



IEEE

2015

IUS

PROGRAM BOOK

IEEE International Ultrasonics Symposium

21-24 OCTOBER, 2015, TAIPEI, TAIWAN

2015

IEEE International Ultrasonics Symposium

Date

October, 21-24, 2015

Venue

Taipei International Convention Center

TAIPEI TAIWAN



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Message from the 2015 IEEE International Ultrasonics Symposium General Chair

Pai-Chi Li

Distinguished Professor and the Taiwan Bio-Development Foundation (TBF) Chair in

Biotechnology

National Taiwan University, Taipei, Taiwan



Welcome to Taipei!

For the first time, the IEEE International Ultrasonics Symposium will be held in Taiwan. It is our great pleasure to invite you to participate in this event that brings together people from all around the world to share the latest advancements in the field of ultrasonics, inspiring new ideas and promoting collaborations.

This year there are around 800 papers to be presented, once again demonstrating active worldwide participation. These presentations cover the five main focus areas of this symposium: Medical Ultrasonics, Sensors, NDE & Industrial Applications, Physical Acoustics, Microacoustics: SAW, FBAR & MEMS, and Transducers & Transducer Materials. There are 21 invited talks, including three clinical talks to be presented by leading clinical experts from Taiwan, Japan and Korea. The poster presentations include 18 student poster competition finalists. There will also be a special session on "Ultrasonics in Biometrics" – this session is jointly organized by the IEEE Biometrics Council and the UFFC Society. I am confident this will be a very informative and inspiring meeting. I particularly would like to thank the entire organizing committee for their remarkable efforts to make the symposium an unforgettable event.

The venue, Taipei International Convention Center, is in the heart of Taipei. Before, during and after the symposium, I hope that you will have a chance to enjoy the rich cultures, the scenery, the food and the hospitality of Taiwan. We are looking forward to seeing you in Taipei.

CONFERENCE VENUE



Taipei International Convention Center

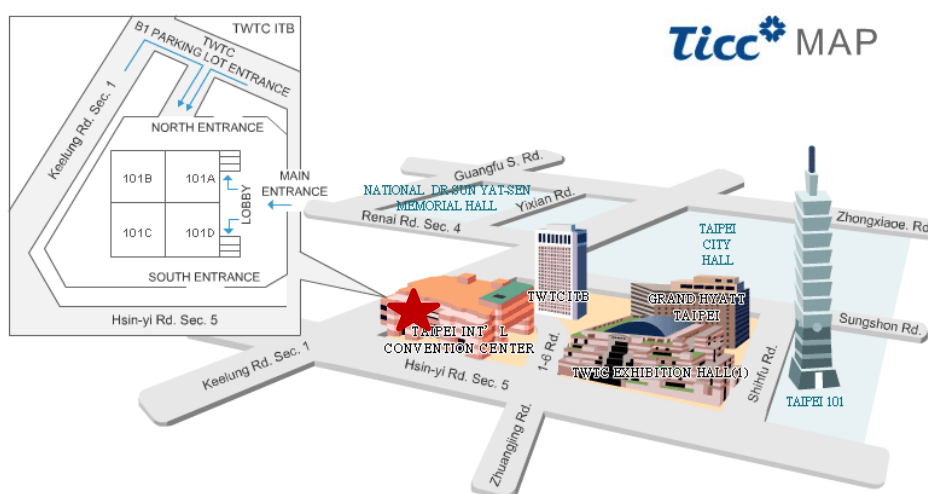
Venue Address:

1 Hsin-Yi Road, Sec.5, Taipei 11049

Tel: +886(2)2725-5200

★ Taipei International Convention Center (TICC)

● TICC $\xrightarrow{500M - 5 \text{ min walk}}$ Taipei 101 Tower



For additional information of public transit to TICC, please review the TICC website:
<http://www.ticc.com.tw/Traffic/Content/ticcmrten.aspx>

REGISTRATION AND FEES (\$USD)

IUS 2015 Registration Fee		
Registration Status	Before Sep 15, 2015	After Sep. 15, 2015
IEEE Members*	US\$ 665	US\$ 815
Non-IEEE Members*	US\$ 890	US\$ 1040
Student*	US\$ 250 (IEEE Member) US\$ 400 (Non-IEEE Member)	US\$ 400 (IEEE Member) US\$ 550 (Non-IEEE Member)
Retiree*	US\$ 250	US\$ 400
Life IEEE Member*	US\$ 250	US\$ 400
One-Day Registration**	US\$ 400	US\$ 400
Short Courses***	US\$ 250 (One Short Course) US\$ 400 (Two Short Courses)	US\$ 350 (One Short Course) US\$ 500 (Two Short Courses)
Student & Retiree Short Courses***	US\$ 150 (One Short Course) US\$ 250 (Two Short Courses)	US\$ 250 (One Short Course) US\$ 400 (Two Short Courses)
Guest****	US\$ 150	US\$ 150
* Registration as Students must be accompanied with a proof of status. (e.g. Student ID)		
* Registration as Life IEEE Member must be accompanied with a proof of status. (e.g. Member Card)		
*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.		
Symposium Proceedings DVD	US\$ 25	US\$ 25
Symposium Banquet <i>Banquet ticket is included (expect for one day, short course and guest registration). You may purchase additional tickets for accompanying guests.</i>	US\$ 90	US\$ 90

Entitlement***Registration fees for IEEE Members, Non-IEEE Members, Student, Retiree and Life IEEE Member**

- Admission to all scientific sessions and exhibition
- Admission to symposium social programs (Welcome Reception & Banquet)
- Symposium program and abstract book on USB
- Conference scheduling App miraMOBILE (search iTunes Apple store or Google Play)
- Refreshment during the symposium

- Password-protected internet access to the conference proceedings for a period of one year for downloading the papers.
- All students are entitled to free Taipei 101 Observatory Tour.

****Registration fees for One Day Registrants**

- Password-protected internet access to the conference proceedings for a period of one year for downloading the papers
- Ticket to the Welcome Reception

*****Registration fees for Short Course(s) Registrants**

- Includes password-protected internet access to the conference proceedings for a period of one year for downloading the papers

******Registration fees for Guest**

- Admission to symposium social programs
- Refreshment during the symposium

Refund Policy

General attendees (non-author) are eligible for a registration refund. Notification of cancellation and request for refunds must be sent in writing to the IUS 2015 Symposium Secretariat. The following cancellation and refund policies will apply:

- Before Sep. 01, 2015: **Refund** of prepaid fees except for an administrative charge of **US\$50**.
- After Sep. 01, 2015: **No** refund is applicable.
- Authors who have uploaded their papers are **not** entitled to any refunds.
- *All refund will be processed after the conference has concluded.*

CONFERENCE PROCEEDINGS

IMPORTANT NOTE: The paper submission deadline is October 7th, 2015 (two weeks before the conference).

In order for the 2015 IEEE International Ultrasonics Symposium to be published in a timely manner, it is important that authors follow the submission instructions to the best of their ability. Conference attendees will receive electronic access to the conference proceedings containing all the papers presented at the conference as part of their full registration fee.

As the Proceedings is a record of the 2015 IEEE International Ultrasonics Symposium, only those papers which are actually presented and defended at the Symposium by the author at either an oral or a poster session will be accepted for publication in the Proceedings. In the event that an author is unable to personally present the paper, she/he MUST be represented in either poster or oral sessions by an individual who is qualified to discuss the technical material in the paper and who will remain in attendance for the full session in which the paper is presented. All the session chairpersons will be recording the presenters attendance, both oral and poster, and sending the results to the Proceedings Editor.

All presenters, both oral and poster, are encouraged to publish in the conference proceedings. Full paper submissions are limited to four (4) single-side pages in the required two-column format. Invited papers can be up to ten (10) pages in length. For all papers: two (2) extra pages may be used at an excess page charge of \$125/page. Payments for excess page charge are part of the paper submission process.

Instructions for the generation of the conference papers can be found at the IEEE Proceedings Author Tools Box at the following website:

http://www.ieee.org/conferences_events/conferences/publishing/templates.html. Here you will find Manuscript Templates for Conference Proceedings, IEEE Citation Reference, and IEEE Keyword Guidelines.

Part of the paper submission process involves standard conversion to PDF, and the authors will be given the opportunity to approve the converted files before the completion of the submission process. As part of the submission process, the author will have to indicate that they have read and conformed to the IEEE Proceedings formatting standards. Authors may risk having their paper not included in the proceedings if there is excessive deviations from the IEEE format standards. Our publication schedule will not allow the authors to make changes to their manuscripts after the deadline. If the papers deviate from the standard format they will be removed from publication.

The paper submission deadline is October 7th, 2015 (two weeks before the conference). IEEE takes the protection of intellectual property seriously. Accordingly, all submissions will be screened for plagiarism using CrossCheck. By submitting your work you agree to allow IEEE to screen your work. For more information please visit: <http://www.crossref.org/crosscheck/index.html>.

VISA ASSISTANCE

Citizens from the following countries are eligible for visa-exempt entry to Taiwan for 90 days:

Andorra, Australia, Austria, Belgium, Bulgaria, Canada, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Republic of Korea, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, the Netherlands, New Zealand, Norway, Poland, Portugal, Romania, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland, U.K., U.S.A. and Vatican City State.

The nationals of the following countries are eligible for the visa exemption program, which permits a duration of stay up to 30 days:

Malaysia, Singapore.

Citizens from India, Thailand, Philippines, Vietnam, and Indonesia: Visitors from above countries also eligible for visa-empty entry if having a valid visa or permanent residence certificate issued by U.S.A., Canada, Japan, U.K., Schengen Convention countries, Australia or New Zealand. However, an advanced registration shall be completed through “Advance Online Registration System for the Visitors of Nationals from Five Southeast Asian Countries to Taiwan.” (https://niaspeedy.immigration.gov.tw/nia_southeast/)

Visitor Visa for Attending Conference

Participants who aren't eligible for visa-empty entry MUST apply for visitor visa in advance.

For detail of the visitor visa application, please visit the Bureau of Consular Affairs' (BOCA) website at <http://www.boca.gov.tw/mp.asp?mp=2> and/or <http://www.boca.gov.tw/ct.asp?xItem=1443&ctNode=779&mp=2>

If you need a personal letter of invitation to attend the Conference, please provide the following information as stated below:

- salutation (Mrs. / Mr.)
- title (Prof. / Dr. / ...)
- complete name (first, middle, last name)
- complete mailing address (company/institution, street, city, state/province, postal code, country)
- e-mail address
- whether you are author/co-author (including ID# of your contribution)
- whether you have already registered AND paid your registration fee (incl. Invoice #), and any other details that US or your country of residence requires for your visa application

Then, contact the Conference Coordinators by email at:

Ms. Kira Yeh

2015 IUS Registration Office

ius2015.reg@elitepco.com.tw

Telephone: +886-2-8502-7087

Visa for Mainland China Passport Holders For further information, you could visit:

http://ewh.ieee.org/conf/ius/ius_2015/CrossStrait.html

IEEE Visa Guidelines

According to IEEE's guidelines for providing visa letters such formal letters of invitation will only be issued to:

- People the committee knows
- Speakers/Presenters
- Committee members
- Attendees/Exhibitors who have paid their registration fee in full

The Conference cannot contact or intervene with any 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 2015 IEEE International Ultrasonics Symposium.

STUDENT TRAVEL SUPPORT

Student Travel Support will be available beginning Friday, October 23rd, 1:00 pm in the registration area. Please have identification and travel receipts available.

PRESIDENT'S STUDENT RECEPTION

Students attending the Conference are invited to attend a complimentary breakfast on Friday, October 23rd from 7:00 am to 8:00 am. This is an opportunity for students to network with other students and with the Administrative Committee members of the UFFC Society.

WOMEN IN ENGINEERING LUNCHEON

Women active in the technical areas of the UFFC conference are invited to attend a complimentary lunch and networking event organized by the women in UFFC group on Saturday, October 24th from 12:00 to 13:00. Katherine Ferrara, Distinguished Professor of Biomedical Engineering at the University of California, Davis, will offer a highlight presentation on securing, pursuing and maintaining an academic career while drawing upon your creative edge and attaining a good work-life balance.

For additional information please contact IEEE UFFC liaison to WIE, Dr. Lori Bridal, at lori.bridal@upmc.fr.

IEEE EVENT PHOTOGRAPHY STATEMENT

No flash photography may be used. Video recording by participants and other attendees during any portion of the conference is not allowed without special prior written permission of IEEE. Photographs of PowerPoint or other slides as well as posters are not permitted.

IEEE NON-DISCRIMINATION POLICY

IEEE is committed to the principle that all persons shall have equal access to programs, facilities, services, and employment without regard to personal characteristics not related to ability, performance or qualification as determined by IEEE policy and / or applicable laws

WELCOME RECEPTION

Thursday, October 22nd, 2015

Time: 6:00 pm – 8:00 pm

Location: Taipei International Convention Center, Third floor

The Conference Reception will be held at the Banquet Hall. Student Paper Competition winners will be announced during the reception.

BANQUET

Friday, October 23rd, 2015

Time: 6:00 pm – 9:00 pm

Location: Taipei International Convention Center, Third floor

The Conference Banquet will be held at the Banquet Hall.

Entertainment:

Time: 6:00 pm – 7:00 pm

Location: Taipei International Convention Center, Third floor

The Conference Banquet Entertainment will be held at the Plenary Hall.

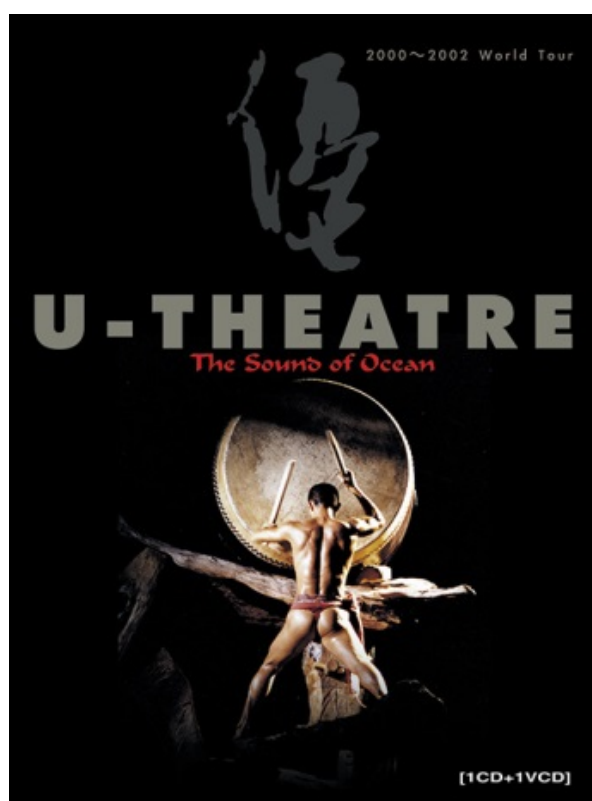
U-Theatre: Founded in Taiwan by Ms. Ruo-Yu Liu, its present art director, in October 1988, and joined by its drumming master and music director, Mr. Chih-Chun Huang, since 1993, U-Theatre has presented rigorous works of aesthetic beauty rooted in the disciplined study and practice of meditation, drumming, martial arts, Tai-Chi, dance, and acting. Uniting East and the West, the ancient and the modern, the spiritual and the soulful, U Theatre lives and breathes ‘Excellence’ as embodied by the meaning of the Chinese character “U”. Over the last decade the U-Theatre has been invited to perform at the world stage including Barbican Center (UK), Cultuurcentrum Brugges (Belgium), Avignon Festival, Biennale de la Danse (France), and the Next Wave Festival at BAM (NYC).

The performance at the 2015 IEEE IUS consists of the following three parts:

Surging: As a part of *The Sound of Ocean*, *Surging* is marked by ritual-like choreography and overwhelmingly intense music. With a full blast of highly enthusiastic and vibrant drumming, this piece reveals a force that is capable of bringing together and elevating the spirits of the audience. In a certain way, *Surging* can be compared to making a brushstroke in Chinese calligraphy. With a stroke of the pen, the debut is made, as if a mountain were falling and the ground breaking apart, resulting in cracks that reveal springs, which symbolize the birth of man. The water flows down, following the structure of the landscape that symbolizes the course of human life.

Sword of Spirits: The performance combines sticks, drums and martial arts to form a dance. In the middle of the stage, the hero turns around, stares at, or concentrates on striking the drums with a stick. All these gestures are blended into rhythms. Together with the women surrounding him who strike their drums from the side, they form a picture where there is tenderness in the middle of rigidity, and there is rigidity in the middle of tenderness. Long and short sticks fall simultaneously or in alternation on the top of the drum or the drum body, and together with the vocal singing reveal an extraordinary diverse music.

