



ISTANBUL AYDIN UNIVERSITY FACULTY OF PHARMACY

E-NEWSLETTER

1 SEPTEMBER - 30 SEPTEMBER 2025



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FACULTY OF PHARMACY

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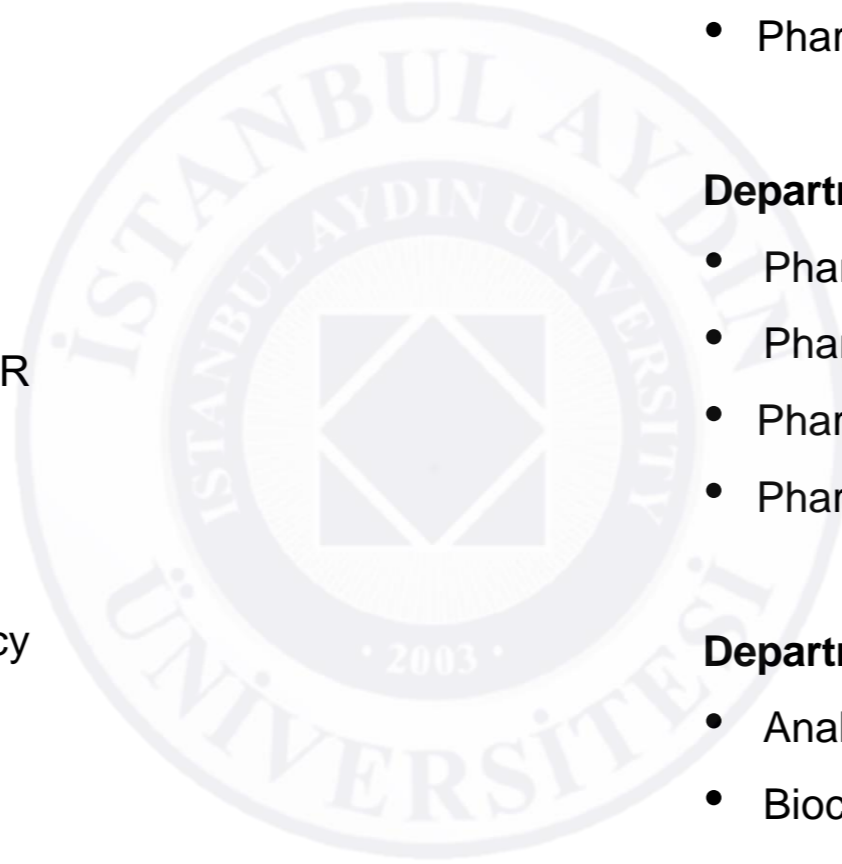
- Pharmaceutical Technology

Department of Professional Pharmaceutical Sciences

- Pharmacology
- Pharmaceutical Chemistry
- Pharmacognosy
- Pharmaceutical Toxicology

Department of Basic Pharmaceutical Sciences

- Analytical Chemistry
- Biochemistry
- Pharmaceutical Microbiology





FACULTY OF PHARMACY

September

In the 2025–2026 academic year, our faculty, with a 100% occupancy rate, has been ranked 1st among foundation universities, having being chosen with the highest score.

 İSTANBUL AYDIN
ÜNİVERSİTESİ | 22 Yıl

Eczacılık Fakültemiz,
vakıf üniversiteleri arasında,
en yüksek puanla

1.

sırada tercih edildi.



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On September 25, World Pharmacists Day, an **Orientation Program** for first-year students was held in the T Block Turquoise Hall.





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September

Prof. Dr. Yusuf ÖZTÜRK, faculty member of the Department of Pharmacology, and Prof. Dr. Abdülhadi BAYKAL, faculty member of the Department of Analytical Chemistry, have been included in the list of “*World's Most Influential Scientists*”.

 İSTANBUL AYDIN
ÜNİVERSİTESİ | 22. Yılı

**Akademisyenlerimiz
Dünyanın En Etkili Bilim İnsanları
Listesinde!**

Kariyer Boyu Etki Kategorisine giren değerli akademisyenlerimiz:

| | | | | |
|---|--|---|---|---|
|  Prof. Dr. Abdülhadi BAYKAL |  Prof. Dr. Beşir ŞAHİN |  Prof. Dr. Kamil KAYGUSUZ |  Prof. Dr. Nosratollah Zarghami SOLTANAHMADI |  Prof. Dr. Yusuf ÖZTÜRK |
|---|--|---|---|---|

2024 Etki Kategorisinde yer alan akademisyenlerimiz:

| | | | | |
|--|---|---|---|--|
|  Prof. Dr. Abdülhadi BAYKAL |  Prof. Dr. Beşir ŞAHİN |  Prof. Dr. Cihan KAYA |  Prof. Dr. Füsün TERZİOĞLU |  Prof. Dr. Kamil KAYGUSUZ |
|  Prof. Dr. Nosratollah Zarghami SOLTANAHMADI |  Prof. Dr. Recep KARADAĞ |  Doç. Dr. Dilek YILDIRIM |  Doç. Dr. Ulaş ÖZDEM |  Dr. Öğr. Üyesi Süleyman ŞİMŞEK |

Değerli akademisyenlerimizi tebrik ediyor, başarılarının devamını diliyoruz.



