

The International Journal of Robotics Research

Call for Papers

International Journal of Robotics Research

Special Issue

Current State of the Art and Future Challenges in Nanorobotics

Abstract

Research activities on nanorobotics are an emerging interdisciplinary technology area raising new scientific challenges and promising revolutionary advancements in applications such as medicine, biology and industrial manufacturing. Nanorobots could be defined as intelligent systems with overall dimensions at or below the micrometer range that are made of assemblies of nanoscale components with individual dimensions ranging between 1 to 100 nm. Nanorobots would be able to perform at least one of the following actions: actuation, sensing, signaling, information processing, intelligence, swarm behavior at the nano scale. The development of nanorobots presents difficult design, fabrication and control challenges as such devices will operate in microenvironments whose physical properties differ from those encountered by conventional parts. Furthermore, nanorobotics is a field, which calls for collaborative efforts between physicists, chemists, biologists, computer scientists, engineers and other specialists to work towards this common objective. In an effort to disseminate the current advances in nanorobotics, and to stimulate a discussion on the future research directions in this field, the *International Journal of Robotics Research* invites papers for a special issue in this area. It is our expectation and goal that this special issue will succeed in invigorating research interests towards the development and applications of nanorobotic systems.

Papers are solicited on all aspects of nanorobotics, including, but not limited to, the following:

- Design and Manufacturing of Nanorobots
- Kinematic and Dynamic Modeling of Nanorobotic Systems
- Control of Nanorobotic Systems
- AFM/SPM Based Assembly and Manipulation at the Nanoscale
- Molecular Self-Assembly and Swarm Behavior of Nanorobots
- Nano-Sensors
- Bio-Nano-Robotics
- Applications (e.g. Medicine, Biology, Industrial Manufacturing)

Papers must contain high-quality original contributions and be prepared in accordance with the International Journal of Robotics Research standards. Excellent quality review papers will also be considered. Submitted manuscripts must not have been previously published or be under review for possible publication. All papers will be reviewed following the regular reviewing procedure of IJRR.

Manuscript Submission

Please submit papers to: <http://mc.manuscriptcentral.com/ijrr> Under 'Manuscript Type' select 'Nanorobotics'. Instructions for authors, with information for *multimedia extensions*, are available on-line at: <http://www.ijrr.org>.

Important Dates:

July 15, 2007	Call for Papers
November 15, 2007	Paper Submission
February 15, 2008	Completion of First Review
March 15, 2008	Submission of Revised Papers
June 15, 2008	Completion of Final Review
July 15, 2008	Submission of Final Manuscripts and Copyright Forms
Fall 2008	Publication

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