

ACTUATOR 12

**13th International Conference on New Actuators
&
7th International Exhibition on
Smart Actuators and Drive Systems**

**18–20 June 2012
Bremen, Germany**

Conference Proceedings

Editor

Hubert Borgmann

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Bremen Exhibition and Congress Center
Germany

Organised by



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Welcoming Remarks

Welcome to ACTUATOR 2012 in Bremen. This year we already have the 13th edition in this series of biennial events. As in the previous years it consists of the 13th International Conference on New Actuators and the 7th International Exhibition on Smart Actuators and Drive Systems.

When starting ACTUATOR in 1988 we offered a new forum to a number of non-conventional actuator technologies, most of them being far away from any commercial application at that time. In the meantime some of these technologies have achieved their technical breakthrough with series products in industrial and consumer goods. Indeed, smart materials in combination with micro technologies have proved their potential for a great leap in miniaturisation and performance of actuators and drives.

ACTUATOR has always been an event focussing on the conference part close to science with an accompanying exhibition. The conference gives a comprehensive overview of the international state of research and development in the area of new actuators, while the exhibition presents current developments, products and services available at the market now.

No doubt: the response to the current Call for Papers was about 10 per cent lower than in 2010. In total 192 remaining conference contributions, 119 oral presentations and 73 posters, will be portraying the state of the art and indicating future trends. One of the main reasons for the decreased number of contributions is closely related to last time's success story: the overwhelming interest in polymer actuators led to the spin-off of a separate European event on this topic. Despite a number of efforts we failed to keep them included. Nevertheless, we are proud to present a "Polymer Actuator" session being at least half as strong as last time, anyway. In addition, based on the experience of 2010, we set-up the two sessions "Actuator Control" and "Tactile / Haptic Applications" on a regular base. A very warm welcome to the contributors and the chairmen in charge of these sessions!

But these ones are not the only topics in 2012: Oral sessions are held in the following fields:

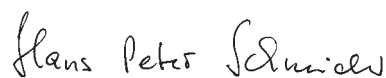
- ▶ Active Vibration Control / Active Noise Control
- ▶ Actuator Control
- ▶ Aerospace Applications
- ▶ Automation / Microrobots / Robots
- ▶ ERF / MRF Actuators
- ▶ Haptic / Tactile Applications
- ▶ Low-Power Electromagnetic Actuators
- ▶ Magnetostrictive / Magnetic Shape Memory Actuators
- ▶ Medical / Biomedical Applications
- ▶ Micro Actuators
- ▶ Micro Fluidics
- ▶ Nanopositioning / Nanomanipulation
- ▶ Piezoelectric Actuators
- ▶ Piezoelectric Actuator Applications
- ▶ Piezoelectric Motors
- ▶ Polymer Actuators
- ▶ Shape Memory Actuators

Including all reviews, a 2012 conference participant has the chance to listen to 51 well selected oral contributions and a number of posters. Nevertheless, the know-how presented in all other contributions is not lost. According to a good tradition we have again compiled the full manuscripts of nearly all oral papers and poster contributions in the conference proceedings. Special thanks to all the authors who went through the extra trouble and prepared their manuscripts in time.

In addition, we thank all the members of the Programme Committee for their excellent work and valuable assistance. We are particularly grateful to the endorsing institutions, the media partners 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.

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 2014.

Enjoy your conference!



Hans Peter Schneider
General Manager
MESSE BREMEN



Hubert Borgmann
Project Manager ACTUATOR 2012
MESSE BREMEN

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