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ICADET

4th INTERNATIONAL Conference on Advanced Engineering Technologies

PROCEEDINGS

28-29-30 September 2022

BAYBURT / TURKEY

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Welcome to ICADET 2022

On behalf of the organizing committee, we would like to thank you for your interest in the 4th International Advanced Engineering Technologies (ICADET) held in Bayburt, Türkiye on 28-30 September 2022.

Having respected scientific board and organizing committee members, New Technologies in Engineering Symposium (MYT) was started nationally in 2015 for the first time. Then, the ICADET series have been continued with an international quality every two years.

The main aim of the ICADET is to bring together leading academic scientists, researchers, research scholars and industry representatives to share new scientific knowledge, technologies and experiences from different engineering disciplines. It also aims to propose scientific solutions to global problems through international cooperation and establish scientific outcomes that will benefit humankind using international economic resources.

There will be 246 oral presentations and all those presentations will be presented by 516 participants from 36 different countries, including Turkey, addressing scientists, technicians and industrialists in the Symposium which can be considered as a big step forward for the scientific collaboration. You can find abstracts and full texts of all the scientific works presented in ICADET'22 in this PROCEEDINGS BOOK. In addition, we are proud to announce that selected full papers will be published in the contracted journals of the symposium after scientific evaluation.

The organizing committee would like to thank all participants, speakers, session chairs, and sponsors and express their thankfulness to the members of the Scientific Committee for their great efforts in evaluating many of the abstracts.

Best Regards,
On behalf of the ICADET 2022 Organizing Committe
Ayla ARSLANER

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KEYNOTE SPEAKERS

Mohd Nizar HAMİDON (*University of Putra*)

Mohd Nizar Hamidon is a Professor at Electrical and Electronic Engineering Department and Director of Institute of Nanoscience and Nanotechnology at Universiti Putra Malaysia (UPM). He received the B.Sc in Physics and M.Sc in Microlelectronics from Univesiti Malaya (Malaysia) and Universiti Kebangsaan (Malaysia) in 1995 and 2001 respectively. Finally, his Ph.D degrees in Electronic and Electrical Engineering from the University of Southampton (U.K.) in 2005. He joined UPM after BSc at Matriculation Center for 5 years before become UPM engineering faculty member in 2000 until now, where he in charge of research program at the department and faculty. Due to his outstanding research activities, UPM have appointed him as the Director of the institute staring from July 2017. His research is primarily concerned with the study of electronic and microelectronic devices including the materials (such as oxide and carbon based) and the systems. He has contributed significantly to the development of sensor system such as gas and pressure sensor, and wireless applications. His research has been primarily funded by the international body, government and university internal funding. He has published over 200 technical papers and few book chapters related to his research area. At the same time he had registered one Start-up Company known as Serdang Paste Technology Sdn Bhd. Mohd Nizar had a good international networking especially with the researchers from Turkey, Japan, Indonesia and Thailand in which they were working together in several different research projects. His also involved in consultancy work for Ministry of Information, Communication and Culture Malaysia to the Implementation of WSN – Based Structure and Infrastructure Monitoring System and e-halal monitoring system. He has given many lectures, seminars and invited talks at universities, research institutions and international conferences, and has served as a reviewer for several international conferences and journal. He has been the organizing chair and technical member for several IEEE conferences and The Past Chapter Chair for IEEE Electron Device Malaysia Chapter.

Osman KOLA *(Adana Alparslan Türkeş University)*

Prof. Dr. Osman KOLA 1972 yılında İskenderun'da doğdu. 1994 yılında Çukurova Üniversitesi Ziraat Fakültesi Gıda Bilimi ve Teknolojisi bölümünü bitirerek Gıda Mühendisi unvanı aldı. Çukurova Üniversitesi Fen bilimleri Enstitüsü Gıda Mühendisliği Anabilim Dalı'nda 1994 yılında Yüksek Lisans, 2005 yılında da Doktora çalışmalarını tamamladı ve Bilim Doktoru unvanı aldı. 2006 yılında Yardımcı Doçent Doktor unvanı ile Sakarya Üniversitesi Mühendislik Fakültesi Gıda Mühendisliği Bölümü kurucu öğretim üyesi olarak yer aldı ve aynı bölümde 2011 yılında Doçent kadrosuna atandı. 2012 yılında Adana Bilim ve Teknoloji Üniversitesi'nde görev aldı ve aynı üniversitede 2016 yılında Profesör oldu. Üniversite Yönetim Kurulu Üyeliği, Dekan, Fakülte Yönetim Kurulu ve Fakülte Kuruluğu Üyeliği, Fen Bilimleri Enstitü Müdürü, Sürekli Eğitim Merkezi Müdürü, Bölüm Başkanlığı ve çeşitli komisyonlarda başkan olarak görev yaptı. Tarım ve Orman Bakanlığı ile Sağlık Bakanlığı bünyesinde birçok komisyonda görev aldı. Gıda sanayinde birçok firmada Ar-Ge Merkezi kurulumunda ve Danışman olarak yer aldı. Halen Adana Alparslan Türkeş Bilim ve Teknoloji Üniversitesi Mühendislik Fakültesi Gıda Mühendisliği Bölümü'nde öğretim üyesi olarak çalışmaktadır.

Durmuş GÜNAY *(Maltepe University)*

İlk ve Ortaokul öğrenimini Sütçüler-Isparta'da yaptı. 1971'de Isparta'da ŞAİK lisesinin Fen Kolunu bitirdi. 1976 da İstanbul Teknik Üniversitesi'nden Makina Mühendisi olarak mezun oldu. 1980 de, EÜ de Y. Lisans, 1986 da DEÜ de Doktora öğrenimini bitirdi. 1977-1980 Yıllarında Bayındırlık Bakanlığı 3. Bölge Müdürlüğünde, İzmir'de kontrol mühendisliği yaptı. Daha sonra akademik hayata geçti. Isparta Devlet Mühendislik ve Mimarlık akademisinde Asistanlık ve Akdeniz Üniversitesi Isparta Mühendislik Fakültesinde, öğretim görevliliği yaptı. YÖK/Dünya Bankası, MYO projesinde, Ankara'da, uzman olarak çalıştı. Bir süre yurt dışında, İngiltere'de, bulundu. İTÜ Sakarya Mühendislik Fakültesi ve Sakarya Üniversitesi Mühendislik fakültesinde öğretim üyeliği yaptı, 1986'da Yardımcı Doçent, 1991'de Doçent, 1999'da, Zonguldak Karaelmas Üniversitesinde Profesör oldu. 2000-2008 yılları arasında Zonguldak Karaelmas Üniversitesi Makina Mühendisliği Bölümünde öğretim üyesi ve bölüm başkanı olarak çalıştı. Mayıs 2004-Mayıs 2007 arasında, Tarım Bakanlığında ve Ulaştırma Bakanlığında Bakan danışmanlığı yaptı. Şubat 2008 yılında YÖK üyeliğine atandı. 2008-2016 yıllarında (8 yıl) YÖK yürütme Kurulu üyeliği yaptı. Üniversitede, Makina Mühendisliği Mekanik Anabilim Dalı derslerinin yanı sıra Bilim Tarihi, Bilim Felsefesi, Araştırma Yöntemleri ve Modern Bilimin Doğuşu ve Gelişmesi gibi dersleri de verdi. Akademik kariyerini yaptığı Mühendislik, Mekanik, alanının yanı sıra, Bilim ve Teknoloji Felsefesi, yükseköğretim ve diğer kültürel alanlarda makale ve kitap şeklinde yayımlanmış çalışmaları bulunmaktadır. 2016 Haziranından beri Maltepe Üniversitesi, İstanbul'da, öğretim üyesi olarak çalışmaktadır.

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Muhammed Vefa AKPINAR *(Karadeniz Technical University)*

Prof. Dr. Muhammet Vefa Akpınar, Karadeniz Teknik Üniversitesinde İnşaat Mühendisliği Bölümünü 1992 yılında dereceyle tamamladıktan sonra, 1992-94 yılları arasında aynı bölümde ulaştırma kürsüsünde asistan olarak çalıştı. 1994 yılına 1416 M.E.B sınavını kazanarak Amerika Birleşik devletlerinde University of Wisconsin-Madison'da mastırını Geotechnic dalında ve Kansas State üniversitesinde doktorasını Transportation dalında tamamladı. Kansas state üniversitesinde research asistant olarak görev yaptı. Professional Engineering sınavına kazanarak P.E. yetkinlik belgesini aldı. Houston Texas GTİ danışmanlık firmasında Geotechnic ve Pavament üzerine yetkin mühendis olarak çalıştıktan sonra mecburi hizmetine Mustafa Kemal Üniversitesi Hatay'da göreve başladı. 2002 yılında Kansas State Universitesinde hızlandırılmış yol test sistemleri üzerine TÜBİTAK araştırma bursuyla post doct olarak çalıştı. 1996-2020 arasında Karadeniz Teknik Üniversitesi İnşaat Mühendisliği Bölümü Ulaştırma kürsüsünde çalıştı. Prof.Dr. Muhammet Vefa Akpınar, Yüksek Öğretim Kurumları tarafından desteklenen 4 tane Bilimsel Araştırma Projesinde (BAP) ve 4 tane TÜBİTAK projesi tamamlamıştır. Türkiye ilk defa büyük ölçekli "Hızlandırılmış Yol Test" sistemini 2009 yılında kurmuş (Avrupada birkaç örneği vardır) ve bu sistemle Türkiye koşulları için en uygun yol kaplamaların (havaalanı pistleri de dahil) ve demiryolları üstyapıların performansların belirlenmesi amacıyla büyükşehir belediyeleri ve özel sektör ile ortak AR-GE çalışmaları yürütmektedir. Prof. Dr. Muhammet Vefa Akpınar, "Uygulamalarla Karayolu Tasarımı" kitabın yazarı olup uluslararası Springer basımevinin kitaplarında 3 adet "Chapther "yazarlığı vardır. 3 adet SCİ index li dergide editör yardımcılığı yapmaktadır. Halen KTÜ, İnşaat Mühendisliği bölümünde görevine devam etmektedir.

