

# Program Information

The 34<sup>th</sup> Annual UIA Symposium provides a great networking opportunity plus up-to-date information on the ultrasonics industry, including:

- ◆ Industrial applications presentations
- ◆ Medical applications presentations
- ◆ First meeting of the High Intensity Focused Ultrasound (HIFU) Industry Council, featuring Dr. Gerald Harris, FDA, on regulation of HIFU devices in the USA
- ◆ First presentation of New Product and Application Awards
- ◆ Presentation of Graduate Research Award

If you are involved in any aspect of ultrasonics, this is the meeting you can't afford to miss! Information about the presentations, HIFU Industry Council, New Product and Application Award Program, Graduate Research Award, hotel and registration are included in this brochure.

If you have any questions, please contact UIA at 937.586.3725 or at [uia@ultrasonics.org](mailto:uia@ultrasonics.org)

## Conference Overview

The UIA Board of Directors meeting will be held on Sunday, 13 March. There are no other formal meetings that day; however, we suggest you arrive on Sunday. The conference begins on Monday morning, 14 March at 7:55 a.m. and concludes on Tuesday afternoon at 5:00 p.m.

- ◆ Monday's programs include industrial sessions, lunch, an invited HIFU paper presentation, HIFU Industry Council meeting and wine and cheese reception.
- ◆ Tuesday's programs include Medical Technology sessions and the Awards Luncheon

## HIFU Industry Council

The Council is being formed to provide a forum for manufacturers and researchers in the High Intensity Focused Ultrasound (HIFU) medical therapy field. This forum will provide an independent body for HIFU system developers, component suppliers and researchers in the field to address issues such as voluntary standards generation, to act as an ombudsman with the FDA rather than forcing the manufacturers to interface with the FDA individually, and to be a clearinghouse for developments in the scientific and regulatory environment for this burgeoning new area of medical science.

The first meeting will allow industry, researchers and regulatory agencies to come together to exchange ideas on the best approach to these challenges and hopefully to develop a plan for future activities.

**Highlighting the meeting will be a presentation from Dr. Gerald Harris of the FDA concerning the Agency's regulation of HIFU devices in the United States. Other speakers will discuss regulatory and measurement requirements for HIFU in China and**

**the EU. Several prominent companies in the field will be sending representatives as well to share their experiences.**

The UIA is actively seeking the support and commitment for attendance from leading companies and researchers in the field, to ensure all of the leaders in HIFU technology will have an opportunity to participate in this new Council.

The HIFU Industry Council meeting is being held in conjunction with the UIA's Annual Symposium. **Non UIA Members attending the HIFU Industry Council Meeting are invited to participate in one or both days of presentations at the UIA Conference at the UIA member rate.** There will be a presentation by the Riverside Research Institute on the first HIFU device approved by the FDA on Monday afternoon as part of the UIA conference program. The Conference program has been arranged to allow participants in the Council Meeting to attend the Medical Technology Sessions on Tuesday.

### **New Ultrasonic Product and Application Competition**

New ultrasonic energy products and applications will be showcased at the first annual new ultrasonic product and application competition. The UIA Conference offers the best opportunity to see the newest in ultrasound in one location. If your company is interested in submitting a product or application for consideration, please go to [www.ultrasonics.org](http://www.ultrasonics.org) for the competition entry form.

### **Graduate Research Award**

This Graduate Research Award recognizes excellence in graduate studies in the science and technologies of interest to the Ultrasonic Industry Association. Entry form is available from [www.ultrasonics.org](http://www.ultrasonics.org). The winning paper will be presented at the Conference.