Sword of Wisdom: This piece is inspired by the story of Manjusri Bodhisattva who holds a sword in one hand, and scripts in the other. When the hero is granted wisdom, it is as if he had several selves, with his power multiplied. On the stage are five heroes, who in reality represent the strength of one hero. The heroes strike the drums and the ground with swords, and, by throwing and spinning them, make different sounds on the top, the body, the middle of the top of different drums or by striking on the ground, symbolizing ubiquitous wisdom. On the stage, martial arts, long sticks and drumbeats, and the turning around, rotating and jumping and leaping of the performers, together with richly diverse singing, produce a visual sensation of «blending together» in stereo. This is a new drumming form developed and practiced rigorously by U People. Striking the drums with long sticks produces an intimate relationship between performers, drums and rhythms, obtaining a form of performance that combines hands, eyes, the body and gestures into one whole. The performers are fully absorbed in each and every gesture and drumbeat; their concentration and the unity of their body and mind are visible to the spectators.



TOURS

	<p>Tamsui Half-Day Mini Tour - NTD1,300/person</p>		<p>Jiu Fen One-Day Tour - NTD2,350/person</p>
	<p>Yehliu Geopark One-Day Tour - NTD2,430/person</p>		<p>Hualien Two Days Tour - NTD7,600/person</p>
	<p>Tainan Two Days Tour - NTD9,550/person</p>		<p>Sun Moon Lake Two Days Tour - NTD9,500/person</p>

Please find more options to explore Taiwan on the IUS 2015 website (http://ewh.ieee.org/conf/ius/ius_2015/TravelInformation.html) or contact our travel agent:

Taddy Lee

E-mail: taddyle@liontravel.com

* The tour desk will be available besides the registration desk. There will also be travel agents at the desk to provide tour information and arrangement services.

➤ **Free Taipei 101 Observatory tours for students**

Student tours are scheduled during the conference on following dates and time:

Wednesday, October 21st 2015

Time: 7:00pm-10:00pm

Thursday, October 22nd 2015

Time: 8:30pm-10:00pm

Friday, October 23rd 2015

Time: 9:00pm-10:00pm

Saturday, October 24th 2015

Time: 6:00pm-10:00pm

The attendance is only available for the students who had registered online for his/her participation. The ticket will be issued with the presence of FREE Taipei 101 Observatory Tour coupon, half an hour before the beginning of tour in front of the observatory ticket booths on the 5th floor of Taipei 101 Shopping mall, please be on time to ensure your entitlement.

Description: FREE Taipei 101 Observatory Tour



At 382 meters above the ground, the 89th floor Observatory offers visitors a commanding view of the city and Taipei Basin at all directions. The world's largest damper, weighing 660 metric tons, is also exhibited at this level. The Observatory is equipped with high - power binoculars, drinks bar, image services, pre-recorded audio tour guides in seven languages, & souvenir shops.

TAIPEI 101 Observatory's elevators are Guinness Record - breaking high-speed pressurized elevators in 2004, with a speed of 1010 meters per minute. It takes only 37 seconds to reach the 89th floor.



EXHIBITORS LIST

Gold Level Exhibitor Information



Verasonics, a technology company based in Kirkland, Washington USA, was founded in 2002. Verasonics designs, manufactures and sells state-of-the-art ultrasound research systems for academic and commercial investigators. These real-time, software-based ultrasound systems simplify the data collection and analysis process to facilitate accelerated research and development.

Verasonics systems support emerging applications requiring high frequencies, high frame rates, high power and high channel count for medical and industrial applications such as earth sciences and non-destructive testing NDT/NDE.

Verasonics licenses its technology, sells research systems and software components, and provides consulting services.

Exhibitor and Satchel Insert Sponsor



S-Sharp is dedicated to providing cutting edge solutions to preclinical and clinical research ultrasound. Our core competence is the ability to leverage rapid advancement of electronics technologies and powerful software computations into biomedical ultrasound and to address our customer's needs. Our preclinical ultrasound imaging product, Prospect, in an open platform designed to streamline the workflow and enhance the quality of small animal research. In addition, Prospect's unique imaging technologies, including shear wave elasticity measurements and Analog Doppler, assist users to perform high quality preclinical research that was not possible before. Our array ultrasound imaging product, Prodigy, shares the same core technologies and innovations. It is aimed to provide the highest research values to most people in need.

Exhibitor and Welcome Reception Sponsor



Weidlinger Associates is the developer of PZFlex, the premier finite element simulation software for piezoelectric and ultrasound analyses. Specifically written for this class of problems, PZFlex displays efficiencies that allow multi-million element models to be solved rapidly on a desktop PC. For nearly 20 years PZFlex has been the simulation tool of choice of the ultrasound imaging, SONAR, NDT, sensor and actuator communities.

Coffee Break for One Day Sponsor



As one of the world-leading manufacturers for Real-Time VOC analyzer, TricornTech possesses critical technology, which leverages the advanced electronic technologies, nano-materials, and innovative sensing architecture to create its significance in the market.

With strong force of Self-R&D capabilities and innovative technologies, TricornTech successfully presents the leading-edge MiTAP series (Miniaturized Total Analysis Platform), enabling on-site analytical monitoring capability and providing multiple merits of specificity, portability, accuracy, cost-effectiveness and more to achieve state-of-the-art performance.

TricornTech is committed to providing integrated, cost-effective and constructive solutions to assist our valued customers solving problems. Not only do we offer a wide product range from high-tech portable instruments to integrated online systems, we also provide a comprehensive software custom made to each and every customer. Our solutions make an excellent foundation for a proactive approach to maintenance, integrated in customers' normal maintenance activities. On Customers' request, we put together the monitoring equipment package best suited to your economic and technical requirements.

Exhibitor Information



Acoustic Life Science Co., Ltd. (ALS) is a high-tech Chinese company dedicated to the research, develop, production and application of advanced medical ultrasound technology.

With cutting-edge technology, professional management team and comprehensive facilities, ALS is a fast-growing company specialized in ultrasound probe technology. We value our talents, patents, as well as key techniques, which are the cornerstones to enable the sustainable development of the company.

Ultrasound probes and interventional ultrasound products are two main categories of ALS's portfolio. Leading in ultrasound materials, manufacturing process and new application, we continue to innovate and develop state-of-the-art techniques to build next generation medical ultrasound products.



Founded in 2007 as a value innovator providing comprehensive ultrasound solutions, ALPINION has been dedicated to technological and user-driven innovation in medical ultrasound transducers, diagnostics, research, and therapeutic ultrasound (US-guided HIFU). With its acoustic engineering superiority, ALPINION strives to provide customers with uniform and fundamentally excellent imaging performance throughout the whole product lifetime.



BK Ultrasound's Sonix brand has been a leading provider of ultrasound research systems for researchers and entrepreneurs for more than 10 years. Our full diagnostic ultrasound research systems give users an access to the specialized software development kits, software updates and unlimited access to our knowledge database.



Advanced OEM Solutions (AOS) designs, develops, and manufactures cutting-edge phased array and conventional multi-channel boards (modules) for the NDT industry, especially integrator for AUT inspection solution. Our products are designed to be compact, open (source code is included in SDK), cost effective, and easy to use. For detail, pls. go to our website.



Founded in 1997, Shanghai Apex Electronics Technology Co., Ltd. (Abbreviated to APEX) is the leading company for designing, development and manufacturing medical ultrasonic transducers (probes), and provides related technical services.

The mission of Apex is to provide advanced acoustic technologies, superior qualities, high acoustic performance and low cost products to satisfy increasing customer demands.

APEX is dedicated to excellence through quality by ensuring the solid commitment that our quality standards must be higher than the quality specified and expected by our customers.

Apex offers a complete series of diagnostic medical ultrasound products for a broad range of clinical application including micro-convex, linear arrays, curved



Spun off from the Industrial Technology Research Institute (ITRI) of Taiwan, R.O.C. in 2002, BROADSOUND Corporation is a medical ultrasound equipment company with research, development, manufacturing, marketing, and sales, focusing on medical diagnostic ultrasound transducers and ultrasound imaging & instrumentation system development platform; the main products and services include the following:

1. New Ultrasound Replacement Transducers
2. Custom-made Ultrasound Transducers
3. Custom-designed Services
4. Ultrasound Transducer Automation Test System
5. Ultrasound Transducers Repair Service

Launching the marketing in 2007, we have now successfully sold the BROADSOUND new replacement transducers and established good relationships with highly satisfied partners in more than 100 countries globally. BROADSOUND Corporation offers excellent quality, high performance, and cost-effective ultrasound transducers covering convex array, linear array, phased array, and endo-cavity array. Pioneering in the sector of new ultrasound replacement transducer, so far BROADSOUND Corporation is the sole company in the world who has the European Union CE0197 mark, U.S. FDA 510(k) Marketing Clearance, and registration to other countries such as Russia and Brazil etc. on the new ultrasound replacement transducer.



Cephasonics is a medical- and industrial-device technology leader utilizing ultrasound and the power of the cloud to bring about the ubiquitous adoption of ultrasound-based measurement products that improve the quality of life. Launched with a management buyout in March 2012 and headquartered in Santa Clara, Calif., Cephasonics' ultrasound technology, including its AutoFocus™ beamforming technology, has won multiple industry awards for innovation. Additional information about Cephasonics can be found at www.cephasonics.com.



The Department of Medical Ultrasound of the Fraunhofer Institute for Biomedical Engineering IBMT technologically implements the scalability of ultrasound in a new unique modular ultrasound beamformer, which can be easily adapted to a variety of applications in research and product development.

In addition to the ultrasonic hardware, the department applies innovative software solutions that enable us to use ultrasound in medicine, biotechnology, the NDT and sonar.

Specialities are systems and methods that work with very high frequencies, are adapted to specific environmental conditions (hybrid imaging on MRI/pressure neutrality for use in AUVs and ROVs), use optical laser combined with ultrasound (optoacoustics) or are extremely compact for use with mobile devices.



IMASONIC is an independent, privately-owned company that develops and produces ultrasonic transducers for health and safety applications. Since its creation in 1989, IMASONIC has been contributing to improving ultrasonic technology by designing and manufacturing transducers based on customer's requirements for medical (HIFU, diagnosis and monitoring) and industrial applications (NDT and measurement). Located in France, the company has 90 employees.



IPPT PAN is a government funded scientific institute conducting research in theoretical and applied physics, mechanics of materials and structures, computational methods, electronics, and ultrasonics.

Professional Electronic Lab (<http://us4us.eu>) is dedicated to

provide advanced electronic design services as well as R&D on medical and industrial applications of ultrasound. Implemented certified quality management systems ISO-9001/ISO-13485 enable us to design, produce and introduce medical devices on the EU market.

Our flagship product is a Versatile Ultrasound Research Platform, which enables real-time implementation and testing of the most computational intensive ultrasound algorithms, thanks to the GPU processing.



Kolo Medical is a world leader in next generation silicon ultrasound transducer technology. We are the first company to make CMUT a practical alternative to PZT transducers, and thus, uniquely positioned to set a new performance standard in clinical diagnostic imaging. Our design and engineering innovations will establish the silicon age of ultrasound imaging.

Kolo has brought together a team of world-class talent from the medical ultrasound and semiconductor industries. Our founders, originally from the research group at Stanford University that invented the CMUT technology, have more than 30 years' experience in silicon transducer innovation. Their expertise in developing the most advanced innovations in this field puts Kolo in an enviable position, with more than 40+ issued patents and impressive IP. Our management team is comprised of seasoned executives and world-renowned technology pioneers from market leading companies, known for their experience in developing and commercializing emerging innovative technologies.

Kolo's proprietary transducer technology delivers an unprecedented level of performance in the area of ultra-high resolution imaging. We offer a portfolio of innovative transducers to meet our customers' diagnostic imaging needs and enable new applications in areas that are not currently developed due to limitations of existing PZT transducer technology.



Our facility in Kvistgaard, Denmark, formerly known as Ferroperm Piezoceramics (www.ferroperm-piezo.com, www.insensor.com), specialises in manufacturing advanced piezoelectric ceramic components and integrated piezoelectric thick film devices.



ONDA is the global leader in ultrasound measurement instrumentation and services. Our products are used to acoustically test devices in the medical, industrial, and electronic markets. Over 3,000 hydrophones have been used around the world to support a broad range of applications including medical imaging, therapeutic ultrasound, ultrasonic cleaning, and non-destructive testing. Onda has served over 1,000 unique customers in over 35 countries representing Fortune 10 companies, government research centers, and the most prominent universities.



For over 45 years Polytec has provided high-technology, laser-based measurement solutions to researchers and engineers. Our commitment is to provide the most precise and reliable optical instruments and sensors available for non-contact measurement, setting Polytec apart from the competition as the gold standard in the design and manufacture of vibrometer and velocimeter systems. Our innovations answer many pressing manufacturing and engineering challenges.



Precision Acoustics (PA) manufactures acoustic measurement products for medical and NDT industries and is the leading global supplier of test and measurement equipment for the MHz ultrasound markets in the range 40 kHz to 50 MHz.

PA products include needle, membrane and fibre-optic hydrophones, single element PVdf and piezo-ceramic ultrasound transducers and the automated Ultrasonic Measurement System (UMS) for beam plotting and NDT scanning. In addition Precision Acoustics offers a consultancy service for the development of bespoke ultrasound measurement and generation solutions, including custom transducers, ultrasonic materials characterisation and automated test and measurement systems.

Precision Acoustics maintains a close working relationship with the acoustics group of the National Physical Laboratory, London as well as with several leading research institutions worldwide.



scia Systems manufactures advanced ion beam and plasma processing equipment. The systems are used in the production of microelectronics, MEMS and precision optical

components, in both, high volume production as well as applications in research and development.

Key applications are frequency and thickness trimming to Angstrom precision, in manufacturing of BAW/SAW devices, with the industry proven scia Trim 200 system. Furthermore the scia Magna 200 deposits SiO₂ temperature compensation films and piezoelectric AlN films. High homogeneity, rapid deposition rates and excellent material properties can be achieved, due to its unique Double Ring Magnetron architecture.

scia Systems provides highly reliable tools together with a superior technology support. The tools are flexible and modular in design. Several vacuum process chambers can be combined into cluster or in-line solutions, according to customer-specific requirements.

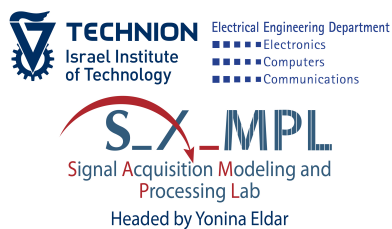


Sonic Concepts, Inc. manufactures high-power, wide-bandwidth ultrasound transducers and related equipment. SCI supplies single- or multi-element transducers, as well as annular, linear, and 2D arrays, transmit electronics, passive cavitation detectors, high-intensity hydrophones, radiation force balances, water degassing equipment, and more. SCI supports customer orders from initial prototyping into full-scale production.



TRUST Bio-Sonics is one of the leading companies in providing the ultrasound contrast agents. Through our innovative technologies, we offer a series of the world's smallest (micron/nano-sized) bubble agents for contrast-enhanced perfusion imaging, ultrasound-mediated drug/gene delivery and more advanced theranostic applications.

We strive to improve the quality of human life by developing novel technologies and offering a product portfolio for ultrasound-based early diagnosis and therapy. To make breakthroughs of ultrasound technologies, you are welcome to join our open platform and lead your own innovations!



The SAMPL lab, led by Prof. Yonina Eldar, is a lab within the EE department at the Technion, Israel institute of Technology. SAMPL research focuses on new design paradigms in which sampling and processing are designed jointly in order to exploit signal properties already in the sampling stage. The laboratory facilitates the transition from pure theoretical research to the development, design and implementation of prototype systems.



Zurich Instruments makes lock-in amplifiers and phase-locked loops that have revolutionized instrumentation in the high-frequency and ultra-high-frequency ranges by combining frequency-domain tools and time-domain tools within each product. This reduces the complexity of laboratory setups, thus removing sources of potential problems and so allows researchers to focus on their experiments. The new MFLI instrument for low-frequencies makes these advantages available to a wider range of users.