Sezai ERÇİŞLİ *(Ataturk University)*

Sezai Ercişli 1989 yılında Atatürk Üniversitesi Ziraat Fakültesinden Fakülte 1. si olarak mezun oldu. Doktorasını Gümüşhane ilinde kuşburnu ıslahı konusunda 1996 yılında tamamladı. 1997-1998 yılları arasında Nebraska Üniversitesi'nde kendi imkanlarıyla Misafir Öğretim Üyesi olarak bulundu. Dünyanın farklı ülkelerinde çok sayıda laboratuvarda bilimsel çalışmalarda bulundu. Lisansüstü düzeydeki öğrencilere Bahçe Bitkileri alanında özellikle meyve genetik kaynakların morfolojik, biyokimyasal ve moleküler belirteçlerle karakterizasyonu, modern meyve üretimi ve bitki üretiminde modern teknolojinin kullanımı (yapay zeka, akıllı tarım, derin öğrenme) konusunda dersler vermektedir. 2021 yılı PlosBiology'de yayınlanan Stanford Üniversitesi sınıflandırmasına göre, dünyada en başarılı 100.000 bilim insanı arasında yer almaktadır. WOS'ta yayınlanan 551 makale ile h indeksi 51'dir. www.research.com'a göre, Bitki ve Tarım Bilimlerinde Türkiye 2.'si, Dünya'da 432. sırada yer almaktadır. Sezai Ercişli 2016-2020 yılları arasında Atatürk Üniversitesi Rektör Yardımcılığı görevinde bulundu. Dünya Kayısı birliği başkanlığını ve Avrupa Meyve Üreticileri Birliği Türkiye temsilciliğini 2018 yılından beri yürütmektedir. 2014 yılında atandığı TÜBİTAK tarafından yayınlanan Turkish Journal of Agriculture and Forestry Dergisinde Başeditör olarak görev almaktadır. Springer tarafından yayınlanan Biochemical Genetics dergisinde başeditörlük yaptı. 4 adet şiir kitabı bulunan Sezai Ercişli aynı zamanda Türk Sanat müziği icra etmektedir. İngilizce bilmektedir. Halen Atatürk Üniversitesi Ziraat Fakültesi Bahçe Bitkileri Bölümünde Bölüm Başkanı ve Rektör danışmanı olarak akademik hayatına devam etmektedir.

Mehmet Ertuğrul *(Ataturk University)*

Mehmet Ertugrul (A'11–M'11) received the B.Sc. degree from the Department of Physics, Atatürk University, Erzurum, Turkey, in 1986, and the M.Sc. and Ph.D. degrees in atomic physics from Atatürk University in 1990 and 1994, respectively. He was an Assistant Professor, an Associated Professor, and a Full Professor with the Department of Physics, Atatürk University, from 1994 to 1996, from 1996 to 2001, and from 2001 to 2002, respectively, where he has been a Full Professor with the Department of Electrical and Electronics Engineering since 2003. He has authored or co-authored over 120 papers in international journals. His current research interests include superconducting and semiconducting devices with applications, nanofabrication, and nanoelectronics. Prof. Ertugrul was a recipient of the Science Encouragement Awards by The Scientific and Technological Research Council of Turkey and the Turkish Academy of Sciences.

Ravi PANDİSELVAM *(Central Plantation Crops Research Institute)*

Dr. R. Pandiselvam is a young academician actively engaged in food engineering research. He received B.Tech Agricultural Engineering in 2010 and M. Tech. (Agricultural Processing & Food Engineering) in 2012 from the Tamil Nadu Agricultural University. After completion of doctorate studies from Tamil Nadu Agricultural University (2015), he has joined ICAR as a scientist (Agricultural Process Engineering) at Central Plantation Crops Research Institute (CPCRI), Kasaragod, India in 2016. Dr. R. Pandiselvam has played an instrumental role in the first report of the reaction kinetics and diffusion of ozone gas in paddy grains, rice grains, and green gram under Indian climatic condition. This work was presented in "International Conference on Innovative Insect Management Approaches for Sustainable Agro Eco System" and was conferred with a best poster award. He has contributed in design and development of minimal processing machine for tender coconut, continuous type coconut testa removing machine, tender coconut cutting machine and preservation protocol for trimmed tender coconut and also developer/co-developer many value-added food products (viz., Kalpa Krunch, Frozen Coconut Delicacy and Matured Coconut Water based Beverages), which are commercialized to many entrepreneurs. Dr. R. Pandiselvam authored more than 90 articles published in the national and international journals of repute. He has been author or co-author of

5 books and 40 book chapters. Dr. R. Pandiselvam is the associate editor of Measurement: Food (Elsevier Journal) and Frontiers in Nutrition. He has served/serving as a Guest Editor for Ozone Science and Engineering (Taylor & Francis Journal), Journal of Food Process Engineering (Wiley-Blackwell Journal) and Journal of Texture Studies. Dr. R. Pandiselvam also features in the editorial board member of Ozone Science and Engineering, Journal of Texture Studies, Quality Assurance and Safety of Crops & Foods, Nutrition & Food Science, and Current Agriculture Research Journal. He conferred with National Academy of Agricultural Sciences (NAAS) Young Scientist Award, NAAS Associate and Indian Society of Agricultural Engineers (ISAE)-Distinguished Service Award-2020.

Derya DİŞPINAR *(R&D Center Foseco)*

Global R&D Manager NonFerrous Metal Treatment in Foseco, Enschede, The Netherlands since 2021. Gained his BSc and MSc in Metallurgy in Istanbul University, Turkey. Started working as a research assistant at the same university. Granted with a scholarship to do his PhD in University of Birmingham, UK. Then carried out his Post-Doc in NTNU, Trondheim Norway while working as senior researcher in casting group SINTEF, Trondheim Norway. Then became Assoc.Prof. at Istanbul University, Metallurgical and Materials Department. His field of expertise is casting, aluminum, magnesium, porosity, defect formation, elimination of defects in casting operations such as sand, gravity, high pressure, low pressure, tilt casting. Simulations with optimized sprue, runner and feeder designs.

Devarajan Thangadurai *(Karnatak University)*

Devarajan Thangadurai, PhD, is Associate Professor at Karnatak University, Dharwad in India and did his postdoctoral research at the University of Madeira, Portugal, University of Delhi, India, and ICAR National Research Centre for Banana, India. He is the recipient of Best Young Scientist Award with Gold Medal from Acharya Nagarjuna University, India, and the VGST-SMYSR Young Scientist Award of the Government of Karnataka, India. He has keen interest and expertise in the fields of biodiversity and biotechnology, genetics and genomics of food crops and beneficial microbes for crop productivity and food safety towards sustainable agricultural development. He has authored and edited more than 35 books including Global Food Safety, Food Microbial and Molecular Biology, Nutriomics, Sequencing Technologies in Microbial Food Safety and Quality, Genes, Genomes and Genomics (2 Vols.), and, Genomics and Proteomics with international scientific publishers in USA, Canada, Switzerland and India. He has authored and co-authored 280 publications inclusive of journal articles, book chapters, books and invited presentations. He has extensively travelled to many universities and institutes in Africa, Europe and Asia for academic works, scientific meetings, and international collaborations. He is also reviewer for several journals including Comprehensive Reviews in Food Science and Food Safety, Food Science and Technology International, Journal of Agricultural and Food Chemistry, Journal of Food Science, Journal of the Science of Food and Agriculture, and, International Journal of Plant Production.

ICADET'22 SCIENTIFIC PROGRAMME
28.09.2022 – Wednesday
OPENING
(Baberti Campus, Faculty of Education Conference Hall)

The bus will depart from the Dede Korkut campus at 8:00

08:30 – 09:00 Registration		
09:00 – 10:00	Opening Speeches	*Homage for the Martyrs and National Anthem (İstiklal Marşı)* *Doç. Dr. Ayla ARSLANER- Head of the Conference* *Prof. Dr. Metin UÇURUM – Dean of Engineering Faculty* *Prof. Dr. Mutlu TÜRKMEN – Rector of Bayburt University* *Hükmü PEKMEZCİ– Mayor of Bayburt* *Cüneyt EPCİM– Governor of Bayburt*
10:00 – 11:30	Opening Session	***Keynote Speaker- Prof. Dr. Mohd Nizar HAMİDON*** *Recent Applications in Thick Film Technology*
		Keynote Speaker – Prof. Dr. Osman KOLA *Gıda Endüstrisinde Ar-Ge ve İnovasyon*
		Keynote Speaker – Prof. Dr. Durmuş GÜNAY *Mühendislik ve Teknoloji Felsefesi*

The bus will depart at 12:00
12:00 – 13:15 Lunch GAZİANTEP SOFRASI
Transfer to Dede Korkut Campus -13:15

On-site Session – 1 (Dede Korkut Campus)

13:30-14:45 PRESENTATION

ELECTRICAL-ELECTRONICS (E.A.S.F. / Gökhan Budak Conference Hall)

Head of Session: Dr. Intan Helina HASAN

12	*13:30-13:45*	An AI based Formulated Feedback-System for interpreting conclusive Emotions for a group of people *Ankita DIXIT, Karan GÜLERİ, Mohit VASHISHTHA*
69	*13:45-14:00*	Enhanced Performance of Flexible Microstrip Patch Antenna with Ferrite Thick Film Inclusion *Intan Helina HASAN, Mohd Nizar HAMIDON, Ismayadi ISMAIL*
175	*14:00-14:15*	Environmental Sound Classification via Convolutional Neural Network *Mustafa A. ENGIN*
239	*14:15-14:30*	Numerical Investigation of a Metamaterial Absorber using Concentric Circular Rings and Coupled Elements for 5G Applications *Ahmet TEBER*

FOOD (Engineering Fac. / Conference Hall)

Head of Session: Assoc. Prof. Dr. Ayla ARSLANER

40	*13:30-13:45*	A study on Forecasting of Avocado Consumption Per Capita in Turkey in the 2021-2025 Periods *Ahmet Semih UZUNDUMLU, Duygu TOSUN, Seval KURTOGLU*
75	*13:45-14:00*	Evaluation of colorimetric Loop-mediated isothermal amplification (LAMP) for rapid detection of Staphylococcus aureus in dairy products *Mehmet YÜKSEL, Arzu KAVAZ YÜKSEL*
171	*14:00-14:15*	Application of Coatings to Reduce Oil Intake in Deep-Fried Foods *Özlem YILMAZ*

172	*14:15-14:30*	Attitudes and Behaviors of Turkish Consumers Regarding the Olive Oil Consumption *Ümit ALTUNTAŞ, İsmail GÜZEL, Özlem YILMAZ, Sibel ULUATA, Beraat ÖZÇELIK*
149	*14:30- 14:45*	The Factors Affecting Nutritional Habits of Some Occupational Groups Living in Istanbul *Özlem ÇAKIR, Elif REİSOĞLU*
CIVIL– (Engineering Fac. / AMFİ)		
Head of Session: Assoc. Prof. Dr. Ömer CAN		
KS	*13:30-14:00*	*Keynote Speaker: Prof. Dr. Muhammet Vefa AKPINAR* Concrete Road Design and Application
38	*14:00-14:15*	Investigation of Biochar Additives as A Performance Enhancer in Asphalt Coatings *Mustafa Taha ASLAN, Tuba KUTUK, Erol ISKENDER, Atakan AKSOY, Cansu ISKENDER*
220	*14:15-14:30*	Mechanical effect of electrical curing for metakaolin and slag based geopolymer mortars with different molarities *Yusuf GOKCEGOZ, Mücteba UYSAL, Oktay ARIKAN, Mohamed SALHI*
232	*14:30-14:45*	Evaluation of Earthquake Performance of a Historical Masonry Building Constructed with Natural Stones *Selçuk ÇIMEN, Ömer CAN*
Chemical (Engineering Fac. / D101)		
Head of Session: Assoc. Prof. Dr. İbrahim Hakkı KARAKAŞ		
85	*13:45-14:00*	Production of FeCoP/Graphene Sponge for Flexible Asymmetric Supercapacitor Electrode Material *Elif ERÇARIKCI, Kader DAĞCI KIRANŞAN, Ezgi TOPÇU*
86	*14:00-14:15*	Synthesis and Characterization of Palladium doped WOx-ZrO2 Catalyst *Havva DULKADİR, Ali SINAĞ*
Mechanical (Engineering Fac. / D102)		
Head of Session: Assoc. Prof. Dr. Rabi KARAALİ		
52	*13:30-13:45*	Determination of the appropriate connection type to be used in the screw jack mechanism in finite element analysis *Engin ERBAYRAK*
147	*13:45-14:00*	New dynamic hip Screw Design that Decreases Cut-Out Risk; A Finite Element Study *Nesimi AKPINAR*
107	*14:00-14:15*	Exergy Analysis of Hypersonic Flow *Rabi KARAALİ, Arzu KEVEN, Esra Nur TOPAL*
133	*14:15-14:30*	Improvement of Biocompatibility Properties of Boronized CoCr Alloys with Electrophoretic Deposition *Şükran Tüzemen, Yakup UZUN, Ayhan ÇELİK, Nuran YANIKOĞLU, Orhan KARSAN*
Industrial (Engineering Fac. / D207)		
Head of Session: Assist. Prof. Dr. Çağatay TEKE		
219	*13:30-13:45*	Thermal assessment of clothing through simulation and its validation by wear trials on a thermal manikin *Muhammad AWAIS, Fiaz HUSSAIN, Assad FAROOQ*
240	*13:45-14:00*	AdSiF as a Language for Multi Agent Programming *M. Fatih HOCAOĞLU, İbrahim GENÇ*
265	*14:00-14:15*	Housing Sales Forecasting with Artificial Neural Networks; The Case of Konya Province *Şeyma EMEÇ, Duygu TEKİN*