## **Conference Schedule**

<b>Monday, 14 March 2005</b>	
<b>Industrial Application Presentations Co- Chair: Karl Graff</b>	
7:55 – 8:00 a.m.	<b>Conference welcome</b> – Tom Kirkland, UIA President
8:00- 8:25 a.m.	<i>Ultrasonic Energy for Layered Manufacturing</i> ; Dawn White, Ken Johnson, Solidica
8:25 – 8:50 a.m.	<i>Ultrasonic Peening of Parts and Welded Elements: Technology, Equipment and Software</i> ;Yuri Kudryavtsev, Integrity Testing Laboratory
8:50 – 9:15 a.m.	<i>Ultrasonic Spot Welding of Aluminum</i> ; Susan Ward, Ford Motor Company; Janet Devine, Sonobond; Jay Sheehan, Branson; Karl Graff, EWI
9:15 – 9:40 a.m.	<i>Application of Single Crystal Piezoceramics</i> ; Wesley Hackenberger, Paul W. Dohrig, Y. Jiang, Kevin Sapp, TRS Technologies
9:40 – 10:10 a.m.	Refreshment Break in Exhibit Area
10:10 – 10:35 a.m.	<i>Aluminum Ultrasonic Welding Process Enhancement Using Digital Power Supply and High Q Tooling</i> ; Jay Sheehan, Branson Ultrasonics
10:35 – 11:00 a.m.	<i>Ultrasonic Torsion Welding</i> ; Karl Graff, Zach Berg, EWI
11:00 – 11:25 a.m.	<i>Ultrasonic Compression Tests on Aluminum</i> ; Margaret Lucas, Yusof Daud, University of Glasgow
11:25 – 11:50 a.m.	<i>Rapid Application Development for Ultrasound Sensor/Actuator Systems Based on Numerical Modeling</i> ; Rainer M. Schmitt, Inoson, Inc.

11:50 – 1:00 p.m.	<b>Luncheon</b>
<b>Industrial Application Presentations Co- Chair: Dr. Margaret Lucas</b>	
1:00 – 1:25 p.m.	<i>Development and Scale-Up of Ultrasonic Soldering Technology</i> ; Peter Hall, Karl Graff, Edison Welding Institute
1:25 – 1:50 p.m.	<i>High Power Ultrasonic Processing of Secondary Sewage</i> ; Jay Sheehan, Branson Ultrasonics
1:50 – 2:15 p.m.	<i>Measurement and Role of Shear Forces in Ultrasonic Metal Welding</i> ; Karl Graff, Matt Short, Edgar de Vries, Edison Welding Institute
2:15 – 2:45 p.m.	<i>Riverside Research Institute presentation on first HIFU device approved by FDA</i>
2:45 – 3:15 p.m.	Refreshment Break in Exhibit Area
3:15 – 5:45 p.m.	<b>HIFU Industry Council Meeting</b>
6:00 – 7:30 p.m.	<b>Wine and Cheese Reception</b>

<b>Tuesday, 15 March 2005</b>	
<b>Medical Applications Presentations: High Power Ultrasound Considerations; Low Intensity - Low Frequency Tissue Dynamics Chair Ron Manna</b>	
7:55 – 8:00 a.m.	<b>Session Welcome</b> – Tom Kirkland, UIA President
8:00 – 8:30 a.m.	<i>Vibration Parameter and Temperature Dependencies in Ultrasonic Cutting of Wood, Bone, and Artificial Bone Material</i> ; Margaret Lucas et al, U. Glasgow
8:30 – 9:00 a.m.	<i>Recent Developments in High Power, High Temperature Piezoelectrics</i> ; Thomas Shroul, Penn State University
9:00 -9:30 a.m.	<i>Effect of Pulse Parameters on Cavitation and Acoustic Streaming in Ultrasonic Surgical Devices</i> ; Mark Schafer, Sonic Tech Inc.
9:30 – 10:00 a.m.	Refreshments in Exhibit Area
10:00 – 10:30 a.m.	<i>Acoustic Modal Control for Increased Bone Fracture Healing</i> ; Neill Pounder et al, Smith & Nephew
10:30 – 11:00 a.m.	<i>In Vivo Vibro-Acoustography</i> ; Mostafa Fatemi, Mayo Clinic
11:00 – 11:30 a.m.	<i>Synthetic Structural Imaging: A New Method for Low Frequency Imaging &amp; Target Parameter Estimation</i> ; Alan Winder and Bahram Jadidian, J&W Medical
11:30 – 12:30 p.m.	<b>UIA Luncheon</b>
<b>Medical Applications Presentations: HF Ultrasound Applications; Innovations In US Transducers &amp; Advances In Materials Chair Alan Winder</b>	
12:30 – 1:30 p.m.	<i>HF Ultrasonic Medical Imaging and Innovative Transducer Concepts/Materials</i> ; Guest Speaker: Kirk Shung, University of Southern California
1:30 – 2:00 p.m.	<i>Dermatological Scanning Acoustic Microscopy</i> ; Bahram Jadidian & Alan Winder, J&W Medical
2:00 -2:30 p.m.	<i>Intravascular Ultrasound (IVUS): from Morphology to Tissue Characterization. Volcano IVUS and Palpography</i> ; Fermin Lupotti et al, Volcano Therapeutics Corporation
2:30 – 3:15 p.m.	Refreshments in Exhibit Area
3:15 – 3:45 p.m.	<i>Nanocomposite Matching Layer via Coating Process for Ultrasonic Transducers</i> ; Yuhong Hwang et al, Chemat Technologies, Inc.
3:45 – 4:15 p.m.	<i>Novel Nanoscale PZT Ceramics: Thin Films and Powder Particles</i> ; Susmita Bose, Washington State University
4:15 – 4:45 p.m.	<i>Critical Design and Materials Issues to Increase Device Efficiency</i> ; Amit Bandoypadhay, Washington State University
<b>Conference Concludes</b>	

