Registration

Industry attendees who are invited to attend this symposium are considered guest members and are charged a registration fee. These persons may attend a maximum of two ICAT meetings before being required to join the ICAT Consortium. No fee will be charged to ICAT member companies. The maximum number of participants from each member company is two; additional persons *must* pay the registration fee.

Lodging

A block of rooms has been reserved at The Penn Stater Conference Center Hotel for the nights of October 5 and 6, 2009. The hotel provides complimentary shuttle service transportation to and from the University Park Airport, State College, PA; please request this service when reserving your room. The reservation number for this symposium is **ICAK08A**. All meetings and meals associated with the symposium will be held on-site at The Penn Stater.

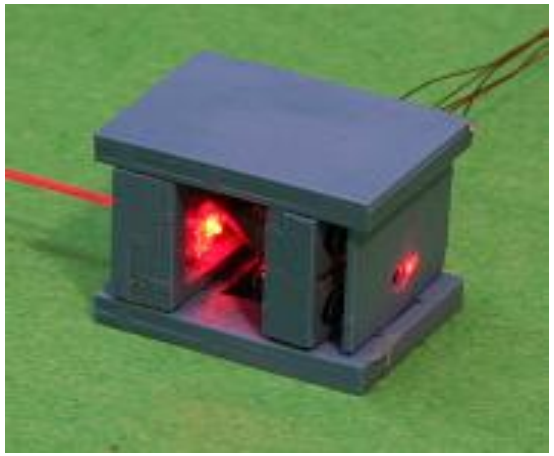
Attendees

A symposium registration form and a lodging information sheet are enclosed. *Please read these items carefully and follow the instructions, respecting the indicated deadlines.* Please direct all registration and lodging questions to Susie Sherlock, ICAT Coordinator, as follows:

Susie Sherlock
ICAT Coordinator
Telephone: 814-865-3225
FAX: 814-863-6734
Email: icat@psu.edu

CURRENT RESEARCH PROJECTS

High-Power Piezoelectric Characterization System (HiPoCS) at ICAT, Penn State University, which can conduct under (1) constant voltage, (2) constant current, (3) constant power, and (4) constant vibration velocity, simultaneously with all thermal profiles.



Integrated Optical Fiber Alignment Package (IFAP) with a delta-shape 2D-freedom piezoelectric ultrasonic motor. [**2007 R&D 100 Award product**]

ICAT

International Center for Actuators and Transducers

56th ICAT/JTTAS Joint International Smart Actuator Symposium

October 6-7, 2009

(Tuesday and Wednesday)

Location/Lodging:

The Penn Stater Conference Center Hotel
215 Innovation Boulevard
State College, PA 16803
(814) 863-5000 (Local)
(800) 233-7505 (Toll-free Reservations)
(814) 865-8501 (Fax)
http://www.pshs.psu.edu

Deadlines:

Symposium Registration: September 25, 2009
Lodging Reservations: September 4, 2009

PENNSTATE 1855

About the Symposium

The development of micromechatronic systems with actuators/motors combined with sensors, exhibiting high mechanical output and efficiency is the key to 21st century technologies. Recently developed piezoelectric positioning devices, ultrasonic micro motors, and piezoelectric energy harvesting systems are essential to so-called nano-, bio- and energy technologies, respectively. Also, market research done for electronic component companies suggests that one of the most required components for IT technologies over the next 10 years will be 3 - 8 mm diameter motors with relatively high torque.

The International Center for Actuators and Transducers (ICAT) at Penn State will hold a two-day international symposium on smart actuators, emphasizing compact and simple structured solid state actuators and integrated sensors.

For further information on the scientific content of this symposium, please contact:

Dr. Kenji Uchino, ICAT Director
Materials Research Institute
134 Materials Research Laboratory Building
The Pennsylvania State University
University Park, PA 16802, USA

Telephone: 814-863-8035
FAX: 814-863-6734
Email: KenjiUchino@psu.edu

Thursday, 8 October 2009
ATILA FEM Tutorial (Post-Conference)
Micromechatronics Inc.,
State College, PA, USA

