Special Issue

Micro- and Nano-Systems for Manipulation, Actuation and Sensing

Message from the Guest Editors

The precise control, handling, and manipulation of microscale and nanoscale objects including robots, particles, cells, droplets and molecules on micro/nano platforms are essential to the fields of chemistry, biology, robotics, and telecommunications. Micro/nano systems have become powerful tools for tackling some of society's most pressing problems, including healthcare, energy harvesting, and environmental quality. However, challenges must be overcome to expand the practicability of micro/nano systems, such as the stability of assembling, precision of microscale control, compatibility of materials in complex environments, and insufficient driven forces. Accordingly, this Special Issue seeks to showcase research papers, short communications, and review articles that focus on: (1) the novel design, modeling, fabrication, and assembling of micro/nano-scale systems for small object manipulation, control and actuation based on, but not limited to, magnetic, electric, thermal, acoustic, light; (2) multiphysics-driven intelligent microrobots, actuators and sensors; (3) applications of newly designed microfluid and nanofluidic systems for fluid control and sensing.

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