
***ADVANCED ROBOTICS* Call for Papers**

Special Issue on Cordless Technology for Milli/Micro/Nano Robots

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Scale analysis tells us importance of cordless power supply and actuation of miniaturized mobile robots, since restoring force of the deformed wire will disturb motion of the robot. For Milli/Micro/Nano Robots, it is crucial to apply cordless technology to communicate, measure, actuate, and control. Recent progress in communication technology as well as power source technology improved performance of miniaturized mobile robots in millimeter size. These robots are applied for inspection, medical diagnosis, environmental sensing, and so on. Although we still have difficulty to realize self-sustained miniaturized mobile robots in micro and nanometer size, impressive technological achievements have been accomplished to drive them without using cables. Outer source of energy was used and noncontact actuation of small robots was achieved by using field force, such as electrostatic force, magnetic force, optical trapping force, ultrasonic force, vibration force, fluid force and so on. We can find wide ranging applications of these robots, such as life science, biotechnology, medical diagnostics, medical treatment, and so on. Recently, cordless technology to realize self-sustained Milli/Micro/Nano robots draw increasing attention.

This special issue will present recent advancements in research and development on Milli/Micro/Nano Robots based on cordless technology and their related technologies including energy storage, energy transfer, communication, mechanisms, actuation, sensing and control. Papers on all aspects of cordless technology for Milli/Micro/Nano Robots are invited, including but not limited to the following topics:

- Milli/Micro/Nano Robotics
- Micro and nanotechnology
- Micro and nanomanipulation
- Micro and nanosensors and actuators
- Micro and nanofabrication
- Cordless power supply, power source for Milli/Micro/Nano Robots
- Noncontact actuation of Milli/Micro/Nano Robots
- Wireless communication and sensing
- Molecular machine
- MEMS/NEMS, μ -TAS
- Drug delivery
- Medical devices and diagnostics

Submission:

Pdf format file of the complete manuscript should be sent by May 31, 2010 to the office of Advanced Robotics, the Robotics Society of Japan through our homepage (www.rsj.or.jp/AR/index_e.html). Sample form of the manuscript is available at the homepage, too. Additionally, please send the same file to Prof. Fumihito Arai (arai@imech.mech.tohoku.ac.jp), and Prof. Lixin Dong (ldong@egr.msu.edu) for the confirmation.