

ACTUATOR 2006

**10th International Conference on New Actuators
&
4th International Exhibition on Smart Actuators
and Drive Systems**

**14 – 16 June 2006
Bremen, Germany**

Conference Proceedings

Editor

Hubert Borgmann

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ACTUATOR 2006

14 – 16 June 2006
Bremen Fair and Congress Center
Germany

Organised by

HVG Hanseatische Veranstaltungen-GmbH, Division Messe Bremen, Germany

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Welcoming Remarks

Welcome to ACTUATOR 2006 in Bremen. This event is the 10th in a series of biennial events in Bremen and consists of the 10th International Conference on New Actuators and the 4th International Exhibition on Smart Actuators and Drive Systems.

ACTUATOR is the major meeting place for leading experts, scientists and managers from all over the world in the field of new actuators for twenty years now. This has been impressively approved by the number of abstracts in response to the Call for Papers. Again, we had an increase of more than 20 percent in comparison to the last time. No doubt, in times of an overall miniaturisation trend in all areas of business there is a still increasing need for miniaturised drives. Piezo technology has confirmed its leading position among the competing smart materials' technologies. Although not recognised by the user it has revolutionised a number of industrial and consumer goods in a spectacular way. The most popular application at this moment is the piezo-based common rail injection technique, for which the German Federal President Horst Köhler awarded the German Innovation Prize to the teams of Siemens and Bosch in November 2005. We are proud of them being reliable members of ACTUATOR community and having offered an appropriate "home forum" that addresses these new actuators as components and, even more, as integrated parts of mechatronic systems or even micro systems.

Being motivated by this engineering success we are looking forward to new prospective results in other areas. Can we expect another innovation stimulus in the field of piezo motors now, where we have had an unexpected response of more than 30 abstracts, resulting in a special session on this topic? Or, can service robotics offer a new market for smart actuators? For the first time, there will be a special session on robots/micro robotics.

Altogether there will be 97 oral presentations and 151 poster contributions this time, all portraying the state of the art and indicating future trends.

Oral sessions will be held in the following fields:

- ERF/MRF actuators
- Low-power electromagnetic actuators
- Micro actuators
- Magnetostrictive actuators
- Piezoelectric actuators
- Polymer actuators
- Shape memory actuators
- Active vibration control
- Aerospace applications
- Bio- / medical applications
- Microfluidics
- Nanopositioning / nanomanipulation
- Piezoelectric actuators: applications
- Piezoelectric motors
- Robotics/ microrobotics

All these sessions will be presented in a 30-minute review by a member of the Programme Committee, followed by application-oriented presentations of 20 minutes each. The full manuscripts of nearly all oral papers and poster contributions have again been compiled in these proceedings and in a separate CD-ROM.

We thank all the members of the Programme Committee for their excellent work and valuable assistance, and we are particularly grateful to the endorsing institutions and to all others who have supported our public relations work. Our special thanks go to all those participants who are actively contributing to this event by sharing the results of their research work here - as authors of papers and posters, or as exhibitors - and thus possibly igniting new projects, initiating new cooperations, or paving the way for new business connections.

We also invite you to visit the accompanying trade shows and the amazing competitions of the RoboCup 2006 world championships of autonomous robots being held at the same time.

As every time we look forward to interesting presentations, lively discussions and helpful new contacts, and we would be delighted to welcome you to Bremen again in two years for ACTUATOR 2008.

Enjoy your conference!


Hans Peter Schneider
Messe Bremen
General Manager

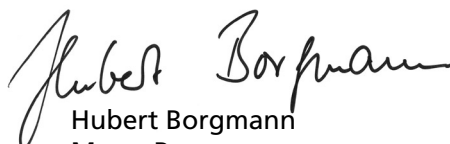

Hubert Borgmann
Messe Bremen
Organiser ACTUATOR 2006

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