Special Issue

Shape Memory Alloy Actuators

Message from the Guest Editors

Since the invention of shape memory alloys (SMAs), in particular, NiTi based SMAs in the 1970s, we have seen extensive R&D in various types of actuators based on bulk and/or thin-film SMA elements. Recent developments in fatigue-resistance and temperature-insensitive versions provide more opportunities for SMAs in a wider range of applications. Furthermore, additive manufacturing of SMA elements enables rapid customization for individuals. This Special Issue of *Actuators*, entitled Shape Memory Alloy Actuators, is a platform to showcase the achievements so far. Both review and original technical (including both experimental and modeling) papers are welcome.

Keywords:

- Shape memory alloys
- Magnetic shape memory alloys
- Shape memory effect
- Superelasticity
- Two-way actuators
- One-way actuators
- Thin film shape memory alloys
- Nitinol
- 3D/4D printing
- Modeling and simulation

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Deadline for manuscript submissions

closed (30 June 2022)

Actuators

an Open Access Journal by MDPI

Impact Factor 2.3
CiteScore 4.3

mdpi.com/si/59314

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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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