289	14:15-14:30	Estimation of CO2 Emissions for Turkey by Machine Learning Algorithms *Didem GÜLERYÜZ, Ali Savaş BÜLBÜL, Emre AKGÜN*
Agricultural (E.A.S.F / AMFİ)		
Head of Session: Prof. Dr. Melek EKİNCİ		
KS	13:30-14:00	**Keynote Speaker: Prof. Dr. Sezai ERCİŞLİ** The use of Biodiversity in Horticulture
189	14:00-14:15	Fruit characteristics of wild apricots in inner Anatolia *Sezai ERCİŞLİ, Tomas NECAS, Azra SKENDER, Amina RAKIDA, Amine ASSOUGUEM, Ravish CHOUDHARY, Rohini KARUNAKARAN, Hafize FİDAN*
206	14:15-14:30	Effect of cultivars on productivity and fruit quality on blackberry grown in greenhouse conditions *Gülçe İLHAN, Sezai ERCİŞLİ*
132	14:30-14:45	The Potential Benefits of Using Hawthorn and its Products as Natural Feed Additives in Poultry Diets *Hacer KAYA*
14:45 – 15:00 Coffee/Tea Break		
Wednesday Presentations		
On-site Session – 2 (Dede Korkut Campus)		
15:00-16:00 PRESENTATIONS		
ELECTRICAL-ELECTRONICS (E.A.S.F. / Gökhan Budak Conference Hall)		
Head of Session: Assist. Prof. Dr. Yunus KAYA		
KS	15:00:15:30	**Keynote Speaker: Prof. Dr. Mehmet ERTUĞRUL** Fabrication and Analysis of a New Ultra-Wideband Hybrid Microwave Absorber for Radar Cross-Section Reduction
174	15:30-15:45	Environmental Sound Classification via Machine Learning *Mustafa ENGIN*
291	15:45-16:00	A Linear Polarization Converter Design with Metasurface-Based for C-Band Microwave Applications *Yunus KAYA*
FOOD (Engineering Fac. / Conference Hall)		
Head of Session: Assist Prof. Dr. Aybike KAMILOĞLU		
81	15:00-15:15	Monosodium Glutamate (MSG) as A Food Additive and Comments on Its Use *Songül ÇAKMAKÇI, Mehmet Ali SALIK*
82	15:15-15:30	A Traditional Snack in Erzincan Region: "Çiğit" *Mehmet Ali SALIK, Songül ÇAKMAKÇI*
98	15:30-15:45	Effect of Different Roasting Methods on Some Properties of Walnut Kernels *Naciye Kutlu KANTAR, Tuğba ELBIR, Özlem YILMAZ, Aybike KAMILOĞLU*
110	15:45-16:00	Statistical optimization studies on the biosynthesis of silver nanoparticles *Aybike KAMILOĞLU*
CIVIL– (Engineering Fac. / AMFİ)		
Head of Session: Assist. Prof. Dr. Muhitttin TURAN		
71	15:00-15:15	Buckling Analysis of Functionally Graded Beams Using the Finite Element Method *Muhittin TURAN, Mahmut İlter HACIOĞLU*
176	15:15-15:30	Investigation of the static pushover capacity curves of a reinforced concrete structural system exposed to high temperatures *Elif Nazlı KÜÇÜK, Oğuz Akın DÜZGÜN*
90	15:30-15:45	Investigation of Seismic Performance of Adjacent Buildings at Different Height Ratio Connected by Fluid Viscous Dampers Considering SSI *Yavuz Selim HATIPOĞLU, Oğuz DÜZGÜN*

91	*15:45-16:00*	Seismic Performance of Two Neighbouring Multi-Storey Buildings Connected with Viscous Dampers under Earthquake Excitation by Considering SSI - An Analytical Study *Yavuz Selim HATIPOĞLU, Oğuz DÜZGÜN*
Chemical-Geology (Engineering Fac. / D101)		
Head of Session: Assist. Prof.Dr. Cihan PALULUOĞLU		
146	*15:15-15:30*	Graphene based materials supported monometallic and multimetallic transition metal nanoparticles (Ni, Co and Cu) as catalysts for the ammonia borane hydrolysis *İbtihel ZAİER AKPİNAR*
184	*15:30-15:45*	Photocatalytic Activity of ZnO Nanoparticles Synthesized by Microwave-Assisted Combustion Method *İbrahim Hakkı KARAKAŞ, Zeynep KARCIOĞLU KARAKAŞ*
253	*15:45-16:00*	Seasonal determination of indoor and outdoor concentrations of urban atmospheric Organochlorine Pesticides (OCPs) with a Tisch passive air sampler (PAS) *Cihan PALOLUOĞLU*
Mechanical (Engineering Fac. / D102)		
Head of Session: Assoc. Prof. Dr. Pinar MERT CUCE		
121	*15:00-15:15*	Improving Performance of Thermoelectric Cooling Systems *Pinar MERT CUCE, Erdem CUCE, Tamer GUCLU*
123	*15:15-15:30*	Comparison of the Performances of Single-Stage and Two-Stage Thermoelectric Coolers *Pinar MERT CUCE, Erdem CUCE, Tamer GUCLU*
152	*15:30-15:45*	A Study on the Utilization of Available Waste Heat in Exhaust Gases of Gas Engines Usually Used in Municipal Solid Waste Facilities *Erman Kadir ÖZTEKIN*
164	*15:45-16:00*	Investigation of the Effect of Iron Element in Aluminum Casting Alloys *Derya DIŞPINAR, Melek DURMUŞ, Mehmet GAVGALI, Murat ÇOLAK*
Industrial (Engineering Fac. / D207)		
Head of Session: Assist. Prof. Dr. Hamid YILMAZ		
125	*15:00-15:15*	XRF, XRD, TGA-DTA, FTIR and SEM Analysis of the Ultra-Fine Talc Product *Ömer GÜLEÇ, Öner Yusuf TORAMAN, Metin UÇURUM*
269	*15:15-15:30*	Assembly Line Worker Assignment and Balancing Problem with Load Balance and Sequence-Dependent Setup Times *Hamid YILMAZ*
270	*15:30-15:45*	Statistical Process Control of Coated Calcite using Brightness (R457) and Whiteness (E313) Values *Metin UÇURUM*
290	*15:45-16:00*	Prioritization of Sales opportunities with artificial intelligence techniques and an application *Kubilay YİĞİT, Çağatay TEKE*
Agricultural (E.A.S.F / AMFİ)		
Head of Session: Dr. Öğr. Üyesi Hacer KAYA		
34	*15:00-15:15*	Current Structure and Problems in Migrating Beekeeping Enterprises in Turkey *Ferda Nur ÖZDEMIR, Erol ÖZBEK, Adem AKSOY*
120	*15:15-15:30*	Hydrogen Sulfide -Mediated Salt Tolerance in Bean *Melek EKİNCİ, Metin TURAN, Selda ÖRS, Atilla DURSUN, Ertan YILDIRIM*
122	*15:30-15:45*	Effects of Hydrogen Sulfide on Tomato Seedling Growth under Salinity *Ertan YILDIRIM, Melek EKİNCİ, Metin TURAN, Selda ÖRS, Atilla DURSUN*
29	*15:45-16:00*	The Role of Leader Countries in Dry Fig Market of World *Seval KURTOĞLU, Ahmet Semih UZUNDUMLU, Duygu TOSUN*
16:00- 16:15 Coffee/Tea Break		

Wednesday Presentations		
On-site Session – 3 (Dede Korkut Campus)		
16:15-17:45 PRESENTATIONS		
CIVIL– (Engineering Fac. / AMFİ)		
Head of Session: Prof Dr Muhammet Vefa AKPINAR		
151	*16:15-16:30*	The Importance of Expansion joints in The Bridges *Riyad ŞIHAB, Nida ÇAKIR*
159	*16:30-16:45*	Different mixing methods for red mud-metakaolin based geopolymer mortars with recycled materials *Mücteba UYSAL, Orhan CANPOLAT, Turgay ÇOŞGUN, Yurdakul AYGÖRMEZ, Omer Faruk KURANLI*
169	*16:45-17:00*	A Study on Compressive Strength Measurements of RCC Pavements *Mert Can ÖZTÜRK, Muhammet Vefa AKPINAR*
Chemical-Geology (Engineering Fac. / D101)		
Head of Session: Assoc. Prof. Dr. İbrahim Hakkı KARAKAŞ		
102	*16:15-16:30*	Evaluation of Electrochemical Performances of Flexible Reduced Graphene Oxide Papers Containing Different Class of Dyes *Zeriş AKSU, Murat ALANYALIOĞLU*
185	*16:30-16:45*	An environmentally friendly method for production of CuO Nanoparticles as an effective photocatalyst in photocatalytic degradation of organic pollutant *Esra ASLAN, İbrahim Hakkı KARAKAŞ, Emrah BAYRAMOĞLU, Zeynep KARCIOĞLU KARAKAŞ*
217	*16:45-17:00*	Development of Novel Biobased Multifunctional Advanced Polymers *Fiaz HUSSAIN, Muhamad AWAIS, Nayab KHAN*
Mechanical (Engineering Fac. / D102)		
Head of Session: Assist. Prof. Dr. Recep ÇATAR		
191	*16:15-16:30*	Effect of Spark Anodizing Process on Corrosion and Stress Corrosion Behaviour of AA2024 Aluminium Alloy *Recep ÇATAR, Hikmet ALTUN*
207	*16:30-16:45*	Evaluation of Liquid Metal Quality by RPT and K-mold Techniques in Casting of A356 Aluminium Casting Alloys *Mehmet TOKATLI, Muhammet Emin KESKİN, Çağlar YÜKSEL, Emin USLU, Murat ÇOLAK*
208	*16:45-17:00*	Determination of Liquid Metal Quality of A206 alloy by K-Mold Technique *Ahmet TIĞLI, Mehmet TOKATLI, Emin USLU, Murat ÇOLAK, Derya DIŞPINAR*
225	*17:00-17:15*	Modelling the Effect of Casting Temperature and Critical Fraction of Liquid on Fluidity Properties in Al12Si Casting Alloy *Yunus Emre ASAN, Murat ÇOLAK*
227	*17:15:17:30*	A New Flow Model for Polytetrafluoroethylene Paste Extrusion *Huaguang YANG, Galip YILMAZ*

