ABSTRACT BOOK

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ABSTRACT BOOK

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➢ **ORAL PRESENTATION**

FIWARE : Framework for Smart Solutions and Digital Economy

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Abstract
We are living in information age and the fuel of todays economy is data. The amount and size of data production has never been in todays sizes. Digital economies requires not only to collect, but also to process and create values from these extremely huge data, which are generally kept in different data silos. We are facing with many kinds of Smart Solutions in different application domains, which are well designed in theirself to collect and process data for their own purpose, but they stores data within their own data silos. The problem in this senario is the lack of interoperability, share and standards. To solve this problem, we need a framework to interconnect these smart solutions and help to share their context data. FIWARE is the de-facto solution to that problem developed by a community.
FIWARE is an open source platform, free-forall-forever, and a set of standardized APIs, such as FIWARE NGSI RESTful API, to support the creation of Smart Applications in various fields. It is becoming the open source platform of choice for designing the Reference Architecture of Smart Solutions and Platforms in multiple application domains. FIWARE NGSI and Context Broker Technology have been announced on Feb. 5th, 2018 as new CEF (Connecting Europe Facility) Building Blocks. The history of FIWARE started in 2011 with the "Future Internet Public Private Partnership" initiated by the European Commission under the FP7, where around of 500 million Euro private and public funding have been invested to create an open source IoT platform, data standards, and Apps. Today, a large ecosystems with nearly 1,000 start ups has been created.
FIWARE is a curated framework of open source platform components which can be assembled together with other third-party platform components to accelerate the development of Smart Solutions. In any smart solution there is a need to gather and manage context information, processing that information and informing external actors, enabling them to actuate and therefore alter or enrich the current context. The FIWARE Context Broker component is the core component of any "Powered by FIWARE" platform. It enables the system to perform updates and access to the current state of context. The Context Broker in turn is surrounded by a suite of additional platform components, which may be supplying context data (from diverse sources such as a CRM system, social networks, mobile apps or IoT sensors for example), supporting processing, analysis and visualization of data or bringing support to data access control, publication or monetization.
With this presentation, we are to share the details about FIWARE and Smart Digital Future, in addition to sharing of our analysis about Digital Economy.
Keywords: FIWARE, IoT Platform, Smart Application Platform, Digital Economy, Digital Future

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➢ **ORAL PRESENTATION**

Extracellular DNA has a dual role in bacterial biofilm

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Abstract
Given that, extracellular DNA is a major constituent of the bacterial biofilm and has a crucial structural role in stabilization of the biofilm, the present work was undertaken to investigate the role of DNA in bacterial biofilms. Different concentrations of genomic DNA were tested for their potential role on biofilms formed by *Staphylococcus aureus*, *Escherichia coli*, and *Pseudomonas aeruginosa* and the results demonstrated that the biofilm thickness significantly decreased ($P < 0.05$) in respect to *S. aureus* isolates and in significantly ($P > 0.05$) in regard to *E. coli* isolates. Yet, one *E. coli* isolate, its biofilm was significantly decreased ($P < 0.05$) linearly with increasing DNA. Of considerable interest, the addition of DNA had led to significant increase ($P < 0.05$) in biofilm of the two-tested *P. aeruginosa* isolates. Moreover, eDNA participated in transferring ciprofloxacin-resistance to the sensitive isolate when it presents in its biofilm. In conclusion, eDNA has dual effect on bacterial biofilms either supportive or suppressive in accordance to bacterial species *per se*. Also it seems to play an important role in antibiotic resistance.
Keywords: eDNA, Biofilm, Ciprofloxacin, Resistance

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➢ **ORAL PRESENTATION**

Rational design of platinum decorated carbon nitride nanosheets as efficient electrocatalyst for oxygen reduction reaction at room temperature

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Abstract

Rational synthesis of Pt-based nanostructures supported have attracted much great interests in energy conversion technologies, ascribing to their great catalytic activities. Herein, we provide a scalable approach for one-pot synthesis of platinum functionalized graphitic-like carbon-nitride (Pt-gPCNs) nanosheets as an efficient electrocatalyst for oxygen reduction reaction (ORR) via the annealing of melamine with bipyridine in presence of platinum-precursor without the needing for multi-reaction steps and/or templates. This is owing to promptly complexation between bipyridine, Pt-atoms, and melamine followed by polymerization into two-dimensional nanosheets. The ORR catalytic activity and durability of Pt-gPCNs were significantly superior to gCNs and commercial Pt/C catalyst at room temperature attributed to the high catalytic activity of single-atom Pt and strong electron-attracting capability of N-atoms.

Keywords: Oxygen Reduction Reaction, Fuel cell, Pt-based Nanostructures.

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➢ **ORAL PRESENTATION**

On the positive definite solution of nonlinear matrix equation :
$$\boldsymbol{X = A + C^{*}\ (B + X^{-\alpha})^{-1}\ C}$$

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Abstract
In this work we consider the nonlinear matrix equation $X = A + C^{*}(B + X^{-\alpha})^{-1}C$ where $\alpha \in (0\,;1]$ is a positive real number, C is an arbitrary $n \times n$ matrix and A and B are Hermitian positive semidefinite matrices. Using fixed point theory of concave operators and the monotone iteration principal in ordered spaces setting, we prove the existence and uniqueness of positive definite solution in some order interval.
Keywords: Matrix equation, Concave operator, Contraction, Cone, Fixed point.

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➢ **ORAL PRESENTATION**

On direct products of α_1 near-rings

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Abstract
In this paper, we discuss direct products of α_1 near-rings and obtain some of their important properties, including α_1 near-rings homomorphism between them.
Keywords: α_1 near-ring, homomorphism, direct products

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➢ **ORAL PRESENTATION**

Synthesis and evaluation of multifunctional composite biphasic calcium phosphate bioceramic scaffolds loaded with silver nanoparticles

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Abstract
Rational design of multifunctional scaffolds with inherent antibacterial, osteostimulation, and proper mechanical properties are of particular interest in tissue engineering. Herein, compositebiphasic bicalcium phosphate (BCP) scaffolds loaded with silver nanoparticles (Ag-NPs) were synthesized with 3D interconnected large pores, high load-bearing properties, and suitable degradation rate. Intriguingly, integration of Ag-NPs into BCP scaffolds have a substantial effect on enhancement their porosity and compressive strength along with retardation biodegradation rates. This is ascribed to a combination between unique physicochemical properties of BCP and antimicrobial merits of Ag-NPs. The presented approach may open new frontiers into tailoring the mechanical and/or physical properties of BCP scaffolds using various metal-based NPs for tissue regeneration.
Keywords: biphasic calcium phosphate scaffolds, silver nanoparticles, tissue engineering, bone reconstruction, allografting.

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➢ **ORAL PRESENTATION**

Tumor Metabolism- Novel and Selective Target for Cancer Therapy

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Abstract

The development of cancer-specific therapeutics has been limited because most of healthy cells and cancer cells depend on common pathways. The recent evidence suggests that targeting the cancer specific metabolic and mitochondrial remodeling may offer selectivity in cancer treatment. Malic enzyme 2 (ME2) is predominantly overexpressed in a number of tumor types and inhibition of ME2 results in decreased tumor growth. Reversing the mitochondrial suppression and the increased glucose consumption in cancer cells is an important step and has great potential for therapeutic drug developments. Therefore, we performed library screen to discove novel inhibitors of tumor metablic enzyme, ME2, for cancer treatment. Here, progress regarding screening for ME2 inhibitors will be reported.

Keywords: Tumor metabolism, Glycolysis, Malic enzyme

- **ORAL PRESENTATION**

2. ABSTRACTS
2.1. ORAL PRESENTATIONS

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➢ **ORAL PRESENTATION**

Spin-polarized hot electron transport through a spin-valve / semiconductor Schottky junction: application to spin polarimetry

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Abstract
During the last decades, developments in the field of spintronics triggered a wealth of fundamental and technological advances in condensed matter physics and material science, with a particular interest for spin-dependent phenomena. For example, high density spin-polarized currents are currently used to switch the magnetization of MRAMs devices or to drive steady state oscillations in STOs [1]. In electron spectroscopy, despite the development of sources and detectors of spin-polarized free electron beams, the manipulation of the spin polarization is not an easy task, and its measurement using Mott, SPLEED or absorption detectors usually requires severe operation conditions (high voltage, surface preparation in ultra-high vacuum, etc.) [2]. In this work, we present preliminary results on the performance of a solid state spin polarimeter fabricated from a spin-valve / semiconductor Schottky. The principle of its operation includes two basic ingredients: (i) the transport of hot electrons through a Pt/IrMn/Co/Cu/Co spin-valve in a polarizer / analyzer configuration to filter the spin polarization [3] and (ii) a Cu/Si(100) Schottky barrier acting as an energy filter to maximize the spin selectivity of the device. Our results show that high spin selectivity can be obtained at room temperature, offering new opportunities for spin detection.
Keywords: hot electron, Schottky junction, spin-valve
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➢ **ORAL PRESENTATION**

Effects of the probe angle of a pacemaker over the electric field inductions at extremely low frequency

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[*1]University of Twente, Engineering Technology Faculty, DPM Department, Enschede, Netherlands.
[2]Institut Jean Lamour(CNRS)-Université de Lorraine, Nanomaterials, Electronics and Living Systems, Nancy, France.

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Abstract
At extremely low frequency (50/60 Hz), electric fields cause inductions inside the human body, which requires particular investigations for the patients equipped with an active cardiac implant, as mentioned in 2013/35/EU. The study will investigate by simulation using Finite Integration Technique (CST© Software), the inductions over a pacemaker with an active fixation probe. We will use anatomic human model at 2 mm resolution implanted with a pacemaker. The particularity of this study is the definition of the inductions, for several angles of the active fixation probe inside the heart, which the induced voltage over the probe highly depends on. In conclusion, the simulations results will estimate the external electric field level which might cause a dysfunction of an implanted pacemaker when the patient is exposed.

Keywords: Electric Field, Low Frequency, Active Cardiac Implants, Pacemaker, Finite Integration Technique

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➢ **ORAL PRESENTATION**

The temperature effect on the physical properties of CuO thin film

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Abstract
In this paper we have synthesized cupric oxide (CuO) with different thicknesses by sol gel method and then deposited under thin films onto glass substrate via spin coating technique at different annealing temperature range from 300°C to 600°C. X ray diffraction (XRD) patterns revealed that all CuO films have a monoclinic structure and the crystallite size is calculated using Debye Scherrer`s formula it is in the order of (33nm-65 nm). The thin film annealed at 300 °C exhibited a band gap of 2.6eV, which is attributed to the Cu_2O phase. Morphological, electrical and optical properties of the synthesized films have been investigated using atomic force microscopy (AFM), UV-Vis spectroscopy and the electrical measurement method (4-point). These studies revealed that the Roughness and average particle size increases with temperature while the band gap and the electrical resistivity decreases by increasing temperature. The highest conductivity values were obtained for CuO films prepared at 500°C. The films showed transmittance over 70% in the optical band gap spectrum.
Keywords: Cupric oxide, Spin coating, Electrical conductivity, transmittance.

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➢ **ORAL PRESENTATION**

2-deoxy-D-ribose (2dDR) and 17β-Estradiol (E2) loaded scaffolds for stimulating angiogenesis in *ex-ovo* CAM assay

Serkan Dikici[1], Naşide Mangır[1, 2], Muhammad Yar[3], Frederik Claeyssens[1], Sheila MacNeil[1,*]

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Abstract
Ensuring rapid neovascularisation following implantation of tissue-engineered (TE) constructs is recognised to be a major barrier to be overcome for translation of tissue engineered constructs to the clinic. Thus, the development of tissue engineered scaffolds that support cells and, critically, promote angiogenesis is an important and promising approach to accelerate vascular ingrowth after implantation. With respect to pro-angiogenic agents, vascular endothelial growth factor (VEGF) plays a pivotal role in angiogenesis but VEGF is also unstable, expensive and the use of VEGF can result in leaky immature vessels in vivo. In contrast, we have recently identified two stable, inexpensive and potent stimulators of angiogenesis, estradiol (E2) and to 2-deoxy-D-ribose (2dDR), which would be ideal to translate to the clinic. The aim of this study is to develop E2 and 2dDR releasing biodegradable scaffolds and assess their potency for promoting angiogenesis using *ex-ovo* chick chorioallantoic membrane (CAM) assay. We first assessed the angiogenic potency of 2dDR and E2 versus VEGF in an *ex-ovo* CAM assay and found both to be approximately 80% as potent as VEGF in stimulating new blood vessels. 2dDR and E2 were electrospun into PHBV fibres, and inclusion of both agents modestly increased scaffold strength. There was a sustained release of both agents over 30 days from these scaffolds. Assessment of their proangiogenic activity using the *ex-ovo* CAM assay showed 2dDR and E2 to be effective at stimulating neovascularisation over 7 days. We have shown for the first time, the gradual release of E2 and 2dDR from fibres, with a resultant stimulation of angiogenesis in the *ex-ovo* CAM assay. These two small, stable drugs found to have great potential to be used as alternatives to exogenous VEGF to promote angiogenesis.
Keywords: angiogenesis, VEGF, deoxy-ribose, estradiol, CAM assay, vascularization

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➢ **ORAL PRESENTATION**

Use of decellularised spinach leaves as a tissue engineering scaffold for promoting angiogenesis in *ex-ovo* CAM assay

Serkan Dikici*, Frederik Claeyssens, Sheila MacNeil

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Abstract

Most of the conventional tissue engineering approaches have mainly focused on attachment and proliferation of cells, and their formation of extracellular matrix (ECM). However, rapid neovascularisation of thick and complex tissue-engineered (TE) constructs is the key for translating in vitro studies into clinic. While simple constructs may survive following implantation on well-vascularised wound beds, complex and thick TE constructs ensuring a rapid neovascularisation is essential. Although majority of the current strategies mainly focuses on use of proangiogenic factors in TE scaffolds to overcome slow vascularisation problems in the post-implantation period, use of decellularised (dcell) natural constructs with preserved three dimensional (3D) vascular architecture -which can be then recellularised with patients own cells- is also a well-established and promising technique. The main principle of decellularisation is to remove cellular content of the tissue or organ by preserving 3D architecture and key ECM elements of it. A variety of applications of dcell tissue and organs including heart, bladder, liver, intestine, skin, leaf has been reported by many groups.

Use of acellular mammalian components has a great potential in TE applications. However, they are expensive and in short supply. It also requires high experience and ethical approval to harvest tissues or organs from animals and may cause immune reaction following implantation. On the other hand, d-cell plant tissues and organs are promising alternatives to be used as tissue engineering scaffolds. They are readily available, cost effective and safe to use.

In this study, we developed a 3D natural TE scaffold with an intrinsic 3D vascular architecture by decellularising spinach leaves. We characterised its structure and assessed the biocompatibility of dcell leaf in vitro. Natural vascular structure was then repopulated with endothelial cells, and scaffolds were then further investigated for their angiogenic activity using *ex-ovo* CAM assay when they are repopulated with endothelial cells.

Keywords: decellularisation, spinach leaf, angiogenesis, CAM assay, vascularization

➢ **ORAL PRESENTATION**

Tumor Metabolism- Novel and Selective Target for Cancer Therapy

Dr. Azhar Rasul[1,*]

[*1]Department of Zoology, Faculty of Life Sciences, Government College University Faisalabad, Pakistan.

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Abstract
The development of cancer-specific therapeutics has been limited because most of healthy cells and cancer cells depend on common pathways. The recent evidence suggests that targeting the cancer specific metabolic and mitochondrial remodeling may offer selectivity in cancer treatment. Malic enzyme 2 (ME2) is predominantly overexpressed in a number of tumor types and inhibition of ME2 results in decreased tumor growth. Reversing the mitochondrial suppression and the increased glucose consumption in cancer cells is an important step and has great potential for therapeutic drug developments. Therefore, we performed library screen to discove novel inhibitors of tumor metablic enzyme, ME2, for cancer treatment. Here, progress regarding screening for ME2 inhibitors will be reported.
Keywords: Tumor metabolism, Glycolysis, Malic enzyme

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➢ **ORAL PRESENTATION**

The disinfection by-products (THMs) levels in drinking tap water at Mostaganem region (Northern West Algeria)-Algeria

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Abstract

The use of chlorine to disinfect water produces various disinfection byproducts such as trihalomethanes(THMs***)***.These compounds are formed when free available chlorine reacts with natural organic matter in raw water during water disinfection. Epidemiologic studies have shown an association between long-term exposure to THMs and an increased risk of cancer, all of them are suspected of having carcinogenic effects**.** The aim of this paper is to determine the presence of disinfection byproducts (THMs) in the drinking tap water of Mostaganem region (Algeria) during the year 2017. This analytical study is based for collecting tap water samples from deferent area of Mostaganem region in order to analyse trihalomethanes. Primary, we have preceding a collect of 18 samples from different area of Mostaganem region which are marked a higher level of residual chlorine; secondly, we have utilised the HS-SPME method for determination of trihalomethanes in drinking tap water. The results obtained show variability in total THMs concentrations from one region to another, with a maximum of 187 µg / l recorded in Beymouth city, but the lowest value 07.84 µ g / l is noted at Salamander city during the same period. Our drinking tap water samples include a large quantity of THMs with different concentrations, where the dibromochloromethane and the bromoform constitute the major portion of THMs.

Key words: Analyse, tap water, disinfection byproducts (THMs).

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➢ **ORAL PRESENTATION**

Controlled fabrication of multifunctional Bentonite-Clay/Polypyrrole/Silver nanoparticles for hydrogen peroxide oxidation reaction

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Abstract

Facile preparation of active and low-cost electrocatalyst for hydrogen peroxide (H_2O_2) oxidation is of particular interest in various applications. Herein, we developed a facile one-pot method for controlled synthesis of bentonite-clay/polypyrrole/silver nanoparticles (BP-PS-PPy/Ag NPs) via the in-suite photo polymerization of pyrrole in the presence of salinized bentonite-clay and silver nitrate. This drove the successful production of exfoliated BP-PS-PPy nanosheets decorated with Ag NPs. The catalytic oxidation activity and durability of H_2O_2 on BP-PS-PPY/Ag NPs was significantly superior to Ag-free BP-PS. This is originated from the synergetic physiochemical properties of Ag NPs and BP-PS-PPY. Our newly designed method may open new avenues on tailoring synthesis of low-cost and natural electrocatalysts for H_2O_2.

Keywords: Nanocomposites, Ag/PPy, and Clay/PPy/Ag nanoparticles, and H_2O_2 Electrocatalyst

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➢ **ORAL PRESENTATION**

Biodiesel production from fruit pulp of *Cassia fistula* L. using green microalga *Chlorella minutissima*

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Abstract
This study demonstrates microalgal bio-diesel generation from a cheap, abundant, non-edible fruit pulp of *Cassia fistula* L. The *Cassia fistula* L. aqueous extract (CAE) was utilized as growth medium for cultivation of microalga *Chlorella minutissima* (*C. minutissima*). This microalga accumulated high amount of lipids when cultivated with CAE as source of nutrition in comparison to BG-11 medium. Different concentrations (10, 20, 30, 40 and 50%) of CAE diluted with distilled water were used to cultivate microalga. Effects of change in light intensity and photoperiod were also observed on biomass and lipid yield of microalga. Light intensity of 7500 lux with a photoperiod of 18 h resulted in maximum biomass and lipid yields of 1.28 ± 0.03 and 0.3968 ± 0.05 g/L, respectively when cultivated with 40% CAE over a cultivation period of 18 days in batch mode. Fatty acid methyl ester (FAME) profile of bio-diesel obtained shown the presence of palmitic acid (C16:0) 38.23%, stearic acid (C18:0) 25.45%, and oleic acid (C18:1) 23.15% as major fatty acids. Highly saturated fatty acids content (72.58%) can be blended with high PUFA feedstocks to make it an industrially viable renewable energy product. These facts reflect that the fruit pulp of *Cassia fistula* L. can be used for cultivation of microalgae, a novel feedstock for bio-fuels production.
Keywords: *Cassia fistula* L., *C. minutissima*, Biomass, Lipid, GC-MS, Bio-diesel.

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➢ **ORAL PRESENTATION**

Occurrence of cassava brown streak disease and associated Cassava brown streak virus and Ugandan cassava brown streak virus in the Comoros Islands

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Abstract
Cassava brown streak disease (CBSD) has emerged as the most important, viral disease of cassava (*Manihot esculenta*) in Africa and is a major threat to food security. The CBSD in East and Central Africa caused by two ipomoviruses, Cassava brown streak virus and Ugandan cassava brown streak virus (family Potyviridae).To evaluate the disease epidemic in the south-western Indian Ocean islands of Comoros (Mayotte, Grande Comore, Anjouan, Mohéli) and to verify the identity of the causal agents, symptomatic leaf samples of 67 affected plants were collected and tested. Total RNA was extracted from these samples using the RNease Plant Mini Kit (Qiagen, France) for the detection of cassava brown streak viruses. For the detection of cassava brown streak viruses, two-step RT-PCR was performed using the CBSDDF2 and CBSDDR. These primers were designed for simultaneous specific detection of CBSV and UCBSV (amplicons of 344 and 440 bp, respectively). RT-PCR products of the expected sizes for CBSV and UCBSV were obtained for 31 and 14 samples, respectively. To confirm the diagnosis, the RT-PCR products were directly and bi-directionally sequenced and contigs assembled using DNA Baser (Heracle BioSoft, Romania). Thirty-seven nucleotide sequences were obtained from the 45 RT-PCR positive samples. Twelve sequences of 374 bp showed the highest nucleotide identity (91-93%) with an isolate of UCBSV from Mayotte (LN611675). The other 25 sequences of 280 bp showed the highest nucleotide identity (96-99%) with isolates of CBSV from Uganda, Kenya and Tanzania (KJ606250, LT560330 and GU563322). MEGA6 was used for the phylogenetic reconstruction of cassava brown streak viruses using publicly available complete genome sequences of cassava brown streak viruses to confirm that CBSV and UCBSV isolates from Grande Comore, Mayotte are genetically related to isolates from East Africa.
Keywords: Ipomovirus, *Manihot esculenta*, south-western Indian Ocean Islands.

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➢ **ORAL PRESENTATION**

Prediction of electricity demand in hybrid systems using Wavelet Recurrent Neural Networks (WRNN)

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Abstract

Morocco is poorly endowed with conventional energy resources and imports 96% of its energy. However, the Kingdom must meet a growing demand (about 7% per year) because of its economic growth and population growth. To outfit these challenges, Morocco has adopted a new national energy strategy to secure energy supply while adopting a sustainable development approach, also aiming to better maintain competitive prices and better control demand. Knowing that also that electricity demand with its seasonal nature is a quantity that can be influenced by several factors from where its instability, so the forecast is an essential tool for ensuring a balance between supply and demand of electricity. Energy demand forecasting is an essential component for energy planning, formulating strategies and recommending energy policies.

This work was dedicated to the prediction of electricity consumption taking into account only the data history. This has been realized by performing prediction with the Wavelet Recurrent Neural Network (WRNN). This method is experimented on the case of the consumption of the Faculty of Sciences and Technology of Beni Mellal, Morocco. Finally the comparison between the predicted and the real data, confirm the efficiency of our approach.

Keywords: Energy management, discrete wavelet transform (DWT), recurrent neural network (RNN), Power planning, electric consumption, Time series

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➢ **ORAL PRESENTATION**

Assessment of ISNAG fluorimeter (Total fluorescence measurements at+ 90° & - 90° using four solar cell on each side for 100mm distance at 2mm path length) with well-known fluorescent molecules via CFIA

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Abstract
Two well-known fluorescent molecules: fluorescein sodium salt (FSS) and 2,7-dichloro fluorescein (DCF) were tried to prove the efficiency, trustability and repeatability of ISNAG fluorimeter by using discrete and continuous flow injection analysis modes. A linear range of 0.002-1 mmol/L for FSS and 0.003-0.7 mmol/L was for DCF, with LOD 0.0018 mmol/L and 0.002 mmol/L for FSS and DCF respectively, were obtained for discrete mode of analysis. While the continuous mode gave a linear range of 0.002-0.7 mmol/L and 0.003-0.5 mmol/L for FSS and DCF respectively, the LOD were 0.0016mmol/L and 0.0018 mmol/L for FSS and DCF respectively. The results were compared with classical method at variable λ_{ex} for both fluorescent molecules at 95% confidence level. The comparison data shows that ISNAG fluorimeter is the choice with excellent extended detection and a wider applicability.

Keywords: Fluorescein sodium salt, 2, 7-Dichlorofluorescein, Flow injection analysis, Fluorescence.

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➢ **ORAL PRESENTATION**

The exact number of positive solutions for a class of quasilinear boundary value problems of type Allee-effect

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Abstract

By using the time-mapping approach we study the exact number of positive solutions for the following boundary value problem:

$$\begin{cases} -\left(\varphi_p(u^\alpha)\varphi_p(u')\right)' = \lambda f(u) & in\ (0,1) \\ u > 0 & in\ (0,1) \\ u(0) = u(1) = 0 \end{cases} \qquad (1)$$

Where $\varphi_p(y) = |y|^{p-2}\, y, y \in \mathbb{R}, \alpha > 0, p > 1, a > 0, \lambda > 0\ and\ f(u) = u^{p-1}\,(1 - u^{p-1})(u^{p-1}\, a)$.

In this work we improve and generalized the results obtained by D. Aronson & M. G. Crandall & L. A. Peletier . More precisely we show that the structure of the positive solutions for 1<p<=2 is similar to that obteined by D. Aronson & M. G. Crandall & L. A. Peletier , but for p>2 is different.

To study our problem we will used the quadrature method , the goal is to transform our problem to an algebric equation which there solutions are equivalent to the solutions of our problem.

Problem of type (1) with **p=2** arise in mathematical biology. More precesily equation in (1) is the stasionary equation with model the spatial diffusion of biologiacal populations where **u** is the population density and **f(u)** represents the population supply due to the birth and deaths.

Keywords: Quadrature method, positive solutions, time-mapping approach.

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➢ **ORAL PRESENTATION**

Improving biological performance of 3DP multiscale porous polymer scaffolds by in vitro generated extracellular matrix

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Abstract

The challenge of tissue engineering is to mimic target tissue structural, mechanical and biochemical aspects. Due to variations in the architecture of natural bones and bone defects, additive manufacturing (AM) an attractive route for on custom bone applications by having high controllability on both the inner/outer shape of the scaffolds. Although AM enables to manufacture macroporous scaffolds, current techniques limit the microporosity (MiP). Alternatively, the MiP of materials can be controlled via using emulsion templating by producing polymerized high internal phase emulsion (polyHIPE) which have -fully interconnected- porosity very similar to trabecular bone. On the other side, the biochemical environment of the natural bone is dominated by mineralized ECM containing various biological factors. Our aim is combining advantages of AM and emulsion templating to create multiscale porous scaffolds. Additionally, to benefit from complex organization of natural ECM, fast-growing MLO-A5 cells were cultured on fully degradable, 3D printed PCL polyHIPE scaffolds (PPHSs) so as to decellularization (dcell). This developed hybrid scaffolds made of pre-generated ECM and polymer were presented for usage of on custom bone grafts. Following polymer synthesis and scaffold manufacturing, MLO-A5s were cultured on PPHS for 4-weeks for collagen and mineral deposition. After dcell, hES-MPs were cultured on plain&hybrid scaffolds to evaluate the effect of *in vitro* generated ECM. Finally, the *ex-vivo* chick femur defect model was used to explore the potential of the scaffolds on the bone healing. Both *in vitro* culture and *ex-vivo* chick femur defect model confirmed that due to its interconnected multiscale-porous structure, PPHS successfully supports cell adhesion, proliferation and migration and it is a promising candidate to fulfil the requirements of defect-matching bone grafts. Additionally, our *in vitro* generated ECM decorated polymer system proposed an applicable approach to improve bioactivity of polymer scaffolds to encourage precursors to differentiate mature bone.

Keywords: Additive manufacturing, polymer synthesis, decellularisation, emulsion templating, bone tissue engineering, chick femur defect model

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➢ **ORAL PRESENTATION**

Scientific&medical illustration: worth a thousand words

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Abstract

Medical illustration is the effective way of conveying certain information to an observer by visual communication. Digital visualization enables real-time manipulation so it is advantageous as compared to traditional techniques. In addition to artists' education in both life sciences and visual communication, they create images with the collaboration of scientist. Real life observations/ images, other medical illustrations, 3D models may be used as references. Illustrations are used for publications, education of the patients or advertisement purposes. Within the scope of this study, the dental case will be illustrated step by step (Adobe Photoshop-CS6). Then, our study on barrier membrane scaffolds will be discussed. In dentistry, bone grafting material is inserted into the defected bone site to encourage bone formation prior to placement of the implant in case of insufficient alveolar bone. Since bone is relatively slower-growing tissue when compared with epithelial cells (ECs) in gum tissue, a barrier membrane (BM) needs to be used to limit the penetration of ECs into bone growing zone. Commercial collagen membranes are widely used as BM, however, they cannot preserve their physical barrier function over a month alongside having a risk of disease transmission. Herein, we will present the development of the biphasic, biodegradable BM composed of electrospun polycaprolactone (PCL) nanofibers, which act as a physical barrier for preventing epithelial invasion up to 4 weeks (histological evaluation) without limiting the diffusion of waste and nutrients, and emulsion-templated (polyHIPE) PCL that encourages and guides bone formation with its highly porous and fully interconnected bone-like structure. By explaining our research problem and solution visually, we conclude that medical illustration is a quite advantageous tool for scientific researches. In this work, the steps of this tool were discussed with the example of the developed novel membrane for dental applications.

Keywords: Medical Illustration, digital drawing, guided tissue regeneration, barrier membrane, polyHIPE, polycaprolactone

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➢ **ORAL PRESENTATION**

Laser-fabricated poly (ε-caprolactone) scaffolds having induced rough surface features that control both the shape and the functionality of stem cells through their extracellular surface micro environment

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Abstract
Scaffold roughness is quite crucial for the control of both the functionality and the biocompatibility of implants in a biological environment. In this investigation, we demonstrate that scaffolds with roughened surface topography fabricated by Pulsed Excimer Laser are shown to guide human bone marrow mesenchymal stem cells (hBMMSCs) morphology. Such induced roughness enhances the stem cells osteogenic differentiation and proliferation for a bone-like tissue. Accordingly, surface modified scaffolds that were obtained upon varying laser parameters; namely: pulse rate, energy, and the number of pulses had a noted effect on both the cells function and morphology. Eventually, this method of the application of excimer laser has resulted in the impartment of a 5-fold increase in surface roughness of the poly(ε-caprolactone) scaffolds. The laser modified scaffolds discerned osteogenic differentiation of the stem cells, whereas the unmodified scaffolds did not. Also, the hBMMSCs on an unmodified scaffold had a large spread area, less roundedness in comparison to the modified scaffolds that would serve as a clear indication that, the surface roughness of a modified scaffold dictated the morphology of the hBMMSCs. Therefore, this result could warrant that the scaffolds fabricated with roughened surface lead to the optimization of stem cells functions through the control of cell morphologies.
Keywords, Excimer Laser, PCL scaffold, human bone marrow mesenchymal stem cells (hBMMSCs), osteogenesis, osteoconduction, cell differentiation

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➢ **ORAL PRESENTATION**

2D Numerical Simulation of ZnO/Si heterojunction solar cells

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Abstract
Zinc Oxide (ZnO) is a potential material that possess two essential properties, high optical transmittance in visible range and a good electrical conductivity due to its high gap energy and high excitonic energy. Also this material is currently integrated in on-board electronic structures used in severe conditions such as high temperature and high power. In this work, the ZnO/Si heterojunction has been simulated and studied using two-dimensional numerical simulation, this structure used as solar cell is made of a p-type bulk Silicon absorber and a n-type ZnO thin film. As results, we will present the effect of ZnO carrier concentration and Si bulk lifetime on the photovoltaic parameters (Short circuit current Icc, Open circuit voltage, Voc, Fill Factor FF and efficiency η) by exploiting the current-voltage characteristics and the external quantum efficiency curves. This work is done in conjunction with an experimental study which is carried out in our laboratory on the elaboration and the characterization of ZnO/Si transparent conducting electrodes.
Keywords: ZnO/Si heterojunction, Solar cells, Two-dimensional simulation.

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➢ **ORAL PRESENTATION**

Adsorption of propylene and propane by X zeolites exchanged by Cr^{3+} and/or Ni^{2+}

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Abstract
In the present work, we investigate propylene and propane adsorption onto $M^{n+}X$ zeolites (M^{n+} = Ni^{2+} and/or Cr^{3+}). First the exchanges zeolites were prepared and characterized by various techniques such as: XDR analysis, SEM, BET and thermal analysis.
The adsorption of propylene and propane onto $M^{n+}X$ zeolites was investigated, and thermodynamic properties were discussed and establish a comparison between the binary (introduction of Ni^{2+} or Cr^{3+} instead of Na^{+}) and ternary (introduction of Ni^{2+} and Cr^{3+} instead of Na^{+}) exchanges. To our knowledge, there is no work in this field, in spite of a growing interest in bimetallic zeolites. Isotherms of C_3H_6 and C_3H_8 were successfully modeled using the Sips and Toth equations. A change in Henry's law slope (K_H), confirms the strong and weak characters of the interactions with propylene and propane, respectively.
The ternary exchanges CrNi(39)X has an intermediary behavior between Cr(39)X and Ni(40)X. It manifests specific interaction with C_3H_6 molecules through the deep implication of Cr^{3+} cations, at low coverage. With increasing adsorbate concentration, the contribution of Ni^{2+} occurs.
Keywords:
$M^{n+}X$ zeolites, Binary and ternary exchanges, Adsorption, C_3H_6 / C_3H_8, Sips or Toth's models.

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➢ **ORAL PRESENTATION**

Priliminary Study Of Affinity Of Estrogen On Mood Swings Among Females From District Hyderabad, Province Sindh, Pakistan

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Abstract

The name estrogen comes from the Greek *οἶστρος* (oistros), literally meaning "verve or inspiration" but figuratively sexual passion or desire, and the suffix *-gen*, meaning "producer of". Like all steroid hormones, estrogens readily diffuse across the cell membrane. Once inside the cell, they bind to and activate estrogen receptors (ERs) which in turn modulate the expression of many genes.

During the present study **MOOD SWINGS** of 25 college girls were observed with range of age in between 13-20 years, through questionnaire and blood investigation of estrogen level in two phases. Data was collected from January to June 2016. Phase I showed observation before menstruation and Phase II showed observation during menstruation.

In results of phase I; 64% girls showed irritability, 57% showed headache, 56% showed tension, 48% showed sleep problem and lack of motivation, 44 % showed mental confusion 32% showed depressive mode and anger. While in results of phase II; 84% showed increase fatigue, 80% showed tension, sleep problem and mood change behavior, 76% showed irrational anger, 68% mental confusion, 64% headache, 52% depressive mood and 44% lack of motivation.

Results clearly indicated that **ESTROGEN** levels have strong impact on mood swings in girls.

In this work it is concluded that the results based has been obtaining that during present study that estrogen level play a vital role in the mood swings and behavioral changes among girls. Finally, it is also recommending the Alter Eating Habits like the foods you eat determine the balance of your hormones. women can control itself mood swings by ensuring that they eat regularly throughout day, get protein with every meal, decrease the carbohydrates and you will be able to regulate your blood sugar levels and mood swings. Exercise daily, Consume the Right Amounts of Vitamins and Nutrients. Medications and Cognitive Behavioral Therapy (CBT) many more caring which on depend on life style

Key Words: Estrogen, mood swings, irritability, depressive mood, lack of motivation.

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➢ **ORAL PRESENTATION**

Strong biofilm-producer *Klebsiella pneumoniae* serotype K2 caused lung damage more than its spouse of weak biofilm-producer

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Abstract
The ability of *Klebsiella pneumoniae* serotype K2 isolates to produce biofilm were evaluated in polystyrene microtiter plates. The obtained results showed that about 21.05, 73.6, and 5.26% of the tested isolates were weak moderate, and were strong biofilm producers. Isolates K20 and K22 were weak and strong biofilm forming isolates, respectively, were injected intranasally in male Swiss white mice (*Mus musculus*). Histopathological changes in mice lung showed that by weak and strong biofilm formers recorded pathological score 9 and 13, respectively, to the lung tissues. In conclusion, strong biofilm producing isolates might be more virulent than their counterpart, the weak producers.
Keywords: biofilm, Klebsiella pneumoniae, lung

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➢ **ORAL PRESENTATION**

The Effect Of The Agitation On The Process Of The Bio Methanisation Of Sludge From Station To Purge

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Abstract

The fate of the sludge from sewage treatment plants is one of the major concerns in the management of the service of the remediation. The increasing volumes of treated wastewater necessarily induce an increase in the quantities of sludge. This situation constitutes a constraint by report to the sustainability of sanitation projects. In effect In the absence of sustainable options for disposal of sludge, the latter will accumulate in the basins which would significantly reduce the performance of cleansing performance or they will be eliminated in the vicinity of the step which will generate environmental nuisance Some.

In the face of the growing problem posed by sludge and their fate, anaerobic digestion appears therefore as a solution to a treatment of sludge very interesting to study, in the framework of the development of a sector of disposal and recovery adapted and reliable.

The valorization of sludge from sewage treatment plants by the anaerobic digestion allows you to produce a renewable energy (biogas), which is available, inexpensive and non-polluting; Its exploitation allows to reduce greenhouse gas emissions. On the other hand the production of biogas is considered as an economic solution, decentralized and ecological for the sustainable development of deprived regions, and/or isolated.

Of this fact, we conducted an experimental study on the anaerobic digestion of sludge sewage treatment. This study is done on a reactor without agitation and another with agitation to assess the effect of the agitation on the biological process.

-The pH of the sample with agitation varies between 6.3 and 7.8 which has allowed to have a favorable environment for the development of methanogenic bacteria responsible for the formation of the biogas.

-The rate of reduction of the cod is 80% of the sample with agitation

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➢ **ORAL PRESENTATION**

Association between types of headache with blood groups and socioeconomic factors

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Abstract
A headache is defined as "a pain or ache anywhere in the region of head". It is the most prevalent neurological disorder that accompanies many diseases and conditions. The International Headache Society (IHS) classifies headaches as either primary or secondary, depending on what has caused them. Common primary headaches include migraines, cluster headaches and tension headaches, while secondary headaches include sinus. A blood group is a classification of blood according to presence or absence of inherited antigens on the surface of red blood cells. The ABO and Rh blood groups are among the most important blood group systems inherited variably amongst population. This study is a preliminary attempt to confirm any significant association between types of headache with blood groups and socioeconomic factors in a sample of Iraqi subjects. Three hundred Iraqi subjects comprising of 120 males and 180 females, aged 19-69 years were randomly selected from different education levels and occupations. The data were recorded using questionnaire which included socioeconomic information and some headache-related data. Blood samples were collected from the studied subjects to determine the ABO and Rh (D) phenotype. The results revealed that blood group O recorded the highest percentage frequency (36.7%), while blood group AB recorded the lowest percentage frequency (12.0%). Also, the most participants (83.3%) were within the Rh^+ blood group, while the lowest (16.7%) were within the Rh^- blood group. Distribution of the studied subjects according to the types of headache showed that most of them complained of tension (53.3%), while the lowest complained of cluster (10.7%). No significant association was found between types of headache and blood groups because the tension was more frequent in all blood groups. Medication was the more practice adopted for relief from headache (46.7%) while relaxation was the lowest practice (18.3%). The results revealed a significant association between types of headache and some socioeconomic factors; cluster was more prevalence (20.9%) in the males while migraine was more prevalence (21.1%) in the females, sinus was more frequent (23.3%) in the free work while migraine was more frequent (31.0%) in the housewife. A significant association was found between types of headache and timing of headache; tension was more prevalence at non regular timing (83.3%), sinus was more prevalence at evening (47.3%), cluster was more prevalence at morning (35.7%), and migraine was more prevalence at afternoon (50.5%).

Keywords: Headache, Blood groups, Socioeconomic factors

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➢ **ORAL PRESENTATION**

Analysıs of shorelıne changes along Karachı coast usıng geospatıal technıques and oceanographıc observatıons

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Abstract
Pakistan coastal resources are important not only for the environment, but also for locals as well as country national economy. Sustainable use of these resources to achieve the future goals of coastal zone management and coastal developments thus protecting the resources on which the coastal communities depend and ultimately to improve their livelihoods are essential. Karachi coastline is well distributed in sandy and rocky beaches while some places are oriented with high-rise cliffs. Shoreline of Karachi from last 15 years is altering in an anthropogenic way which originates the unstable condition along the coast and in near shore sedimentation. The analysis of the data indicates that the residual water moved towards North north east with a speed of 0.13 m/sec at the surface while bottom water is slower than the surface water with a velocity of 0.02 m/sec toward west. In general, at the time of flooding water moved towards coast while in ebb stage, it moved away from the coast. The data showing perpendicular average velocity with direction the flood current is eastward and ebb current is westward near the Sandpit and Hawksbay coast of Karachi. The tidal constituent current along the coast is rectilinear current, the maximum current of M2, S2, K1, O1 is about 20, 10, 5 and 3 cm/s by which the erosion and accretion along the Karachi coast is initiate by Longshore currents. Satellite data of High-resolution images and Medium resolution also point out the major sequential shift in the Karachi coast.
Keywords: Currents, Ebb, Flood, Tide, Sedimentation, Tidal constituent.

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➢ **ORAL PRESENTATION**

Gold/Chitosan as biodegradable material for three component-coupling

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Abstract
The synthesis of gold nanoparticles of desired shape and size with uniform distribution within the polymer matrix remains highly challenging. This challenge can be made more meaningful by employing simpler and easier synthetic routes. Chitosan (CS), a natural biopolymer, has emerged as an attractive biomaterial for drug-delivery systems because of its biocompatible, biodegradable, and nontoxic.
The multicomponent coupling reactions occurring between amines, haloalcane and terminal alkynes (AHA coupling reaction) are another useful transformation catalyzed by the homogenous systems bearing gold.
The reactions are a synthetic source of propargylamines which are also the important intermediates for the synthesis of biological active compounds used as the components for pharmaceuticals and plant protectants.
In this study gold/chitosan was prepared by deposition precipitation with urea and characterized by IR, DRX, ATG and BET. This catalyst was used in AHA coupling with good yield of propargylamine.
Keywords: Chitosan, propargylamine, gold nanoparticle.

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➢ **ORAL PRESENTATION**

Histological study on the liver and kidney of white albino rats treated with malathion and lambda-cyhalothrin

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Abstract: Malathion and Lambda cyalothrin are a commonly used pesticide that a large number of populations are undesirably exposing themselves to severe health risk due to taking up the contaminated foods, water and vegetables containing these pesticide. This study was carried out through histopathologic test to evaluate the extent of damage caused by those pesticide in the liver and kidney tissues of white albino rats. We used thirty nine adult albino rats and distribute to four groups as control group and treatment group. Each of the treatment groups (group1, group 2 and group 3 , group 4, group 5 and group 6 containing six animals in each group while three in control group). The concentrations of malathion and lambda as 1/15, 1/10 and 1/5 of LD_{50} respectively. After 42 days the animals of each groups were sacrificed and the organs of sacrificed animal were subjected to histopathological examination. Results demonstrated various histopathological alterations in liver large granulomatous lesion consisting from aggregation of active macrophages and lymphocytes, parenchyma with necrotic hepatocytes , monocytes and neutrophils aggregation in portal area with proliferation of Kupffer cells and necrotic hepatocytes, the piecemeal necrosis of hepatocytes. While in kidney exhibited acute swelling and vacuolar degeneration of renal tubules and deformed architecture of tissues. massive aggregation of mononuclear and hemosiderin with hemorrhage around blood vessels. shrunken of glomerulus and a number pyknic and necrotic nucleimassive vacuole degeneration of renal tubules with grate infiltration of macrophage and lymphocytes and eosinophilic proteinaceous material in the adjacent tubules the tubules are lined by atrophic epithelium and hemorrhage.Therefore, we strongly recommend here for the ban of malathion and lambda for used as pesticide.

Keywords: liver, kidney, malathion and lambda-cyhalothrin

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➢ **ORAL PRESENTATION**

Influence of buffer layer on inverted organic solar cells characteristics

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Abstract
Numerical simulation was used to study the effect of the cathodic interfacial layer on the performance of P3HT:PCBM based organic solar cells of an inverted structure of ITO/ZnO/P3HT:PCBM/PEDOT:PSS/Ag, with SCAPS-1D software. The principal photovoltaic parameters of the simulated devices: open circuit voltage (Voc), short-circuit current (Jsc), fill factor (FF) and power conversion efficiency (η) are examined as a function of the ZnO buffer layer thickness. According to the simulation results, the maximum conversion efficiency (4.88%) of the photovoltaic device is reached for a thickness of 20 nm of the ZnO layer. Our results are validated with experimental results (2.34%). For higher interface layer thicknesses of 50 and 100 nm, a decrease in the photovoltaic parameters was noticed.
Keywords: Buffer layer, thickness, organic solar cells, SCAPS, efficiency.

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➢ **ORAL PRESENTATION**

Adsorption of CO_2 onto $M^{n+}X$ (M^{n+}= Cr^{3+} and/or Ni^{2+}) zeolites

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Abstract
The ever-increasing application of zeolites, especially as ion exchangers, catalysts and adsorbents in various chemical reactions and separation processes, is due to their intrinsic physico-chemical properties. Thus, in the field of adsorption, these molecular sieves have been used to recuperate pollutants such as H_2S, NH_3, SO_2, CH_4... The chemical modification of these materials through cation exchange considerably influences their adsorptive properties.
To our knowledge, there is no work concerning the influence of ion exchange, in the case of the introduction of Ni^{2+} or Cr^{3+} cations into X zeolites, on the recovery of carbon dioxide, a greenhouse gas, par excellence.
As a consequence, NaX zeolite was exchanged by Ni^{2+} and Cr^{3+} cations at different rates. The samples obtained were used to recover CO_2. The isotherms have been described by the Sips model. The CO_2-zeolite interaction M(x)X (M=Cr^{3+} or Ni^{2+}) was discussed using the determination of isosteric heat (Qst). Isosteric heat is a thermodynamic parameter, since it represents the absolute value of the enthalpy of adsorption.
Keywords: X zeolites, exchange, adsorption, CO_2, Qst .

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➢ **ORAL PRESENTATION**

Surface morphology, electrical resistivity and structural study of Ni/Au/Si(111) annealed system up 800°C.

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Abstract
Thermal evaporation was used to deposit Ni/Au bilayers on (111) monocristalline silicon substrate Si(111). Surface morphology, films composition and electrical resistivity of these annealed bilayers were investigated. According to annealing between 200 and 800°C, crystallites size of resulting silicides was calculated. Gold layer thickness of about 64 nm shows that it is not sufficient to prevent interdiffusion of Nickel atoms in Silicon lattice. After an annealing of 400°C, Nickel textures were missed in X ray spectra which confirm their full consumption to form silicides. Wheras, no interdiffusion of gold was revealed through the different annealing temperatures employed. Consequently, gold precipitations were clearly revealed within scanning electronic microscopy SEM on the top of samples surface. Ni_2Si is the most easily formed silicides phase that was formed after only 200 °C. Other silicides such us Ni_2Si, NiSi and $NiSi_2$ and Ni_3Si were also identified when annealing temperature was enhanced. Rough mean square factors RMS of studied samples show that are considerably sensitive to annealing temperature rise. Similarly, deduced values of electrical resistivity were also discussed under other previous parameters. Some correlations and relationships was declared in this in this paper

Keywords: Thermal evaporation, Ni/Au bilayers, Si(111), Annealing temperature, Nickel silicides, interdiffusion.

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➢ **ORAL PRESENTATION**

Rheum ribes restores experimentally induced neurotoxicity in *Spraque dawley* rats

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Abstract
Rheum ribes (Rr) is a common plant used all over the world. In folk medicine it is used in hypertension, fever and sore throat. We used the carbon tetrachloride (CCI_4) experimental model of reactive oxygen species (ROS)-induced lipid peroxidation and exaluated the antioxidant effect of Rr. Over the years CCI_4 has been used as an excellent model for studying experimentally induced neurotoxicity in murinemodels. In this study, 56 Spraque-Dawley male ratswere randomly divided into 7 groups of 8 rats each. GroupI: control, group II: CCI_4 dissolved in olive oil (1 mL/kg/twice a week, ip), group III and group IV: CCI_4+200 and 400 mg/kg Rr, groupV and group VI: only Rr (200 and 400 mg/kg). CCI_4 was administered twice a week to group II. III and IV during the experimental period. CCl_4-treated rats caused a significant increase in serum enzyme levels, such as aspartate aminotransferase, alanine aminotransferase and total bilirubin, and decrease in albumin, when compared with control. Histopathology, haematoxylen-Eosin (H&E), cysteine-dependent aspartate-directed proteases 3 (Caspase-3) and 8-hydroxydeoxyguanosine (8-OhdG) immunohistochemistry were also performed. Caspase-3 activities, and 8-OhdG levels were significantly increased in CCI_4 group These increases were significantly reversed by Rr treatment. While CCI_4 increased the number of apoptotic cells, this increase was prevented in CCI_4+200 mg/kg Rr and 400 mg/kg Rr groups. Morphometric examination showed that the mean diameter of apoptotic cells was increased with CCI_4 administration while this increase was reduced by both dosages (200 and 400 mg/kg) of Rr treatments. Intraperitoneal administration of Rr significantly attenuated oxidative stress prevented apoptosis, and increased antioxidant defense mechanism activity in the tissues versus the control group ($P<0.05$). Comet assay also postulates that Rr treated rats brain shows less DNA damage than CCI_4 treatment rats. Present study concludes the neuroprorective effect of Rr in CCI_4 treatment rats by its antioxidant, anti apoptotic and anti-inflammatory activity.
Key words: Carbon tetrachloride, *Rheum ribes,* Antioxidant enzymes, Neurotoxicity

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➢ **ORAL PRESENTATION**

Expression analysis of NAC gene under cold stress condition in sunflower (*Helianthus annuus* L.)

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Abstract
Cold stress is one of the most important environmental factors that limits agricultural productivity of plants. NAC gene family have been suggested to play important roles in development, defense and abiotic stress responses. In this study, the potential role of expression of the NAC gene, a member of transcription factor family, was investigated for the first time in cold stress response to sunflower (*Helianthus annuus* L.). Three different sunflower varieties, Saray, Tarsan 1018, Tr-3080, were subjected to cold stress to compare their stress tolerances. Then, total RNA was isolated from stressed and non-stressed plant roots and leaves. The expression level of the NAC gene was determined by qRT-PCR from the samples taken at different time periods from the cold stressed sunflower plants. In addition, changes in malondialdehyde and protein content were observed upon stress treatments. Among the three varieties, in the samples taken on the sixth day from the roots of the Saray variety, the NAC gene expression level was the highest. In this time period an increase of approximately nine fold compared to the control was observed. The obtained results showed that NAC gene expression levels were mostly increased in the time periods of cold stress applied in three sunflower cultivars and it was statistically significant at $p<0.05$ level. MDA concentration and total soluble protein content in both root and leaf tissues showed notable variability. It is thought that the NAC gene is induced by cold and may play a role in response to cold stress.
Keywords: Sunflower, Cold stress, Malondialdehyde, Total protein, Transcription factors, Quantitative real time PCR

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➢ **ORAL PRESENTATION**

The activity of some antioxidant enzymes in three sunflower cultivars related to cold stress

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Abstract
The aim of this study is to investigate the changes in superoxide dismutase (SOD), catalase (CAT), ascorbate peroxidase (APX), and peroxidase (POX) enzyme activities level under cold stress applied in three sunflower (*Helianthus annuus* L.) varieties whose levels of endurance against cold stress are unknown. Sunflower seedlings were grown in perlite for 15 days in plant growth cabinet and then exposed to cold stress at 4°C for 10 days. SOD, CAT, APX and POX enzyme activity levels were determined spectrophotometrically in samples taken from roots and leaves on the days of sampling (0, 2, 4, 6, 8 and 10 days). The enzyme activities of SOD, CAT, APX and POX were variable when the samples taken on 3 different sunflower plants subjected to cold stress were compared with control groups. Nevertheless, it was determined that enzymatic activities are mostly decreased in the roots and increased in the leaves. These results indicate that SOD, CAT, APX and POX antioxidant enzymes may be active in the upper part of the plant, in response to the oxidative stress caused by cold stress.
Keywords: Sunflower, Antioxidant enzyme activity, Cold stress

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➢ **ORAL PRESENTATION**

Understanding the Link between Skin Diseases and Gut Microbiota: A Multi-Omics Approach

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Abstract
The understanding of the role of the human gut microbiata in complex diseases has increased recently. Nonetheless the knowledge about the relationship between genetics, metabolism and microbiata is still a work in progress. In this study, Psoriasis and Atopic Dermatitis which are two skin diseases were selected for omics analysis. The metabolites of these diseases were listed then integrated with associated metabolic pathways. Subsequently the human gut microbiata related to these diseases were brought to light. The results indicate that there is indeed a mutual group of microbial species among psoriasis and atopic dermatitis which are mostly of the firmicutes, deltaproteobacteria, bacteriodetes and actinobacteria phyla. A noticeable difference between the microbial species of these diseases is that the species of the tenericutes phyla was not present in psoriasis. These results shed new light on the role of human gut microbiata in skin diseases and highlighted that there is an interconnection between metabolites, microbiota and pathogen groups which are all a part of understanding the disease mechanism in order to produce target therapeutics for these diseases.
Keywords: Psoriasis, Atopic Dermatitis, Metabolites, Human Gut Microbiata,

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➢ **ORAL PRESENTATION**

Pelton su türbinleri ve onunla ilgili yapılan çalışmalar

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Özet
Son yıllarda enerji ihtiyacının karşılanabilmesi için doğal süreçlerde bulunan enerji akışından yararlanmak popüler hale gelmiştir. Hidroelektrik sistemlerde suyun akış enerjisinden faydalanılmaktadır. Su, bir boru sistemi ile (cebri boru) yüksek bir yerden türbine verilmektedir ve potansiyel enerji kinetik enerjiye çevrilmektedir. Yüksek basınçlı su türbinin kanatlarını döndürmekte ve kinetik enerji mekanik enerjiye dönüşmektedir. Türbinin tahrik ettiği jeneratörün dönmesi ile de elektrik enerjisi elde edilmektedir Türbinden elde edilen güç, suyun düşüsüne ve debisine bağlıdır. Modern su türbinleri arasında bugün endüstriyel anlamda önemi olan yegane aksiyon türbini Pelton türbinlerdir. Pelton türbini suyun yalnız kinetik enerjisinden istifade etmek kaydıyla çalışan türbindir. Tesir türbinidir. Genel olarak yüksek düşü ve ufak debilerde işe yarar. Türbinin çalışma prensipi evvela yüksek basınçlı suyun atmosfer basıncına püskürtmek ve bu suretle elde edilen yüksek hızlı su jetinin kinetik enerjisini kepçeler ihtiva eden bir bir çark vasıtası ile türbin miline intikar ettirmektedir. Görünüşüne göre diğer su türbinlerinden daha basit görünen Pelton türbini aslında kendi içinde daha karışıktır. Bu çalışmada da Pelton türbinin tanıtımı yapılacak, diğer türbinlerden farkı anlatılacaktır, aynı zamanda özellikleri, avantaj ve dezavantajından bahsedilecektir. Pelton türbini ile ilgili son yıllar Türkiye ve dünyada yapılan saha araştırma çalışmaları incelenecektir.
Anahtar Kelimeler: Türbin, Pelton, Basınç, Debi, Su, Enerji

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➢ **ORAL PRESENTATION**

Isolation and identification of oxide nanoparticles in fly ashes from turkish thermal power plants and ınvestigation of their potentials as fillers in polymeric nanocomposites

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Abstract

Fly ash is the waste product of combustion of coal in a thermal power plants. Approximately 800 million tons of fly ash can be produced worldwide. The recycling of fly ash is around 15% worldwide. The impact of these wastes on environmental pollution cannot be underestimated, and for this reason recycling is a global problem. More than 17 million tons of fly ash are produced every year in Turkey and only 16.7% of this is used in construction sector. We developed simple, versatile and economical technique to fractionate oxide based nanoparticles (NPs) from fly ashes. We obtained selectively SiO_2 and Fe_3O_4 NPs enriched fractions. Total recovery of Fe_3O_4 and SiO_2 were 53.46% and 55%, respectively. Furthermore, homogeneously dispersed nanocomposite films were prepared by mesoporous SiO_2(content 0.5%, 1.5%, 2.5%, and 5%wt)in a polypropylene (PP) matrix.Chemical identification of NPs were conducted with XRF and XPS, while particle size/size distribution was characterized by TEM and dynamic light scattering. A single screw extureder or a twin screw extruder was used for nanocomposite preparation. The tensile and bending strength of all nanocomposites were increased. While the impact resistance of the nanocomposites were decreased.The elastic modulus varied with the conditons. As a summary, effective recycling of NPs from fly ash is achieved and an industrially relevant product is explored.

Keywords: Fly-ash, Nanoparticles, Nanocomposites, Polipropylene, Thermal Power Plant

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➢ **ORAL PRESENTATION**

Asma köprülerde çelik kulelerin deprem yükleri altında sonlu elemanlar programı kullanılarak çözümünün yapılması ve parametrik olarak incelenmesi

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Özet

Asma köprüler, köprü tabliyesinin yatay halatlarla ana halata asılmış, iki veya daha fazla kulelerden oluşan ve açıklıkların genişlikleri bakımından en çok tercih edilen köprü tipleridir. Ayrıca asma köprüler; dünyanın birçok yerinde genellikle araç trafiğinin geçişlerini sağlamak, uzun mesafeleri minumum maliyetle geçmek, bir yakadan diğer yakaya geçişleri sağlamak amacıyla, teknolojinin en son gelişmelerini sergilediği sanat yapılarıdır. Ülkemizde de İstanbul Boğazı üzerinde üç adet asma köprü bulunmaktadır. Bu köprülerden 1973 yılında trafiğe açılan 15 Temmuz Şehitler Köprüsü(Boğaziçi Köprüsü) İstanbul Boğazı üzerine yapılan ilk köprüdür. 15 Temmuz Şehitler Köprüsü Boğaz'ın her iki yakasındaki birer taşıma kulesi ve bunların arasında gerili iki kabloya askı kablolarıyla asılmış bir tabliyeden oluşan tek açıklıklı bir asma köprüdür. Her taşıyıcı kulenin kutu kesitli iki düşey ayağı vardır ve bunlar üç noktada yine kutu kesitli üç yatay kirişle birbirlerine bağlanır. Kule yükseklikleri 165 m olup, kuleler içerisinde yolcu ve servis asansörleri bulunur. Bu çalışmada, Boğaziçi Köprü kulesinin 3 boyutlu sonlu elemanlar modeli hazırlanıp, köprü kulelerinin deprem yükleri altında davranışları incelenmiştir. Sonlu elemanlar modelinde deprem yükleri, spektral hesap (modal maksimumların birleştirilmesi ile hesap) ve zaman tanım alanında hesap yöntemi (time history analysis) ile kararlı harmonik yükler altında hesaplar yapılmıştır. Köprü kulelerinin dinamik davranışlarını etkileyen kule kesitleri ve kule yüksekliğine bağlı olarak parametrik şekilde yeni modeller oluşturulmuş ve deprem etkilerinin her bir model için etkileri incelenmiştir. Analizler neticesinde kule kesitleri ve kule yükseklikleri belirtilen köprü açıklığı için köprü kule elemanlarının gerilme analizleri yapılmıştır.

Anahtar Sözcükler: Sonlu elemanlar modeli, 3 Boyutlu Model, dinamik davranış, spektral hesap, zaman tanım alanında hesap yöntemi, gerilme analizi

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➢ **ORAL PRESENTATION**

Synthesis of some novel benzimidazole derivative compounds and ınvestigation of urease enzyme ınhibition properties

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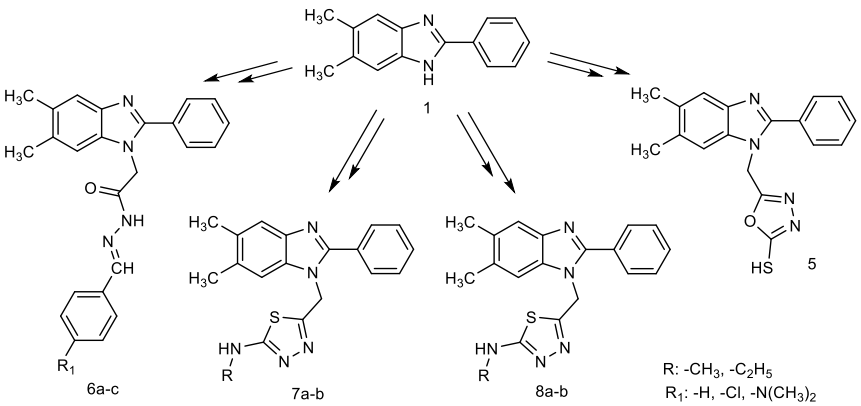
Abstract
Because of the structural similarities to adenine, guanine and the presence in the structure of vitamin B12, benzimidazole nucleus is thought to easily show activitiy in living systems. And, many studies have proved that benzimidazole core in medicinal chemistry is a valuable pharmacophore. Similarly, triazole, thiadiazole, oxadizole rings and schiff bases are an important group of heterocyclic compounds which have attracted considerable attention of medicinal chemist owing to their wide range of pharmacological activities, such as anticancer, antibacterial, antifungal, antiinflammatory, antimicrobial agent. Also, several studies show that the different substituents in position 1,2 and/ or 5(or 6) of the benzimidazole core markedly affect pharmacological activity. In this context we have synthesized some new 1,2-disubstitued benzimidazoles in this work, in which the 5,6-dimethyl-1H-benzimidazole includes phenyl grup at position 2 and triazole, thiadiazole, oxadizole rings, imine and carbotoamide moiety at position 1. And also the newly synthesized compounds were evaluated for their urease inhibition activities.
Key words: Benzimidazole, Urease inhibition, Triazole, Thiadiazole



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➢ **ORAL PRESENTATION**

The impact of refugees on Leishmaniasis and the prencese of vector sand flies in İstanbul

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Abstract

Cutaneous leishmaniasis (CL) is an important public health problem with around 2.000 autochthonous reported cases each year in Turkey. Due to the civil war in Syria, Turkey received around three million refugees and they are mainly located at either camps or homes in south/southeastern part of Turkey. Cutaneous leishmaniasis (CL) is one of the notifiable diseases in Turkey since 1980s and 46,003 cases were reported between 1990 and 2010. Due to open border policy of Turkish government, large amount of displaced Syrians were introduced to the camps without any ini- tial check-up process. Thus, it is impossible to understand whether the infection was occurred in Syria or in Turkey. According to the reports of Turkish Disaster and Emergency Management Presidency, registered refugee number is peaked in 2013 with 22.088, which reside at refugee camps. Also suitable vector species are present in Istanbul, which makes the situation more important in terms of epidemiology. In the present study sand fly collections were made using CDC light traps and 118 specimens were collected during the study period. According to the species identification, majority of the identified flies were notd to be P. papatasi (77%) and rest was P. tobbi (23%) Studies showed that the epidemiology of leishmaniasis is more complex than it is estimated. Wtih the new migration wave, leishmaniasis is more prone to spread Europe if necessary precautions are not taken by authorities.

Keywords: Leishmaniasis, Refugess, Phlebotomus papatasi, *Phlebotomus* tobbi

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➢ **ORAL PRESENTATION**

The improvement of vulcanization process in a radial tyre company in Turkey: A case based study

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Abstract

Compared to traditional production and management approaches, Lean Manufacturing practices with many gains such as labour and production area gains, increased machine productivity, less transportation and inventory and lower costs are frequently used in the manufacturing and service sectors. Lean Manufacturing applications explore more efficient production and working methods. It also provides significant competitive advantage for companies. One of the systematic applications that are used to solve the problems that occur in companies is the Kaizen studies carried out within Lean production practices. Kaizen studies, also called continuous improvement, are successful in seeing the problems of firms and revealing the inconveniences. As a result of Kaizen applications, in general, an increase in company performance, a decrease in error rates, an improvement in production processes and an increase in employee motivation have been determined. In this study, it is aimed to increase the Overall Equipment Efficiency (OEE) and to decrease the waste in the vulcanization process in radial tire manufacturing in automotive sector.
Lean production techniques such as Kaizen, 5S, 5G (Genri, Gensoku, Genba, Genbutsu, Genjitsu), Poka-yoke, Quality circles, QA matrix and OEE were used in this study. By using these techniques, the failure rate caused by machine in vulcanization process is reduced and productivity is increased. These lean manufacturing applications were conducted with a team of quality, maintenance, manufacturing, work safety department staff and researchers. As a result of the study in this company, the waste rate in the vulcanisation process is reduced by 25% and the Overall Equipment Efficiency (OEE) is increased by 5%.

Keywords: Lean Manufacturing, Kaizen, Overall Equipment Efficiency (OEE), Automotive Sector, Tire Vulcanization

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➢ **ORAL PRESENTATION**

Double Layer Density Modulated Si Thin Films for Lithium Ion Batteries

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Abstract
In order to analyze the effect of top layer on the electrochemical properties, double-layer density modulated silicon thin films consisting of alternating low and high density Si film layers were fabricated by magnetron sputtering method. Two different samples were investigated as anodes in Li-ion batteries. Our results show that the first sample of Si thin film -where the top layer is low density thin film and the bottom layer is conventional high density thin film- (LD/HD) exhibits better performance than the second sample of Si thin film that has high density layer at the top (HD/LD). Cycling performance of the LD/HD Si anode were found to be stable with the specific charge capacities of 2000 mAh g−1 at the 150th cycle at C/2 current density, and 1200 mAh g−1 at the 240th cycle at 10 C current density. Additionally, effect of fluoroethylene carbonate (FEC) electrolyte additive were also analyzed by comparing the thin film anode samples prepared with and without FEC.
Keywords: Silicon, thin film, lithium-ion, battery anode

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➢ **ORAL PRESENTATION**

Synthesis and molecular docking study of some novel 2,3-disubstituted quinazolin-4(3H)-one derivatives as potent inhibitors of urease

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Abstract

A new series of 2,3-disubstituted quinazolin-4(3H)-one compounds including oxadiazole and furan rings was synthesized. Their inhibitory activities on urease were assessed in vitro. All newly synthesized compounds exhibited potent urease inhibitory activity in the range of IC50=1.55 ± 0.07–2.65 ± 0.08 µg/mL, when compared with the standard urease inhibitors such as thiourea (IC50=15.08 ± 0.71 µg/mL) and acetohydroxamic acid (IC50=21.05 ± 0.96 µg/mL). 2,3-Disubstituted quinazolin-4(3H)-one derivatives containing furan ring (3a-e) were found to be the most active inhibitors when compared with the compounds 2a-e bearing oxadiazole ring. Compound 3a, bearing 4-chloro group on phenyl ring, was found as the most effective inhibitor of urease with the IC50 value of 1.55 ± 0.11 µg/mL. The molecular docking studies of the newly synthesized compounds were performed to identify the probable binding modes in the active site of the Jack bean urease (JBU) enzymes.

Keywords: Quinazolinone, Urease Inhibition, Oxadiazole, Schiff base.

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➢ **ORAL PRESENTATION**

Synthesis some novel 2,3-disubstituted quinazolin-4(3H)-one cointaining imin bond and some biological properties

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Abstract

This study comprises the synthesis of novel potential bioactive compounds containing a combination of quinazolinone structures with various heterocycle, which are used as pharmaceutically active agents due to their important biological and pharmacological properties, and investigation of various enzyme inhibition properties of these molecules. At the first, iminoester hydrochlorides (**1a-f**) were synthesized by the method described in the literature and the starting quinazolinones (**2a-f**) were obtained by reacting these compounds with 2-aminobenzamide. With the reaction of the compounds **2a-f** with ethylbromoacetate the ester derivatives (**3a-f**) and with the reaction of these products by hydrazine hydrate, the hydrazide derivative quinazolinones (**4a-f**), were synthesized. The target compounds **5a-f**, which containing imin bond with ten various heterocycle. Thus, 10 quinazolinone derivatives of Schiff base which of all were original, were synthesized and some biological properties of these compounds were investigated by elucidating the structures of these novel compounds by IR, ^{1}H-NMR and ^{13}C-APT.

Keywords: Quinazolinone, antioxidant, , Schiff base.

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➢ **ORAL PRESENTATION**

Ready to Eat Apple Slices Coated with Chitosan and Stevia Combinations: Polyphenoloxidase Activity and Microbial Quality

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Abstract

In this study, it was aimed to investigate the changes in polyphenoloxidase (PPO) activity and microbiological quality of ready to eat apple slices coated with chitosan (CH) and stevia combinations under MAP (polypropylene-PP, 30µm) storage at +1 ºC for 3 days. The apples were cube-shaped and divided into three groups: i- Control (C, without any coating), ii- Chitosan (dipped into film mixture consisting of 0.75% chitosan, 1.5 % glycerol and 2% ascorbic acid for 30 min) and iii- Chitosan-Stevia combination (CHS, dipped into film mixture consisting 0.75% chitosan, 1.5% glycerol and 2% ascorbic acid and 2.5% stevia extract for 30 min). After coating, all samples were dried and stored. PPO activity and microbiological (total yeast& mold-TYM and total psychrophilic aerobic bacteria-TPAB, total mesophilic aerobic bacteria-TMAB) analyzes were performed in 24 hours period. The results suggested that; in the CHS group, the initial enzyme activity was close to CH, but in CHS samples, the enzyme activity was increased after storage. The TMAB was found under the detectable amount ($<10^2$ cfu /g) in both CH and CHS groups. However, in the C group, TMAB was $1.65x10^3$ cfu/g. Film coating has been effective in reducing the number of TMAB. In addition, TPAB was found under detectable amount ($<10^2$ cfu /g) in C and CH samples. TYM loads are found as CHS<CH<K ($p \leq 0.05$), chitosan and stevia have been effective in reducing TYM counts. As conclusion; CH and CHS edible films are effective applications for reducing PPO activity and microbial load.

Keywords: Stevia, Chitosan, Apple, Edible Film, Polyphenoloxidase, Microbial Quality.

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➢ **ORAL PRESENTATION**

Su kirliliği tespitinde kullanılan biyoindikatörler

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Abstract
Water pollution is the presence in surface water and underground water of toxic chemicals and biological agents that exceed that is naturally found in the water. Chemicals and biological agents are released into the water bodies as a result of various human activities. They may pose harmful effect on human health and the environment. The sources of water pollution are different. The most important contamination sources are industrial and agricultural activities, household waste, hydrological changes, habitat modification and tourist activities. Sewage and garbage come at the top of household pollution. The scarcity of fresh water is a globally significant problem for people in the worldwide, leading to reductions in food production, human health, and economic development. There are different methods to monitor and to evaluate the status of water pollution. Different physico-chemical methods and bioindicators are used for monitoring of water pollution. Bioindicators are organisms, chemical markers or biological processes that can be observed to altered environmental conditions. They can be used to identify and quantify the effects of pollutants on the environment. Bioindicators show us the effects of different pollutants in the ecosystem. There are different group bioindicators for monitoring of water pollution. Organisms including plants, animals, and microorganisms have been adopted in biomonitoring. The species used as bioindicators should have some common characteristics: a) narrow tolerant species should be preferred over broad tolerant species, b) large-scale species should be preferred more than small species, c) bioindicator species should be found in abundance, d) it should be easy to collect, e) the life cycle should not be too short and f) always show the same response to certain pollutants. It has been observed that the examination of many variables together in environmental pollution studies gives useful results in the evaluation of pollution in natural environments.

