

**2010 IEEE International
Ultrasonics Symposium (IUS)**
(including Short Courses)

**Town & Country Resort and Convention Center
San Diego, California, USA
October 11-14, 2010**

***Sponsored by the IEEE Ultrasonics, Ferroelectrics
and Frequency Control
Society (UFFC-S)***



Table of Contents

Welcome from the General Chair	1
Welcome from the from the Technical Program Chair.....	2
Symposium Organizing Committee.....	3
Exhibitors	4
Plenary Session	5
Conference Venue.....	7
Conference Registration.....	8
Visa Application.....	9
Local Transportation	10
Nearby Food and Shopping.....	10
San Diego Weather	10
Tuesday Reception	11
Wednesday Banquet.....	11
Guest Program.....	11
Speaker Ready Room.....	11
Oral Presentation Guide	12
Poster Presentation Guide	12
Session Chairs / Session Summary Forms	12
Technical Program Committee	12
Short Courses	16
Invited Speakers	17
Invited Clinical Speakers (Session 2A).....	19
Student Paper Competition	19
Student Travel Support	22
Session Chairs Index.....	70
Author Index	71
Floor Plans	89
Condensed Program	90

Welcome from the General Chair



Bob Potter
Vectron International

The 2010 IEEE International Ultrasonics Symposium (IUS) is being held in San Diego, California at the Town and Country Inn & Convention Center for the second time. The 2010 IEEE IUS brings together more closely the ultrasonics communities around the world with the ultrasonics industry in San Diego County to further the research and development of ultrasonics theories and applications. The 2010 IEEE IUS will be another success in the history of this annual conference that started in the early 1960s and has grown to have more than 1000 attendees in recent years. San Diego is California's second largest city, where blue skies keep watch on 70 miles of beaches and a gentle Mediterranean climate begs for a day of everything and nothing. Bordered by Mexico, the Pacific Ocean, the Anza-Borrego Desert and the Laguna Mountains, San Diego County's 4,200 square miles offer immense options for business and pleasure. The Mexican city of Tijuana is just minutes from downtown, San Diego. Welcome to San Diego and welcome to the 2010 IEEE IUS.

Bob Potter

Welcome from the Technical Program Chair



Peter M. Smith
McMaster University

On behalf of the Technical Program Committee I would like to welcome you to the 2010 IEEE International Ultrasonics Symposium at the Town & Country Resort and Convention Centre in San Diego.

Since the first Symposia held in the 1960s, the meetings have grown significantly in size. This year, we received over 850 abstract submissions covering the five areas of focus of this meeting: Medical Ultrasonics, Sensors, NDE & Industrial Applications, Physical Acoustics, Microacoustics, and Transducers & Transducer Materials. After reviewing all the abstracts in each group, the Technical Program Committee put together a program of oral and poster sessions, containing 702 presentations, including 18 invited presentations and 3 invited clinical presentations. In order to accommodate all of these, the oral sessions have been organized into six parallel tracks over three days.

There will also be a Student Paper Competition. 21 finalists for the Student Paper Competition have been selected from the five focus areas and a panel of experts will judge these during Tuesday afternoon's poster session. The five winners will be announced at the Symposium Dinner on the Wednesday evening and will each receive a certificate and a \$200 cash award. Their names will also be published in the IEEE UFFC Newsletter.

I hope that, in addition to the short courses and the technical program, attendees will participate in the social and guest programs and will take the opportunity to enjoy the sites of San Diego.

Peter Smith

Symposium Organizing Committee

Finance Chair



Mark Schafer
Sonic Tech. Inc.

Publications Chair



Marjorie Yuhas
IMS, Inc.

Short Course Co Chairs



Veer Narayanan
Vectron Intl



Maximilian Pitschi
Epcos

Audio-Visual Chair



Oliver Keitmann-Curdes
Flexim GmbH

Exhibits Chair



Clemens Ruppel
Epcos

Guest Program Chair



Nancy Larson

Exhibitors

Exhibition Schedule:

Tuesday, October 12, 2010: 8:00 a.m. – 5:00 p.m.
Wednesday, October 13, 2010: 8:00 a.m. – 5:00 p.m.
Thursday, October 14, 2010: 8:00 a.m. – 12:00 noon

List of Exhibitors at the 2010 IEEE International Ultrasonics Symposium, as of August 6, 2010:

1	Precision Acoustics Ltd	UK
2	Verasonics	USA
3	Polytec	USA
4	Imasonic	France
5	Ferroperm Piezoceramics A/S	Denmark
6	Lecoeur Electronique	France
7	TRS Technologies	USA
8	Electronics & Innovation	USA
9	Weidlinger Associates - PZFlex	USA
10	Ultrasonix	Canada
11	Texas Instruments/Medical Imaging Group	USA
12	IEEE Ultrasonics, Ferroelectrics and Frequency Control Society	
13	Advanced Modular Systems	USA
14	Unisyn Medical Technologies	USA
16	Onda Corporation	USA
17	Bossa Nova Technologies	USA

Plenary Session

8:00 a.m. – 9:30 a.m., Tuesday, October 12, 2008
Town & Country Inn, San Diego Room

Welcome:

Conference organizers and others
UFFC-S President

Awards and Recognitions:

IEEE Awards:

IEEE Fellow Award 2010

IEEE UFFC Society Awards:

Achievement Award 2010
Distinguished Service Award 2010
Outstanding Paper Award 2009
2010-2011 Distinguished Lecturer Award

Ultrasonics Award:

Rayleigh Award 2010

Plenary Speaker:

Title of Presentation:

Multiwave Imaging and Ultrasound

Author:

Mathias Fink, Institut Langevin
Ecole Supérieure de Physique et de Chimie de la Ville de Paris

Abstract:

Interactions between different kinds of waves can yield images that beat the single-wave diffraction limit. Multiwave imaging consists of combining two different waves – one to provide contrast, another to provide spatial resolution – in order to build a new kind of image. Contrary to single-wave imaging that is always limited by the contrast and resolution properties of the wave that generated it, multiwave imaging provides a unique image of the most interesting contrast with the most interesting resolution. Multiwave imaging opens new avenues in medical imaging and a large interest for this approach is now emerging in geophysics and non-destructive testing.

We will describe the different potential interactions between waves that can give rise to multiwave imaging and we will emphasize the various multiwave approaches developed in the domain of medical imaging. Common to all these approaches, ultrasonic waves are almost always used as one of the waves to provide spatial resolution, while optical, electromagnetic or sonic shear waves provide the contrast. Among various multiwave techniques, we will mainly focus on photo-acoustic and shear wave imaging. Through various medical applications going from cancer diagnosis to cardiovascular imaging, we will emphasize the recent clinical successes of multiwave imaging.

Biography of the Author:



Mathias Fink
Ecole Supérieure de Physique et de Chimie Industrielles

Mathias Fink received the M.S. degree in Mathematics from Paris University, France, in 1967, and the Ph.D. degree in Solid State Physics in 1970. Then he moved to ultrasonic medical imaging and received the Doctorat es-Sciences degree in 1978 from Paris University in Acoustics.

He is now a Professor of Physics at the Ecole Supérieure de Physique et de Chimie Industrielles de la Ville de Paris (ESPCI) and at Paris Diderot University.

In 1990 he founded the Laboratoire Ondes et Acoustique at ESPCI that became in January 2009 the Langevin Institute. Mathias Fink is now the director of this Institute.

In 2002, he was elected to the French Academy of Engineering, in 2003 to the French Academy of Science and in 2008 to the College de France on the Chair of Technological Innovation.

His current research interests include medical ultrasonic imaging, ultrasonic therapy, nondestructive testing, underwater acoustics, telecommunications, seismology, active control of sound and vibration, analogies between optics, quantum mechanics and acoustics, wave coherence in multiply scattering media, and time-reversal in physics. He has developed different techniques in acoustic imaging (transient elastography, supersonic shear imaging), wave focusing in inhomogeneous media (time-reversal mirrors), speckle reduction, and in ultrasonic laser generation. He holds more than 50 patents, and he has published more than 300 articles. 4 start-up companies have been created from his research (Echosens, Sensitive Object, Supersonic Imagine and Time Reversal Communications).

Conference Venue



Town & Country Inn & Convention Center

The Town and Country Inn is located about 5 miles from the San Diego International Airport at 500 Hotel Circle just off of Interstate 8. It is in Mission Valley in the heart of San Diego five minutes walk from the Mission Valley Shopping Center.

- Modern accommodations in two towers or ranch style garden bungalows that capture the feeling of a cozy retreat.
- Relax in one of our sparkling pools or play golf. Grab a bite to eat in one of our five delectable restaurants.
- There are first class spa & fitness facilities, and a trolley on property, racquetball and shopping nearby.



Conference Registration

Registration Type	By Sept 10, 2010	After Sept 10, 2010
IEEE Member	\$550	\$650
Non-IEEE Member	\$725	\$855
Student (Show Student ID at Conference)	\$150	\$300
Retiree	\$150	\$300
Life IEEE Member (Show Life Member Card at Conference) **	\$90	\$90
One-Day Registration (without DVD Proceedings) *	\$350	\$400
A Registrant May Add:		
- Additional DVD Proceedings: ***	\$75	\$75
- Short Courses:		
Regular	\$200 each	\$300 each
Student/Retiree	\$75 each	\$125 each
- Guest	\$75	\$75

Notes:

* One-Day Registration includes sessions for the day of registration only. The Banquet is optional at \$70.

** Life Member is defined by IEEE as at least 65-year old and the age plus years of IEEE membership should be equal or greater than 100. Life members should show their IEEE Life Member card or evidence of Life Membership when getting registration materials. The Banquet is optional at \$70.

*** A Full Registration (IEEE Member, Non-IEEE Member, Student, Retiree, or Life IEEE Member) will include one DVD conference proceedings. If you need additional DVD proceedings, you may order them when you register. A printed version of the Proceedings will only be available by ordering directly from the IEEE after the Symposium.

A Full Registration will also include the Tuesday Evening Social (October 12, 2010) and the Wednesday Banquet (October 13, 2010).

Guest Registration includes three guest breakfasts. Guests are NOT allowed to attend any technical sessions except for the Monday morning plenary session. The Banquet is optional at \$70.

For those who register for Short Courses Only, they will NOT get a badge or any conference materials such as books and meal/show tickets, and will NOT be allowed to register for guests or to attend any technical sessions.

As indicated in the table above, students are required to show their valid identifications (IDs) to the registration desks to qualify for the student rates and get any registration materials.

The deadline for early conference registration with discount registration fees is September 10, 2010 (midnight, Pacific Standard Time). After September 10, 2010, attendees with credit cards (Visa, Master, or American Express) can continue to register on-line at higher fees until September 27, 2010 after which on-line registration ends. Also, registrations via fax or mail will not be accepted after September 27, 2010 (9:00 a.m., Eastern Standard Time), and these attendees are requested to register on-site.

Registration Cancellation and Refund Policy:

There will be a \$25.00 USD service charge to process refunds for those who have pre-registered but who are unable, for whatever reason, to attend the conference, or those who would like to make changes to the registration resulting in a refund. A letter requesting the refund should state the registrant's name and to whom the refund check should be made payable. No refunds will be given for requests RECEIVED after September 27, 2010 (9:00 am, Eastern Standard Time). FAX the letter to 2010 IEEE International Ultrasonics Symposium at

1-410-559-2217

Online Registration Link:

<https://www.yesevents.com/ius/>

Visa Application

Visa requirements: The US has updated its visa policies to increase security, so it may take you 3-6 months to apply for and receive your visa. For details that apply specifically to your country, please go immediately to your nearest US Consulate or Embassy. Review your visa status now to determine if you need a US visa or visa renewal and to find out how to schedule an interview appointment, pay fees, and other vital instructions. If you need a personal letter of invitation to attend the Conference, contact the Conference Coordinators by email at: IUSInfo@yesevents.com. Please provide the following information: complete name, mailing address, and any other details that your country of residence requires for your visa application. Only an original copy (not faxed or email version) of the letter of invitation may be accepted with your visa application. The Symposium cannot contact or intervene with any U.S. Embassy or Consulate office abroad on your behalf, so please begin your visa application process as soon as you determine that you want to attend the 2010 International Ultrasonics Symposium. All nationals and citizens of countries included in the Visa Waiver Program (VWP) who plan to travel to the U.S. for temporary business or pleasure for 90 days or less are not required by law to obtain a Visa prior to initiating travel to the United States, but must meet eligibility requirements to travel without a visa on VWP and, therefore, some travelers from VWP countries are not eligible to use the program. VWP travelers are required to have a valid authorization through the Electronic System for Travel Authorization (ESTA) prior to travel, are screened at the port of entry into the United States, and are enrolled in the Department of Homeland Security's US-VISIT program. This authorization can be obtained online through the **Electronic System for Travel Authorization (ESTA)**, a free Internet application administered by the U.S. Department of Homeland Security. For additional information about the ESTA please visit

<http://www.cbp.gov/esta>. Travelers from countries not in the VWP are still required to obtain a Visa prior to entry into the United States.

Local Transportation

Taxi

Taking a taxi from the airport to the Town and Country Resort is a convenient way to travel and can be reasonable in cost if you share and will cost about \$30 one way. If you rent a car, parking is available at a reduced rate for the symposium. The car rental agencies can give directions in getting from the airport to the hotel.

Shuttle

Shuttle vans and buses operated by off-airport companies are a popular and convenient transportation option. Shuttle service is available at the Transportation Plazas across from Terminals 1 and 2, and curbside at the Commuter Terminal. From Terminal 1 you must cross the skybridge, and take either the escalators or the elevators to street level. From Terminal 2, cross the Terminal 2 skybridge and take either the escalators or the elevators to street level, or use the pedestrian crosswalk conveniently located outside the Terminal 2 Baggage Claim Area to access the Transportation Plaza. A Transportation Coordinator will place you with the first available shuttle, unless you specify a particular shuttle company. These shuttles cost between \$17 and \$25 and your destination is the Town and Country Resort in Mission Valley.

More information can be found at:

http://www.san.org/sdia/passenger_services/ground_transportation.aspx

Nearby Food and Shopping

The Mission Valley shopping Mall is only a five minute walk from the hotel and has 130 stores, 34 places to eat and movie theaters. Anyone at the hotel can give you directions as to how to walk there. A short ride on the San Diego Trolley (\$5) will get you to Old Town where there is more shopping and restaurants.

San Diego Weather

Typical San Diego Weather

San Diego enjoys beautiful weather year round with an average daily temperature of 70.5°F (21.4°C). A marked feature of the climate is the wide variation in temperature within short distances due to the topography of the land. Come sample coastal, mountain and desert environments all in the span of a day. Typical October weather is 75 F during the day and 60°F for a low temperature. Rainfall is .33 inch for an average in October. So you can expect great weather!

Tuesday Reception

There will be a Reception on Tuesday the 12th of October at 6:30 pm on the patio near the pool for the Towers rooms. All full registration guests and those who paid separately for the reception will be welcome with their tickets. We will have entertainment from a band at the reception.

Wednesday Banquet

The Banquet on Wednesday October 13th is for all full registration guests and others who paid separately for this event will be welcome with their ticket. The event will be held in the rooms off of the Atlas Foyer and will start at 7:00 p.m. If you would like a vegetarian menu please let the registration desk know.

Guest Program

Nancy and John Larson (co-chairs for the Guest Program) have organized four San Diego local tours from October 11-14, 2010 (one for each day), for guests of attendees. You may register for these tours at the time of registration on-line or at the conference if there is still room on the bus for each event – the buses will hold 47 guests.

Tour 1 (Monday October 11, 2010 - 9 a.m. to 1 p.m.): Ad Hoc Trolley Tour for those who want to ride the trolley to downtown San Diego and explore the nearby Fashion Valley Mall with shopping – Free

Tour 2 (Tuesday October 12, 2010 - 8:45 a.m. to 3 p.m.): San Diego City Tour with lunch at Old Town. Board bus at 8:45 a.m. at hotel – \$55

Tour 3 (Wed. October 13, 2010 - 8:45 a.m. to 3 p.m.): Coronado Island: Walking tour, lunch, & shopping – \$55

Tour 4 (Thursday October 14, 2010 - 8:45 a.m. to 3 p.m.): Balboa Park Museums with lunch – \$45

Speaker Ready Room

The schedule of the Speaker Ready Room (Terrace Salon 3) is as follows:

Sunday (Oct. 10): 2:00 p.m. – 5:00 p.m. (for short courses)

Monday – Thursday (Oct. 11-14): 7:30 a.m. – 5:00 p.m.

Please follow closely the instructions on the “Oral Presentation Guide” at the conference website to prepare your presentation and to avoid any technical difficulties.

Oral Presentation Guide

The Oral Presentation Guide on the conference website provides detailed instructions, tips to avoid technical difficulties, and good practices for your presentations. It is accessible via the link "Oral Presentation Guide" at the conference website http://ewh.ieee.org/conf/ius_2010. It is the responsibility of authors to follow the guide closely.

Poster Presentation Guide

The Poster Presentation Guide on the conference website provides information needed to prepare your presentation. It also gives a detailed description of poster labels and their use in finding the location of poster boards. The layout of the poster boards is shown on the floor plan near the end of this booklet. Please check the link "Poster Presentation Guide" at the conference website http://ewh.ieee.org/conf/ius_2010 for details.

Session Chairs / Session Summary Forms

Duties of Session Chairs of both oral and poster sessions can be viewed on the conference website via the link "Session Chairs". Session Summary Forms will be available at the Registration Desk. Session Chairs should fill out a form after each session and return it to the Registration Desk.

Technical Program Committee

The Technical Program Committee consists of the following 144 members:

Group 1: Medical Ultrasonics

Vice Chair of TPC:

Jan D'hooge, Ph.D.

*Catholic University of Leuven
Leuven, Belgium*

Members:

1. **Olivier Basset:** *CREATIS, Université Lyon I, France*
2. **Ayache Bouakaz:** *INSERM, Université Tours, France*
3. **Charles Cain:** *University of Michigan, USA*
4. **Jean-Yves Chapelon:** *INSERM, France*
5. **Greg Clement:** *Harvard Medical School, USA*
6. **Paul Dayton:** *UNC Chapel Hill and NC State University, USA*
7. **Emad Ebbini:** *University of Minnesota, USA*
8. **Stanislav Emelinov:** *University of Texas at Austin, USA*
9. **David Evans:** *University of Leicester, UK*
10. **Kathy Ferrara:** *University of California Davis, USA*
11. **Stuart Foster:** *University of Toronto, Canada*
12. **James Greenleaf:** *Mayo Clinic College of Medicine, USA*

13. **Anne Hall:** *General Electric Medical Systems, USA*
14. **Christopher Hall:** *Philips Research North America, USA*
15. **Peter Hoskins:** *The University of Edinburgh, UK*
16. **John Hossack:** *University of Virginia, USA*
17. **Kullervo Hynynen:** *University of Toronto, Canada*
18. **Jorgen Jensen:** *Technical University of Denmark, Denmark*
19. **Nico de Jong:** *Erasmus Medical Centre and University of Twente, The Netherlands*
20. **Hiroshi Kanai:** *Tohoku University, Japan*
21. **Jeff Ketterling:** *Riverside Research Institute, USA*
22. **Michael Kolios:** *Ryerson University, Canada*
23. **Chris de Korte:** *Radboud University Nijmegen Medical Centre, The Netherlands*
24. **Nobuki Kudo:** *Hokkaido University, Japan*
25. **Pai-Chi Li:** *National Taiwan University, Taipei, Taiwan*
26. **Jian-yu Lu:** *University of Toledo, USA*
27. **Leonardo Masotti:** *Università degli Studi di Firenze, Italy*
28. **Tom Matula:** *University of Washington, USA*
29. **James G. Miller:** *Washington University in Saint Louis, USA*
30. **Kathy Nightingale:** *Duke University, USA*
31. **Svetoslav Nikolov:** *BK Medical, Denmark*
32. **William O'Brien:** *University of Illinois, Urbana-Champaign, USA*
33. **Georg Schmitz:** *Ruhr-Universität Bochum, Germany*
34. **Ralf Seip:** *Philips Research North America, USA*
35. **Mickaël Tanter:** *Laboratoire Ondes et Acoustique, ESPCI, France*
36. **Tom Thomas:** *Boston Scientific, Inc., USA*
37. **Kai Thomenius:** *General Electric's Corporate R&D, USA*
38. **Hans Torp:** *Norwegian University of Science and Technology, Norway*
39. **Piero Tortoli:** *Università degli Studi di Firenze, Italy*
40. **Ton van der Steen:** *Erasmus Medical Centre, Rotterdam, The Netherlands*
41. **Kendall Waters:** *Silicon Valley Medical Instruments, USA*
42. **Keith Wear:** *US Food and Drug Administration, USA*

Group 2: Sensors, NDE, and Industrial Application

Vice Chair of TPC:

Jafar Saniie, Ph.D.

Illinois Institute of Technology

Chicago, Illinois, U.S.A.

Members:

1. **Robert C. Addison:** *Rockwell Science Center, USA*
2. **Walter Arnold:** *Fraunhofer Institute for Nondestructive Testing, Germany*
3. **Michal Bezdek:** *Endress+Hauser Flowtec AG, Switzerland*
4. **Ramazan Demirli:** *Canfield Scientific, USA*
5. **Eric S. Furgason:** *Purdue University, USA*
6. **David Greve:** *Carnegie Mellon University, USA*
7. **Edward Haeggstrom:** *University of Helsinki, Finland*
8. **Mitsutaka Hikita:** *Kogakuin University, Japan*
9. **Jacqueline Hines:** *Applied Sensor Research and Development Corporation, USA*
10. **Fabien J. Josse:** *Marquette University, USA*

11. **Lawrence W. Kessler:** *Sonoscan Inc., USA*
12. **Pierre T. Khuri-Yakub:** *Stanford University, USA*
13. **Mario Kupnik:** *Stanford University, USA*
14. **Jun-ishi Kushibike:** *Tohoku University, Japan*
15. **Roman Maev:** *University of Windsor, Canada*
16. **Kentaro Nakamura:** *Tokyo Institute of Technology*
17. **Massimo Pappalardo:** *Università di Roma Tre, Italy*
18. **Tony Sinclair:** *University of Toronto, Canada*
19. **Bernhard Tittman:** *Pennsylvania State University, USA*
20. **Jiromaru Tsujino:** *Kanagawa University, Japan*
21. **John F. Vetelino:** *University of Maine, USA*
22. **Paul Wilcox:** *University of Bristol, UK*
23. **William Wright:** *University College Cork, UK*
24. **Donald E. Yuhas:** *Industrial Measurement Systems, Inc., USA*

Group 3: Physical Acoustics

Vice Chair of TPC:

Yook-Kong Yong, Ph.D.

Rutgers University

Piscataway, New Jersey, U.S.A.

Members:

1. **Manabu Aoyagi:** *Muroran Institute of Technology, Japan*
2. **Art Ballato:** *U.S. Army, USA*
3. **Jan Brown:** *JB Consulting, USA*
4. **Fred Hickernell:** *Retired from Motorola, USA*
5. **Eun Sok Kim:** *U.S. Army, USA*
6. **Yonkee Kim:** *U.S. Army, USA*
7. **Minoru Kuribayashi Kurosawa:** *Tokyo Institute of Technology, Japan*
8. **Amit Lal:** *Cornell University, USA*
9. **John Larson:** *Avago Technologies, USA*
10. **Vincent Laude:** *Institut FEMTO-ST, France*
11. **George Mansfeld:** *Russian Academy of Sciences, Russia*
12. **Valeri Proklov:** *Institute of Radio Engineering & Electricity, Russia*
13. **Edgar Schmidhammer:** *TDK-EPC, Germany*
14. **Susan Schneider:** *Marquette University, USA*
15. **Bikash Sinha:** *Schlumberger-Doll Research, USA*
16. **Ji Wang:** *Ningbo University, China*
17. **Jiun Der Yu:** *Epson Research and Development, USA*

Group 4: Microacoustics - SAW, FBAR, MEMS

Vice Chair of TPC:

Clemens Ruppel

TDK-EPC

Munich, Germany

Members:

1. **Ben Abbott:** *Triquint, USA*
2. **Robert Aigner:** *Triquint, USA*
3. **Ivan Avramov:** *Institute of Solid State Physics, Bulgaria*
4. **Sylvain Ballandras:** *LPMO, France*

5. **Kushal Bhattacharjee:** *RF Micro Devices, USA*
6. **Sunil Bhawe:** *Cornell University, USA*
7. **Sergey Biryukov:** *Leibniz Institute for Solid State and Materials Research Dresden (IFW), Germany*
8. **Paul Bradley:** *Avago, USA*
9. **Jidong Dai:** *RF Monolithics, USA*
10. **Omar Elmazria:** *Université de Nancy - CNRS, France*
11. **Gernot Fattinger:** *Sawtek, USA*
12. **James Friend:** *Monash University, Australia*
13. **Ken-ya Hashimoto:** *Chiba University, Japan*
14. **Shitang He:** *IACAS, China*
15. **Chunyun Jian:** *Nortel Networks, Canada*
16. **Michio Kadota:** *Murata, Japan*
17. **Jyrki Kaitila:** *Avago, Germany*
18. **Ilia Katardjiev:** *Uppsala University, Sweden*
19. **Kimmo Kokkonen:** *Helsinki University of Technology, Finland*
20. **Jan Kuypers:** *University of California, USA*
21. **Ken Lakin:** *Consultant, USA*
22. **Don Malocha:** *University of Central Florida, USA*
23. **Hiroyuki Odagawa:** *Kumamoto National College of Technology, Japan*
24. **Tuomas Pensala:** *VTI, Finland*
25. **Mauricio Pereira da Cunha:** *University of Maine, USA*
26. **Maximilian Pitschi:** *TDK-EPC, Germany*
27. **Viktor Plessky:** *GVR Trade SA, Switzerland*
28. **Leonard Reindl:** *Albert-Ludwigs-University Freiburg, Germany*
29. **Richard Ruby:** *Avago Tech, USA*
30. **Takahiro Sato:** *Samsung, Japan*
31. **Marc Solal:** *Sawtek, USA*
32. **Karl Wagner:** *TDK-EPC, Germany*
33. **Robert Weigel:** *Friedrich-Alexander University, Germany*
34. **Sergei Zhgoon:** *Moscow Power Engineering Institute, Russia*

Group 5: Transducers and Transducer Materials

Vice Chair of TPC:

Jian Yuan

Boston Scientific, USA

Members:

1. **Sandy Cochran:** *University of Dundee, UK*
2. **Christopher Daft:** *Siemens Medical Solutions, USA*
3. **Levent Degertekin:** *Georgia Institute of Technology, USA*
4. **Charles Emery:** *Mirabilis Medica, USA*
5. **John Fraser:** *Philips Medical Systems, USA*
6. **Jean-Francois Gelly:** *GE Healthcare, France*
7. **Reinhard Lerch:** *Friedrich-Alexander-Universität Erlangen-Nuremberg, Germany*
8. **Geoff Lockwood:** *Queen's University, Canada*
9. **Clyde Oakley:** *W. L. Gore, USA*
10. **Omer Oralkan:** *Stanford University, USA*
11. **Paul Reynolds:** *Weidlinger Associates, USA*
12. **Yongrae Roh:** *Kyungpook National University, Korea*
13. **Arne Ronnekleiv:** *Norwegian University of Science & Technology,*

Norway

14. **Ahmad Safari:** Rutgers University, USA
15. **Mark Schafer:** Sonic Tech Inc., USA
16. **Kirk Shung:** University of Southern California, USA
17. **Scott Smith:** GE Global Research, USA
18. **Stephen Smith:** Duke University, USA
19. **Wallace Smith:** Office of Naval Research, USA
20. **Yasuhito Takeuchi:** Kagoshima University, Japan
21. **Qiming Zhang:** Pennsylvania State University, USA
22. **Qifa Zhou:** University of Southern California, USA

Short Courses

There will be 10 short courses offered on Monday, October 11, 2010. These are listed below. More information on the course and on the authors can be found on the symposium web site at http://ewh.ieee.org/conf/ius_2010.

8:00 a.m. - 12:00 noon:

Short Course 1A (Royal Palm 1):

Photoacoustic Imaging and Sensing

Stanislav Emelianov, Biomedical Engineering Department,
University of Texas at Austin, USA

Short Course 2A (Royal Palm 2):

Piezoelectric Ultrasound Transducer Fundamentals: Materials, Structure, Behavior and Analysis

Susan Trolrier-McKinstry, Materials Research Lab, Penn State
University, PA, USA

Sandy Cochran, Institute for Medical Science and Technology,
University of Dundee, UK

Paul Reynolds, Weidlinger Associates Inc, Mountain View, CA, USA

Christine Demore, Institute for Medical Science and Technology,
University of Dundee, UK

Short Course 3A (Royal Palm 3):

Ultrasonic Signal Processing for Detection, Estimation and Compression

Jafar Saniie, Department of Electrical and Computer Engineering at
Illinois Institute of Technology, USA

Ramazan Demirli, Center for Advanced Communications, Villanova
University, Villanova, PA, USA

Erdal Oruklu, Department of Electrical and Computer Engineering,
Illinois Institute of Technology, USA

Short Course 4A (Royal Palm 4):

Microacoustic devices as chemical sensors

Gerhard Fischerauer, University of Bayreuth, Germany

Short Course 5A (Royal Palm 5):

Therapeutic Ultrasound

Lawrence A. Crum, Applied Physics Lab, University of Washington,
USA

Joo Ha Hwang, Dept of Medicine, University of Washington, USA
Michael R. Bailey, Applied Physics Lab, University of Washington,
USA

1:00 p.m. - 5:00 p.m.:

Short Course 1B (Royal Palm 1):

Medical Ultrasound Transducers

Douglas G. Wildes, and L. Scott Smith, GE Global Research,
Niskayuna, NY, USA

Short Course 2B (Royal Palm 2):

Regulatory and Safety Issues in Medical Ultrasound

Jeffery Brian Fowlkes, University of Michigan, USA
Peter A. Lewin, Drexel University, USA
William D. O'Brien, Jr., University of Illinois, Urbana-Champaign, USA
Shahram Vaezy, US Food and Drug Administration, USA
Keith A. Wear, US Food and Drug Administration, USA

Short Course 3B (Royal Palm 3):

Estimation and Imaging of Tissue Motion and Blood Velocity

Hans Torp and Lasse Lovstakken, Department of Circulation and
Medical Imaging, Norwegian University of Science and
Technology, Trondheim, Norway

Short Course 4B (Royal Palm 4):

Nonlinear Effects in SAW and BAW components

Masanori Ueda and Hiroshi Nakamura, Taiyoyuden Co., Ltd., Japan
Ken-ya Hashimoto, Chiba University, Japan

Short Course 5B (Royal Palm 5):

Applications of High Frequency Ultrasonics in Microfluidics

James Friend, Monash University, Melbourne, Australia

Invited Speakers

There are 18 Invited Talks at this year's Symposium.

Group 1: Medical Ultrasonics

1. "Practical Applications of Synthetic Aperture Imaging in Medical Ultrasound," Svetoslav Ivanov Nikolov, Jacob Kortbek (BK Medical Aps, Denmark) and Jørgen Arendt Jensen (Technical University of Denmark, Denmark)
2. "The Physics of Microbubbles for Imaging and Therapy," Michel Versluis (University of Twente, Enschede, Netherlands)
3. "Conformable Transducers for Large-Volume, Operator-Independent Imaging," Chris M. W. Daft (Siemens Healthcare, Mountain View, CA, USA)
4. "Multi-Modal Molecular Imaging," Juergen Willmann (Stanford University, USA)

5. "Augmented Guided Ultrasound Therapy using Bubbles, Sound and Light," Ronald Roy (Boston University, USA)
6. "Remote Control of Brain Circuits using Pulsed Ultrasound," William Tyler (Arizona State University, USA)

Group 2: Sensors, NDE & Industrial Applications

1. "Infrared Imaging of Defects in Materials with Chaotic Sonic Excitation," Robert Thomas, Xiaoyan Han, L.D. Favro and Golam Newaz (Wayne State University, Detroit, MI, USA)
2. "A Lateral Field Excited Sensor," John Vetelino (University of Maine, USA)
3. "Ultrasonics and Microfluidics," Utkan Demirci, Feng Xu (Harvard Medical School, Boston, MA, USA)
4. "Array Imaging for NDE Applications," Bruce Drinkwater, Paul Wilcox, Alexander Velichko, Alan Hunter, Jie Zhang (University of Bristol, United Kingdom)

Group 3: Physical Acoustics

1. "Phononic Plate Waves," Tsung Tsong Wu (National Taiwan University, Taiwan), Jin Chen Hsu (National Yunlin University of Science and Technology, Taiwan) and Jia Hong Sun (National Taiwan University, Taiwan)
2. "Studies of Nanostructures Using Picosecond Ultrasonics," Humphrey Maris (Brown University, Providence, RI, USA)

Group 4: Microacoustics – SAW, FBAR, MEMS

1. "Front-End Implications to Multi-Standard Cellular Radios – State-of-the-Art and Future Trends," Rastislav Vazny, Linus Maurer, Harald Pretl (Danube Integrated Circuit Engineering GmbH, Linz, Austria) and Robert Weigel (Friedrich-Alexander-University, Erlangen, Germany)
2. "Application of Colored Picosecond Ultrasonics to the Thin Film Characterization in Microacoustic Devices," Arnaud Devos (IEMN CNRS, Lille, France)
3. "RF Front End Requirements for 3G and Beyond," Kamal Sahota (Qualcomm, Inc., USA)

Group 5: Transducers & Transducer Materials

1. "High Intensity Therapeutic Ultrasound Transducer Performance and Characterisation," Gerard Fleury, Remi Berriet, Laurent Chupin, Jean-Luc Guey, Olivier Le Barron, Baptiste Mainfroy and Theo Martinez (IMASONIC, France)

2. "Future Integration of Silicon Electronics with Miniature Piezoelectric Ultrasonic Transducers and Arrays," Sandy Cochran (University of Dundee, United Kingdom), David Cumming (University of Glasgow, United Kingdom), Marc Desmulliez (Heriot-Watt University, United Kingdom) and John Sweet (Loadpoint Ltd, United Kingdom)
3. "Intravascular Ultrasound: Technologies and Applications," Tat-Jin Teo (Boston Scientific, USA)

Invited Clinical Speakers (Session 2A)

The 2010 International Ultrasonics Symposium will have a special clinical session to show how medical ultrasonic technologies are used in clinical practices. This special session, which will take place on Tuesday at 11 a.m. in the Town & Country Room, consists of the following three invited presentations.

1. "Clinical Perspectives on Prostate Cancer Imaging and Therapeutics," Masoom Haider (University of Toronto, Toronto, ON, Canada)
2. "Clinical Perspectives on Focused Ultrasound Surgery in Uterine Disease," Elizabeth A. Stewart (Mayo Clinic, Rochester, MN, USA)
3. "HIFU for Prostate Cancer: Current Status, Outcomes and Future Perspectives" Jean-Yves Chapelon (INSERM, Lyon, France) and Albert Gelet (Edouard Herriot Hospital, Lyon, France)

Student Paper Competition

This is the 10th year of the Student Paper Competition. 21 Student Paper Competition finalists have been selected by the Technical Program Committee. These finalists will present a Poster of their work (in addition to their scheduled Oral presentation, if any) during the Poster Session on the Tuesday afternoon. Please refer to the Poster Presentation Guide to see what is required. A team of judges will discuss the work with the student in attendance and will select the winners of the Competition. The winners will be announced on Wednesday evening.

Group 1: Medical Ultrasonics

1. "Monitoring of Thermal Ablation Therapy Based on Shear Modulus Changes: Shear Wave Thermometry and Shear Wave Lesion Imaging," Bastien Arnal, Mathieu Pernot and Mickael Tanter (Institut Langevin, Paris, France)
2. "Ultrasound Contrast Agent Dynamics: Ultra High-Speed Fluorescence Imaging of Shell Morphology and Local Drug Release," Erik Gelderblom (University of Twente, Enschede, Netherlands), Klazina Kooiman (Erasmus MC, Rotterdam, Netherlands), Marcel

Böhmer (Philips Research, Eindhoven, Netherlands), Nico de Jong, Detlef Lohse and Michel Versluis (University of Twente, Enschede, Netherlands)

3. "Measurements From 22 to 105 MHz of the Apparent Anisotropy of Ultrasonic Backscatter from Coronary Arteries with Atherosclerotic Plaques Identified by Intravascular Ultrasound," Joseph Hoffman, Benjamin Johnson, Mark Holland (Washington University in St. Louis, USA), Russell Fedewa, Anuja Nair (Volcano Corporation, USA) and James Miller (Washington University in St. Louis, USA)
4. "Viscoelastic Measurements on Perfused and Non-Perfused Swine Renal Cortex in Vivo," Carolina Amador, Matthew W. Urban, Shigao Chen and James F. Greenleaf (Mayo Clinic College of Medicine, Rochester, MN, USA)
5. "Three-Dimensional Cardiac Motion and Strain Estimation: A Validation Study in Thick-Walled Univentricular Phantoms Using Sonomicrometry," Brecht Heyde (K.U.Leuven, Leuven, Belgium), Szymon Cygan, Beata Lesniak-Plewinska (Warsaw University of Technology, Warsaw, Poland), Daniel Barbosa, An Elen, Piet Claus, Dirk Loeckx, Krzysztof Kaluzynski and Jan D'hooge (K.U. Leuven, Leuven, Belgium)
6. "In Vivo Study of Cerebral Ischemia Using Shear Wave Imaging and Ultrafast Doppler," Emilie Mace(ESPCI ParisTech, Paris, France), Abraham Martin (CEA, Orsay, France), Gabriel Montaldo, Mathias Fink (ESPCI ParisTech, Paris, France), Bertrand Tavitian (CEA, Orsay, France) and Mickael Tanter (ESPCI ParisTech, Paris, France)
7. "Ultrasonic Assessment of the Determinants of Human Cortical Bone Elasticity: Relative Contributions of Haversian Porosity and Mineralized Matrix Stiffness," Mathilde Mouchet, Pierre Nauleau, Quentin Grimal, Amena Saïed and Pascal Laugier (Laboratoire d'Imagerie Parametrique, Paris, France)
8. "In Vivo Transcranial Cavitation Detection During Ultrasound-Induced Blood-Brain Barrier Opening," Yao-Sheng Tung, Fotios Vlachos, James Choi, Thomas Deffieux, Kirsten Selert and Elisa Konofagou (Columbia University, New York, NY, USA)

Group 2: Sensors, NDE & Industrial Applications

1. "Air-Coupled Ultrasound Wave Propagation in Glued Laminated Timber Structures Applied to Bonding Quality Assessment," Sergio Sanabria, Roman Furrer, Juerg Neuenschwander (Swiss Federal Laboratories for Materials Science and Technology, Empa, Switzerland), Peter Niemz (Institute for Building Materials, ETH Zurich, Switzerland) and Urs Sennhauser (Swiss Federal Laboratories for Materials Science and Technology, Empa, Switzerland)
2. "Langasite SAW Devices with Gas-Sensitive Layer," Peng Zheng, Tao-Lun Chin, David Greve, Irving Oppenheim, Tejasvi Ashok, James

Miller and Limin Cao (Carnegie Mellon University, USA, Pittsburgh, PA, USA)

3. "Ultrasonic Wave Propagation in Cylindrical Vessels and Implications for Ultrasonic Reactor Design," Tapiwa Mutasa, Anthony Gachagan, Alison Nordon and Richard O'Leary (University of Strathclyde, Glasgow, United Kingdom)

Group 3: Physical Acoustics

1. "Influence of Shadowing Effect on Shear Mode Acoustic Properties in the c-Axis Tilted AlN Films," Masashi Suzuki, and Takahiko Yanagitani (Nagoya Institute of Technology, Nagoya, Aichi, Japan)
2. "Design of Acoustic Beam Aperture Modifier Using Gradient-Index Phononic Crystals," Sz-Chin Lin, Bernhard Tittmann and Tony Huang (Pennsylvania State University, University Park, PA, USA)
3. "Miniaturization of the Traveling Wave Ultrasonic Linear Motor Using Bimorph Transducers," Shuichi Kondo, Daisuke Koyama and Kentaro Nakamura (Tokyo Tech, Japan)

Group 4: Microacoustics – SAW, FBAR, MEMS

1. "Reconfigurable 4-Frequency CMOS Oscillator Based on AlN Contour-Mode MEMS Resonators," Matteo Rinaldi, Chengjie Zuo, Jan Van der Spiegel and Gianluca Piazza (University of Pennsylvania, Philadelphia, PA, USA)
2. "Reliability of AlN/Sapphire Bilayer Structure for High Temperature SAW Applications," Thierry Aubert, Omar Elmazria, Badreddine Assouar, Ahmad Hamdan and Damien Geneve (Institut Jean Lamour, Nancy, France)
3. "Wafer-Level Heterointegration Process for SAW Devices on LSI," KyeongDong Park, Masayoshi Esashi and Shuji Tanaka (Tohoku University, Sendai, Miyagi, Japan)
4. "SAW-Based Radioisotope-Powered Wireless RFID/RF Transponder," Steven Tin and Amit Lal (Cornell University, USA)

Group 5: Transducers & Transducer Materials

1. "Intracranial Dual-mode IVUS Transducer for Image-Guided Brain Therapy," Carl Herickhoff, Gerald Grant, Gavin Britz and Stephen Smith (Duke University, Durham, NC, USA)
2. "High-Resolution Co-Registered Intravascular Imaging with Integrated High Frequency Ultrasound and OCT Probe," Xiang Li (University of Southern California, Los Angeles, CA, USA), Jiechen Yin (University of California, Irvine, CA, USA), Changhong Hu, Qifa Zhou, K. Kirk Shung (University of Southern California, Los Angeles, CA, USA) and Zhongping Chen (University of California, Irvine, CA, USA)

3. "CMUT with Substrate-Embedded Springs for Non-Flexural Plate Movement," Amin Nikoozadeh and Pierre T. Khuri-Yakub (Stanford University, Stanford, CA, USA)

Student Travel Support

Some of the students will receive travel support to attend the conference. These students were selected based on need, whether they received support last year, and their group affiliation. Students that receive this support must register normally and will receive the monies at the conference. **They must show proof of their student status and of their membership in the IEEE and UFFC to receive their monies.**

11:00 am - 12:30 pm		Oral --- Tuesday, October 12, 2010					
	<p>Session 2A. Clinical Ultrasound Chair: Stuart Foster Univ. of Toronto</p>	<p>Session 2B. Elasticity Imaging - Technology Chair: Kathy Nightingale Duke University</p>	<p>Session 2C. NDE Array Imaging Chair: R.C. Addison, Jr. Rockwell Scientific Co</p>	<p>Session 2D. Functional Imaging Chair: Svetoslav Nikolov BK Medical</p>	<p>Session 2E. Piezoelectric Materials Chair: Qifa Zhou University of Southern California</p>	<p>Session 2F. Future Directions of RF Filters Chair: Rich Ruby Avago Technologies</p>	
	<p>Town & Country</p> <p>2A-7 Clinical Perspectives on Prostate Cancer Imaging and Therapeutics Mawson Haider¹ ¹University of Toronto, Canada</p>	<p>2B-1 Measurement of mechanical properties of viscoelastic medium using short-pulsed acoustic radiation on a laser-induced microbubble Sunggil Yoon^{1,2}, Aghvanig Salami¹, Andrii Kimbaki, Seungsoo Kim¹, Stanislav Emelianov¹ ¹Department of Biomedical Engineering, the University of Texas at Austin, Austin, TX, USA, ²Department of Mechanical Engineering, the University of Texas at Austin, Austin, TX, USA</p> <p>2B-2 Quasi-static elastography based on high frame rate imaging and frequency domain displacement estimation. Alessandro Ramalli^{1,2}, Olivier Basset¹, Christian Cochard¹, Piero Tortoli¹ ¹Microelectronics Systems Design Laboratory, University degli Studi di Firenze, Italy; ²UMR5220 - Institut INSIS, CNRS Université Lyon 1, France</p>	<p>2C-1 Array Imaging for NDE Applications Bruce Drinkwater¹, Paul Wilcox¹, Alexander Yelichko¹, Alan Hunter¹, Jie Zhang¹, Yehuda Ben-El-Mechaieq¹ ¹University of Bristol, United Kingdom</p>	<p>2D-1 Vascular Architecture in Subharmonic Breast Images: A Comparative Study Neha Joshi^{1,2}, Flemming Forberg¹ ¹Imaging Technology Center, Philips Research, Philadelphia, PA, USA, ²Drexel University, USA</p>	<p>2E-1 Piezoelectric Crystal Composite for High Frequency Ultrasound Application Jian Tian¹, Kevin Meehan¹, Brandon Stone¹, Jeffrey S. Nelson¹ ¹H.C. Materials Corporation, Balingbrook, IL, USA</p>	<p>2E-2 A High Q_v Relaxor Ferroelectric Single Crystal: Growth and Characterization Jun Luo¹, Wesley Hackenberger¹, Shujun Zhang¹, Thomas Shroff¹ ¹TFS Technologies, Inc, USA, ²Material Research Lab, Penn State, USA</p>	<p>Golden West</p> <p>2F-1 RF Front End Requirements for 3G and Beyond Kamal Sabouni¹ ¹Qualcomm, B.C, USA</p>
11:00 am		<p>San Diego</p>	<p>California</p>	<p>Royal Palm 1-3</p>	<p>Royal Palm 4-6</p>	<p>Golden West</p>	
11:15 am							

<p>11:30am</p>	<p>2A-2 Clinical Perspectives on Focused Ultrasound Surgery in Uterine Disease Elizabeth Stewart¹ <i>replace, replace, replace, USA</i></p>	<p>2B-3 Quantifying the Impact of Kernel Size on the Accuracy and Precision of Shear Wave Speed Estimation Xuan Ding¹, Mark Palmer¹, Neal Breen¹, Michael Wang¹, Kathan Nishikie¹ <i>Biomaterial Engineering, Duke University, Durham, NC, USA; Duke University, Durham, NC, USA</i></p>	<p>2C-2 Array Element Failure Correction for Robust Ultrasound Beamforming and Imaging Minghui Li¹, Michelle McGuire¹, Eddie Ho¹, Grant H. Ewald¹ <i>Centre for Ultrasonic Engineering, University of Strathclyde, Glasgow, Scotland, United Kingdom</i></p>	<p>2D-3 A diagnostic tool for reducing unnecessary prostate biopsy cores Nicola Tescioni¹, Simona Maggioni¹, Francesca Lica¹, Luca Di Felice¹, Nicola Spasiale¹, JUREC Diagnostic Center <i>Center for Ultrasonic Engineering, University of Bologna, Italy; ARCES - Advanced Research Center on Electronic Systems, Università di Bologna, Bologna, Italy</i></p>	<p>2E-3 Electrical Properties of Grain Oriented (Bi1/2K1/2)TiO3 Ceramics Tadashi Takenaka¹, Hajime Nagata² <i>Faculty of Science and Technology, Tokyo University of Science, Tokyo, Japan; Tokyo University of Science, Japan</i></p>	<p>2F-2 FBAR using LINDO, thin film deposited by CVD Mieho Kato¹, Yusuke Suzuki¹, Yoshhiro Teraoka¹ <i>Technology and Business Development Unit, Kokuka Laboratory, Murata Mfg Co., Ltd., Yamashiro, Shiga, Japan; Product Development Dept.II, New Technology and Products Development Group, Murata Mfg Co., Ltd., Yamashiro, Shiga, Japan</i></p>
<p>11:45 am</p>	<p>2A-3 HFU for Prostate Cancer: Current Status, Outcomes and Future Perspectives Jean-Yves Chapelon¹, Albert Gelet² <i>US56, INSEERM, LYON, France; Urology, Edouard Herriot Hospital, LYON, France</i></p>	<p>2B-4 Composed Vibration Pulses for Ultrasound Vibrometry Yi Zhang¹, Aiping Yao¹, Shiqiang Chen², Matthew Urban³, Yu Liu¹, Ke Chen¹, James Greenleaf⁴ <i>Electrical and Computer Engineering, St. Cloud State University, St. Cloud, MN, USA; Physiology and Biomedical Engineering, Mayo Clinic, Rochester, MN, USA</i></p>	<p>2C-3 Two-dimensional arrays for defect characterization Paul Wilson¹, Alexander Velichko² <i>Mechanical Engineering, University of Bristol, Bristol, Avon, United Kingdom; University of Bristol, United Kingdom</i></p>	<p>2D-4 Application of a Limiting form of the Rényi Entropy for Molecular Imaging of Tumors Using a Clinically Relevant Protocol Jim Marsh¹, Kirk Wallace¹, John McCarthy², Victor Wickerhauser³, Gregory Lanza⁴, Samuel Wickline⁵, Michael Hughes⁶ <i>Washington University, School of Medicine, St. Louis, MO, USA; Department of Mathematics, Washington University, St. Louis, MO, USA</i></p>	<p>2E-4 Lithium niobate ultrasound transducers for high resolution focused ultrasound surgery Spiros Koteplakis¹, Sandy Cochran¹, Michael Postema² <i>Medical Engineering, Ruhr-Universität Bochum, Germany; University of Hull, United Kingdom; Institute for Medical Science and Technology, University of Dundee, United Kingdom; Department of Mathematics and transducers for high resolution focused ultrasound surgery</i></p>	<p>2F-3 Front-End Implications to Multi-Standard Cellular Radios – State-of-the-art and Future Trends Rastislav Vazny¹, Linus Mauser¹, Harald Prell¹, Robert Weigel¹ <i>Donau-Integrated Circuit Engineering GmbH, Linz, Austria; Institute for Electronics Engineering, Friedrich-Alexander-University, Erlangen, Germany</i></p>
<p>12:00 am</p>	<p>2B-5 Robust Estimation of Time-of-Flight Shear Wave Speed Using a Randon Sum Transformation Ned Breen¹, Michael Wang¹, Mark Palmer¹, Kathryn Nightingale¹ <i>Biomaterial Engineering, Duke University, Durham, NC, USA</i></p>	<p>2C-4 Conformally mapped 2D ultrasonic array structure for NDE imaging application Sivaram Nihal Ramadas¹, Joseph Jackson¹, Andrew Tweedle², Richard O'Leary¹, Anthony Gachuan¹ <i>Centre for ultrasonic engineering, University of Strathclyde, United Kingdom; Albu Ultrasound Ltd., United Kingdom</i></p>	<p>2D-5 Velocity Profile Detection Through Adaptive Estimators for Improved Frame Rate Imaging Stefano Ricei¹, Francesco Guidi¹, Piero Terribi¹ <i>Electronics & Telecommunications Dept., Università di Firenze, Florence, Italy</i></p>	<p>2E-5 195 MHz High Frequency Ultrasonic Transducer with KIN-BENT 0-3 Composite Active Element Sien Ting Lau¹, Xiang Li¹, Xubing Zhang¹, Qili Zhou¹, K. K. Shung¹, Hongfen Ji¹, Wei Ren² <i>Biomedical Engineering, University of Southern California, Los Angeles, California, USA; Xiamen Jiaotong University, China, People's Republic of</i></p>	<p>2F-4 GNSS Filter-LNA Module using BAN CRP Filters Rich Ruby¹, Steve Gilbert¹, Yu-Hoang Chow², William Hui¹, Simon Lim² <i>Avago Technologies, USA; Avago Technologies, Malaysia</i></p>	
<p>12:15 am</p>	<p>2B-6 A Confidence Index Weighted Least Squares Filter for Ultrasound Displacement Registration Linguo un Huang¹, Congxian Jia¹, Chi Hyung Seo¹, Junjun Xia¹, Matthew O'Donnell² <i>Department of Biomechanical Engineering, University of Washington, USA; The College of Engineering, University of Washington, USA</i></p>	<p>2C-5 3D Ultrasonic Imaging of the human hand for biometric purposes Antonio Iula¹, Alessandro Savaola², Cristina Longo³, Alessandro Caronni², Giovanni Calamò⁴, Massimo Pappalardo⁵ <i>University of Basilicata, Potenza, Potenza, Italy; University Roma Tre, Italy</i></p>	<p>2D-6 Bayesian reconstruction of complex shear modulus images Marho Oreschall, Michael F. Insana^{1,2} <i>Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, USA; Biomechanical Engineering, University of Illinois at Urbana-Champaign, USA</i></p>	<p>2E-6 Structure and Ferroelectric properties of Sputtered P(VDF)/Nb:O₃-PZT Thin Films Kiyohisa Wasa¹, Isaki Kanno², Hidetoshi Kotera³ <i>Micro Engineering, Kyoto University, Kyoto, Japan; Micro Engineering, Kyoto University, Kyoto, Japan</i></p>	<p>2F-4 GNSS Filter-LNA Module using BAN CRP Filters Rich Ruby¹, Steve Gilbert¹, Yu-Hoang Chow², William Hui¹, Simon Lim² <i>Avago Technologies, USA; Avago Technologies, Malaysia</i></p>	