17:30– 19:30 Trip- KENAN YAVUZ ETHNOGRAPHY MUSEUM

19:30 Dinner

29.09.2022 Thursday Presentations		
Online Session –1		
09:00-10:15 PRESENTATIONS		
ELECTRICAL-ELECTRONICS-I Join the Session*		
Head of Session: Prof. Dr. Mohd Nizar HAMIDON		
24	*09:00-09:15*	Open-circuit faults and Short-circuit faults for DC-DC boost converters *Fatma KHATER, Abderrezak AIBECHE, Sid Ali FELLAG*
26	*09:15-09:30*	Synergistic effect of spiralled multiwalled carbon nanotubes/barium hexaferrite (MWCNTs/BaFe12O19) hybrid for electromagnetic wave absorption in X- and Ku-band *Ismayadi ISMAIL, Raba'ah Syahidah AZIS, Nurhidayaty MOKHTAR, Nurshahiera ROSDI*
62	*09:30-09:45*	Particle Swarm Optimization of Fuzzy-Controllers Parameters in a DTC-SVM Drive of PMSM *Abderrahmane TALAOUBRID, Yazid AITGOUGAM*
88	*09:45-10:00*	An Improved Method and Optimized Techno-Economic Analysis for Sizing Stand-Alone Photovoltaic/Wind Energy System with Storage: Application at Tindouf Region in Algeria *Zakaria BOUZID, Yasmine HALIMI, Meymoune BELAOUI, Nassera GHELLAI*
95	*10:00-10:15*	Direct Torque Control Improvement for PMSM Drive Based on Artificial Intelligence *Abderrahmane El Djallil RABHI, Kada HARTANI, Yacine GUETTAF*
FOOD –I Join the Session*		
Head of Session: Prof. Dr. Devarajan THANGADURAI		
KS	*09:00-09:30*	*Keynote Speaker: Dr. Ravi PANDISELVAM* Coconut Processing Equipments: Concepts, Design and Applications
7	*09:30-09:45*	Uses of Black Rosehip in the Food Industry *Hojjat PASHAZADEH, İlkay KOCA*
8	*09:45-10:00*	Change in Bioactive Properties During Drying of Black Rosehip Fruit *Hojjat PASHAZADEH, İlkay KOCA*
18	*10:00-10:15*	A Nonthermal Emerging Technology for Reducing the Oil Absorption in Deep-Fried Foods: Ultrasound *Anahi Guadalupe COZAIN MONTIEL, Hilal TOMBULOĞLU, Sadettin TURHAN*
CIVIL-I Join the Session*		
Head of Session: Assist. Prof. Dr. Ruşen SINIR		
17	*09:00-09:15*	Tunnel-Soil-Structures Interaction Effect due to Seismic Loading *Abderrahim ACHOURI, Mohamed Nadir AMRANE*
23	*09:15-09:30*	Effect of substitution of crushed firebrick wastes as a partial replacement for natural fine and coarse aggregate in concrete *Mohammed KHATTAB, Samya HACHEMI, Hicham BENZETTA*
64	*09:30-09:45*	Contribution to the static study of composite plates *Adim BELKACEM, Tahar Hassaine DAOUADJI*
233	*09:45-10:00*	Characteristics of recycled materials from multiple-recycled coarse aggregate concrete *Jeonghyun KIM*
234	*10:00-10:15*	Influence of the quality of parent concrete on the quality of son concrete: compression strength case *Kamel AKROUM, Dounia DERDOUR, Maroua LAGAGUINE*
Chemical-I Join the Session*		
Head of Session: Dr. Mohd Hafizuddin AB GHANI		
4	*09:00-09:15*	Combustion Synthesis of NaSrVO4: Nd^{3+} Nano Powders with Enhanced NIR 1.056 mm Luminescent Performance for Solid State Laser and Bio- Imaging Applications *Kamni PATHANIA*

25	*09:15-09:30*	Kitchen Waste to Methane Gas: Anaerobic Digestion for Community *Mohammad Hakim CHE HARUN, Nurul Fasihah MOHD ASRI*
39	*09:30-09:45*	An Overview of Metal–Organic Framework (MOF) for Green Engineering Applications *Mohd Hafizuddin AB GHANI, Ismayadi ISMAIL, Rosnah NAWANG, Siti Zulaika RAZALI, Che Azurahanim CHE ABDULLAH, Nishata ROYAN, Rajendran ROYAN*
65	*09:45-10:00*	The Potential of Carbon as Green Catalyst for the Carboxylation of Glycerol *Nurul RAZALI, Najaa ROZULAN*
44	*10:00-10:15*	Evaluation of Groundwater Nitrate Pollution by Nitrate Pollution Index (NPI): A Case Study of Tarsus Coastal Plain Aquifer (Mersin, Turkey) *Onur GÜVEN, Cüneyt GÜLER, Mehmet Ali KURT, Ümit YILDIRIM*
Mechanical-I* Join the Session		
Head of Session: Assoc. Prof. Dr. Murat ÇOLAK		
KS	*09:00-09:30*	***Keynote Speaker: Dr. Derya DİŞPINAR*** Mechanical property comparison of Al11Si wheels grain refined by Ti, Nb and Nucleant 1582
80	*09:30-09:45*	Enhancing the performances of a PVT solar collector by integrating a porous medium *Saber BOULHIDJA, Abderrahim BOUROUIS, Taqiy Eddine BOUKELIA*
94	*09:45-10:00*	Assessment of wind energy and power generation of various wind turbines at Laghouat, Algeria *Zakaria CHAOUI, Mohamed TEGGAR, Mohamed Amine ZITOUNI*
160	*10:00-10:15*	Electromagnetic Wave Absorption Performance of Carbon Nanocoils by Using Mixed Ferrites as Catalyst *Fadzidah Mohd IDRIS, Hatika KACO, Siti Munirah MOHD, Nurhidaya Mohamad JAN, Haslinawati Mohd MUSTAPHA, Zanariah Mohd IDRIS*
Industrial-N&I* Join the Session		
Head of Session: Dr. Şeyma EMEÇ		
15	*09:00-09:15*	Case Study of Demand Prediction in the Food Industry *Aslı BORU İPEK*
19	*09:15-09:30*	The Role of the Government Incentives in Remanufacturing *Mehmet ALEGÖZ*
89	*09:30-09:45*	An individualized feedback system based on counterfactual explanation with a skeleton data-based LSTM classifier for operator efficiency *Öznur AY, Erdal EMEL*
249	*09:45-10:00*	Effect of infrared wavelength, power and distance on drying and quality characteristics of apple slices *YASHASWINI S.N., ARUN KUMAR T. V., Pramod P. ARADWAD, Indra MANI, SHALINI G. RUDRA and Bishal GURUNG*
Agricultural-N* Join the Session		
		Head of Session: Assoc. Prof. Dr. Özlem ÇAKIR
128	*09:00-09:15*	Determination of the Anti-methanogenic Effect of Safflower Oil Addition to Oat Straw By In Vitro Gas Production Method *Büşra DUMLU, Ali KAYA*
154	*09:15-09:30*	The Effect of Sewage Sludge on the Development and Some Properties of Maize (Zea Mays L.) *Zeynep DUMLU GÜL, Sevda YAĞANOĞLU, Esra ZEREN DURSUN*
210	*09:30-09:45*	The Effects of Different Bacteria Applications on the Rooting and Shooting Performances of Grapevine Cuttings *Muhammed KÜPE, Fazıl HACIMÜFTÜOĞLU, Fatih DADAŞOĞLU*
153	*09:45-10:00*	The Relation of the Antioxidant Enzymes and Heavy Metal Stress in Plants *Zeynep DUMLU GÜL, Özlem ÇAKIR*
10:30 Coffee/Tea Break		

29.09.2022		
Thursday Presentations		
Online Session –2		
10:30-12:00 PRESENTATIONS		
ELECTRICAL-ELECTRONICS-I Join the Session*		
Head of Session: Prof. Dr. Mohd Nizar HAMIDON		
113	*10:30-10:45*	A New DTC Strategy of Single-Inverter Dual-Machine System for Vehicular Propulsion *Rabie BENAISSA, Kada HARTANI*
118	*10:45-11:00*	Efficient Current Signature Analysis of Induction Motor Operating Under Rotor Mass Unbalance Fault *Nurafnida AFRIZAL, Nik Zakiah Mahirah NIK HASSAN, Md Rabiul AWAL*
136	*11:00-11:15*	Active Suspension Control in In-Wheel Motor Driven Electric Vehicles using Fuzzy Logic Control and Fuzzy Logic Sliding Mode Control *Nor El Houda M YAZID, Kada HARTANI , Abdelkader MERAH, Tarik Mohammed CHIKOUCHE*
166	*11:15-11:30*	Electric Vehicle Longitudinal Dynamics Improvement using a Fuzzy Anti-skid System *Rabie BENAISSA, Kada HARTANI, M'hamed SEKOUR*
192	*11:30-11:45*	Electrical Characteristics of Submicron MOS Transistors in $Si_{1-x}Ge_x$ and SiC Technologies *Mourad HEBALI, Hocine Abdelhak AZZEDDINE, Benaoumeur IBARI, Abdelkader MAACHOU, Menaouer BENNAOUM, Djilali CHALABI*
242	*11:45-12:00*	Co-sensitization Process to Optimize the Efficiency of DSSC *Mohd Ali MAT NONG, Mohd Hafizuddin AB GHANI, Juraina MD YUSOF*
FOOD –I Join the Session*		
Head of Session: Assoc. Prof. Dr. Gülşah ÇALIŞKAN KOÇ		
50	*10:30-10:45*	Drying kinetics and quality analysis of turmeric slices using IRHAD *Jeevarathınam GANESAN, Ravi PANDISELVAM, Dinesh KUMAR SHANMUGASUNDARAM, Dillwyn STEPHEN, Nivetha THANGARAJ, NEETHU C. S.*
51	*10:45-11:00*	Characterization of Biodegradable Packaging using Polylactic acid and Ethyl Cellulose composite *Dillwyn STEPHEN, Nivetha THANGARAJ, NEETHU C. S., Jeevarathınam GANESAN, Ravi PANDISELVAM,*
58	*11:00-11:15*	Comparative studies on micronutritional status of fortified and unfortified beverages *NAVARASAM R., Ayyavoo Preamnath MANOHARAN, Jeevarathınam GANESAN, Ravi PANDISELVAM, Shahir SULTHAN, Priyadharshini SELVAKUMAR, Nageswari GANESAN*
134	*11:15-11:30*	Hot air-assisted radio frequency: An industrial technology for redrying of flue-cured tobacco (N*icotiana tabacum* L.) strips *Yue ZHANG, Yanhong LIU*
148	*11:30-11:45*	Valorization of rehydrated Loquat in the Mediterranean area using Response Surface Methodology *Hemza KHERCHOUCHE, Miloud LAHBARI, Rahal SAMIR*
264	*11:45-12:00*	Proteomic tools for food safety in the meat industry *Josué DELGADO*
293	*12:00-12:15*	Prevalance of *Staphylococcus aureus* from various Fish Species of Karwar coast of Karnataka, India *Suresh ARAKERA, Harshitha RAMAMURTHY, Supriya RAY*
295	*12:15-12:30*	Isolation of a *halotolerant* Bacillus sp. for protease production from Kali estuary *Suresh ARAKERA, Sujal REVANKAR, Lucky THAKKAR*

