

ISSN 2636-8498

Environmental Research & Technology

Year 2025
Volume 8
Number 1

<https://dergipark.org.tr/en/pub/ert>

Environmental Research & Technology

Volume 8 Number 1 Year 2025

EDITOR-IN-CHIEF

Prof. Dr. Ahmet Demir, *Yıldız Technical University, İstanbul, Türkiye*

Prof. Dr. Mehmet Sinan Bilgili, *Yıldız Technical University, İstanbul, Türkiye*

ACADEMIC ADVISORY BOARD

Prof. Dr. Adem Baştürk, *Yıldız Technical University, İstanbul, Türkiye*

Prof. Dr. Mustafa Öztürk, *Yıldız Technical University, İstanbul, Türkiye*

Prof. Dr. Lütfi Akça, *İstanbul Technical University, İstanbul, Türkiye*

Prof. Dr. Oktay Tabasaran, *University of Stuttgart, Germany*

SCIENTIFIC DIRECTOR

Prof. Dr. Ahmet Demir, *Yıldız Technical University, İstanbul, Türkiye*

ASSISTANT EDITOR

Dr. Hanife Sarı Erkan, *Yıldız Technical University, İstanbul, Türkiye*

LANGUAGE EDITOR

Prof. Dr. Güleda Engin, *Yıldız Technical University, İstanbul, Türkiye*

Abstracting and Indexing

The following is a list of the Abstracting and Indexing databases that cover

TUBITAK TR Index, Scopus, EBSCO, ROAD, SJIFactor, EurAsianScientific Journal Index (ESJI), Research Bib(Academic Resource Index), ScientificIndexing Services, ASOS Index, MIAR, IndexCopernicus, Open Ukranian Citation Index (OUCI), Scilit, Ideal Online, Google Scholar, Directory of Research Journals Indexing.

Publisher (Owner)

Mehmet Sinan Bilgili

E-mail: mbilgili@yildiz.edu.tr, ahmetd@yildiz.edu.tr

Corporate Contributor (Publishing House)

Kare Publishing - Kare Yayıncılık

Address: Göztepe Mah., Fahrettin Kerim Gökay Cad., No: 200, Da: 2, Göztepe, Kadıköy, İstanbul, Türkiye

Phone: +90 216 550 61 11; **Web:** www.karepb.com; **E-mail:** kare@karepb.com

Environmental Research & Technology

Volume 8 Number 1 Year 2025

CO-EDITORS (AIR POLLUTION)

Prof. Dr. Mohd Talib Latif, *Department of National University of Malaysia/Universiti Kebangsaan Malaysia, Malaysia*

Prof. Dr. Nedim Vardar, *Inter American University, Puerto Rico*

Prof. Dr. Sait Cemil Sofuođlu, *İzmir Institute of Technology, İzmir, Türkiye*

Prof. Dr. Wina Graus, *Copernicus Institute of Sustainable Development, Utrecht University, Netherlands*

CO-EDITORS (ENVIRONMENTAL ENGINEERING AND SUSTAINABLE SOLUTIONS)

Prof. Dr. Bülent İnanç, *İstanbul Technical University, İstanbul, Türkiye*

Prof. Dr. Güleda Engin, *Yıldız Technical University, İstanbul, Türkiye*

Prof. Dr. Hossein Kazemian, *University of Northern British Columbia, Canada*

Prof. Dr. Raffaella Pomi, *La Sapienza, Italy*

Prof. Dr. Yılmaz Yıldırım, *Zonguldak Bülent Ecevit University, Zonguldak, Türkiye*

CO-EDITORS (WASTE MANAGEMENT)

Prof. Dr. Bestami Özkaya, *Yıldız Technical University, İstanbul, Türkiye*

Prof. Dr. Bülent Topkaya, *Akdeniz University Faculty of Engineering, Antalya, Türkiye*

Prof. Dr. Kahraman Unlu, *Department of Environmental Engineering, Middle East Technical University, Ankara, Türkiye*

Prof. Dr. Mohamed Osmani, *Loughborough University, School of Architecture, Building and Civil Engineering, United Kingdom*

Prof. Dr. Pin Jing He, *Tongji University, China*

CO-EDITORS (WATER AND WASTEWATER MANAGEMENT)