Keywords: water pollution, bioindicators, monitoring

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➢ **ORAL PRESENTATION**

Yapay arı kolonisi tabanlı çok amaçlı görüntü zenginleştirme

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Özet
Sayısal görüntü işleme uygulamalarında, görüntülerdeki belirsiz detayların daha anlaşılır hale getirilmesi ve istenilen belli bazı özelliklerin vurgulanması amacıyla görüntü zenginleştirme yöntemleri sıklıkla kullanılmaktadır. Meta sezgisel yöntemler, görüntü zenginleştirme işlemlerinde oldukça yaygın kullanılan yöntemler arasındadır. Bu çalışmada optimizasyon problemi olarak ele alınan görüntü zenginleştirme işlemi, meta sezgisel bir yöntem olan yapay arı kolonisi algoritmasının (ABC) renkli test görüntülerine hem tek hem de çok amaçlı uygulamasıyla gerçekleştirilmiştir. Çalışmada RGB renk uzayındaki test görüntüleri HSI renk uzayına dönüştürülmüş ve görüntü zenginleştirme işlemi I (Intensity) bileşeni üzerinde gerçekleştirilmiştir. Çok amaçlı ABC'de ton bozulması ve kontrast kazancı amaçlar olarak seçilmiştir. Zenginleştirilmiş görüntülerin kalite değerlendirmeleri, Pik sinyal gürültü oranı, yapısal benzerlik indeksi, kontrast geliştirme indeksi ve renk zenginleştirme faktörü metrikleri kullanılarak yapılmıştır. ABC yöntemi kullanılarak elde edilen sonuçlar hem görsel hem de değerlendirme metrikleri kullanılarak, histogram eşitleme, kontrast germe, adaptif histogram eşitleme yöntemlerinin sonuçları ile karşılaştırılmıştır. Elde edilen sonuçlar, görüntü zenginleştirme işleminde ABC tabanlı yönteminin kabul edilebilir sonuçlar ürettiğini göstermiştir.
Anahtar Kelimeler: Görüntü zenginleştirme, Yapay arı kolonisi, Çok amaçlı optimizasyon

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➢ **ORAL PRESENTATION**

Öncül Afidikolin ve Nokadozol Muamelesinin Kanserli ve Ölümsüzleştirilmiş Mezotelyum Hücrelerinde Kapsaisin Sitotoksitesine Etkisi

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Özet

Malignant mezoteliyoma akciğer, kalp ve karın zarında asbestos ya da eriyonite uzun süreli maruziyete bağlı olarak gelişen bir kanser türüdür. Bu kanser türü Türkiye'nin Kapadokya Bölgesi civarındaki bazı köylerinde dünya ortalamasının oldukça üzerinde bir sıklıkla görülmektedir ve henüz etkili bir tedavi yöntemi bulunmamaktadır. Kapsaisin, Capsicum spp. cinsi bitkilerde üretilen ikincil bir metabolittir ve yapılan çalışmalar ile bazı kanser türleri üzerinde iyileştirici etkisi olduğu ortaya konulmuştur. Bu etki mekanizmasında, hücrenin, yaşam döngüsünün özel bir fazında hapsedildiği ve ardından apoptoza yönlendirildiği ifade edilmektedir. Hücre döngüsü G1, S, ve G2 olarak ayrılmış bir interfaz ve M olarak kısaltılan mitotik fazdan meydana gelir. Döngünün bir basamağından diğerine geçiş, aktiviteleri siklin adı verilen bir grup molekülün varlığıyla direkt olarak ilişkili enzimler ile gerçekleştirilir. Bazı ajanlar hücredeki özel siklin seviyelerini değiştirerek hücrenin belirli bir basamakta tutuklu kalmasına neden olabilir. Afidokolin hücreyi G1/S fazında, Nokodazol ise hücreyi G2/M fazında tutuklu bırakan kimyasallardır. Bu çalışmada, kanserli (H2452) ve ölümsüzleştirilmiş (AG07086) mezotelyum hücrelerine kapsaisin uygulanarak sitotoksite tespiti yapılmış ve kaspaz-3 değişimi mRNA düzeyinde incelenmiştir. Ardından afidokolin ve nokodazol ön muamelesi görmüş hücrelere kapsaisin uygulaması yapılmış sitotksite ve kaspaz-3 mRNA değişimleri karşılaştırılmıştır. Bu uygulamaların sonuçlarına göre; i) normal koşullarda, kanserli ve ölümsüzleştirilmiş mezotelyum hücrelerinde kapsaisin sitotokisitesi benzerdir ($p>0.05$), ii) afidikolin muamelesiyle her iki tücre tipinde siklin E proteini neredeyse tamamen yok olurken kapsaisinin etkenliği normal koşullara göre azalmış ($p<0.05$) ancak kanser hücrelerinin kapsaisin duyarlılığı ölümsüz hücrelere kıyasla anlamlı bir şekilde artmıştır ($p<0.05$), iii) nokadozol ile ön muamele görmüş her iki hücrede siklin B seviyesi belirgin bir şekilde azalmış, kanser hücrelerinde kapsaisin sitotoksititesi normal şartlara göre düşüş göstermiş ($p<0.05$), öte yandan ölümsüzleştirilmiş hücreler için bu değişim istatiksel olarak anlamsız bulunmuştur ($p>0.05$), iv) tüm bu uygulamalar için yapılan RT-PCR sonuçlarına göre, kaspaz-3'ün bağıl ifadesi hücre tipi ya da ön mumamelelerden etkilenmemiş, değerler her koşulda kontrol grubuna denk çıkmıştır ($p<0.05$).

Anahtar kelimeler: Mezotelyoma, kapsaisin, afidikolin, nokadozol, Siklin E, Siklin B.

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➢ **ORAL PRESENTATION**

Mathematical simulation of wave propagation in quasicrystals

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Abstract

The icosahedral quasicrystal structure was discovered in Al–Mn alloys in 1984 [1]. After that quasicrystals (QCs) have become the focus of theoretical and experimental studies in the physics of condensed matter. QCs are clearly fascinating materials: crystal structures and properties are surprising and could be remarkably useful. Most of these properties combine effectively to give technologically interesting applications which have been protected recently by several patents. For instance, the combination of such kind of properties as high hardness, low friction and corrosive resistance of QCs gives almost an ideal material for motor-car engines. The application of QCs in motor-car engines would be undoubtedly result in reduced air pollution and increase engine lifetimes. The same set of associated properties (hardness, low friction, corrosive resistance) combined with bio-compatibility is also very promising for introducing QCs in surgical applications as parts used for bone repair and prostheses.

The fundamental theory based on the motion of continuum model to describe the elastic behavior of QCs is well known.

In the present paper we consider the dynamic three dimensional motion equations of QCs. We suggest a method for the derivation of the time-dependent fundamental solution with three space variables in QCs with arbitrary system of anisotropy [2], [3]. Our method efficiently works for QCs with dodecagonal, octagonal, decagonal, pentagonal, hexagonal, trigonal, tetragonal, orthorhombic, monoclinic and triclinic structure as well with 57 groups of QCs. It is shown that the constructed FS of elasticity for QCs can be efficiently used for computation of the initial value problem solution for the considered dynamic differential equations of elasticity for QCs with arbitrary given external force and initial data.

In the end we would like to discuss the future plan of the theoretical study of wave propagation in quasicrystals as well as wishes to find collaborators (experimental teams) for a joint study of quasicrystal properties and their applications.

Keywords: quasicrystals, wave propagation, mathematical modelling, simulation.

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➢ **ORAL PRESENTATION**

Waste management applications in ethanol industry: Extraction of fungal oil and chitin from *Rhizopus oligosporus* growth on thin-stillage

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Abstract

Thin stillage is an industrial waste generated in large amounts during the production of ethanol by dry-grind processing. It is very rich in carbon sources like glycerol, glucose and maltose. Therefore this industrial waste can be useful as a substrate to growth fungi and produce value added fungal chitin and oil. Fungal chitin can be used in a wide variety of areas such as producing chitin-derived products (chitosan, chito-oligosaccarites, glucosamine) for raw materials of food and pharmaceuticals industries. Environmental-friendly bioplastics can also be produced by fungal chitin. Fungal oil is a good component to produce biodiesel production. In this study, thin stillage was used as a substrate to produce *Rhizopus oligosporus* and then fungal oil and chitin extracted from fungal biomass harvested from bioreactor. Extraction studies carried out in three steps: (1)Carboydrate removal, (2)Lipid removal and (3) Deproteinization studies. For first step samples agitated in an orbital shaker with hot water at 80ºC, 15 min. Lipid removal step was carried out with ethanol or methanol and more effective alcohol and fungal biomass:alcohol ratio was determined. For deproteinization alkali treatment procedure was applied. At this step efficiency of oven and autoclave was compared with same concentration of alkali solutions. Producing value-added products from industrial wastes or by-products are one of the key step of industrial waste management. Results of this study showed that it is possible to produce fungal oil and fungal chitin from thin-stillage which is one of the main waste of dry-grind processing of Ethanol Industry. Experimental results also showed that changes at the extraction conditions can help to reduce total cost to produce fungal oil and chitin.

Keywords: Ethanol, fungal oil, fungal chitin, *Rhizopus oligosporus*, waste management.

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➢ **ORAL PRESENTATION**

Atıksulardan ağır metal gideriminde kullanılan doğal adsorbent maddeler

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Abstract
Ağır metal iyonlarını ve boyar maddeleri tek başlarına veya birlikte içeren endüstriyel atıksular günümüzde hem insan sağlığı hem de tüm eko sistem için ciddi bir tehdit unsuru oluşturmaktadır. Endüstriyel üretim prosesleri sonucu oluşan bu atıksular ön ve ikincil olmak üzere bir dizi arıtım işleminden geçtikten sonra doğal sulara deşarj edilmektedir. Bu yüzden araştırmacılar devamlı olarak atıksuların arıtılmasında en uygun süreçlerin geliştirilmesi için çalışmalar yürütmektedirler. Araştırmacılar arıtma yöntemlerinde pahalı sistemler yerine alternatif, ucuz ama etkili yöntemler arayışına girmişlerdir. Adsorpsiyonda kullanılan adsorbentin de düşük maliyetli ve yüksek adsorplama kapasitesine sahip olması gerekmektedir. Bu özelliklere sahip adsorbentlerden kitin ve kitosan yapılan çalışmalarda ön plana çıkmaktadır. Adsorpsiyon, akışkan fazda çözünmüş haldeki belirli bileşenlerin bir katı adsorbent yüzeyine tutunmasına dayanan ve faz yüzeyinde görülen yüze tutunma olayıdır. Çözünmüş parçacıklar ile adsorpsiyon yüzeyi arasındaki çekim kuvvetlerinin türüne bağlı olarak üç tip adsorpsiyon tanımlanmaktadır. Adsorpsiyon işleminde çok sayıda adsorbent kullanılmaktadır. Bunlar arasında tüm dünyada atıksu arıtımında en yaygın olarak kullanılan aktif karbondur. Fakat maliyetinin yüksekliği kullanımında kısıtlamalara sebep olmaktadır. Bu nedenle aktif karbon yerine alternatif olabilecek doğal, endüstriyel ve tarımsal atıklardan elde edilen adsorbentler kullanılmaktadır. Bu adsorbentler düşük maliyetleri, arıtımda gösterdikleri verimleri ve yüksek metal bağlama kapasitesine sahip olmaları nedeniyle dikkat çekmektedirler. Ağır metal gideriminde üstün metal bağlama kapasiteli, doğal bir adsorbent olan kitosan ve kitin çok kullanılmaktadır. Kitosan ve kitin, Asya ülkeleri olan Tayland, Japonya ve Çin'de karides, yengeç gibi bazı deniz ürünlerinin atıklarından elde edilmektedir. Bu tür atıklar bol miktarda bulunduğundan kitosan ve kitin düşük maliyetlidir. Kitosan, kitinin alkali ortamda deasetilasyonuyla elde edilen önemli bir amino polisakkarittir. Yüksek sıcaklıkta sodyum hidroksit veya potasyum hidroksit içeren heterojen ortamda distilasyonu sonucu yapı kitosana dönüşmektedir. Kitosan ucuz sayılabilecek, yüksek elde edilebilirliği olan, çevreye ve insan sağlığına zarar vermeyen bir maddedir. Adsorpsiyonda adsorbent olarak polimerik partikül kullanımı uygulanan yeni yaklaşımlardandır. Günümüzde giderek artan dünya nüfusunu, kaynakların sınırlı olmasını ve maliyeti dikkate alarak atıksu arıtımında daha ucuz ve daha etkili yöntemlerin kullanılması önem kazanmaktadır.
Keywords: endüstriyel atıksu, adsorbent, kitin, kitosan, metal giderimi

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➢ **ORAL PRESENTATION**

Photophysical and Photochemical Properties of Indium(III) Phthalocyanine Containing Carboxylic Acid Group

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Abstract
Phthalocyanines (Pcs) are useful functional materials due to their high stability and interesting chemical and physical properties. This class of compounds has been used in many fields including non-linear optic materials, catalysis, liquid crystals, electrochromic displays, photovoltaic cells and photodynamic therapy (PDT). Since Pcs have appropriate properties such as stronger absorption in the red visible region, long triplet lifetimes and higher performance at creating singlet oxygen, these substances have been used as second generation photosensitizers for visible light. Photochemistry of Pcs compounds has been greatly studying to optimize their properties in the last decades. A major limiting factor for the use of Pcs in many applications is their low solubility in common organic solvents. This problem can be solved by attaching appropriate substituents at the peripheral or non-peripheral positions of the phthalocyanine ring. Phthalocyanines containing carboxylic acid group have been extensively studied due to the increase in solubility recently [1,2].

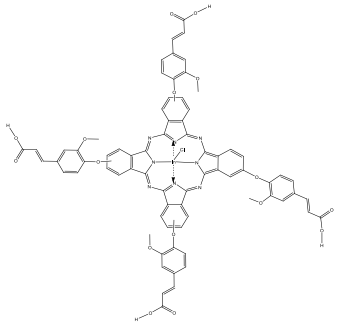

Fig. 1 Structure of indium(III) phthalocyanine

The synthesis, characterization, photophysical and photochemical properties and aggregation behavior of peripherally 3-(4-(3,4-dicyanophenoxy)-3-methoxyphenyl)acrylic acid tetra-substituted indium(III) phthalocyanine were reported in this study. Elemental analysis, FT-IR, UV-vis, NMR and mass techniques were used the characterization of this phthalocyanine. The new compound shows excellent solubility in organic solvents, which makes it candidate for use in different applications. The aggregation, photophysical (fluorescence quantum yields) and photochemical (singlet oxygen generation and photodegradation under light irradiation) properties of this novel phthalocyanine were investigated in both dimethyl sulfoxide (DMSO) and dimethylformamide (DMF). This phthalocyanine exhibited good singlet-oxygen generation and appropriate photodegradation quantum yields in DMSO and DMF and no show any aggregation in these solvents. Photophysical and photochemical properties of indium(III)phthalocyanine are very useful for PDT applications.

Keywords: Indium(III), Phthalocyanine, Carboxylic Acid, Photophysical, Photochemical

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➢ **ORAL PRESENTATION**

İnsansı robot kol tasarımı ve gerçeklenmesi

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Özet
1500'lü yıllardan beri kullanılan basit yapılı ve sınırlı hareketler yapabilen robot mekanizmalar günümüzde elektronik ve yazılım yardımıyla daha işlevsel hale gelmiştir. İnsan yapısı ile robot mekaniğinin gücünü birleştiren bu modern robotlar başta üretim olmak üzere hayatımızı kolaylaştıracak uygulamalarda kullanılmaktadır. Ayrıca günümüzün robotları gelişmiş sensörleri ve yapay zeka uygulamaları ile insansı davranışlar da gösterebilmektedir. Bu çalışmanın amacı seri iletişim ağıyla birbirine bağlı dağıtık yapıda mikrodenetleyicili kartlar ile yönetilen ve ana bir mikrobilgisayar tarafından denetlenen bir insansı robot kolu tasarımı ve uygulamasıdır. Bu çalışmada Fransız heykeltraş ve tasarımcı olan Gael Langevin tarafından hayata geçirilen InMoov projesi temel alınmıştır. InMoov projesinin temel amacı insana fiziki benzerlik ve insansı hareketler elde etmektir. Bu tasarım mekanik yeterlikler göz önüne alınmadığı için hem içyapısı hem de sensör yerleşimine uygun olmaması nedeniyle bu modelin temeline yeni bir ön kol ve el tasarımı yapılmıştır. Tasarlanan ön kol ve el, PLA hammaddesi kullanılarak 3 Boyutlu yazıcı ile üretilmiştir. Parmak ve bilek hareketleri için 7 adet servo motor kullanılmıştır. Avuç içinin ortasına yerleştirilen bir kuvvet duyarlı direnç ile avuç içinde bir nesnenin olup olmadığı algılanabilmektedir. Parmak uçları yaylı bir mekanizma ile parmak gövdesine tutturulmuş böylece parmak uçlarının da esnek hareketi mümkün olmuştur. El üstüne avuç içindeki kuvvet duyarlı direnci algılayacak bir Arduino Pro Mini, ön kol içerisine servo motor kontrolleri için ikinci bir Arduino Pro Mini yerleştirilmiştir. Ana kontrolcü olarak Arduino Mega kullanılmıştır ve kontrolcü kartları birbirleri ile I2C üzerinden haberleşmektedirler. Robot kol seri iletişim veya bluetooth üzerinden kontrol edilmektedir.
Anahtar kelimeler: Animatronik, I2C seri iletişim, robot kol.

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➢ **ORAL PRESENTATION**

Determination of anesthetic properties of isofloran and clove oil in zebrafish

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Abstract
Zebrafish has recently attracted considerable interest in science,cancer,toxicology,medicine and gene studies due to its transparent structure of embryos, easy to nourish and grow,and behavioral characteristics. It's aimed to provide a more economical and appropriate anesthetic selection by evaluating effects of various anesthetics which can be used for transport and scientific studies. In the study, totally 254 zebrafish divided in three groups (42 females and 42 males in each group) were studied (Ethichal no: T2018-7). Anesthesia intake and lethal dose values weredetermined by following the anesthetic entry and exit times. Also,physiological responses such as respiration and behavior were also observed. The highest dose of anesthesia in 10sec. of isoflurane administration and duration of the anesthesia after the anesthesia were 5min.30sec. In application of clove oil, the anesthesia entry times were found for 1 mg/l at 23,66±0,88 sec, 12,66±1,45 sec for 2 mg/l, 9±0,57 sec for 5 mg/l and 4±0,57 sec for 10 mg/l. It was determined that as the proportion of the clove oil doses increased, the duration of anesthesia admission decreased statistically in zebrafish ($p<0,05$). Also, any anesthetic effects were not detected of the doses 0,1 mg and 0,5 mg clove oil. It was determined that isoflurane had a faster anesthetic effect.However, clove oil had a lethal effect of 10 mg/l dose when the anesthesia entry and exit. In addition, easy availability and safety of the clove oil, application dose has resulted in no effect on the fish.
Key words: Zebrafish, isoflurane, clove oil, anesthesia

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➢ **ORAL PRESENTATION**

Güney Marmara Bölgesi Hava Kalitesi İncelemesi: Bandırma İlçesi Örneği

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Özet

Balıkesir ili Bandırma İlçesi 2017 yılı TÜİK verilerine göre 152480 kişi nüfusu ile Marmara Bölgesinin ilk 10 yerleşim bölgesi arasında yer almaktadır. Güney Marmara'nın ikinci büyük liman kenti olan Balıkesir'e bağlı Bandırma ilçesi kara, deniz ve demiryolu ulaşımının tümünü barındırması nedeniyle oldukça önemli bir ilçedir. Ayrıca gelişen sanayi ve ticaret hacmini de bünyesinde barındırmaktadır. Tüm bu gelişmeler beraberinde bir takım çevre sorunlarını da getirmektedir. Bu sorunlar arasında katı atıklar, su kirliliği, hava kirliliği, gürültü kirliliği gibi problemler sayılabilmektedir. Bunlar arasında hava kirliliği önemli bir yer tutmaktadır. Literatürde hava kirliliği nüfusun aşırı artması ve ekonominin hızlı büyümesi sonucu olarak ortaya çıkan belirgin bir çevre sorunu olarak kabul edilmektedir ve hem mali hem de halk sağlığı açısından olumsuz bir etkiye sahiptir. Yapılan bu çalışmada Bandırma ilçesindeki hava kalitesi değerlendirilmiştir. Hava kalitesi verileri için T.C. Çevre ve Şehircilik Bakanlığına ait Bandırma ölçüm istasyonundaki verilerden yararlanılmıştır. İstasyon 01.03.2013 tarihi itibariyle ölçümlere başlamış olup buradaki veriler yine aynı Bakanlığa ait olan Hava Kalitesi İzleme İstasyonları internet sitesinden elde edilmiştir. Hava kalitesi değerlendirmesinde Bandırma istasyonda 2013-2017 tarihleri arasında ölçülen PM10, SO2, ve NO2 kirleticileri kullanılmıştır. Ayrıca çalışmada her çalışma yılına ait 1 Ekim-31 Mart tarihleri arasını kapsayan kış ayı verilerinin ortalaması da alınmıştır. Tüm bu değerlendirmeler sonucunda elde edilen veriler Türkiye'deki sınır değerlerle karşılaştırılmıştır. Veriler incelendiğinde ilçede en yüksek PM10 konsantrasyonu 01.02.2015 tarihinde saat 19:00'da 818 µg/m³, en yüksek SO2 konsantrasyonu 23.12.2014 tarihinde saat 06:00'da 456 µg/m³, en yüksek NO2 konsantrasyonu ise 08.03.2017 tarihinde 230 µg/m³ olarak ölçüldüğü görülmüştür. Yapılan bu çalışma sonucunda gerek sanayisi gerekse doğal güzellikleri ile ön planda olan Bandırma ilçesinin hava kalitesi değerlendirilerek, önemli bir yer kaplayan bu çevre sorununa dikkat çekilmesi hedeflenmektedir.

Anahtar Kelimeler: Bandırma, Güney Marmara, Hava Kalitesi, PM10, SO_2, NO_2

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➢ **ORAL PRESENTATION**

The effects of utilizing sodium nitrite on the biogenic amine levels of bez sucuks produced with different meat:fat ratios

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Abstract
The objective of this study was to investigate the effects of using sodium nitrite on biogenic amine levels of bez sucuks (BS). For this purpose four groups of bez sucuk were manufactured by traditional methods and named as follows; Control-10 (containing 10:90 fat:meat ratio, without sodium nitrite), Control-20 (containing 20:80 fat:meat ratio, without sodium nitrite), SN-10 (containing 10:90 fat:meat ratio, 150 ppm sodium nitrite) and SN-20 (containing 20:80 fat:meat ratio, 150 ppm sodium nitrite). Bez sucuk processing was achieved by mixing ground meat and fat with seasonings, and then ripening after filling into cloth casings. The samples were taken during ripening period (initial mix, 2nd day, 4th day, 10th day and 14th day) and storage period (30th, 60th, 90th, 120th, 150th and 180th day). To determine the effects of different starter culture utilization on the formation of biogenic amines, phenylethylamine, tryptamine, tyramine, putrescine, cadaverine, histamine, spermidine and spermine amounts of all sucuk groups were analyzed and expressed as mg/kg. It was seen that tyramine and spermine were main biogenic amines among all bez sucuk groups. Although the histamine levels of all the BS groups were lower than 100 mg/kg, the findings of the current study showed that increasing meat ratio resulted in higher biogenic amine levels.
Key words: Bez sucuk, Sodium nitrite, Cadaverine, Histamine, Tryptamine

➢ **ORAL PRESENTATION**

Kızılırmak Nehri'nin kemirici populasyonlarının farklılaşmasına etkisi

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Özet
Kızılırmak, Türkiye'nin en uzun nehri olup Sinop ve Samsun arasında Karadeniz'e döküldüğü bölgede Kızılırmak Deltası'nı meydana getirmiştir. Bu çalışmada Kızılırmak Deltası'nın Karadeniz Bölgesi boyunca uzanan orman sürekliliğini keserek, bölgede yayılış gösteren populasyonlar arasındaki gen akışını engelleyip engellemediği araştırılmıştır. Çalışmada *Clethrionomys glareolus* (kızıl sırtlı orman faresi) ve *Apodemus mystacinus* (kayalık faresi)'un Karadeniz Bölgesi'nde yayılış gösteren populasyonlarına ait mitokondriyal DNA (mtDNA)'nın D-loop ve sitokrom b (cyt b) dizi analizleri değerlendirilmiştir. Populasyonlar arası genetik çeşitliliği ortaya koymak ve populasyonların farklılaşma zamanlarını belirleyebilmek için istatistiksel tabanlı genetik analiz programlarından yararlanılmıştır. Sonuç olarak her iki populasyonun da Sinop'un doğu ve batısı olarak iki gruba ayrıldığı ortaya konulmuş olup Kızılırmak Deltası'nın Doğu ve Batı Karadeniz'de yayılış gösteren populasyonlar arasında ayırıcı bir faktör olabileceği gösterilmiştir. Bu çalışma Ankara Üniversitesi BAP ofisi tarafından desteklenen 09B4240001 ve 11B4240002 kod numaralı projelerde elde edilen sonuçlar doğrultusunda gerçekleştirilmiştir.
Anahtar Kelimeler: Kızılırmak, *Clethrionomys glareolus*, *Apodemus mystacinus*, mtDNA, Karadeniz Bölgesi, Türkiye

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➢ **ORAL PRESENTATION**

Benzetimde olağan ve genel kriging meta-modelleri

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Özet

Benzetim modellerinden veri üretmenin oldukça zaman alıcı olduğu durumlarda eniyileme, duyarlılık analizi gibi amaçlarla benzetim modelinin yerine meta-model kullanılır. Meta-model literatürde "modelin modeli" olarak tanımlanır ve benzetim parametrelerinin bazılarını girdi olarak kullanarak benzetim çıktısını tahmin eden bir fonksiyondur. Genellikle birinci ve ikinci dereceden regresyon modellerini kullanan cevap yüzeyi yöntemleri meta-model olarak kullanılmıştır.

Kriging meta-modelleri, özellikle konumsal istatistiklerin analizinde enterpolasyon yöntemi olarak geliştirilmiş olmasına karşın 1990'lı yıllardan buyana belirli benzetim problemleri için başarıyla kullanılmıştır. Kriging modelleri belirli benzetim çıktılarının incelenmesinde kullanıldığından buyana mühendislik alanındaki birçok probleme uygulanmıştır. Literatür çalışmalarında krigingin meta-model olarak en yoğun kullanılan birinci ve ikinci dereceden regresyon modellerine göre daha iyi sonuç verdiği gösterilmiştir.

Son zamanlarda kriging meta-modellerinin, olasılıklı sistemlerin benzetim eniyilemesi amacıyla birçok çalışmada kullanıldığı görülmektedir. Olasılıklı kesikli sistem benzetim modellerinin eniyileme çalışmalarında çoğunlukla olağan (ordinary) kriging yöntemi meta-model olarak benimsenmiştir. Benzetim modellerinin çok değişkenli yapısına uygun genel (universal) kriging meta-modelerinin yazılımlarının olmamasından dolayı kullanımı oldukça nadirdir.

Bu çalışmada, konumsal istatistikte sıkça kullanılan olağan ve genel kriging meta-modellerinin benzetim sonuçlarında nasıl kullanılacağı test fonksiyonları üzerinde adım adım incelenmiştir. Model kurma ve geçerleme aşamalarında kullanılan veriler test fonksiyonlarından Latin Hiperküp Tasarım kullanılarak üretilmiştir. Uygulama sonuçları olağan ve genel kriging meta-modellerinin birbirine üstünlükleri olmadığı problemin yapısının meta-model olarak hangi modelin seçileceği üzerinde etkili olduğunu göstermektedir.

Anahtar Kelimeler: Varyogram, olağan kriging, genel kriging, meta-model, Latin Hiperküp Tasarım.

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➢ **ORAL PRESENTATION**

Cytotoxicity detection by Annexin V-PI counterstain in cancer and normal cells using fluorescence-based instruments

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Abstract
The detection of cell death is an important task for molecular biology and biochemistry research to understand for instance whether natural or synthetic compounds can be considered as drug candidates especially for cancer therapy. There is a range of methods to evaluate cytotoxicity in cells such as MTT assay that has been commonly used. But this common method has the lack of sensitivity to reveal differences in the process of cell death. Annexin V-Propidium iodide counterstaining has been currently one of the methods to discriminate apoptotic and necrotic cell profiles after treatments with cytotoxic agents. The method is operated by fluorescence-based detection of counterstain via laser beam-employed instruments including flow cytometer, fluorescence microscope and automated cell counter. The detection is primarily conducted based on the same principle; however the efficiency of instruments may vary. Here we evaluated the efficiency of those instruments for the clear-cut detection of cell death through various mammalian cell lines including pancreatic cancer, metastatic breast cancer and mouse fibroblasts. Cell death was induced by UV-irradiation. Findings postulated that automated cell counter and fluorescence microscopy revealed similar patterns for the detection by both counterstain in all the cells examined. Interestingly, flow cytometry did provide an accurate and significant detection for only one mammalian cell line when UV-treatment was followed by routine Annexin V-Propidium iodide counterstaining. The related outputs propose that the obtaining reliable quantitation strongly depends on experimental design, cell type and instruments used. These suggest the necessity of optimization and validation endeavors before any cell death detection initiative. The analytical outcomes present insights into detailed assessment of cell death detection of eukaryotic cells and provide a direction to researchers to consider.
Keywords: Annexin V, propidium iodide, cell death, cancer, fluorescence-based instruments

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➢ **ORAL PRESENTATION**

Üniversite Öğrencilerinin Kampüs İçi Rekreasyonel Eğilim Ve Taleplerinin Belirlenmesi; Bingöl Üniversitesi Örneği

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Özet

Üniversite yerleşkeleri sadece eğitim öğretim faaliyetlerinin yürütüldüğü bir alan değil aynı zamanda öğrencilerin rekreasyon başta olmak üzere bir çok ihtiyacının karşılandığı alanlardır. Bunun yanında kampüsler Üniversiteler için prestij ve marka değeri taşıdığı görülmektedir. Kampüs yerleşkesinin sağladığı imkânlar öğrencilerin üniversite tercihinde bile etkili olabilmektedir. Ancak üniversite kampüslerinin planlanmasında esas olan temel kullanıcı grubu öğrencilerin rekreasyon ihtiyaçlarının karşılanmasıdır. Kurulum tarihi daha eski olan üniversitelerde bu ihtiyacı karşılamaya yönelik fiziki imkânlar daha iyi sağlanmaktayken Bingöl Üniversitesi gibi yeni kurulan üniversitelerde bu olanaklar zamanla tamamlanmaya çalışılmaktadır. Bu araştırmada Bingöl Üniversitesi öğrencilerinin rekreasyonel eğilimleri, kampüs alanının rekreatif etkinliklerinin bireylerin isteklerine göre yeterliliği ve rekreasyonel taleplerinin analiz edilmesi amaçlanmıştır. Araştırmada nicel araştırma yöntemlerinden betimsel araştırma yöntemi kullanılmıştır. Veri toplama aracı olarak standart anket formu hazırlanmıştır. Hazırlanan anketler 2017-2018 bahar döneminde öğrenim gören öğrenciler arasında tesadüfi yolla seçilmiş toplam 222 öğrenci üzerinde uygulanmıştır. Veriler SPSS 17.0 programında değerlendirilmiş ve sonuçlar tablo ve grafikler halinde özetlenerek sunulmuştur. Anket sonuçları öğrencilerin %57'sinin aktif rekreasyonu, %43'ünün ise pasif rekreasyonu tercih ettiği, bunun yanında katılımcıların büyük çoğunluğunun (%69) rekreasyonel faaliyetlere küçük arkadaş grubu ile katılım sağladıkları belirlenmiştir. Ayrıca öğrencilerin rekreasyonel faaliyet tercihlerinde sosyal-kültürel aktivite ve doğaya yönelik aktivite odaklı tercihlerde bulunduğu, 29 seçenekli rekreasyon alanı tercihlerinde ise sırasıyla açık hava sinema-tiyatro alanı, konser-müziksel aktivite alanı, serbest gezinme-dolanma alanları, bisiklet sürme alanları ve ağaç altı oturma/dinlenme alanlarını en yüksek oranda tercih ettikleri belirlenmiştir. Elde edilen sonuçlar göz önünde bulundurularak çalışmanın gelişmekte olan Bingöl Üniversitesinin gelecekteki kampüs içi mekân planlamalarına ışık tutacağı düşünülmüş ve buna yönelik çeşitli öneriler ortaya konulmuştur.

Anahtar Kelimeler: Bingöl Üniversitesi, rekreasyon, aktivite tercihi, öğrenci, serbest zaman, peyzaj planlama

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➢ **ORAL PRESENTATION**

Doğu Karadeniz Sahil Şeridinin Hava Kalitesi Açısından Değerlendirilmesi

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Abstract
Günümüzde gerek sanayi gerek taşımacılık ve gerekse yerleşim alanlarının artması sonucunda çevre problemleri meydana gelmiştir. Bu problemlerin başında hava kirliliği gelmektedir. Hava kalitesi terimi ise içinde bulunduğumuz ortamın hava kirliliği açısından değerlendirilmesidir. Özellikle hava kalitesinin düşük olduğu bölgelerde önemli sağlık problemleri ortaya çıkmaktadır. Bu çalışmada Türkiye'nin Doğu Karadeniz Bölgesinin Doğusunda yer alan illerden Trabzon, Rize ve Artvin'in sahil kesimlerindeki hava kalitesi PM10 kirleticisi bakımından incelenmiştir. Bu bölge özellikle içinden geçen Karadeniz sahil yolu nedeniyle oldukça önemlidir. Bu yolda meydana gelen yoğun trafik nedeniyle özellikle PM10 kirleticisi artabilmektedir. Bölgedeki hava kirliliğinin kaynakları olarak konut, trafik ve çay fabrikaları söylenebilir. İncelemede 2017 yılına ait 5 farklı istasyondan günlük PM10 kirleticisi ile rüzgâr hız ve yön verileri T.C. Çevre ve Şehircilik Bakanlığı Ulusal Hava Kalitesi İzleme Ağı WEB sitesinden elde edilmiştir. Elde edilen veriler R programlama dili içerisinde OpenAir paketi ile modellenmiştir. Değerlendirmede rüzgâr yön ve hızının kirletici dağılımları üzerinde nasıl etkili olduğu açıkça görülmüştür. Sonuç olarak PM10 kirleticisinin Artvin-Hopa'da SWE yönlerinde, Rize-Ardeşen'de SE yönünde, Rize'de SE yönünde, Trabzon-Akçaabat'ta S yönünde, Trabzon-Uzungöl'de SWE yönlerinde dağılım gösterdiği görülmüştür.
Anahtar Kelimeler: Doğu Karadeniz, Hava Kalitesi Dağılımı, PM10, Open Air

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➢ **ORAL PRESENTATION**

Okul Bahçelerinin Yeniden Düzenlenmesi Ve Kullanimina Işbirlikçi Çözüm Yaklaşimi, 'Okullar Hayat Olsun Projesi'

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Özet

Peyzaj Mimarları mesleki çalışmalarında özellikle çocukların ve gençlerin ihtiyaçları ön planda tutulmaktadır. Çünkü toplumun temel taşlarını oluşturan günümüz çocuklarının ve gençlerin fiziksel ve ruhsal bakımdan sağlıklı bireyler olarak hayata hazırlanmaları hem kendi gelişimleri hem de sağlıklı bir toplum oluşması açısından oldukça önemlidir. Bu nedenle çocuğun yaşadığı mahalleden eğitim aldığı okula kadar bütün fiziki alanların ihtiyacı karşılayacak biçimde düzenlenmesi gerekmektedir. Okul bahçelerinin düzenlenmesi görevi Milli Eğitim Bakanlığı başta olmak üzere okul yönetimleri, yerel yönetimler, il ve ilçe milli eğitim müdürlüklerindedir. Ancak birçok konuda olduğu gibi bu konuda toplumsal birlikteliğe ve dayanışmaya ihtiyaç bulunmaktadır. Bu amaçla Milli Eğitim Bakanlığı 13 Aralık 2011 tarihinde Orman ve Su İşleri Bakanlığı ile Türkiye Belediyeler Birliği arasında imzalanan protokolle 'Okullar Hayat Olsun Projesi'ni başlatmıştır. Proje ile okul bahçelerinin fizikî yapılarına uygun projelere göre yeniden düzenlenerek peyzaj tasarımının yapılması, ağaçlandırılması, ekolojik okul bahçelerinin oluşturularak çevrenin yararlanabileceği alanlar hâline getirilmesi ve örgün eğitim dışı zamanlarda fizikî mekânlarının öğrencilere, yetişkinlere, mahalle sakinlerine açılması amaçlandığı görülmüştür. Araştırmada bu proje ile ilgili Türkiye genelinde yapılan fiziki iyileştirmeler belirlenmiş ve Erzurum, Erzincan, Bingöl İllerinde yapılan çalışmalar yerinde görülmüştür. Araştırmada doküman incelenmesi, yerinde gözlem ve proje yöneticileri ile görüşmeler yapılmış, ilgili kentlerde resimler çekilmiştir. Projenin okul bahçelerinin farklı kamu ve sivil toplum kuruluşlarının işbirliğinde peyzaj tasarımlarının yapılarak 'nefes veren alanlar' haline getirilmesi açısından oldukça önemli olduğu belirlenmiştir. Proje kapsamında Türkiye genelinde şimdiye kadar 756 okulda çevre düzenleme, 470 okulda ağaçlandırma, 1270 okulda geleneksel oyun alanı çizimi, 32 okulda anfi tiyatro, 394 okulda voleybol sahası, 419 okulda basketbol sahasının okullara kazandırıldığı tespit edilmiştir. Bunun dışında okul fiziki ortamlarında farklı ve önemli çalışmaların yapıldığı belirlenmiştir. Türkiye genelinde okul sayısı göz önünde bulundurulduğunda bu sayıların yetersiz olmasına rağmen projenin amacı, içeriği ve sağladığı işbirliği açısından devam ettirilmesinin faydalı olacağı vurgulanmıştır. Ayrıca proje kapsamında yapılan fiziki iyileştirmelerin daha kaliteli, nitelikli, tekniğine uygun ve işe yarar olması için mutlaka çalışmalarda peyzaj mimarının katılımı sağlanması önerilmiştir.

Anahtar kelimeler: Katılımcılık, okul bahçeleri, okullar hayat olsun projesi, peyzaj tasarımı, yenilenme,

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➢ **ORAL PRESENTATION**

Controlling Traffic Density and Road Clearance for Emercency Vehicles Using Microconroller AT89C51 and Keil Software

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Abstract
The main purpose of this paper is to develop a density control and smart emergency vehicle traffic light control which will simplify the road fluency and the emergency vehicle clearance to reach their destination with the lack of any delay in the weighty traffics. This paper is for the developed and crowded cities in world especially with those who have traffic congestions in most of the rush hours and the weighty traffics. Some emergency vehicles like Ambulances, fire department, VIP vehicles and some important security conveys get jammed in the traffic and these emergency vehicles have to wait which is not desirable. Thus, the system will give priority to the emergency vehicles and also give longer green lights to the traffics that have more density. Four IR detect sensors (S0, S1, S2, S3) are used for density detections and the emergency vehicles have installed active Radio Frequency Identification (RFID) tag in order to specify that they are in an emergency case, and then RFID reader will detect that an emergency vehicle is coming. The readings from Radio Frequency Identification reader will be sending to the central control system to decide the right action to take and give a priority for the emergency vehicle. To design our smart control traffic system, we use microconroller AT89C51 and traffic LEDS, we also use Keil and proteus to simulate and realize how our system works.
Keywords: RFID, Emergency vehicles, VIP vehicles, Smart Traffic Light Systems(STLS), Traffic density

➢ **ORAL PRESENTATION**

Endoskopik olarak saptanılan Benign Duodenal Polip Olgularımız

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Selim duodenal polipler (SDP), üst gastrointestinal endoskopi yapılan hastaların % 0,3–4,6'sında saptanır. Duodenal polipler ilk defa 1917'de King tarafından bildirilmiştir. Mukozal hasara karşı rejeneratif bir yanıt olarak geliştikleri düşünülmektedir. SDP'ler hiperplastik, adenomatöz, hamartamatöz, inflamatuar ve heterotopik tiplerdedir. Bu çalışmada kliniğimizde SDP saptanan hastalar ve poliplerin özellikleri sunuldu. Temmuz 2013-Aralık 2016 yılları arasında Cerrahi Endoskopi Ünitesindeki kayıtlardan SDP saptanan hastalar retrospektif olarak incelendi. Endoskopi uygulanan 1075 hastanın 12'sinde (% 1,1) SDP tespit edildi. Hastaların yarısı erkek, yarısı kadındı. Yaş ortalamaları 55 (30-85 yaş aralığı) idi. Hastaların 8'inde (% 67) tek polip, 4'ünde (% 33) multipl polip saptandı. Lezyonlar en sık bulbusta (7 hasta, % 58) gözlendi. Poliplerin üçü saplı diğerleri sesildi. En büyük polip çapı 25 mm; en küçük polip çapı 2 mm idi. Hastaların 9'unda (% 75) brunner gland hiperplazisi, ikisinde adenomatöz polip, birinde hiperplastik polip saptandı. Hastaların 6'sında (% 50) helikobakter pilori (HP), 3'ünde (% 25) alkalen reflü gastrit (ARG) saptandı. İki hastada (%17) polip üzerinde fokal displazi alanları saptandı. Hastaların tamamında kronik gastrit ve kronik duodenit vardı. İki hasta kolesistektomiliydi.Tedavide polipektomi, HP ve ARG tedavileri uygulandı. Hastalar takibe alındı. Dispeptik şikayeti olan, özellikle elli yaş üstü hastalarda endoskopik inceleme yapılmalıdır. Endoskopi sırasında mutlaka duodenum kontrol edilmeli ve duodenal polip varlığına bakılmalıdır. Değişik oranlarda malignite riski taşıdığından duodenal poliplerin takip ve tedavileri önemlidir.

Anahtar Kelimeler: Endoskopi, Selim Duodenal Polip, Kronik Gastrit, Kronik Duodenit

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➢ **ORAL PRESENTATION**

Approximately Gamma Rings

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Abstract

The aim of this paper is to introduce approximately Γ-rings, approximately Γ-ideals and approximately Γ-rings of all descriptive approximately cosets by considering new operations on the set of all descriptive approximately cosets. Furthermore, some properties of approximately Γ-rings and approximately Γ-ideals were given in this paper.

Keywords: Proximity spaces, relator spaces, descriptive approximations, approximately gamma rings.

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➢ **ORAL PRESENTATION**

Influence of precursor electrotrolyte solution on the properties of CZTS based solar cells

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Abstract
Electrochemical deposition followed by heat treatment is a practical method to synthesize new generation semiconductors such as earth abundant and low-cost Kesterite, Cu2ZnSnS4 (CZST). The formation of secondary phases has been one of the bottlenecks for the performance increase of this semiconductors. Phase purity of CZTS based absorber layers depend on the compositional uniformity of electrodeposited metallic precursor and influence the performance of the solar cell dramatically. Electrodeposition of metallic precursors leads to reasonable in-plane homogeneity but lacks good lateral composition uniformity. In this study, we investigated the influence of citrate and pyrophosphate type electrolytes on the initial electrodeposited metallic precursors and resulting semiconducting materials after heat treatment. We first synthesized Cu-Zn-Sn (CZT) metallic precursors (~2 cm^2) and sulfurized them to form CZTS layers. Successively we built solar cells with the following architecture: Al: Ni/ITO/ZnO/CdS/CZTS/Mo and investigated the power conversion efficiency (PCE) of the devices through current density-voltage measurements. We found a correlation between the compositional distribution of the CZTS films and the solar cell efficiency for both electrolyte types. Second, we inspected the morphological properties of the layers with SEM and EDS mapping to understand the influence of secondary phases and pinholes on the solar cell performance. Further investigations were carried out by the Hall coefficient measurements, and the capacitance-voltage curves to determine the carrier concentration via the Mott-Schottky method. Finally, we measured the minority carrier lifetime of the CZTS layers with time-resolved photoluminescence and the photoresponse by determining the external quantum efficiency (EQE) to understand loss mechanisms in the bulk and at the interfaces.
Keywords: Electrodeposition, CZTS, solar cell, metallic precursor, Raman Spectroscopy, compositional uniformity

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➢ **ORAL PRESENTATION**

Analyses of T-2 mycotoxin-induced cell death in SerW3 cells

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Abstract

T-2 toxin is a mycotoxin produced by *Fusairum* species, and is found in agricultural products including cereals such as maize, wheat, barley and oats. Exposure to T-2 toxin by contaminated products was known to cause several adverse effects in reproductive system and one of the main targets of T-2 toxin is testes. The purpose of this study is to evaluate the cell death type and cytotoxicity in SerW3 cells which mimics Sertoli cells *in vitro*. SerW3 cells which were rat Sertoli cell line, were treated with 0, 0.005, 0.01 and 0.05 µg/ml T-2 toxin at 24 hours incubation time. Neutral red uptake assay was performed in SerW3 cells exposed to T-2 toxin. Total protein levels in SerW3 cell lysates were determined. Additionally, in order to determine cell death type induced by T-2 toxin, DAPI staining was performed and SerW3 cells were observed morphologically by inverted microscope. Neutral red uptake assay results showed that T-2 toxin induced cell death dose dependently. Although total protein levels did not change by T-2 toxin treatment, nuclear stain DAPI analysis showed that, T-2 toxin induced apoptosis. To summarize the study, it was shown that T-2 toxin induced cytotoxicity by neutral red uptake assay and apoptosis in a dose dependent manner.
Keywords: SerW3 cells, T-2 toxin, cytotoxicity, apoptosis.

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➢ **ORAL PRESENTATION**

Cam elyaf/epoksi kompozit malzemelerin çentik darbe davranışına Al_2O_3-%3 TiO_2 seramik toz partikül takviyesinin etkisinin incelenmesi

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Özet

Epoksi matrisli kompozit malzemeler uçak, uzay, savunma, otomotiv, denizcilik ve spor malzemeleri gibi birçok alanda çok yaygın olarak kullanılmaktadır. Bu alanlarda kullanılan kompozit malzemelerin kullanım yerlerine göre sahip olması istenilen birçok mekaniksel, fiziksel ve kimyasal özellikleri vardır. Polimer matrisli kompozit malzemelerin dayanım değerlerini artırmak için genellikle takviye elemanı olarak cam, karbon ve aramid gibi elyaflar kullanılmaktadır. Bunun yanında polimer matris malzemelerinin özelliklerinin iyileştirilmesi için ise matris malzemeleri inorganik partiküllerle modifiye edilmektedir. Bu çalışmada, cam elyaf takviyeli epoksi reçine matrisli kompozit malzemelerde ilave parçacık olarak kullanılan Al_2O_3–%3 TiO_2 seramik tozlarının karışım oranlarının ve boyutunun üretimi yapılan malzemenin darbe dayanımı özelliklerine etkisi deneysel olarak incelenmiştir. Kompozit malzemelerin üretimi için, takviye olarak hazır olarak satılan (woven) 270 gr/m^2'lik dokuma kumaşlar, matris malzemesi olarak ise epoksi reçine kullanılmıştır. Üretimde epoksi reçine olarak Epikote Resin 828 Bisphenol-A-(Epichlorhydrin) ve sertleştirici olarak Epikure Curing Agent 875 kullanılmıştır. Karışım oranı 100:80'dir. Al_2O_3-%3 TiO_2 seramik tozları reçinenin içerisine % 0, %5, %10, %15 katkı oranlarında ilave edilmiştir. Kompozit malzemeler el yatırma yöntemi ile üretilmiştir. Üretilen kompozit malzemelerin elyaf ağırlık oranları ve porozite miktarları belirlenmiştir. Numunelerin Charpy çentik darbe dayanımı testleri ASTM D 6110 standardına göre yapılmıştır. Deneysel çalışmanın sonuçlarına göre; cam elyaf takviyeli epoksi matrisli kompozit malzemelerin üretimi esnasında reçine matris içine ilave edilen seramik tozların karışım oranlarının ve boyutlarının üretilen kompozit malzemelerin porozite miktarları ile darbe dayanımlarını önemli oranda etkilediği tespit edilmiştir.

Anahtar kelimeler: Kompozit malzeme, Cam elyaf, Epoksi reçine, Seramik toz, Porozite, Darbe dayanımı

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➢ **ORAL PRESENTATION**

Raspberry Pi mini bilgisayarı ile ortam izleme sistemi geliştirilmesi

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Özet
Bu çalışma kaspsamında Raspberry Pi mini bilgisayarı ile kapalı bir ortamdaki nem, sıcaklık, gaz, hareket, sıvı, ışık ve alev sensörleri kullanılarak ortama ait veriler izlenmektedir. Sensörlerden ortam değerlerini okumak için hazırlanan programda Python programlama dili kullanılmaktadır. Bu programla elde edilen veriler mini bilgisayarda bir MySQL veritabanına kaydedilmekte ve oluşturulan bir internet sayfası üzerinden grafiksel şekillerle gösterilip kullanıcıların anlık olarak uzaktan ortamı izleyebilmesine olanak sağlanmaktadır. Aynı zamanda internet sayfası üzerinden sıcaklık ve nem gibi koşulların günlük, haftalık, aylık ve yıllık dönemlere ait istatiksel veriler de öğrenilebilmektedir. Ayrıca oluşturulan eşik değerlerine göre alarm seviyeleri oluşturulabilmekte ve anormal bir durum meydana geldiğinde belirlenen kişilere alarmın nedeni ve derecesiyle ilgili haber de verilebilmektedir.

Anahtar Kelimeler; Raspberry Pi mini bilgisayarı, ortam izleme, Raspbery Pi ile ortam izleme sistemi, akıllı ev sistemleri

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➢ **ORAL PRESENTATION**

Tracing of reproduction processes in cell cultures by ultrasonic method

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Abstract
The reproduction processes of the cells differ from the cell to the cells. In cell culture studies, it is important to obtain a maximum number of cells for the productivity. Therefore, it is necessary to track the reproduction of the seeded cells and passage when the culture have maximum number of cells. However, correspondingly the exact time for the passaging is not known. Objective: To trace the reproduction processes and to determine the optimum time of passage. Methods: In the study, the cells with feed environment were placed in a flask in incubator a constant temperature. Then, ultrasonic monitoring of the flask was carried out. The speed of the sound wave transmitted on the flask has changed as a result of the cells changing the intensity of the environment as they reproducted. The change at the speed resulted with a varying travel time of the sound waves. Then this travel time was measured in nanoseconds and a graph was obtained. Results: When the resulting graph was analyzed, it was seen that it was similar to the bacterial growth curve. Conclusion: It has been seen that the designed system can be used to track the reproduction of cells. Thus, by tracking the reproduction stage, the cells can be passaged at the most appropriate time and therefore the maximum number of cells can be obtained. The designed system has significant advantages such as being noninvasive, cheap and does not have a destructive effect on the cells.
Keywords: Cell Line, Ultrasound, Cell Growth Processes.

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➢ **ORAL PRESENTATION**

Vitamin D deficiency, its relation to bone and back pain, tiredness, hair loss and mood improving in a sample collected from Baghdad city

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Abstract

Vitamin D deficiency is a global health problem. With all the medical advances of the century, vitamin D deficiency is still epidemic. Over a billion people worldwide are vitamin D deficient or insufficient (1) .Yet no international health organization or governmental medical program has declared a health emergency to warn the public about the urgent need of achieving sufficient vitamin D blood levels.

Vitamin D, which described as "the Sun Vitamin" is a steroid with hormone like activity. It regulates the functions of over 200 genes and is essential for growth and development (2)

Still must people in the world suffering from deficiency of Vit.D , its related with the modern life style they live and less exposure of people to sun light, as people using car and automobile for running to the day work (3)

Serum 25-hydroxyvitamin D [25 (OH) D] concentration is the parameter that choice for the assessment of vitamin D status. Recently, many studies have used 30 ng/ mL as a cut-off value and most experts, now recommend the normal level of 25-hydroxyvitamin D (25OHD) to be ≥30 ng/mL(4),(5).

Vitamin D insufficiency is defined insufficient when the levels are between 20–29 ng/mL and at levels of ≤20 ng/mL the patient is considered vitamin D deficient.(6)

Many research reported that vitamin D deficiency can result in obesity, diabetes, hypertension, depression, fibromyalgia, chronic fatigue syndrome, osteoporosis and neuro-degenerative diseases like (Alzheimer's disease). Vitamin D deficiency may even contribute to the development of cancers, especially breast, prostate, and colon cancers (10). Vitamin D3 is believed to play a role in controlling the immune system (possibly reducing one's risk of cancers and autoimmune diseases), while some reported that it's increasing neuromuscular function and improving mood and potentially reducing pain (5) (9).

In this study data collected for (58) out patients Clinic suffering from Vit D deficiency in different rate, they were either Vit D deficiency (10-19) ng/mL or Insufficiently of Vit D (20-29) ng/mL and some with sever deficiency less than 10ng/mL . This study covered samples from different age, (male and female) different life style, which include different characters (bone and back pain, tiredness, hair loss and mood improving) .

Result showed that women were more suffer than men for Vit D deficiency because woman loss more through menopause , pregnancy and lactation period , results showed that sample of patients with age (40 to 59) year old and (60 to 69) year old they had suffering from bone and back bone pain, were 25% of sample study suffering from hair loss. Most people covered in this study felling tiredness and headache.(7)

In this study some of the collected people with Vit. D deficiencies were treated by giving dosages of supplement medicine to optimize level of 25-OH Vitamin D3.

Result showed that the supplement medicine for Vit D help and improve reducing hair loss, bone and back pain within three months of taken medicine , while patients that feeling tiredness will recover their health spontaneously. In related to depression, it was found that depression is associated with low vitamin D levels and some studies have found that supplementing improves mood. In our study with a sample of patients (7 patient) had Vit D defiance with a low mood and they had taken medicine to improve of Vit D. Results showed that all 7 patients have reducing depress and improved mood (all person lived with the same environment all the time of experiment) .The similar results showed that depression is associated with low vitamin D levels and some studies have found that supplementing improves mood (7) (8).

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➢ **ORAL PRESENTATION**

Mono-Ferrosenil Spirosiklotetrafosfazen türevlerinin sentezi ve spektroskopik özelliklerinin incelenmesi

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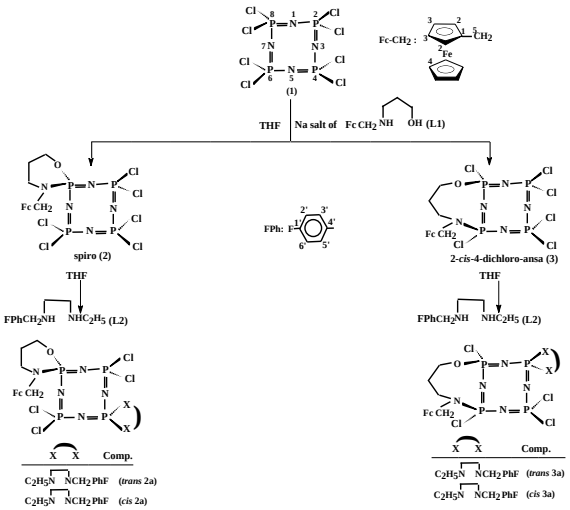
Özet

Bu çalışmada, ilk olarak, ferrosenkarboksaldehit ile 3-amino-1-propanolün metanol ortamındaki kondenzasyon tepkimeleri sonucunda oluşan Schiff bazının $NaBH_4$ ile indirgenmesinden 3-(N-ferrosenilmetilamino)-1-propanol, $FcCH_2N(CH_2)_3OH$ **(L1),** elde edilmiştir. Sentezlenen bu NO donör atomlu bidentat ligandın oktaklorosiklotetrafosfazen (tetramer, $N_4P_4Cl_8$, **1**) ile reaksiyonundan mono-ferrosenil-spiro **(2)** ve mono-ferrosenil-2-*cis*-4-dikloro-ansa **(3)** siklotetrafosfazen bileşikleri kolon kromatografisi ile ayrılmıştır. İkinci aşamada, 4-florobenzaldehit ile N'etiletan-1,2-diaminin metanol ortamındaki kondenzasyon tepkimeleri sonucunda oluşan Schiff bazının $NaBH_4$ ile indirgenmesinden N-(4-florobenzil)-N'etiletan-1,2-diamin (**L2**) elde edilmiştir. Daha sonra hekzakloro-mono-ferrosenil-spiro (**2**) bileşiğinin THF ortamında Et_3N varlığında aşırı miktardaki **L2** ile etkileştirilmesi sonucunda kısmen sübstitüe 2-*trans*-6-dispiro-siklotetrafosfazen (**2a**) bileşiği sentezlenmiştir. Bir sonraki aşamada ise, mono-ferrosenil-2-*cis*-4-dikloro-ansa **(3)** bileşiğinin THF ortamında Et_3N varlığında aşırı miktardaki sırasıyla **L2** ile etkileştirilmesi sonucunda kısmen sübstitüe 2-*cis*-4-dikloro-ansa-2-*trans*-6-spiro(N/N) (**3a**) ve 2-*cis*-4-dikloro-ansa-2-*cis*-6-spiro(N/N) (**3b**) bileşiklerini elde edilmiştir (Şema 1). Sentezlenen bileşikler kolon kromatografisi ve preperatif ince tabaka kromotografi teknikleri ile saflaştırılmıştır. Bileşiklerin yapısı; element analizi, kütle spektrometresi (ESI-MS), FTIR, ^1H, ^{13}C ve ^{31}P-NMR tekniklerinden faydalanılarak aydınlatılmıştır. Bu ürünler yer seçimli (regioselective) olarak oluşmaktadır ve stereojenik P merkezlerine sahiptir (**2a** hariç). Bu bileşiklerin kiralliği, spektroskopik ve kristallografik yöntemlerle aydınlatılacaktır.



Şema 1. Mono-Ferrosenil Spirosiklotetrafosfazen türevlerinin sentezi

Anahtar Kelimeler: Ferrosenil siklotetrafosfazenler, sterejenizm, spektroskopi

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➢ **ORAL PRESENTATION**

Hidrolik blokların talaşlı imalatında özel takım dizaynının malzemenin işlenebilirlik performansına etkisinin incelenmesi

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Özet

Hidrolik blok; yağın hızını, yönünü ve debisini kontrol etmeye yarayan hidrolik sistem ekipmanıdır. Sistemin devre şeması ve çalışma şartlarına göre içyapısı tasarlanır. Blok yüzeyleri üzerine oturma yüzeyli valfler veya blok içinde açılmış özel kademeli yuvalara vidalanan kartriç kontrol valfleri monte edilir. Hidrolik blokların imalatında 320 bar çalışma basıncına kadar sfero dökme demir malzemeler, 320 bar'dan fazla olduğu durumlarda ve düşük çalışma sıcaklıklarında kırılma tokluğunun yüksek olması istenilen yerlerde çelik malzemeler tercih edilir. Hidrolik blokların talaşlı imalatı sırasında kartriç valf yuvalarının imalatı için piyasada standard olarak bulunamayan özel tasarlanmış rayba-senker ile blok içindeki birbirine bağlanan deliklerin imalatı için değişik ebat, kalite ve teknolojide delik delme ve diş açma takımları kullanılır. Kademeli özel yuvaların işlenmesinde güncel olarak kaba işleme için kademeli senker, hassas işleme için kademeli raybalar kullanılmaktadır. Dökme demir malzeme için sonuç veren mevcut takımlar, çelik grupları için istenilen hassasiyet ve ölçüyü vermemektedir. Çelik malzemelerin talaşlı imalatı esnasında çok hızlı körelmekte, talaş sarımına neden olmakta ya da işlem yapısına göre kırılmaktadır. Bu yüzden çelik malzemede kullanılmak üzere belli bir çapa kadar takımlar karbür malzemeden, belli bir çaptan sonra ise takma uçlu olarak tasarlanıp kullanılması hedeflenmektedir. Çelik malzemelerden blok imalatı Türkiye'de ve hatta dünyada seri imalata uygun olacak şekilde sürdürülebilir olarak çok zor gerçekleştirilebilmektedir. Blok imalatı sırasında karşılaşılan en ufak bir hata, blok malzemesinin ve işçiliğin boşa harcanması demektir. İmalatında hata gerçekleşen blok malzemesi sisteme geri kazandırılamamaktadır. Bu çalışma kapsamında, bir hidrolik sistemde kullanılacak olan bir blokta bulunan belli tipteki kademeli valf yuvaları için karbür malzemeden yuva takımı ile takma uçlu senker ve rayba takımlarının farklı tasarımları yapılmış olup, uygun parametreler belirlenmiş, takımların imalatları yaptırılarak çelik malzemeler ile sfero dökme demir malzemelerden yapılan bloktaki yuvaların talaşlı imalat denemeleri yapılmıştır. Blokların talaşlı imalatları esnasında alınan verilerin karşılaştırılmalı analizleri yapılmıştır. Malzemelerin işlenebilirlik performansının yüksek olmasını sağlayan takımda yüzey pürüzlülük ölçümleri yapılmıştır.

Anahtar Kelimeler: Hidrolik blok, Talaşlı imalat, Takım dizaynı, İşlenebilirlik

➢ **ORAL PRESENTATION**

Midede nöroendokrin karsinom, adenokarsinom birlikteliği olan nadir bir olgu eşliğinde gastrik mikst nöroendokrin-nonnöroendokrin neoplazmların değerlendirilmesi

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Özet: Mide kanserleri erkeklerde dördüncü, kadınlarda beşinci sırada en sık görülen kanserlerdir. Histopatolojik tip %95 adenokarsinomdur. Gastrik nöroendokrin neoplazmlar (gNENs) mide mukozasının nöroendokrin hücrelerinden köken alan tümörler olup görülme oranı <% 1. Yaklaşık % 7 non-nöroendokrin neoplazm birlikteliği vardır. Endoskopinin yaygınlaşması ve teknik ilerlemeler tanı sıklığını arttırmıştır. Hastanın prognozu, takip ve tedavi protokolleri değişik olduğundan (gNENs) tanı ve diferansiasyon derecesinin belirlenmesi önemlidir. Teşhisde ve sınıflamada immünohistokimyasal çalışma önemlidir. Kromogranin ve sinaptofizin pozitifliği vardır. Prognostik sınıflama için Ki-67 proliferatif indeks ve mitoz sayısına göre WHO 2017 sınıflamasında (NENs): Grade 1,2,3 nöroendokrin tümörler, nöroendokrin karsinom, mikst nöroendokrin-nonnöroendokrin neoplazmlar (MİNENs) olarak sınıflandırılmıştır**.** G1 NET:10BBA < 2 den az mitoz, Ki67 proliferatif indeksi <% 3 ün altında. G2 NET: 10BBA: 2-20 arası mitoz veya Ki67 proliferatif indeksi: % 3-20. G3 NET: 10BBA da >20 fazla mitoz veya Ki67 proliferatif indeksi % 20 nin üstünde. Nöroendokrin karsinom: 10BBA da >20 fazla mitoz ve Ki67 proliferatif indeksi % 20 nin üstünde. MİNENs: Nöroendokrin karsinom komponenti varsa yüksek gradeli, karsinom ve NET varsa orta gradeli, NET-adenom birlikteliği varsa düşük gradeli MİNEN diye sınıflandırılırlar. MİNEN varlığında heterojen yapı nedeniyle tedavi planlaması zordur ve standardizasyon sağlanamamıştır. Tedavi planlaması mevcut komponent ve metastaz durumuna göre endoskopik rezeksiyon, total veya subtotal gastrektomi ve/veya adjuvan veya preoperatif kemoterapi şeklinde yapılabilir. Ameliyat edilen hastalar 2 yıl altı ayda bir, sonraki dört yıl yılda 1, sonra her iki yılda 1 endoskopi, BT veya MRI ve serum kromogranin bakılarak takip edilmelidirler. Olgumuzda 60 yaşındaki erkek hastanın mide kardia bölgesinden alınan biyopsi örneğinde, nekroz ve sıkışma artefaktları arasında, Synaptofizin ve Kromogranin ile kuvvetli boyanan, Ki67 proliferatif indeksi %8o olan, yüksek mitotik aktivite içeren, iri hiperkromatik nükleuslu dar sitoplazmalı atipik hücreler ve PANCK pozitif, iri hiperkromatik nükleuslu, belirsiz adenoid yapılar yapan atipik hücrelerden oluşan tümöral infiltrasyon mevcuttu. Olgu Nöroendokrin karsinom+adenokarsinom (yüksek gradeli MİNEN) olarak rapor edildi.

Anahtar Kelimeler: Mide, nöroendokrin neoplazm, non-nöroendokrin neoplazm

➢ **ORAL PRESENTATION**

Ulcer disease in rats, the creation of ulcer model and the evaluation of biochemical parameters

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Peptic ulcer disease is a pathology caused by the deterioration of aggressive factors (acid and pepsin) and defensive factors (mucus, bicarbonate secretion, integrity, regeneration and blood supply of gastric epithelial cells) in favor of aggressive factors. Helicobacter pylori (H. pylori) infection, nonsteroidal antiinflammatory (NSAID) drug use, alcohol, smoking, stress and diet have been accused in the etiopathogenesis of ulcer in the past, but nowadays, multifactorial hypothesis is widely accepted. Ulcer's disease is a model that is frequently studied in experimental animals and the data obtained is quite valuable.

In addition to the anatomical differences between all experimental animals and human beings, if the metabolic, physiological and biochemical differences between the gastrointestinal systems are considered, it is very difficult to test the life-threatening complications of ulcer in more than half of the society such as duodenal ulcer. For this, it is important to select the correct test animal and the method to be used. For this reason, rats that are completely matched to the human gastrointestinal system are the anatomically and physiologically correct choice for the ulcer model.

It is known that NSAIDs used in daily life make ulcers. Various experimental ulcer models (aspirin, indomethacin, etc.) have been developed considering this feature of NSAIDs. Today, these models are widely used in the research of anti-allergic drugs. In this study, we will give information about ulcer model and ulcer process with indomethacin which is an NSAID.

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➢ **ORAL PRESENTATION**

The gastroprotective effect of water extract of *Cumin* in experimental rat model: This effect is related to its *in vivo* and *in vitro* antioxidant parameters

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Abstract
In this study, the antiulcerogenic effect of a water extract (CWE) obtained from a spices sample, *Cumin*, was investigated using indomethacin-induced ulcer models in rats. Experimental groups consisted of six rats. Antiulcerogenic activities of 50, 100, 200 and 400 mg/kg body wt. doses of the CWE were determined by comparing the negative control IND 25 mg/kg and positive control FAM 25 mg/kg form was orally administered. After awaiting about six hour, rats were sacrified and ulcer areas in stomach were calculated via milimetric paper. After that CAT, SOD, MPx enzyme activities and GSH, LPO amounts were measured. Although all doses of the CWE showed significant antiulcerogenic activity as compared to negative control groups, the highest activity was observed with 400 mg/kg body wt. doses. The CWE showed similarly antioxidant activity when compared with trolox and ascorbic acids used as positive antioxidants. In addition, the activities of catalase (CAT) and myeloperoxidase (MPO) enzymes were determined in the stomach tissues of rats and compared with those of the negative and positive control groups to expose the effects of these enzymes on antiulcerogenic activity. The enzymatic activities of CAT and MPO and lipid peroxidation (LPO) level in indomethacin-administrated tissues were increased significantly by indomethacin in comparison to control groups. These enzymes and LPO level were decreased, however, by the CWE. In contrast to LPO level, CAT and MPO activities, glutathione (GSH) level was decreased by indomethacin and increased by all doses of CWE and famotidine. The present results indicate that the CWE has a protective effect in indomethacin-induced ulcers, which can be attributed to its antioxidant potential.

Keywords: *Cumin*, antioxidant activity, antiulcerogenic activity, famotidine, indomethacin

➢ **ORAL PRESENTATION**

Bazı *Melanophila* (Buprestidae:Coleoptera) Türlerinin Ekolojik Önemi

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Özet

Pyrophilous organizmalar "ateşi seven" organizmalar olarak bilinirler ve hayvanlarda, bitkilerde, mantarlarda pyrophilous türlere rastlanır. Pyrophilous böcekler Hemiptera, Lepidoptera, Diptera ve Coleoptera takımlarındaki en az 25 familya ile temsil edilir. Biyoçeşitliliğin korunması ile ilgili endişeler arttıkça, biyolojik çeşitlilik üzerindeki yangın gibi ekolojik olayların olumlu veya olumsuz etkilerine de ilgi artmıştır. Birçok böcek türü duyusal reseptörleri ve davranışları sayesinde yeni başlamış orman yangınlarına doğru yönelirler. Bu yönelme ise ateşin cezbediciliğinin yanısıra, bu böceklerin yeni kesilmiş veya zayıflamış ağaçları kaynak olarak kullanmalarıyla da açıklanır. Ülkemizdeki ormanlar; gıda, yakıt, barınak, temiz hava, ilaç, gelir kaynağı, istihdam, dinlenme, peyzaj gibi maddi-manevi birçok ekonomik, ekolojik, sosyokültürel faydalar sunan doğal bir kaynaktır. Bu paha biçilemeyen doğal kaynak olan ormanlarımızın sürdürülebilirliği baş tehdit olan yangınların kontrolüne ve diğer ekolojik ilişkilere bağlıdır. Buprestidae familyasında yer alan *Melanophila* cinsine ait bazı türlerde ateşe yönelme, yeni kesilmiş veya zayıflamış ağaçları kaynak olarak kullanma davranışı görülür. Dünya'da 70, Palearktik'te 4 türü bulunan bu cinsin Türkiye'de 3 türü (*M. acuminata, M. cuspidata, M. picta*) bilinmektedir. Pyrophilous özellik gösteren *Melanophila* türleri ormanlarımızın ve ekonomik önemi olan ağaçlarımızın sürdürülebilirliği açısından oldukça önemlidir. Bu çalışmada *Melanophila* cinsine ait türlerin literatürlerde bildirilen ve ülkemizin farklı bölgelerinden toplanan türlerin yayılış bilgileri verilmiştir. Aynı zamanda bu çalışma ile *Melanophila* cinsinin ekolojik ve ekonomik önemi ortaya konulmuştur.

Anahtar Kelimeler: *Melanophila,* Buprestidae**,** Pyrophilous

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➢ **ORAL PRESENTATION**

Kallikrein (KLK) Gene Family in Prostate Cancer

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Abstract
Prostate cancer is one of the deadliest cancer types affecting males that results with death. Usually, it is treatable if diagnosed early. The specificity and positive predictive value of prostate specific antigen (PSA), the most widely used biomarker for prostate cancer, is low and the absolute lower limit value for cancer diagnosis has not yet been identified. Biochemical recurrence is defined as an increase in PSA value >0.2 ng/mL, measured twice after radical prostatectomy and PSA value ≥2 ng/mL, after radiotherapy. The Kallikrein (KLK) gene family consist of 15 genes encoding secreted serine proteases that have relevant homologies at both the DNA and amino acid level. Two members of the human KLK gene family, PSA and human kallikrein 2 (hK2), are used clinically as prostate cancer biomarkers. In our study, changes in 15 KLK gene expression levels in 34 recurring 36 non-recurring prostate cancers and 19 normal tissue specimens were investigated. This non-invasive method makes a strong candidate for PCa diagnosis. The difference in expression levels of the KLK gene family in recurrent PCa has been shown first time in the literature by us. Easy application of PSA in routine examination and the relationship between prostate cancer and other KLKs have been examined. Our results showed that KLKs, which are differently expressed in PCa, can be used as recurrence markers. While, KLK1 and KLK2 genes (only in recurrent prostate cancer tissues) are down-regulated in prostatic cancer tissues, other genes (KLK3, KLK4, KLK8, KLK9) are found to be overexpressed in both recurrent and non-recurrent prostate cancer tissues in our experiment.
Keywords: Prostate Cancer, KLK gene family, gene expression.

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➢ **ORAL PRESENTATION**

Üç Boyutlu (3D) Cd(II)-Koordinasyon Polimerlerinin Sentezi, Karakterizasyonu ve Lüminesans Özellikleri

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Özet

Koordinasyon polimerlerinin dizayn ve sentezi, ilginç topolojik yapıları ve gaz depolama/ayrım, sensör, kataliz, foto-parçalama, lüminesans gibi uygulama alanları sebebiyle ilgi çekmiştir. Bu uygulamalar için arzu edilen yapıda koordinasyon polimerlerin sentezinde uygun organik ligandların ve metal iyonlarının seçimi önemli faktördür. Koordinasyon polimerlerin inşasında, aromatik karboksilik asitler, N-verici ligandlar veya bu ligandların karışımı (karışık ligandlı koordinasyon polimeri) arzu edilen mimaride yapısal çerçeveyi ayarlamak veya daha yüksek boyutlu koordinasyon polimeri elde etmek için kullanılmaktadır. Bu çalışmada, 5-tert butil isoftalik asit ve isomerik bis(imidazol) ligandları ile 3D Cd(II) koordinasyon polimerleri, $[Cd_2(\mu_4\text{-tbip})(\mu_5\text{-tbip})(\mu\text{-obix})(OH_2)_2]_n$ (**1**) ve $[Cd_2(\mu_3\text{-tbip})_2(\mu\text{-mbix})]_n$ (**2**) (tbip = 5-tert butil isoftalik asit, o, m-bix = 1,x-bis(imidazol-1-ilmetil)benzen, x= 2 ve 3), sentezlenmiştir. Sentezlenen komplekslerin yapıları elementel analiz, IR spektrometresi, tek kristal X-ışınları difraktometresi ve termal analiz ile karakterize edilmiştir.

