

Special Issue on
Fluorescent Probes: Current and Future Trends

CALL FOR PAPERS

Fluorescent probes are indispensable tools for the detection and quantification of chemical and biological molecules. Throughout the last few decades, fluorescence was exploited for the identification of trace amounts of innumerable organic and inorganic molecules with great sensitivity and selectivity. The availability of probes for a specific ion or molecule often gave rise to extraordinary advancements of an entire field, as exemplified by Fura-2 and its derivatives and the FRET-based calcium biosensors.

The revolutionary and rapid advance of fluorescence imaging techniques (e.g., laser scanning confocal and two-photon microscopy) have provided better insight into the molecular processes in living organisms with high sensitivity, simplicity, and fast response. All these techniques have facilitated the development of novel fluorescent probes and sensors. Nowadays, a wide range of fluorescent probes are available and used as powerful tools to detect, localize, and study the dynamics of biomolecules including ions, proteins, analytes, lipids, cofactors, and drugs, to target various cellular organelles, to analyze environmental contaminants and for food quality analysis. However, despite the wide field of application, new fluorescent probes are needed to better understand cell physiology and natural processes.

This special issue is intended to be an up-to-date and comprehensive issue focused on fluorescent probes and aims to pave the way to future developments in this wide and dynamic field. We cordially invite you to submit original papers, short communications, perspectives, critical overviews, and reviews directed, but not limited, to the design, synthesis, and characterization of fluorescent probes potentially implicated in biotechnological, medicine, and medicinal chemistry applications. All aspects of the topics are welcome, including new fluorescent compounds and their applications, novel discoveries, imaging and data for especially challenging targets, and new fluorescence-based techniques to advance the field. Reviews should provide a retrospective analysis and a critical overview of the current state-of-the-art, highlighting the recent advances of this wide field.

Potential topics include but are not limited to the following:

- ▶ Fluorescent sensing mechanisms
- ▶ Synthesis and application of fluorescent probes
- ▶ The applications of fluorescent probes in medicinal chemistry
- ▶ Fluorescent probe based nanomaterials
- ▶ Spectroscopic-based biosensors
- ▶ Studies on Förster resonance energy transfer (FRET)
- ▶ Ion fluorescence indicator dyes and metal enhanced fluorescence (MEF)
- ▶ One photon/two-photon excitable probes
- ▶ Ratiometric near-infrared fluorescent probes
- ▶ Fluorescent detection and the resulting biomedical applications

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/jchem/biochemistry/fpft/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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