Prof. Dr. Ayşe Filibeli, *Dokuz Eylül University, İzmir, Türkiye*

Prof. Dr. Barış Çallı, *Marmara University, İstanbul, Türkiye*

Prof. Dr. Marina Prisciandaro, *University Of L'aquila, Italy*

Prof. Dr. Md. Ahmaruzzaman, *National Institute of Technology Silchar, India*

Prof. Dr. Selvam Kaliyamoorthy, *Mie University, Japan*

Prof. Dr. Subramanyan Vasudevan, *Academy For Scientific and Innovative Research, New Delhi, India*

Environmental Research & Technology

Volume 8 Number 1 Year 2025

EDITORIAL BOARD

Prof. Dr. Andjelka Mihajlo, *Department of Environmental Engineering and Occupational Safety and Health, Faculty of Technical Sciences, University of Novi Sad, Serbia*

Prof. Dr. Artur J. Badyda, *Warsaw University of Technology, Poland*

Prof. Dr. Azize Ayol, *Dokuz Eylül University, İzmir, Türkiye*

Prof. Dr. Didem Balkanlı, *Yıldız Technical University, İstanbul, Türkiye*

Prof. Dr. Erwin Binner, *University of Natural Resources and Life Science Vienna, Austria*

Prof. Dr. Eyüp Debik, *Yıldız Technical University, İstanbul, Türkiye*

Prof. Dr. Dilek Sanin, *Middle East Technical University, Ankara, Türkiye*

Prof. Dr. Gülsüm Yılmaz, *İstanbul University-Cerrahpaşa, İstanbul, Türkiye*

Prof. Dr. Hamdy Seif, *Beirut Arab University, Beirut, Lebanon*

Prof. Dr. Hanife Büyükgüngör, *Ondokuz Mayıs University, Samsun, Türkiye*

Prof. Dr. Ilirjan Malollari, *University of Tirana, Albania, Albanian Academy of Sciences, Albania*

Prof. Dr. İsmail Koyuncu, *İstanbul Technical University, İstanbul, Türkiye*

Prof. Dr. Jaakko Puhakka, *Tampere University of Applied Sciences, Tampere, Finland*

Prof. Dr. Lucas Alados Arboledas, *University of Granada, Granada, Spain*

Prof. Dr. Mahmoud A. Alawi, *University of Jordan, Amman, Jordan*

Prof. Dr. Marcelo Antunes Nolasco, *University of São Paulo, São Paulo, Brasil*

Prof. Dr. Martin Kranert, *University of Stuttgart, Stuttgart, German*

Prof. Dr. Mesut Akgün, *Yıldız Technical University, İstanbul, Türkiye*

Prof. Dr. Mukand S. Babel, *Asian Institute of Technology, Pathum Thani, Thailand*

Prof. Dr. Mustafa Odabaşı, *Dokuz Eylül University, İzmir, Türkiye*

Prof. Dr. Müfide Banar, *Eskişehir Technical University, Eskişehir, Türkiye*

Prof. Dr. Mufit Bahadır, *Technische Universität Braunschweig, German*

Prof. Dr. Neslihan Doğan Sağlamtimur, *Niğde Ömer Halisdemir University, Niğde, Türkiye*

