Special Issue

Recent Advances in Soft Actuators, Robotics and Intelligence

Message from the Guest Editor

With their soft bodies, soft actuators and robots are a natural safety solution for bridging the gap between machines and humans. Thanks to their flexibility and regulatory compliance, they can adapt to complex and dynamic environments. Therefore, this Special Issue will focus on the latest advances in the field of soft technologies for robot realization. Here, we invite you to share your latest findings by submitting high-quality manuscripts that address the following challenges in the field:

- Soft actuators and pliable mechanisms in robotics;
- Artificial muscles;
- Material and structural design of soft actuators;
- Soft materials in soft actuators or robots;
- Modeling and simulation of sensing actuators;
- Model-based control of soft actuators or robots;
- Control methods for soft actuators or robots;
- Artificial intelligence for soft actuators or robots;
- Unprocessed synthetic soft actuators;
- Soft actuators in soft fixtures;
- Development of soft actuators for complex soft robots;
- Real-world applications of soft actuators.

Guest Editor

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Deadline for manuscript submissions

closed (31 July 2025)

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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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