



MECHATRONICS

Call for papers

Focused Section on

Design and Control of Hydraulic Robots

Hydraulic robots have recently pushed the state of the art in robotics by demonstrating new levels of performance in terms of rough terrain locomotion, balance, speed, dexterity and robustness (e.g. Boston Dynamics/Google's robots, SARCOS Raytheon's humanoids and exoskeletons, but also academic efforts such as IIT's HyQ, Shandong University's SCalf etc). Inspired by these results, an increasing number of academic groups are (re-)discovering hydraulic actuation for applications where a high power density, robustness and high control bandwidth are crucial requirements.

The main objective of this Focused Section is to report on the most recent advances in the field of hydraulic high-performance robots and actuators with a special focus on their design and control. We are looking for original contributions covering topics including:

- * Mechatronics design of legged robots and manipulator arms with hydraulic actuation
- * Mechatronics design of compact hydraulic actuators and power systems for robotic systems
- * Mechatronics design of rehabilitation devices with hydraulic actuation
- * Model-based position and force controller for hydraulic actuators
- * Whole body control, balancing and rough-terrain locomotion of hydraulic legged robots
- * Agile, highly dynamic and dexterous motions of hydraulic robots
- * Solutions towards energy efficient hydraulic actuation
- * Hydro-static transmissions and novel solutions with magneto-rheological fluids

Manuscript Submission

Please submit the manuscripts in PDF format to <http://mc.manuscriptcentral.com/tmech-ieee/>, and indicate on your cover letter that "This paper is submitted for possible publication in the Focused Section on Design and Control of Hydraulic Robots." Instructions for authors are available online at: <http://www.ieee-asme-mechatronics.org>. The papers should contain both theoretical and practical/experimental results and are subject to the TMECH review procedures. If you have any questions relating to this Focused Section, please email one of the guest editors.

Important Dates

Paper Submission deadline (extended)	October 14, 2015
Completion of First Review	January 1, 2016
Submission of Revised Papers	February 1, 2016
Completion of Final Review	April 1, 2016
Submission of Final Manuscripts and Copyright Forms	May 15, 2016
Publication	July 2016

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