1:30 pm - 3:00 pm		Oral --- Tuesday, October 12, 2010	
Session 3A. Therapy and Gene or Drug Delivery <i>Chair: Charles Cain Univ. of Michigan</i>	Session 3B. Bio-Effects <i>Chair: William O'Brien Univ. of Illinois at Urbana- Champaign</i>	Session 3C. NDE Signal Processing and Imaging <i>Chair: Jafar Sanjie Illinois Institute of Technology</i>	Session 3D. Phononic Crystal Devices I <i>Chair: Vincent Laude Institute Femto-St. CNRS</i>
Town & Country		California	
3A-7 Augmented Guided Ultrasound Therapy using Bubbles, Sound and Light <i>Ronald Roy¹ Boston University, USA</i>	3B-1 Physical mechanisms and bioeffects of explosive boiling induced by millisecond pulses of high intensity focused ultrasound <i>Tatiana Khabibova¹, Michael Chang², Ven Khabibova¹, Yak-Nam Wang¹, Ioo Ha Hwang¹, Lawrence Cram¹, Michael Bailey¹ ¹Applied Physics Laboratory, University of Washington, Seattle, WA, USA, ²INSERM, Lyon, France, ³Faculty of Physics, Moscow State University, Moscow, Russian Federation</i>	3C-1 An improved beamforming technique for GWR-based SHM resolution in IMW-based SHM <i>Emanuele Baravall^{1,2}, Luca De Marchi¹, Nicola Cazzane¹, Philipp Sautner¹, Nicolò Speziale¹ ¹DEIS, University of Bologna, Italy, ²School of Aerospace Engineering, Georgia Institute of Technology, USA</i>	3D-1 Phononic Plate Waves <i>Tsung Tseng Wu¹, Jin Chen Hsu¹, Jia Hong Sun¹ ¹Institute of Applied Mechanics, National Central University, Chungli, Taiwan ²Mechanical Engineering, National Tsing University of Science and Technology, Taiwan</i>
1:30 pm	3B-2 Inception of cavitation clouds by scattered shockwaves <i>Adam Maxwell¹, Charles Cain¹, J. Brian Fowlkes², Zhen Xu¹ ¹Biomedical Engineering, University of Michigan, USA, ²Radiology, University of Michigan, USA</i>	3C-2 Asymmetric Gaussian Chirplet Model for Ultrasonic Echo Analysis <i>Ramazan Demiri¹, Jafar Sanjie¹ ¹Illinois Institute of Technology, Chicago, IL, USA</i>	3E-1 Interaction between Rayleigh-type SAW and the surface skimming wave in a periodic grating on a 128°-LiNb substrate <i>Victor Plushki¹, Patrick Turner², Neal Fearn², Valery Grigorievsky¹ ¹GTR Trade SA, Switzerland, ²Supersubductor Technologies Inc., USA, ³IRE R.R. Russian Federation</i>
1:45 pm	3E-2 FEMIBEM simulation of SAW components with electrode passivation by anodic oxidation <i>Markus Mayer¹, Gholamreza Daglar-Javid¹, Wolfgang Sauer¹, Thilo Gaeremier¹, Karl Wagner¹, Sabine Zehlmy² ¹EPCOS AG, Germany, ²Technische Universität Graz, Austria</i>	3F-2 Automated left ventricular border detection using active appearance models <i>K. Y. Esther Leung¹, Manjin van Sijmal¹, Gerard van Buren¹, Antonius F. W. van der Steen¹, Niso de Jong¹, Johan G. Bosch¹ ¹Biomedical Engineering, Thoraxcenter, Erasmus M.C., Rotterdam, Netherlands</i>	3F-7 GPU volume rendering in 3D echocardiography: real-time pre- processing and ray-casting <i>Gabriel Kiss¹, Erik Steen², Jon Peter Aasen¹, Knut Erik Steen¹ ¹Medical Imaging Laboratory, Norwegian University of Science and Technology, Trondheim, Norway, ²GE Vingmed Ultrasonid, Horten, Norway, ³Department of Informatics, University of Oslo, Oslo, Norway, ⁴Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway</i>
Royal Palm 1-3		Royal Palm 4-6	
Golden West		Golden West	

2:00 pm	<p>3A-2 Enhanced gene transfection of plasmid DNA in the liver with ultrasound and microbubbles</p> <p>Ralf Scah¹, Bahadar Raju¹, Evelyn Loyvi¹, Chia Ting Chen¹, Sanyal G¹, Clay Renee¹, Dwight Koebel¹, William Fodor², ¹Philly Research North America, ²Bracewell Manor, NY, USA, ²Duke University Medical Center, Durham, NC, USA, ³GfGenex Therapeutics, Broadbridge, CT, USA</p>	<p>3B-3 Instantaneous bandwidth measurements of an electrohydraulic lithotripter</p> <p>Jeffrey A. Kutzler¹, Eugene Filson¹, Michael Adams¹, A. Alshabkali¹, Benjamin M. Knudt¹, Robin O. Cleveland¹, ¹Riverside Research Institute, New York, NY, USA, ²Dept. Mech. Eng., Boston University, Boston, MA, USA</p>	<p>3C-3 Evaluation of Direct-Sequence Spread-Spectrum Modulation Technique for Digital Data Transmission with Ultrasound</p> <p>Michael Vogt¹, ¹Dept. of Electrical Engineering and Information Technology, Ruhr-University Bochum, Bochum, Germany</p>	<p>3D-2 Negative refraction of Rayleigh and Lamb waves through two-dimensional phononic crystals</p> <p>Bernard Bonaldi¹, Laurent Belliard², Juliette Pons¹, Olga Bakas², ¹CEMOS, ²Institut des NanoSciences de Paris, Paris, France, ³Institut des NanoSciences de Paris, Paris 6 University, Paris, France</p>	<p>3E-3 Measurement and FEM/BEM simulation of transverse effects in SAW resonators on lithium tantalate</p> <p>Marc Sulp¹, Julien Guillet², ¹TriQuint Semiconductor, Troy, MI, USA, ²TriQuint Semiconductor, Troy, MI, USA</p>	<p>3F-3 Semi-automatic abdominal aortic aneurysms geometry assessment based on 3D ultrasound imaging</p> <p>Renaud Lanascaud¹, Robert Adler¹, Jean-Michel Borel¹, Basilio Merce¹, Vincent Lef¹, ¹MedSys, Philips Healthcare, Staines, France, ²CHU Reims, France</p>
2:15 pm	<p>3A-3 Microbubble Potentiated Collagenase Therapy of In Vivo Chronic Total Occlusions</p> <p>David Gerrit², Aman Thani², Raffi Karadhaj¹, Michelle Ladouceur¹, Carl Wayne¹, Stuart Frazer¹, Isabella Simeoni¹, ¹Smiths & Nephew Centre, ON, Canada, ²Medical Biophysics, University of Toronto, Canada, ³Northwest Health Science Centre, Canada, ⁴Styerson University, Canada, ⁵McLaughlin Centre for Molecular Medicine, University of Toronto, Canada</p>	<p>3B-4 Improving US Induced Blood Brain Barrier Disruption in Rodents using MR Acoustic Radiation Force Imaging.</p> <p>Benoit Luzzati¹, Benjamin Marty¹, Sébastien Mériaux¹, Mathieu Pennot², Franck Lethimonier¹, Michael Taitot², ¹CEA/DST/IBEM/Neurospin, France, ²ESPCI ParisTech, CNRS UMR 7587, INSERM U979, France</p>	<p>3C-4 Dispersion compensation of Lamb waves with the Warped Frequency Transform in passive monitoring techniques</p> <p>Luca De Marchi¹, Alessandro Marzani², Nicolo' Speciale³, Erasmo Viola⁴, ¹DEIS, University of Bologna, Italy, ²DISTART, University of Bologna, Italy</p>	<p>3D-3 VHF Phononic Band Gap Multiplexer/Demultiplexers using Coupled Phononic Crystal Waveguides and Resonators</p> <p>Saeed Mohammadi¹, Ali A. Eftekhari¹, Abdelhakim Khelif², Ali Adibi¹, ¹Georgia Institute of Technology, USA, ²International Joint Laboratory, Georgia Tech-CNRS UMI, USA, ³Institut Frenet-ST, France</p>	<p>3E-4 Simulation of Solidly Mounted BAW Resonators using a Finite Element Method combined with a Boundary Element Method (BEM) and/or a Perfectly Matched Layer (PML)</p> <p>Allreza Tajiri¹, Alexandre Volatier¹, Robert Aigner¹, Marc Sulp¹, ¹TriQuint Semiconductor Inc., Apopka, Florida, USA</p>	<p>3F-4 Three Dimensional Ultrasonic Molecular Imaging of Angiogenesis</p> <p>Jesse E. Streete¹, Ryan C. Gessner¹, Steven Feinberg¹, Jason J. Garner¹, Paul A. Dayton¹, ¹UNC-Chapel Hill and NCSU, USA, ²Stemans Medical Solutions, USA</p>
2:30 pm	<p>3A-4 The release of thrombin, using acoustic droplet vaporization (ADV), from perfluoropentane double emulsions</p> <p>Mario Fabilli¹, James Lee¹, Oliver Krippligans¹, Paul Carson¹, J. Brian Fowlkes¹, ¹University of Michigan, USA</p>	<p>3B-5 Ultrasound-enhanced Delivery of Antibiotics into the Eye</p> <p>Marijan Najai¹, Marjan Farhadshah¹, Sankar Mohesh¹, Ji Liu¹, Cong Gao¹, Vesna Zekic¹, ¹Department of Electrical and Computer Engineering, The George Washington University, Washington, DC, USA, ²Department of Ophthalmology, The George Washington University, Washington, DC, USA</p>	<p>3C-5 A Comparative Study of Human Motion Using Ultrasonic and Seismic Sensors</p> <p>musashy zabair¹, ¹ZESS, University of Siegen, Germany</p>	<p>3D-4 Hypersonic phononic crystal for surface acoustic waves</p> <p>Sarah Bendabane¹, Gwenn Ulliac¹, Olivier Goffe¹, Roland Salut¹, Younes Achoui¹, Vincent Laude¹, ¹FEMTOS-ST, Besancon, France</p>	<p>3E-5 Renaturing Structures on the Surface</p> <p>Henry Weger¹, Elina A. Meyer¹, Werner Rulle¹, Leonhard M. Reinalt¹, Andreas Mayer¹, ¹Laboratory for Electrical Instrumentation, University of Freiburg, Germany, ²EPCCOS AG, Munich, Germany, ³University of Applied Sciences Offenburg, Geigenloch, Germany</p>	<p>F-5 Blood vessel structural morphology derived from 3D dual-frequency ultrasound images</p> <p>Ryan C. Gessner¹, Elizabeth Ballitt¹, Paul A. Dayton¹, ¹Joint Department of Biomedical Engineering, UNC-Chapel Hill and NCSU, NC, USA, ²Surgery, UNC-Chapel Hill, USA</p>
2:45 pm	<p>3A-5 Enhanced brain molecular delivery using focused ultrasound at low acoustic intensity and low acoustic pressures</p> <p>James Choi¹, Kirsten Sclerf¹, Elisa Koniagou¹, ¹Biomedical Engineering, Columbia University, New York, NY, USA</p>	<p>3B-6 Comparing Tumor Response to PEG-Biobeads Therapy using High Frequency Ultrasound and Contrast Size-Selected Microbubble Contrast Agents</p> <p>Shawn Lee¹, Cheryl Choi¹, Sachin Kumar¹, Jianming Jiang¹, Tom Braken¹, Sarah Zimmerman¹, James Koenig¹, Shantanu Kumar¹, ¹Department of Biomedical Engineering, Columbia University, New York, NY, USA, ²Department of Biomedical Engineering, Columbia University, New York, NY, USA, ³Department of Radiology, Columbia University, New York, NY, USA, ⁴Department of Cell Biology, Columbia University, New York, NY, USA, ⁵Department of Cell Biology, Columbia University, New York, NY, USA, ⁶Department of Cell Biology, Columbia University, New York, NY, USA, ⁷Department of Cell Biology, Columbia University, New York, NY, USA, ⁸Department of Cell Biology, Columbia University, New York, NY, USA, ⁹Department of Cell Biology, Columbia University, New York, NY, USA, ¹⁰Department of Cell Biology, Columbia University, New York, NY, USA, ¹¹Department of Cell Biology, Columbia University, New York, NY, USA, ¹²Department of Cell Biology, Columbia University, New York, NY, USA, ¹³Department of Cell Biology, Columbia University, New York, NY, USA, ¹⁴Department of Cell Biology, Columbia University, New York, NY, USA, ¹⁵Department of Cell Biology, Columbia University, New York, NY, USA, ¹⁶Department of Cell Biology, Columbia University, New York, NY, USA, ¹⁷Department of Cell Biology, Columbia University, New York, NY, USA, ¹⁸Department of Cell Biology, Columbia University, New York, NY, USA, ¹⁹Department of Cell Biology, Columbia University, New York, NY, USA, ²⁰Department of Cell Biology, Columbia University, New York, NY, USA</p>	<p>3C-6 Improved system identification for simultaneous transmitting and receiving in single transducer applications</p> <p>Andreas Schröder¹, Bernd Henning¹, ¹Measurement Engineering Group, University of Paderborn, Paderborn, Germany</p>	<p>3D-5 Silicon Carbide Phononic Crystals for Ultra-high TQ Micromechanical Resonators</p> <p>Maryam Ziaee-Mayyed¹, Mehmet F. Si¹, Charles M. Renke¹, Ilub El-Kady¹, Roy H. Olsson III¹, ¹Department of Mechanical and Industrial Engineering, University of New Mexico, Albuquerque, NM, USA, ²Phononic Materials, LLC, Albuquerque, NM, USA, ³Phononic Materials, LLC, Albuquerque, NM, USA, ⁴Phononic Materials, LLC, Albuquerque, NM, USA, ⁵Phononic Materials, LLC, Albuquerque, NM, USA, ⁶Phononic Materials, LLC, Albuquerque, NM, USA, ⁷Phononic Materials, LLC, Albuquerque, NM, USA, ⁸Phononic Materials, LLC, Albuquerque, NM, USA, ⁹Phononic Materials, LLC, Albuquerque, NM, USA, ¹⁰Phononic Materials, LLC, Albuquerque, NM, USA, ¹¹Phononic Materials, LLC, Albuquerque, NM, USA, ¹²Phononic Materials, LLC, Albuquerque, NM, USA, ¹³Phononic Materials, LLC, Albuquerque, NM, USA, ¹⁴Phononic Materials, LLC, Albuquerque, NM, USA, ¹⁵Phononic Materials, LLC, Albuquerque, NM, USA, ¹⁶Phononic Materials, LLC, Albuquerque, NM, USA, ¹⁷Phononic Materials, LLC, Albuquerque, NM, USA, ¹⁸Phononic Materials, LLC, Albuquerque, NM, USA, ¹⁹Phononic Materials, LLC, Albuquerque, NM, USA, ²⁰Phononic Materials, LLC, Albuquerque, NM, USA</p>	<p>3E-6 Natural SPUT behavior of YZ LNBOS</p> <p>Gunter Marin¹, Hagen Schmidt¹, Bert Wall¹, ¹JFW Dresden, Germany, ²Vector International GmbH, Germany</p>	<p>3F-6 Refraction and time of flight corrections in 3D Ultrasound Computed Tomography</p> <p>Andreas Koch¹, Christian Hansen¹, Nils Hüttenbräuer¹, Helmut Ernst¹, ¹High Frequency Engineering Research Group, Ruhr-University Bochum, Germany</p>

4:30 pm - 6:00 pm		Oral --- Tuesday, October 12, 2010				
4:30 pm	<p>Session 4A. Therapy: Hyperthermia Chair: Greg Clement <i>Harvard Medical School</i></p>	<p>Session 4B. Molecular and Magneto/Current-Source Imaging Chair: Kai Thomenius <i>GE's corporate R&D</i></p>	<p>Session 4C. Surface Acoustic Wave Sensors Chair: John Vetelino <i>Univ. of Maine</i></p>	<p>Session 4D. Laser Acoustics & Acousto-optics Chair: John D. Larson <i>Avago Technologies</i></p>	<p>Session 4E. Non-Linearities and Device Physics Chair: Gernot Fattinger <i>Triquint Semiconductor</i></p>	<p>Session 4F. Novel Ultrasound Systems Chair: Paul Carson <i>Univ. of Michigan</i></p>
	<p>4A-7 Enhancement of Ultrasonic Heating by Ultrasonically Localized Cavitation for High Intensity Focused Ultrasound Ryo Takagi¹, Shin Yoshizawa¹, Shin-ichiro Uenamaru¹ ¹Graduate school of Engineering, Tohoku University, Japan; ²Graduate school of Biomedical Engineering, Tohoku University, Japan</p>	<p>4B-1 Multi-modal Molecular Imaging Jaergen Willmann¹ ¹Stanford, USA</p>	<p>4C-1 Super-Precise Ultrasonic Measurement System of Zero-CTE Temperature for EUVL-Grade TiO₂-SiO₂ Ultra-Low-Expansion Glasses Jun-ichi Kashiike¹, Mutsaka Arakawa¹, Yoji Ohashi¹, Toshiro Sanemitsu¹, Yoko Matsuyama¹ ¹Electrical Engineering, Tohoku University, Sendai, Japan</p>	<p>4D-1 Studies of Nanostructures Using Picosecond Ultrasonics Hamphrey Mark¹ ¹Department of Physics, Brown University, Providence, Rhode Island, USA</p>	<p>4E-1 Determination of the Non-linear Physical Constants in a Piezoelectric AIN Film David Felat¹, Dong Shun¹ ¹ATAGO Technologies, USA</p>	<p>4F-1 Performance of SARUS: A Synthetic Aperture Real Time Ultrasound System Jürgen Arndt Jansen¹, Hans Helber-Land², Ralf Neumann², Hans-Joachim Schmiedel², Sverre Janoy Skjeltorp², Martin Hansen², Ulf-Darling Larsen² ¹Department of Electrical Engineering, Technical University of Denmark, Lyngby, Denmark; ²Preus-AS, Copenhagen ST, Denmark; ³BK Medical, Herlev, Denmark</p>
4:45 pm	<p>4A-2 Acoustic Droplet Vaporization for the Enhancement of Ultrasound Thermal Therapy Man Zhang¹, Mario Fabbili¹, Paul Carson¹, Frederic Padilla¹, Scott Swanson¹, Oliver Krifflings¹, Brian Fowlkes¹ ¹University of Michigan, USA</p>	<p>4C-2 Detection of CO₂ Absorption in Graphene using Surface Acoustic Waves Venkatesh Chivukula¹, Christo Krizinger¹, Fazal Yavari¹, Daamantas Ciplys¹, Nibhil Korarikar¹, Michael Shur¹ ¹Electrical Engineering, Rensselaer Polytechnic Institute, Troy, NY, USA; ²Department of Physics, Rensselaer Polytechnic Institute, USA; ³Radiophysics, Vilnius University, Lithuania</p>	<p>4D-2 Acoustic Phonon Transmission Through Vacuum Mika Prunnila¹, Johanna Melkas¹ ¹TTT Technical Research Centre of Finland, Espoo, Espoo, Finland</p>	<p>4E-2 3rd Order Nonlinear Distortion of SAW Duplexers in UMITS System Li Chen¹, Jean Broil¹, Pierre Girard¹, Carlos Ledesma¹, Marc Solal¹, Karim Cheema¹, Donald Malocha¹, Parveen Wahid¹ ¹TriQuint Semiconductor, Apopka, Florida, USA; ²University of Central Florida, Orlando, Florida, USA</p>	<p>4F-2 Challenges and Considerations of Analog Front-Ends Design for Portable Ultrasound Systems Xiaochen Xu¹, Sundeep Ovsval¹, harsh Venkataraman¹, Eduardo Bartolome¹, Kanthik Vasanth¹ ¹Medical Business Unit, Texas Instruments, Dallas, TX, USA</p>	
	<p>Town & Country</p>					
		<p>San Diego</p>		<p>California</p>		
		<p>Royal Palm 1-3</p>		<p>Royal Palm 4-6</p>		
		<p>Golden West</p>				

<p>5:00 pm</p>	<p>4A-3 Mechanisms of ultrasound and heating dissipation of ultrasound in the skull bone : Comparison between simulation models and experiments Gnamucro Piatoni¹, Mathieu Perrin¹, Etienne Bossy², Jean-Francois Aubry³, Manis Muller⁴, Mickael Tanter⁵ ¹Institut Langevin, ESPCI, CNRS 7587, Paris, France, ²Institut Langevin, ESPCI, CNRS 7587, France, ³Institut Langevin, France</p>	<p>4B-2 On application of magnetic nanoclusters for high sensitivity pulsed magneto-motive ultrasound imaging Mohammed Mahabubamam¹, Ki Youn Yoo², Min Ooi³, Cahin Kocemur⁴, Ananya Bhowanker⁵, Keith P. Johnson⁶, Stanislaw Emchynski⁷ ¹Biomedical Engineering, University of Texas at Austin, Austin, TX, USA, ²University of Texas at Austin, Austin, TX, USA</p>	<p>4C-3 Flexible instrumentation for wireless SAW sensing in harsh environments Tim Lam Chia¹, Peng Zheng², David Greve¹, Irving Oppenheim¹ ¹National Energy Technology Laboratory, USA, ²National Energy Technology Laboratory, Pittsburgh, PA, USA</p>	<p>4D-3 Development of an accurate ultrasonic measurement system using an optical interferometer Yoshiaki Maruyama¹, Masahito Yoshida¹, Takashi Uchida¹, Tetsuo Kikuchi¹ ¹National Metrology Institute of Japan/ AIST, Japan</p>	<p>4E-3 Substrate induced 3rd order nonlinear Effects in BAW Devices Martin Froschich¹, Martin Handmann¹, Ulrich Steiner¹ ¹Physikalische Division, Avago Technologies, Munich, Germany</p>	<p>4F-3 A PC-based Fully-programmable Medical Ultrasound Imaging System using a Graphics Processing Unit Seokhan Kwid¹, Hak-yeon Seok¹, Jin Ho Chang², Taek-Kyung Song², Yungsoo Yoo^{1,3} ¹Electronic Engineering, Sejong University, Seoul, Korea, ²Republic of Korea, Institute of Advanced Biotechnology, ³Innovative Program of Integrated Biotechnology, Sejong University, Seoul, Korea, Republic of</p>
<p>5:15 pm</p>	<p>4A-4 Ultrasound Compatible RF Ablation Electrode Design for Catheter Based Guidance of RF Ablation - In Vivo Results with Thermal Strain Imaging Douglas Segerson¹, Jui-Cannar², Chi-Hwang Lee², Jung-Sook Jeong³, Erwan Meehan⁴, Michael S. Litwin⁵, The Nguyen⁶, Arunthanasorn⁷, Yong-Lin Shih⁸, Shih-Pin Wang⁹, Timothy M. Johnson¹⁰, Peter Kuan¹¹, David Miller¹² ¹UC Davis, USA, ²University of Southern California, USA, ³University of Michigan, USA, ⁴University of California, San Diego, USA, ⁵Stanford University, USA, ⁶UC San Diego, USA, ⁷UC San Diego, USA, ⁸UC San Diego, USA, ⁹UC San Diego, USA, ¹⁰UC San Diego, USA, ¹¹UC San Diego, USA, ¹²UC San Diego, USA</p>	<p>4B-3 Measuring the acousto-electric interaction constant in cardiac tissue using Ultrasound Current Source Density Imaging Qian Wang^{1,2}, Ragnar Olafsson³, Peter Ingargam⁴, Zhichui Liu^{1,2}, Russell Wicks⁵ ¹Department of Biomedical Engineering, University of Arizona, Tucson, AZ, USA, ²Department of Radiology, University of Arizona, Tucson, AZ, USA, ³Department of Radiology, University of Arizona, Tucson, AZ, USA, ⁴Department of Radiology, University of Arizona, Tucson, AZ, USA, ⁵Department of Radiology, University of Arizona, Tucson, AZ, USA</p>	<p>4C-4 Multi-Sensor Wireless Interrogation of SAW Resonators at High Temperatures Alberto Casabelli¹, Peter Dawlati^{1,2}, Thomas Pollard³, Maurício Ferreira da Cunha³ ¹Laboratory for Surface Science & Technology, University of Maine, Orono, ME, USA, ²Department of Mechanical Engineering, University of Maine, Orono, ME, USA, ³Environmental Technologies Corporation, Orono, ME, USA</p>	<p>4D-4 3D reconstruction of ultrasonic fields from optical measurement Yoshihisa Osumi¹, Yuya Shimomaki¹, Shin Yoshitani¹, Shirohito Umematsu¹ ¹Tohoku University, Japan</p>	<p>4E-4 Acoustic Dispersion of Solidly Mounted Resonators (SMRs) with optimized reflector stack for dual wave reflection Suny Jose¹, Ray Hasting², Andre Jansman³ ¹Semiconductor Components, University of Twente, Enschede, Netherlands, ²Semiconductor components, University of Twente, Enschede, Netherlands, ³Research, NXP semiconductor, Eindhoven, Netherlands</p>	<p>4F-4 A matrix phased array system for 3D high-frame rate imaging of the carotid arteries Margret W. Duester¹, Robert H.S.H. Bourskens¹, Guillaume Fern¹, Peter J. Brands¹, Johan G. Bosch¹, Niccolò Jorg¹ ¹BioMedical Engineering, ErasmusMC, Netherlands, ²Vermon, France, ³Esate Europe B.V., Netherlands</p>
<p>5:30 pm</p>	<p>4A-5 Ultrasound and Photoacoustic Image-Guided Photothermal Therapy Using Silica-Coated Gold Nanorods: In-Vivo Study Seungsoo Kim¹, Yun-Sheng Chen², Mohammad Mehmooramadi³, Jason Cook⁴, Stanislaw Emchynski⁵ ¹Department of Biomedical Engineering, Kyung Hee University, Yongin, Gyeonggi, Korea, Republic of, ²Department of Biomedical Engineering, Kyung Hee University, Yongin, Gyeonggi, Korea, Republic of, ³Department of Biomedical Engineering, Kyung Hee University, Yongin, Gyeonggi, Korea, Republic of, ⁴Department of Biomedical Engineering, Kyung Hee University, Yongin, Gyeonggi, Korea, Republic of, ⁵Department of Biomedical Engineering, Kyung Hee University, Yongin, Gyeonggi, Korea, Republic of</p>	<p>4B-4 Magnetic Coil Design for Quantitative Ultrasound Imaging of Magnetic Nano-particle Density A.B.M. Awolad Hossain¹, L.H. Kang¹, Y.H. He¹, M.H. Cho¹, S.Y. Lee¹ ¹Department of Biomedical Engineering, Kyung Hee University, Yongin, Gyeonggi, Korea, Republic of</p>	<p>4C-5 Langasite SAW devices with gas-sensitive layer Peng Zhang^{1,2}, Hui-Lian Chai¹, David Greve³, Irving Oppenheim³, Tejvir Akbar⁴, James Miller⁵, Lixun Cao⁶ ¹Physics, Georgia Millers University, USA, ²National Energy Technology Laboratory, USA, ³Georgia Millers University, USA, ⁴Georgia Millers University, USA, ⁵Civil and Environmental Engineering, Georgia Millers University, USA, ⁶Chemical Engineering, Georgia Millers University, USA</p>	<p>4D-5 New acousto-optic and acousto-electron phenomena in the InGaAsP/InP laser heterostructures Liudmila Lukkova¹ ¹Russian Academy of Physico-Technical Institute, St.Petersburg, Russian Federation</p>	<p>4E-5 A General Non-Linear Mason Model of Arbitrary Non-Linearities in a Piezoelectric Film Dong Shim¹, Dave Fad¹ ¹Avago Technologies, USA</p>	<p>4F-5 System architecture of ultrasound based real-time bone thickness determination for synergistically operated cutting tools Fabrice Chumbou Pokam¹, Alexander Korfi¹, Jan Braznemburg¹, Klaus Ruckemacher¹, Stefan Heiger¹ ¹Chair of Medical Engineering, Aachen University of Technology, Germany</p>
<p>5:45 pm</p>	<p>4A-6 High-Intensity Therapeutic Partial Nephrectomy Jiao Yu¹, Yik-Nam Wang¹, Damon Cassisi¹, Paulina Harper¹, Amir Shah¹, Michael Bailey¹, Michael Kovacki¹, Lawrence Chan¹, Stuart Mitchell¹ ¹Center for Industrial and Medical Ultrasound, University of Washington, USA, ²Department of Urology, University of Washington Medical Center, USA</p>	<p>4B-5 Multichannel Ultrasound Current Source Density Imaging of a 3D Dipole Field Zhaohui Wang¹, Ragnar Olafsson², Peter Ingargam³, Qian Li⁴, Russell Wicks⁵ ¹Electrical and Computer Engineering, University of Arizona, USA, ²Radiology, University of Arizona, USA</p>	<p>4C-6 SAW Wireless RFID Correlator System Design Donald Malocha¹ ¹SECS, Univ. of Central Florida, USA</p>	<p>4E-6 Fabrication of high-Q film bulk acoustic resonator (FBAR) filters with carbon nanotube (CNT) electrodes Luis Garcia-Gancedo¹, Fahd Al-Naimi¹, Andrew J. Flower¹, William J. Milne¹, Gregory M. Ashby² ¹Electrical Engineering Division, University of Cambridge, Cambridge, United Kingdom, ²CMBI, University of Bolton, United Kingdom, ³School of Mechanical Engineering, University of Manchester, United Kingdom</p>	<p>4E-8 Implementation of Vibro-acoustography on a Clinical Ultrasound System Matthew Urban¹, Carl Chalk², Ranali Kimick³, Thomas Kistler⁴, Bruno Jägle⁵, James Greenleaf⁶, Naji Thomeuter⁷, Mustafa Fatmi⁸ ¹Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, MN, USA, ²General Electric Global Research, Niskayuna, NY, USA</p>	

9:30 am - 11:00 am

POSTER --- Tuesday, October 12, 2010

Grand Hall

Session P1-A1. Bulk Acoustic Wave Effects and Devices

Chair: Ji Wang
Ningbo University

<p>P1-A1-1 Investigation of Lithium Niobate (LN) and Lithium Tantalate (LT) for Ultra-High Frequency (UHF) Monolithic BAW Filter Applications</p> <p>Yueh-Kuang Yang¹, Mihai S. Patel¹ ¹Coastal and Engineering, Rutgers University, Piscataway, NJ, USA</p>	<p>P1-A2-1 Novel LSAW DMS filter structure for narrow duplexer gap 3G-3.5G RX filter application.</p> <p>Alba Loeu¹ ¹RF Micro Devices, Greensboro, USA</p>	<p>P1-A2-2 Fabrication and Characterization of a SAW-Integrated Reciprocal Coupler and a Wireless ZigBee Transmission System</p> <p>Bruno François¹, Gilles Martin¹, Philippe Goswala¹, Marc Lamotte¹, Gwendal Gouez-Merou¹, Jean-Michel Friauf¹, Yvan Billandier¹ ¹UMR 5077, CNRS, France; ²SEMSCOR SAS, France</p>	<p>P1-M1-3 Real-Time Imaging Based Quantification of Quality Evaluation using Texture Analysis Method for Ultrasonic Particle Image Velocimetry Technique</p> <p>Li-Bi Xia^{1,2}, Ming Qian^{1,2}, Qiaohong Jia^{1,2}, Bo Jiang^{1,2}, Haining Zheng^{1,2} ¹Department of Mechanical Engineering, Tsinghua University, Beijing, China; ²State Key Laboratory of Mechanical System and Vibration, Tsinghua University, Beijing, China; ³People's Republic of China, People's Republic of China, People's Republic of China; ⁴Limube Research Center for Biomedical Imaging, Institute of Biomedical and Health Engineering, SHT, China, People's Republic of China</p>	<p>P1-M2-5 Ultrasonic Estimation Method of Left Ventricle Ejection Fraction Using E-1gM-Vibration Model of Ellipsoidal Shell</p> <p>Toshihiko Tanaka¹, Takashi Azuma¹, Kunito Hashiba¹ ¹Hitech Ltd., Japan</p>
<p>P1-A1-2 Influence of homogeneous stress on BAW and SAW propagation in diamond single crystals</p> <p>Boris Sorokin¹, Sergey Burkov² ¹Technological Institute for Superhard and Novel Carbon Materials, Troitsk, Moscow region, Russian Federation; ²Siberian Federal University, Krasnoyarsk, Russian Federation</p>	<p>P1-A2-2 High Selectivity SAW DMS Filter</p> <p>Weihsiao Wang¹ ¹Shoulder Electronics Limited, China, People's Republic of China</p>	<p>P1-A3-3 SWITCHABLE LOW-LOSS SAW FILTER BANKS WITH MEMS SWITCHES</p> <p>Sergei Dukerstein¹ ¹ONIP, Russian Federation</p>	<p>P1-M1-4 Blood Flow Stream Line Imaging by Direct Visualization of Echo Trajectories</p> <p>Hideoaki Hasegawa^{1,2}, Hiroaki Kama^{1,2} ¹Graduate School of Biomedical Engineering, Tohoku University, Sendai, Japan; ²Department of Mechanical Engineering, Tohoku University, Sendai, Japan</p>	<p>P1-M2-6 Fast strain tensor imaging using beam-steered plane wave ultrasound transmissions</p> <p>Henrik Hansen¹, Richard Lopata^{2,3}, Tim Idema⁴, Chris de Krom⁵ ¹Medical Physics Laboratory, Department of Pediatrics, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands; ²Department of Biomedical Engineering, Massachusetts Institute of Technology, Cambridge, MA, USA; ³Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; ⁴Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; ⁵Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands</p>
<p>P1-A1-3 Bulk Acoustic Wave Propagation in Nonuniformly Deformed Bismuth Silicium Oxide Crystals</p> <p>Boris Sorokin¹, Alex Manabiyak², Sergey Burkov², Kirill S. Prudnikov² ¹Technological Institute for Superhard and Novel Carbon Materials, Troitsk, Moscow region, Russian Federation; ²Siberian Federal University, Krasnoyarsk, Russian Federation; ³L.F. Kirevsky Institute of Physics, Krasnoyarsk, Russian Federation</p>	<p>P1-A2-3 Polar c-axis Orientation Dependence of ZnO, AlN and GaN Thin Film Bulk Acoustic Resonators</p> <p>Lifeng Qin¹, Qing-Ming Wang² ¹Department of Mechanical Engineering and Materials Science, University of Pittsburgh, USA; ²Department of Mechanical Engineering and Materials Science, University of Pittsburgh, Pittsburgh, PA, USA</p>	<p>P1-A3-4 Good Temperature Coefficient of Frequency SAW Resonator on a SiO₂/MLIN/DBO Structure</p> <p>Hidetsugu Nakanishi^{1,2}, Hiroyuki Nakamura¹, Tetsuya Tsunamari¹, Ichi Fujimura¹, Yosuke Hamada¹, Ken-ya Hashimoto¹ ¹Panasonic Electronic Devices Co., Ltd., Kadoma City, Osaka, Japan; ²Graduate School of Engineering, Chiba University, Chiba City, Chiba, Japan</p>	<p>P1-M1-5 Optimization of Transverse Oscillation Fields for Phased Array Vector Velocity Imaging</p> <p>Michael Johannes Pohl¹, Per Haugan², Jørgen Arendt Jensen¹ ¹Center for Fast Ultrasound Imaging, Dept. of Elec. Eng. Bldg. 349, Technical University of Denmark, DK-2800 Kgs. Lyngby, Denmark; ²IK, Medical Aps, DK-2730 Herlev, Denmark</p>	<p>P1-M2-7 A new user-independent in vivo method for local 2D motion estimation of the carotid wall by strain imaging for early detection of pathological behavior</p> <p>Gaillaume Zahad¹, Aghen Maron¹, André Senneciat¹, Marion Durand¹, Loïc Boussel^{1,2}, Didier Vray¹ ¹Université de Lyon, CREATIS-ERIM; CNRS UMR5220; Inserm U687; INSU-Lyon; Université Lyon 1; France; ²Hopital Geriatrique et Faculté de Médecine de Lyon, France</p>
<p>P1-A1-3 Bulk Acoustic Wave Propagation in Nonuniformly Deformed Bismuth Silicium Oxide Crystals</p> <p>Boris Sorokin¹, Alex Manabiyak², Sergey Burkov², Kirill S. Prudnikov² ¹Technological Institute for Superhard and Novel Carbon Materials, Troitsk, Moscow region, Russian Federation; ²Siberian Federal University, Krasnoyarsk, Russian Federation; ³L.F. Kirevsky Institute of Physics, Krasnoyarsk, Russian Federation</p>	<p>P1-A2-4 Origins and Mitigation of Spurious Modes in Aluminum Nitride Microresonators</p> <p>Kenneth Wojciechowski¹, Darren Branch¹, Roy Olsson¹ ¹Swedish National Laboratories, USA</p>	<p>P1-A3-5 SAW RFID with Phase-delay Length Limited Coding</p> <p>Along Kang¹, Chenru Zhang¹, Haodong Wu¹, Tao Han¹, Yongnan Shui¹ ¹Shanghai Jiao Tong University, China, People's Republic of China; ²Nanjing University, China, People's Republic of China</p>	<p>Session P1-M2. Elasticity Imaging: Clinical Applications</p> <p>Chair: Jeremy Dahl</p>	<p>P1-M2-8 Analysis of axial shear strain imaging for classifying breast masses</p> <p>Haiyan Xu^{1,2}, Tomy Varghese^{1,2} ¹Medical Physics, University of Wisconsin-Madison, Madison, WI, USA; ²Electrical and Computer Engineering, University of Wisconsin-Madison, USA</p>

<p>P1-A1-4 Design of Quartz Crystal Resonators with an Analytical Procedure Based on the Mindlin Plate Theory</p> <p>Ji Wang¹, Lijun Yang¹, Qiaoqiao Pan¹, Min-Chang Chao² ¹Department of Mechanics and Engineering Sciences, Ningbo University, Ningbo, Zhejiang, China, ²People's Republic of China, People's Republic of China, People's Republic of China</p>	<p>P1-A2-5 Radial Extensional Mode Air-film Resonator with High Coupling Factor</p> <p>Atsushi Itoke¹, Kenjo Asai¹ ¹Measurement System Research Department, Hitachi Ltd., Central Research Laboratory, Kobanjiyashi, Tokyo, Japan</p>	<p>P1-A3-4 "Design over temperature" - new approach to LSAW filters thermo stability improving.</p> <p>Abdi Loeu¹, Jagan Rao¹ ¹RF Micro Devices, Greensboro, NC, USA</p>	<p>P1-M2-1 In-vivo assessment of radial and longitudinal strains in the carotid artery using speckle tracking</p> <p>Maria Lorenz¹, Florence Koenig¹, Tatjana Kuznetsov¹, Britta Loeff¹, Alex Bjarnskott¹, Lars-Ake Berne¹, Jan Pössel¹ ¹Department of Cardiorespiratory Diagnostics, Catholic University of Leuven, Leuven, Belgium, ²Department of Medical Engineering, School of Technology and Health, Royal Institute of Technology, Stockholm, Sweden, ³Department of Cardiorespiratory Rehabilitation, University of Leuven, Leuven, Belgium, ⁴Medical Imaging Lab, Dept. of Cardiovascular and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway</p>	<p>P1-M2-9 Multiscale technology introducing shear wave elastography of the kidney: Pre-clinical study on key biosignals and clinical feasibility study on 70 human renal transplants.</p> <p>Jean Luc Gemusson¹, Nicolas Barchet¹, Regis hahnecht¹, Lionel Courty¹, Youssef delmas¹, Marc depreux¹, Sebastien Lepaux¹, Alain cricet¹, Jeremy bercoff¹, michel tamer¹ ¹Supersonic Imagine, France, ²CHU Bordeaux, France</p>
<p>P1-A1-5 Deformation Sensitive Cuts of Quartz for Torque Sensor</p> <p>Alexander Shvetsov¹, Sergei Zhegon¹, Anthony Lomdale², Serghei Sanducei² ¹Roscosm Power Engineering Institute, Russian Federation, ²Sensor Technology Ltd, United Kingdom</p>	<p>P1-A2-6 Characterization of a Single Port Aluminium Nitride Tuning Fork</p> <p>Gabriele Vigevano¹, Richie Przybyla¹, Ting-Ta Yen¹, Chih-Ming Lin¹, André Guedes¹, Albert Pisano¹ ¹Microphotonical Technology, University of California at Berkeley, Berkeley, CA, USA, ²IBM Research, University of California at Berkeley, Berkeley, CA, USA</p>	<p>Session P1-M1. Vector Flow Imaging Methods</p> <p>Chair: Hans Torp Norwegian Institute of Science & Technology</p>	<p>P1-M2-2 Early Detection of Coronary Stenosis with Myocardial Elastography: A Clinical Feasibility Study</p> <p>Stanley Okrasinski¹, Elaine Wan¹, Wei-Bing Lee¹, Yukiko Og¹, Elisa E. Konofal¹ ¹Clinical Engineering, Columbia University, New York, NY, USA, ²Department of Radiology, Columbia University, Columbia University, USA</p>	<p>P1-M2-10 Deforming Serial Muscular Mechanical Property Changes in a Dog Model of Duchenne Muscular Dystrophy Using AFI Ultrasound. In Vivo</p> <p>Mallory Soak¹, Joe Konegny², Caterina Gallippi¹ ¹Biomedical Engineering, North Carolina at Chapel Hill, USA, ²Department of Radiology, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA</p>
<p>P1-A1-6 AN ANALYSIS OF THICKNESS-SHEAR MODES OF QUARTZ RESONATORS BY NUMERICALLY-ANALYTICAL MODELLING</p> <p>Anatoliy Komysh¹, Alexander Lepstev¹, Igor Khomsenko¹ Omsk state technical university, Russian Federation</p>	<p>Session P1-A3. Device Design and Applications</p> <p>Chair: Yaqiang Wang Avago Technologies</p>	<p>P1-M1-1 High Frame-Rate Vector Flow Estimation Using Speckle Tracking with Recursive Plane-Wave Compounding</p> <p>Che-Chou Shan¹, Min-Yan Pan¹, Meng-Lin Li² ¹Department of Electrical Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan, ²Department of Electrical Engineering, National Tsing Hua University, Taiwan</p>	<p>P1-M2-3 Regional measurement of arterial stiffness using Pulse Wave Imaging: Phantom validation and preliminary clinical results</p> <p>Jonathan Vappou¹, Jianwen Luo¹, Elissa Konofal¹ ¹Ultrasound and Elasticity Imaging Laboratory, Columbia University, USA</p>	<p>P1-M2-11 Monitoring Radiofrequency Catheter Ablation using Thermal Strain Imaging</p> <p>Chi Hwang So¹, Douglas Sheehan², Jonathan Camata³, Aaron Deuringer⁴, Feng Liu⁵, Salyoun Park⁶, Douglas Wicks⁷, Kai Thoenes⁸, Peter Chen⁹, Tho Nguyen⁹, Alan DeLamara⁹, Jong Soob Jeong⁹, Aman Kishore⁹, M. S. Mani⁹, James O'Leary⁹, David Saha⁹, Pierre Kheradmand⁹, M. S. Mani⁹ ¹University of Washington, USA, ²University of California, Davis, USA, ³University of Southern California, USA, ⁴GE Global Research, USA, ⁵Ge Medical, USA, ⁶David Geffen School of Medicine at UCLA, USA, ⁷Stanford University, USA, ⁸Oregon Health and Science University, USA</p>
<p>Session P1-A2. Acoustic Device Design</p> <p>Chair: Alexandre Volatier Triquint Semiconductor</p>	<p>P1-A3-1 RealTime Label-Free Detection of DNA Synthesis by FBAR-Based Mass Sensing</p> <p>Anderson Lim¹, Fukun E. Shih¹, Phuong Phan¹, Eun S Kim¹ ¹Electrical Engineering-Electrophysics, University of Southern California, Los Angeles, CA, USA, ²Biological Sciences, University of Southern California, Los Angeles, CA, USA</p>	<p>P1-M1-2 Numerical evaluation of velocity measurement accuracy with a vector Doppler ultrasound system</p> <p>Bashra Hussain¹, Emily Wong¹, Tamie Peestring² ¹Physics and Astronomy, University of Western Ontario, London, Ontario, Canada, ²Medical Biophysics, University of Western Ontario, Canada</p>	<p>P1-M2-12 Ultrasound saline infused sonohysterography based in-vivo strain imaging in the evaluation of Uterine Abnormalities</p> <p>Ennis Orant¹, Tony Varghese¹, Mark Klewer¹ ¹Medical Physics, University of Wisconsin-Madison, Madison, WI, USA, ²Electrical and Computer Engineering, University of Wisconsin-Madison, Madison, WI, USA, ³Radiology, University of Wisconsin-Madison, Madison, WI, USA</p>	

TUESDAY POSTER

TUESDAY POSTER

Grand Hall

POSTER --- Tuesday, October 12, 2010

9:30 am - 11:00 am

<p>P1-M2-3 Differential Diagnosis of Thyroid Nodules by Elastography based on Support Vector Machines</p> <p>Jiamei Ma¹, Si Luo¹, Manjit Dighel², Dong-Jun Lim¹, Younghan Kim³</p> <p>¹Electrical Engineering, University of Washington, Seattle, WA, USA, ²Radiology, University of Washington, Seattle, WA, USA, ³Department of Biomedical Engineering, University of Washington, Seattle, WA, USA</p>	<p>P1-M2-7 A Combinational Method of Laser and Photoacoustic Propagation for Evaluating Elasticity of Regenerating Cartilage Sample</p> <p>Nawaka Nita¹, Koshiro Homma¹, Masaki Misawa¹, Keitaro Hashi², Yungsoo Kim³, Yungsoo Kim³</p> <p>¹Institute for Materials and Chemical Process, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan, ²Department of Cell and Bone Regeneration (Physoft), Graduate School of Medicine, University of Tokyo, Bunkyo-ku, Tokyo, Japan</p>	<p>P1-M1-3 New Developments for In situ Ultrasonic Measurement of Dislocations at the Tip of a Copper Resistance Spot Weld Electrode</p> <p>Pavel Kustanov¹, Roman Gr. Maly², Anthony C. Karim³, Andriy Chernov³, Janusz Kocinski³, Pawel Kustanov¹, Roman Gr. Maly²</p> <p>¹Institute for Diagnostic Imaging Research, University of Windsor, Windsor, Ontario, Canada</p>	<p>P1-M2-6 Determination of surface mechanical properties using a herzan contact and ultrasound sensor</p> <p>Jorge Armendariz Silva¹, Arturo Balazar Herrejón¹, Chideres Treastayapan¹</p> <p>¹Robotics and Advanced Manufacturing, CINVESTAV Unidad-Saltillo, Saltillo, Coahuila, Mexico</p>	<p>Session P1-T1. Low/intermediate Frequency Tissue Characterization</p> <p>Chair: Guillaume Haiat <i>Université Paris XII</i></p>
<p>Session P1-M3. Chair: Guillaume Haiat Université Paris XII</p> <p>P1-M3-1 The smoking effect on the cyclic variation of blood echogenicity from the common carotid artery</p> <p>Ying Li¹, Tae-Hoon Bak², Jeong-Hwa Yang^{2,3}, Min-Aho Choi^{1,4}, Dong-Guk Paeng³</p> <p>¹Department of Ocean System Engineering, Aps-National University, College, Korea, Republic of, ²Interdisciplinary Postgraduate Program in Biomedical Engineering, Aps-National University, Korea, Republic of, ³Department of Medicine, Aps-National University, Korea, Republic of</p>	<p>P1-M2-8 A New Approach for Estimating Attenuation Coefficient Changes due to HIFU</p> <p>Jeremy Kemmerer¹, Shiyu Chang², Michael Oelzel³</p> <p>¹The University of Illinois at Urbana-Champaign, USA</p>	<p>P1-M1-4 Quality Control of Ultrasonic Bonding Tools Using a Scanning White Light Interferometer</p> <p>Ville Heikkinen¹, Risto Kurppa², Henri Seppänen^{1,3}, Heikki Hänninen¹, Jukka Ahtonen¹, Yvon Kasanen^{1,4}, Edward Heikkilä¹</p> <p>¹University of Helsinki, Finland, ²Finnish Meteorological Institute, Finland, ³Helsinki Institute of Physics, Finland</p>	<p>Session P1-T1. Transducer Characterization for Applications</p> <p>Chair: Yongrae Roh <i>Kyungpook National University</i></p>	
<p>P1-M2-9 An integrated approach based on morphology, texture, and backscattering-statistics for distinguishing between benign and malignant breast tumors</p> <p>Yin-Yin Liao¹, Chih-Kuang Yeh²</p> <p>¹Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan</p>	<p>P1-M2-5 A New Approach for Estimating Attenuation Coefficient Changes due to HIFU</p> <p>Jeremy Kemmerer¹, Shiyu Chang², Michael Oelzel³</p> <p>¹The University of Illinois at Urbana-Champaign, USA</p>	<p>Session P1-M2. Acoustic Wave Sensors</p> <p>Chair: Eric Furgeson <i>Purdue University</i></p>	<p>P1-T1-1 Adaptive Processing On Transmit And Receive For-High Frequency Composite Transducers</p> <p>Jianhua Yin¹, Emmanuel Cheri¹, Stuart Foster¹</p> <p>¹Imaging Research, Sunnybrook Health Science Centre, Toronto, ON, Canada</p>	
<p>P1-M2-2 A New Application of Ultrasound Imaging to Characterize Tissue Properties and Blood Flow in Myofascial Pain Syndromes</p> <p>Siddhartha Sildar¹, Robin Ortiz², Jay Shah³, Tadese Gebreab¹, Lynn Gerber¹</p> <p>¹Department of Biomedical Engineering, George Mason University, Fairfax, VA, USA, ²National Institutes of Health, USA, ³George Mason University, USA</p>	<p>P1-M2-10 Quantification of the heterogeneity of the scatterer distribution for liver-fibrosis characterization using echo-signal envelope analysis</p> <p>Tadashi Yamaguchi¹, Susumu Terashima¹, Naohisa Katsuyama², Junshan Miao³, Yungsoo Kim⁴</p> <p>¹Research Center for Frontier Medical Engineering, Chiba University, Japan, ²Ultrasound System Division, Toshiba Medical Systems Corp., Japan, ³Y. I. Lutz Center for Biomedical Engineering, Riverside University, California, USA, ⁴Graduate School of Engineering, Tokyo Institute of Technology, Japan</p>	<p>P1-M2-7 A new wireless SAW based groscope based on standing wave mode</p> <p>Wen Wang¹, Fangqian Xu², Shitang He¹, Shanzhou Li¹, Minghua Liu¹</p> <p>¹Chinese Academy of Sciences, Institute of Acoustics, Beijing, People's Republic of China, ²Department of Electronic Media and Communications, Hangzhou, Zhejiang, China, People's Republic of</p>	<p>P1-T1-2 Simple method for measuring phase transfer functions of transducers</p> <p>Paul van Nier¹, Hendrik Vos¹, Mikhail Danilouchine¹, Nico de Jong²</p> <p>¹Dept. Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands</p>	

<p>P1-M3-3 Change in acoustic impedance and sound speed of HFU-exposed chicken breast muscle</p> <p>Takashi Shibahara¹, Shiu Yoshizawa¹, Shie-ichiro Umemura² ¹Dept. of Electrical and Communication Eng., Tohoku Univ., Sendai, Miyagi, Japan, ²Dept. of Biomedical Eng., Tohoku Univ., Sendai, Miyagi, Japan</p>	<p>P1-M3-17 Optically Assisted Ultrasonic Velocity-Change Images of Visceral Fat in a Living Animal</p> <p>Himelishi Horinaka¹, Toshiyuki Matsunaka¹, Daisuke Sakami¹, Hajime Sano¹, Yuya Ohara¹, Yoshinori Mochi¹, Tetsuya Matsuyama¹, Kenji Wada¹ ¹Osaka Prefecture University, Japan</p>	<p>P1-M2-2 Loss-reduction technique for SAW gas sensor with self-temperature-compensation characteristics used in sensor network</p> <p>Yoshihiko Kane¹, Jun Hosaki¹, Mitsuaki Hikita² ¹Kogakuin University, Japan, ²Global Engineering, Kogakuin University, Tokyo, Shinjyuku-ku, Japan</p>	<p>P1-T1-3 Reconstructing Transducer Surface Motion by Inverse Extrapolation of Measured Pressure Wavefields</p> <p>E.J. Alles¹, M.D. Verweij², K.W.A. van Dongen¹ ¹Laboratory of Acoustical Imaging and Sound Control, Delft University of Technology, Faculty of Applied Sciences, Delft, Zuid-Holland, Netherlands, ²Laboratory of Electromagnetic Research, Delft University of Technology, Faculty of Electrical Engineering, Mathematics and Computer Science, Delft, Zuid-Holland, Netherlands</p>	
<p>P1-M3-4 Tissue Characterization in Echographic Spectral Hyperspace: Breast Pathologies Differentiation</p> <p>Elewa Bagdi¹, Simona Gracchi², Enrico Vannacci³, Leonardo Licciani⁴, Leonardo Masotti⁵ ¹University of Florence, ²University of Florence, ³FI, Italy, ⁴Electronics and TIC, University of Florence, Italy</p>	<p>Session P1-N1. Weld Inspection Chair: David Greve <i>Carnegie Mellon University</i></p>	<p>P1-M2-3 Ball SAW gas chromatograph for automatic analysis of wide variety of gases</p> <p>Toshihiro Sakamoto^{1,2}, Shingo Akao^{1,3}, Hiroki Nagai^{1,3}, Takamitsu Iwaya^{1,3}, Yontaka Nakao¹, Toshihiro Tsuji^{1,3}, Kazushi Yamamaki^{1,3} ¹Yamanashi University, Japan, ²JST-CREST, Japan, ³Traypan Printing Co.Ltd./JST-CREST, Japan</p>		
<p>P1-M3-5 Development of Myocardial Tissue-Mimicking Phantoms Exhibiting a Range of Lipid Concentrations Comparable to that Observed in Obese Subjects</p> <p>Benjamin Johnson¹, Joseph Hoffman¹, Gautam Singh², Mark Holland¹, James Miller¹ ¹Washington University in St. Louis, USA, ²Washington University in St. Louis School of Medicine, USA</p>	<p>P1-M1-1 Novel phased array imaging of defects in weld metals compensating the beam deflection</p> <p>Yohel Shinaika¹, Yoshihiko Ohara¹, Makoto Hashimoto¹, Satoshi Horinouchi¹, Kazushi Yamamaki¹ ¹TOHOKU UNIVERSITY, Japan</p>	<p>P1-M2-4 Liquid-Level Sensing by Trapped-Energy Mode of Backward-Wave-Type Thickness Vibration</p> <p>KENYAMADA¹, SHUICHI SETO¹ ¹TOHOKU GAKUIN UNIVERSITY, Japan</p>		
<p>P1-M3-6 Quantitative Ultrasound Assessment of HIFU Lesions in Rodent Liver</p> <p>Jeremy Kenneret¹, Gautam Ghoshal¹, Michael Oelze¹ ¹The University of Illinois at Urbana-Champaign, USA</p>	<p>P1-M1-2 Welding Characteristics of Bimetal, Bridged Wires, Aluminum and Copper Foils Using 20 MHz Ultrasonic Complex Vibration Welding Equipments</p> <p>Jiromaru Tajiho¹, Eitichi Sugimoto² ¹Kanagawa University, Yokohama, Kanagawa, Japan, ²Anahi EMS Co. Ltd, Tokyo, Japan</p>	<p>P1-M2-5 Point-to-size airborne ultrasonic sensor with a nanoform acoustic lens and a homodyne interferometer</p> <p>Ushio Saigawa¹, Takuya Iwamoto¹, Yuriko Kaneko¹, Masahiko Hashimoto¹ ¹Advanced Technology Research Laboratory, Panasonic Corporation, Japan</p>		

