

ACTUATOR 2004

**9th International Conference on New Actuators
&
3rd International Exhibition on Smart Actuators
and Drive Systems**

**14 – 16 June 2004
Bremen, Germany**

Conference Proceedings

Editor

Hubert Borgmann

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ACTUATOR 2004

14 – 16 June 2004
Bremen Fair and Congress Center
Germany

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HVG Hanseatische Veranstaltungs-GmbH, Division Messe Bremen, Germany

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Contitech Vibration Control GmbH, Hannover, Germany

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Welcoming Remarks

Welcome to ACTUATOR 2004 in Bremen. This event continues the series of biennial functions in Bremen and consists of the *9th International Conference on New Actuators* and the *3rd International Exhibition on Smart Actuators and Drive Systems*. Like its predecessors, ACTUATOR 2004 is a major meeting place for leading experts, scientists and managers from all over the world in the field of new actuators. Its main focus is on the transfer of new results from science and research into wide fields of application.

Based on the overwhelming response to the Call for Papers – we received 30 percent more abstracts than last time – the concept of two parallel tracks of oral presentations has again been improved. Following a current trend, we have included special applications of piezoelectric actuators in transformers / power supplies in a separate session. As a result, we have finally exhausted the timeframe of three conference days.

Altogether there will be 89 oral presentations and 105 poster contributions this time, all portraying the state of the art and indicating future trends. Of course, the schedule has been compiled carefully to avoid time conflicts between related topics.

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
- Transformers / power supplies

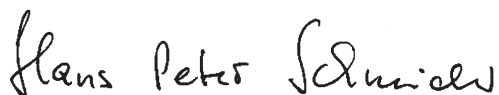
With one exception, all these sessions will be kicked off by a 30-minute review, usually presented by a member of the Programme Committee, followed by application-oriented presentations of 20 minutes each. The full manuscripts of nearly all oral papers and poster contributions have again been compiled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

Furthermore, we invite you to also visit the accompanying trade show. In the exhibition forum right in its centre, exhibitors will again present their latest product innovations. Thus, conference participants and visitors to the exhibition can catch up on the current state of actuator technology and the performance of available products.

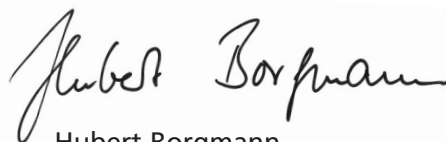
We thank the members of the Programme Committee for their excellent work and valuable assistance, and we are particularly grateful to the endorsing institutions and to all others who have supported our public relations work. Our special thanks go to all those participants who are actively contributing 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 co-operations, or paving the way for new business connections.

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 2006, which will be held simultaneously with the Robot World Cup Soccer Games and Conferences, RoboCup 2006.

Enjoy your conference!



Hans Peter Schneider
Messe Bremen
General Manager



Hubert Borgmann
Messe Bremen
Organiser ACTUATOR 2004

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