Special Issue

Pneumatic, Hybrid Pneumatic–Electric, and Vacuum-Powered Actuators

Message from the Guest Editor

This Special Issue will cover all aspects of the design, modeling, control, and applications of pneumatic, hybrid pneumatic–electric, and vacuum-powered actuators. Both theoretical and practical contributions are welcome. The particular topics of interest include, but are not limited to:

- pneumatic actuators;
- hybrid pneumatic–electric actuators;
- vacuum-powered actuators;
- soft actuators;
- position control;
- force control;
- physical human–robot interaction;
- soft robots;
- collaborative robots;
- assistive robots.

Guest Editor

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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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