

Latest in Ultrasonic Research and Applications

The *UIA Symposium* is the **one** program that provides the latest research and application in the scientific, industrial **and** medical ultrasound arenas.

Cambridge Massachusetts - Top US Destination for International Meetings

The *International Congress and Convention Association* reports that Boston and Cambridge hosted a record number of international association meetings. Logan International Airport currently provides international service to 36 destinations with more than 1,500 flights a day arriving and departing.



Photos Courtesy of Boston Convention and Visitors Bureau



Technical Co-Sponsor:



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Powering Sound Ideas...

2010 UIA 39th Annual Symposium

 Ultrasonic Industry Association

Latest in Ultrasonic Research and Applications

12 - 14 April 2010

Royal Sonesta Hotel

Cambridge, MA USA



Monday Industrial and Scientific Sessions

The program begins on Monday, 12 April, with invited speaker Avraham



Benatar, Ph.D, Associate Professor Integrated Systems Engineering, The Ohio State University.

His topic is *The use of the servo-driven welder for ultrasonic welding of semi-crystalline thermoplastics*. Other papers in this session will focus on the latest scientific and industrial advances in ultrasound.

Tuesday Workshop Sessions

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.

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

Abstracts still being accepted.

Download Call for Papers at

www.ultrasonics.org

Wednesday Medical Sessions



Invited speaker Robin Cleveland, Ph.D., carries out research in the field of physical acoustics with an emphasis on nonlinear acoustic propagation. He uses a

combination of experimental measurement, numerical calculation, and theoretical analysis, to study problems such as lithotripsy (breaking of kidney stones by shock waves), high intensity focused ultrasound (HIFU) for therapeutic destruction of tissue, ultrasonic imaging of tissue, and sonic boom propagation in the atmosphere. Other papers in this session will focus on the latest medical advances in ultrasonics.

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