Special Issue

Actuator Design and Control Strategy Development for Vibration Control in Precision Engineering

Message from the Guest Editors

Vibration control is essential for most engineering applications, such as civil and aerospace structures, astronomical and physics instruments, and ultra-precise industrial machines. For many years, smart materials, such as piezoelectric/electrostrictive materials, magnetostrictive materials, shape memory alloys, and piezoelectric/electrostrictive materials, have been used as sensors and actuators in several applications such as precision motion control, active vibration damping, and shock absorption. The research into the applications of actuator design and control strategy development for vibration control is constantly being updated.
In this Special Issue, we aim to collect a coherent ensemble of original articles and reviews emphasizing the following topics:

- Design of active actuators in damping and isolation applications;
- Vibration control of aerospace structures;
- Vibration damping and isolation in precision machining;
- Novel control strategy design for active vibration suppression;
- Application of smart materials in vibration control;
- Active vibration control in presence of structural uncertainties.

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Actuators

an Open Access Journal by MDPI

Impact Factor 2.3
CiteScore 4.3

mdpi.com/si/160316

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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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