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2016 **IEEE IUS** INTERNATIONAL ULTRASONICS SYMPOSIUM
 september 18-21, Tours, France



September 18-21, TOURS, FRANCE

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The annual 2016 IEEE International Ultrasonics Symposium will be held at the **the VINCI Convention Center, TOURS, FRANCE, from September, 18-21, 2016.** Oral and poster presentation formats will be used at the symposium. Papers are solicited for this conference describing original work in the field of ultrasonics from the following subject classifications:

Group 1: Medical Ultrasonics

- MBB Medical Beamforming and Beam Steering
- MBE Biological Effects & Dosimetry
- MBF Blood Flow Measurement
- MCA Contrast Agents
- MEL Elastography
- MIM Medical Imaging
- MPA Medical Photoacoustics
- MSD System & Device Design
- MSP Medical Signal Processing
- MTC Medical Tissue Characterization
- MTH Therapeutics, Hyperthermia, and Surgery

Group 2: Sensors, NDE & Industrial Applications

- NAF Acoustics Microfluidics
- NAI Acoustic Imaging
- NAM Acoustic Microscopy
- NAS Acoustic Sensors
- NDE General NDE Methods
- NEH Energy Harvesting
- NFM Flow Measurement
- NMC Material & Defect Characterization
- NPA Photoacoustics
- NPC Process Control
- NSP Signal Processing
- NTD Transducers: NDE and Industrial
- NUA Underwater Acoustics
- NWP Wave Propagation

Group 3: Physical Acoustics

- PAT Acoustic Tweezers and Particle Manipulation
- PNL Nonlinear Acoustics
- PGP General Physical Acoustics
- POA Opto-acoustics
- PPN Phononics
- PTF Thin Films
- PMI Magnetic/Electromagnetic Interactions
- PUM Ultrasonic Motors & Actuators

Group 4: Microacoustics: SAW, FBAR, MEMS

- ADA Device Applications
- ADD Device Design
- ADM Device Modelling
- AMP Materials & Propagation
- AMS Microacoustic Sensor Devices & Applications

Group 5: Transducers & Transducer Materials

- TMC Materials Fabrication and Characterization
- TMO Modeling [Analytical & Numerical]
- TFT Thin and Thick Piezoelectric Films
- TMU Micromachined Ultrasonic Transducers
- TMI Biomedical Diagnostic and Imaging Transducers
- TTT Biomedical Therapeutic Transducers
- THF Front-end and Integrated Electronics
- TFI High Frequency Transducers
- TPF Applications of Piezoelectrics & Ferroelectrics



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SHORT COURSES

- 1A: 08:00am-12:00pm** **Ultrasound Imaging Systems: from Principles to Implementation**
Instructor: Kai Thomenius, Massachusetts Institute of Technology, USA
- 1B: 08:00am-12:00pm** **Elasticity Imaging: Methods and Applications**
Instructor: Mark Palmeri, Duke University, USA
- 1C: 08:00am-12:00pm** **Ultrasonic Therapy: Mechanism, Methods, and Application**
Instructor: Kullervo Hynynen, Sunnybrook Health Sciences Centre, Canada
- 1D: 08:00am-12:00pm** **Signal Processing and System-on-Chip Designs for Ultrasonic Imaging, Detection and Estimation Application**
Instructors: Jafar Saniie, Department of Electrical and Computer Engineering, Illinois Institute of Technology, USA and Erdal Oruklu, Department of Electrical and Computer Engineering, Illinois Institute of Technology, USA
- 1E: 08:00am-12:00pm** **Laser Interferometric Measurement of Acoustic Surface and Bulk Waves: Application for SAW&FBAR Components**
Instructor: Kimmo Kokkonen, Aalto University, Finland
- 1F: 08:00am-12:00pm** **Medical Transducers (with Electronics)**
Instructors: L. Scott Smith, GE Global Research and David Cowell, University of Leeds, UK
- 2A: 1:00pm-5:00pm** **Ultrafast Imaging in Biomedical Ultrasound: Principles and Applications**
Instructors: Mickael Tanter and Mathias Fink, Institut Langevin, ESPCI, France
- 2B: 1:00pm-5:00pm** **Ultrasound Contrast Agents: Fundamentals and Application to Molecular Imaging, Gene and Drug Delivery**
Instructors: Nico de Jong, Erasmus MC, The Netherlands and Michel Versluis, University of Twente, The Netherlands
- 2C: 1:00pm-5:00pm** **Biomedical Photoacoustics: From Bench to Bedside**
Instructor: Michael Kolios, Department of Physics, Ryerson University, Canada
- 2D: 1:00pm-5:00pm** **Acoustical Imaging; from Acoustic Field Equations to Imaging and Inversion**
Instructor: Koen W.A. van Dongen, Laboratory of Acoustical Wavefield Imaging, Faculty of Applied Sciences, Delft University of Technology, the Netherlands
- 2E: 1:00pm-5:00pm** **A Modern Approach to Modelling and Simulation of Micro-acoustic Devices**
Instructor: Alireza Baghai-Wadji, University of Cape Town, South Africa
- 2F: 1:00pm-5:00pm** **High Frequency Transducers (with Materials)**
Instructors: Sandy Cochran, University of Dundee, UK and Qifa Zhou, University of Southern California, USA

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PLENARY LECTURE

Thursday, October 22nd, 2015 8:00 am – 9:30 am, Plenary Hall

Pan-Chyr Yang, MD, PhD, President, National Taiwan University

Ultrasound and Translational Pulmonary Medicine



Dr. Yang currently is the President of National Taiwan University and Professor in the Department of Internal Medicine, National Taiwan University College of Medicine. His major research interests are pulmonary and critical care medicine, molecular and cellular biology, lung cancer genomics and personalized cancer therapy. He was elected member of Academia Sinica in 2006 because of his contributions in leading the translational research and implementation of precision therapy for lung cancer in Taiwan, which have significantly improved the survival in lung cancer patients. His research group identified novel genes and pathways that associated with lung cancer progression. They established new platform for development of lung cancer stem cell directed therapy and discovered the autocrine-paracrine interaction between the lung cancer stem cell with cancer microenvironment. They also identified specific gene expression and microRNA biomarkers that might be beneficial for precision therapy of lung cancer patients.

ABSTRACT

Ultrasound technology is a powerful diagnostic and therapeutic tool in clinical medicine. Here I summarize the progress of ultrasound technology in translational pulmonary medicine in the past decades. Air-containing lung is not a good ultrasound-transmitting medium. By scanning through the acoustic window created by consolidated disease lung, ultrasound is a very useful and reliable tool to evaluate the nature of the lesions of the chest wall, pleural cavity, diaphragm, mediastinum, hilum, and peripheral lungs. A precise puncture transducer can be used to perform ultrasound-guided transthoracic needle biopsy (TNB) with real-time visualization of the biopsy needle and the lesion. The accuracy of ultrasound-guided TNB for peripheral pulmonary nodules, chest wall lesions, and mediastinal tumors is 88% to 100%. Ultrasound-guided TNB is also useful for histologic diagnosis of tumors causing superior vena cava syndrome, Pancoast's tumors, pulmonary consolidation of unknown etiology, and tumors with obstructive pneumonitis. Moreover, transthoracic needle aspiration under ultrasound guidance can provide adequate specimens for microbiologic diagnosis of lung abscesses, necrotizing pneumonia, and parapneumonic effusions. Color Doppler imaging further extends the diagnostic spectrum of ultrasound, allowing the hemodynamics and neovascularization of a pulmonary lesion to be assessed noninvasively. Pulmonary arteriovenous malformations, pulmonary sequestration, and pulmonary infarctions can be diagnosed easily with color Doppler ultrasound. The color Doppler ultrasound puncture guiding device can improve the safety of ultrasound-guided TNB by simultaneously displaying blood vessel information, the needle shaft, and the puncture route. The recent development of endobronchial ultrasound (EBUS) further extends the accessibility of ultrasound for evaluating and sampling of lesions adjacent to the airways and mediastinum and improves the staging of lung cancer. In combination of "omic technology", ultrasound has become indispensable diagnostic and therapeutic tool for translational pulmonary medicine.

CLINICAL SPEAKERS

1E-1 Ultrasound-guided high intensity focused ultrasound: clinical experience

Jae Young Lee, Seoul National University Hospital, South Korea
Friday, October 23rd, 2015 10:30am – 11:00am, Plenary Hall, 3F

1E-2 Clinical Application of Liver Elastography

Yi-Hong Chou and Hsin-Kai Wang, Taipei Veterans General Hospital, Taiwan
Friday, October 23rd, 2015 11:00am – 11:30am, Plenary Hall, 3F

1E-3 Ultrasound Fusion Imaging of Liver Tumor: Recent Progress and Clinical Relevance

Masatoshi Kudo, Kinki University, Japan
Friday October 23rd, 2015 11:30am – 12:00pm, Plenary Hall, 3F

INVITED SPEAKERS

Group 1: Medical Ultrasonics

1A-1 Elasticity measurement of carotid artery atherosclerotic plaque

Chris de Korte, Medical UltraSound Imaging Center (MUSIC), Department of Radiology and Nuclear Medicine, Radboud University Medical Center, Netherlands
October 22nd, Thursday, 10:30am - 10:45am, Plenary Hall, 3F

1B-3 Handheld photoacoustic imaging with integrated diode lasers

Georg Schmitz, Hans-Martin Schwab, Martin Beckmann, Chair for Medical Engineering, Ruhr-Universität, Germany
October 22nd, Thursday, 1:30am - 1:45am, Plenary Hall, 3F

1C-3 Super-resolution imaging of microbubble contrast agents

Robert Eckersley, King's College, UK
October 22nd, Thursday, 4:00am - 4:15am, Plenary Hall, 3F

1D-5 Shear wave elasticity imaging for preclinical research on small animals and 3D cell cultures

Pai-Chi Li, National Taiwan University, Taiwan
October 23rd, Friday, 9:00am – 9:15am, Plenary Hall, 3F

2G-1 Nonlinear beamforming of aperture domain signals

Brett Byram, Biomedical Engineering, Vanderbilt University, USA

October 23rd, Friday, 3:30pm – 3:45pm, VIP Room, 4F

2I-1 Ultrafast vector flow imaging

Damien Garcia, University of Montreal, Canada

October 24th, Saturday, 10:30am - 10:45am, VIP Room, 4F

Group 2: Sensors, NDE & Industrial Applications**5B-1** Quantitative phased array modeling and imaging

Lester Schmerr Jr., Center for NDE, Iowa State University, USA

October 22nd, Thursday, 1:00pm - 1:15pm, Room 103, 1F

5D-1 In-chip GHz ultrasonic pulses for information processing

Amit Lal, SonicMEMS, Electrical and Computer Engineering, Cornell University, USA

October 23rd, Friday, 8:00am – 8:15am, Room 103, 1F

5H-1 SAW synthesis with inverse filter and IDT Arrays for microfluidic and biological applications: one ring to rule them all

Michaël Baudoin, Antoine Riaud, Jean-Louis Thomas, Adrien Bussonière, Olivier Bou Matar, IEMN, University of

Lille, EC Lille, CNRS, INSP, France

October 24th, Saturday, 8:00am - 8:15am, Room 103, 1F

Group 3: Physical Acoustics**6B-1** Phonon dynamics in electromechanical resonators

Imran Mahboob, Hirsohi Yamaguchi, NTT Basic Research Laboratories, Japan

October 22nd, Thursday, 1:00pm - 1:15pm, Room 201AF, 2F

6D-1 Depth-profiling of acoustic, optic and acousto-optic spatial inhomogeneities by technique of picoseconds ultrasonic interferometry

Vitalyi Gusev, LAUM, UMR-CNRS 6613, LUNAM, Université du Maine, Le Mans, France

October 23rd, Friday, 8:00am – 8:15am, Room 201AF, 2F

6G-1 Finite element analysis of BAW devices: principles and perspectives

Robert Thalhammer, John Larson, Avago Technologies, Munich, Germany, Avago Technologies, USA

October 23rd, Friday, 3:30pm – 3:45pm, Room 201AF, 2F

Group 4: Microacoustics - SAW, FBAR, MEMS

7A-1 GaN MEMS resonators and oscillators

D. Weinstein, MIT, USA

October 22nd, Thursday, 10:30am – 10:45am, Room 105, 1F

7C-1 Current developments and future trends in mobile terminal frontend architectures

Harald Pretl, DMCE GmbH & Co KG, Austria

October 22nd, Thursday, 3:30pm - 3:45pm, Room 105, 1F

7E-1 Heterogeneous integration technology using wafer-to-wafer transfer

Shuji Tanaka, Department of Bioengineering and Robotics, Tohoku University, Japan

October 23rd, Friday, 10:30am – 10:45am, Room 105, 1F

Group 5: Transducers & Transducer Materials

8A-5 Wearable ultrasound applicators for wound healing and noninvasive drug delivery

Peter A. Lewin, Youhan Sunny, Christopher Bawiec, Leonid Zubkov, Michael Neidrauer, Michael S. Weingarten, David J. Margolis, Drexel University, University of Pennsylvania, USA

October 22nd, Thursday, 11:30am – 11:45am, Room 102, 1F

8F-1 Reliability measurements of CMUT arrays of a semiconductor manufacturer

Christophe Antoine, Erik Tarvin, Sushil Bharatan, Urvi Shah, Rob O'Reilly, Michael Judy, Analog Devices Inc., USA

October 23rd, Friday, 1:00pm – 1:15pm, Room 102, 1F

8J-1 Current Status and Future Prospects of High Performance Piezoelectric Single Crystals:

Bridgman Method vs. Solid-state Single Crystal Growth (SSCG) Method

Ho-yong Lee, Ceracomp Co. Ltd, Republic of Korea

October 24th, Saturday, 1:00pm - 1:15pm, Room 102, 1F

STUDENT PAPER COMPETITION

Student Paper Competition Chairs:

Stanislav Emelianov

PA-1 *Low flow rate spraying using a torsional ultrasonic transducer*

Shunsuke Tsuyuki¹, Takefumi Kanda¹, Koichi Suzumori², Shin-ichiro Kawasaki³, Shoki Ofuji¹, ¹Okayama University, Okayama, Japan, ²Tokyo Institute of Technology, Tokyo, Japan, ³National Institute of Advanced Industrial Science and Technology, Miyagi, Japan

PA-2 *Fast wave velocity measurement by Brillouin scattering using induced phonon from ScAlN piezoelectric thin film*

Masahiko Kawabe¹, Takahiko Yanagitani², Hayato Ichihashi¹, Shinji Takayanagi¹, Masashi Suzuki³, Mami Matsukawa¹, ¹Doshisha University, Kyoto, Japan, ²Waseda University, Tokyo, Japan, ³Nagoya Institute of Technology, Nagoya, Japan

PA-3 *High order mode polarity inverted Al-polar (0001) ScAlN/O-polar (000-1) ZnO film resonator*

Takeshi Mori¹, Takahiko Yanagitani², Masashi Suzuki¹, ¹Nagoya Institute of Technology, Japan, ²Waseda University, Tokyo, Japan

PA-4 *Multiphysics Modeling of BAW Filters*

Andreas Tag¹, Dominik Karolewski², Bernhard Bader³, Maximilian Pitschi³, Robert Weigel¹, Amelie Hagelauer¹, ¹Institute for Electronics Engineering, University of Erlangen-Nuremberg, Erlangen, Germany, ²Institut für Mikroelektronik- und Mechatronik-Systeme gemeinnützige GmbH, Germany, ³TDK Corporation, Germany

PA-5 *Evaluation of Acoustic Properties of CaTiO₃-(K,Na)NbO₃ Film Using Microfabricated Structure*

Ryosuke Kaneko¹, Michio Kadota¹, Yuji Ohashi², Jun-ichi Kushibiki¹, Shinsuke Ikeuchi³, Shuji Tanaka¹, ¹Graduate school, Tohoku University, Sendai, Miyagi, Japan, ²Institute for Material Research, Tohoku University, Sendai, Miyagi, Japan, ³Devices Development, Murata Manufacturing Co., Ltd., Nagaokakyo, Kyoto, Japan

PA-6 *SAW Characteristics of AlN/SiO₂/3C-SiC Layered Structure with Embedded Electrodes*

Qiaozhen Zhang¹, Tao Han¹, Jing Chen¹, Kenya Hashimoto², ¹Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, Shanghai, Shanghai, China, People's Republic of, ²Graduate School of Engineering, Chiba University, Japan

PA-7 *Dual-Mode Integrated Circuit for Imaging and HIFU With 2-D CMUT Arrays*

Ji Hoon Jang¹, Anshuman Bhuyan¹, Hyo-Seon Yoon¹, Jung Woo Choe¹, Amin Nikoozadeh¹, Douglas Stephens², Butrus Khuri-Yakub¹, ¹Electrical Engineering, Stanford University, Stanford, California, USA, ²Biomedical Engineering, University of California, Davis, Davis, California, USA

PA-8 Capsule-based Ultrasound-mediated Targeted Gastrointestinal Drug Delivery

Fraser Stewart¹, Antonella Verbeni², Yongqiang Qiu¹, Benjamin Cox¹, Jan Vorstius³, Sandy Cochran¹, ¹Institute for Medical Science and Technology, University of Dundee, United Kingdom, ²The BioRobotics Institute, Scuola Superiore Sant'Anna, Italy, ³School of Engineering, Mathematics and Physics, University of Dundee, United Kingdom

PA-9 Design of High-Efficiency, Miniaturized Ultrasonic Receivers for Powering Medical Implants with Reconfigurable Power Levels

Ting Chia Chang¹, Marcus Weber¹, Jayant Charthad¹, Amin Nikoozadeh¹, Butrus T. Khuri-Yakub¹, Amin Arbabian¹, ¹Electrical Engineering, Stanford University, Stanford, CA, USA

PA-10 Photoacoustic properties of plasmonic-nanoparticle coated microbubbles

Adam Dixon¹, Song Hu¹, Alexander Klibanov¹, John Hossack¹, ¹Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA

