

Special Issue

Robot Control in Human-Machine Systems

Message from the Guest Editors

Soft robotics are robotic systems made of materials that are similar in softness to human soft tissues. Recent technological developments have led to the widespread use of soft robotics systems in a broad range of medical applications, including rehabilitation, surgery, and diagnosis. In order to further advance soft robotic systems in medical applications, it is crucial to understand the current achievements and the technical challenges remaining for soft robots. Hence, this Special Issue intends to gather world-class researchers to present state-of-the-art research achievements and advances that contribute to soft robotics techniques in medical applications. **Keywords:**

- soft robot modeling and simulation
- soft robot control, soft sensors and soft actuators, soft electronics
- soft/flexible materials and structures
- soft robot-human interface
- soft robot applications in the medical field
- tissue engineering and biological actuation
- mechanical intelligence of soft materials
- sensing techniques for soft systems
- optimizing soft actuator design and control
- soft robot systems

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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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