

Special Issue

Miniature and Micro-Actuators

Message from the Guest Editor

In this Special issue, a wide range of topics will be covered, including the design, fabrication, characterization, packaging, and system integration or final applications of miniature actuators, ranging from the centimeter down to the micrometer scale. The main focus of the issue is miniaturization, regardless the materials employed or the device principle. Furthermore, basic as well as more application-oriented research topics are considered, such as:

- Material research oriented to actuator microsystems: polymers, organic materials, piezoelectric materials, nitrides, shape memory alloys, thermoelectric materials, other functional thin film materials, thick and thin films;
- Processes and fabrication technologies for miniaturized actuator systems: deposition techniques, lithography, etching and ablation techniques, hybrid technologies, inkjet or 3D printing;
- Functional surfaces in actuator microdevices: hydrophobic/hydrophilic functionalization, tribological functions, biomimetic surfaces;
- etc...

Guest Editor

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About the Journal

Message from the Editorial Board

We are just entering the Next Wave of Technology (NWT) where actuators will play the same role as the computer chip did for computers/social media approximately four decades ago. Just in the U.S., production of \$1 trillion year of electromechanical systems (vehicles, orthotics, manufacturing cells, freight trains, aircraft, etc.) will be impacted by the NWT, all driven by actuators. Five key trends can be found for the future perspectives: “Performance to Reliability”, “Hard to Soft”, “Macro to Nano”, “Homo to Hetero” and “Single to Multi functional”. We invite papers that primarily impact these economic sectors; those illustrating basic scientific principles are also welcome.

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