		FOOD-N Join the Session*
		Head of Session: Prof. Dr. Mustafa ŞENGÜL
11	*10:30-10:45*	*Evaluation* of Processed Sausage Products Sold in the Market in Terms of Carcinogenic Volatile N-nitrosamines *Sena ÖZBAY*
35	*10:45-11:00*	Changes in *some* chemical properties of black mulberry concentrate during storage *Oğuzhan YAVAŞ, Memnune ŞENGÜL, Melek ZOR*
36	*11:00-11:15*	Evaluation of the Effect of A corn Flour on the Appearance of Foods in Terms of Consumer *Preference*: Baklava *Şeyma Nur N. GÜNEŞ, Tolga AKCAN*
37	*11:15-11:30*	Chocolate Coated Cereal Bar Design with Puffed Buckwheat: Puffing Efficiency and *Physical* Properties *Seher Nur ŞAHIN, Afranur DONMEZ, Dilara BOYDAK, Sevil Cıkrıkcı ERUNSAL*
161	*11:30-11:45*	Textural Properties of Nevşehir Bagel *Kâmil Emre GERÇEKASLAN*
		CIVIL-I Join the Session*
		Head of Session: Assist. Prof. Fatih YILMAZ
79	*10:30-10:45*	Effect of the fineness of metakaolin used in partial mass substitution of a CMII/A 42.5 cement on the performance of self-placing concrete *Kamel AKROUM, Kheireddine KHOUALDI, Fatiha BOUMAAZA*
92	*10:45-11:00*	Numerical Study of Landslide Reinforcement by Piles Case of High Excavation *Zemouli SAMIRA, Zohra Melais*
101	*11:00-11:15*	Influence of the step numbers on the static response of multi-stepped curved beams; Finite Element Approach *Ahmed M.W. ALHASAN, Ahmad Reshad NOORI*
112	*11:15-11:30*	The influence of the nature of the fine additions on the diffusion coefficient of chloride ions of fiber-reinforced sandcrete *Fatma Zohra MELAIS, Samira ZAMLOUI, Djamel ACHOURA, Siham KAMALI BERNARD*
221	*11:30-11:45*	Rigidity requirement for discrete lateral restraints of simply supported I-beams under uniform bending. *Toufik BELAID, Adel SLIMANI, Dalila BOUKHALFA, Fatiha AMMARI*
		CIVIL/GEOLOGY-I Join the Session*
		Head of Session: Assoc. Prof. Dr. Erdal ÖNER
28	*10:30-10:45*	Investigation of Usability of Aggregates in Kırşehir Region *İlhami DEMIR*
32	*10:45-11:00*	Freeze-Thaw resistance of road pavement concrete produced with self-compacting concretes with different steel fiber ratios *Emine Ebru DEMIRCI, Fatma KARAGÖL*
47	*11:00-11:15*	Seismic Assessments in Elazig Province, Turkey *Yusuf GÜZEL, Fidan GÜZEL*
84	*11:15-11:30*	Hydrological Analysis of Değirmendere Basin and Solution Proposals *Ömer YÜKSEK, Uğur SERENCAM*
68	*11:30-11:45*	Experimental Investigation of Usability of Recycled Asphalt Pavement in Granular Bases *Orhan KAYA, Bahadır OK*
		Chemistry-I Join the Session*
		Head of Session: Assist.Prof.Dr. Erman Kadir ÖZTEKİN
70	*10:30-10:45*	Structural and optical properties of NiO thin film deposited by spray pyrolysis method *Meriem GASMI, Sabrina IAICHE, Abdelkader DJELLOUL*
87	*10:45-11:00*	Overview of foam production processes *Tayeb SAKHI, Rachida CHEMINI, Yacine SALHI, Abdellah ARHALIASS*
111	*11:00-11:15*	Comparative study on adsorption of phenol Surfactant by natural clays for wastewater treatment *Sabiha HAKKAR, Naouel HEZIL, Hichem CHORFI, Saida Hoggas*

114	*11:15-11:30*	Synthesis and optical characterization of fluorine-doped tin oxide films *Saida HOGGAS, Sabrina REGUAI, Abdelkadder DJELLOUL*
124	*11:30-11:45*	Single crystal structure, vibrational spectroscopy, thermal Behaviour and catalytic activity of a new Inorganic-Organic Hydrogenophosphate material *Safaa Hidaoui, Najlaa Hamdi, Mohammed Lachkar, Brahim El Bali*
43	*11:45-12:00*	Investigation of the Factors Causing Salinization in the Tarsus Coastal Plain Aquifer (Mersin, Turkey) Using Ionic Ratios and Graphical Methods *Onur GÜVEN, Cüneyt GÜLER, Mehmet Ali KURT, Ümit YILDIRIM*
Mechanical-I* Join the Session		
Head of Session: Assist. Prof. Dr. Engin ERBAYRAK		
53	*10:30-10:45*	Effect of Inlet Breadth on The Performance of a Free-running Oven Impeller *Ömer ABACI, Esin SELÇUK, Özgül ALTAY, Funda ERDEM ŞAHNALİ, Figen KAYMAK- ERTEKİN, Safiye Nur DİRİM, Utku ŞENTÜRK*
105	*10:45-11:00*	Analysis of Some Tribological Properties of Hazelnut Oil in Gasoline Engines *Arzu KEVEN, Rabi KARAALİ*
117	*11:00-11:15*	3-axis CNC Milling Simulation for an End Mill using Decomposition of the Tool into the Circles *Ahmet DOGRUSADIK*
129	*11:15-11:30*	Design of Horizontal Lid Magazine *Oğulcan SÖĞÜT, Y.Yağız ŞİMŞEK, Onur ÇİMEN, İ.Etem SAKLAKOĞLU*
103	*11:30-11:45*	Processing, Preparation, and Functional Applications of Syntactic Foams: A Review *Kübra Çağla ÇIBIKÇI, Mustafa YAMAN*
104	*11:45-12:00*	Experimental Study on Dynamic Analysis of Multi-Layered Aluminum Foam/Syntactic Foam Core *Kübra Çağla ÇIBIKÇI, Mustafa YAMAN*
Industrial-I* Join the Session		
Head of Session: Dr. Şeyma EMEÇ		
119	*10:30-10:45*	Time - Constrained Touristic Route Planning: The Case of Eskisehir *Rifat Aykut ARAPOĞLU*
137	*10:45-11:00*	The Policy Determinants of the Engineering Education. Lessons to be Drawn from the Privatization Efforts of the Turkish Higher Educational System with Special Reference to Trans Engineering Perspective. *Erkan Abdulgaffar AĞAOĞLU*
142	*11:00-11:15*	Determinants of the Mythology of Normality in the Turkish Higher Education: A Case Study of Industrial Engineering Education *Erkan Abdulgaffar AĞAOĞLU*
Agricultural-N* Join the Session		
Head of Session: Prof. Dr. Ramazan ÇAKMAKÇI		
173	*10:30-10:45*	Determination of the Anti-methanogenic Effect of Turpentine (*Pistacia terebinthus* L.) Tree Leaf Extract Addition to Dry Meadow Grass by In Vitro Gas Production Method *Tuğba BAKIR, Bilal SELÇUK, Atilla BAŞER, Ali KAYA*
179	*10:45-11:00*	Use of Innovative Trend Analysis Methodology for the Aquaculture Production of Rainbow Trout (Oncorhynchus mykiss Walbaum, 1792) in Kastamonu, Türkiye *Semih KALE, Adem Yavuz SÖNMEZ*
182	*11:00-11:15*	Future and trends of sustainable agricultural production and food systems *Ramazan ÇAKMAKÇI, Songül ÇAKMAKÇI*
21	*11:15-11:30*	Impact of Different Ambient Temperatures on Egg-Laying and Hatching Parameters in Japanese Quail *Hüseyin Baki ÇİFTÇİ*
42	*11:30-11:45*	Effects of Co-Inoculation of Microbial Biostimulants on Cucumber Growth, Yield and Fruit Quality at Different İrrigation Levels under Field Conditions *Seyhmus BİCER, Ceknas ERDINC, Nuray COMLEKCIOGLU*
Lunch 12:00-13:00		

29.09.2022 *Thursday Presentations*		
Online Session –3		
13:00-14:15 PRESENTATIONS		
ELECTRICAL-ELECTRONICS-I Join the Session*		
Head of Session: Prof. Dr. Mohd Nizar HAMIDON		
167	*13:00-13:15*	New control approach of high-speed interior permanent synchronous motors used in EV-traction *Chaima DIREM, Kada HARTANI, Fatiha MEKRI, Norediene AOUADJ*
181	*13:15-13:30*	Study of the Lateral Dynamics of a Four-wheel Drive Electric Vehicle *Ahmed TAIBI, Kada HARTANI, Rabie BENAISSA*
194	*13:30-13:45*	An Improved Direct Torque Control of PMSM for Torque Ripple Reduction *Ahmed TAIBI, Kada HARTANI, Rabie BENAISSA*
FOOD –N Join the Session*		
Head of Session: Assoc. Prof. Dr. Osman GÜL		
41	*13:00-13:15*	Active Nano Biopolymers and Food Packaging Applications *Kübra CANPOLAT*
46	*13:15-13:30*	Gluten Free Tarhana: A Review *Gülşah ÇALIŞKAN KOÇ, Ayşe Nur YÜKSEL, Yeliz TEKGÜL*
31	*13:30-13:45*	Effect of Different Extraction Methods and Solvents on Bioactive Compounds of Lavender *Naciye KUTLU KANTAR*
170	*13:45-14:00*	Optimization of hydrolysis conditions of *Cladostephus spongiosum* proteins using response surface methodology *Eda ŞENSU, Emine Şükran OKUDAN, Beraat ÖZÇELIK, Aysun YÜCETEPE*
FOOD –N Join the Session*		
Head of Session: Assist. Prof. Dr. Özlem YILMAZ		
20	*13:00-13:15*	Towards a Sustainable Future: Innovative Solutions for Food Systems *Ayşe Burcu ATALAY*
22	*13:15-13:30*	Efficiency of CaO Usage as a Pre-Clarification Adsorbent in Aqueous Stevia Extract *Ahmet HACIOĞLU, Hatice Reyhan ÖZIYCI, Mustafa KARHAN*
186	*13:30-13:45*	Affecting factors of food preference and consumption habits of high school students *Hatice KARADENIZ, Ayla ARSLANER*
187	*13:45-14:00*	The Effect of Rennet Obtained by Different Production Techniques on Erzincan Tulum Cheese Quality *Özgenur TÜRKMEN, Ayla ARSLANER*
CIVIL-N Join the Session*		
Head of Session: Assist. Prof. Dr. Hakan Alper KAMİLOĞLU		
55	*13:00-13:15*	Effect of Light-source on the Photocatalytic Degradation Capability of TiO2 incorporated Cementitious Composites *Oğuzhan ŞAHIN, Muhammed HATEM, Emrah BAHŞI, İsmail Raci BAYER*
56	*13:15-13:30*	Utilization of Calcined Volcanic Tuff in the Production of Geopolymer Composites *Nurullah ÖKSÜZER, Muhammed HATEM, Oğuzhan ŞAHIN*
59	*13:30-13:45*	Geosynthetic Materials in Transportation Engineering *Denizhan MERSIN*
60	*13:45-14:00*	Trend Analysis with the Annual Temperature and Precipitation in the Izmir District, Turkey *Denizhan MERSIN, Gokmen TAYFUR, Mir Jafar Sadegh SAFARI, Babak VAHEDDOOST*