TUESDAY POSTER

Session P2

Student Paper Competition

Chair: Peter Smith
McMaster University

P2-8 Reliability of ANI/Sapphire bilayer structure for high temperature SAW applications
Thierry AUBERT¹, Omar Elmazria¹, B. Saïdine Assouf¹, Ahmad Hamdan¹, Damien Geneve¹
¹UMR 7198 Nancy University-CNRS, Institut Jean Lamour, Nancy, France

P2-16 Monitoring of thermal ablation therapy based on spatiotemporal adaptive shear wave thermometry and shear wave lesion imaging
Bassem Arsal¹, Mathieu Persin¹, Mickael Tamer^{1,4}
¹INESM, Paris, France; ²Université Paris Diderot-Paris7, Paris, France; ³EHU, 0379, INSEEM, Paris, France; ⁴UMR 7387, CNRS, Paris, France

P2-M7-2 Retrospective PW-Doppler based on spatiotemporal adaptive signal processing
Ingvid Kinn Ekelund¹, Hans Torp¹, Lasse Laysvakk²
¹NTNU, Trondheim, Nor-
²NTNU, Trondheim, Nor-
³NTNU, Trondheim, Nor-
⁴NTNU, Trondheim, Nor-

P2-M2-3 Sonophoresis with Ultrasound Contrast Agent for intratumoral drug delivery: In Vivo experimental study
Donghee Park¹, Heunggil Ryu¹, Misun Nangang¹, Youngsun Kim¹, Kyul Choi¹, Jonghwan Seo¹
¹Department of Engineering, Yonsei University, Wonju, Gangwon-do, Korea, Republic of; ²Samyang Biomedical Research, Seoul, Korea, Republic of; ³School of Medicine, Sangbukhanam University, Seoul, Korea, Republic of; ⁴Department of Pathology, Samsung Medical Center, Korea, Republic of

P2-1 Langasite SAW devices with gas-sensitive vi layer
Peng Zhang^{1,2}, Tao-Lun Chih^{1,4}, David Greve^{1,5}, Irving Oppenheim¹, Tejasi Ashok¹, James Miller¹, Limin Cao¹
¹Optical Energy Laboratory, Louisiana State University, USA; ²Microelectronics Technology Laboratory, USA; ³Space Energy Technology Laboratory, USA; ⁴Carnegie Mellon University, USA; ⁵Electrical and Computer Engineering, Carnegie Mellon University, USA; ⁶Civil and Environmental Engineering, Carnegie Mellon University, USA; ⁷Chemical Engineering, Carnegie Mellon University, USA

P2-9 Reconfigurable 4-Frequency CMOS Oscillator Based on AIN Contour-Mode MEMS Resonators
Matteo Rinaldi¹, Chengjie Zuo¹, Jan Van der Spiegel¹
¹Electrical and Computer Engineering, University of Pennsylvania, Philadelphia, PA, USA

P2-17 Ultrasound contrast agent dynamics: ultra high-speed fluorescence imaging of shell morphology and local drug release
Erik Guldshelm¹, Kirilina Kozina², Marcell Böhmer³, Nico de Jong⁴, Frank Lub⁵, Mubashir Ullah⁶
¹Physics of Fluids Group, University of Twente, Enschede, Netherlands; ²Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands; ³Philips Research, Eindhoven, Netherlands

P2-M7-3 High Frame Rate Flow Imaging Using Plain Wave Transmits: A Feasibility Study
Bo Zhuang¹, Reza Zahiri Aar^{1,2}, Kris Dickie¹, Chris Cheung¹
¹University of British Columbia, Vancouver, Canada; ²Medical Corp, Canada; ³University of British Columbia, Canada

P2-M2-4 Detection of transient ischemia and hemorrhage in blood-brain barrier disruption by high-frequency ultrasound imaging
Chin-Yu Ting¹, Ching-Hsiang Fan¹, Chih-Kuang Yeh¹
¹Department of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan

P2-2 Air-Coupled Ultrasound Wave Propagation in Glued Laminated Timber Structures Applied to Bonding Quality Assessment
Sergio Smažina¹, Roman Furrer¹, Jürg Neuenschwander¹, Peter Nussli², Urs Sennhauser³
¹Electronics Metrology / Reliability Laboratory, Swiss Federal Laboratories for Materials Science and Technology, Empa, Dübendorf, Switzerland; ²Wood Products, Institute for Building Materials, ETH Zurich, Switzerland

P2-10 SAW-Based Radioisotope-powered Wireless RHDRF Transponder
Steven Tin¹, Amit Lal¹
¹School of Electrical and Computer Engineering, Cornell University, USA

P2-18 Measurements from 22 to 105 MHz of the Apparent Anisotropy of Ultrasonic Backscatter from Carotid Arterial Plaques Identified by Intravascular Ultrasound
Joseph Hoffman¹, Benjamin Johnson¹, Mark Holland¹, Russell Fawcett¹, Anuj Nair¹, James Miller¹
¹Washington University in St. Louis, USA; ²Volcano Corporation, USA

P2-M7-4 Estimation of reflected wave in the carotid pulse wave for simple and noninvasive assessment of arterial stiffness
Masashi Saito¹, Yoya Yamamoto¹, Mami Matsukawa¹, Yoshiaki Watanabe¹, Mio Furuya¹, Takaki Asahi^{1,2}
¹Doshisha University, Japan; ²Maruta Manufacturing Co., Ltd., Japan

P2-M2-5 Enhancing Chemotherapy by Ultrasound and Microbubbles: Effect of Acoustic Pressure and Ultrasound VIVO Suspension of Breast and Prostate Cancer Cells
Raffi Karshafian¹, Frans Almani¹, Anuja Giles², Gregory J. Czarnota³
¹Physics, Ryerson University, Toronto, ON, Canada; ²Biophysics, Ryerson University, Toronto, ON, Canada; ³Biophysics, Ryerson University, Toronto, ON, Canada

P2-3 ULTRASONIC WAVE PROPAGATION IN CYLINDRICAL VESSELS AND IMPLICATIONS FOR ULTRASONIC REACTOR DESIGN.
Tajana Muraš¹, Anthony Gachagan², Alison Nordon¹, Richard O'Leary¹
¹Electrical Engineering, University of Strathclyde, Glasgow, United Kingdom; ²University of Strathclyde, United Kingdom; ³University of Strathclyde, United Kingdom

P2-11 Intracranial Dual-mode IWUS Transducer for Image-Guided Brain Therapy
Carl Hetschko¹, Gerald Grant², Gavin Britz², Stephen Smith¹
¹Biomedical Engineering, Duke University, Durham, NC, USA; ²Neurosurgery, Duke University Medical Center, Durham, NC, USA

P2-19 Viscoelastic measurements on perfused and non-perfused swine renal cortex in vivo
Carolina Amador¹, Matthew W. Urban¹, Shiguo Chen¹, James F. Greenleaf¹
¹Imaging and Research Laboratory, Department of Physiology, University of Maryland School of Medicine, Baltimore, MD, USA; ²Biostatistics, Johns Hopkins University, Baltimore, MD, USA

P2-M7-5 A New Robust and Computationally Efficient Adaptive Clutter Filtering
Moo-Ho Bae¹, Young-Seok Lee¹, Kyoung-Bo Lee¹, Sung-Bae Park¹, Han-Woo Lee¹, Mok-Kun Jeong¹
¹Chonnam National University, Gwangju, Korea, Republic of; ²Medical Ultrasound, Korea, Republic of; ³Daegu, Korea, Republic of; ⁴Daegu, Korea, Republic of

P2-M2-6 Enhanced gene transfection using ultrasound and micromarker microbubbles
Julien Piron¹, Kadja Kaduri¹, Anthony Novet¹, Jean-Michel Escoffre¹, Ayache Bouakaz¹
¹IPFR de médecine, INSERM U930 CNRS ERL 3106, Paris, France; ²IPFR de médecine, INSERM U930 CNRS ERL 3106, Paris, France; ³IPFR de médecine, INSERM U930 CNRS ERL 3106, Paris, France

<p>P2-4 Design of Acoustic Beam Aperture Modifier Using Gradient-Index Phononic Crystals</p> <p>Sz-Chin Lin¹, Bernhard Titmann¹, Tony Huang¹ <i>Engineering Science and Mechanics, Pennsylvania State University, University Park, PA, USA</i></p>	<p>P2-12 High-resolution co-registered intravascular imaging with integrated high frequency ultrasound and OCT probe</p> <p>Xiang Li¹, Jiechen Yin², Changlong Hu¹, Qih Zhou¹, K. Kirk Shung¹, Zhongxing Chen³ <i>1)Biomedical Transducer Research Center and Department of Mechanical Engineering, Stanford University, Stanford, CA, USA; 2)Department of Biomedical Engineering, University of California, Irvine, Irvine, CA, USA; 3)Eshbach LifeSciences Center for Advanced Cardiovascular Technology, University of California, Irvine, Irvine, CA, USA</i></p>	<p>P2-20 Three-dimensional cardiac motion and strain estimation: A validation study in thick-walled uniaxial phantoms using sonomicrometry</p> <p>Breshi Hoyle¹, Seymon Cypar², Beate Lemke-Plawinski², Daniel Barbone¹, An-Bin¹, Per-Clau¹, Dirk Loeckx¹, Krzysztof Kaliszewski¹, Christian D'hooge¹ <i>1)Department of Imaging and Dynamics, K.U.Leuven, Leuven, Belgium; 2)Department of Biomedical Engineering, Western University of Technology, Warsaw, Poland; 3)Medical Image Computing, K.U.Leuven, Leuven, Belgium; 4)MATH, Norwegian Institute for Science and Technology, Trondheim, Norway</i></p>	<p>P2-M2-6 Color-Doppler and spectral Doppler with high frame-rate imaging</p> <p>Canxing Xu¹, Joon Hwan Choi¹, Keith Conness¹, Yungmin Kim¹ <i>Department of Biomechanical Engineering, University of Washington, Seattle, WA, USA</i></p>	<p>P2-M2-7 Convertible Perfluorocarbon Droplets for Cancer Detection</p> <p>Ross Williams¹, Amanda Martin¹, Nikita Remick², Jian Gorelikov³, Stuart Foster^{1,2}, Peter Burns^{1,2}, Naomi Matsunaga² <i>1)Sunnybrook Health Sciences Centre, Canada; 2)University of Toronto, Canada</i></p>
<p>P2-5 Influence of shadowing effect on shear mode acoustic properties in the c-axis tilted AN films</p> <p>Masashi Suzuki¹, Takahiko Yamaguchi¹ <i>Graduate School of Engineering, Nagoya Institute of Technology, Nagoya, Aichi, Japan</i></p>	<p>P2-13 CMUT with substrate-embedded springs for non-flexural plate movement</p> <p>Amin Nikoovandeh¹, Pierre T. Khuri-Yakub¹ <i>Stanford University, Stanford, CA, USA</i></p>	<p>P2-21 In Vivo Study of Cerebral Ischemia using Shear Wave Imaging and Ultrafast Doppler</p> <p>Emilie Mace¹, Abraham Martin¹, Gabriel Morinault¹, Mathias Fink¹, Bertrand Tavitian², Mickael Tanter¹ <i>1)Institut Langevin, ESPCI Paris Tech, Paris, France; 2)Experimental Molecular Medicine Lab, CEA, Orsay, France</i></p>	<p>Session P2-M2. Contrast Agents I</p> <p>Chair: Tom Mattila <i>Univ. of Washington</i></p>	<p>P2-M2-8 Acoustic radiation forces between UCA microbubbles near a wall</p> <p>Valeria Garbin¹, Mattias Overvelde², Nico de Jong², Delft Lohse¹, Michel Verschuik¹ <i>1)Department of Chemical and Biomedical Engineering, University of Twente, Enschede, The Netherlands; 2)Department of Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands</i></p>
<p>P2-6 Miniaturization of the traveling wave ultrasonic linear motor using bimorph transducers</p> <p>Shuichi Kondo¹, Daisuke Koyama¹, Kentaro Nakamura¹ <i>Tokyo Tech, Japan</i></p>	<p>P2-14 Ultrasonic assessment of the determinants of human cortical bone elasticity: relative contributions of Haversian porosity and mineralized matrix stiffness</p> <p>Mathilde Munchet^{1,2}, Pierre Naulouf^{1,2}, Quentin Grimal², Amena Saeid², Pascal Langer² <i>1)UPMC Univ Paris 06, UMR 7623, Laboratoire d'Imagerie Paramétrique, Paris, F-75005, France; 2)CNRS, UMR 7623, Laboratoire d'Imagerie Paramétrique, Paris, F-75005, France</i></p>	<p>Session P2-M1. Blood Flow Measurement and Imaging</p> <p>Chair: Lasse Lovstakken <i>Norwegian Institute of Science & Technology</i></p>	<p>P2-M2-9 Epidermal Growth Factor Receptor Targeting using Cetuximab-labeled Ultrasound Contrast Agents - A Feasibility Study</p> <p>Joseph Knowles¹, Omar Safarjani¹, Roshu Sami¹, Heidi Umphrey¹, Eben Rosenthal¹, Kenneth Hoyt¹ <i>University of Alabama at Birmingham, USA</i></p>	<p>P2-M2-9 Acoustic radiation forces between UCA microbubbles near a wall</p> <p>Valeria Garbin¹, Mattias Overvelde², Nico de Jong², Delft Lohse¹, Michel Verschuik¹ <i>1)Department of Chemical and Biomedical Engineering, University of Twente, Enschede, The Netherlands; 2)Department of Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands</i></p>
<p>P2-7 Wide-level Heterointegration Process for SAW Devices on LSI</p> <p>Kyeonghwng Park¹, Masayoshi Eesshi¹, Shuji Tanaka¹ <i>Nanomechanics, Tohoku University, Sendai, Miyagi, Japan; 1)PI-4MR, Tohoku University, Sendai, Miyagi, Japan</i></p>	<p>P2-15 In vivo Transcranial Cavitation Detection during Ultrasound-induced Blood-Brain Barrier Opening</p> <p>Sheng Tung¹, Fotios Vlachos¹, James Choi¹, Thomas Dettlmeis¹, Kirsten Schert¹, Elisa Konofagou² <i>1)Biomedical Engineering, Columbia University, New York, NY, USA; 2)Radiology, Columbia University, New York, NY, USA</i></p>	<p>P2-M1-1 Precise Blood-Flow Imaging on Ultrasonic Power Doppler Imaging Based on Motion Compensation</p> <p>Hidetoshi Yoshikawa¹, Takashi Azuma¹, Ken-ichi Kawahara¹ <i>1)Central Research Laboratory, Hitachi Ltd., Tokyo, Japan</i></p>	<p>P2-M2-2 Temperature Change of Oscillating Bubbles within a Capillary Network Induced by Focused Ultrasound</p> <p>Shaoying Liu¹, Kulkervo Hyonen² <i>1)Medical Biophysics, Sunnybrook Hospital, Toronto, Ontario, Canada; 2)Medical Biophysics, Sunnybrook Hospital, Toronto, ON, Canada</i></p>	<p>Session P2-M3. Elasticity Imaging: Technology</p> <p>Chair: Hiroshi Kanai <i>Tohoku University</i></p>

TUESDAY POSTER

<p>P2-M3-1 Effect of Prestretch on Modes of Shear Wave Propagation on Arteries Miguel Bernal¹, Matthew Urban¹, James Greenleaf² ¹Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, MN, USA</p>	<p>P2-M3-9 Plane wave imaging of focal pulse wave velocity Liang Zhang¹, Yongmin Kim¹ ¹Bioengineering, University of Washington, Seattle, WA, USA</p>	<p>P2-M4-4 Virtual Reality Training System for Diagnostic Ultrasound Jason Kutarnik¹, Peder Pedersen¹, Christina Yuan¹ ¹ECE, WPI, Worcester, MA, USA</p>		
<p>P2-M3-2 Improving Precision of Tissue Shear Modulus Quantification within the Region of Acoustic Radiation Force Excitation with Compounded Displacement Estimates Michael Wang¹, Mark Palmer¹, David Xu¹, Neil Rouze¹, Kathy Nightingale¹ ¹Duke University, USA</p>	<p>P2-M3-10 Application of matrix array-based 3D ultrasound imaging to organ tracking for motion compensated IMRT Mitsuhito Iweda^{1,2}, Brett Byram², Emma Harris¹, Philip E. Johnson¹, Hans-Joachim Zumbach¹ ¹Joint Department of Physics, Institute of Cancer Research, Sutton, Surrey, United Kingdom, ²Biomedical Engineering, Duke University, Durham, NC, USA</p>	<p>P2-M4-5 Improving ultrasonic imaging of the vascular wall and blood flow using a multiphysics simulation tool integrating fluid-structure interaction and ultrasound simulations. Abigail Swillens¹, Joris De Geoele², Jan Vermeulen², Lucie Losjakken¹, Patrick Segers¹ ¹IBTech-BioMedica, Ghent University, Ghent, Belgium, ²Department of flow, heat and combustion mechanics, Ghent University, Belgium, ³Department of Circulation and Medical Imaging, NTNU, Trondheim, Norway</p>		
<p>P2-M3-3 Elasticity and Viscosity Estimation from Shear Wave Velocity and Attenuation: A Simulation Study Heng Zhao¹, Matthew W. Urban¹, James F. Greenleaf¹, Shigao Chen¹ ¹Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, Minnesota, USA</p>	<p>P2-M3-11 Direct Inversion of Lamb Waves in Shearwave Dispersion Ultrasound Vibrometry (SDUV) Ivan Nenadić¹, Matthew Urban¹, Scottie Mitchell¹, James Greenleaf¹ ¹Mayo Graduate School, USA, ²University of Kansas, USA</p>	<p>P2-M4-6 Fusion of 2D B-mode Images for Enhancement of the Abdominal Aorta R.G.P. Lupata^{1,2}, L. Lindelboom¹, M.M. Nillesen¹, C.L. de Kont¹, E.M.H. Bosboom¹, F.N. van de Vosse^{1,2} ¹Dept. of BioMedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands, ²Dept. of Biomedical Engineering, Maastricht University, Maastricht, Netherlands, ³Clinical Physics Lab, Dept. of Pediatrics, Radboud University Nijmegen Medical Center, Nijmegen, Netherlands</p>		
<p>P2-M3-4 A Fast, High-Performance Motion and Strain Imaging Method Jianwen Luo¹, Elisa Konofogou^{1,2} ¹Biomedical Engineering, Columbia University, USA, ²Radiology, Columbia University, USA</p>	<p>P2-M3-12 A novel measure to express tracking quality in ultrasound block matching Mattilda Larsson^{1,2}, Florence Kemner¹, Per Claus¹, Lars-Ake Brodin¹, Jim D'hooge³ ¹Lab on cardiac and vascular Imaging & Dynamics, Department of Cardiology, Ghent University Hospital, Ghent, Belgium, ²School of Technology and Health, Royal Institute of Technology, Stockholm, Sweden, ³MiLab, Norwegian Institute for Science & Technology, Trondheim, Norway</p>	<p>P2-M4-7 Study of zebrafish heart regeneration using high-frequency ultrasound imaging Mayan Yi¹, Xunwei Zhou¹, Weichun Yu¹, Chung-Ling Lee¹, K. Kirk Shung¹, Lei Department of Health Technology and Informatics, The Hong Kong Polytechnic University, Hong Kong, ²Department of Biomedical Engineering, Tsinghua University, Beijing, China, ³Department of Biomedical Engineering, Tsinghua University, Beijing, China, ⁴Department of Biomedical Engineering, University of Southern California, Los Angeles, USA</p>		

			<p>Session P2-M4. Image Processing/fusion <i>Chair: Olivier Basset</i> <i>CREATIS, LYON</i></p>	
<p>P2-M3-5 Nonlinear elasticity phantom containing spherical inclusions undergoing large deformations Theo Pavan^{1,2}, Ernest Madsen², Jingfeng Jiang², Gary Frank², Antonio Carneiro¹, Timothy Hall¹ <i>Departamento de Física e Matemática, Universidade de São Paulo, Ribeirão Preto, SP, Brazil</i>, <i>Medical Physics Department, University of Wisconsin, Madison, WI, USA</i></p>	<p>P2-M4-1 Preliminary evaluation of automatic time gain compensated <i>in-vivo</i> ultrasound sequences Martin Christian Axelsen¹, Kristian Frostholm Røedbe¹, Martin Christian Hemmen¹, Svendav Ivanov Nikolov², Mads Møller Pedersen¹, Jørgen Arendt Jensen¹ <i>1: Department of Ultrasound, Rigshospitalet, Copenhagen, Denmark</i>, <i>2: BK Medical, Herlev, Denmark</i>, <i>Department of Radiology, Copenhagen University Hospital, Rigshospitalet, Copenhagen, Denmark</i></p>	<p>P2-M4-2 A High-Frequency Ultrasound Imaging System using Limited-Angle Spatial Compounding and Synthetic Aperture Focusing Jørn Oprezka¹, Michael Vogl¹, Helmut Erment¹ <i>1: High Frequency Engineering Research Group, Ruhr-University Bochum, Bochum, Germany</i></p>	<p>P2-M4-3 Coupled Baseline Active Geometric Functions for Myocardial Segmentation in Cardiac Ultrasound Dated Barbosa^{1,2}, Olivier Bernard¹, Oana Sivu¹, Thomas Diercken¹, Brecht Hoyle¹, Piet Claus¹, Denis Friboulet¹, Jan Thijs¹ <i>1: Ghent University Imaging and Dynamics, K. U. Leuven, Belgium</i>, <i>2: CREATIS (INSU-Lyon, France)</i>, <i>All Lab, Norwegian Institute for Science & Technology, Trondheim, Norway</i></p>	<p>P2-M3-6 Dynamic elastography using delay compensated and angularly compounded high frame rate 2D motion vectors Reza Zaluri Azar^{1,2}, Ali Baghani¹, Septimiu E. Salcudean¹, Robert Kalling¹ <i>1: British Columbia, Canada</i>, <i>2: Ultrasonics Medical Corp, Canada</i></p>
<p>P2-M3-7 Acoustic Radiation Force Impulse Imaging 1.5D Array Transducer with Optimized "Pushing" and "Tracking" Apertures Ali Haider Dhanjalwala¹, Frank William Mauldin, Jr., Joseph P. Kelly¹, John A. Hossack¹ <i>1: Biomedical Engineering, University of Virginia, Charlottesville, VA, USA</i></p>				<p>P2-M3-8 A 2D least square differentiation filter for tensorial elastography Jessica Olliver¹, Adrian Basarab¹, Audley Lyschek¹, Philippe Delchambre¹ <i>1: Université de Lyon, France</i>, <i>Université de Toulouse, France</i>, <i>Radiology and Radiological Sciences, Vanderbilt University Medical Center, USA</i></p>

TUESDAY POSTER

WEDNESDAY ORAL

8:00 am - 9:30 am Oral --- Wednesday, October 13, 2010

<p>8:00 am</p>	<p>Session 5A. Therapy: Cavitation <i>Chair: Ralf Seip Philips Research</i></p>	<p>Session 5B. Image Quality <i>Chair: Mathew O'Donnell Univ. of Washington</i></p>	<p>Session 5C. Photoacoustic Imaging: Devices and Algorithms <i>Chair: Stanislav Emelianov Univ. of Texas at Austin</i></p>	<p>Session 5D. Bulk Wave Effects & Devices <i>Chair: Yook-Kong Yong Rutgers University</i></p>	<p>Session 5E. Characterisation <i>Chair: Marc Solal Triquint Semiconductor</i></p>	<p>Session 5F. MUT Modeling & Characterization <i>Chair: Chris Daft Siemens Healthcare</i></p>									
Town & Country															
<p>8:00 am</p>	<p>San Diego</p> <p>5A-1 Combined Passive Detection and Ultrastat Active Imaging of single cavitation events using Ultrastat ultrasound scanners Jerome GATEAU^{1,2}, Jean-Francois AUBIN^{1,2}, Mathieu PEREAS¹, Dorian CHANCE¹, Anne-laure BOEY¹, Mathias FRANK^{1,2}, Mickael TAMER^{1,2} ¹Institut Langevin, ESPCI ParisTech, CNRS, UMR 7087, Paris 75005, France, ²INSEBM, U979, Paris, 75003, France, ³Université Paris Diderot-Paris7, Paris, 75003, France, ⁴ Groupe Hospitalier Pitié-Salpêtrière, Paris, France</p>			<p>5B-1 Practical Applications of Synthetic Aperture Imaging in Medical Ultrasound Svetoslav Ivanov Nikolov¹, Jacob Korbek¹, Jørgen Arendt Jensen¹, Thomas Madsen¹, Technical University of Denmark, Denmark</p>			<p>5C-1 Deep Tissue 3-D Photoacoustic Imaging Using a 2-D CMUT Array Te-Jen Ma¹, Sri Rajasekhar Kohupalli², Krikant Chintalingam³, Oluwole Oritokun⁴, Aya Kuroki⁵, John A. Nyberg⁶, Robert M. Waymouth⁷, Sathya S. Gambhir⁸, R. Hiroaki Jeffrey, Jr.,⁹, Burms T. Khan-Yakab¹⁰, Edward L. Grizzon Laboratory, Stanford University, USA, ²Department of Radiology, Molecular Imaging Program, Stanford University, USA, ³Department of Radiology, Stanford University Medical Center, Stanford University, USA</p>			<p>Royal Palm 1-3</p> <p>5D-1 Attenuation & Velocity Measurement at GHz Frequencies in Thin Film Carbon Doped Silicon Oxide (CDO) John D. Larson III (Fellow)¹, Steven R. Gilbert², Arnaud DEYOS³ ¹HEAVENCOMS, Lille, Nord, France</p>			<p>Golden West</p> <p>5F-1 Model and Measurement of the Effects of the Mutual Impedance on Multi-Cell CMUTs Kwan Kyu Park¹, Manis Kumar¹, In Wygan², Yoon-Ki Park², M. Y. Y. Akab³, Edward L. Grizzon Laboratory, Stanford University, Stanford, CA, USA, ²National Semiconductor, Santa Clara, CA, USA</p>		
<p>8:15 am</p>	<p>5A-2 Investigation of Effectiveness of Microbubble Stable Cavitation in Thrombolysis William Shi¹, Shanji Gao², Francois Vigon¹, Jeff Powers¹, Lucas Dvořák¹, Ki Won Jung³, Feng Xie⁴, John Lo⁵, Cui Everbaah⁶, Thomas Potter² ¹Philips Research North America, USA, ²Philips Research Europe, Belgium, ³Philips Healthcare, USA, ⁴Swanhamre College, USA</p>			<p>5C-2 An Integrated Photoacoustic and Ultrasonic Catheter for Intravascular Imaging Krista Jansen¹, Gert Springeling², Robert Beurskens³, Antonius FW van der Steen³, Gijb van Soest⁴ ¹Biomedical Engineering, Thorax Center, Erasmus MC, Rotterdam, Netherlands, ²Philips Research Europe, Belgium, ³Erasmus MC, Rotterdam, Netherlands, ⁴Interuniversity Cardiology Institute, Netherlands</p>			<p>5D-2 Frequency-Temperature (f-T) Behavior for Different Rotated Quartz Cuts at High Temperatures and Their Q-factor Estimation Mihir S. Patel¹, Bikash K. Sinha¹, Schlamberg-Doll Research, Cambridge, MA, USA</p>			<p>Royal Palm 4-6</p> <p>5E-1 Application of colored picosecond ultrasonics to the thin film characterization in microacoustic devices Arnaud DEYOS¹ ¹HEAVENCOMS, Lille, Nord, France</p>			<p>5F-2 Measurements of CMUT neighbour coupling resonances in fluids of different viscosities Sigrid Berg¹, Ame Remeckiev² ¹Department of Electronics and Telecommunications, Norwegian University of Science and Technology (NTNU), Trondheim, Trondheim, Norway</p>		

<p>8:30 am</p> <p>5A-3 Local cavitation suppression using cavitation nuclei preconditioning for precise treatment in histotripsy</p> <p>Tao Xia Wang¹, Timothy Hall¹, Zhen Xu¹, J Brian Fowlkes¹, Charles Cui¹</p> <p>¹University of Michigan, USA</p>	<p>5B-3 A Singular Value Filter for Rejection of Stationary Artifact in Medical Ultrasound</p> <p>Frank William Mauldin, Jr.¹, Dan Liu¹, John A. Hirsch¹</p> <p>¹Biomedical Engineering, University of Virginia, Charlottesville, VA, USA</p>	<p>5C-3 Wavelength agile photoacoustic microscopy with a pulsed supercontinuum source</p> <p>Mengyang Liu¹, Takashi Inoue¹</p> <p>¹University of Delaware, USA</p>	<p>5D-3 Braag Mirrors Basic Properties and Resonant Frequencies and Quality Factor of SMR's</p> <p>Georgiy Ivanov¹, Sergey Alekseyev², Natalia Poljanec¹, Diana Bruma¹</p> <p>¹IRE RAS, Moscow, Moscow, Russian Federation, ²IRE RAS, Russian Federation, ³Moscow Institute of Physics and Technology, Russian Federation</p>	<p>5E-2 Laser Probe Measurements of Plate-Size Related Effects on the Square-Extensional Mode of Piezoelectrically Transduced MEMS Resonators</p> <p>Lauri Uplander¹, Kimmo Kokkonen¹, Antti Jaakkola¹, Matti Kaivola¹</p> <p>¹Applied Physics, Aalto University, Espoo, Finland</p>	<p>5F-3 Simulating CMUTs using Field II</p> <p>David Beak¹, Omer Oubari¹, Mario Kuznetz¹, Marcin Jamski¹, Diana I. Kuznetz-Yablun¹, Jagan Aravamudan¹</p> <p>¹Center for Real Ultrasonic Imaging, Department of Electrical Engineering, Technical University of Denmark, Sønderborg, Denmark</p>
<p>8:45 am</p> <p>5A-4 Ultrasound-induced Fluid Uptake Phenomenon in Porcine Uterine Tissue</p> <p>Kwame N. Ujah¹, Xiu Sun², Zhen Xu¹, J. Brian Fowlkes¹, Charles A. Cain^{1,3}</p> <p>¹Department of Biomedical Engineering, University of Michigan, Ann Arbor, Michigan, USA, ²Department of Mechanical Engineering, University of Michigan, Ann Arbor, Michigan, USA, ³Department of Electrical Engineering and Computer Science, University of Michigan, Ann Arbor, Michigan, USA</p>	<p>5B-4 Compressive sensing for raw RF signals reconstruction in ultrasound</p> <p>Denis Friboulet¹, Hervé Liebgott¹, Rémy Prost¹</p> <p>¹GREHTS, CNRS UMR5220, Inserm U680, Université de Lyon, INSIS-Lyon, Université Lyon 1, France</p>	<p>5C-4 Design and Synthesis of Nano-Photonic Acoustic Response</p> <p>Yun-Sheng Chen^{1,2}, Seungsoo Kim¹, Peter Kevorkyants¹, Kimberly Haman¹, Wolfgang Frey¹, Sushanta Emmanuel^{1,3}</p> <p>¹Department of Biomedical Engineering, The University of Texas at Austin, Austin, TX, USA, ²Department of Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX, USA</p>	<p>5D-4 The Calculation of Electrical Parameters of Overtone Thickness-shear Quartz Crystal Resonators with the Higher-order Mindlin Plate Equations</p> <p>Ji Wang¹, Lijun Yang¹, Jianke Du¹, Dejin Huang¹</p> <p>¹Piezoelectric Device Laboratory, Ningbo University, Ningbo, Zhejiang, China, People's Republic of</p>	<p>5E-3 Direct Measurement of Spurious Mode Properties in Thin Film BAW Resonator</p> <p>Kimmo Kokkonen¹, Thomas Penttilä², Johanna Melanen¹, Matti Kaivola¹</p> <p>¹Department of Applied Physics, Aalto University, Finland, ²TUT, Finland</p>	<p>5F-4 An Equivalent Circuit for Collapse Operation Mode of CMUT</p> <p>Solter Olsman¹, F. Yekta Yamaner², Ayhan Bolkar², Hayrettin Kaymaz², Abduhalik Altar¹</p> <p>¹Electrical and Electronics Engineering, Bilkent University, Ankara, Turkey, ²Faculty of Engineering and Natural Sciences, Sabanci University, Istanbul, Turkey</p>
<p>9:00 am</p> <p>5A-5 Optimization of Histotripsy for Kidney Stone Erosion</p> <p>Alexander Durya¹, William Roberts^{1,2}, Charles Cain¹, Timothy Hall¹</p> <p>¹Biomedical Engineering, University of Michigan, Ann Arbor, Michigan, USA, ²Urology, University of Michigan, Ann Arbor, Michigan, USA</p>	<p>5B-5 Transducer arrays for ultrasonic particle manipulation</p> <p>Christine Dewar¹, Peter Glyne-Jones², Yongqiang Qiu¹, Congwei Ye¹, Martyn Hill¹, Sandy Cochran¹</p> <p>¹Institute for Medical Science and Technology, University of Dundee, Dundee, United Kingdom, ²School of Engineering Sciences, University of Southampton, Southampton, United Kingdom</p>	<p>5C-5 Monospectral photoacoustic imaging using Legendre sequences</p> <p>Martie F. Beckmann¹, Martin P. Menklau¹, Claus-Sören Friedrich¹, Nils C. Gerhardt¹, Martin R. Hofmann¹, Georg Schmitz¹</p> <p>¹Institute of Medical Engineering, Robert-Koch-Phoniatrics and Trauma-Technology, Universitätsklinikum, Bochum, Germany</p>	<p>5D-5 Analysis of the SH Wave Radiation from the SAW Devices</p> <p>Saurea Masuda¹, Michio Minai¹, Takashi Masuda¹, Masamori Ueda¹, Yoshio Sato¹</p> <p>¹Topco Yuden Co., Ltd., Hyogo, Japan</p>	<p>5E-4 Improved Pulse-Echo Imaging Performance for Fixture-Made PMUT Arrays</p> <p>David Danesh¹, John Castellucci¹, Derrick Choo¹, Kristin Gilchrist¹, James Carlson¹, Olaf von Ramm¹</p> <p>¹RTI International, Research Triangle Park, NC, USA, ²Duke University, Durham, NC, USA</p>	<p>5F-5 Bias Optimization of Dual Ring CMUT Arrays for Forward Looking IVUS Applications</p> <p>Jaime Zahorian¹, Michael Hochman¹, Toby Xu¹, Gokee Gurun¹, Sarp Saur¹, Levant Dogatekin¹</p> <p>¹Electrical and Computer Engineering, Georgia Institute of Technology, USA, ²Mechanical Engineering, Georgia Institute of Technology, USA</p>
<p>9:15 am</p> <p>5A-6 Lesion Generation through Ribs without Abrasion Correction using Cavitation Therapy</p> <p>Yohan Kim¹, Tin-Yin Wang¹, Zhen Xu¹, Charles Cain¹</p> <p>¹Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI, USA</p>	<p>5B-6 Surfaces of Acoustic Attenuation in B1R2GeO20 and B1R2SiO20 Crystals</p> <p>Farhad Akhmedzhanov¹, Uugbek Saidvaliev¹</p> <p>¹General Physics and Electrodynamics, Naval state mining institute, Novosibirsk, Novosibirsk, Russian Federation, ²Tashkent university of information technology, Uzbekistan</p>	<p>5C-6 Development of a Combined Photoacoustic-Micro-Ultrasonic System for Minimizing Blood Oxygenation</p> <p>Andrew Nedelk¹, Pinhas Eprati¹, Corina Bilan-Tincey¹, Armin Trautleb¹, Catherine Theodoropoulos¹, Desmond H. Chiu¹, Stuart Hayashi¹</p> <p>¹Utah State Office, Canada, ²Stamperbrook Health Sciences Centre, Canada</p>	<p>5D-6 Method of Fitting Q-Circles of Measured Mechanical Resonators</p> <p>Rich Ruby¹</p> <p>¹Avago Technologies, USA</p>	<p>5F-6 Bias Optimization of Dual Ring CMUT Arrays for Forward Looking IVUS Applications</p> <p>Jaime Zahorian¹, Michael Hochman¹, Toby Xu¹, Gokee Gurun¹, Sarp Saur¹, Levant Dogatekin¹</p> <p>¹Electrical and Computer Engineering, Georgia Institute of Technology, USA, ²Mechanical Engineering, Georgia Institute of Technology, USA</p>	

WEDNESDAY ORAL

WEDNESDAY ORAL

11:00 am - 12:30 pm		Oral --- Wednesday, October 13, 2010				
11:00 am	Session 6A. Therapy Monitoring, Control and Quality Assurance <i>Chair: Emad Ehbini</i> <i>Univ. of Minnesota</i>	Session 6B. Vascular Elasticity Imaging <i>Chair: Ton Van der Steen</i> <i>Erasmus Medical Centre</i>	Session 6C. Photoacoustic Imaging <i>Chair: Michael Kolios</i> <i>Ryerson University</i>	Session 6D. Wave Propagation in Phononic Crystals <i>Chair: Tsung-Tsong Wu</i> <i>Institute of Applied Mechanics, National Taiwan Univ.</i>	Session 6E. Wireless and Materials <i>Chair: Mauricio Pereira Da Cunha</i> <i>University of Maine</i>	Session 6F. CMUT Technology and Integration <i>Chair: Omer Oralkan</i> <i>Stanford University</i>
	Town & Country	San Diego	California	Royal Palm 1-3	Royal Palm 4-6	Golden West
11:15 am	6A-1 Monitoring of thermal ablation therapy based on shear modulus changes: Shear wave thermometry and Shear wave lesion imaging <i>Bastien Anand¹, Mathieu Pernot¹, Mickael Tanter²</i> ¹ Meves physics for medicine and biology, Institut Langevin, Paris, France, France, ² Université Paris Diderot-Paris7, Paris, France, ENRM, Paris, France, ³ UMR 7587, CNRS, Paris, France	6B-1 Evaluation of local arterial stiffness using ultrafast imaging: a comparative study between Pulse Wave Imaging and Shear Wave Imaging <i>Mathieu Couade^{1,2}, Christina Flanagan³, Weining Lee², Emmanuel Messias³, Mathias Fink¹, Mathieu Pernot¹, Mickael Tanter²</i> ¹ Supersonic Imagine, Aix En Provence, France, ² Institut Langevin, Paris, France, ³ Inserm U763, Faculté de Pharmacie, Paris, France	6C-1 Optical droplet vaporization: photoacoustic characterization of micron-sized perfluorocarbon droplets <i>Erik Strömahl¹, Ivan Gouletkov², Shami Yehia¹, Jean-Luc Lemaire, Nancy University - CNRS, Vandœuvre les Nancy, France, ²Department of Physics, South China University of Technology, South China University of Technology, Guangzhou, China, People's Republic of </i>	6D-1 Phonon transport in locally resonant phononic stubbed plates <i>Mourad Oudich¹, Badreddine Assouar¹, Zhilin Han¹, Jean-Luc Lemaire, Nancy University - CNRS, Vandœuvre les Nancy, France, ²Department of Physics, South China University of Technology, South China University of Technology, Guangzhou, China, People's Republic of </i>	6E-1 SAW-Based Radioisotope-powered Wireless RFIDRF Transponder <i>Steve Tibl¹, Amit Lal¹</i> ¹ School of Electrical and Computer Engineering, Cornell University, USA	6F-1 CMUT Fabrication Based on a Thick Buried Oxide Layer <i>Mario Kuzupik¹, Srikant Vaidhalingam¹, Kazutoshi Taniguchi¹, Ima O. Wiygant¹, Bhanu Prasad¹, M. S. Shur¹, Edward L. Grazian Lab, Stanford University, Stanford, CA, USA, ²Corporate R&D Headquarter, Canon Inc., Japan, ^{NS Laboratories, National Semiconductor, USA} </i>
	6A-2 In vivo soft tissue elasticity changes during thermal ablation are linked to the thermal dose <i>Emilie SAPIV - DE BRONSES¹, Mathieu PERNOT¹, Mathias FINK¹, Mickael TANTER¹</i> ¹ Institut Langevin, ESPCI ParisTech, CNRS, INSERM, Paris Diderot University, PARIS, France	6B-2 In Vitro Assessments of Viscoelastic Properties of Fibrin Clot by Shear Acoustic Radiation Force on a Solid Sphere <i>Chu-Chiang Shih¹, Ting-Yu Liu¹, Chih-Chung Huang¹</i> ¹ Department of Electronic Engineering, Fu Jen Catholic University, Hsin-Chung, Taiwan	6C-2 Simultaneous photoacoustic detection of multiple inflammatory biomarkers using photoacoustic gold nanodots as selective targeting agents <i>Senghan Ha¹, Jong S. Kim¹, Sakya Tripathy¹, Andrew Casson¹, Michelle Giam¹, Abhishek Agrawal¹, A. K. Koo¹, Vladimir S. Vitushova¹, King Kim¹</i> ¹ Center for Ultrasound Molecular Imaging and Therapeutics, University of Pittsburgh and University of California, San Diego, ² Department of Chemical Engineering, University of Michigan, Ann Arbor, MI, USA, ³ Department of Biomechanical Engineering, University of Pittsburgh, PA, USA	6D-2 Phononic crystal of pillars on a surface <i>Younes Achachi¹, Abdelkrim Khelif¹, Laurent Robert¹, Sarah Benchabane¹, Vincent Laude¹</i> ¹ FEATOST, Resonance, France, ² Georgia Tech, Atlanta, USA	6E-2 SAW-tag system with increased reading range <i>Victor Pleskhy¹, Vladimir Kalinin², Boris Lulin¹</i> ¹ GTR Trade SA, Switzerland, ² Avanograd Ltd., St. Petersburg, Russian Federation	6F-2 Low Temperature Process for CMUT Fabrication with Water Bonding Technique <i>Yukihide Tsuji^{1,2}, Maito Kuzupik¹, Buntaro T. Kushi-Yakub¹</i> ¹ Edward L. Grazian Laboratory, Stanford University, USA; ² Central Research Laboratories, NEC Corporation, Japan

<p>11:30 am</p>	<p>6A-3 Focused Harmonic Motion Imaging for Localized Ultrasound Surgery Targeting and Treatment Outcome Lawa Cund^{1,2}, Kellervo Byham¹, ¹Electrical Engineering, Lehigh University, Thunder Bay, Ontario, Canada, ²Imaging Guided Interventions, Pfizer, Bay Regional Health Imaging Research, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada</p>	<p>6B-3 Ex Vivo and In Vivo Comparison of AFI Beam Sequence Performance for Atherosclerosis Imaging Ruedi Babb¹, Timothy Nichols¹, Elizabeth Merricks², Caterina Gallip¹ ¹Biomedical Engineering, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA, ²Department of Biomedical Engineering, University of North Carolina at Chapel Hill, USA, ³Biomedical Engineering, University of North Carolina at Chapel Hill, USA</p>	<p>6C-3 Molecular Diagnosis of Cancer using Multiplex Photoacoustic Imaging with Targeted Nanorods Cynthia Boyd¹, Yun-Sheng Chang¹, Seungsoo Kim¹, Srivatsava Mallik¹, Komantini Sokolov¹, Stanislav Emelchikov¹, ¹Department of Chemical and Biomedical Engineering, The University of Texas at Austin, Austin, TX, USA, ²Electrical and Computer Engineering, The University of Texas at Austin, Austin, TX, USA, ³Harvard Medical School, Boston, MA, USA, ⁴UT Southwestern Medical Center, Dallas, TX, USA</p>	<p>6D-3 A novel method for tuning the band gap structure of 2D phononic crystal Mikhail Zubov¹, Rafal Lachlan¹ ¹Ultrasound-Geriatric University Magdeburg, Germany</p>	<p>6F-3 CMUT-on-CMOS for Forward-Looking IVUS: Improved Focalization and Real-Time Imaging Michael Hebsan¹, Jaime Zahorian¹, Serg Sadi², Levent Degertekin¹, Toby Xu¹, M. Kazman¹, P. Hasler², F. Levent Degertekin¹ ¹Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA, USA, ²Georgia Institute of Technology, Georgia Institute of Technology, USA, ³Electronics Engineering, Isik University, Turkey</p>
<p>11:45 am</p>	<p>6A-4 Monitoring lesion formation of HIFU-treatment from radiated shear waves Stefanie Dreeks¹, Klaus-Volrad Jenckels¹, Christian Koch¹ ¹Physikalisch-Technische Bundesanstalt, Braunschweig, Germany</p>	<p>6B-4 2 D RF-based Strain Imaging in the Normal and Diseased Aorta: A Feasibility Study R.C.P. Lagan^{1,2}, H.H.C. Hampe¹, G.W.H. Schmalz¹, F.N. v.d. Vosse¹, E.M.H. Bosboom¹, C.J. de Korte¹ ¹Department of Biomedical Engineering, University of Technology, Enschede, Netherlands, ²Dept of Biomedical Engineering, Maastricht University, Maastricht, Netherlands, ³Department of Biomedical Engineering, Maastricht University, Maastricht, Netherlands, ⁴Dept of General Surgery, Maastricht University, Maastricht, Netherlands, ⁵Dept of Immunobi, Utrecht, Netherlands</p>	<p>6C-4 Contrast-enhanced Photoacoustic Imaging Congjian Jia¹, Sheng Shen Huang¹, Yuesheng Jin¹, Chi Huang Seo¹, Liqun Han¹, Janet Earl¹, Xiaohu Gao¹, Matthew O'Donnell¹ ¹University of Washington, USA</p>	<p>6E-3 Theoretical and Experimental Investigation of Langasite as Material for Wireless High Temperature SAW Sensors S. Sakharov¹, S. Kondratiev¹, N. Namsheev¹, A. Atanov¹, S. Zhegou¹, A. Zabelin¹, A. Shvetsov¹, F. Ponomarev¹, Moscow, Russian Federation, Moscow, Russian Federation, ²Tomsk State University, Tomsk, Russian Federation, Tomsk, Russian Federation, ³Tomsk State University, Tomsk, Russian Federation, Tomsk, Russian Federation</p>	<p>6F-4 A Fully-Populated 32x32 CMUT-in-CMOS Ultrasound Array David Lenningshul¹, Xiyang Cheng¹, Oliver Kipfmueller¹, Min Zhang¹, J. Brian Fowlkes¹, Sonetics Ultrasound, Inc., Ann Arbor, MI, USA, ²University of Michigan, Ann Arbor, MI, USA</p>
<p>12:00 am</p>	<p>6A-5 Realtime Control of Multiple-focus Phased Array Heating Patterns Based on Noninvasive Ultrasound Thermography Andrew Casper¹, Dalong Liu¹, Emad Elbini¹ ¹University of Minnesota, USA</p>	<p>6B-5 Simultaneous Imaging of Tissue Motion and Flow Velocity Using 2D Phase-coupled Speckle Tracking Yayun Wan¹, Dalong Liu¹, Emad Elbini¹ ¹Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, USA, ²Biomedical Engineering, University of Minnesota, Minneapolis, MN, USA</p>	<p>6C-5 Negative refraction of longitudinal waves in an elastic phononic crystal Charles Cozzane¹, Anne-Christine Helvik¹, Henrik Jerome Vassel¹, Bertrand Dubus¹, Maxime Bavençolle¹, Bruno Morvan¹ ¹EMN, Lille, France, ²LOMC, Le Havre, France</p>	<p>6E-4 Brillouin spectroscopy applied to the characterization of SAW propagation losses in langasite. Brie Vincent¹, Thierry Aubert¹, Mehdiel Saffadini¹, Omar Elmarni¹, Didier Roussel¹, Jan Kristian Krüger¹ ¹Institut Jean Lamour, France, ²Laboratoire de physique des matériaux, Luxembourg</p>	<p>6F-5 An Annular CMUT Array Beamforming System for High-Frequency Side Looking IVUS Imaging Surp Sair¹, Gokce Gurun¹, Jaime Zahorian¹, Masah Kazman¹, Paul Hasler¹, F. Levent Degertekin¹ ¹Georgia Institute of Technology, Atlanta, GA, USA, ²Georgia Institute of Technology, Atlanta, GA, USA</p>
<p>12:15 am</p>	<p>6A-6 A Method for Automated Detection of High-Intensity Focused Ultrasound (HIFU) Beam in 3D Space Liewiang Fan¹, Xiaohong Jemy Zeng¹, Chi- Yin Lee¹, Stephen Hsu¹, Rin Sutedja¹, John Koo¹, Mike Siskins¹ ¹Ultrasound, Siemens Healthcare, Issaquah, Washington, USA</p>	<p>6B-6 A method to measure shear strain with high-spatial-resolution in vivo by tracking zero-crossings of B-mode intensity gradients Tobias Nilsson¹, Axel Boyka Ahlborn¹, Torsten Jansson¹, Hans W. Pettersen¹, Jan Nilsson¹, Agneta Lundström¹, Magnus Chelmo¹, Lars Eriksson¹, ¹Department of Biomedical Engineering, Linköping University, Sweden, ²Center for Ultrasound Physiology and Shear Modulus, Linköping University, Sweden, ³Department of Biomedical Engineering, Linköping University, Sweden</p>	<p>6C-6 Ultrasound Guided Photoacoustic Imaging with Grid Nanoparticles to Obtain Molecular Map of Tumor In-Vivo Srivatsava Mallik¹, Seungsoo Kim¹, Pranita Joshi¹, Konstantin Sokolov¹, Stanislav Emelchikov¹ ¹University of Texas at Austin, USA</p>	<p>6D-5 Design of waveguides in silicon phononic crystal slabs Václav Landa¹, Jan Čech, Bogdan¹, Sarah Bouchabane¹, Václav Pech, Jiřímařík Dufar, Roman¹, Niko Pajunková, Janina FERTIG-SF, Centre National de la Recherche Scientifique, Bordeaux, France, ²Department of Electronics Engineering, Faculty of Science, Institute of University of Ljubljana, Ljubljana, Slovenia, ³Institute of Technology Center, Universidad Carlos III de Madrid, Madrid, Spain</p>	<p>6E-5 Reliability of ANNs/Sapphire bilayer structures for high temperature SAW applications Thierry AUBERT¹, Omar Elmarni¹, Badrédine Azzouzi¹, Ahmad Hamdan¹, Dimitrie Geneşcu¹ ¹UMR 7198 Nancy University-CMOS, Institut Jean Lamour, Nancy, France</p>

WEDNESDAY ORAL

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1:30 pm - 3:00 pm		Oral --- Wednesday, October 13, 2010		
<p>Session 7A. Therapeutic Applications in the Brain</p> <p>Chair: Kullervo Hynynen <i>Univ. of Toronto</i></p>	<p>Session 7C. Defect Characterization</p> <p>Chair: Massimo Pappalardo <i>Universita Di Roma Tre</i></p>	<p>Session 7D. Blood/high Frequency Tissue Characterization</p> <p>Chair: Keith Wear <i>Food and Drug Administration</i></p>	<p>Session 7E. Multi Layer SAW Devices</p> <p>Chair: Karl Wagner <i>TDK-EPC</i></p>	<p>Session 7F. High Frequency Transducers</p> <p>Chair: Geoff Lockwood <i>Queens University</i></p>
Town & Country		California		Royal Palm 1-3
<p>7A-1 <i>In vivo</i> Transcranial Cavitation Detection during Ultrasound-Induced Blood-Brain Barrier Opening</p> <p>Yao-Sheng Tang¹, Felicia Vlaches¹, James C. Knowlton¹, David DeLorenzo¹, Kristen Sedri¹, Elisa Konofalou^{1,2}</p> <p>¹Biomedical Engineering, Columbia University, New York, NY, USA, ²Radiology, Columbia University, New York, NY, USA</p>	<p>7C-1 Infrared Imaging of Defects in Materials with Chaotic Sonic Excitation</p> <p>Robert Thomas¹, Xiaoyan Han², L.D. Favro³, John Neuzil⁴</p> <p>¹School of Arts and Sciences, Wayne State University, Detroit, MI, USA, ²Electrical and Computer Engineering, Wayne State University, Detroit, MI, USA, ³Physics, Wayne State University, USA, ⁴Mechanical Engineering, Wayne State University, USA</p>	<p>7D-1 Measurements from 22 to 105 MHz Ultrasonic Backscatter from Coronary Arteries with Atherosclerotic Plaques Identified by Intravascular Ultrasound</p> <p>Joseph Hoffman¹, Benjamin Johnson¹, Mark Miller¹, Russell Fedewa¹, Anup Nair¹, James Hollet¹</p> <p>¹Washington University in St. Louis, USA, ²Volcano Corporation, USA</p>	<p>7E-1 Transverse mode suppression and loss reduction for buried electroacoustic SAW devices</p> <p>Marc Sobel¹, Helen Gruber², Robert Algazi³, K. S. Kim⁴, M. J. R. Cantrell⁵, Fabio Rook⁶, Alan Chen¹, Kurt Steiger¹</p> <p>¹TriQuint Semiconductor, Apopka, FL, USA, ²TriQuint Semiconductor, Newton, MA, USA</p>	<p>7F-1 Characterization and Evaluation of High Frequency Convex Array Transducers</p> <p>Hyung Han Kim¹, Chang-Hong Ju¹, Joon-Ho Lee¹, Joon-Ho Park¹, Jonathan M. Cantrell², K. Kirk Slingo³</p> <p>¹Department of Biomedical Engineering, University of Southern California, USA</p>
San Diego		Royal Palm 4-6		Golden West
<p>7B-1 Spatial compounding for lateral two-dimensional strain estimation in the mouse heart: a pilot study</p> <p>Flavence Kremer¹, Mimi Babayeh¹, Hon Fai Chan¹, David S. D'Elia¹</p> <p>¹Lab on cardiovascular Imaging & Dynamics, Department of Cardiovascular Diseases, Catholic University of Leuven, Leuven, Belgium, ²School of Technology and Health, Royal Institute of Technology, Stockholm, Sweden, ³MI lab, Norwegian Institute for Science & Technology, Trondheim, Norway</p>	<p>7C-2 Three-Dimensional High-Frequency Spectral and Envelope Localization of Excised Human Lymph Nodes</p> <p>Jean-Benoit Bismuth¹, Michel L. Odeh², Jim Hogue³, Yongshun Zhang⁴, David L. Taylor⁵, David J. Lodge⁶</p> <p>¹F. L. Lizzi Center for Biomedical Engineering, Riverside University of Health Sciences, Orange, CA, USA, ²Department of Diagnostic Radiology, University of Illinois at Chicago, Chicago, IL, USA, ³University of Hawaii and Keck Medical Center, Honolulu, HI, USA</p>	<p>7E-2 Suppression of Transverse-Mode Spurious Responses by selectively SIO, and the Design of a High Frequency Resonators on a SiO₂/AlN/InGaB_{0.5} Structure</p> <p>Hirayuki Nakamura¹, Hideozuka Nakanishi¹, Rei Goto¹</p> <p>¹Corporate Components Development Division, Panasonic Electronic Devices Co., Ltd., Kadoma, Osaka, Japan</p>	<p>7F-2 An Easy and Inexpensive Method for Fabricating High Frequency Annular Arrays</p> <p>Holly S. Lay¹, Eric A. Simpson¹, Greg H. Griffin¹, Geoffrey R. Lockwood¹</p> <p>¹Queens University, Canada</p>	
<p>7A-2 Gold-Nanorod Contrast Enhanced Ultrasound Imaging of Focused and Blurred Brain-Barrier Opening: Small Animal Study</p> <p>Po-Hsun Wang¹, Po-Hung Hsu¹, Hao-Li Liu¹, Chung-Ren Chen¹, Meng-Lin Li¹</p> <p>¹Dept. of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan, ²Exp. Ultrasonics, National Tsing Hua University, Taiwan, ³Dept. of Chemistry and Biochemistry, National Chung Cheng University, Taiwan</p>	<p>7B-2 Quantitative evaluation of correlation-based 3D vs. 2D speckle tracking using the finite elastic mechanical model and <i>in-vivo</i> phantom</p> <p>S. Tripathy^{1,2}, M. A. Simon³, K. Kim³</p> <p>¹Center for Ultrasound Molecular Imaging and Therapeutics, University of Pittsburgh and University of Pittsburgh Medical Center, Pittsburgh, PA, USA, ²Department of Biomedical Engineering, University of Pittsburgh Medical Center, Pittsburgh, PA, USA, ³Department of Biomedical Engineering, University of Pittsburgh, Pittsburgh, PA, USA</p>			