PA-11 Joint compressive sampling and deconvolution in ultrasound medical imaging

Zhouye Chen¹, Adrian Basarab¹, Denis Kouamé¹, ¹IRIT, UMR CNRS 5505, University of Toulouse, France

PA-12 Automatic Mouse Embryo Brain Ventricle Segmentation, Gestation Stage Estimation, and Mutant Detection from 3D 40-MHz Ultrasound Data

Jen-wei Kuo¹, Yao Wang¹, Orlando Aristizabal^{2,3}, Daniel H. Turnbull³, Jeffrey A. Ketterling², Jonathan Mamou², ¹Electronics and Computer Engineering, Polytechnic School of Engineering, New York University, Brooklyn, USA, ²F. L. Lizzi Center for Biomedical Engineering, Riverside Research, New York, USA, ³Skirball Institute of Biomolecular Medicine, New York University School of Medicine, New York, USA

PA-13 Robust Sound Speed Estimation for Hepatic Steatosis Assessment

Marion Imbault¹, Alex Faccinetto², Bruno-Félix Osmanski¹, Mathias Fink¹, Jean-Luc Gennisson¹, Valérie Vilgrain², Mickaël Tanter¹, ¹Institut Langevin, ESPCI ParisTech, PSL Research University, CNRS UMR 7587, INSERM U979, Paris, France, ²Department of Radiology, Beaujon Hospital, Paris, France

PA-14 In vivo magnetomotive ultrasound imaging of rat lymph nodes – a pilot study

Maria Evertsson¹, Magnus Cinthio¹, Pontus Kjellman^{2,3}, Sarah Fredriksson², Roger Andersson¹, Hanna Toftvall², Hans W Persson¹, Tomas Jansson^{4,5}, ¹Biomedical Engineering, Faculty of Engineering, LTH, Lund University, Lund, Sweden, ²Genovis AB, Sweden, ³Medical Radiation Physics, Clinical Sciences Lund, Lund University, Lund, Sweden, ^{4,5}Biomedical Engineering, Clinical Sciences Lund, Lund University, Lund, Sweden, ⁵Medical Services, Skåne University Hospital, Lund, Sweden

PA-15 Ultrafast Pulsed Magnetomotive Ultrasound Imaging of Sentinel Lymph Nodes: Small Animal Study

Yu-Chun Huang¹, Jieh-Yuan Houg¹, Yi-Da Kang², San-Yuan Chen², Meng-Lin Li^{1,3}, ¹Dept. of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan, ²Dept. of Materials Science and Engineering, National Chiao Tung University, Taiwan, ³Institute of Photonics Technologies, National Tsing Hua University, Taiwan

PA-16 *Ultrasound flow mapping for the investigation of crystal growth*

Norman Thieme¹, Richard Nauber¹, Hannes Beyer¹, Hannes Radner¹, Lars Büttner¹, Paul Bönisch², Kaspars Dadzis², Lamine Sylla², Dagmar Meier³, Olf Pätzold³, Jürgen Czarske¹, ¹Laboratory for Measurement and Sensor System Techniques, Dresden University of Technology, Dresden, Germany, ²SolarWorld Innovations GmbH, Freiberg, Germany, ³Institut für Nichteisen-Metallurgie und Reinststoffe, Technische Universität Bergakademie, Freiberg, Germany

PA-17 *Non-contact mass measurement of droplet based on free oscillation under ultrasonic levitation*

Sae Ito¹, Ryohei Nakamura¹, Hiroki Tanaka¹, Yosuke Mizuno¹, Marie Tabaru¹, Kentaro Nakamura¹, ¹Precision and Intelligence Laboratory, Tokyo Institute of Technology, Yokohama, Japan

PA-18 *Ultrasound Image-based Absolute Concentration Measurement Technique for Materials with Low Scatterer Concentration*

John H. Lee¹, Javier Jimenez², Xiang Zhang¹, Duane S. Boning¹, Brian W. Anthony¹, ¹Massachusetts Institute of Technology, Cambridge, MA, USA, ²Madrid-MIT M+Vision Consortium, Massachusetts Institute of Technology, Cambridge, MA, USA

POSTER PRESENTATION GUIDE

Posters will be on display in the Poster Area located in the **4F Corridor**. This year we will have three full day poster sessions. Each poster session is divided into two time slots, as follows:

Mornings: 09:30 am to 10:30 am (posters with odd numbers will be presented)

Afternoons: 2:30 pm to 3:30 pm (posters with even numbers will be presented)

Posters must be posted in the morning between 7:30 am to 8:00 am. They must be removed between 5:00 pm to 5:30 pm at the end of the day. Therefore, each poster will be displayed for a full day (8:00 am – 5:00 pm)

Student Paper Competition (SPC) posters will be displayed in **Room 101** on the **first floor**. To recognize an outstanding work of the students and their accomplishment, SPC posters will be on display for all three (3) days of the conference. Student authors are required to be present for all six poster sessions to describe their work. Judges will review the SPC posters on Thursday only.

Poster Size and Instructions

- One poster board is allocated to each presentation. The recommended poster size is 36 inches high by 48 inches wide (92 cm x 122 cm).
- Posters must be mounted using supplies provided by the organizing committee.
- Each poster presenter is required to defend his/her poster during the respective poster session slot for the paper to be included in the conference proceedings.
- Simply posting the pages of your written version of the proceedings paper is not effective and thus not acceptable for your poster.
- The title of your poster paper should be done in block letters which are at least 8 to 10 cm (3 to 4 inches) high.
- All text must be easily readable from a distance of 1 to 2 meters. Make the lettering at least 1 cm high, smaller lettering will not be legible from a distance of 1 to 2 meters.
- All graphs and charts should be least 25 X 30 cm (approximately 8.5 x 11 inches) or larger.
- It is a good idea to sequentially number your materials in the poster. This will indicate to the viewer a logical progression through your poster.
- Provide an introduction (outline) and a summary or conclusion for your poster.
- Prepare your poster carefully so that it can be used as the basis to explain and answer questions from the viewers.
- It is helpful to have copies of your proceedings paper available for those who may want to study specifics of your work in more detail.
- Have your business cards or contact information available for those who may wish to contact you at a later date.
- Bring along a notepad to use for a discussion of technical details relating to your poster.

ORAL PRESENTATION GUIDE

Observing Your Allotted Time

- The total time allotted to each speaker is 15 minutes. You should plan to speak for 12 minutes and leave 3 minutes for questions.
- Invited speakers have twice this time, 30 minutes in total, and they should plan to speak for about 25-27 minutes leaving 3-5 minutes for questions.
- There is no excuse for using more than your allotted time. Rehearse your presentation several times; projecting slides and doing anything else you would otherwise expect to do at the meeting. It is a discourtesy to your audience, the Session Chair and the other speakers to exceed your allotted time. The Session Chairs are instructed to adhere to the printed schedule for the session. With many parallel sessions this is critical to the overall success of the conference.

Organization of Oral Sessions

- There are six to eight parallel sessions in the conference and the Technical Program Committee will ensure minimal conflicts of topics between the parallel sessions.
- Audio and Video Equipment Provided at the Conference: The conference will be equipped with a computer video projector and a computer that is connected to the projector for each oral presentation room. Normal audio equipment such as microphones will be provided.
- Software Used in the Conference: The computers are equipped with Windows 7 as well as **Microsoft PowerPoint 2010 (Office 2010)** and **Adobe Acrobat Reader**. The PowerPoint 2010 is the preferred projection software offered at the conference.
- It is strongly recommended to all authors to check their presentation in the Speaker Ready Room for compatibility and proper operation.
- Avoid Font Problems: Since your computer may have sophisticated fonts (such as special equation symbols) that the conference computers do not have, it is suggested that when you save your PowerPoint presentations, use "Save As" from your "File" pull-down menu. When a dialog box pops up, click on the "Tools" menu on that dialog box and select "Save Options". Then, check the option "Embed true type fonts". Click "OK" and then click "Save". This allows you to include the fonts you are using in your presentations to minimize the font incompatibility problems. Otherwise, any fonts that are not recognized by the conference computers would be incomprehensible. In addition to the default ".pptx" file format, we suggest that you also save a copy of your presentations in the ".ppsx" (PowerPoint Show) format for safe (the ".ppsx" version may also include some of the special fonts in your presentations). If you have a full version of Adobe Acrobat, we suggest you also save (or print) your presentations into a ".pdf" format and thus you will be able to use the free Adobe Reader software to present in case nothing else would work.
- Movies or Videos: If you have movies or videos, the best way to present them properly is to use your own laptop computers since the conference computers may not have the Code/Decode

(Codec) software that is necessary to play your movies or videos. If you do not wish to bring your own computers, you may have to convert all of your movies and videos to the Moving Picture Experts Group 1 (MPEG1) format to ensure a cross-platform compatibility. In addition, the movie or video files should be placed where the links in your presentations are pointing to. To make it easy, you could place the movies and videos in the same folder as your ".pptx" or ".ppsx" files when you prepare your presentations and then copy all these files together to a folder or the desktop of the conference computers.

- **USB Thumb Drives:** Nowadays it is convenient to save your PowerPoint presentations in a USB 2.0 thumb drive. The conference computers will be equipped with the USB 2.0 interfaces. However, some USB drives may have security or driver issues that may prevent the drives from being recognized by the conference computers. Please scan your USB drives to remove viruses if there are any before you bring them to the conference.
- **CD or DVD Backup:** You could also save a copy of your presentation on a CD-R, CD-RW, DVD+/-R, or DVD+/-RW as a backup in case your USB thumb drives do not work with the conference computers (such as missing drivers or having security protections). When you use CD or DVD media, you should "close" (not be able to add any more files) them to increase the chance that these media could be read by the conference computers. If you use Direct CD to save your presentations, please make sure they are readable in a computer without Direct CD software installed.
- **VGA Adapters:** The conference computer projectors will be equipped only with a standard 15-pin analog Video Graphic Array (VGA) connector. If you decide to bring your laptop computers that do not have a VGA port, it is your responsibility to bring all necessary video output adapters with you so that your computers can be connected to the projectors (your computer vendors usually sell or ship such converters with your computers). In addition, the highest resolution of the computer projectors is 1024 x 768 pixels and the resolution of your laptop computers may need to be adjusted properly.
- **100V-240V Voltage Converters:** Taiwan uses 110V/60Hz as its power standard. If your laptop computers do not work with 110V/60Hz, it is your responsibility to bring all necessary power converters. In addition, please plug the power adapters into the power strips so that your laptop computers will not run out of power during your presentations. Please also notice that the plug of the power adapter of your laptop computer may not necessarily fit with the 110V power strip. In this case, international converters/adaptors may be needed for you to use the power strips.
- **Backup Your Laptop Computers:** We suggest you make a copy of your presentations on a USB thumb drive in case your computers are damaged, lost, or cannot be used for whatever reasons.

Good Practices

- Show no more than 1 slide per minute of speaking time. This means approximately 10-12 slides maximum for the 12 minutes of presentation at the symposium. Remember, the last three minutes of the presentation are for questions from the audience. It detracts from the quality of the

presentation to flash numerous graphs, equations, or tables on the screen in rapid sequence in an effort to squeeze a presentation into its allotted time.

- Make the letters on your slides sufficiently big – suggested minimum font size is 14.
- Put no more than 12 lines of text or 4 curves on any slide.
- Avoid lengthy tabulations of numerical data and limit equations to those for which the terms can be properly defined.
- Your audience needs time to interpret the data that you present. While you are very familiar with the data displayed, the audience is not. Describe the abscissa, coordinates, units and the legend for each curve.
- When you display a curve, tell the audience what they should be looking for in order to grasp the point you are trying to make. The audience will not have time to figure it out for themselves.
- Use repetition in your talk to ensure the facts are understood by the audience.
- In addition to the body of the talk, present an introduction and a summary or conclusion.
- Include only information or data that can be properly explained in the allotted time.
- Repeat any questions that are posed to you.
- If a question requires a lengthy reply, suggest that you and the person asking the question meet after the presentation. Then take the discussion out of the meeting room.

SPEAKER READY ROOM

Speaker Ready Room is located at Room 203 on the 2nd floor of the Taipei International Convention Center (TICC). The schedule of the speaker ready room is as follows:

October 21:	7:00 AM – 5:00 PM
October 22:	7:00 AM – 5:00 PM
October 23:	7:00 AM – 5:00 PM
October 24:	7:00 AM – 5:00 PM

Please follow closely the instructions on the "Oral Presentation Guide" to prepare your presentation and to avoid any technical difficulties.

2015 IUS CONDENSED PROGRAM

2015 IUS CONDENSED PROGRAM						
Wednesday, October 21, 2015						
Time	102 1 st floor	105 1 st floor	103 1 st floor	201AF 2 nd floor	201BC 2 nd floor	201DE 2 nd floor
08:00 - 12:00	Short Course 1A Ultrasound Imaging Systems: from Principles to Implementation	Short Course 1B Elasticity Imaging: Methods and Applications	Short Course 1C Ultrasonic Therapy: Mechanism, Methods, and Application	Short Course 1D Signal Processing and System-on-Chip Designs for Ultrasonic Imaging, Detection and Estimation Application	Short Course 1E Laser Interferometric Measurement of Acoustic Surface and Bulk Waves: Application for SAW&FBAR Components	Short Course 1F Medical Transducers (with Electronics)
12:00 - 13:00	Lunch Break					
Time	102 1 st floor	105 1 st floor	103 1 st floor	201AF 2 nd floor	201BC 2 nd floor	201DE 2 nd floor
13:00 - 17:00	Short Course 2A Ultrafast Imaging in Biomedical Ultrasound: Principles and Applications	Short Course 2B Ultrasound Contrast Agents: Fundamentals and Application to Molecular Imaging, Gene and Drug Delivery	Short Course 2C Biomedical Photoacoustics: From Bench to Bedside	Short Course 2D Acoustical Imaging; from Acoustic Field Equations to Imaging and Inversion	Short Course 2E A Modern Approach to Modelling and Simulation of Micro-acoustic Devices	Short Course 2F High Frequency Transducers (with Materials)

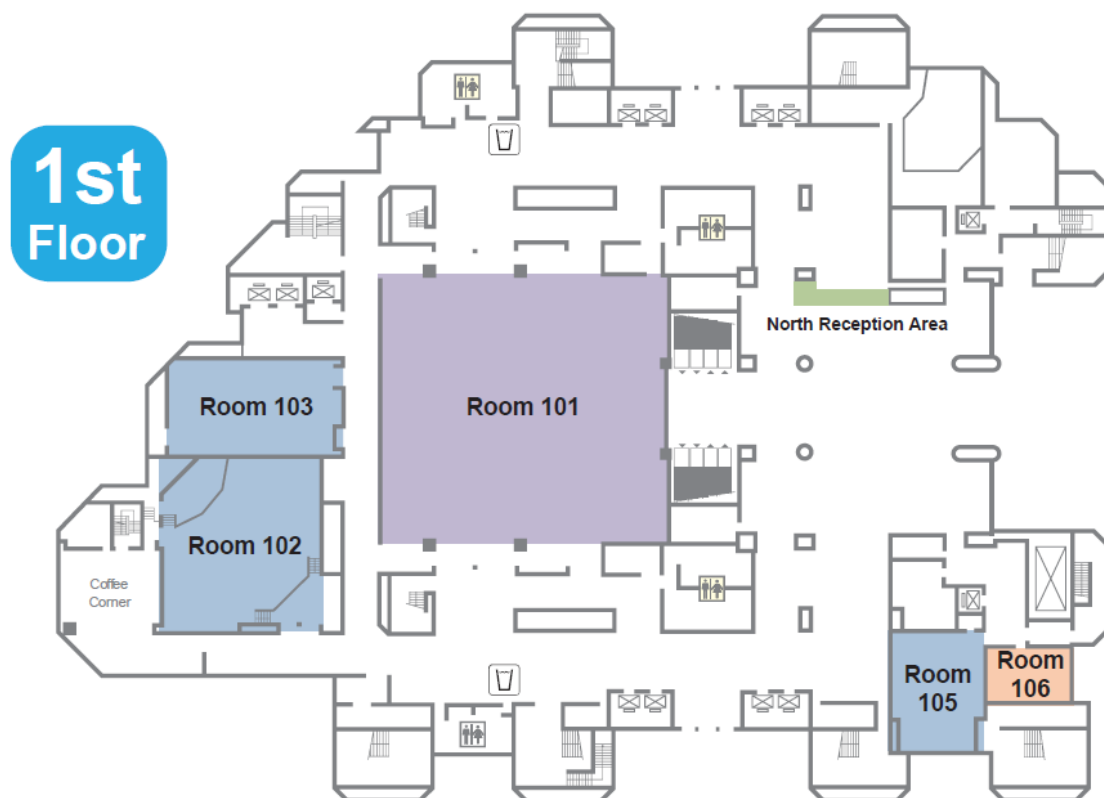
2015 IUS CONDENSED PROGRAM								
Thursday, October 22, 2015								
Time	Plenary Hall 3 rd floor	VIP Room 4 th floor	201BC 2 nd floor	201DE 2 nd floor	103 1 st floor	201F 2 nd floor	201A 2 nd floor	102 1 st floor
08:00 - 09:30	Opening Plenary (Plenary Hall, 3 rd floor)							
09:30 - 10:30	Coffee Break (101, 1 st floor) & Poster Display (West Corridor, 4 th floor)							
10:30 - 12:00	Session 1A MEL: Carotid elasticity measurement techniques	Session 2A MCA: Molecular imaging	Session 3A MBF: Advances in flow imaging methods	Session 4A MBB: Beamforming I	Session 5A Ultrasonics in Water and Air	Session 6A Acoustic Tweezers and Particle Manipulation	Session 7A MEMS and FBAR Oscillators and innovative applications	Session 8A Medical Applications of Transducers
12:00 - 13:00	Lunch Break							
Time	Plenary Hall 3 rd floor	VIP Room 4 th floor	201BC 2 nd floor	201DE 2 nd floor	103 1 st floor	201F 2 nd floor	201A 2 nd floor	102 1 st floor
13:00 - 14:30	Session 1B MPA: Photoacoustic systems	Session 2B MEL: New shear wave imaging techniques	Session 3B MTH: Treatment monitoring	Session 4B MIM: Advances in vascular imaging	Session 5B Arrays	Session 6B Phononics	Session 7B Microacoustic Modeling	Session 8B CMUT Design
14:30 - 15:30	Coffee Break (101, 1F) & Poster Display (West Corridor, 4F)							
15:30 - 17:00	Session 1C MCA: High temporal and spatial resolution contrast imaging	Session 2C MBF: New vascular mapping tools	Session 3C MTH: Brain	Session 4C MBB: Beamforming II	Session 5C NDE	Session 6C Nonlinear Acoustics	Session 7C RF frontend devices	Session 8C Transducer Design, Fabrication and Applications
18:00 - 20:00	Welcome Reception (Banquet Hall, 3F)							