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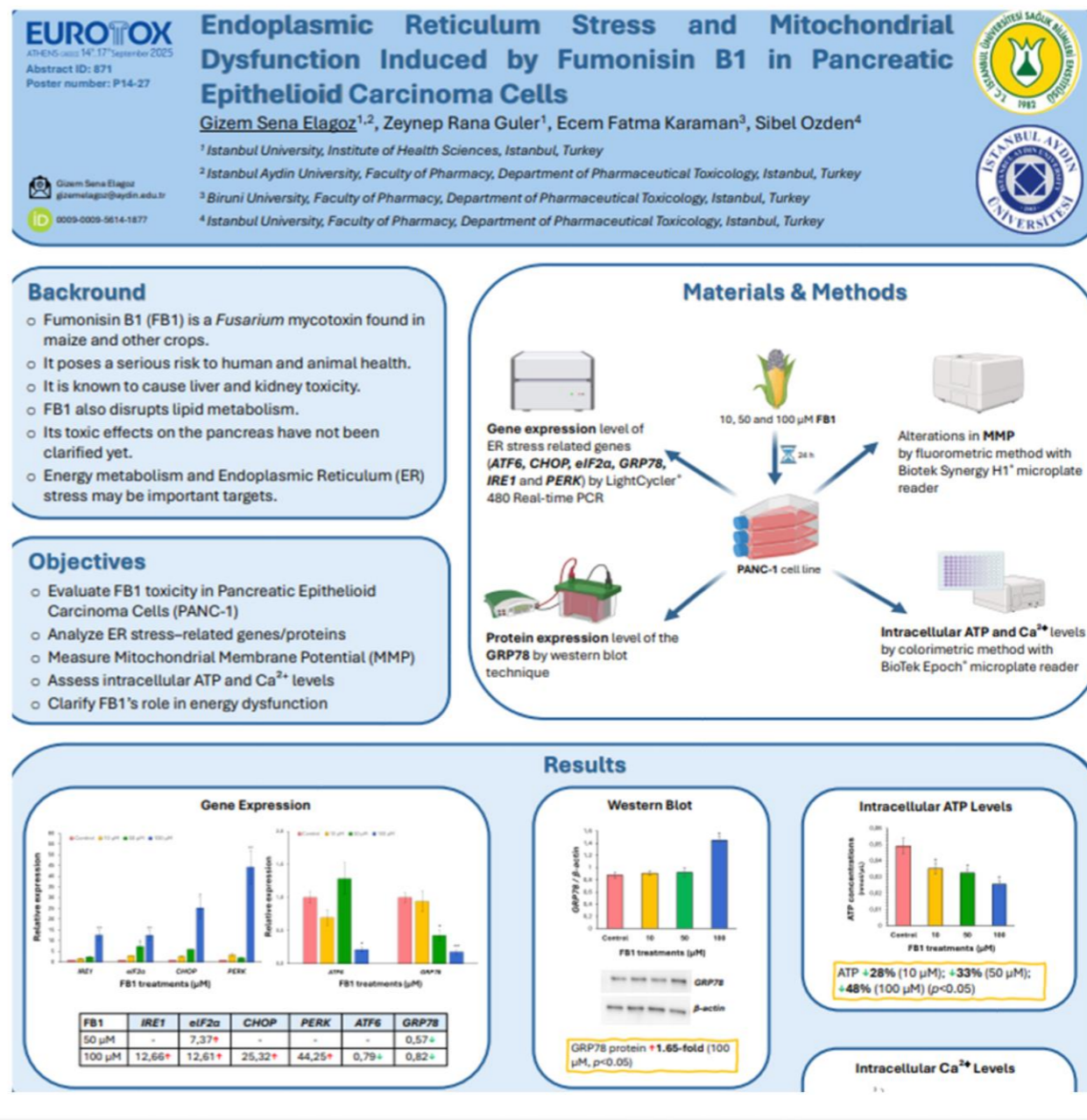
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Asst. Prof. Dr. Gizem Sena ELAGÖZ, faculty member of the Department of Pharmaceutical Toxicology, participated in the 59th Congress of the European Societies of Toxicology (EUROTOX 2025) held in Athens, Greece, with her poster titled “*Endoplasmic Reticulum Stress and Mitochondrial Dysfunction Induced by Fumonisin B1 in PANC-1 Pancreatic Epithelioid Carcinoma Cells*”.



