

Special Issue

Small-Molecule Fluorescent Probes: From Design to Biological Applications

Message from the Guest Editor

Small-molecule fluorescent probes have become indispensable tools for visualizing biological processes with high spatial-temporal resolution. Their structural tunability, fast response kinetics, and compatibility with live-cell and in vivo environments enable precise monitoring of microenvironmental cues, dynamic organelle functions, and disease-related biomarkers. In recent years, technological and chemical advances have driven the demand for next-generation probes with improved photophysical performance, enhanced biostability, and refined functional specificity. This Special Issue, "Small-Molecule Fluorescent Probes: From Design to Biological Applications," aims to highlight recent progress in probe chemistry, structure–function relationships, imaging mechanisms, and practical applications in biology. We welcome original papers that report innovative molecular design strategies, advanced imaging modalities, and biological discoveries enabled by fluorescent probes. We intend this Special Issue to be an inspiring platform for the development of next-generation fluorescent tools for fundamental research and biomedical innovation.

Guest Editor

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