Workshop Sessions Tuesday 13 April

Tuesday morning features two workshops: **The Newcomers to Ultrasonics Workshop** provides the fundamentals of ultrasonic transducer and acoustic design analysis. This workshop will detail the technical background of acoustic design such as spring / mass systems, equivalent circuit models, series and parallel systems, and basic characterization methods. A transducer design process will be introduced. This process will introduce methods of electrical and mechanical design for ultrasonic transducers. Techniques of finite element analysis using ANSYS will be introduced such as material characterization and setup, static, modal and harmonic analysis, and post processing of electrical and mechanical results. Some advanced topics such as ANSYS generated impedance curves and heat modeling will also be presented.

The Finite Element Methods for Modelling Transducers Workshop will be the first of its kind - a discussion and comparison of some of the commercially-available Finite Element Analysis (FEA) Programs used in modeling Ultrasonic Transducers. A typical transducer type will be analyzed using a range of different programs, and then the experiences of each package will be compared regarding several criteria, such as: ease of use, inputs required, outputs obtained, cost and so on.

The poster session provides opportunity for a broad overview of ultrasonic research and applications. **Student posters are accepted and a cash prize will be given for the top poster.**

A tour of the PACLAB, Physical Acoustics Laboratory at Boston University is available on Tuesday afternoon.

Register on-line! **Go to www.ultrasonics.org**

Hotel Reservations: **Call 800.SONESTA (U.S. & Canada) or +1.617.806.4200**

ultrasonic industry association

P O Box 2307
Dayton OH 45401-2307
USA

Phone: +1.937.586.3725
Fax: +1.937.586.3699
E-mail: uia@ultrasonics.org

Latest in Ultrasonic Research and Applications

Powering Sound Ideas…

2010 UIA 39th Annual Symposium

Ultrasonic Industry Association

12 - 14 April 2010
Royal Sonesta Hotel
Cambridge, MA USA

ultrasonic industry association

Symposium Features

- Industrial Sessions
- Ultrasonic Workshops
- Medical Sessions
- Poster Session

UFFC IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society

Technical Sponsor

Industrial Sessions Monday 12 April

7:45-8:15	Registration and Continental Breakfast
8:15-8:30	Welcome by Robert Muratore, President and Leo Klinstein, Co-Chairm
8:30 -9:00	Optimizing Piezelectric Ceramic Thickness in Ultrasonic Transducers, *Dominick A. DeAngelis, Gary W. Schulze*
9:00 - 9:30	Ultrasonic Cutting of Biodegradable Polylactic Acid (PLA) Films, *Dr. David Grewell, Julius Vogel*
9:30-10:00	Determining Bond Quality from VHPUAM Process Parameters, *Matt Short*
10:00 - 10:45	*Refreshment Break in Exhibits*
10:45-11:15	UAM Fabrication of Metal-Matrix Smart Material Composites, *R. Hahnlen and M. Dapino*
11:15-11:45	Ongoing Developments in Ultrasonic Machining, *Matt Short*
11:45 -1:00	*Luncheon*
1:00 - 1:15	New Product Award Presentation
1:15 - 2:15	Servo-Driven Ultrasonic Welding of Semi-Cyrstalline Thermoplastics, *Avraham Benatar and He Xiping*
2:15-2:45	Protease Inactivation in Milk by Thermosonication and Impact on Milk Characteristics, *Sakthi Vijayakumar, David Grewell, Stephanie Jung, Stephanie Clark*
2:45-3:15	Efficiency Improvement for Power Ultrasonic Transducer Systems, *John Yen, Laura Yao, Lihong Cheng*
3:15-3:30	*Refreshment Break in Exhibits*
3:30-4:00	Ultrasonic Brazing Developments, *Shankar Srinivasan and Dan Hauser*
4:00-4:30	Measurement of the Acoustic Softening Effect in Forming and Joining of Metals, *Margaret Lucas, Sa'ardin Aziz*
4:30-5:00	Advanced Analysis and Characterization of the UAM, VHP UAM Bonding Process, *D. Schick, R. DeHoff, M. Sriram, R. Hahnlen, M. Dapino and S. S. Babu*

Schedule subject to change

Medical Sessions Wednesday 14 April

7:30-8:05	Registration / Continental Breakfast
8:00-8:15	Welcome Robert Muratore, President, Dan Cotter, Co-Chairman
8:15 -9:15	Invited Speaker, *Robin Cleveland*
9:15-9:45	Correlation of Acoustic Pressure with BBB Disruption in a Primate Model, *Al Kyle and Matt Lawrence*
9:45-10:15	Real-time Monitoring of Tissue Deformation and Targeting during Robotic FUS, *Sunita Chauhan*
10:15 - 11:00	Break
11:00-11:30	Realtime acousto-optical QA methods for high intensity fields, *Ian Butterworth and Adam Shaw*
11:30-12:00	Metrology research for External Beam Cancer Therapy, *Dr. Klaus-Vitold Jenderka*
12:00 -1:00	Lunch
1:00 - 1:30	High Frequency Transducer Based on Lead Free Piezoceramic Thick Film, *Karsten Hansen, Konstantin Astafiev, Rasmus Lou-Mueller, Wanda Wolny*
1:30 - 2:00	Propagating Ultrasound Energy Through a Catheter Around Bends, *David Constantine, James Sheehan and Jeffrey Vaitekunas*
2:00-2:30	The evolution from ultrasonic dental scaling to bone surgery, *Andrew Mathieson, Niccolo' Cerisola, Andrea Cardoni*
2:30-2:50	Break
2:50-3:20	Multidimensional Analysis of Ultrasonic Surgical System Performance, *Mark E. Schafer*
3:20-3:50	A Deformable Template Model With Feature Tracking For Automated Ivus Segmentation, *Prakash Manandhar and Chi Hau Chen*
3:50-4:20	A Novel Ultrasound Method for Estimating Lesion Volume *Bahram Jadidian, Alan Winder, Robert Muratore*