Special Issue

Design and Control of Compliant Manipulators

Message from the Guest Editor

Targeting at different tasks, compliant manipulators can be driven by various actuators such as smart materials actuators (e.g., piezoelectric actuator, shape memory alloy, magnetostrictive actuator, ionic polymer, dielectric elastomer), electromagnetic actuators, fluidic/pneumatic actuators, electrothermal actuators, etc. Compliant manipulators have been applied extensively in different scenarios ranging from macro-, micro- to nano-scale. Example applications including micro/nano-manipulation, assembly automation, medical instruments, rehabilitation robots, biomedical engineering, and so on. Such applications are enabled by the design and implementation of sophisticated control strategies, involving motion control, force control, visual servo control, intelligent control, etc. The main focus of this Special Issue is on new design, control and applications of compliant manipulators dedicated to diverse science and engineering fields.
Website
http://www.mdpi.com/journal/actuators/special_issues/design_control

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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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