Special Issue

Piezoelectric Actuators in MEMS

Message from the Guest Editor

Piezoelectric actuators are indispensable key components in MEMS, playing a vital role in realizing the precise motion and control of microdevices, as well as promoting the continuous development and innovation of MEMS technology. The main advantage of piezoelectric actuators is their ability to achieve small and precise displacement and rotation. Piezoelectric actuators are especially suitable for micro devices requiring high precision, high speed, and stable performance. In the practical application of MEMS, piezoelectric actuators are widely used to realize the precise motion control of micro pumps and micro valves, to name a few. The recent literature has provided a myriad of contributions related to the basic characterization of such devices, whilst ongoing research is devoted to various applications of piezoelectric actuators, addressing specific needs and issues. The aim of the present Special Issue is to collect original papers concerned with the application of various types of piezoelectric actuators in MEMS, without any limitation on the specific application field. Theoretical, numerical, and experimental contributions are all welcome.

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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