Presentation schedule subject to change without notice; please consult [www.ultrasonics.org](http://www.ultrasonics.org) for any changes

## Meeting Location and Hotel Registration Information

The meeting will be held at the Luxor Hotel at 3900 Las Vegas Blvd South, Las Vegas, 89119

Room Rates		
Day	Date	Room Rate
Saturday	March 12, 2005	\$239.00
Sunday	March 13, 2005	\$139.00
Monday	March 14, 2005	\$139.00
Tuesday	March 15, 2005	\$159.00

Please call 1-800-288-1000, and refer to our groups' name, **ULTRASONIC INDUSTRY ASSOCIATION**, or our groups' code, **TULTRA**, at the time of booking to receive our group rate. (The letter "T" in front of the group code must remain; this is an internal code.)

### RESERVATIONS MUST BE RECEIVED BY FEBRUARY 20, 2005, 5:00 pm PST

The Luxor Resort & Casino has been voted one of the top 50 resorts in the United States by the discriminating readers of Gourmet Magazine. Luxor's great onyx-hued pyramid is a marvel of modern construction, and has become a distinctive landmark in the city of lights. Rising 350 feet into the desert sky and crowned with the world's brightest beam of light, Luxor guides travelers across the desert toward Las Vegas from miles away.

For the ultimate escape from reality, Luxor created the elegant Oasis Spa, the only 24-hour spa in all of Las Vegas. For sun-worshippers, Luxor's five sparkling swimming pools and four Jacuzzis beckon with conveniences like sundry shops, a snack bar and, of course, refreshing pool-side beverage service.

Luxor's fine restaurants have gained international recognition through the recent honor bestowed on them by readers of Gourmet Magazine. Home to nine extraordinary dining experiences, from gourmet to casual, Luxor offers a wide selection of culinary delights for any time of day or night. Luxor also offers the "Blue Man Group-Live at Luxor," For information on Luxor Resort & Casino, call 800-288-1000 or visit [www.luxor.com](http://www.luxor.com)

### Cancellation Liability

In the event of cancellation of the symposium for any reason, the Ultrasonic Industry Association liability is limited to the return of the symposium fee.

### Cancellation Policy

A cancellation fee of 25 percent will be charged for all cancellations made after **25 February 2005**. All cancellations must be in writing. Confirmed registrants who fail to attend and do not cancel prior to **4 March 2005** are liable for the entire symposium registration. You may, if you wish, send a substitute or receive the papers on disc.



Mail registration form and all payments to:  
UIA, P O Box 2307,  
Dayton, OH 45401-2307



Address for express mail only:  
11 West Monument Ave, Ste 510  
Dayton, OH 45402-1233



Fax registration form to:  
937.586.3699



For further information call:  
937.586.3725



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