

Special Issue

Radiochemistry: Present Status and Future Perspectives

Message from the Guest Editors

Radiochemistry is the study of radioisotopes and their chemical properties, reactions, and processes. The careful manipulation of these isotopes is critical for the advancement of technologies in nuclear energy and medicine, as well as for deepening our fundamental understanding of the elements at the outer reaches of the periodic table, where nuclear instability is the norm. With increased academic access to radioisotopes like the actinides, as well as the resurgence of interest in nuclear energy and radiopharmaceuticals for targeted cancer therapies, this Special Issue compiles research that underscores the current status and future prospects of radiochemistry. This Special Issue focuses on isotope production, radioisotope separation techniques, chemical and radiation-induced radical reactions, complexation thermodynamics, organometallic synthesis, crystallography, and alpha-particle and gamma counting spectroscopies to highlight the current state of the art and shape the future of this broad field of chemistry.

Guest Editors

Dr. Gregory P. Holmbeck

Center for Radiation Chemistry Research, Idaho National Laboratory,
1955 N. Fremont Avenue, P.O. Box 1625, Idaho Falls, ID 83415, USA

Dr. Travis S. Grimes

Radiochemical Separations and Radiation Science, Center for
Radiation Chemistry Research, Idaho National Laboratory, 1955 N.
Fremont Avenue, P.O. Box 1625, Idaho Falls, ID 83415, USA

Deadline for manuscript submissions

30 April 2026



Molecules

an Open Access Journal
by MDPI

Impact Factor 4.6
CiteScore 8.6
Indexed in PubMed



mdpi.com/si/250776

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

[mdpi.com/journal/
molecules](https://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](https://mdpi.com/journal/molecules)



About the Journal

Message from the Editor-in-Chief

As the premier open access journal dedicated to molecular chemistry, now in its 29th 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 all major fields of molecular chemistry and multidisciplinary topics bridging chemistry with biology, physics, and materials science, as well as timely reviews and topical issues on cutting-edge fields in all of 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).