Special Issue

Design, Planning and Control of Soft and Adaptive Robots

Message from the Guest Editors

Due to recent developments in the design, planning and control algorithms of soft and adaptive robots, the time when such robots will begin to effectively and efficiently perform in unstructured environments is rapidly approaching. This Special Issue will cover all the above-mentioned advancements. Potential topics include, (but are not limited to) the following:

- Proprioceptive and exteroceptive sensing of soft and adaptive robots;
- Software architectures for autonomous soft and adaptive robots;
- Innovative design of soft and adaptive robot bodies;
- Innovative design of soft and adaptive actuators;
- Adaptive navigation in unstructured environments;
- Dynamic motion planning exploiting soft and adaptive robot bodies;
- Impedance planning and control of soft and adaptive robots;
- Model-based and model-free control of soft robots.

Guest Editors

Dr. Manolo Garabini

Dr. Franco Angelini

Dr. Tom Verstraten

Deadline for manuscript submissions

closed (30 September 2022)

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Actuators
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
actuators@mdpi.com

mdpi.com/journal/actuators

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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.

Editors-in-Chief

Prof. Dr. Kenji Uchino
Emeritus Academy Institute, The Pennsylvania State University, University Park, PA 16802, USA

Prof. Dr. Norman M. Wereley
Department of Aerospace Engineering, University of Maryland, 3179J Martin Hall, College Park, MD 20742, USA

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