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Special Issue Reprint

Optofluidic Devices and Applications

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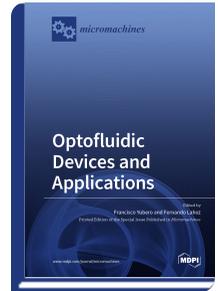
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Optofluidic devices are of high scientific and industrial interest in chemistry, biology, material science, pharmacy, and medicine. In recent years, they have experienced strong development because of impressive achievements in the synergistic combination of photonics and micro/nanofluidics. Sensing and/or lasing platforms showing unprecedented sensitivities in extremely small analyte volumes, and allowing real-time analysis within a lab-on-a-chip approach, have been developed. They are based on the interaction of fluids with evanescent waves induced at the surface of metallic or photonic structures, on the implementation of microcavities to induce optical resonances in the fluid medium, or on other interactions of the microfluidic systems with light. In this context, a large variety of optofluidic devices has emerged, covering topics such as cell manipulation, microfabrication, water purification, energy production, catalytic reactions, microparticle sorting, micro-imaging, or bio-sensing. Moreover, the integration of these optofluidic devices in larger electro-optic platforms represents a highly valuable improvement towards advanced applications, such as those based on surface plasmon resonances that are already on the market. In this Special Issue, we invited the scientific community working in this rapidly evolving field to publish recent research and/or review papers on these optofluidic devices and their applications.



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