77	*14:00-14:15*	Comparative Study on 2D Pultruded GFRP Composite and Conventional Frame Structures Using ETABS *Emrah MADENCI, Ali Serdar ECEMIŞ*
Chemistry-I Join the Session*		
*Head of Session: **Dr. Ismayadi ISMAIL***		
9	*13:00-13:15*	Catalytic Activity of Clay Supported Nickel Catalyst for Toxic Dyes Reduction in Effluent of Chemical Industries *Şakir YILMAZ*
135	*13:15-13:30*	ZnO-Nanoparticles biosynthesis using a residue of an extraction of essential oils from a medicinal plant *Mohamed AIT OUMERACI, Tarek BERRAMA, Hayet TIZI, Feriel SAHOUI, Yassine KADMI*
150	*13:30-13:45*	An Overview of Hydrogen Production from Wastewater as Substrate Using Microbial Electrolysis Cell System *Fatiha LASSOUANE*
177	*13:45-14:00*	New sorbents from a waste of local plant raw materials for water purification from dichromate ions *Kulumkan SARTOVA, Diana ABDIKALYKOVA, Aichurok MAZHITOVA*
211	*14:00-14:15*	Effect of ZnO buffer layer deposition thickness on the growth of ZnO nanorods and its structural evolution *Juraina MD YUSOF, Ismayadi ISMAIL, Rahimi M YUSOP, Mohd Ali MAT NONG, Siti Zulaika RAZALI*
262	*14:15-14:30*	Evaluation of the effect of four bioactive compounds in combination with chemical product against two spider mites Tetranychus urticae and Eutetranychus orientalis (Acari: Tetranychidae) *Amine ASSOUGUEM, Mohammed KARA, Abderrahim LAZRAQ ,Abdellah FARAH*
Chemistry/Mechanical-I Join the Session*		
*Head of Session: **Assist. Prof. Dr. Galip YILMAZ***		
212	*13:00-13:15*	Enhancement effect of fins and nanoparticles on performance of cold energy storage *Abdelghani LAOUER, Mohamed TEGGAR*
230	*13:15-13:30*	Evaluation of nanomaterials in green drilling fluid *Siti Zulaika RAZALI, Robiah YUNUS, Suraya Abdul RASHID, Hong Ngee LIM, Badrul MOHAMED JAN, G. Abdulkareem-ALSULTAN, Juraina MD YUSOF, Ismayadi ISMAIL, Mohd Hafizuddin AB GHANI*
248	*13:30-13:45*	Nano-enhanced Phase Change Material (PCM) in a Thermal Energy Storage unit: Numerical Study *Houssem GOUDJIL, Abdelghani LAOUER, Mohamed TEGGAR*
267	*13:45-14:00*	Combined-simultaneous hydrodistillation of *Salvia rosmarinus* Spenn and *Cedrus atlantica* Manetti: Optimization of Anti-Wood-Decay Fungal activity by mixture design methodology *Saoussan ANNEMER, Yassine EZ ZOUBI, Amine ASSOUGUEM, Badr SATRANI, Hamide STAMBOULI, Taoufik BOUAYOUN, Abdellah FARAH*
271	*14:00-14:15*	Adulticidal Effect of Essential Oils bioactive Monoterpenes against the mosquito *Culex pipiens* *Amal RAMZI, Abdelhakim El Ouali LALAMI, Yassine Ez ZOUBI, Amine ASSOUGUEM, Rafa ALMEER, Agnieszka NAJDA, Riaz ULLAH, Sezai ERCISLI and Abdellah FARAH*
287	*14:15-14:30*	Moxifloxacin release from a natural composite material synthesized from Alginate and Agar-agar *Hana TITOUHI, Jamel-Eddine BELGAIED*
14:15-14:30 Coffee/Tea Break		

29.09.2022		
Thursday Presentations		
Online Session–4		
14:30-16:00 PRESENTATIONS		
ELECTRICAL-ELECTRONICS-N Join the Session*		
Head of Session: Assist. Prof. Dr. Yunus KAYA		
45	*14:30-14:45*	Pneumonia Detection with Different Classifiers in the Hybrid Model Approach *Rabiye KILIÇ, Hilal Kübra SAĞLAM, Emin Argun ORAL, İbrahim Yücel ÖZBEK*
74	*14:45-15:00*	The Feasibility Study of Hyperthermia with a Novel Flexible Antenna for Bone Cancer in the Rat *M. Dilruba GEYIKOĞLU, Hilal Koç POLAT*
140	*15:00-15:15*	Determination of Fungus Infected Apples by Using Electronic Nose *Esra KOCAMANOGLU, Onder AYDEMIR*
141	*15:15-15:30*	Time-Frequency Analysis of Breathing Sounds in Bronchiectasis Disease *Ömer AKGÜN, Tahir Cetin AKICI*
143	*15:30-15:45*	Improved Local Search Flower Pollination Algorithm Based on Decomposition *O. Tolga ALTINOZ*
144	*15:45-16:00*	Multiobjective Elephant Herding Optimization by using Decomposition *O. Tolga ALTINOZ*
FOOD –N Join the Session*		
Head of Session: Doç. Dr. Filiz YANGILAR		
109	*14:30-14:45*	Investigation of Methylene Blue Adsorption onto Brewed Tea Waste *Neslihan Yıldız KÜÇÜK, İlhan KÜÇÜK, İhsan BAKIRCI*
115	*14:45-15:00*	The Importance of Pseudo-cereals in Nutrition and Effects on Health *Filiz YANGILAR*
116	*15:00-15:15*	The effect of Jerusalem artichoke (Helianthus tuberosus) tuber powder on some physico-chemical and sensory properties of yogurts *Filiz YANGILAR*
130	*15:15-15:30*	Textural Properties of Phyllo (Yufka) Stored in Different Temperature and Time *Yeşim BEDIR, Mehmet Murat KARAOĞLU*
131	*15:30-15:45*	Overview of 3 and 4 Dimensional Food Technology *Canan ÇELIK, Yeşim BEDIR, Mehmet Murat KARAOĞLU*
CIVIL-N Join the Session*		
Head of Session: Assoc. Prof. Ömer CAN		
99	*14:30-14:45*	Deformation of Subgrade Soil Subjected to Freeze-Thaw Cycles Under High-Speed Train Passing *Serap ATILA ŞAHIN, Müge Elif ORAKOGLU FIRAT*
203	*14:45-15:00*	Free Vibration Analysis of a Porous Functionally Graded Beam Using Parabolic Shear Deformation Theory *Gökhan ADIYAMAN*
145	*15:00-15:15*	Static responses of sandwich domes with a functionally graded porous (FGP) core via the Finite Element Method *Asena Pınar ÖZER, Ahmad Reshad NOORI*
157	*15:15-15:30*	Effect of Curing Temperature on Slag-Based Geopolymer Composites Incorporating Raw Perlite Powder *Serdar KORKMAZ, İlhami DEMIR, Ozer SEVIM, Selahattin GÜZELKÜÇÜK*
72	*15:30-15:45*	Cumulative Departures Model for Water Fluctuations of Lake Eğirdir, TÜRKİYE *Hüsnü DEMIRPENÇE*
73	*15:45-16:00*	Fuzzy Modeling for Predicting Peak Outflow from Breached Embankment Dam *Hüsnü DEMIRPENÇE*

29.09.2022 *Thursday Presentations*		
Online Session–5		
16:15-17:45 PRESENTATIONS		
FOOD –N* Join the Session		
Head of Session: Prof. Dr. İhsan BAKIRCI		
138	*16:15-16:30*	The Effect of Strawberry Addition at Different Ratio to Buffalo Yoghurt on the Development of ABT-2 Probiotic Culture *Murat Emre TERZIOĞLU, Ayla ARSLANER, İhsan BAKIRCI*
139	*16:30-16:45*	The Effects of Adding Pineapple to Sheep Yoghurt at Different Ratios on ABT-2 Probiotic Culture Growth *Murat Emre TERZIOĞLU, Neslihan YILDIZ KÜÇÜK, İhsan BAKIRCI*
163	*16:45-17:00*	The Effect of Peeling, Filling Medium and Storage on the Physico-Chemical Quality of Canned Figs *Hafizenur Şengül BINAT, Ayşegül KIRCA-TOKLUCU*
93	*17:00-17:15*	Heavy Metal Contamination in White Cheese *Neslihan YILDIZ KÜÇÜK, Murat Emre TERZIOĞLU, İlhan KÜÇÜK, İhsan BAKIRCI*
178	*17:15-17:30*	Determination the effect of concentration, pH and ionic charge on functional properties of hazelnut protein isolate *Latife Betül GÜL, Osman GÜL*
ELECTRICAL-ELECTRONICS-I* Join the Session		
Head of Session: Prof. Dr. Mohd Nizar HAMIDON		
196	*16:15-16:30*	New lateral control for Electric Vehicles based on Yaw Moment Control *Norediene AOUADI, Kada HARTANİ, Abdelkader MERAH*
197	*16:30-16:45*	Lateral Stability Enhancement for Electric Vehicle Based on NMP-DTC *M'hamed SEKOUR, Kada HARTANI, Abdelkader MERAH*
200	*16:45-17:00*	Enhanced lateral control for electric vehicles based on fuzzy-AFS control *Norediene AOUADI, Kada HARTANI, Abdelkader MERAH*
201	*17:00-17:15*	Fuzzy Direct Power Control of Three Phase PWM Rectifier for Power Ripple Reduction *Tarik Mohammed CHIKOUCHE, Kada HARTANI, Salima BOUZAR, Bochra BOUARFA*
255	*17:15-17:30*	Effect of sol concentration on structural and optical properties of ZnO thin films *Sarra BERRA, Abdelhafid MAHROUG, Samir HAMRIT*
CIVIL-N* Join the Session		
Head of Session: Assist. Prof. Dr. Mustafa ERGÜN		
168	*16:15-16:30*	The effect of wax-based additives on penetration and softening points in bitumen modification: A literature review *Neslihan ŞAHAN, Ersoy KABADAYI, , Aytuğ KUMANDAŞ, Erman ÇAVDAR, Şeref ORUÇ*
180	*16:30-16:45*	Trend Analysis of Mean Annual Streamflow of Devrek Creek, Zonguldak, Türkiye *Semih KALE, Adem Yavuz SÖNMEZ*
193	*16:45-17:00*	Investigation of Oscillations of Cable Modelled by Smoothed Particle Hydrodynamics *Abdullah DEMIR*
199	*17:00-17:15*	A state-of-the-art review on the rheological properties of boron containing additives in asphalt *Hacer YEŞİLÇİÇEK, Merve Gülfer BOZDEMİR, Şeref ORUÇ*
216	*17:15-17:30*	Investigation of the Effect of Using Marble Powder Instead of Cement at a Certain Ratio on Concrete Compressive and Tensile Strength *Abdulkadir SOLAK, Oguz Kagan KESKİN, Alptug ÜNAL, Mehmet KAMANLI*

