

NIST Mobile Microrobotics Challenge, 2011 Call for Participants

September 3rd, 2010
– Updated October 13th, 2010 –

*The National Institute of Standards and Technology, in association with the IEEE Robotics and Automation Society, invites applications to participate in the **2011 NIST Mobile Microrobotics Challenge**, in which microrobots on the order of the diameter of a human hair face off in tests of speed and agility.*

DATES AND LOCATION

The 2011 NIST Mobile Microrobotics Challenge will be held at the Shanghai International Conference Center in Shanghai, China as part of the IEEE International Conference on Robotics and Automation. The conference will be held on May 9-13, 2011.

COMPETITION EVENTS

All robots entered in the competition must be no bigger than 600 micrometers in their largest dimension and must be able to operate without the direct connection of wires (i.e. untethered operation.) The competition will consist of two events structured to test each microrobot's speed, agility, and ability to manipulate small objects.

Mobility Challenge: Microrobots are required to navigate a planar maze in the shape of a figure eight.

Microassembly Challenge: Microrobots must assemble multiple microscale components in a narrow channel. This task simulates anticipated applications of microassembly, including manipulation within a human blood vessel and the assembly of components in nanomanufacturing. *Multiple cooperating microrobots will be allowed.*

APPLICATION TO PARTICIPATE

To apply to the NIST Mobile Microrobotics Challenge, submit a proposal by **December 1st, 2010**. The proposal may be submitted by electronic mail to microrobotics2011@nist.gov, or by post to:

NIST Microrobotics Challenge, 2011
c/o Craig McGray
National Institute of Standards and Technology
100 Bureau Dr., MS 8120
Gaithersburg, MD 20899

The proposal must identify:

1. The individuals contributing to the team.
2. Contact information for exactly one individual who will serve as a Primary Contact.
3. The facilities available for fabrication, operation, and characterization of microrobots.
4. An overview of the microrobot design.
5. An overview of the intended capabilities of the microrobot.
6. An overview of the fabrication process to be used.

The purpose of the proposal is to convince the contest organizers that the team has a credible plan for bringing operational microrobots to the competition. Proposals will not be shared outside of the conference organizers before the competition without express permission of the Primary Contact.