



Modeling Smart Actuators and Their Applications

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Message from the Guest Editor

Dear Colleagues,

Multifunctional materials, such as piezoelectric materials, shape memory alloys, electrorheological (ER) and magnetorheological (MR) materials, and magnetostrictive materials, have received growing interest in the development of advanced actuators for motion control and, semi-active and active vibration and noise control applications. The purpose of this Special Issue is to invite the state-of-the art review and original contributions in this emerging technology. Contributions related to modeling and analysis, design optimization, experimental characterization, and control of actuators featuring smart materials, are especially encouraged. This Special Issue is also interested in contributions addressing the application of smart actuators for adaptive positioning, noise and vibration control applications.

Website:

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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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