<p>2:00 pm</p>	<p>7A-3 Remote Control of Brain Circuits using Pulsed Ultrasound</p> <p>William Tyler¹ ¹Arizona State, USA</p>	<p>7B-3 Three-dimensional cardiac motion and strain estimation: A validation study in thick-walled uniaxial cylindrical phantoms using sonomicrometry</p> <p>Bruce Hoyle¹, Syamim Osman², Brian Lomax-Peavonia³, David Harrison⁴, Anil Bhat⁵, Peter Chan⁶, Dirk Loeckx⁷, ¹Cardiovascular Imaging and Diagnostics, K.U.Leuven, Leuven, Belgium, ²Department of Mechanical Engineering, University of Michigan, Ann Arbor, Michigan, USA, ³Imaging Computing, K.U.Leuven, Leuven, Belgium, ⁴McGill University, Montreal, Quebec, Canada, ⁵Department of Mechanical Engineering, University of Michigan, Ann Arbor, Michigan, USA, ⁶Department of Mechanical Engineering, University of Michigan, Ann Arbor, Michigan, USA, ⁷Department of Mechanical Engineering, University of Michigan, Ann Arbor, Michigan, USA</p>	<p>7C-3 Air-Coupled Ultrasound Wave Propagation in Glued Laminated Timber Structures Applied to Bonding Quality Assessment</p> <p>Sergio Sanabria¹, Roman Farber², Jaeg Neuenhofer³, Peter Nemež⁴, Urs Stammhuber⁵, ¹Swiss Federal Institute of Technology, Zurich, Switzerland, ²Swiss Federal Institute of Technology, Zurich, Switzerland, ³Swiss Federal Institute of Technology, Zurich, Switzerland, ⁴Swiss Federal Institute of Technology, Zurich, Switzerland, ⁵Swiss Federal Institute of Technology, Zurich, Switzerland</p>	<p>7D-3 A comparison of the ultrasonic properties of cells during apoptosis and mitosis using acoustic microscopy</p> <p>Edis Strahin¹, Mira Rai¹, Maurice Bagterak¹, Michael Koles¹, Gregory Cramiel¹, Michael Kolos¹, ¹Department of Physics, Queen's University, Toronto, Ontario, Canada, ²Department of Radiation Oncology, Sunnybrook Health Sciences Centre, Toronto, Ontario, Canada</p>	<p>7E-3 Investigation of SiO₂ Film Properties for Zero Temperature Coefficient of Frequency SAW Devices</p> <p>Satoru Matsuda¹, Michio Miura¹, Takashi Muroki¹, Masahito Ueda¹, Yoshinori Sano¹, ¹Taiyo Yuden Co., Ltd., Akashi, Hyogo, Japan</p>	<p>7F-3 Micromachined High-Frequency PMN-PT/Epoxy 1:3 Composite Ultrasonic Annular Arrays</p> <p>Changsheng Liu¹, Frank D'Alagni¹, Chungsheng Ho¹, Wang Li¹, Bing Xu¹, Qih Zhong¹, Kirk Shang¹, ¹Geospace Research, Inc., USA, ²Biomedical Engineering, University of Southern California, USA</p>
<p>2:15 pm</p>	<p>7A-4 In-vivo Quantitative Permeability Assessment of the Focused-Ultrasound Induced Blood-Brain Barrier Opening using Dynamic Contrast-Enhanced MRI</p> <p>Kolja Vlachy¹, Yao-Sheng Tsung¹, Elias Laurent Massee^{1,2}, Dorain Chaves¹, Benjamin Robert¹, Mathieu Pomet¹, Anne-Laure Boix¹, Najal Tamer¹, Mathias Fink¹, Jean-Francois Aubry¹, ¹INSERM, Institut Langevin, Paris, France, ²SuperSonic-Imaging, Paris, France, ³INSERM, Département Paris, France, ⁴UCLERM, Clermont-Ferrand, France</p>	<p>7B-4 3D elasticity imaging using principal stretches on an open-chest dog heart</p> <p>Congxian Jia¹, Ping Yao², Albert Simasac³, Donald Dimec⁴, Ben Liu⁵, Qing Wei⁶, Karl Thiele⁷, Theodore Kolias⁸, Jonathan Rubin⁹, Langyan Huang¹⁰, James Durrant-Whyte¹¹, ¹USA, ²USA, ³USA, ⁴USA, ⁵USA, ⁶USA, ⁷USA, ⁸USA, ⁹USA, ¹⁰USA, ¹¹USA</p>	<p>7C-4 Guided wave scattering from straight features</p> <p>Paul Wilson¹, Alexander Velichko², Michael Todd³, Bruce Drinkwater⁴, ¹Mechanical Engineering, University of Bristol, Bristol, Avon, United Kingdom, ²University of Bristol, United Kingdom, ³University of California at San Diego, United Kingdom</p>	<p>7D-4 Design and Experiment of High Temperature Wedges for Shear Horizontal Plate Acoustic Waves</p> <p>Jose Edgar Barbosa Oliveira¹, Kuo-Ting Wu², Cheng-Kuo Lee³, ¹Universidade de Brasilia, Brazil, ²Electrical and Computer Engineering, McGill University, Montreal, Quebec, Canada, ³Industrial Materials Institute, National Research Council Canada, Boucherville, Quebec, Canada</p>	<p>7E-4 A study on temperature-compensated surface acoustic wave filters fabricated on a hybrid substrate.</p> <p>Hiroki Koriyashi¹, Kazunobu Tohyama¹, Yoji Hori¹, Yasunori Iwasaki¹, Kenji Suzuki¹, ¹NGK INSULATORS, LTD., Japan, ²NGK INSULATORS, LTD., Japan, ³NGK INSULATORS, LTD., Japan</p>	<p>7F-4 Design of a phased-array for radiation force generation following a closed path</p> <p>Derrick Ekwon¹, Anis Hady Hami¹, Guy Cloutier¹, ¹Laboratory of Biomechanics and Medical Ultrasonics, University of Montreal Hospital, Montreal, Quebec, Canada</p>
<p>2:30 pm</p>	<p>7A-5 Pre-clinical evaluation of a 1MHz ultrasonic brain therapy device on human cadavers</p> <p>Laurent Massee^{1,2}, Dorain Chaves¹, Benjamin Robert¹, Mathieu Pomet¹, Anne-Laure Boix¹, Najal Tamer¹, Mathias Fink¹, Jean-Francois Aubry¹, ¹INSERM, Institut Langevin, Paris, France, ²SuperSonic-Imaging, Paris, France, ³INSERM, Département Paris, France, ⁴UCLERM, Clermont-Ferrand, France</p>	<p>7B-5 Myocardial contractility assessed by shear wave elasticity imaging</p> <p>Mathieu Couade¹, Mathieu Pernot², Philippe Maceo³, Bertrand Crozetier⁴, Roolophe Fischmeister⁵, Mathias Fink⁶, Michael Tamer⁷, ¹INSERM, Institut Langevin, Paris, France, ²INSERM, Institut Langevin, Paris, France, ³INSERM, Institut Langevin, Paris, France, ⁴INSERM, Institut Langevin, Paris, France, ⁵INSERM, Institut Langevin, Paris, France, ⁶INSERM, Institut Langevin, Paris, France, ⁷INSERM, Institut Langevin, Paris, France</p>	<p>7C-5 Insight into the Wave Transformation Mechanisms via Numerical Simulation of Acoustic Fields in Rectilinear Grating Dielectric Structures</p> <p>Natalya Naumkina¹, Benjamin Abbot², ¹Metecore Steel and Alloys Institute, Russian Federation, ²TriQuint Semiconductors, Inc., USA</p>	<p>7D-5 In-situ characterization of red blood cell aggregation measured with high frequency ultrasound in type 2 diabetic patients</p> <p>Liuh-Chi Nguyen¹, Julien Triquet², Emile Franceschi³, Jean-Louis Chazotte⁴, Peter Kohler⁵, Ghis Stolar⁶, ¹University of Montreal Hospital, Montreal, Quebec, Canada, ²University of Montreal Hospital, Montreal, Quebec, Canada, ³University of Montreal Hospital, Montreal, Quebec, Canada, ⁴University of Montreal Hospital, Montreal, Quebec, Canada, ⁵University of Montreal Hospital, Montreal, Quebec, Canada, ⁶University of Montreal Hospital, Montreal, Quebec, Canada</p>	<p>7E-5 High-Frequency Single Element Ring Transducer for Photoacoustic Imaging Applications</p> <p>Ramin Chen¹, Joosim Yang², Kosanmitta Maslow³, Shuang-Yao⁴, Qih Zhong⁵, Liuhong V. Wang⁶, A. Kirk Shang⁷, ¹University of Southern California, USA, ²University of Southern California, USA, ³University of Southern California, USA, ⁴University of Southern California, USA, ⁵University of Southern California, USA, ⁶University of Southern California, USA, ⁷University of Southern California, USA</p>	<p>7F-5 Development of a Digital Micro-Manufacturing Process for High Frequency Ultrasonic Transducers</p> <p>Hamid Reza Chahok¹, Chi Zhou², Yong Chen³, Qih Zhong⁴, Kirk Shang⁵, ¹Biomedical Engineering, University of Southern California, Los Angeles, CA, USA, ²Biomedical Engineering, University of Southern California, Los Angeles, CA, USA, ³Biomedical Engineering, University of Southern California, Los Angeles, CA, USA, ⁴Biomedical Engineering, University of Southern California, Los Angeles, CA, USA, ⁵Biomedical Engineering, University of Southern California, Los Angeles, CA, USA</p>

WEDNESDAY ORAL

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Oral --- Wednesday, October 13, 2010

4:30 pm - 6:00 pm	Session 8A. Drug/Gene Delivery <i>Chair: Ayache Bouakaz</i> <i>INSERM, Tours</i>	Session 8B. Cardiac Mechanics Imaging <i>Chair: Jan D'hooge</i> <i>Catholic Univ. of Leuven</i>	Session 8C. Acoustic Sensing & Material Characterization <i>Chair: Mario Kupnik</i> <i>Stanford University</i>	Session 8D. Low/Intermediate Frequency Tissue Characterization <i>Chair: James Miller</i> <i>Washington University</i>	Session 8E. Acoustic Sensors <i>Chair: Clemens Ruppel</i> <i>TDK-EPC</i>	Session 8F. Catheters <i>Chair: Jian Yuan</i> <i>Boston Scientific</i>								
Town & Country	8A-1 Ultrasound contrast agent dynamics: ultra high-speed fluorescence imaging of shell morphology and local drug release Erik Guldeman ¹ , Klajun Kozina ² , Marcel Böhm ³ , Nicole Jong ⁴ , Dettlef Lubke ⁵ , Michel Verschuik ⁶ ¹ Physics of Fluids Group, University of Twente, Enschede, Netherlands, ² Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands, ³ Philips Research, Eindhoven, Netherlands, ⁴ Philips Research, Eindhoven, Netherlands, ⁵ Philips Research, Eindhoven, Netherlands	8B-1 Intracardiac Measurements of Elasticity using Acoustic Radiation Force Impulse (ARFI) Imaging: Temporal and Spatial Stability Peter Hollander ¹ , Steven Ha ² , Richard Bouchard ³ , David Binkhwy ⁴ , Patrick Wolf ⁵ , Gregg Trahey ³ ¹ Biomaterial Engineering, Duke University, Durham, NC, USA, ² Ultrasound Business Unit, Siemens Healthcare, Issaquah, WA, USA, ³ Radiology, Duke University, Durham, NC, USA	8C-1 Liquid Level Torsional Waveguide Sensor William Sprang ^{1,2} , Lawrence Lynnworth ^{1,2} , John Veellino ² ¹ Surface Science & Technology, USA, ² University of Maine, USA	8D-1 Ultrasonic assessment of the determinants of human cortical bone elasticity: relative contributions of Haversian porosity and mineralized matrix stiffness Mathilde Monche ^{1,2} , Pierre Nainan ^{1,2} , Quentin Grimal ² , Amens Salié ^{2,3} , Pascal Laugier ^{1,2} ¹ UPMC Univ Paris 06, UMR 7623, Laboratoire d'Ingénierie Paramétrique, Paris, F-75005, France, ² CMS, UMR 7623, Laboratoire d'Ingénierie Paramétrique, Paris, F-75005, France	8E-1 Point-of-Care SH-SAW Biosensor Mikihiro Goto ¹ , Osamu Iijima ¹ , Takashi Kogai ¹ , Hiroshi Yamada ¹ <i>Japan Radio Co., Ltd., Japan</i>	8F-1 Intravascular Ultrasound: technologies and applications Tai-Jia Tu ¹ <i>Boston Scientific, USA</i>								
4:45 pm	8A-2 First-in vivo observations of bubble lodging, vessel occlusion, and droplet vaporization Stanley Samel ¹ , Mario Fabbini ¹ , Joseph Bull ¹ , Brian Fowler ² ¹ Radiology, University of Michigan Medical Center, Ann Arbor, MI, USA, ² Biomedical Research Center, University of Michigan, Ann Arbor, MI, USA	8B-2 In Vivo Measurements of Viscoelasticity in the Swine Heart using Shear-wave Elastography, Tension Ultrasound Vibrometry (SDUV) Matthew Urban ¹ , Cristina Pislam ¹ , Randall Kimick ¹ , James Greenleaf ¹ ¹ Alloy Clinic, College of Medicine, Rochester, MN, USA	8C-2 Estimation of Particle Size Distributions in Solid/Liquid Suspensions using Resonance Band Ultrasound Attenuation Measurements John E. Carlson ^{1,2} ¹ Dept. of Computer Science and Electrical Engineering, Lulea University of Technology, Lulea, Sweden, ² Dept. of Chemistry, University of Bergen, Bergen, Norway	8D-2 Decomposition of Two-Component Pulses in Bone: Phantom Experiment and Simulation Keith West ¹ ¹ Food and Drug Administration, Silver Spring, MD, USA	8E-2 Concentration of Microbubbles with Surface Acoustic Wave Devices Long Meng ¹ , Feiyun Cui ¹ , Qiangfeng Jin ¹ , Dasong Peng ² , Fedi Chen ¹ , Zhanhai Wang ¹ , Huirong Zheng ¹ ¹ Szrhon Institute of Advanced Technology, China, People's Republic of, ² Department of Integrated Electronics, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Republic of, ³ Nanjing Electronic Devices Institute, China, People's Republic of									
Golden West			Royal Palm 4-6			Royal Palm 1-3			California			San Diego		

<p>5:00 pm</p>	<p>8A-3 Enhanced gene transfection in vivo using magnetic localisation of ultrasound contrast agents: Preliminary Results</p> <p>Mona Mohamed¹, Elwanee Abdel-Rahman², Richard Johnson³, Tom Brack⁴, Qingping Wang⁵, Qingping Wang⁶, Dennis Wells⁷, Robert J. Taylor⁸, Qingping Wang⁹, Qingping Wang¹⁰, Qingping Wang¹¹, Qingping Wang¹², Qingping Wang¹³, Qingping Wang¹⁴, Qingping Wang¹⁵, Qingping Wang¹⁶, Qingping Wang¹⁷, Qingping Wang¹⁸, Qingping Wang¹⁹, Qingping Wang²⁰</p> <p>¹Imperial College School of Biomedical Engineering, London, United Kingdom; ²Imperial College School of Biomedical Engineering, London, United Kingdom; ³Imperial College School of Biomedical Engineering, London, United Kingdom; ⁴Imperial College School of Biomedical Engineering, London, United Kingdom; ⁵Imperial College School of Biomedical Engineering, London, United Kingdom; ⁶Imperial College School of Biomedical Engineering, London, United Kingdom; ⁷Imperial College School of Biomedical Engineering, London, United Kingdom; ⁸Imperial College School of Biomedical Engineering, London, United Kingdom; ⁹Imperial College School of Biomedical Engineering, London, United Kingdom; ¹⁰Imperial College School of Biomedical Engineering, London, United Kingdom; ¹¹Imperial College School of Biomedical Engineering, London, United Kingdom; ¹²Imperial College School of Biomedical Engineering, London, United Kingdom; ¹³Imperial College School of Biomedical Engineering, London, United Kingdom; ¹⁴Imperial College School of Biomedical Engineering, London, United Kingdom; ¹⁵Imperial College School of Biomedical Engineering, London, United Kingdom; ¹⁶Imperial College School of Biomedical Engineering, London, United Kingdom; ¹⁷Imperial College School of Biomedical Engineering, London, United Kingdom; ¹⁸Imperial College School of Biomedical Engineering, London, United Kingdom; ¹⁹Imperial College School of Biomedical Engineering, London, United Kingdom; ²⁰Imperial College School of Biomedical Engineering, London, United Kingdom</p>	<p>8B-3 Noninvasive Assessment of Myocardial Anisotropy in Vitro and in Vivo using Supersonic Shear Wave Imaging</p> <p>Wei-Shing Lee¹, Mathias Comak², Christina Flanagan³, Mathias Fink⁴, Mathieu Pernot⁵, Mickael Tanter⁶</p> <p>¹Institut Langevin, ESPCI ParisTech, CNRS, UMR 7587, INSERM, U979, Paris, France; ²Supersonic Imaging, Aix en Provence, France</p>	<p>8C-3 Ray tracing model for Doppler ultrasonic flow measurement</p> <p>Dharshanic Maaldea^{1,2}, Songming Huang³, Gary Odille⁴, Roger Baker⁵</p> <p>¹Imperial College School of Biomedical Engineering, London, United Kingdom; ²Imperial College School of Biomedical Engineering, London, United Kingdom; ³Imperial College School of Biomedical Engineering, London, United Kingdom; ⁴Imperial College School of Biomedical Engineering, London, United Kingdom; ⁵Imperial College School of Biomedical Engineering, London, United Kingdom</p>	<p>8D-3 Two longitudinal wave propagation reflects three dimensional microstructure of cancellous bone.</p> <p>Katsunori Mizoue¹, Hiroaki Saitou¹, Takahito Kikuchi², Mami Matsuda³, Takahiko Omi⁴, Toshiyuki Tsushima⁵</p> <p>¹Doshya University, Japan; ²Horiha, Ltd, Japan</p>	<p>8E-3 Forward-Looking Intracardiac Imaging Catheters Using Fully Integrated CMUT Arrays</p> <p>Amin Shamsi¹, Omar Chahid², Akhmad Ghafoor³, Jing Shao⁴, Douglas S. Stephan⁵, John B. Borer⁶, Peter Chan⁷, Qing Liu⁸, Arun Aravamudan⁹, Chih-Ping Shih¹⁰, Andrew Chien¹¹, Stephen D. Senturia¹², Charles D. Madsen¹³, Stephen A. Socolow¹⁴, Stephen A. Socolow¹⁵, Stephen A. Socolow¹⁶, Stephen A. Socolow¹⁷, Stephen A. Socolow¹⁸, Stephen A. Socolow¹⁹, Stephen A. Socolow²⁰</p> <p>¹University of California, San Diego, La Jolla, CA, USA; ²University of California, San Diego, La Jolla, CA, USA; ³University of California, San Diego, La Jolla, CA, USA; ⁴University of California, San Diego, La Jolla, CA, USA; ⁵University of California, San Diego, La Jolla, CA, USA; ⁶University of California, San Diego, La Jolla, CA, USA; ⁷University of California, San Diego, La Jolla, CA, USA; ⁸University of California, San Diego, La Jolla, CA, USA; ⁹University of California, San Diego, La Jolla, CA, USA; ¹⁰University of California, San Diego, La Jolla, CA, USA; ¹¹University of California, San Diego, La Jolla, CA, USA; ¹²University of California, San Diego, La Jolla, CA, USA; ¹³University of California, San Diego, La Jolla, CA, USA; ¹⁴University of California, San Diego, La Jolla, CA, USA; ¹⁵University of California, San Diego, La Jolla, CA, USA; ¹⁶University of California, San Diego, La Jolla, CA, USA; ¹⁷University of California, San Diego, La Jolla, CA, USA; ¹⁸University of California, San Diego, La Jolla, CA, USA; ¹⁹University of California, San Diego, La Jolla, CA, USA; ²⁰University of California, San Diego, La Jolla, CA, USA</p>	<p>8F-3 Intracranial Dual-mode IVUS Transducer for Image-Guided Brain Therapy</p> <p>Carl Herrick¹, Genald Gunn², Gavin Brice³, Stephen Smith⁴</p> <p>¹Biomedical Engineering, Duke University, Durham, NC, USA; ²Neurosurgery, Duke University Medical Center, Durham, NC, USA</p>
<p>5:15 pm</p>	<p>8A-4 Brain Tumor Growth Inhibition via Microbubble Destruction with Low Duty Cycle Pulsed Ultrasound</p> <p>Caitlin Burke¹, Alexander Kilbano², Jason Sheehan³, Richard Price⁴</p> <p>¹Biomedical Engineering, University of Virginia, Charlottesville, VA, USA; ²Biomedical Engineering, University of Virginia, Charlottesville, VA, USA; ³Biomedical Engineering, University of Virginia, Charlottesville, VA, USA; ⁴Biomedical Engineering, University of Virginia, Charlottesville, VA, USA</p>	<p>8B-4 Validation of Electromechanical Wave Imaging for Mapping of the Regional Cardiac Electrical Activity</p> <p>Noninvasive In Vivo</p> <p>Jean-Pierre¹, Vatchesh Garg², Stanley Ohtsuki³, Naoki Takagawa⁴, Elita Kozalagan⁵</p> <p>¹Biomedical Engineering, Columbia University, USA; ²Biomedical Engineering, Columbia University, USA; ³Biomedical Engineering, Columbia University, USA; ⁴Biomedical Engineering, Columbia University, USA; ⁵Biomedical Engineering, Columbia University, USA</p>	<p>8C-4 Non-linear ultrasonic material characterization using non-collinear mixing</p> <p>Paul Wilson¹, Anthony Crossland², Bruce Drinkwater³, Peter Nagy⁴</p> <p>¹Mechanical Engineering, University of Bristol, Bristol, Avon, United Kingdom; ²University of Bristol, United Kingdom; ³University of Cincinnati, USA</p>	<p>8D-4 Detecting Cervical Microstructure Via Ultrasound and Optical Microscopy</p> <p>Lisa M. Russell¹, Jacelyne Adelman², Lindsey Carlson³, Heather A. Simmons⁴, Carolyn Polak⁵, Kevin Elkerst⁶, Helen Fehock⁷, Timothy J Hall⁸</p> <p>¹Medical Physics, University of Wisconsin - Madison, Wisconsin, Madison, WI, USA; ²Medical Physics, University of Wisconsin - Madison, Wisconsin, Madison, WI, USA; ³Medical Physics, University of Wisconsin - Madison, Wisconsin, Madison, WI, USA; ⁴Medical Physics, University of Wisconsin - Madison, Wisconsin, Madison, WI, USA; ⁵Medical Physics, University of Wisconsin - Madison, Wisconsin, Madison, WI, USA; ⁶Medical Physics, University of Wisconsin - Madison, Wisconsin, Madison, WI, USA; ⁷Medical Physics, University of Wisconsin - Madison, Wisconsin, Madison, WI, USA; ⁸Medical Physics, University of Wisconsin - Madison, Wisconsin, Madison, WI, USA</p>	<p>8E-4 Development of new polyurethaneimide tailored copolymers for SO₂ SAW gas microsenors</p> <p>Ismael BEN YOUSSEF^{1,2}, Frederic SARRY³, Omar ELMAZRIA⁴, Hatim ALLEM⁵, Jalal JIMENEZ-RODRIGUEZ⁶</p> <p>¹Imperial College School of Biomedical Engineering, London, United Kingdom; ²Imperial College School of Biomedical Engineering, London, United Kingdom; ³Imperial College School of Biomedical Engineering, London, United Kingdom; ⁴Imperial College School of Biomedical Engineering, London, United Kingdom; ⁵Imperial College School of Biomedical Engineering, London, United Kingdom; ⁶Imperial College School of Biomedical Engineering, London, United Kingdom</p>	<p>8F-4 Ring Array Transducers for Real-Time 3D Ultrasound Guidance of Prosthetic Heart Valve Deployment</p> <p>Edward Light¹, Victor Lieu², Stephen Smith³</p> <p>¹Biomedical Engineering, Duke University, Durham, NC, USA; ²Neurosurgery, Duke University Medical Center, Durham, NC, USA</p>
<p>5:30 pm</p>	<p>8A-5 Localized Ex-Vivo Microbubble-based Drug Delivery using an Ultrasound Catheter</p> <p>Joseph P. Kilroy¹, Abby V. Paul², Alexander L. Kilbano³, Brian R. Wambolt⁴, John A. Hossack⁵</p> <p>¹Biomedical Engineering, University of Virginia, Charlottesville, VA, USA; ²Biomedical Engineering, University of Virginia, Charlottesville, VA, USA; ³Biomedical Engineering, University of Virginia, Charlottesville, VA, USA; ⁴Biomedical Engineering, University of Virginia, Charlottesville, VA, USA; ⁵Biomedical Engineering, University of Virginia, Charlottesville, VA, USA</p>	<p>8B-5 Visualization in Propagation of Electric Excitation in Human Heart</p> <p>Hiroaki Kama¹</p> <p>¹Electronic Engineering, Tohoku University, Sendai, Miyagi, Japan</p>	<p>8C-5 Probing hysteretic elasticity in weakly nonlinear materials</p> <p>Sylvain Haupert¹, Guillaume Renaud², Jacques Riviere³, Paul Johnson⁴, Maryline Tahani⁵, Pascal Laugier⁶</p> <p>¹LPMC, CNRS, Laboratoire d'Ingénierie Paramétrique, PARIS, France; ²Geophysics Group, Los Alamos National Laboratory, Los Alamos, New Mexico, USA</p>	<p>8D-5 Reducing the effects of specular scatterers on QUS imaging using the generalized spectrum</p> <p>Adam Luchley¹, Gautam Ghoshal², William D. O'Brien, Jr.³, Michael L. Ode⁴</p> <p>¹Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, USA</p>	<p>8E-5 SH-SAW Liquid Sensor for Methanol Concentration Sensing</p> <p>Koji Kama¹, Takashi Kogai², Naoyuki Yoshimura³, Hiroaki Yasuda⁴, Jun Kondoh⁵, Shouko Shibukawa⁶</p> <p>¹Research & Development Center, Japan Radio Co., Ltd., Fujimino-shi, Saitama, Japan; ²Shizuoka University, Hamanatsu-shi, Hamanatsu-shi, Shizuoka, Japan; ³HFRS-P Tech Co., Ltd., Hamanatsu-shi, Shizuoka, Japan</p>	<p>8F-5 High-resolution co-registered intravascular imaging with integrated high-frequency ultra-sound and OCT probe</p> <p>Xiang Li¹, Jacob Yao², Chonghui Yu³, Qiu Zhou⁴, K. Kirk Minamide⁵, Richard Johnson⁶, Stephen D. Senturia⁷, Charles D. Madsen⁸, Stephen A. Socolow⁹, Stephen A. Socolow¹⁰, Stephen A. Socolow¹¹, Stephen A. Socolow¹², Stephen A. Socolow¹³, Stephen A. Socolow¹⁴, Stephen A. Socolow¹⁵, Stephen A. Socolow¹⁶, Stephen A. Socolow¹⁷, Stephen A. Socolow¹⁸, Stephen A. Socolow¹⁹, Stephen A. Socolow²⁰</p> <p>¹University of California, Irvine, Irvine, CA, USA; ²University of California, Irvine, Irvine, CA, USA; ³University of California, Irvine, Irvine, CA, USA; ⁴University of California, Irvine, Irvine, CA, USA; ⁵University of California, Irvine, Irvine, CA, USA; ⁶University of California, Irvine, Irvine, CA, USA; ⁷University of California, Irvine, Irvine, CA, USA; ⁸University of California, Irvine, Irvine, CA, USA; ⁹University of California, Irvine, Irvine, CA, USA; ¹⁰University of California, Irvine, Irvine, CA, USA; ¹¹University of California, Irvine, Irvine, CA, USA; ¹²University of California, Irvine, Irvine, CA, USA; ¹³University of California, Irvine, Irvine, CA, USA; ¹⁴University of California, Irvine, Irvine, CA, USA; ¹⁵University of California, Irvine, Irvine, CA, USA; ¹⁶University of California, Irvine, Irvine, CA, USA; ¹⁷University of California, Irvine, Irvine, CA, USA; ¹⁸University of California, Irvine, Irvine, CA, USA; ¹⁹University of California, Irvine, Irvine, CA, USA; ²⁰University of California, Irvine, Irvine, CA, USA</p>
<p>5:45 pm</p>	<p>8A-6 Vascular damage by ultrasound-activated microbubbles induced vessel invagination</p> <p>Hong Chen¹, Andrew A. Beyman², Andrew P. Evans³, Wayne Kessler⁴, Michael R. Bailey⁵, Thomas J. Leary⁶, Richard Johnson⁷, Stephen D. Senturia⁸, Charles D. Madsen⁹, Stephen A. Socolow¹⁰, Stephen A. Socolow¹¹, Stephen A. Socolow¹², Stephen A. Socolow¹³, Stephen A. Socolow¹⁴, Stephen A. Socolow¹⁵, Stephen A. Socolow¹⁶, Stephen A. Socolow¹⁷, Stephen A. Socolow¹⁸, Stephen A. Socolow¹⁹, Stephen A. Socolow²⁰</p> <p>¹Department of Biomedical Engineering, Duke University, Durham, NC, USA; ²Department of Biomedical Engineering, Duke University, Durham, NC, USA; ³Department of Biomedical Engineering, Duke University, Durham, NC, USA; ⁴Department of Biomedical Engineering, Duke University, Durham, NC, USA; ⁵Department of Biomedical Engineering, Duke University, Durham, NC, USA; ⁶Department of Biomedical Engineering, Duke University, Durham, NC, USA; ⁷Department of Biomedical Engineering, Duke University, Durham, NC, USA; ⁸Department of Biomedical Engineering, Duke University, Durham, NC, USA; ⁹Department of Biomedical Engineering, Duke University, Durham, NC, USA; ¹⁰Department of Biomedical Engineering, Duke University, Durham, NC, USA; ¹¹Department of Biomedical Engineering, Duke University, Durham, NC, USA; ¹²Department of Biomedical Engineering, Duke University, Durham, NC, USA; ¹³Department of Biomedical Engineering, Duke University, Durham, NC, USA; ¹⁴Department of Biomedical Engineering, Duke University, Durham, NC, USA; ¹⁵Department of Biomedical Engineering, Duke University, Durham, NC, USA; ¹⁶Department of Biomedical Engineering, Duke University, Durham, NC, USA; ¹⁷Department of Biomedical Engineering, Duke University, Durham, NC, USA; ¹⁸Department of Biomedical Engineering, Duke University, Durham, NC, USA; ¹⁹Department of Biomedical Engineering, Duke University, Durham, NC, USA; ²⁰Department of Biomedical Engineering, Duke University, Durham, NC, USA</p>	<p>8B-6 Assessment of the effects of scatterer size distributions on effective attenuation coefficients</p> <p>Roberto J. Lavaruelo¹, Michel L. Ode²</p> <p>¹Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, USA</p>	<p>8C-6 An improved mode-tracing algorithm to compute dispersion curves of acoustic waveguides</p> <p>Fabian Baus¹, Jens Rautenberg², Bernd Henning³</p> <p>¹Measurement Engineering Group, University of Paderborn, Paderborn, Germany</p>	<p>8D-6 Parametric pressure-volume analysis and acoustic radiation force imaging of left ventricular function</p> <p>Stephan Rud¹, David Bradway², Richard Bouchard³, Peter Hübner⁴, Patrick Wolf⁵, Gregg Haskins⁶, Isaacqiu, HA, USA; ⁷Department of Biomedical Engineering, Duke University, Durham, NC, USA; ⁸Department of Radiology, Duke University, Durham, NC, USA</p>	<p>8F-6 SAW Temperature Sensor System for Smart Electric Grid</p> <p>Wen Liu¹, Bing Tan², Ywen Gong³</p> <p>¹FiberHome Technologies Inc, Wuhan, Hubei, China; ²People's Republic of, WUFO, Hubei, China; ³University of Science and Technology, Wuhan, Hubei, China; ⁴People's Republic of</p>	

WEDNESDAY ORAL

WED. POSTER

9:30 am - 11:00 am **Poster --- Wednesday, October 13, 2010** **Grand Hall**

**Session P3-A1.
Acoustic Materials and
Propagation**

*Chair: Fabien Dumont
Triquint Semiconductor*

P3-A1-1 A Diamond Substrate Suitable for 5GHz SAW Device Application

Satoshi Fujita¹, Chuanyun Jiao²
¹Chiba University, ²Chiba University
Chiba University, Chiba, Chiba, Japan
Hwasil Technologies Canada Co., LTD., Canada

P3-A1-2 A Universal Technique for Analysis of Acoustic Waves in Periodic Grating Sandwiched Structures and Its Application to Different Types of Waves

Natalya Nannenko¹
¹Moscow Steel and Alloys Institute, Russian Federation

P3-A1-3 Assessment of solidly mounted resonators with wide-band asymmetric acoustic reflectors

Jimeas Obares¹, Enrique Wegmann¹, Maria Climent¹, Enrique Bover¹, Jesus Sanguador
¹ESI Telecomunicación, Universidad Politécnica de Madrid, Madrid, Spain

P3-A1-4 Surface Acoustic Wave Propagation Properties in ANI/3C-SiGeSi Composite Structure

Chih-Ming Lin¹, Yung-Yu Chen², Valley Felbetsger³, Ting-Tu Yen¹, Wei-Cheng Lien¹, Debbie Stensky¹, Albert B'sano¹
¹Berkeley Sensor and Actuator Center, University of California, Berkeley, CA, USA, ²Mechanical Engineering, Tamag University, Taipei, Taiwan, ³QEMGroup, Gilbert, AZ, USA

**Session P3-M1.
Contrast Agents II**

*Chair: Nobuki Kudo
Hokkaido University*

P3-M1-1 Method for the estimation and compensation of attenuating tissue layers by the acoustic observation of microbubbles for sonoporation therapy

Karin Hentsel¹, Georg Schmitz²
¹Institute of Medical Engineering, Ruhr-Universität, Bochum, Germany

P3-M1-2 Experimental Investigation of the Spectral Characteristics of Linear and Nonlinear Frequency Modulated Signals

Sevan Harput¹, Muhammad Arif¹, Steven Freear¹
¹School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom

P3-M1-3 Adaptive matched filters for Contrast Imaging

Sébastien Meignot¹, Iulian Voicu¹, Jean-Marie Ciraoui¹
¹Centre François Bédaride de Tours, Inserm U930, CNRS ERL 3106, Tours, France, France

P3-M1-4 Subharmonic spectroscopy of ultrasound contrast agents

Telli Fawz¹, Margret Doerfler¹, Michel Vershaes², Nito de Jong²
¹Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands, ²Physics of Fluids, University of Twente, Enschede, Netherlands

**Session P3-M2.
Beam Forming I**

*Chair: Jian-Yu Lu
Univ. of Toledo*

P3-M2-1 3D FEA model for quantifying bound/free microbubble behavior: displacement, stress, echoes and resonance frequencies.

Abhay Patel¹, Paul Reynolds², John Hossack¹
¹Biomedical Engineering, University of Virginia, Charlottesville, VA, USA, ²Wellington Associates, Mountain View, CA, USA

P3-M2-5 Estimation of Sound Velocity based on Evaluation of Edge Conspicuity

Haijin Seo¹, Yuhwa Lee², Jin Ho Chang³, Thi-Kyong Song²
¹Electronic Engineering, Sogang University, Seoul, Korea, Republic of, ²Sogang Institute of Advanced Technology, Sogang University, Seoul, Korea, Republic of

P3-M2-6 Fourier domain beamforming for Transverse-Oscillations

Hervé Lebigot¹
¹Université Lyon, CHEARTE-LIRAOY, CNRS UMR5220; Inserm U1007, INSU-Lyon1, Université Lyon 1, France

**Session P3-M3.
Bio-effects**

*Chair: Vesna Zderic
Univ. of Washington*

P3-M3-1 Can therapeutic ultrasound be used as a reversible male contraceptive?

Jimm Turner¹, Paul Dwyer², Ryan Cooper³, T. Sam Gregory⁴, Michael Bricker⁵, ¹University of North Carolina, ²University of North Carolina, ³University of North Carolina, ⁴University of North Carolina, ⁵University of North Carolina
University of North Carolina, Chapel Hill, NC, USA, ²University of North Carolina, Chapel Hill, NC, USA, ³University of North Carolina, Chapel Hill, NC, USA, ⁴University of North Carolina, Chapel Hill, NC, USA, ⁵University of North Carolina, Chapel Hill, NC, USA

P3-M3-6 Ultrasound/microbubble mediated drug delivery to the microbubble radius and ultrasound frequency.

Lisney Phillips¹, Alexander Kilbanov¹, Brian Wamhoff¹, John Hossack¹
¹Biomedical Engineering, University of Virginia, USA, ²University of Virginia, USA, ³R.R. Cardiovascular Research Center, University of Virginia, USA

**Session P3-M4.
Applications of New
Ultrasound Devices**

*Chair: Hans Bosch
Erasmus Medical Centre*

P3-M4-1 In-vivo and In-vitro Verification of Optimal Transmit Phasing for Harmonic Background Suppression with Bipolar Square Wave Pulsar

Che-Chou Shen¹, Yun-Chan Yang¹
¹Department of Electrical Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan

P3-M4-2 Measurement of the bladder volume with a limited number of ultrasonic transducers

Reiko Tanaka¹, Takashi Abe²
¹Electrical and Electronic Engineering Faculty of Engineering, Nagasaki University, Nagasaki, Nagasaki, Japan, ²Electrical and Electronic Engineering Faculty of Engineering, Nagasaki University, Nagasaki, Nagasaki, Japan

<p>P3-A1-7 Modal Properties of Isolated Layer Longitudinal Leaky Acoustic Wave</p> <p>Sergei Zhigon¹, Alexandre Shvessov¹, Konstantin Blatnichayev², Moscow Power Engineering Institute, Russian Federation, RFMD, USA</p>	<p>P3-M1-3 Measurement of a Single Microcapsule Vibration in an Acoustic Standing Wave Field</p> <p>Himono Kotera¹, Naosaku Kitazawa¹, Kenji Yoshida¹, Daizuke Koyama¹, Kenmao Nakamura¹, Yoshiaki Watanabe², Faculty of Engineering, Doshisha University, Kyotanabe, Kyoto, Japan, Faculty of Life and Medical Sciences, Doshisha University, Kyotanabe, Kyoto, Japan, Precision and Intelligence Laboratory, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan</p>	<p>P3-M2-1 Improved resolution for ultrasound Fourier imaging.</p> <p>Pierré Gaehp¹, Rémy Blanchard^{1,2}, Hervé Liebigart^{1,3}, Olivier Basse¹, Philippe Dabochnard², GRETTIS-IRAN - CNRS UMR 5210 - INSERM U810, France, INS-Lyon, France, Université CB Lyon 1, France</p>	<p>P3-M2-2 Ultrasound Generated Mechanical Induction of Mesenchymal Stem Cells</p> <p>Jia-Jing Ruan¹, Yak-Nam Wang¹, Stuart Mitchell¹, Lawrence Cunn¹, Center for Industrial and Medical Ultrasound, University of Washington, Seattle, WA, USA</p>	<p>P3-M4-3 Local Compression in Automated Breast Ultrasound in the Mammographic Geometry</p> <p>Paul L. Conrad¹, Bryan Wang², Gerald L. Caporaso², Michael M. Goodwin², Chris Labadie², James Pinsky², Gensheng Srirangam², J. Brian Fowler², Paul J. Holland², Robert M. Waymouth², University of Michigan, Ann Arbor, MI, USA, Mechanical and Electrical Engineering, Univ. of Michigan, Ann Arbor, MI, USA, Biomedical Engineering, Univ. of Michigan, Ann Arbor, MI, USA, Radiology, Univ. of Michigan, Ann Arbor, MI, USA, Radiation Medicine, University of Kentucky Medical Center, Lexington, KY, USA, Radiology and BME, Univ. of Michigan, Ann Arbor, MI, USA, Mechanical Engineering, Univ. of Michigan, Ann Arbor, MI, USA</p>
<p>P3-A1-5 41 Degree Lithium Niobate, a Study of Harmonics</p> <p>Fred Hücknerth^{1,2}, Optical Sciences, University of Arizona, Phoenix, AZ, USA, University of Central Florida, USA</p>	<p>P3-M1-4 The fate of resonant and off-resonant microbubble signals in response to consecutive imaging pulses.</p> <p>David Thomas¹, Puding Leony¹, Maitread Butler¹, Tom Andersen¹, Silvio Polchiasa¹, William Norman McGlacken¹, Department of Medical Physics, University of Edinburgh, Edinburgh, United Kingdom, Department of Mechanical Engineering, University of Thessaly, Volos, Greece</p>	<p>P3-M2-2 Simulation of high quality ultrasound imaging</p> <p>Martin Christian Hemmen^{1,2}, Svetoslav Ivanov Nikolov¹, Jürgen Arendt Jensen¹, Center for Fast Ultrasound Imaging, Dept. of Elec. Eng. Bldg. 349, Niels Bohr Institute, Copenhagen, Denmark, BK Medical, Herlev, Denmark</p>	<p>P3-M3-3 Effect of high glucose and low intensity pulsed ultrasound on osteoblasts</p> <p>Shou-Hsin Chen¹, Shyh-Han Wang¹, Wenq-Dyng Li¹, Chung-Yuan Christian University, Taiwan, National Cheng Kung University, Taiwan</p>	<p>P3-M4-4 Fundamental Limits and Simulations on Time Difference of Arrival Source Localization Using Ultrasound Signals</p> <p>Jay Mung¹, Jesse Yea², Biomedical Engineering, University of Southern California, Los Angeles, CA, USA, Mechanical Engineering, University of Southern California, USA</p>
<p>P3-A1-6 Optimization of thin AlN sputtered films for X-band BAW resonators</p> <p>Enrique Ibarra¹, Volodymyr Felnerberger², Maria Clausen¹, Jose Capilla¹, Jimena Olivares¹, ETSI Telecomunicación, Universidad Politécnica de Madrid, Madrid, Spain, OEGM Group Inc., USA</p>	<p>P3-M1-5 An imaging therapeutic molecular probe for ultrasound and photoacoustic dual modality system</p> <p>Al-Ho Liao¹, Yu-Hsun Wang¹, Yu-Ting Wang¹, Chaurng-Ren Wang¹, Pai-Chi Li¹, National Taiwan University, Taiwan, National Chung Cheng University, Taiwan</p>	<p>P3-M2-3 A Method for Synthetic Aperture Compounding</p> <p>Jens Munk Hansen¹, Jürgen Arendt Jensen¹, Center for Fast Ultrasound Imaging, Dept. of Elec. Eng., Bldg. 349, Technical University of Denmark, DK-2800 Kgs. Lyngby, Denmark</p>	<p>P3-M3-4 Cytoplasmic Signaling Involved in Sonoporation-Induced Apoptosis and Mitosis Repression of Promyelocytic Leukemia Cells</p> <p>Wenjing Zhang¹, Wai-Hung Siu¹, Jennifer M. F. Wan², Alfred C. H. Yu¹, Medical Engineering Program, The University of Hong Kong, Hong Kong, School of Biological Sciences, The University of Hong Kong, Hong Kong</p>	<p>P3-M4-5 An ultrasonic device to assess the biomechanical properties of the bone implant interface</p> <p>Vincent MATHIEU¹, Emi ANAGNOSTOU¹, Emmanuel SOFFER¹, Guillaume HAIAI², IZOMA UMR 7052, CNRS, PARIS, France, Metropolitan</p>
<p>P3-A1-7 Deposition of Highly Oriented Ta₂O₅ Piezoelectric Thin Films on Silicon for Fabricating Film Bulk Acoustic Resonator Structure by RF Magnetron Sputtering</p> <p>Shoji Kubo¹, Akimori Tsuchiya¹, Takeshi Mitsui¹, Yasuhiko Nakagawa¹, Hitachi Graduate School of Medicine and Engineering, University of Yamaguchi, Yofu, Yamaguchi, Japan</p>	<p>P3-M1-6 Influence of shell properties on rupture of polymeric contrast agents in response to overpressure</p> <p>Purag V. Chitambar¹, Paul Lee¹, Jonathan Mamou¹, Jeffrey A. Ketterling¹, F. L. Lizzi Center for Biomedical Engineering, Riverside Research Institute, New York, NY, USA</p>	<p>P3-M2-4 Cyclic Resolution and Task Performance in Beamforming</p> <p>Craig Abbas^{1,2}, Nghia Nguyen¹, Michael Insana¹, UC Santa Barbara, USA, Biomedical Engineering, UC Davis, USA, ECE Department and Beckman Institute, USA, Biomechanical Engineering Department, University of Illinois at Urbana-Champaign, USA</p>	<p>P3-M3-5 Inflammatory response to focused ultrasound (FUS) exposures evaluated with dual labeled macrophages using fluorescence imaging and cellular MRI</p> <p>Hilary Hancock¹, Dana D. Dean¹, Bobbie K. Lewis¹, Eric Gold¹, Victor Finkbeiner¹, Joseph A. Frank¹, School of Imaging and Imaging Sciences, National Institutes of Health, USA</p>	<p>P3-M4-6 Staircase-wave driver circuit to drive therapeutic array transducer</p> <p>Kosuke Muro¹, Jumpei Okada¹, Shin Yoshizawa¹, Shin-ichiro Umemura¹, Tohoku University, Japan</p>

WED. POSTER

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Grand Hall

Poster --- Wednesday, October 13, 2010

9:30 am - 11:00 am

<p>P3-M7-4 A 40 MHz High Frequency Ultrasound and Elastography Needle for Assisting Epidural Access in Pig Study Chin-Shiang Liu¹, Huihan Kerry Chang¹, Chen Kun Tang², Raimin Chen³, Qibo Zhou⁴, K. Kai Shung⁵ ¹National Tsing-Tung University, ²Tongji Hospital, ³Taiwan, ⁴Department of the technology, Taipei Veterans General Hospital, ⁵Taiwan, ⁶Department of Biomedical Engineering, University of Southern California, NIH Resource Center on Medical Ultrasonic Transducer Technology, Los Angeles, CA, USA</p>	<p>P3-M7-6 Acoustic Sensor Array for Ultrasonic Imaging in Air for Object Detection and Recognition Marcos Turqueti¹, Jader Saniie², Erdal Onuklu³, Guilherme Cardoso³ ¹Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, Illinois, USA, ²Creative Electron, San Marcos, California, USA</p>	<p>Session P3-P2, Phononic Crystal Devices II <i>Chair: Bernard Bonello</i> <i>Institut de Nanosciences de Paris, CNRS</i></p>	<p>P3-T1-2 A cMUT Sensor for Applications as a Wide-Band Acoustic Receiver in the MHz Range Giosuè Callano¹, Alessandro Stuart Savoia¹, Cristina Longo¹, Alessandro Caroni¹, Samantha Rothmann¹, Antonio Iula¹, Massimo Pappalardo¹ ¹Dept. of Electronic Engineering, University Roma Tre, Roma, Italy, ²Espe Nazionale d'Ingegneria del Val de Lanzo, Biella, France, ³D.I.F.A., University of Basilicata, Potenza, Italy</p>
<p>P3-M7-8 The Development of Linear Power Amplifier for High Frequency Ultrasound Coded Excitation Imaging Jianyong Fan¹, Changhong Hu¹, Kirk Shung² ¹Biomedical Engineering, University of Southern California, USA</p>	<p>P3-M7-7 A PLL-Based Phased Array Method to Minimise Phase Quantisation Errors and Reduce Phasing-Lobes Peter Smith¹, Benjamin Baiton¹, David Cunniff¹, Steven Fiecar¹ ¹Ultrasound School of Electrical and Electronic Engineering, University of Leeds, Leeds, West Yorkshire, United Kingdom</p>	<p>P3-P2-1 Zero group velocity of Lamb waves near band gaps in phononic crystals Juliette Pierre¹, Laurent Belliard¹, Olga Boyko¹, Bernard Haudou¹, Institut des NanoSciences de Paris, Paris 6 University, Paris, France, ²Institut des NanoSciences de Paris, CNRS and Paris 6 University, Paris, France</p>	<p>P3-T1-3 A Strategy to predict and reduce baffle effects in linear array of cMUTs Audrea Bonalme¹, Dominique Ceroni¹, Nicolas Seneignol¹, Amil Mestral¹, Franck Naudon¹ ¹Université de Poitiers, INSERM U930, CNRS ERL3106, TOURS, France</p>
<p>Session P3-N1, Acoustic Imaging & Microscopy <i>Chair: Pierre Khuri-Yakub</i> <i>Stanford University</i></p>	<p>Session P3-P1, Wave Propagation and Field Characterization <i>Chair: Vincent Laude</i> <i>Institut FEMTO-ST, CNRS</i></p>	<p>P3-P2-2 Material Loss Effect on the Dispersion of Bloch Waves in Phononic Crystals Rayssa Moiseyenko¹, Vincent Laude¹ ¹Institut FEMTO-ST, Centre National de la Recherche Scientifique, Besançon, Franche-Comté, France</p>	<p>P3-T1-4 Design and Fabrication of a cMUT Probe for Ultrasound Imaging of Fingerprints Alessandro Stuart Savoia¹, Alessandro Caroni¹, Cristina Longo¹, Giosuè Callano¹, Riccardo Carotenuto¹, Antonio Iula¹, Massimo Pappalardo¹ ¹Dipartimento di Ingegneria Elettronica, Università degli Studi Roma Tre, Roma, Italy, ²Dipartimento I.M.E.T., Università degli Studi "Mediterranea", Reggio Calabria, Italy, ³D.I.F.A., Università degli Studi della Basilicata, Potenza, Italy</p>
<p>P3-M7-1 The improvement of the reliability in imaging using the Bayesian approach Kwok-Shun Ho¹, Gareth Pearce¹, Ming-Hui Li¹, Gordon Hayward¹, Mohamed Thaqi Sultan² ¹University of Strathclyde, United Kingdom, ²University of Sheffield, United Kingdom</p>	<p>P3-P1-1 Experimental Verification and Characterization of Sub-harmonic Rotating Wave on an Ultrasonic Micromotor Steven The¹, Manoj Pandey¹, Amit Lal¹ ¹School of Electrical and Computer Engineering, Cornell University, USA</p>	<p>P3-P2-3 Dynamic visualization of surface vibrations in phononic crystals defects Mathieu Renier¹, Olga Boyko¹, Laurent Belliard¹, Juliette Pierre¹, Bernard Baudou¹ ¹Institut des Nano Sciences de Paris (CNRS) 75885, France, ²Institut des Nano Sciences de Paris (CNRS) 75388, France</p>	<p>P3-T1-5 CMUTs with Improved Electrical Safety & Minimal Dielectric Surface Charging Peiyu Zhang¹, Glen Fitzpatrick¹, Walid Mousa¹, Roger Zemp¹ ¹Electrical and Computer Engineering, University of Alberta, Edmonton, Canada, ²Electrical and Computer Engineering, University of Alberta, Edmonton, Alberta, Canada</p>

