
ADVANCED ROBOTICS Call for Papers

Special Issue on

“New Hydraulic Components for Tough Robots”

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Hydraulics is a traditional technology with a long history of contribution to heavy plants and large power machines. In addition to the traditional features of hydraulics, new hydraulic components are recently being developed for robots, which aim for compactness, low weight, high energy-efficiency, multi-DOF drives, dexterity, smartness, silence, cleanliness, etc. All these advancements have great potential to be expanded for a new discipline of “tough robotics”.

“Toughness” is a key-word for recent robots working practically in real fields such as hazardous outdoor environments and unknown disaster scenes. While “toughness of a robot” includes various aspects, this special issue focuses on mechanical and functional “toughness” of hydraulic robots, which are difficult to be realized by conventional robots driven by electric motors and gears. This includes: (1) high power with a light and compact body, (2) strength and durability for heavy loads, impacts, and vibration, (3) shock and vibration absorption, (4) stationary positioning with no energy consumption, (5) resistance for applications in special environments, e.g. radiation-hardened, waterproof, fire-safe, and etc.

We wish to share the state of art on new hydraulics components for tough robotics and discuss their potential through this special issue.

We are looking for original contributions covering topics including:

- New hydraulic actuators for robots
- Servo valves for robots
- Power packs for mobile robots
- Control methods for dexterous hydraulic robots
- Intelligent hydraulic control
- Sensors for hydraulic robots
- Efficient hydraulic components
- Multi DOF hydraulics
- Hydraulic robots with novel hydraulic components

Submission: The full-length manuscript (either PDF file or MS word file) should be sent by **30 June 2017** to the office of Advanced Robotics, the Robotics Society of Japan through the homepage of Advanced Robotics (<http://www.rsj.or.jp/AR/submission>). A sample template format of the manuscript as well as the Instruction for Authors is available at the homepage.