2015 IUS CONDENSED PROGRAM								
Friday, October 23, 2015								
Time	Plenary Hall 3 rd floor	VIP Room 4 th floor	201BC 2 nd floor	201DE 2 nd floor	103 1 st floor	201F 2 nd floor	201A 2 nd floor	102 1 st floor
08:00 - 09:30	Session 1D MEL: Elasticity imaging of small structures	Session 2D MCA: Microbubbles and nanodroplets applications	Session 3D MPA: Photoacoustic imaging of atherosclerosis and cancer	Session 4D MIM: Image fusion and classification methods for improved diagnostics	Session 5D Frontiers of Ultrasonics	Session 6D Opto-acoustics	Session 7D Reduction of TCF	Session 8D Transducers for IVUS
09:30 - 10:30	Coffee Break (101, 1 st floor) & Poster Display (West Corridor, 4 th floor)							
10:30 - 12:00	Session 1E Clinical Ultrasound	Session 2E MEL: Characterizing vascular disease	Session 3E MTH: Bubbles and HIFU	Session 4E MBB: Beamforming III	Session 5E Signal Processing	Session 6E General Physical Acoustics & Ultrasonic Motors & Actuators	Session 7E Emerging technologies	Session 8E Front-end and Integrated Electronics
12:00 - 13:00	Lunch Break							
Time		VIP Room 4 th floor	201ABC 2 nd floor	201DE 2 nd floor	103 1 st floor	201F 2 nd floor		102 1 st floor
13:00 - 14:30		Session 2F Ultrasonics in Biometrics	Session 3F MEL: Mechanical characterization of the heart	Session 4F MSP: Compressive sensing and image reconstruction	Session 5F Industrial Applications	Session 1F MSD: Novel imaging systems		Session 8F Applications of CMUTs
14:30 - 15:30	Coffee Break (101, 1 st floor) & Poster Display (West Corridor, 4 th floor)							
15:30 - 17:00		Session 2G MBB: Beamforming IV	Session 3G MEL: New applications of elasticity imaging	Session 4G MIM: Medical imaging I	Session 1G MTC: High frequency tissue characterization	Session 6G Physics of Thin-Film Resonators		Session 8G Transducers for Therapy
18:00 - 19:00	Banquet Performance Plenary Hall, 3 rd floor							
19:00 - 21:00	Symposium Banquet (Banquet Hall, North Lounge & South Lounge, 3 rd floor)							

2015 IUS CONDENSED PROGRAM								
Saturday, October 24, 2015								
Time		VIP Room 4 th floor	201ABC 2 nd floor	201DE 2 nd floor	103 1 st floor	201F 2 nd floor		102 1 st floor
08:00 - 09:30		Session 2H MBB: Beamforming V	Session 3H MEL: Methods for elasticity imaging	Session 4H MTH: Ultrasound-mediated agent delivery	Session 5H Microfluidics	Session 1H MSP: Medical signal processing		Session 8H Transducer Applications
09:30 - 10:30	Coffee Break (101, 1 st floor) & Poster Display (West Corridor, 4 th floor)							
10:30 - 12:00		Session 2I MIM: Advances in vascular and flow imaging	Session 3I MEL: Towards clinical application of elasticity imaging	Session 4I MTH: Histotripsy, shockwaves and liquefaction	Session 5I MBE: Bioeffects and dosimetry	Session 1I MTC: Tissue characterization		Session 8I CMUTs and Signal Processing
12:00 - 13:00	Lunch Break							
Time		VIP Room 4 th floor	201ABC 2 nd floor	201DE 2 nd floor	103 1 st floor	201F 2 nd floor		102 1 st floor
13:00 - 14:30		Session 2J MPA: Photoacoustic imaging and reconstruction	Session 3J MTC: Cardiovascular tissue characterization	Session 4J MTH: Taming cancer, tumors, and bacteria	Session 5J Sensors and sensing	Session 1J MBF: 3D imaging and flow simulations		Session 8J Materials Fabrication and Characterization
14:30 - 15:30	Coffee Break (101, 1 st floor) & Poster Display (West Corridor, 4 th floor)							
15:30 - 17:00		Session 2K MIM: Medical imaging II	Session 3K MEL: Fundamental elastography studies	Session 4K MCA: Contrast perfusion imaging	Session 5K Flow Measurement	Session 1K MSD: Novel high-frequency systems		Session 8K More Medical Transducer Applications

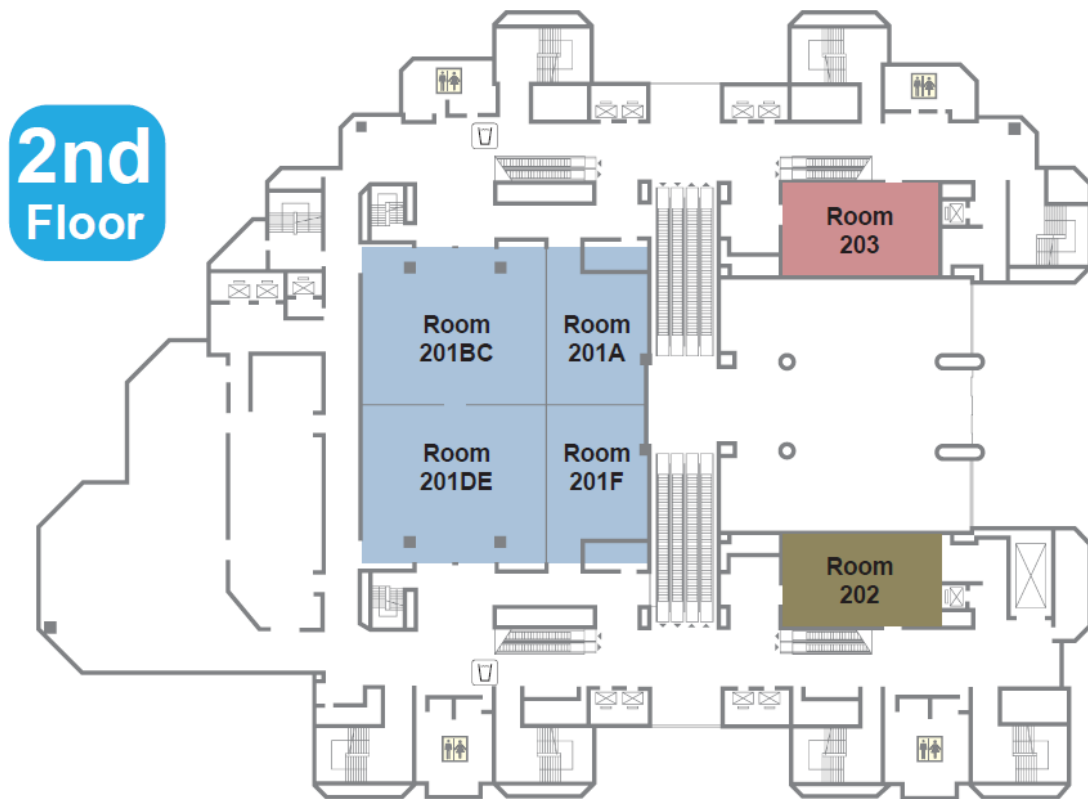
TAIPEI INTERNATIONAL CONVENTION CENTER FLOOR PLANS

First Floor Map: (Registration, Exhibitions, Oral Sessions, Student Poster Competition)

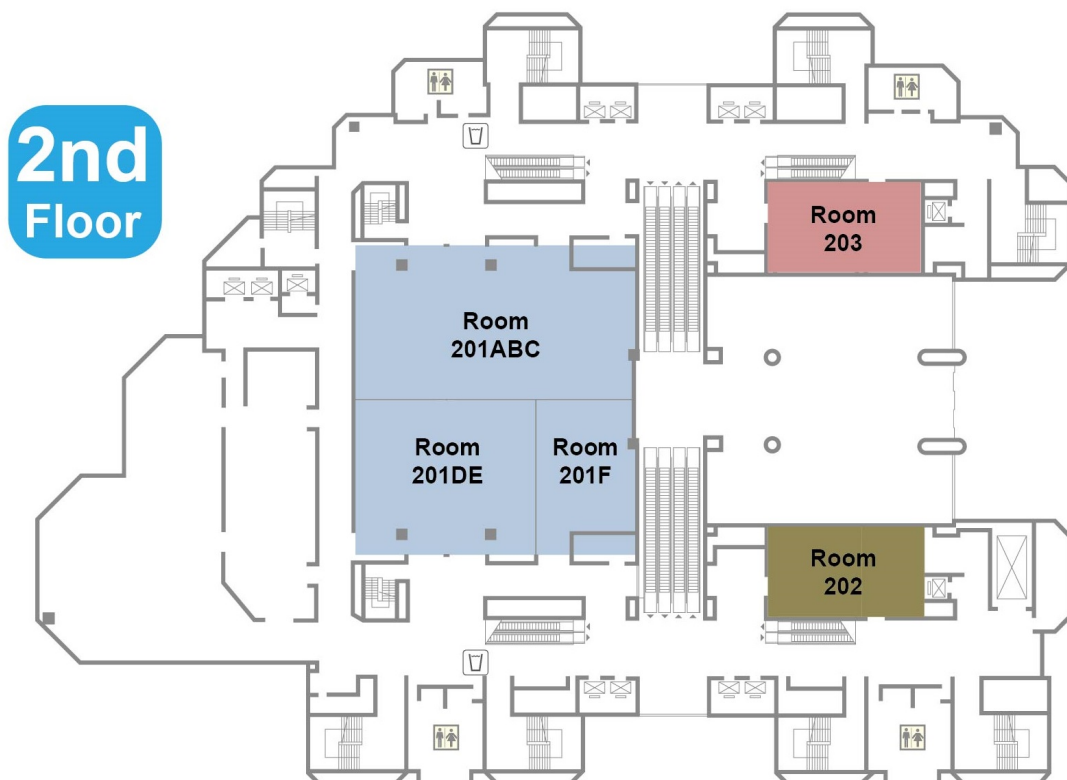


Session Rooms / Function Spaces	
Room 101	Exhibition & Student Poster Competition & Exhibitors Breakfast
Room 102	Oral Sessions & Short Course
Room 103	Oral Sessions & Short Course
Room 105	Oral Sessions & Short Course
Room 106	Family Room
North Reception Area	Registration Desk

Second Floor Map: (Oral Sessions – 10/22~23AM, Speaker Ready Room, Secretariat Room)

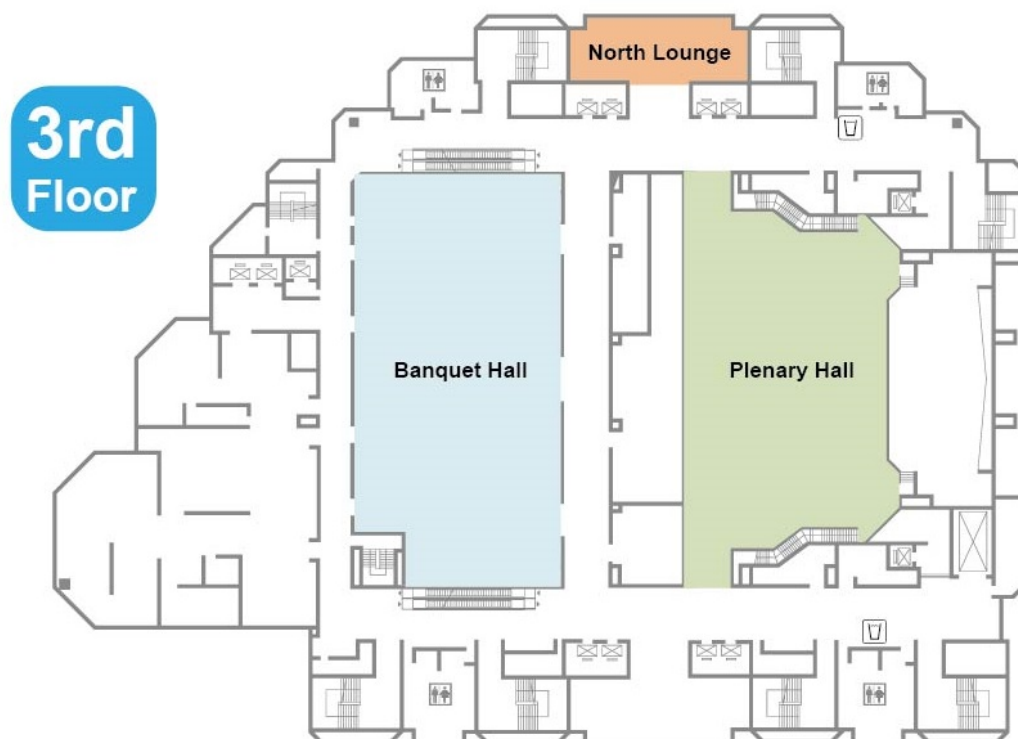


Second Floor Map: (Oral Sessions – 10/23PM~24, Speaker Ready Room, Secretariat Room)



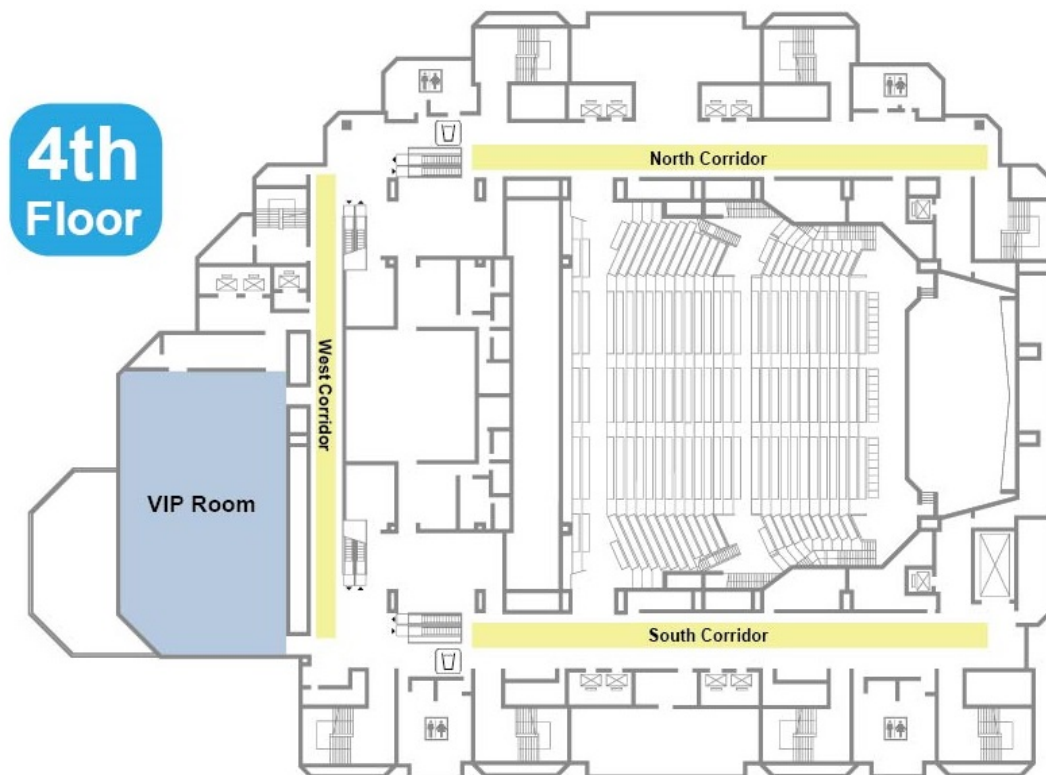
Session Rooms / Function Spaces	
Room 201 A	Oral Sessions
Room 201 BC	Oral Sessions & Short Course
Room 201 ABC	Oral Sessions
Room 201 DE	Oral Sessions & Short Course
Room 201 AF	Short Course
Room 201 F	Oral Sessions
Room 202	Secretariat Room
Room 203	Speaker Ready Room