30.09.2022 *Friday Presentations*		
Online Session–6		
09:00-10:15 PRESENTATIONS		
FOOD –AGRICULTURE – I Join the Session*		
Head of Session: Dr. İbtihel ZAİER AKPINAR		
222	*09:00-09:15*	Functionality of Muffins Fortified with Apples Pomace: Nutritional, Textural and Sensory Aspects *Andruța E. MUREȘAN, Romina A. MARC (VLAIC), Simona MAN, Sonia A. SOCACI, Andreea PUȘCAȘ, Anda TANISLAV, Emoke PALL, Vlad MUREȘAN, Constantin G. CERBU*
223	*09:15-09:30*	Research On Volatile Compounds, Sensory, Antioxidant and Biological Activities of Mulberry, Raspberry and Sour Cherries Syrups Obtained Without Heat Treatment *Andruța E. MUREȘAN, Romina A. MARC (VLAIC), Sonia A. SOCACI, Andreea PUȘCAȘ, Anda TANISLAV, Crina Carmen MUREȘAN, Vlad MUREȘAN*
224	*09:30-09:45*	Characterization of the Volatile Profile of Tortilla Chips Improvement with Chickpeas Flour and Lentil Flour *Giorgiana BUZGAU, Romina A. MARC, Anca FARCAS, Sonia SOCACI, Andruța E. MUREȘAN, Crina C. MUREȘAN, Muste SEVASTITA*
238	*09:45-10:00*	Morphological and pomological diversity among apricot (*Prunus armeniaca)* genotypes grown in Azerbaijan *Rakida Amina MARFAT*
279	*10:00-10:15*	Total Phenol, Flavonoid Content and Phytochemical Screening Total Extracts of Endophytic Bacteria from The Medicinal Plant Ajuga Turkestanica *Bakhodir MAMARASULOV, Kakhramon DAVRANOV, Dilfuza JABBOROVA*
292	*10:15-10:30*	Yield, chemical composition and antioxidant activity of essential oils extracted by four different methods from fruit peels of orange (Citrus nobilis) grown in Mekong Delta, Vietnam *Huynh Thi Phuong THAO, Ha Thanh TOAN, Nguyen Thi Nhu Y, Nguyen Trong TUAN, Luu Thai DANH*
ELECTRICAL-ELECTRONICS-N Join the Session*		
Head of Session: Assist. Prof. Dr. M. Alptekin ENGİN		
236	*09:00-09:15*	Metamaterial Based Microwave Absorber *Fadı Alahmed ALBASRY, Gokhan OZTURK*
237	*09:15-09:30*	Metasurface Linear Polarization Converter for Microwave C Band Applications *Gokhan OZTURK*
260	*09:30-09:45*	Comparing the predictive ability of several models to calculate iodine value of biodiesel *Mostafa MOSTAFAEI*
FOOD – I Join the Session*		
Head of Session: Prof Dr. Fatih ÖZ		
277	*09:00-09:15*	*Keynote* Speaker*: Prof. Dr.* Devarajan Thangadurai Strain engineering of autochthonous *Saccharomyces cerevisiae* by genome shuffling *Devarajan THANGADURAI, Ravichandra HOSPET, Jeyabalan SANGEETHA*
257	*09:15-09:30*	The technology for obtaining of betacyanins from beets by CO2 supercritical fluid extraction *Alexander ZAKHARENKO, Kirill GOLOKHVAST*
256	*09:30-09:45*	Microbiological Production of DHA *Heba H. SALEMA, Monica TRIF, Antonio ZUORRO, Sourish BHATTACHARYA*
247	*09:45-10:00*	Effect of addition of some enzymes on the acceleration of Ras cheese manufactured with addition of goat's milk *Aly A. SHAHIN, Ayman NASSER, Waheed A. RAGAB*

284	*10:00-10:15*	**Encapsulation of Origanum compactum essential oil in beta-cyclodextrin metal organic frameworks: Characterization, optimization and antioxidant activity** *Amine EZ-ZOUBI, Saoussan ANNEMER, Soukaina EL AMRANI, Yassine EZ-ZOUBI, Abdellah FARAH*
Chemistry-I Join the Session*		
Head of Session: Dr. Sofiah HAMZAH		
33	*09:00-09:15*	**Potential Application of Copperas and calcium Hydroxide for Industrial Effluent Treatment** *Sofiah HAMZAH, Mohammad. Hakim CHE HARUN, Nurul Aqilah MOHAMAD, Mohd. Salleh Amri ZAHID, Ahmad Ariff Fahmi MUSTOFA, Sa'adah LATFI, Suhaimi MOHD ARIPIN, Rozano SAAD*
57	*09:15-09:30*	**Neuro-Fuzzy Application for Petroleum Reservoir Porosity Prediction on Algerian Sahara Data** *Amina CHERANA, Leila ALIOUANE*
218	*09:30-09:45*	**Intelligent Prediction of Fabric Shade Change after Nano-Finishing** *Farida IRSHAD, Assad FAROOQ, Munir ASHRAF*
285	*09:45-10:00*	**Evaluation of the antibacterial activity of healthy and infected cedar wood** *Wafae MOUSTAID, Taoufik SEFFAJ, Amal RAMZI, Amine ASSOUGUEM, Saoussan ANNEMER, Abdellah FARAH*
272	*10:00-10:15*	**Synergistic effect of bioactive essential oils' compounds against the mosquito, *Culex* pipiens** *Amal RAMZI, Abdelhakim El Ouali LALAMI, Saoussan ANNEMER, Yassine EZ-ZOUBI, Amine ASSOUGUEM, Mikhlid H. ALMUTAIRI, Mohamed KAMEL, Ilaria PELUSO, Sezai ERCISLI, Abdellah FARAH*
Agricultural-I -1 Join the Session*		
Head of Session: Prof. Dr. Sezai ERCİŞLİ		
241	*09:00-09:15*	**Ascophyllum nodosum: A Significant Plant Growth Biostimulant under various environmental stresses** *Sangeeta KUMARİ, Deepak PHOGAT, Ravish CHOUDHARY, Anita R SEHRAWAT*
254	*09:30-09:45*	**Evaluation of the effect of four bioactive compounds in combination with chemical product against two spider mites Tetranychus urticae and Eutetranychus orientalis (Acari: Tetranychidae)** *Amine ASSOUGUEM, Mohammed KARA, Abderrahim LAZRAQ, Abdellah FARAH*
259	*09:45-10:00*	**Effect of Seed Priming on Seed Quality Parameter under Abiotic Stress Condition** *Deepak RAO, Sangita YADAV, Shiv Kumar YADAV, Ravish CHOUDHARY*
263	*10:00-10:15*	**A Review on apple (Malus domestica Borkh) in Morocco: current situation, problems and perspectives** *Mohammed KARA, Amine ASSOUGUEM, Safaâ BENMESSAOUD, Younes GAGA, Abdou Rachid ZERHOUNI, Jamila BAHHOU*
266	*10:15-10:30*	**Evaluation of the Varietal Impact of Two Citrus Species on Fluctuations of Tetranychus urticae (Acari: Tetranychidae) and Beneficial Phytoseiid Mites** *Amine ASSOUGUEM, Mohammed KARA, Abderrahim LAZRAQ, Abdellah FARAH*
Agricultural-I-2* **Join the Session**		
Head of Session: Dr. Saoussan ANNEMER		
268	*09:00-09:15*	**Variation of the quality of Moroccan saffron (Taliouine and Taznakht region) according to altitude and provenance: Chemometric study** *Saoussan ANNEMER, Yassine EZ-ZOUBI, Amine ASSOUGUEM, Badr SATRANI, Amal RAMZI, Wafae MOUSTAID, Abdellah FARAH*
273	*09:15-09:30*	**Pigment content in leaves of varieties and lines of mungbean (Vigna radiata L.) in different conditions of water availability** *Shakhzod SAITJANOV, Abdulahad AZIMOV, Zafar ZIYAEV*

274	*09:30-09:45*	Influences of different iron levels on plant growth and root morphological traits of basil under hydroponic condition *Zarnigor ABDUMALIKOVA, Dilfuza JABBOROVA*
275	*09:45-10:00*	The Role Of Climate Factors in Soil Pollution with Petroleum Hydrocarbons *Zafarjon JABBAROV, Urol NOMOZOV, M BAHRONOVA, Jasurbek ABDUKARIMOV*
276	*10:00-10:15*	Can two-dimensional training systems improve the production of European plum (Prunus domestica L) grown on a vigorous rootstok (Prunus cerasifera Ehrh.)? *Miljan CVETKOVIĆ, Jelisaveta Seka CVIJANOVIĆ, Đorđe BOJBAŠA, Ivan GLIŠIĆ, Boris PAŠALIĆ, Borut BOSANČIĆ*
Agricultural-I-3 Join the Session*		
*Head of Session: **Assoc. Prof. Dr. Özlem ÇAKIR***		
278	09:00-09:15	Positive Effects of Mineral Fertilizers and Biochar on Growth and Physiological Properties of Okra under Drought Stress *Maftuna CHORIEVA, Khurshid SULAYMANOV, Dilfuza JABBOROVA*
280	09:15-09:30	The Effects of Biochar and Mineral Fertilizers on the Growth, Root Morphological Traits and Physiological Characteristics in Okra *Dilfuza JABBOROVA, Mekhrigul DUSTOVA*
281	09:30-09:45	Root Morphological Traits and Growth of Spinach as Influenced by Biochar and Plant Growth Promoting Bacteria under Drought Stress *Nigora ZIYADULLAEVA, Khurshid SULAYMANOV, Dilfuza JABBOROVA*
282	09:45-10:00	Contribution to the knowledge of apple (Malus domestica Borkh.) growing in Bijelo Polje, Polimlje Region, Montenegro *Dejan ZEJAK, Velibor SPALEVIC, Goran SKATARIC, Shuraik KADER, Mirjana RADOVIC, Branislav DUDIC*
283	10:00-10:15	Contribution to the knowledge of integrated watershed management in the mountainous watersheds of SEE: Case study areas of Kanjski Potok, Polimlje, Montenegro *Velibor SPALEVIC, Paolo BILLI, Ronaldo Luiz MINCATO, Abdulvahed Khaledi KHALEDI DARVISHAN, Abdessalam OUALLALI*
288	10:15-10:30	The Advantage of Using Hydrogel Technologies in Agriculture *Samad MAKHAMMADIEV, Shokhrukh ABDULLAEV*
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Methane production