<p>P3-N1-2 Deconvolution of ultrasonic signals in time domain Norbert Gasi¹, Elfried Kuehnisch² ¹TU Dresden, Germany</p>	<p>P3-P1-2 Ultrasonic Wave Propagation in Piezoelectric Semiconductor Plates in the Presence of an Initial Electric Field Bernard Collet¹, Bernard Collet² ¹Institut Jean Le Rond d'Alembert, CNRS UMR 7190, 765, case 162, Université Pierre et Marie Curie, Paris, Ile. France, ²Institut Jean Le Rond d'Alembert, CNRS UMR 7190, 765, case 162, Université Pierre et Marie Curie, Paris, Ile de France, France</p>	<p>P3-P2-4 Effective parameter retrieval of phononic crystal slabs Charles Crebain¹, Anne-Christine Hudry-Hemion¹, Jérôme Vasseur³, Bertrand Dubé¹ ¹EMN, Lille, France</p>	<p>P3-P1-3 Nonlinear shift in Medium-Fresnel-number focused acoustic beams Carmena Franco¹, Makov Yuri², Sanchez-Mercillo Victor¹, Adrián Silva¹ ¹ Física Aplicada, Universidad Politécnica de Valencia - IDIC, Camino de Vera, 46100 Burjassot, Valencia, Spain ² Faculty of Physics, Moscow State University, Russian Federation</p>	<p>P3-M1-3 Adaptive beamforming for ultrasonic phased array focusing through layered structures Kiyonobu Shapiro¹, Jeffrey Sudler², Eugene Malyarenko¹, Fedar Sverin¹, Enrico Boni¹, Alessandro Ramali¹, Piero Terenzi¹, Roman G. Muev ¹Ontario, Canada, ²Institute for Diagnostic Imaging Research University of Windsor, Windsor, Ontario, Canada, ³Tescomet Corp., Birmingham, MI, USA, ⁴Microelectronic-Systems Design Lab, Università di Firenze, Italy</p>
<p>P3-N1-4 Evaluation of Flow Estimation Methods for 3D color Doppler Imaging Jeeok Yi¹, Yang Mo, Yoo^{1,2} ¹Department of Electronic Engineering, Sogang University, Seoul, Korea, Republic of, ²Interdisciplinary Program of Integrated Biotechnology, Sogang University, Seoul, Korea, Republic of</p>	<p>P3-P1-4 Rapid Measurement of Ultrasound Transducer Fields in Water Employing Compressive Sensing Martin Schiffrer¹, Georg Schmitz¹ ¹Institute of Medical Engineering, Ruhr-University Bochum, Bochum, Germany</p>	<p>P3-P2-5 Acoustic Mirage in Two-Dimensional Gradient-Index Phononic Crystals Sz-Chin Lin¹, Tony Hwang¹ ¹Engineering Science and Mechanics, Pennsylvania State University, University Park, PA, USA</p>	<p>P3-P1-1 Analytical Design of Circular CMUT Cells in Immersion Dina Reda E-Hadad¹, Emad Hegazi¹, Hani Ragai¹ ¹Integrated Circuit Laboratory, Ain Shams University, Cairo, Egypt</p>	<p>P3-M1-5 Development of a Digital 35MHz, 64-channel Phased Ultrasound Array Imaging System for NDT Applications Changhong Hu¹, Zheng Tan¹, Lequan Zhang¹, Xiaoming Jiang¹, Kevin Snook¹, Liang Yu¹, Wesley S' Hackenberg¹, Ruben Liu¹, Xuecong Geng¹, Kirk K. Shung² ¹Department of Mechanical Engineering, Southern California, Los Angeles, CA, USA, ²North Carolina State University, USA, ³TBS Technologies, Inc., USA, ⁴Blazek, Inc., USA</p>
<p>Session P3-T1. MUT Chair: Arne Ronnekleiv <i>Norwegian University of Science and Technology</i></p>				

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3:00 pm - 4:30 pm

Poster --- Wednesday, October 13, 2010

Grand Hall

<p>P4-A1-1 Complex loadings on thickness shear mode resonators Raimund Breenig¹, Hagen Schmidt¹, Chen Gahr¹, Manfred Wehner¹ ¹IFW Dresden, Dresden, Germany, ²Imoxtek, Dipoldswalde, Germany</p>	<p>P4-A1-9 Efficient Derivation and Evaluation of Finite Element Models for Two-Dimensional Micro-acoustic Wave Devices Glenn Matthews¹, Alireza Baghat-Wadi¹ ¹RMIT University, Australia</p>	<p>Session P4-M2. Contrast Agents III Chair: Piero Tortoli Univ. of Firenze</p>	<p>P4-M2-8 Dual-frequency excitation enhances targeted delivery of ultrasound microbubbles Ting-Yu Huang¹, Chih-Kuang Yeh¹ ¹Biomedical Engineering and Environmental Science, National Tsing Hua University, Hsinchu, Taiwan</p>	<p>P4-M3-5 Design of a Programmable Micro-Ultrasound Research Platform Harry C. T. Chiu¹, Lequan Zhang¹, Daves K. H. Cheung¹, Changling He¹, K. Kirk Shang¹, Alfred C. H. Yu¹ ¹Medical Engineering Program, The University of Hong Kong, Hong Kong, ²NHI Ultrasonic Transducer Resource Center, The University of Southern California, USA</p>
<p>P4-A1-2 Discrete Analysis of Regular Systems Boris Svobitnikov¹ ¹Nizhny Novgorod State University, Russian Federation</p>	<p>Session P4-M1. Beam Forming II Chair: Jørgen Jensen Technical Univ. of Denmark</p>	<p>P4-M2-1 Pressure-dependent resonance frequency for lipid-coated microbubbles at low acoustic pressures Yunjun Gong¹, Manic Chhab^{2,3}, Truyen Fort³ ¹Acoustic Research Center, Boston, MA, USA, ²Center for Nanoscience and Nanotechnology, Boston University, Boston, MA, USA, ³Biomedical Engineering, Boston University, Boston, MA, USA</p>	<p>P4-M2-9 One-Step Covalently Conjugated Aptamer Microbubbles for Ultrasound Targeted Imaging Chung-Hsin Wang¹, Chih-Kuang Yeh¹ ¹Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan</p>	<p>P4-M3-6 128 Element Ultrasound Array for Transcranial Imaging F. Can Mezal^{1,2}, Gregory Clement^{1,2} ¹Harvard Medical School, Boston, MA, USA, ²Bright and Women's Hospital, Boston, MA, USA</p>
<p>P4-A1-3 Symmetry Properties of Acoustic Fields in Piezoelectrics and their Implementation in FEM Simulations of the SHW Propagation Alexandre Dainaki¹, Manfred Wehner^{2,3}, Hagen Schmidt², Institute of Crystallography RAS, Moscow, Russian Federation, ¹IFW Dresden, Dresden, Germany, ²Imoxtek, Dipoldswalde, Germany</p>	<p>P4-M1-1 Ultrasound Beamforming with Compressed Data Yen-Feng Li¹, Pai-Chi Li¹ ¹National Taiwan University, Taiwan</p>	<p>P4-M2-2 Coherence-based contrast-ultrasound diffusion imaging for prostate cancer detection Maarten Kwana^{1,2}, Hessel Wilksin¹, Massimo Michi¹ ¹Eindhoven University of Technology, Eindhoven, Netherlands, ²Academic Medical Center, Amsterdam, Netherlands</p>	<p>P4-M2-10 Nanoparticle Delivery to Ischemic Skeletal Muscle and Brain Tumors with an Ultrasound-Activated Agent Caitlin Burke¹, Yu-Han Hsiang¹, Alexander Kilbanov¹, Richard Price¹ ¹Biomedical Engineering, University of Virginia, Charlottesville, VA, USA, ²Biomedical Engineering, University of Virginia, Charlottesville, VA, USA, ³Cardiovascular Division, University of Virginia, Charlottesville, VA, USA</p>	<p>P4-M3-7 Comparison of Different Schemes of Synthetic Transmit Aperture Using an Ultrasound Advanced Open Platform (U-LOP) Marcin Lewandowski¹, Ziemowit Klimowicz¹, Michal Sklowski¹, Piotr Karwat¹, Andrzej Nowicki¹, Luca Bassi¹, Piero Tortoli¹ ¹Institute of Fundamental Technological Research, Warsaw, Poland, ²Universita degli Studi di Firenze, Italy</p>
<p>P4-A1-4 Nearly Perfectly Matched Layer (NPM-L) absorbing boundary condition for elastic wave propagation in piezoelectric solids Yi-Feng Li¹, Guo-feng Li¹ ¹Harbin University of Technology, Harbin, China, ²People's Republic of China, ³Harbin University of Technology, Harbin, China, ⁴Harbin University of Technology, Harbin, China, ⁵Harbin University of Technology, Harbin, China, ⁶Harbin University of Technology, Harbin, China</p>	<p>P4-M1-2 Improved Plane-Wave High Frame Rate Imaging Using Retrospective Transmit Focusing and Filter-derived Coherence-index Weighting Chang-Lin Hu^{1,2}, Gong-Shu Jang³, Yu-Han Wang³, Pai-Chi Li^{1,4}, Meng-Yun Chen^{1,4} ¹Department of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan, ²Industrial Technology Research Institute, Hsinchu, Taiwan, ³Guohua Institute of Biomedical Electronics and Information, Hsinchu, Taiwan, ⁴Department of Electrical Engineering, National Tsing Hua University, Taipei, Taiwan</p>	<p>P4-M2-3 Effect of weak CW ultrasound on acoustic responses of microbubbles generated from phase change nano droplet Ken-ichi Kawabata¹, Rei Asami¹, Takashi Azuma¹, Hirotaki Kikawa¹, Shin-ichiro Umemoto¹ ¹Research Laboratory of Resources, Hitachi, Ltd., Kokubunji, Tokyo, Japan, ²Tokai University, Saitaki, Japan</p>	<p>Session P4-M3. Novel Imaging Systems and Devices Chair: Andrzej Nowicki Polish Academy of Sciences</p>	<p>P4-M3-8 A Real-time Synthetic Aperture Beamformer for Medical Ultrasound Imaging Jong-ho Park¹, Jin Ho Chung², Yangsoo Yoo^{1,3}, Tai-Kyong Song¹ ¹Interdisciplinary Program of Integrated Biotechnology, Sogang University, Seoul, Korea, ²Department of Electrical Engineering, Seoul National University, Seoul, Korea, ³Department of Electronic Engineering, Sogang University, Seoul, Korea, Republic of</p>

<p>P4-M1-5 Pressure Sensitivity Cuts for Surface Transverse Wave in Quartz Tao Han¹, Weibiao Wang², Xiaojun Ji³ ¹Sungshai Jiaotong University, China, ²People's Republic of China, ³Yixun Shoulder Electronics Co.Ltd, China, ⁴People's Republic of</p>	<p>P4-M1-3 A method for K-space analysis of Synthetic Transmit Beam motion artifacts Tore Bjastad¹, Torbjorn Heggen¹, Anders Simons², Kjell Knutsen³, Geri Haugen⁴, Hans Torp⁵ ¹Norwegian University of Science and Technology, Trondheim, Norway, ²GE Vingmed Ultrasound, Oslo, Norway</p>	<p>P4-M2-4 Phase Shift Variance Imaging for Contrast Agent Detection Monika Szpaniak¹, Martin P. Mielckin¹, Zhe Liu², Stanley Fokong³, Fabian Kressling³, Jessica Gilgert³, Georg Schmitz⁴ ¹Ruhr-University Bochum, Bochum, Germany, ²Experimental Molecular Imaging, RWTH Aachen, Aachen, Germany</p>	<p>P4-M3-1 Development of Integrated Pre-amplifier for High Frequency Ultrasonic Transducers Hojung Choi¹, Xiang Li², Sica-Ting Lau², Changhong Hu², Qih Zhoo², K. Kirk Shang² ¹NIH Resource Center for Medical Ultrasonic Transducer Technology and Electrical Engineering, University of Southern California, Los Angeles, California, USA, ²NIH Resource Center for Medical Ultrasonic Transducer Technology and Electrical Engineering, University of Southern California, Los Angeles, California, USA</p>	<p>Session P4-M4. Signal Processing I Chair: Tom Thomas Boston Scientific</p>
<p>P4-M1-6 3D Mass-loading Effect of Metallic Electrodes with Ultra-high Aspect Ratios in SAW Devices Hardik Vagh¹, Alireza Baghai-Wadji² ¹School of Electrical and Computer Engineering, RMIT University, Melbourne, Victoria, Australia, ²RMIT University, Melbourne, Victoria, Australia</p>	<p>P4-M1-4 Real-Time GPU-Based Software Beamformer Designed for Advanced Imaging Methods Research Billy Y. S. Yip¹, Ivan K. H. Tsang¹, Alfred C. H. Yu¹ ¹Medical Engineering Program, The University of Hong Kong, Hong Kong</p>	<p>P4-M2-5 Contrast-Enhanced, Real-Time Volumetric Imaging of Tissue Perfusion Harriet Patel^{1,2}, Gregory Clement^{1,3} ¹Hospital Boston, Boston, MA, USA, ²Children's Hospital, Boston, MA, USA, ³Brigham and Women's Hospital, Boston, MA, USA</p>	<p>P4-M3-2 Design of a 64 Channel Analog Receive Beamformer for High Frequency Linear Arrays Lequan Zhang¹, Changhong Hu², Jesse T. Yen¹, K. Kirk Shang² ¹Biomedical Engineering, University of Southern California, Los Angeles, CA, USA</p>	<p>P4-M4-1 A Synthetic Lateral Phase (SLP) Lateral Displacement Estimator Using Complex Finite Impulse Response Filters Ling-uo Huang¹, Matthew O'Donnell^{1,2} ¹Department of Biomechanical Engineering, University of Washington, USA, ²The College of Engineering, University of Washington, USA</p>
<p>P4-M1-7 Improved analysis for string and block weighted tapered SAW transducers Svetlana Meloch¹ ¹Tripunkt Semiconductor, Apopka, Florida, USA</p>	<p>P4-M1-5 Synthetic aperture flow imaging using a dual beamformer approach Ye Li¹, Lequan Avandh Jensen¹ ¹Center for Four Ultrasound Imaging, Dept. of Elec. Eng. Technical University of Denmark, Lyngby, Denmark</p>	<p>P4-M2-3 Complementary Galois Encoding for Dual-frequency Transmit in Ultrasonic Harmonic Contrast Detection Che-Chou Shan¹, Tak-Yu Shui¹ ¹Department of Electrical Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan</p>	<p>P4-M3-3 Development of a Digital High Frequency Ultrasound Array Imaging System Changhong Hu¹, Lequan Zhang¹, Jonathan Cannata¹, Kirk K Shang¹ ¹University of Southern California, USA</p>	<p>P4-M4-2 Combined use of iteration, parabolic interpolation and an extra kernel for high-resolution 2D particle tracking: a first evaluation John Ahlsson^{1,2}, Sofia Boersson², Finn Lindqvist³, Asa Kvalin Ahlgren⁴, Magnus Cronh⁵ ¹Faculty of Engineering, LTH, Lund University, Lund, Sweden, ²PRODEA research group, School of Business and Engineering, Halmstad University, Halmstad, Sweden, ³Mathematical Statistics, Faculty of Engineering, LTH, Lund University, Lund, Sweden, ⁴Department of Biotechnology and Nuclear Medicine Unit, Lund University, Lund, Sweden</p>
<p>P4-M1-8 A New Approach to Reveal the Dispersive Characteristics for Leaky SAW on Short-circuited Gratings Bao Wang¹, Weibiao Wang², Xianglong Shi¹, Haodong Wu¹, Yongpan Shui¹ ¹Key Laboratory of Modern Acoustics, Institute of Acoustics, Chinese Academy of Sciences, Beijing, China, ²Shoulder Electronics Limited, China, ³People's Republic of</p>	<p>P4-M1-6 Optimal Design of a 2-D Sparse Transducer Array for 3-D Ultrasound Imaging Jung Woo Chae¹, Omer Omilan¹, Burmes (Pierre) T. Kham-Yakub¹ ¹Edward L. Ginzton Laboratory, Stanford University, USA</p>	<p style="text-align: center;">Withdrawn</p>	<p>P4-M3-4 Real-Time High Frequency Ultrasound Imaging System Based on High-Speed FPGA Weibiao Wang¹, Yanyan Yu¹, K. Kirk Shang², Lei Sun³ ¹Department of Health Technology and Informatics, The Hong Kong Polytechnic University, Hong Kong, China, ²People's Republic of, Department of Biomedical Engineering, University of Southern California, Los Angeles, USA, ³USA</p>	<p>P4-M4-3 Median estimation using prebeamformed ultrasound signals. Pierre Gachet¹, Philippe Delachante¹, Hervé Liebholt^{1,3} ¹CREATIS-UMR - CNRS UMR 5209 - INSERM U660, France, ²INSA Lyon, France, ³Université CB Lyon 1, France</p>

WED. POSTER

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Grand Hall

Poster --- Wednesday, October 13, 2010

3:00 pm - 4:30 pm

<p>P4-M4-4 Ultrasound harmonic imaging using nonlinear chirp for cardiac imaging Hyun-Jae Song¹, Inchee Song², Jin Ho Chang³, Tai-Kyong Song⁴ ¹Department of Electronic Engineering, Sogang University, Korea, Republic of; ²Interdisciplinary Program of Integrated Biotechnology, Sogang University, Korea, Republic of; ³Sogang Institute of Advanced Technology, Sogang University, Korea, Republic of</p>	<p>P4-M4-4 Adaptive IIR Filtering Algorithms for Enhanced CINE-T Performance Sean McSweeney¹, William M.D. Wright¹ ¹Electrical and Electronic Engineering, University College Cork, Cork, Ireland</p>	<p>P4-P7-2 On the use of a frequency-domain method for modeling weak shock wave propagation Yun Jung¹, Greg Clement² ¹Radiology, Harvard Medical School, Boston, MA, USA, ²Radiology, Harvard Medical School, USA</p>	<p>P4-T7-5 New ultrasonic dispersion method for thin plates using cylindrical piezoelectric transducer Jung-Son Kim¹, MOOJOON KIM², Kanglyeol Ha² ¹Tongmyong University, Korea, Republic of; ²Pohang National University, Korea, Republic of</p>
<p>P4-M4-5 Adaptive quadrature demodulation for ultrasound tissue harmonic imaging Da-yeung Lee¹, Yangmo Yoo^{1,2}, Tai-Kyong Song¹, Jin Ho Chang³ ¹Department of Electronic Engineering, Sogang University, Seoul, Korea, Republic of; ²Interdisciplinary Program of Integrated Biotechnology, Sogang University, Seoul, Korea, Republic of; ³Sogang Institute of Advanced Technology, Sogang University, Seoul, Korea, Republic of</p>	<p>Session P4-N2. Gas and Liquid Characterization <i>Chair: Michal Bezdak</i> <i>Address and hauser, Flow Tec.</i></p>	<p>P4-P7-3 Modeling Nonlinear Acoustic Wave Fields in Media with Inhomogeneity in the Attenuation and in the Nonlinearity L. Duan¹, M.D. Yewsey², N. de Jong³, K.W.A. van Dungen¹ ¹Lab. of Acoustics and Sonochemistry, Faculty of Applied Sciences, Delft University of Technology, Netherlands, ²Lab. of Electromagnetic Research, Faculty of Electrical Engineering, Mathematics and Computer Sciences, Delft University of Technology, Netherlands, ³Lab. of Experimental Echocardiography, Erasmus Medical Center, Netherlands</p>	<p>P4-T7-6 A Taper Microstructure for Impedance Matching Paul Harris¹, Dawei Wei¹, Roger Young¹ ¹Industrial Research Ltd, New Zealand</p>
<p>P4-M4-6 Performance Evaluation of Nonlinear Frequency Modulated Signals in Ultrasound Harmonic Imaging Mahammad Arif¹, Steven Freest² ¹Ultrasound Group, School of Electronic and Electrical Engineering, University of Leeds, United Kingdom, ²University of Leeds, United Kingdom</p>	<p>P4-N2-1 Temperature Compensated Radio-Frequency Harmonic Bulk Acoustic Resonators Pressure Sensors Thomas Barom¹, Jeremy Massot², Eric Lebrasseur¹, Florent Bassignot¹, Jean-Pierre Roman¹, Sébastien Alzaiga¹, Samuel Queste¹, Gilles Martin¹, Dorian Guehon¹, Thierry Laroche¹, Sylvain Ballandras¹ ¹PEMTO-ST, France, ²SENSEOR, France</p>	<p>P4-P7-4 Shear Waves of Finite Amplitude in a Resonator Filled with a Cubically Nonlinear Medium Valery Andreev¹, Timothy Kiri¹, Oleg Sirozhatkov¹ ¹Dept of Acoustics, Physics Faculty, Moscow State University, Russian Federation</p>	<p>P4-T7-7 Integrated Piezoelectric Structures under External Mechanical Stress : theory and experiments Mathieu Dometjeoul¹, Mickael Lemarec², Pascal Tam Hou Huec², Guy Feuillard² ¹Université François Bachelard de Tours, Laboratoire Imagerie et Corrélation, FR CNRS 3116, Blois, France, ²ENI Val de Loire, Laboratoire Imagerie et Corrélation, FR CNRS 3110, Blois, France</p>
<p>P4-M4-7 Machine learning for noise removal on breast ultrasound images Sumedha Sinha¹, Yong Ming Hoo¹, Zeehan Syed¹, Renee Pinsky¹, Kai Thoenesius¹, Paul Carson ¹University of Michigan, Ann Arbor, MI, USA; ²GE Global Research, USA</p>	<p>P4-N2-2 Development and Evaluate of metal MEMS Column for the Ball SAW Gas Chromatograph Shingo Akao¹, Takamitsu Iwaya¹, Toshihiro Sakamoto², Hiroki Nigai¹, Toshihiro Tsuji¹, norioka makino¹, Kazushi Yamamata¹ ¹Tokyo University, Japan, ²Japan Patent Co., Ltd, JST-CREST, Japan, ³Tokyo University, JST-CREST, Japan</p>	<p>Session P4-T7. Transducer Materials <i>Chair: Qiming Zhang</i> <i>Pennsylvania State University</i></p>	

<p>Session P4-N1. NDE Signal Processing <i>Chair: Ramazan Demiri</i> <i>Villanova University</i></p>	<p>P4-M2-3 In-line Rheometry for Highly Filled Suspensions Through Doppler-Ultrasound Siciliano Ricci¹, Beat Birkhofer², Didier Loosens³, Piero Tortoli¹ ¹Electronics & Telecommunications Dept., <i>Università di Firenze, Florence, Italy</i>, ²Sika Services AG, <i>Zurich, Switzerland</i>, ³Sika Technology AG, <i>Zurich, Switzerland</i></p>	<p>P4-M2-4 Ultrasonic Viscosity Measurement Cell based on a Shear-Wave Transducer Edgardo Franco¹, Julio Adamowski¹, Flavio Buiochi¹ ¹Mechanics and Mechanical Systems, <i>School of Engineering, University of São Paulo, São Paulo, São Paulo, Brazil</i></p>	<p>P4-T1-1 Polymer-Metal Front Matching Layers for Arbitrary Impedance Conversion Minoru Tada¹, Mitchell Thompson² ¹Measurement Spectralites Inc., <i>Lawrenceville, New Jersey, USA</i>, ²Measurement Spectralites Inc., <i>Wayne, PA, USA</i></p>	
<p>P4-N1-1 CHIRPLET PARAMETER ESTIMATOR BASED ON ELLIPSE FITTING IN TIME-FREQUENCY DISTRIBUTIONS FOR ULTRASONIC NDE APPLICATIONS Alireza Kaveifard¹, Jafar Samiie¹, Ental Onukli¹ ¹Department of Mechanical Engineering, <i>Illinois Institute of Technology, Chicago, Illinois, USA</i></p>	<p>Session P4-P1. Non Linear, Finite Amplitude Effects <i>Chair: Valery Andreev</i> <i>Moscow State University, Russian Fed.</i></p>	<p>P4-T1-2 Fabrication of Silicon-Polymer Composite Acoustic Matching Layers For High Frequency Transducers Tuan Thai Anh Nguyen¹, Tung Manh¹, Ger Uti Jensen², Tomi Pranke Johansen³, Lars Hoffmeier⁴ ¹Department of Engineering Science, <i>Vestfold University College, Borre, Norway</i>, ²Microsystems and Nanotechnology Department, <i>SINTEF ICT, Oslo, Norway</i>, ³Department of Circulation and Medical Imaging, <i>Norwegian University of Science and Technology, Trondheim, Norway</i></p>	<p>P4-T1-3 Deposition of Nb-doped Lead Zirconate Titanate Films by Hydrothermal Method and Their Electrical Properties Mutsuo Ishikawa¹, Hamid Reza Chahok², Takeshi Morita³, Shinichi Takachi⁴, Minoru Kurosawa¹, Hiroshi Funakubo¹, Frank Djah¹, Qili Zhou⁵, Kirk Shung⁶ ¹Tokyo Institute of Technology, <i>Japan</i>, ²University of Southern California, <i>USA</i>, ³The University of Tokyo, <i>Japan</i>, ⁴The Tian University of Yokohama, <i>Japan</i>, ⁵Geospace Research, <i>Inc., USA</i></p>	
<p>P4-N1-2 Performance Evaluation of Fractional Fourier Transform for Time-Frequency Analysis of Ultrasonic Signals in NDE Applications Yufeng Lu¹, Alireza Kaveifard², Ental Onukli², Jafar Samiie² ¹Electrical and Computer Engineering, <i>Bradley University, Peoria, Illinois, USA</i>, ²Electrical and Computer Engineering, <i>Illinois Institute of Technology, Chicago, Illinois, USA</i></p>	<p>P4-P1-1 Emulsion Generation using Microchannel Plates and 2.25 MHz Ultrasonic Vibrations Takeruomi Kaneda¹, Takuya Hanada¹, Yoshiyuki Tomimaga¹, Koichi Suzuki¹ ¹Okayama University, <i>Japan</i></p>	<p>P4-T1-4 Endoscopic Ultrasound Radial Artery Fabricated with PINPT Single Crystal/Epoxy 1:3 Composite Dae-Young Hyun¹, Joon-Deu Park¹, Young-Gil Seung¹, Hoon Lee¹, Sun-Ting Lee², Joon-Ho Park³, Joon-Ho Park⁴, Yong-Gook Kim⁵, Joon-Ho Park⁶, Applied Physics, <i>The Hong Kong Polytechnic University, Hong Kong, China</i>, ²Department of Applied Physics, <i>City University of Hong Kong, Hong Kong, China</i>, ³Department of Applied Physics, <i>City University of Hong Kong, Hong Kong, China</i>, ⁴Department of Applied Physics, <i>City University of Hong Kong, Hong Kong, China</i>, ⁵Department of Applied Physics, <i>City University of Hong Kong, Hong Kong, China</i>, ⁶Department of Applied Physics, <i>City University of Hong Kong, Hong Kong, China</i></p>		
<p>P4-N1-3 Estimation and Detection in the Presence of Ringing Noise Brent Jamson¹, Roberto Manduchi¹ ¹Computer Engineering, <i>San Jose State, USA</i></p>				

WED. POSTER

THURSDAY ORAL

8:00 am - 9:30 am		Oral --- Thursday, October 14, 2010			
<p>Session 9A. Nonlinear Contrast Detection</p> <p>Chair: Jeff Ketterling Riverside New York</p>	<p>Session 9B. Image Formation and Therapy</p> <p>Chair: Pai-Chi Li National Taiwan University</p>	<p>Session 9C. NDE Imaging</p> <p>Chair: Paul Wilcox University of Bristol</p>	<p>Session 9D. Ultrasound Systems and Devices</p> <p>Chair: Jorgen Jensen Technical Univ. of Denmark</p>	<p>Session 9E. SAW, FBAR SMR Devices</p> <p>Chair: Don Malocha University of Central Florida</p>	<p>Session 9F. Therapeutic Transducers</p> <p>Chair: John Fraser Philips Healthcare</p>
<p>Town & Country</p>		<p>Golden West</p>			
<p>9A-7 In vivo subharmonic pressure estimation of portal hypertension in canines</p> <p>Jaydee Daw^{1,2}, Vijayarajan Rajadurai^{1,2}, J. Peter K. Yu^{1,2}, Liuhua Fan^{1,2}, Hua Zhou¹, Hsin-Kai Wang¹, Kai Thomsen³, Flemming Fomberg⁴, Thomas Jefferson University, Philadelphia, Pennsylvania, USA, ¹School of Biomedical Engineering, Science and Health Systems, Drexel University, Philadelphia, Pennsylvania, USA, ²Global Research, Alnylam, New York, USA</p>	<p>9B-1 In vivo 3D quantitative analysis of the mouse embryonic brain with a 38 MHz annular array and coded excitation</p> <p>Orlando Mestralon^{1,2}, Jonathan Munoz³, J. Peter K. Yu^{1,2}, David G. Gao^{1,2}, Hua Zhou¹, F. L. Lizzi¹ Center for Biomedical Engineering, Riverside Research Institute, New York, NY, USA</p>	<p>9C-1 Surface Wave Acoustic Microscopy for Rapid Nondestructive Evaluation (NDE) of Silicon Nitride Balls</p> <p>Dan Xiang¹, Yexian Qiu¹, Fang Li¹ Intelligent Automation, Inc., USA</p>	<p>9D-1 IVUS-Near Infrared Spectroscopy in Atherosclerotic Patients</p> <p>Antonius FW van der Steen^{1,2}, Gerrit van Dijk¹, Robert Sivan¹, Mike A. Miles¹, James E. McLaughlin¹, Patrick W. Stamps¹, Evelyn WA van Dongen¹, Regal³ Thorax centre, Erasmus MC, Rotterdam, Netherlands, ¹Interuniversity Cardiology Institute, Netherlands, ²Imaging Science & Technology, Delft University of Technology, Netherlands, ³AppliedX, Burlington, MA, USA</p>	<p>9E-1 A GHz-range, Single-Structure, Multi-Mode ZnO Solidly-Mounted Bulk Acoustic Resonator</p> <p>Farouq Mumtaz¹, Adam Warren¹, William F. Strohriegl¹, School of Electrical and Computer Engineering, Georgia Institute of Technology, USA</p>	<p>9F-1 High Intensity Therapeutic Ultrasound transducer performance and characterisation</p> <p>Genard ELIURY¹, Benoît BERRIET¹, Laurent GUYON¹, Jean-Louis GILLET¹, Jean-Benoît BARKIN¹, Baptiste MAINFROY¹, Thibault MARTINEZ¹ IMASONIC, France</p>
<p>San Diego</p>		<p>Royal Palm 1-3</p>		<p>Royal Palm 4-6</p>	
<p>9B-2 A comprehensive framework for Harmonic Motion Imaging for Focused Ultrasound (PHIPFU) with ex vivo validation</p> <p>Gary Hou¹, Jianwen Luo¹, Caroline Maleki¹, Jonathan Vappou¹, Elisa Konofogou^{1,2} Biomedical Engineering, Columbia University, USA, ¹Radiology, Columbia University, USA</p>	<p>9C-2 Measurement of Propagation Characteristics of Leaky SAWs for Cossy Specimen by the LFB-UMC System</p> <p>Takanori Kumada¹, Jun-ichi Kushibiki¹ Electrical Engineering, Tohoku University, Sendai, Miyagi, Japan</p>	<p>9D-2 A 10 Fr. Catheter with Integrated Micromotor for 4D Intracardiac Echocardiography</p> <p>Wenxian Luo¹, Douglas Wang¹, David Bailey², Terry Hines³, James Hines³, Richard L. Taylor³, John Frazee⁴, Robert W. Bevilacqua⁵, Richard L. Taylor³, James C. Goff⁶, Cameron Wood⁷, David S. Ross⁸, Douglas A. Clark⁹, M. US. US, ¹Medtronic, Inc., USA, ²Medtronic, Inc., USA, ³Medtronic, Inc., USA, ⁴Medtronic, Inc., USA, ⁵Medtronic, Inc., USA, ⁶Medtronic, Inc., USA, ⁷Medtronic, Inc., USA, ⁸Medtronic, Inc., USA, ⁹Medtronic, Inc., USA</p>	<p>9E-2 Improved Modeling of BAW Resonators and Filters</p> <p>Amel Hagelaar¹, Andreas Link², Bernhard Bader², Stephan Marksteiner², Karl Wagner², Robert Weigel¹ Institute for Electronic Engineering, University of Erlangen-Nuremberg, Erlangen, Germany, ²TDK-EPK, Munich, Germany</p>		

<p>8:30 am</p>	<p>9A-3 Nonlinear, detection of biodegradable, experimental nanoparticles using a high frequency ultrasound prototype</p> <p>Sara Jaber¹, Nicolas Tasse^{2,3}, Odile Duce², Benjamin Berti¹, Elias Fatt¹, Nicolas Tanel¹, Lon Biral¹</p> <p>¹Université d'Angers, Parametrique, UMR 9623</p> <p>²Université Paris 6 and CNRS, Paris, Ile de France, France</p> <p>³Pharmaceutics, UMR CNRS 8662, France, ⁴Faculté de Pharmacie, France</p>	<p>9B-3 Conformable transducers for large-volume, operator-independent imaging</p> <p>Chris MW. Day¹</p> <p>¹RIU Ultra, Siemens Healthcare, Mountain View, CA, USA</p>	<p>9C-3 An Investigation on the Interaction of Wedge Waves With a Defect Using a Quantitative Laser Ultrasound Visualization System</p> <p>L-Hong Lin¹, Che-Hua Yang¹</p> <p>¹National Tsing Hua University of Technology, Taipei, R.O.C, Taiwan</p>	<p>9D-3 A Battery-less Deep-Seated Implantable Ultrasonic Pulsar-Receiver Powered by Wireless Magnetic Coupling</p> <p>Sai Chun Tang¹, Francis Jolesz¹, Gregory Chen¹</p> <p>¹Radiology, Harvard Medical School, Brigham and Women's Hospital, Boston, MA, USA</p>	<p>9E-3 FBAR Resonator Figures of Merit Improvement</p> <p>Yaqiang Wang¹, Chris Feng¹, Tina Lamers¹, David Paul Bradley¹, Paul H. Geilker¹ and Robert C. Albers¹</p> <p>¹USC, Asago Technologies, Santa Ana, California, USA</p>	<p>Withdrawn</p>
<p>8:45 am</p>	<p>9A-4 Wireband harmonic imaging of ultrasound contrast agent with a CMUT Probe</p> <p>Anthony Navali¹, Anashe Bouakel¹</p> <p>¹UMR INSERM 0930, CNRS BRL 3106 and Université François Babelais, Tours, France</p>	<p>9B-4 The Effects of Image Degradation on Ultrasound-Guided HIFU</p> <p>Jeremy Ishai¹, Gregg Trahey^{1,2}, Gianmarco Pinton¹</p> <p>¹Biomedical Engineering, Duke University, Durham, NC, USA, ²Radiology, Duke University Medical Center, Durham, NC, USA, ³Institut Langevin, Ecole Supérieure de Physique et Chimie Industrielles, Paris, France</p>	<p>9C-4 Selective excitation using phase shifted ultrasound radiation force from focused transducers</p> <p>Thomas Haber¹, Bryce Bjelak¹, Christopher Han¹, Daniel Mellman¹</p> <p>¹Physics Department, Gustavus Adolphus College, Saint Peter, MN, USA</p>	<p>9D-4 Design of a Low-Power Time-Gain-Compensated Amplifier for a 2D Piezoelectric Ultrasound Transducer</p> <p>J. Yae¹, Z. Ye¹, M.A.P. Perini¹, G.C.M. Meijer², C.T. James¹, J.G. Bosch¹, N. de Jong¹</p> <p>¹Department of Medical Imaging, Radboud University Nijmegen, Nijmegen, The Netherlands, ²Electronics Instrumentation Laboratory, Department of Biomedical Engineering, Erasmus MC, Netherlands</p>	<p>9E-4 Multimode bandpass SAW filter using Reconfigurable Resonance Technology</p> <p>Nail O. Fawal¹, Patrick J. Turner¹, Balam A. Williams¹, James R. Costa¹, Edward R. Soares¹, Silvestro Jimenez¹</p> <p>¹Superconductor Technologies Inc, Santa Barbara, CA, USA</p>	<p>9F-3 Monolithic Rapid Prototyped Flexured Ultrasonic Horns</p> <p>Stewart Sherrill¹, Xiangji Bai¹, Mitesa Bhaskar¹, Yoseph Bar-Cohen¹, Phillip Allard¹</p> <p>¹Advanced Technologies, Jet Propulsion Laboratory, CALTECH, Pasadena, CA, USA, ²Mechanical Engineering, Cal Poly Pomona, Pomona, CA, USA</p>
<p>9:00 am</p>	<p>9A-5 Using the Luxembourg-Gorky effect exhibited by lipid-coated microbubbles to enhance contrast in medical ultrasound imaging</p> <p>Gulianne Renaud¹, Johan Bosch¹, Nico De Jong¹</p> <p>¹Department of Biomedical Engineering, Thoraxcenter, Erasmus MC, Rotterdam, Netherlands</p>	<p>9B-5 Microscopic visualization of high-frequency ultrasound fields using a new method of Brillouin photography</p> <p>Naohiko Kudo¹, Yoshiaki Sahnayama¹, Koichi Shimizu¹</p> <p>¹Graduate School of Information Science and Technology, Hokkaido University, Sapporo, Hokkaido, Japan</p>	<p>9C-5 Monitoring of the Nonlinear Coefficient $\beta(p)$ during Silica Gel Formation Using an Ultrasonic Self-Calibrated Method</p> <p>Christophe Mouchel¹, Nicolas Wilke-Tromas¹, Pascal Gramet¹, Guy Duhamel¹</p> <p>¹UMR 8002, Institut National de Recherche Scientifique, Université de Guelph, Guelph, Ontario, Canada, ²UMR 8002, Institut National de Recherche Scientifique, Université de Guelph, Guelph, Ontario, Canada, ³UMR 8002, Institut National de Recherche Scientifique, Université de Guelph, Guelph, Ontario, Canada, ⁴UMR 8002, Institut National de Recherche Scientifique, Université de Guelph, Guelph, Ontario, Canada, ⁵UMR 8002, Institut National de Recherche Scientifique, Université de Guelph, Guelph, Ontario, Canada</p>	<p>9D-5 Robot Integrated Ultrasound Geometry-Scanning for Trackerless Bone Cement Reconstruction in RTHR</p> <p>Stefan Heger¹, Theosten Vollborn¹, Martin Niggemeyer¹, Torsten Mammert², Fabrice Chuechou¹, Klaus Rademacher¹</p> <p>¹Chair for Medical Engineering, Aachen University of Technology, Germany, ²Department for Orthopaedics, University Clinic Aachen, Germany</p>	<p>9E-5 High-Stability SAW Oscillator with Tertiary Frequency vs. Temperature Curve and Excellent Long-Term Aging Property</p> <p>Kunihito Yamanaoka¹, Naohisa Ohata¹, Takao Morita¹, Yoshio Masuda¹, Shigeo Kamae¹</p> <p>¹EPSON TOYOCHO, Japan, SEIKO EPSON, Japan</p>	<p>9F-4 Design and Construction of a Passive Receiver Array for Monitoring Transcranial Focused Ultrasound Therapy</p> <p>Meaghan O'Reilly¹, Junho Song¹, Ben Luchini¹, Kullervo Pyykko¹</p> <p>¹Department of Imaging Research, Sunnybrook Research Institute, Canada, ²Department of Medical Biophysics, University of Toronto, Canada</p>
<p>9:15 am</p>	<p>9A-6 Parametric Imaging Using Subharmonic Signals from Ultrasound Contrast Agents in Patients with Breast Lesions</p> <p>John Eusebio¹, Jayden Dave^{1,2}, Daniel Merani¹, Juan Palazon¹, Angus Hall¹, Benjamin Tinsberg¹</p> <p>¹University of California at Davis, Davis, CA, USA, ²Drexel University, USA, ³School of Biomedical Engineering, Thomas Jefferson University, USA, ⁴GE Healthcare, USA</p>	<p>9B-5 Electromagnetically Tracked Ultrasound for Small Animal Imaging</p> <p>Charles Cawley¹, Mano Hitwitschka¹, Shengping Qin¹, Katherine Ferran¹</p> <p>¹Biomedical Engineering, University of California at Davis, Davis, CA, USA, ²Department of Computer Science, University of California at Davis, Davis, CA, USA</p>	<p>9C-6 Microscopic visualization of high-frequency ultrasound fields using a new method of Brillouin photography</p> <p>Changyang Lee¹, Siem Ting Lan¹, Jungwoo Lee¹, Qifa Zhou¹, K. Kirk Shung¹</p> <p>¹Biomedical Engineering, University of Southern California, Los Angeles, CA, USA</p>	<p>9D-6 Surface Acoustic Wave Devices for Ocular Drug Delivery</p> <p>Marjan Nabil¹, Mohamadzeza Ghassemani¹, Sakuna Mahesh¹, Ji Liu¹, David Boley¹, Craig Gees¹, Vesna Zakeri¹, Mona Zaghal¹</p> <p>¹Department of Electrical and Computer Engineering, The George Washington University, Washington, DC, USA, ²Department of Ophthalmology, The George Washington University, Washington, DC, USA</p>	<p>9E-6 Multi-layer transducer for nonlinear imaging with application to targeting ultrasound</p> <p>Nell Overt¹, Francesco Curia¹</p> <p>¹Applied Physics Laboratory, University of Washington, USA</p>	<p>Withdrawn</p>

THURSDAY ORAL

THURSDAY ORAL

11:00 am - 12:30 pm		Oral --- Thursday, October 14, 2010				
	<p>Session 10A. Microbubbles Dynamics Chair: Nico de Jong <i>Erasmus Medical Centre</i></p>	<p>Session 10B. Elasticity Imaging - Clinical Applications Chair: James Greenleaf <i>Mayo Clinic</i></p>	<p>Session 10C. Lateral Field Excited Acoustic Wave Sensors Chair: Jackie Hines <i>Applied Sensor Research</i></p>	<p>Session 10D. Ultrasonics Motors & Actuators Chair: Taketumi Kanda <i>Okayama University</i></p>	<p>Session 10E. RF MEMS Chair: Jan Kuyppers <i>Stand 9</i></p>	<p>Session 10F. Beam Forming Chair: Mickael Tanter <i>INSERM, Paris</i></p>
	<p>Town & Country</p> <p>10A-1 The physics of microbubbles for imaging and therapy Michel Versluis¹ <i>University of Twente, Enschede, Netherlands</i></p>	<p>San Diego</p> <p>10B-1 Quantitative evaluation of Shear viscosity and Shear modulus heterogeneities in the human liver for fibrosis staging by combining shear wave imaging and shear wave spectroscopy Jean Luc gennisson¹, eric havi¹, mathieu couade¹, jeremy bercoff¹, mathias fink¹, vincent mallet¹, anais vallet-pechot¹, Stanislas Pol¹, mickael tanter¹ <i>Langevin Institute, France; ²Superioric Institute, France; ³Cochin Hospital, France</i></p>	<p>California</p> <p>10C-1 A Lateral Field Excited Sensor John Yvelino¹ <i>Laboratory for Surface Science and Technology, University of Maine, USA</i></p>	<p>Royal Palm 1-3</p> <p>10D-1 Finite Element (FEA) Based Modeling of a Parametrically Excited Piezo Driven Ultrasonic Micro Motor. Manoj Pandey¹, Steven Tin¹, Amit Lal¹ <i>IBM, Computer Engineering, Cornell University, USA</i></p>	<p>Royal Palm 4-6</p> <p>10E-1 High frequency Lamb Wave Resonator using Thin LiNbO3 Crystal Plate and Application to Tunable Filter Michiko Kadota¹, Takashi Ogami² <i>Melexis, Japan; ²Co., Ltd., Yamashi, Shiga, Japan; ³Kadate Laboratory, Morata Mfg. Co., Ltd., Yosh-oh, Shiga, Japan</i></p>	<p>Golden West</p> <p>10F-1 A Real-time B-mode/ARFI/Doppler imaging system: Frame Rate Considerations and Imaging Quality Trade-offs Douglas Dussan¹, Josh Doherty¹, Jeremy Dahl, Gregg Tanky² <i>¹Biomedical Engineering, Duke University, Durham, NC, USA; ²Radiology, Duke University, Durham, NC, USA</i></p>
11:00 am		<p>10B-2 Controlled Attenuation Parameter (CAP): a Novel VCTE™, for the early diagnosis of liver fibrosis. Principles and Validation on Field II Simulations, Tissue Mimicking Phantoms and Clinically on Patients with Chronic Liver Disease Magali Sasso¹, Laurent Sandrin¹, Veronique Miéville¹, Etchoven, Paris, France</p>	<p>10D-2 Design and optimization of Y-typed multilayer piezoelectric actuator for camera module Won-Hee Lee¹, Chong-Yun Kang¹, Dong-Soo Park¹, Byoung-Kwon Ju¹, Seok-Jin Yoon¹ <i>Korea Institute of Science and Technology, Seoul, Korea, Republic of; ²Korea Institute of Science and Technology, Korea, Republic of; ³Korea University, Korea, Republic of</i></p>	<p>10E-2 Reconfigurable 4-Frequency CMOS Oscillator Based on AN Contour-Mode MEMS Resonators Marcelo Rialaldi¹, Chengjie Zuo¹, Jan Van der Spiegel¹, Gianluca Piazza¹ <i>¹Electrical and Systems Engineering, University of Pennsylvania, Philadelphia, PA, USA</i></p>	<p>10F-2 Aberration Correction using moving blood speckle noise for Ultrasound Ultrasonic Imaging Gabriel Montaldo¹, Bruno-Eliu Oumansk¹, Mathias Fink¹, Mickael Tanter¹ <i>¹Institut Langevin, France</i></p>	
11:15 am						

11:30 am	<p>10A-2 Microbubbles shell break-up and collapse during gas exchange</p> <p>James Kuan¹, Mark Borden² ¹Department of Engineering, Colorado State University, Fort Collins, CO, USA, ²McGill University, St. Joseph's Hospital, Colorado, USA</p>	<p>10C-3 Detection of Peroxide Based Explosives Utilizing a Lateral Field Excited Acoustic Wave Sensor</p> <p>Wen Jie¹, Todd Almer², Brian Hecker², David Niekirk³, John Veselko⁴ ¹Laboratory for Surface Science and Technology, University of Maryland, USA, ²US Army Research Office-Durham, Durham, NC, USA, ³Department of Chemistry, Pennsylvania State University, USA, ⁴Department of Chemical and Biological Engineering, University of Maine, Orono, Maine, USA</p>	<p>10D-3 Miniaturization of the traveling wave ultrasonic linear motor using bimorph transducers</p> <p>Shiichi Kanda¹, Daitsuke Koyama¹, Kentaro Nakamura¹ ¹NTT Device, Ltd., Nipponbashi, Tokyo Tech, Japan</p>	<p>10E-3 Laterally Coupled BAW Filters with 5% Relative Bandwidth</p> <p>Johanna Meltau¹, Thomas Pensa¹ ¹ITT Technical Research Center of Finland, Espoo, Espoo, Finland</p>	<p>10F-3 Ultrasound Imaging Utilizing the Short-Lag Spatial Coherence of Backscattered Echoes</p> <p>Mahmoud Ledjaj¹, Betty Byram¹, Gregg Tabor¹, Daniel J. Sacks¹ ¹Biomedical Engineering, Duke University, Durham, NC, USA, ²Department of Radiology, Duke University, Durham, NC, USA</p>
11:45 am	<p>10A-3 Lipid distribution and mobility of coated microbubbles</p> <p>Klaudia Kodama¹, Marcia Emma¹, Tom Kobayashi², Hans Bosch³, Martin J de Graaf², Martin van Royen⁴, Adriaan Huisman⁵, Ton van der Steen², Nico de Jong² ¹Biomedical Engineering, Erasmus MC, Netherlands, ²Interuniversity Cardiology Institute of the Netherlands, Netherlands, ³Institute of the Netherlands, Netherlands, ⁴Pathology, Erasmus MC, Netherlands</p>	<p>10C-3 Lateral Field Excited LTR03 Acoustic-Wave Sensing Platform</p> <p>Jason McGinn¹, Don McCom¹, John F. Veldho¹ ¹Laboratory for Surface Science and Technology, University of Maine, Orono, Maine, USA</p>	<p>10D-4 Modal Separation of Circular Cylindrical Ridge Wave Ultrasonic Motors</p> <p>Tai-Ho Yui^{1,2} ¹National United University, Taiwan, ²National Chiao Tung University, Taiwan</p>	<p>10E-4 Fine Frequency Selection Technique for Synthesizing Narrowband AM Lamb Wave Ladder Type Filters</p> <p>Ting-Ta Yen¹, Chih-Ming Lin¹, Debbie G. Slesky¹, Matthew A. Hopewell¹, Albert P. Pisano¹ ¹Berkeley Sensor & Actuator Center, University of California, Berkeley, USA</p>	<p>10F-4 Adaptive focusing of transcranial therapeutic ultrasound using MR Acoustic Radiation Force Imaging in a clinical environment</p> <p>Laurent Marsu^{1,2}, Benoît Larrai¹, Mathieu Pernot¹, Benjamin Robert¹, Mathias Frink¹, Jean-François Aubry¹, Mickael Tanter¹ ¹Institut Langevin, Paris, France, ²SuperSonic Implants, Aix en Provence, France</p>
12:00 pm	<p>10A-4 Perfluorobutane as a Phase-Change Contrast Agent</p> <p>FaithSheran¹, Paul Kujan², Vincent Wong², Terry Maung³, Paul A. Dayton⁴ ¹Joint Department of Biomedical Engineering, University of Virginia, Charlottesville, VA, USA, ²Department of Surgery, Cedars-Sinai Medical Center, Los Angeles, CA, USA, ³Department of Biomedical Engineering, University of Arizona, Tucson, AZ, USA, ⁴Department of Radiology Research, University of Arizona, Tucson, AZ, USA</p>	<p>10C-4 A Lateral Field Excited Acoustic Sensor Array</p> <p>Shawn Wilmer¹, George Bernhart¹, John Veselko¹ ¹Laboratory for Surface Science and Technology, University of Maine, Orono, Maine, USA</p>	<p>10D-5 Triangular Tubular Ultrasonic Motor Driven by Coupled Resonant Modes</p> <p>Ching-Chung Yin¹, Ching-Fang Tsai¹ ¹Department of Mechanical Engineering, National Chiao Tung University, Hsinchu, Taiwan</p>	<p>10E-5 Overlaid and Thermally Tunable Aluminum Nitride Microresonators</p> <p>Krzysztof Wojciechowski¹, Boongsang Kim¹, Roy Olsson¹ ¹Sanofi National Laboratories, USA</p>	<p>10F-5 Robustness of beamforming in the Bayesian Observer approach.</p> <p>Nikola Njerve¹, Craig Abov¹, Michael Thasch¹ ¹Department of Electrical and Computer Engineering, University of Illinois at Chicago, Chicago, IL, USA, ²Department of Psychology, University of California, Santa Barbara, Santa Barbara, California, USA, ³Department of Psychology, University of Illinois at Chicago, Chicago, IL, USA, ⁴IBM Almaden Research Center, San Jose, CA, USA, ⁵Department of Science and Technology, University of Illinois at Urbana-Champaign, Urbana, Illinois, USA</p>
12:15 pm	<p>10A-5 The selection of the low frequency for radial modulation imaging at 20 MHz</p> <p>François Yu¹, Florentine Villameua¹, Xaceli Chen² ¹Center for Ultrasound Molecular Imaging and Therapeutics, University of Pittsburgh, USA</p>	<p>10C-5 The Study of Piezoelectric Lateral Field Excited Resonators</p> <p>Boris Zaitsev¹, Iren Kurzenova¹, Alexander Shikhbatdinov¹, Andrei Vasiliev¹ ¹Saratov Department, Institute of Radio Engineering and Electronics, Institute of Radio Russian Federation, Saratov State University, Saratov, Russian Federation</p>	<p>10D-6 Liquid lens using an acoustic radiation force</p> <p>Daisuke Koyama¹, Ryotchi Isgo¹, Kentaro Nakamura¹ ¹Precision and Intelligence Laboratory, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan</p>	<p>10E-6 Selective Mode Excitation of Piezoelectric Disk-Type Resonator by Electrode Pattern Definition</p> <p>Takeshi Mitsuura^{1,2}, Masayoshi Hashi¹, Hiroshi Haseki¹, Shoji Tanaka¹ ¹Research Center, National Institute of Information and Communications Technology, Yokohama, Kanagawa, Japan, ²Department of Numerical Analysis, Tohoku University, Sendai, Miyagi, Japan</p>	<p>10F-6 Simulated Annealing Based Optimization of Dwell Time Arrays for Forward-Looking IVUS and ICE Imaging</p> <p>Coskun Tekeli¹, Mustafa Karaman¹, F. Levent Degertekin¹ ¹Electronics Engineering, Isik University, Istanbul, Turkey, ²G. W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA, USA</p>