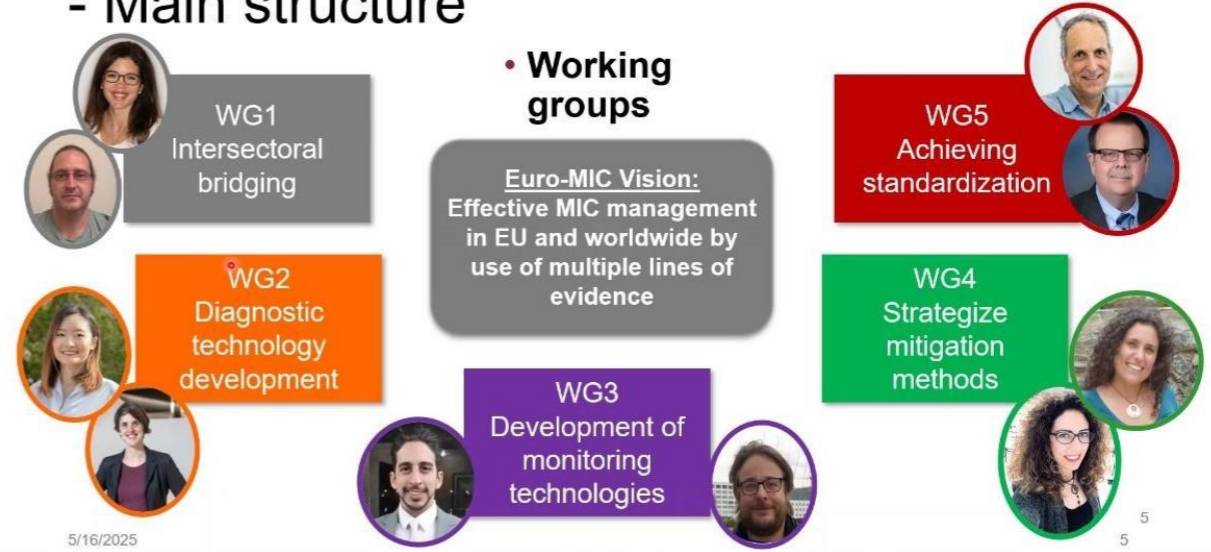


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Asst. Prof. Dr. Tuğçe TÜCCAR, faculty member of the Department of Pharmaceutical Microbiology, served as a member of the leadership team of working groups within the EURO-MIC COST Action CA20130 between 2023 and 2025. At the “Closing Workshop & Conference” held on September 18–19 in Horsens, Denmark, she was recognized for her valuable contributions to international collaboration.

Euro-MIC CA20130 - Main structure





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September

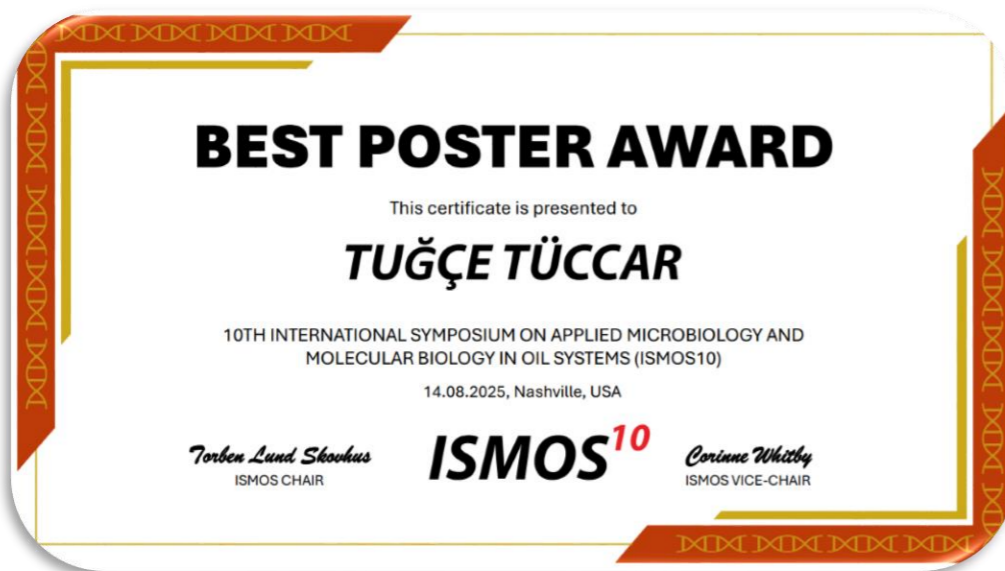
Asst. Prof. Dr. Tuğçe TÜCCAR, faculty member of the Department of Pharmaceutical Microbiology, attended the *Euro-MIC COST Action CA20130 Closing Workshop & Conference* held on September 18–19 at VIA University College in Horsens, Denmark, and delivered her oral presentation titled “*Ontology Study: Harmonizing Microbiologically Influenced Corrosion (MIC) Terminology Across Industries*”.





