Special Issue

Pneumatic Actuators for Robotics and Automation

Message from the Guest Editor

Pneumatic actuation is a valuable and preferred alternative adopted in several control and automation systems for manufacturing and logistic processes, as well as for bio-robotic applications. Pneumatics as the main motion power source offers some important advantages in terms of a low weight-to-power ratio and safety; the latter is most relevant to the emerging field of cooperative robotics where a controlled and safe interaction between a human operator and pneumatic robot, other than the soft manipulation of delicate objects, can be guaranteed. The Special Issue "Pneumatic Actuators for Robotics and Automation" covers both theoretical and experimental challenges involved in the design, realization, and control of pneumatic actuators for all relevant applications of robotics, automation, and control engineering.

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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