Special Issue

Advanced Technologies in Soft Pneumatic Actuators

Message from the Guest Editor

I am pleased to announce the Special Issue “Advanced Technologies in Soft Pneumatic Actuators” to be published in *Actuators*. Newly introduced design approaches, which integrate pneumatic actuation technologies with the adoption of soft hyper-elastic materials and novel processes of fabrication of soft actuators, pave the way for more efficient implementations of control and automation systems in a large range of industrial and automation processes and bio-robotic applications. A common feature of all those important applications that can benefit from the adoption of a soft pneumatic actuation is the improved control performance, e.g., thanks to the low weight-to-power ratio and intrinsic safety of the actuators and soft robots interacting with a human subject, in collaborative robotics as well as in assistive and rehabilitation robotics mediated by soft wearable exoskeletons. The Special Issue covers both theoretical and experimental challenges involved in the design, realization, and control of pneumatic soft actuators for all relevant applications of robotics and automation, control engineering, and healthcare and biomedical 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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