Kompleksler, 5-tbip ve bis(imidazol) ligandları ile Cd(II) tuzu ($CdCl_2 \cdot xH_2O$ ve $Cd(NO_3)_2 \cdot 6H_2O$) ve KOH'in sulu ortamda 160ºC'de hidrotermal sentezi ile tek kristal formda elde edilmiştir. X-ışınları analiz sonuçlarına göre, kompleksler 3D boyutlu yapı sergilemiştir. Komplekslerin 3D yapıları Cd(II) iyonları ve 5-tbip ligandları ile oluşturulurken, obix ve mbix ligandları ise hem metal merkezinin koordinasyon boşluğunu doyurmuştur hem de 3D yapının kararlılığına katkı sağlamıştır. **1** kompleksinde hem hidrofilik hem de hidrofobik gözenek bulunurken, **2** kompleksinde sadece hidrofobik gözenek bulunmaktadır. **2** kompleksinde aynı birimler birbirinin içine geçerek 2-kat iç içe geçmiş 3D+3D→3D yapı sergilemiştir. Topolojik olarak, **1** kompleksi $4^{24}.6^4$ nokta sembolü ile bcu topolojiye sahipken, **2** kompleksi $3^6.6^6.7^3$ nokta sembolü ile crs/dia-e topolojiye sahiptir. Ayrıca, komplekslerin termal ve lüminesans özellikleri de detaylı şekilde araştırılmıştır.

Anahtar Kelimeler: Koordinasyon polimeri, bis(imidazol) ligandı, topoloji, lüminesans

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➢ **ORAL PRESENTATION**

Morphological and molecular characterization of Erlotinib resistance established in A549 Non-Small Cell Lung Cancer (NSCLC) cell line

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Abstract

Development of chemoresistance is one of the major challenges in the treatment of patients with different cancers including NSCLC. Chemoresistance against conventional and targeted therapy drugs that interferes with the proper treatment of patients, develops through different molecular mechanisms. We developed drug-resistant cell sub-lines for modeling drug resistance in laboratory conditions by using commercialized A549 NSCLC cell line. A tyrosine kinase inhibitor Erlotinib (Tarceva) was selected as chemotherapeutic agent, which targets intrinsic and acquired mutations in the tyrosine kinase region leading to uncontrolled autophosphorylation of Epidermal Growth Factor Receptor (EGFR), an important actor in NSCLC drug resistance. A549 cells were cultured in a period of 3 months by continious exposure to Erlotinib at regularly increasing concentrations (3, 6, 9, 12 µM) mimicking clinical therapy conditions. An untreated parental cell line (A549-PT) was maintained in culture in parallel with the Erlotinib treated candidate drug-resistant sub-line (A549-ER). At the end of 3 months period two cell lines were compared in terms of some morphological and molecular characteristics. In the MTT tests performed in the presence of Erlotinib (12 µM), the cell viability of the A549-ER sub-line was increased compared to the A549-PT cells. Cell wound assay showed that the migration ability of A549-ER cells was increased when compared to A549-PT cells. In soft agar assay, A549-ER sub-line cells produced more colonies than A549-PT cells and gained more aggressive morphological characteristics upon long-term exposure to Erlotinib. Finally, we tested the effects of drug exposure on the transition from eptelial to mesenchymal cell type. The expression levels of epithelial cell markers such as E-cadherin and occludin as well as mesenchymal cell markers such as vimentin and fibronectin were determined by qRT-PCR method. All results showed that prolonged exposure to Erlotinib changes the morphological characteristics of A549 cells such that more aggressive cells with higher migration capacity and mesenchymal features form.

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➢ **ORAL PRESENTATION**

On-axis transmittance for partially coherent flat-topped optical beams in underwater turbulence

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Abstract
In this study, the effects of oceanic turbulence on the optical transmittance are examined when partially coherent flat-topped beam wave propagates in a wireless underwater medium environment. To observe the oceanic turbulence effect, the power spectrum of homogeneous and isotropic oceanic water combining the effects of salinity and temperature is used. Also, employing the extended Huygens-Fresnel integral for the general beam formulation that is applied to partially coherent flat-topped beam, the effects of the parameters of power spectrum on the on-axis average transmittance are analyzed. Obtaining the results with the help of Matlab program indicates that if the flatness of the optical beam increases, the average transmittance increases, i.e., larger number of Gaussian beams composing the flat-topped beam (denoted as N) causes larger transmittance. Partial coherence (ρ_s) is found to be inversely proportional to the average transmittance. Increase in the link distance is found to reduce the average transmittance. The loss of the kinetic energy of fluid causes to less turbulence. The rate of dissipation of kinetic energy per unit mass of fluid is directly proportional to the average transmittance while the rate of dissipation of the mean-squared temperature is inversely proportional to the average transmittance. When the temperature-induced optical turbulence is dominant, the average transmittance almost never decreases. However, the salinity-induced optical turbulence sharply reduces the average transmittance of the partially coherent flat-topped beam in underwater turbulence.
Keywords: Partial coherence, flat-topped beam, underwater turbulence, average transmittance.

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➢ **ORAL PRESENTATION**

The Predictive Value of Placental Alpha-Microglobulin-1 Test for Memrane Rupture

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Abstract
The certain diagnosis of membrane rupture (ROM) during pregnancy can be made when leakage of amniotic fluid from the cervical os is observed on speculum examination. But sometimes, it's difficult to have a certain diagnosis about membrane rupture. Several methods have been developed to overcome this problem including detection of alpha-fetoprotein, insulin-like growth factor binding protein-1, fetal fibronectin, and prolactin in cervicovaginal fluids. But the most common method being used in clinic is detection of placental alpha-microglobulin-1 (PAMG-1) in cervicovaginal fluid. The concentration of this protein in amniotic fluid is 1,000-10,000 times higher than in the case of cervicovaginal fluid.
In this study conducted in Sanliurfa Education and Research Hospital, our objective was to determine the clinical power of PAMG-1 test for the detection of clinical ROM. Total 168 test results that have been applied due to suspicious ROM are evaluated (eg. oligohydramniosis, suspicion about ROM). All suspicious ROM cases are followed in clinic until the diagnosis is clarified. Of these, total 66 ROM cases are clarified and the ROM diagnosis is not verified at 102 cases.8 cases were false positive and 3 cases were false negative according to PAMG-1 test. Diagnostic performance of PAMG-1 test is reported on table. False negative cases were especially associated with earlier gestational ages like early second trimester. And false positive cases were associated with bleeding and prematurity and short cervix during pregnancy.
Evaluation of PAMG-1 in cervicovaginal fluid is an effective test for suspicious ROM cases. However, the results should be evaluated with clinical findings.
Keywords: Alpha-Microglobulin-1, Membrane Rupture, Oligohydramniosis

ROM / PAMG-1	Positive	Negative
Positive	63	8
Negative	3	94
Sensitivity	95.45% (87.27% - 99.00%)	
Specifity	92.16% (85.12% - 96.54%)	
Positive Predictive Value	88.73% (78.99% - 94.99%)	
Negative Predictive Value	96.91%(91.21% - 99.32%)	

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➢ **ORAL PRESENTATION**

Effect of burner configuration on flame spray pyrolysis process parameters

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Abstract
Flame Spray Pyrolysis (FSP) is a versatile and cost-efficient production process for nanoparticles which relies on the combustion of liquid raw materials containing metal or transition metal compounds at flame temperatures. Product nanoparticles are formed within milliseconds and collected as a dry powder on a filter. An FSP reactor consists of 3 main parts; a two-fluid nozzle for liquid precursor delivery and atomization which is located in the center of a burner, a premixed or diffusion burner as an ignition source for the liquid precursor, and a downstream filtering system for nanoparticle product collection. The configuration of an FSP system effects the performance of the process and product powder characteristics. In this work, the placement of a premixed burner around the nozzle has been studied using the commercial ANSYS FLUENT (v.19) software. Multicomponent droplet evaporation, flame temperature, velocity and gas density in the flame were predicted and tested against experimental data from the FSP literature. The radial distance of the burner flamelets from the center of the nozzle has been investigated for 5, 9, 14 and 19 mm. In all the three cases, the same operation conditions for the liquid flowrate, concentration and oxygen dispersion gas flowrate were used for nano-CeO_2 production, and the same meshing of the domain was applied in Fluent after determination of the mesh independency. The FLUENT results showed that the increasing distance between the nozzle center and the burner flamelets cause an increase in the main flame height which ultimately results in a decrease in the centerline flame temperature, as well as the centerline flame velocity. Also FLUENT results showed a decrease in the centerline gas density. Solid formation in the flame was modeled by feeding the temperature, velocity and gas density predictions by Fluent into a MATLAB code. The results showed that the increasing distance between the nozzle center and the burner flame cause an increase in the main flame height which ultimately results in an increase in the primary particle diameter, as well as the agglomerate collision diameter.
Keywords: flame spray pyrolysis, nanoparticle production, fluent simulation, matlab

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➢ **ORAL PRESENTATION**

Polyvinyl alcohol/CuO Nanocomposite Hydrogels: Facile synthesis and long-term stability

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Abstract
Within this study, Polyvinyl alcohol/CuO nanocomposite hydrogels were synthesized through dispersing CuO nanoparticles in PVA solution using the freeze-thawing procedure in order to physically crosslinking. The presence of CuO nanoparticles in nanocomposite hydrogels was determined by FESEM, EDS and FTIR analysis. The Effect of CuO content of nanocomposite hydrogels on the swelling behavior and long term stability was investigated. These nanocomposite hydrogels demonstrated unique properties for biomedical applications due to their high swellability at pH 2.1 as the pH values of stomach and long term stability. According to these results, the addition of CuO to the hydrogel structure improved the swelling characteristics of neat PVA hydrogel.
Keywords: Long-term stability, swelling behavior, PVA, CuO nanoparticles, ball milled.

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➢ **ORAL PRESENTATION**

Mg-Al Alaşımlarının Korozyonunda Yüzey Oksit Filmi-β Fazı İlişkisi

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Özet

Özgül mukavemet değerlerinin yüksek olmasından dolayı AZ, AM, AS serisi Mg alaşımları otomotiv endüstrisinden elektronik ve uzay endüstrisi gibi birçok mühendislik alanında kullanım alanlarına sahip olmasının yanında düşük toksik özelliği nedeniyle biyo-uyumlu ve biyo-bozunur bir metalik biyomalzeme olarak, ortopedik implant uygulamalarında plaka ve vida yapımında potansiyel implant malzemeleri olarak kullanılması da son yıllarda ilgi çekmektedir.
Elektrokimyasal olarak oldukça aktif bir metal olmasından kaynaklanan zayıf korozyon özellikleri, Mg ve alaşımlarının herhangi bir koruma uygulanmadan kullanılmalarını sınırlandırmaktadır. Mg-Al alaşımlarının korozyon mekanizmalarını anlamaya yönelik literatürde birçok çalışma bulunmasına rağmen, bu alaşımların korozyonunda β fazının rolü üzerindeki görüşler çelişkilidir.
Bu çalışmada, farklı Al içeriklerine sahip (AZ21, AZ91, AS21 ve AS91) alaşımların korozyon özellikleri, β fazı yapısı ve yüzeyde oluşan oksit filmi-β fazı ilişkiside değerlendirilmiştir. Mikroyapı çalışmaları Taramalı Elektron Mikroskobu (SEM) ile korozyon çalışmaları ise elektrokimyasal testler kullanılarak yapılmıştır. Sonuçlar, yüksek Al içeren alaşımların (AZ91 ve AS91) daha fazla korozyona uğramasının nedeninin, alaşım yüzeyinde kabalaşan β fazının oksit filminin devamlılığını kesintiye uğratmasına dayandırılmıştır.

Anahtar Kelimeler: Mg-Al alaşımı, Oksit Filmi, Mikroyapı, Korozyon.

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➢ **ORAL PRESENTATION**

A Conservation Study on Rare Endemic *Verbascum adenocaulon* in Central Anatolia

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Abstract
Verbascum adenocaulon Boiss. & Balansa is a rupicolous local endemic taxon and spreads in Çamardı district in Niğde province. It is collected at first by Balansa in 1856. Until now it was not stated any information about the occurrence of this plant. In the context of the study, locations of the populations, number of individuals in metapopulations and habitat features of *V. adeonocaulon* have been examined. The potential threat factors on the species and its habitat have been determined. Also its IUCN conservation threat category and status have been proposed. *V. adenocaulon* is adapted to grow in mobile screes which survive in extreme conditions. The distribution of the species is restricted by steep slopes, high erosion rate, and thin soil layer. It grows together with *Centaurea chrysantha* Wagenitz, *Saponaria prostrata* Willd., *Convolvulus assyricus* Griseb., *Ebenus bourgeaui* subsp. *cappadocica* (Hausskn. & Siehe ex Bornm.) Ponert, *Iberis carnosa* Willd. The occurrence of nearly 144 individuals have been confirmed in the research area. 58 of them are in the form of mature and flowering individuals and 86 of them are in the form of individuals with rosettes. These are the first information about the population size of the taxon and it has not known whether there is any reduction in population or not. However, based on IUCN Red List Categories and Criteria, the estimated extent of occurrence (EOO) of *V. adenocaulon* is not more than 100 km^2 and the population does not have more than 250 mature individuals. According to field studies, overgrazing, road construction, and erosion are the main threats on the population of *V. adenocaulon* and also other endemic taxa in the area. Considering IUCN criteria, the most appropriate status for the taxa is Critically Endangered (CR).

Acknowledgement: This study was supported by the General Directorate of Nature Conservation and National Parks of the Ministry of Forestry and Water Affairs.

Keywords: *Verbascum adenocaulon*, endemic, rupicolous vegetation, Çamardı, Niğde.

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➢ **ORAL PRESENTATION**

Gıdanın emülsiyon özelliklerinin uçucu bileşen salınımına etkisi

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Özet
Bir gıdanın tüketici tarafından kabulü ürünün duyusal özelliklerine ve özellikle lezzetine bağlıdır. Uçucu lezzet bileşenleri burun içindeki olfaktori epitelindeki reseptörlere temas ettiğinde ya da ortonasal olarak direkt koklandığında, retronasal olarak çiğneme/yutma sırasında iletilmektedir. Birçok gıda ürünü emülsiyon olarak hazırlanmakta ya da üretiminin belirli aşamasında emülsifikasyon işlemi uygulanmaktadır. Bu nedenle arzu edilen lezzet özelliklerine sahip gıdanın tasarlanabilmesi için emülsiyonlarda uçucu bileşen salınımının iyi anlaşılması gerekmektedir. Uçucu bileşenlerin salınımı termodinamik ve kinetik iki ana faktör tarafından kontrol edilmektedir. Termodinamik faktör uçucu bileşenin uçuculuğu, kinetik faktör ise emülsiyondan havaya kütlenin geçişte gösterdiği dirençtir. Termodinamik faktör matriks içinde partisyonu, kinetik faktör ise uçucu bileşenlerin salınım hızını belirlemektedir. Gıda emülsiyonlarında su fazı, yağ fazı ve emülsiyon ara yüzeyi istenen bazı yapısal ve uçucu bileşenlerin salınımını modifiye edecek şekilde dizayn edilmektedir. Emülsiyondan uçucu bileşenin salınımı, uçucu bileşenlerin yağ fazı, ara yüzey, su fazı ve tepe boşluğu arasında partisyon ve kütle transferini içermektir. Tepeboşluğu konsantrasyonundaki değişiklik ve salınım hızı toplam lezzet algısını etkilemektedir. Uçucu bileşenlerin emülsiyondan salınımı uçucu bileşenin fizikokimyasal özelliğiyle beraber emülsiyonun bileşimi ve özelliklerinden etkilenmektedir. Bu derleme gıdanın emülsiyon özelliklerinin uçucu bileşen salınımına etkisi hakkında genel bir bakış açısı sunmaktadır.

Anahtar Kelimeler: gıda emülsiyonu, uçucu bileşen salınımı, lezzet

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➢ **ORAL PRESENTATION**

A CSCM approximation for the full MHD equations

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Abstract

In this study, a Chebyshev spectral collocation method (CSCM) is presented for approximating the full magnetohydrodynamics (MHD) equations. The MHD flow is two-dimensional, steady, laminar and incompressible. It takes place in a square cavity that is subjected to an externally applied magnetic field, where the induced magnetic field is also taken into account. The governing equations are given in terms of stream function, vorticity, magnetic stream function, and current density. An iterative scheme is designed that provides a means of approximating the vorticity and current density boundary conditions which are physically unavailable. In this formulation, the divergence-free condition for the magnetic field is automatically satisfied on the whole problem domain.

The numerical results obtained, reveal the fact that the designed procedure based on CSCM, approximates the full MHD equations effectively. Moreover, the divergence-free nature of the magnetic field is shown to be preserved on the whole computational domain.

Keywords: MHD, CSCM, Divergence-free.

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➢ **ORAL PRESENTATION**

Silifke Çeltik (*Oryza sativa* L.) Alanlarındaki Örümcek (Arachnida: Araneae) Faunası

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Özet
Çeltik, *Oryza sativa* L. insan beslenmesinde rol oynayan çok önemli bir besin kaynağıdır. Çeltik ekosistemi binlerce böcek ve örümceğe ev sahipliği yapmaktadır. Bu çalışma, 2016 yılında Mersin ili Silifke ilçesi çeltik alanlarında mevcut örümcek faunasını belirlemek amacıyla yapılmıştır. Çalışma, erken ekilen çeltik alanlarında biçime yakın ve geç ekilen çeltiklerde ise çiçekte ve salkım çıkış (gebe) döneminde yapılmıştır. Örnekleme atrap ve elle yapılmıştır. Toplanan örnekler içinde %70 etil alkol bulunan plastik tüplerde muhafaza edilmiştir. Yapılan teşhis sonucunda, **Araneidae** familyasından *Larinia chloris* (Audouin, 1826) ve *Argiope bruennichi* (Scopoli, 1772), **Philodromidae** familyasından *Thanatus atratus* Simon, 1875, Pisauridae familyasından *Pisaura mirabilis* (Clerck, 1757), Salticidae familyasından *Bianor albobimaculatus* (Lucas, 1846), *Mendoza canestrinii* (Ninni, 1868.) ve, *Heliophanus edentulus* Simon 1871, **Tetragnathidae** familyasından *Tetragnatha nitens* (Audouin, 1826) ve **Thomisidae familyasından** *Runcinia grammica* (C. L. Koch, 1837), türleri belirlenmiştir. Bu türlerin hepsi Türkiye çeltik faunası için ilk kayıtlardır. Ve *Tetragnatha nitens* (Audouin, 1826) ise Türkiye örümcek faunası için ilk kayıttır.
Anahtar kelimeler: Çeltik, *Oryza sativa* L., , örümcek türleri, fauna, Silifke-Mersin, Türkiye

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➢ **ORAL PRESENTATION**

Spiders (Arachnida: Araneae) Fauna in the Silifke Paddy (*Oryza sativa* L.) Fields

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Abstract
Rice, *Oryza sativa* L. is an important food source that plays a role in human nutrition. And, the paddy ecosystem is home to thousands of insects and spiders. This study was carried out for identification spiders species fauna of paddy fields of Silifke district in Mersin province on the Mediterranean Coast in 2016. The study has done during period of cutting for early sown and during periods of flowers and headings for late sown. The samples were collected with sweep-net and by hand and preserve in %70 ethyl alchol in plastic tubes. At the and of diagnose, from the **Araneidae** family *Larinia chloris* (Audouin, 1826), and *Argiope bruennichi* (Scopoli, 1772), from the **Philodromidae** family *Thanatus atratus* (Simon, 1875), from the Pisauridae family *Pisaura mirabilis* (Clerck, 1757), from the Salticidae family *Bianor albobimaculatus* (Lucas, 1846), *Mendoza canestrinii* (Ninni, 1868.) and *Heliophanus edentulus* Simon 1871, from the **Tetragnathidae** family *Tetragnatha nitens* (Audouin, 1826) and, from the **Thomisidae family** *Runcinia grammica* (C. L. Koch, 1837) spider species were recorded. All of these species are first records for paddy fauna of Turkey. And, *Tetragnatha nitens* (Audouin, 1826) is a new record for the spiders fauna of Turkey.

Key Words: Paddy, *Oryza sativa* L., spider species, fauna, Silifke-Mersin, Turkey.

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➢ **ORAL PRESENTATION**

Syrphidae (Diptera) Species and Distribution Areas Detected in Cereal Fields of Turkish Republic of Northern Cyprus*

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Abstract
Syrfid flies (Diptera: Syrphidae) are an important predator fed on different insects, especially aphids in agriculture and forest ecosystems, and also constitute an important group of pollinators. In this study conducted in Lefkoşa, Gazimağusa, Girne, Güzelyurt and İskele Region cereal areas in the Turkish Republic of Northern Cyprus in 2012 and 2015, it was aimed to determine the species belonging to Syrphidae (Diptera) family. Sweep net was used to collect species. A total of 100 atraps were shaken in 10 different places in each field. The collected samples were stored in 70% ethyl alcohol. As a result of research conducted in 2012, *Episyrphus balteatus* (De Geer 1776), *Eupeodes corollae* (Fabricius, 1794), *Melanostoma mellinum* (Linnaeus, 1758), *Paragus quadrifasciatus* Meigen 1822, *Sphaerophoria rueppelli* (Wiedemann, 1830), *Sphaerophoria scripta* Linnaeus, 1758.) and *Syritta pipiens* (Linnaeus, 1758.) and *Eumerus* sp the most common species were seen as *Sphaerophoria scripta* (Linnaeus, 1758) in 2012 year. In the same regions in Northern Cyprus in 2015, *Eupeodes corollae* (F., 1794), *Melanostoma mellinum* (L., 1758), *Episyrphus balteatus* (De Geer, 1776), *Sphaerophoria scripta* (L., 1758), *Syritta pipiens* L., 1758), *Helophilus trivittatus* (F., 1805), *Meliscaeva auricollis* (Meigen, 1822) species were determined and it was seen that *Episyrphus balteatus* is the most common species. *Helophilus trivittatus* (F., 1805), which was found in 2015, is first record for Cyprus Island. The distribution areas of the species determined in the study are given.
Key Words: Cereals fields, Syrphidae species, distribution, TRNC

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➢ **ORAL PRESENTATION**

Syrphidae (Diptera) Species and Distribution Areas Detected in Cereal Fields of Turkish Republic of Northern Cyprus*

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Abstract
Syrfid flies (Diptera: Syrphidae) are an important predator fed on different insects, especially aphids in agriculture and forest ecosystems, and also constitute an important group of pollinators. In this study conducted in Lefkoşa, Gazimağusa, Girne, Güzelyurt and İskele Region cereal areas in the Turkish Republic of Northern Cyprus in 2012 and 2015, it was aimed to determine the species belonging to Syrphidae (Diptera) family. Sweep net was used to collect species. A total of 100 atraps were shaken in 10 different places in each field. The collected samples were stored in 70% ethyl alcohol. As a result of research conducted in 2012, *Episyrphus balteatus* (De Geer 1776), *Eupeodes corollae* (Fabricius, 1794), *Melanostoma mellinum* (Linnaeus, 1758), *Paragus quadrifasciatus* Meigen 1822, *Sphaerophoria rueppelli* (Wiedemann, 1830), *Sphaerophoria scripta* Linnaeus, 1758.) and *Syritta pipiens* (Linnaeus, 1758.) and *Eumerus* sp. The most common species were seen as *Sphaerophoria scripta* (Linnaeus, 1758) in 2012 year. In the same regions in Northern Cyprus in 2015, *Eupeodes corollae* (F., 1794), *Melanostoma mellinum* (L., 1758), *Episyrphus balteatus* (De Geer, 1776), *Sphaerophoria scripta* (L., 1758), *Syritta pipiens* L., 1758), *Helophilus trivittatus* (F., 1805), *Meliscaeva auricollis* (Meigen, 1822) species were determined and it was seen that *Episyrphus balteatus* is the most common species. Helophilus trivittatus (F., 1805), which was found in 2015, is first record for Cyprus Island

Key Words: Cereals fields, Syrphidae species, distribution, TRNC

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➢ **ORAL PRESENTATION**

Effect of electrode dipping temperature on efficiency in dye sensitive solar cell with ZnO electrode

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Abstract
In this day and age, dye-sensitive solar cells (DSSC) are remarkable for their high efficiency and relatively inexpensive production procedures compared to conventional solar cells. In this study, zinc oxide (ZnO), which has attracted attention due to its applications in dye sensitive solar cells, has been used as electrode in DSSC. ZnO nanostructures were produced by hydrothermal synthesis method. Polyvinylpyrrolidinone (PVP) was used as the surfactant in the production of ZnO nanostructures and sodium hydroxide (NaOH) was used as the reactant. In order to determine morphological features of synthesized ZnO nanostructures, Scanning Electron Microscopy (SEM) and X-ray diffraction method were used to determine structural features. For dye-sensitive solar cell production, firstly $TiCl_4$ thin film coated on fluorine doped tin oxide (FTO) glass and then ZnO nanostructures coated by a doctor blade method on the $TiCl_4$ layer. ZnO film, which is used as electrode in DSSC fabrication is immersed in ruthenium based paint solution at different temperatures (at room temperature and 80 °C). ZnO films were kept in a ruthenium-based dye solution for 16 hours to allow dye absorption. In order to create the DSSC structure, the synthesized electrolyte were dropped on the ZnO electrode and the platinum (Pt) coated glass with a small hole in the middle was clipped together with the counter electrode. *I-V* measurements of the produced solar cells were studied by using a standard solar simulator of 1 Sun intensity with AM 1.5 filter. The effect on different parameters such as open circuit voltage, short circuit current, filling factor, and power conversion efficiency of DSSCs were analysed. The effect of the temperature of the electrode immersed in the dye solution on the DSSC performance was investigated.

Acknowledgements: This work was supported by Anadolu University Commission of Scientific Research Projects under Grant No. 1706F385

Keywords: ZnO, DSSC, doctor blade, solar cell, I-V measurements.

➢ **ORAL PRESENTATION**

Farklı Isırgan Tohumu Yağlarının *(Urticae piluliferae oleum)* Sitotoksik Etkilerinin Karşılaştırılması

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Özet

Sitotoksik terimi, hücre ölümüne neden olan anlamına gelmektedir. Sitotoksisite araştırmaları, bir maddenin sitotoksik potansiyelinin olup olmadığının belirlenmesi amacıyla yapılır. Çalışmamızın amacı ticari olarak temin edilebilen farklı markalardaki ısırgan tohumu yağlarının (*Urticae piluliferae oleum*) L929 fare fibroblast hücre hattı üzerindeki sitotoksik etkisinin incelenmesidir.

Avrupa ülkelerinde gençlik yağı veya gençliğin iksiri olarak bilinen ısırgan otu yağı, vücudun savunma sistemine güç vermesi, virüs ve bakteri enfeksiyonlarına karşı direnci arttırması, kanı temizleme etkisi, ısırgan otu yağı yararları olarak bilinmektedir.

Isırgan otu yağının yanı sıra ısırgan tohumu yağının (*Urticae piluliferae oleum*) pek çok faydası vardır. Saç dökülmesinde, romatizma şikayetlerinde, hücre yenilenmesinde ve kanın temizlenmesinde ayrıca, miyom küçültücü olarak kullanılmaktadır. Ancak ülkemizde bu kadar yaygın olarak temin edilebiliyor olmasına rağmen, ısırgan tohumu yağının hücreler üzerindeki sitotoksik etkilerinin karşılaştırılmalı bir çalışması bulunmamaktadır. Bu nedenle çalışma kapsamında bu yağların sitotoksik etkilerinin karşılaştırılarak incelenmesi hedeflenmektedir. Sitotoksik etkiler, sitotoksisitenin değerlendirilmesinde yaygın olarak kullanılan test yöntemlerinden biri olan MTT test yöntemi ile incelenmiştir.

Sonuç olarak, çalışmada L929 fare fibroblast hücresinde MTT test yöntemi ile ticari olarak temin edilebilen farklı ısırgan tohumu yağlarının (*Urticae piluliferae oleum*) sitotoksik etkileri karşılaştırmalı olarak incelenmiştir. Isırgan tohumu yağının (*Urticae piluliferae oleum*) L929 fare fibroblast hücresindeki sitotoksisite testi sonucunda canlılık oranı % 80 olup sitotoksik etki göstermemektedir. *Non-toksik*dir. A marka ısırgan tohumu yağı, B marka ısırgan tohumu yağına göre daha homojen değerler vermiştir.

Anahtar Kelimeler: ısırgan tohumu yağı, sitotoksik etki, L929 fare fibroblast hücresi

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➢ **ORAL PRESENTATION**

Yenilebilir kaplamalara eklenen antimikrobiyallerin mikroorganizmalar üzerindeki etkisi

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Özet
Gıdaları dış etkilerden korumak için kullanılan ve kimyasal yollarla elde edilen sentetik ambalajlar çevreye fazlaca zarar verdiğinden dolayı bilim insanları ekolojik dengeyi korumak için alternatif olarak doğada kolaylıkla yok olabilen ambalajlara yönelmeye başlamışlardır. Bu amaçla doğal yollarla elde edilen yenilebilir film kaplamalar dikkat çekmeye başlamıştır. Bu kaplamalar gıdaların korunmasında iyi bir nem ve gaz bariyeri olarak görev yaparak gıdaların raf ömrünü ve duyusal kalitesini arttırmaktadırlar. Mikroorganizma kaynaklı bozulmaları kontrol altına almak amacıyla yenilebilir kaplamaların bileşimlerine antimikrobiyal maddeler eklenmektedir. Yenilebilir filmlere eklenen antimikrobiyal maddeler, besinlere bulaşan patojen mikroorganizmaların lag fazını uzatarak mikrobiyal gelişmeyi yavaşlatmakta veya gelişmesini engellemektedir. Doğal antimikrobiyal maddeler, kimyasal antimikrobiyal maddelere göre kullanımı sınırlandırılmamakta fakat antimikrobiyal etkiyi gösterdikleri kritik miktar ve üzerinde kullanıldıklarında etkili olabilirler. Antimikrobiyal olarak kullanılan asetik asit, sitrik asit gibi zayıf organik asitler gıdalarda yaygın olarak kullanılan antimikrobiyal maddelerdir. Zayıf organik asitler; peynir, et ve unlu mamuller gibi gıdaların ambalajlanmasında kullanılan filmlere ilave edilebilmektedir. Bu maddeler, antimikrobiyal etkisini ayrışmamış formlarında gösterirler. Ayrışmamış form mikroorganizmaların hücre zarına penetre olmakta ve hücre içi asitliği yükseltip sitoplazma pH'sını değiştirerek mikroorganizmayı inaktive etmektedir. Baharatlardan ve bitkisel kaynaklardan elde edilen doğal özütler, içerdiği fenolik bileşenler sayesinde güçlü antimikrobiyal etkiye sahip maddelerdir. Bu maddeler antimikrobiyal etkisini mikroorganizmaların hücre zarındaki fosfolipit tabakasını bozup, enzim sistemini etkisiz bırakır. Bakteriyosinler olarak adlandırılan antimikrobiyal maddeler, mikroorganizmalardaki proteinlere etki eder. Bu bileşiklerden biri olan nisin, gram negatif bakteriler üzerine antimikrobiyal etkisinin zayıf olduğu bilinmekle birlikte, bu bakterilerin hücre membranı termal şoka maruz bırakıldığında veya EDTA gibi şelat yapıcı kimyasal maddelerle muamele edildiğinde nisin gram negatif bakterilere karşı da belirli düzeyde bir antimikrobiyal etki göstermektedir. Antimikrobiyal enzimler, besinle temas eden film yüzeyinden besinin iç kısımlarına doğru etki ederek, mikrobiyal toksin üretimine engel olurlar. Bu derlemede kaplamalara eklenen antimikrobiyallerin mikroorganizmalar üzerine inhibe etkisi araştırılmış ve bundan sonra yapılacak olan çalışmalara yardımcı olması amaçlanmıştır.
Anahtar Kelimeler: Yenilebilir Kaplama, Antimikrobiyal maddeler, Ambalaj

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➢ **ORAL PRESENTATION**

Kobalt floroborat sentezi ve alev geciktirici olarak kullanılabilirliği

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Özet
Özel bor ürünleri; geniş kullanım alanına sahip, katma değeri yüksek bileşiklerdir. Bu çalışmada özel bor ürünlerinden biri olan kobalt floroborat, reaktant olarak kobalt (II, III) oksit ve floroborik asit kullanılarak sentezlenmiştir. Reaktant mol oranı (HBF_4/Co_3O_4), süre ve sıcaklık parametrelerinin ürün verimi üzerine etkisi incelenmiştir. Karakterizasyon çalışmalarında BF_4^- iyon seçici elektrot ve FT-IR kullanılmıştır. Reaktant mol oranı 12:1 ve 90 °C'de % 91 verimle kobalt floroborat elde edilmiştir. Ürün %98 saflıktadır. Sentezlenen kobalt floroboratın farklı derişimlerde (%15, %30) çözeltileri hazırlanmış, aynı boyut ve özelliklere sahip kumaşlara emdirilmiştir. Kobalt floroborat çözeltisi emdirilmiş kumaşlar LOI (limiting oxygen index) testine tabi tutulmuştur. LOI değeri, bir materyalin havada yanmaya devam etmesi için gereksinim duyduğu % oksijen miktarı anlamına gelmektedir. İşlem görmemiş kumaşın LOI değeri 16 iken, %15 derişimde kobalt floroborat çözeltisi emdirilmiş kumaşın LOI değeri 34, %30 derişimde kobalt floroborat çözeltisi emdirilmiş kumaşın LOI değeri 36 olarak bulunmuştur. Bu sonuçlar ışığında kobalt floroboratın etkili bir alev geciktirici olduğu belirlenmiştir.

Anahtar Kelimeler: Kobalt floroborat, alev geciktirici, LOI

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➢ **ORAL PRESENTATION**

Investigation of the effects of Guaiazulene on MDA amount and phenoloxidase enzyme activity in *Drosophila melanogaster*

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Abstract
In this study, we aimed to investigate the effect of Guaiazulene (Gua) which is an antispasmotic, antimicrobial activity, which is a cosmetic color agent, used in skin and body care products, toothpastes, hair dyes and eye solutions, on the amount of MDA and phenoloxidase enzyme activity in *Drosophila melanogaster* individuals. Guaiazulene (Gua) (1,4-dimethyl-7-isopropylazulene) is obtained from Guajacum ojficinale (Zygophyllaceae) and Matricaria chumomilla (Asteraceae). It is a dark blue colored crystalline bicyclic sesquiterpendir. Gua is an antispasmodic, antimicrobial activity chemical. It is used in herbal treatment with this aspect. Gua is a cosmetic colorant approved by the FDA (Food and Drug Administration) in the USA, and is used in skin - body care products, toothpastes, hair dyes and eye solutions. *D.melanogaster* has many features that make it preferable for research and makes it superior to other organisms. The model organism *D.melanogaster* used in the study was obtained from the Health Vocational School of Amasya University, *D.melanogaster* individuals were divided into male and female every 6 hours. The collection process lasted 72 hours and individuals were placed on a Gua-containing medium at the end of 72 hours. In this study, the amount of MDA and phenoloxidase enzyme activities were investigated. It was observed that the amount of MDA increased significantly due to increased dose of Gua ($p < 0,05$). There was no difference in MDA between male and female individuals. Although differences in phenoloxidase activity due to increased dose of Gua were possible, these differences were not statistically significant. There was no significant difference in phenoloxidase activity between male and female individuals. It was concluded that high doses of Gua, which is widely used in health and cosmetic field, did not change the phenoloxidase activity while causing MDA formation which is the product of oxidative stress.
Key words: Guaiazulene, MDA, Oxidative stress, *Drosophila melanogaster*

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➢ **ORAL PRESENTATION**

Low frequency antiplane shear vibrations of a three-layered elastic plate

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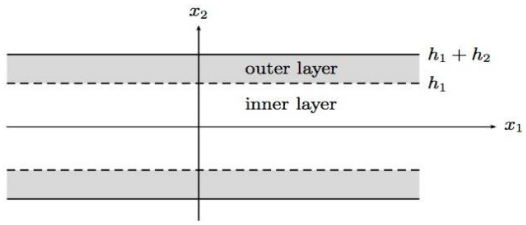
Abstract
The construction of multi-layered structures, particularly plates and shells composed of three layers, also known as sandwich plates, with geometrical symmetry and high contrast in material properties has long been in demand. In this work we extend the results of [1, 2] to derive the dispersion relation of antiplane motions of a three-layered, strongly inhomogeneous plate in two different configurations: a) stiff, thick outer layers with soft, thin inner layer b) soft, thin outer layers with stiff, thick inner layer. Such configurations are encountered in, for example, laminated glass plates used in photovoltaic panels (see, [3]) in case (a) and dust-covered precipitator plates in gas filters (see, [4]) in case (b). The obtained dispersion relation is expanded in a series in the low frequency range and results in the same equation for both configurations. However, this expansion may still be shortened and, taking into account the problem parameters, it is found that each configuration has a different shortened polynomial equation. The obtained shortened equations are then compared against the "exact" dispersion relation and the results are illustrated in figures. Finally, we derive the asymptotic form of the equations of motion in the case of thin, soft outer layers with thick, stiff inner layer.
Keywords: Asymptotic, cut-off, dispersion, wave, layered structure.



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➢ **ORAL PRESENTATION**

Size analysis on the first upper molar of the hazel dormouse

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Abstract
The hazel dormice live at small populations and need rich heterogenous habitats. This may cause specialization to their habitats and differentiation of their phenetic characters. We searched geographical location with intraspecific variation of tooth size and tested relationship between size of the first upper molar and longitude of the hazel dormouse, *Muscardinus avellanariu*s (Linnaeus, 1758), populations in Anatolia. Initially, outline analysis was done on occlusal surface of the first upper molars. Then, square root of the efa area scores were obtained and longitude of populations of hazel dormouse were compared. As a result, we found that the smallest specimens belonged to Trabzon population, while the largest ones belonged to Bolu populations. However, in general, there is weak size differentiation between biogeographic populations of the genus *Muscardinus* in the way of geographical location.
Keywords: *Muscardinus*, Teeth, Geometric morphometrics, Size, Anatolia
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➢ **ORAL PRESENTATION**

Total phenolics, flavonoids and antioxidant capacity in *Melissa officinalis* L. leaves under the combination of salinity and nickel stresses

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Abstract
Plants are naturally exposed to a number of different abiotic stress factors in simultaneously under field conditions. Among abiotic stresses, soil salinity cause osmotic and ionic stresses, leading to various growth and physiological damages to plants. Ni is an essential metal ion which is required in trace amounts for growth and development of higher plants; however, it is strongly phytotoxic at high concentrations for plant species. The aim of this work was to investigate the interaction between salt and nickel on growth parameters, lipid peroxidation, total phenolic compounds (TPC), total flavonoid (TF) contents and antioxidant capacity values (FRAP, CUPRAC and DPPH radical scavenging capacity) in the leaves of lemon balm (*Melissa officinalis* L.), an important medicinal herb of the Lamiaceae family. In this study, thirty-day-old seedlings were treated with 100 mM NaCl and/or 500 µmol/L $NiSO_4.7H_2O$ for two weeks. Salt and Ni treatments significantly reduced relative growth rate (RGR), but the reduction in RGR was more pronounced with the combination of NaCl and Ni stresses. Salt and nickel combination also showed the same increases in lipid peroxidation in lemon balm. On the other hand, the content of TPC, TF and antioxidant capacity values increased in leaves treated with the combination of NaCl and Ni, as compared to control plants. As a result, there are a limited number of studies which conducted in terms of alterations in physiological and biochemical responses under salt, nickel and their combination. To the best of our knowledge, this is the first study conducted on the total phenolics compounds, total flavonoids contents and antioxidant capacity of lemon balm under salt and nickel combinations.
Keywords: Antioxidant capacity, Lemon balm, *Melissa officinalis*, Nickel, Salt stress

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➢ **ORAL PRESENTATION**

Effects of trace element and mineral compounds on biochemıcal profile and pregnancy rate in akkaraman ewes

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Abstract
In this research, we aimed to evaluate the effects of injectable selenium, vitamin E and B compounds on serum metabolic profile and pregnancy rates during non-breeding season in Akkaraman ewes that synchronized with progesterone and pregnant mare serum gonadotropin (PMSG).

A total of 20 ewes, aged 2-4, were used in present study. Animals were randomly assigned into two groups. Group 1 and Group 2 were synchronized with same protocol. At day 0 sponges that contains progesterone were inserted in vagina for 14 days. Also, all animals received 125 mcg PGF_{2a} intramuscularly at day 0. Following sponge removal 400 IU PMSG were applied intramuscularly. Group 1 (n=10), received 1 mg sodium selenite, 60 mg vitamin E and 40 mg vitamin B1 at the beginning of sponge insertion and following sponge removal. Group 2 (Control, n=10) didn't receive treatment. Blood samples taken from jugular vein into evacuated tubes without anticoagulant at sponge insertion and removal. Serum samples were analyzed for concentrations of calcium, total protein, urea, glucose, cholesterol. After removal of sponges the ewes mated with fertile rams. Pregnancy determined by transabdominal ultrasonography 50 days after mating.

Serum calcium, cholesterol, total protein and urea concentrations were similar in both groups. There were no interaction between group by time for these parameters ($P>0.05$). However, group 1 ewes showed higher glucose concentration at sponge insertion and removal. Also, trace element and vitamin supplementation increased blood glucose concentration in ewes ($P<0.05$). On the other hand, serum calcium levels increased in group 1 ewes after sponge removal ($P<0.05$). Pregnancy rate were higher in group 1 (%52) than group 2 (%40).

In conclusion trace element and vitamin injections during synchronization in non breeding season increased pregnancy rate in ewes. As well as these treatment increased blood glucose and calcium metabolism positively in Akkaraman ewes.

Keywords: Trace element, biochemical profile, pregnancy, ewe

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➢ **ORAL PRESENTATION**

Sustainable remediation of nitrate contamination in the agricultural fields

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Abstract
For a successful food production sufficiently high yield of product should be taken from a unit area and this - especially with current agriculture system - requires a suitable irrigation, fertilization methods and pest controls. Those processes are always interconnected with their surrounding environment. As a result, groundwater, especially beneath the agricultural areas is highly affected by fertilizer contamination. Yet, all remediation options aim to destroy contaminants, which are in fact very significant commodities, and very costly to produce. Another option would be "pump and fertilize", a remedy that could treat the groundwater while reducing the contamination. Before applying a pump and fertilize technology an estimation of the possibility needs to be done. Since the main issue of fertilizer application is high nitrate concentrations in the groundwaters our contaminant of choice was nitrate. In this study, we constructed models for different climates on the unsaturated zone via HYDRUS 1D for one-hectare maize fields because of the high nitrate recommendations to grow corn. Our study focused in prevalent soils in Turkey and Eskişehir, Adana, Şanlıurfa, Düzce climates in Turkey, assessing the most likely promising conditions for pump and fertilize. Our results showed that climates of Sanliurfa with its soil type are the most suitable areas to apply this technology. We also observed that even groundwaters contaminated with 50 mg/L nitrate concentrations could be used to substitute fertilizers and this application would potentially reduce around 500 kg/ha of fertilizer application.
Keywords: reuse, pump and fertilize, groundwater contamination, nitrate.

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➢ **ORAL PRESENTATION**

In situ Crosslinkable Thiol-ene Hydrogels Based on PEGylated Chitosan and β-Cyclodextrin

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Abstract

Novel β-Cyclodextrin incorporated injectable hydrogels employing PEGylated chitosan as bio-based hydrophilic matrix have been fabricated via thiol-ene reaction. As thiol bearing polymer counterpart of hydrogel precursors, native chitosan was firstly modified with polyethylene glycol groups to increase its water solubility and bioinertness and then decorated with thiol groups to facilitate thiol-ene crosslinking with acryloyl-modified β-cyclodextrin. A series of hydrogels with varying amounts of acryloyl β-CD and PEGylated chitosan feed were synthesized with high efficiency under mild aqueous conditions. The resulting hydrogels were characterized by equilibrium swelling, structural morphology and rheology. These materials were investigated as controlled drug release platforms by employing a poorly water soluble anti-inflammatory drug diclofenac as model compound. Benefiting from the inclusion complex formation of the drug with β-CD groups in gel interior, prolonged release profiles were maintained. The total drug absorption and release of hydrogels were shown to be dependent on the amount of β-CD in gel matrix. These hydrogels combined efficient crosslinking and β-CD incorporation into clinically important chitosan scaffold and might have potential applications as injectable drug reservoirs such as in regenerative tissue engineering.

Keywords: Drug releasing hydrogels, chitosan, β-cyclodextrin, thiol-ene crosslinking, injectable gels.

Acknowledgements:

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➢ **ORAL PRESENTATION**

Silan bazlı süperhidrofobik yüzey kaplama malzemelerinin raft polimerizasyon yöntemiyle geliştirilmesi

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Özet

Su sevmeyen ve su ile etkileşime girmek istemeyen (hidrofobik) malzemeler, son yıllarda hem akademik çevrelerce araştırma maksadıyla hem de endüstriyel ve teknolojik uygulamalar açısından üzerine eğinilen önemli bir konudur. Bu yaygın ilgideki başlıca etken, bu malzemelerin pek çok potansiyel kullanım alanlarının olmasıdır. Söz konusu uygulamalar sürtünmeyi azaltmak için uçak ve gemi gövdelerinin kaplanmasından, köprülerin ve yağmurun etkilerine açık başka yapıların korunmasına, elektronik devrelerin kaplanmasına, su ve gaz taşıyan boruların geçirgenliğinin yükseltilmesiyle enerji tasarrufuna, giysilerin ve derilerin kendi kendini temizler ve su tutmaz hale getirilmesine genişlemektedir. Malzemelerin sahip olabileceği su sevmezliğin dereceleri bulunmaktadır. Endüstriyel ve ticari kullanım açısından en çok uygulama alanı bulunanlar süperhidrofobik yapıdaki malzemelerdir. Süperhidrofobik yüzeylere/yapılara doğada rastlanırken (örneğin lotus ve nilüfer yaprağı), sentetik olarak da değişik metotlarla süperhidrofobik yapılar/yüzeyler hazırlanabilmektedir. Bu konudaki öncelikli gereklilik, su moleküllerinin yüzeyde tutunabileceği alanı küçülterek su damlacıklarının yüzey gerilimini olabildiğince yüksek tutmaktır. Bunu başarmak için tercih edilen bir yöntem yüzey pürüzlülüğünü artırarak sıvı damlalarının düzgün tabana temas etmeyip mikroskopik "sırıklar" üzerinde durmasını sağlamaktır. Süperhidrofobik yapıların ve yüzeylerin hazırlanması için yaygın olarak kullanılan bir başka yöntem ise perfloro bazlı monomer ya da polimerler ile malzemenin kaplanmasına dayanmaktadır. Perfloro polimerler çok düşük yüzey enerjili malzemeler olduğundan su ve yağ tutmayan yüzeyler hazırlamada yüksek performans göstermektedirler. Bu çalışmada cam, metal gibi yüzeylere bağlanma özelliği olan organik silan grupları içeren perfloro bazlı polimerlerin RAFT polimerizasyon yöntemi ile üretilmesi ve süperhidrofobik yüzey oluşturma uygulamalarının gösterilmesi amaçlanmıştır.

Anahtar Kelimeler: Süperhidrofobik yüzey kaplama, silan bazlı polimerler, RAFT polimerizasyonu.

Teşekkür: Bu çalışma, Yalova Üniversitesi Bilimsel Araştırma Projeleri (BAP) Koordinasyon Birimi tarafından Proje No: 2015/AP/132 ile desteklenmektedir.

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➢ **ORAL PRESENTATION**

Current information on the genus *Iberis* L. (Brassicaceae) in Turkey

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Abstract

The genus *Iberis* L. (Brassicaceae) consists of about fifty species of annuals, perennials and evergreen subshrubs worldwide.
The common name of *Iberis* L. is candytuft. *Iberis* is the only genus of the tribe *Iberideae* and typical with its monosymmetric flower structure in Brassicaceae family. Therefore zygomorphic symmetry is seen in *Iberis*, not bilateral. Flower colours are white, pinkish or purplish. Corymbose infructescense, angustiseptate and two-seeded fruits are important diagnostic characters for identification of *Iberis* species. It is represented by nine taxa in Turkey; *Iberis carica* Bornm., *Iberis carnosa* Willd., *Iberis halophila* Vural & H. Duman, *Iberis odorata* L., *Iberis saxatilis* L. subsp saxatilis, *Iberis saxatilis* subsp. *magnesiana* Oskay, *Iberis sempervirens* L., *Iberis simplex* DC. and *Iberis umbellata* L.. While *I. sempervirens* is the only subshrub and evergreen species of the genus found in Turkey, *I. simplex* DC. is widely distributed in Turkey and found in many regions of the country. *I. carnosa* Willd. is a typical Mediterranean phytogeograpical element. Three taxa, *I. carica*, *I. halophila* and *I. saxatilis* subsp. *magnesiana* are endemic to Turkey, even *I. halophila* and *I. saxatilis* subsp. *magnesiana* are local and restricted endemics.

Keywords: *Iberis*, Brassicaceae, taxonomy, endemism, phytogeography, Turkey

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➢ **ORAL PRESENTATION**

A review on applications of smart grid maturity model

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Abstract
The growing demand for electricity in the world leads to the growth of electricity networks and increasing complexity. The importance of efficient and reliable smart grids using information and communication technology is increasing in electricity network with the advancement of technology. Many countries create roadmaps, methodologies and strategies for transition from traditional network systems to smart grids. In this context, Smart Grid Maturity Model was developed by Software Engineering Institute (SEI) in 2011 as an auxiliary model for determining targets, establishing roadmaps and implementing management objectives for transition to smart grids. This model provides a general framework to define requirements for transition to smart grids and is a reference to monitor the processes in this transition. The Smart Grid Maturity Model groups the transition to smart grids in eight domains: tecnology, customer, strategy, management and regulatory, organization and structure, value chain integration, grid operations, work and asset management and societal and environmental. Some countries refer to this model during the transition to the smart grids. In this study, the characteristics and capabilities, advantages and disadvantages of Smart Grid Maturity Model are discussed. Examples of countries planning the smart grid transition process with reference to this model are examined. Status of Turkey is also discussed in the same approach to transition to smart grids.
Keywords: Smart Grid, Maturity Model, Smart Grid Models, Smart Grid Management, Maturity Assessment

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➢ **ORAL PRESENTATION**

Ladik gölü çevre sorunları ve çözüm önerileri

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Özet

Ladik Gölü, Samsun İli'nin Ladik ilçesine 10 km uzaklıkta olup yüzölçümü 10 km^2, maksimum derinliği 6 m civarında olan yaklaşık 870 ha alana sahip ötrofik karakterli bir göldür. Doğal kaynak değerleri bakımından zengin olan Ladik Gölü, ülkemizde bulunan 45 adet "Ulusal Öneme Haiz Sulak Alan"dan biridir. Ladik Gölü'nün Islahı çalışmaları çerçevesinde 1986 yılında göl sulama amaçlı bir baraj gölü haline getirilmiştir Gölü besleyen ana akarsular; gölün doğu kısmından giriş yapan Küpecik deresi, gölün güneybatısından giriş yapan Aşağıgölyazı deresi, göl batısı Ladik yerleşimi tarafından gelen yüzeysuyu ise drenaj kanalları ile ıslah edilerek göle boşalımı sağlanmıştır. Göl kuzeyinde ise DSİ tarafından inşası yapılmış Ladik regülatörü ile göl çıkışından Tersakan çayına boşalım sağlanmaktadır. Gölün ciddi çevre sorunları vardır, bu sorunlardan en önemlisi göl seviyesindeki azalmadır. Arastırma için değisik kaynaklardan yararlanılmıstır. Literatür, haritalar, hava fotoğrafları ve uydu görüntüleri yardımıyla gerek günümüzdeki durum gerekse geçmisten bugüne kadar olan değişim ortaya konulmustur. Göl tabanının erozyon nedeni ile dolması, sulama için aşırı su çekilmesi gölün ekolojisinde ciddi sorunlara yol açmıştır. Ladik Gölü ve çevresinde sulak alanın özellikle su miktarının yıllara ve mevsimlere göre azalması, göl aynasının zamanla küçülmesi ve karayoluna bağlı olarak habitat kayıpları ve parçalanmaları gözlenmiştir. Su seviyesi 2018 yılı içinde 4.5 metreden 80 santimetreye düşmüş, yüzen adaları bu özelliklerini yitirmiş, turna balığı populasyonu büyük oranda azalmıştır. Göl su toplama havzasında Aşağıgölyazı, Yukarıgölyazı, Tatlıcak, Bolat, Hamit, Kıranboğaz, Mazlumoğlu, Aktaş, Cüce ve Küpecik Mahallelerine ait tarım alanları bulunmaktadır. Bu durum gölden sulama suyuna olan talebi arttırmaktadır. Ladik Gölü ve çevresinde bu olumsuz parametrelerin süreklilik arz etmesi durumunda Göl'ün yakın zamanda sulak alan özelliğini kaybetmesi kaçınılmaz olacaktır. Bu arastırmanın amacı Ladik Gölü su toplama Havzasındaki arazi kullanım özellikleri ile göl hidrolojisi arasındaki ilişkileri ortaya koyarak bu özeliklerin Ladik Gölü üzerindeki etkilerini saptamak ve çözüm yolları önermektir.

Anahtar Kelimeler: Arazi Kullanımı, Çevre Sorunları, Samsun, Hidroloji

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➢ **ORAL PRESENTATION**

Ülkemizdeki baraj ve göletlerin hidrolojik bazı özelliklerinin tespit edilmesinde ve yönetiminde CBS ve UA yöntemlerinin kullanılması

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Özet

Su kaynaklarının izlenmesi, korunması ve optimum kullanım koşullarının değerlendirilmesi çalışmalarında klasik hidrojeolojik ve hidrolojik yöntemlerin yanısıra uzaktan algılama (UA) ve coğrafi bilgi sistemleri (CBS) teknolojilerinden de yararlanılmaktadır. Bu teknolojiler, su kaynakları ile ilgili araştırmalarda karar verme ve yönetim konularında önemli altlık oluşturmaktadır. Ayrıca, su kaynaklarındaki zamansal ve mekânsal değişimlerin belirlenmesi ve gerekli önlemlerin alınması aşamasında da uzaktan algılama ve CBS çok önemli avantajlar sağlamaktadır. Söz konusu yöntemler hidrojeoloji ve hidroloji araştırmalarını destekleyerek yararlı bilgilere kısa sürede ulaşmamızı sağlamaktadır. Su kaynaklarımızdan daha etkili yararlanmak ve bunları kısmen de olsa kontrol altına alabilmek, suya olan talebi karşılamak için ülkemizde çok sayıda baraj ve gölet inşa edilmiş ve edilmektedir. Çalışmamızın amacı CBS-UA teknolojileri ve arazi verilerinin birlikte kullanıldığında ülkemizdeki göletlerin ve barajların sağlıklı işletilebilmesi için önemli veri altlıklarının elde edilebileceğini göstermektir. Gölet ve barajların batimetrik haritalarının üretilmesi zaman alıcı, maliyetli ve işgücü gerektiren çalışmalardır. Bu zorlukları aşmak için bu çalışmada literatüre dayalı olarak sınırlı veri ile ve yeterli batimetrik veri olmadığında baraj ve göletlere ait yüzeysel su alanı değişimi, arazi kullanım etkisi, hacim tahmini CBS ve UA yöntemleri ile nasıl yapılabilir gösterilecektir. Küçük göletler, ulaşılması ve örneklenmesi zor göletler, batimetrik çalışmaların yoğun işgücü, zaman ve para gerektirdiği büyük barajlar için CBS ve UA yöntemlerinin klasik batimetrik yöntemlere göre getirdiği avantajlar ayrıca tartışılacaktır.

Anahtar Kelimeler: Arazi Kullanımı, Göl Yüzeyi Değişimleri, Su Kaynakları, ,Landsat Görüntüsü, Su Yönetimi

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➢ **ORAL PRESENTATION**

Newton Raphson ve Gauss Seidel sayısal çözüm yöntemlerinin havacılık problemlerinin çözümünde kıyaslanması

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Özet

Newton Raphson ve Gauss Seidel doğrusal olmayan denklem sistemlerinin çözümünde kullanılan bilinen iki sayısal çözüm yöntemleridir. Bu iki yöntemin havacılık problemlerinin çözümünde kıyaslanması ele alınmıştır. Ele alınan problem uçağın boylamsal hareketi ve dönüş hareketi denge hallerinin analizidir. Bunun için sabit kanatlı bir uçağın üç ve altı serbestlik dereceli dinamik modeli oluşturulmuş ve bu iki yöntem oluşturulan iki test durumunun çözümünde kullanılmış ve kıyaslanmıştır.

Anahtar Kelimeler: Newton Raphson, Gauss Siedel, uçuş dinamiği, boylamsal haraket, uçak dönüş hareketi

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➢ **ORAL PRESENTATION**

Structural and rheological properties of gelatin-carrageenan mixtures

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Abstract

Gelatin due to its superior gelling and emulsifying properties is widely used especially in food industry. It is a protenious gelforming food material with a good film forming ability to coat fruit and vegetables because of its resistance to water vapour and protective effect for air diffusion but and Gelatin (G) can be modified with other compatible polysaccharides used as stabilizer and thickener such as carrageenan (CR)-a complex polysaccharide with a good biocompatibility- to reinforce its mechanical strength and rheological properties CR in different food formulations. Therefore, the objective of the study is to provide investigation of the comprehensive gel strength of G-CR mixture by using linear oscillatory rheometry and textural analysis. Rheological steady shear and dynamical measurement of G-CR (1.00 % , w/v) mixtures at equal mixing ratio (1:1) at pH 7.0 were performed using stress controlled rheometer. The results reveal that Herschel-Bulkley (HB) rheological flow model gives the best fit (R^2=0.993) to capture the flow characteristics of highly yielding G-CR mixtures. Carrageenan improves the gel strength of the mixture due to moving towards more elastic modulus (order of G'≈10^3) as compared to gelatin elastic modulus (order of G'≈10). At 1.0 % of gum concentration, 1:1 of gum ratio, 13 ^oC of temperature, and pH of 7.0, the gel strength and texture for G-CR blends were found to be as 180.55 Pa.s^n and 4.71 N, respectively. Strengthening of gel network structures were also confirmed using SEM analysis of G-CR mixtures.

Keywords: Rheological measurements, Gelatin (G), Carrageenan (CR), G-CR gel network

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➢ **ORAL PRESENTATION**

Girişimcilik, Yaratıcılık ve Risk

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Özet
Girişimcilik, toplumsal refahın ve sosyo-ekonomik gelişimin anahtarlarından biridir. Son zamanlarda revaçta olan girişimcilik, bundan dolayı dünyanın her yerinde desteklenen ve teşvik edilen bir konu haline gelmiştir. Büyük başarılar büyük risk almayı gerektirir. Bu nedenle girişimci risk alabilen kişidir demek doğrudur. Girişimci, başarma ihtiyacı duyma, özgüven, risk alabilme, belirsizlik toleransı ve yenilikçi olma özelliklerine sahip olmalıdır. Başarma ihtiyacı duyma konusunu ele aldığımızda, genel olarak bu konunun aslında kişinin kendi patronu olma isteğinden doğduğunu görebiliriz. Ancak gerçek şu ki başarı oranı çok yüksek değildir. Girişimcilik, fırsatları kullanarak yeni fırsatlar yaratabilmektir. Bu noktada bakmak ve görmek arasındaki farkın önemini vurgulamak gerekir. Bu özellikler sağlandığında, sahneye yetenek ve zamanlama çıkar. Doğru zamanda doğru yerde olma durumu ise tek başına bir konudur.

Anahtar Kelimeler: Girişimcilik, girişim, yaratıcılık, risk

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➢ **ORAL PRESENTATION**

Theoretical Disquisition of Angular Distributions for ^{6,7}Li Elastic Scattering Reactions from Heavy Mass Target ^{208}Pb Around The Coulomb Barrier

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Abstract
Angular distributions for ^{6}Li and ^{7}Li elastic scattering reactions from heavy mass target ^{208}Pb have been systematically calculated at laboratory energies around the Coulomb barrier for E_{LAB} at various MeV regions within the theoretical framework. Optical-model parameters for Woods-Saxon real and imaginary volume potentials have been used for to illustrate the data. The corresponding ratios to Rutherford scattering and relevant barrier distributions of elastic scattering cross-sections have been attained from 0^0 to 180^0. The theoretical calculations shed light on a well-rounded definition of the empricial angular distribution data.
Keywords: Elastic Scattering, Angular Distributions, Cross Sections, Optical Potential.

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➢ **ORAL PRESENTATION**

Effects of stabilization on physicochemical properties and antioxidant activity of rice bran

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Abtract

Rice (*Oryza sativa* L.) is one of the most important cereal crop and it comsumed as a staple food for more than half of the world's population. Rice bran (RB) main by-products of rice milling with highest nutritional value, is removed from the endosperm during milling. The typical composition of RB includes 11.3-14.9% protein, 62% starch, 7-11% crude fiber, 1% β-glucan, 15-19% oil. It is a rich source of bioactive compounds such as tocopherols, ɣ-oryzanol. Despite the high biological value of RB, it is used as an animal feed in many countries as RB is sensitive to rancidity during storage. The objective of this study was to determine the effects of different stabilization treatments on the free fatty acid (FFA), peroxide value (PV), phytic acid content of RB. RB was stabilized in the oven including 10% moisture. Three different stabilization temperatures and stabilization times were applied for stabilization (120°C -20 min, 140°C-15 min, 160°C-10 min). All samples were stored at the -18°C. Initial FFA value of control was 4.5, this value increased to 17.89 within 24 hours after milling. During in the 3-months storage FFA value did not significantly increase for stabilized samples but it increased in control samples. PV of stabilized RB samples after 3 months of storage were lower than 10 meq/kg, which is the acceptable limit for oils and fats according to Codex Alimentarius Commission. While the antioxidant activities of the RB samples increased significantly, phytic acid content did not change with the stabilization. From the present work, it could be concluded that stabilization process had a significant effect on antioxidant properties, the amount FFA and PV.

Key words: Antioxidant activity, rice bran, stabilization,

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➢ **ORAL PRESENTATION**

UV-VIS and fluorescence investigation of an acetonaphthone type photoinitiator

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Abstract

Polymerization reactions are extensively performed in various commercial areas such as coatings, 3D curing, imaging materials, photoresists, halographic recordings and nanoscale micromechanics. The development of the photocuring industry depends on improvement of photoinitiating systems that have the standarts required for industrial fabrication. Photoinitiators produce reactive species like free radicals or ions that are efficient in UV-curing systems. Because of their vital role in photopolymerization, they are the subject of particularly extensive research.

Recently, an acetonaphthone based photoinitiator, 2-pyrrolidino acetonaphthone (MPY) was synthesized and characterized by spectral analysis. Solvent effects on the electronic absorption and fluorescence emission spectra of MPY were determined in this study. Molar absorptivity values of MPY in various solvents with different polarities are calculated from absorption spectra. Moreover, singlet energies were obtained by nearly mirror-image-like relations between the excitation and emission spectra in different solvents.

Keywords: Photoinitiator, acetonaphthone, solvent effect, absorption spectra, singlet energy.

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➢ **ORAL PRESENTATION**

Finite Element Modelling of a Nanoscale Semiconductor Device

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Abstract
Chalcogenide elements are promising materials due to their extraordinary properties, such as having two different metastable states (polycrystalline and amorphous) to benefit in many research area such as data storage, sensor, detector, and transistor. Therefore, a semiconductor device using chalcogenide elements as an essential constituent is considered as a potentially revelation technology for future ultra-high density data storage application. In addition to the other superior properties, high contrast between 0 and 1 logic states brought out the possible application of the idea of multiple logic levels in a single bit in an effort to boost data storage density. The potential stabilization of resistance levels in between the 0 polycrystalline and 1 amorphous states enables storage of several data in a single cell (such as 00, 01, 10, 11 levels). I report on my investigation of the role of the current injection in stabilizing intermediate states within a nanoscale cell (Ge2Sb2Te5/Ge2Sb2Te5) to obtain more intermediate states than a single layer cell for fabrication of a multiple-bit-per-cell. First, to visualize the complex nature of the switching dynamics, 3D finite element simulations were carried out in cell with two layers Ge2Sb2Te5/Ge2Sb2Te5 (GST/GST) alloys incorporating phase change kinetics, electrical, thermal and percolation effects, all as a function of temperature, using an iterative approach with coupled differential equations as well as Seeback coefficient to account for thermoelectric effect. The nature of switching dynamics appears highly sensitive to the exact programming current distribution and defect density. My model suggests that the physical origin of the formation of stable intermediate states unexpectedly in circular top contact devices is mainly due to anisotropic heating during the application of a programming current pulse. My model successfully predicts the required programing conditions for such mixed-phase levels, which can be used to optimize memory cells for future ultra-high-density data storage applications. **Keywords:** Semiconductor, Phase Change, Switching Dynamics, Intermediate Levels, Multiple-bit-per-cell, Finite Element Modelling

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➢ **ORAL PRESENTATION**

Three Dimensional Finite Element Modelling of an Artificial Spin Ice Network

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Abstract
Magnonic crystal is a new crystal arrangement to regulate magnetic properties in a magnetic network. Advanced nanotechnology design possibility enables the generation of connected ferromagnetic nanowire networks functioning as magnetic metamaterials. Artificial spin ice (ASI) is consisting of lithographically fabricated 2D ferromagnetic nanoscale islands to imitator the magnetic behavior of crystalline spin ice. The purpose of fabrication of ASI is to study of degeneracy control of magnetic ground states, the direct observation of magnetic monopoles, and the dynamics of magnetic charges. ASI structures are not only model systems in which to study geometrical frustration, but also essential in the development of a wide range of potential applications such as information storage, signal propagation, and logic devices. Therefore, it is necessary to conduct a systematic study on the static and dynamic behaviors of the ASI structures. For this reason, I report on my investigation of the role of the current injection in a nanoscale cell (Permalloy ASI network) to understand heat profile and critical programming current not to disturb the magnetic properties of network. Because, temperature is a fundamental parameter to affect the magnetic properties of the network and to lose their desire magnetic properties. First, to visualize the complex nature of the ASI network, 3D finite element simulations were carried out in cell with mono layer Permalloy incorporating electrical and thermal effects, all as a function of temperature, using an iterative approach with coupled differential equations as well as Seeback coefficient to account for thermoelectric effect. My model suggests that the heating profile is mainly due to isotropic/anisotropic heating depending on the geometry and contacts positions during the application of a programming current pulse. My model successfully predicts the temperature distribution for different type of networks, which can be used for different purposes like data storage or logic device application.
Keywords: Magnonic crystal, Artificial spin ice, Finite Element modeling, Heating profile, Geometry Dependency.

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➢ **ORAL PRESENTATION**

Çevik model kullanan yazılım projelerinde test otomasyon aracı seçimi: Örnek bir olay incelemesi

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Özet
Yazılım testi yazılım geliştirme yaşam döngüsünde faydalı fakat maliyetli bir aktivitedir. Bu maliyeti azaltmak ve test süreçlerinde gereken insan kaynağı ihtiyacını en aza indirgemek için test otomasyon ihtiyacı meydana gelmiştir. Test otomasyonu elle yapılan test koşum süreçlerinin yazılımlar yardımıyla yapılması işlemidir. Yazılım projelerinde test otomasyonu uygulanabilmesi için kullanılan ticari amaçlı ve ücretsiz bir çok test otomasyon aracı (yazılımı/kütüphanesi) bulunmaktadır. Projelerdeki artan kalite gereksinimlerine cevap verebilmek için, test otomasyon aktivitelerine başlamadan önce proje ihtiyaçlarına göre hangi test yöntemlerinin ve hangi test araçlarının kullanılacağına karar verilmesi önemlidir. Bu ihtiyaçlar, yöntem ve araçlar proje metodolojisine göre değişiklik göstermektedir. Geleneksel proje yönetim süreçleri uygulanan bir projede kullanılan test otomasyon aracı, çevik model kullanan bir projedeki gereksinimleri karşılamayabilir veya farklı metodoloji ile geliştirilen projelerin temel gereksinimleri ve önem seviyeleri (ağırlıkları) birbirinden farklı olabilir. Bu nedenle test otomasyon aracı belirlenirken, bir test otomasyon aracında olması gereken nitelikler, projeye özgü kısıtlar ve, çevik model kullanan bir yazılım projesinde fayda sağlayacak noktalar birer kriter olarak birlikte değerlendirilmelidir. Bu çalışma kapsamında, çevik model kullanılan bir yazılım projesi için "Kepner-Tregoe" yöntemi kullanılarak aday test otomasyon araçlarının değerlendirilmesi yapılmıştır. Çeşitli kategorilerdeki kriterler ekip üyeleriyle birlikte ağırlıklandırılmış ve araçlar bu ağırlıklara göre karşılaştırılarak, projeye ve çevik süreçlere en uygun test otomasyon aracı belirlenmiştir.
Anahtar Kelimeler: çevik model, karşılaştırma, test otomasyonu, araç seçimi, yazılım testi, kepner-tregoe

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➢ **ORAL PRESENTATION**

Mısır yağının ratlarda karragenin ile oluşturulan akut enflamasyon üzerine etkileri

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Özet:
Anti-enflamatuvar ilaçlar ağrı, ateş ve enflamasyonun tedavisinde yaygın bir şekilde kullanılırlar. Bu yüzden daha az yan etkiye sahip mevcut ilaçlardan da daha etkin tedavi edebilen yeni anti-enflamatuvar ilaçların keşfedilmesi ilaç araştırmalarının önemli hedefleri arasındadır. Diğer yandan halkın yaygın olarak tükettiği gıdaların da tedavi edici etkilerinin belirlenmesi, bu gıdaların daha bilinçli tüketimine imkan verecektir. Bu araştırmada halkımızın yaygın olarak tükettiği mısır yağının anti-enflamatuvar etkiye sahip olup olmadığı belirlenmeye çalışılmıştır.
Araştırmada; ratlarda karragenin (CAR) ile oluşturulan akut enflamasyon üzerine, mısır yağı (MY) ve pozitif kontrol olarakta yaygın kullanımı olan ilaçların [diklofenak (DIC) ve indometazin (IND)]'in anti-enflamatuvar etkileri araştırılmıştır. Araştırmada 180-200 gram ağırlığında 30 adet Wistar rat kullanılmıştır. Rat pençelerine CAR enjeksiyonunu MY ve pozitif kontrollerin uygulamaları izlemiştir. Rat pençelerinin hacimleri plethismometre ile ölçülmesi ile elde edilen sonuçlar karşılaştırılmıştır.
CAR enjeksiyonu ile rat pençelerinde 0.73 ml'lik bir hacim artışı meydana gelmiş ve MY, DIC ve IND den sırasıyla 0.40, 0.36 ve 0.32 ml'lik hacim artışları kaydedilmiştir. Hacım artışı IND ve MY birlikte uygulandığında ise 0.19 olarak ölçülmüştür. Bu sonuçlar, MY'nin antienflamatuvar etkiye sahip olduğunu göstermiş DIC ve IND'nin etkilerini de doğrulamıştır. İlginç olarak MY ve IND birlikte uygulandığında sinerjistik etki göstermiş ve çok yüksek bir anti-enflamatuvar etki yakalanmıştır.
Anahtar kelimeler: Enflamasyon, karragenin, mısır yağı, indometazin.

