Special Issue

Advanced Chemical Innovations for Sustainable Water and Wastewater Treatment

Message from the Guest Editor

Wastewater treatment has evolved as a critical pillar of environmental sustainability, driven by escalating industrial pollution, population growth, and stringent regulatory demands. Traditional methods often fall short in addressing complex contaminants such as pharmaceuticals, microplastics, and heavy metals, necessitating breakthroughs in chemical engineering and material science. Recent advances in catalysis, nanotechnology, and green chemistry have unlocked novel pathways to enhance treatment efficiency, reduce energy consumption, and enable resource recovery. For this Special Issue, we welcome cutting-edge research and reviews on transformative chemical approaches. Topics include, but are not limited to, the following: (1) advanced oxidation processes (AOPs) for persistent pollutant degradation; (2) catalytic and photocatalytic systems for contaminant removal; (3) functionalized nanomaterials and smart adsorbents; (4) green solvents and ionic liquids for selective extraction; (5) hybrid chemical–biological treatment synergies; (6) computational modeling of reaction mechanisms; (7) scalability and lifecycle analysis of novel technologies.

Guest Editor

Dr. Mohammed J.K. Bashir

School of Engineering and Technology, Central Queensland University, 120 Spencer St., Melbourne, VIC 3000, Australia

Deadline for manuscript submissions

30 September 2025

Molecules

an Open Access Journal by MDPI

Impact Factor 4.6
CiteScore 8.6
Indexed in PubMed

mdpi.com/si/234525

Molecules
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
molecules@mdpi.com

mdpi.com/journal/molecules

Molecules

an Open Access Journal by MDPI

Impact Factor 4.6
CiteScore 8.6
Indexed in PubMed

mdpi.com/journal/molecules

MDPI

About the Journal

Message from the Editor-in-Chief

As the premier open access journal dedicated to experimental organic chemistry, and now in its 25th year of publication, the papers published in *Molecules* span from classical synthetic methodology to natural product isolation and characterization, as well as physicochemical studies and the applications of these molecules as pharmaceuticals, catalysts and novel materials. Pushing the boundaries of the discipline, we invite papers on multidisciplinary topics bridging biochemistry, biophysics and materials science, as well as timely reviews and topical issues on cutting edge fields in all these areas.

Editor-in-Chief

Prof. Dr. Thomas J. Schmidt
Institute of Pharmaceutical Biology and Phytochemistry, University of Münster, Corrensstrasse 48, D-48149 Münster, Germany

Author Benefits

High Visibility:

indexed within Scopus, SCIE (Web of Science), PubMed, MEDLINE, PMC, Reaxys, CaPlus / SciFinder, MarinLit, AGRIS, and other databases.

Journal Rank:

JCR - Q2 (Biochemistry and Molecular Biology) / CiteScore - Q1 (Organic Chemistry)

Rapid Publication:

manuscripts are peer-reviewed and a first decision is provided to authors approximately 16.1 days after submission; acceptance to publication is undertaken in 2.6 days (median values for papers published in this journal in the first half of 2025).