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September



Asst. Prof. Dr. Tuğçe TÜCCAR, faculty member of the Department of Pharmaceutical Microbiology, participated in the *ISMOS-10 Symposium* held in Nashville, USA, with her poster titled “*Ontology Study: Harmonizing Microbiologically Influenced Corrosion (MIC) Terminology Across Industries*” and was honored with the “*Best Poster Award*”.

ISMOS¹⁰ Ontology study: Harmonizing Microbiologically Influenced Corrosion (MIC) Terminology Across Industries

Tuğçe Tüccar¹, Judit Knisz², Richard Eckert³, Torben Lund Skovhus⁴

¹Istanbul Aydın University, Faculty of Pharmacy, Department of Pharmaceutical Microbiology, İstanbul, TÜRKİYE
²University of Public Service, Faculty of Water Sciences, Department of Water Supply and Sewerage, Baja, HUNGARY
³Microbial Corrosion Consulting, LLC, Commerce Township, USA
⁴Research Centre for Built Environment, Climate and Water Technology, VIA University College, Horsens, DENMARK

Summary

Microbiologically Influenced Corrosion (MIC) terminology is widely used across various industrial sectors, such as oil and gas, marine, energy production, and water treatment. However, differing definitions of MIC-related terms often lead to misunderstandings, confusion, and communication gaps among stakeholders. To bridge this gap, a standardized glossary of MIC-related terms is essential for both academic and industry professionals. In this study, we developed a comprehensive glossary to eliminate misunderstandings and promote clearer communication across sectors.

Materials and Methods

1. Data collection

- MIC-related terms were extracted from 17 internationally recognized standards, 6 online glossaries, and peer-reviewed literature across multiple industries.

2. Data processing

- An AI-powered tool, **ChatGPT Plus** (GPT-4o, OpenAI, 2024), was used to automatically generate and classify definitions for each MIC-related term based on their contextual relevance to microbiology, chemistry, or engineering.
- To enhance classification accuracy and ensure citation-backed reliability, we employed the **SciSpace plugin** in ChatGPT (OpenAI, 2025)—a research-focused tool developed for scientific discovery and analysis.

3. Generation of a MIC glossary

- A structured **MIC Glossary Table** was developed by combining manually collected MIC-related definitions with outputs from an AI tool.
- For each term, two versions of a unified definition were created:

1. Consensus Definition

Generated using the Consensus plugin in ChatGPT, integrating perspectives from microbiology, chemistry, and engineering.

2. Harmonized Definition

Manually developed to ensure clarity, completeness, and cross-disciplinary relevance.

Results and Discussion

- Most terminology in the reviewed standards and glossaries originates from chemistry, materials science, and engineering, with limited microbiology-related terms.
- The language used is often not easily understood across disciplines.
- Commonly misused terms like *SRB* (*sulfate-reducing bacteria*) and *SRP* (*sulfur-reducing prokaryotes*) are poorly defined or absent.
- Terms like *anoxic* and *anaerobic* are used interchangeably, causing confusion between engineering and microbiology contexts.
- Although terms like *biocorrosion*, *microbially influenced corrosion*, and *biological degradation/deterioration* are frequently used in scientific and technical literature in contexts closely related to MIC, none were defined in the standards examined.
- The absence of key MIC-related terms in existing standards and glossaries, along with inadequate, unclear, or inconsistent definitions, highlights the need for a more comprehensive and interdisciplinary MIC terminology resource.

1. Data Collection

Totally 351 MIC-related terms were collected.

2. Data Processing

The definitions, along with their references, were extracted using the SciSpace plugin in ChatGPT.

| Term | Microbiology Definition | Chemistry Definition | Engineering Definition |
|--------|---|--|---|
| Anoxic | An environment completely devoid of molecular oxygen, often found in aquatic and sedimentary ecosystems (Frenkel et al., 2012). | A condition where oxygen is absent, influencing redox reactions intentionally designed to exclude and chemical processes such as denitrification (Stamm & Morgan, 1996). | Engineering environments that are oxygen-free, such as in wastewater treatment and bioreactors (Metcalfe & Eddy, 2014). |



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Asst. Prof. Dr. Tuğçe TÜCCAR, faculty member of the Department of Pharmaceutical Microbiology, participated in the online *Working Groups Meeting* held on September 24–25, 2025, within the scope of *COST Action CA23152 Regulatory Tool Box*.