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➢ **ORAL PRESENTATION**

Anti-enflamatuvar ilaç araştırmalarında kullanılan deneysel akut ve kronik enflamasyon modellerinin ratlarda gösterilmesi

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Özet
Enflamasyon organizmada enfeksiyöz, fiziksel, kimyasal ve diğer etkenlerin neden olduğu doku hasarına karşı sellüler ve hümoral düzeyde oluşan güçlü bir fizyolojik cevaptır. Bu fizyolojik cevabın amacı, meydana gelen hasarı ve bu hasarı oluşturan etkenleri ortadan kaldırmak ve hasarı olduğu yerde sınırlı tutmak suretiyle kontrol sağladıktan sonra, hasarlanmış dokunun tamir ve yenilenmesini mümkün hale getirmektir. Enflamasyon akut ve kronik olmak üzere iki şekilde sınıflandırılır. Akut enflamasyon kısa sürelidir, birkaç dakika ile birkaç gün sürer. Kronik enflamasyon aktif iltihap ve iyileşme süreçlerinin birlikte görüldüğü uzun süreli bir enflamasyon olarak kabul edilir. Deneysel olarak birçok enflamasyon modeli mevcuttur. Akut enflamasyon modellerinden birisi, karragenin-uyarımlı enflamasyon modelidir. Bu modeli oluşturmak için rat pençelerine karragenin (CAR) enjekte edilir. Kronik enflamasyon araştırmalarında ise yaygın olarak kotton-pellet yöntemi tercih edilmektedir. Bu yöntem pamuk bilyelerin ratların sırt dokularına yerleştirilmesi suretiyle uygulanır.
Günümüzde yeni anti-enflamatuvar ilaçların keşfedilmesi için uygulanacak farklı *in vivo* deney modelleri, tüm ilaç araştırması yapan ekipler tarafından kullanılmaktadır. Bu sunum akut ve kronik enflamasyan modelleri kullanılarak yapılacak olan araştırmalar için, uygulanabilir ve pratik iki yöntemin takdimini içermektedir.
Anahtar kelimeler: Enflamasyon, karragenin, indometazin.

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➢ **ORAL PRESENTATION**

Sensitivity of superstructure response of deterministic base-isolated buildings to the uncertainties in the synthetic ground motion parameters

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Abstract
Base-isolation is being used as an effective alternative earthquake resistant design technology for particularly important structures such as hospitals, scientific research centers, museums, etc., generally housing vibration-sensitive contents such as high-cost medical or electronic devices or precious historical artifacts which may be damaged in case of high floor accelerations. Therefore, accurate analysis and design of such structural systems may have economic, cultural and even vital aspects. In order to capture dynamic behavior of base-isolated buildings properly, it is important to take into account both the time-dependent factors which may cause deviations in the mechanical characteristics of isolation system members and the uncertainties in the ground motion parameters. Uncertainties in the ground motion characteristics may arise due to the uncertainties related to the fault locations and magnitudes of earthquakes, and are considered to have more importance than other uncertainties. Therefore in this study, the uncertainties in moment magnitude and fault distance related parameters of pulse-like ground motion records such as pulse velocity, pulse period, and pulse decaying factor are taken into account considering them as Weibull-distributed random variables. The ground motion records are generated synthetically for a nominal moment magnitude of $M_{w,nom}$=6.0 and a nominal fault distance of r = 3 km via a common pulse model developed by Agrawal and He (2002. A closed form approximation of near fault ground motion pulses for flexible structures. 15th ASCE Proceeding of Engineering Mechanics Conference, New York). The sensitivity of the superstructure response of a benchmark three-dimensional realistic multi-story building isolated with a deterministic nonlinear isolation system to the uncertainties in the abovementioned ground motion parameters is investigated by examining the peak floor accelerations obtained from the nonlinear time history analyses conducted in the framework of Monte Carlo Simulations.
Keywords: Probabilistic seismic response analysis, probabilistic sensitivity analysis, Monte Carlo simulations, uncertainty, seismic base-isolation.

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➢ **ORAL PRESENTATION**

Rutin yüklü PLGA nanopartiküllerinin biyolojik değerlendirmesi

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Özet

Rutin, rutosid, karabuğday, kırmızı biber ve domateste bulunan glikozit flavanoiddir. Anti-enflamatuar, kolesterol düşürücü, anti-kanser ve antioksidan aktivitelerine sahip olan Rutin molekülü, gıda ve farmasötik ürünlerdeki yüksek miktarlardaki uygulamalarında biyoaktif ve yararlı bir maddedir. Flavonoidlerin aktiviteleri, moleküler büyüklüğüne, konfigürasyonuna ve çözünürlüğüne bağlıdır. Rutin maddesinin en önemli problemi suda az çözünmesi ve düşük biyoyararlanımıdır. Molekülün polimerik malzemelerle enkapsüllenmesi ve canlı sistemde kontrollü salınımı Rutinin biyoyararlanımını arttırabilir. Böylece gıda ve farmasötiklerdeki uygulanmaları geliştirilebilir. Ön çalışmada, Rutin yüklü PLGA (poli-d, l-laktid-ko-glikolid) nanoparçacıkları, literatürde ilk defa propilen glikol çözücüsü kullanılarak yağ/su (o/w) tekli emülsiyon çözücü buharlaştırma yöntemiyle sentezlenmiş ve optimum nanopartikül belirlenmiştir. Rutin yüklü PLGA optimum nanopartiküllerin reaksiyon verimi %, enkapsülasyon etkinliği %, parçacık boyutu, polidispersite indeksi, zeta potansiyeli belirlenmiş ve invitro kümülatif salım çalışmaları yapılmıştır. Bu değerlendirmelerden sonra optimum nanopartiküle ait antikanser etkinliği ise MCF7 meme kanser soyu üzerinde MTT (3-[4,5-dimetiltiazol-2-il]-2,5-difeniltetrazolyum bromür) yöntemi kullanılarak gösterilmiştir. MCF7 hücre soyları üzerine yapılan antikanser etkinlik analizi sonucunda enkapsüle Rutin maddesinin MCF7 hücre soyu üzerine 48 saat süreyle antikanser aktivite göstermediği görülmektedir. Sonuçlar, PLGA nanopartikül sisteminin 0,5-0,00025 µg/ml konsantrasyon aralığında Rutin maddesinin kontrollü ve uzun dönemde salımını sağladığını ancak MCF7 hücreleri üzerinde bu konsantrasyon aralığında antikanser aktivite göstermediği görülmüştür. Elde edilen sonuçların, ileride Rutin yüklü PLGA nanopartikülleri ile yapılabilecek olan disiplinlerarası çalışmalar için bilgi verici olacağı düşünülmektedir.

Anahtar Kelimeler: Rutin, PLGA nanopartikül, Tekli emülsiyon, Propilen glikol, kontrollü salım, MCF7 hücre hattı

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➢ **ORAL PRESENTATION**

Effects of probability distribution forms of uncertain ground motion parameters on the isolation system response of base-isolated buildings

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Abstract

Earthquake excitations are inherently random and involve large uncertainties. Compared with other uncertainties such as statistical and modelling uncertainties related to the mechanical characteristics of a structural system, the uncertainties in the ground motion characteristics are considered to have more importance on the dynamic behavior. Therefore, to estimate the seismic performance of a base-isolated building realistically, particularly the uncertainties in the ground motion characteristics should be taken into account appropriately. In this study, the ground motion records with large velocity pulses are generated synthetically for a nominal moment magnitude of $M_{w,nom}$=6.0 and a nominal fault distance of r = 3 km via a common pulse model developed by Agrawal and He (2002. A closed form approximation of near fault ground motion pulses for flexible structures. 15th ASCE Proceeding of Engineering Mechanics Conference, New York). The uncertainties in the pulse velocities, pulse periods, and pulse decaying factors are taken into account by considering them as random variables with Weibull distribution. The general characteristics of Weibull distribution depends on three parameters: location, scale, and shape parameters. Changes in the shape parameters of the uncertain ground motion parameters directly affect the form of the probabilistic distribution which would result in different ground motion records. In this study, two different values of shape parameters are considered for the abovementioned uncertain ground motion parameters in order to evaluate its effects on the isolation system response of a benchmark three-dimensional realistic base-isolated building equipped with a deterministic nonlinear isolation system. The peak base displacement responses are obtained from the nonlinear time history analyses conducted in the framework of the Monte Carlo Simulations. The extent of the effects of the shape factors on the isolation system response of base-isolated buildings are presented using these results.

Keywords: Probabilistic seismic response analysis, probabilistic sensitivity analysis, Monte Carlo simulations, uncertainty, shape factors, seismic base-isolation.

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➢ **ORAL PRESENTATION**

Determination of antioxidant activities of some natural *Nepeta* species

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Abstract

The main objective of the current work is to analyze the antioxidant activities of some plants that grow naturally in some mountains of East Anatolia/Turkey. For this purpose, we evaluated and compared antioxidant activities of three Nepeta species plants; N*epeta fissa*, *Nepeta nuda* subsp. *lydiae*, and *Nepeta nuda* subsp. *albiflora*. We determined their antioxidant potentials by using ABTS, DPPH, FRAP, and CUPRAC methods severally.

According to the results, ethanol extracts of the plants have higher potential of reducing antioxidant activity on CUPRAC and FRAP methods. Furthermore, both water and ethanol extracts showed lower reducing antioxidant activity compare to standards on both reducing methods.
Keywords: Antioxidant; FRAP; *Nepeta*

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➢ **ORAL PRESENTATION**

Voltammetric determination of catechol at 3-amino-1,2,4-triazole-5-thiol modified glassy carbon electrode

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Abstract
Catechol (CC), one of the phenolic compounds, has found applicability in medicines, cosmetics, pesticides, plasticizers, photostabilizers and dyes. Owing to its high toxicity to human, plants, and animals even at low concentrations, it is necessary to develop a simple, an effortless and a quick analytical method for the determination of CC [Alshahrani et al. 2018]. Due to the robustness, simplicity and versatility of electrochemical techniques, they have been frequently employed as a substitute for conventional analytical methods to determine CC [Tashkhouriana et al. 2016]. In this study 3-amino-1,2,4-triazole-5-thiol modified glassy carbon electrode (3AT5T-GCE) was fabricated. 3AT5T-GCE was characterized by cyclic voltammetry (CV) and electrochemical impedance spectroscopy (EIS). The electrochemical behavior of 3AT5T-GCE against CC was assessed using differential pulse voltammetry (DPV). The effects of supporting electrolyte and pH of solutions were investigated on the oxidation of CC. In order to better understand the electrochemical determination mechanism of CC, the effect of scan rate on the 3AT5T-GCE was studied by CV. This simple, sensitive, and low-cost fabricated electrode was applied to the selective determination of CC in reallife water samples.
Keywords: Catechol, Triazole Derivatives, Modified Electrode.

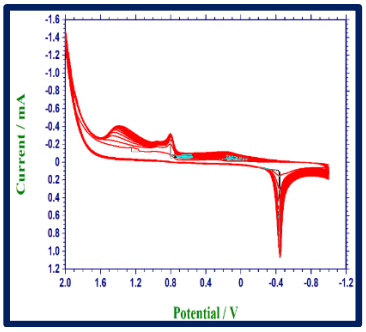

Figure 1. The multi-cycle CVs of 1 mM 3AT5T solution prepared in H_2SO_4 on GCE.

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➢ **ORAL PRESENTATION**

Development and characterization of TiO_2-doped ZrO_2 nanofiltration membrane deposited on low-cost bentonite support for filtration of dyes and heavy metal solutions

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In this investigation, the membranes are a typical example of structural composite layering that ensures high mechanical strength and low resistance to fluid passage. The support of bentonite was made by uniaxial pressing. Sintered support at 950 °C leads to obtained porosity of 32.12%, water permeability of 520 L/h.m^2.bar and good mechanical resistance of 22 MPa **[1]**. This support was used for development of ultrafiltration membrane by dip-coating process using nano-TiO_2 and followed by sintering at 750 °C. The average pore diameter and water permeability of the obtained membrane are respectively 10 ± 0.5 nm and 16.08 L/h.m^2.bar **[2]**. The ultrafiltration membrane was used as support for development of nanofiltration (NF) membrane by spin-coating process using TiO_2-doped ZrO_2 (TDZ). The membrane was successfully fabricated via a modified colloidal sol-gel process using a mixture of Zr-inorganic salts and Ti-alkoxides. The resulting TDZ membrane was sintered at 550 °C and characterized by XRD, SEM and Nitrogen sorption. The as-prepared membrane (TDZ/TiO_2/Bentonite) exhibits high performances in terms of average pore diameter (2.5 nm) and water permeability (4.5/h.m^2.bar). The prepared low-cost nanofilration membrane has a high efficiency for both dyes and heavy metal removal. The rejection of methyl orange and methylene blue are respectively 94.2% and 99.36%, while the rejection of $Cd(NO_3)_2$, $Pb(NO_3)_2$ and $Cr(NO_3)_3$ are 99.6, 99.2 and 99.4% respectively.

Keywords: Membrane; Bentonite; TiO_2-doped ZrO_2, nanofiltration, dyes; heavy metal

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➢ **ORAL PRESENTATION**

Hydrothermal Synthesis and Characterization of $[Co(psa)(\mu\text{-abpy})(H_2O)_3]_n.H_2O$

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Abstract
The aim of this work is to prepare a new coordination polymers of Co(II) with 4,4'-azobispyridine (4,4'-abpy) as an N-containing rigid auxiliary ligand and phenyl succinic acid (H_2psa) as a flexible dicarboxylate ligand and undertake its spectrothermal analysis and thermal properties. Dicarboxylates which are flexible and have phenyl ring, play an important role to form frameworks with unique structures and useful properties. These factors have remarkable effects on different conformations, coordination modes and direct the dimensionality to generate new coordination polymers[1].
Studies of the coordination chemistry of the azo aromatic compounds have attracted increasing attention because of their unique-combination of geometrical and electronic structures [2,3]. The 4,4'-azobispyridine ligand (4,4'-abpy) coordinated to metal ion via pyridyl-N atoms as a bridging ligand (Figure 1), forming extended networks of supramolecular architectures [4]. These types of coordination have attracted particular attention especially in fields such as developing new functional materials, crystal engineering, molecular recognition and self-assembly of coordination polymers [5,6]. H_2psa which can be applied as a configurationally asymmetric bridging ligand associated with more interesting coordination polymers shows an interesting phenyl ring side group (Figure 1) which is expected to modulate and influence the orientation relationship and coordination abilities of the two carboxylate groups [7].

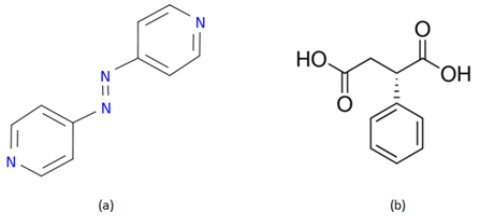

Figure 1(a) 4,4'-Azobispyridine (b) Phenyl succinic acid

In this study, a mixed-ligand Co(II) one-dimensional coordination polymer, namely $[Co(psa)(\mu\text{-abpy})(H_2O)_3]_n.H_2O$, has been synthesized under hydrothermal conditions with phenyl succinic acid and 4,4'-azobispyridine ligands. The structure of complex characterized by elemental analyses, IR spectra, and thermal analyses (TG, DTA).
Keywords: 4,4'-Azobispyridine , Phenyl succinic acid, Coordination Polymers, Cobalt complexes

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➢ **ORAL PRESENTATION**

Endoscopic exploratory tympanotomy: An alternative to microscopic technique

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Abstract

Exploratory tympanotomy (ET) is a diagnostic intervention for the middle ear and its structures. It has been traditionally performed under otomicroscopy across the external ear canal (EAC) and usually needs an endaural incision to provide better exposure of middle ear structures. Otomicroscopes have excellent illumination, good depth perception and magnification, binocular vision and however they constrain surgeon to work in narrower corridors like EAC. Therefore, although endoscopes have been used especially in endoscopic sinus surgery in otorhinolaryngology practice, because of their achievement of wide field of view, visualization of difficult areas in the middle ear like facial recess, anterior tympanic membrane perforations, and less invaziveness for healthy tissues, otologists began to perform endoscopic transcanal otologic interventions. Herein, five patients with suspected middle ear pathologies undergoing endoscopic ET for hearing loss were presented and the advantages and disadvantages of use of otomicroscope and endoscope in ear surgery were discussed.

Keywords: Endoscope, Exploratory tympanotomy, Microscope, Middle ear

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➢ **ORAL PRESENTATION**

Design of a multimeric antigen as a highly immunogenic peptide vaccine against *Acinetobacter baumannii*

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Abstract
According to reports collected from 22 different countries including Turkey, the *Acinetobacter baumannii* is responsible for the hospital infections that cause of 47% mortality in the Intensive Care Unit (ICU). *Acinetobacter baumannii* have acquired resistance to antibiotics over time. *Acinetobacter Bomani* causes a variety of infections including pneumonia, meningitis and blood-related infections. Biofilm-associated proteins of the strain are cell-specific proteins that directly forms (Bap) biofilm which plays a major role in bacterial infectivity. For this reason, vaccine design and production against *Acinetobacter baumannii* appears to be an alternative solution to prevent infections. In this study, the amino acid sequence of the Biofilm Associated Protein (Bap) were extracted using the NCBI and UniProtKB database. The high immunogenic and antigenic regions of the proteins were determined by using immunoinformatic programs. By assembling these epitope-rich parts, a chimeric protein was designed that in in-silico analysis, this protein exhibited a high ability to induce the immune system against *Acinetobacter Bomani*. T-cell epitopes, B-cell epitopes, antibody epitopes, MHC binding capacity of the recombinant antigen were analyzed using CBS Prediction Servers", "Predicting Antigenic peptides" ve "vaxiJen 02" programs. Epitope predictions have shown that this hypothetical structure can induce B and T cells and cause high immune responses.
Keywords: *Acinetobacter*, epitope, recombinant, antigen

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➢ **ORAL PRESENTATION**

Utilization of ionic liquids as effective pretreatment reagents to produce fuels and chemicals from biomass

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Abstract
Lignocellulosic biomass is unique for being a natural, abundant and low-cost raw material among renewable energy resources. Lignocellulosic biomass, which is the only renewable resource of fixed carbon, possess an original content and structure. This unique content and structure enable biomass conversion into a variety of fuels and chemicals that can replace petroleum-based products. Although catalytic strategies have received a great deal of interest in the recent years for biomass processing, some challenges such as the loss of catalyst's selectivity and stability with time and the complexity of reaction medium lead researchers to seek alternative solutions. At this point, ionic liquids emerge as successful solvents; having high solvation capability towards lignocellulosic biomass and being capable of separating different biomass components with high purity. Ionic liquids (ILs), which have been known as "green solvents", have low vapor pressures and can be recycled and reused following their reaction with biomass. That is particularly linked to their increased thermal stability. Modifications in their cations and anions enable ILs to be effective on different biomass components. Under certain conditions, separation and recovery of soluble and insoluble biomass components from the reaction medium by various antisolvents at the end of the reaction considered as a significant advantage. In this study, we represented the effects of protic and aprotic ILs with respect to their potentials in the fractionation and valorization of biomass into biofuel, ethanol and aromatic product, lignin.
Keywords: bioenergy, lignocellulosic biomass, ionic liquid, ethanol, lignin.

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➢ **ORAL PRESENTATION**

Numerical and Experimental Investigations of E387 and SD7032 Wind Turbine Airfoils for 3 Different Reynolds Number Conditions

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Abstract
In this study, we have focused on two commonly used wind turbine airfoils (E387, SD7032). The main purpose of the study is to determine the lift, drag and lift/drag coefficients of these airfoils with numerical and experimental analysis. Second phase is to determine the power output of the wind turbines produced from these airfoils using Qblade software and to compare the results with past similar studies. Airfoils have been determined from past studies on small wind turbines. Numerical analysis of the airfoils has been done with Ansys Fluent fluid dynamics program and Qblade software. Experimental analysis has been done at wind tunnel in Erciyes University, Turkey. Lift and drag coefficients of these airfoils have been determined for 50,000-100,000-200,000 Reynolds numbers.

Keywords: airfoil, wind turbine, fluid dynamics

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➢ **ORAL PRESENTATION**

Developments in the treatment of diseases caused by disruption in cell signal pathways

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Abstract

One of the most important features of cells are respond to signal of autocrine, paracrine and endocrine. Impediment of the signal mechanicsm causes many metabolic problems. Continuity of intracellular and inter-cellular signal transmission is important and necessary for embryogenesis, proliferation, growth, Ca++ signal delivery based on increases of concentration of cytosolic Ca++ . Some neurological diseases such as Episodic ataxia type 2, spinocerebellar ataxia type 6, familial hemiplegic migraine could correlated by plasma membrane Ca++ channels and oculocerebrorenal syndrome, manic depression and Alzheimer disease could correlated by functions of IP3 receptor degeneration. cAMP pathway is resulted by cAMP formation with cyclic adenosine monophosphate enzyms. Especially, cAMP pathway is key point in the secretion of growth hormone and may affect phenotype. When appearing details of cellular communication, effective treatment would be possible. The first medicine which uses chronic myeloid leukemia is protein kinase inhibitor. There are articles that indicate resistance in the treatment of leukemia. On these findings, there are studies that show Ras and Raf kinase inhibitors will be effective treatment. Recently, new molecules have been developed that would fight with cancer-causing target as a result of scientific studies. Despite all the findings, the relationship between intracellular signaling pathways and cancer has not been resolved diagnosis of cancer, determination of prognosis and implementation of new therapies are especially possible with the increase in intracellular signal transmission information. Determination of critical points in intracellular and outside signal transmission, very good understanding of the function and structure of the molecules, is very important in eliminating the defects in the signal system. Well-defined mechanisms will constitute the first and most important step in the treatment.

Key Words: Cell Signaling, cAMP, Signal Pathway, Apoptosis

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➢ **ORAL PRESENTATION**

Synthesis and characterization of graphene-supported nanoelectrocatalysts for fuel cell applications

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Abstract

The world energy demand is growing parallel to the population increase and fuel consumption produce pollutants beside the harmful emissions such as nitrous oxides and sulfur oxides. Therefore, environmental friendly, cost effective and efficient alternative energy sources have been searched intensively in recent years. Fuel cells have emerged as promising alternatives and produce energy as long as fuel is supplied. Fuel cells usually directly convert the chemical energy of the reactants, a fuel and oxidant, into electrical power, ensuring continuity of operation for as long as externally stored reactants are supplied [1,2]. The fuel cells are working quietly and do not produce environmental pollution. The key performance measure of a fuel cell is the voltage output as a function of electrical current density drawn, or the polarization curve. This can be achieved by maintaining the oxidation of small molecule fuels at relatively negative potential compared to oxygen reduction. The efficiency of this energy conversion mostly depends on the catalytic activity of the electrode surface [3,4]. Developing more selective catalysts is very important for the development of fuel cells technology. By this means, the fuel can be oxidized at more negative potentials at the anode while the oxygen reduces at more positive region. Carbon materials are the most widely used supports for electrocatalyst in fuel cells. Although graphene is still a relatively new member in carbon material family, its novel properties, such as large surface area, ultrahigh electrical conductivity, excellent mechanical properties, and high chemical stability, render it an ideal electrocatalyst support for fuel cells. Moreover, the defects and functional groups present on graphene surface can immobilize the nanocatalysts, resulting in improved stability of the graphene-based hybrid catalysts. Herein, electrochemical oxidation behavior of borohydride as an anode material in fuel cell was investigated on metal nanoparticles modified graphene oxide film glassy carbon electrode. Graphene oxide was synthesized with Hummer's method in laboratory. The chemical and physical properties of prepared composite electrode was explained with scanning electron microscopy and X-Ray photoelectron spectroscopy.

Keywords: Electrooxidation of borohydride, Fuel cell, Graphene oxide.

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➢ **ORAL PRESENTATION**

Kurumlardaki bilgisayar sistemlerinin performanslarına göre sıralanması ve takibinin yapılması için çok ölçütlü karar destek sistemi önerisi

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Özet

Günümüzde bilgisayarlar, kurumların işleyişinin her safhasında yoğun olarak kullanılmaktadır. Kullanılan bilgisayar sistemleri ortalama 3-5 yılda bir değiştirilmektedir. Kullanılan bilgisayar sistemlerinin değiştirilmesi yöneticilerin kararına bağlıdır. Genellikle yöneticiler teknisyenlerin ya da çalışanın kullandığı bilgisayara ait performans ve işlem kapasiteleri hakkında söyledikleri öznel bilgiye göre kararlarını vermektedirler. Bu tür kararların nesnel olarak verilebilmesi için bilgisayarın donanım bileşenlerinin işlem kapasiteleri-performanslarına göre sıralanabilmeleri ve yöneticilere özet olarak sunulması gerekmektedir. Bu çalışmada, yöneticilere çalışanların sahip oldukları bilgisayar sistemlerinin donanım bileşenlerini (işlemci, bellek vb. gibi) ayrı ayrı takip ederek sistemleri kendi aralarında performanslarına göre sıralama imkanı veren bir karar destek sistemi önerisi sunulmuştur. Önerilen sistemin ürettiği özet sıralama puanı sayesinde yöneticilerin, kurumdaki bilgisayar sistemlerini izlemesi ve kendi aralarında sıralaması kolaylaştırılmıştır. Sıralama işleminde çok kriterli karar verme tekniği olarak TOPSIS(Technique for Order Preference by Similarity to Ideal Solution) kullanılmıştır. Bu sayede bilgisayar sistemi ihtiyaçları tespit edilebilecek ve yeni satın alma istekleri tespit edilen ihtiyaçlara göre yapılabilecektir. Aynı zamanda önerilen sistem yöneticilerin, kuruma alınan yeni bilgisayar sistemlerini dağıtırken hangi bilgisayarların öncelikli olarak değiştirilmesi gerektiğine karar vermelerini kolaylaştıracaktır.

Anahtar Kelimeler: Karar destek sistemi, Çok ölçütlü karar verme, TOPSIS,

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➢ **ORAL PRESENTATION**

Sulu çözeltideki demir iyonlarinin sepiyolit ile adsorpsiyonu

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Endüstriyel işlemler sonucunda ortaya çıkan ağır metaller, çevre kirliliğine sebep olmakta; suya, toprağa ve atmosfere karışarak canlı organizmalarının yaşamını etki altında bırakmaktadır. Bu nedenle endüstriyel faaliyetler sonrasında açığa çıkan kirli atık sular çeşitli işlemlerden geçirilerek standartlara uygun hale getirilmelidir. Çalışmamızda düşük konsantrasyonlardaki ağır metalleri adsorbe etmek için belirgin bir adsorpsiyon kapasitesine sahip olduğu tespit edilen sepiyolit, adsorban olarak kullanılmıştır. Eskişehir yöresinden alınmış sepiyolitin, sulu çözeltilerdeki demir(II) ve demir(III) iyonlarını adsorplama kapasitesinin, çalışma koşullarına bağlı olarak değişimi incelenmiştir. Bu amaçla, $FeSO_4.7H_2O$ ve $FeCl_3.6H_2O$ çözeltilerinden demir iyonlarının adsorpsiyonunu ve adsorpsiyon olayını etkileyen adsorpsiyon süresi, adsorban miktarı, pH, sıcaklık, başlangıç çözelti derişimi gibi parametrelerin adsorpsiyon kapasitesi üzerindeki etkileri belirlenmiştir. Deney sonuçları sıcaklığın adsorpsiyon kapasitesine önemli derecede bir etkiye sahip olmadığını; ancak artan sıcaklıkla beraber adsorpsiyon kapasitesinde oldukça küçük bir miktar artışın meydana geldiğini göstermiştir. İstatistiksel değerlendirme sonucunda adsorpsiyon kapasitesi üzerinde en etkin parametrenin başlangıç iyon derişimi olduğu saptanmıştır. Ulaşılan maximum Fe^{+2} giderim verimi pH 5'de ve 23^0C'de % 97 olarak elde edilirken, Fe^{+3} giderim verimi pH 3'de ve 23^0C'de % 93 olarak bulunmuştur.

Anahtar kelimeler: Sepiyolit, demir, adsorpsiyon

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➢ **ORAL PRESENTATION**

Energy – exergy efficient applications and what-if scenarios on a power generation plant

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Abstract
Energy conversion and consumption of systems conducts one of the most important subjects in an industry. Engineers and scientists dealing with the design and operation of an energy conversion system want to improve/retrofit or optimize it by maximizing efficiency, and minimizing production cost and environmental impact. In order to optimize such systems, firstly the real mechanism should be understood according to which thermodynamic inefficiencies, costs, and environmental impacts are formed within the system. For a production industry, energy has one of the biggest share in costs. It should be immediately managed to reduce consumption and should be saved as money, oil, natural gas, etc. For all these, energy should be managed by monitoring, optimizing, doing saving projects, creating awareness, by energy management. In this study, energy saving, optimizing and efficiency applications were analysed by performing exergy analysis in Power Generation Plant. The main utility plant provides both steam and power for the whole site. It is a complex plant that includes five steam headers (XHS, HHS, HS, MS, LS) operating with different pressures and temperatures. Steam at each pressure level is used both within the utility plant itself and exported to the other processes on the site. Both theoretical based study and what – if scenarios were done by applying exergy analysis. Then, in what – if scenarios the subjects which are listed as i) decreasing HS, MS, and LS header pressures, ii) increasing XHS Header Pressure, iii) increasing BFW (Boiler Feed Water) temperature, iv) optimizing steam turbine operations were studied and analysed. Exergy analyses were applied to all those scenarios in two steps which are before and after application. Besides all the scenarios applied on the plant, the exergy analysis and exergetic efficiencies for all equipment in the steam and power generation plant had been examined.
Keywords: power generation plant, what-if scenarios, energy–exergy efficiency

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➢ **ORAL PRESENTATION**

Optical, Electrochromic and Structural Properties of $LiCoO_2$ Thin Films Deposited by RF Magnetron Sputtering

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Abstract

In the past few years, $LiCoO_2$ has been extensively employed as a cathode material in rechargeable batteries because of its durability, lasting life span, low self-discharge rate and affordable cost. $LiCoO_2$ is a kind of electrochromic material that can reversibly show changes in optical properties when it is applied external voltage onto them. $LiCoO_2$ thin films have been extensively used for micro-batteries, long life sensors, aerospace applications and electrochromic devices.

In this work, $LiCoO_2$ thin films were deposited on glass and silicon substrates by RF magnetron sputtering using a high purity $LiCoO_2$ target in an argon (Ar) atmosphere at room temperature. The plasma power (RF) was maintained at 40 Watt while the Ar deposition pressures were varied between 20 – 50 mTorr to investigate the effects on the optical, structural and electrochemical properties of the films. Optical transmission and reflection measurements of the films were performed using an Aquila NKD-8000E spectrophotometer over the wavelength range of 350–1050 nm. Optical transmission of the films was between 60%–90% in the visible region. Optical absorbance spectra of both bleached and coloured state transmissions of the films were measured by using a Hitachi U0080D diode array spectrophotometer over the spectral range of 190–1100 nm at normal incidence during the EC cycles. A PARK XE15Atomic Force Microscope was used to take AFM micrographs of the films to investigate the surface topographies of the films.

Keywords: $LiCoO_2$ thin film, cathode material, electrochromic, RF magnetron sputtering.

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➢ **ORAL PRESENTATION**

Detection and Classification of Lesions in Dermoscopic Images Using DCNN Under a Single Framework

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Abstract
The major role of the skin is to protect human body from ultraviolet rays which cause the most aggressive type of skin cancer known as melanoma. According to clinical research, the number of its incidence has been significantly increased in last decades and early diagnosis has reduced the rate of deaths. Nowadays, the technique of dermoscopy providing a better visualization has been developed by dermatologists in order to discriminate melanomas from non-melanoma lesions. We propose a framework based on CNNs (Convolutional Neural Network) commonly used for melanoma detection combined with image processing techniques for lesion segmentation. We investigated whether the effect of separating the target skin lesion from the non-lesion skin and other artificial tissues improves the classification process. The proposed framework is evaluated on a large publicly available dataset and experimental results demonstrate that the preprocessing methods can potentially improve the performance of CNNs.
Keywords: Deep learning; Medical image analysis; Convolutional neural networks; Skin lesion segmentation; Machine learning.

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➢ **ORAL PRESENTATION**

Exergetic performance investigation of a cement production facility

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Abstract
Cement is the most important building material in the world. Sectoral development of cement industry is the one of the main part in the rate of economic development of countries. In this study, cement production is taken into account as being an energy intensive process. In the production of clinker that is the main raw material of cement needs approximately 700-950 kcal/ton clinker energy as fuel and 24-35 kW/ton as electricity in rotary kilns where the clinker production is taken place. Oyak Bolu Cement production plant was used as a real case with 1200 kton/year clinker production capacity. Actual prosess data is used for energy, exergy and exergoeconomic analysis for revealing the exergy efficiency of the system besides exergoeconomic cost. The exergy efficiency of the system is found to be 30.61% where energy efficiency is 54.91% for rotary kiln with overall exergoeconomic cost 0.0204$/s for clinker production.
Keywords: energy, exergy, cement production, exergoeconomy, clinker

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➢ **ORAL PRESENTATION**

Photocatalytic activity of titania-ZIF-8 nanocomposite

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Abstract
Metal organic frameworks (MOFs) are microporous materials which are used in heterogeneous catalysis applications due to their high specific surface areas. ZIF-8 is a type of zeolitic imidazolate framework (ZIF) which is one of the common groups of MOFs possessing high specific surface areas and high adsorption capacities of various gases. Special reactions involving gases are target applications of heterogeneous catalysis with ZIF based materials. Artificial photosynthesis is one of these special reactions in which CO_2 and H_2O is turned into methane, methanol etc. by using solar energy and catalysis (photocatalysis). ZIF-8 is a good candidate to be used in artificial photosynthesis due to its unique CO_2 adsorption capacity. Research on photocatalysis with ZIF-8 is currently limited and the photocatalytic activity of ZIF-8 needs to be improved. This improvement can be achieved by modifying ZIF-8 through various routes. Combining ZIF-8 with active photocatalytic materials is an effective method which results in a nanocomposite structure. In this study titania, which is known to be very active in photocatalysis, was used to improve the photocatalytic activity of ZIF-8. First a series of titania based photocatalysts were prepared and tested in the photocatalytic degradation of methylene blue which is a common probe molecule that is used in the tests involving photocatalysis. Zinc, copper and iron doped titania photocatalysts were prepared and the results indicated that copper doped titania showed higher activity compared to zinc, iron doped or undoped titania. Copper doped titania-ZIF-8 nanocomposites were then prepared to investigate the nanocomposite effect on the photocatalytic activity and it was determined that the activity of ZIF-8 was increased by a minimum of 2.5 folds when used with copper doped titania. The results of this study showed that titania-ZIF-8 nanocomposite photocatalyst can be a good candidate to be used in artificial photosynthesis.

Keywords: photocatalysis, ZIF-8, titania, nanocomposite

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➢ **ORAL PRESENTATION**

Comparing of shrinkage methods and application on high-dimensional data set

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Abstract
The number of variables exceeds the number of observations in high-dimensional data and also the multicollinearity between variables are extremely high. This can lead to some prediction problems. To overcome these problems, various penalties have been proposed. Thanks to them, the required predictors in the model are defined. Thus, the accuracy of the fitted model increases and its interpretation is more easily. In effect, a variable selection is embedded in the modelling framework. For such dataset, a sparse solution in the model fitting is usually preferred due to its simplicity in the interpretation. Lasso and elastic net can give sparse solutions. The aim of this study is to describe and compare shrinkage methods (Ridge, Lasso and Elastic Net) for generalized linear model framework. The results indicate that the modelling framework is able to produce sparse solution with sensible interpretation. Furthermore, this methods are illustrated by a high dimensional data set.
Keywords: Generalized linear model, Ridge regression, Lasso, Elastic Net.

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➢ **ORAL PRESENTATION**

Review on Using Moving bed biofilm reactors for degradation of phenols compounds from petroleum effluents

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Abstract

In recent years the wastewater ecclesiastical controls have prompted to a consistent rise in the decontamination execution requested of waste water treatment plants. In light of this, the quantity of wastewater treatment plants has been developing, and specialized multifaceted nature has additionally been developing. Keeping in mind the end goal to hold the associated increasing expenses of capital consumption and operation inside limits, shrewd process innovation arrangements must be found.

Phenol is a noteworthy contamination in the wastewater in view of its nearness in the profluent of real handling and refining plants. It has extreme impact on individual, both fleeting and long haul. Different techniques are utilized for expulsion of the phenol from wastewater, for example, biodegradation, adsorption, photodecomposition, volatilization and different natural and non-organic strategies. In the present review endeavor is done to show the study of the examination on the phenol evacuation by different strategies. The strategies, for example, Polymerization, electrocoagulation, extraction, photodecomposition, propelled oxidation and particle trade were utilized successfully by different examiners. These techniques are accounted for to be effective for the phenol expulsion. Reasonable technique for phenol expulsion can be chosen in light of accessibility of the material, degree of partition required and properties of phenolic gushing.

This review was aimed to understanding removal efficiency of petroleum refinery effluents by using MBBR process in waste water treatment plants, and to exploration the characterizations of these effluent as a sours of contamination with realization the fate of PREs in bioreactors of MBBR processes.
Keywords: Biodegradation, Biological Treatment, Moving bed biofilm, Petroleum Effluent, Phenol, Wastewater.

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➢ **ORAL PRESENTATION**

The effects of quercetin on cyclophosphamide induced hepatotoxicity in the rats

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Abstract
Cyclophosphamide (CYP) causes toxicity in many organs, as liver and lung. Several studies have shown that some antioxidants have protective effects against side effects of CYP. The aim of this study was to investigate the possible effect of quercetin (Q) on CYP-induced hepatotoxicity in rats using biochemical and histopatological methods. Thirty Sprague-Dawley male rats were divided into five groups as; control, CYP, Q50+CYP, Q100+CYP and Q100 groups. Control group was given corn oil intragastrically for 7 days. CYP group was given intragastrically corn oil for 7 days and CYP (200 mg/kg) was administered intraperitoneally on the 7th day. For 7 days, Q50+CYP (50 mg/kg) and Q100+CYP (100 mg/kg) groups were given quercetin and single dose CYP (200 mg/kg) was administered on the 7th day. Q100 group was given quercetin 100 mg/kg dose per day. On the 8th day, blood samples and liver tissues were taken for biochemical and histopathological examinations. Comparisons between groups were made using one-way analysis of variation (ANOVA) following Post hoc Duncan test. p value equal to/less than 0.05 would be considered to be statistically significant. According to the results of biochemical analysis, MDA level was higher in the CYP group than the control group ($p<0.05$) and it with the decreased administration of quercetin. SOD and GSH levels were lower in the CYP group compared to the other groups. Histopatological analysis revealed that sinusoidal dilatation and mononuclear cell infiltration were observed in the CYP group, and these degenerative changes were reduced by quercetin administration. In the TUNEL method, a large number of TUNEL positive hepatocytes were detected in the CYP group. Bcl-2 immunopositivities were lower in the CYP group, while Bax and Caspase-3 immunopositivities were higher in the CYP group than other groups. Our results show that quercetin has protective effect on cyclophosphamide-induced hepatotoxicity.

Keywords: Cyclophosphamide, Hepatotoxicity, Liver, Quercetin.

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➢ **ORAL PRESENTATION**

Soft Chemistry Route for Synthesis of Lead Zirconate Titanate via Modified Coprecipitation Method

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Abstract

Lead zirconate titanate (PZT) one of world's most widely used piezoelectric material and exhibit excellent properties. PZT is used in wide range of applications, especially in electronical devices such as transducers, ferroelectric memories, sensors, optical fibers, actuators and modulators.

The synthesis of PZT has been extensively investigated by many research groups and reported routes for preparation of fine powders include coprecipitation, sol-gel process, Pechini method, hydrothermal and solvothermal synthesis and others such as microwave, emulsion processing, complex combustion process [1–3].

The conventional and simplest method for synthesis of PZT-based ceramics is via solid-state process that include grinding or ball milling the mixed oxides or carbonates or hydroxides. This method generally needs very high calcination temperatures and should to repeat several times to obtain a pure perovskite structure. In contrast to the solid-state reactions, wet chemical preparation permits fine and homogeneous particles with relatively high specific surface area. Especially coprecipitation is a productive method for synthesis of perovskite powders at an industrial scale.

In the present work, PZT ceramic was synthesize in an aqueous environmental media by coprecipitation method. PZT powders derived from zirconyl(IV) and lead(II) nitrate salts. The chelate solution of isopropyltitanate, which is cheap and commercially available, was used as titanium source. The structural formation of PZT was followed by FTIR spectroscopy, thermal analysis and X-ray diffraction methods. The coprecipitation method will be compared with the sol-gel and the advantages and disadvantages will be discussed.

Keywords: Lead zirconate titanate, perovskite, coprecipitation, X-ray diffraction

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➢ **ORAL PRESENTATION**

On the fluidity and hardness of ultrasonically degassed Al7Si0,3Mg aluminium alloy

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Abstract
In this study, ultrasonic degassing process is applied to Al7Si0.3Mg (A356) aluminium alloy, which is one of the most widely used engineering materials, in three different times as 15, 30 and 45 sec. The raw material used is completely secondary aluminium, i.e. scrap or swarf. In the ultrasonic degassing process applied for 15 seconds, the fluidity of the alloy was 420 mm and the hardness value was 54.29 HB, in 30 seconds fluidity was 273 mm and hardness was 57,61 HB and for 45 seconds of ultrasonic process, the fluidity was 204 mm and the hardness value measured as 65,71 HB. In conjunction with increasing ultrasonic degassing time, hardness values were also increased, but fluidity of the liquid metal is decreased dramatically, approximately half of 15 secs. The main reason for decrease in fluidity is that the applied ultrasonic sound waves break down the impurities in the liquid metal (e.g. bifilm) and reduce the fluidity of liquid metal, as a result of these small parts blocking the flow of liquid metal during casting. On the other hand, in the remaining part, it is thought that these disintegrating impurities are dispersed in the liquid metal during the casting process, thus, the material is treated as a composite material and increasing hardness values of the material is supported by these inclusions.
Keywords: ultrasonic degassing, fluidity, Brinell hardness, bifilm, scrap, secondary aluminium

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➢ **ORAL PRESENTATION**

Revealing the low and high temperature magnetic behavior of $Ni_{46.86}Co_{2.91}Mn_{38.17}Sn_{12.06}$ shape memory compound

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Abstract
We have investigated the magnetic, magnetocaloric properties and transition hysteresis of $Ni_{46.86}Co_{2.91}Mn_{38.17}Sn_{12.06}$ magnetic shape memory alloy under several magnetic field levels over a large temperature range from 400 K down to 10 K. We observe a small magnetization difference between austenite and martensite phase with thermal hysteresis around the martensitic transition. Magnetization is calculated as a function of temperature at constant fields for $Ni_{46.86}Co_{2.91}Mn_{38.17}Sn_{12.06}$ from the molecular field theory. Martensitic transition is studied by analyzing the magnetization as functions of temperature and the field in this alloy. The critical exponents β and δ for the temperature-and field-induced magnetization, respectively, are deduced, which indicate weakly first order (or nearly second order) martensitic transition within the framework of an Ising or Heisenberg model for $Ni_{46.86}Co_{2.91}Mn_{38.17}Sn_{12.06}$ alloy. The necessity of compositional analysis is demonstrated in magnetic shape memory alloys. The minimum magnetic field required to start and to complete the magnetostructural phase transition is investigated. We observe superspin glass features occurring when interacting clusters are frozen below a critical temperature.
Keywords: Magnetic intermetallics; Martensitic transformation; Magnetic properties; Molecular field theory; Power-law analysis

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➢ **ORAL PRESENTATION**

Effect of different amplitude of vibration during solidification of Al7Si0,3Mg on electrical conductivity

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Abstract
Al-Si alloys are commonly used in automotive and aerospace industries. The control of the internal structure in the parts produced by the casting method is very important. With the change of the internal structure, different features can be achieved. Generally, the microstructure is tried to be modified by the addition of alloying elements to the liquid metal. In this study, the relationship between electrical conductivity and vibration due to the internal structural change of Al7Si0.3Mg aluminum alloy was investigated by using vibrating mold without additional alloying element. Three different amplitudes were used at fixed frequency: 0.75 mm, 1,5 mm and 2,25 mm. The primary aluminum ingot was melted as charging material. Metal mold was used in the castings and the casting temperature was kept constant at 750 °C and the mold temperature at 400 °C. There are three different sections in the mold being 20 mm, 10 mm and 5 mm. Thus, 3 different cooling rates were obtained in a single casting mold. When 0,75 mm amplitude was used, it was observed that the average electrical conductivity value of the mold reached 22,82% IACS, 22,62% IACS at 1,5 mm amplitude and 22,65% IACS at 2,25 mm amplitude. It is seen that electrical conductivity decreases by increasing the vibration amplitude. The purpose of using different cross-sectional thicknesses was to reveal the relationship between electrical conductivity and solidification time. However, it was observed that the decrease in electrical conductivity did not decrease significantly in different sections even with the same amplitude. In addition, it is thought that the disintegrating dendrites serve as a barrier to reduce the electrical conductivity, and that these dendrites cannot be sufficiently fragmented / crushed in these amplitude values and in this mold geometry so that they cannot move away from the dendrite body.
Keywords: casting, vibrating mold, electrical conductivity, amplitude, solidification, aluminum, IACS

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➢ **ORAL PRESENTATION**

Pamuk/Poliamid/Elastan İçerikli Kumaşların Ön Terbiyesinde Biyoproses Uygulamaları

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Özet

Günümüzde çevre kirliliği ile ilgili sorunların tüm dünyada büyük önem kazanması, enerj kaynaklarının hızla tükenmesi ve bu konulardaki bilincimizin artışı ile birlikte alternatif temiz üretim yöntemleri araştırmalarına başlanmıştır. Tekstil endüstrisinde de kullanılan genel kimyasal prosesler yerine ekolojik olan biyoproseslere olan ilgi artmıştır. Enzimlerin esnek ve güvenli kullanımları, tekstil materyaline zarar vermeme, su ve enerji tasarrufu ve çevresel sorumluluklarımız için tekstil endüstrisinde yaş işlemlerde ve boyama sonu ard işlemlerinde enzimatik uygulamalar ve bu konudaki araştırmalar hız kazanmıştır. [1-2] Liflerin hidrofilliğinin, boyarmadde ve terbiye işlemlerine karşı afinitesinin arttırılması amacıyla yapılan ön terbiye işlemleri liflerin cinsine göre farklılıklar göstermektedir. Pamuk elyafının ön işleminde genel uygulanan, 95°C'de alkali ortamda hidrojen peroksit ile ya da alkali ortamda sabun ile yapılan kaynatma prosesleridir. Karışım liflerden oluşan kumaşlar bu işlemlere tabi tutulduğunda diğer elyaflar bu ortamda zarar görmektedir. Bu çalışmamızda, Pamuk/Nylon/Elastan içeren karışım dantel ve örme kumaşların pişirme ön işleminde geleneksel uygulanan proseslere karşılık pektat liyaz enzimi ile yapılan ekolojik proseslerin karşılaştırılması yapıldı. Elyafa geleneksel pişirme işlemi pH:10 da sabun 2 g/L. kullanılarak 95°C'de 30´ ve ardından nötralizasyon işlemleri yapıldı. Uyguladığımız biyoproseste, kumaşlar pektat liyaz enzimi ile 55°C'de pH nötral ortamda 30´ işleme tabi tutuldu. AATCC Test method 39-1980 göre yapılan ıslanma testleri sonuçları aynıdır. Macbeth Color Eye 7000A spektrofotometresinde yapılan WI-CIE göre beyazlık derecesi ölçümlerinde, ham kumaş 4.89, biyoproses 31.17 iken geleneksel pişirme prosesi 27.32 değeri vermiştir. Uygulanan enzim biyoprosesi daha iyi beyazlık derecesine sahiptir. ISO 13934-1:1999 Maximum Elongation-Strip metoduna göre kopma mukavemetleri karşılaştırıldığında uyguladığımız biyoproses daha iyi bir direnc sahiptir. Pektat liyaz enzimi ile uyguladığımız biyoproses oldukça başarılıdır.

Anahtar Kelimeler: Enzim, pektat liyaz, pamuk, pişirme, biyoproses

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➢ **ORAL PRESENTATION**

Investigation of mud volcano composition in Turkmenistan

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Abstract
Balneotherapy is a treatment of some diseases, commonly used in clinical practice in various countries as well as Turkey, Israel and Japan. The mechanism has not been exactly explained but involved in mechanical, thermal and chemical effects. Because of that, mud volcano component is a very important chemical source as being cure of different problems.
For this purpose, two different mud origins were investigated in Turkmenistan area in terms of their chemical components.
Keywords: Mud, volcano, balneotherapy,

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➢ **ORAL PRESENTATION**

Cerium adsorption on the Si(111) surface: Density functional Theory

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Abstract
The interaction between Cerium with the Si(111) surface is studied by means of the first-principles calculation. Cerium coverage is about 0.33 ML on the Si surface. We have calculated atomic and electronic structures of this system with and without spin orbit coupling effect. It is found that spin orbit coupling effect does not change the calculated results significantly. Only we have seen small splitting in the surface states. The electronic band structure shows the system is in semiconductor character. We have also depicted and determined the orbital natures of states.
Keywords: Density Functional Theory, Si surface, adsorption

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➢ **ORAL PRESENTATION**

Farklı iki denizkestanesi türünün embriyonik gelişimi üzerine potasyum siyanürün toksisitesi

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Özet
Bu çalışmanın amacı farklı iki deniz kestanesi türünün (*Paracentrotus lividus ve Arbacia lixula*) embriyoları üzerine potasyum siyanürün (KCN) karşılaştırmalı toksisitesini araştırmaktır. Ergin deniz kestaneleri Seferihisar Körfezi'nden (Ege Denizi, Türkiye) toplandı. Daha önce rapor edildiği gibi gametler elde edildi ve embriyolar yetiştirildi. Kontroller, üç tekrarlı olarak sadece doğal filtre edilmiş deniz suyunda yetiştirilen embriyolardan oluştu. Deniz kestanesi embriyoları, KCN ilave edilmiş deniz suyunda 10^{-7} ila 10^{-5} M arasında değişen konsantrasyonlarda 72 saat boyunca (döllenmeden 10 dakikadan sonra başlayarak pluteus larval aşamasına kadar) yetiştirildi. Embriyolojik analizler yüzde gelişimsel anomalileri ve/veya embriyonik mortaliteyi belirlemek için yapılmıştır. Embriyolojik analizler fertilizasyondan yaklaşık 72 saat sonra ve gözlemden 10 dakika önce 10^{-4} M krom sülfat ilavesi ile hareketsizleştirilen canlı plutei üzerinde mikroskop ile gerçekleştirilmiştir. Her derişimden ilk 100 plutei aşağıda verilen özelliklere bakılarak değerlendirilmiştir: 1) normal larva (N); 2) gelişimsel olarak gecikmiş larvalar (G, boyut <1 / 2N); 3) çoğunlukla hasarlı iskelet farklılaşması ile gözlenen malformasyona sahip larva (P1); 4) pluteus aşamasına erişemeyen embriyolar / larvalar - yani anormal blastula veya gastrula (P2) ve 5) ölü (Ö) embriyolar veya larvalar. Toplam gelişimsel bozukluklar P1 ve P2 toplamı olarak değerlendirilmiştir. KCN' e maruz kalan *P. lividus* ve *A. lixula* larvalarında konsantrasyonlarla ilişkili gelişimsel bozukluklar, hiçbir gelişimsel bozukluğun görülmediği 10^{-7} M KCN ile yaklaşık % 100 gelişimsel bozukluğa neden olan 10^{-5} M KCN arasında arttığı görülmüştür. Bu çalışma, taksonomik olarak farklı iki deniz kestanesi türleri olan *P. lividus* ve *A. lixula'* nın erken yaşam evrelerinde KCN' ün farklı toksisite eğilimlerine ilişkin kanıtlar sunmaktadır. Sonuç olarak, *A.lixula* embriyoları *P. lividus* embriyolarına göre KCN' ye karşı daha hassas cevaplar verdiği ortaya bulunmuştur.
Anahtar Kelimeler: Potasyum Siyanür, Toksisite, Embriyo

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➢ **ORAL PRESENTATION**

Leather industry wastewater sludge and chromium mobility in soil

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Abstract

Leather industry wastewater sludge is classified as hazardous mainly on account of the presence of chromium in it. The sludge influence on soil for many years is becoming a major source of heavy metals contamination in soil and ground water. Recently, concern about Cr as an environmental pollutant has been increasing due to its build up to toxic levels in the environment as a result of various industrial activities. The risk of leaching of Cr(VI) from the soils into the groundwater poses a considerable health hazard. Chromium, in the trivalent form (Cr(III)), is an important component of a balanced human and animal diet and its deficiency causes disturbance to the glucose and lipids metabolism in humans and animals. In contrast, hexavalent Cr is highly toxic and may cause death to animals and humans if ingested in large doses. In this study, was investigated chromium mobility and chromium form (Cr^{+3}, Cr^{+6}) in the soil contaminated with tannery sludge.

The aim of this study is to establish the effect of soil contaminated with tannery sludge on its environment. For this purpose, in the study, was investigated that chromium mobility and chromium form (Cr^{+3}, Cr^{+6}) in the soil contaminated with tannery sludge. Soil samples were taken from different depths (0-20, 20-40, 40-60) cm and samples were analysed.

Key Word: Leather industry, sludge, mobilty, chrome

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➢ **ORAL PRESENTATION**

Effect of leather industry wastewater sludge on grown of *Ligustrum vulgare*

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Abstract

In leather industry, the hundred thousand tons waste sludge for every year is generated from wastewater treatment processes. These wastes occupy large amount of areas at disposal sites due to their huge volumes. The formed treatment sludge also can be used for the component of growing environment due to their plant nutrients. The treatment wastes contain approximately %50-70 organic matter in dry matter and they were considered as the source of organic fertilizer because of they contain a significant amount of plant nutrients. The organic materials in the treatment sludge are supported in agriculture due to their properties with soil corrective matter. The high amount of organic matter contained in the sludge contributes to plant growth.

In this study, the effect of sludge waste on plant development of *Ligustrum vulgare* was investigated. First of all, the plantation of the Ligustrium plant was performed by using 55 pots and using total 990 kg soil. Then, the treatment sludge was added in these pots. During one year experiment period, the soil sample was taken from pots to be 0-20 cm depth at certain times (1st, 3th, 6th, 9th and 12th months) and the plant harvest was carried out.

The amount of organic matter in the soil and tannery sludge was found to be 2.33 % and 8.9 %, respectively. The effect on the soil organic matter of the he tannery sludge treatments were determined as 8.5% (control 1.4%); 8% (control 1.3%)., 9% (control 1.2%); 10% (control 0.5%) and 10.8% (control 2.3%) at 1st, 3rd, 6th, 9th and 12th months.

It was observed that the using of tannery sludge has an effect on plant development and the length of plants treated with sludge were longer.

Key Word: Tannery sludge, soil, plant, organic matter

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➢ **ORAL PRESENTATION**

Theoretıcal investigation of laser light absorption by soil medium

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Abstract
Environmental studies generally require analysis of chemical, physical and biological properties of materials such as soil and rock. Such analyses can be costly and time consuming. Therefore, fast and cost effective methods are needed. Reflection spectroscopy, which is widely used in food and drug analysis, has become an effectively used tool in the field of soil science. In this study, the theoretical calculations and the experimental investigations of the background radiation ratios and spectral traces in soil and rocky terrains were made by using reflection spectroscopy. It was determined how the radiation and the spectral trace show changes in the different mixture ratios in soil. Additionally, we made measurements and calculations for five different soil samples with varying mineralogical composition at wavelengths between 250 and 1100 nm. In order to avoid the particle scattering effects in these calculations, we took the particle sizes between 2 and 4 um. The results showed a direct relationship between soil composition and spectral reflectance rates. The spectral absorption rates are directly dependent on the soil components and their concentrations.
Keywords: Reflection Spectroscopy, Soil Analyze, Spectrum.

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➢ **ORAL PRESENTATION**

Kablosuz algılayıcı ağlarda elfes olasılıksal dağıtım modeli kullanılarak ağın kapsanma oranının optimizasyonu için yeni bir meta-sezgisel yaklaşım

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Özet

Kablosuz Algılayıcı Ağ (KAA)'lar kritik ortamların takibi, felaket durumlarının tespiti, çevrenin izlenmesi gibi ulusal güvenliği gerektiren çeşitli uygulamalarda son yıllarda birçok araştırmacı tarafından çalışılan önemli bir çalışma sahası olmuştur. KAA'ları oluşturan algılayıcıların algılama, hesaplama ve iletişim yetenekleri ile birlikte enerjileri de sınırlı olduğu için belli bir alan içerisindeki yerleşimlerinin rastgele olarak yapılması; hem ilgili alanın etkin bir şekilde kapsanamamasına hem de algılayıcıların enerjilerinin gereğinden fazla tüketilerek ağın yaşam süresinin kısalmasına neden olacaktır. Bu süreçte algılayıcıların alandaki yerleşimlerinin dinamik olarak yapılması ağın kapsanma oranının artırılmasında ve ağın yaşam süresini uzatarak alanın algılanma sürekliliğinin sağlanmasında önemli bir rol oynar.

Bu çalışmada, sadece mobil düğümlerden oluşan algılayıcıların ilgili alanda etkin olarak yerleştirilmesi amacıyla meta-sezgisel tabanlı Elektromagnetizma-Benzer algoritmasına dayalı yeni bir dinamik dağıtım yaklaşımı önerilmiştir. 2 boyutlu (2D) bir düzlem üzerindeki tüm hedef noktaların kapsanma problemine çözüm bulmak için başlangıç dağıtımları rastgele olarak yapılan algılayıcıların dağılımları Elfes Olasılıksal Dağıtım Modeli kullanılarak yapılmıştır. Elektromagnetizma-Benzer Algoritmasını temel alan Elfes Olasılıksal Dağıtım Modeli (Elfes Probabilistic Deployment Model based on Electromagnetism-like Algorithm – EPDM-EM) olarak isimlendirilen bu yaklaşımın simülasyonları yapılarak optimum kapsanma oranlarına ulaşılmaya çalışılmıştır. Simülasyon sonuçları; önerilen yöntemin rastgele dağıtıma göre etkin olduğunu ve algılayıcıların ilgili alandaki optimum yerleşimleri için dinamik bir dağıtım stratejisi olarak önerilebileceğini göstermiştir.

Anahtar Kelimeler: Kablosuz Algılayıcı Ağlar, Elfes Olasılıksal Dağıtım Modeli, Algılayıcı Dinamik Dağıtımı, Elektromagnetizma-Benzer Algoritması

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➢ **ORAL PRESENTATION**

Improvement of shoot proliferation in hazelnut using temporary immersion system bioreactor

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Abstract
Hazelnut is an economically important nut crop for Turkey by production of nearly 550.000 tons per year. For the renewal of the oldest orchards and the release of the new varieties, mass propagation of hazelnut is required. Micropropagation is considered as an alternative technique to the traditional methods to reach large quantities of seedlings. However, low multiplication rate of hazelnut microcuttings on solid culture medium does not meet the commercial need. Liquid culture in temporary immersion system (TIS) has recently been developed and proved high rate of multiplication for many plant species. The system is based on immersion and ventilation of the explants intermittently. Immersion of the shoots to the liquid medium provides uniform contact to the nutrients, whereas the solid medium allows the absorbance of the nutrients only by the basal part. The ventilation interval provides oxygenation of the vessel to inhibit accumulation of detrimental gases. Immersion frequency-immersion time and ventilation frequency-ventilation time combinations are the important parameters for successfully applying the system. In this study, to investigate the effect of TIS on increasing shoot proliferation of Turkish hazelnut cultivar "Palaz", different immersion-ventilation time combinations were tried. The explants (5-6 nodal segments) excised from 8-week-old cultures grown on solid medium were transferred to TIS device (SETIS™) containing Nas and Read Liquid Medium. The explants were grown in a growth room at 25 °C and 16 h photoperiod. During the study it was found that SETIS™ significantly increased the numbers of shoots compared to solid culture. The system found to be promising on high rate multiplication of hazelnut cultivars.
Key words: Bioreactor, liquid culture, SETIS

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➢ **ORAL PRESENTATION**

Effect of calf gender on dystocia in multiparous holstein dairy cows

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Abstract
Dystocia can be defined as calving difficulty resulting from delayed spontaneous calving or severe assisted extraction. The economic importance of dystocia well known due to calf losses and subsequent health and reproductive problems. The objectives of this study were to evaluate the incidence of dystocia and its association with calf gender in Holstein dairy cows. Records of 200 calves, including 108 males and 92 females, from multiparous (between 3 to 5 ages) Holstein dairy cows were included the study. Dystocia score and calf viability status (alive or dead) was recorded during calving. In this study, dystocia scored from 1 to 3 as 1 = no assistance, 2 = slight problem, and 3 = needed assistance. Two and 3 scores were defined as dystocia. The incidence of dystocia was determined as 13%. And also, it was found that dystocia rates more in cows that produced male calves compared to cows that produced female calves. These ratios were 15,74% and 9,78% respectively. The mean body weight of male calves was found to be around 10% higher than the females and it could be related with dystocia. In conclusion, it was detected that calf gender had an impact on dystocia and dystocia score in dairy cows. A larger proportion of male calves had mild or severe dystocia than female calves.
Keywords: calf, cow, dystocia, gender.

➢ **ORAL PRESENTATION**

Maksiller sinüs ile diş kökleri arasındaki ilişkinin konik işınlı bilgisayarlı tomografi ile değerlendirilmesi

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Özet
Maksiller sinüs tabanının diş köklerine yakınlığı ve sinüsün anatomik, patolojik ve fizyolojik özellikleri diş hekimleri için önemlidir. Periapikal lezyonlar, şiddetli periodontal hastalıklar, gömülü dişler, oroantral fistül oluşumu, kök kanal dolgu materyallerinin kanal dışına çıkması gibi pek çok dental durumda maksiller sinüs etkilenebilir. Bu çalışmanın amacı diş köklerinin maksiller sinüs ile ilişkisini konik ışınlı bilgisayarlı tomografik (KIBT) görüntüleme yöntemi ile değerlendirmektir. 484 hastada toplam 3.621 adet (1.821 sağ, 1.800 sol) sağlam dişin sinüsle ilişkisi değerlendirilmiştir. Diş köklerinin sinüsle ilişkisi dört farklı şekilde sınıflandırılmıştır: sınıf 0, kök apeksi ile sinüs arasında 0,5 mm'den fazla mesafe var; sınıf 1, kök apeksi ile sinüs arasında 0,5 mm'den az mesafe var; sınıf 2, kök apeksi sinüs tabanını oluşturuyor; sınıf 3, kök apeksi sinüsün içine uzanıyor. Sağ ve sol taraf arasında arasında anlamlı bir fark bulunmamıştır ($p>0,05$). Sınıf 3 ilişkinin en sık görüldüğü dişler ikinci ve birinci molarlardır (sırasıyla %53,6 ve %49,5). İkinci premolar (%43,6) birinci premolar (%85,1) ve kanin (%89,9) dişlerde en sık görülen ilişki tipi ise sınıf 0 olmuştur. Premolar ve kaninlerde maksiller sinüsle yakın ilişki çok az görülürken, birinci ve ikinci molar dişlerin sinüsle olan yakın ilişkisi cerrahi işlem planlanırken göz önünde bulundurulmalıdır.
Anahtar Kelimeler: maksiller sinüs, molar, premolar, kanin, konik ışınlı bilgisayarlı tomografik görüntüleme

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➢ **ORAL PRESENTATION**

Kuvars kristal mikroterazi ile genetik tespitte yüzey kaplama etkisi

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Özet

Sensör yüzeyinin kimyasal ve morfolojik özellikleri, tespitin kalitesi ve hassasiyeti ile doğrudan ilişkili olduğu için yüzey kimyası çalışmaları biyosensör uygulamalarında çok önemli bir yere sahiptir.. Altın, platin gibi sensör yüzeylerini kaplayarak; farklı özelliklerde, kararlı, seçici ve duyarlı sensör yüzeyleri elde edebilmek için çalışmalar yapılmaktadır. Aynı zamanda spesifik bir ölçüm yapılabilmesi için gerçek zamanlı, hızlı ve bulunduğu ortamdan etkilenmeyen sistemlere gereksinim duyulmaktadır. Bu çalışmada, kaplama yönteminin öneminin ve tespit sisteminin hassasiyetindeki etkisini araştırmak için yüksek duyarlılığa sahip Kuvars Kristal Mikroterazi (*Quartz Crystal Microbalance*-QCM) tabanlı *sensör kullanılarak 2* farklı deney prosedürü ile DNA tespitinin karşılaştırılması yapılmıştır. Deney-1'de altın yüzey üzerine 3-Mercaptopropyltrimethoxysilane (MPS) kaplama uygulanmış, bağlayıcı molekül olarak Sulfo-SMCC kullanılarak prob DNA (pDNA)'nın bağlanması için yüzey hazır hale getirilmiştir. Sonrasında pDNA (10^{12} kopya/mL) immobilizasyonu gerçekleştirilmiştir. Deney-2'de ise altın yüzey üzerine direkt bağlanabilecek sülfidril ile aktif edilmiş pDNA (10^{14} kopya/mL) immobilizasyonu gerçekleştirilmiş ve bu aşamaları takiben her iki deney prosedüründe de spesifik olmayan bağlantıları önlemek için % 5 oranında Bovine Serum Albümin (BSA) solüsyonu uygulanmış, son aşamada ise hedef DNA (hDNA)(10^{13} kopya/mL) uygulanarak tespit işlemi tamamlanmıştır. Deneylerin her biri üç tekrarlı olarak yapılmış ve her bir frekans taraması için ölçümlerin ortalaması alınmıştır. Elde edilen sonuçlara göre rezonans frekansında, tDNA'da sırasıyla 100 Hz ve 40 Hz'lük kayma gözlemlenmiştir. Deney-2'de kullanılan pDNA'nın, Deney-1'de kullanılan pDNA'ya göre konsantrasyonun fazla olması nedeniyle Deney-2'de yüzeye daha fazla tDNA immobilizasyonu beklenirken yapılan çalışma sonucunda elde edilen sonuçlar bu durumun tersini göstermektedir. Bunun sebebi Deney-1'de yapılan yüzey kaplamasının yüzeyde oluşan stresi altın yüzey üzerine eşit dağıtmış olmasıdır. Dolayısıyla yüzey kaplaması, sensör hassasiyetini artırmış olup yüzeyde oluşan az miktardaki bağlantının tespitini kolaylaştırmıştır. Sonuç olarak kararlı, seçici ve hassasiyeti yüksek sensör yüzeyleri elde edebilmek için MPS yüzey kaplaması uygun bir yüzey kimyası sağlamaktadır.

Anahtar Kelimeler: Sensör, yüzey modifikasyonu, piezoelektrik, 3-Mercaptopropyltrimethoxysilane, DNA tespiti.

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➢ **ORAL PRESENTATION**

Evaluation of the IR temperature measuring unit for the PV surface

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Abstract

Sensors have been used in every aspect of science and technology in order to make reliable measurements as a necessity of understanding the physical world for the entire field of engineering. Hence, understanding how and where to use this technology most efficiently is essential. This study focuses on the practical operations of noncontact temperature measurement devices and infrared (IR) thermometry. The main benefits of noncontact IR thermometry are the immediate response, lack of interference, and the ability to measure in high temperature ranges up to 3000 °C. Therefore only the surface temperature can be measured with this technique. The Arduino family of microcontroller was chosen as it contains a whole range of boards with varying levels of capability that all share a common programming languages. So, several studies in the literature have been preferred appropriately sized Arduino that provides the answer of wide range of demand. The programming for Arduino is handled via the open-source Arduino Software. Programs are written as a series of functions that perform tasks necessary to achieve the desired goal. A prototype of IR thermometer with Arduino microcontroller was produced in ITU. Furthermore, experimental studies have been carried out to measure the temperature of the polycrystalline PV panel's surface with widespread use and to interpret the results by meteorological data with this prototype IR thermometer. The results are presented with tables and interpreted with graphs. According to the results of this study, it is seen that due to the change of temperature, the response of different material is vary. In the experimental system the area that PV module placed have been adjusted four different ambient air temperature difference as 5 °C. PV module efficiencies are calculated with using obtained experimental data. According to the computations the module efficiency was decreased by increasing temperature cases. Consequently it will underlined that it was observed that increasing of PV module temperature decreases efficiency.

Keywords: Sensors, IR termomertry, Arduino, mudule temperature, PV panel surface temperature.

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➢ **ORAL PRESENTATION**

Nörodejeneratif hastalıklara karşı koruyucu etkisi bulunan mikrobiyal kaynaklı pyocyanin pigmentinin sentetik gıda renklendiricilerine alternatif olarak kullanımının araştırılması

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Özet

Mavi renkli ve fenazin türü pigment olan pyocyanin pigmentini *Pseudomonas aeruginosa* sekonder metabolit olarak durgun fazda üretmekte olup, yapılan birçok çalışmada bu pigmentin antimikrobiyal biyolojik aktivitesi gösterilmiştir. Gıdalarda kullanılan sentetik renklendiricilerin karsinojenik etkilere ve hiperaktivite, migren gibi nörolojik rahatsızlıklara sebep olduğu bilinmektedir. Bu çalışmada gıdalarda bakteriyal kaynaklı, nörolojik hasar yaratmayan ve nörolojik hasara karşı koruyucu etkiye sahip olan, doğal gıda renklendiricisi olarak kullanılabilecek bir pigment bulunması amaçlanmıştır. Yapılan çalışmada kullanılan pyocyanin pigmenti üreticisi *Pseudomonas aeruginosa* MB713 suşu 16S rRNA ile tanımlanmış, modifiye edilmiş indükleyici besiyerinde yüksek verimde ürettiği pyocyanin kloroform ile kısmi olarak saflaştırılmış, sonrasında spektrofotometrik yöntemle 495 nm'de ölçülerek miktarı belirlenmiş, evaporatörde uçurularak tok haline getirilmiş ve SHSY5Y nörpblastoma hücresine uygulanarak MTT yöntemi ile toksisitesi, nörodejeneratif hasara karşı koruyucu etkisi, ELISA yöntemi ile de SOD, CAT ve MDA miktarları ölçülerek antioksidan aktivitesi ve in vitro ve in vitro hücre modelinde asetilkolinesteraz inhibisyon etkisi araştırılmıştır. Modifiye edilmiş indükleyici besiyerinde 6 gün 30^0C'de 150 rpm'de inkübe edilerek üretilen *Pseudomonas aeruginosa*'nın ürettiği pyocyanin miktarı 51,22 µg/mL olarak hesaplanmıştır. Farklı derişimlerde (10, 25, 50 ve 100 µM) uygulanan pyocyanin pigmenti SHSY5Y nöroblastoma hücresinde %15 ile %42 ölüm oranı göterirken, 150 µM H_2O_2 ile uyarılan SHSY5Y hücresinde SOD aktivitesi 6,2 ile 7,6 U/mL, CAT aktivitesi 5,0 ile 7,3 nmol/mL ve MDA miktarı 7,4-7,1 ng/mL ve %15 ile %30 asetilkolinesteraz (AChE) inhibisyonu gözlenmiştir. Bu araştırmada elde edilen sonuçlara göre; nörolojik hasarlara karşı koruyucu olan, düşük toksisiteye sahip pyocyanin pigmentinin sentetik gıda renklendiricilerine alternatif olarak kullanımı önerilebilir.

Anahtar Kelimeler: Pyocyanin, SHSY5Y, toksisite, asetilkolinesteraz, antioksidan

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➢ **ORAL PRESENTATION**

Development of a disposable electrochemical sensor for dopamine determination based on poly(pyrrole-2-carboxylic acid) modified pencil graphite electrode

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Abstract
As a catecholamine, dopamine (DOP) is one of the most important neurotransmitters, and is widely distributed in the human central nervous system for message transfer, serving as an antecedent of adrenaline and noradrenaline, and helping to maintain hormonal balance, as well as emotion control. Abnormally high or low DOP levels may lead to several neurological disorders, such as Parkinson's disease, Alzheimer's disease, schizophrenia, and epilepsy. Thus, the highly selective and sensitive detection of DOP is important [1,2].