THURSDAY ORAL

THURSDAY ORAL

1:30 pm - 3:00 pm		Oral --- Thursday, October 14, 2010				
1:30 pm	<p>Session 11A. Contrast Imaging</p> <p>Chair: Katherine Ferrara Univ. of California Davis</p>	<p>Session 11B. Elasticity Imaging - Fundamental Studies</p> <p>Chair: John Hossack Univ. of Virginia</p>	<p>Session 11C. Acoustic Visualization and Actuation on Micrometer Scale</p> <p>Chair: Edward Haegstrom University of Helsinki</p>	<p>Session 11D. Piezoelectric Thin Films</p> <p>Chair: Eun Sok Kim University of Southern California</p>	<p>Session 11E. Vector Flow and CFD- Simulations</p> <p>Chair: David Evans Univ. of Leicester</p>	<p>Session 11F. Imaging Transducers</p> <p>Chair: Scott Smith GE Research</p>
	<p>Town & Country</p> <p>11A-1 Remotely Triggered Contrast Nano-Agent for Ultrasound and Photoacoustic Imaging Katherine Wilson¹, Kimberly Homan¹, Stephen J. Lee¹, David J. Suckale¹, David J. Suckale¹ ¹Biomedical Engineering, The University of Texas at Austin, Austin, TX, USA</p> <p>11A-2 Phase-locked magnetomotive ultrasound imaging of superparamagnetic iron-oxide nanoparticles Maria Holst¹, Magnus Cinihal¹, Sarah Fredriksson¹, Fredrik Olsson¹, Hans W Persson¹, Tomas Jansson¹ ¹Electrical Measurements, Faculty of Engineering, University of Lund, Lund, Sweden</p>	<p>11B-1 Measurement of surface wave speed in two-layered gelatin phantoms Be Qiang¹, James Greenleaf¹, Xiaoming Wang¹, James Greenleaf¹ ¹Physics and Biomedical Engineering, Mayo Clinic, Rochester, MN, USA</p> <p>11B-2 Shear Wave Velocity Imaging using Transient Electrode Perturbation: a Phantom Study Ryan DeWalt^{1,2}, Tony Varghese^{1,2}, Ernest Madsen¹ ¹Medical Physics, University of Wisconsin - Madison, Madison, WI, USA, ²Biomedical Engineering, University of Wisconsin - Madison, Madison, WI, USA</p>	<p>California</p> <p>11C-1 ULTRASONICS AND MICROFLUIDICS Urban Demmel¹, Feng Xu¹ ¹Department of Medicine, Harvard Medical School, Boston, MA, USA</p>	<p>Royal Palm 1-3</p> <p>11D-1 Deposition techniques of c-axis-titled SCAFN films by conventional RF magnetron sputtering Kunshi Kucheyev^{1,2}, Takahiko Yamaguchi², Kenjiro Kamai¹, Atsuhiko Tashikawa¹, Mutsuaki Aoyama¹ ¹Research Laboratories, Densetsu Corporation, Nishin, Aichi, Japan, ²Graduate School of Engineering, Nagoya Institute of Technology, Gokisocho, Showa-ku, Aichi, Japan</p> <p>11D-2 Influence of shadowing effect on shear mode acoustic properties in the c-axis tilted AlN films Masashi Suzuki¹, Takahiko Yamaguchi¹ ¹Graduate School of Engineering, Nagoya Institute of Technology, Nagoya, Aichi, Japan</p>	<p>Royal Palm 4-6</p> <p>11E-1 Left ventricular 2D flow pattern estimation of the heart by combining speckle tracking with Navier-Stokes based regularization Heng Cao¹, Francesco Comi¹, Han Eui Choi¹, Jens Lee Vogt¹, Piet Claus¹, Jan D Hooge² ¹Cardiovascular Imaging & Dynamics, Dept. of Cardiovascular Diseases, Katholieke Universiteit Leuven, Leuven, Belgium, ²Mi lab, Norwegian Institute for Science & Technology, Trondheim, Norway</p> <p>11E-2 A combined speckle tracking and phase-shift estimation approach for 2D blood flow imaging in the carotid bifurcation Abigail Swillock¹, Patrick Segers¹, Lasse Lovstakken¹ ¹IBiTech-BioMedula, Ghent University, Belgium, ²Department of Circulation and Medical Imaging, NTNU, Norway</p>	<p>Golden West</p> <p>11F-1 Solid-State SL-WUS Arrays Based on Non-Uniform Aperture Sampling Alper Shivanian¹, Mustafa Kurumun¹, Cecile Ouellet¹, E. E. Chong¹ ¹Electronics Engineering, Jsk University, Istanbul, Turkey; ²G. W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA, USA</p> <p>11F-2 A New Device for Intra-vascular Blood Flow Measurement: the Helical Diffraction-Grating Transducer David Wilkomerson¹, Thomas Chikpila¹, John Bogan¹, Hao-chung Yang¹, Jonathan Cannata¹ ¹DVA, Inc., USA; ²University of Southern California, USA</p>

<p>2:00 pm</p>	<p>11A-3 Photoacoustic Imaging with Biodegradable Plasmonic Nanocylinders Soon Jeon Yoon^{1,2}, Svyatoslav Mikhlin¹, Justin Tam¹, Avinash Murthy¹, Keith Johnson¹, Konstantin Sobolev¹, Stanislas Emelianov^{1,2} ¹Department of Electrical and Computer Engineering, ²Department of Biomedical Engineering, ³Department of Chemical Engineering, ⁴Department of Mechanical Engineering, ⁵Department of Industrial Engineering, ⁶Department of Imaging Physics, ⁷University of Texas MD Anderson Cancer Center, USA</p>	<p>11B-3 3D Shear Wave Imaging: A simulation and experimental study Marika Orrecañal¹, Yue Wang², Michel F. Brunet¹ ¹Electrical and Computer Engineering, ²Department of Mechanical Engineering, ³Department of Chemical Engineering, ⁴Department of Biomedical Engineering, ⁵Department of Imaging Physics, ⁶University of Texas MD Anderson Cancer Center, USA</p>	<p>11C-2 Evaluation for the distribution of fouling deposition on the microfiltration membrane using high frequency ultrasound Yi-Hsun Lin¹, Shyh-Hua Wang¹, Chih-Chung Huang¹, Hae-Chun Pui¹, Kuo-Lan Tang¹ ¹National Cheng Kung University, Taiwan, ²Fu Jen Catholic University, Taiwan, ³Chung Yuan Christian University, Taiwan</p>	<p>11D-3 Heteroepitaxial growth of AlN films on sapphire by magnetron sputtering for high temperature SAW applications Thierry Aubert¹, Radeedine Assouaf¹, Ouassaf Legrand¹, Omar Elmazria¹, Coridan Tassin¹, Sylvie Robert¹ ¹Institut Jean Lamour, CNRS - Nancy University, Vandœuvre les Nancy, France</p>	<p>11A-4 US/MRI Dual Modality Contrast Agent for Concurrent MR and Ultrasound Imaging of Focused-Ultrasound Induced Blood-Brain Barrier Opening A-Hua Lee¹, Hse-Li Lin¹, Chia-Hao Su¹, Yu-Ting Wang¹, Po-Hung Wang¹, Sheng-Min Huang¹, Shih-Yen Yu¹, Hsin-Hsiung Yang¹, Tzu-Chun Yen¹, Du-Chih Lu¹ ¹National Yang Ming University, ²National Cheng Kung University, ³Taiwan, ⁴National Tsing Hua University, Taiwan</p>	<p>11E-3 Characterization of a Vector Doppler System based on an Array Transducer Atsushi Tanaka¹, Khalid Almulami¹, Süleyman Südker¹ ¹Graduate Student, ²George Mason University, Fairfax, VA, USA, ³Electrical and Computer Engineering, ⁴George Mason University, Fairfax, VA, USA</p>
<p>2:15 pm</p>	<p>11A-5 US/MRI Dual Modality Contrast Agent for Concurrent MR and Ultrasound Imaging of Focused-Ultrasound Induced Blood-Brain Barrier Opening A-Hua Lee¹, Hse-Li Lin¹, Chia-Hao Su¹, Yu-Ting Wang¹, Po-Hung Wang¹, Sheng-Min Huang¹, Shih-Yen Yu¹, Hsin-Hsiung Yang¹, Tzu-Chun Yen¹, Du-Chih Lu¹ ¹National Yang Ming University, ²National Cheng Kung University, ³Taiwan, ⁴National Tsing Hua University, Taiwan</p>	<p>11C-3 Harmonic Generation of Subharmonic Acoustic Pressure Standing Waves in a Flexurally Vibrating Glass Microcapillary: Applications in Micro and Nanoparticle Manipulation Muhammad Arif¹, Amit Lal¹ ¹School of Electrical and Computer Engineering, Cornell University, Ithaca, NY, USA</p>	<p>11D-4 Fabrication & Characterization of Reversed-c-axis AlN Thin Films John D. Laeson III (Fellow)¹, Sergey Mishin², Stephen Baker³ ¹Wireless Semiconductor R&D, Avago Technologies, San Jose, CA, USA, ²Advanced Modular Systems, Goleta, CA, USA, ³Wireless Semiconductor R&D Fabrication Facility, Avago Technologies, Fort Collins, CO, USA</p>	<p>11B-4 Theoretical, numerical and experimental comparison of Shear Wave Imaging and Magnetic Resonance Elastography Thomas Defieux¹, Jean-Luc Gennisson¹, Benoît Larrat¹, Mathias Fink¹, Mickael Tanter¹ ¹Institut Langevin - Ondes et Images, ESPCI ParisTech, CNRS UMR 7587, INSERM U979, Paris, France</p>	<p>11A-6 Spatial Fourier Transform processing of BGD microbubble echoes in mouse tumors Xiaowen Hu¹, Chris Anderson¹, Joshua Ryeckh¹, Katherine Ferrara¹ ¹University of California, Davis, USA, ²Targaceon, Inc, USA</p>	<p>11E-4 Resolving In-Vivo Flow Fields in the Systemic Circulation of the Mouse through Combined Ultrasound Imaging and Computational Fluid Dynamics Brian Truesher¹, Abigail Swillens¹, Mapolin Benam², Julie De Backer³, Steven Stoeckels⁴, Bart Loeyen⁵, Patrick Segers⁶ ¹Center for Experimental Research in Hemodynamics, Ghent University, Belgium, ²Center for Medical Genetics, Ghent University, Belgium, ³InTech-MEDISP, Ghent University, Belgium</p>
<p>2:30 pm</p>	<p>11A-5 Three dimensional perfusion mapping in the rat kidney using ultrasonic contrast Steven Feigold¹, Ryan C. Gessner¹, Janyll M. Ginzcar¹, Paul A. Dayton¹ ¹Joint Department of Biomedical Engineering, ²Chapel Hill and NCSE, USA, ³Stemness Medical Solutions USA, Inc, USA</p>	<p>11C-4 Acoustic Streaming Induced by Anti-symmetrical Flexural Modes near a Wedge Tip Wen-Chih Wang¹, Che-Hua Yang¹, An-Shik Yang¹ ¹National Taipei University of Technology Taipei, Taiwan</p>	<p>11D-5 A simple technique for obtaining (11-20) or (10-10) textured ZnO films by RF bias sputtering Shinji Takayama¹, Takahiko Yamaguchi¹, Mami Matsukawa¹, Yoshiaki Watanabe¹ ¹Tohoku University, ²Kyotomachi, Kyoto, Japan, ³Graduate School of Engineering, Nagoya Institute of Technology, Nagoya, Aichi, Japan</p>	<p>11B-5 Time Reversal Elastography: elasticity imaging using complex shear wave field in soft solids Javier Brum^{1,2}, Thomas Galzer³, Stefan Catheline², Philippe Roux², Nicolas Besson², Carlos Negreira¹ ¹Instituto de Física, Facultad de Ciencias, Uruguay, ²Laboratoire de Géophysique Interne et Tectonophysique (LGIT), Université Joseph Fourier, Saint Martin d'Hères, France</p>	<p>11E-5 Direct Echo PIV Flow Vector Mapping on Ultrasound DICOM Images Juehng Chen¹, Fuxing Zhang¹, Luciano Marzaro², Craig Lanning³, Robyn Giang⁴, Robin Shandas⁵ ¹Mami Matsukawa, ²Department of Mechanical Engineering, ³University of Colorado at Boulder, Boulder, CO, USA, ⁴Department of Biomechanical Engineering, ⁵University of Colorado at Denver, Aurora, CO, USA</p>	<p>11E-6 Future Integration of Silicon Electronics with Miniature Piezoelectric Ultrasonic Transducers and Arrays Sandy Cochran¹, David Cumming¹, Marc Desmulliez², John Sweet³ ¹Institute for Medical Science and Technology, ²University of Dundee, United Kingdom, ³Microsystem Technology, University of Glasgow, United Kingdom, ⁴Department of Electronic Engineering, ⁵University of Warwick, Coventry, UK, ⁶United Kingdom, ⁷Leopold Ltd, United Kingdom</p>
<p>2:45 pm</p>	<p>11A-6 Spatial Fourier Transform processing of BGD microbubble echoes in mouse tumors Xiaowen Hu¹, Chris Anderson¹, Joshua Ryeckh¹, Katherine Ferrara¹ ¹University of California, Davis, USA, ²Targaceon, Inc, USA</p>	<p>11C-5 Acoustic Visualization of Proton Exchange Membrane Fuel Cells Using Phased Array Ultrasound Ching-Chung Yin¹, Shih-Ming Hsu¹, Yu-Shyan Liu² ¹Department of Mechanical Engineering, ²National Chiao Tung University, Hsinchu, Taiwan, ³Industrial Technology Research Institute, Taiwan</p>	<p>11D-6 Preliminary quantification of complex blood flow using real-time in vivo vector flow ultrasound Math Müller-Pedersen¹, Michael Thiel¹, Peter Beckmann¹, Michael Michael¹, Michael Beckmann¹, Jürgen Aertel¹ ¹Department of Radiology, Copenhagen University Hospital, Bispebjerg, Copenhagen, Denmark, ²Department of Radiology, Copenhagen University of Denmark, Copenhagen, Denmark, ³R&D Applications & Technology, BK Medical, Herlev, Denmark</p>	<p>11B-6 Experimental Reverse Time Migration for imaging of elasticity changes Bastien Amal^{1,2}, Mathieu Pernot¹, Mickael Tanter¹ ¹Institut Langevin, Paris, France, ²Université Paris Diderot-Paris 7, Paris, France, ³ESPCI ParisTech, CNRS UMR 7587, INSERM U979, Paris, France</p>	<p>11E-6 Preliminary quantification of complex blood flow using real-time in vivo vector flow ultrasound Math Müller-Pedersen¹, Michael Thiel¹, Peter Beckmann¹, Michael Michael¹, Michael Beckmann¹, Jürgen Aertel¹ ¹Department of Radiology, Copenhagen University Hospital, Bispebjerg, Copenhagen, Denmark, ²Department of Radiology, Copenhagen University of Denmark, Copenhagen, Denmark, ³R&D Applications & Technology, BK Medical, Herlev, Denmark</p>	<p>11E-6 Preliminary quantification of complex blood flow using real-time in vivo vector flow ultrasound Math Müller-Pedersen¹, Michael Thiel¹, Peter Beckmann¹, Michael Michael¹, Michael Beckmann¹, Jürgen Aertel¹ ¹Department of Radiology, Copenhagen University Hospital, Bispebjerg, Copenhagen, Denmark, ²Department of Radiology, Copenhagen University of Denmark, Copenhagen, Denmark, ³R&D Applications & Technology, BK Medical, Herlev, Denmark</p>

THURSDAY ORAL

THURSDAY ORAL

4:30 pm - 6:00 pm		Oral --- Thursday, October 14, 2010			
4:30 pm	<p>Session 12A. Targeted Contrast Imaging</p> <p>Chair: Paul Dayton Univ. North Carolina/NCSSU</p>	<p>Session 12B. Elasticity Imaging - Preclinical Studies</p> <p>Chair: Stuart Foster Univ. of Toronto</p>	<p>Session 12C. NDE Industrial Transducers</p> <p>Chair: Jiramaru Tsujino Kanagawa University</p>	<p>Session 12E. Advances in Blood Flow Measurement and Imaging</p> <p>Chair: Anne Hall GE medical systems</p>	<p>Session 12F. Transducer Modeling</p> <p>Chair: Raul Reynolds Weidlinger Associates</p>
	<p>Town & Country</p> <p>12A-1 Imaging targeted microbubble interactions with microvessels</p> <p>Hong Chen¹, Andrew A. Brayman¹, Thomas J. Matula¹, <i>Univ. of Maryland and Medical Ultrasonics, Applied Physics Laboratory, University of Washington, Seattle, WA, USA</i></p>	<p>12B-1 In-vivo mechanical property assessment of a biodegradable polyurethane tissue construct on rat abdominal repair model using ultrasound elasticity imaging</p> <p>S. Tajiri¹, K. L. Bagnall², R. Hoshino³, V. Hoop⁴, N. J. Amoroso⁵, M. S. Sack⁶, W. R. Wagner⁷, K. Kim⁸, <i>1. Univ. of Pittsburgh, 2. Univ. of Pittsburgh Medical Center, Pittsburgh, PA, USA, 3. Department of Surgery, University of Pittsburgh, Pittsburgh, PA, USA, 4. Institute of Regenerative Medicine, University of Pittsburgh, Pittsburgh, PA, USA, 5. Department of Bioengineering, University of Pittsburgh, Pittsburgh, PA, USA</i></p>	<p>12C-1 Flow detection using a selective Lamb mode excitation with phased array transducers</p> <p>Jens Prager¹, Carsten Hoeber², <i>1. Fraunhofer IPT, 2. Fraunhofer IPT, Federal Institute for Materials Research and Testing, Germany, 3. Chalmers University of Technology, Sweden</i></p>	<p>12D-1 Wireless Acoustic Communications and Power Supply for In-vivo Biomedical Devices</p> <p>Graham Wild¹, Steven Hilschky¹, <i>1. School of Electrical Engineering, University of Queensland, St. Lucia, Queensland, Australia</i></p>	<p>12E-1 Detection of Chronic Cerebrospinal Venous Inefficiency through Multigate Quality Doppler Profiles</p> <p>Piero Tonello¹, Stefano Biasi¹, Fabio Astelescafi¹, Leonardo Frazzari¹, <i>1. Electronics & Telecommunications, Università di Firenze, Italy, 2. Esaote SpA, Firenze, Italy</i></p>
4:45 pm	<p>12A-2 Isolation of Signal from Stationary Microbubbles Adhered to Vessel Wall Using Adaptive Regression Filtering Technique</p> <p>Frank William Mandin, Jr., Abhay V. Patel¹, Joseph P. Kelly, Ali H. Dhanjalwala, John A. Hossack², <i>1. Biomedical Engineering, University of Virginia, Charlottesville, VA, USA, 2. Mayo Clinic, Rochester, MN, USA</i></p>	<p>12B-2 Viscoelastic measurements on perfused and non-perfused swine renal cortex in vivo</p> <p>Carrolla Anadol¹, Matthew W. Urban¹, Shigao Chen¹, James E. Greenleaf¹, <i>1. Ultrasound Research Laboratory, Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, MN, USA</i></p>	<p>12C-2 ULTRASONIC WAVE PROPAGATION IN CYLINDRICAL ULTRASONIC REACTOR DESIGN.</p> <p>Tajima Marusa¹, Anthony Gachagan¹, Alison Norden¹, Richard O'Leary², <i>1. Electronic and Electrical Engineering, University of Strathclyde, Glasgow, United Kingdom, 2. University of Strathclyde, United Kingdom</i></p>	<p>12E-2 High Sensitivity Brain Angiography using Ultrasound Doppler</p> <p>Emilie Macé¹, Gabriel Montaldo¹, Ivan Cobari², Mathias Fink¹, Mickael Tanter¹, <i>1. Institut Langevin, ESPCI Paris Tech, Paris, France, 2. Cortex and Epilepsy Lab, INSERM U739, Paris, France</i></p>	<p>12F-2 Transducer design for second harmonic 3D Transesophageal Echocardiography</p> <p>Sandra Blask¹, Paul L.M.J. van Nier¹, Christian Prins¹, Johan G. Bosch¹, Charles T. Lance², Nico de Jong³, <i>1. Druisman/MC, Rotterdam, Netherlands, 2. Odette Ultrasound B.V., Delft, Netherlands</i></p>
	<p>Golden West</p>	<p>Royal Palm 4-6</p>	<p>California</p>	<p>Royal Palm 1-3</p>	<p>Golden West</p>

9:30 am - 11:00 am

Poster --- Thursday, October 14, 2010

Grand Hall

**Session P5-A1.
Resonators and Materials**

Chair: **Jyrki Kaitila**
Avago Technologies

P5-A1-1 Modified Ladder-type 2.4GHz SAW Filter with transmission zero

Volodymyr Novgorodov^{1,2}, Stefan Fräselben¹, Patrick Hédie¹, Andrei Gheorghiu¹, Frank Hees¹, Michael Hübner¹, EPFL/OS-IG, Germany; ¹TU Clausthal, Germany

P5-A1-2 Parametric study of Aluminum Nitride Lamb Wave Resonators

Marc Gorske¹, Frédéric Dominge², Gilles Polo-Fillan¹, Christophe Billard¹, Isaki Koue³, Alexandre Reinhardt¹, Emmanuel Deslys¹, Marc Ad¹, CEA, Leti, Minatex, Grenoble, France; ²LMST, Université du Québec à Trois-Rivières, Trois-Rivières, Québec, Canada; ³Grenoble-INP, Grenoble, France; ⁴ISEN, TEHM, Lille, France

P5-A1-3 Fabrication of SAW Resonators on Quartz and Langasite using Nano-Imprint Lithography

Esko Forsén¹, William Dumaix², sylvain ballandus², DTU, Denmark; ¹FEMTO-ST, CMS, France

P5-M1-2 Ultrasound stimulated release of liposomal calcium

Mercy Anzidi¹, Yngve Holstad Hansen¹, Bjorn Angeretti¹, Tommi Franke Johansen¹, Svein-Erik Målyng¹, Catherine de L. Davies¹, Department of physics, Norwegian University of Science and Technology, NTNU, Trondheim, Norway; Department of Science and Technology, Trondheim, Norway

P5-M1-3 Ultrasound Cavitation Transducer for Cancer Treatment by means of Sensitive Liposomes

Alexei Moussatov¹, Cyril Lafon¹, Jean-Louis Mesias¹, Jean-Yves Chapelon¹, INSERM Lyon, Rhône-Alpes, France; ¹Ultrasound for Therapy, INSERM Lyon, Rhône-Alpes, France

P5-M1-4 Large payload composite droplets for controlled release of drugs and markers using conventional ultrasound imaging probes

Olivier Couture¹, Magalie Faivre², Nicolas Pagniez¹, Avin Babalghati¹, Vincent Servois¹, Patrick Tabeling¹, Mickael Tanner³, Institut Langevin, ESPCI, Paris, France; ¹ESPCI, France; ²Institut Curie, France; ³CMS, France; ⁴INSERM, France

P5-M1-5 Optimization of Focused Ultrasound Exposures for Hyperthermia Mediated Drug Delivery in a Murine Subcutaneous Tumor Model

Shaolin Wang^{1,2}, Victor Frenkel², Vesna Zdrilic², Department of Electrical and Computer Engineering, The University of Texas at Austin, Austin, Texas, USA; ¹Department of Radiology and Imaging Sciences, National Institutes of Health, Bethesda, MD, USA

P5-M1-6 Enhanced permeability of tumor blood vessel using focused ultrasound with microbubbles

Eun-Joo Park¹, Yong-Zhi Zhang¹, Natalia Vykhodtseva¹, Nathan McDonald¹, Radiology, Brigham & Women's Hospital / Harvard Medical School, Boston, MA, USA

**Session P5-M2.
Photoacoustic Imaging**

Chair: Georg Schmitz
Ruhr-Universität Bochum

P5-M2-1 Bimodality US/optical imaging: registration and 2D/3D visualization

Sylvain Bernhart¹, Jerome Bouter¹, Francois Dubouat¹, Lionel Heve², Jean-Marc Dinten¹, Didier Vray¹, Université de Lyon, CREATIS-LRAN¹, CNRS UMR5270; ²INSERM U630; INSA-Lyon; Université-Lyon 1, France; ³CEA Leti, France

P5-M2-2 Staging atherosclerosis using ultrasound, strain and photoacoustic imaging

Iliaa Graf¹, Seungsoo Kim¹, Stanislaw Emelinski¹, Biomedical Engineering, University of Texas at Austin, Austin, Texas, USA

P5-M2-3 Photoacoustic Signal Generation with Gouy Coupled Excitation

Shin-Yuan Su¹, Pai-Chi Li¹, National Taiwan University, Taiwan

**Session P5-M3.
Bone**

Chair: Pascal Laugier
Université Paris XII

P5-M3-1 Prediction of "anomalous" velocity dispersion with an independent scattering model in scattering media

Gaillaume Haïat¹, Salah Naji², BDOA UMR 7652, CNRS, Paris, Idr, France; ¹MSME UMR 8208, Université Paris-Est, Créteil, IdF, France

P5-M3-2 Statistical properties of trabecular bone backscatter: experimental and simulations results

Litewski Jerzy¹, Cielicki Lucyna¹, Wojcik Janusz¹, Nowicki Andrzej¹, Ultrasonical Institute of Fundamental Technological Research, Warsaw, Poland

P5-M3-7 Experimental investigation of local elastic properties in a trabecula of bovine femur.

Masahiko KAWABE¹, Kenji FUKUI¹, Mami MATSUKAWA¹, Masahide MOUCHI¹, Aemsa SAIED¹, Quentin GRIMAL², Pascal LAUGIER³, Hitachi Zoson Corporation, Osaka, Japan; ¹Doshisha University, Yamashiro, Japan; ²CMS, LIP, Université Pierre et Marie Curie-Paris 6, France

**Session P5-M4.
Beam Forming / Testing / Simulation**

Chair: Gregg Trahey
Duke University

P5-M4-1 Impact of the Structure of Subcutaneous Tissue on Ultrasonic Clutter

Jeremy Dahl¹, Biomedical Engineering, Duke University, Durham, NC, USA

P5-M4-2 Impact of clutter levels on spatial covariance: implications for imaging

Gianmarco Pinton¹, Jeremy Dahl², Gregg Trahey³, Institut Langevin, ESPCI, CNRS 5387, Paris, Ile de France, France; ¹Biomedical Engineering, Duke University, Durham, NC, USA

<p>P5-M-1-4 Giant shear mode electromechanical coupling coefficient k_{36} in c-axis tilted SCAN films</p> <p>Takahiko Yamaigata¹, Kazuki Akiyama², Kazuhiko Kano³, Akihiko Teshigahara⁴, Mouto Akiyama⁵</p> <p>¹Graduate School of Engineering, Nagoya Institute of Technology, Gokisocho, Showa-ku, Nagoya, Aichi, Japan, ²Research Laboratories, Denso Corporation, Nishiku, Aichi, Japan, ³Denso Corporation, Research Laboratories, Nishiku, Aichi, Japan, ⁴Measurement and Instrumentation Laboratory, Toyo Soda, Japan</p>	<p>P5-M1-6 Joint Capsule Loosening by High-Intensity Ultrasound</p> <p>Pei-Ling Kuo¹, Chia-Lun Yeh¹, Pai-Chi Li¹</p> <p>¹National Taiwan University, Taiwan</p>	<p>P5-M2-3 A Fiber Optic Photoacoustic Ultrasound Sensor for In Vivo Photoacoustic Vascular Imaging</p> <p>Clay Shariff¹, Shai Ashkenazi¹</p> <p>¹Biomedical Engineering, University of Minnesota-Twin Cities, Minneapolis, MN, USA</p>	<p>P5-M3-3 Guided wave phase velocity measurement in anisotropic absorbing material</p> <p>Jean-Gabriel Minonzi¹, Assouan Faried¹, Maryline Talami¹, Pascal Laugier²</p> <p>¹LIP, UPMC - CNRS, Paris, France</p>	<p>P5-M4-3 Modeling Nonlinear Medical Diagnostic Ultrasound via a Linearized Contrast Source Method</p> <p>L. Demil¹, M.D. Versnel², N. de Jong³, K.W.A. van Dongen⁴</p> <p>¹Lab of Acoustical Imaging and Sound Control, Faculty of Applied Sciences, Delft University of Technology, Netherlands, ²Lab of Electromagnetic Research, Faculty of Electrical Engineering, Mathematics and Computer Sciences, Delft University of Technology, Netherlands, ³Lab of Experimental Electrodynamics, Erasmus Medical Center, Netherlands</p>
<p>P5-M1-5 Single-mode Ring Waveguide Resonator on SAW</p> <p>Sergey Bryukov¹, Hagen Schmid¹, Manfred Wehner^{1,2}</p> <p>¹IPW Dresden, Dresden, Germany, ²InnoLocks, Dippoldswalde, Germany</p>	<p>P5-M1-7 Enhancement of Radiation Therapy by Ultrasonically-stimulated Microbubbles in Vitro: Effects of Treatment Scheduling on Cell Viability and Production of Ceramide</p> <p>Ruth Kerschbaum¹, Beate J. Nofels, Tobias Müller¹, Azza Al-Nofels, Gernot G. Klöpper, Gernot Klöpper²</p> <p>¹Physik, Biomedizinisches Zentrum, ON, Canada, ²Stromboli Health Sciences Centre, Canada, ³Medical Biophysics, University of Toronto, Canada</p>	<p>P5-M2-4 Adaptive Depth Compensation Algorithm for Photoacoustic Tomography</p> <p>Shuhei Bai¹, Makoto Yamakawa¹, Tsuyoshi Shiina¹</p> <p>¹Department of Human Health Science, Graduate School of Medicine, Kyoto University, Kyoto, Japan, ²Advanced Biomedical Engineering Research Unit, Kyoto University, Kyoto, Japan</p>	<p>P5-M3-4 Effects of H₉₀ alignment and microstructure on the anisotropic of longitudinal wave velocity in bovine cortical bone</p> <p>Kazufumi Yamamoto¹, Tomohiro Nakasaji¹, Yu Yamano¹, Takahiko Yanagihara¹, Katsu Yamazaki¹, Mami Matsukawa¹</p> <p>¹Department of Orthopaedic Surgery, Hamamatsu University School of Medicine, Japan, ²Doshisha University, Japan, ³Nagoya Institute of Technology, Japan, ⁴Iwata City Hospital, Japan</p>	<p>P5-M4-4 Nonlinear Radio Frequency Image Simulation for Harmonic Imaging</p> <p>Vivary Frauwias^{1,2}, Cachard Christian¹, Tortoli Piero³, Basset Olivier⁴</p> <p>¹Université de Lyon, CREATES-LRMRV, CNRS UMR5209, France, ²INSERM U1028, France, ³University of Ferrara, Ferrara, Italy, ⁴University of Florence, Italy</p>
<p>Session P5-M1. Therapeutic Effects, Micro-Bubbles and Drug Delivery <i>Chair: Jean-Yves Chapelon</i> INSERM, Lyon</p>	<p>P5-M1-8 In vivo transfer of a reporter gene into the ocular ciliary muscle mediated by ultrasound and microbubbles</p> <p>Michele Bougied¹, Laurent Kowalczyk², Amena Saïed¹, Francine Behar-Cohen³, Pascal Laugier⁴</p> <p>¹Laboratoire d'Imagerie Paramétrique, University Pierre et Marie Curie-Paris6/CNRS, Paris, France, ²Centre de recherche des Cordeliers, INSERM UMR872, Paris, France</p>	<p>P5-M2-5 Dual illumination mode photoacoustic tomography for quantitative imaging</p> <p>Kazuhiko Fukui¹, Takuro Miyasato¹, Takao Nakajima¹, Yasuhiko Sasaki¹, Yasutami Aso^{2,3}, Takayuki Yanai¹, Makoto Yamakawa¹, Tsuyoshi Shiina¹</p> <p>¹Medical Imaging Project, Canon Inc., Tokyo, Japan, ²Graduate School of Medicine, Kyoto University, Kyoto, Japan, ³Advanced Biomedical Engineering Research Unit, Kyoto University, Kyoto, Japan</p>	<p>P5-M3-5 Highest wave velocity direction in the bovine cortical bone: observation of a small tilt relative to the bone axis</p> <p>Tomohiko Nakasaji¹, Kazufumi Yamamoto¹, Takahiko Yanagihara¹, Mami Matsukawa¹, Katsu Yamazaki¹</p> <p>¹Doshisha University, Kyoto, Japan, ²Hamamatsu University School of Medicine, Hamamatsu, Shizuoka, Japan, ³Graduate School of Engineering, Nagoya Institute of Technology, Nagoya, Aichi, Japan, ⁴Iwata City Hospital, Iwata, Shizuoka, Japan</p>	<p>P5-M4-5 A Comparative Study of optimal Fundamental, Second- and Superharmonic Imaging.</p> <p>Paul van Nier¹, Mikhail Duzhkovskii², Guillaume Maitte¹, Marco Voormolen¹, Martin Versnel¹, Nico de Jong¹</p> <p>¹Dept. Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands, ²Dept. Circulation and Imaging, Norwegian University of Science and Technology, Trondheim, Norway, ³Laboratory of Electromagnetic Research, Delft University of Technology, Delft, Netherlands</p>
<p>P5-M1-1 Design and Testing of Acoustically-Active Therapeutic Nanoparticle Delivery Vehicles for Ultrasound-Targeted Chemotherapy</p> <p>Lee Mullis¹, Lei Peng², Sarahs Washwa², Ping M.F. Russell¹</p> <p>¹Joint Department of Biomedical Engineering, UNC-Chapel Hill and NCSU, NC, USA, ²Division of Molecular Pharmaceutics, Center for Nanoscale Drug Delivery, University of North Carolina at Chapel Hill, NC, USA, ³Department of Radiation Oncology, University of North Carolina at Chapel Hill, USA</p>	<p>P5-M1-9 Creating Brain Lesions by Trans-cranial Focused Ultrasound with Microbubbles</p> <p>Natalia Vyskhodtseva¹, Yuexi Huang², Kullervo Hyytiäinen³</p> <p>¹Radiology, Harvard Medical School/Brighton/Women's Centre, Toronto, ON, Canada, ²Imaging Research Institute, Sunnybrook Health Sciences Centre, Toronto, ON, Canada</p>	<p>P5-M2-6 In Vivo Photoacoustic and Pulse Echo Imaging of a Pancreatic Tumor using a Hand Held Device</p> <p>Lionardo C. Montelli¹, Ragan Orlafson¹, Russell S. White¹</p> <p>¹Radiology, University of Arizona, Tucson, AZ, USA</p>	<p>P5-M3-6 Ultrasonic wave properties in bovine bone marrow</p> <p>Tomohiko Kishi¹, Nicolas Carot¹, Mami Matsukawa¹</p> <p>¹Doshisha University, Kyoto, Japan</p>	<p>P5-M4-6 Experimental Investigation of Chirp Coded Excitation in Ultrasound Superharmonic Imaging</p> <p>Muhammed Arif¹, Sevan Haput¹, Steven Freear¹</p> <p>¹Ultrasound Group, Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom, ²University of Leeds, Leeds, United Kingdom</p>

THURS. POSTER

<p>P5-M4-7 Simulation of Second Harmonic Component Yiyang Bai¹, Haniik Kwon², Jongsun Ahn³, Kensei Center for Fast Ultrasound Imaging, Department of Electrical Engineering, Technical University of Denmark, Lyngby, Denmark, ²BK Medical ApS, Herlev, Denmark</p>	<p>P5-M4-4 New Method of the Change of TCD of Acoustic Waves in Structure Containing Piezoelectric Plate Iren Kuznetsova¹, Boris Zolotarev¹, Anastasia Kuznetsova¹ ¹Saraitov Department, Institute of Radio Engineering and Electronics of RAS, Saratov, Russian Federation</p>	<p>P5-T7-1 Hydrophone with hydrothermally deposited acoustic matching film as acoustic receiving surface for estimation of high-power acoustic field by HIFU Shuichi Takewaki¹, Kazuo Yoshimura¹, Hiromi Yagi¹, Norimichi Kawabuchi¹, Yoshiaki Uchida¹, Yasuhiko Yoshida¹, Tetsuo Yoshida¹, Yung-Hsiang Kuo² ¹Department of Electrical Engineering, University of Tsukuba, Ibaraki, Japan, ²Advanced Industrial Science and Technology, Atsuta E. T., Aichi, Tokyo Institute of Technology, Japan</p>	
<p>P5-M4-8 Superharmonic imaging based on chirps Mikhail Dmitrievich¹, Paul van Nee², Guillaume Maite¹, Marcos Voornveld¹, Martin Verweij¹, Nico de Jong Dept. Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands, ²Department of Biomedical Engineering, University of Science and Technology, Tongji, Shanghai, Norway, ³Laboratory of Electromagnetic Research, Delft University of Technology, Delft, Netherlands</p>	<p>Session P5-P1. Material Characterization Chair: Shinicchi Takeuchi Toh University of Yokohama, Japan</p>	<p>P5-T7-2 A Spherically-focused PVDF Hydrophone for Monitoring Focused Ultrasound Therapy Takashi Yoshida¹, Jumbo Song², Meaghan A. O'Reilly³, Shitoyo Hyosen¹ ¹University of Tsukuba, Ibaraki, Japan, ²Department of Engineering University of Toronto, Canada, ³Department of Imaging Research, St. Mary's Research Institute, Toronto, Canada, ⁴Department of Medical Biophysics, University of Toronto, Canada</p>	
<p>P5-M4-9 Fast ultrasound beam prediction for linear and regular two-dimensional arrays using a general- purpose graphics processing unit Mario Hlawitschka^{1,2}, Robert McCough¹, Katherine Ferraro¹, Dustin Kuss¹ ¹Biomedical Engineering, University of California at Davis, Davis, CA, USA, ²Department of Computer Science, University of California at Davis, Davis, CA, USA, ³Department of Electrical Engineering, Michigan State University, East Lansing, MI, USA</p>	<p>P5-P1-1 Study of Measurement of the Amount of Generated Acoustic Cavitation : Relationships among the Amount of Ultrasound, Dissolved Oxygen, and Sonochemical Luminescence Takeyoshi Uchida¹, Shinichi Takeuchi¹, Tsuneo Kikuchi¹ ¹National Metrology Institute of Japan (NMIJ), National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki, Japan, ²Toh University of Yokohama, Yokohama, Kanagawa, Japan</p>	<p>P5-T7-3 Optimal Suppression of Therapeutic Interference for Real-time Therapy and Imaging with An Integrated HIFU Imaging Transducer Jong Seob Jeong¹, Jonathan Matthew Cummins¹, K. Kirk Shung¹ ¹Biomedical Engineering, University of Southern California, Los Angeles, CA, USA</p>	
<p>P5-M4-10 Spatial resolution quantification of single- element, linear-array and annular-array high- frequency systems using a novel anechoic-sphere phantom Erwan Filoux¹, Jonathan Maman¹, Orlando Aristizabal^{1,2}, Jean-François Levesque¹, ¹F. L. Lévesque Center for Biomedical Engineering, Riverside Research Institute, New York, NY, USA, ²NYU School of Medicine, New York, NY, USA</p>	<p>P5-P1-2 Liquid Characteristics Determined on the Base of Ultrasound Measurement Ilona Ali Bialova¹ ¹Department of Physics, Czech Technical University in Prague, Faculty of Electrical Engineering, Prague, Czech Republic</p>	<p>P5-T7-4 OPTIMIZING CMUT GEOMETRY FOR HIFU APPLICATIONS F. Yalcin Yamaner¹, Selim Okum¹, Ayhan Bozkurt¹, Hayrettin Koyman¹, Abdullah Altinlar¹ ¹Faculty of Engineering and Natural Sciences, Sabanci University, Istanbul, Turkey, ²Department of Electrical and Electronics Engineering, Bilkent University, Ankara, Turkey</p>	

			<p>Session P5-N1. Guided Waves <i>Chair: Walter Arnold Fraunhofer Inst. for NDE</i></p>	<p>P5-N1-1 Simple formulas for transmission and reflection coefficients of a Lamb wave by multiple defects Youngae Roh¹, Byungsoo Kim¹ ¹School of Mechanical Engineering, Kyungpook National University, Daegu, Korea, Republic of</p>
			<p>P5-P1-3 Fundamental investigation of novel sono-reactor with 16 piezoelectric elements - Estimation of reaction field with sono-chemical luminescence - Shinichi Takeuchi¹, Hidemitsu Sato¹, Norimichi Kawashima¹, Takeyoshi Uchida¹, Yoshiyuki Asakura¹, Nagaya Okada¹ ¹Toin University of Yokohama, Japan, ²National Institute of Advanced Industrial Science and Technology, Japan, ³Honda Electronics, Japan</p>	<p>P5-N1-2 Change in Mode Configurations and Propagation Velocity of Guided Waves through an Elbow Section of a Pipe Satoru Furubashi¹, Kazuhiro Shimachi¹, Toshihiko Sugium² ¹Science and Technology, Keio University, Yokohama, Kanagawa, Japan, ²Keio University, Japan</p>
			<p>P5-P1-4 Assessment of the biomechanical properties of newly formed bone tissue using Micro-Brillouin scattering Vincent Mathias¹, Kenji Etkur², Mami Matsukawa², Masahiko Kawabe², Fumi Amagasaki², Emmanuel Soffer², Guillaume Bascles² ¹CEA DAM 7052, CNRS Paris, IGF, France, ²Laboratory of Ultrasonic Electronics, Faculty of Engineering, Doshisha University, Kyoto-ku, Japan</p>	<p>P5-N1-3 Anomalous dispersion of guided wave in cylindrical multi-layered solid media Haiyin Cui¹, Jun Trevelyan¹, Stuart Millman¹, Sherni Johnstone² ¹School of Engineering and Computing Sciences, University of Derby, Derby, United Kingdom, ²Crans Research in Advanced Technology, Crans UK Ltd, Middleborough, United Kingdom</p>
			<p>P5-P1-5 Inverse determination of thickness and elastic properties of thin layers and graded materials using generalized Love waves Piotr Kizicki¹, Marek Szalowski¹ ¹Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw, Poland</p>	<p>Session P5-T1. High Intensity Focused Ultrasound <i>Chair: Charles Emery Philips Healthcare</i></p>

THURS. POSTER

THURS. POSTER

3:00 pm - 4:30 pm

Poster --- Thursday, October 14, 2010

Grand Hall

Session P6-M1.
Therapy: Monitoring, Control and Quality Assurance
Chair: Elisa Konofagou
Columbia University

P6-M1-8 Investigation of standing wave formation in a phased array in an agarose cylindrical phantom
Guided focused ultrasound phased-array
 Junho Song¹, Yuesi Huang², Kullervo Hyytiäinen^{1,2}
¹Imaging Research, Sunnybrook Health Sciences Centre, Toronto, ON, Canada, ²Department of Medical Biophysics, University of Toronto, Toronto, ON, Canada

P6-M2-8 A Synthetic Aperture Focusing Technique Using Regularized Beamforming for High-Frequency Ultrasound
 Jeera Oprea¹, Michael Vogl¹, Helmut Ernst¹
¹High Frequency Engineering Research Group, Ruhr-University Bochum, Bochum, Germany

P6-M2-7 Freeze Casted Microstructured PVA Tissue Phantoms Using a Microfabricated Seed Layer
 Andrew Dawson¹, Paul Harris¹
¹Engineering and Applied Physics Group, Industrial Research Limited, New Zealand

P6-M4-7 Brachytherapy strand visibility in reflected EchoStrands vs. Regular Strands Using 3D Visibility Profiles
 Mehdi Moradi¹, Jack Zhang¹, Xu Wei¹, Septimia E. Silescu¹
¹Department of Electrical and Computer Engineering, University of British Columbia, Vancouver, Canada

P6-M1-1 Ultrasound Nakagami Visualization of HFU-Induced Thermal Lesions
 Meng-Lia Li¹, Du-Wei Li¹, Hao-Li Liu^{1,2}, Ming-Shi Liu^{1,2}
¹Department of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan, ²Department of Electrical Engineering, Chang Gung University, Taiwan

P6-M1-9 Simultaneous coagulation of large volume by creating multiple cavitation clouds in high intensity focused ultrasound treatment
 Yuka Inaba¹, Shin Yoshizawa¹, Shin-ichiro Umemura¹
¹Tohoku University, Japan

Session P6-M3.
High Frequency Tissue Characterization
Chair: Michael Oelze
Univ. of Illinois at Urbana-Champaign

Session P6-M4.
Tomography and 3D Imaging
Chair: Kendall Waters
Silicon Valley Med. Instruments

P6-M4-8 3D Ultrasound real-time monitoring of surgical tools
 Fabian Gaudl¹, Ilveci J. Liegert¹, Martin Uchek^{1,2}, Friedric Ervenyansky¹, Jan Kyriakos Katsiforjas¹
¹UMR 7005, CNRS, UPMC, Paris, France, ²UMR 5270, CNRS, UPMC, Paris, France, ³INSAT, CNRS, UPMC, Lyon 1, France, ⁴Center for Machine Perception, Czech Republic

P6-M1-2 Evaluation of three-dimensional temperature distributions produced by a low-frequency focused ultrasound system within ex vivo human skulls
 Nathan McDonald¹, Eui-Joo Park¹, Chung-Sheng Mei¹, Eyal Zadachny¹, Ferenc Jolesz¹
¹Brighton & Women's Hospital, Harvard Medical School, USA, ²Brighton & Women's Hospital, USA, Boston College, USA, ³Biogenics, Israel

Session P6-M2.
Signal Processing II
Chair: Michael Insana
Univ. of Illinois at Urbana-Champaign

P6-M3-1 A simulation study on ultrasound backscattering by cell aggregates with poly-disperse cells
 Ratan K. Saha¹, Michael C. Kolios¹
¹Physics, Ryerson University, Toronto, Ontario, Canada

P6-M4-1 Regularized tomographic density imaging using multiple frequency information
 Roberto J. Lavaruelo¹, Stephen Bond¹, Michael L. Oelze¹
¹Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, USA, ²Computer Science, University of Illinois at Urbana-Champaign, Urbana, IL, USA

P6-M4-9 Contrast-enhanced intravascular ultrasound 3D reconstruction of a vasa vasorum mimicking model
 David Mareca¹, Marcia Emma^{1,2}, Geert Springeling¹, Frits Mastik¹, Gijb van Soest¹, Nico de Jong¹, Antonius F. W. van der Steen^{1,2}
¹Biomedical Engineering, Thorax Center, Erasmus MC, Rotterdam, Netherlands, ²Interuniversity Coakings Institute of the Netherlands, Utrecht, Netherlands

P6-M1-3 Real-time Monitoring of Thermal and Mechanical Response to Sub-therapeutic HFU Beams In Vivo
 DALONG LIU¹, Jing-Jing Li¹, John Ballard¹, John Bischoff¹, David Ebbins¹
¹Department of Mechanical Engineering, University of Minnesota, Minneapolis, MN, USA, ²Electrical and Computer Eng, University of Minnesota, Minneapolis, MN, USA, ³Mechanical Engineering, University of Minnesota, Minneapolis, MN, USA

P6-M2-1 Lossless Compression of Ultrasound RF Data
 Mohamed Mansour¹, Murtaza Ali¹
¹Texas Instruments Inc., USA

P6-M3-2 In vivo assessment of inflammatory skin using high frequency ultrasound image and quantitative parameters
 Yi-Hsun Lin¹, Shih-Hua Wang¹, Chih-Chung Huang²
¹National Cheng Kung University, Tainan, Taiwan, ²St. John Catholic University, Taiwan

P6-M4-2 Ultrasound Tomography dedicated to Anatomical Breast Inspection
 Julien Rouyer¹, Serge Mansal¹, Philippe Lasaygues¹, Jean-Pierre Lefebvre¹
¹Laboratoire of Mechanics and Acoustics, C.N.R.S., Marseille cedex 20, France

P6-M4-10 Assembling 3D histology volumes from sections of cancerous lymph nodes to match 3D high frequency quantitative ultrasound images
 Alain Coust¹, Jamal Ben Mami¹, Emi Segura-Becerra¹, Masaki Hata¹, Paul Lee¹, Junji Mochi¹, Ragon Yamaguchi¹, Pascal Laugier^{1,2}, Erass J. Peluppes¹
¹UMR 7023, CNRS, Paris, France, ²Laboratoire Ultrasonique Biomédical UMR 7023, UPMC, Paris, France, ³F. L. Lizz Center for Biomedical Engineering, Riverside Research Institute, New York, NY, USA, ⁴University of Hawaii and Kaulaoni Medical Center, Honolulu, HI, USA

<p>P6-M1-4 Numerical prediction of frequency dependent 3D maps of mechanical index thresholds in ultrasonic brain therapy Gianmarco Pinton¹, Jean-Francois Aubry¹, Mathias Fink², Mickael Tanter¹ ¹Institut Langevin, ESPCI, CNRS 7587, Paris, France, ²Institut Langevin, France</p>	<p>P6-M2-2 Coded excitation can provide simultaneous improvements in sensitivity and axial resolution in Doppler ultrasound systems Joanne Cowe¹, Enrico Boni¹, Stefano Ricci¹, Piero Tonoli¹, David Evans¹ ¹Medical Physics, University Hospitals of Leicester NHS Trust, United Kingdom, ²Electronics and Telecommunications Department, University of Florence, Italy, ³Cardiovascular Sciences, University of Leicester, United Kingdom</p>	<p>P6-M3-3 Time Progression and Depth Dependence of High-Frequency AIBS in Ex-Vivo Porcine Corneas Kyle Holman¹ ¹Biomedical Engineering, University of Michigan, Ann Arbor, MI, USA</p>	<p>P6-M4-3 Breast Sound Speed Tomography From B-Mode Data Jakob Nebeker¹, Thomas R. Nelson² ¹Bioengineering, UCSD, USA, ²Radioology, Bioengineering, UCSD, USA</p>	<p>P6-M1-1 A New Method for Grating Lobe Reduction for 3D Synthetic Aperture Imaging with Ultrasound Computer Tomography Nicole Kruer¹, Robin Dapp¹, Michael Zapf¹, Hartmut Gemmel¹ ¹Karlsruhe Institute of Technology, Germany</p>
<p>P6-M1-5 Targeted Microwave Hyperthermia Monitored with Ultrasound Thermography Joon-Cook¹, Seungsoo Kim¹, John Pearce², Stanislaw Emdeuszy³ ¹Engineering, University of Texas at Austin, Austin, TX, USA, ²Senior Engineering, University of Texas at Austin, Austin, TX, USA</p>	<p>P6-M4-4 Ultrasound Projection Imaging (UPI) And Its Application To The Breast Haim Azhari¹, Tamara Roshstein¹, Dana Gaitini¹ ¹Biomedical Eng., Technion IT, Haifa, Israel, ²Technion IT, Haifa, Israel, ³Radioology, Rambam Medical Center, Haifa, Israel</p>	<p>P6-M3-4 Characterization of tumor vasculature derived from angiogenesis and vasculogenesis by high-frequency three-dimensional Doppler ultrasound Jia-Jian Chen¹, Yu-Hsiang Lin¹, Chi-Shuan Chang¹, J-Hong Luog¹, Chin-Kuang Yeh¹ ¹Department of Biotechnology and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan, ²Department of Radiation Oncology, Chang Gung Memorial Hospital, Taoyuan, Taiwan, Taiwan</p>	<p>P6-M4-5 Clinical Prototype of Autonomous Breast Biopsy Robot Guided by 4D Ultrasound Kaibing Ling¹, Edward Light¹, Jay Baker², Stephen Smith¹ ¹Biomedical Engineering, Duke University, Durham, North Carolina, USA, ²Radioology, Duke University Medical Center, Durham, North Carolina, USA</p>	<p>P6-M1-2 Considerations on the Method of Determining Motor-Received Heat Using Aerial Ultrasonic Waves with Finite Amplitude Ayumu Osami¹, Youshi Ito¹ ¹Department Of Electrical Engineering, College Of Science And Technology, Nihon University, Chiyoda, Tokyo, Japan</p>
<p>P6-M1-6 Simulation Aided Dosing Control of a 2D Array Therapeutic Ultrasound Transducer Xiobehna Jenny Zang¹, Kevin Mike Sakin¹, Steve Barnes², Barbara Darnice¹ ¹Ultrasound Business Unit, Siemens Healthcare, Issaquah, WA, USA, ²Siemens Corporate Research, USA, ³University of Washington, USA</p>	<p>P6-M4-6 Ultrasound Image-Guided Robotic Breast Biopsy Thomas Nelson¹, Jakob Nebeker² ¹Radioology and Bioengineering, University of California, San Diego, La Jolla, CA, USA, ²Bioengineering, University of California, San Diego, San Diego, CA, USA</p>	<p>P6-M3-5 High-Frequency Ultrasonic Attenuation and Backscatter Measurements of Rat Blood Huang Chih-Chung¹ ¹Department of Electronic Engineering, Fu Jen Catholic University, Taipei, Taiwan</p>	<p>P6-M4-7 Two-way Nonlinear Manipulation in Plane Materials Using Dual Frequency Pulse Complexes Torjei Rømmetveit¹, Tomi Johansen¹, Jochen Diebelke², Halvard Kaupang², Bjorn Angelset¹ ¹Engineering Design and Materials, NTNU, Trondheim, Norway, ²Trondheim, Norway, ³Circulation and Medical Imaging, NTNU, Norway</p>	<p>P6-M2-3 Ultrasound Speckle Reduction using Coded Excitation, Frequency Compounding, and Postprocessing Despeckling Filters Joshua S. Ullman¹, Michael L. Oelze², Jose R. Sanchez¹ ¹Electrical and Computer Engineering, Bradley University, Peoria, IL, USA, ²Senior Engineer, Intel, Santa Clara, CA, USA, ³University of Illinois, Urbana, Illinois, USA</p>
<p>P6-M2-5 A Lossy Compression Scheme of Pre-Beamformer and Post-Beamformer Ultrasound Data Mohamed Mansour¹, Muratza Ali¹ ¹Texas Instruments Inc., USA</p>	<p>P6-M2-4 A Lowy Flight Model for Ultrasound in Skin Tissues Marcelo A. Pereyra¹, Hsaj Barutai¹ ¹University of Toulouse, France</p>	<p>P6-M2-1 Numerical prediction of frequency dependent 3D maps of mechanical index thresholds in ultrasonic brain therapy Gianmarco Pinton¹, Jean-Francois Aubry¹, Mathias Fink², Mickael Tanter¹ ¹Institut Langevin, ESPCI, CNRS 7587, Paris, France, ²Institut Langevin, France</p>	<p>P6-M2-2 Coded excitation can provide simultaneous improvements in sensitivity and axial resolution in Doppler ultrasound systems Joanne Cowe¹, Enrico Boni¹, Stefano Ricci¹, Piero Tonoli¹, David Evans¹ ¹Medical Physics, University Hospitals of Leicester NHS Trust, United Kingdom, ²Electronics and Telecommunications Department, University of Florence, Italy, ³Cardiovascular Sciences, University of Leicester, United Kingdom</p>	<p>P6-M1-5 Targeted Microwave Hyperthermia Monitored with Ultrasound Thermography Joon-Cook¹, Seungsoo Kim¹, John Pearce², Stanislaw Emdeuszy³ ¹Engineering, University of Texas at Austin, Austin, TX, USA, ²Senior Engineering, University of Texas at Austin, Austin, TX, USA</p>

THURS. POSTER

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3:00 pm - 4:30 pm Poster --- Thursday, October 14, 2010 Grand Hall

<p>PE-N4-3 An Ultrasonic Array Technique for Velocity of Bulk Waves and Sample Thickness Measurement Sergey Tlivo^{1,3}, Roman Macej^{1,3}, Alexey Bogachenko² ¹Institute for Diagnostic and Imaging Research, University of Windsor, Canada, ²Institute for Biomedical Physics of RAS, Moscow, Russian Federation</p>				
<p>PE-N4-4 Defect Detection of Artificial Micro Void Specimen with High Frequency Acoustic Micro Imaging Munehisa Tabata¹, Takashi Azuma¹, Kunito Hashiba¹, Takahisa Matsuda², Yukiyo Kashiwa² ¹CEL, Hitachi Ltd., Kokubanjishi, Tokyo, Japan, ²Hitachi Construction Machinery, Tsuchiura-shi, Ibaraki, Japan</p>				
<p>PE-N4-5 A possible mechanism causing subharmonics in ultrasonic testing of a closed crack Keiichi Naito¹, Toshihiko Sugium¹ ¹Mechanical Engineering, Keio University, Japan, ²Mechanical Engineering, Keio University, Japan</p>				
<p>PE-71-1 One-dimensional optoacoustic receive array employing parallel detection and video-rate acquisition Ya-Shu¹, Xinqiang Guo¹, Mengyang Liu¹, Takashi Burns¹ ¹University of Delaware, USA</p>				

