Special Issue

Near-Infrared Fluorescent Materials for Biological Imaging and Sensing

Message from the Guest Editors

Fluorescence imaging is vital in biomedicine, but visible-light fluorophores suffer from shallow tissue penetration, autofluorescence, and photodamage. Near-Infrared (NIR, 650-1700 nm) fluorescence overcomes these issues with deeper penetration, minimal background, and enhanced signal-to-noise ratios. Advances in novel NIR materials are crucial for breakthroughs in diagnostics, surgery, and monitoring.

This Special Issue of Molecules, 'Near-Infrared Fluorescent Materials for Biological Imaging and Sensing,' aims to capture the latest advancements. We invite original research and reviews on topics including:

1. Novel NIR material design (organic dyes, Pdots, QDs, CNTs, lanthanide NPs).
2. Surface engineering for improved biocompatibility and targeting.
3. Advanced bioimaging (NIR-II/VIII, super-resolution, image-guided surgery).
4. Biosensing and theranostics (activatable probes, combined therapy/diagnosis).
5. Translational research (toxicity, biodistribution, preclinical validation).

We seek interdisciplinary contributions that bridge chemistry, materials science, and biology. Submit your work to help create a valuable resource for the scientific community.

Guest Editors

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Message from the Editor-in-Chief

As the premier open access journal dedicated to molecular chemistry, now in its 30th 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.

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