The screenshot shows a Zoom meeting interface with a presentation slide. The slide content is as follows:

Biofilm Regulatory Toolbox

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WG2

Translating Data for Informed Decision-Making

WG2 bridges gaps between research and regulation by translating biofilm lab data into actionable regulatory insights. It creates decision-making frameworks, aligns stakeholders through workshops, and establishes guidelines for risk assessment models that protect health and the environment.

Group leaders

 **Kasper Nørskov Kragh**
Science Development Lead, Symcel AB

 **Maria Salta**
Dr, Endures PV

Objectives:

- Analyse existing guidelines and risk assessment models that regulators use to make decisions about antimicrobials intended to protect and improve public health (D11).
- Creating a decision-making framework that considers data generated by new methods of analysis and what is necessary to collect for decisions that support public health claims (D11-D12).
- Workshops for regulators and industry to align on decision-making frameworks and recommendations for data necessary to support risk assessment models and decision-making (D12-D15).
- Training modules/lectures (onsite and online) and cyclic webinars for graduates and post-graduates covering subjects such as metrology and standardisation, MIABE, overview of active groups and committees and help/facilitation of involvement in the groups, principles of regulatory sciences (D12-D15).
- Workshops for academics (graduates and post-graduates) and innovators to discuss the practical implications of what types of label product label claims may be supported (D12-D15)
- Workshops for all stakeholders, allowing academics and innovators to share cutting-edge research findings, technologies, and methodologies directly with regulators and industry participants (D12-D15).
- Arranging the meetings necessary to plan, conduct and coordinate (with WG1) the above activities.

Zoom Workplace Toplantı Martijn Riool adlı kişinin ekranı Giriş yapın Kayıt Görüntüle

Tuğçe Tüccar Martijn Riool Caroline Bachlechner Dr Geertje van Keulen ... theo Judit Knisz (HU)

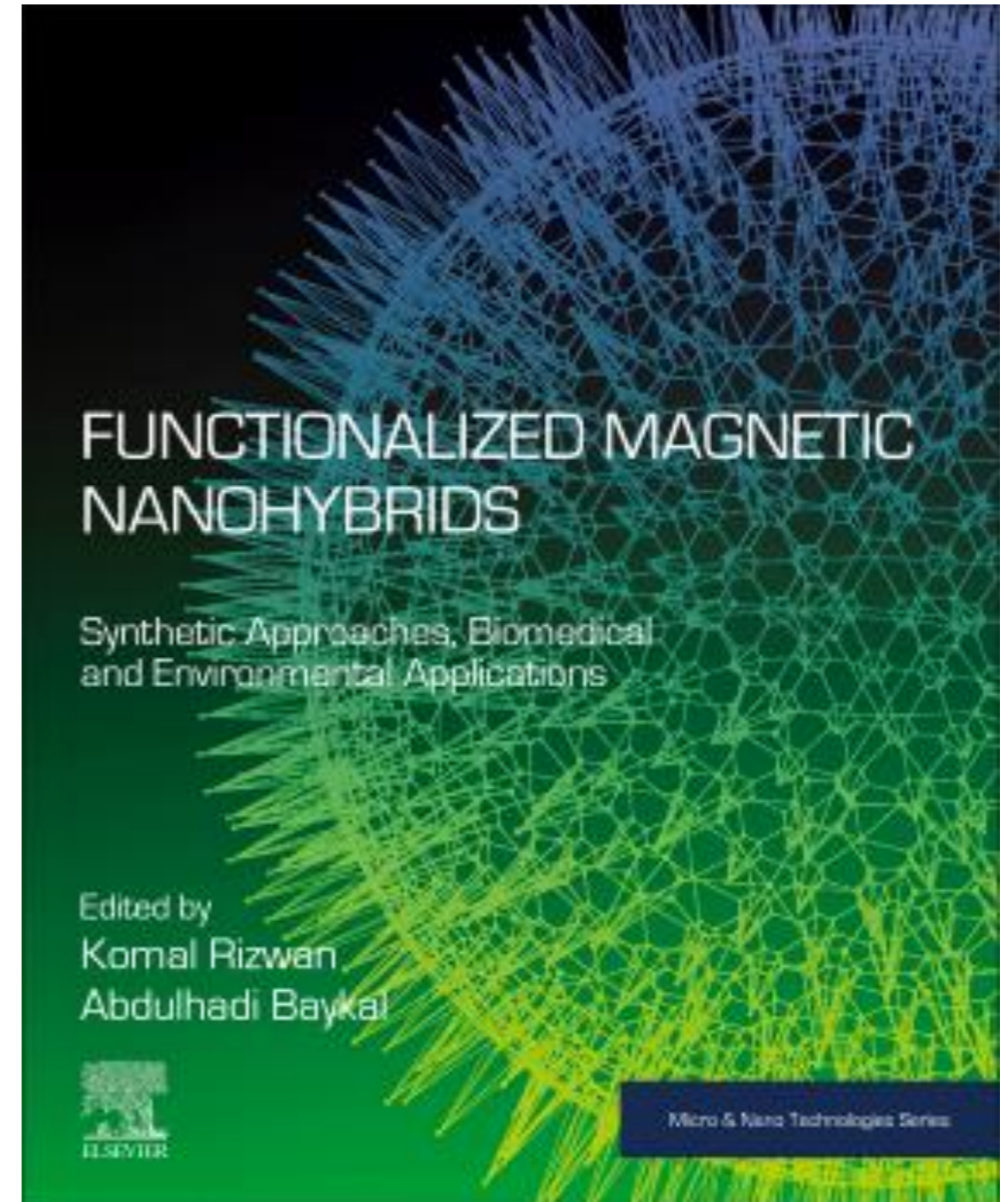
Ses Video Katılımcılar 19 Sohbet Tepki ver Paylaş Uygulamalar Daha fazla



