Special Issue

Optical Tweezers in Sensing Technologies

Message from the Guest Editor

Optical tweezers are a laser-based technique that uses light to trap and manipulate micro/nano-objects. Optical tweezers are developed as advanced tools for super-highly precise sensing, which can be used for the measurement of forces with subfemtonewton sensitivity, displacements with subnanometer sensitivity, and masses with attogram sensitivity, therefore enabling its wide applications in single molecules sensing, gravitational waves detection, and quantum behavior investigation of macroscopic mechanics. Miniaturized optical tweezers, including fiber optical tweezers, on-chip integrated tweezers, and metasurface tweezers, have been developed. These new types of optical tweezers are portable, autonomous, integrable, and able to interface with other existing technologies, including microfluidics and ion traps in a quantum chip, and show more advantages in sensing. The aim of this Special Issue is to highlight the most recent research regarding optical tweezers in sensing technology. For more details, please visit here.

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Sensors is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. Sensors organizes Special Issues devoted to specific sensing areas and applications each year.

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