Special Issue

Pneumatic Muscle Actuators

Message from the Guest Editors

Pneumatic muscle actuators were initially conceived only for bioengineering applications. Over time, several new types have also been proposed for industrial applications, keeping some interesting characteristics unchanged: high strength/mass ratio, possibility of realization with easily available materials, ease of realization, low cost, ease of introduction into mechanical devices thanks to high tolerances assembly, respect for the environment and compliance, very useful for devices that must interact with humans. The recent development of soft actuators has led to a renewed interest of researchers in pneumatic muscles. This Special Issue aims to collect all the most innovative contributions on the theme of pneumatic muscles and soft actuators on topics including, but not limited to, new types of actuators, new realization technologies, new realization materials, new applications, and new models for sizing, control, for the forecast of operation, and for fatigue life duration.

Guest Editors

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Deadline for manuscript submissions

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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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