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The book titled “*Functionalized Magnetic Nanohybrids: Synthetic Approaches, Biomedical, and Environmental Applications*”, edited by Prof. Dr. Abdülhadi BAYKAL, faculty member of the Department of Analytical Chemistry, has been published by Elsevier.





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Asst. Prof. Dr. Cem ERKMEN, faculty member of the Department of Analytical Chemistry, has authored a article entitled “*Synthesis of a Rod-Like Cobalt Sulfide Nanostructure Embedded with Glassy Carbon Electrode for Sensitive Detection of Ecotoxic Resorcinol*” which has been published in *Inorganic Chemistry Communications*, a Q1-ranked, internationally recognized journal.

Inorganic Chemistry Communications 182 (2025) 115400



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journal homepage: www.elsevier.com/locate/inoche



Short communication

Synthesis of a rod-like cobalt sulfide nanostructure embedded with glassy carbon electrode for sensitive detection of ecotoxic resorcinol

Ganesh Pattan-Siddappa^{a,*}, Vivek Dhand^b, Cem Erkmen^{c,d}, Abdullah K. Alanazi^e, Seok-Han Lee^a, Sang-Youn Kim^{a,*}

^a Interaction Laboratory, Future Convergence Engineering, Advanced Technology Research Center, Korea University of Technology and Education (KoreaTech), Cheonan-si, Chungcheongnam-do 330-708, Republic of Korea

^b Department of Mechanical Design Engineering, Chonnam National University, 50 Daehak-ro, Yeosu, Jeonnam 59626, Republic of Korea

^c Department of Analytical Chemistry, Faculty of Pharmacy, Istanbul Aydın University, Istanbul 34295, Türkiye

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^e Department of Chemistry, College of Science, Taif University, Taif, Saudi Arabia

ARTICLE INFO

Keywords:

Rod-like cobalt sulfide
Ecotoxic
Glassy carbon electrode
Resorcinol
Electrochemical sensor
Limit of detection

ABSTRACT

Resorcinol (RS) is a phenolic chemical that is widely utilized in industrial applications, particularly in the manufacturing of cosmetics, insecticides, and skin care antiseptics. However, RS can be exceedingly harmful to both the environment and humans (ecotoxic). If inhaled or absorbed through the gastrointestinal tract, significant effects to the eyes, skin, mouth, and gastrointestinal processes may occur. Thus, the current study investigated the design and fabrication of a sensing interface made of glassy carbon electrode (GCE) embedded with rod-like cobalt sulfide (CS) nanostructures, followed by structural, morphological, and electrochemical characterizations. The CS/GCE demonstrated exceptional sensitivity for RS detection, with a calculated limit of detection of 8.1 nM in 0.025–0.50 μ M linear range using differential pulse voltammetry. Electroanalysis of RS in spiked water samples from various sources resulted in recoveries ranging from 92.80 to 97.86%. This proposed sensing interface has the advantage of being simple to fabricate while also exhibiting promising electrochemical performance, both of which are extremely important factors for designing next-generation sensor devices for monitoring environmental contaminants.

1. Introduction

Chalcogenide nanoparticles have attracted substantial consideration owing to their vast applications and the significant variations in their physicochemical and optoelectronic characteristics that arise with changes in particle size [1]. Metal-based chalcogenides, particularly molybdenum sulfide, nickel sulfide, silver sulfide, vanadium sulfide, and cobalt sulfide, have remained extensively explored for their potential uses in biomedical fields, supercapacitors, lithium-ion batteries, solar cells, and as catalysts [2–4]. Metal-based chalcogenide nanoparticles can be synthesized through various methods, including microwave irradiation, co-precipitation, sublimation, hydrothermal and solvothermal techniques, sol-gel processes, and chemical vapor deposition, each offering distinct advantages in terms of particle size, morphology, and crystallinity. Moreover, the use of capping agents and surfactants enables the successful synthesis of well-dispersed and stabilized

chalcogenide nanoparticles by preventing agglomeration and controlling particle growth [5,6].