				<p>PE-T1-2 Recent results from dual-layer array transducers for 3-D imaging Yaling Chen¹, Man Nguyen¹, Jesse Yen¹ <i>Biomedical Engineering, University of Southern California, Los Angeles, CA, USA</i></p>
				<p>PE-T1-3 Early Exploration of MRI-compatible Diagnostic Ultrasound Transducers Bjørna Gemild¹, Stephen Reynolds², Andreas Melzer¹, Sandy Cochran¹ <i>Institute for Medical Science and Technology, University of Dundee, Dundee, United Kingdom</i> ¹Engineering and Physics, University of Dundee, United Kingdom</p>
				<p>PE-T1-4 Numerical and Experimental Evaluation of a Composite-based Multiple-Resonance Transducer Keitaro Nakamura¹, Yuji Wada¹, Daisuke Koyama¹, Shigemi Sato², Iwaki Akijama¹ <i>Precision and Intelligence Laboratory, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan</i> ²Tokai University, Japan, <i>Shonan Institute of Technology, Japan</i></p>

THURS. POSTER

Session Chairs

Addison, Jr., R.C.	2C	Laude, Vincent.....	3D, P3-P1
Andreev, Valeriy	P4-P1	Laugier, Pascal.....	P5-M3
Arnold, Walter.....	P5-N1	Li, Pai-Chi	9B
Basset, Olivier	P2-M4	Lockwood, Geoff.....	7F
Bezdek, Michal.....	P4-N2	Lovstakken, Lasse	P2-M1
Bonello, Bernard.....	P3-P2	Lu, Jian-Yu	P3-M2
Bosch, Hans.....	P3-M4	Malocha, Don	9E
Bouakaz, Ayache.....	8A	Matula, Tom	P2-M2
Cain, Charles	3A	Miller, James	8D
Carson, Paul.....	4F	Nightingale, Kathy	2B
Chapelon, Jean-Yves	P5-M1	Nikolov, Svetoslav	2D
Clement, Greg.....	4A	Nowicki, Andrzej	P4-M3
Cochran, Sandy.....	P6-T1	O'Brien, William.....	3B
Da Cunha, Mauricio Pereira.....	6E	O'Donnell, Mathew.....	5B
Daft, Chris	5F	Oelze, Michael.....	P6-M3
Dahl, Jeremy	P1-M2	Oralkan, Omer	6F
Dayton, Paul	12A	Pappalardo, Massimo	7C
de Jong, Nico.....	10A	Pitschi, Max	P4-A1
de Korte, Chris.....	7B	Reynolds, Raul.....	12F
Demirli, Ramazan.....	P4-N1	Roh, Yongrae.....	P1-T1
D'hooge, Jan	8B	Ronnekleiv, Arne.....	P3-T1
Dumont, Fabien.....	P3-A1	Ruby, Rich	2F
Ebbini, Emad	6A	Ruppel, Clemens.....	8E
Emelianov, Stanislav	5C	Saniie, Jafar	3C
Emery, Charles	P5-T1	Schmitz, Georg	P5-M2
Evans, David.....	11E	Seip, Ralf	5A
Fattinger, Gernot.....	4E	Smith, Peter	P2
Ferrara, Katherine.....	11A	Smith, Scott	11F
Foster, Stuart.....	12B, 2A	Solal, Marc	5E
Fraser, John.....	9F	Takeuchi, Shinicchi	P5-P1
Furgeson, Eric.....	P1-N2	Tanter, Mickael.....	10F
Greenleaf, James.....	10B	Thomas, Tom.....	P4-M4
Greve, David.....	P1-N1	Thomenius, Kai	4B
Haeggstrom, Edward	11C	Tittman, Bernhard.....	P6-N1
Haiat, Guillaume.....	P1-M3	Torp, Hans	P1-M1
Hall, Anne.....	12E	Tortoli, Piero.....	P4-M2
Hines, Jackie	10C	Trahey, Gregg.....	P5-M4
Hoskins, Peter.....	3F	Tsujino, Jiramaru	12C
Hossack, John.....	11B	Van der Steen, Ton.....	6B
Hynynen, Kullervo	7A	Vetelino, John.....	4C
Insana, Michael.....	P6-M2	Volatier, Alexandre	P1-A2
Jensen, Jorgen.....	9D, P4-M1	Wagner, Karl	7E
Kaitila, Jyrki	P5-A1	Wang, Ji	P1-A1
Kanai, Hiroshi.....	P2-M3	Wang, Yaqiang	P1-A3
Kanda, Takefumi	10D	Waters, Kendall	P6-M4
Ketterling, Jeff.....	9A	Wear, Keith.....	7D
Khuri-Yakub, Pierre	P3-N1	Weigel, Robert.....	3E
Kim, Eun Sok	11D	Wilcox, Paul	9C
Kolios, Michael	6C	Wu, Tsung-Tsong	6D
Konofagou, Elisa	P6-M1	Yong, Yook-Kong	5D
Kudo, Nobuki	P3-M1	Yuan, Jian	8F
Kupnik, Mario	8C	Zderic, Vesna	P3-M3
Kuypers, Jan	10E	Zhang, Qiming.....	P4-T1
Larson, John D.....	12D, 4D	Zhou, Qifa.....	2E

Author Index

A

- Aaltonen, Juha P1-N1-4
 Abbey, Craig 10F-5, P3-M2-4
 Abbott, Ben 7E-1
 Abbott, Benjamin 7E-5
 Abe, Takashi P3-M4-2
 Achaoui, Younes 3D-4, 6D-2
 Adamowski, Julio P4-N2-4
 Adibi, Ali 3D-3
 Afadzi, Mercy P5-M1-2
 Agarwal, Ashish 6C-2
 Ahlgren, Åsa Rydén 6B-6, P4-M4-2
 Aid, Marc P5-A1-2
 Aigner, Robert 3E-4, 7E-1
 Aired, Leila 12A-6
 Akao, Shingo P1-N2-3, P4-N2-2
 Akhmedzhanov, Farkhad 5D-6
 Akiyama, Iwaki P6-T1-4
 Akiyama, Morito 11D-1, P5-A1-4
 Albinsson, John P4-M4-2
 Aleksandrov, Kirill S. P1-A1-3, P3-P1-5
 Alekseev, Sergey 5D-3
 Alem, Halima 8E-4
 Ali Blahova, Ilona P5-P1-2
 Ali, Murtaza P6-M2-1, P6-M2-5
 Alibakhshi, Mohammad A. 3B-3
 Allard, Louise 7D-5
 Allen, Phillip 9F-3
 Alles, E.J. P1-T1-3
 Al-Mahrouki, Azza P5-M1-7
 Almasri, Firas P2-M2-5
 Almuhanha, Khalid 11E-3
 Al-Naimi, Farah 4E-6
 Alzuaga, Sébastien P4-N2-1
 Amador, Carolina 12B-2, P2-19
 Amoroso, N. J. 12B-1
 Anagnostou, Fani P3-M4-5, P5-P1-4
 Anderson, Chris 11A-6
 Anderson, Janelle 8D-4
 Anderson, Tom P3-M1-4
 Andreev, Valeriy P4-P1-4
 Andreuccetti, Fabio 12E-1
 Andrzej, Nowicki P5-M3-2
 Angelsen, Bjørn P5-M1-2, P6-N1-2
 Arakawa, Kazuki 11D-1, P5-A1-4
 Arakawa, Mototaka 4C-1
 Araz, Muhammet 11C-3, 12D-5
 Ardon, Roberto 3F-3
 Arendt Jensen, Jørgen.... 11E-6, 12F-4, 5F-3,
 P3-M2-3
 Arif, Muhammad P3-M1-7, P4-M4-6,
 P5-M4-6
 Aristizábal, Orlando 9B-1, P5-M4-10
 Armendariz Silva, Jorge P1-N2-6
 Arnal, Bastien 11B-6, 6A-1, P2-16
 Asada, Takaaki P2-M1-4
 Asai, Kengo P1-A2-5
 Asakura, Yoshiyuki P5-P1-3
 Asami, Rei P4-M2-3
 Asao, Yasufumi P5-M2-5
 Åsen, Jon Petter 3F-1
 Ashkenazi, Shai P5-M2-3
 Ashley, Gregory 11D-6, 4E-6
 Ashok, Tejasvi 4C-5, P2-1
 Assouar, Badreddine..... 11D-3, 6D-1, 6E-6,
 P2-8
 Atalar, Abdullah 5F-4, P5-T1-4
 Aubert, Thierry 11D-3, 6E-4, 6E-6, P2-8
 Aubry, Jean-Francois..... 10F-4, 4A-3, 5A-1,
 7A-5, P6-M1-4
 Axelsen, Martin Christian P2-M4-1
 Azarov, A. 6E-3
 Azhari, Haim P6-M4-4
 Azuma, Takashi P1-M2-5, P2-M1-1,
 P4-M2-3, P6-N1-4

B

- Babataheri, Avin P5-M1-4
 Bachmann Nielsen, Michael..... 11E-6
 Bader, Bernhard 9E-2
 Bader, Stefan 11D-4
 Badescu, Mircea 9F-3
 Bae, Moo-Ho P2-M1-5
 Bæk, David 12F-4, 5F-3
 Baghai-Wadji, Alireza P4-A1-6, P4-A1-9
 Baghani, Ali P2-M3-6
 Bailey, Michael 3B-1, 4A-6, 8A-6
 Baker, Jay P6-M4-5
 Baker, Roger 8C-3
 Ballandras, Sylvain..... P1-A3-2, P4-N2-1,
 P5-A1-3
 Ballard, John P6-M1-3
 Baltazar Herrejón, Arturo P1-N2-6
 Bamber, Jeffrey P2-M3-10
 Bao, Xiaoqi 9F-3
 Barack, Tom 8A-3
 Baravelli, Emanuele 3C-1
 Barbosa, Daniel 7B-3, P2-20, P2-M4-3
 Bar-Cohen, Yoseph 9F-3
 Barnes, Steve P6-M1-6
 Baron, Thomas P4-N2-1
 Bartolome, Eduardo 4F-2
 Basarab, Adrian 5B-3, P2-M3-8
 Basset, Olivier 2B-2, P3-M2-1
 Bassi, Luca P4-M3-7
 Bassignot, Florent P4-N2-1
 Batatia, Hadj P6-M3-6
 Bause, Fabian 8C-6
 Bavencoffe, Maxime 6D-5
 Bavu, Eric 10B-1
 Bayer, Carolyn 6C-3
 Beckmann, Martin F. 5C-5
 Behar-Cohen, Francine P5-M1-8
 Behler, Russell 6B-3
 Belliard, Laurent 3D-2, P3-P2-1, P3-P2-3
 Belyea, David 9E-6

Cheema, Kamran	4E-2	Collet, Bernard.....	P3-P1-2, P3-P1-2
Chen, Alan	7E-1	Comess, Keith.....	P2-M1-6
Chen, Cherry.....	3B-6	Cook, Jason.....	4A-5, P6-M1-5
Chen, Hong.....	12A-1, 8A-6	Coron, Alain	7D-2, P6-M4-10
Chen, Jia-Jiun	P6-M3-4	Costa, James R.....	9E-4
Chen, Jiusheng.....	11E-5	Couade, Mathieu....	10B-1, 6B-1, 7B-6, 8B-3
Chen, Ke	2B-4	Couture, Olivier.....	P5-M1-4
Chen, Li	4E-2	Couzy, Lionel	P1-M2-9
Chen, Peidi	8E-2	Cowe, Joanne.....	P6-M2-2
Chen, Peter	8F-2, P1-M2-11	Cowell, David.....	P3-N1-7
Chen, Ruimin.....	7F-5, P3-M4-7	Criton, Aline	P1-M2-9
Chen, Shigao.....	10B-3, 12B-2, 2B-4, P2-19, P2-M3-3	Croënné, Charles	6D-5, P3-P2-4
Chen, Show-Huie	P3-M3-3	Croxford, Anthony	7C-4, 8C-4
Chen, Xucai	10A-5	Crozatier, Bertrand	7B-6
Chen, Yong	7F-6	Crum, Lawrence	3B-1, 4A-6, P3-M3-2
Chen, Yuling.....	P6-T1-2	Cui, Hanyin.....	P5-N1-3
Chen, Yung-Yu.....	P3-A1-8	Cumming, David	11F-5
Chen, Yun-Sheng	4A-5, 5C-4, 6C-3	Cummings, Jennifer E.....	9D-2
Chen, Zhongping	8F-5, P2-12	Curiel, Laura.....	6A-3
Cheng, Xiaoyang.....	6F-4	Curra, Francesco.....	9F-5
Cheng, Xiaoyu	12D-3	Cygan, Szymon.....	7B-3, P2-20
Cheriu, Emmanuel.....	9A-2, P1-T1-1	Czarnota, Gregory.....	7D-3, P2-M2-5, P5-M1-7
Chertov, Andriy.....	P1-N1-3		
Cheung, Chris.....	P2-M1-3		
Cheung, Dave K. H.	12E-5, P4-M3-5		
Chiang, Chi-Shiun	P6-M3-4		
Chiang, Huihua Kenny	P3-M4-7		
Chiasson, Jean-Louis.....	7D-4		
Chih-Chung, Huang	P6-M3-5		
Chilipka, Thomas	11F-2		
Chimankar, Omprakash.....	12D-4		
Chin, Chien Ting	3A-2		
Chin, Tao-Lun	4C-3, 4C-5, P2-1		
Chitnis, Parag V.....	P3-M1-6		
Chiu, Harry C. T.....	12E-5, P4-M3-5		
Chivukula, Venkata.....	4C-2		
Cho, M.H.	4B-4		
Chodakauskas, Thaddeus	9D-2		
Choe, Jung Woo	8F-2, P4-M1-6		
Choi, Hojong	P4-M3-1		
Choi, Hon Fai	11E-1, 7B-1		
Choi, James.....	3A-5, 7A-1, P2-15		
Choi, Joon Hwan	P2-M1-6		
Choi, Kyusil.....	P2-M2-3		
Choi, Min-Joo.....	P1-M3-1		
Chou, Derrick	5F-6		
Chow, Yut-Hoong	2F-4		
Christian, Cachard	P5-M4-4		
Chuembou, Fabrice	4F-5, 9D-5		
Chupin, Laurent.....	9F-1		
Cinthio, Magnus	11A-2, 6B-6, P4-M4-2		
Ciplys, Daumantas.....	4C-2		
Claus, Piet ...	11E-1, 7B-3, P2-20, P2-M3-12, P2-M4-3		
Clement, Gregory.....	9D-3, P4-M2-5, P4-M3-6, P4-P1-2		
Clement, Marta.....	P3-A1-3, P3-A1-6		
Cleveland, Robin O.	3B-3		
Cloutier, Guy	10B-5, 7D-4, 7D-5, 7F-4		
Cochran, Sandy.....	11F-5, 2E-4, 5D-5, P6-T1-3		
Cohen, Ivan.....	12E-2		
		D	
		D'hooge, Jan.....	11E-1
		Daft, Chris M.W.	9B-3
		Dagdar-Javid, Gholamreza.....	3E-2
		Dahl, Jeremy	10F-1, 10F-3, 9B-4, P5-M4-1, P5-M4-2
		Dai, Jiyan	P4-T1-4
		Dallai, Alessandro	12E-6
		Daniau, William	P5-A1-3
		Danilouchkine, Mikhail	12F-3, P1-T1-2, P5-M4-5, P5-M4-8
		Dapp, Robin.....	P6-M4-11
		Darinskii, Alexandre.....	P4-A1-3
		Darrasse, Luc	7A-5
		Dausch, David	5F-6
		Dave, Jaydev.....	9A-1, 9A-6
		Davies, Catharina. De L.	P5-M1-2
		Davulis, Peter.....	4C-4
		Dawson, Andrew	P6-M3-7
		Dayton, Paul.....	10A-4, 11A-5, 3F-4, 3F-5, P3-M3-1, P5-M1-1
		De Backer, Julie.....	11E-4
		De Groote, Joris	P2-M4-5
		de Gruiter, Martijn.....	10A-3
		de Jong, N.....	9D-4, P4-P1-3, P5-M4-3
		de Jong, Nico	10A-3, 12F-2, 12F-3, 3F-2, 4F-4, 8A-1, 9A-5, P1-T1-2, P2-17, P2-M2-8, P3-M1-9, P5-M4-5, P5-M4-8, P6-M4-9
		De Korte, C.L.	6B-4, 7B-5, P2-M4-6
		de Korte, Chris.....	P1-M2-6
		De La Rama, Alan	8F-2
		De Marchi, Luca	2D-3, 3C-1, 3C-4
		Dean, Dana D.	P3-M3-5
		Defay, Emmanuel	P5-A1-2
		Deffieux, Thomas	11B-4, 7A-1, P2-15
		Degertekin, Levent.....	10F-6, 11F-1, 5F-5, 6F-3, 6F-5, 6F-6
		Deibele, Jochen.....	P6-N1-2

Delachartre, Philippe	P2-M3-8, P3-M2-1, P4-M4-3	Elmazria, Omar	11D-3, 6E-4, 6E-6, 8E-4, P2-8
Delarama, Alan	4A-4, P1-M2-11	Emelianov, Stanislav ...	11A-1, 11A-3, 2B-1, 4A-5, 4B-2, 5C-4, 6C-3, 6C-5, 6C-6, P5-M2-2, P6-M1-5
Delmas, Yahsou	P1-M2-9	Emmer, Marcia	10A-3, P6-M4-9
Demi, L.	P4-P1-3, P5-M4-3	Ephrat, Pinhas	5C-6
Demirci, Utkan	11C-1	Eranki, Avinash	11E-3
Demirli, Ramazan	3C-2	Ermert, Helmut	3F-6, P2-M4-2, P6-M2-6
Demore, Christine	5D-5	Esashi, Masayoshi	10E-6, P2-7
Denault, André Y.	7D-5	Escoffre, Jean-Michel	P2-M2-6
Dencks, Stefanie	6A-4	Evan, Andrew P.	8A-6
Deng, Cheri	12A-5	Evans, David	P6-M2-2
Dentinger, Aaron	4A-4, 8F-2, P1-M2-11	Evans, Phillip	P2-M3-10
Derieppe, Marc	P1-M2-9	Everbach, Carr	5A-2
Desmulliez, Marc	11F-5		
Devos, Arnaud	5E-1	F	
Dewall, Ryan	11B-2	Fabiilli, Mario	3A-4, 4A-2, 8A-2
Dhanaliwala, Ali H.	12A-2, P2-M3-7	Faez, Telli	P3-M1-9
D'hooge, Jan	7B-1, 7B-3, P1-M2-1, P2-20, P2-M3-12, P2-M4-3	Faivre, Magalie	P5-M1-4
Dickie, Kris	P2-M1-3	Fan, Ching-Hsiang	P2-M2-4
Dietenbeck, Thomas	P2-M4-3	Fan, Liexiang	6A-6
Dighe, Manjiri	P1-M2-13	Fan, Zheng	P3-N1-5
Ding, Xuan	2B-3	Fan, Zhenzhen	12A-5
Dinten, Jean-Marc	P5-M2-1	Fardanesh, Marjan	3B-5
Dione, Donald	7B-4	Fatemi, Mostafa	4F-6
Diou, Odile	9A-3	Fattal, Elias	9A-3
Djafari-Rouhani, Bahram	6D-6	Favro, L.D.	7C-1
Djuth, Frank	7F-3, P4-T1-3	Fedewa, Russell	7D-1, P2-18
Doberstein, Sergei	P1-A3-3	Feingold, Steven	11A-5, 3F-4
Docter, Margreet	4F-4, P3-M1-9	Feld, Dave	4E-5
Doherty, Josh	10F-1	Feld, David	4E-1, 9E-3
Doinikov, Alexander	12A-6	Feleppa, Ernest J.	7D-2, P6-M4-10
Domenjoud, Mathieu	P4-T1-7	Felmtsetger, Valery	P3-A1-6, P3-A1-8
Domingue, Frédérique	P5-A1-2	Feltovich, Helen	8D-4
Drinkwater, Bruce	2C-1, 7C-4, 8C-4	Feng, Chris	9E-3
Drvol, Lucas	5A-2	Fenzi, Neal	3E-1, 9E-4
Du, Jianke	5D-4	Ferin, Guillaume	4F-4
Du, Jiankedu	12D-3	Fernandez, Anna	10B-3
Du, Yigang	P5-M4-7	Ferrara, Katherine ...	11A-6, 9B-5, P5-M4-9, P6-M1-7
Duboeuf, Francois	P5-M2-1	Feuillard, Guy	9C-5, P4-T1-7
Dubus, Bertrand	6D-5, P3-P2-4	Filoux, Erwan	3B-3, P5-M4-10
Dufilié, Pierre	7E-6	Fink, Mathias ..	10B-1, 10B-4, 10F-2, 10F-4, 11B-4, 12B-4, 12E-2, 5A-1, 6A-2, 6B-1, 7A-5, 7B-6, 8B-3, P1-M2-4, P2-21, P6-M1-4
Dumont, Douglas	10F-1	Fischmeister, Rodolphe	7B-6
Duncan, James	7B-4	Fitzpatrick, Glen	P3-T1-5
Dunmire, Barbrina	P6-M1-6	Flanagan, Christina	6B-1, 8B-3
Durand, Marion	P1-M2-7	Fleury, Gerard	9F-1
Duryea, Alexander	5A-5	Flewitt, Andrew	11D-6, 4E-6
Duy, Walter	10C-2	Fodor, William	3A-2
		Foiret, Josquin	P5-M3-3
E		Fokong, Stanley	P4-M2-4
Eary, Janet	6C-4	Ford, Christopher	11D-6
Ebbini, Emad	6A-5, 6B-5, P6-M1-3	Forsberg, Flemming	2D-1, 9A-1, 9A-6
Eckersley, Robert	8A-3	Forsén, Esko	P5-A1-3
Eftekhar, Ali A.	3D-3	Fortineau, Jérôme	9C-5
Eisenbrey, John	9A-1, 9A-6	Forzoni, Leonardo	12E-1
Ekeom, Didace	7F-4	Foster, Stuart	3A-3, 5C-6, 9A-2, P1-T1-1, P2-M2-7
El-Damak, Dina Reda	P3-T1-1		
Elen, An	7B-3, P2-20		
Eliceiri, Kevin	8D-4		
El-Kady, Ihab	3D-5, 6D-4		
Elkateb Hachemi Amar, Melouka	10B-6		

Fowlkes, Brian 3A-4, 3B-2, 4A-2, 5A-3,
5A-4, 6F-4, 8A-2, P3-M4-3
 Francalanci, Lorenzo 12E-6
 Franceschini, Émilie 7D-4
 Francisco, Camarena P3-P1-3
 Franco, Ediguer P4-N2-4
 François, Bruno P1-A3-2
 François, Varray P5-M4-4
 Frank, Gary P2-M3-5
 Frank, Joseph A. P3-M3-5
 Franosch, Martin 4E-3
 Fredriksson, Sarah 11A-2
 Freear, Steven P3-M1-7, P3-N1-7,
P4-M4-6, P5-M4-6
 Freisleben, Stefan P5-A1-1
 Frenkel, Victor P3-M3-5, P5-M1-5
 Frey, Wolfgang 5C-4
 Friboulet, Denis 5B-4, P2-M4-3
 Friedrich, Claus-Stefan 5C-5
 Friedt, Jean-Michel P1-A3-2
 Fujii, Satoshi P3-A1-1
 Fujimoto, K. L. 12B-1
 Fujiwara, Joji P1-A3-4
 Fukui, Kenji P5-M3-7, P5-P1-4
 Fukutani, Kazuhiko P5-M2-5
 Funakubo, Hiroshi P4-T1-3
 Furrer, Roman 7C-3, P2-2
 Furuhashi, Satoru P5-N1-2
 Furuya, Mio P2-M1-4

G

Gachagan, Anthony 12C-2, 12C-3, 2C-4,
P2-3
 Gachon, Dorian P4-N2-1
 Gaertner, Tilo 3E-2
 Gaiffe, Olivier 3D-4
 Gaitini, Diana P6-M4-4
 Gallippi, Caterina 12B-5, 6B-3, P1-M2-10
 Gallot, Thomas 11B-5
 Galluzzo, Francesca 2D-3
 Gambhir, Sanjiv S. 5C-1
 Gamble, Kevin 7E-1
 Gao, Hang 11E-1
 Gao, Shunji 5A-2
 Gao, Xiaohu 6C-4
 Garbin, Valeria P2-M2-8
 Garcia, Damien 12E-4
 Garcia-Gancedo, Luis 11D-6, 4E-6
 Gateau, Jerome 5A-1
 Gätjens, Jessica P4-M2-4
 Gauffillet, Fabian P6-M4-8
 Gebreab, Tadesse P1-M3-2
 Geist, Craig 3B-5, 9E-6
 Gelderblom, Erik 8A-1, P2-17
 Gelet, Albert 2A-3
 Gelly, Jean-Francois 9D-2
 Gemmeke, Hartmut P6-M4-11
 Gencil, Mustafa 8F-2
 Geneve, Damien 6E-6, P2-8
 Geng, Xuecang P3-N1-5
 Gennisson, Jean-Luc... 10B-1, 11B-4, 12B-4,
P1-M2-4, P1-M2-9

Gerber, Lynn P1-M3-2
 Gerhardt, Nils C. 5C-5
 Gerold, Bjoern P6-T1-3
 Gessner, Ryan 11A-5, 3F-4, 3F-5, P3-M3-1
 Ghahremani, Mohammadreza 9E-6
 Ghiadoni, Lorenzo 12E-6
 Ghoshal, Goutam 8D-5, P1-M3-6
 Gilbert, Steve 2F-4, 5D-1
 Gilchrist, Kristin 5F-6
 Giles, Anoja P2-M2-5, P5-M1-7
 Girard, Pierre 4E-2
 Girault, Jean-Marc P3-M1-8
 Glang, Robyn 11E-5
 Glynne-Jones, Peter 5D-5
 Goavec-Merou, Gwenhaël P1-A3-2
 Goblirsch Sorace, Anna 12A-3
 Goertz, David 3A-3, 9A-2
 Gold, Eric P3-M3-5
 Gong, Yanjun P4-M2-1
 Gong, Yiwen 8E-6
 Goodstitt, Mitchell M. P3-M4-3
 Gorelikov, Ivan 6C-1, P2-M2-7
 Gorisse, Marie P5-A1-2
 Goto, Mikihiko 8E-1
 Goto, Rei 7E-2
 Graf, Iulia P5-M2-2
 Granchi, Simona P1-M3-4
 Grant, Gerald 8F-3, P2-11
 Grata, Michelle 6C-2
 Gratier, Julien 3E-3, 7E-1
 Greenleaf, James 10B-3, 11B-1, 12B-2,
12B-3, 12B-6, 2B-4, 4F-6, 8B-2, P2-19,
P2-M3-1, P2-M3-11, P2-M3-3
 Gregoire, Jean-Marc 5B-3
 Gregory, T. Stan P3-M3-1
 Grenier, Nicolas P1-M2-9
 Greve, David 4C-3, 4C-5, P2-1
 Griesmar, Pascal 9C-5
 Griffin, Greg H 7F-2
 Griffin, Weston 9D-2
 Grigorievsky, Valery 3E-1
 Grimal, Quentin 8D-1, P2-14, P5-M3-7
 Grosclaude, Philippe P1-A3-2
 Guedes, André P1-A2-6
 Gueth, Pierre P3-M2-1, P4-M4-3
 Guey, Jean-Luc 9F-1
 Guhr, Glen P4-A1-1
 Guidi, Francesco 2D-5
 Gunaseelan, Samuel 11F-4
 Guo, Xinqing P6-T1-1
 Guracar, Ismayil 11A-5, 3F-4
 Gurev, Viatcheslav 8B-4
 Gurun, Gokce 11F-1, 5F-5, 6F-3, 6F-5,
6F-6
 Gust, Norbert P3-N1-2

H

Ha, Kanglyeol P4-T1-5
 Ha, Seunghan 6C-2
 Ha, Y.H. 4B-4
 Hachiya, Hiroyuki P1-M3-10
 Hackenberger, Wesley 2E-2, P3-N1-5

Hackett, Brian.....	10C-2	Hikita, Mitsutaka	P1-N2-2
Hadj Henni, Anis.....	10B-5, 7F-4	Hill, Martyn	5D-5
Hægström, Edward.....	P1-N1-4	Hinckley, Steven.....	12D-1
Hagelauer, Amelie.....	9E-2	Hirson, Desmond.....	5C-6
Haiat, Guillaume.....	P3-M4-5, P5-M3-1, P5-P1-4	Hladky-Hennion, Anne-Christine.....	6D-5, P3-P2-4
Haider, Bruno	4F-6	Hlawitschka, Mario	9B-5, P5-M4-9
Haider, Masoom	2A-1	Ho, Eddie	2C-2
Hajnal, Jo	8A-3	Ho, Kwok Shun	P3-N1-1
Hall, Anne.....	9A-6	Ho, Min-Chieh.....	12F-6
Hall, Timothy.....	5A-3, 5A-5, 8D-4, P2-M3-5	Hochman, Michael	5F-5, 6F-3
Halldorsdottir, Valgerdur	9A-1	Hoever, Carsten	12C-1
Hamaoka, Yosuke	P1-A3-4	Hoff, Lars.....	P4-T1-2
Hamdan, Ahmad.....	6E-6, P2-8	Hoffman, Joseph.....	7D-1, P1-M3-5, P2-18
Han, Pengdi	2E-1	Hoffmann, Martin R.	5C-5
Han, Tao	P1-A3-5, P4-A1-5	Holland, Mark.....	7D-1, P1-M3-5, P2-18
Han, Xiaoyan	7C-1	Hollender, Peter.....	8B-1, 8B-6
Hancock, Hilary.....	P3-M3-5	Holman, Kyle.....	P6-M3-3
Handtmann, Martin	4E-3	Holst, Maria	11A-2
Hansen, Christian	3F-6	Holten-Lund, Hans	4F-1
Hansen, H.H.G.	6B-4	Homan, Kimberly.....	11A-1, 5C-4, 6C-5
Hansen, Hendrik	P1-M2-6	Homma, Kazuhiro	P1-M3-7
Hansen, Jens Munk.....	P3-M2-3	Homma, Shunichi.....	3B-6
Hansen, Martin	4F-1	Hong, Ji-Hong	P6-M3-4
Hansen, Yngve Hofstad.....	P5-M1-2	Hong, Y.	12B-1
Harada, Hiroshi.....	10E-6	Hooi, Fong Ming	P4-M4-7
Harada, Takuya.....	P4-P1-1	Hopcroft, Matthew A.....	10E-4
Harper, Jonathan.....	4A-6	Hori, Yuji	7E-4
Harput, Sevan	P3-M1-7, P5-M4-6	Horinaka, Hiromichi.....	P1-M3-11
Harris, Emma.....	P2-M3-10	Horinouchi, Satoshi	P1-N1-1
Harris, Paul	P4-T1-6, P6-M3-7	Hosaka, Jun.....	P1-N2-2
Hasegawa, Hideyuki.....	P1-M1-4	Hoshi, Kazuto	P1-M3-7
Hashiba, Kunio	P1-M2-5, P6-N1-4	Hossack, John	12A-2, 12A-4, 5B-2, 8A-5, P2-M3-7, P3-M1-2, P3-M3-6
Hashimoto, Ken-Ya.....	P1-A3-4	Hossain, A.B.M. Aowlad	4B-4
Hashimoto, Makoto	P1-N1-1	Hou, Gary	9B-2
Hashimoto, Masahiko.....	P1-N2-5	Hou, Zhilin.....	6D-1
Hashizume, R.	12B-1	Houtsmuller, Adriaan	10A-3
Hasler, P.....	6F-3	Hoyt, Kenneth.....	12A-3, P2-M2-9
Hasler, Paul.....	6F-5, 6F-6	Hsiang, Yu-Han.....	P4-M2-10
Hata, Masaki.....	7D-2, P6-M4-10	Hsu, Jin Chen.....	3D-1
Haugaard, Per	11E-6, P1-M1-5	Hsu, Po-Hung	11A-4, 7A-2
Haugen, Geir.....	P4-M1-3	Hsu, Shih-Ming	11C-5
Haumesser, Lionel.....	9C-5	Hsu, Stephen.....	6A-6, 8B-1, 8B-6
Hauptert, Sylvain.....	8C-5	Hu, Chang-Hong.....	12E-5, 7F-1, 7F-3, 8F-5, P2-12, P3-M4-8, P3-N1-5, P4-M3-1, P4-M3-2, P4-M3-3, P4-M3-5, P4-T1-4
Hayward, Gordon	2C-2, P3-N1-1	Hu, Chang-Lin.....	P4-M1-2
He, Shitang	P1-N2-1	Hu, Xiaowen.....	11A-6
Hecht, Frédéric	7E-6	Huang, Chih-Chung.....	11C-2, 6B-2, 7D-6, P6-M3-2
Hegazi, Emad	P3-T1-1	Huang, Dejin.....	5D-4
Heger, Stefan	4F-5, 9D-5	Huang, Jianzhong	3B-6
Heide, Patric	P5-A1-1	Huang, Lingyun	2B-6, 6C-4, 7B-4, P4-M4-1
Heikkinen, Ville	P1-N1-4	Huang, Sheng-Min	11A-4
Helfield, Brandon	9A-2	Huang, Sheng-Wen.....	6C-4
Hemmsen, Martin Christian	P2-M4-1, P3-M2-2	Huang, Songming.....	8C-3
Henning, Bernd.....	3C-6, 8C-6	Huang, Ting-Yu.....	P4-M2-8
Hensel, Karin	P3-M1-1	Huang, Tony.....	P2-4, P3-P2-5
Hergum, Torbjorn.....	P4-M1-3	Huang, Yuexi.....	P5-M1-9, P6-M1-8
Herickhoff, Carl.....	8F-3, P2-11	Huber, Thomas	9C-4
Hernandez, Sonia.....	3B-6	Hubmayr, Rolf.....	12B-6
Herve, Lionel.....	P5-M2-1		
Heyde, Brecht.....	7B-3, P2-20, P2-M4-3		
Hickernell, Fred.....	P3-A1-5		
Hii, William.....	2F-4		

Hubrecht, Regis P1-M2-9
 Hueting, Ray 4E-4
 Hughes, Michael 2D-2, 2D-4
 Humbert, Philippe 12B-4
 Hunt, Christopher 9C-4
 Hunt, William 9E-1
 Hunter, Alan 2C-1
 Huo, Xuan 9A-2
 Hussain, Bushra P1-M1-2
 Hüttebräuker, Nils 3F-6
 Hwang, Joo Ha 3B-1
 Hynynen, Kullervo ... 11F-4, 6A-3, 9F-4, P2-M2-1, P5-M1-9, P5-T1-2, P6-M1-8

I

Iborra, Enrique P3-A1-3, P3-A1-6
 Idzenga, Tim P1-M2-6
 Igarashi, Yu P1-M3-10
 Iijima, Osamu 8E-1
 Ilg, Jürgen 12F-1
 Inaba, Yuta P6-M1-9
 Ingram, Pier 4B-3, 4B-5
 Insana, Michael 10F-5, 11B-3, 2D-6, P3-M2-4
 Isago, Ryoichi 10D-6
 Ishikawa, Mutsuo P4-T1-3
 Isobe, Atsushi P1-A2-5
 Ito, Yoshihiro 2F-2
 Ito, Youichi P6-N1-1
 Iula, Antonio 2C-5, P3-T1-2, P3-T1-4
 Iwamoto, Takuya P1-N2-5
 Iwasaki, Yasuroni 7E-4
 Iwaya, Takamitsu P1-N2-3, P4-N2-2

J

Jaakkola, Antti 5E-2
 Jackson, Joseph 2C-4
 Jafari, Sara 9A-3
 Jajodia, Sangeeta 12D-4
 Jakoby, Bernhard 8E-3
 Jameson, Brant P4-N1-3
 Jansen, Krista 5C-2
 Jansman, André 4E-4
 Jansson, Tomas 11A-2, 6B-6
 Janusz, Wojcik P5-M3-2
 Jeffrey, Jr., R. Brooke 5C-1
 Jen, Cheng-Kuei 12C-4, 7C-5
 Jenderka, Klaus-Vitold 6A-4
 Jeng, Geng-Shi P4-M1-2
 Jensen, Geir Uri P4-T1-2
 Jensen, Henrik P5-M4-7
 Jensen, Jørgen Arendt 4F-1, 5B-1, P1-M1-5, P2-M4-1, P3-M2-2, P4-M1-5, P5-M4-7
 Jeong, Jong Seob P1-M2-11, P5-T1-3
 Jeong, Jong-Seob 4A-4
 Jeong, Mok-Kun P2-M1-5
 Jerzy, Litniewski P5-M3-2
 Ji, Hongfen 2E-5
 Ji, Xiaojun P4-A1-5
 Jia, Congxian 2B-6, 6C-4, 7B-4

Jian, Chunyun P3-A1-1
 Jiang, Bo P1-M1-3
 Jiang, Jing P6-M1-3
 Jiang, Jingfeng P2-M3-5
 Jiang, Xiaoning P3-N1-5
 Jiang, Zibo 2E-1
 Jimenez, Silverio 9E-4
 Jimenez-Rioboo, Rafael 8E-4
 Jin, Qiaofeng 8E-2, P1-M1-3, P2-M2-2
 Jin, Yongdong 6C-4
 Jing, Yun P4-P1-2
 Johansen, Tonni P6-N1-2
 Johansen, Tonni Franke... P4-T1-2, P5-M1-2
 Johnson, Benjamin ... 7D-1, P1-M3-5, P2-18
 Johnson, Paul 8C-5
 Johnston, Keith 11A-3, 4B-2
 Johnston, Patrick 7C-2
 Johnstone, Sherri P5-N1-3
 Johung, Tessa 3B-6
 Jolesz, Ferenc 9D-3, P6-M1-2
 Jon, Marsh 2D-2
 Jonquieres, Anne 8E-4
 Jose, Sumy 4E-4
 Joshi, Neha 2D-1
 Joshi, Pratixa 6C-6
 Ju, Byeong-Kwon 10D-2
 Jung, Ki Won 5A-2

K

Kaczkowski, Peter 4A-6
 Kaddur, Kadija P2-M2-6
 Kadota, Michio 10E-1, 2F-2
 Kaivola, Matti 5E-2, 5E-3
 Kakio, Shoji P3-A1-7
 Kalinin, Vladimir 6E-2
 Kaluzynski, Krzysztof 7B-3, P2-20
 Kamaya, Aya 5C-1
 Kamiyama, Naohisa P1-M3-10
 Kanai, Hiroshi 8B-5, P1-M1-4
 Kanda, Takefumi P4-P1-1
 Kandel, Jessica 3B-6
 Kaneko, Yuriko P1-N2-5
 Kaneshima, Yasuhiro 12F-5
 Kang, Along P1-A3-5
 Kang, Chong-Yun 10D-2
 Kang, L.H. 4B-4
 Kanna, Shigeo 9E-5
 Kanno, Isaku 2E-6
 Kano, Kazuhiko 11D-1, P5-A1-4
 Kano, Koji 8E-5
 Kapusta, L. 7B-5
 Karaman, M. 10F-6, 11F-1, 6F-3, 6F-5
 Karloff, Anthony C. P1-N1-3
 Karpouk, Andrei 2B-1
 Karshafian, Raffi .. 3A-3, P2-M2-5, P5-M1-7
 Karwat, Piotr P4-M3-7
 Kasaeifard, Alireza P4-N1-1, P4-N1-2
 Kassamakov, Ivan P1-N1-4
 Kato, Yoshitaka P1-N2-2
 Kaupang, Halvard P6-N1-2
 Kawabata, Ken-Ichi P2-M1-1, P4-M2-3
 Kawabe, Masahiko P5-M3-7, P5-P1-4

Kawashima, Norimichi.....	P5-P1-3, P5-T1-1	Konofagou, Elisa.....	3A-5, 7A-1, 7A-4, 8B-4,
Kemmerer, Jeremy	P1-M3-6, P1-M3-8	9B-2, P1-M2-2, P1-M2-3, P2-15, P2-M3-4	
Kenbou, Yukio	P6-N1-4	Kooiman, Klazina.....	10A-3, 8A-1, P2-17
Kent, Joel.....	12D-2	Kook, John.....	6A-6
Ketterling, Jeffrey A.	3B-3, 9B-1, P3-M1-6,	Kook, Taeho	7E-1
	P5-M4-10	Koratkar, Nikhil.....	4C-2
Khelif, Abdelkrim	3D-3, 6D-2	Korff, Alexander.....	4F-5
Khokhlova, Tatiana	3B-1	Kornegay, Joe.....	P1-M2-10
Khokhlova, Vera.....	3B-1	Kortbek, Jacob.....	5B-1
Khomenko, Igor.....	P1-A1-6	Kosykh, Anatoly.....	P1-A1-6
Khuri-Yakub, Pierre T.	12F-6, 4A-4, 5C-1,	Kotera, Hidetoshi.....	2E-6
	5F-1, 6F-1, 8F-2, P1-M2-11, P2-13,	Kotera, Hironori	P3-M1-3
	P4-M1-6	Kothapalli, Sri Rajasekhar.....	5C-1
Kielczynski, Piotr.....	P5-P1-5	Kotopoulos, Spiros.....	2E-4
Kiessling, Fabian	P4-M2-4	Kotov, Nicholas A.....	6C-2
Kikuchi, Tsuneo	4D-3, P5-P1-1, P5-T1-1	Kotsmar, Csaba.....	4B-2
Kilbanov, Alexander.....	8A-4, P4-M2-10	Kouame, Denis	5B-3
Kilroy, Joseph P.....	P2-M3-7	Kowalczuk, Laura.....	P5-M1-8
Kilroy, Joseph P.	12A-2, 8A-5	Koyama, Daisuke ..	10D-3, 10D-6, P2-6, P3-
Kim, Bongsang.....	10E-5	M1-3, P6-T1-4	
Kim, Byungsoo.....	P5-N1-1	Koymen, Hayrettin.....	5F-4, P5-T1-4
Kim, Eun S.....	P1-A3-1	Kracht, Jonathan M.	3B-3
Kim, Hoe Woong	12C-6	Kreider, Wayne.....	8A-6
Kim, Hyung Ham	7F-1	Kremer, Florence	11E-1, 7B-1, P1-M2-1,
Kim, Jong S.....	6C-2		P2-M3-12
Kim, Jungsoon.....	P4-T1-5	Kripfgans, Oliver.....	3A-4, 4A-2, 6F-4
Kim, K.....	12B-1, 7B-2	Kristoffersen, Kjell.....	P4-M1-3
Kim, Kang	6C-2	Krit, Timofey.....	P4-P1-4
Kim, Moojoon	P4-T1-5	Kritzinger, Christo.....	4C-2
Kim, Seokhyun.....	4F-3	Krüger, Jan Kristian.....	6E-4
Kim, Seungsoo.....	2B-1, 4A-5, 5C-4, 6C-3,	Kruizinga, Pieter.....	5C-4
	6C-6, P5-M2-2, P6-M1-5	Kruse, Dustin.....	P5-M4-9, P6-M1-7
Kim, Yohan	5A-6	Kubo, Tomohiro	8D-3, P5-M3-6
Kim, Yongmin	P1-M2-13, P2-M1-6,	Kudo, Nobuki	9C-6
	P2-M3-9	Kuehnicke, Elfgard.....	P3-N1-2
Kim, Yoon Young	12C-5, 12C-6	Kuene, Maarten.....	P4-M2-2
Kim, Youngsun.....	P2-M2-3	Kukic, Aleksandra	11F-4
Kinn Ekroll, Ingvild	P2-M1-2	Kuo, Po-Ling	P5-M1-6
Kinnick, Randall.....	4F-6, 8B-2	Kupnik, Mario.....	12F-6, 5F-1, 5F-3, 6F-1,
Kinter, Thomas	4F-6		6F-2
Kiss, Gabriel	3F-1	Kurosawa, Minoru.....	P4-T1-3, P5-T1-1
Kitazawa, Natsuko.....	P3-M1-3	Kurppa, Risto.....	P1-N1-4
Klibanov, Alexander	8A-5, P3-M3-6	Kushibiki, Jun-Ichi.....	4C-1, 9C-2
Kliewer, Mark.....	P1-M2-12	Kustron, Pawel.....	P1-N1-3
Klimonda, Ziemowit	P4-M3-7	Kutarnia, Jason	P2-M4-4
Knowles, Joseph.....	P2-M2-9	Kuznetsova, Anastasia.....	P5-N1-4
Kobayashi, Hiroki	7E-4	Kuznetsova, Iren.....	10C-5, P5-N1-4
Koch, Andreas	3F-6	Kuznetsova, Tatiana	P1-M2-1
Koch, Christian	6A-4	Kwan, James.....	10A-2
Kocimski, Janusz.....	P1-N1-3	Kwon, Young Eui.....	12C-6
Koerberl, Dwight.....	3A-2	Kybic, Jan	P6-M4-8
Kogai, Takashi.....	8E-1, 8E-5		
Kogan, Paul	10A-4		
Kokhuis, Tom.....	10A-3		
Kokkonen, Kimmo	5E-2, 5E-3		
Kolias, Theodore	7B-4		
Kolios, Michael.....	6C-1, 7D-3, P6-M3-1		
Komura, Yuji.....	12F-5		
Kondo, Shuichi.....	10D-3, P2-6		
Kondo, Takanori.....	9C-2		
Kondoh, Jun.....	8E-5		
Kondratiev, S.....	6E-3		
Koné, Issiaka	P5-A1-2		

L

Lachman, Michael.....	10B-3
Ladouceur, Michelle.....	3A-3
Lafon, Cyril	P5-M1-3
Lai, Chun-Yen	P6-M1-7
Lal, Amit.....	10D-1, 11C-3, 12D-5, 6E-1,
	P2-10, P3-P1-1
Lamers, Tina.....	9E-3
Lamothe, Marc.....	P1-A3-2
Lancée, C.T.....	12F-2, 9D-4

Langer, Mark	9D-2	Li, Pai-Chi.....	11A-4, P3-M1-5, P4-M1-1, P4-M1-2, P5-M1-6, P5-M2-7
Lanning, Craig	11E-5	Li, Qian	4B-3, 4B-5
Lanteri, Frederic	9D-2	Li, Shunzhou.....	P1-N2-1
Lanza, Gregory	2D-2, 2D-4	Li, Songtao.....	3A-2
Laroche, Thierry.....	P4-N2-1	Li, Weng-Tyng	P3-M3-3
Larrat, Benoit.....	10F-4, 11B-4, 3B-4, 7A-5	Li, Xiang	2E-5, 7F-3, 8F-5, P2-12, P2-M2-2, P4-M3-1
Larsen, Ulrik Darling	4F-1	Li, Ye	P4-M1-5
Larson Iii (Fellow), John D.....	11D-4, 5D-1	Li, Yen-Feng.....	P4-M1-1
Larsson, Matilda	7B-1, P1-M2-1, P2-M3-12	Li, Yifeng.....	P4-A1-4
Lasaygues, Philippe.....	P6-M4-2	Li, Ying	P1-M3-1
Lashbrook, Chris	P3-M4-3	Liang, Kaicheng	P6-M4-5
Lau, Sien-Ting	2E-5, 9D-6, P4-M3-1, P4-T1-4	Liao, Ai-Ho.....	11A-4, P3-M1-5
Laude, Vincent ..	3D-4, 6D-2, 6D-6, P3-P2-2	Liao, Chen-Chih	7D-6
Laugier, Pascal.....	7D-2, 8C-5, 8D-1, P2-14, P5-M1-8, P5-M3-3, P5-M3-7, P6-M4-10	Liao, Yin-Yin.....	P1-M3-9
Laurence, Rouet.....	3F-3	Lieb Gott, Hervé	5B-4, P3-M2-1, P3-M2-6, P4-M4-3, P6-M4-8
Lavarello, Roberto J	8D-6, P6-M4-1	Lien, Ching-Ling	P2-M4-7
Lay, Holly S.....	7F-2	Lien, Wei-Cheng	P3-A1-8
Le Baron, Olivier.....	9F-1	Lieu, Victor	8F-4
Lebrasseur, Eric.....	P4-N2-1	Light, Edward	11F-3, 8F-4, P6-M4-5
Lecarpentier, Gerald L.	P3-M4-3	Lim, Dong-Jun.....	P1-M2-13
Ledesma, Carlos	4E-2	Lim, Simon	2F-4
Lediju, Muyinatu	10F-3, P2-M3-10	Lin, Anderson	P1-A3-1
Lee, Changyang	9D-6	Lin, Ben	7B-4
Lee, Chi-Yin	6A-6	Lin, Chih-Ming.....	10E-4, P1-A2-6, P3-A1-8
Lee, Da-Young	P4-M4-5	Lin, Dan	5B-2
Lee, Han-Woo	P2-M1-5	Lin, Feng.....	4A-4, 8F-2, 9A-1, P1-M2-11
Lee, Hyunjoo	5F-1	Lin, Kuang-Wei.....	5A-4
Lee, James	3A-4	Lin, Ming-Shi	P6-M1-1
Lee, Ju Seung.....	12C-5	Lin, Sz-Chin.....	P2-4, P3-P2-5
Lee, Jungwoo.....	9D-6	Lin, Yi-Hsun	11C-2, P6-M3-2
Lee, Kyoung-Bo	P2-M1-5	Lin, Yu-Hsiang	P6-M3-4
Lee, Min Kyung.....	12C-5	Lind, Britta	P1-M2-1
Lee, Paul	7D-2, P3-M1-6, P6-M4-10	Lindeboom, L.....	P2-M4-6
Lee, Po-Yang	7D-6	Lindgren, Finn	P4-M4-2
Lee, S.Y.	4B-4	Lindsey, Brooks.....	11F-3
Lee, Warren	9D-2	Lindskov Hansen, Kristoffer	11E-6
Lee, Wei-Ning	6B-1, 8B-3, P1-M2-2	Lindström, Kjell	6B-6
Lee, Won-Hee.....	10D-2	Link, Andreas	9E-2
Lee, Young-Seok.....	P2-M1-5	Lipiäinen, Lauri	5E-2
Lee, Yuhwa	P3-M2-5	Littlejohn, David.....	12C-3
Lefebvre, Jean-Pierre.....	P6-M4-2	Liu, Changgeng	7F-3
Legrani, Ouarda	11D-3	Liu, Chih-Shiang	P3-M4-7
Lematre, Mickaël.....	P4-T1-7	Liu, Dalong.....	6A-5, 6B-5, P6-M1-3
Lemmerhirt, David	6F-4	Liu, Hao-Li	11A-4, 7A-2, P6-M1-1
Lepetaev, Alexander.....	P1-A1-6	Liu, I-Hung	9C-3
Lepreux, Sebastien	P1-M2-9	Liu, Ji	3B-5, 9E-6
Lerch, Reinhard	12F-1	Liu, Ji-Bin	9A-1
Lesniak-Plewinska, Beata	7B-3, P2-20	Liu, Mengyang.....	5C-3, P6-T1-1
Lethimonnier, Franck	3B-4	Liu, Minghua	P1-N2-1
Leung, K. Y. Esther.....	3F-2	Liu, Rui bin	P3-N1-5
Lewandowski, Marcin	P4-M3-7	Liu, Shaoying.....	P2-M2-1
Lewis, Bobbie K.....	P3-M3-5	Liu, Ting-Yu	6B-2
Leyvi, Evgeniy	3A-2	Liu, Wen	8E-6
Li, Da-Wei	P6-M1-1	Liu, Yu	2B-4
Li, Fang	9C-1	Liu, Yu-Shyan	11C-5
Li, Guofeng.....	P4-A1-4	Liu, Zhe	P4-M2-4
Li, Meng-Lin.....	7A-2, P1-M1-1, P4-M1-2, P6-M1-1	Lockwood, Geoffrey R.....	7F-2
Li, Ming Hui.....	P3-N1-1	Loeckx, Dirk.....	7B-3, P2-20
Li, Minghui.....	2C-2	Loeys, Bart.....	11E-4
		Lof, John.....	5A-2

