Special Issue

Soft Actuators and Robotics

Message from the Guest Editor

This Special Issue aims to cover different aspects of the recent advances in soft actuators and robotics, including the development of architectures and modules for fabrication, modeling, sensing, analysis, and control of soft actuators and robotics. Submissions examining how the performance of soft actuators and robotics can be improved and those discussing adaptability, multimodal locomotion, self-healing, and multi-responsiveness of such robots are particularly welcome. Topics of interest for this collection include but are not limited to:

- Compliant mechanisms in soft actuators and robotics;
- Artificial muscles with embedded proprioceptive sensors and electronics;
- Materials and structural designs of soft actuators;
- Programmable soft materials in soft actuators and robotics;
- Modeling and simulation of sensorized actuators;
- Model-based control of soft actuators and robotics;
- Data-driven models in soft actuators and robotics;
- Learning control of soft actuators and robotics;
- Untethered synthetic soft actuator;
- Soft actuators in soft grippers;
- Soft actuators to develop complex soft robots;
- Real-world applications of soft actuators.

Guest Editor

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Deadline for manuscript submissions

closed (1 November 2023)

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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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