

## Special Issue

# Piezoelectric Actuators and Transducers: Materials, Design, Control and Applications—2nd Edition

### Message from the Guest Editor

Piezoelectric actuators are often used in precision positioning devices because of their nanometer-order resolution. In addition, they are small and light, and generate a large blocking force. On the other hand, the deformation of the piezoelectric actuators is generally limited to several tens of micrometers. In order to overcome their disadvantages, they are often combined with a mechanism to enlarge the movable range by accumulating minute motions. Since hysteresis and creep also deteriorate the performance of the piezoelectric actuators, the displacement, supplied electric charge, or driving current are fed back for closed-loop or sensor-less control methods. Some models that compensate for the hysteresis have also been studied. Smart structures with collocated piezoelectric composites can suppress vibration. These developments are expanding, and their applications in science, technology, precision engineering, and industry (such as material science, space science, nanotechnology, biotechnology, precision machining, and semiconductor production) are abundant

### Guest Editor

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### Deadline for manuscript submissions

closed (15 January 2024)



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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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