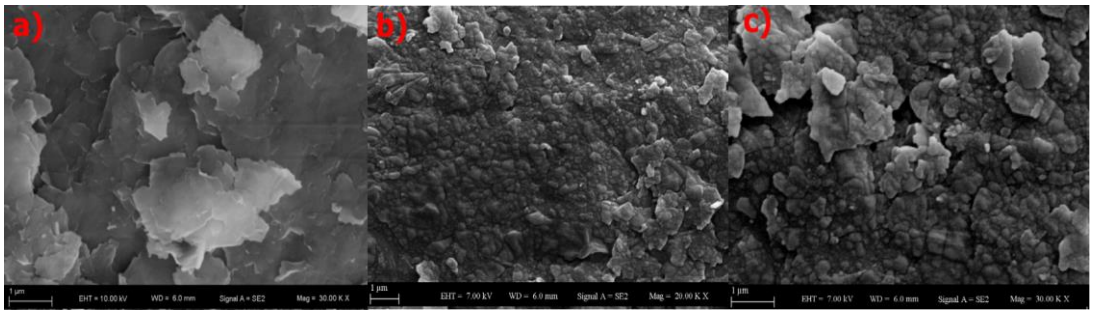

Figure 1. Scanning electron microscopy images of the **a)** bare/PGE, **b)** and **c)** P(P2CA)/PGE.

In this work, preparation of poly(pyrrole-2-carboxylic acid) (P(P2CA)) modified pencil graphite electrode (PGE) and the use of this modified electrode for electrochemical sensing applications were investigated. Poly(pyrrole-2-carboxylic acid) modified pencil graphite electrode (P(P2CA)/PGE) was characterized with cyclic voltammetry (CV), electrochemical impedance spectroscopy (EIS), scanning electron microscopy (SEM) and X-ray photoelectron spectroscopy (XPS) analysis. The sensor properties of the obtained surface were examined for voltammetric determination of dopamine. The effects of pH and polymerization parameters on the electrochemical behaviour of DOP were investigated. The effects of possible interfering substances were evaluated. The detection limit was determined as 0.0035 µM (S/N=3). Analytical application of P(P2CA)/PGE was successfully tested in the determination of DOP in blood serum and drug samples.

Keywords: Dopamine, poly(pyrrole-2-carboxylic acid), pencil graphite electrode, electropolymerization.

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➢ **ORAL PRESENTATION**

The APGIII revision of the aquatic vascular macrophyte flora of Turkey

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Abstract

In recent years, the rapid development of molecular techniques used in revealing the diversity of living things has led to a considerable increase in the use of these techniques to establish classifications in plant taxonomy. As a result of the molecular discoveries carried out in this field with the use of these techniques, the system used to date in the plant classifications has undergone radical changes. For instance, various changes have been made to the names of the species, the upper taxa, and some subspecies have upgraded to species level, while others have been considered to be a single species by being accepted as synonymy. The changes that occur in the systematics of the angiosperm plants have been accumulated in the light of new knowledge based on phylogenetic studies and the new classification system for angiosperm plants introduced by Angiosperm Phylogeny Group, which is an international research group founded by a team of taxonomists. By the year 2010, Angiosperm Phylogeny Group introduced the new classification system in 3-stage versions (APG I, 1998; APG II, 2003; APG III). The APG III revision of the flora of Turkey is made and published in the book " Türkiye Bitkiler Listesi – Damarlı Bitkiler" by the editor in chief Adil Guner.

In this study, Turkey wetland plants list is reorganized according to the changes in the APG III revision. In the detection of wetland plants, the book “Türkiye Sulak Alan Bitkileri ve Bitki Örtüsü” written by Ozcan Secmen and Erkuter Lebleci and “Su Yabancı Otları” the book published by General Directorate of State Hydraulic Works are used as basic reference studies due to their importance in this context. The list was prepared by examining the other studies on wetlands found in the literature. By scanning the relevant literature, 687 vascular plant taxa have been identified which were accepted as wetland plants in Turkey. It was found that 100 of these taxa had changes in their names at genus and species level. At the end of the study, it was demonstrated that some taxa were named in different ways in the “Türkiye Bitkiler Listesi – Damarlı Bitkiler” as compared to international databases. In this regard, it is thought that it would be useful to make a more detailed revision by broadening the study.

Keywords: Wetland Plants, Flora, Vascular Macrophyte, APG III.

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➢ **ORAL PRESENTATION**

Evaluation of technological traits of some winter bread wheat genotypes growth under dry conditions as organic and conventional[§]

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Abstract
In this study, in the growth seasons of 2013-2014 and 2014-2015, trials were conducted with hiring in the town of Siran in Gumushane with three replicated according to completely randomized block design as split plots. In the study, two growth conditions as organic and conventional, and eight winter bread wheat genotypes as material. Growth conditions were selected main plots, others (genotypes) as sub-plots.
In the study, thousand kernel weight, moisture of flour, sedim, and dough stability showed differences for growth conditions; however, these variation differed according to growth years. On the basis of the genotypes; some quality criteria such as test weight, protein content of flour, colour L, a, b values of the flour, sedim, and late sedim showed differences for the genotypes in the both of the years. But, thousand kernel weight, ash contents of flour and bran for the genotypes differed on different years. Quality criteria such as protein content of flour, colour L, a, b values, ash content of bran, late sedim showed the interaction of growth condition x genotypes in different growth years. Differences for falling number were not statistically significant for all variation sources. When evaluated in general terms, it is seen that the quality characteristics are affected by the growth conditions and genotypes rather than by the years. Thus, quality genotypes even under organic conditions that address the minimum input conditions, such genotypes should be used as a source of gene in organic wheat breeding studies. For this purpose, a large number of genotypes that are known to be of high quality should be evaluated in large areas and it should be possible to recommend the market in organic bread production together with the characteristics of flour and dough.
Keywords: Winter wheat, quality traits, organic farming.

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➢ **ORAL PRESENTATION**

Alleben Göleti (Gaziantep-Türkiye) akuatik vasküler makrofit florası

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Özet

Günümüzde ülkelerin biyolojik zenginliklerinin tespit edilmesi ve kayıt altına alınması yer altı zenginliklerin belirlenmesi ve kullanıma sunulması kadar önemlidir. Biyolojik çeşitlilik gen rezervlerinin ortaya konması açısından büyük önem arz eden biyolojik zenginlikler içerisinde en önemli unsurlardan birisidir. Tür, gen ve ekosistem çeşitliliği alt başlıklarında incelenen biyolojik çeşitlilik açısından tüm başlıklar için ortak noktanın sahip olunan tür sayısı olduğu söylenebilir. Bu bağlamda Türkiye'nin coğrafik, topoğrafik ve iklimsel özellikleri nedeniyle bulunduğu bölgenin çeşitlilik bakımından en zengin ülkelerinden birisi olduğu düşünüldüğünde Türkiye florasının tespit edilmesi oldukça önemli olup bu amaçla yerli ve yabancı pek çok bilim insanı tarafından çalışmalar yapılmıştır. Ancak floristik zenginlik tam olarak ortaya konamamıştır. Bu noktada bölgesel düzeyde irili ufaklı floristik çalışmaların yapılmasına hala ihtiyaç duyulmaktadır.

Bu çalışmada daha önce lokal bir floristik çalışmanın yapılmadığı tespit edilen Alleben Göleti (Gaziantep) ve çevresinin florası tespit edilerek Türkiye'nin biyolojik çeşitliliği noktasında kayıt altına alınan biyolojik zenginliklerinin tespitine katkı sağlamak amaçlanmıştır. Alleben Göleti yapay bir gölet olup, yerel halk tarafından rekreasyon amacıyla oldukça yoğun şekilde kullanılmaktadır. Gölet Davis'in Grid sistemine göre C6 karesinde yer almaktadır.

Çalışma kapsamında gerçekleştirilen örneklemeler, 2016-2018 yılları arasında farklı zamanlarda gerçekleştirilmiştir. Arazi çalışmaları sırasında toplanan bitki örnekleri, numara verilerek arazi defterine kaydedilmiş tayin ederken açık bir şekilde incelenebilmesi açısından uygun şekilde preslenmiştir. Teşhiste kolaylık sağlaması açısından renk özellikleri, boy, habitat özellikleri gibi bilgiler arazi defterine kaydedilirken aynı zamanda bitkiler fotoğraflanmıştır. Toplanmış ve kurutulmuş olan bitki örnekleri ilk önce familya düzeyinde ayrıldıktan sonra, Davis (1965-1988)'in " Flora of Turkey and the East Aegean Island" adlı eseri ile yapılmış monogram ve revizyonlardan yararlanılarak tayin edilmiştir.

Toplanan örneklerin tayin edilmesi ile 48 familyaya ait 113 genus ve 158 takson tespit edilmiştir. Alanda en çok taksonla temsil edilen familyalar 14 takson ile Asteraceae, 12 takson ile Poaceae ve Cyperaceae, 11 takson ile Brassicaceae ve 10 takson ile Caryophyllaceae olarak sıralanmıştır. 6 takson ile *Carex* en fazla taksonla temsil edilen cins olarak belirlenmiştir. Araştırma alanında tespit edilen taksonlardan 74'ü Türkiye sulak alan bitkileri listesinde yer alan akuatik vasküler makrofitlerdir. Sulak alan bitkileri incelendiğinde taksonların 25 familyaya ait oldukları görülmekte olup en fazla taksonla temsil edilen familyanın 12 taksonla Cyperaceae olduğu belirlenmiştir.

Anahtar Kelimeler: Alleben Göleti, flora, vasküler makrofit

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➢ **ORAL PRESENTATION**

Basit bir biyosensör tasarımı: piezo disk element

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Özet
Günümüzde kütle değişimi sonucu oluşan gerinim ölçümünde kullanılan çok sayıda piezoelektrik biyosensör platformu mevcuttur. Piezoelektrik malzemelerin mekanik strese olan yüksek hassasiyeti, bunları çok düşük voltajları tespit edebilen transdüserlerde kullanımı uygun hale getirmiştir. Bu bağlamda, voltaj ölçümünün pratikleşmesi için küçük, hızlı ölçüm yapabilen sensörlere ihtiyaç duyulmaktadır. Bu çalışmanın temel amacı, plaka üzerinde oluşan yüzey stresini voltaja dönüştüren, gerçek zamanlı, yerinde ve hali hazırdaki sistemlere nazaran maliyeti düşük, basit ve kullanılabilir bir piezoelektrik sensör tasarlamaktır. Yapılan çalışmada voltaj ölçümünün hassasiyeti ve tespiti için kurşun zirkonat titanat (PbZrTiO3; PZT) piezo disk element (PDE) kullanılmıştır. Çalışmanın amacına yönelik olarak voltaj tespitinde, hidroksile edilmiş PDE bakır yüzeyinde katmanlaşmayı sağlayacak 3-Mercaptopropyl-trimethoxysilane (MPS) kaplama pH=9 değerinde bazik olarak uygulanarak katmanlaşmanın gerilim üzerindeki etkisi incelenmiştir. Çalışmanın ilk aşamasında piezoelektrik malzeme olarak tercih edilen PDE yüzeyine uygulanan kaplamanın gerilim üzerine etkisinin gözlemlenmesi için devre oluşturulmuştur. İkinci aşamasında ise PDE üzerine MPS kaplama 30 dakika boyunca uygulanarak her 5 dakikada bir gerilim değerleri avometre ile ölçülerek kaydedilmiştir. Elde edilen veriler değerlendirildiğinde katmanlaşmaya bağlı yüzey stresindeki artış gerilimde artışa neden olmuştur. Tasarlanan sensör ile ilgi konusu olan altın yüzey piezoelektrik sensörlerine dayanan yeni gerilim dönüştürücü konfigürasyonun genelleştirilmesini sağlayacaktır. Gelecek çalışmalarda tasarlanan bu sensörün kullanımı ile yerinde, hızlı, gerçek zamanlı ve düşük maliyetli bakteri tespiti amaçlanmaktadır.
Anahtar Kelimeler: Sensör, yüzey modifikasyonu, piezo disk element, 3-Mercaptopropyl-trimethoxysilane.

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➢ **ORAL PRESENTATION**

Eskişehir Endemic Plant Biodiversity

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Abstract
There are three phytogeographical regions in Turkey: Irano-Turanian, Mediterranean and Euro-Siberian. Eskişehir is located in the north-west of Central Anatolia and interestingly is exactly at the intersection of these three phytogeographical regions, reflecting both climatic characteristics and plant biodiversity. Especially geographical position, microclimatic conditions of Sakarya valley, existence of Porsuk river increase Eskişehir plant biodiversity. According to recent studies, there are about 1500 taxa registered in Eskişehir flora. Approximately 10% of this number is endemic to Turkey. Most importantly, there are 34 taxa locally endemic for Eskişehir. In this study, the distribution of Eskişehir plant biodiversity to families and genera, phytogeographical status, endemic species numbers and especially local endemic species which is grown only in Eskişehir are given.
Keywords: Anatolia, Eskişehir, Biodiversity, Endemism ratio

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➢ **ORAL PRESENTATION**

Interactions of Curcumin with Lipid Bilayers

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Abstract
Curcumin, a well-known hydrophobic polyphenol molecule extracted from C. longa turmeric, has been attracting increasing interest due to its antimicrobial, anti-inflammatory, anti-oxidant, and anti-tumor activities. However, detailed understanding of the interaction mechanism between curcumin and the cell membrane remains to be investigated. Here we present preliminary results from the interactions of curcumin with different model lipid membranes (i.e. bacteria, yeast and mammalian plasma cell membranes as well as peroxidized lipid membranes) by coarse-grained molecular dynamics simulations. We show that curcumin has in general thinning effect on the cell membrane with the results being more significant in bacterial membranes. Our results provide important insights into the membrane disruption activity of curcumin exposed to distinct cell types.
Keywords: Curcumin, lipid membranes, MARTINI, molecular dynamics.

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➢ **ORAL PRESENTATION**

Effective Atomıc Numbers And Gamma-Ray Attenuation Properties Of Substituted 45S5 Bıoactive Glasses

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Abstract
This study examines the attenuation behaviors of bioactive glasses 45S5 substituted with CuO, Fe2O3, against photon energies of 0.02 MeV, 0.06 MeV, 0.08 MeV, 0.122 MeV, 0.356 MeV, 0.511 MeV, 0.662 MeV, 1.173 MeV, 1.25 MeV, 1.33 MeV, 5 MeV,8 MeV,10 MeV,15 MeV and 20 MeV. Practical application of certain material for radiation attenuation depends on parameters like mass attenuation coefficient (μ/ρ), effective atomic number (Zeff), mean free path (MFP), and half value layer (HVL). The mass attenuation coefficient data have been used to calculate linear attenuation coefficient coefficients and half-value layer. The best radiation attenuation derives from photon energy, material density and an atomic number of elements present in the materials. In the present study, the μ/ρ, the Zeff, MFP and HVL are calculated for these bioactive glasses. An ideal bioactive material possesses biomechanical compatibility as an important feature and 45S5 bioactive glass with its ability to bond to both hard and soft tissue provides such feature. The elasticity of the bioactive glasses, however, has little to do with the shielding properties. Shielding properties of the bioactive glasses depends mainly on parameters like mass attenuation coefficient (μ/ρ), effective atomic number (Zeff), mean free path (MFP), and half value layer (HVL). This study examines the shielding properties of above mentioned bioactive glasses.

Keywords: Attenuation behaviors, Shielding properties, Bioactive Glasses, Mass attenuation coefficient (μ/ρ), Effective atomic number (Zeff), mean free path (MFP).

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➢ **ORAL PRESENTATION**

The effects of fiber reinforcement on strength characteristics of sand soils

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Abstract
Using synthetic fiber to improve mechanic properties of soil has become popular and has been widely used nowadays. This kind of materials provides many advantages due to its cost-effectiveness, easy implementation and positive contribution on strength properties of soils therefore they are widely used in many geotechnical engineering applications such as; weak soil, slope stability, embankments, liquefaction seepage controlling in water-retaining structures and prevention of internal erosion. In this study, the fiber material is randomly distributed to sand soil. The fiber type, size, weight ratio according to sand and sand type were kept constant and the effects of fiber on shear strength of the sand that has different relative density were investigated with 216 shear box tests. The results show that the fiber reinforcement increases the shear strength in each density level; when the density increases the effect of the fiber on shear strength decreases and finally the fiber reinforcement limits the loss of post-peak shear strength.
Keywords: Soil Improvement, Fiber Reinforced Sand, Strength Parameters, Direct Shear Test.

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➢ **ORAL PRESENTATION**

Potential of high pressure processing for processing of traditional drinks

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Abstract
High pressure processing (HPP) is a nonthermal food processing technique for food preservation that provides inactivation of both food spoilage and foodborne pathogens as well as enzymes by applying pressure rather than heat to induce a pasteurization effect. Pressures at 400-600 MPa range at room temperature or slightly above or below room temperature provides minimal changes on taste, texture, appearance or nutritional value of liquid foods such as fruit juices and milk and solid foods such as meat, fresh fruit and vegetables with extension of shelf life. The trends towards natural (minimally processed or without additives), highly nutritional value, health-promoting and flavor rich foods and beverages and especially for traditional drinks have been increased with consciousness of consumers. These traditional drinks such as fermented turnip juice (Shalgam), licorice drink and hardaliye, however, have very short shelf-life, and thus, are produced in very limited amount and consumed freshly. Heat processing provides extension of shelf life, but causes deterioration on physical, nutritional and sensory properties of these products. Thus, processing of these products by HPP with quantification of the changes in physical properties are prompted in this study. HPP processing of these three products with the pressures up to 500 MPa for 5 to 15 min processing time and processing temperatures up to 40□C revealed that effect of pressure on physical properties of the products changes by the type of the product, the magnitude of pressure and processing temperature. Generally, color (L^*, a^* and b^*), hue, chroma, total color difference (TCD), (total antioxidant capacity (TAC), total phenolic substance content (TPSC) for all three products, and total monomeric anthocyanin content (TMAC) for shalgam and hardaliye were significantly affected by HPP processing.
Keywords: Shalgam, hardaliye, licorice drink, high pressure processing, physical properties.

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➢ **ORAL PRESENTATION**

Pulsed electric fields: From food processing to seed disinfection

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Abstract
Pulsed electric field (PEF) processing involves the application of a short burst of high voltage pulses to foods placed between two electrodes. In a typical PEF treatment, intense electric pulses are applied to a conductive material (whether it is liquid or solid) which is located between two working electrodes; the external electric field induces a reversible or irreversible permeabilization of biological cells membranes in organic food matrices, supporting step production processes like tissues soaking, peels removal or the extraction of bioactive compounds. Depending on the mode applications such as permeabilization of plant as well as animal tissue, inactivation of microorganisms and enzymes, pasteurization of food, tissue modification, and surface disinfection; applied electric field strength changed from 0.1 to 80 kV/cm. Lower electric field intensities are used for permeabilization and tissue modification, whereas higher intensities are used for pasteurization purposes. Although tissue modification, cell permeabilization and food pasteurization are well studied in the literature; not enough information is available about surface disinfection of seeds. Thus, both bench and pilot scale PEF processing systems including a loading unit, a seed treatment chamber, and a high-voltage pulse generator were designed and constructed. The main system components included a treatment chamber, a system control unit, a hopper doser unit, a high voltage power pulse generator, a pulse generator, a control PC, and an HV switch unit. Effectiveness of both systems were tested with different seeds, and it was seen that PEF can be used for surface disinfection with inactivation of endogenous microflora as well as pathogenic species with equal or better germination ability and cold stress.
Key words: pulsed electric fields, food processing, permeabilization, seed treatment, seed vigour

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➢ **ORAL PRESENTATION**

Failure analysis of an Aluminum brass tube in heat exchanger tube

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Abstract
Controlled A failure analysis of the aluminum brass heat exchanger tube was performed to investigate the causes of random water leaking in most of heat exchanger tubes. The perforated tubes were provided from multi-stage flash evaporators system of desalination planet after four years of operation. The main perforates and defected areas were analyzed using scanning electron microscopy SEM, EDX, XPS and optical microscopy. It was determined that the tubes failed according to sequenced steps of erosion corrosion process followed by dealloying process then copper redeposition as a final stage which enhance the dealloying mechanism.
Keywords: Aluminum brass, heat exchanger, corrosion, saline water, dezincification, redeposition.

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➢ **ORAL PRESENTATION**

Characterization of undoped and EU^{3+} doped ceo_2 synthesized by sol-gel and flame spray pyrolysis methods

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Abstract:
Cerium dioxide (Ceria, CeO_2) nanoparticles are remarkable materials for varied applications such as luminescence devices, optic sensors, medical equipment and etc. because of its superior physical and chemical properties. Recently, rare earth (RE) ion-doped such as europium (Eu^{3+}) CeO_2 has attracted much attention for special optical, magnetic, and catalytic properties respect to the CeO_2 nanoparticles. This study aims that the synthesis and characterization of undoped CeO_2 and europium (Eu^{3+}) doped CeO_2 (CeO_2: Eu^{3+}) nanoparticles both sol-gel and one-step flame spray pyrolysis methods. In this work, synthesized nanoparticles have studied as the structural and optical properties. Nano-powders were characterized by using X-ray diffraction (XRD), scanning electron microscopy (SEM) and X-ray photoelectron spectroscopy (XPS). Also, optical reflectanse measurements performed with UV-Vis spectrofotometer. Electron microscopy showed spherical morphologies with an average size of 20 nm for FSP synthesis according to sol-gel method which particle size is >100nm. In contrast to the FSP process, the advantages of the sol-gel process to be easily controlled influence of a variety of synthesis parameters as gel aging time, calcination temperature and dwell time on phase/chemical composition and crystallite size during the synthesis of nanocrystals. To the best of our knowledge, there is no previous work about the flame spray pyrolysis synthesis of the CeO_2:Eu^{3+} phosphor as nanocrystal.
Keywords: CeO_2, sol-gel, flame spray pyrolysis, nanoparticle

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➢ **ORAL PRESENTATION**

Infrared spectroscopic imager for future space missions

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Abstract
Instruments are constantly being designed for future space missions with the goal of understanding extraterrestrial environments and their geology, mineralogy, petrology and chemical history. Space missions require a number of instruments in an effort to conduct the planned scientific experiments in-situ on the target body. For instance, NASA's Mars Science Laboratory vehicle Curiosity carries several instruments for understanding the chemistry and mineralogy on Mars. Similarly, the first ever mission to a comet by ESA consisted of a lander that carried variety of instruments. In this work, a concept of an infrared spectroscopic imager will be presented. This instrument is a portable wide-range infrared multispectral imager that is planned to collect infrared spectra as well as chemical and visible images. The on-board miniature computer will be responsible for executing the necessary commands autonomously. After the construction, the instrument will be tested on real samples (such as minerals, terrestrial rocks, meteorites) in ambient as well as in a simulated environment chamber to demonstrate its capabilities. The eventual goal of this infrared spectroscopic imager will be to collect spectral and visual data from the surface of a planetary body (i.e., soils, rocks, etc…) in an effort to detect various chemical and molecular compositions to eventually help us understand the past and present of planetary bodies.
Keywords: infrared, imager, instrumentation, planetary, space.

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➢ **ORAL PRESENTATION**

GaInNAs-based vertical cavity devices for 1.3µm applications

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Abstract

The operational characteristic of GaInNAs-based vertical cavity light emitters and light detectors for 1.3µm applications is presented. The structure of the devices is based on p-i-n junction sandwiched between top and bottom distributed Bragg reflectors. The Bragg reflectors consist of AlAs/GaAs dielectric mirrors. The active region of the devices is based on GaInNAs material surrounded by GaAs (GaAsN) barriers. The number of the QWs 9 and 20. The efficieny of the photodtector is obtained to be 43% at room temperature at 1.3um for 9 QW structure and increases to 67% efficiency at 2V reverse bias, therefore the devices has internal gain. The emission starts at 1.3um is observed at 0.5V forward bias for 9 QW structure.

Keywords: GaInNAs, vertical cavity device, photodiode, light emitter

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➢ **ORAL PRESENTATION**

Wavelet transform-based fault detection methods for PV-based distributed generators

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Abstract
Intelligent fault detection methods are examined recently in the literature due to the bi-directional power flow in PV-based distributed generators. Conventional fault detection methods are limited to detect some faults because these methods are not capable of determining both the time and frequency domain analysis. In this study, a wavelet transform (WT)-based intelligent fault detection method is proposed to detect voltage sags, voltage swells and transients in developed gird-connected PV system. The proposed grid-connected PV system and the WT-based models are developed in Matlab/Simulink. The proposed method uses a discrete wavelet transform method considering the Daubechies wavelets of order 1 (db1) and order 2 (db2) to detect faults in a grid-connected PV system. Different fault conditions are investigated by using the proposed method, and the results show that the developed WT-based method is more reliable according to the conventional methods. The developed model use also both the time and frequency domain analysis, thus the fault detection time is shorter than conventional methods.
Keywords: Distributed Generation, Fault Detection, Wavelet-Transform

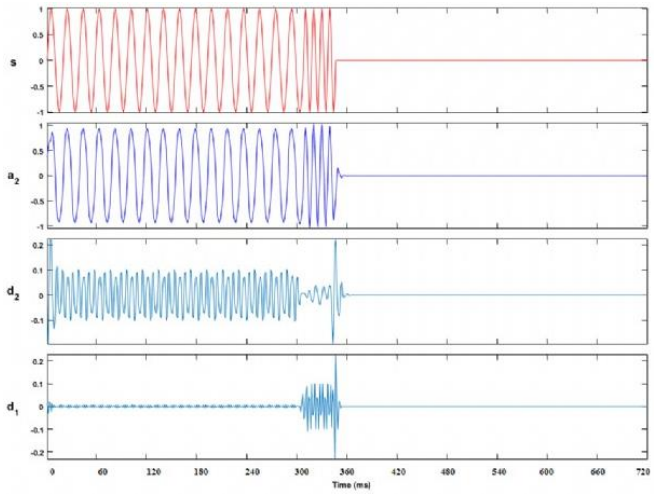

Fig. 1. Fault Detection by proposed WT-based method

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➢ **ORAL PRESENTATION**

Investigation of amylase production by *Aspergillus* section *Nigri* members

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Abstract
Enzymes have been defined as the organic and catalytic chemical compounds synthesized by living cells. Several hydrolytic enzymes could be obtained by microbial sources and amylase have been widely used in industrial applications. Industrially amylase enzymes are generally produced from filamentous fungi. In this sense, the amylase production of the *Aspergillus* section *Nigri* members isolated from dried figs was examined in this study. The effect of incubation time and temperature on the amylase activity of fungal strains were investigated, as well. Within this scope, the amylase production capability of the fungal strains were evaluated by inoculating fungal strains onto starch containing medium and incubating at 15°C for 7 days. At the end of the incubation, amylolytic activities were determined by addition of Lugol's solution and clear halo formation around the colony. In the second part of the study, the effect of incubation time (4, 6, 8 and 10 days) on amylase activity were investigated in basal medium and wheat bran medium at 15°C. Indeed, the effect of incubation temperature (15°C, 25°C and 35°C) were investigated on the fungal strains which have higher amylase activity. At the end of incubation period, the amylase activity of the fungal strains at 15°C were determined by DNS method. As a result of screening study, it has been found that nine out of 18 strains have amylolytic activity at low temperatures. Based on screening study, four strains were selected for further examinations. Amylase activity of strains were found to be higher after 8 days incubation at 15°C both in TSB and wheat brean medium. As far as incubation temperature is concerned, higher amylase activity levels were observed at mesophilic temperatures (25°C and 35°C). The amylase activity levels of the strains incubated at different conditions showed that the incubation time could change depending on incubation temperature.
Keywords: Amylase, Cold-active, *Aspergillus* section *Nigri*, Filamentous fungi

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➢ **ORAL PRESENTATION**

Gıda Ambalaj Malzemesi Olarak Nişasta/Pla İki Tabakalı Film Hazırlanması ve Mekanik Özelliklerinin İncelenmesi

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Özet

Petrol kaynaklı polimerik malzemelerden elde edilen ambalaj filmleri, gıda endüstrisinde besin maddelerinin raf ömrünü uzatmada ve korumada kullanılmaktadır. Ancak biyobozunur olmayan petrol kaynaklı bu polimerlerin aşırı kullanımı çevresel kirliliğe neden olmaktadır. Son yıllarda, gıda ambalaj uygulamalarında petrol kaynaklı sentetik malzemeler yerine, çevre dostu, yenilenebilir, ucuz, biyobozunabilir olan biopolimerlere ihtiyaç duyulmuştur. Nişasta ve Poli (laktik asit) PLA biyobozunur polimerlerdir. Bir polisakkarit olan ve yaygın olarak bulunan biopolimerler arasında nişasta bitkilerin dokularında depolanmış olarak bolca bulunur. Ancak, doğal nişasta zayıf mekanik özelliği, düşük su buharı geçirgenliği ve düşük termal kararlılığı nedeniyle nişastanın bu özelliklerini geliştirmek için farklı modifikasyonlara ihtiyaç duyulmuştur. PLA ise gıda ambalajlamada kullanılan yenilenebilir ve biyobozunur olan şeker hammaddelerinin fermantasyonundan elde edilen poliesterdir. PLA bazı uygulamalarda plastiğin yerini alan yüksek molekül ağırlıklı, şeffaf ve yüksek oranda su çözünürlüğüne dayanıklı biopolimerdir. Son yıllarda yapılan çalışmalarda nişastanın mekanik ve termal özelliklerini iyileştirmek için iki tabakalı filmler hazırlanmıştır.

Bu çalışma kapsamında zayıf mekanik ve hidrolfilik olan atık patates nişastası (APN) ile hidrofobik özellikte olan PLA ile iki tabakalı filmler casting metot (dökme) yöntemiyle hazırlanmıştır. Elde edilen bu filmlerin mekanik test ve su buharı geçirgenliği testleri yapıldı. Mekanik testler ASTM D-882-02 (American Society for Testing and Materials)'ye göre 5 tane film örneğinin ortalaması alınarak yapılmıştır. Buna göre, APN için 1.017±0.35 MPa iken, iki tabakalı filmlerde ise 9.414±1.53 MPa olarak ölçülmüştür. Su buharı geçirgenliği testi ise ASTM E-9680 göre yapılmıştır. Bu test sonucunda iki tabakalı filmlerde su buharı geçirgenliği azaldığı görülmüştür.

Anahtar Kelimeler: Biyopolimer, Nişasta, Mekanik Özellikler, Su buharı geçirgenliği

Teşekkürler: Bu çalışma Dicle Üniversitesi Bilimsel Araştırmalar Projeleri (DÜBAP) Koordinatörlüğü tarafından EZC.16.004 numaralı projesi ile desteklenmiştir.

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➢ **ORAL PRESENTATION**

Biyobozunur Magnezyum Alaşımlarından Üretilen İmplantların Antimikrobiyal Kaplamalarının Araştırılması

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Özet

Kristal yapıları ve sahip oldukları güçlü metalik bağlar sayesinde metal ve metal alaşımlarının implant malzemesi olarak kullanım oranı yüksektir. Ancak uzun senelerdir kullanılan kalıcı metalik biyomalzemeler, toksik etkiler ve kemik ile çok farklı olan mekanik özellikleri gibi birtakım dezavantajlara sahiptirler.

Bu çalışmanın amacı, biyopolimer (kitosan) kaplamalı biybozunur magnezyum-alümintum-çinko (Mg-Al-Zn) alaşımlarından, antimikrobiyal implant geliştirilmesi yoluyla kalıcı implantların dezavantajların büyük bir çoğunluğunun ortadan kaldırılmasıdır.

Biyouyumlu ve biyobozunur metalik iskelet (Mg-Al-Zn alaşımı), günümüzde kullanılan implant malzemelerin olası negatif etkilerinin ortadan kalkmasını sağlayacak ve biyobozunur yapısı sayesinde ikincil bir cerrahi operasyon ile çıkarılması gerekmeyecektir. Ayrıca alaşımın bileşenlerinden Zn, antibakteriyel özellik göstermekte ve ana bileşen Mg ise insan vücudunda birçok metabolik faaliyette kullanılmaktadır. Tasarımda kullanılacak olan FDA (Food and Drug Administration) tarafından onaylanmış biyopolimer olan kitosan magnezyum alaşımının bozunma hızını azaltmakla beraber, aynı zamanda kendiliğinden antibakteriyel ve antifungal özellikte olması sebebiyle, olası enfeksiyonların da önüne geçecektir.

Bu çalışmada, yukarıdaki durumlar göz önünde bulundurularak Al ve Zn alaşımlı AZ91 magnezyum alaşımı, implantın bozunma hızını geciktirmek ve esas antimikrobiyel etki sağlayabilmek amacıyla ise düşük molekül ağırlıklı kitosan polimeri kullanılmıştır. Bu alaşımda Al korozyon dayanımı ve sertlik sağlarken, Zn'nun ise antibakteriyel etkiye destek vermesi beklenmektedir. Magnezyum alaşımı kaplamalı ve kaplamasız olarak özel hazırlanmış pH 7.4 olarak ayarlanan bir yapay vücut sıvısı (simulated body fluid, SBF) içerisine daldırılmıştır.

Magnezyum alaşımlı numuneler 3x3x1 cm olarak boyutlandırılıp ardından 400-600-1200 gritlik kağıtlarda optimum yüzey pürüzsüzlüğünü elde etmek amacıyla zımparalanmıştır. Ardından hazırlanan numuneler %1-%3-%5 olmak üzere daldırma kaplama yöntemi kullanılarak 3 farklı konsantrasyondaki kitosan ile kaplanmıştır. Sonrasında bir kaplamasız ve üç kaplamalı olmak üzere 4 magnezyum numunesi Taş'ın formülüne göre hazırlanmış olan SBF içerisinde daldırılmıştır ve 1, 2, 3, 7, 14, 21, 28 günlük periyotlarda ölçümler alınmıştır. Bahsedilen günlerde alınan ölçümlerle korozyon hızı, ağırlık kaybı ve ICP-OES test yöntemleriyle, antimikrobiyal etkisi ise Broth Mikrodilasyon yöntemiyle belirlenmiştir.

Anahtar kelimeler: implant, magnezyum, magnezyum implant, biyobozunur, kitosan, SBF, daldırma kaplama, polimer kaplama, antimikrobiyal, antibakteriyel, antifungal

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➢ **ORAL PRESENTATION**

Çoklu Bant Durduran Optik Filtrelerin Fibonacci Serileri Ile Tasarimi

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Özet

Son yıllarda çok katmanlı optik haberleşmede önemli bir yeri olan optik filtrelerle ilgili çeşitli çalışmalar yapılmaktadır. Bu yapılar genellikle optik yansıtıcılarda ve renk filtrelerinde kullanılmakta, katman malzemesi olarak da farklı özellikler gösteren ince film metal, dielektrik ve yarı iletken malzemeler sıkça kullanılmaktadır. Çok katmanlı yapılarda elektromanyetik dalga ilerlerken yapıyı oluşturan malzemelerin çeşidine ve kalınlığına göre farklı bantlarda yansıma veya iletim özelliği göstermektedir. Ayrıca yine bu parametreler değiştirilerek yansıma ve iletim bantları istenen dalga boyuna göre ayarlanabilmektedir.

Çok-katmanlı optik filtre yapıları tasarlanırken katmanların dizilimlerinde Fibonacci serileri gibi bazı iyi bilinen serilere göre dizilimler yapılmaktadır [1]-[4]. Her bir seri kendine özgü çalışma özellikleri ortaya koymaktadır. Bu çalışmada da optik filtre yapısı oluşturulurken Fibonacci Serilerinden ve bu serilerin seçilen bir hücre yapısından yararlanılmış, bu hücre yapısı ard arda tekrarlanarak yeni, çok-katmanlı bir optik filtre yapısı elde edilmiştir. Bu şekilde literatürde yer almayan, katman kalınlıkları dereceli olarak artırılan özel bir yapı elde edilmiştir. Elde edilen yapıda ardışık katmanlar arasında belli bir oranda kalınlık artışı sağlanarak bunun filtre performansına etkileri incelenmiştir.

Fibonacci serilerinde "1" ile ifade edilen sayı yüksek kırılma katsayısına sahip malzeme (H) ile , "0" ile ifade edilen sayı ise düşük kırılma katsayısına sahip malzeme (L) ile modellenmiştir. Eş kalınlıklı yapıda elde edilen yansıma bandının, kademeli kalınlıklı yapıda yüksek dalga boylarına kaydığı ve görünür ışık bandında toplam yansıma bandı sayısının arttığı gözlenmiştir. Bu şekilde çeşitli lazer uygulamalarında daha çok renk bandının yansıması, tasarlanan filtre yapısı ile sağlanabilecektir.

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➢ **ORAL PRESENTATION**

Dynamic Behavior of Viscoelastic Euler Bernoulli Beam

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Abstract
In this study, the mathematical model of viscoelastic Euler Bernoulli Beam theory is obtained from the theory of elasticity. Two dimensional dynamic equilibrium equations are written in this theory. These equilibrium equations depend on stress and displacement acceleration. These dynamical equilibrium equations are integrated in section domains and then the equations are rewritten in forces forms such as moment, axial force and shear force. The normal force and moment depends on the beam deflections. It is assumed that the material is homogeneous and viscoelastic in order to transform the normal force and moment equations in terms of displacement. At the end, the unknowns in the equilibrium equations are the beam deflections in transverse and axial directions. Kelvin-voigt model is chosen as viscoelastic model. Thus, equations of motion with 2 unknowns are obtained for linear case. These equations of motion have been solved by analytically.
Keywords: Viscoelastic Euler Bernoulli beam, Dynamic Analysis

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➢ **ORAL PRESENTATION**

Secondary metabolites and antioxidant capacity of *Craterellus cornucopioides*

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Abstract
The aim of this study was to determine antioxidant activity, total antioxidant level (TAS), total oxidant level (TOS), oxidative stress index (OSI) and phenolic contents of *Craterellus cornucopioides* (L.) Pers. edible mushrooms. In this context, mushroom samples collected in field studies were dried and pulverized. Subsequently, extraction was carried out with ethanol on a soxhlet apparatus. The antioxidant capacity was determined by using DPPH method and TAS, TOS and OSI values were determined by using Rel Assay commercial Kits and phenolic contents were determined by using HPLC device. As a result of the studies, the percentage inhibition of DPPH activity was 46.10. TAS value was determined as 2.725 mmol / L, TOS value was 36.332 µmol / L and OSI value was 1.334. In addition, it has been determined that the fungus contains gallic acid, catechin, chlorogenic acid, Kumaric acid and Sinnamic acid. As a result, *C. cornucopioides* has been determined to have antioxidant potential. However, the oxidative stress value was determined to be high levels depending on the TOS value. In this context, it is thought that *C. cornucopioides* can be used as an antioxidant source to be collected from appropriate regions in terms of oxidative stress. In addition, it is thought that it can be a natural source in terms of the compounds determined within the structure.

Keywords: *Craterellus cornucopioides*, Edible Mushroom, Phenolic contents, Antioxidant, Oxidant, Oxidative stress.

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➢ **ORAL PRESENTATION**

Dose Dependent Safety of Tinzaparin Sodium During Pregnancy: Investigation in a Cell Culture Model

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Abstract
Low molecular weight heparins (LMWHs) are produced by chemical or enzymatic depolymerization of unfractionated heparins (UFHs) and they show greater anti-factor Xa activity. These drugs are administered subcutaneously and absorbed with 90% bioavailability from the subcutaneous tissue. Tinzaparin sodium is generally well tolerated drug and there are very few reports regarding cutaneous or systemic side effects about this drug in the literature. In addition, this drug has been recommended for use in pregnancy with retrospective studies. But limited data is found regarding safety of the drug in case of pregnancy. Therefore, we aimed to investigate a possible dose-dependent cytotoxic effect of tinzaparin sodium in cell culture model. L929 fibroblastic cells were incubated with four different dilutions (dilution I: 5.000 IU; dilution II: 3.500 IU; dilution III: 1.250; dilution IV: 0.625 and control: only the cell culture medium) of the test material [Innohep (tinzaparin sodium, 20.000 IU/0.7 ml)™]. Morphological changes, cell viability and apoptosis were evaluated at 48 hours of incubation. The cell viability was determined by MTT assay and apoptosis was observed with acridine orange/propidium iodide (AO/PI) staining. The results of MTT assay were showed that tinzaparin had a cytotoxic effect in dilution I and II ($p<0.05$), while it did not show a significant cytotoxic effect in dilution III and IV ($p>0.05$). The results of AO/PI staining were consistent with MTT assay. In conclusion, our results showed that tinzaparin sodium has been found cytotoxic in only high prophylactic doses in cell culture model. Although it is subcutaneously administered, the drug pass to systemic blood flow. Nonetheless, the concentration of the drug which is reached to placenta is low. Therefore, tinzaparin sodium may be considered as a safe drug for pregnants.

Keywords: Low molecular weihgt heparin, Tinzaparin sodium, Cell viability, Apoptosis

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➢ **ORAL PRESENTATION**

Assessment of Ecological Status Based on Diatom Indexes in Lake Abant

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Abstract
The present work was aimed to estimate ecological quality of Lake Abant by diatom indices. The study was carried out seasonally between April 2015 and December 2015 in Lake Abant. The epiphytic diatom samples on the *Phragmites australis* (Cav.) Trin. ex Steud community were collected from five stations in the littoral region. The samples were cleaned by hot hydrogen peroxide method and mounted by Naphrax. At least 400 diatoms in each slide were counted by a trinoculer microscope and relative abundance of diatom species was determined. The diatom indexes of IBD, IPS, IDG, DESCY, SLA, IDSE, IDAP, EPID, LOBO, DI-CH, Rott TI, Rott SI, CEE, WAT, %PTI, TDI, IDP, SHE and TDIL were calculated. Ecological Quality Rate (EQR) was computed by LTDI index. These 20 indexes were calculated by Omnidia and Darleq-II software. The average IBD, IPS, IDG, DESCY, SLA, IDSE, IDAP, EPID, LOBO, DI-CH, Rott TI, Rott SI, CEE, WAT, %PTI, TDI, IDP, SHE and TDIL were determined as 16.35, 4.18, 4.11, 4.06, 1.33, 3.97, 4.26, 1.13, 2.26, 3.33, 1.68, 1.29, 8.43, 65.46, 0.49, 36.69, 1.29, 5.86 and 3.40, respectively. The lake was found as oligotrophic and very good / good ecological quality according to IBD, SHE, EPID, TDI, SLA, IDP, IPS, DESCY and IDSE while SLA and SHE were pointed out I and II class of water quality. EQR was calculated as 0.934 (very good) according to LDTI index.

Keywords: Epiphytic Diatom, Water Framework Directive, Ecological Status.

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➢ **ORAL PRESENTATION**

Determination of microbiological stability of fish fillets immersed into rosemary oil-based nanoemulsions

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Abstract
Rosemary oil-based nanoemulsions (RON), which possessed a 300 nm average diameter, were successfully obtained. Characterization analysis such as Zeta Potential revealed that RON was stabile more than three months after preparing. After optimization and characterization steps, skinless fish fillets were prepared and then the samples were treated by RON. 100 µL nanoemulsion solution was treated onto the whole surface of 10-g fish fillets and then the samples were wrapped by aluminum foils and stored at 4ºC. The effect of RONs in terms of limitation of Mesophilic (M), Psychrophilic Bacteria (P) and Yeast and Mold growth (YM) in fish fillets was tested during the analysis period. In this sense, the microbial analysis results demonstrated that RON was effectively limited M and P growth in fish fillets by 30% (>1log CFU/g). On the other hand, the effect of RONs on YM growth in fish fillets was some more limited (<1log CFU/g). The microbial analysis results were correlated with the results of sensory analysis, which was defined to be unfit for human consumption on the 4th and 7th day of the cold storage for control and RONs groups, respectively. The amount of used substance in nanotechnology applications is highly lower than micro and macro food application. In this sense, the study revealed that nanoemulsions obtained from rosemary oil could be effectively used in order to delay the microbial growth in fish fillets by using less material as compared to micro and macro scale food preservation applications.

Key words: Nanoemulsion, rosemary oil, psychrophilic bacteria, yeast and moulds, mesophilic bacteria, fish fillets.

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➢ **ORAL PRESENTATION**

Artificial neural network modeling of electrolytic etching of 5754 aluminum plate for mini/micro reactor production

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Abstract

Hydrogen has the highest energy content per unit mass in all known fuels and also belongs to renewable energy class. Therefore, hydrogen production has always been a subject of interest. In the present study, the production of mini and microchannels for the production of hydrogen in the presence of a suitable catalyst in a microchannel reactor was investigated. In addition to the use of micro-ducts in various fields such as electronic engineering, biological applications, it has been found that micro channels have an important place in the production of hydrogen.

In this study, micro channels were obtained by electrolytic etching of aluminum metal. Firstly, a vinyl mask was applied on the metal and the desired channel pattern was applied to the vinyl mask. The electrolytic etching method was then applied to various electrode distances, electrolyte concentrations, temperatures, voltages and amperes and the channel pattern was etched on the aluminum plate surface.

As a result, microchannels which were produced at various depths and widths, were modeled with artificial neural networks to predict the complex relationship between the input and output parameters.

Keywords: Micro channel, electrolytic etching, aluminum 5754 etching, artificial neural networks

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➢ **ORAL PRESENTATION**

Elaziğ ilinde hastane çalişanlari ve sağlik yüksekokulu öğrencilerinde *Toxoplasma gondii* yayginliğinin elisa yöntemi ile belirlenmesi

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Özet
Bu araştırmada Elazığ merkez ve ilçelerinde bulunan beş farklı hastanede çalışan doktor, hemşire ve aşçılar ile stajyer öğrencilerinden oluşan gönüllü grubu arasında toxoplasmosisin varlığı ve yaygınlığının belirlenmesi amaçlanmıştır. Her biri 25'er kişiden oluşan doktor, hemşire, aşçı ve öğrencilerden toplanan 100 kan örneği anti-*T. gondii* IgM ve IgG antikorlarının varlığı yönünden ELISA ile incelenmiştir. Örneklerin 26'sında IgG, 14'ünde ise IgM pozitif bulunmuştur. En yüksek IgG seropozitifliği hemşirelerde (%68) görülmüş, bunu aşçılar (%32) ve doktorlar (%8) izlemiş, stajyer öğrencilerde pozitiflik saptanmamıştır. IgM seropozitifliğinin ise doktor ve öğrenciler (%20) ile aşçı ve hemşireler (%8) şeklinde sıralandığı görülmüştür. Bu meslek gruplarında çiğ et yeme alışkanlığı bulunan ve bulunmayanlarda sırası ile %31.2 ve %23.5 IgG pozitiflik saptanmış, bu oranların kedi besleme alışkanlığı bulunan ve bulunmayanlarda ise %28.3 ve %22.5 olduğu belirlenmiştir. *T.gondii'*ye karşı 18-25 yaş arası 27 kişiden 1'i, 26-30 yaş arası 23 kişinin 11'i, 31 yaş ve üzeri 50 kişinin 14'ü IgG pozitif bulunmuştur. Bu araştırmada sağlık çalışanlarından özellikle hemşirelerde *T.gondii* pozitifliğinin daha yüksek olduğu belirlenmiş ve çiğ et tüketimi ile kedi besleme alışkanlığına sahip gruplarda daha yüksek oranlarda seropozitiflik saptanmıştır.

Anahtar Kelimeler: *Toxoplasma gondii,* seroprevalans, ELISA, Elazığ.

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➢ **ORAL PRESENTATION**

Effects of extremely low frequency electromagnetic fields on caspase activities

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Abstract
All life on Earth is bathed in a sea of natural low-frequency electromagnetic fields from conception to death. Since the World Health Organization (WHO) launched its international electromagnetic fields (EMF) project in 1996, it has conducted international reviews of the evidence on whether exposure to static and extremely low-frequency (ELF) fields might be harmful to health. ELF fields for In the framework of this study, the activation of seven different caspases will be investigated systematically, when extremely low frequency electromagnetic fields, which are thought to be an environmental hazard according to WHO, are applied to the HEK 293 cell line. The selected frequency will be 50 Hz, which is the power transmission line frequency in most parts of the world. Two different magnetic field strengths will be applied to HEK 293 cells, and two different exposure durations will be chosen. Caspase activity levels are to be measured at different time points after exposure. The common pattern seen in all of them was the oscillation of enzyme activities from the beginning. At 100 µT, caspases gave four peaks at four, eight, 16 and 34-hour incubation periods. This oscillatory behavior can also be seen when 25 µT magnetic field was applied, but the behaviors of the enzymes were different in a certain extent. The location and the number of the peaks at 25 µT exposure were quite variable, but the activity periods of all caspases seemed to be shorter than those exposed to 100 µT. The data presented here indicate that when ELF-EMF is applied to the HEK 293 cells, all seven caspases investigated are found to be activated, but this activation shows an oscillatory pattern, and in the long run it seems to be damped by some intracellular mechanisms.

Keywords: electromagnetic fields, caspases, bioelectromagnetics, HEK293

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➢ **ORAL PRESENTATION**

Lignin recovery from wood sawdust by atmospheric organosolv method

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Abstract
Biorefinery is the general name of various conversion technologies (chemical, biochemical, thermochemical etc.) that converts biomass and produces biofuels, bio-chemicals, biomaterials and power. While classical refinery concept relies on fossil resources, lignocellulosic biomass, which has the highest potential in terms of quantity and resource variety, seems to be the unique candidate that can be used in similar refinery concept. Lignocellulosic biomass is mainly composed of cellulose, hemicellulose and lignin. Since the presence of lignin reduces the efficiency of cellulose recovery, lignin must be removed from the lignocellulosic structure. In today's technology, cellulose is used extensively in the production of bioethanol and biobutanol, but lignin, which is regarded as waste, is mainly dumped as waste or combusted to recover its energy. The organosolv method, which is among the pretreatment methods to enrich the cellulosic fraction, gives quite pure lignin having a narrow molecular weight range. However, process conditions reduce the feasibility of this method by increasing its cost. Furthermore, with the current technology (mainly organosolv with ethanol under pressure), lignin recovery is usually ignored due to low recovery rates. In the present work, atmospheric organosolv method was experimented to recover lignin from wood sawdust. Ethanol, alkaline ethanol, acetic acid, alkaline glycerol and formic acid/acetic acid/water mixture were selected as solvents, which all undergo reaction at different conditions. The highest lignin recovery (42,7% based on Klason lignin) was observed in the case of alkaline glycerol method. The only disadvantage of this method is the high energy need (due to its high boiling point) to concentrate the lignin liquor and recover glycerol. Lignin recovery was at minimum (3,20% based on Klason lignin) when alkaline ethanol method was applied to lignin recovery. Acetic acid and formic acid/acetic acid/water mixture nearly showed similar lignin recovery, which were between 18% and 25%. Based on GPC results, it was obvious that solvent type (this also determined the reaction temperature) affected the average molecular weight, which ranged between 1373 and 7400 g/mol.
Keywords: lignin recovery, mild organosolv method, biomass pretreatment.

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➢ **ORAL PRESENTATION**

Optimal allocation of water resources by using artificial ımmune systems

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Abstract
This study proposes an optimization model using Artificial Immune Systems (AIS) for allocation of water resources among different sectors such as agriculture, industry, livestock production, drinking and environmental water demands, energy, tourism, mining, aquaculture and commercial water. The modified Clonal Selection Algorithm (modified Clonalg), a class of AIS, was used as a heuristic optimization method in the model. An objective function of the model was based on both maximum benefit (income) and satisfaction of the sectors. The model was implemented to a scenario including the mentioned sectors for testing its performance. The results showed that the model appeared to be promising for allocation of water resources.

Keywords: Water resources, allocation, optimization, modelling, modified Clonalg.

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➢ **ORAL PRESENTATION**

Reliability of soot models in turbulent non-premixed combustion simulations

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Abstract
Combustion processes transform the chemical energy in fuels into thermal energy for world's social development and economic growth. More than 80% of the current world's energy consumption is supplied from combustion of fossil fuels (natural gas, oil and coal). In industrial applications, combustion almost always takes place turbulent mode as turbulent mixing increases the burning rates. Unfortunately, in addition to providing a beneficial impact on the development of human civilisation, combustion is also a major source of damage to the human and natural environment. Large amounts of pollutants are formed and their direct emission to the atmosphere affects the quality and condition of the human lives as well as the environment. Soot emitted from turbulent combustion devices such as gas turbines, steam boilers and furnaces causes severe air pollution in the forms of smog. Soot is also associated with health risks since both polycyclic aromatic hydrocarbons (PAHs) that are precursors of soot have been identified to be carcinogenic.
Since the experimental construction of the combustion devices is difficult and expensive, computational fluid dynamics (CFD) simulation provides an attractive alternative in the design and optimization of turbulent combustion systems. Although the CFD simulation could not replace experiments completely, it helps to give detailed insight into a turbulent combustion system where experimental data may not easily be available. Consequently, many CFD simulations have been utilized to model soot formation and oxidation in combustion processes. However, modelling soot formation and destruction in combustion simulation remain a challenge due to complex physical and chemical phenomena that govern these two processes. This paper presents a review on the current available soot models for combustion simulation, with particular attention on their reliability and limitation. The development and application of pure empirical, semi-empirical and detailed soot models is explored. Soot formation as well as its destruction mechanisms is discussed from physical and chemical processes.

Keywords: combustion, soot, turbulent, modeling, simulation

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➢ **ORAL PRESENTATION**

Mimari Tasarımda Fiziksel Çevre Denetimi Amaçlı Kinetik Biyomimetik Sistemlerin Kullanılması

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Özet

Günümüz mimarlığında, tasarlanan binanın farklı iklim koşullarında davranış gösterememesi önemli bir problem olarak görülmektedir. Zaman içerisinde binaya, ısıtma donanımı, iklimlendirme gibi ek maliyet getiren imalatlar yapılması gerekli olmaktadır. Oysa binanın sıcak/soğuk koşullara göre değişip dönüşebilmesi, çevreden fayda sağlanması veya korunabilmesinin yanı sıra yapı maliyetini de azaltmaktadır. Bu amaca kinetik tasarım girdileri ile yaklaşmak tasarıma ve bina kullanımına yeni olanaklar getirmektedir. Kinetik mimarlıkta amaç, hareketli yapı elemanları ile iç-dış dönüşüm gerçekleştirilmesi ve iklime göre adaptasyonun sağlanmasıdır. Teknolojinin gelişimiyle birlikte iç-dış mekan ayrımını sağlayan duvarların hareketi mümkün olmuştur. Duvarların hareketliliği fiziksel çevre denetimine olanak sağlamaktadır. Bu bağlamda doğadaki oluşumlardan etkilenme, simüle etme yaklaşımları olan biyomimetik, tasarımda harekete ve fiziksel çevre denetimine olanak sağlayabilmekte ve problem çözümünde yol gösterici olmaktadır. Bu çalışmanın amacı, tasarımda güneşe, rüzgara ve fırtınaya karşı duyarlı, iklime göre adapte olabilen çözümler sunulabilmesi için kinetik-biyomimetik sistemlerin kullanılması hipotezini test etmektir. Bu amaçla, çalışma kapsamında bu tür durumlara cevap verebilen özgün bir tasarım önerilmiştir. Önerilen tasarımın avantaj ve dezavantajları değerlendirilerek sonuca ulaşılmıştır. Bu çalışma ile, doğadaki formların, strüktürlerin hareket prensiplerinin analiz edilmesinin, mimari tasarımda fiziksel çevre denetimi bağlamında yeni stratejilerin kullanılmasında ve uygulanmasında, mimar ve mühendislere ilham kaynağı olabileceği düşünülmektedir.

Anahtar Kelimeler: Fiziksel çevre denetimi, Biyomimesis, Kinetik mimarlık.

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➢ **ORAL PRESENTATION**

The investigation of some physicochemical characteristics of TTAB, BRIJ 35 and their mixture and the effect of temperature contact angle on the different metal surfaces

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Abstract
For a long time surfactants are applied in many trades e.g. petroleum industry, cosmetics, foods, and textiles industry. They are used in manufacture to reduce a surface tension in the interfacial processes e.g. detergency, foaming, emulsification, creation of coating or sprays. Such studies on the physicochemical properties of surfactant systems are of both theoretical and practical interest. The surface properties of cationic surfactant tetradecyltrimethylammonium bromide (TTAB) and nonionic surfactant polyoxyethylene (23) lauryl ether, (Brij 35) and their mixed surfactant solutions in water have been studied by conductivity and contact angle measurements within the temperature range 293.15-313.15 K. With the help of the plotted graphs, the critical micelle concentrations of these solutions were found. The CMC change in temperature with temperature was studied. CMC values determined from the conductivity and surface tension measurement on different surfaces and different temperature. The contact angles are determined on different metal surfaces to investigate the wettability. This metal surfaces were Aluminum, Cupper, Zinc and Stainless Steel.
Keywords: Cationic surfactant, Nonionic surfactant, Contact angle, Conductivity, Temperature.

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➢ **ORAL PRESENTATION**

Runway Detection during Landing with Neural Network Based Image Processing

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Abstract

Runway detection based on image processing is highly crucial when it comes to urgent scenarios like no-GPS or spoofed dGPS options. In this paper, a different approach is proposed to recognize the runway in a high-risk environment using computer vision based deep learning algorithms. With the help of the Convolutional Neural Networks, the aircraft is aimed to assist for a safe and secure landing. First, runway image data is collected from open source images and then preprocessed each of them one by one in order to ready for neural network model. Images are being annotated with an open source labelling software tool. Model learns to associate images and labels. In this work, python software language and Tensor Flow machine-learning library are chosen as main tools. The proposed method is tested on a dataset consist of more than 5000 runway image provided by real videos during landing from the open source data.

Keywords: Runway Detection, Deep Learning, Image Processing, Convolutional Neural Networks (CNNs)

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➢ **ORAL PRESENTATION**

Effect of rotational motion on the electrochemical properties of electrodeposited platinum catalysts

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Abstract

Oxygen reduction reaction (ORR) is an important electrochemical reaction because of its significance for electrochemical energy conversion and storage devices. Among these devices, proton exchange membrane fuel cells (PEMFCs) has privilege importance due to its high efficiency and low operating temperature. Unfortunately, PEMFCs are not broadly utilized because their cost and durability are still not satisfactory. These are considered as the most serious obstacles for the PEMFCs commercialization. Especially, used previous platinum electrocatalyst raises the fuel cell cost and prevents the commercialization of PEMFCs. Nowadays, most of the researches are focused on improving the catalytic activity of cathode electrocatalysts where the slow kinetics of the ORR, is responsible for about 70% of the total losses, takes place. In this study, we will investigate the effect of electrode rotating during electrodeposition on the electrochemical properties of Pt nanoparticles. Pt plate with 1 cm^2 surface area will be used as substrate for Pt electrodeposition. The catalytic efficiency of reduced Pt nanoparticles toward ORR in 0.5 M H_2SO_4 solutions was investigated by means of cyclic voltametry (CV) and linear sweep voltametry (LSV) on rotating disc electrode (RDE), using Gamry Potansiostat, model 1010B, controlled by PC and commercial software. The structure and morphology of the obtained catalysts will be studied by X-ray powder diffraction (XRD) patterns of the electrocatalysts were recorded using a Rigaku diffractometer with CuK_α radiation (λ = 1.54 Å). XRD analyses were conducted from 5° to 90° with a scan rate of $3°.min^{-1}$. The scanning electron morphology of reduced catalyst will be conducted at scanning electron device together with an operating voltage of 20 kV under high vacuum.

Keywords: PEMFCs, ORR, Pt catalyst, electrodeposition, rotational motion.

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➢ **ORAL PRESENTATION**

Synthesis and characterization of reduced graphene oxide via flash heat treatment

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Abstract

In recent years, graphene has attracted attention in a lot of application. In this work, first graphene oxide was synthesized using modified Hummers method. And then, reduced graphene oxide was successfully prepared from graphene oxide by flash heat treatment in Argon gas and 1000°C. The structure, morphology and elemental analysis of reduced graphene oxide was examined by field-emission scanning electron microscopy (FE-SEM), energy dispersive X-ray spectroscopy (EDAX), X-ray diffraction (XRD) and dispersive Raman spectroscopic analyses. According to the XRD analysis spectrum, the diffraction peaks at $2\theta = 24.3°$ can be attributed to the graphite-like structure.

Keywords: Hummers method; Flash heat treatment; Graphene.

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➢ **ORAL PRESENTATION**

Application of hazard and operability study method to an acetylene generator

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Abstract
One of the most commonly used risk assessment methods in the chemical and process industry is the Hazard and Operability Study (HAZOP). Based on process flow diagrams, HAZOP is a systematic study used to determine possible dangers in the design or operation phases of a plant. Acetylene is a highly flammable gas which forms an explosive atmosphere with an explosion limit of 2.2 to 85%. At the same time, acetylene gas is decomposed by releasing a high energy even in the presence of air under high temperature and/or pressure, or even when there is no air. This preliminary study constitutes the first stage of the HAZOP study applied to the acetylene production and filling facility, and it was carried out for the reactor where acetylene/air mixtures may be present or the physical conditions of the acetylene (pressure and temperature) may cause decomposition. In order to determine these hazards and risks originating from the reactor in which calcium carbide (carbide) and water reacted to form acetylene gas, the proposed guide words for HAZOP were applied to the process variables and the possible deviations from the working conditions were determined. Then, the causes and consequences of these deviations were emphasized and the existing safety barriers in the plant were specified and additional recommendations were taken.

Keywords: Hazard and Operability Study, HAZOP, Acetylene, Production Process

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➢ **ORAL PRESENTATION**

Ankara Ahmet Hamdi Akseki Cami'nin kullanıcı memnuniyeti açısından değerlendirilmesi

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Özet

İbadet eylemi toplulukların yaşam koşullarına, kültürlerine ve inançlarına bağlı olarak zamanla mekanı etkileyerek dini yapıların oluşmasını sağlamıştır. Dini yapılardan olan camiler Müslümanlar için ibadet mekanını simgeler. Camiler; mimarlar, sanat tarihçileri ve ilahiyatçılar gibi farklı bilimlerden araştırmacıların ilgi alanına girer. İbadet alanlarının kullanıcılarla arasındaki etkileşimi, ibadet davranışlarına yeterli alanı sağlaması, potansiyel kullanımlara imkan tanıması gibi mekansal ve psikolojik özellikleri ile camiler mimarlık alanındaki akademik çalışmalara konu olabilir. Bu doğrultuda Ankara'da bulunan Ahmet Hamdi Akseki Cami incelenmek üzere ele alınmıştır. Eskişehir yolu-Bilkent kavşağında, Diyanet İşleri Başkanlığı'nın yanında yer alan cami 2013 yılından beri hizmet vermektedir. Bulunduğu konum nedeniyle mahalli kullanımdan ziyade protokol kişilerince tercih edilmektedir. Ankara Ahmet Hamdi Akseki Cami kullanıcılarının memnuniyetini değerlendirmek üzere saha çalışması yapılmıştır. Böylelikle farklı profillerdeki bireylerin ihtiyaçları, kullanımları, camilerde gördükleri eksiklikleri saptanmıştır. Elde edilen veriler sayesinde camilerin kullanıcılarını etkileyen psikolojik ve fiziksel niteliklerinin gereklilik dereceleri tespit edilmiştir. Kamuya ait olan camilerin tüm kullanıcıların ihtiyaçlarına uygun gerekli fizyolojik ve psikolojik koşulları sağlaması gerekliliğine vurgu yapılmıştır. Çalışma ile kullanıcı memnuniyetinin sağlanacağı, fonksiyon ile mekan koşullarının örtüşeceği yapılar elde etmek, ibadet mekanlarının konfor koşullarını arttırmak ve gelecekte yapılacak cami tipolojilerine katkı sağlamak amaçlanmıştır.

Anahtar Kelimeler: Kullanıcı memnuniyeti, kullanım değerlendirmesi, ibadet mekanı, cami, mescit.

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➢ **ORAL PRESENTATION**

A Safety Perception Analysis of Users of Ankara High Speed Train Station

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Abstract
With increasing population, the urban life intensifying with each passing day gradually increases the importance of security measures in public areas. In the face of unexpected events that may arise in public spaces (fire, earthquake, terror, social events, etc.), a good management is required to secure the building. It is possible to minimize the damage and losses that may arise by taking precautions. Ankara High Speed Train Station (AHSTS) is a multi-programmed public venue that includes railway transportation as well as shopping, eating, drinking, office and hotel programs. Considering the risks that this intensive program can bring, this paper examines the passengers' way finding at AHSTS under normal conditions, with an emphasis on the passengers' understanding and rating of the location of emergency exit signs, emergency buttons, evacuation maps and the assembly area. A survey of 200 passengers was carried out at the railway station. The aim of the study is to reveal the safety awareness of train station users and to use these data to be taken into account in the security management of railway stations.
Keywords: Safety Perception, Ankara High Speed Train Station, Pedestrians, Transport safety, Way finding, Emergency evacuation.

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➢ **ORAL PRESENTATION**

Atık elektrikli ve elektronik ekipman geri kazanımı için çok amaçlı lojistik şebeke tasarımı modeli ve uygulaması

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Özet

Tersine lojistik uygulaması olarak geri kazanım yönetimi; kıt kaynakların etkin kullanımı, enerji tasarrufu, ekonomik getiri, olumsuz çevresel etkilerin azaltılması, başta insan olmak üzere canlı sağlığının olumsuz etkilerden korunması vb. gibi hususlar bakımından, dünyada üzerinde ciddiyetle durulan ve yasal mevzuatlarla güvence altına alınmış ağır yaptırımları olan ilk öncelikli konulardan biridir. Bugün, her ailenin, bireyin, işletmenin/kurumun vazgeçilmezi olan Atık Elektrikli ve Elektronik Ekipman da (AEEE), geri kazanımın en önemli ve tipik örneklerinden biridir. Literatürde, Ürün Geri Kazanımı (ÜGK) için, çok amaçlı ve gerçek uygulama temelli Lojistik Şebeke Tasarımı (LŞT)'de eksiklik görülmüştür. Gerçek dünya ve durumlar için, matematik-fen ve mühendislikte, tek amaçlı yapının yetersiz kalması/uygun olmaması ve mühendisliğin esas amacının gerçek dünya problemlerini çözmek olmasından hareketle, bu çalışmada, deterministik ortamda ÇAKV yaklaşımları kullanılarak gerçek bir uygulama yapılmıştır. Ekonomik ve etik sebeplerle, AEEE geri kazanımının gittikçe önemli olmasına karşın, Türkiye'de AEEE için bir sistemin halen mevcut olmayışı, bu çalışmanın diğer en önemli itici gücüdür. Bu bağlamda, Türkiye'de AEEE pazarı, yarattığı sorunlar ve fırsatlarla birlikte ele alınarak, mevcut koşullarda optimum bir sistem ve işleyiş mekanizması önerilmesi, bu sistemin matematiksel olarak modellenmesi ve akabinde ürün geri kazanımı için bu sistem ve modeli temel alan bir lojistik şebekesinin tasarımının yapılması amaçlanmıştır. Bu amaçla, Türkiye'de AEEE LŞT için henüz olmayan bir sistem önerilmiş ve sistemin matematiksel formülasyonu, deterministik, doğrusal, kapasiteli, çok ürünlü, çok amaçlı, karışık tamsayılı, yer seçimi-atama / LŞT modeli olarak kurulmuş ve Ankara / Türkiye'de bir gerçek dünya uygulaması ile modelin uygulanabilirliği gösterilmiştir. Ankara'nın bütün ilçeleri hem müşteri bölgesi, hem de toplama ve işleme tesisleri için aday yerleşim yerleri olarak alınmıştır. Toplama ve işleme tesislerinin nereye, hangi kapasite seviyelerinde ve sayıda kurulacağının belirlenmesi ile müşteriler - toplama tesisleri, toplama tesisleri – işleme tesisleri, işleme tesisleri - imha / rafineriler arasındaki akış değerleri atamaları, karar değişkenleri olarak dikkate alınmıştır.

Anahtar Kelimeler: Lojistik şebeke tasarımı, Çok amaçlı karar verme

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➢ **ORAL PRESENTATION**

Geri kazanım şebeke tasarımı için bir karışık tam sayılı programlama modeli ve Ankara uygulaması

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Özet
Ekonomik, etik ve çevresel sebeplerle geri kazanımın önemi gittikçe artmaktadır. Bu çalışmada, Türkiye'de Atık Elektrikli Elektronik Ekipman (AEEE) için bir sistem önerilmiş, önerilen sistemin işleyişi dikkate alınarak, sistemin yer seçimi-dağıtım şebekesi, deterministik, doğrusal, çok ürünlü bir Karışık Tam Sayılı Matematiksel Programlama modeli olarak ifade edilmiş ve Ankara'da gerçek bir uygulama yapılmıştır. Modelde, Ankara'nın 25 ilçesi müşteri bölgesi ve toplama ve işleme tesisleri için aday yerleşim yerleri olarak alınmış, toplama tesisleri için 8 farklı kapasite seviyesi, işleme tesisleri için, teknik gerekçelerle ancak 3 farklı kapasite seviyesi indis kümesi olarak alınmıştır. Ürün sayısı olarak, AEEE'yi temsil edebilmesi amacıyla en önemli 6 ürün dikkate alınmıştır. Karar değişkenleri; açılacak toplama ve işleme tesislerinin yerlerinin belirlenmesi ve tesisler ile müşteriler arasındaki akış değerlerinin bulunmasıdır. Stratejik planlamada karar vericiye karar desteği sağlayacak model, sistemin, gerçek dünyanın ve uygulama alanı ile yerinin özellikleri ve varsayımlarını dikkate alan gerçek verilerle çözülmüştür, bu gerekçelerle, gerçek dünyada uygulanabilir, esnek, etkin ve etkili karar verme stratejileri sunmaktadır.

Anahtar Kelimeler: Şebeke tasarımı, Karışık tam sayılı programlama, Geri kazanım

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➢ **ORAL PRESENTATION**

Reaktif oksijen radikalleri ve antioksidanların Fertil ve İnfertil erkeklerde sperm parametrelerine olan etkileri

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Özet
İnfertilite evli çiftlerin yaklaşık %15'inde gözlenen bir patolojidir. Erkeğe ait nedenler arasında gözlenen spermiogram anormallikleri; oligospermi, astenospermi, azospermi ve teratospermidir. Semen plazmasında reaktif oksijenlerin(>ROS) artması oligospermi, astenospermi ve morfolojik olarak bozuk sperm üretilmesine neden olarak erkeklerde infertiliteye neden olabilmektedirler. Bu amaçla oksidatif strese neden olan reaktif oksijenlerin (ROS) ve oksidatif stresi engelleyen anti oksidanların sperm paramatrelerine olan etkilerini inceledik.
30 fertil erkek ve 65 infertil erkek çalışma kapsamına alındı. Semende oksidan olarak metil malonil dialdehit (MDA), antioksidan olarak da katalaz (CAT), süperoksitdismutaz (SOD), glutatyon peroksidaz (Gpx) değerleri biyokimyasal olarak ölçüldü. Bu değerle sperm parametreleri (morfoloji, motilite, say) arasında anlamlı bir ilişki olup olmadığı araştırldı.
Hastaların %40'ında lökospermi, %41.5'inde varikosel, %18.4'ünde ise hem lökospermi hem de varikosel vardı. Bu üç hasta grubuyla birlikte varikoseli ve buna ilave olarak astenospermi, oligospermi ya da teratospermiden herhangi biri olan (%36.9) hasta gruplarında, median (MDA) değeri kontrol grubundan yüksek olmasına rağmen bu değer istatistiksel olarak anlamlı değildi. Ve CAT, SOD, Gpx değerleri ise kontrol gurubu ile benzerdi. Bununla birlikte oligospermik (%21.5), teratospermik (%30.7), astenospermik (%69.2), oligoastenospermik (%21,5), oligoteratospermik (%13.8), astenoteratospermik (%27.8) hasta gruplarının MDA değerleri kontrol grubundan anlamlı olarak yüksekti ($p<0.05$). CAT değerleri anormal sperm parametreli kişilere göre kontrol grubunda anlamlı olarak yüksek bulundu (astenospermili kişiler hariç)($P<0,05$).
Anormal sperm parametrelilerde anlamlı MDA yüksekliği ve anlamlı CAT düşüklüğü gözlendi. Varikoseli ve lökospermililerde MDA değerinde anlamlı yükselme ve CAT değerinde anlamlı düşme gözlemlemedik. Sonuç olarak oligospermik, astenospermik ve teratospermik kişilerde seminal MDA değerinin anlamlı olarak yüksek olması, spermatozoayı oksidatif strese maruz bırakmakta ve sayı, motilite ve morfoloji üzerine olumsuz etki yapmaktadır. Ayrıca MDA nın artmasına bağlı olarak CAT'ın semende miktarının azalmasının da bu olumsuz etkiye katkı da bulunduğu görülmektedir.