Cobalt sulfide (CS), a notable subgroup of transition metal chalcogenides, exhibit multifunctional features that make them promising candidates for a variety of applications. These applications include use in electrochemical energy storage [7], photocatalysis [8], supercapacitors [9], sensing systems [10], solar cell applications [11], hydrogen production, and evolution [12], as a catalyst for hydrogen production from water [13]. Because of its variable stoichiometry, cobalt sulfide can exist in different crystal forms like CoS, CoS₂, and Co₂S₄. Some studies have also shown that mixed phases, such as Co₃S₄ with CoS_{1.097}, or combinations of CoS₂, Co₉S₈, and CoS, can be produced [14,15]. Therefore, the synthesis method plays a critical role in determining the phase purity, morphology, crystallinity, and overall performance of CS nanostructures. Among the various available techniques, hydrothermal synthesis has gained considerable attention due to its

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Asst. Prof. Dr. Cem ERKMEN, faculty member of the Department of Analytical Chemistry, presented posters at the International 19th Nanoscience and Nanotechnology Conference (NanoTR-19) held in Ankara. The titles of his posters are listed below:

- ❖ *"Electrochemical Detection of Prilocaine Using POSS-TiO₂ Nanomaterial Modification: First Detection at Nanomolar Levels in Real Blood Samples and Pharmaceutical Dosage Forms"*,
- ❖ *"One-Step Bimetallic Nanoparticle Modified SPCE-Based Molecularly Imprinted Sensor for Sensitive Detection of Organophosphorus Pesticides in Environmental Matrices"*
- ❖ *"Electrochemical Sensing of Diazinon via Layer-by-Layer Assembled MIP/MWCNT-TiO₂/Nafion Modified Glassy Carbon Electrode"*

NANO TR-19
19th NANOSCIENCE AND NANOTECHNOLOGY CONFERENCE
27 - 29 August 2025, Middle East Technical University, Ankara, Türkiye

Book of Abstracts

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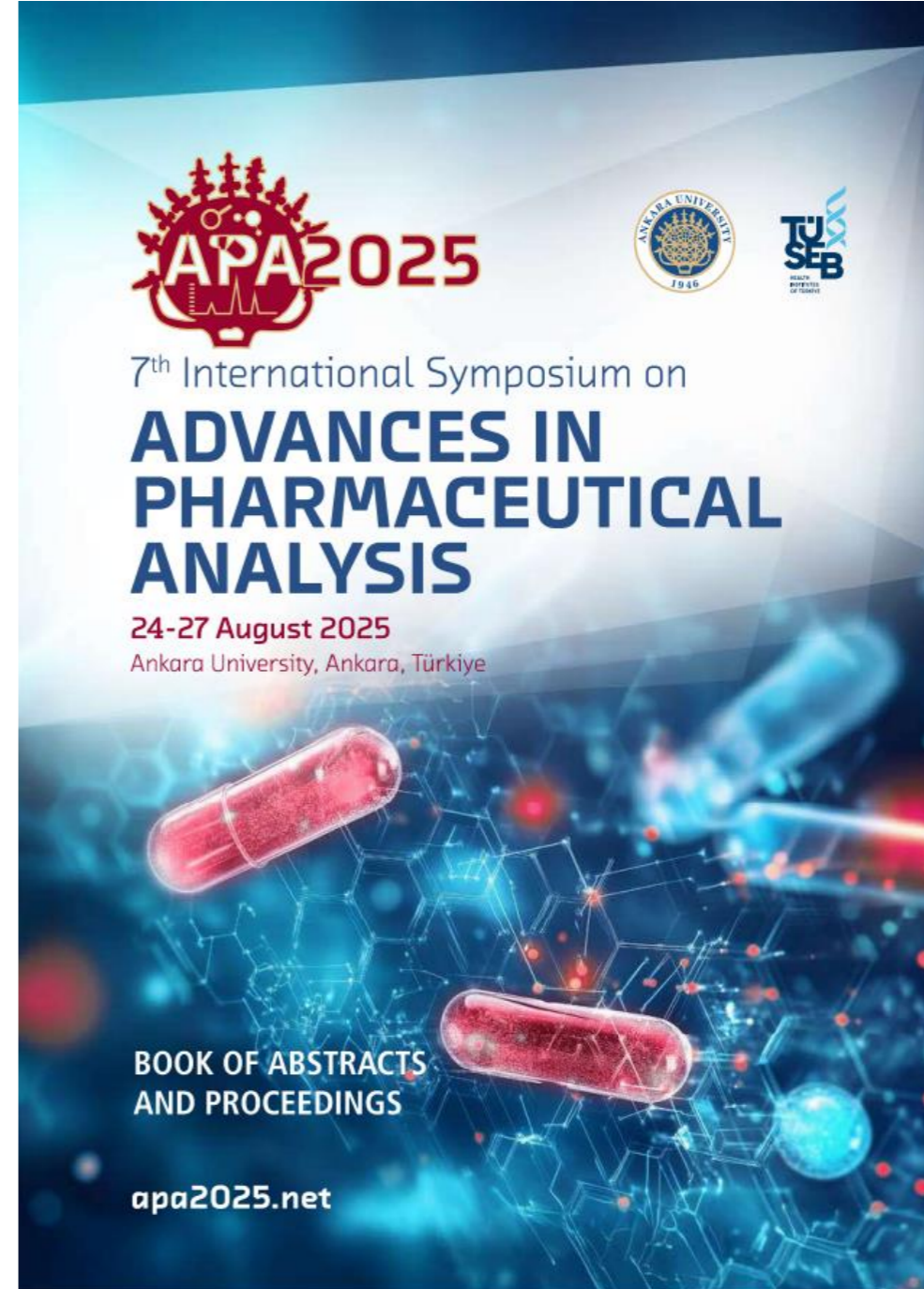
meetinghand



