Special Issue

Piezoelectric and Electrostrictive Materials in Mechatronics, Precision Engineering and Vibration Control

Message from the Guest Editors

Piezoelectric and electrostrictive materials are considered the most mature among smart materials used in mechatronics, precision engineering, and vibration control. They include poly-crystal and mono-crystal ceramics (PZT, PMN-PT), polymers (PVDF, PVDF-TrFE, etc.) as well as composites (MFC). They offer high resolution and high bandwidth, they are suitable for mass manufacturing, and they can be used as thin films. This Special Issue will gather papers on modeling, control, and applications related to:

- Precision engineering;
- MEMS;
- Position and shape control;
- Adaptive structures for space;
- Vibration control (active isolation, active damping, and semi-active damping);
- Aeroelasticity;
- Energy transformer and energy harvesting.

Guest Editors

Prof. Dr. André Preumont

Dr. Kainan Wang

Dr. Haim Abramovich

Deadline for manuscript submissions

closed (15 September 2022)

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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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