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Advanced Polymers for Wastewater Treatment and Toxicant Removal

Edited by
Seyed Borhan Mousavi and Grigorios L. Kyriakopoulos

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Guest Editors

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About the Editors

Seyed Borhan Mousavi

Seyed Borhan Mousavi earned his Bachelor of Science (BSc) with distinction in Chemical Engineering from the University of Tabriz in 2016. He continued his academic journey at the same institution, obtaining his Master of Science (MSc) with honors in Chemical Engineering and Polymer Studies in 2019. He then expanded his interdisciplinary expertise by joining the University of British Columbia (UBC) as a graduate research and teaching assistant in Mechanical Engineering from 2020 to 2022. In January 2023, he became a member of the graduate program in Mechanical Engineering at Texas A&M University.

In 2024, Dr. Mousavi joined the Department of Chemical and Biomolecular Engineering at the University of Houston, where his research has since focused on sustainability, environmental sciences, and the thermochemical conversion of solid wastes. His broader research interests span the topics of polymers, nanofluids, heat transfer, tribology, CO_2 capture, and water/wastewater treatment.

To date, he has served as an editor for five scientific journals and has conducted over 300 peer reviews. He has also authored more than 30 publications in high-impact, peer-reviewed journals.

Grigorios L. Kyriakopoulos

Dr. Dr. Grigorios L. Kyriakopoulos (PhD in Chemical Engineering, PhD in Low Carbon Economy) is a teaching and research associate and senior researcher at the School of Electrical and Computer Engineering, National Technical University of Athens (NTUA). He has consistently been among the top 2% highly cited scientists in the world for the years between 1996 and 2023, based on the Stanford University list. His main areas of research are engineering, the environment, energy, renewable energy sources, low carbon economy, waste and water management, business administration, education, urban and regional development, extroversion and internationalization of Small and Medium Enterprises (SMEs), development economics, circular economy, and behavioral ecology.

Preface

Natural water sources are frequently polluted by wastewater effluents streaming into freshwater and causing the diffusion of diverse types of contaminants that are adversely affecting the quality of drinking and irrigation water. In response to this global and controversial issue, this Special Issue explores the use of advanced polymer-based materials for wastewater treatment and toxicant removal. Emphasis is placed on synthesis methods, characterization techniques, and applications for removing pollutants such as heavy metals, dyes, pharmaceuticals, and biological contaminants from contaminated water.

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