Tentative Agenda

Tuesday, October 6, 2009

8:00-8:30 On-site Registration; Gathering and Refreshments

Session Chair: Kenji Uchino
8:30-8:40 Welcome Remarks: C. Pantano, Director of MRI
8:40-9:15 Annual Report of the ICAT: K. Uchino, Director of ICAT
9:15-9:30 Resonance and Antiresonance Modes: Y. Zhuang, MRI
9:30-9:45 High Power Piezoelectric ML Transformers: S. Ural, MRI
9:45-10:00 Loss in Magnetostriction: M. Tao, MRI

10:00-10:30 **Refreshment Break**

Session Chair: Shashank Priya
10:30-10:55 Multilayer Piezoelectric Devices: J. Lehrhofer, EPCOS, Austria
10:55-11:20 Microsystems for Minimally Invasive Diagnostics and Treatment: Y. Haga, Tohoku University, Japan
11:20-11:45 Piezoelectric Actuator Components for Positioning Systems: P. Pertsch, PI Ceramic GmbH, Germany

11:45-13:00 **Lunch Break**

Session Chair: Seok-Jin Yoon
13:00-13:25 Non-Pb Piezoelectrics: S. Nahm, Korea University
13:25-13:50 Shape Memory Piezoelectric Actuator:T. Morita, University of Tokyo, Japan
13:50-14:15 PMN-Single Crystals and their Applications: H-Y Lee, Ceracomp, Korea
14:15 -14:40 Piezoelectric Energy Harvesting: S. Priya, Virginia Tech

14:40-15:10 **Refreshment Break**

Session Chair: Takeshi Morita
15:10-15:35 Efficient High Power Density Magnetic-less AC-DC Power Conversion, Parameterized Design of Piezoelectric Transformers and Topology Development: K. Sindling Meyer, Noliac, Denmark
15:35-16:00 Piezoelectric Actuators: H-J Schreiner, CeramTec, Germany
16:00-16:25 Piezo-Thin Films and USM: S-J Yoon, KIST, Korea
16:25-16:50 Advanced Micro Motion Systems – Piezo Motors, Adaptive Drives, Smart Sensors: D. Henderson, New Scale
18:00-20:00 **Dinner Banquet**

Wednesday, October 7, 2009

7:30-8:00 On-site Registration; Gathering and Refreshments

Session Chair: Kenji Uchino
8:00-8:15 Piezoelectric Pump: R. Gosain, MRI
8:15-8:30 Multi-functional Micro Motors: S. Tuncdemir, MRI

8:30-10:30 **Exhibition & Poster/Refreshment Break**

8:40-10:30 O**ptional Laboratory Tour of ICAT and MRL Facilities**

Session Chair: Ahmed Amin
10:30-10:55 Thin-sized Piezoelectric Loudspeakers for Cellular Phones: M. Takahashi, NEC Corporation, Japan
10:55-11:20 Remote Sensing and Failure Analyses of Bridges: A. Dogan, Anadolu University
11:20-11:45 New Applications of Piezoelectric Transformers: A. Vazquez Carazo, Micromechatronics, Inc.

11:45-13:00 **Lunch Break**

Session Chair: Sahn Nahm
13:00-13:25 Piezoelectric Films: S. Trolier-McKinstry, MRI
13:25-13:50 High Coupling Single Crystals and Recent Applications in Sound Projectors: A. Amin, NUWC
13:50-14:15 Bio MEMS:S. Zheng, BioEngineering, PSU
14:15-14:40 The SPA30uXS, a new MRI-compliant Linear Piezo Micro-motor for Medical Implants and Micro-robotic Applications: F. Claeyssen, Cedrat, France

14:40-15:10 **Refreshment Break**

Session Chair: Alfredo Vazquez Carazo
15:10-15:35 Damping of a Simple Piezoelectric Structure with Negative Electric Circuits, J-C Debus and Pascal Mosbah: ISEN, France
15:35-16:00 Bioreactors and Microfabrication in Tissue Engineering: Potential Actuator and Transducer Applications: G. Engelmayr, PSU
16:00-16:25 Drive/Control Circuits: G. Knowles, QorTek
16:25-16:50 High Voltage Power Supply: Unknown, Trek, Inc.
16:50-17:00 Closing Remarks: K. Uchino, ICAT Director
Questionnaire Completion and Collection

17:30 Closing Reception at the home of Kenji Uchino
Shuttle cars will leave from the HOTEL for Uchino's house