FACULTY OF PHARMACY

September

Asst. Prof. Dr. Cem ERKMEN, faculty member of the Department of Analytical Chemistry, participated in the 7th International Symposium on Advances in Pharmaceutical Analysis (APA 2025) held in Ankara with his poster titled “MIP-Based Electrochemical Nanosensor for Monitoring Neurotoxic Pesticides in Environmental Matrices” and was honored with the “Young Scientist Poster Presentation Award”.





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September

On Monday, September 01 , 2025, Asst. Prof. Dr. Cem ERKMEN, faculty member of the Department of Analytical Chemistry, participated in a live broadcast titled “*Career Journey*” for pharmacy students organized by *Faculty Pharmacy Platform*.

Farklı bir bakış

KARİYER YOLCULUĞU

Diplomayı aldıktan sonra hangi yolları izleyebilirsiniz?



DR.CEM ERKMEN
Akademisyen
(Eczacılıkta Analitik Kimya)



MERT ÇAKAR
Eczacılık Öğrencisi

Sayın DR.CEM ERKMEN ile Instagram Canlı Yayını düzenleyeceğiz. Bir akademisyenin geçmiş olduğu yolları kendisinden dinlemeye ne dersin?

1 EYLÜL 2025 SAAT 20.00 İNSTAGRAM

CANLI YAYIN

@hell_lum @mertcakar98

TANITILIM



Dr. Cem Erkmén, 1991 doğumlu olup İstanbul Aydın Üniversitesi Eczacılık Fakültesi, Temel Eczacılık Bilimleri Bölümü Analitik Kimya Anabilim Dalı'nda Dr. Öğr. Üyesi olarak görev yapmaktadır.

Aynı zamanda fakülte bünyesinde Bölüm Başkanlığı, Fakülte Kurulu Üyeliği ve Birim Kalite Komisyonu Üyeliği görevlerini sürdürmektedir. Ayrıca, Dr. Cem Erkmén İstanbul Aydın Üniversitesi İleri Araştırmalar Uygulama ve Araştırma Merkezi'nde araştırmacı olarak görev almaktadır.



Dr. Cem Erkmén, 1991 doğumlu olup İstanbul Aydın Üniversitesi Eczacılık Fakültesi, Temel Eczacılık Bilimleri Bölümü Analitik Kimya Anabilim Dalı'nda Dr. Öğr. Üyesi olarak görev yapmaktadır.



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Dr. Erkmén, ulusal ve uluslararası kongrelerde 30'un üzerinde bildiri sunmuş, 2018'de Bükreş'te düzenlenen Uluslararası Analitik Kimya Konferansı'nda En İyi Sözlü Sunum Ödülü'nü kazanmıştır.

Ayrıca farklı dergilerde misafir editörlük yapmış, 2025 yılında Exploration of Foods and Foodomics dergisinin Genç Editör Kurulu'na seçilmiştir. Bilimsel vizyonu; farmasötik ve çevresel örneklerde hassas, seçici ve hızlı analizler için yenilikçi sensör platformları geliştirmek, bu platformları klinik ve biyomedikal uygulamalara entegre ederek topluma fayda sağlayacak teknolojiler üretmektir.



FACULTY OF PHARMACY

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On Monday, September 8, a training session on “**Emergency Situations and Training Plan**” was conducted by Occupational Safety Specialist Hüseyin Emre Gülbaş in classroom M Block 9701. The training provided participants with detailed information on appropriate actions to be taken and incorrect behaviors to be avoided during and after fire, flood, and earthquake situations. At the end of the training, an earthquake drill was carried out, during which participants were evacuated from the building and directed to the assembly area on campus.

