



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

Guest Editor:

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Deadline for manuscript
submissions:

closed (15 January 2024)

Message from the Guest Editor

Dear Colleagues,

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

