Special Issue on
Innovative Optofluidic Sensing Schemes for Water Quality Assessment

CALL FOR PAPERS

Water is essential to all aspects of ecosystems and human societies. However, with the rising population of the world and continuous industrial growth, both the availability and quality of water resources are at risk. As a result of the mounting anthropogenic activities, we have seen a surge in aquatic pollutants in various forms including heavy metals, chemicals, organic compounds, and even pathogens. The consequences of such contamination can be dramatic for humans and our planet. In this regard, there is a need for rapid and facile sensing schemes that can help identify these hazardous pollutants so that remediation measures can be implemented.

Sensors are valuable tools for water quality assessment. Among possible architectures, those based on optofluidic approaches are particularly attractive for detecting aquatic pollutants since liquids (water) are an essential part of their structure. Furthermore, optofluidic sensors fulfill the main requirements for water quality monitoring, as they hold high sensitivity and low detection limits, allow multicomponent recognition, which is crucial for discriminating water pollutants, and more importantly can operate in a real-time and continuous-monitoring fashion.

This goal of this Special Issue is to offer a full appraisal of up-to-date systems deploying optofluidic technologies as multimodal water contaminant sensors, i.e. sensors that are capable of rapidly detecting and distinguishing water pollutants. Therefore, we intend to look at complete optofluidic devices and systems from the perspective of their most promising applications, which could contribute to truly innovative solutions for rapid diagnosis, prevention for onward treatment, and remediation procedures. Original research and review articles are welcome.

Potential topics include but are not limited to the following:

- Resonant optical micro- and nano-cavity
- Photonic bandgaps materials
- Waveguides and optical fibers
- Micro- and nanofluidic platforms
- Remote and network sensors (IoT sensors and wireless sensor networks)
- Microscopy and spectroscopy
- Nanosensors (nanopores, nanowires, plasmonic, meta-materials)
- Machine and deep-learning assisted methods
- Sample collection and preparation strategies

Authors can submit their manuscripts through the Manuscript Tracking System at https://review.hindawi.com/submit?specialIssue=742730.

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

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