Abstract

The aim of this study was to determine the effect of the extract obtained from the leaves of turpentine tree (*Pistacia terebinthus* L.) added to dry meadow grass on gas and methane production in ruminants. Turpentine tree (*Pistacia terebinthus* L.) leaves were dried to extract the extracts after being collected from the field. After drying, 5 g of the ground tree leaves were taken and mixed in 80 ml of 10% methanol-ethanol solution for 72 hours. The obtained leaf extracts were prepared at four different doses of 0 (C), 0.6 (M1), 1.2 (M2), 1.8 (M3) ml/g DM and four replicates and the amounts of gas and methane production were determined by in vitro gas production technique. In vitro gas and methane production, methane (%), metabolic energy, net energy lactation and organic matter digestion degree were found to be significant ($p<0.01$). The 24-hour in vitro gas production values of the experimental groups were 42.27- 61.45 ml/200 mg DM, methane production values were 6.75-13.12 ml, methane (%) values were 15.98- 25.23, metabolic energy values were 9.19-11.91 MJ/kg DM and organic matter digestibility values were 64.57- 81.63 %. As a result, there is an increase in gas production as a result of fermentation due to the increase in extract in dry meadow grass. However, it did not show any anti-methanogenic effect on methane production, one of the greenhouse gases originating from ruminants. For this reason, it is not recommended to prefer the use of turpentine tree (*Pistacia terebinthus* L.) extracts for the reduction of methane gas that causes greenhouse gas effect.

1 INTRODUCTION

With the decision of the European Union Commission, the use of antibiotics in animal feed is prohibited due to the risk of leaving residue on meat and milk and the possible effects on human health [15]. In addition, due to its potential contribution to the emergence of antibiotic-resistant bacteria with the increase in its use in feeds and the effects of methane gas (CH_4) released by ruminant animals on global warming, animal nutritionists and microbiologists have sought natural alternative products instead of antibiotics and similar chemical feed additives for environmentally friendly animal production. they tried to find. In recent years, the use of plant extracts as an alternative to antibiotics has been emphasized. In a study reported that plant extracts have the potential to positively manipulate rumen fermentation [1]. In many studies, the bioactive effect of some plants on methanogenesis has been studied and positive results have been reported [3, 7, 13, 14].

In this study, the anti-methanogenic effect was investigated by the *in vitro* gas production method by adding various doses of turmeric (Pistacia terebinthus L.) tree leaf extract to meadow grass, which is widely used in the nutrition of ruminant animals.

2 MATERIAL AND METHOD

The meadow grass used in the research was dried and ground to pass through a 1 mm sieve. Dry matter (DM), ether extract (EE), crude protein (CP), and crude ash (CA) contents of meadow grass were determined as reported

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by Official Methods of Analysis [2]. *In vitro* gas production of the samples according to Menke et al. [9], according to the technique they applied, 0.2 grams of meadow grass was put into glass syringes, 30 ml of buffered rumen fluid and extracts of turmeric leaves (0.6, 1.2, and 1.8 ml) were added to the syringes and incubated in a water bath at 39 °C for 24 hours. Rumen fluid was obtained from 2 sheep with fistula fed twice daily on a ration containing alfalfa grass (60%) and concentrate (40%). Gas measurements were made at the end of the 24-hour incubation period. The methane (CH_4) content of the total gas produced was measured using an Infared methane analyzer (Sensor Europe GmbH, Erkrath, Germany) [6]. The extracts of the leaves of the Turpentine tree, after drying and grinding, were weighed at 5 grams and mixed with 45 ml of 10% methanol-ethanol mixture into a screw-capped glass bottle. After waiting for 3 days, the mixture was obtained by filtration from the samples. Methane production (ml) was calculated as follows:

*Methane production (ml) =Total gas production (ml) * Percentage of methane (%)* (1)

The metabolisable energy (MJ/kg DM) and organic matter digestibility (OMD) of extract samples was calculated using equations of Menke and Steingass [8]) as follows:

ME (MJ/kg DM) = 1.68 + 0.1418GP + 0.073CP + 0.217EE – 0.028CA (2)
OMD (%) = 14.88 + 0.8893GP + 0.448 CP +0.651CA (3)
Where,
IVGP is 24 h net gas production (ml/200 mg),
CP = Crude protein (%)
EE: Ether extract (%)
CA: Crude ash (%)

Table 1. Chemical composition of meadow grass

	DM (%)	CP (%)	EE(%)	CA
Meadow Grass	93.52	10.77	4.81	11.18

DM: dry matter. CP: crude protein. EE: ether extract. CA: crude ash.

Statistical Analysis
As a result of this study, the fermentation parameter data were subjected to one-way analysis of variance (ANOVA) in the SPSS 20.0 [11] software package. The Duncan test was used to compare the differences in the means [4].

3 RESULTS

The effects of Turpentine tree leaf extract on the fermentation of meadow grass were determined and are given in Table 1. Turpentine tree leaf extract significantly affected *in vitro* gas production and CH_4 production of meadow grass ($P<0.001$). In this study, turmeric tree leaf extract significantly increased the *in vitro* gas production of meadow grass in the M1, M2 and M3 dosage groups compared to the control group. When the methane (CH_4 ml and % CH_4) production values of the Turpentine tree leaf extract were examined, a significant increase was observed in the M1, M2 and M3 groups compared to the control group. Although the methane (CH_4 ml and % CH_4) production decreased in the M3 group compared to the M1 and M2 groups due to the increasing dosage amount, the amount produced was still significantly higher than the control group.

Table 2. The effect of Turpentine tree leaf extract on *in vitro* gas and methane production parameters of meadow grass.

	IVGP	CH_4 (ml)	CH_4 (%)	ME (MJ/kg DM)	OMD (%)
C	42,27^{c}	6.75^{c}	15,98^{c}	9.19^{c}	64.57^{c}
M1	54,70^{b}	13.75^{b}	25,11^{a}	10.95^{b}	75.63^{b}
M2	60,75^{a}	15.31^{a}	25,23^{a}	11.81^{a}	81^{a}
M3	61,45^{a}	13.12^{b}	21,35^{b}	11.91^{a}	81.63^{a}
SEM	1,898	0.659	0.934	0.268	1.686
Sig.	***	***	***	***	***

^{abc}There is no difference between meanings with the same superscript and in the same column. ($P<0.05$), C: meadow grass. M1: C+0.6ml turpentine leaf extract M2: C+ 1.2ml extract turpentine leaf extract M3: C+1.8ml

turpentine leaf extract. ME: metabolizable energy. OMD: organic matter digestibility. SEM: Standard error mean, Sig.: Significance level. ***P<0.001

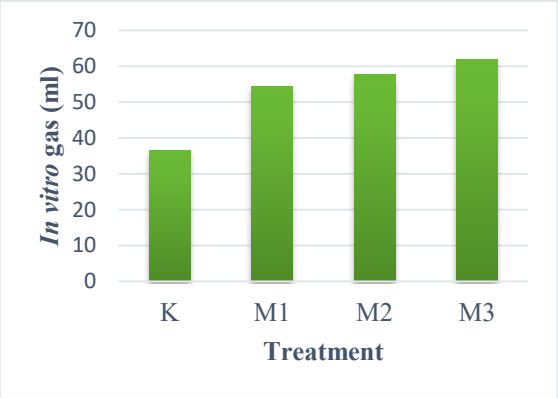

Figure 1. Effect of incubation type on *in vitro* gas production of Turpentine leaf extract

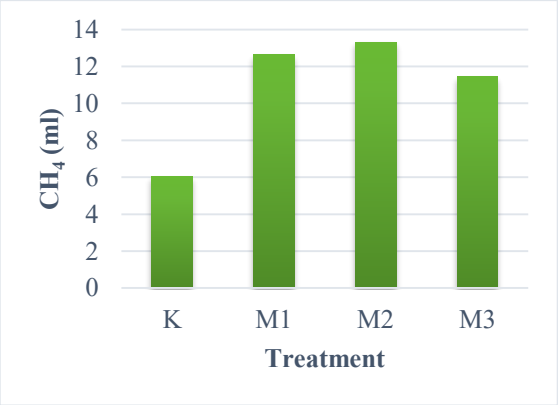

Figure 2. Effect of incubation type on methane (CH_4) production (ml) of Turpentine leaf extract

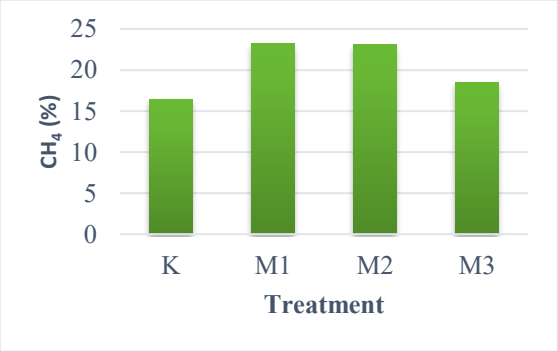

Figure 3. Effect of incubation type on methane (CH_4) production (%) of Turpentine leaf extract

In their study with different herbal extracts, Patra et al. [1] found similar results. Ethanol and methanol used during the extraction process in this study are substances that can be used by archaea in methane production. Therefore, in order to obtain more accurate results, specific blanks were created for each treatment group and the *in vitro* gas and methane values obtained from the treatment groups were subtracted, but the *in vitro* gas and methane production of the groups were found to be significantly higher than the control group. Although the *in vitro* gas and CH_4 production values were decreased, the gas and CH_4 production of the treatment groups were found to be significantly higher than the control group. It can be said that the increase in gas production is due to the increase in the amount of acetic acid formed as a result of the fermentation of the extract and feed. It has been reported that there is a close relationship between total *in vitro* gas production and acetic acid formed in the rumen; acetic acid production increases *in vitro* gas production, and propionic acid decreases it [5]. It has been reported that methanogens produce methane CH_4 by metabolizing methanol, methylamine, and acetate [12]. Similarly, in extract

studies, significant increases were observed in *in vitro* gas and CH_4 production [1, 12]. Metabolizable energy and organic matter digestion are associated with *in vitro* gas production [8]. Increasing the amount of ethanol-methanol in the extract increased the gas production. Accordingly, metabolizable energy and organic matter digestion also increased.

4 CONCLUSION

In this study, it was understood that the leaves of the Turpentine tree extracted in ethanol, methanol, and water did not show anti-methanogenic effects on meadow grass under *in vitro* fermentation conditions and did not have the ability to reduce methane production. For this reason, it has been observed that if tree leaf extracts are extracted with ethanol-methanol-water, they cannot be anti-methanogenic and their use in ruminant animals with anti-methanogenic properties will not provide any benefit. In addition, separation of the extracted sample from ethanol and methanol before *in vitro* incubation will allow a more accurate evaluation of the data to be obtained.

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