Anahtar kelimeler: erkek infertilitesi, oksidatif stres, lökospermi, olgosperi, MDA

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➢ **ORAL PRESENTATION**

Liu tahmin edicisine dayalı regresyon katsayılarının hipotez testi

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Özet

Çoklu lineer regresyon modellerinde temel varsayımlardan biri bağımsız değişkenler arasında doğrusal bir ilişki olmamasıdır. Bu varsayım sağlanmadığında ise, çoklu bağlantı problemi ortaya çıkmaktadır. Bu durumda, en küçük kareler (EKK) yöntemiyle elde edilen regresyon katsayılarının tahmin edicileri yansızlığını korur, ancak varyansı büyüyeceğinden yanlış model bulgularına ve kullanımına neden olur. Bu nedenle literatürde EKK tahmin edicilerine göre yanlı, ancak çok daha küçük varyanslı tahmin ediciler önerilmiştir. Yanlı tahmin yöntemlerinde genel amaç, EKK tahmin yönteminde büyük olan varyans alanını küçük bir yan karşılığında daraltmaktır. Böylece EKK yöntemine göre daha doğru sonuçlar elde edilebilir. Çoklu bağlantı probleminin üstesinden gelmek için literatürde en yaygın kullanılan yanlı tahmin yöntemi Hoerl ve Kennard (1970)'ın önerdiği k yanlılık parametresine dayalı Ridge tahmin edicisidir. Daha sonra Liu (1993)' de Ridge tahmin edicisine alternatif olarak d yanlılık parametresine sahip Liu tahmin edicisini önermiştir. Uygulamalı istatistikte genel problemlerden biri de regresyon katsayılarının anlamlılığının test edilmesidir. Literatüre bakıldığında; regresyon katsayılarının nokta tahminiyle ilgilenen birçok çalışma bulunmasına rağmen, bunlardan çok azı bu katsayıların anlamlılık testiyle ilgilenmiştir. Bu çalışmalar, Obenchain (1977) ve Coutsourides ve Troskie (1979)' da yalnızca bir k yanlılık parametre değeri için Ridge regresyonuna dayalı F testi ve t testi çalışmışlardır. Halawa ve Basuiouni (2000)' de ise iki farklı k değerine dayalı Ridge regresyon modeli için asimptotik t testlerini önermiş ve aynı zamanda simülasyon çalışmasıyla bu k değerlerine dayalı testler karşılaştırılmıştır. Bu çalışmada ise regresyon katsayılarının anlamlılığının testi için Liu tahmin edicisine dayalı bir test önerilmiştir. Ayrıca, testin hem deneysel birinci tip hata oranı nominal seviyeye yakın olacak şekilde, hem de testin gücü yüksek olacak şekilde uygun d değeri belirlenmiştir. Simülasyon çalışmasıyla da farklı örnek çapları, değişken sayısı ve korelasyon yapılarında, önerilen test incelenmiş ve sonuçlar yorumlanmıştır.

Anahtar Kelimeler: Çoklu bağlantı, Liu tahmin edicisi, Yanlılık parametresi, Hipotez testi

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➢ **ORAL PRESENTATION**

Standartlaştırılmış olabilirlik oran yöntemi

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Özet

Uygulamalı istatistikte en önemli problemlerden biri uygun test istatistiğinin kullanılmasıdır. Literatürde kullanılan en önemli testlerden bir tanesi de yaklaşık olarak ki-kare dağılımına sahip olan Olabilirlik Oran Yöntemine dayalı testtir. Fakat bu yöntem genellikle küçük örnek çaplarında iyi bir performans sağlamadığından en önemli dezavantajı büyük örnek çapları gerektirmesidir**.** Son yıllarda bir çok araştırmacı bu yöntemin ki-kare yaklaşımını düzeltmek için bir çok yöntem önermiştir (Bartlett 1937; McCullagh 1982, 1984; DiCiccio 1984; vb). Bu yöntemlerden biri de DiCiccio ve ark. (2001) tarafından önerilen olabilirlik oran testinin beklenen değer ve varyansına dayalı yaklaşımıdır. Çalışmalarında test istatistiğini bu şekilde standartlaştırmanın elde edilen test istatistiğinin ki-kare dağılımına daha çabuk yaklaşacağını ifade etmişlerdir. Bu amaçla çalışmada, yığın varyanslarının homojenliğini test etmek için bu yöntem kullanılmıştır. Bu problem için elde edilen olabilirlik oran yönteminin beklenen değeri ve varyansı teorik olarak elde edilmesi zor olduğundan simülasyon yoluyla elde edilmiştir. Daha sonra önerilen test istatistiği ve literatürde özellikle son yıllarda yaygın kullanılan testlerle karşılaştırılmış ve sonuçlar yorumlanmıştır. Elde edilen sonuçlara göre standartlaştırılmış olabilirlik oran yöntemi rakip yöntemlere karşı oldukça iyi bir alternatif yöntem olduğu görülmüştür.

Anahtar Kelimeler: Olabilirlik Oran Yöntemi, Varyans Homojenliği, Testin Gücü

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➢ **ORAL PRESENTATION**

H_2S selective oxidation reaction over niobium oxide supported vanadium catalyst

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Abstract

The Claus process is the oldest known industrial process used in the production of elemental sulfur from H_2S which is a highly toxic gas. In this process, H_2S is converted to elemental sulfur in two steps called as thermal and catalytic. Due to the equilibrium limitations in the catalytic step of the Claus process, high H_2S conversion can not be achieved. Considering environmental sensitivities, the Claus process was modified as SuperClaus process to obtain higher conversion. In the SuperClaus process, very high H_2S conversion (~ 99%) can be obtained by selective catalytic oxidation reaction ($H_2S+1/2O_2 \rightarrow S+H_2O$). Some side reactions can occur to form SO_2 which is another harmful gas. This may also decrease the sulfur selectivity. To prevent the formation of side reactions and to obtain high sulfur yield, active, selective and stable catalysts should be developed.

In this study, Nb_2O_5 supported vanadium catalyst (containing 10% V by weight) was prepared by using wet impregnation method. N_2 adsorption/desorption, XRD, TPR and EDS analysis were performed to characterize the catalyst. XRD pattern of the $V@Nb_2O_5$ catalyst showed mainly crystalline phase of Nb_2O_5. Vanadium loading improved the redox properties of the catalyst. Catalytic activity tests were performed in a fixed-bed flow reactor at different temperatures (200°C, 250°C and 300°C) using stoichiometric feed ratio. Complete conversion of H_2S and very high sulfur selectivities (≥99%) were obtained for all reaction temperatures. This showed that the side reactions could prevent by the catalyst during the reaction test.

Keywords: H_2S, elemental sulfur, FTIR, Niobium oxide, vanadium

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➢ **ORAL PRESENTATION**

Yakıt hücresi uygulamaları için imidazolyum fonksiyonlu anyon değişim membranların hazırlanması ve karakterizasyonu

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Özet

Yakıt Hücresleri (YH), hidrojen, metanol, doğal gaz vb. yakıtlardaki kimyasal enerjiyi doğrudan elektrik ve ısı enerjisine yüksek verimle dönüştüren ve gelecekte enerji ihtiyacını karşılamada alternatif enerji sistemleri arasında (güneş, rüzgar, hidrotermal, jeotermal) ilk sırayı alacağı öngörülen enerji teknolojileridir. Temel olarak elektrotlar ve elektrolitten oluşan YHleri, kullanılan elektrolitin tipine, elektrolit üzerinden taşınan iyonun türüne, yakıt ve oksitleyicinin bileşimine, yakıtın doğrudan veya dolaylı olarak hücreye beslenmesine bağlı olarak sınıflandırılabilirler. Anyon Değişim Membran Yakıt Hücreleri'nde (ADMYH), polimer elektrolit yani polielektrolit membranların kullanıldığı ve hidroksil iyonlarınının (OH^-) katoddan anoda taşındığı YH türüdür.

ADMYH'sinde OH^- iyonlarının membran tarafından elektrotlar arasında taşınımı polimerik membranın taşıdığı katyonik gruplar- kuaternize amonyum, fosfonyum, guanidyum, imidazolyum vb. üzerinden gerçekleşmektedir. Katyonik grubun türü, membranın kimyasal dayanımını doğrudan etkilemektedir. Kuaternize amonyum gruplu polimerik membranların yüksek iletkenlik ve düşük maliyet sağlamalarına rağmen, alkali ortamda ki kimyasal dayanımlarının zayıf olması bu tür membranların kullanıldığı ADMYH'lerinin ticarileşmesini engellemektedir. Bu çalışmada, bahsedilen problemlere çözüm oluşturmak amacıyla, imidazolyum fonksiyonlu polivinil alkol (PVA) esaslı ADM'ların sentez ve karakterizasyon çalışmaları gerçekleştirilmiştir.

İmidazolyum fonksiyonlu PVA esaslı ADMlar elde edilmesi için öncelikle karboksilik asit grubu taşıyan imidazol bileşiği (Im) ile PVA'ün doğrudan esterleşme reaksiyonu üzerinden imidazol fonksiyonlu PVAlar sentezlenmiş, alkil halojenür ile (C_2H_5Br) kuaternizasyon reaksiyonu gerçekleştirilmiştir. Esterleşme reaksiyonu 25/50/80/100˚C, 6/24/48 saat süre ve 1:0.1 /1:0.5 PVA:Im mol oranı reaksiyon koşullarında yapılmıştır. Ürünlerin kimyasal yapısı elementel analiz, FTIR, ^1H NMR ve ICP ile gerçekleştirilmiştir. Ürünlerden sadece 25˚C'de çalışılan reaksiyon ürününde azot varlığı tespit edilmiş, elementel analiz ile N içeriği %1.04 tespit edilmiş, esterleşme derecesi %1.70 olarak hesaplanmıştır. 25˚C, 24 saat ve 1:0.5 PVA:Im mol oranı reaksiyon koşulunda elde edilen üründen çözelti döküm tekniği ile membranlar elde edilmiş ve glutaraldehit ile çapraz bağlanma reaksiyonu gerçekleştirilmiştir. ADMların karakterizasyonu iyonik iletkenlik, su tutma ve iyon değişim kapasitesi, alkali ortam dayanım testleri gerçekleştirilmektedir.

Anahtar Kelimeler: Anyon değişim membran yakıt hücresi; Polivinil alkol; İmidazol

Teşekkür: Bu çalışma, TÜBİTAK 116M531 numaralı proje desteği ile yürütülmüştür.

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➢ **ORAL PRESENTATION**

The mastitis resistance in dairy cattle, goat and sheep breeding: a genetic approach

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Abstract

Mastitis which is an inflammation of the mammary gland caused by pathogenes such as bacteria, viruses or mycoplasma in ruminants. The somatic cell count (SCC) is frequently used as an indicator of clinic or subclinic mastitis, as well as symptoms for clinic forms of the disease. The prevalence of mastitis is average 30-33% in dairy cattle in worldwide. In addition to the great incidence of mastitis in cattle, goat or sheep, the costs caused by disease extremely high for breeders. Loss of milk production, increased culling rate, veterinary treatment costs, effort for detection, death of the animals and alterations on milk product processes are the economic burdens of mastitis in animal breeding. On the other hand, antimicrobial residues threaten the food safety and consumption's health status. The prevention and the development of resistance against mastitis is significant for dairy industry, because of the economic reasons and importance of the disease. The physiological responses or the variation of genetic and enviromental factors such as lactation stage, hygienic properties of equipments or enviromental conditions which are the issues effecting mastitis on ruminants in background, make this disease complex.

The mastitis resistance of animals derived by some mechanic or physiological defence mechanisms regulated by some candidate genes (as *BoLA-DRB3,MBL1,TLR2/3/4,C4A,CXCR1,CD4,STAT5B,CD14,TNF,RARA,STAT3,STAT5A)*. Development of molecular mapping techniques led us to detect the genetic correlations among phenotypic traits (SSC or clinical signs) based on mastitis in dairy livestock. Although some gene associations are well established for mastitis resistance related to the SCC for cattle, the studies have been done in dairy goat and sheep were limited. According to economic, health and welfare consequences of mastitis, further studies are required for identification of associated genetic markers with mastitis resistance in dairy cattle, goat and sheeps. Addition of these markers to the selection programs and increment of genetic resistance to mastitis must be a breeding strategy for udder health in ruminants for breeders. We review the current knowledge of the genetic approach of mastitis resistance in dairy livestock and future implications in this paper.

Keywords: Cattle, goat, sheep, selection, genome analysis, mastitis resistance.

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➢ **ORAL PRESENTATION**

Application of artificial neural network to vegetable oil bleaching process

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Abstract

Bleaching is one of the important process of vegetable oil production. Adsorption via bleaching earth is the common method of decoloring. Decoloring carried out under low vacuum and high temperature. Usage of proper bleaching earth is the important issue for final product and cost. Decolorized oil could be diverse because of the feed chemical composition variety.

In this study acid numbers, chlorophyll and beta carotene values were experimentally determined before and after the bleaching process, then an artificial neural network employed to predict the beta carotene values of the decolored oil by using input variables. Raw oil neutralized and degummed before bleaching. 114 FF bleaching earth used and experiments carried out at 100°C, 710 mmHg vacuum for 1 hour. Bleaching earth analyzed XRD (X ray diffraction), BET (Brunauer–Emmett–Teller) and SEM (Scanning Electron Microscope. About 66 experiment carried out and 70% of the data used for training, 15% for validation and 15% for testing. Correlation coefficients were calculated for training and testing the network as 0.998 and 0.997, respectively. Respective MAPE values were determined as 3.05% and 7.51%. The model exhibited fair agreement with experimental data regard to the prediction of the beta carotene values of the decolored oil.

Keywords: Bleaching Earth, vegetable oil, ANN

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➢ **ORAL PRESENTATION**

Predicting syngas composition for downdraft biomass gasification using machine learning classifiers

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Abstract
Various type of machine learning methods have been used to develop prediction models for gasification processes. Even though results obtained from previous studies are somewhat promising, usage of datasets with low number of observations and lack of implementation of cross-validation techniques caused biased performance evaluations and inadequacy to explain true potential of the methods used. In this paper, we approach the gasification process as a classification problem and we employ two types of classifiers, i.e, k-nearest neighbors and Naïve Bayes classifier to predict producer gas composition and its calorific value obtained by woody biomass gasification process in a downdraft gasifier. Dataset with 5237 observations is used to develop and test proposed methods, performances of the models are evaluated with 10-fold cross-validation.

Keywords: Gasification, Biomass, Downdraft, Machine Learning, Classification

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➢ **ORAL PRESENTATION**

Synthesis of new chiral thiourea, precursors of atropisomeric triads

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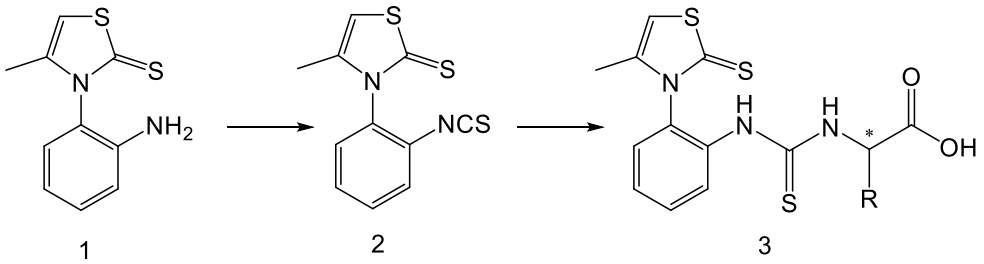
Abstract
Thiourea derivatives constitute an important class in the field of organic, organocatalytic, organometallic and pharmaceutical chemistry. Due to their strong hydrogen bonding potential, these compounds, particularly asymmetric chiral thioureas, have been extensively studied as novel organocatalysts in asymmetric reactions, in the last decade. These catalysts can be used as an acidic promoter in a variety of reactions.
On the other hand, α-amino acyclic acids have received increasing attention in organocatalysis as chiral scaffolds.
The combination of these two classes of compounds: thiourea made from an amino acid, leads to molecules of great importance. They constitute precursors of chiral heterocycles, as they constitute chiral bifunctional organocatalysts.
In our work, the thioureas that we have synthesized can be easily obtained optically pure starting from thiazoline thione 1 enantiopure:



We synthesized a serie of new thioureas 3 with good yields (81-96%) starting from racemic and then optically pure isothiocyanate 2 with racemic and optically pure amino acids.
Keywords: thiourea; chiral, aminoacid, racemic, optically pure .

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➢ **ORAL PRESENTATION**

Performance analysis of Universal Filtered Multi Carrier system in multipath high speed channels

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Abstract
Conventional Orthogonal Frequency Division Multiplexing (OFDM) has been widely employed in the wireless high speed vehicular communications and it has functioned properly so far in multipath scenarios. Although OFDM has met the requirements of 4G wireless systems, it is seen that in the next generation technology, OFDM is not able to provide an efficient transmission due to its several drawbacks such as high out of band radiation and sensitivity to Inter-Carrier Interference (ICI) and Inter-Symbol Interferences (ISI). In order for the communication systems to provide a reliable transmission and improve the performance of the existing OFDM systems, a new waveform called Universal Filtered Multi Carrier (UFMC) is introduced as a candidate for 5G next generation systems. UFMC has been in discussion for a while in terms of its improved performance against multipath fading and having the reduced out of band radiation as compared to OFDM systems. This work investigates the performance of UFMC and evaluates the transmission throughput in high speed Rayleigh multipath channels. The effect of high speed vehicles or especially High Speed Train (HTS) is generally a problem as it causes a frequency shift from the center frequency of each subcarrier as a result of Doppler existence. The frequency shift is increased naturally by the speed of vehicle or the high operating frequency of the transmitted waveform. In case of Doppler shift, subcarrier frequencies are distorted by the neighbouring subcarrier frequencies and hence this needs to be prevented by selecting larger spacing between the adjacent subcarriers. During this study UFMC waveform is designed with the larger subcarriers and then at the receiver end Bit Error Rate (BER) analysis is performed after the signal is affected by the high speed multipath channel. It is verified that UFMC with larger subcarrier design copes with the Doppler shift and shows better BER results. In order to mitigate the channel effect, Zero Forcing equalizer is used at the receiver side.

Keywords: UFMC, Doppler, High Speed Train, OFDM.

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➢ **ORAL PRESENTATION**

Clustering models for mining association rules from numerical datasets

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Abstract
Association rules have proven to be useful to discover relationships between items in large datasets. Hence, these relationships are often hidden in such datasets. Symbolic models are the main tools to extract association rules. Unfortunately, these models suffer of very serious limitations such as time consumption and the huge number of generated rules. To cope with these problems, we have already proposed an alternative method using clustering. However, our algorithm was only able to extract simple association rules between couples of items, so, it still generates a lot of association rules. Therefore, in this paper we develop a more general approach for extracting complex and important association rules. This approach is based on multi topographic unsupervised neural network model and clustering quality measures which evaluate to which extent a numerical classification model behaves as a natural symbolic model.

Keywords: Association Rules, Unsupervised Learning, Multi-SOM Model, Symbolic Model, Clustering Model, Numerical Dataset.

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➢ **ORAL PRESENTATION**

Balık beslemede krom

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Özet

Krom insanlar ve hayvanlar için esansiyel bir besin maddesi olarak kabul edilmektedir. Bu derlemede balık yemlerine yapılan krom ilavesinin pozitif ve negatif etkileri de değerlendirildi. Bu çalışmanın amacı, balık yemlerine ilave edilen kromun balıkların büyüme, yem değerlendirme ve metabolizmaları üzerindeki etkilerini inceleyen çalışmaları derlemektir. Bu derlemenin hazırlanması için, kromun yemlerde kullanımı ile ilgili balık besleme ve hayvan besleme hakkındaki kitaplar, yayınlar ve derlemelerden yararlanıldı. Krom yerkabuğunda bolluk açısından 21. sırada yer almaktadır. Krom teorik olarak -2 den +6 ya kadar olan tüm değerliklerde bulunmakla birlikte genellikle trivalent (+3) ve heksavalen (+6) formunda bulunur. Trivalent krom en stabil değerlikteki krom formudur. Canlı organizmada da bulunan trivalent krom en güvenli krom formu olarak kabul edilmektedir. Değerliği +6 olan krom çok güçlü bir oksitleyicidir ve biyolojik membranlardan kolayca geçerek protein ve aminoasitlerle etkileşime girerler. Bu özellik +6 formunu +3 komplekslerinden daha toksik hale getirmektedir.

Krom glikoz tolerans faktör (GTF) olarak adlandırılan ve glikoz taşıyıcısı olarak da bilinen bir protein aracılığıyla görev yapar. Bu protein, insülin reseptör kompleksleriyle etkileşerek insülinin işlevlerini kolaylaştırmaktadır. Krom karbonhidrat, protein ve yağ metabolizmasında görev almaktadır. Ayrıca, kromun belirli enzimleri aktive ettiği ve nükleik asitler ile proteinleri stabilize ettiği görülmüştür.

Krom yemlerde inorganik bileşikler ve organik kompleksler şeklinde bulunabilir. Elementel krom absorbe edilememektadir ve besinsel değeri yoktur. Balık yemlerine krom ilavesinin yararlı etkilerinin olduğu görülmektedir.

Anahtar Kelimeler: Balık besleme, İz element, Krom, Glikoz metabolizması

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➢ **ORAL PRESENTATION**

Kaynaklı kiriş tasarımı probleminin yusufçuk optimizasyon algoritması ile çözümü

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Özet

Yusufçuk optimizasyon algoritması, sürü zekasına dayalı meta sezgisel bir algoritmadır. Yusufçukların doğada sürü halindeki statik ve dinamik davranışlarından esinlenilmiştir. Optimizasyonun iki temel aşaması vardır: Keşif ve Sömürü. Bu iki aşama yusufçukların sürü halindeyken dinamik ya da statik olarak besin araması veya düşmandan kaçınması izlenerek modellenmiştir. Mühendislik optimizasyonunda kullanılan fonksiyonlar, birçok değişken ve kısıtlamayla birlikte çok karmaşıktır. Konvansiyonel optimizasyon araçları bazen global optimal noktasını bulamaz. Mühendislik alanında iyi bilinen problemlerden biri olan Kaynaklı Kiriş Tasarımı Problemi, kirişin dört yapısal parametrelerinin uygun bir kümesini bularak kaynaklı kirişin imalat maliyetini en aza indirmeyi amaçlamaktadır. Bu çalışmada, Yusufçuk optimizasyon algoritması, Kaynaklı Kiriş Tasarımı Problemi'ne uygulanmış ve 40 yusufçuk/100 iterasyon ile MATLAB ortamında gerçeklenmiştir. Önerilen algoritma, adım kontrolsüz, %10 adım kontrollü ve %1 adım kontrollü olarak ayrı ayrı çalıştırılmış ve sırasıyla 1.302, 1.253 ve 1.252 değerlerine ulaşılmıştır.

Anahtar Kelimeler: yusufçuk algoritması, optimizasyon, kaynaklı kiriş tasarımı.

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➢ **ORAL PRESENTATION**

Triaxial shear behavior and microstructure of biologically treated sand specimens

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Abstract
The use of microbial calcite cementation for ground improvement presents a relatively new ground improvement option for geotechnical engineers, one that particularly has the potential to revolutionize the way that we improve soils to prevent liquefaction-induced damage. This technique uses non-pathogenic organisms which are found naturally in a soil environment to cement sand particles together at their particle-to-particle contacts. There is significant potential for a reduction in environmental concerns on various types of projects; in the long-term, this technique may also prove to be an extremely sustainable form of ground improvement. Consequently, the goal of the research described herein is to enhance the state-of-the-art with respect to our understanding of controlling biological cementation processes in soil. This study describes the results from an experimental study that was conducted to examine the factors that influence microbial calcite cementation in sands. Bio-treatment of the Ottowa sand was performed using a commonly encountered urea-producing soil microorganism called *Sporosarcina Pasteurii* (ATCC-6453). In this study, triaxial test specimens were prepared using two different methods; dry pluviation and moist tamping, which achieves a relatively loose initial void ratio that is more prone to collapse during soil shear. Microorganisms that are suspended in solution are introduced to the soil, and over time the microorganisms are supplied with necessary nutrients via cycling with a peristaltic pump. After bio-treatment, the specimens were back pressure saturated, isotropically consolidated, and sheared under undrained conditions. The shear behavior of bio-treated specimens is presented and compared to untreated specimens that have been prepared in a similar fashion. Additional scanning electron microscope (SEM) testing was also performed to examine the soil microstructure over a range of specimen curing periods to assess the nature of any cementitious bonds that may have formed.

Keywords: Biologically treated soil, biocementations, shear strenght of Ottowa sand, ground improvement

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➢ **ORAL PRESENTATION**

Salisilaldehit türevinden yeni bir schiff bazı ligandı ile metal (ıı) komplekslerinin sentezi, karakterizasyonu ve bunların biyolojik aktivitelerinin incelenmesi

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Özet
Schiff bazları, yapısal ve biyolojik özelliklerinden dolayı koordinasyon kimyasında yaygın olarak kullanılan ligantlar arasında yer almaktadır ve bunların pratik hayatımızdaki önemi de gün geçtikçe artmaktadır. Schiff bazları tıpta ve eczacılıkta, bazı ilaçların hazırlanmasında, biyolojik sistemlerde, boyar maddelerin üretiminde, kozmetikte, tarım alanında, polimerlerin üretiminde, plastik sanayisinde, elektronik endüstrisinde, uçak sanayisi gibi birçok sanayi dalında kullanılmaktadır [1]. Schiff bazları çok geniş bir farmakolojik aktiviteye sahiptir. Bu aktiviteleri de eser elementlerle yaptıkları şelatlardan kaynaklanmaktadır. Bazı Schiff bazları ve geçiş metal komplekslerinin antibakteriyel, antifungal, antimikrobiyal, antiülser, antikanser, antitümör, antioksidant özelliklere sahip olduğu da bilinmektedir. Ayrıca Schiff bazları ve geçiş metal kompleksleri kemoterapi de ilaç olarak da kullanılmaktadır. Günümüzde platin bileşiklerinin ve Salisilaldehit ile propan, bütan, pentan aminlerden türeyen Schiff bazlarının Galyum komplekslerinin kanser kemoterapisinde kullanıldığı bilinmektedir.
Bu çalışmada, 4-metoksisalisiliden-*o*-aminofenol ligandı; *o*-aminofenol ve 4-metoksisalisilaldehit'in mutlak etil alkol içinde 60 ^{o}C'de p-toluen sülfonik asit katalizörlüğünde gerçekleştirilen reaksiyonundan elde edildi. Bu ligandın EtOH çözücü ortamında Co(II), Ni(II), Cu(II), Zn(II), Cd(II) ve UO_2(II) iyonları ile M:L oranı 1:2 olan kompleksleri hazırlandı [2]. Sentezlenen ligand ve komplekslerin yapıları elementel analiz, IR, ^{1}H-NMR, ^{13}C-NMR, UV-Vis, manyetik süsseptibilite ve termogravimetrik analiz yöntemleri ile aydınlatıldı. Hazırlanan komplekslerin antikanser aktiviteleri XTT metodu ile insan kolon kanseri (HT-29) ve meme kanseri (MCF-7) hücreleri üzerinde *in vitro* olarak araştırıldı. Elde edilen veriler komplekslerin test edilen hücre hatları üzerinde doz bağımlı ve hücre seçici olarak anti-proliferatif aktivite sergilediklerini gösterdi. Komplekslerinin IC_{50} değerleri göz önüne alındığında Co(II) kompleksinin diğer komplekslere kıyasla iki hücre hattında da daha yüksek aktiviteye sahip olduğu gözlendi.
Sonuç olarak, elde edilen komplekslerin, özellikle Co(II), kemoterapötik ajan adayı olarak *in vitro* çalışmalarda değerlendirilebileceğini düşündürmektedir.
Anahtar Kelimeler : Schiff bazları, ligand, *o*-aminofenol, spekroskopik teknikler

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➢ **ORAL PRESENTATION**

Gut hastalığının tedavisinde febuksostat etkin maddeli ilaçların spektroskopik yöntemlerle incelenmesi

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Özet

Gut, ayırt edici özelliği tekrarlayan akut enflamatuvar artrit olan tıbbi bir durumdur. En sık etkilenen bölge, ayak başparmağının tabanındaki tarak kemiği-parmak kemiği eklemidir. Ayrıca kireçlenme, böbrek taşı veya ürat nefropati şeklinde de görülebilir. Gut hastalığının sebebi kanda ürik asit düzeylerinin yükselmesidir. Ürik asit, pürin denilen madddelerin bir yıkım ürünüdür. Özellikle protein yapısındaki maddelerin atım şekli olan ürik asit, atılmasında bir sorun oluşması durumunda veya çok fazla üretilmesinde kristalleşir ve kristaller eklemlerde, tendonlarda ve çevre dokularda birikir. Bu maddenin eklemlerde birikmesi sonucu iltihap oluşumu gözlenir. Bu özgün kristallerin eklem sıvısında görülmesiyle klinik tanı doğrulanmış olur. Son on-onbeş yıldır gut hastalığının görülme sıklığı artmıştır. Bu artışın, popülasyondaki metabolik sendrom, daha uzun hayat süresi beklentisi ve beslenme düzenindeki değişiklikler gibi risk faktörlerinin artışına bağlı olduğu düşünülmektedir. Gut tedavisi, atak ve atak dışı tedaviler olmak üzere iki aşamalıdır. Tedavinin amacı gut ataklarının-komplikasyonlarının önlenmesi ve kan ürik asit seviyesini 6 mg/dL'nin altında tutmaktır. Nonsteroidal antiflamatuvar ilaçlar (NSAİİ'ler), steroidler veya kolşisin ile yapılan tedaviler belirtileri iyileştirir. Gut hastalığında kullanılan ilaçlar; Kolşisin, Allopurinol, Probenesid, Febuxostat'dır. Gut komplikasyonları ve atak gelmesini önlemek için; ürik asit üretimini azaltan ilaçlar allopurinol, kolşisin ve febuxostat kullanılabilir. Febuksostat, kronik gut ve hiperürisemi tedavisinde kullanılmaktadır.

Bu çalışma da, Gut hastalığının tedavisinde kullanılan febuksostat etkin maddeli ilaçların bazı fiziksel ve kimyasal özellikleri (kapalı formülleri, molekül ağırlıkları, renkleri, erime noktaları, iletkenlikleri, pH ölçümleri, çözünürlük testleri ile polar ve apolar çözücülerdeki çözünürlükleri, sertlikleri, mikroskobik kontrolleri gibi özellikleri) belirlenip spektroskopik teknikler kullanılarak elementel analiz, IR, ^{1}H-NMR, ^{13}C-NMR, UV-Vis, manyetik süsseptibilite, HPLC, GC-MS, termogravimetrik analiz gibi yöntemler kullanılarak incelenmiş ve standart çözeltiler de ve farmasötik preparatlarda analizleri gerçekleştirilmiştir.

Anahtar Kelimeler : Gut, Ürik Asit, Febuksostat

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➢ **ORAL PRESENTATION**

Synthesis of substituted 5-[(3-Methylthiophen-2-yl)methylidene]-1,3-thiazolidin-4-one compounds via One-Pot multicomponent reaction

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Abstract

Thiazolidinones and derivatives have an important place in the area of heterocyclic compounds because of their presence in the structures of macrocyclic complex drugs, their applications in industry and usage in pharmaceutical researches due to their biological properties such as antitubercular, antibacterial, antifungal, antimicrobial, anticancer, antitumor, antiviral, anti-HIV, antimalarial.

In the light of literature researches made, synthesis of some new thiazolidinone derivatives that may have biological activity is aimed in this study.

The study consists of two steps. In the first step, substituted thioureas which were planned to use as substrates in the principal reactions, were prepared by the reaction of aryl isothiocyanate with substituted amines. Thioureas have an important role in the synthesis of sulfur- and nitrogen-containing heterocyclic compounds due to their ability to make advanced reactions. Addition to this, thiourea derivatives have attracted attention during the last decades due to their significant biological activities as antitubercular, antibacterial, antifungal, anti-HIV, antihypertensive as well as good anticonvulsant properties.

In the second step which is the main part of the study, cyclocondensation of each of the previously prepared substitued thioureas with chloroacetic acid and 3-methlythiophene-2-carboxaldehyde was achieved by the technique of one-pot multicomponent reaction; and five new 5-[(3-methylthiophen-2-yl)methylidene]-1,3-thiazolidin-4-one compounds have been obtained.

Structures of all the synthesized compounds have been determined and characterized by infrared, nuclear magnetic resonance, mass spectral data results.

Keywords: Iminothiazolidinone, one-pot reaction, multicomponent reaction, cyclocondensation, thiourea.

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➢ **ORAL PRESENTATION**

Diurnal and seasonal variations of PM_{10} mass levels in Bolu, Turkey

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Abstract

Numerous epidemiological and toxicological studies were conducted in the literature showed that there is a strong association between the adverse health effects and exposure to ambient particulate matter (PM). Most of these studies are using the mass concentration of daily collected PM samples as metric. However, day and night time mass concentration or corresponding concentration with more higher time resolution have not been investigated until recently. Diurnal and seasonal variation of PM mass concentration were determined in the city center of Bolu (Turkey). To end this, sampling campaign was performed at the centrum of Bolu at two different periods during spring and autumn. Springtime measurement was initiated on 6th of May and completed on 6th of June, 2013 while autumn measurement was started on 23rd of September and finished on 21st of October, 2013. Daylight time (from about 7:00 through 19:00 local saving time) and night-time (from about 19:30 through 6:45) samples were collected during these two separate measurement times at the city center. A Gent-type stacked filter unit (SFU) with two (front and back) pre-fired quartz fibre filters in series was employed to collect PM_{10} samples. Sampler was mounted 1.6 m above the ground level at the site. PM mass concentration of the collected samples were determined by AND GH brand microbalance with ±0.02 mg sensitivity. The average mass concentration of PM_{10} was measured as 80 and 85 µg m^{-3} in May and October, respectively, at the city center during the study. Day-time and night-time PM_{10} concentrations were determined as 93±42 µg/m^3 and 75±34 µg/m^3, respectively, during spring. Moreover, corresponding average values were found as 56±47 µg/m^3 and 75±61 µg/m^3, respectively, during autumn. It was revealed in this study that daily and diurnal mean PM10 values exceed the daily threshold value set in Turkish Air Quality Control Regulation.

Keywords: PM, SFU Sampler, Diurnal Concentrations, Bolu

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➢ **ORAL PRESENTATION**

Effect of high pressure processing on bioactive, aroma active and phenolic compounds

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Abstract
High Pressure Processing (HPP) is a cold pasteurization technique involves pressure application to food products with or without package subjected to a high level of isostatic pressure (300–600MPa/43,500-87,000psi) transmitted by water. Pressures at the magnitude of 400-600 MPa are applied for pasteurization purposes. Both liquid and solid foods with pressures between 400-600 MPa can successfully be processed by HPP with reasonable amount of microbial and enzyme inactivation.
Hardaliye -mostly produced in Thrace Region of Turkey- is a traditional fermented drink made from grape pomace, sour cherry leaves, and mustard seeds. It has very pleasant taste and unique color. Because of its limited shelf life, antimicrobial agents such as sodium benzoate causing health problems is added. Current efforts include processing of hardaliye with alternative nonthermal technologies such as HPP, but they do not include the effect of HPP on bioactive, aroma active and phenolic compounds.
Processing of hardaliye with changes in pressure, processing time and temperature revealed no significant difference on total antioxidant capacity (TAC), total monomeric anthocyanin content (TMAC) and total phenolic substance content (TPSC) in addition to pH, titratable acidity, conductivity, etc. Concentration of sinigrin and sinalbumin also changed by HPP processing. On the hand, concentration of aroma active compounds showed a great variability depending on the processing parameters. Sensory panel indicated no significant difference between control and HPP processed samples. It was concluded that HPP can be a viable alternative processing technology to process hardaliye drink.
Key words: hardaliye, high pressure processing, physical properties, aroma active compounds

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➢ **ORAL PRESENTATION**

An Experimental Study on the Evolution of Scour around a Bridge Pier

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Abstract
The local scour around piers is the major reason of the failures of bridges. In this study the time evolution of local scour depths and the maximum possible scour depth were studied in clear water conditions. The experiments were carried out in a rectangular flume by using uniform sediment with median diameter of 1.06 mm and geometric standard deviation of 1.18. The diameter of the circular bridge pier was 160 mm. The scour depths were recorded by a non-intrusive camera. The experimental findings were compared with those calculated from some empirical equations existing in the literature.
Keywords: Bridge pier, scour depth, time evolution.

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➢ **ORAL PRESENTATION**

Treatment and Statistical Analysis of ADV Data

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Abstract
Open channel flows are free surface flows with complex 3D flow structures and the study of these different scaled structures has been a great challenge for engineers from such different domains as civil, environmental and mechanic engineering. Vectrino which is an Acoustic Doppler Velocimeter (ADV) was used in this study to investigate the properties of flow field in an open channel with a width of 120 cm, discharge of 67 l/s and flow depth of 18 cm. The Vectrino permits to measure 3D velocity time series at a point in the flow field with a maximum sampling rate of 200 Hz. The selected sampling rates were 5 Hz, 25 Hz, 100 Hz and 200 Hz with a sampling duration of 1 and 3 minutes. The time series obtained at two different depths were treated by the software Explorer V Pro and the time average and the fluctuation components were calculated. The statistical properties for each velocity time series was obtained and compared.
Keywords: Vectrino, turbulent flow, statistical analysis.

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➢ **ORAL PRESENTATION**

Investigation of Levels of PAHs and PCBs in Dust Samples Collected from Different Microenvironments at University Campus

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Abstract
The objectives of the study are to determine the both Polycyclic Aromatic Hydrocarbons (PAHs) and Polychlorinated Biphenyls (PCBs) in indoor dust samples which were collected from SDÜ Engineering Faculty and to investigate the sources of these organic pollutants. Therefore, for this aim, indoor dust samples were collected from previously identified 23 points in SDÜ Engineering Faculty Building in 2017 summer and organic compounds were extracted from these dust samples by solvent extraction method, then extracts were concentrated and they were cleaned-up by column chromatography method and finally prepared samples were analyzed by Gas Chromatography/Mass Spectroscopy instrument.

In the study, the obtained both PAH and PCB concentrations displayed great variability. Total PAH concentration were between (Σ16PAH) 247.14 and 14162.65 ng g^{-1} (in dry weight) (avg ± sd; 2161.27 ± 3118 ng g^{-1}), total PCB concentrations were between (Σ41PCB) 2.06 and 495 ng g^{-1} (in dry weight) (avg±sd; 74.72 ± 107.67 ng g^{-1}). In the study, to determine the sources of target pollutants Factor Analysis (FA) was also performed. Factor Analysis revealed two factors for PAHs and three factors for PCBs. According to the results of the Factor Analysis, it was observed that the traffic and activities performed in the faculty building were the sources of the measured PAHs, activities in the building, paints and technical solvents were the sources of the PCBs in the indoor dust of building. Furthermore, it was seen that academic/ administrative personnel who smoke in their offices had a potential risk in terms of PCB exposure.
Keywords: Polycyclic aromatic hydrocarbons (PAHs), Polychlorinated biphenyls (PCBs), Factor Analysis (FA), Indoor dust

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➢ **ORAL PRESENTATION**

Vitamin A and β-carotene levels of chicken liver marketed in Ankara province

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Abstract
Vitamins increase the nutritional value of nutrients. In addition to these, they are vital for the development of living organisms. Vitamin A must be taken from outside since it cannot be synthesized in humans and other mammalians. Vitamin A, is one of the fat-soluble vitamins, takes place in gene expression, reproduction, vision, immune function, epithelial tissue development, and embryonic development. Vitamin A deficiency adversely affects reproduction, estrus cycle, development, regeneration, and immune-resistance of the body. Carotenoids are found in plants as a vitamin A precursors. Humans and/or animals consume these plants and convert carotenoids to vitamin A by means of enzymes and vitamin A is mainly stored in the liver. The liver is an important food source due to its rich content of protein, iron, and vitamin. Also, it is a fundamental vitamin A storage organ which contains about 90% of body vitamin A reserves. Vitamin A deficiency is an endemic public health problem in many countries. The aim of this study was to determine the vitamin A and β-carotene levels in 50 chicken liver samples collected from Ankara. As a result of the analysis, the mean levels of vitamin A and β-carotene in liver samples were determined as 26.06±5.69 and 1.90±0.15 µg/g, respectively. As a result, it was observed that vitamin A and β-carotene levels in chicken liver were found to be in normal range. These results indicate that poultry feed is balanced regarding vitamin A and/or β-carotene. Also, chicken liver is a good source for human consumption in terms of vitamin A and β-carotene.
Keywords: chicken, liver, vitamin A, β-carotene

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➢ **ORAL PRESENTATION**

Determination of *in vitro* antioxidant activity of endemic *Sideritis akmanii* consumed as herbal tea

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Abstract

Tea is a worldwide popular beverage which is mostly consumed after water. In addition, herbal teas are also widely consumed in Turkey. These teas can be obtained by brewing the diverse parts of plants including leaves, fruits, seeds, roots, or flowers. Teas exhibit positive health effects on human health and employed in folk medicine for curative purposes based on their antioxidative, antihypercholesterolemic, anti-inflammatory, antimicrobial, and antihypertensive properties. *Sideritis akmanii* is an endemic plant used as herbal tea. The present study evaluated the antioxidant activity of endemic *Sideritis akmanii* collected from Afyonkarahisar Province, Turkey. For this purpose, water, acetone and methanol extracts of aerial parts of *Sideritis akmanii* were prepared. The level of phenolic contents in these extracts was spectrophotometrically determined according to the Folin-Ciocalteau method. The results showed that phenolic content in methanol and acetone extracts of *Sideritis akmanii* was found to be higher compared to water extract. Also, antioxidant capacities of extracts were determined based on phosphomolybdenum method. According to results, the methanol extract showed the highest antioxidant capacity than the other extracts. Free radical scavenging activity of the extracts was determined by means of 1,1-diphenyl-2- picrylhydrazyl radical assay and results exhibited that free radical scavenging activities of extracts were determined as follows methanol > acetone > water. Consequently, the present study showed that Sideritis *akmanii* is a potential natural antioxidant compound against oxidative stress. Also, the methanol extract of *Sideritis akmanii* may be employed for future studies due to its highest antioxidant capacity.

Keywords: *Sideritis akmanii*, herbal tea, phenolic content, scavenging activity, antioxidant capacity

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➢ **ORAL PRESENTATION**

Seasonal aluminium concentrations in Merzimen and Karasu Streams (Gaziantep, Turkey)

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Abstract
The present study was conducted to determine the seasonal aluminium (Al) levels of Karasu (Araban) and Merzimen (Yavuzeli) streams in Gaziantep being under the effects of excess irrigation and agricultural activities. The study was conducted in 2017 and 5 stations were were decided from each stream. Water sampling was performed seasonally based on standard methods and Al levels of samples were determined according to method of EPA 6020A by using ICP-MS. There were significant alterations depending on stations and seasons in which water samples were taken. In Karasu stream, sampling was not possible during summer and autumn due to drought except for station 4. The highest Al concentrations were determined as 0.91 mg/L in winter and 5.20 mg/L in spring for stations 3 and 4 respectively. In Merzimen stream, the highest Al level was 4.49 mg/L in winter and the lowest level determined was 0.19 mg/L in autumn for station 4. According to Turkish Water Quality Classes and Criteria, Merzimen stream was found to be fourth water quality in winter and summer. Karasu stream was also evaluated to be fourth water quality in spring.
Keywords: Seasonal Al concetrations, Merzimen Stream, Karasu Stream
Acknowledgement: The authors would like to thank the Gaziantep University Research Fund.

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➢ **ORAL PRESENTATION**

Chemical composition, phenolic content and some biological activities of *Artemisia splendens*

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Abstract

The present study aimed to determine phenolic content, chemical composition, antimicrobial activity, total antioxidant status (TAS), total oxidant status (TOS), oxidative stress index (OSI), DNA protective activity, cytotoxic effect and antioxidant activity of *Artemisia splendens* Willd. collected from Duhok (Iraq) province. In this context, the plant was extracted with methanol and dichloromethane in soxhlet apparatus. DPPH method for antioxidant activity, Rel Assay Kits for TAS, TOS and OSI values, HPLC device for phenolic contents, GC-MS device for chemical compositions, pBR322 supercoil DNA for DNA protective activity, modified agar dilution method for antimicrobial activity and cytotoxic activities against A549 cell line were determined. As a result of the studies, it was determined that the DPPH activities of plant extracts increased due to concentration increase. It was determined that plant extracts exhibited normal antimicrobial activity. TAS value was found as 3.201±0.055 mmol/L, TOS value was 2.115±0.062 µmol/L and OSI value was 0.066±0.001. It was determined that the methanol extracts of the plant had strong DNA protective effect in 200 µg/mL concentration. Plant extracts showed cytotoxic effects on A549 cells due to increased concentration. Also within the plant was determined to be gallic acid, epicatechin, cinnamic acid, syringic acid, chlorogenic acid, quercetin, caffeic acid, benzoic acid and rosmarinic acid. As a result of GC-MS analysis were determined 4 compounds. As a result, *A. splendens* has been determined to have low biological activities. However, it is thought that it can be used as a natural source in terms of the phenolic compounds determined in its structure.

Keywords: *Artemisia splendens*, Medicinal plant, Phenolic contents, Antioxidant, Antimicrobial, Cytotoxic effect

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➢ **ORAL PRESENTATION**

Determination of some biological activities of *Fritillaria imperialis*

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Abstract
The present study aimed to determine phenolic content, chemical composition, antimicrobial activity, total antioxidant status (TAS), total oxidant status (TOS), oxidative stress index (OSI), DNA protective activity, cytotoxic effect and antioxidant activity of *Fritillaria imperialis* L. collected from Duhok (Iraq) province. In this context, the plant was extracted with methanol and dichloromethane in soxhlet apparatus. DPPH method for antioxidant activity, Rel Assay Kits for TAS, TOS and OSI values, HPLC device for phenolic contents, GC-MS device for chemical compositions, pBR322 supercoil DNA for DNA protective activity, modified agar dilution method for antimicrobial activity and cytotoxic activities against A549 cell line were determined. As a result of the studies, plant extracts showed low DPPH and antimicrobial activity. TAS value was found to be 3.336±0.126 mmol/L, TOS value was 12.355±0.688 µmol/L and OSI value was 0.373±0.035. It was determined that plant extracts did not show DNA protective effect. It was determined that plant extracts have strong cytotoxic activities. In addition, gallic acid, epicatechin, syringic acid, chlorogenic acid, quercetin and coumaric acid were determined. As a result of GC-MS analysis were determined 7 compounds. As a result, the biological activities of *F. imperialis* were found to be low. However, it is thought that it can be used as a natural source in terms of the phenolic compounds determined in its structure.
Keywords: *Fritillaria imperialis*, Medicinal plant, Phenolic contents, Antioxidant, Antimicrobial, Cytotoxic effect

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➢ **ORAL PRESENTATION**

Antioxidant, antimicrobial, DNA protective, cytotoxic activities and phenolic content of *Allium calocephalum*

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Abstract

The present study aimed to determine phenolic content, chemical composition, antimicrobial activity, total antioxidant status (TAS), total oxidant status (TOS), oxidative stress index (OSI), DNA protective activity, cytotoxic effect and antioxidant activity of *Allium calocephalum* Wendelbo. collected from Duhok (Iraq) province. In this context, the plant was extracted with methanol and dichloromethane in soxhlet apparatus. DPPH method for antioxidant activity, Rel Assay Kits for TAS, TOS and OSI values, HPLC device for phenolic contents, GC-MS device for chemical compositions, pBR322 supercoil DNA for DNA protective activity, modified agar dilution method for antimicrobial activity and cytotoxic activities against A549 cell line were determined. Studies have shown that methanol extracts exhibit high DPPH activity. The antimicrobial activity of plant extracts was found to be normal. TAS value was determined as 5.853±0.170 mmol/L, TOS value was 16.288±0.230 µmol/L and OSI value was 0.278±0.004. While the methanol extracts of the plant did not show activity, dichloromethane extracts showed high concentrations DNA protective effect. It has been determined that plant extracts exhibit strong cytotoxic activities. As a result of the phenolic analysis of the plant was determined gallic acid, epicatechin, syringic acid, chlorogenic acid, caffeic acid, rosmarinic acid and sinapic acid. As a result of GC-MS analysis were determined 11 compounds. As a result, *A. calocephalum* has been determined to have biological activity.

Keywords: *Allium calocephalum*, Medicinal plant, Phenolic contents, Antioxidant, Antimicrobial, Cytotoxic effect

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➢ **ORAL PRESENTATION**

Phenolic content and some biological activities of *Ornithogalum kurdicum*

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Abstract

The present study aimed to determine phenolic content, chemical composition, antimicrobial activity, total antioxidant status (TAS), total oxidant status (TOS), oxidative stress index (OSI), DNA protective activity, cytotoxic effect and antioxidant activity of *Ornithogalum kurdicum* Bornm. collected from Duhok (Iraq) province. In this context, the plant was extracted with methanol and dichloromethane in soxhlet apparatus. DPPH method for antioxidant activity, Rel Assay Kits for TAS, TOS and OSI values, HPLC device for phenolic contents, GC-MS device for chemical compositions, pBR322 supercoil DNA for DNA protective activity, modified agar dilution method for antimicrobial activity and cytotoxic activities against A549 cell line were determined. As a result of the studies, it was determined that plant extracts have high cytotoxic effect. The methanol extracts of the plant showed high DPPH activity. Antimicrobial activity was found to be high. TAS value was determined as 6.507±0.098 mmol/L, TOS value was 10.210±0.681 µmol/L and OSI value was 0.157±0.013. The DNA protective effect of plant extracts was found to be weak. In addition, epicatechin, cinnamic acid, syringic acid, chlorogenic acid, quercetin, caffeic acid, coumaric acid, benzoic acid and hydroxybenzoic acid were determined in *O. kurdicum*. As a result of GC-MS analysis were determined 18 compounds. As a result of the studies, biological activities of *O. kurdicum* plant were determined and it can be used as material in pharmacological studies.

Keywords: *Ornithogalum kurdicum*, Medicinal plant, Phenolic contents, Antioxidant, Antimicrobial, Cytotoxic effect

- **POSTER PRESENTATION**

2. ABSTRACTS
2.2. POSTER PRESENTATIONS

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➢ **POSTER PRESENTATION**

Structural, electronic and optical propreties of Deltamethrin ($C_{22}H_{19}Br_2NO_3$) using density functional method

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Abstract
Pesticides are one of the most common pollutant groups in the world, and they have a major drawback such as toxicity. A long-term exhibition can be harmful for the human life and can disrupt the functioning of various organs of the body.
Epidemiological and toxicological studies show that most neurodegenerative diseases, such as Parkinson's disease, associated with chronic exposure to pesticides.
Deltamethrin (DM) is one of the most used pyrethroids and is currently the most widely used class of pesticides.
The vibrational frequencies of Deltamethrin ($C_{22}H_{19}Br_2NO_3$) have been reproduced in the 500–4000 cm^{-1} range. The modified Urey–Bradley–Shimanouchi force field was used, combined with an intermolecular potential energy function that includes van der Waals interactions, electrostatic terms, and an explicit hydrogen bond function. The vibrational frequencies of Deltamethrin were calculated and assigned to the experimentally observed vibrational frequencies. Overall, there was good agreement between the observed and calculated frequencies. In addition, the molecular orbital calculations such as Natural Bond Orbitals (NBOs), HOMO-LUMO energy gap and Mapped molecular Electrostatic Potential (MEP) surfaces were also performed with the same level of DFT. Electronic stability of the compound arising from hyper conjugative interactions and charge delocalization were also investigated based on the natural bond orbital (NBO) analysis.
Keywords: Deltamethrin, Vibrational spectra, MUBS force field, HOMO-LUMO, DFT..

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➢ **POSTER PRESENTATION**

Controlled Synthesis of One-dimensional Graphitic-like Carbon Nitride Nanostructures Co-doped With Binary Metal for CO Oxidation Reaction Under ambient Conditions

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Abstract

Controlled synthesis of efficient catalysts for CO oxidation is of great importance in various industrial and environmental applications. Herein, we developed a scalable up approach for one-pot synthesis of graphitic-like porous carbon nitride (gC_3N_4) nanostructures co-doped with Au and Pd as efficient catalysts for carbon monoxide (CO) conversion. This is based on the polymerization of melamine with nitric acid in an organic solvent in the presence of metal precursors followed by carbonization at elevated temperature. Interestingly enough, gC_3N_4 nanotubes and nanowires were formed using ethylene glycol and ethanol solvents, respectively. The CO oxidation performance of Au/Pd-doped gC_3N_4 nanotubes was superior to Au/Pd-doped gC_3N_4 nanowires. This is owing to the porous one-dimensional nanotube morphology, which provide various accessible active sites for the adsorption of reactant molecules. The presented method may open new frontiers on the synthesis and utilization of gC_3N_4 one-dimensional nanostructures in gC_3N_4 in gas phase reaction.

Keywords: CO Oxidation, gC_3N_4 Nanostructures.

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➢ **POSTER PRESENTATION**

Theoretical studies of Ce-doped Pr_2CuO_4 as a cathode material for solid oxide fuel cells

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.

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Abstract
The solid oxide fuel cells (SOFCs) are considered as one of the alternative to traditional hydrocarbons sources of energy due to their high efficiency and excellent fuel flexibility. In this context, we have performed first-principles calculations based on density functional theory to study $Pr_{2-x}Ce_xCuO_4$ (x = 0.25) for potential application as a cathode material for SOFCs. The structural, electronic and electrical properties of Ce-Doped and -Undoped T'-type Pr_2CuO_4 are analyzed. The relation between electronic structures and conducting properties are predicted correctly and comparisons have been made to available experimental data. The result suggests that the substitution of 2.5% of Pr atoms by Ce is effective to enhance the performance of Pr_2CuO_4 as a SOFC cathode.
Keywords: First-principles calculations, Cathode materials, Doping, Pr_2CuO_4, Solid Oxide Fuel Cell

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➢ **POSTER PRESENTATION**

Effect of some biotic and abiotic factors on population dynamics of *Aphis spiraecola* Patch, 1914 on citrus in eastern Mitidja (Algeria)

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Abstract

The importance of the damage caused by *Aphis spiraecola* on Algerian citrus cultivation stimulated us to carry out this study. The sampling took place during the period from April 11 to July 24, 2013 at the specialized technical agricultural institute. The first apparition of *Aphis spiraecola* on the orange leaves are recorded towards the beginning of April, with 10.02 individuals per leaf on April 18th. During this period we noted a certain temperature stability around 11 ° C for Minima, 22 ° C for Maxima. This phase coincides with the first sap flow. The improvement of favorable conditions for the development of aphids and the host plant, mainly climatic factors: temperatures around 25 ° C, humidity ranging from 60-80% and the soil reserves by rainwater not yet exhausted, have done that the populations of *Aphis spiraecola* are steadily increasing, reaching the maximum level on July 07 with 110.84 aphids per leaf on orange tree, against 30.14 aphids per leaf on lemon tree. This period corresponds to the second sap flow. After July 07, the populations of *Aphis spiraecola* will regress and disappear permanently from the arboreal strata around July 21st.

Because climate changes in the summer period, increases in maximum temperatures exceeding 35 ° C, absence of precipitation can affect the activity and development of aphids.

Key words: Citrus, *Aphis spiraecola*, temperature, humidity, sap flow.

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➢ **POSTER PRESENTATION**

Corrosion studies on magnesium alloy as biomaterials

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Abstract

Alloys are metallic biomaterials that can be biodegradable in the body fluids. It is vital to understand main characteristics about metallurgy and corrosion of Mg alloys. Investigating of magnesium corrosion has always been a challenge. In this study, the corrosion resistances of the Mg alloys were evaluated in aqueous 0.9% NaCl solution. The corrosion behavior of Mg alloys was performed in situ by electrochemical techniques. Such techniques are the open circuit potential measurements, potentiodynamic polarization, and electrochemical impedance measurements. Characterization of the corroded surface was made by means of microscopic examinations, hardness measurements. Mg alloys presents low corrosion potential, they are sensitive to chloride ions and can be degraded in the Cl^- containing human body environment.

Keywords: Corrosion, Mg alloys, electrochemical techniques, biomaterials.

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➢ **POSTER PRESENTATION**

Gold-Cobalt bimetallic nanopartilcles catalyzed three component coupling of amines, CH_2Cl_2 and alkynes

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Abstract
Propargylamine is an intermediary for synthesis of several natural product and inhibitors of Parkinson's disease. The three compounds coupling of amine alkynes and aldehyde is the most strategy to synthesis of propargylamine using homogenous gold, cobalt catalyst and heterogeneous monometallic gold and cobalt catalys. In the last time some researchers use haloalcane as a source of the methylene fragment for the AHA coupling but it stays limited compared with A3 coupling.
In recent years, the synthesis of bimetallic catalyst has attracted significant interest due to the peculiar properties arising from the combination of two distinct metallic species. Supported bimetallic gold catalyst shows an interesting activity in variety of reaction1.
In the present study bimetallic gold catalyst Au-Co/TiO2 was used in the first time in synthesis of proprgylamine by AHA coupling. The present catalyst was characterized by RDUV-Vis, XRD and MET.
Keywords: propargylamine, AHA coupling, bimetallic nanoparticle
1-Dhital, R. N.; Kamonsatikul, C.; Somsook, E.; Bobuatong, K.; Ehara, M.; Karanjit, S.; Sakurai, H. *ACS* **2012**, *134*, 20250.

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➢ **POSTER PRESENTATION**

Intercalation of Algerian halloysite with an organic compound and adsorption of cationic dye.

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Abstract
Algerian halloysite was intercalated with dimethyl sulfoxide (DMSO). The resulting material was characterized by X-ray powder diffraction, Fourier transformed infrared spectroscopy, thermal analysis, transmission electron microscopy, and used as crystal violet adsorbent from aqueous solutions. Intercalation reaches a rate of 95% and increases the basal spacing to 11.2 Å. $(CH_3)_2SO$ interacts with the inner surface hydroxyls of halloysite through new hydrogen bonds with the S=O groups. The release of DMSO occurs in 2 phases: a partial elimination at 195 °C and a second part due to the DMSO combustion at 277 °C. The TEM image of H-DMSO reveals halloysite nanotubes (HNTs) polydisperse in length and diameter. The adsorption capacity of dimethyl sulfoxide-intercalated halloysite nanotubes (H-DMSO) and unmodified halloysite is 93.6 and 50.9 mg g^{-1} respectively. Intercalation constitutes a key procedure for developing new nanocomposites, attractive in technological applications, such as effective adsorbents.
Keywords: Halloysite; Intercalation, DMSO, Characterization, Adsorption, Crystal violet.

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➢ **POSTER PRESENTATION**

Synthesis, crystal and characterization of a (z)-3-n-(ethyl)-2-n'-(3methoxyphenylimino) thiazolidin-4-one

Nourdine Boukabcha[1*], Youcef Megrous[1], Salem Yahiaoui[1] Ahmed Djafri[1,2], Abdelkader Chouaih[1].

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Abstract

These compounds (E)-2-(tert-butylimino)-3-(4-methoxyphenyl) thiazolidin-4-one have been further investigated using density functional theory (DFT) with 6-311++G (d, p) basis set combination to obtain optimized geometry. A good agreement is observed between experimental XRD structures and B3LYP optimized geometry. Structural investigation by single crystal XRD reveals that (BMTD) crystallizes in monoclinic system with space group I 2/a and the unit cell parameters are a = 12.5002(11) Å, b = 9.7564(9) Å, c = 12.4675(10) Å and $\alpha = \gamma = 90°$, $\beta = 91.349$ (4), Z = 8, R factor = 0.046and independent reflections 2169. The spectroscopic characterization was also performed by the applying of FT-IR, UV-Vis, ^{1}H and ^{13}C NMR spectroscopies. In order to support experimental results, density functional theory (DFT) calculations have been performed using B3LYP functionnal with 6-311++G(d,p) basis set. All of the obtained theoretical results are in a perfect agreement with the experimental ones.

Key words: DFT, XRD, FT-IR, UV-Vis, ^{1}H and ^{13}C NMR

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➢ **POSTER PRESENTATION**

Synthesis and characterization of A thiazole derivative compound (Z)-3-N-(Ethyl)-2-N'-(3-Methoxyphenyl Imino) thiazolidine-4-one

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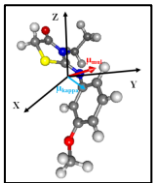
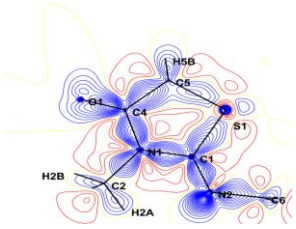
Abstract

The chemistry and pharmacology of thiazole derivative have been of great interest to medicinal chemistry ,because thiazole derivatives have wide range of pharmacological properties , It has been noticed continuously over the years that interesting biological activities [1-2] were associated with thiazole derivatives. We present a comparative study based on the exploitation of high resolution X-ray diffraction experimental data on the one hand, [3] and theoretical ab initio calculations on the other. We performed a detailed structural and thermal analysis of the molecule and the calculation of the electrostatic properties of the molecular system such as the distribution of the charge density in the mean planes of the molecule [4] and the electrostatic potential around the molecule .The experimental results have been obtained through the MOPRO software using the multipolar model Hansen-Coppens showing the distribution of the electron density in the form of spherical harmonics. Theoretical calculations were performed by the Gaussian 09program using two methods of Hartree Fock and model of the DFT at the B3LYP / 6-31G.The comparison of the results shows a good agreement between the experimental values thus testifying to the good quality of XRD data. The study revealed the nature of the intramolecular charge transfer existing within this molecule. Les detailed results relating to the calculation of the electrostatic potential and the distribution of the charge density in the crystal will be presented at the meeting.

Keywords: thiazole , X-ray diffraction, ab initio calculations.





Deformation dynamic density map with a contour interval of 0.05 e $\mathring{A}^{-3}$ maps of the plan thiazolidinone ring

Orientation of the molecular dipole moment of the title compound

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➢ **POSTER PRESENTATION**

Adsorption of Anionic dye by thermally and chemically modified halloysite

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Abstract

Algerian halloysitic clay (AH) was treated at 600 °C (AH600) and with HCl 5N (AH600-5N). The resulting samples were characterized and used for the adsorption of Congo red from synthetic solutions. The experiments were performed to determine equilibrium and regeneration. A special attention was paid to FTIR study, before and after adsorption.

The aim is to elucidate the mechanism of CR adsorption onto a halloysitic material. The knowledge of the organic product–halloysitic solid interactions represents a fundamental approach for developing the use of these adsorbents in wastewater treatment. The thermo-chemical treatment results in the dehydroxylation of halloysite and increase in SiO_2 content. The modification increases specific surface area up to 503 against 63 m^2 g^{-1} for unmodified halloysite. The Redlich–Peterson isotherm yields the best fit of the CR adsorption. The mechanism highlights an outer-sphere surface complexation of silanol species of the best adsorbent (AH600-5N) via amino and sulfoxide groups.

Keywords: Halloysite; Modification; Adsorption; Congo red; FTIR; Mechanism.

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➢ **POSTER PRESENTATION**

Study of mechanical behavior of a composite material for orthopedic use

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[4] Department of Production, National Office of Apparatus and Accessories for the Disabled (ONAAPH), Annaba Unit, Algeria.
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Abstract

Reinforced polymeric composites are profoundly used in variety of applications due to its high strength to weight ratio and ease of fabrication.Our study consists in the mechanical characterization of a composite material for orthopedic use used in the fabrication of orthopedic prostheses by the ONAAPH - unit of Annaba-Algeria; As a result of the combination of a polymethyl methacrylate resin often abbreviated to PMMA methyl and fiber glass reinforcements as well as the absorbent of the resin which is perlon. The method of obtaining adopted for the manufacture of test pieces is the same as that used in the manufacture of prostheses. The adaptation provided is limited to the geometric shape of the mold to allow the obtaining of plates that will be used to cut test pieces. The three-point bending tests were carried out on an MTS 43 universal machine in the Advanced Materials Research Unit (URMA / CRTI) –Annaba. Then, this work consists in identifying the mechanisms of damage according to the conditions mechanical loading and to connect them then the degradation of the constituent elements such as the reinforcement, the matrix.

Keywords: Composite, mechanical tests, mechanical behavior, finite elements..

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➢ **POSTER PRESENTATION**

Synthesis and characterization of nanocomposites prepared from Aniline with Activated Carbon

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Abstract

Encapsulation of inorganic nanomaterials inside the shell of PANI has also become a popular and interesting aspect of nanocomposite synthesis. This study reports the synthesis by in-situ oxidative polymerization of polyaniline / activated carbon (AC) conductive nanocomposites. The structure and morphology of the obtained nanostructures were analyzed by UV-visible (UV-vis), Fourier transform infrared (FTIR), thermal gravimetric analysis (TGA) and X-ray diffraction (XRD). The UV-vis and FTIR studies showed that AC particles affect the quinoid units along the polymer backbone and indicate strong interactions between AC particles and quinoidal sites of polymers. The electrochemical behavior of the polymers extracted from the composites has been analyzed by cyclic voltammetry. Good electrochemical response has been observed for polymer films; the observed redox processes indicate that the polymerization into AC produces electroactive polymers.

Keywords: nanocomposite; conducting polymer; polyaniline; activated carbon; oxidative polymerization.

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➢ **POSTER PRESENTATION**

Characterization of Macrophytes in the Gulf of Annaba

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Abstract
The objective of this study is to characterize the algal flora that develops in the Gulf of Annaba and to try to identify them by establishing an alguier with determination of physicochemical parameters. The study was conducted for three months (from March to May 2018) at the site (Lever de L'Aurore) and recorded the presence of three groups of algae: Chlorophyceae (with 5 species), the Rhodophyceae (with 2 species), the Pheophyceae (with 3 species) and a Phanerogam represented by the species Posidonia oceanica. These species can play the role of early warning system of a contamination whose effects are still reversible.
Key words : Algae, Herbarium, Chlorophyceae, Rhodophyceae, Pheophyceae, Gulf of Annaba.

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➢ **POSTER PRESENTATION**

The microbiological milk characterization ferment traditional (Lben and Raib)) in the Algerian center east

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Algerian milks fermented the « Lben and Raïb » are traditional dairy products very appreciated and very often consumed, in rural environment that in urban environment. They have a good amount of advantages and of important nutritional benefits; they are transformed by a primarily lactic natural fermentation which leads to the acidification and with the gelation of the raw milk generally of cow

Twenty samples of the milk believed untreated and fermented of cow coming from dairy exploitations of north east Algerian in Bouira were collected and studied for their microbiological quality the analyses and were carried out in accordance with the Algerian regulation,

The got results have watch an average presence of coliformes total, coliformes fecal and staphilococca "staphylococcus Aureus" of respective order of $5.2.10^3$ UFC/ml, $1.6.10^4$UFC/ml and $2.02 .10^2$ UFC/ml According to the microbiological criteria fixed by the Algerian regulation for the dairy products, the rate of the fecal coliformes is higher to the national standards thus fermented milk has a hygienic quality no satisfactory substandard and as well testifies to a fecal contamination no respect of good hygiene practices at the time of the draft, or the collection and of the transport of believed milk, or at the time of its transformation into "Lben" are probably the origin of these contaminations

The prevention of the consumer against any health risk is the role of the competent jurisdictions which must found programs of monitoring and medical sensitizing good hygiene practices , with the respect of the cold chain and the risks of food toxinfections.

Keywords: Believed milk, traditional fermented milk, microbiology, good practices hygiene, toxinfections food

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➢ **POSTER PRESENTATION**

Valorisation of plant biomass for the production of polymer materials

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Abstract

During the 20th century, the development of science and technology has mainly focused on the use of fossil resources while the 21st century is oriented towards the valorization of bioresources. To meet this objective, scientists , and also industrialists, have developed new, more efficient and environmentally friendly methodologies using renewable resources. Among the components of biomass, the terpenes that is the focus of our work which are extremely attractive compounds because of their moderate costs and availability. Indeed, because of their natural abundances and their reactivities, they can quite well be used for the production of polymers. In this work To valorise the terpenes, the study of their polymerisation has been undertaken by a copolymerization reaction involving a natural catalyst activated by sulfuric acid (Mag-H^+).
This work also includes the influence of different parameters such as the amount of catalyst, temperature, solvent and time on the polymerization yield.. The polymers obtained were analyzed by infra red spectroscopy (FT-IR) and nuclear magnetic resonance spectroscopy (^{1}H-NMR).

Keywords: Terpenes, , maghnit $H^{+,}$ copolymerization, , heterogeneous catalysis, biomas

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➢ **POSTER PRESENTATION**

Statistical Analysis of Stable Variables : Application in Finance

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Abstract :
For any company it's often essential to develop adequate strategies for efficient portfolio management to deal with probable risks. To do this, it is often sought to develop representative mathematical models, to be used as tools for analysis, forecasting and simulation for decision support. The choice of model is very important and as we know Gaussian process and variables have been studied for a long time and their usefulness in stochastic and statistical modelling is well accepted. However, they don't allow for large fluctuations and may sometimes be inadequate for modelling high variability, especially in finance. that's why it's important to focus on other family of laws and processes such as stable random variable's and processes which naturally appear as alternative modeling tools. There are several reasons which have led us to choose the stable distributions for our work and modelization, they are a very rich class of probability distributions can represent different asymmetries and heavy tails.

This class was characterized by Lévy (1925) in this work the sum of independent and identically distributed variables. This class has a great importance in the theory of extreme values, because stable distributions can be characterized from the Generalized Central Limit Theorem given by Gnedenko and Kolmogorov (1954) and indicates that if the condition of finite variance is not respected. The only possible limit law of the sum of n random variables (iid), is a Stable law.

Keywords: Stable variable, Rare event, Graphical statistical tests

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➢ **POSTER PRESENTATION**

Post-deposition Hydrogen treatment effect on surface roughness and hydrophobicity of amorphous silicon films

Sib Jamal Dine, Filali Larbi*, Brahmi Yamina, Yahya Bouizem, Aissa Kebab, Larbi Chahed .

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Abstract

Amorphous silicon films were deposited by radiofrequency (rf) magnetron sputtering. Then, the films were treated by pure hydrogen gas at different pressures (1, 2 and 3 Pa) for 20 min, to investigate its effect on surface hydrophobicity (or un-wettability) and roughness. Fourier transform infrared-attenuated total reflection (FTIR-ATR) spectroscopy was used to evaluate presence of Si-H bonds at the surface. Results obtained by the atomic force microscopy (AFM) showed a sharp decrease (the non-treated film had a root mean square value of 10.94 nm, which then dropped significantly to 6.69 nm for the 3 Pa hydrogenated film) in surface roughness as a result of hydrogenation. Optical transmission results revealed that optical properties were not affected. Contact angle measurements showed an enhanced hydrophobicity by 15 degrees for the 1 Pa hydrogenated film, and then it decreased for the 2 Pa and 3 Pa hydrogenated films. This result indicates that the decrease in roughness compromised the hydrophobization process.

Keywords: Silicon-Thin Film-Surface Science.

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➢ **POSTER PRESENTATION**

Synthesis and characterization of a novel organic photovoltaic compound

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Abstract
The technology of photovoltaic cells based on small organic molecules is a promising technology that successful reach a great success in the field of renewable energy. The study of structural, electronic and optical properties for these compounds could help to design more efficient functional photovoltaic organic materials. Therefore, designing and synthesizing conjugated molecules with interesting properties play a crucial role in technology at the same time it is important to understand the nature of the relationship between the molecular structure and the electronic properties to provide guidelines for the development of new materials in this field.
In this context, a structural study of a new organic photovoltaic compound was performed using X-ray powder diffraction data technique and quantum chemical calculation based on density functional theory (DFT) to predict the band gap of the conjugated system. All calculations were done with Gaussian 09 program package. Finally, more results will be presented at the seminar.