Lohse, Detlef	8A-1, P2-17, P2-M2-8	Marsac, Laurent	10F-4, 7A-5
Long, Anne	3F-3	Marsh, Jon	2D-4
Longo, Cristina	2C-5, P3-T1-2, P3-T1-4	Martin, Abraham	10B-4, P2-21
Lonsdale, Anthony	P1-A1-5	Martin, Amanda	P2-M2-7
Looney, Padriag	P3-M1-4	Martin, Gilles	P1-A3-2, P4-N2-1
Lootens, Didier	P4-N2-3	Martin, Guenter	3E-6
Lopata, R.G.P.	6B-4, 7B-5, P2-M4-6	Martinez, Alejandro	6D-6
Lopata, Richard	P1-M2-6	Martinez, Loic	9C-5
Loseu, Aleh	P1-A2-1, P1-A3-6	Martinez, Theo	9F-1
Løvstakken, Lasse ...	11E-2, 12E-3, P2-M1-2, P2-M4-5	Marty, Benjamin	3B-4
Lu, Jian	11D-6, 4E-6	Marushyak, Alex	P1-A1-3
Lu, Minhua	P2-M2-2	Maruyama, Takahisa	P6-N1-4
Lu, Yufeng	P4-N1-2	Maruyama, Yuko	4C-1
Lucarini, Leonardo	P1-M3-4	Marzani, Alessandro	3C-4
Luchies, Adam	8D-5	Maslov, Konstantin	7F-5
Lucht, Ben	9F-4	Masotti, Leonardo	P1-M3-4
Lucklum, Ralf	6D-3	Måsøy, Svein-Erik	P5-M1-2
Lucyna, Cieslik	P5-M3-2	Masson, Jeremy	P4-N2-1
Lulakova, Liudmila	4D-5	Mastik, Frits	9D-1, P6-M4-9
Lulin, Boris	6E-2	Mateo, Philippe	7B-6
Luo, Haosu	P4-T1-4	Mathieu, Vincent	P3-M4-5, P5-P1-4
Luo, Jack	11D-6, 4E-6	Matsuda, Satoru	5E-4, 7E-3
Luo, Jianwen	9B-2, P1-M2-3, P2-M3-4	Matsuda, Takashi	5E-4, 7E-3
Luo, Jun	2E-2	Matsuda, Youichi	4D-3
Luo, Si	P1-M2-13	Matsukawa, Mami ...	11D-5, 8D-3, P2-M1-4, P5-M3-4, P5-M3-5, P5-M3-6, P5-M3-7, P5-P1-4
Lynnworth, Lawrence	8C-1	Matsumura, Takeshi	10E-6
Lyshchik, Andrej	P2-M3-8	Matsunaga, Terry	10A-4
M			
Ma, Jieming	P1-M2-13	Matsunaka, Toshiyuki	P1-M3-11
Ma, Ping	P5-M1-1	Matsuura, Naomi	6C-1, P2-M2-7
Ma, Te-Jen	5C-1	Matsuyama, Tetsuya	P1-M3-11
Mace, Emilie	10B-4, 12E-2, P2-21	Matsuyama, Yukihiko	P5-M3-4
Machi, Junji	7D-2, P6-M4-10	Matte, Guillaume	12F-3, P5-M4-5, P5-M4-8
Madsen, Ernest	11B-2, P2-M3-5	Matthews, Glenn	P4-A1-9
Maeda, Yoshinori	P1-M3-11	Matula, Thomas J.	12A-1, 8A-6
Maeda, Yoshio	9E-5	Mauldin, Jr., Frank William	12A-2, 5B-2, P2-M3-7
Maev, Roman ...	P1-N1-3, P3-N1-3, P6-N1-3	Maurer, Linus	2F-3
Maffre, Jennifer	9D-2	Maurizi, Brian	2D-2
Maggio, Simona	2D-3	Maxwell, Adam	3B-2
Mahadeva, Dharshanie	8C-3	Mayer, Andreas	3E-5
Mahajan, Aman	4A-4, 8F-2, P1-M2-11	Mayer, Elena A.	3E-5
Mahesh, Sankara	3B-5, 9E-6	Mayer, Markus	3E-2
Mainfroy, Baptiste	9F-1	Mazzaro, Luciano	11E-5
Malacrida, Jean-Pierre	9D-2	Mc Sweeney, Sean	P4-N1-4
Maleke, Caroline	9B-2	McCann, Don	10C-3
Mallet, Vincent	10B-1	McCarthy, John	2D-2, 2D-4
Mallidi, Srivalleesha	11A-3, 6C-3, 6C-6	McDaniel, Benjamin	9D-2
Malocho, Donald	4C-6, 4E-2	McDannold, Nathan	P5-M1-10, P6-M1-2
Malocho, Svetlana	P4-A1-7	McDicken, William Norman	P3-M1-4
Malyarenko, Eugene	P3-N1-3	McGann, Jason	10C-3
Mamou, Jonathan	7D-2, 9B-1, P1-M3-10, P3-M1-6, P5-M4-10, P6-M4-10	McGough, Robert	P5-M4-9
Manduchi, Roberto	P4-N1-3	McGuire, Michelle	2C-2
Manh, Tung	P4-T1-2	Mehrmohammadi, Mohammad	4A-5, 4B-2, 6C-5
Mansfeld, Georgy	5D-3	Mei, Chang-Sheng	P6-M1-2
Mansour, Mohamed	P6-M2-1, P6-M2-5	Meijer, G.C.M.	9D-4
Maresca, David	P6-M4-9	Mellema, Daniel	9C-4
Marion, Adrien	P1-M2-7	Meltaus, Johanna	10E-3, 4D-2, 5E-3
Maris, Humphrey	4D-1	Meltzer, Andreas	P6-T1-3
Marksteiner, Stephan	9E-2	Meneou, Kevin	2E-1

Meng, Long 12D-6, 8E-2
 Ménigot, Sébastien P3-M1-8
 Mensah, Serge P6-M4-2
 Meral, F Can P4-M3-6
 Mercado, Michelle 7D-3
 Mériaux, Sébastien 3B-4
 Merricks, Elizabeth 6B-3
 Merton, Daniel 9A-6
 Messas, Emmanuel 6B-1
 Mestas, Jean-Louis P5-M1-3
 Meynier, Cyril P3-T1-3
 Mienkina, Martin P. 5C-5, P4-M2-4
 Miette, Véronique 10B-2
 Miller, James 4C-5, 7D-1, P1-M3-5, P2-1, P2-18
 Millman, Stuart P5-N1-3
 Milne, William 11D-6
 Milne, William I 4E-6
 Minonzio, Jean-Gabriel P5-M3-3
 Misawa, Masaki P1-M3-7
 Mischi, Massimo P4-M2-2
 Mishin, Sergey 11D-4
 Mitchell, Scottie P2-M3-11
 Mitchell, Stuart 4A-6, P3-M3-2
 Mitri, Farid 12B-3
 Mitsui, Takeshi P3-A1-7
 Miura, Michio 5E-4, 7E-3
 Miyasato, Takuro P5-M2-5
 Mizuno, Katsunori 8D-3
 Mlsna, Todd 10C-2
 Mohammadi, Saeed 3D-3
 Moiseyenko, Rayisa P3-P2-2
 Møller Pedersen, Mads 11E-6
 Montaldo, Gabriel 10B-4, 10F-2, 12E-2, P2-21
 Montilla, Leonardo G. P5-M2-6
 Moradi, Mehdi P6-M4-7
 Morita, Takao 9E-5
 Morita, Takeshi P4-T1-3
 Moro, Kosuke P3-M4-6
 Morvan, Bruno 6D-5
 Mory, Benoit 3F-3
 Moser, Glenda P3-M3-1
 Mouchet, Mathilde ... 8D-1, P2-14, P5-M3-7
 Moussa, Walied P3-T1-5
 Moussatov, Alexei P5-M1-3
 Muller, James E 9D-1
 Muller, Marie 4A-3
 Mullin, Lee P5-M1-1
 Mulvana, Helen 8A-3
 Mumme, Torsten 9D-5
 Mumper, Russell J. P5-M1-1
 Mung, Jay P3-M4-4
 Munir, Farasat 9E-1
 Murthy, Avinash 11A-3
 Mutasa, Tapiwa 12C-2, P2-3
 Muth, Stéphan 12E-4

N

Nabili, Marjan 3B-5, 9E-6
 Nagai, Hiroki P1-N2-3, P4-N2-2
 Nagata, Hajime 2E-3

Nagy, Peter 8C-4
 Naili, Salah P5-M3-1
 Nair, Anuja 7D-1, P2-18
 Naito, Keiichi P6-N1-5
 Nakagawa, Yasuhiko P3-A1-7
 Nakajima, Takao P5-M2-5
 Nakamura, Hiroyuki 7E-2, P1-A3-4
 Nakamura, Kentaro 10D-3, 10D-6, P2-6, P3-M1-3, P6-T1-4
 Nakanishi, Hidekazu 7E-2, P1-A3-4
 Nakaso, Noritaka P1-N2-3, P4-N2-2
 Nakatsuji, Tomohiro P5-M3-4, P5-M3-5
 Namgung, Misun P2-M2-3
 Narayanasamy, Ganesh P3-M4-3
 Nauleau, Pierre 8D-1, P2-14
 Naumenko, N. 6E-3, 6E-5, 7E-5, P3-A1-2
 Nebeker, Jakob P6-M4-3, P6-M4-6
 Needles, Andrew 5C-6
 Negreira, Carlos 11B-5, P1-M2-4
 Neivandt, David 10C-2
 Nelson, Thomas P6-M4-3, P6-M4-6
 Nenadic, Ivan P2-M3-11
 Neuenschwander, Juerg 7C-3, P2-2
 Newaz, Golam 7C-1
 Nguyen , Tuan Thai Anh P4-T1-2
 Nguyen, Linh-Chi 7D-4
 Nguyen, Man P6-T1-2
 Nguyen, Nghia 10F-5, P3-M2-4
 Nguyen, Tho 4A-4, P1-M2-11
 Nguyen, Thu-Mai 12B-4
 Nichols, Timothy 12B-5, 6B-3
 Nielson, Ronnie Thorup 4F-1
 Niemz, Peter 7C-3, P2-2
 Niggemeyer, Martin 9D-5
 Nightingale, Kathryn 2B-3, 2B-5
 Nightingale, Kathy P2-M3-2
 Nikolov, Svetoslav Ivanov 4F-1, 5B-1, P2-M4-1, P3-M2-2
 Nikoozadeh, Amin 4A-4, 8F-2, P2-13
 Nillesen, M.M. 7B-5, P2-M4-6
 Nilsson, Jan 6B-6
 Nilsson, Tobias 6B-6
 Nitta, Naotaka P1-M3-7
 Niu, Lili P1-M1-3
 Nofiele Tchouala, Joris I. P5-M1-7
 Nordon, Alison 12C-2, 12C-3, P2-3
 Novell, Anthony 9A-4, P2-M2-6
 Novgorodov, Volodymyr P5-A1-1
 Nowicki, Andrzej P4-M3-7

O

O'Donnell, Matthew 6C-4, 7B-4, 8F-2, P1-M2-11
 Obata, Naohisa 9E-5
 O'Brien, Jr., William D. 8D-5
 Oddie, Gary 8C-3
 O'Donnell, Matthew ... 2B-6, 4A-4, P4-M4-1
 Oe, Yukiko P1-M2-2
 Oelze, Michael 5B-5, 7D-2, 8D-5, 8D-6, P1-M3-6, P1-M3-8, P6-M2-3, P6-M4-1
 Ogami, Takashi 10E-1
 Ohara, Yoshikazu P1-N1-1

Ohara, Yuya.....	P1-M3-11	Park, Sung-Bae.....	P2-M1-5
Ohashi, Yuji.....	4C-1	Pasternak, Maurice.....	7D-3
Okada, Junpei.....	P3-M4-6	Patat, Frederic.....	10B-6
Okada, Nagaya.....	P5-P1-3	Patel, Mihir S.....	5D-2, P1-A1-1
Okrasinski, Stanley.....	8B-4, P1-M2-2	Patil, Abhay.....	12A-2, 12A-4, 8A-5, P3-M1-2
Okuno, Tetsuji.....	P5-T1-1	Pavan, Theo.....	P2-M3-5
Olafsson, Ragnar.....	4B-3, P5-M2-6	Pearce, John.....	P6-M1-5
Olafsson, Ragnar.....	4B-5	Pedersen, Mads Møller.....	P2-M4-1
Olcum, Selim.....	5F-4, P5-T1-4	Pedersen, Peder.....	P2-M4-4
O'Leary, Richard.....	12C-2, 2C-4, P2-3	Pedros, Jorge.....	11D-6
Olivares, Jimena.....	P3-A1-3, P3-A1-6	Pehlke, Carolyn.....	8D-4
Oliveira, José Edimar Barbosa.....	7C-5	Pelekasis, Nikos.....	P3-M1-4
Olivier, Basset.....	P5-M4-4	Pelissier, Laurent.....	P2-M1-3
Ollivier, Jessica.....	P2-M3-8	Peng, Dasong.....	8E-2
Olsson Iii, Roy H.....	3D-5	Peng, Lei.....	P5-M1-1
Olsson, Fredrik.....	11A-2	Pennec, Yan.....	6D-6
Olsson, Roy.....	10E-5, 6D-4, P1-A2-4	Pensala, Tuomas.....	10E-3, 5E-3
Omari, Eenas.....	P1-M2-12	Pereira Da Cunha, Mauricio.....	4C-4
Omura, Ryosuke.....	4D-4	Pereyra, Marcelo A.....	P6-M3-6
Oppenheim, Irving.....	4C-3, 4C-5, P2-1	Pernot, Mathieu.....	10F-4, 11B-6, 3B-4, 4A-3, 5A-1, 6A-1, 6A-2, 6B-1, 7A-5, 7B-6, 8B-3, 8B-16
Oppermann, Klaus-Guenter.....	4E-3	Perrault, Louis P.....	7D-5
Opretzka, Joern.....	P2-M4-2, P6-M2-6	Persson, Hans W.....	11A-2, 6B-6
Oralkan, Ömer.....	4A-4, 5C-1, 5F-3, 8F-2, P1-M2-11, P4-M1-6	Pertijs, M.A.P.....	9D-4
O'Reilly, Meaghan.....	9F-4, P5-T1-2	Peterson, Roy.....	10B-3
Orescanin, Marko.....	11B-3, 2D-6	Pham, Phuong.....	P1-A3-1
Ortiz, Robin.....	P1-M3-2	Phillips, Linsey.....	P3-M3-6
Oruklu, Erdal.....	P3-N1-6, P4-N1-1, P4-N1-2	Piazza, Gianluca.....	10E-2, P2-9
Osmanski, Bruno-Felix.....	10F-2	Pierce, Gareth.....	P3-N1-1
Osumi, Ayumu.....	P6-N1-1	Piero, Tortoli.....	P5-M4-4
Oswal, Sandeep.....	4F-2	Pierre, Juliette.....	3D-2, P3-P2-1, P3-P2-3
Otani, Takahiko.....	8D-3	Pihl, Michael.....	11E-6, P1-M1-5
Otsu, Kenji.....	12F-5	Pinsky, Renee.....	P3-M4-3, P4-M4-7
Oudich, Mourad.....	6D-1	Pinton, Gianmarco.....	4A-3, 9B-4, P5-M4-2, P6-M1-4
Overvelde, Marlies.....	P2-M2-8	Piron, Julien.....	P2-M2-6
Owen, Neil.....	9F-5	Pisano, Albert.....	10E-4, P1-A2-6, P3-A1-8
P			
Packer, Douglas.....	9D-2	Pislaru, Cristina.....	8B-2
Padilla, Frederic.....	4A-2	Plessky, Victor.....	3E-1, 6E-2
Paeng, Dong-Guk.....	P1-M3-1	Poepping, Tamie.....	P1-M1-2
Pai, Hao-Chuan.....	11C-2	Pol, Stanislas.....	10B-1
Paik, Dong-Soo.....	10D-2	Pollard, Thomas.....	4C-4
Palazzo, Juan.....	9A-6	Polo-Filisan, Gilles.....	P5-A1-2
Palmeri, Mark.....	2B-3, 2B-5, P2-M3-2	Polzikova, Natalia.....	5D-3
Palombo, Carlo.....	12E-6	Popova, Daria.....	5D-3
Paltiel, Harriet.....	P4-M2-5	Porter, Thomas.....	5A-2
Pan, Min-Yan.....	P1-M1-1	Porter, Tyrone.....	P4-M2-1
Pan, Qiaoqiao.....	P1-A1-4	Postema, Michiel.....	2E-4
Pandey, Manoj.....	10D-1, P3-P1-1	Powers, Jeff.....	5A-2
Pankhurst, Quentin.....	8A-3	Prager, Jens.....	12C-1
Pannacci, Nicolas.....	P5-M1-4	Pretl, Harald.....	2F-3
Papanikolaou, Nikos.....	6D-6	Price, Richard.....	8A-4, P4-M2-10
Pappalardo, Massimo.....	2C-5, P3-T1-2, P3-T1-4	Prins, Christian.....	12F-2
Park, Donghee.....	P2-M2-3	Prost, Rémy.....	5B-4
Park, Eun-Joo.....	P5-M1-10, P6-M1-2	Provost, Jean.....	8B-4
Park, Jinhyoung.....	7F-1, P3-M4-8	Prunnila, Mika.....	4D-2
Park, Jong Ho.....	P4-M3-8	Przybyla, Richie.....	P1-A2-6
Park, Kwan Kyu.....	5F-1	Q	
Park, Kyeongdong.....	P2-7	Qian, Ming.....	P1-M1-3
Park, Suhyun.....	4A-4, P1-M2-11	Qiang, Bo.....	11B-1, 12B-6

Qin, Lifeng P1-A2-3
 Qin, Shengping 9B-5
 Qin, Yexian 9C-1
 Qiu, Weibao P4-M3-4
 Qiu, Yongqiang 5D-5
 Qu, Min 4B-2, 6C-5
 Queste, Samuel P4-N2-1
 Quinsac, Celine 5B-3

R

Rabayah, Muna 7B-1
 Radermacher, Klaus 4F-5, 9D-5
 Ragai, Hani P3-T1-1
 Rääkkönen, Heikki P1-N1-4
 Raiton, Benjamin P3-N1-7, P6-M2-4
 Raju, Balasundar 3A-2
 Ramadas, Sivaram Nishal 2C-4
 Ramalli, Alessandro 2B-2, P3-N1-3
 Rao, Jagan P1-A3-6
 Rautenberg, Jens 8C-6
 Regar, Evelyn 9D-1
 Reindl, Leonhard M. 3E-5
 Reinhardt, Alexandre P5-A1-2
 Reinke, Charles 3D-5, 6D-4
 Remenieras, Jean Pierre 10B-6
 Ren, Wei 2E-5
 Renard, Marjolijn 11E-4
 Renaud, Guillaume 8C-5, 9A-5
 Rénier, Mathieu P3-P2-3
 Reusch, Lisa M 8D-4
 Reynolds, Paul P3-M1-2
 Reynolds, Stephen P6-T1-3
 Reza Chabok, Hamid P4-T1-3
 Reznik, Nikita P2-M2-7
 Ricci, Stefano 12E-1, 2D-5, P4-N2-3,
 P6-M2-2
 Rinaldi, Matteo 10E-2, P2-9
 Riviere, Jacques 8C-5
 Robert, Benjamin 10F-4, 7A-5
 Robert, Jean-Luc 10B-3
 Robert, Laurent 6D-2
 Robert, Sylvie 11D-3
 Roberts, William 5A-5
 Robillard, Pierre 7D-4
 Robin, Ann 12C-3
 Robin, Guillaume 9C-5
 Røeboe, Kristian Frosthalm P2-M4-1
 Roh, Yongrae P5-N1-1
 Rohling, Robert P2-M3-6
 Romand, Jean-Pierre P4-N2-1
 Rommetveit, Tarjei P6-N1-2
 Ronnekleiv, Arne 5F-2
 Rosenthal, Eben P2-M2-9
 Rothmann, Samantha P3-T1-2
 Rothstein, Tamara P6-M4-4
 Rouet, Jean-Michel 3F-3
 Rouse, Clay 3A-2
 Roux, Philippe 11B-5
 Rouxel, Didier 6E-4
 Rouyer, Julien P6-M4-2
 Rouze, Ned 2B-3, 2B-5, P2-M3-2
 Roy, Ronald 3A-1

Ruan, Jia-Ling P3-M3-2
 Rubin, Jonathan 7B-4
 Ruby, Rich 2F-4, 5E-5
 Ruby, Richard 9E-3
 Rui, Min 7D-3
 Ruile, Werner 3E-5
 Ruitter, Nicole P6-M4-11
 Rupitsch, Stefan 12F-1
 Ruzzene, Massimo 3C-1
 Rychak, Jack 12A-4
 Rychak, Joshua 11A-6
 Ryu, Heungil P2-M2-3

S

Sacks, M. S. 12B-1
 Sadler, Jeffrey P3-N1-3
 Saegusa-Beecroft, Emi 7D-2, P6-M4-10
 Safarjalani, Omar P2-M2-9
 Saha, Ratan K P6-M3-1
 Sahin, Furkan E 8C-6
 Sahn, David 4A-4, 8F-2, P1-M2-11
 Sahota, Kamal 2F-1
 Saidvaliev, Ulugbek 5D-6
 Saïed, Amena 8D-1, P2-14, P5-M1-8,
 P5-M3-7
 Saini, Reshu 12A-3, P2-M2-9
 Saito, Masashi P2-M1-4
 Saito, Shigemi P6-T1-4
 Saitou, Kazuhiro P3-M4-3
 Sakamoto, Toshihiro P1-N2-3, P4-N2-2
 Sakharov, S. 6E-3
 Sakurai, Daisuke P1-M3-11
 Salameh, Najat 7A-5
 Salavat, Aglyamov 2B-1
 Salcudean, Septimiu E. ... P2-M3-6, P6-M4-7
 Salut, Roland 3D-4
 Samuel, Stanley 8A-2
 Sanabria, Sergio 7C-3, P2-2
 Sanbonmatsu, Yoshiaki 9C-6
 Sanchez, Jose R. 5B-5, P6-M2-3
 Sandrin, Laurent 10B-2
 Sanducci, Serghei P1-A1-5
 Sangawa, Ushio P1-N2-5
 Sangrador, Jesús P3-A1-3
 Sanjie, Jafar 3C-2, P3-N1-6, P4-N1-1,
 P4-N1-2
 Sannomiya, Toshio 4C-1
 Sano, Hajime P1-M3-11
 Sapin - De Brosses, Emilie 6A-2
 Sapozhnikov, Oleg P4-P1-4
 Sarry, Frederic 8E-4
 Sasso, Magali 10B-2
 Satir, Sarp 5F-5, 6F-3, 6F-5
 Sato, Hidenobu P5-P1-3
 Satoh, Yoshio 5E-4, 7E-3
 Sauer, Wolfgang 3E-2
 Savoia, Alessandro 2C-5, P3-T1-2,
 P3-T1-4
 Savu, Oana P2-M4-3
 Sboros, Vassilis P3-M1-4
 Schatzer, Philipp 3C-1
 Schiffner, Martin P3-P1-4

Schmidt, Hagen.....	3E-6, P4-A1-1, P4-A1-3, P5-A1-5	P4-M3-1, P4-M3-2, P4-M3-3, P4-M3-4, P4-M3-5, P4-T1-3, P4-T1-4, P5-T1-3	
Schmitt, Cédric	10B-5	Shur, Michael.....	4C-2
Schmitz, Georg	5C-5, P3-M1-1, P3-P1-4, P4-M2-4	Shvetsov, A.....	6E-3, P1-A1-5, P3-A1-4
Schröder, Andreas	3C-6	Siepmann, Monica	P4-M2-4
Schurink, G.W.H.	6B-4	Sikdar, Siddhartha	11E-3, P1-M3-2
Scola, Mallory	12B-5, P1-M2-10	Silva, Erick	P3-M3-1
Seebo, Jeffrey	7C-2	Silva, Robert	9D-1
Segers, Patrick	11E-2, 11E-4, P2-M4-5	Silvestry, Frank.....	9D-2
Seifaddini, Mahdiah	6E-4	Silvia, Adrián	P3-P1-3
Seip, Ralf	3A-2	Simmons, Heather A	8D-4
Sekins, Mike	6A-6, P6-M1-6	Simon, M. A.	7B-2
Seklewski, Michal	P4-M3-7	Simpson, Eric A.....	7F-2
Selert, Kirsten	3A-5, 7A-1, P2-15	Singh, Gautam	P1-M3-5
Sénégon, Nicolas	P3-T1-3	Sinha, Bikash K.....	5D-2
Senesky, Debbie	10E-4, P3-A1-8	Sinha, Sumedha	P4-M4-7
Sennhauser, Urs.....	7C-3, P2-2	Sinusas, Albert.....	7B-4
Seo, Chi Hyung	2B-6, 4A-4, 6C-4, 8F-2, P1-M2-11	Sirsi, Shashank.....	3B-6
Seo, Haijin	P3-M2-5	Sisman, Alper	11F-1
Seo, Jongbum	P2-M2-3	Sit, Wai-Hung.....	P3-M3-4
Seppänen, Henri	P1-N1-4	Smith, Peter	P3-N1-7
Serruys, Patrick W.....	9D-1	Smith, Stephen	11F-3, 8F-3, 8F-4, P2-11, P6-M4-5
Sérusclat, André	P1-M2-7	Snook, Kevin	P3-N1-5
Servois, Vincent	P5-M1-4	Soares, Edward R.....	9E-4
Seto, Shuichi	P1-N2-4	Soffer, Emmanuel.....	P3-M4-5, P5-P1-4
Severin, Fedar.....	P3-N1-3	Sohn, Hak-Yuel	4F-3
Shah, Anup	4A-6	Sokal, David	P3-M3-1
Shah, Jay	P1-M3-2	Sokolov, Konstantin	11A-3, 6C-3, 6C-6
Shamdasani, Vijay	10B-3	Solal, Marc.....	3E-3, 3E-4, 4E-2, 7E-1
Shandas, Robin	11E-5	Someda, Yasuhiro.....	P5-M2-5
Shao, Xia	5A-4	Somiya, Hiroki.....	8D-3
Shapoori, Kiyanoosh	P3-N1-3	Song, Hyun-Jae.....	P4-M4-4
Sheaff, Clay	P5-M2-3	Song, Jaehee	P4-M4-4
Sheehan, Jason.....	8A-4	Song, Junho.....	11F-4, 9F-4, P5-T1-2, P6-M1-8
Sheeran, Paul	10A-4	Song, Tai-Kyong.....	P3-M2-5, P4-M3-8, P4-M4-4, P4-M4-5
Shen, Che-Chou.....	P1-M1-1, P3-M4-1, P4-M2-6	Song, Tai-Kyung	4F-3
Sherrit, Stewart	9F-3	Sorimachi, Kazuhiro	P5-N1-2
Shi, William.....	5A-2	Sornes, Anders.....	P4-M1-3
Shi, Xianglong.....	P4-A1-8	Sorokin, Boris... P1-A1-2, P1-A1-3, P3-P1-5	
Shi, Yan	10B-3	Soulez, Gilles.....	7D-4
Shih, Cho-Chiang	6B-2	Souris, Line.....	7A-5
Shih, Jeanne-Louise.....	12C-4	Speciale, Nicolò.....	2D-3, 3C-1, 3C-4
Shiina, Tsuyoshi	P5-M2-4, P5-M2-5	Spratt, William.....	8C-1
Shikhabudinov, Alexander	10C-5	Springeling, Geert.....	5C-2, P6-M4-9
Shim, Dong.....	4E-1, 4E-5	Staelens, Steven.....	11E-4
Shimazaki, Yuta	4D-4	Steen, Erik	3F-1
Shimizu, Koichi	9C-6	Steiner, Kurt.....	7E-1
Shintaku, Yohei	P1-N1-1	Stephens, Douglas... 4A-4, 8F-2, P1-M2-11, P6-M1-7	
Shiokawa, Showko	8E-5	Stewart, Elizabeth.....	2A-2
Shishitani, Takashi	P1-M3-3	Stone, Brandon	2E-1
Shivkumar, Kalyanam	4A-4, 8F-2, 9D-2, P1-M2-11	Strauss, Bradley	3A-3
Shriwas, Ranjeeta	12D-4	Streeter, Jason E.....	3F-4
Shrout, Thomas.....	2E-2	Streicker, Michael.....	P3-M3-1
Shu, Tai-Yu	P4-M2-6	Stride, Eleanor.....	8A-3
Shu, Ya	P6-T1-1	Strohm, Eric.....	6C-1, 7D-3
Shui, Yongan	P1-A3-5, P4-A1-8	Su, Chia- Hao	11A-4
Shung, Kirk K.	12E-5, 2E-5, 4A-4, 7F-1, 7F-3, 7F-5, 7F-6, 8F-5, 9D-6, P2-12, P2-M4-7, P3-M4-7, P3-M4-8, P3-N1-5,	Su, Mehmet.....	3D-5, 6D-4
		Su, Shin-Yuan.....	P5-M2-7
		Sugimoto, Eiichi	P1-N1-2

Sugiura, Toshihiko	P5-N1-2, P6-N1-5	Tin, Steven.....	10D-1, 6E-1, P2-10, P3-P1-1
Sultan, Mohamed Thariq.....	P3-N1-1	Ting, Chien Kun	P3-M4-7
Sun, Enwei.....	4A-4	Ting, Chien-Yu.....	P2-M2-4
Sun, Jia Hong.....	3D-1	Titov, Sergey	P6-N1-3
Sun, Lei.....	P2-M4-7, P4-M3-4	Tittmann, Bernhard.....	P2-4
Sutcliffe, Patrick.....	P6-M1-7	Tiusan, Coriolan	11D-3
Sutedja, Ria.....	6A-6	Toda, Minoru.....	P4-T1-1
Sutor, Alexander.....	12F-1	Todd, Michael.....	7C-4
Suzuki, Kenji.....	7E-4	Tohyama, Kazutoshi.....	7E-4
Suzuki, Masashi.....	11D-2, P2-5	Tominaga, Yoshiyuki.....	P4-P1-1
Suzuki, Yusuke.....	2F-2	Tomov, Borislav G.....	4F-1
Suzumori, Koichi.....	P4-P1-1	Topka, Terry.....	9D-2
Sveshnikov, Boris.....	P4-A1-2	Torashima, Kazutoshi.....	6F-1
Swanson, Scott.....	4A-2	Torp, Hans.....	12E-3, 3F-1, P2-M1-2, P4-M1-3
Sweet, John.....	11F-5	Tortoli, Piero.....	12E-1, 12E-6, 2B-2, 2D-5, P3-N1-3, P4-M3-7, P4-N2-3, P6-M2-2
Swillens, Abigail.....	11E-2, 11E-4, P2-M4-5	Touboul, David.....	12B-4
Syed, Zeeshan.....	P4-M4-7	Trachet, Bram.....	11E-4
Szalewski, Marek.....	P5-P1-5	Trahey, Gregg.....	10F-1, 10F-3, 8B-1, 8B-6, 9B-4, P5-M4-2
T			
T. Khuri-Yakub, Butrus.....	5F-3, 6F-2	Tran Huu Hue, Pascal.....	P4-T1-7
Tabaru, Marie.....	P6-N1-4	Trayanova, Natalia.....	8B-4
Tabeling, Patrick.....	P5-M1-4	Treesatayapun, Chidentree.....	P1-N2-6
Tabhane, Vilas.....	12D-4	Trevelyan, Jon.....	P5-N1-3
Tajic, Alireza.....	3E-4	Tripathy, S.....	12B-1, 6C-2, 7B-2
Takagi, Ryo.....	4A-1	Tripette, Julien.....	7D-4, 7D-5
Takayanagi, Shinji.....	11D-5	Truby, Ryan.....	6C-5
Takenaka, Tadashi.....	2E-3	Trujillo, Anna.....	5C-6
Takeuchi, Shinicchi.....	P5-P1-3	Truong, Uyen.....	4A-4, 8F-2
Takeuchi, Shinichi.....	P4-T1-3, P5-P1-1, P5-T1-1	Tsai, Ching-Fang.....	10D-5
Talmant, Maryline.....	8C-5, P5-M3-3	Tsang, Ivan K. H.....	P4-M1-4
Tam, Justina.....	11A-3	Tsapis, Nicolas.....	9A-3
Tan, Bing.....	8E-6	Tsuchiya, Akinori.....	P3-A1-7
Tanaka, Reiko.....	P3-M4-2	Tsuji, Toshihiro.....	P1-N2-3, P4-N2-2
Tanaka, Shuji.....	10E-6, P2-7	Tsuji, Yukihide.....	6F-2
Tanaka, Tomohiko.....	P1-M2-5	Tsujimoto, Toshiyuki.....	8D-3
Tang, Mengxing.....	8A-3	Tsujino, Jiromaru.....	P1-N1-2
Tang, Sai Chun.....	9D-3	Tsurunari, Tetsuya.....	P1-A3-4
Tanter, Mickaël.....	10B-1, 10B-4, 10F-2, 10F-4, 11B-4, 11B-6, 12B-4, 12E-2, 3B-4, 4A-3, 5A-1, 6A-1, 6A-2, 6B-1, 7A-5, 7B-6, 8B-3, P1-M2-4, P1-M2-9, P2-16, P2-21, P5-M1-4, P6-M1-4	Tsuruta, James.....	P3-M3-1
Taulier, Nicolas.....	9A-3	Tung, Kuo-Lun.....	11C-2
Tavitian, Bertrand.....	10B-4, P2-21	Tung, Yao-Sheng.....	7A-1, 7A-4, P2-15
Taylor, Brooks.....	12A-4	Turchin, Pavel.....	P3-P1-5
Tekes, Coskun.....	10F-6	Turbull, Daniel H.....	9B-1
Teo, Tat-Jin.....	8F-1	Turner, Patrick.....	3E-1, 9E-4
Teshigahara, Akihiko.....	11D-1, P5-A1-4	Turqueti, Marcos.....	P3-N1-6
Teston, Franck.....	P3-T1-3	Tweedie, Andrew.....	2C-4
Testoni, Nicola.....	2D-3	Tyler, William.....	7A-3
Theodoropoulos, Catherine.....	5C-6	U	
Thiele, Karl.....	7B-4	Uchida, Takeyoshi.....	4D-3, P5-P1-1, P5-P1-3, P5-T1-1
Thijssen, J.M.....	7B-5	Ueda, Masanori.....	5E-4, 7E-3
Thind, Aman.....	3A-3	Uhercik, Marián.....	P6-M4-8
Thomas, David.....	P3-M1-4	Ulliac, Gwenn.....	3D-4
Thomas, Robert.....	7C-1	Ullom, Joshua S.....	P6-M2-3
Thomenius, Kai.....	4A-4, 4F-6, 8F-2, 9A-1, P1-M2-11, P4-M4-7	Umemura, Shin-Ichiro.....	12F-5, 4A-1, 4D-4, P1-M3-3, P3-M4-6, P4-M2-3, P6-M1-9
Thompson, Mitchell.....	P4-T1-1	Umphrey, Heidi.....	12A-3, P2-M2-9
Tian, Jian.....	2E-1	Urban, Matthew.....	10B-3, 12B-2, 12B-3, 2B-4, 4F-6, 8B-2, P2-19, P2-M3-1, P2-M3-11, P2-M3-3

V

V.D. Vosse, F.N. 6B-4
 Vagh, Hardik P4-A1-6
 Vaithilingam, Srikant 5C-1, 6F-1
 Vallet-Pichard, Anais 10B-1
 van Burken, Gerard 3F-2
 van de Vosse, F.N. P2-M4-6
 Van der Spiegel, Jan 10E-2, P2-9
 van der Steen, Antonius F. W. 3F-2, 5C-2, 9D-1, P6-M4-9
 van der Steen, Ton 10A-3
 van Dijk, Gerrit 9D-1
 van Dongen, K.W.A. 9D-1, P1-T1-3, P4-P1-3, P5-M4-3
 Van Neer, Paul 12F-2, 12F-3, P1-T1-2, P5-M4-5, P5-M4-8
 van Royen, Martin 10A-3
 Van Soest, Gijs 5C-2, 9D-1, P6-M4-9
 van Stralen, Marijn 3F-2
 Vander Meulen, François 9C-5
 Vannacci, Enrico P1-M3-4
 Vappou, Jonathan 9B-2, P1-M2-3
 Varghese, Tomy 11B-2, P1-M2-12, P1-M2-8
 Vasanth, Karthik 4F-2
 Vasiliev, Andrei 10C-5
 Vasseur, Jérôme 6D-5, P3-P2-4
 Vazny, Rastislav 2F-3
 Velichko, Alexander 2C-1, 2C-3, 7C-4
 Venkataraman, Harish 4F-2
 Ventura, Pascal 7E-6
 Versluis, Michel 10A-1, 8A-1, P2-17, P2-M2-8, P3-M1-9
 Verweij, M.D. P1-T1-3, P4-P1-3, P5-M4-3
 Verweij, Martin ... 12F-3, P5-M4-5, P5-M4-8
 Vetelino, John 10C-1, 10C-2, 10C-3, 10C-4, 8C-1
 Víctor, Sánchez-Morcillo P3-P1-3
 Vierendeels, Jan P2-M4-5
 Vigevani, Gabriele P1-A2-6
 Vignon, Francois 5A-2
 Vilkomerson, David 11F-2
 Villanueva, Flordeliza 10A-5, 6C-2
 Vincent, Brice 6E-4
 Viola, Erasmo 3C-4
 Vlachos, Fotios 7A-1, 7A-4, P2-15
 Voglhuber-Brunnmaier, Thomas 8E-3
 Vogt, Michael 3C-3, P2-M4-2, P6-M2-6
 Voicu, Iulian P3-M1-8
 Voigt, Jens-Uwe 11E-1
 Volatier, Alexandre 3E-4
 Vollborn, Thorsten 9D-5
 Von Ramm, Olaf 5F-6
 Voormolen, Marco P5-M4-5, P5-M4-8
 Vos, Hendrik P1-T1-2
 Vossiek, Martin P5-A1-1
 Vray, Didier P1-M2-7, P5-M2-1
 Vykhodtseva, Natalia ... P5-M1-10, P5-M1-9

W

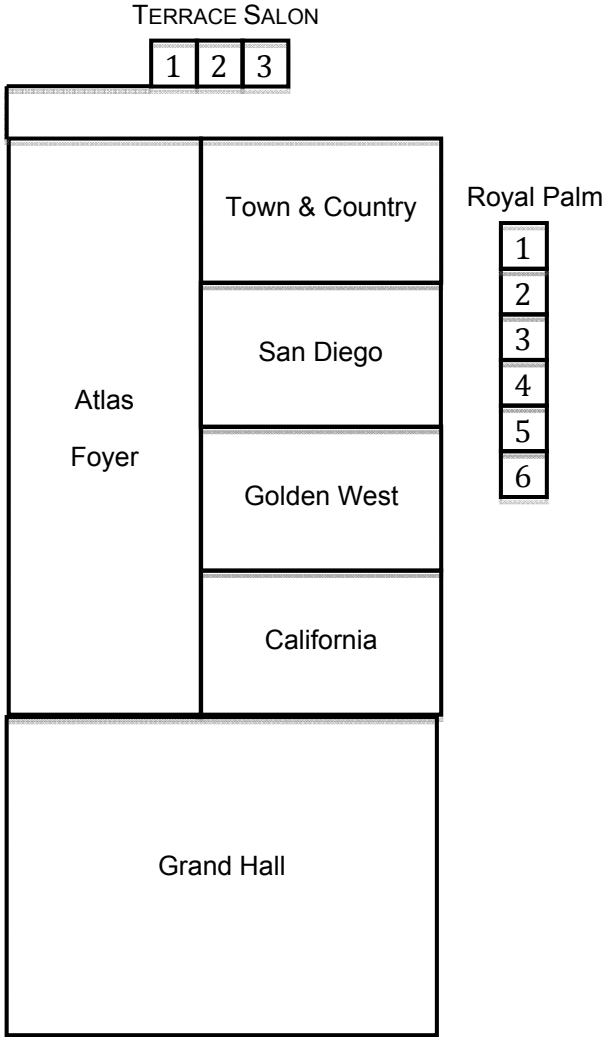
Wada, Kenji P1-M3-11

Wada, Yuji P6-T1-4
 Wadhwa, Saurabh P5-M1-1
 Wagner, Karl 3E-2, 9E-2
 Wagner, W. R. 12B-1
 Wahid, Parveen 4E-2
 Wall, Bert 3E-6
 Wallace, Kirk 2D-2, 2D-4
 Wamhoff, Brian 8A-5, P3-M3-6
 Wan, Elaine P1-M2-2
 Wan, Jennifer M. F. P3-M3-4
 Wan, Yayun 6B-5
 Wang, Boyun P3-M4-3
 Wang, Chuangnan 12C-3
 Wang, Chung-Hsin P4-M2-9
 Wang, Chung-Ren 7A-2, P3-M1-5
 Wang, Hao P4-A1-8
 Wang, Hsin-Ell 11A-4
 Wang, Hsin-Kai 9A-1
 Wang, Ji 12D-3, 5D-4, P1-A1-4
 Wang, Lihong V. 7F-5
 Wang, Michael 2B-3, 2B-5, P2-M3-2
 Wang, Po-Hsun 7A-2
 Wang, Qing-Ming P1-A2-3
 Wang, Shutao P5-M1-5
 Wang, Shyh-Hau 11C-2, P3-M3-3, P6-M3-2
 Wang, Tzu-Yin 5A-3, 5A-6
 Wang, Weibiao P1-A2-2, P4-A1-5, P4-A1-8
 Wang, Wen P1-N2-1
 Wang, Wen-Chih 11C-4
 Wang, Yak-Nam 3B-1, 4A-6, P3-M3-2
 Wang, Yaqiang 9E-3
 Wang, Yue 11B-3
 Wang, Yu-Hsin P3-M1-5, P4-M1-2
 Wang, Zhanhui 8E-2
 Wang, Zhaohui 4B-3, 4B-5
 Warram, Jason 12A-3
 Wasa, Kiyotaka 2E-6
 Watanabe, Yoshiaki 11D-5, P2-M1-4, P3-M1-3
 Wathen, Adam 9E-1
 Wear, Keith 8D-2
 Wegert, Henry 3E-5
 Wegmann, Enrique P3-A1-3
 Wei, Qifeng 7B-4
 Weigel, Robert 2F-3, 9E-2
 Weihnacht, Manfred P4-A1-1, P4-A1-3, P5-A1-5
 Wells, Dominic 8A-3
 Wen, Xu P6-M4-7
 Weng, Yu-Ting 11A-4, P3-M1-5
 Whyne, Cari 3A-3
 Wickerhauser, Victor 2D-2, 2D-4
 Wickline, Samuel 2D-2, 2D-4
 Wijkstra, Hessel P4-M2-2
 Wilcox, Paul 2C-1, 2C-3, 7C-4, 8C-4
 Wild, Graham 12D-1
 Wilder, Mark A. 9D-1
 Wildes, Douglas 4A-4, 8F-2, 9D-2, P1-M2-11
 Wilkie-Chancellier, Nicolas 9C-5
 Willatzen, Morten 12F-4, 5F-3

Willemsen, Balam A.	9E-4	Yang, Joon-Mo	7F-5
Williams, Jay A.	7F-1	Yang, Lijun	5D-4, P1-A1-4
Williams, Ross	P2-M2-7	Yang, Yun-Chian	P3-M4-1
Willmann, Juergen	4B-1	Yao, Aiping	2B-4
Wilson, Katheryne	11A-1	Yao, Dakang	7F-5
Winters, Shane	10C-4	Yao, J.	9D-4
Witte, Russell	4B-3, 4B-5, P5-M2-6	Yatsuda, Hiromi	8E-1, 8E-5
Wojciechowski, Kenneth	10E-5, P1-A2-4	Yavari, Fazel	4C-2
Wolf, Patrick	8B-1, 8B-6	Ye, Congwei	5D-5
Wong, Emily	P1-M1-2	Yeh, Chia-Lun	P5-M1-6
Wong, Vincent	10A-4	Yeh, Chih-Kuang	P1-M3-9, P2-M2-4, P4-M2-8, P4-M2-9, P6-M3-4
Wright, Christopher	7C-2	Yen, Jesse	P3-M4-4, P4-M3-2, P6-T1-2
Wright, William M.D.	P4-N1-4	Yen, Ting-Ta	10E-4, P1-A2-6, P3-A1-8
Wu, Dawei	P4-T1-6	Yen, Tzu-Chen	11A-4
Wu, Haodong	P1-A3-5, P4-A1-8	Yin, Ching-Chung	10D-5, 11C-5
Wu, Kuo-Ting	7C-5	Yin, Jianhua	P1-T1-1
Wu, Ping	11F-4	Yin, Jiechen	8F-5, P2-12
Wu, Shih-Yen	11A-4	Yiu, Billy Y. S.	P4-M1-4
Wu, Tsung Tsong	3D-1	Yong, Yook-Kong	P1-A1-1
Wygant, Ira	5F-1	Yoo, Yang Mo	P3-N1-4
Wygant, Ira O.	5C-1, 6F-1	Yoo, Yangmo	4F-3, P4-M3-8, P4-M4-5
X			
Xia, Bing	7F-3	Yoon, Ki Youl	4B-2
Xia, Jinjun	2B-6	Yoon, Sangpil	2B-1
Xiang, Dan	9C-1	Yoon, Seok-Jin	10D-2
Xie, Feng	5A-2	Yoon, Soon Joon	11A-3
Xie, Hua	10B-3	Yoshida, Kenji	P3-M1-3
Xu, Canxing	P2-M1-6	Yoshida, Takashi	P5-T1-2
Xu, David	P2-M3-2	Yoshikawa, Hideki	P2-M1-1, P4-M2-3
Xu, Fangqian	P1-N2-1	Yoshimura, Kazuho	P5-T1-1
Xu, Feng	11C-1	Yoshimura, Naoyuki	8E-5
Xu, Haiyan	P1-M2-8	Yoshioka, Masahiro	4D-3, P5-T1-1
Xu, Toby	5F-5, 6F-3	Yoshizawa, Shin	12F-5, 4A-1, 4D-4, P1-M3-3, P3-M4-6, P6-M1-9
Xu, Xiaochen	4F-2	Young, Roger	P4-T1-6
Xu, Zhen	3B-2, 5A-3, 5A-4, 5A-6	Yu, Alfred C. H.	12E-5, P3-M3-4, P4-M1-4, P4-M3-5
Y			
Yagi, Hitomi	P5-T1-1	Yu, Francois	10A-5
Yagi, Takayuki	P5-M2-5	Yu, Jaesok	P3-N1-4
Yamada, Ken	P1-N2-4	Yu, Jiao	4A-6
Yamaguchi, Tadashi	P1-M3-10	Yu, Liang	P3-N1-5
Yamakawa, Makoto	P5-M2-4, P5-M2-5	Yu, Tai-Ho	10D-4
Yamamoto, Kazufumi	P5-M3-4, P5-M3-5	Yu, Weichuan	P2-M4-7
Yamamoto, Yuya	P2-M1-4	Yu, Yanyan	P2-M4-7, P4-M3-4
Yamanaka, Kazushi	P1-N1-1, P1-N2-3, P4-N2-2	Yu, Z.	9D-4
Yamanaka, Kunihito	9E-5	Yuan, Christina	P2-M4-4
Yamaner, F. Yalcin	5F-4, P5-T1-4	Yuri, Makov	P3-P1-3
Yamashiro, Darrell	3B-6	Z	
Yamato, Yu	P5-M3-4	Zabelin, A.	6E-3
Yamazaki, Kaoru	P5-M3-4, P5-M3-5	Zadicario, Eyal	P6-M1-2
Yan, Fei	P2-M2-2	Zaghloul, Mona	9E-6
Yan, Ping	7B-4	Zaglmayr, Sabine	3E-2
Yanagihara, Eugene	7D-2, P6-M4-10	Zahiri Azar, Reza	P2-M1-3, P2-M3-6
Yanagitani, Takahiko	11D-1, 11D-2, 11D-5, P2-5, P5-A1-4, P5-M3-4, P5-M3-5	Zahnd, Guillaume	P1-M2-7
Yang, An-Shik	11C-4	Zahorian, Jaime	5F-5, 6F-3, 6F-5, 6F-6
Yang, Che-Hua	11C-4, 9C-3	Zaitsev, Boris	10C-5, P5-N1-4
Yang, Hao-Chung	11F-2	Zalameda, Joseph	7C-2
Yang, Jeong-Hwa	P1-M3-1	Zapf, Michael	P6-M4-11
		Zderic, Vesna	3B-5, 9E-6, P5-M1-5
		Zemp, Roger	P3-T1-5
		Zenbutsu, Satoki	P1-M3-10

Zeng, Xiaozheng Jenny	6A-6, P6-M1-6	Zheng, Yi	2B-4
Zhang, Chenrui	P1-A3-5	Zhgoon, S.	6E-3
Zhang, Fuxing	11E-5	Zhgoon, Sergei	P1-A1-5, P3-A1-4
Zhang, Jie	2C-1	Zhong, Wenjing	P3-M3-4
Zhang, Lequan	12E-5, P3-N1-5, P4-M3-2, P4-M3-3, P4-M3-5	Zhou, Chi	7F-6
Zhang, Liang	P2-M3-9	Zhou, Dan	P4-T1-4
Zhang, Man	4A-2, 6F-4	Zhou, Jian-Hua	9A-1
Zhang, Peiyu	P3-T1-5	Zhou, Qifa	2E-5, 7F-3, 7F-5, 7F-6, 8F-5, 9D-6, P2-12, P3-M4-7, P4-M3-1, P4-T1-3, P4-T1-4
Zhang, Shujun	2E-2	Zhou, Xiaowei	P2-M4-7
Zhang, Xiabing	2E-5	Zhuang, Bo	P2-M1-3
Zhang, Xiaoming	11B-1, 12B-6	Zhuang, Xuefeng	5C-1
Zhang, Yong-Zhi	P5-M1-10	Ziaei-Moayyed, Maryam	3D-5, 6D-4
Zhang, Zidong	P2-M2-2	Zinn, Kurt	12A-3
Zhao, Heng	P2-M3-3	Zolotova, Olga	P3-P1-5
Zhao, Xiubo	11D-6, 4E-6	Zubair, Mussab	3C-5
Zheng, Hairong	12D-6, 8E-2, P1-M1-3, P2-M2-2	Zubtsov, Mikhail	6D-3
Zheng, Jack	P6-M4-7	Zuo, Chengjie	10E-2, P2-9
Zheng, Peng	4C-3, 4C-5, P2-1		

Floor Plan



Condensed Program (Monday)

Monday, Oct. 11	Royal Palm 1	Royal Palm 2	Royal Palm 3	Royal Palm 4	Royal Palm 5
	Symposium Registration (Atlas Foyer) 7:00 – 18:00				
8:00 – 12:00	Short Course 1A Photoacoustic Imaging and Sensing	Short Course 2A Piezoelectric Ultrasonic Transducer Fundamentals	Short Course 3A Ultrasonic Signal Processing for Detection, Estimation and Compression	Short Course 4A Microacoustic Devices as Chemical Sensors	Short Course 5A Therapeutic Ultrasound
12:00 – 13:00	Lunch				
13:00 – 17:00	Short Course 1B Medical Ultrasound Transducers	Short Course 2B Regulatory and Safety Issues in Medical Ultrasound	Short Course 3B Estimation and Imaging of Tissue Motion and Blood Velocity	Short Course 4B Nonlinear Effects in SAW and BAW Components	Short Course 5B Applications of High Frequency Ultrasonics in Microfluidics

Condensed Program (Tuesday)

Tuesday, Oct. 12		Town & Country	San Diego	California	Royal Palm 1-3	Royal Palm 4-6	Golden West	
8:00 – 9:30		Symposium Registration (Atlas Foyer) 7:00 – 18:00						Exhibits (Grand Hall) 8:00 – 17:00
9:30 – 11:00		Plenary Session						
		Refreshments (Grand Hall)						
		Poster Sessions P1 (Grand Hall)						
11:00 - 12:30	2A. Clinical Ultrasound	2B. Elasticity Imaging - Technology	2C. NDE Array Imaging	2D. Functional Imaging	2E. Piezoelectric Materials	2F. Future Directions of RF Filters		
12:30 – 13:30	Lunch							
13:30 – 15:00	3A. Therapy and Gene or Drug Delivery	3B. Bio-Effects	3C. NDE Signal Processing and Imaging	3D. Phononic Crystal Devices	3E. Acoustic Modeling and Devices	3F. 3D Imaging and Tomography		
15:00 – 16:30	Refreshments (Grand Hall)							
		Poster Sessions P2 (Grand Hall)						
16:30 – 18:00	4A. Therapy: Hyperthermia	4B. Molecular and Magneto/Current Source Imaging	4C. Surface Acoustic Wave Sensors	4D. Laser Acoustics & Acousto-Optics	4E. Non-Linearities and Device Physics	4F. Novel Ultrasound Systems		

Condensed Program (Wednesday)

Wed., Oct. 13	Town & Country	San Diego	California	Royal Palm 1-3	Royal Palm 4-6	Golden West
	Symposium Registration (Atlas Foyer) 7:00 – 18:00					
8:00 – 9:30	5A. Therapy Cavitation	5B. Image Quality	5C. Photoacoustic Imaging: Devices & Imaging	5D. Bulk Wave Effects & Devices	5E. Characterization	5F. MUT Modeling & Characterization
9:30 – 11:00	Refreshments (Grand Hall)					
11:00 - 12:30	Poster Sessions P3 (Grand Hall)					
	6A. Therapy Monitoring, Control and Quality Assurance	6B. Vascular Elasticity Imaging	6C. Photoacoustic Imaging	6D. Wave Propagation in Phononic Crystals	6E. Wireless and Materials	6F. CMUT Technology and Integration
12:30 – 13:30	Lunch					
13:30 – 15:00	7A. Therapeutic Applications in the Brain	7B. Cardiac Strain Imaging	7C. Defect Characterization	7D. Blood/High Frequency Tissue Characterization	7E. Multi Layer SAW Devices	7F. High Frequency Transducers
15:00 – 16:30	Refreshments (Grand Hall)					
16:30 – 18:00	Poster Sessions P4 (Grand Hall)					
	8A. Drug/Gene Delivery	8B. Cardiac Mechanics Imaging	8C. Acoustic Sensing & Material Characterization	8D. Low-Intermediate Frequency Tissue Characterization	8E. Acoustic Sensors	8F. Catheters

Condensed Program (Thursday)

Thursday, Oct. 14	Town & Country	San Diego	California	Royal Palm 1-3	Royal Palm 4-6	Golden West
	Symposium Registration (Atlas Foyer) 7:00 – 12:00					
8:00 – 9:30	9A. Nonlinear Contrast Detection	9B. Image Formation and Therapy	9C. NDE Imaging	9D. Ultrasound Systems and Devices	9E. SAW, FBAR SMR Devices	9F. Therapeutic Transducers
9:30 – 11:00	Refreshments (Grand Hall)					
	Poster Sessions P5 (Grand Hall)					
11:00 - 12:30	10A. Microbubble Dynamics	10B. Elasticity Imaging - Clinical Applications	10C. Lateral Field Excited Acoustic Waves	10D. Ultrasonic Motors & Actuators	10E. RF MEMS	10F. Beam Forming
12:30 – 13:30	Lunch					
13:30 – 15:00	11A. Contrast Imaging	11B. Elasticity Imaging - Fundamental Studies	11C. Acoustic Visualization and Actuation on Micrometer Scale	11D. Piezoelectric Thin Films	11E. Vector Flow and CFD Simulations	11F. Imaging Transducers
15:00 – 16:30	Refreshments (Grand Hall)					
	Poster Sessions P6 (Grand Hall)					
16:30 – 18:00	12A. Targeted Contrast Imaging	12B. Elasticity Imaging - Preclinical Studies	12C. NDE Industrial Transducers	12D. General Physical Acoustics	12E. Advances in Blood Flow Measurement and Imaging	12F. Transducer Modeling

Notes