Third Floor Map: (Opening Ceremony, Plenary Lecture Social Events)



Session Rooms / Function Spaces	
Plenary Hall	Opening Ceremony & Plenary Lecture & Banquet Performance
Banquet Hall	Welcome Reception & Banquet & WIE Luncheon & President's Student Reception
North Lounge	President's Reception

Fourth Floor Map: (Oral Sessions, Poster Sessions)



Session Rooms / Function Spaces	
VIP Room	Oral Sessions
West Corridor	Poster Sessions
North Corridor	Poster Sessions
South Corridor	Poster Sessions

STUDENT PAPER COMPETITION

Thursday
8:00 am - 6:00 pm

Session PA,
STUDENT PAPER COMPETITION
FINALISTS

Chair: Stanislav Emelianov
Georgia Institute of Technology

- Posters of Student Paper Competition -

<p>PA-1 Low flow rate spraying using a torsional ultrasonic transducer</p> <p>Shunsuke Tsuyuki¹, Takefumi Kanda¹, Koichi Suzumori², Shin-ichiro Kawasaki¹, Shoki Otsuji¹ ¹Okayama University, Okayama, Japan, ²Tokyo Institute of Technology, Tokyo, Japan, ³National Institute of Advanced Industrial Science and Technology, Miyagi, Japan</p>	<p>PA-4 Multiphysics Modeling of BAW Filters</p> <p>Andreas Tag¹, Dominik Karolewski², Bernhard Bader³, Maximilian Pitschi³, Robert Weigel¹, Amelie Hagelauer¹ ¹Institute for Electronics Engineering, University of Erlangen-Nuremberg, Erlangen, Germany, ²Institut für Mikroelektronik- und Mechatronik-Systeme gemeinnützige GmbH, Germany, ³TDK Corporation, Germany</p>	<p>PA-8 Capsule-based Ultrasound-mediated Targeted Gastrointestinal Drug Delivery</p> <p>Ernest Stewart¹, Antonella Verboni², Yongqiang Qiu¹, Benjamin Cox¹, Jan Vorstius³, Sandy Cochran¹ ¹Institute for Medical Science and Technology, University of Dundee, United Kingdom, ²The BiRobotics Institute, Scuola Superiore Sant'Anna, Italy, ³School of Engineering, Mathematics and Physics, University of Dundee, United Kingdom</p>	<p>PA-12 Automatic Mouse Embryo Brain Ventricle Segmentation, Gestation Stage Estimation, and Mutant Detection from 3D 40-MHz Ultrasound Data</p> <p>Jen-wei Kuo¹, Yao Wang¹, Orlando Aristizabal^{2,3}, Daniel H. Turnbull¹, Jeffrey A. Ketterling¹, Jonathan Mamont¹ ¹Electronics and Computer Engineering, Polytechnic School of Engineering, New York University, Brooklyn, USA, ²F. L. Lizi Center for Biomedical Engineering, Riverside Research, New York, USA, ³Skirball Institute of Biomolecular Medicine, New York University School of Medicine, New York, USA</p>	<p>PA-16 Ultrasound flow mapping for the investigation of crystal growth</p> <p>Norman Thieme¹, Richard Nauber¹, Hannes Beyer¹, Hannes Radner¹, Lars Büttner¹, Paul Bönsch¹, Kaspars Dardzis¹, Lamine Sylla¹, Dagmar Meier¹, Olaf Patzold¹, Jürgen Czarske¹ ¹Laboratory for Measurement and Sensor System Techniques, Dresden University of Technology, Dresden, Germany, ²SolarWorld Innovations GmbH, Freiberg, Germany, ³Institut für Nichtzerstörungs- und Reinstoffe, Technische Universität Bergakademie, Freiberg, Germany</p>
<p>PA-2 Fast wave velocity measurement by Brillouin scattering using induced phonon from ScAlN piezoelectric thin film</p> <p>Masahiko Kawabe¹, Takahiko Yangitani², Hayato Ichihashi¹, Shinji Takayanagi¹, Masashi Suzuki¹, Mami Matsukawa¹ ¹Doshisha University, Kyoto, Japan, ²Waseda University, Tokyo, Japan, ³Nagoya Institute of Technology, Nagoya, Japan</p>	<p>PA-5 Evaluation of Acoustic Properties of CaTiO₃-(K,Na)NbO₃ Film Using Microfabricated Structure</p> <p>Ryosuke Kaneko¹, Michio Kadota¹, Yuji Ohashi², Jun-ichi Kushibiki¹, Shinsuke Ikeuchi³, Shuji Tanaka¹ ¹Graduate school, Tohoku University, Sendai, Miyagi, Japan, ²Institute for Material Research, Tohoku University, Sendai, Miyagi, Japan, ³Devices Development, Murata Manufacturing Co., Ltd., Nagatsukayyo, Kyoto, Japan</p>	<p>PA-9 Design of High-Efficiency, Miniaturized Ultrasonic Receivers for Powering Medical Implants with Reconfigurable Power Levels</p> <p>Ting Chia Chang¹, Marcus Weber¹, Jayant Chatterjee¹, Amin Nikoozadeh¹, Batrus T. Khuri-Yakub¹, Amin Arbabian¹ ¹Electrical Engineering, Stanford University, Stanford, CA, USA</p>	<p>PA-13 Robust Sound Speed Estimation for Hepatic Steatosis Assessment</p> <p>Marion Imbault¹, Alex Faccinotto², Bruno-Félix Osmanski¹, Mathias Trink¹, Jean-Luc Geminsson¹, Valérie Vilgrain¹, Mickael Tanter¹ ¹Institut Langevin, ESPCI ParisTech, PSL Research University, CNRS UMR 7587, INSERM U979, Paris, France, ²Department of Radiology, Beaujon Hospital, Paris, France</p>	<p>PA-17 Non-contact mass measurement of droplet based on free oscillation under ultrasonic levitation.</p> <p>Sae Ito¹, Ryohhei Nakamura¹, Hiroki Tanaka¹, Yosuke Mizuno¹, Marie Tabaru¹, Kentaro Nakamura¹ ¹Precision and Intelligence Laboratory, Tokyo Institute of Technology, Yokohama, Japan</p>
<p>PA-22 Fast wave velocity measurement by Brillouin scattering using induced phonon from ScAlN piezoelectric thin film</p> <p>Masahiko Kawabe¹, Takahiko Yangitani², Hayato Ichihashi¹, Shinji Takayanagi¹, Masashi Suzuki¹, Mami Matsukawa¹ ¹Doshisha University, Kyoto, Japan, ²Waseda University, Tokyo, Japan, ³Nagoya Institute of Technology, Nagoya, Japan</p>	<p>PA-6 SAW Characteristics of AlN/SiO₂/3C-SiC Layered Structure with Embedded Electrodes</p> <p>Qiaozhen Zhang¹, Tao Han¹, Jing Chen¹, Kenya Hashimoto² ¹Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, Shanghai, Shanghai, China, People's Republic of, ²Graduate School of Engineering, Chiba University, Japan</p>	<p>PA-10 Photoacoustic properties of plasmonic-nanoparticle coated microbubbles</p> <p>Adam Dixon¹, Song Hu¹, Alexander Klibanov¹, John Hossack¹ ¹Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA</p>	<p>PA-14 In vivo magnetomotive ultrasound imaging of rat lymph nodes – a pilot study</p> <p>Maria Evertsson¹, Magnus Cimbino¹, Pontus Kjellman^{2,3}, Sarah Fredriksson², Roger Andersson¹, Hanna Toftvalv¹, Hans W Persson¹, Tomas Jansson^{1,5} ¹Biomedical Engineering, Faculty of Engineering, LTH, Lund University, Lund, Sweden, ²Genovis AB, Sweden, ³Medical Radiation Physics, Clinical Sciences Lund, Lund University, Lund, Sweden, ⁴Biomedical Engineering, Clinical Sciences Lund, Lund University, Lund, Sweden, ⁵Medical Services, Skåne University Hospital, Lund, Sweden</p>	<p>PA-18 Ultrasound Image-based Absolute Concentration Measurement Technique for Materials with Low Scatterer Concentration</p> <p>John H. Lee¹, Javier Jimenez², Xiang Zhang¹, Duane S. Boning¹, Brian W. Anthony¹ ¹Massachusetts Institute of Technology, Cambridge, MA, USA, ²Madrid-MIT M+ Vision Consortium, Massachusetts Institute of Technology, Cambridge, MA, USA</p>

<p>PA-3 High order mode polarity inverted Al-polar (0001) ScAlN/O-polar (000-1) ZnO film resonator</p> <p>Takeshi Mori¹, Takahiko Yanagitani², Masashi Suzuki¹ ¹Nagoya Institute of Technology, Japan, ²Waseda University, Tokyo, Japan</p>			
<p>PA-7 Dual-Mode Integrated Circuit for Imaging and HIFU With 2-D CMUT Arrays</p> <p>Ji Hoon Jang¹, Anshuman Bhuyan¹, Hyo-Seon Yoon¹, Jung Woo Choe¹, Amin Nikoozadeh¹, Douglas Stephens², Butrus Khuri-Yakub¹ ¹Electrical Engineering, Stanford University, Stanford, California, USA, ²Biomedical Engineering, University of California, Davis, Davis, California, USA</p>			
<p>PA-17 Joint compressive sampling and deconvolution in ultrasound medical imaging</p> <p>Zhouye Chen¹, Adrian Basarab¹, Denis Kouamé¹ ¹IRIT, UMR CNRS 5505, University of Toulouse, France</p>			
<p>PA-15 Ultrafast Pulsed Magnetomotive Ultrasound Imaging of Sentinel Lymph Nodes: Small Animal Study</p> <p>Yu-Chun Huang¹, Jieh-Yuan Houng¹, Yi-Da Kang², San-Yuan Chen², Meng-Lin Li^{1,3} ¹Dept. of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan, ²Dept. of Materials Science and Engineering, National Chiao Tung University, Taiwan, ³Institute of Photonics Technologies, National Tsing Hua University, Taiwan</p>			

Oral --- Thursday, October 22, 2015

10:30 am - 12:00 pm

	<p>Session 1A. MEL: Carotid Elasticity Measurement Techniques <i>Chair: Ton van der Steen</i> Erasmus Medical Centre</p>	<p>Session 2A. MCA: Molecular Imaging <i>Chair: Helen Mulvana</i> University of Glasgow</p>	<p>Session 3A. MBF: Advances in Flow Imaging Methods <i>Chair: Piero Tortoli</i> Università di Firenze</p>	<p>Session 4A. MBB: Beamforming I <i>Chair: Jesse Yen</i> University of Southern California</p>	<p>Session 5A. Ultrasonics in Water and Air <i>Chair: Jiroamaru Tsujino</i> Kanagawa University</p>	<p>Session 6A. Acoustic Tweezers and Particle Manipulation <i>Chair: Amit Lal</i> Cornell University</p>	<p>Session 7A. MEMS and FBAR Oscillators and Innovative Applications <i>Chair: Shuji Tanaka</i> Tohoku University</p>	<p>Session 8A. Medical Applications of Transducers <i>Chair: Mark Schafer</i> PhotoSonic Medical, Inc.</p>
<p>Plenary Hall</p>	<p>1A-1 Elasticity measurement of carotid artery atherosclerotic plaque <i>Chris de Korte</i> ¹Medical UltraSound Imaging Center (MUSIC), Department of Radiology and Nuclear Medicine, Radboud University Medical Center, Nijmegen, Netherlands</p>	<p>2A-1 The use of acoustic radiation force decorrelation weighted pulse inversion (ADW-PI) in enhancing microbubble contrast <i>Elizabeth Herbst¹, Sunil Umnikrishnan¹, Shiyong Wang¹, Alexander Klbanov¹, Will Mauldin¹, John Hossack¹</i> ¹Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA</p>	<p>3A-1 Adaptive Spectral Estimation Methods in Color Flow Imaging <i>Yitcel Kanbiyik¹, Ingvild Kim Ekrojl¹, Jorgen Avdal¹, Hans Torp¹, Lasse Lovstakken¹</i> ¹Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway, ²St. Olavs Hospital, Trondheim, Norway</p>	<p>4A-1 Coherence Beamforming Applied to Velocity Estimation and Partially Coherent Signals <i>Jeremy Dahl¹, You Li², Dongwoon Hyun²</i> ¹Radiology, Stanford University, Palo Alto, CA, USA, ²Biomedical Engineering, Duke University, Durham, NC, USA</p>	<p>5A-1 Shear wave generation in soft tissues using electrolysis-induced bubbling <i>Sandra Montalescot¹, Stefan Catheline², Ali Zargani¹, Benedicte Roger¹, Rémi Souchon¹</i> ¹INSERM, University of Lyon, France, ²INSERM, University of Lyon, Lyon, France, ³University of Lyon, France</p>	<p>6A-1 Dynamic Acoustic Field for Tuneable and Scalable Particle Sorting <i>George Skotis¹, David Cumming¹, Jemma Roberts¹, Mathis Kiehle¹, Anne Bernasconi²</i> ¹University of Glasgow, United Kingdom, ²Heriot-Watt University, United Kingdom</p>	<p>7A-1 GaN MEMS Resonators and Oscillators <i>D. Weinstein¹</i> ¹MIT, Cambridge, MA, USA</p>	<p>8A-1 In-vivo navigation of neurosurgical biopsy needles using micro-ultrasound transducers with M-mode imaging <i>Rachael McPhillips¹, Yun Jiang², Zhen Qiu¹, Syed Osama Maliboo¹, Han Wang¹, Carl Meggs²</i> Giuseppe Schiavone¹, Daniel Rodriguez-Samartin¹, Sam Eljamel¹, Marc P. Y. Desmulliez², Christine E.M. Demore¹, Tim Burton², Sandy Cochran¹</p>
<p>10:30 am</p>								
<p>10:45 am</p>		<p>2A-2 Quantification of the binding kinetics of targeted ultrasound contrast agent for molecular imaging of cancer angiogenesis <i>Simona Turco¹, Peter J. A. Frinking², Hessel Wijkstra^{3,4}, Massimo Misch¹</i> ¹Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands, ²Bracco Suisse S.A., Geneva, Switzerland, ³Urology, Academic Medical Center, University of Amsterdam, Amsterdam, Netherlands</p>	<p>3A-2 Robust Estimator Design for High Frame Rate Flow Vectorgraphy: The Least-Squares Vector Doppler Technique <i>Billy Y. S. Yiu¹, Alfred C. H. Yu¹</i> ¹Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong</p>	<p>4A-2 Acoustic clutter suppression with weighted phase-difference coherence factor <i>Zijian Guo¹, Ting-Lan Ji², Albert Gee¹, Dave Napolitano¹, Ching-Hua Chou¹, Yuling Chen¹, D-L Donald Liu², Glen McLaughlin¹</i> ¹Zonare Medical Systems, Mountain View, CA, USA, ²Mindray North America, Mountain View, CA, USA</p>	<p>5A-2 Measurement of human body surface displacement by breathing using airborne ultrasound <i>Shinnosuke Hirata¹, Hiroyuki Hachiya¹</i> ¹Dept. of Mechanical and Control Engineering, Tokyo Institute of Technology, Meguro-ku, Japan</p>	<p>6A-2 Traveling Standing Waves: a Feasibility Study <i>Paul van Neer¹, Ludvig Rasmijn², Armin Rasidovic³, Arno Volker¹</i> ¹Process and Instrumentation Development, TNO, Delft, Zuid-Holland, Netherlands, ²TNO, Netherlands, ³Apphus RTD, Netherlands</p>	<p>7A-2 3/45 MHz Dual-layer Co-Linear Array for Transrectal Acoustic Angiography <i>Sibo Li¹, Jinwook Kim¹, Sandeep Kasoji², Paul Dayton³, Xiaoning Jiang¹</i> ¹Mechanical and Aerospace Engineering, North Carolina State University, Raleigh, North Carolina, USA, ²Joint Department of Biomedical Engineering, University of North Carolina and North Carolina State University, Chapel Hill, North Carolina, USA</p>	