Prof. Dr. Nihal Bektaş, *Gebze Technical University, Gebze, Türkiye*

Prof. Dr. Osman Arıkan, *İstanbul Technical University, İstanbul, Türkiye*

Prof. Dr. Osman Nuri Ağdağ, *Pamukkale University, Denizli, Türkiye*

Prof. Dr. Pier Paolo Manca, *University of Cagliari, Italy*

Prof. Dr. Saim Özdemir, *Sakarya University, Sakarya, Türkiye*

Prof. Dr. Serdar Aydın, *İstanbul University-Cerrahpaşa, İstanbul, Türkiye*

Prof. Dr. Timothy O. Randhir, *University of Massachusetts Amherst, USA*

Prof. Dr. Ülkü Yetis, *Middle East Technical University, Ankara, Türkiye*

Prof. Dr. Victor Alcaraz Gonzalez, *University of Guadalajara, Mexico*

Prof. Dr. Ejaz Khan, *Health Services Academy, Pakistan*

Environmental Research & Technology

Volume 8 Number 1 Year 2025

CONTENTS

Research Articles

- 1** **Ionic status of ground and surface water at Madaripur in Bangladesh for drinking and agricultural uses**
Tusar Kanti ROY, Shuvo GHOSH, A. K. M. Faruk-E-AZAM, Mizanur RAHMAN, Mohammad Nurul AZIM SIKDER, Abdullah Al Mamun SIDDIQUI, Rimu DAS, Md. Habibur RAHMAN
- 7** **Anaerobic treatment of N-(phosphonometyl) glycine using mixed culture in batch reactor**
Çağla UYGUN, Cansu FİLİK İŞÇEN, Ülküye Dudu GÜL, Semra İLHAN
- 17** **Enhancing climate change resilience: Assessing adaptation needs, and significance of monitoring and evaluation systems**
Çiğdem TUĞAÇ
- 35** **Combined treatment of domestic wastewater with landfill leachate using aerobic moving bed bioreactor (AeMBBR)**
Melike KOZAK, Kevser CIRIK
- 44** **Which one is greener for the consumer? Product emission comparison between diesel and battery electric vehicles**
Mustafa CANBULAT, İbrahim ALKARA
- 57** **Waste collection and transport optimization in accordance with zero waste principles of Karaman province in Türkiye**
Yusuf Alparslan ARGUN, Melayib BİLGİN
- 65** **Removal of sodium isopropyl xanthate by capacitive deionization process**
Yasemin ÖZTÜRK
- 73** **Experimental determination of mechanical properties and characterization of selected crop residues**
Adigun Ayotunde OJO, Omojola AWOGBEMI, Kazeem Aderemi BELLO
- 81** **Narrowing band gap of ZnO codoping (Al+Mn) as a photocatalyst candidate for degraded textile dye wastewater**
Aprilion KRISANDI, Heru HARSONO, Nurfina YUDASARI
- 88** **Phytoremediation of Cr(VI)-rich wastewater using water hyacinth, water lettuce and duckweed**
Bijit Kumar BANIK, Maksudul ISLAM, Imran KABIR, Muhammad Azizul HOQUE

Environmental Research & Technology

Volume 8 Number 1 Year 2025

CONTENTS

- 97** **A comparative study of microplastic detection in *Nemipterus japonicus*, *Rastrelliger kanagurta*, *Arius* sp. and *Scylla olivacea* from Chennai Coastal Region, India using ATR-FTIR spectroscopy**
Rebecca Cathrine JAYAKUMARI, Deborah Anne ROSE, Karthikeyan SIVAKUMARAN, Sheeba Anitha NESAKUMARI, Mahesh THAVASIMUTHU, Saravanan RAMACHANDRAN, Thirunavukkarasu NATESAN
- 110** **A bibliometric analysis of blue growth: Trends, challenges, and opportunities**
Veysi BAŞHAN, Afşin ÇETİNKAYA
- 123** **Assessing the potential of rainwater harvesting and reuse for sustainable university campus**
Nilay MISIRLI, Elif Ebru ŞİŞMAN
- 134** **Impact of temperature on ferric chloride performance in water coagulation**
Dewi FITRIA, Puti Sri KOMALA, Lita DARMAYANTI
- 139** **Sustainable airline company selection using SWARA Weighted VIKOR and COPRAS methods**
Aybike Esra ŞAHİN, Celil DURDAĞ, Fatma Betül BAĞLAN, Elif Arslan DİNÇ
- 152** **Geochemical characteristics and paleo weathering in sediments of Noyyal River Basin, Tamilnadu–India**
Augustine CRISPIN, Purushothaman PARTHASARATHY
- 161** **The relationship between economic growth, population, FDI, globalization, and CO₂ emissions in OIC member countries**
Hafidz ZAINUL MUSTOFA
- 177** **Physio-chemical characterisation of dumped solid waste**
Mumtaz ALAM, Kafeel AHMAD, Mehtab ALAM
- 186** **Mold development risk assessment in the inner side of a building envelope under varying climate conditions**
Bahar TÜRK
- 196** **Performance evaluation of a simple electrochemical treatment model for saline wastewaters: Part A**
Justinah AMOKO, Ezekiel Oluwaseun FEHINTOLA, Enoch ADEKUNBI, Lasisi GBADAMOSI, Babatunde OJO, Abidemi Iyewumi DEMEHIN, John AWOTUNDE, Isaiah OKE
- Review Articles**
- 224** **Industrial symbiosis practices: A case study of Türkiye and Denmark**
Kemal ULUSOY, Neslihan DOĞAN-SAGLAMTİMUR, Fehiman ÇİNER, Andrzej STERNIK, Paula Magdalena SEKUŁA