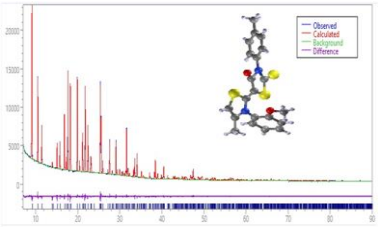

Figure 1. X-ray diffraction diagram of the title compound

Keywords: structure,conjugated molecules, powder diffraction, DFT, band gap

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➢ **POSTER PRESENTATION**

Wastewater treatment with activated humic/fluvic Substances "Cd II removal"

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Abstract

Heavy metals are toxic and detrimental water pollutant. Their presence not only affects human beings but also animals and vegetation because of their mobility in aqueous ecosystem, toxicity and non-biodegradability. Removal of heavy metals from the effluent is one of the major researches carried out by researchers in the field of environment. Although different methods such as Ion exchange, precipitation, evaporation, membrane filtration and adsorption are used for heavy metals removal, adsorption process has attracted attention of many researchers because of low cost, design flexibility, and high efficiency. [1]
The study begins with a characterization and a follow-up of the process of humification and maturation of the biosorbant.
The biosorption of Cd(II) ions from aqueous solutions by the eco-friendly biosorbant was investigated as a function of initial pH (from 2 to 10) ,initial metal ion concentration, and temperature (25,40 and 55°C). Optimum pH for the removal of Cadmium was found to be around 6[2]. In order to study the sorption isotherm, two equilibrium models, the Langmuir and Freundlich isotherms, were analyzed. The Langmuir model was a better fit with the experimental data for cadmium adsorption with a regression coefficient, R2 =0.998 and Qmax =13 mg/g.

Keywords: heavy metals, Adsorption, Biosorbant, Isotherm.

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➢ **POSTER PRESENTATION**

Structure and the molecular properties determination of the compound with chemical formula C20H14O3N3S by ab initio calculations

Salem.Yahiaoui [1], *Youcef Megrouss[2], N,Boukabcha[2] , A Djafri [3], A,Nakrouf [2], A.Chouaih[2] and F, Hamzaoui[2].

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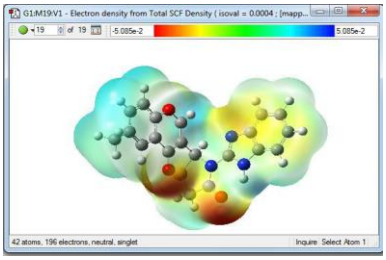
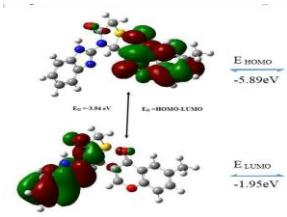
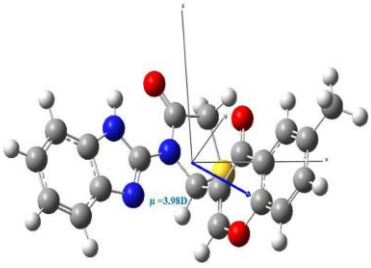
Abstract

Quantum mechanics methods have been used in the study of the chemical reactivity of **3-(benzo[d]imidazol-2-yl)-2-(7-methyl-4-oxo-chromen-3-yl) thiazolidin-4-one**, ab initio calculations (HF/ 6-31G (d, p)) ,DFT (B3LYP/6-31G (d, p)) and semi-empirical (PM6) have been used to determine the structural, electronic and energetic parameters associated with the studied molecule. All these calculations are carried out by the Gaussian series of programs. In our work, molecular orbital (MO) calculation indicates that the title compound, has 47 active MBs. We examine the two major molecular orbitals (MO): the first occupied high and the highest and the second lowest vacant MOs we call HOMO and LUMO respectively, the gap value in our case is 3.94 Ev, these results are presented in the figure below , The dipole moment is a fundamental property of a molecule, used to study the intermolecular interactions concerning the unbound dipole-dipole interaction. The higher the dipole moment, the stronger the intermolecular interaction. The dipole moment Debye equals 3.9811, this value can help to multiply its NLO activity. In order to predict the molecular reactive sites, the MEP for the molecule was calculated using the 6-31G base (d, p). The different values of the electrostatic potential of the surface are represented by different colors, blue indicates the highest electrostatic potential energy and red indicates the lowest potential electrostatic energy.

Keywords: thiazole , , ab initio calculations, HOMO and LUMO.







Properties molecules of the title compound

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➢ **POSTER PRESENTATION**

Contribution to the inventory of ferns (Dermaptères) at some environments at the province of El Tarf, Algeria.

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Abstract

The study of the forests (Dermaptera) at three stations (Lake Tonga, Ripisylve de Oued Guergour and The orchard of El Matrouha) in the Wilaya of El Tarf, from January to May 2017, harvested 191 (Forficulidae, Labiduridae and Anisolabidae) and 4 genera (Forficula, Nala, Anisolabis and Euborellia)

After identification, the results revealed, a specific richness per station of Tonga (2), Oued Guergour (2) and orchard of El Matrouha (3). The total species richness is 5 species.

The analysis of the stand in the three stations made it possible to draw up a list of five species: The species *Forficula auricularia* with a total relative abundance of 15.70% *Anisolabis maritima*, with a total relative abundance of 7.85%, *Nala lividipes* with a total relative abundance of 29.31%, *Euborellia annulipes* with a total relative abundance of (14.65%) and *Euborellia moesta* with a total relative abundance of (35.07%).

Finally, the morphometric study allowed to estimate, the body size and the size of the claws for each species.

Key-words: The Dermaptera, inventory, stand structure, Lake Tonga, Oued Guergour, Orchard El Matrouha

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➢ **POSTER PRESENTATION**

Theoretical study of structural, electronic, optical, elastic and thermodynamic properties of the quaternary diamond-like semiconductors Cu_2MgSiS_4 and Cu_2MgGeS_4

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Structural, electronic, chemical bonding, optical, elastic and thermodynamic properties of quaternary diamond-like semiconductors Cu_2MgSiS_4 and Cu_2MgGeS_4 were investigated through density functional theory and quasi-harmonic Debye model (QHDM). The optimized structural parameters of the two studied compounds agree well with those obtained experimentally. Electronic band structure calculation showed that these materials are direct band gap ($\Gamma-\Gamma$) semiconductors. The calculated energy bang gap using LDA-CAPZ (GGA-WC) is equal to 2.007 (1.820 eV) and 1.262 (0.964 eV) for Cu_2MgSiS_4 and Cu_2MgGeS_4, respectively. By analyzing the total and partial densities spectra and also based on the results of the Mulliken population analysis, we have demonstrated that the bonding of Cu_2MgSiS_4 and Cu_2MgGeS_4 are characterized by a mixture of covalent-ionic character. Dielectric function, refractive index, extinction coefficient, optical reflectivity and electron energy loss are calculated for different light polarizations. Single-crystal and polycrystalline elastic constants and some related properties namely isotropic sound velocities, Debye temperature acoustic Grüneisen parameter, Vickers hardness and minimum thermal conductivity at high temperature have been computed. The studied material is characterized by a relatively high hardness. It is found that the studied compounds exhibit a striking elastic anisotropy. The analysis of B/G ratio indicated that the examined materials might classify as ductile. The computed Debye temperature is about 369 and 342 K for Cu_2MgSiS_4 and Cu_2MgGeS_4, respectively.
Keywords: ab-initio, diamond-like semiconductors, electronic properties, optical properties

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➢ **POSTER PRESENTATION**

Development of predictive methods to estimate the formation enthalpies of organic compounds

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Abstract
This work concerns the prediction of the enthalpies of formation of pure organic compounds. For each state of matter, solid, liquid or gas, two models of groups' contributions of third order have been developed; the first is linear and the second is a neural network method. The prediction of formation enthalpies is carried out using only the molecular structure of a compound, without resorting to other physicochemical properties. The data set is divided into a learning and test subset using a new semi-random division technique. In order to increase the performances of the proposed models, new groups contributions of third order (corrections) have been proposed. The models proposed are correctly tested, validated and compared with other competing models. It shows better results compared to those displayed by competing methods.
Another approach, different from that of group contributions has been proposed, it is based on an ab initio calculation of molecular energy for the prediction of enthalpies in the gas state of some hydrocarbon compounds. It has been found that the greater the size of the molecules, the more the precision of this method is impaired. The results of the predictions are generally promising.

Keywords: Standard formation enthalpy; gaseous phase; solid phase; liquid phase; method of group contribution; neural networks; thermochemistry.

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➢ **POSTER PRESENTATION**

Study of the contamination of the propane cycle by ethane at the GL1Z complex--SONATRACH Algeria

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Abstract
Propane pre-cooling cycle is a very important refrigeration circuit of APCI (AIR PRODUCT AND CHEMICALS) process of natural gas liquefaction used in GL1/Z complex - Sonatrach Algeria. This part of cooling cycle in cascade remove heat from MCR (Multi-component refrigerant) and pre-cooled natural gas.
The contamination by ethane can touch the propane loop; it may come from the loop itself or from fractionation section.
The contamination prevents the circuit of propane to ensure the cooling and the transfer of frigories to the MCR cycle which in turn will not transferred to the natural gas for liquefy the latter through heat exchangers.The Simulator HYSYS has allowed to estimate the influence of contamination on the cycle.
Keywords: Propane pre-cooling cycle, APCI, liquefaction, MCR, contamination, ethane, simulator HYSYS

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➢ **POSTER PRESENTATION**

Electrodeposited Molybdenum coated onto Copper substrate for solar cells application: Crystal structure and surface morphology

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Abstract
In this study, we present a successful electrodeposition experiment of micrometric, bright and rough Mo coating from aqueous electrolyte in an acid bath during 1800 seconds of. XRD analysis and EDS spectrum have been used to confirm the dominance of Mo within the resulting films. The crystal structure of deposits was slightly amorphous in nature to body centred cubic structure (bcc) Mo (110), (211) and (220) face. Lattice parameters exhibit some residual tensile stress, and deviate slowly from reference lattice parameter. In addition, calculated lattice parameters agreed well with some other few available works from literature. Surface top was observed at different zoom in order to deep inside the origin of Mo coating properties. Discussions on the grain growth prove that they are constrained by grain boundary energy not the thickness effect. Further discussions were devoted to inspire some relationships and correlations in view of their application as a back contact for solar cell application.

Keywords: Electrodeposition, XRD analysis, EDS spectrum, Roughness, Grain growth, Surface morphology

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➢ **POSTER PRESENTATION**

Structural and electron charge density studies of the compound (E)-3-(2-Ethoxyphenyl)-5-(3-(2methoxyphenyl)-4 methylthiazol-2(3H)-ylidene)-2-thioxothiazolidin-4-one by X-ray diffraction in low temperature

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Abstract
In this work, we chose to study the electronic density of the compound (E)-3-(**2**-Ethoxyphenyl)-5-(3-(2methoxyphenyl)-4 methylthiazol-2(3H)-ylidene)-2-thioxothiazolidin-4-one. Initially, the structure of the title compound was determined by the X-ray diffraction from data recorded at low temperature (110K). the compound crystallizes in the Monoclinic system, space group P21/c with cell parameters: a=11.1100(5) Å, b=13.0597(6) Å, c=15.2343(7) Å, β =103.48(0.00) °, Z=4. The crystal structure is stabilized by short intermolecular hydrogen bonds (C-H**…**O). The selected structure was used for the determination of the electron density using Mopro program. The density maps obtained show that the electronic density is centered on the Carbon - Carbon bonds and confirm the covalent nature of these bonds. In addition, the free pairs of oxygen atoms (O1 and O2) are obvious.
Keywords: X-ray diffraction, low temperature, electron charge density.

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➢ **POSTER PRESENTATION**

Diversity And Biomass Of The Entomofaune Of Matorrals In Northeast Of Algeria

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Abstract:
Matorrals in the northeastern Algeria represent the most frequent structure but biodiversity in this ecosystem is still poorly known. In this work, we have undertaken a preliminary study on one of the most important groups of the animal kingdom which is the insects Class.
Botanical diversity and the height of maquis vegetation will determine an overall vegetation structure. This structure will have an important influence on the richness and the abundance of the entomological stands of these formations. For this reason we have chosen three types of maquis in the Edough park: low maquis (Oued Boukrat) and high and medium maquis (Seraidi).
We collected different insects' types using barber pots that were placed in the various maquis and recovered a week later.
An insects inventory in Edough scrubland shows that Coleoptera and Dictoptera are the abundant entomological fauna of the three maquis (by 30 specimens for each groups), we also recovered 15 Diptera specimens, 6 Dermaptera specimens even the Hymenoptera and ants form the spring maquis fauna in this region.

Key words: Inventory; entomological fauna; maquis; Edough park; insects.

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➢ **POSTER PRESENTATION**

Vector control of a dual power generator

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Abstract
To carry out a control similar to that of the DC machine with separate excitation, it is necessary to orient the flux in quadrature with the pair, hence the name of the flow method oriented this orientation makes it possible to transform the expression of the couple. electromagnetic in a form similar to that of the DC machine.
In this paper, we will give a general representation of the vector control of a double-fed generator, with the adjustment of the rotor currents which allows a decoupling between the two powers. Indeed, the stator powers (active and reactive) can be controlled via the rotor quantities (currents).
Keywords: DFIG, vectror control, machine.

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➢ **POSTER PRESENTATION**

CFD study of grafene growth in a chemical vapour deposition reactor

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Abstract
A computational fluid dynamic (CFD) investigation has been carried out to model and simulate the growth of graphene on a catalytic metal Copper substrate via chemical vapor deposition (CVD). The purpose is to predict growth rate of graphene in order to obtain a uniform layers. Methane has been selected as carbonaceous source with fairly detailed kinetics mechanisms for homogenous and heterogeneous reactions. Simulations were performed in cold wall horizontal reactor by using computer FLUENT CFD package. The numerical model incorporated the conservation equations of momentum, energy, and species. The effects of processes conditions: precursor gas composition, inlet flow rate and temperature, the hydrodynamic characteristics outline: laminar and steady state flow, properties of heat transfer on the uniformity and deposition rate in a 2D CVD reactor are described.
The results obtained show that the surface rate deposition depends mainly on the gas composition and the inlet flow rate in the reactor. Thus, differences in the deposition rate are considered due to a change in the thickness of boundary layer along the substrate. The simulation results of this study can be used to optimize the CVD reactor conditions for graphene production.

Key words : CFD, Copper , CVD, Graphene,

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➢ **POSTER PRESENTATION**

Hydrodynamic analysis of reactive flow in micro-channels

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In this study, computational fluid dynamic simulations of reactive flows in microchannels are presented. Two combinations of fluid have been investigated in T configuration: 1benzene - nitric acid, and 2acetic anhydride – water. The dimensions of the micro-channels are 0.1- 0.2mm in diameter and 10-30mm in length.
All simulations were performed through FLUENT computer package which uses the finite volume method for solving the governing equations of mass, momentum, heat and reactive species transport. In this case, the incompressible Navier-Stocks equations in combination with convection-diffusion equations for species concentration are solved. The model leads to predict flow velocity profiles, temperature fields, and mass fractions of all components versus positions.

For nitrobenzene acid acetic synthesis through narrow channels are investigated in order to explore microreactors mixing performance and potentialities for fast and exothermic liquid-liquid reactions. Calculations are carried for a first order benzene concentration kinetic model and a second order anhydride acetic concentration model. Inlet flow velocities are comprised in the interval of 0.0002 – 0.02m/s. The T junction dimensions are respectively: central channel is 200µm diameter and 30000µm long, and reactive feed are 100µm diameter and 10000µm long.
The results illustrate parabolic velocity profiles for a laminar flow after a few tens of microns in the central microchannel. For a velocity range of 0.0002 to 5m/s, the mixing fractions are between 0.85 and 1.

As expected, simulations illustrate that nitration of benzene and acid anhydride hydrolysis could proceed efficiently in the microreactor with more than 95% conversion for the lowest velocities.

Keywords : Hydrodynamic, microchannel ; CFD ; liquid phase, exothermic reaction

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➢ **POSTER PRESENTATION**

Analysis of the evolution of bed expansion and correlation development in turbulent bed contactor

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Abstract
In recent years, under the double constraints of environmental protection requirements and the reduction of pollution as well as the rational use of energy, the turbulent bed contactor (TBC) offers new opportunities, particularly in reduction of the pollution in the air. The aim of this study was to predict the bed expansion and to analyse the effect of the gas velocity, the liquid spray, the height of the static bed and the free area of the support grid on the evolution on the bed expansion. The existence of three zones for varying bed expansion has been highlighted. These three areas were clearly distinguishable and presupposed different hydrodynamic regimes, which were analyzed.
Experimental data of bed expansion, obtained for different operating conditions (in a large range of variation of gaseous flow and for different apertures of the grid and different static heights) were correlated with independent parameters. The average deviation of the results obtained using this correlation was 10.75 %. The effect of hydrodynamic operating variables on the expansion of bed, predicted by the simulation is in good agreement with the experimental data. An analysis of the results obtained with a large number of correlations was also conducted and useful conclusions were highlighted.

Keywords: Three phase fluidization; Turbulent bed contactor; Bed expansion

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➢ **POSTER PRESENTATION**

Extraction of bioactive compounds in Salvia by non-ionic surfactant assistance

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Abstract
Organic solvents were widely used for extraction of bioactive compounds from medicinal plants. However, the involvement of toxic and volatile organic solvents causes significant health and environmental problems. In this study, non-ionic surfactant-assisted extraction was proposed as an alternative and green extraction method. Bioactive compounds were extracted using Triton X-114 and several processing conditions, namely the solid-liquid ratio (10, 15 and 20), concentration of surfactant (0, 1 and 2%), concentration of ethanol (0, 20 and 40 %) and time of extraction (4, 6 and 8h) were evaluated. The optimal conditions were applied to the extraction of polyphenols and flavonoids for sage leaves. In addition, the antioxidant activity was determined and measured by 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical scavenging assay. The highest content of bioactive compounds was retained when preforming the extraction with 1% triton, and 40 % ethanol for 4 hours. As regards the anti-radical activity, comparison of the IC50 of the various extracts tested indicates that the best anti-radical activity, with values of IC_{50} of 0.328 mg/ml was obtained from the sage leaves extracted with 1% of triton. These results shown that the addition of a very small percentage of surfactant can give yields as high as those using organic solvent and leads to greater antioxidant activity.
Key words: Extraction, non-ionic surfactant, bioactive compounds, antioxidant activity

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➢ **POSTER PRESENTATION**

Ameliyat sonrası hastalara verilen bazı antibiyotiklerin insan serumundan saflaştırılan paraoksonaz1 enziminin aktivitesi üzerine *in vitro* etkilerinin incelenmesi

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Özet

Paraoksonaz (PON1; E.C.3.1.8.1), organik fosforlu bir insektisit olan paratiyonun aktif metaboliti paraoksonu hidroliz etme yeteneğine sahip A-esterazlar grubundan bir enzimdir. PON1, HDL'ye bağlı organofosfat ajanlarının ve sinir gazlarının hidrolizine, LDL'nin oksidasyonu ile lipit peroksitlerinin oluşumuna ve bakteri endotoksinlerine karşı koruyucu rol oynayan önemli bir karaciğer enzimidir. Bu çalışmada PON1 enzimi, insan serumundan amonyum sülfat çöktürmesi (%60-80 aralığında), DEAE-Sephadex A-50 iyon değişim kromatografisi ve Sephadex G-200 jel filtrasyon kromatografisi basamakları kullanılarak, %47,5 verimle yaklaşık 322,6 kat saflaştırıldı. Enzimin saflığı SDS poliakrilamid jel elektroforezi ile kontrol edilerek molekül kütlesi yaklaşık 43 kDa olarak belirlendi. Ayrıca çalışmamızda insan serum PON1 enzimi aktivitesi üzerine ameliyattan sonra verilen bazı antibiyotik ilaçların (fosfomisin, sefiksim, sefuroksim, sefaklor monohidrat) in vitro şartlarda etkileri incelendi. İnhibisyon etkisi gösteren bu ilaçların IC_{50} değerleri ve K_i sabitleri belirlendi. Düşük dozlarda farklı inhibisyon mekanizmaları ile enzimin aktivitesini inhibe ettiği görüldü. Bu antibiyotik ilaçlardan sefiksimin *in vitro* PON1 aktivitesini daha fazla düşürdüğü görüldü.

Anahtar Kelimeler: Paraoksanaz-1 enzimi, saflaştırma, antibiyotik, inhibisyon

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➢ **POSTER PRESENTATION**

Çoraklıktepe epitermal altın yatağını oluşturan çözeltilerin kökeni ve fizikokimyasal özellikleri

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Özet

Bu çalışmada Balıkesir ilinin Burhaniye ilçesinde bulunan Çoraklıktepe Altın Madeni' nde işletme öncesi ve işletme esnasında elde edilen; elmaslı sondaj karot örnekleri, işletme kat (RL) haritaları, ocak şev haritaları ve dijital cevher modeli verileri kullanılarak mineralizasyona ait jeokimyasal veriler makro ve mikro boyutta incelenmiştir. Çalışma, Batı Anadolu'da Edremit Grabeni güney kenarında yer alan altın ve gümüş içerikli epitermal düşük sülfidasyon tipi kuvars damarlarından alınan örneklerle detaylandırılmıştır. Sondajlarla elde edilen karot numuneleri görsel olarak incelenmekle birlikte parlak kesit yöntemiyle mikroskopta incelenmiştir. Mineralizasyon, alterasyon kimyası ve yapısal öğeler birlikte incelenerek mineralizasyon tipi ortaya konulmaktadır. Mineralizasyon tipinin belirlenmesi araştırma ve cevher geliştirme faaliyetlerinin yönlendirilmesi açısından önem taşımaktadır. Damar sistemlerini bariz bir şekilde çevreleyen tipik düşük sülfidasyon epitermal cevherleşmelerde gözlenen; silisik, arjilik, propilitik alterasyonlar el örnekleri ile makro düzeyde tespit edilebilmekte, kayaç yüzleklerinde kolayca tanımlanabilmektedir.

Anahtar Kelimeler: Altın, Çoraklıktepe, Küçükdere, Jeokimyasal Model, Alterasyon

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➢ **POSTER PRESENTATION**

Investigating the effects of production and storage on some quality characteristics of tomato juice

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Abstract

In this study, it was aimed to investigate the changes in the lycopene content and some quality characteristics of tomato juice during production and storage. Linda variety tomatoes were used as raw material. After washing, tomatoes were processed to tomato juice by using a juice extractor. The citric acid (0.5%) and salt (0.5%) were added to tomato juice for pH adjustment and flavoring. Then samples were sterilized at 105°C for 1 minute. After cooling process, samples were divided into two groups and stored at +4 and +25 ºC for 90 days; the analyses were performed in 30 days period. Lycopene, water-soluble matter, pH, titratable acidity and color a*/b* values were analyzed in control samples (raw tomato juice), 0.5% citric acid and 0.5% salt added samples, sterilized samples and stored samples. The results suggested that lycopene content of raw tomato juice was 47.35µg/g; at the end of the storage it was determined as 11.50±4.84 µg/g for +4 ºC and 16.41±0.75 µg/g for +25 ˚C. Lycopene was not affected by store temperature however storage period have a significant effect on lycopene content. There were no significant differences between storage temperatures on samples for water soluble matters and pH values. Titratable acidity values were changed after 30 day storage. At the end of the storage, higher color a*/b* values were determined at +4 ˚C.

Keywords: Tomato juice, thermal heating, storage, lycopene, quality.

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➢ **POSTER PRESENTATION**

Effect of different frying conditions on viscosity and color values of sunflower oil

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Abstract

In this study, the effects of different frying conditions on the viscosity and color values (L*, a*, b*) of sunflower oil were investigated using response surface methodology. For this purpose, leavened dough containing 1, 3 and 5% salt was fried in refined sunflower for 1, 3 and 5 minutes at 160, 180 and 200 °C. Fifty frying operations were applied in a day. As the number of repeated frying increases, a slight increase in the viscosity of the oil was observed. While the initial viscosity of the sunflower oil was 44.03 cP, while the viscosity of the oil at the end of the 50th frying varied from 47.20 to 54.85 cP. It was determined that the change in the viscosity of the frying oil was in conformity with the square model and that this model was statistically significant ($p < 0.05$). The effect of frying oil temperature, frying time and dough salt content on the viscosity of frying oil at the end of frying 50th was significant and the determination coefficient (R^2) of the model was determined as 0.9199. During the frying operation, a slight decrease in the L* value of the oil and a slight increase in the a* and b* values were observed. It was determined that the change of the color values of the frying oil (L*, a* and b*) was suitable for the square model and this model was statistically significant ($p < 0.05$). At the end of frying, the L* value of the frying oil varied from 49.84 to 59.67, the a* values varied from -5.50 to 4.81, and the b * values varied from 26.6 to 44.1. Determination coefficients of the models for L*, a* and b* color values were determined as 0.9276, 0.9654 and 0.9076, respectively.

Keywords: Frying conditions; response surface methodology; viscosity; color values

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➢ **POSTER PRESENTATION**

Effects of frying conditions on peroxide values and polymer triglyceride contents of sunflower oil

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Abstract

In this study, leavened doughs with % 0, 1, 3 salt content were fried for 1, 3, and 5 minutes at 160, 180 and 200 °C. Fifty frying operations were performed under these conditions in a day. Peroxide values and polymer triglyceride contents of sunflower oil taken at the end of 50th frying operation were determined. The effects of frying oil temperature, frying time and dough salt content on these parameters were investigated by response surface methodology. The initial peroxide value and polymer triglyceride content of sunflower oil were found to be 4.4±0.7 meq O_2/kg and 1.11±0.035 %, respectively. The peroxide value varied from 4.9 to 19.6 meq O_2/kg and the polymer triglyceride content varied from 4.17 % to 11.12 % during repeated frying. The change in peroxide value and polymer triglyceride content of the frying oil was suitable for the quadratic model and this model was significant ($p<0.05$). Determination coefficients of the models for peroxide value and polymer triglyceride content (R^2) determined as 0.9085 and 0.9196, respectively. The effects of frying temperature on peroxide value of frying oil was found significant ($p<0.05$), whereas the effects of frying time and dough salt content on the peroxide value of oil were found insignificant ($p>0.05$). On the other hand, the polymer triglyceride contents of sunflower oil was significantly affected by frying temperature, frying time and dough salt content ($p<0.05$).

Keywords: Frying conditions; response surface methodology; peroxide value; polymer triglyceride

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➢ **POSTER PRESENTATION**

Some physical and chemical properties of bonito nuggets coated with different cereal flours

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Abstract

In the current study, wheat (as Control), corn (CO) and rye (RY) flours and one mixture (MIX) of these flours were used for coating the bonito nuggets, and the effects of these coatings on the physical and chemical properties of the products were investigated. The other ingredients added to the coating formulations were as follows salt (2%), carrageenan (1%) and water (58%). To determine the physical and chemical properties of cooked and uncooked samples pH, titratable acidity (TA, lactic acid %), moisture (%), water activity (a_w), surface color (CIE L*a*b*) and thiobarbituric acid (TBA, mg malonaldehyde/kg sample) values were analyzed. The cooking loss value (CL) and the coating thickness of cooked samples were also measured. It was determined that pH, TA, $a_{w,}$ TBA values and moisture content of uncooked samples were in the ranges of 5.92-6.00, 0.63-0.69% lactic acid, 0.983-0.986, 2.37-3.96 mg malonaldehyde kg^{-1}, and 55.34-60.64%, respectively. For cooked samples pH, TA, $a_{w,}$ TBA values and moisture content were in the ranges of 5.99-6.08, 0.75-0.91% lactic acid, 0.966-0.976, 13.20-13.34 mg malonaldehyde kg^{-1}, and 50.16-52.60%, respectively. It was determined that CO group had the lowest a*and the highest L* and b* values among the coating groups ($p<0.05$). Utilizing different cereal flour also affected the CL values thus MIX group had higher CL value than other groups ($p<0.05$). The findings of the current study showed that coating containing corn flour and corn starch could be a good alternative to wheat flour for coating fish nuggets.

Keywords: fish nugget, coating, wheat flour, corn flour, rye flour

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➢ **POSTER PRESENTATION**

Hydrophilic drug-loaded electrospun nanofiber membranes as drug delivery vehicles

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Abstract
Electrospinning is a simple, beneficial, and versatile technique for the fabrication of polymeric nanofiber membranes. These electrospun nanofiber membranes are one of the vehicles that have attracted the attention nowadays. The main objective of this study is to fabricate electrospun nanofiber membranes to be used as drug delivery vehicles. For that reason, 75:25, 50:50 and 25:72 (w/w) PCL and PEO polymers were blended with doxycycline as a model drug and electrospun to fabricate drug-loaded nanofiber membranes. After the fabrication process, these membranes were characterized by scanning electron microscopy (SEM), Fourier transform infrared spectroscopy (FTIR), X-ray diffraction analysis (XRD) and water contact angle analysis. Moreover, *in vitro* release of drug from these membranes was tested in simulated physiological condition and *in vitro* release kinetics were assessed. In conclusion, it has found that the membranes can be utilized as drug delivery vehicles in the biomedical applications.

Keywords: electrospinning; doxycycline; nanofiber.

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➢ **POSTER PRESENTATION**

Developing of chitosan-based hemostatic agent

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Abstract

The most common cause of preventable death in trauma encountered in life are uncontrolled bleeding. The control of bleeding which made up effectively, fast, timely and with accurate technique will be resulted significant reduction in mortality rate. The aim of this work is to improve hemostatic agent which has especially high efficiency and can be easily used by the patient and provides as much as possible characteristics such as non-toxic, biocompatible, easy to use, scalable, flexible, secure, stable, and economical. For that reason, two different hemostatic agents (sponge and powder) were prepared. Hemostatic activity, porosity, blood absorption, scanning electron microscopy (SEM), Fourier transform infrared spectroscopy (FT-IR) thermal analysis (TGA and DSC) were performed for the characterization of these agents. To sum up, the hemostatic agent used in the biomedical applications were determined.

Keywords: chitosan; hemostatic agent; trauma.

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➢ **POSTER PRESENTATION**

Yüksek azot içerikli atıksuların karşılaştırmalı arıtımında farklı sıcaklıklarda nitritasyon özelliklerinin belirlenmesi

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Özet

Yüksek amonyum azotu içerikli atıksuların (anaerobik arıtım çıkış suları, hayvan çiftliği atıksuları, katı atık depolama sızıntı suları ve gübre sanayi atıksuları) arıtımında uygulanan kısa-yol biyolojik azot giderimi (SBNR) teknolojisi nitrit üzerinden azot giderimi sağlamakta ve klasik nitrifikasyon-denitrifkasyon yöntemine göre oksijen ve alkalinite ihtiyacında %25 ve oluşan atık çamurda %30 tasarruf sağlamaktadır. İlk basamak proses olan amonyumun nitrite oksitlenmesi nitritasyon olarak adlandırılmakta ve proses kontrol parametreleri ile ikinci basamak nitratasyonun (nitritin oksidasyonu) engellenmesi sağlanmaktadır. Konya kentsel atıksu arıtma tesisinde oluşan anaerobik çamur çürütücü süzüntü suyu (AÇSS) ve sentetik atıksu ile gerçekleştirilen ardışık kesikli reaktör (AKR) çalışmasında aynı ÇO, sıcaklık ve biyokütle şartlarında nitritasyon reaksiyonu paralel yürütülerek organik madde varlığı ve sıcaklık etkisinin (25, 30 ve 35 ^{o}C) proses kinetik ve performansına etkilerinin belirlenmesi amaçlanmıştır. Nitrosomonas türü ototrofik bakterilerce gerçekleştirilen nitritasyon reaksiyonu yüksek çözünmüş oksijen (ÇO) ve alkali ihtiyacı gösteren bir reaksiyondur ve bu reaksiyon organik madde varlığında aerobik heterotroflarla eşzamanlı ve ÇO üzerinde rekabetle gerçekleşmektedir. Ayrıca reaksiyonun nitritte kalması, nitrata kadar oksidasyonun devam etmemesi de ekonomik verimlilik açısından gereklidir. Çalışmada, her iki atıksu için reaksiyon kinetiği ve hız değerleri benzerlik göstermiştir. Organik madde varlığında reaksiyonun nitritte kalması ve alkalinite ihtiyacından tasarruf sağlanmış ve eşzamanlı heterotrofik oksidasyon, düşük ORP değerlerince de ortaya konmuştur. Artan sıcaklığın reaksiyon hızlarına pozitif etkisi elde edilmiştir. Organik maddenin yavaş ayrışır karakteri, ototrofik nitritasyon hızlarının etkilenmemesinde etkili olmuştur. Iki reaktör işletimi arasında önemli farklar; nitrat oluşumu, çökelme özelliği, farklı çamur yaşı ihtiyacı ve toksik serbest amonyak seviyeleri olarak belirlenmiştir.

Anahtar Kelimeler: Atıksu, biyolojik azot giderimi, nitritasyon, kinetik, işletim, AKR.

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➢ **POSTER PRESENTATION**

Synthesis, crystallographic characterizations and biological activities of the piperidino and DASD-Substituted 4-chlorobenzyl pendant armed spirocyclotriphosphazenes

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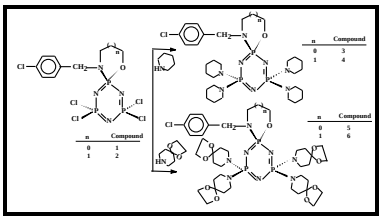
Abstract

A large number of organocyclotriphosphazenes obtained with monodentate ligands are present in the literature [1]. Nevertheless, the reactions of $N_3P_3Cl_6$ with bidentate and multidentate ligands are very rare [2]. The condensation reactions of $N_3P_3Cl_6$ with bidentate and multidentate ligands can commonly produce the spiro-, dispiro-, trispiro-, ansa-, spiro-ansa-, bino- and spiro-bino-spiro phosphazenes depending on the structures of the ligands and the reaction conditions. However, the spirophosphazene derivatives preferably occur with the bulky diamines [3]. In this study, the reactions of trimer with the 4-chlorobenzylamines gave the tetrachloro N/O spirocyclic monobenzylaminocyclotriphosphazenes. They have four reactive Cl atoms. Hence, the replacement reactions of the Cl atoms of the 4-chlorobenzyl pendant armed spirocyclotriphosphazenes with the piperidine and 1,4-dioxa-8-azaspiro[4.5]decane (DASD) resulted in the fully-piperidino and fully-DASD-substituted phosphazenes. The structures of all the phosphazenes were determined using FTIR, MS, ^{1}H, $^{13}C\{^{1}H\}$ and $^{31}P\{^{1}H\}$ NMR spectroscopy. The crystal structure of the one phosphazene derivative was evaluated using X-ray crystallography. In addition, the interactions between the compounds and pBR322 plasmid DNA, and the antimicrobial activities of the phosphazenes were investigated.



Keywords: benzylaminospirocyclotriphosphazenes, crystal structure, spectroscopy, antimicrobial activity, DNA cleavage.

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➢ **POSTER PRESENTATION**

Derivative spectrophotometric determination of Ibuprofen in pure form and pharmaceutical preparations

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Abstract

Derivative spectrophotometric (first and second derivative) were used for the determination of ibuprofen (IBU) for pure samples. Also, determination of ibuprofen in (ibuprofen 200 mg, SDI, IRAQ) tablet was applied. IBU was determined by using ^{1}D and ^{2}D derivative methods at 228.6 and 225.6 nm with linear concentration range 2-30 $\mu g.mL^{-1}$, with correlation coefficient r (0.9971, 0.9980) relative error (-4.2, -0.92) respectively. No interference found between determined drug molecule and those of matrices. A good accuracy and precision of the determination of IBU was confirmed by statistical analysis. The percentage recovery of the individual drugs under the established conditions is ranged from 95.8% to 99.08%, The proposed procedures were successfully applied to the determination of this drug in pure and pharmaceutical tablet.

Keywords: Ibuprofen, derivative spectrophotometry, pharmaceutical preparations.

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➢ **POSTER PRESENTATION**

Reflü özofajit ve özofageal skuamöz polip birlikteliği

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Özet

Özofagus skuamoz hücreli polip sıklığı otopsi ve endoskopi serilerinde %0.01 %0.45 oranlarında bildirilmiştir. Lezyonların human papillomavirüs (HPV) enfeksiyonu sonucu oluştuğu ileri sürülse de gastroözofagial reflü hastalığına (GÖRH) bağlı olarak kronik enflamasyon sonucu oluştuğu da ileri sürülmüştür. Genellikle endoskopide küçük, beyaz ya da pembe polipoid lezyonlar şeklinde görülür ve çoğu özofagusun 1/3 distalinde lokalize ve tektir. Sıklıkla GÖRH ile birliktedir. Çeşitli yayınlarda özofagus karsinomlarıyla ilişkili olduğu bildirilmiştir. Bu sunumda özofageal polip olgumuz sunuldu.
Bir yıldır aralıklı olarak epigastrik bölgede yanma ekşime ağrı şikayetleri olan 42 yaşındaki erkek hastanın yapılan endoskopisinde dişlerden 30. cm'de distal özofagusta 1 cm çaplı polipoid lezyon saptandı. Beraberinde Los Angeles evre B reflü özofajit, 3 cm çapında Tip I evre IV hiatal herni, helikobakter pilori (+) kronik gastrit saptandı. Snare ile özofageal polipektomi yapıldı. Kolonoskopik incelemede patoloji görülmedi. Patolojik incelemede kronik aktif inflamasyon gösteren yüzeyi ülserasyonlu benign özofageal skuamöz polip olduğu belirlendi. Hasta takibe alındı.
Özofagus poliplerinin endoskopik inceleme sırasında rastlantısal olarak saptanır. Hastalarda en sık semptom dispepsi ve retrosternal yanmadır. Özellikle reflü özofajit varlığında malignite potansiyeli ve üzerini örten mukozanın zamanla ülserasyona uğrayarak çeşitli komplikasyonlara sebep olduğundan tanı konulduğunda özofageal polibin derhal çıkarılması önerilmektedir.

Anahtar Kelimeler: Endoskopi, reflü özofajit, özofageal skuamöz polip

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➢ **POSTER PRESENTATION**

Investigation of cytotoxic effect of newly synthesized isoindole derivatives

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Abstract

Cancer is a type of disease caused by tumor formation by uncontrolled proliferation of cells. Cancer drugs are divided into several groups according to their mechanism of action and some of them may have a specific phase in the cell cycle, while others may affect all stages. At the affected stage, the cell cycle is stopped, the division is stopped, and over time, the cell leads to apoptosis (programmed cell death). Isoindole derivatives constitute an important class of biologically active heterocyclic compounds and continue to attract considerable attention due to their diverse pharmacological profile such as, antimicrobial, anthelmintic, insecticidal, anticancer activities. The aim of this study is to evaluate the toxicity and apoptotic effect of eight newly synthesized isoindole derivatives on cancer cell lines. The anticancer activity of these compounds was evaluated against HeLa (adenocarcinomic human cervix epithelial) and A549 (adenocarcinomic human alveolar basal epithelial) cell lines was checked by MTT cell viability test. The synthesized compounds showed concentration- and time-dependent inhibitory effects on the viability of both cell lines. Then, using the IC_{50} doses determined the ratio of cells at each stage of the cell cycle and apoptotic cells were determined by flow cytometry. Cytotoxicity studies reveal that all substances kill both cancer cells in a varying degree. As a result of the cell cycle and apoptosis studies, it was observed that the drugs lead to apoptosis cell death.

Keywords: Isoindole, Anticancer, Cytotoxicity, Cancer cell lines.

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➢ **POSTER PRESENTATION**

Otomotiv sektörü plastik enjeksiyon kalıplarında alternatif tasarım ve mühendislik çözümleri

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Özet

Otomotiv sektöründe metal parçalar yanında çevre regülasyonlarına olan uyumun artma ihtiyacı nedeniyle metale göre daha hafif olan plastik parça kullanımı giderek artmaktadır. Plastik parça üretim yöntemleri arasında en fazla kullanılan teknoloji enjeksiyondur. Müşteri görsel algısında problem yaşanmaması ve metal ile uyumlu çalışması için plastik parça üretimini sağlayacak enjeksiyon kalıp tasarımlarının ilgili standartlara uygun olarak yapılması gerekmektedir. Plastik enjeksiyon prosesi birçok farklı süreç ve parametreden etkilenmektedir. Ürün tasarımından, enjeksiyon makinesinde parça üretimine kadar olan aşamalar bu prosesin kalitesini belirlemektedir. Son ürün tasarımı, kalıp tasarım aşamasında ortaya çıkmaktadır. Ürünün doğru bir şekilde üretilmesi için kalıbın istenilen ömrü sağlayabilecek şekilde ve ürünün geometrik toleransları dikkate alınarak çeşitli tasarım (Catia, Unigraphics vb.) ve analiz programları (Moldflow vb.) kullanılarak tasarlanması gerekmektedir. Tasarım aşamasında ve sonrasında kalıp veya enjeksiyon prosesinden kaynaklı çeşitli problemlerle karşılaşılmaktadır. Bu çalışmada, 3 farklı üründe karşılaşılan problemlerin çözümüne yönelik tasarım çözümleri sunulmuştur. Birinci üründe karşılaşılan çapak problemi maça tasarımının aşama aşama değişmesiyle, ikinci ürünün kalıp çeliğinde karşılaşılan kırılma problemi ilgili bölgedeki tasarımın değişmesiyle, üçüncü ürünün montaj aşamasında karşılaşılan çizilme problemi maça sisteminin tasarımının değişmesiyle çözülmüştür.

Anahtar Kelimeler: Otomotiv, regülasyon, enjeksiyon, tasarım, analiz, kalıp, plastik, ürün, Catia, Unigraphics, Moldflow.

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➢ **POSTER PRESENTATION**

2,6- dimetilmorfolinditiyokarbamat metal komplekslerinin amberlite XAD-4 reçinesi üzerinden kati faz ekstraksiyonu

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Özet

Çalışmamızda ditiyokarbamat türevi olan 2,6-dimetilmorfolinditiyokarbamat (DMMDTC) reaktifi sentezlenerek Cu(II), Co(II), Ni(II) ,Cd(II),Pb(II), Zn(II), Hg(II) ve Mn(II) ağır metalleriyle oluşturduğu kompleks iyonlarının Amberlite XAD-4 reçinesi üzerinden sorpsiyonu ve elüsyonu ile katı faz ekstraksiyon yöntemi ile tayini araştırıldı. Önderiştirilen metal iyonlarından UV-VIS spektrofotometrik analizi gerçekleştirildi. Cu(II), Co(II), Ni(II) iyonlarının analizi triton X-100 ortamında DMMDTC reaktifi ile geliştirilen ölçüm metodu, Cd(II), Pb(II), Zn(II), Hg(II) iyonlarının analizi triton X100 ortamında ditizon reaktifi Mn(II) ağır metalinin analizi ise formaldoksim reaktifi ile yapıldı. Katı faz Ekstraksiyonu kolon yöntemi ile adsorplanan metal iyonlarının farklı elüent çözeltileri ile kolondan geri kazanım değerleri belirlendi. Elde edilen sonuçlardan Cu(II) iyonu için 0.5 M Nitrik asit (aseton içerisinde) Cd(II) iyonu için % 2.5 Asetik asit (metil alkol içinde) elüent çözeltisi için % 90 üzerinde geri kazanım değerleri belirlendi. Cu(II) ve Cd(II) iyonu için sorpsiyon verimini etkileyen numune pH'sı, numune akış hızı ve hacmi ayrı ayrı incelenerek Cu(II) ve Cd (II) için optimum pH aralığı sırasıyla 4.0-8.0 ve 4.0-6.0 numune akış hızı 2.5-7.5 ml dak^{-1}, 2.0-8.5 ml $dak^{-}1$, absorpsiyon ölçümünde değişimin gözlenmediği maksimum numune hacmi her iki metal iyonu için 800 mL olarak belirlendi.

Anahtar Kelimeler: Amberlit XAD-4, 2,6-dimetilmorfolinditiyokarbamat, Katı Faz Ekstraksiyonu

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➢ **POSTER PRESENTATION**

Gıda taşımacılık sektöründe ATP'li tankerlerde kullanılan, östenitik paslanmaz levhaların kaynaklı birleştirilmesinde uygulanan MIG, tıg ve plazma kaynak yöntemlerinin karşılaştırılması, x-ray röntgen ve makro yapılarının incelenmesi

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Giriş

Bozulabilir Gıda Maddelerinin Uluslararası Taşımacılığı ve Taşımalarında Özel Araçların Kullanımı Antlaşmasına (ATP) uygun ve rakiplerinden %15 daha hafif yeni nesil STL gıda tankerinde kullanılan östenitik paslanmaz çelik 2 mm kalınlığındaki levhaların kaynaklı birleştirilmesinde MIG, TIG ve Plazma ark kaynak yöntemleri tatbik edilmiştir. 1.4571 östenitik paslanmaz çelik malzemelerinin kaynaklı birleştirilmesinde tanker imalatına en uygun kaynak parametrelerinin tespit edilmesi hedeflenmiştir. Yapılan numunelerin makro dağlama ile nüfuziyet değerlendirmesi yapılacaktır. Kaynak numunelerinden çekme ve kaynak bölgelerinin ITAB etkisi altında kalan ısı girdisi bölgelerin HV cinsinden sertlik değerlendirmesi yapılacaktır. Çelik ve alaşımlarında ark kaynaklı kusur tespit standartı TS EN ISO 5817 'e göre değerlendirilmesi yapılacak ve bu kaynaklı parçalara 50 kv altında röntgenleri çekilerek değerlendirmeye tabi tutulacaktır. Tüm bu değerlendirmeler sonrası hidrostatik teste tabi tutulan tanker için en uygun kaynak yöntemi tespiti yapılacaktır.

Keywords: Gıda Tankeri, ATP, MIG, TIG, Plazma

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➢ **POSTER PRESENTATION**

Korozyona maruz kalmış betonarme kolonların monotonik yükleme etkisindeki davranışı

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Özet

Korozyona maruz kalmış betonarme yapılarının sismik performanslarının tahmin edilmesi geleneksel yapılara göre oldukça zordur. Yapılan bu deneysel çalışmayla birlikte korozyona maruz kalmış betonarme elemanları üzerine yapılacak olan çalışmalara ışık tutulması amaçlanmıştır. Beş adet tam ölçekli betonarme kolonu hızlandırılmış korozyon yöntemi kullanılarak farklı korozyon oranları için paslandırılmıştır. Bu çalışmaya konu olan beş adet betonarme kolonu bu çalışmanın yazarları tarafından yürütülmekte olan TÜBİTAK 3501 ve 116M162 numaralı proje kapsamında üç farklı beton basınç dayanımı (C8, C20 ve C30), iki eksenel yük ve dört farklı korozyon oranı için deneyleri gerçekleştirilen paslandırılmış betonarme kolonlarının başlangıç hasar seviyelerinin tespiti için tersinir yükleme programının ve betonarme kolon hasar indekslerinin tespit edilmesi için yürütülmüştür. Betonarme kolonlarındaki gerçek korozyon oranları yükleme deneylerinden sonra betonarme kolonlarının kırılarak ve içlerinden tüm betonarme donatılarının çıkartılması ile elde edilmiştir. Deneyleri gerçekleştirilen betonarme kolonları sabit eksenel yük altında monotonik yüklemeye tabi tutularak, akma ve nihai yükleri, süneklilik oranları ve enerji yutma kapasiteleri deneysel olarak elde edilmiştir. Yapılan deneysel çalışma sonucunda, monotonik yüklemenin tersinir tekrarlanır yüklemeye göre zayıf yönleri her bir deprem parametresi için değerlendirilmiştir. Elde edilen deneysel sonuçlar doğrultusunda ileriki korozyon çalışmaları için önemli önerilerde bulunulmuştur. Yapılan bu çalışma kapsamında, korozyonun sağlamış olduğu sargı etkisi nedeni ve buna bağlı olarak aderans dayanımdaki artışlar, akma dayanımdaki azalış, süneklik oranları ve enerji yutma kapasitelerindeki artış ve azalışlar nedeniyle korozyona maruz kalmış betonarme elamanlarının değerlendirilmesinde hasar indekslerinin belirlenmesi gerektiği sonucuna varılmıştır.

Anahtar Kelimeler: Korozyon, Betonarme Donatısı, Monotonik Yükleme

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➢ **POSTER PRESENTATION**

Flotation behavior of bituminous coal using sunflower oil as a green collector

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Abstract

Using sunflower as an alternative to kerosene as a collector, the flotation characteristics of bituminous coal were investigated through flotation tests and contact angle measurements. The flotation results indicated that the collecting feature of kerosene is better than that of sunflower oil. Clean coal with 8.73% ash with kerosene collector was obtained with a combustible recovery value of 62.54%, while sunflower oil with 10.35% ash clean coal with a combustion recovery value of 55.48% was obtained. For a salable clean coal ash value (e.g. 10% ash), the combustible recovery value (~ 70%) of the kerosene collector is higher than the combustible recovery value (~ 53%) of the sunflower oil. The results of kinetic flotation studies for sunflower oil and kerosene showed that the combustible recovery values of both oil types are approximately the same during low (30 s) and high (240 s) flotation times. The selectivity index is 432 for kerosene and 288 for sunflower oil. It is seen from the results that the overall performance of sunflower oil is about 20–30% lower than that of kerosene.

Keywords: Bituminous coals, flotation, contact angle, sunflower oil

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➢ **POSTER PRESENTATION**

Tek silindirli bir dizel motorun performans karakteristiklerinin belirlenmesi

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Özet

Dünya petrol rezervlerindeki düşüş, petrol fiyatlarındaki artışlar gibi ekonomik veriler ve içten yanmalı motorların kullanım alanları göz önünde bulundurulduğunda motorlarda yakıt tasarrufunun önemi bir kat daha artmaktadır. Bu kapsamda ekonomik kullanım, yakıt tasarrufu ve enerji verimliliği gibi konular için motor performansı anahtar rol üstlenmektedir. Günümüzde motor parametreleri ile termodinamik temeller üzerinden oluşturulan yazılımlar yardımıyla farklı motor parametreleri ile simülasyonlar yapılarak motor performansına etkileri kolaylıkla incelenebilmektedir. Bu çalışmada tek silindirli bir dizel motor için krank biyel mekanizmasının dinamik analiziyle basınç ve tork modellemesi gerçekleştirilmiştir. Bu kapsamda öncelikle termodinamiğin birinci kanunu yardımıyla silindir içi basınç değişimi formülize edilmiştir. Daha sonra basınç değişiminin piston üzerine uyguladığı kuvvetten yola çıkarak krank biyel mekanizmasının dinamik analiziyle tork değişimi formülize edilmiştir. Ortalama efektif basınç yardımıyla güç hesabı yapılarak farklı girdiler için motor performans verileri elde edilmesi amaçlanmıştır. Elde edilen matematiksel ifadeler MATLAB/Simulink programı yardımıyla ara yüze dönüştürülerek farklı girdiler için analiz imkanı oluşturulmuştur. Oluşturulan model ile farklı hava fazlalık katsayıları (1,3, 1,5, 1,7) ve farklı sıkıştırma oranları (16:1, 20:1, 24:1) kullanılarak analizler gerçekleştirilmiştir. Yapılan analizler literatürdeki bir çalışmayla karşılaştırılmıştır. Karşılaştırma yapılan çalışma ile tez kapsamında oluşturulan modelden elde edilen sonuçlar karşılaştırılmış ve uyumlu oldukları değerlendirilmiştir.

Anahtar Kelimeler: İçten yanmalı motorlar, dizel motor, MATLAB

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➢ **POSTER PRESENTATION**

Vrtex mobile ark kaynak similatörü ile üç boyutlu ortamda yetiştirilen gaz altı kaynakçılarının yetkinliğinin değerlendirilmesi ve geleneksel kaynak eğitiminin zorunlu kıldığı sarf malzeme ve benzeri harcamalara etkilerinin incelenmesi

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Özet
Kaynak imalat sektöründe yaşanan en büyük sıkıntılardan biri olan yetkin kaynak operatörlerinin olmaması sektörün dar boğazlarından biri olmuştur. Kaynak operatörlerinin geleneksel metotlar ile yetiştirilmesi aynı zamanda fabrika içi sarf malzeme ve tel, gaz vb zorunlu harcamaların artışına sebebiyet vermektedir. Vrtex Mobile kaynak yöntemi ile etkin bir şekilde kaynak personelinin yetilerinin geliştirilmesi hedeflenmiştir. Personel yetiştirilmesi sırasında kullanılan kaynak sarf malzeme giderleri, kaynak teli, kaynak gazı ve diğer zorunlu giderlerin fabrika harcamalarına azaldığının gözlemlenmesi beklenmiştir. Similatör ve geleneksel yöntem ile yetiştirilen ark kaynak operatörlerinin EN ISO 9606-2:2007 Kaynakçıların Yeterlilik Sınavında başarılarının karşılaştırılması incelenecektir.

Anahtar Kelimeler: Similatör 3 boyutlu, Ark Kaynak, Vrtek,

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➢ **POSTER PRESENTATION**

Model for remediation of nitrate contamination in the agricultural fields

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Abstract

Pump and fertilize, while removing nitrate the groundwater, can also reduce nitrate and pesticide requirement. In this study, we constructed groundwater models via HYDRUS 1D for one-hectare maize field in prevalent soils in Turkey and Eskişehir, Adana, Şanlıurfa, Düzce climates in Turkey, assessed the most likely promising conditions for pump and fertilize, and found that even in 50 mg/L nitrate concentrations, this process is beneficial, especially in Şanlıurfa similar climates (687 TL/year). Nitrogen leaching loss were more in sandy soils. Later, we modeled the atrazine and cypermethrin contaminated water irrigation, with also using leonardite as adsorbent to facilitate controlled desorption of pesticides. We found that using leonardite, one can both effectively immobilize the contaminant or dilute its concentration to its 1/5, 1/10 of applied concentration.

Keywords: atrazine, reuse, pump and fertilize, groundwater contamination, nitrate.

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➢ **POSTER PRESENTATION**

The effect of molecular resonance on mesophilic and psychrotrophic aerobic microflora of raw milk

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Abstract

Long cold storage of milk in the milk collection centers and / or transport of milk to the dairy industry under long-term cold chain conditions, due to the scattering of milk production areas and the remote location of the milk processing centers in our country, facilitates the growth and proliferation of psychrotrophic bacteria in raw milk. These bacteria and their thermostable hydrolytic enzymes cause defects like undesired clotting of milk proteins, increase concentrations of free fatty and amino acid and changes in flavor in milk and dairy products. Since the economic effect of mesophilic and psychrotrophic aerobic bacteria on dairy industry is known to be great, this study aimed to investigate the effects of molecular resonance on the control of both total mesophilic aerobic bacteria (TAMB) during storage at room temperature and of total psychotrophic aerobic bacteria (TPAB) during cold storage of raw milk for the first time either in the national or international context. For this purpose, two different raw milk samples were kept under room temperature for t (h) = 1, 2, 3, 4, 5, 6, 8, and 10 both in the absence or in the presence of molecular resonance and were inoculated and then incubated into the Plate Count Skim Milk agar (PCSMA) at 30° C for 48 hours according to TS EN ISO 4833-1: 2014. On the other hand, the same milks were kept under refrigerated temperature for t (h) = 1, 2, 3, 4, 5, 6, and 8 both in the absence or in the presence of molecular resonance, and were inoculated and then incubated in parallel to the PCSMA at 6.5° C for 10 days according to TS EN ISO 17410: 2004. According to the results, the molecular resonance application did not make a significant change both in TAMB and TPAB counts in raw milk with time.

Keywords: raw milk, mesophilic aerobic bacteria, psychrotrophic aerobic bacteria, molecular resonance

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➢ **POSTER PRESENTATION**

The effect of microfiltration on microbiological properties of milk

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Abstract

Milk which is the main nutrient for human, has risk of containing foodborne pathogenic bacteria such as *Listeria*, *Brucella*, *Mycobacterium*, *Staphylococcus*, *Corynebacterium*, *Escherichia coli* O157:H7, and *Salmonella*. The most common method used to remove these pathogens is heat treatment but due to the heat sensitive nature of milk, thermal processing techniques causes damages on milk components especially on proteins and vitamins. As an example, it is known that ultra-high temperature (UHT) processing causes loss of available lysine and denaturation of whey protein. Nowadays consumers' awareness about healthy nutrition and high demand for non-processing foods has directed researches to emerging non-thermal techniques. Non-thermal processing techniques cause less effect on the nutritional properties of milk compared to thermal ones. One of the non-thermal processing method is membrane filtration. Pressure driven membrane separation method with using ceramic membranes which has approximately 0.1 µm-10 mm pore diameter is known as microfiltration (MF). Researches on MF have indicated that this technique could reject somatic cells, microorganisms, and their spores while allowing other milk constituents to pass through the membrane. Different studies on microfiltrated milk have shown that decimal reduction of milk microflora is above 3.5. Also, spore forming bacteria such as *Bacillus* spp. which can survive under pasteurization conditions are better retained by MF membrane because of their large cellular volume. The separation rate and decimal reduction of microorganisms from milk depend on pore size of the membranes. MF with 0.2 µm membranes produce a sterilization effect while 1.4 µm membranes produce a pasteurization effect. Therefore it is important to select the proper membrane with proper pore size. Numerous studies have been focused on this emerging technique which allows milk to be safely consumed and processed to different products such as cheese without damaging the components of milk.

Keywords: milk, microfiltration, pathogen

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➢ **POSTER PRESENTATION**

Preparation of new generation superhydrophobic coatings for oil / water separation

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Abstract

Oil spills, discharge of organic chemicals from industrial sources, and accidental pollution have caused very serious severe ecological and environmental problem over past few decades. As know that cleaning up these oil pollutions from water resources is very challenging process. Various methods such as in situ burning, skimming and using chemical dispersant were performed to remove oil spills from water. However, these methods might cause additional damage to ecosystems. Recently, 3-dimentional (3D), porous and superhydrophobic materials are tried to fabricate for removing oil spills from water. For this purpose, the commercial polymer sponges such as polyurethane and melamine sponges have been widely used due to their 3D and porous structures. In this study, we fabricated a robust, reusable and eco-friendly superhydrophobic/superoleophilic melamine sponges for oil/water separation. The superhydrophobic/superoleophilic melamine sponges were prepared in three steps; (i) firstly, melamine sponge was modified with a silane coupling agent for further modifications, (ii) the silane-functionalized melamine sponge was treated with SiO_2 nanoparticles to enhance the surface roughness, (iii) an *alkylsilane* coupling agent was then used for the providing the melamine sponges a hydrophobic feature. The results showed that the superhydrophobic/superoleophilic melamine sponges absorbed a wide range of organic solvents and oils and also exhibited outstanding recyclability with oil sorption retention of more than 95% after 25 cycles of sorption−desorption.

Keywords: Superhydrophobic, Superoleophilic, Oil/Water Separation, Melamine Sponge, SiO_2 Nanoparticles

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➢ **POSTER PRESENTATION**

Multifunctional theranostic nanoparticles for controlled drug release

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Abstract

Cancer is one of the most important diseases that are growing rapidly every day. In traditional treatment methods, anti-cancer drug molecules circulate freely in the blood and do not exhibit targeted release. It is known that these drug molecules cause serious side effects and systemic toxicity. Thus, the scientists are trying to develop new multifunctional and targeted hybrid nanocarrier systems. Nanocarriers have many advantages compared to traditional methods. First of all, the drug molecules are trapped into the nanocarriers and the toxicity of drug can be decreased in minimum levels. In addition to that the hybrid nanocarriers can be functionalized with targeting agents to be able to guide the particles to desired tissue and organs. As a result, the targeted and controlled multifunctional hybrid nanocarriers can carry the cargo molecules to the desired tissue or organs with a specified rate and dosage. In this study, we have developed a novel pH/redox-triggered hybrid nanocarrier system for controlled drug delivery. Multifunctional hybrid nanoparticles are composed of a core/shell system consist of a magnetic core, a mesoporous silica shell and a pH/redox-responsive polymer layer. The experimental results showed that these smart nanoparticles exhibited high extracellular stability and an efficient release under cellular pH environments. Moreover, these redox-responsive nanoparticles showed fast and an efficient drug release in the presence of 10 mM DTT. In our belief, the obtained each result from every step will be very precious to reach excellent carrier systems and will provide very big contribute to the literature.

Anahtar Kelimeler: pH/redox-sensitive, magnetic nanoparticle, drug delivery, cancer

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➢ **POSTER PRESENTATION**

Photocatalytic degradation of pentachlorophenol under UV light combined with TiO_2

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Abstract

Photocatalysis plays a key role in the environment purification. Thus, it has been shown that photocatalysis has great advantages; it leads to complete mineralization of pollutants to CO_2, water and mineral acids. Among the photocatalysts, TiO_2 appears to be one of the most promising catalysts for its cheap, stablity, non toxicity, and environmentally friendly.

TiO_2 has attracted much attention due to unique optical and electronic properties which makes it suitable for the oxidation of organic pollutants . The band gap excitation of titania under UV light promotes the transfer of electronfrom valence band (VB) to conduction band (CB). In this effect, we have been intrested in the photodegradation of pentachlorophenol in the presence of TiO2 as catalyst. The results of the photocatalytic degradation were discussed through the PCP concentration remaining after treatment, the COD measurement, and the amount of chloride ions released in solution. Under UV light irradiation and without catalyst, the elimination of PCP necessitates 4 h and leads to 85 % of degradation. In presence of the catalyst, only 1 h is necessary to reach a degradation rate of 87%.

Keywords: Catalyst; Photocatalysis; TiO_2; Degradation; Pentachlorophenol.

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➢ **POSTER PRESENTATION**

Bitki gelişimini arttırıcı rizobakteriler ve sürdürülebilir tarımda önemi

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Özet

Bitki gelişimini arttırıcı rizobakteriler (PGPR) bitkilerin köklerinde kolonize olan, gelişimleri ve büyümelerine yardım eden bakterilerdir. PGPR toprak verimliliği, bitki gelişimini arttırma, fitopatojenlerin baskılanması ve çevre dostu sürdürülebilir tarımın geliştirilmesi için önemli rol oynamaktadır.
PGPR'ler azotu ve fosforu bitki için kullanılabilir hale getirerek, indol-3-asetik asit gibi hormonlar üreterek, ACC deaminaz enzimi ile etilenin olumsuz etkisini engelleyerek, siderofor üretimi ile demir alınımını arttırarak, uyarılmış sistemik dayanıklılık oluşturarak, antibiyotik üreterek, zararlı mikroorganizmalara karşı litik enzimler ve bazı metabolitler üreterek, mevcut yer ve besin için bitkinin rekabet gücünü arttırarak bitki gelişimine katkıda bulunurlar.
Tanımlanan PGPR'ler arasında *Pseudomonas* ve *Bacillus* spp. en sık çalışılan rizobakterilerdir. *Acetobacter, Aeromonas, Azoarcus, Azospirillum, Azotobacter, Arthrobacter, Acinetobacter, Agrobacterium, Allorhizobium, Azorhizobium, Alcaligenes, Bradyrhizobium, Bacillus, Burkholderia, Clostridium, Caulobacter, Chromobacterium, Enterobacter, Erwinia, Flavobacterium, Gluconacetobacter, Klebsiella, Mesorhizobium, Micrococcus, Pseudomonas, Rhizobium, Rhodococcus, Stenotrophomonas* ve *Serratia* gibi cinslerin suşları PGPR olarak tanımlanmıştır, yeni rizobakteriler eklenmesi için çalışmalar devam etmektedir.
Dünya nüfusunun artışıyla birlikte küresel yiyecek üretim talebinin de artması, geliştirilecek tarımsal stratejiler ve aynı zamanda çevresel zarar oluşturan tarımsal uygulamalar 21.y.y.'da çözülmesi gereken başlıca sorunlar haline gelmiştir. Bu küresel sorunla başetmek için tarımsal verimliliğin gelecek birkaç on yıl içinde önemli oranda arttırılması ve çevreyle dost yeni uygulamalar sunulması kaçınılmazdır. PGPR'lerin kullanımı çevresel kirlenme yaratan kimyasal gübre kullanımını azaltacak cazip bir alternatiftir ve sürdürülebilir tarım uygulamalarında PGPR uygulamaları umut vaat eden bir potansiyel göstermektedir.

Anahtar Kelimeler: PGPR, rizosfer, mikrobiyal gübre

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➢ **POSTER PRESENTATION**

Catalytically activated self–propelling micromotor for oil/ water separation

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Abstract

Growing water pollution because of regular oil-contamination from industrial sources and accidental oil spillage during transportation cause severe damage to the aqua-ecosystem. Cleaning oil spills and organic chemicals from the water is very difficult with the conventional methods. Therefore, researchers are working on the developing new efficient methods for water treatment. In recent years self-propelling micro- and nanomotors have been fabricated that can convert chemical energy into mechanical force and movement. The self-propelling micromotors might be defined as the promising materials for environmental remediation such as water purification or oil removal. Herein, we fabricated self-propelling catalytic hydrogel micromotor for oil-water separation. The micromotor have the ability of moving autonomously in the aqueous solution containing the H_2O_2 fuel. The motion ability of micromotor originates from O_2 bubbles generated by catalytically active $KMnO_4$ and H_2O_2 chemical reaction. Moreover, it is seen that micromotor velocity increased approximately up to 3.74 mm/s in solution depending upon fuel concentration. Beside the motion ability the micromotor exhibited very promising potential for removing oil from water. We believe that this new micromotor will shed light on the development of new micromotors for oil/water separation system.

Keywords: Micromotor, Self propelling, Oil/water separation, Hydrogel

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➢ **POSTER PRESENTATION**

Preparation and characterization of electrospun chitosan/PEO/nano-hydroxyapatite nanofibrous scaffolds for biomedical applications

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Abstract

Electrospinning [1] is efficient technique that enables to produce nanofibrous scaffolds [2] with various synthetic and natural polymers. Electrospun scaffolds have unique material property such as high surface area and high porosity. Owing to this advantageous properties, electrospun porous scaffolds is promising for tissue engineering applications [3] such as drug carrier, bone regeneration material and mimicking extra cellular matrix. In the present study, chitosan [4] /polyethylene oxide (PEO)/nano-hydroxyapatite(nHAp) tissue scaffolds with different concentration ratios were fabricated by the electrospinning process. The morphologies and diameters of composite nanofibers were observed with scanning electron microscope (SEM). Structural analyzes of the nanofibers were also performed by XRD and FTIR. Morphological, structural and biocompatibility properties of electrospun nanofibrous scaffolds were evaluated in terms of structure-function relationship for future application potential.

Keywords: Electrospinning, chitosan, scaffold

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➢ **POSTER PRESENTATION**

Investigation of electro-optical properties of quantum dots doped PDLC composite structure under DC electric field

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Abstract

Polymer dispersed liquid crystal (PDLC) is a composite material which consists of a blend of polymer and liquid crystal (LC). Doping some nanoparticles in PDLC materials have occurred significant scientific interest in fields of nanomaterials and soft materials and their applications in flexible displays, holographic films etc. In this study, firstly quantum dots (QDs) doped PDLC structures with different concentrations was prepared curing ultraviolet (UV) illuminations, than dielectric and electro-optical properties of the hybrid structures were investigated dependence on wide frequency range. Some considerable physical parameters such as dielectric constants, loss tangent and some important electro-optical parameters such as critical frequency, relaxation time were obtained depend on quantum dots concentrations as a function of frequency. Results show that QDs contribution have occurred significant changes in electro-optical properties of investigated samples which can be used in PDLC based device applications.

Keywords: Dielectric Properties; Liquid Crystal; Quantum Dots; Polymer

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➢ **POSTER PRESENTATION**

Investigation of ultraviolet irradiation effect on dielectric properties of phthalocyanine and quantum dot doped nematic liquid crystal composite structures

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Abstract

In recent years liquid crystals have been extensively investigated in science and technology due to their optical, electrical and dielectric properties. Furthermore, these properties can be improved by adding different nanoparticles into the liquid crystal. This study reports that dielectric properties of phthalocyanine and quantum dot doped nematic liquid crystal composite structures in dark and under ultraviolet irradiation condition. Samples dielectric measurements have been carried out using the dielectric spectroscopy method in the frequency range of 100 Hz to 10 MHz at room temperature in dark and under ultraviolet irradiation condition. Some dielectric parameters such as dielectric permittivity, dielectric anisotropy, relaxation frequency, relaxation time have been determined for the composite structures by using experimental data. Results show that phthalocyanine and quantum dots contribution and ultraviolet irradiation effects cause significant improvements in the nematic liquid crystals and make providing a vision about their usage in optoelectronic device design.

Keywords: Dielectric properties, Liquid crystal, Phthalocyanine, Quantum dot, Ultraviolet irradiation effect

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➢ **POSTER PRESENTATION**

Corrosıon inhibition effect of 6-amino-3-pyridine-carbonitrile (APC), 2-amino-4,5-imidazolecarbonitrile (AIC), 4-amino-5-pyrimidine carbonitrile (APMC)

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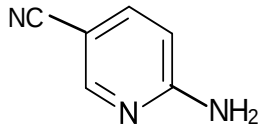
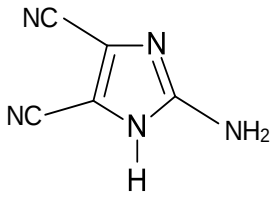
Abstract

Corrosion inhibition effect of 6-amino-3-pyridine-carbonitrile (APC), 2-amino-4,5-imidazolecarbonitrile (AIC), 4-amino-5-pyrimidine carbonitrile (APMC) has been investigated for mild steel in 2 M HCl using weight loss, polarization curves, electrochemical impedance spectroscopy (EIS) and quantum chemical calculations. The experimental results showed that, their inhibition performance increased with the rise of inhibitor concentration. Quantum chemical parameters such as highest occupied molecular orbital energy (E_{HOMO}), lowest unoccupied molecular orbital energy (E_{LUMO}), energy gap (ΔE), dipole moment (μ), global softness (σ), and global hardness (η) were calculated using density functional theory (DFT) at B3LYP/6-31G(d,p) level. Results showed all inhibitors under study to exhibit good inhibition characteristics, APC exhibiting the highest amongst these compounds.

Keywords: Corrosion, mild steel, polarization, EIS, theoretical calculation.



(APC)



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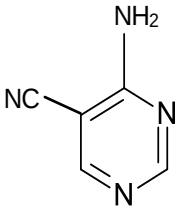

(APMC)

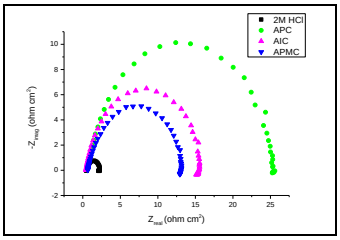

Fig 1. Nyquist plot for steel in 2 M HCl

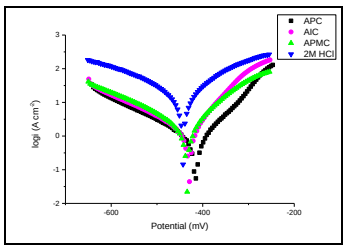

Fig 2. Polarization curves for steel in 2 M HCl

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➢ **POSTER PRESENTATION**

Türkiye ve Avrupa Birliği üyesi bazı ülkelerde deniz balıkçılığı alanında faaliyet gösteren kamu araştırma enstitülerinin altyapı ve araştırıcı özellikleri açısından değerlendirilmesi

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Özet

Su ürünleri avcılık ve yetiştiricilik ürünleri insan sağlığı açısından değerli bir protein kaynağı olarak önemli bir rol oynamaktadır. Su ürünleri sektörü, tür çeşitliliğinin azalması, istilacı türlerin ortaya çıkması, üçüncü ülkelerle rekabet ve turizm sektörü gibi diğer kıyı faaliyetleriyle çatışma içinde ya da negatif çevresel etkiler gibi zorluklarla karşı karşıyadır. Avrupa Birliği (AB), dünyadaki en büyük su ürünleri ithalatçılarından biri olarak, su ürünleri alanındaki zorlukların üstesinden gelmek ve doğal kaynakların potansiyelini artırmak amacıyla araştırma ve yeniliğe odaklanmıştır. AB, müktesebatı için bilimsel ve teknolojik araştırma gerektiren konular ile kendi enstitülerinde yaptığı araştırmalarda, Türkiye'den de araştırmacıların bulunması veya Türkiye'deki araştırma kuruluşlarının AB Ortak Araştırma Merkezi (Joint Research Center – JRC) birimleriyle işbirliği içerisinde olması, Türkiye Araştırma Alanı'nın Avrupa Araştırma Alanı'yla bütünleşmesinin yanı sıra Türkiye'deki araştırmacıların AB'deki gelişmeleri yakından izlemesine ve oluşum süreçlerine dahil olmalarına katkıda bulunmaktadır. Bu kapsamda, AB'deki araştırma enstitülerindeki araştırma alt yapısı ve araştırıcı özelliklerinin bilinmesi olası bu tür araştırma projelerinde ortak bulmak açısından önem arz etmektedir. Bu çalışmada, AB üye devletlerinden Bulgaristan, İspanya, İtalya, Romanya ve Yunanistan ile aday ülke statüsünde olan Türkiye'nin deniz balıkçılığı alanında faaliyet gösteren kamuya bağlı araştırma enstitülerinde kurumsal kapasite ve araştırıcı özelliklerinin incelenmesi amaçlanmıştır. Bu kapsamda, ele alınan AB ülkelerinde ki araştırma enstitülerinde genel olarak, bölgelere göre dağılım gösteren bir yapılanma olduğu gözlemlenmiştir. Aynı durum, Türkiye için sadece bir enstitüde tespit edilmiştir. Ayrıca, Türkiye'nin incelenen beş AB üye ülkesi ile karşılaştırıldığında araştırma alt yapı olanaklarının da bu ülkelere eşdeğer olduğu saptanmıştır.

