

Special Issue

Synthesis and Application of Chalcogen-Containing Organic Compounds

Message from the Guest Editors

Chalcogen-containing organic compounds—molecules bearing sulfur, selenium, or tellurium atoms—have attracted increasing attention due to their broad chemical versatility, unique electronic properties, and wide-ranging applications in materials science, medicinal chemistry, and catalysis. Recent advances in synthetic methodologies have enabled the selective incorporation of chalcogens into complex frameworks through transition-metal catalysis, organocatalysis, and other redox strategies. These approaches provide access to a wide array of functionalized heterocycles, chalcogen-functionalized arenes, chalcogenium-containing heterocycles, dichalcogenocarbamates, chalcogenoxides, and chalcogenones. Despite progress, challenges remain in the development of efficient, greener, more sustainable synthetic routes and in understanding the structure–property relationships that govern their functions. Continued interdisciplinary efforts are essential to fully explore the potential of chalcogen-containing compounds in synthetic, biomedical, and materials frontiers.

Guest Editors

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Deadline for manuscript submissions

31 December 2025



Molecules

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CiteScore 8.6
Indexed in PubMed



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