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Smart Microfluidic Devices with Photonic Control and Sensing

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Message from the Guest Editor

A wide plethora of solutions for flow control and sensing of chemical and physical parameters have been combined with microfluidic devices, thus allowing manipulation and monitoring of small volumes of fluids. Still, there are technical challenges for the conventional microfluidic approaches that could be overcome by realizing “smart microfluidic devices.” Photonics techniques to remotely induce and control flow in channels as well as to perform non-contact, non-invasive sensing on the filling fluids can provide significant contributions for a faster transition toward a smart microfluidic world.

This Special Issue is particularly focused on the specific application to microfluidic channels of photonic-based non-invasive sensors of temperature, pressure or other physical parameters as well as of non-contact sensors of pH, oxygen, or other analytes. Contributions are also welcomed on the development of microdevices where flow is activated and modulated in real-time, by exploiting optical, non-contact strategies.



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Special Issue



Editor-in-Chief

Message from the Editor-in-Chief

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