<p>11:00 am</p>	<p>1A-2 Shear wave elastography for lipid content detection in transverse arterial cross-sections</p> <p>Hendrik Hansen¹, Mathieu Pernot², Simon Chatelet³, Mickael Tanter³, Chris de Korte⁴</p> <p>¹Medical Ultrasound Imaging Center (MUSIC), Department of Radiology and Nuclear Medicine, Radboud university medical center, Nijmegen, Netherlands; ²Instituut Langevin, Ecole Supérieure de Physique et de Chimie Industrielles, Paris, France</p>	<p>2A-3 Molecular acoustic angiography: Demonstration of in vivo feasibility for high resolution superharmonic ultrasound molecular imaging</p> <p>Brooks Lindsey¹, Sarah Shelton¹, James Tsuruta², F. Stuart Foster³, Paul Dayton^{1,4}</p> <p>¹Joint Department of Biomedical Engineering, University of North Carolina-Chapel Hill and NC State University, Chapel Hill, NC, USA; ²Department of Pediatrics, University of North Carolina-Chapel Hill and NC State University, Chapel Hill, NC, USA; ³Sunnybrook Research Institute, Toronto, ON, Canada; ⁴Biomedical Research Imaging Center, University of North Carolina-Chapel Hill, Chapel Hill, NC, USA</p>	<p>2A-4 Ultrasound Molecular Imaging with Modulated Acoustic Radiation Force-based Beam Sequence in Mouse Abdominal Aorta: A Feasibility Study</p> <p>Shiying Wang¹, Samil Unnikrishnan¹, Alexander L Klibanov^{1,2}, F William Mauldin Jr., John A Hossack¹</p> <p>¹Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA; ²Division of Cardiovascular Medicine, University of Virginia, Charlottesville, Virginia, USA</p>
<p>1A-3 Carotid artery wall dynamics captured with multi-plane high-frame-rate imaging</p> <p>Pieter Kruijzinga¹, Frits Mastik¹, Johannes G Bosch¹, Antonius FW van der Steen^{1,2}, Nico de Jong^{1,2}</p> <p>¹Thorax Center - Biomedical Engineering, Erasmus Medical Center, Rotterdam, Netherlands; ²Faculty of Applied Sciences - Acoustical Wavefield Imaging, Delft University of Technology, Delft, Netherlands</p>	<p>3A-3 Unaliased vector Doppler imaging from unsteered plane waves</p> <p>Damien Garcia¹, Shahrokh Shalhin², Daniel Posada², Julia Faurie²</p> <p>¹Department of radiology, University of Montreal, Canada; ²University of Montreal, Canada</p>	<p>3A-4 Time-resolved Doppler vortography in the left ventricle</p> <p>Julia Faurie¹, Daniel Posada², Amir Hodzic², François Tournoux², Damien Garcia¹</p> <p>¹University of Montreal, Canada; ²Department of electrocardiography, University of Montreal Hospital, Canada; ³Department of radiology, University of Montreal, Canada</p>	<p>4A-3 Adaptive imaging with Multi-Phase Apodization with Cross-correlation; Phantom and In-vivo Results</p> <p>Junsob Shin¹, Jesse Yen²</p> <p>¹Earth and Environmental Sciences, Los Alamos National Laboratory, Los Alamos, NM, USA; ²Biomedical Engineering, University of Southern California, Los Angeles, CA, USA</p>
<p>5A-3 Phased array transducer for emitting 40-kHz air-coupled ultrasound without grating lobes</p> <p>Eric Konezke¹, Matthias Rutsch¹, Maik Hoffmann¹, Alexander Unger², Rene Golinski³, Dirk Killat¹, Sivaram Nishal Ramadas^{1,4}, Steve Dixon³, Mario Kupnik²</p> <p>¹BTU Cottbus-Senftenberg, Germany; ²Technische Universität Darmstadt, Germany; ³University of Warwick, Coventry, United Kingdom; ⁴Elster-Instrument, Belgium</p>	<p>6A-3 Phononic crystal guided parallel particles transport</p> <p>Fei L^{1,2}, Feiyun Cai¹, Chen Wang¹, Long Meng¹, Suresh Sridaran³, Reed Parker³</p> <p>¹Changxiang Zhang, Hairong Zheng¹; ²Paul C. Lauterbur Research Centre for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, Shenzhen, Guangdong, China; ³Shenzhen Key Laboratory of Nanobiomechanics, Shenzhen Institutes of Advanced Technology, Shenzhen, Guangdong, China; ⁴People's Republic of China</p>	<p>6A-4 Self-acoustophoresis of metallic microparticles in ultrasonic standing waves: new tricks with old hats</p> <p>Wei Wang¹</p> <p>¹School of Electrical and Engineering, Harbin Institute of Technology, Shenzhen Graduate School, Shenzhen, Guangdong, China; ²People's Republic of China</p>	<p>5A-4 Laser-ultrasound imaging of material porosity with a kHz rate fiber-optic pump-probe system</p> <p>Ivan Pelivanov^{1,2}, Matthew O'Donnell¹</p> <p>¹Biomedical Engineering, University of Washington, Seattle, Washington, USA; ²Physics Faculty, Moscow State University, Moscow, Russian Federation</p>
<p>8A-3 Fabrication and Characterization of 15 MHz Concave Array Transducers for Ophthalmic Imaging</p> <p>Jung Hyui Cha¹, Byungwoo Kang², Jihun Jang³, Jin Ho Chang^{1,2}</p> <p>¹Interdisciplinary Program of Integrated Biotechnology, Sogang University, Seoul, Korea, Republic of; ²Department of Electronic Engineering, Sogang University, Seoul, Korea, Republic of</p>	<p>7A-2 Oven Controlled FBAR Oscillator</p> <p>Rich Ruby¹, Kannan Sankaranarathi², Suresh Sridaran³, Reed Parker³</p> <p>¹Avago technologies, Menlo Park, Ca, USA; ²Google, Google, C.A, USA; ³Avago technologies, USA</p>	<p>7A-3 Towards a CMOS Compatible Acoustic Delay Line Memory</p> <p>Justin Kuo¹, Jason Hoople¹, Amit Lal¹</p> <p>¹School of Electrical and Computer Engineering, Cornell University, Ithaca, New York, USA</p>	<p>8A-4 Programmable delivery of macromolecules using high frequency ultrasound</p> <p>Sangpil Yoon¹, Min Gon Kim¹, Yingxiao Wang², K. Kirk Shung¹</p> <p>¹Department of Biomedical Engineering, University of Southern California, Los Angeles, California, USA; ²Department of Bioengineering & Institute of Engineering in Medicine, University of California, San Diego, USA</p>

10:30 am - 12:00 pm		Oral --- Thursday, October 22, 2015					
<p>11:30 am</p> <p>1A-4 Comparison of Different Pulse Waveforms for Local Pulse Wave Velocity Measurement in Healthy and Hypertensive Common Carotid Arteries In Vivo</p> <p>Chengyu Huang¹, Yuan Su², Hong Zhang³, Lin-Xue Qian⁴, Jianwen Luo⁵</p> <p>¹Department of Biomedical Engineering, Tsinghua University, Beijing, China, ²People's Republic of -Department of Ultrasound, Beijing Friendship Hospital, Capital Medical University, Beijing, China, ³People's Republic of</p>	<p>2A-5 A Theoretical Model for the Interaction of an Ultrasound-Activated Contrast Microbubble with a Wall at Arbitrary Separation Distances</p> <p>Alexander Domnikov¹, Ayache Bouakaz²</p> <p>¹Inserm U930, Université François-Rabelais, Tours, France</p>	<p>3A-5 Improved Vector Velocity Estimation using Directional Transverse Oscillation for a Convex Array</p> <p>Jørgen Arendt Jensen¹</p> <p>¹Dept. of Elect. Eng., Center for Fast Ultrasound Imaging, Technical University of Denmark, Lyngby, Denmark</p>	<p>4A-5 Adaptive Beamformer Incorporating with Element Directivity</p> <p>Hideyuki Hasegawa¹, Hiroshi Kanai²</p> <p>¹Graduate School of Science and Engineering, for Research, University of Toyama, Toyama, Japan, ²Graduate School of Engineering, Tohoku University, Sendai, Japan</p>	<p>5A-5 Investigation of Lamb Waves in Solid-Liquid Layers</p> <p>Detlef Pape¹, Miklos Lemer², Tobias Kaufmann³</p> <p>¹Corporate Research, ABB Switzerland Ltd., Baden-Daetwil, Switzerland</p>	<p>6A-5 Recent advances in developing biomedical applications of single beam acoustic tweezers</p> <p>Ying Li^{1,2}, Changyang Lee^{1,2}, Ruim Chen^{1,2}, Hae Lim^{1,2}, Ming-Yi Lin³, Kwok Ho Lam⁴, Kirk Shung^{3,5}</p> <p>¹Biomedical Engineering, University of Southern California, Los Angeles, USA, ²NH Resource Center on Medical Ultrasonic Transducer Technology, University of Southern California, USA, ³Zilkha Neurogenetic Institute, University of Southern California, USA, ⁴Department of Electrical Engineering, Hong Kong Polytechnic University, Hong Kong</p>	<p>7A-4 Chipscale GHz Ultrasonic Channels for Fingerprint Scanning</p> <p>Jason Hoople¹, Justin Kuo¹, Mohamed Abdel-moneim², Amit Lal¹</p> <p>¹Electrical and Computer Engineering, Cornell University, USA, ²Intel Corporation, USA</p>	<p>8A-5 Wearable ultrasound applicators for wound healing and noninvasive drug delivery</p> <p>Peter A. Lewin¹, Youhan Sunny¹, Christopher Bawiec¹, Leonid Zubkov¹, Michael S. Neidrauer¹, Michael S. Weingarten¹, David J. Margolis²</p> <p>¹Drexel University, USA, ²University of Pennsylvania, USA</p>
<p>11:45 am</p> <p>1A-5 In Vivo Carotid Plaque Stiffness Measurements with ARFI Ultrasound in Endarterectomy Patients</p> <p>Tomasz Czereszewicz¹, Jonathan Homesteier², Melissa Caughey³, Mark Farber⁴, Joseph Fulton⁵, Peter Ford⁶, William Marston⁷, Raghuveer Vallabhaneni⁸, Timothy Nichols^{2,3}, Caterina Gallippi^{1,5}</p> <p>¹Joint Department of Biomedical Engineering, University of North Carolina and North Carolina State University, Chapel Hill, NC, USA, ²Department of Pathology and Laboratory Medicine, University of North Carolina, Chapel Hill, NC, USA, ³Department of Medicine, University of North Carolina, Chapel Hill, NC, USA, ⁴Department of Surgery, University of North Carolina, Chapel Hill, NC, USA, ⁵Department of Electrical and Computer Engineering, North Carolina State University, Raleigh, NC, USA</p>	<p>2A-6 Modelling of ultrasound contrast agent oscillations in vessels based on an infinite mirror image method</p> <p>Martin Ward^{1,2}, Yesna Yildiz², Virginie Papadopolou², Robert Eckersley¹, Meng-Xing Tang²</p> <p>¹Department of Mathematics, Imperial College London, London, United Kingdom, ²Department of Bioengineering, Imperial College London, London, United Kingdom, ³Biomedical Engineering Department, Division of Imaging Sciences, King's College London, United Kingdom</p>	<p>3A-6 Small-diameter Vascular Detection with Coherent Flow Power Doppler Imaging</p> <p>You Li¹, Jeremy Dahl²</p> <p>¹Department of Biomedical Engineering, Duke University, Durham, North Carolina, USA, ²Department of Radiology, School of Medicine, Stanford University, Stanford, California, USA</p>	<p>4A-6 Model-based clutter suppression in the presence of phase-aberration from in vivo data and simulations</p> <p>Kazuyuki Doi¹, Brett Byram¹</p> <p>¹Biomedical Engineering, Vanderbilt University, TN, USA</p>	<p>5A-6 Transducer beam diffraction effects in sound transmission near leaky Lamb modes in elastic plates at normal incidence</p> <p>Magne Aanes^{1,2}, Kjetil Daase Lohne², Per Lundø³, Magne Vestheim¹</p> <p>¹Department of Physics and Technology, University of Bergen, Bergen, Norway, ²Christian Michelsen Research AS, Bergen, Norway</p>	<p>6A-6 Cell deformation by acoustic trapping with a single-element high-frequency ultrasound transducer: Potential to determine invasiveness of breast cancer cells</p> <p>Jae Youn Hwang¹, Jinman Park¹, Chi Woo Yoon², Hae Gyun Lim², Jungwoo Lee³, K. Kirk Shung²</p> <p>¹Daegu Gyeongbuk Institute of Science & Technology (DGIST), Daegu, Korea, Republic of, ²Biomedical Engineering, University of Southern California, USA, ³Electronic Engineering, Kwangjuon University, Korea, Republic of</p>	<p>7A-5 Pt-Ni / Pt-Zr Electrodes for Stable SAW Resonator Operation During Repeated Temperature Cycling up to 1000°C(deg)C</p> <p>Mauricio Pereira da Cunha¹, Ann Maskay¹, Robert Lad¹, David Frankel¹, Scott Moulzolf¹, Michael Call¹, George Bernhardt¹</p> <p>¹Laboratory for Surface Science and Technology, University of Maine, Orono, ME, USA</p>	

Oral --- Thursday, October 22, 2015						
1:00 pm -2:30 pm	Session 1B. MPA: Photoacoustic Systems	Session 2B. MEL: New Shear Wave Imaging Techniques	Session 3B. MTH: Treatment Monitoring	Session 4B. MIM: Advances in Vascular Imaging	Session 5B. Arrays	Session 6B. Phononics
	Chair: Stanislav Emelianov <i>Georgia Institute of Technology</i>	Chair: Mickael Tamir <i>INSERM</i>	Chair: Ayache Bouakaz <i>Inserm</i>	Chair: Ton van der Steen <i>Erasmus Medical Centre</i>	Chair: Robert Addison <i>Rockwell Science Center</i>	Chair: Tsung-Tsong Wu <i>National Taiwan University</i>
	Session 7B. Microacoustic Modeling	Session 8B. CMUT Design				
	Chair: Ken-ya Hashimoto <i>Chiba University</i>	Chair: Levent Degertekin <i>Georgia Institute of Technology</i>				
Plenary Hall						
1:00 pm	7B-1 Optimizing a laser irradiation pattern in a high frame rate integrated photoacoustic / ultrasound (PAUS) imaging system Soon-Joon Yoon¹ , Bao-Yu Hsieh ¹ , Chen-wei Wei ¹ , Thi-Mai Nguyen, Bastien Arnal ¹ , Ivan Feivanov ^{1,2} , Matthew O'Donnell ¹ ¹ Department of Bioengineering, University of Washington, Seattle, USA, ² International Laser Center, Moscow State University, Russian Federation	2B-1 Shear wave elastography with fast single-push multi-angle compounding Heechul Yoon¹ , Salavat Aglyamov ¹ , R. Andrew Fowler ¹ , Stanislav Emelianov ¹ ¹ Biomedical Engineering, The University of Texas at Austin, Austin, Texas, USA	3B-1 10 MHz Catheter-based Annular Array for Intramural Cardiac Ablations Douglas Stephens¹ , Josquin Foret ¹ , Steven Luero ¹ , Katherine W. Ferrara ¹ , Kalyanam Shivkumar ² , Pierre Khuri-Yakub ³ ¹ Biomedical Engineering, University of California, Davis, California, USA, ² University of California, Los Angeles, California, USA, ³ Stanford University, USA	4B-1 Coherent RF-data processing to enhance the Intima-Lumen interface Alfonso Rodriguez-Molares¹ , Lasse Lovstakken ¹ , Julio Martin-Herres ² , Tore Grueter-Bjasted ¹ , Hans Torp ¹ Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway, ² Signal Theory and Communications, University of Vigo, Spain, ³ GE Vingmed Ultrasound, Horten, Norway	5B-1 Quantitative Phased Array Modeling and Imaging Lester Scherrer¹ ¹ Center for NDE, Iowa State University, Woodward, Iowa, USA	6B-1 Phonon Dynamics in Electromechanical Resonators G3 topic: Phononics (PPN) Imran Mahboob¹ , Hironori Yamaguchi ¹ ¹ NTT Basic Research Laboratories, Japan
	7B-2 Optimizing a Single-Sided Reflection Mode Photoacoustic Setup for Clinical Imaging Martin F Beckmann¹ , Hans-Martin Schwab ¹ , Georg Schmitz ¹ ¹ Chair for Medical Engineering, Ruhr-University Bochum, Bochum, Germany	2B-2 Magnetic Resonance-guided transient shear wave imaging using constructive multi-pulse transmission Yu Liu¹ , Brett Fite ¹ , Josquin Foret ¹ , Erik Dumont ² , Katherine Ferrara ¹ ¹ Biomedical Engineering, UC Davis, Davis, California, USA, ² Image Guided Therapy, Pessac, France	3B-2 Real-Time Feedback System for High-intensity Focused Ultrasound Treatment Using Decorrelation Maps of RF Echoes with Plane-Wave Transmission Ryo Takagi¹ , Hayato Jinbo ² , Ryosuke Iwasaki ¹ , Shin Yoshizawa ¹ , Shin-ichiro Umemura ¹ ¹ Biomedical Engineering, Tohoku University, Japan, ² Communications Engineering, Tohoku University, Japan	4B-2 Estimation of arterial wall motion using ultrafast imaging with transverse oscillations: in-vivo study Sebastien Sallès¹ , Damien Garcia ² , Alfred Yu ³ , Didier Vray ¹ , Hervé Liebgott ¹ ¹ Creatis, France, ² RUBIC, Canada, ³ EEE Department The University of Hong Kong, Hong Kong	5B-2 Study on Generation Mechanisms of Third-Order Non-Linearity in SAW Devices Ryo Nakagawa^{1,2} , Takanao Suzuki ¹ , Hiroshi Shimizu ¹ , Haruki Kiyoyai ¹ , Katsuhiko Nako ¹ , Ken-ya Hashimoto ² ¹ Mitsuta Manufacturing Co., Ltd., Japan, ² Graduate School of Engineering, Chiba University, Japan	6B-2 Fabrication of Capacitive Micromachined Ultrasonic Transducers with Through-Glass-Via Interconnects Xiao Zhang¹ , F. Yalcin Yamaner ² , Omer Oralkan ¹ ¹ Department of Electrical and Computer Engineering, NCSU, Raleigh, North Carolina, USA, ² Department of Electrical and Electronics Engineering, Istanbul Medipol University, Istanbul, Turkey
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	7B-1 Efficient and Accurate WLP SMT SAW Duplexer EM Simulation in Module Integration Hao Dong¹ , Kevin Gamble ² , Jean Briot ¹ , Thor Thorvaldsson ² ¹ Qorvo, Apopka, Florida, USA, ² Qorvo, USA	8B-1 Experimental Study of Mutual Acoustic Coupling in CMUT's with Substrate-Embedded Springs Byung Chul Lee¹ , Amin Nikoozadeh ¹ , Butrus T. Khuri-Yakub ¹ ¹ Stanford University, USA	7B-2 Study on Generation Mechanisms of Third-Order Non-Linearity in SAW Devices Ryo Nakagawa^{1,2} , Takanao Suzuki ¹ , Hiroshi Shimizu ¹ , Haruki Kiyoyai ¹ , Katsuhiko Nako ¹ , Ken-ya Hashimoto ² ¹ Mitsuta Manufacturing Co., Ltd., Japan, ² Graduate School of Engineering, Chiba University, Japan	8B-2 Fabrication of Capacitive Micromachined Ultrasonic Transducers with Through-Glass-Via Interconnects Xiao Zhang¹ , F. Yalcin Yamaner ² , Omer Oralkan ¹ ¹ Department of Electrical and Computer Engineering, NCSU, Raleigh, North Carolina, USA, ² Department of Electrical and Electronics Engineering, Istanbul Medipol University, Istanbul, Turkey		
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VIP						

