Special Issue

Soft Actuators for Artificial Muscles

Message from the Guest Editors

With expanding interest in soft robotics as a human-safe counterpart of traditional industrial robotics, the field of soft actuators working as artificial muscles to actuate these machines has been subject to intense research in the last two decades. The range of actuators capable of mechanical response to various kinds of stimuli has become extensive, covering the vast spectrum of interesting properties utilizable in soft robotics applications. ... This Special Issue aims to attract papers devoted to any aspect of artificial muscle (AM)-related research, ranging from their design as well as the design of AM-actuated mechanisms to their modeling and/or control, including pneumatic soft actuators (fluidic muscles, PAMs), polymeric actuators (DEAs and IPMC), shape memory alloys, stimuli-responsive gels, magnetostrictive actuators, and more.

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Guest Editors

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Deadline for manuscript submissions

closed (30 June 2022)

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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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