Anahtar Kelimeler: Türkiye, Avrupa Birliği, Balıkçılık sektörü, Araştırıcı özellikleri

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➢ **POSTER PRESENTATION**

Green synthesis of *Crocus sativus* L. (Saffron) extract based nanoflower: Evaluation of *in vitro* antimicrobial and peroxidase-mimicking activities of extract and its nanoflower structure

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Abstract

In this study, for the first time, a novel organic–inorganic nanobio-antimicrobial agent called "nanoflowers" (Nfs) from *Crocus sativus* L. (Saffron) extracts were produced and the increase in the antimicrobial activity of the Nfs was elucidated. While the *Crocus sativus* L. (Saffron) extract (obtained in 70% ethanol) and was involved as organic components in the formation of the Nfs, copper (II) ions (Cu2+) was the inorganic component. The structures of the Nfs were examined with several techniques such as Scanning Electron Microscopy (SEM), Energy-Dispersive X-ray (EDX), X-ray Diffraction Analysis (XRD), and Fourier Transform Infrared Spectrometer (FT-IR). The structural examination demonstrated that the presence of Cu–O and Cu–N bonds in Nfs can be an indication of the Nfs formation. Antimicrobial activities of the Saffron extract, and its Nfs were systematically studied against *Staphylococcus aureus* (ATCC 25923), *Escherichia coli* (ATCC 25922) and *Candida albicans* (ATCC 90028) with broth microdilution. The peroxidase-mimicking activity depending on a Fenton-like reaction mechanism of the Nfs was measured against guaiacol in the presence of H_2O_2. Our results demonstrated that plant extract based Nfs technology is promising and may find potential applications in various scientific and technical fields.

Keywords: *Crocus sativus* L., Nanoflower, Saffron, Peroxidase-mimicking activity, Antimicrobial activity.

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➢ **POSTER PRESENTATION**

Evaluation of some hematological variables in golden retriever bitches with pyometra

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Abstract

The objectives of this study were to evaluation blood WBC, albumin, urea, ALT, AST and creatine concentrations in bitches with pyometra. Pyometra which known as purulent inflammation of the uterus is a common and lethal polysystemic disease of female dogs. İt is usually luteal period disease in intact bitches. Hormonal and bacterial factors take an important role in the occurrence of the disease. The safest and most effective treatment method is Surgical ovariohysterectomy. Five bitches which were between 5-10 years old were included the study. The dogs were in between first and second month after the heat cycle and were diagnosed with pyometra by ultrasonography. And also there was vaginal discharge in the bitches. It was decided to surgery for treatment. Before surgery, examination of the patients was performed and then blood samples were taken for hematology tests. While the Blood WBC, urea, ALT, AST and creatinine concentrations were above, below or normal according to the reference values, the concentration of albumin was found to be low in five the bitches. Mean concentration of albumin in five dogs 2.3 g/dL (reference value 3.1-4.0 g/dL). In conclusion, it was thought that albumin blood concentration value decreased due to liver and kidney damage in all the bitches with pyometra. Blood WBC, urea, ALT, AST and creatinine values, however, was thought to vary according to the severity of the disease. Clinical improvements were observed in all bitches after surgery.

Keywords: Albumin, Bitch, Pyometra, Uterus.

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➢ **POSTER PRESENTATION**

Arama/kurtarma gemilerindeki hassas faaliyetlerde alınması gereken iş güvenliği önlemlerinin belirlenmesi ve risk analizi uygulamaları

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Özet

Denizcilik sektörü dünyada en tehlikeli ve riskli sektörler arasında yer almaktadır. Bu çalışmada öncelikle ülkemizde Arama Kurtarma (A/K) amacıyla kullanılan gemiler tanımlanarak diğer ülke A/K gemileri ile karşılaştırmalar yapılmıştır. Ayrıca A/K amacıyla kullanılan gemilerdeki hassas faaliyetler içerisindeki; harici yangın söndürme, tıbbi tahliye, düzensiz göçmen olaylarına müdahale, kaybolan/sürüklenen tekneye müdahale ve denizden insan kurtarma faaliyetlerindeki tehlikeler çeklist yöntemi ile belirlenerek alınması gereken temel iş güvenliği önlemleri ortaya çıkarılmıştır. Hassas faaliyetlerdeki ortak iş güvenliği önlemleri olarak; faaliyete uygun kişisel koruyucu donanımların personel tarafından kullanılması, A/K gemisinde operasyon esnasında batma ve su almayı önlemek maksadıyla dışa açılan kaporta ve lumbuzların kapalı tutulması, dış güvertede kaygan/ıslak zeminde çalışılması sebebiyle emniyet halatı, kaydırmaz tabanlı ayakkabı, can yeleği gibi kişisel koruyucu donanımların giyilmesi ve kullanılan matafora, yedekleme donanımı, kurtarma ağı gibi ekipmanların periyodik bakımlarının zamanında yaptırılması ve çalışır durumda tutulması olarak öngörülmüştür. Çalışmada her sektöre uygulanabilirliği, basit ve anlaşılır olmasından dolayı L tipi matris yöntemi tercih edilmiştir. Kaybolan/sürüklenen tekneye müdahale faaliyeti ile ilgili kullanılan Risk Analizi uygulaması sonucunda; en yüksek risk skoru değerinin 25 ile halat kopması tehlikesinde olduğu, en düşük risk skoru değerinin ise 3 ile üşüme tehlikesinde olduğu sonucuna varılmıştır. Sonuç olarak tehlikeli meslek gruplarını bünyesinde barındıran denizcilik sektörü içindeki tüm gemiler için risk analizleri yapılarak sonrasında alınacak tedbirler belirlenmelidir. Böylece çalışanları tehlikelerden korurken verimliliğin de artmasına katkı sağlanmış olunacaktır.

Anahtar Kelimeler: Arama Kurtarma, hassas faaliyet, matris, risk analizi

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➢ **POSTER PRESENTATION**

Işgın bitkisi ve kullanım alanları

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Özet

Rheum, Polygonaceae ailesine ait olup Irak, İran, Türkiye, Azerbaycan, Afganistan, Pakistan, Rusya ve Çin dahil olmak üzere Akdeniz'in doğu bölgelerinde yaygın olarak yetişen bir bitki türüdür. *Rheum* cinsinin ülkemizde yetişen tek türü olan *Rheum ribes L.* ise Sivas, Kars, Erzincan, Tunceli, Elazığ, Muş, Ağrı, Bitlis, Erzurum, Van, Hatay, Kahramanmaraş ve Hakkâri bölgelerinde bahar aylarında yüksek yamaçlarda ve dunit kayaları üzerinde yetişmektedir. *Rheum ribes L.* Türkiye'de "Işgın, Uşgun ve Uçgun" adlarıyla bilinmektedir. Işgın bitkisi genel olarak ilaç sanayinde, gastronomi alanında ve süs bitkisi olarak yaygın şekilde kullanılmaktadır. Ülkemizde Işgın bitkisinin taze kök ve yaprakları çiğ veya pişirilmiş olarak tüketilmektedir. Işgın bitkisi yapısında flavonoidleri, A, E ve C vitaminlerini, oksalik asit, sinamik asit, nişasta, β-glukagon organik asitleri, fenolik asitleri ve flavonoidleri içermektedir. Oldukça zengin bir besin içeriğine sahip olan Işgın bitkisinin tüketimi ile sindirimin kolaylaştığı, iştah arttırıcı özelliğe sahip olduğu, antiemetik özellik gösterdiği ve balgam söktürücü olarak kullanıldığı araştırmacılar tarafından rapor edilmiştir. Ek olarak, Işgın bitkisi diyabet, hipertansiyon, obezite, hemorid ve diyare hastalıklarının tedavisinde kullanılmaktadır. Bunun yanında *Rheum*'un bazı türlerinin sitotoksik ve antiviral etkiye sahip olduğu araştırmacılar tarafından bildirilmiştir. Literatürde rapor edilen çalışmalarda *Rheum ribes* L.'nin bazı mikroorganizmalar üzerine antibakteriyel ve antifungal etkilerinin olduğu görülmüştür. Yapılan son çalışmalarda bu bitkinin kanser tedavisinde de önümüzdeki yıllarda kullanılacağı rapor edilmektedir. Bu çalışmada Işgın bitkisinin kullanım alanları ile ilgili çeşitli literatür çalışmalarının derlenmesi amaçlanmıştır.

Anahtar Kelimeler: Işgın, tıbbi bitki, geleneksel tıp

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➢ **POSTER PRESENTATION**

Poliamid/Elastan Kumaşların Fenolik Sararmasını Önleyici Proses Geliştirme

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Özet
Poliamid (PA) lifleri, halı, mayo, iç giyim, dış giyim, sportswear giyim kumaşlarında ve oto lastiklerinde takviye malzemesi olarak birçok endüstriyel alanda kullanılan önemli bir sentetik lif gurubudur. Beyaz ve açık renk tonların sararması en çok karşılaşılan problemlerden biridir. PA mamuller ısı, ışık, ozon gibi atmosferik gazlara, kuvvetli asitler (nitrik asit, sülfirik asit vb.), yükseltgen maddeler (peroksitler vb), mikroorganizmalara, bazı metallere, uygulama sırasında kullanılan bazı kimyasal maddelere, BHT içeren ambalajlara karşı hassastırlar. Bu çalışmamızda, %80 PA/%20 EL içerikli jarse kumaşın fenolik sararmasını önlemek için kimyasal madde geliştirme ve proses denemeleri yapıldı. Poliamid elyafı alkali ortamda fenolik sararmaya eğilimli olduğu için son proses adımında kullanmak için uçucu olmayan sitrik asit/maleik asit ve tuzlarından oluşan asit karışımı hazırlandı. Fenolik sararmayı önlemek için, benzen sülfonik asitin sodyum tuzu, dietanol amin, 2,2'-oxidiethanol içeren bir anti fenolik sararma karışımı hazırlandı. Beyaz boyama işleminin sonunda Poliamid/Elastan kumaşın fenolik sararmasını önlemek için son banyosuna, bu hazırlanan anti fenolik sararma maddesinden 4% oranında ilave edildi, uçucu olmayan asit karışımından 1 g/L. ilave edildi, pH:4,5-5 olarak ayarlanarak 40°C'de 20' işleme tabi tutuldu. Çıkan kumaş C20B Elusive/reversible Yellowing:Courtaulds method yöntemine göre test yapıldı. Test sonunda işlem yapılmayan kumaş sarı renkli fenolik sararma değeri 1, işlem yapılan kumaşın değeri 5'tir. Hazırladığımız anti fenolik sararma malzemesi iyi sonuçlar gösterdi.
Anahtar Kelimeler: Fenolik sararma, poliamid, elastan, pH

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➢ **POSTER PRESENTATION**

Structural and magnetic proprieties of Nickel ferrite doped Gadolinium (0.0≤x≤0.1) synthesized by co-precipitation method

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Abstract

Nickel ferrites are some of the most versatile magnetic materials. In recent years, ferrite are the subject of numerous investigations and have been studied extensively for their remarkable properties such as high saturation magnetization, large permeability at high frequency, high electrical resistivity, environmental stability moreover its advantage for the cost. Which allowed them to be useful in many electronic devices and magnetic refrigeration.

Doping with rare earth cations may modify the magnetic properties of the Ni-Ferrites; this doping reduces the permeability and increase the electrical resistance.

In the present study, we have synthetized a serie of samples $NiFe_{2-x}Gd_xO_4$ (x = 0.00, 0.02, 0.04, 0.06, 0.1) by coprecipitation method. The powder was annealed at 1000°C for 2h. Afterwards, they were characterized by X-ray diffraction and Mössbauer spectrometry at room temperature. The estimated average crystallite size was ranged between 90 and 41.5 nm. As a result, it seems that the lattice parameter was changed with the x value and present a minimum for x = 0.04.

The Mössbauer spectra recorded at room temperature, shown that $NiFe_2O_4$ phases exhibit a ferromagnetic behavior and their spectra represent two sextets, which indicates that the iron atoms are in a ferromagnetic environment. For $NiFe_{1.98}Gd_{0.1}O_4$, the Mössbauer spectra was adjusted by superposition of three sextets, with different areas, two sextets due to Fe^{3+} at tetrahedral and octahedral sites and one sextet for the $GdFeO_3$ phase. Finally, all the hyperfine parameters were determined for each spectrum

Keywords: Coprecipitation, Nickel ferrite, Rare earth, Mössbauer, X-ray diffraction.

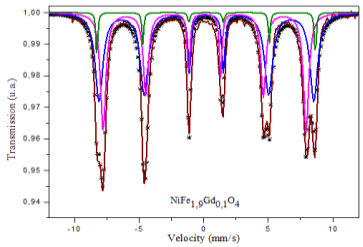

Figure 1: Caption of Mossbauer spectra of $NiFe_{1.9}Gd_{0.1}O_4$ composition

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➢ **POSTER PRESENTATION**

Esterification of Caprylic Acid with Methanol by Using Purolite CT169DR

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Abstract
Biodiesel has become more attractive because of its environmental benefits and it is made from renewable resources. Biodiesel is a promising alternative to petroleum based diesel fuel regarding the limited resources of fossil fuels and the environmental concerns. Biodiesel is consisting of methyl esters of long chain fatty acids produced by transesterification of vegetable oils or animal fats and also esterification of fatty acids with methanol. The purpose of this work was investigate the reaction conditions of caprylic acid and methanol esterification by using acidic cation exchange resin Purolite®CT169DR as a catalyst. The reactions were carried out using three neck glass reactor equipped with a reflux condenser. After the reaction water was removed from reaction mixture and the conversion of caprylic acid was calculated by the titration. The effects of various reaction parameters such as molar ratio of methanol to caprylic acid, reaction time and catalyst amount were investigated under the same reaction temperature of 67 °C. The 94 % conversion of caprylic acid was obtained at the reaction conditions of 9 % (w/w) catalyst amount and 9:1 molar ratio at 7 hours of reaction time.
Keywords: Esterification, Biodiesel, Caprylic acid, Purolite CT169DR

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➢ **POSTER PRESENTATION**

Vitrification based techniques in cryopreservation of *in-vitro* derived microcuttings of Myrobalan 29C rootstock

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Abstract
Cryopreservation is becoming a very important tool for long-term storage of plant germplasm, requiring a minimum of space and maintenance. With the increasing interest in genetic engineering of plants, the preservation of cultured cells and tissues with unique attributes is becoming more important. Among cryopreservation protocols vitrification based methods has become preferred techniques. In this study, Myrobalan 29C microcuttings (2-3 mm long) without leaves and with one axillary buds were excised from the in vitro-proliferated shoots and subjected to the vitrification, encapsulation- vitrification, droplet- vitrification and V-plate vitrification procedures. Microcuttings were cold hardened for 3 days at 4 °C and precultured on MS medium supplemented with 0.5 M sucrose. Following loading solution, naked and calcium alginate coated explants were subjected to PVS2 application for different durations (on vitrification for 20 and 40 min, encapsulation-vitrification for 60 min, droplet-vitrification for 30 min, V-plate vitrification for 30 min). They were immersed in liquid nitrogen for 60 minutes and then thawed in a water bath at 40 °C for 2 minutes. After rewarming of the explants they were cultured on MS medium. Among used tecniques encapsulation-vitrification was found to be more suitable for microcuttings of Myrobalan 29C cryopreservation, providing the highest survival rate (60%).
Key words: Cryopreservation, vitrification, V-plate, encapsulation

➢ **POSTER PRESENTATION**

Fibröz displazi: Olgu sunumu

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Özet

Kemik metabolizmasındaki bölgesel değişimlerden kaynaklanan fibröz displazilerin %70' inden sorumlu olan soliter (monostotik) formu, sıklıkla çeneleri tutan tiptir. Maksillada mandibulaya göre iki kat daha fazla görülen lezyonlar sıklıkla posteriorda izlenir. Bu bildirinin amacı mandibulada görülen bir fibröz displazi olgusunun klinik ve radyografik özelliklerini konik ışınlı bilgisayarlı tomografik (KIBT) görüntüleme bulgularıyla sunmaktır. 16 yaşında, erkek hasta diş çürüğü sebebiyle kliniğimize başvurmuştur. Sistemik bir hastalığı bulunmayan hastanın fizik muayenesinde alt çenede ekstraoral şişlik olduğu saptanmıştır. Klinik bulgular ve hastanın mevcut panoramik radyografının değerlendirilmesi sonucunda fibröz displazi ön tanısına varılan lezyonun detaylı incelenmesi için KIBT görüntüleme yapılmıştır. Ağrı veya uyuşukluk şikâyeti olmayan hastanın KIBT görüntüleri incelendiğinde, 34 ve 35 numaralı dişlerde yer değiştirmeye sebep olan ve orta hattan 36 numaralı dişin distaline kadar uzanan lezyon tespit edilmiştir. Kemikte şiddetli ekspansiyona sebep olan lezyonda karakteristik buzlu cam görüntüsü izlenmiştir. Hastanın ekstraoral şişlik dışında şikâyeti olmadığından lezyonun takibine karar verilmiştir. Fibröz displazi olgularının çoğunda klinik ve radyolojik özellikler tanı koymak için yeterlidir. Genç hastalarda cerrahi müdahale sebebiyle aşırı büyüme olabileceği için cerrahi planlanmadan önce dental radyoloji uzmanından konsültasyon istenmelidir.

Anahtar Kelimeler: Fibröz displazi, mandibula, konik ışınlı bilgisayarlı tomografik görüntüleme

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➢ **POSTER PRESENTATION**

Gemi Makine Dairesi Yangınlarının İncelenmesi, Tehlikelerin Tanımlanması ve Risk Değerlendirilmesi

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Özet

Gemilerde bulunan makine daireleri, içerisinde birçok sistem, cihaz ve makine barındıran, kapalı bölmelerden meydana gelmektedir. Makine daireleri, sürekli çalışan cihaz ve makineler sebebiyle yüksek oranda kaza ve yangın riski barındıran alanlardır. Bununla beraber oluşabilecek bir tehlike anında makine dairelerinin herhangi bir bölgesine erişim imkanı kısıtlıdır. Bu nedenle makine daireleri yangınlarının kontrol altına alınması veya söndürülmesi oldukça güçtür. Yangının başka yerlere de sıçrayabileceği ihtimali düşünüldüğünde, zamanında yapılacak ilk müdahale daha da önemlisi yangın oluşmadan önce tehlikeleri tanımlayarak kaynağında yok etmek son derece önemlidir. Makine dairesi yangınları geminin onarımı, yedeklenmesi, yükünün veya yolcunun planlanandan önce boşaltılması, seyirlerin iptal edilmesi gibi milyon dolarları bulan zararlara sebep olabilmektedir. Büyük maliyetlerin ve oluşabilecek can kayıplarının önüne geçebilmek için gemilerde özellikle de makine dairelerinde çalışacak tüm personelin icra edeceği hassas faaliyetlere yönelik risk analizleri yapılmalı ve analiz sonucuna göre ortaya çıkacak riski bertaraf etmek veya azaltmak maksadıyla gerekli önlemler alınmalıdır. Bu çalışmada gemilerin makine dairelerinde oluşabilecek yangınlar incelenmiş ve L- tipi matris yöntemine göre bir risk analiz uygulaması yapılmıştır. Yapılan uygulama sonucunda; en yüksek risk skorunun 25 ile makinelerin basınçlı yakıt devrelerinden sızan yakıtın sıcak yüzeylere teması olarak belirlenmişken, en düşük skorun ise 6 ile egzost devrelerine ait gereğinden fazla sıkılmış rekor/bağlantıları olduğu tespit edilmiştir. Yapılan risk analizi değerlendirildiğinde tehlikeli birçok hassas mahalden oluşan gemilerin, yangın çıkma olasılığının yüksek düzeyde olduğu makine dairelerinde oluşabilecek yangınların sebepleri konusunda çalışanların bilgilendirilmesi oldukça önemlidir.

Anahtar Kelimeler: Makine dairesi, yangın, tehlike, risk

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➢ **POSTER PRESENTATION**

Serratia marcescens'ten izole edilen prodigiosin pigmentinin alternatif doğal gıda boyası olarak antioksidan özelliğinin ve kolon kanserine karşı antikanser etkisinin araştırılması

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Özet

Kırmızı renkli prodigiosin pigmentini *Serratia marcescens* sekonder metabolit olarak durgun fazda üretmekte olup, bu pigmentin antibakteriyal ve antitümöral aktiviteye sahip olduğu bir çok araştırmada kanıtlanmıştır. Bu çalışmada gıdalarda bakteriyal kaynaklı, toksik olmayan aynı zamanda da antikanser etkiye sahip, doğal gıda renklendiricisi olarak kullanılabilecek bir pigment bulunması amaçlanmıştır. Çalışmada kullanılan prodigiosin pigmentini üreten *Serratia marcescens* MB703 suşu 16S rRNA ile tanımlanmış, Nütrient Broth'ta üretilen bakteri Nütrient Agar'a yayma ekim yöntemi ile ekilerek 5 gün 28^0C'de inkübe edilmiş, üretilen 1 gram örneği 20 ml etanolle çözerek pelleti renksizleşene kadar sonikatörle 10 dk homojenize edilmiştir. Sonrasında prodigiosin miktarı spektrofotometrede 535 nm'de 70,04 µg/ml ölçülmüş ve evaporatörde uçurularak pigment kısmi olarak saflaştırılmıştır. Elde edilen prodigiosin HT29 kolon kanseri hücresine uygulanarak MTT yöntemi ile toksisitesi ve antikanser etkisi, ELISA yöntemi ile de SOD, CAT ve GPx miktarları ölçülerek antioksidan aktivitesi araştırılmıştır. Farklı derişimlerde (10, 25, 50 ve 100 µM) uygulanan prodigiosin pigmenti HT29 kolon kanseri hücresinde %17 ile %48 ölüm oranı göterirken, SOD aktivitesi 13,5 ile 15,6 U/mL, CAT aktivitesi 13,2 ile 15,0 nmol/mL ve GPx aktivitesi 22,3 ile 25,6 nmol/mL olarak belirlenmiştir. Bu araştırmada elde edilen sonuçlara göre; kolon kanserine karşı antikanser etkiye sahip, düşük toksisiteye gösteren prodigiosin pigmentinin sentetik gıda renklendiricilerine alternatif olarak kullanımı önerilebilir.

Anahtar Kelimeler: Prodigiosin, HT29, renklendirici, antikanser

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➢ **POSTER PRESENTATION**

Effect of different extraction methods on the yield of steviol glycosides in *Stevia rebau*diana (Bertoni) Bertoni

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Abstract

Stevia rebaudiana (Bertoni) Bertoni is a member of the genus Stevia belongs to the family Asteraceae has worldwide importance today. It has economic importance because the plant contains sweet-tasting ent-kaurene diterpenoid glycosides, especially, stevioside and rebaudioside. Stevioside, an ent-kaurene diterpene diglycoside, is the most abundant sweet constituent of the leaves of species. In the first decade of the twentieth century stevioside was first isolated in impure form. Then in the 1970s, a second major sweet ent-kaurene diterpene glycoside rebaudioside A was isolated from *S. rebaudiana* leaves by the group of Professor Osamu Tanaka at the Hiroshima University in Japan. After that, dulcoside A, rebaudiosides B-E, and steviolbioside which are six further less abundant sweet-tasting glycosides were isolated from this species. Steviol glycosides, stevioside and rebaudioside A are approved as food additives in many countries throughout the world. So it is important to improve the yield of steviol glycosides extraction from Stevia leaves. Conventionally, solvent extraction, maceration (hot and cold), and hydro-distillation are used for the recovery of steviol glycosides in powdered form. But there are some limitations for these conventional extraction methods such as low efficiency, low yield, and higher consumption of solvents, energy, and time. Modern extraction techniques such as supercritical fluid extraction, pressurized hot water extraction(PHWE), ultrasonically assisted extraction (UAE) and microwave assisted extraction (MAE) have become more popular for bioactive compound extraction from botanicals than the conventional methods, because they give the high purity stevioside and rebaudioside-A. The disadvantages of these techniques are high cost and complex. In this study the literature review was done for compare the exraction methods. And it has seen that the most efficient extraction method was determined as different methods in different studies. In a study the microwave assisted extraction is gaining popularity because it allows faster extraction, reduced solvent, increases recovery, saves time and energy consumption in comparison to conventional methods of extraction. On the other hand in another study it was found that the extraction of flavoring using enzyme was significantly increased the product released from plant material and minimizing the uses of solvent and heat.

Keywords: Extraction, Rebaudioside A, Stevia, *Stevia rebaudiana* (Bertoni) Bertoni, Stevioside.

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➢ **POSTER PRESENTATION**

TREYLER SEKTÖRÜNDE KULLANILAN ST-52 MALZEMEDEN ÜRETİLMİŞ YAN GÜVENLİK BARİYER PROFİLİNE YÜZEY KAPLAMA YÖNTEMLERİNDEN GEOMET (GEOMET 321 GRADE B) VE ELEKTROLİTİK ZİRKONYUM KAPLAMANIN(Fe/Zn25/A) MALZEME KOROZYONUNA DAYANIMI AÇISINDAN İNCELENMESİ

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Özet
Treyler sektöründe güvenlik ekipmanı olarak kullanılan yan güvenlik bariyer profil imalatında, St 52 standartında 30*30*2 mm boyutlarında çelik malzeme kullanılmıştır. Yan güvenlik bariyer profillerinin yol koşullarında ve farklı iklimlerin etkisiyle korozyona maruz kalabileceği değerlendirilmiştir. Özellikle İtalya, İspanya gibi okyonus kıyısı ülkelerin müşterilerinden bu gibi şikayetler alındığı tespit edilmiştir. Güvenlik bariyer profilinin korozyon dayanımını arttırmak için iki farklı malzemeden birinin yüzeyine Geomet 321 Grade B , diğerinin yüzeyine ise Elektrolitik Zirkonyum Kaplama (Fe/Zn25/A) uygulaması yapılmıştır. Yapılan bu kaplama ile tuz, nem ve sıcaklık faktörlerinin profilde meydana getireceği korozyonun etkisinin minimuma indirilmesi hedeflenmiştir. Geomet 321 Grade B kaplama ile Elektrolitik Zirkonyum kaplamanın korozyon direnci mukayese edilmiştir.
Keywords: St52, Geomet, Elektrolitik Zirkonyum

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➢ **POSTER PRESENTATION**

İki Tabakalı Nişasta/Pla Filmlerinin Karakterizasyonu, Şişme (Su Alma) ve Çözünürlüklerinin İncelenmesi

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Özet

Nişasta bitkisel kaynaklı bitkilerin kök ve yumrularının ekstraksiyonu sonucu elde edilen, başlıca doğal bir karbonhidrat kaynağıdır. Bitkinin kaynağına bağlı olarak genellikle 1- 100 µm çapında olan ve birçok bitkinin dokularından oluşmaktadır. Kimyasal olarak, nişasta birbirine bağlı doğrusal α-D-(1–4) amiloz ile dallanmış α-D-(1–6) amilopektinden oluşmuş granül yapısına sahip bir polisakkarittir. Nişasta ve türevleri plastik, gıda ve medikal sanayinde, kozmetik ve ilaç sektörü gibi birçok alanda geniş kullanım alanı vardır. Nişasta farklı amilopektin içeriklerine göre A ve B tipi olarak bulunmaktadır. A tipi nişasta tahıllarda bulunurken, B tipi nişasta yumrulara ve amiloz bakımında zengin kaynaklarında bulunur. Nişasta bol, ucuz, biyobuzunur olmasına karşın, zayıf fiziksel özellikleri nedeniyle saf nişasta modifiye edilmelidir.

Umut verici biyopolimerlerden biri olan PLA, biyolojik olarak parçalanabilir ve yenilenebilir kaynaklar olan şeker hammaddesi, mısır, vb. maddelerin fermentasyonundan elde edilen laktik asitin monomerinin, kontrollü depolimerizasyonundan elde edilen polimerdir. Yüksek şeffaflık, iyi işlenebilirlik ve suda çözünürlük direnci ile geri dönüştürülebilir polimerdir.

Bu çalışma kapsamında, casting (dökme) yöntemiyle hazırlanan filmler karakterizasyonu (ATR-FTIR, XRD, TGA/DTA) yapılarak, şişme özellikleri ve çözünürlükleri testleri yapılmıştır. Bu test sonunda filmlerin su alma ve çözünürlüklerinin azaldığı görülmüştür.

Anahtar Kelimeler: Nişasta, Şişme, Çözünürlük, Casting (dökme) metot.

Teşekkürler: Bu çalışma Dicle Üniversitesi Bilimsel Araştırmalar Projeleri (DÜBAP) Koordinatörlüğü tarafından EZC.16.004 numaralı projesi ile desteklenmiştir.

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➢ **POSTER PRESENTATION**

The use of carob flour and stevia as sugar substitutes for cake production and enrichment with wheat germ

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Abstract
In production of cake, too much sugar is used in the formulation. The increasing consumption of sugar has resulted in several health problems such as obesity due to its high caloric value. Furthermore, there are increasing numbers of diabetic patients. Carob flour and stevia can be used as natural sugar substitutes in cake production. Stevia is a natural plant, about 300 times sweeter than sucrose and has zero calorific value. Also, nutritional values of cake can be increased by addition of wheat germ in the formulation of cake dough. Wheat germ contains several minerals, vitamins, unsaturated oil and health benefit components. In this study, carob flour and stevia were used instead of sugar which is one of the main ingredients in production of cakes. Also, wheat germ was used to enrich nutritional value~~s~~ of cake. Process variables are sugar concentration (0-25%), stevia concentration (0-2%) and carob flour concentration (0-30%) in constant amount of wheat flour. From these variables, 20 different cakes were produced. The best cake formulation was decided from volume index, symmetry index, uniformity index, sub shrinkage value, top shrinkage value and total volume index which were determined as 124 mm, 8 mm, 0 mm, 1 mm, 13 mm and 296 mm, respectively. Hardness, springiness, cohesiveness, gumminess, chewiness and resilience were determined as 1360 g force, 0.978 %, 0.403, 548 g force, 536 g force and 0.145%, respectively as textural properties. Color, taste, firmness and general evaluation were determined as 5.1, 4.5, 4.9 and 4.9 (1: minimum, 7: maximum), respectively as sensorial properties. Finally, to increase nutritional values of the best cake decided, the wheat germ was replaced with wheat flour in different amounts (0-10%) and 8 different cakes were produced. Among these cakes, the best cake formulation was decided from physical, textural and sensorial properties of the cakes.
Keywords: Cake, Sugar, Carob Flour, Stevia, Wheat Germ

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➢ **POSTER PRESENTATION**

Farklı Endüstriyel Kalıp ve İskele Sistemlerinin Tasarımı ve Uygulaması

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Özet
Betonarme yapıların imalat aşamasında kalıplanma işlemi yakın geçmişe kadar geleneksel yöntemlerle uygulanmaktaydı. Gelişen sanayi ve teknoloji ile gelişmiş ülkelerde artan talep ve işçilik ücretlerini dengelemek amacı ile ekonomik ve performanslı kalıp sistemleri geliştirilmiştir. Yüksek katlı yapıların ve köprülerin yapımının artması ile farklı tipte kalıp sistemlerine ihtiyaç oluşmuştur. Bu çalışmada, tırmanır ve köprü kalıp sistemleri ve bu sistemlere etkiyen yükler DIN (Deutches Institut Für Normung) normuna göre incelenmiştir. Ayrıca, tırmanır kalıp sistemlerinin DIN (Deutches Institut Für Normung) normuna ve farklı ankraj türlerine göre statik hesabı yapılmış ve sonuçlar değerlendirilmiştir.
Anahtar Sözcükler: Endüstriyel kalıp, tırmanır kalıp sistemleri, ankraj çeşitleri, köprü kalıbı sistemleri

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➢ **POSTER PRESENTATION**

A new algorithm to optimize the feedforward pre-controllers by nonrecursive filters

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Abstract
The paper presents a new algorithm to design an optimal feedforward pre-controller for stable single input, single output systems using constant delay digital systems. The system to be controlled which is modelled in discrete time domain is cascaded by the Nth order FIR system and the coefficients and the order of the FIR system are obtained by using a new optimization algorithm which works in both discrete time and frequency domain. The presented algorithm is applied to both magnitude characteristic and phase characteristics of the overall system. Since the coefficients of the system to be controlled and the coefficients of the pre-controller are taken as matrix wise, the optimization algorithm which uses only matrix inversion and multiplication gives faster result both in time and frequency domain comparing to the recursive algorithms. The presented algorithm is applied to the second order nonminimum phase system and several possible nonrecursive controller coefficients are obtained and compared. Although the presented method can be used for all stable or asymptotically stable single input and single output (SISO) systems, it can easily be modifies for multi input, multi output (MIMO) systems.
Keywords: pre controller, feedforward, SISO, nonrecursive, FIR

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➢ **POSTER PRESENTATION**

The morhology and histology of male reproductive system in *Leptoglossus occidentalis* (Heidemann, 1910) (Heteroptera: Coreidae)

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Abstract
Leptoglossus occidentalis (Heidemann, 1910) (Heteroptera: Coreidae), is an invasive alien species of North American origin. In Europe, it was first collected in Italy in 1999. From there, it quickly expanded its range to western and eastern Europe. *L. occidentalis* was recorded for the first time in Sariyer-Istanbul, Turkey in 2009. *L. occidentalis* is specialised to conifers. In order to combat with *L. occidentalis* which has biological and economic value both in the world and our country, therefore, in this study; the male reproductive system of *L. occidentalis* were described by light and scanning electron microscope (SEM**).** Adult *L. occidentalis* were collected in Ankara from September to November 2017. The male reproductive system of *L. occidentalis* consists of a pair of testes, a pair of vas deferens, a pair of seminal vesicles, a lot of accessory glands, a bulbus ejaculatorius, a ductus ejaculatorius. Each testis has seven of testicular follicles which are three different development zones (growth zone, maturation zone, differentiation zone). The spermatocytes were observed in the growth zone. Growth zone follows maturation zone and at this stage spermatids form. In the differantion zone, the spermatids turned to the marked spermatozoa with head and tail parts. The testes surrounded by a red peritoneal sheath and attached to the white seminal vesicle via a pair of white vas deferens. The vas deferens and seminal vesicle are surrounded by a monolayer epithelium and in the lumen, sperm tails have been distinguished in bulk. At the end of the seminal vesicles were found accessory glands. They have single-layered cylindrical epithelium.
Keywords: Reproductive, histology, morphology, spermatogenesis, light microscope, SEM.

➢ **POSTER PRESENTATION**

Bitki Büyüme Düzenleyicilerinin 5BB anacı ile Cabernet Sauvignon Çeşidinin Köklenmesi ve Gelişmesi Üzerine Etkisi

Hatice Kiraz, Zeliha Gökbayrak*, Hakan Engin

Bu çalışmada Amerikan asma anacı 5BB ve şaraplık üzüm çeşidi Cabernet Sauvignon (CS)'un köklenmesi üzerine indol-3-asetik asit (IAA) ve melatonin (MEL) hormonlarının etkileri araştırılmıştır. Araştırmada 0, 1000, 2000 ve 4000 ppm IAA ve 0, 0.1, 0.5 ve 1 µM MEL konsantrasyonları kullanılmıştır. İklimlendirme odasında gelişimleri sağlanmış olan çeliklerin köklenme, sürme ve sağlıklı bitki oranları ile kök gelişimi (kök sayısı, en uzun kök uzunluğu, kök gelişim skalası, yaş kök ağırlığı, kuru kök ağırlığı, kuru kök oranı) ve sürgün gelişimi (primer sürgün uzunluğu, boğum sayısı, sürgün sayısı, koltuk sürgünü sayısı) değerlendirilmiştir. Uygulamaların 5BB anacında incelenen özellikler üzerine etkisi önemli bulunmamakla birlikte 4000 ppm IAA ile 0.1 ve 0.5 µM MEL uygulamalarıyla %100 köklenme elde edilmiştir. En düşük köklenme %93,3 oranıyla 1000 ppm IAA ile sağlanmıştır. Vejetatif gelişme ile birlikte değerlendirildiğinde ise IAA uygulamalarının genel olarak MEL uygulamalarına göre daha iyi sonuçlar verdiği görülmüştür. CS çeliklerinde uygulamaların köklü, süren ve sağlıklı bitki oranları üzerine önemli etkileri bulunmamış, ancak genel olarak IAA uygulamalarının MEL uygulamalarına göre daha yüksek köklü ve sağlıklı bitki oranlarını verdiği tespit edilmiştir. Kök sayısı, en uzun kök uzunluğu ve primer sürgün uzunluğu ile boğum sayısı üzerine uygulamaların etkisi önemli bulunmuştur. Köklenmede yaygın ve etkili kullanılan oksin grubu hormonu olan IAA ile benzer yapı ve ortak biyosentez yoluna sahip MEL kullanımının kök gelişiminde bazı özelliklerin teşvik edilmesinde rol aldığı, yapılacak kapsamlı çalışmalar ile etkisinin daha iyi anlaşılabileceği ve yeni nesil hormon olarak yetiştiricilikte farklı etkilerinin de tespit edilmesinin gerekliliği anlaşılmıştır.

Anahtar Kelimeler: Melatonin, IAA, Asma, Anaç, Köklenme

Not: Bu çalışma ilk yazar tarafından ikinci yazarın danışmanlığında yürütülen yüksek lisans tez çalışmasından üretilmiştir.

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➢ **POSTER PRESENTATION**

Investigating pelleting possibilities of tea residues produced from tea production

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Abstract

This study investigates the pelleting possibilities of tea residues produced from tea production every year in our country. Tests were done with 4 different particle sizes ranging from 3 to 5, 8 and 10 mm at 10%≥ (M10) moisture content. Some thermal properties like flue gases, lower heating value and ash content values determined. The effect of particle size on ash content, heating value and flue gases was found to be statistically significant. Regarding all the results the pellets produced from tea residues was found very suitable both environmentally and energetically.

Key Words: Renewable energy, agricultural residue, tea, pellet, biofuel, energy

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➢ **POSTER PRESENTATION**

Synthesis of new compounds incorporated indole moiety

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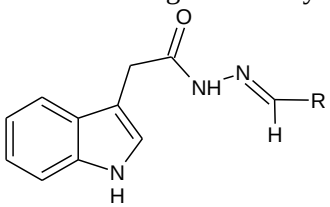
Özet

Compounds that have an indole and hydrazide-hydrazone structure showed various biyological activity such as antiviral(1), antitumoral(2), antioxidant(3), antibacteriyal(4) and there has been a lot of research about this group compounds. In view of literatüre data, new *N*'-(substitutedbenzylidene)-2-(1*H*-indole-3-yl)acetohydrazide derivatives (A) have been synthesized, characterized by spectral data(IR, ^{1}H-NMR) and elemental analyses. Structures proposed confirmed by spectral data. Biological activity studies of this compounds are continuous.



(A)

Anahtar Kelimeler: Indole, hydrazide-hydrazone, biological activity.

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➢ **POSTER PRESENTATION**

The some aphrophorid spittlebugs of East Anatolia (Hemiptera: Cercopoidea: Aphrophoridae)

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Abstract
The study was carried out to determine Aphrophoridae species in East Anatolia in 2018. Five species were collected by sweeping net on herbs. The collected specimens were identified as: *Aphrophora salicina* (Goeze, 1778), *Lepyronia coleoptrata* (Linnaeus, 1758), *Paraphilaenus notatus* (Mulsant & Rey, 1855), *Philaenus spumarius* (Linnaeus, 1758), *Neophilaenus campestris* (Fallén, 1805). The species *P. spumarius* and *L. coleoptrata* were the most abundant species and the others were rather rare. The species of family Aphrophoridae are xylem feeders so they are considered as candidates for transmitting bacteria *Xylella fastidiosa*. Therefore the role of the identified species in the agricultural ecosystems in the collecting sites needs to be studied.

Key words: Aphrophoridae, Fauna, East Anatolia

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➢ **POSTER PRESENTATION**

İstanbul'da Satışa Sunulan Soğuk Pres Yağların Bazı Fizikokimyasal Özellikleri

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Özet
Bitkisel yağlar, yüksek besleyici özellikleri ile insan beslenmesinde büyük öneme sahiptir.Ancak bitkisel yağların proses işlem basamakları biyoaktif bileşenlerini direkt etkilemektedir.Bu nedenle son zamanlarda soğuk pres yöntemi ile üretilen,özellikle değerli yağlar oldukça talep görmektedir. Bu yağların elde edildiği hammaddenin, depolamanın, üretim prosesinin doğru ve güvenilir olması gerekmektedir.. Ancak, aktarlarda soğuk pres yağ adı altında satılan yağların ne kadar güvenilir olduğu tartışma konusudur.
Bu çalışmada özellikle destekleyici gıda takviyesi olarak en çok tüketilen ve aktarlarda soğuk pres adı altında satışa sunulan yağların kalite ve karakteristik özelliklerinin incelenerek güvenirliliği ile ilgili bilgi edinmek amaçlanmıştır. Çalışmamızda İstanbul piyasasında satışa sunulan altı marka,dört çeşit (çörek otu, ruşeym, üzüm çekirdeği ve kayısı çekirdeği), toplam 24 adet yağ mataryel olarak kullanıldı.Söz konusu yağların kalite özelliklerinden % serbest yağ asitliği (FFA) ve peroksit değerleri (PV); karakteristik özelliklerinden ise yağ asitleri kompozisyonları ve iyot sayıları incelendi. FFA ve PV analizleri için klasik volumetrik yöntem, yağ asitleri bileşimi için GC-FID' de yağ asitleri metil esterleri (FAME) analizi kullanılmış olup iyot sayıları ise buradan hesaplanmıştır. Analiz sonuçlarına göre yağların ortalama FFA değerleri, çörek otunda %8,1, ruşeymde %1,43, üzüm çekirdeğinde %1,90 ve kayısı çekirdeğinde %4,31'dir. Yağlarda ortalama PV (meq O_2/kg yağ) ise, çörek otunda 24,30, ruşeymde 21,42, üzüm çekirdeğinde 12,39 ve kayısı çekirdeğinde 26,23'tür. Toplam (Σ) % SFA, MUFA, PUFA değerleri sırasıyla, çörek otunda toplam % 7,14-11,42, % 16,43-42,78, % 29,09-48,81; ruşeymde % 6,83-11,35, % 22,64-51,87, % 22,27-54,87; üzüm çekirdeğinde % 6,89-11,86, % 22,68-41,82, % 30,76-44,27; kayısı çekirdeğinde % 5,62-10,29, % 22,58-59,24, % 21,15-43,93 aralıklarında değiştiği tespit edilmiştir. Ortalama iyot sayıları (g I_2/ 100 g yağ) ise, çörek otunda 95,17, ruşeymde 97,58, üzüm çekirdeğinde 99 ve kayısı çekirdeğinde 92,62'dir.
Anahtar Kelimeler: Soğuk pres yağlar, FFA, PV, yağ asitleri kompozisyonu, iyot sayısı

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➢ **POSTER PRESENTATION**

Evaluating transverse stiffener distances on beam bu using finite element simulations

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Abstract
This research conducted involves computer simulations of twelve beams having transverse stiffeners welded to the web and flanges. Beam cross-sections in the study were selected as IPE (140,160,200), and all the material was taken as S235 structural steel. Spacing between transverse stiffeners were chosen according to AISC Specification (a/d ratio) as 1, 2, 2.5 and 3. Simulations have been defined using ABAQUS FE software. The twelve-beam models have been analyzed to demonstrate the effectiveness of spacing between stiffeners on stress, deflection and fatigue behavior of the beams. The results that were obtained from simulations and hand calculations have been compared.
Keywords: steel,fatigue, stiffeners

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➢ **POSTER PRESENTATION**

Ovaryum kanserli yumurta tavuklarında kurkuminin H-Ras gen ekspresiyonu üzerine etkisi

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Özet

Ovaryum kanseri, beş yıl hayatta kalma oranı %30'dan az olan en ölümcül jinekolojik kanser türüdür. Tümör oluşumunun moleküler mekanizmasındaki dönüşüm ve ilerlemelerdeki değişikliklerin doğru belirlenmesinin yanı sıra, etkili kemopreventif ve terapötik stratejilerin, kanser insidansını ve hastalık oluşum oranını düşürmesi açısından acilen ortaya konulması gerekmektedir. Zerdeçal ürünlerinde bulunan bir polifenolik bileşik olan kurkuminin, *in vitro* ovaryum kanser modellerinde anti proliferatif ve antitümor etkinliği ortaya konulmuştur. Bu çalışmada, spontan ovaryum kanser oluşumu ve gelişiminde en uygun model olan tavuk modelinde ovaryum kanser insidans oranının azaltılması üzerine kurkuminin etkisi araştırılmıştır. Çalışmada 104 haftalık toplam 270 yumurta tavuğu kullanılması ve her birinde grupta 90 hayvan bulunnak üzere, çalışma kpsamına alınan hayvanlar, 3 deneme grubuna ayrılmıştır. Kontrol grubundaki tavuklar sadece bazal rasyon, diğer gruplartai tavuklar ise bazal rasyona 200 mg veya 400 mg kurkumin/ kg ilave edilecek rasyonlarla beslenmiştir. Daha sonra, deney ve kontrol grubu hayvanlardan, kan numunesi alınarak DNA izolasyonu gerçekleştirilmiş ve bu DNA örnekleirnde H ras gen eskpresyon düzeyleri tespit edilmiştir. Bu tespitlerde PCR ve sekans analizleri yöntemleri kullanılmış ve H-ras gen mutasyonları için, alel frekansları, ki kare (x^2) testi , genotip frekansları Hardly- Equilibrium testi uygulanmıştır. Gen değişim oranlarının hesaplanmasında ise odd-ratio testi kullanılmıştır. Tavuklarda H-RAS geni ,kod 12 bölgesi de içine alınacak şekilde dizi analizi ile taranmıştır. Bu bölgede tanımlanmış olan c.-23C>T (rs315505027 SNP) ve c.105A>C (rs316850941 SNP) değişimleri bulunmamıştır. Ama takip eden intronda; IVS 1+20 da C>T, de IVS 1+147 G>T ve de IVS 1+159 T>C değişikliklerine örneklerin birçoğunda homozigot olarak rastlanılmış ($p<0.001$), az bir kısmında ise heterozigot olarak da tespit edilmiştir

Anahtar Kelimeler: Ovaryum kanser, kurkumin, NF-κB, Nrf2, MDA

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➢ **POSTER PRESENTATION**

Breast Cancer Treatment and New Drug Molecules Searched In Therapy

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Abstract

Breast cancer is one of the most common types of cancer in the world and Turkey, and is located at the top among death rates developing due to cancer. Although the incidence of breast cancer continues to increase slowly, deaths due to breast cancer have gradually decreased in the last two decades. This effect includes recent improvements in chemotherapy agents, drugs that are effective at hormone receptors, and a major contribution to targeted drugs.

The purpose of breast cancer chemotherapy is to prolong life span, to control symptoms and to improve quality of life. For this purpose, multiagent chemotherapies are widely used in the treatment of breast cancer. Nowadays, selective drugs with high selectivity for hormone receptors are developed and the negative effect of estrogen and progesterone is suppressed with fewer side effects. Especially targeted therapies have prolonged survival in early and metastatic breast cancer. Studies of monoclonal antibodies and drug molecules acting on growth factors are of great importance at this stage. At the same time, recent findings have also shown that the addition of the monoclonal antibody trastuzumab to adjuvant treatment of HER-2 positive patients further increases the chances of success.

Our study used clinical treatment in recent years and ongoing work on effective new anticancer drugs focuses on the goal of treatment.

Keywords: breast cancer, chemotherapy, targeted treatments, anticancer drugs, monoclonal antibody

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➢ **POSTER PRESENTATION**

Evaluation of histamine presence in foods

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Abstract

Biogenic amines in foods are related to food quality and safety. The concentrations of biogenic amines in many foods are used as an indicator of food spoilage. Histamine is one of the most common and toxic biogenic amines. Histamine is mainly produced by bacterial decarboxylation of histidine in foods. Fresh and properly stored or processed foods have low histamine contents. The concentration of histamine in food products *can* increase during inappropriate *food processing* and *storage* conditions. Thus, high levels of histamine can be found in some foods such as fish, fish products and fermented foods (e.g. meat, vegetables, dairy, beers, and wines). High histamine concentrations in foods and beverages are considered a serious health risk. Some fish and cheeses are the foods most commonly associated with histamine poisoning. Histamine may cause symptoms such as urticaria, eczema, diarrhea, and bronchospasm. Some *countries have* established limits for histamine in certain foods. As a result, the presence of histamine in foods has a great impact on food quality, food safety and human health. Therefore, it is important to monitor the levels of histamine in foods.

Keywords: Biogenic amine, Food quality, Histamine

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➢ **POSTER PRESENTATION**

Pekmez kalite kriterleri

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Özet
Türkiye'ye özgü, geleneksel bir gıda olan pekmez, taze veya kuru meyvelerden elde edilen şıraların, tekniğine uygun olarak asitliğinin giderilmesi ve evaporasyon yöntemiyle suda çözünür kuru madde oranının arttırılarak dayanıklı hale getirilmesi prensibiyle üretilmektedir. Üretildiği bölgeye ve hammaddeye göre değişim gösteren teknikler kullanılmakta ve ona göre isimlendirilebilmektedir. Pekmez üretimi sırasında birçok kriter ele alınmaktadır. Değerlendirilen kalite kriterleri ışığında, üretim sürecinde uygulanan işlemler hakkında bilgi edinilebilmekte ve son ürünün, tüketime uygunluğuna karar verilebilmektedir. Pekmez üretim aşamaları genel olarak, yıkama-ayıklama, daneleme-ezme, (kuru hammadde ise) ekstraksiyon, (yaş hammadde ise) presleme, asitliğin düzenlenmesi (geleneksel tanımı ile pekmez toprağı ilavesi), ısıtma, durultma, filtrasyon, evaporasyon, pastörizasyon ve ambalajlama işlemlerinden oluşmaktadır. Pekmez, beslenme açısından değerlendirildiğinde, hammaddeye bağlı olarak içerdiği, karbonhidratlar, mineraller, organik asitler, aminoasitler, fenolik bileşikler açısından oldukça değerli bir üründür. Pekmez kalite kriterleri dört ana başlık altında toplanabilmektedir; duyusal özellikler, reolojik özellikler, kimyasal özellikler, mikrobiyolojik özellikler. Duyusal özellikler, tat, koku, koku, görünüş ile ilgili iken, reolojik özellikler viskozite, kıvam hakkında bilgi vermekte, kimyasal özellikler ise, asitlik, pH, suda çözünür kuru madde (briks), HMF (Hidroksimetilfurfural) şeker profili, kül, HCL'de çözünmeyen kül, formol sayısı, mineral madde, organik asit dağılımı, fenolik bileşik dağılımı gibi birçok kriteri içermektedir. Mikrobiyolojik özellikler ise; toplam mezofilik aerobik bakteri, toplam maya, toplam küf, ozmofilik maya, Escherischia coli gibi mikroorganizmalar ile OTA gibi mikotoksinleri kapsamaktadır. Bahsedilen tüm kalite kriterleri bir bütün olarak ele alındığında; pekmez ürününün, hammadde çeşidinin belirlenmesi, üretim ve depolama şartlarının değerlendirilmesi ve son üründe hile yapılıp yapılmadığının tespiti mümkün olmaktadır.
Anahtar Kelimeler: Pekmez, geleneksel gıda, kalite

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➢ **POSTER PRESENTATION**

Salisilik asidin köfteler üzerindeki antimikrobiyal etkisinin değerlendirilmesi

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Özet

Et insan gelişimi ve büyümesi için vazgeçilmez bir hayvansal protein kaynağı olarak değerlendirilmektedir. Et genellikle demir, selenyum, çinko ve vitamin B12 gibi mikro besin elementlerinin yanında özellikle yüksek değerlikli proteinler olmak üzere çeşitli besin elementlerini içermektedir. Et kompleks bir ekosistem olup kimyasal ve fiziksel yapısı çok çeşitli ve fazla sayıda organizmanın gelişmesi ve kolonizasyonuna izin vermektedir. Bu nedenle, etin raf ömrü kesinlikle başlangıçtaki bakteri sayısı, tipi ve muhafaza, sıcaklık, pH ve gaz atmosferi gibi çeşitli koşullara bağlı olmaktadır. Mikroorganizmaların metabolizmasına bağlı olarak bozulmanın belirtileri de genellikle koku, tat ve renk bozukluğu ile ortaya çıkmaktadır. Antioksidanlar ve koruyucular genellikle gıdalara raf ömrünü uzatmak veya ürünü geliştirmek amacıyla tek başına veya kombinasyon halinde eklenmektedir. Salisilik asit uygulaması bazı gıdalarda bozulmayı engellediği gibi aynı zamanda insan sağlığına olumlu etkileri de bulunmabilmektedir. Salisilik asitin koroner kalp hastalıklarına karşı profilaktik etkisi yanında, kolon kanseri ve gebeliğe bağlı preeklampsinin önlenmesinde de etkili olduğu belirtilmektedir. Bu çalışmada, köftelerin mikrobiyel yükü üzerine salisilik asidin etkileri araştırılmıştır. Bu amaçla Plate Count Agarda toplam mezofil bakteri sayısı ve toplam psikrofil bakteri sayısı, Reinforced Clostridial Agarda toplam anaerobik bakteri ve Violet Red Bile Agarda toplam koliform bakteri sayıları klasik kültür yöntemi ile araştırılmıştır. Kontrol grubunda bozulma sınırı olarak kabul edilen 7 log kob/g düzeyine kadar analizler günlük olarak yapılmıştır. Sonuç olarak, salisilik asit içeren grupların genel olarak kontrol grubuna göre yaklaşık 2 logaritmik daha düşük bakteri yüküne sahip olduğu ve salisilik asit uygulamasının köftelerin mikrobiyolojik kalitesi üzerinde olumlu bir etkisi olduğu görülmüştür.

Anahtar Kelimeler: Gıda güvenliği, Köfte, Mikrobiyolojik kalite, Salisilik asit

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➢ **POSTER PRESENTATION**

Gıdalarda melamin kontaminasyonu

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Özet

Melamin (1,3,5-triazine-2,4,6-triamine, veya C3H6N6, CAS numarası 108-78-1) sentetik bir kimyasal olup gıda ambalaj materyali ve taşıyıcı olarak kullanılmaktadır ve bu yolla gıda ile temas etmektedir. Melamin içeren ambalaj materyali ile temas sonucunda gıda maddelerine melamin kalıntısı geçebilmektedir. Melaminin gıda veya yem katkı maddesi olarak kullanılmasına izin verilmemektedir. Buna karşın, hile amacıyla gıda maddelerine ham protein oranını artırmak için katılmaktadır. Melamin atıştırmalıklar, süt ürünleri, yumurtalar, şekerleme ürünleri, balık ve bazı işlenmiş gıdalarda bulunabilmektedir. Sindirim yoluyla alınan melamin gastrointestinal yoldan hızla absorbe edilmekte ve metabolize edilmeden idrar ile atılmaktadır. Melaminin sağlık üzerine çeşitli yan etkileri bulunmaktadır. Hayvanlarda ağız yoluyla alınması sindirim sistemini etkilemektedir ve mide bulantısı, kusma ve ishal gibi semptomlara neden olabilmektedir. Düşük oranda oral akut toksisiteye sahip olmasına ragmen, yüksek konsantrasyonlarda kronik alımı renal patolojiye neden olabilmektedir. Melaminin toksik etkisi maruziyet oranı ile ilişkilidir. Başlıca toksikolojik etkileri boşaltım organlarında görülmektedir. Doza bağlı en sık görülen semptomlar idrar kesesinde taş oluşumu ve hiperplazidir. Hayvan deneylerinde kronik böbrek hastalığı ve akut böbrek hastalığına neden olabileceği belirtilmektedir. Hayvanlarda melamin ile ilişkili akut böbrek hastalığı semptomları distal tubuler hücrelerde nekroz ve enflamasyondur. Kronik toksisite de ise daha büyük kristaller, intersitisyal enflamasyon ve fibrosis görülebilmektedir. Dünya Sağlık Örgütü melamini grup 3 karsinojenik riskli olarak sınıflandırmıştır. Birçok ülke insan sağlığını korumak ve gıda güvenliğini sağlamak amacıyla çeşitli gıda maddelerinde melamin için maksimum kalıntı limitleri belirlemiştir. Türk Gıda Kodeksine göre melamin düzeyi bebek formülleri ve devam formüllerinin toz halde olanlarında 1 mg/kg, bebek formülleri ve devam formülleri hariç gıdalarda ise 2.5 mg/kg düzeyini geçmemelidir. Sonuç olarak, önemli bir kontaminant olan melaminin gıdalardaki miktarlarının analitik olarak kontrolü önem taşımaktadır.

Anahtar Kelimeler: Gıda, Gıda güvenliği, Kontaminant, Melamin

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➢ **POSTER PRESENTATION**

Management of dental trauma in a girl with poor oral health and mental retardation

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Özet

Trauma to the face and mouth occur more frequently in people who have *mental retardation*. The ideal treatment with special needs is frequently the most conservative option offering to meet with functional and esthetic requirements. A 16 year-old girl with poor oral health and mental retardation reffered to clinic. The clinical and radiographic examination revealed that she had severe dental caries with periapical lesions in upper and lower anterior teeth. Also, her parents were reported chronically dental trauma to anterior teeth caused by frequent fall. The patient' teeth were treated with gutta percha-canal paste and teeth were restored with composite resin. The teeth were asymptomatic and oral hygiene steps were reminded to parents. The individuals with special needs living at home may have had more trauma as the otherwise healthy children. Because dental access is limited for those with special needs, it is essential to start good oral hygiene habits at home.

Key words: dental trauma, mental retardation, root-canal treatment

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➢ **POSTER PRESENTATION**

Fermente gıdalarda biyojen aminlere genel bir bakış

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Özet

Biyojen aminler düşük molekül ağırlıklı, biyolojik aktiviteye sahip azotlu organik bazlardır. Gıdalarda bulunan en önemli biyojen aminler histamin, tiramin, putresin, kadaverin ve feniletilamindir. Biyojen aminler, gıdalardaki bazı amino asitlerin mikrobiyel dekarboksilasyonu sonucunda oluşmaktadır ve konsantrasyonları gıdalardaki mikrobiyolojik kirlenme seviyesinin bir göstergesi olarak düşünülmektedir. Taze gıdalarda biyojen aminler düşük miktarlardadır veya hiç bulunmamaktadır. Biyojen aminlerin üretimi maya, Gram-negatif ve Gram-pozitif bakteriler ile ilgilidir. Fermente gıdalarda, Gram-negatif bakteriler genellikle fermantasyon süreciyle inhibe olmaktadır, Gram-pozitif bakteriler ve özellikle laktik asit bakterileri biyojen aminlerin üretiminden sorumludurlar. Aslında, biyojen aminleri üreten laktik asit bakterileri fermente gıdaların normal mikrobiyotalarıdır ve aynı zamanda başlangıç veya yardımcı kültürlerin bir parçası olabilirler. Et, süt ürünleri, bazı sebzeler, biralar ve şaraplar gibi fermente edilmiş gıda maddeleri yüksek düzeylerde biyojen amin içerebilmektedirler. Bu nedenle, fermente gıdalar ve içecekler, tüketici sağlığı için tehlikeli olan biyojen aminleri yüksek konsantrasyonlarda içerebilmektedir. Bu ürünlerde biyojen aminlerin birikmesini destekleyen birçok faktör bulunmaktadır. Fermente gıdalarda oluşan biyojen aminlerin miktarının ve türlerinin gıda bileşimi, mikrobiyel flora ve gıda işleme ve depolama sırasında bakteriyel büyüme için elverişli koşul sağlayan diğer faktörlerden etkilendiği bilinmektedir. Gıdalarda biyojen amin üretimi için prekürsörler yani amino asitlerin varlığı, aminoasitlerin dekarboksilazlarını sentezleyen bakterilerin varlığı ve onların büyüme ve dekarboksilasyon aktivitesi için elverişli koşulların bulunması gerekmektedir. Genel olarak, fermente gıdalarda en yüksek dekarboksilaz aktivitesi olan bakterilerden biri laktik asit bakterileridir. Fermente gıda işleme ve dağıtım aşamalarında biyojen amin oluşumunu potansiyel olarak arttıran etkilerden kaçınmak veya en aza indirmek için işlem basamaklarının dengelenmesi veya ayarlanması önemli olup starter kültürlerin baskın kültür olması sağlanmalıdır. Sonuç olarak, gıdalarda kaliteli hammadde kullanımı, uygun gıda işleme ve depolama koşulları ile biyojen amin oluşumunun engellenmesi veya en aza indirilmesi gıda endüstrisi için önem taşımaktadır.

Anahtar Kelimeler: Biyojen amin, Fermente gıda, Laktik asit bakterileri

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➢ **POSTER PRESENTATION**

Mathematical Modelling of Spray Freeze Drying Method Used for Inhaled Drug Production

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Abstract

For inhalation drug delivery, powder formulations offer the benefits of increased bioavailability for poorly soluble drugs, improved biochemical stability for biologics, and expanded options of using various drugs and their combinations. The pulmonary delivery of biopharmaceuticals requires to produce particles with the optimal properties for deep lung deposition without violating active ingredient of molecules. There are several ways such as milling (vibration milling, ball milling, and jet milling), controlled solvent crystallization, supercritical fluid processing, liquid dispersion systems, spray drying and spray freeze drying to obtain inhalation powder drug for pulmonary delivery. The overall efficiency of the inhalation powder drugs depends on the amount of fine particles delivered to lung and lung bioavailability. The size, morphology and aerodynamics behavior of the particles play an important role on the efficiency of inhalation process. Incorporating desirable attributes, such as narrow size distribution, enhanced protein stability, improved dispersability, sustainable release, or enhanced targeting into the particles are the main challenge to prepare inhalable powder drugs for pulmonary drug delivery.

Spray freeze drying combines the best features of both spray and freze drying to produce high quality and spherical porous particles in a wide range of sizes, especially for pharmaceutical and bio-chemical uses. The spray freeze drying is becoming more popular process for producing relatively large porous microparticles which are ideal for pulmonary drug delivery, processing of low water soluble drugs, producing of powders for epidermal immunization. Spray freeze drying technique can also increase the solubility of the low water soluble drugs by reducing the size of the drug particles. The spray freeze dried powder with smaller particle size and higher surface area results from porous structure of particles which have better wettability and faster dissolution rates in aqueous medium.

In this study, in order to simulate the spray freeze drying process a COMSOL multiphysics model is built using distributed sublimation front approach and fixed grid meshing. The model is tested numerically in multi-dimensions using 3D model. In the model solution, different heating methods like surface radiation, surface conduction and surface convection are used. The involved critical parameters are discussed comprehensively in the results such as the maximum operating temperature, the maximum sublimation pressure, and total drying time. The results show that drying temperature and chamber pressure are key parameters to reduce the drying time and experimental effort to obtain the spray freeze dried inhaled drug particles.

Keywords: inhalation, inhaled drug, spray freeze drying, comsol multiphysics, 3D model

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➢ **POSTER PRESENTATION**

Taraxacum Officinale Ekstresi Kullanılarak Gümüş Nanopartiküllerin Yeşil Sentezi ve Gıda Patojenlerine Karşı Antibakteriyel Etkisi

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Özet

Gelişen teknolojiyle beraber nanopartikül bazlı antimikrobiyallerin kullanımı, sağladığı avantajlardan dolayı halihazırda kullanımdaki antimikrobiyal ajanlara göre tercih edilmeye başlanmıştır. Bu çalışma, gümüş nanopartiküllerin (AgNP) sentezi için *Taraxacum officinale*'in kullanımını ve elde edilen nanopartiküllerin gıda patojenleri üzerindeki etkinliğini araştırmaktadır. AgNP'ler; *E. faecalis ATCC 29212 , S. typhimurium, E. coli O157:H7* ve *Listeria monocytogenes* gibi önemli gıda patojenlerine karşı antibakteriyel aktivite açısından değerlendirildi. Bitki bazlı elde edilen AgNP'lerin morfolojisi, boyutu ve yapısı UV-görünür spektroskopi ve X-ışını kırınımı (XRD) kullanılarak karakterize edilmiştir. Fourier dönüşümü kızılötesi spektroskopisi (FT-IR), NP'lerin sentezi sırasında yer alan fitokimyasalların varlığını gösterdi. Taramalı elektron mikroskobu (TEM) analizi ile ortalama parçacık boyutu yaklaşık 25 nm olan 10 ila 55 nm arasında değişmektedir. Taraxacum-AgNP'ler (30mg/mL konsantrasyonunda gıda patojenleri üzerinde *E. faecalis ATCC 29212 (15±0,4 mm), S. typhimurium (*13.0 ± 0,22 mm), *E. coli O157:H7 (18± 0,32)* ve *Listeria monocytogenes (21±0,6)* önemli bir antibakteriyel aktivite göstermiştir. Sentezlenen AgNP'ler, ticari AgNP'lere kıyasla daha yüksek antibakteriyel aktiviteye sahip olduğu gözlendi. Genel olarak, *Taraxacum officinale* aracılı AgNPs sentezi, ucuz ve çevre dostu bir yapıya sahip etkili antimikrobiyal ilaçları geliştirmek için kullanılabilir.

Anahtar Kelimeler: *Taraxacum officinale,* gümüş nanopartiküller, gıda patojenleri

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➢ **POSTER PRESENTATION**

Otobüs Sefer Çizelgesinin Hedef Programlama Yöntemi İle En İyilenmesi

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Özet

Kent içi toplu ulaşım sistemlerinde sefer sıklıklarının belirlenmesi, sefer sayılarının tespiti ve bu seferlerin hangi zaman dilimlerinde gerçekleşmesi gerektiği toplu taşımanın en önemli araştırma konularındandır. Bu noktada sefer sayıları ve sefer sıklıkları tüm sistemi önemli ölçüde etkilemekte ve bu sayılar sistemin bulunduğu ulaşım ağında yaşayan her canlıya etki etmektedir.

Sürdürülebilir bir toplu taşıma ve ulaşım sistemi için günlük sefer sıklıkları yüksek önem arz etmekte özellikle gün içerisinde zirve saatlerde yapılması gereken seferlerin yolcu taleplerine göre hesaplanması gerekmektedir. Bu calismada Denizli kentindeki otobus isletmesinin gunluk seferleri incelenmis ve sefer sikliklarinin mevcut sartlar ve kisitlar altinda en iyilenmesi icin calisma gerceklestirilmistir. Calismada oncelikle secilen konu hakkinda temel bilgiler ve literatur arastirmasi ozetlenmis, daha sonra incelenen mevcut sistem hakkinda bilgiler verilerek, isletmeye dair bazi temel istatistik analizler sunulmus ve onerilen model tanitilmistir. Calisma kapsaminda gelistirilen modelde doğrusal hedef programlama yontemi kullanilmistir. Bu yontem yardimiyla incelenen otobus hatlarinin sefer sayıları isletmeden elde edilen verilere göre yeniden tespit edilmiştir. Mevcut sisteme ait sefer sayilari, onerilen yaklasim ile elde edilen sefer sayilari ile karsilastirilmis ve sonuclar yorumlanmistir. Ayrica onerilen yontem ile elde edilen sonuclar, farkli toplumsal fayda oranlari dikkate alinarak yapilan bir maliyet analizi ile desteklenmistir. Bu noktada önerilen yeni sefer sayıları ile önemli ölçüde ekonomik ve çevresel iyileme sağlanabileceği düşünülmektedir.

Anahtar Kelimeler: Toplu Ulaşım, Hedef Programlama Modeli, Sosyal Fayda, Sefer Sıklığı, Otobüs

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➢ **POSTER PRESENTATION**

Importance Of Toxicology

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Abstract

Many chemical substances, which are produced as industrial, medicinal, cosmetic and food additives every year, facilitate human life and increase its chemical burden. Aphrodisiacs materials may cause more or less toxic effects. This situation increases the importance of toxicology day by day.

These chemical substances; Knowing their effects, besides limiting their entry into the circulation. Inspecting this, accordingly, avoiding exposure at toxic level will reduce the risk of toxic effects of the substances. The purpose of this compilation study, reveal toxic effects due to various factors do scientific research to increase information on toxic effects risk by investigating the potential toxic effects of chemical agents in the environment assess the harmful effects of chemical substances and other toxins to prevent and control.

Toxicology is the science that interferes with the interaction of chemicals and biological systems with harmful consequences. All these chemicals are given the name "Xenobiotics" which means foreign to the organism. However, substances that are endogenous to the organism (hormones) or exogenous substances (vitamins) that are necessary for the body are toxic at high doses and therefore enter the field of toxicology research. Since the toxicity of a chemical is related to the size of the organ that it harms, it should be considered in terms of dose and concentration. The organism must be in a medium containing toxic substance. The most commonly used criterion for determining the toxicity of a compound in biological systems is the death of a living thing. Also, depending on the purpose, the criteria; inhibition of enzyme activities, irregularity of physiological events and metabolism, formation of tumors are taken into consideration. The factors that influence the concentration of a xenobiotic at the site of action depend on the model of change that the substance undergoes in the organism. The liver and kidney accumulate more in the organs than the other organs.

Investigating the general knowledge of toxicology has changed according to the passage of important poisons, toxic substances continue to threaten our lives and health. The environmental toxins, which are countered by the development of industry and technology, will stand in the face of human beings as hazards that can not be reflected in the future.

Keywords: Toxicology, Xenobiotics, Exposure

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➢ **POSTER PRESENTATION**

Growth and characterization of grown optical pumped VCSEL

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Abstract
Semiconductors are the most attractive material group because of their application in electronic and optoelectronic industry. Arsenic based semiconductors are the mostly used due to their visible and infrared wavelength region application. Lasers are one of the important application of arsenic based devices because lasers are commonly used in the field of industry, medical and security. Optical pumped Vertical Cavity Surface Emitting Laser (VCSEL) is one of these laser types which shows key features such as; circular beam, high power, wafer level testing and temperature stability.
In this study, we have made comprehensive characterization of Distributed Bragg Reflector (DBR) which is main mirror of VCSEL. High Resolution X-ray Diffraction (HRXRD) was used to make structural characterization of DBR. Layer thicknesses and strain states of multilayers were determined by means of reciprocal space mapping measurement and dynamic XRD simulations. Finally, optical properties of mirror was found with reflectivity measurement.
Keywords: GaAs, AlAs, DBR, HXRD, MOCVD

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➢ **POSTER PRESENTATION**

Annealing effect on optical and electrical properties of p-GaN

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Abstract
Wide band gap semiconductor materials are very attractive due to their UV-Vis Light Emitting Diode, Laser and High Electron Mobility Transistor applications. GaN is one of them and its band gap value is around 3,4 eV. Doping is crucial to obtain n and p-type material to control conductivity and carrier density. However, it is not easy to dope wide band gap materials and post processing is necessary.
In this study, we have grown p-doped GaN by using Metal Organic Vapor Deposition System (MOCVD). In order to enhance conductivity and obtain p-type GaN, we have annealed the materials in three different temperature. Then, optical and electrical properties were examined by means of photoluminescence and Hall effect measurement.
Keywords: MOCVD, GaN, Photoluminesence, Hall Effect, Annealing

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