<p>1:30 pm</p>	<p>1B-3 Handheld Photoacoustic Imaging with Integrated Diode Lasers</p> <p>Georg Schmitz¹, Hans-Martin Schwab², Martin Beckmann¹ ¹Chair for Medical Engineering, Ruhr-Universität Bochum, Bochum, Germany</p>	<p>2B-3 Moving beam shear wave reconstruction for both ultrasound and optical coherence tomography applications</p> <p>Bao-Yu Hsieh¹, Shaozhen Song¹, Thu-Mai Nguyen¹, Soon-Joon Yoon¹, Tueng Shen², Ruikang Wang^{1,2}, Matthew O'Donnell¹ ¹Department of Bioengineering, University of Washington, Seattle, USA; ²Department of Ophthalmology, University of Washington, Seattle, Washington, USA</p>	<p>3B-3 Visualization of 3D temperature distribution caused by exposure of HIFU with thermo-chromic liquid crystal phantom</p> <p>Toshihide Iwahaashi¹, Kazuhiro Matsui¹, Tang Tianhan¹, Katsuke Fujiwara², Kazunori Imai², Takashi Azuma¹, Kiyoshi Yoshinaka³, Akira Sasaki¹, Sha Takagi¹, Yoichiro Matsumoto¹, Ichiro Sakuma¹ ¹The University of Tokyo, Japan; ²Hitaichi-Aloka Medical, Japan; ³National Institute of Advanced Industrial Science and Technology, Japan</p>	<p>4B-3 Intra-plaque stiffness mapping in carotid stenosis patients in vivo using high-frame rate Pulse Wave Imaging</p> <p>Ronny Li¹, Iason Apostolakis², Edward Connolly³, Elisa Konoigou^{3,4} ¹Department of Biomedical Engineering, Columbia University, USA; ²Biomedical Engineering, Columbia University, USA; ³Neurological Surgery, Columbia University, USA; ⁴Radiology, Columbia University, USA</p>	<p>5B-2 Imaging Beyond Aliasing</p> <p>Paul van Neer¹, Arno Volker¹ ¹Process and Instrumentation Development, TNO, Delft, Zuid-Holland, Netherlands</p>	<p>6B-2 The generation of impulses from narrow bandwidth signals using resonant spherical chains</p> <p>David Hutchins¹, Jia Yang¹, Omolu Akanni¹, Peter Thomas¹, Lee Davis¹, Steven Frestat², Sevan Harput², Nader Safdari¹, Pierre Gelat³ ¹School of Engineering, University of Warwick, Coventry, United Kingdom; ²School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom; ³Department of Mechanical Engineering, University College London, London, United Kingdom</p>	<p>7B-3 Effective nonlinear constants for SAW devices from FEM calculations</p> <p>Andreas Mayer¹, Elena Mayer¹, Markus Mayer², Philipp Jaeger², Werner Ruile¹, Ingo Bleyl¹, Karl Wagner² ¹Hochschule Offenburg, Germany; ²TDK corporation, Munich, Germany</p>	<p>8B-3 Highly Reliable CMLUT Cell Structure with Reduced Dielectric Charging Effect</p> <p>Shuntaro Machida¹, Taiichi Takezaki¹, Takashi Kobayashi¹, Hiroki Tanaka¹, Tatsuya Nagata¹ ¹Hitachi, Ltd., Tokyo, Japan; ²Hitachi Aloka Medical, Ltd., Tokyo, Japan</p>
<p>1:45 pm</p>	<p>2B-4 Eliminating Speckle Noise with Three-dimensional Single-Track-Location Shear Wave Elasticity Imaging (STL-SWEI)</p> <p>Peter Hollender¹, Samantha Lipman¹, Gregg Trahey^{1,2} ¹Biomedical Engineering, Duke University, Durham, North Carolina, USA; ²Radiology, Duke University Medical Center, Durham, North Carolina, USA</p>	<p>3B-4 Monitoring of Radiofrequency Ablation with Shear Wave Delay Mapping</p> <p>William Shi¹, Ajay Anand¹, Shiram Sathuraman¹, Sheng-Ng², Wen Huang³, Hua Xie³, Gary Ng² ¹Philips Research North America, Briarcliff Manor, NY, USA; ²Philips Ultrasound, Bothell, WA, USA</p>	<p>4B-4 Dual-frequency intravascular ultrasound imaging of vasa vasorum: Ex vivo and in vivo demonstration</p> <p>Brooks Lindsey¹, K. Heath Martin¹, Janguo Ma^{1,2}, Zhuochen Wang³, Xiaoning Jiang^{1,2}, Paul Dayton^{1,3} ¹Joint Department of Biomedical Engineering, University of North Carolina-Chapel Hill and NC State University, Chapel Hill, NC, USA; ²Department of Mechanical & Aerospace Engineering, North Carolina State University, Raleigh, NC, USA; ³Biomedical Research Imaging Center, University of North Carolina-Chapel Hill, Chapel Hill, NC, USA</p>	<p>5B-3 Flexural Transducer Arrays for Industrial Non-Contact Applications</p> <p>Tobias Eriksson¹, Sivaram Ramadas^{1,2}, Alexander Unger³, Mark Hoffmann⁴, Mario Kupnik³, Steve Dixon¹ ¹University of Warwick, United Kingdom; ²Elsevier Instrument, Belgium; ³Technische Universität Darmstadt, Germany; ⁴BTU, Colbitz-Senftenberg, Germany</p>	<p>6B-3 Tunable Bragg band gaps in piezocomposite phononic crystals</p> <p>Charles CROENNE¹, Manie-Frause PONGE¹, Franck LEVASSER¹, Lionel HAUMESSER², Mai PHAM THI¹, Anne-Christine HLADKY¹ ¹EMAN, UMR 8570 CNRS, ISEN Department, Lille, France; ²François-Rabelais University, GREMAN UMR 7347 CNRS, Tours, France; ³Thales Research and Technology, Palaiseau, France</p>	<p>7B-4 Thermal Modeling of WLP-BAW Filters – Power Handling and Miniaturization</p> <p>Michael Fattinger¹, Paul Stokes¹, Genot Fattinger¹ ¹BAW R&D, Qorvo, Apopka, Florida, USA</p>	<p>8B-4 Fabrication of polymer bonded capacitive micromachined ultrasonic transducers (CMUTs)</p> <p>Zhenhao Li¹, Albert I. H. Chen¹, Shuai Na¹, Lawrence Wong¹, John T. W. Yeow^{1,2} ¹Systems Design Engineering, University of Waterloo, Waterloo, Ontario, Canada; ²Waterloo Institute of Nanotechnology, University of Waterloo, Waterloo, Ontario, Canada</p>	

<p>1:00 pm -2:30 pm</p>	<p>1B-4 In vitro and in vivo dynamic blood volume assessment using photoacoustics</p> <p>H.M. Hersh¹, M.U. Arabul¹, F.N. Yan de Vosse¹, M.C.M. Rutten¹, R.G.P. Lopata¹</p> <p>¹Biomedical Engineering, Cardiovascular Biomechanics Group, Eindhoven University of Technology, Netherlands</p>	<p>8B-5 CMUTs with vented cavities and non-uniform squeeze films</p> <p>Nikhil Apté¹, Amin Nikoozadeh¹, Bitrus (Pierre) T. Khuri-Yakub¹</p> <p>¹E. L. Ginzton Laboratory, Stanford University, USA</p>
<p>2:00 pm</p>	<p>2B-5 Implementation of Shear Wave Elastography on Pediatric Cardiac Transducers with Pulse-inversion Harmonic Imaging and Time-aligned Sequential Tracking</p> <p>Pengfei Song¹, Xiaojun Bi^{1,2,3}, Daniel C. Mellema¹, Armando Manduca¹, Matthew W. Urban¹, Shigao Chen¹, James F. Greenleaf¹</p> <p>¹Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, Minnesota, USA; ²Department of Cardiovascular Diseases, Mayo Clinic College of Medicine, Rochester, Minnesota, USA; ³Department of Medical Ultrasonology, Tongji Hospital, Medical College, Wuhan, Hubei, China, People's Republic of</p>	<p>7B-5 Theoretical and Experimental Investigation of Spurious Modes in a SAW Delay Line Based on Langasite</p> <p>Natalya Naumenko^{1,2}, Pascal Nicolay³, Jochen Bardong⁴</p> <p>¹Acousto-optical Research Center, National University of Science and Technology, Moscow, Russian Federation; ²MTUCL, Moscow, Russian Federation; ³Carinthian Tech Research (CTR AG), Villach, Austria</p>
<p>3B-5 Advances in thermal strain imaging: 3D motion and tumor validation studies</p> <p>Josquin Foiret¹, Katherine W. Ferrara¹</p> <p>¹Department of Biomedical Engineering, University of California, Davis, USA</p>	<p>4B-5 Improved Estimation of Thermal Strain Using Pulse Inversion Harmonic Imaging: An Ex Vivo Human Tissue Study</p> <p>Xuan Ding^{1,2}, Man Nguyen², Isaac James³, Kacey Maria^{4,5}, J. Peter Rubin^{6,7}, Steven Leers^{4,5}, Kang Kim^{1,2}</p> <p>¹Department of Biomechanical Engineering, University of Pittsburgh School of Engineering, Pittsburgh, PA, USA; ²Center for Ultrasound Molecular Imaging and Therapeutics, University of Pittsburgh School of Medicine, Pittsburgh, PA, USA; ³Department of Plastic Surgery, University of Pittsburgh School of Medicine, Pittsburgh, PA, USA; ⁴Heart and Vascular Institute, University of Pittsburgh School of Medicine, Pittsburgh, PA, USA; ⁵Department of Surgery, University of Pittsburgh Medical Center, Pittsburgh, PA, USA</p>	<p>6B-4 Tunability of the band structure of a piezoelectric phononic crystal using electrical negative capacitance</p> <p>Bruno Morvan^{1,2}, Sid Ali Mansour^{1,2}, Pierre Maréchal^{1,2}, Paul Bernard^{1,2}, Anne-Christine Hladky-Hemion^{2,3}, Bertrand Dubus^{2,3}</p> <p>¹LOMC UMR 6294 CNRS, Le Havre, France; ²FANO FR CNRS 3110, France; ³JEMN UMR 8520 CNRS, ISEN, Lille, France</p>
<p>3B-6 Monitoring of Lesions Induced by Cavitation-Enhanced High-Intensity Focused Ultrasound Using Shear Wave Elastography</p> <p>Ryosuke Iwasaki¹, Ryo Takagi¹, Ryo Nagaoka¹, Hayato Jimbo², Shin Yoshizawa², Yoshitami Sano¹, Shin-ichiro Umemura¹</p> <p>¹Biomedical Engineering, Tohoku University, Sendai, Japan; ²Communications Engineering, Tohoku University, Sendai, Japan</p>	<p>4B-5 High Resolution Autofocused Virtual Source Imaging (AVSI)</p> <p>Jorge Camacho¹, Jorge F. Cruz¹</p> <p>¹Ultrasonic Systems Group, Spanish National Research Council (CSIC), Madrid, Madrid, Spain</p>	<p>6B-5 Phononic crystal based liquid sensor governed by localized defect resonances</p> <p>Aleksandr Oscev¹, Marc-Peter Schmidt¹, Ralf Lucklum¹, Mikhail Zabitsov¹, Soeren Hirsch¹</p> <p>¹Institute of Micro and Sensor Systems (IMOS), Otto-von-Guericke University Magdeburg, Magdeburg, Germany; ²Department of Engineering, University of Applied Sciences Brandenburg, Brandenburg, Germany</p>
<p>2B-6 Storage and Loss moduli imaging in soft solids using Supersonic Shear Imaging technique</p> <p>Elifana Budelli^{1,2}, Javier Brum³, Miguel Bernal¹, Thomas D'effieux¹, Mickael Tamer¹, Patricia Lema¹, Carlos Negreira¹, Jean-Luc Gemisson¹</p> <p>¹Institut Langevin, Paris, France; ²Instituto de Ingeniería Química, Uruguay; ³Laboratorio de Acústica Ultrasonora, Uruguay</p>	<p>5B-4 Fast Calculation of Wideband Beam Pattern for Designing Large Planar Array</p> <p>Cheng Chi¹, Zhaochun Li^{1,2}</p> <p>¹Department of Electronics, Peking University, Beijing, China, People's Republic of; ²Department of Electronics, Peking University, China, People's Republic of</p>	<p>8B-6 A Commercialized High Frequency CMUT Probe for Medical Ultrasound Imaging</p> <p>Danhua Zhao¹, Steve Zhuang¹, Ron Dagle²</p> <p>¹Kolo Medical Inc, USA; ²Verasonics Inc, USA</p>
<p>2B-7 Photoacoustic microscopy using four-wave mixing in a multimode fiber</p> <p>Margaret Ferrari¹, Jessica Farland¹, Takashi Buma¹</p> <p>¹Union College, USA</p>	<p>5B-5 Demonstration of High-speed Integrated Intravascular Ultrasound and Optical Coherence Tomography Imaging on Atherosclerosis Animal Model</p> <p>Teng Ma¹, Jiawen Li², Mingyue Yu¹, Dilbarah Mohar¹, Pranav M. Patel¹, Kirk Shung¹, Zhongping Chen², Qifa Zhou¹</p> <p>¹NH Resource Center for Medical Transducer Technology and Department of Biomedical Engineering, University of Southern California, USA; ²Department of Biomedical Engineering, University of California Irvine, USA; ³Division of Cardiology, University of California Irvine, USA</p>	<p>7B-6 Analysis of the Spurious Lamb modes in Temperature Compensated LSAW hybrid Substrates</p> <p>Patrick Turner¹, Yevstislav Yanchev², Sean McHugh¹, Victor Plesky³</p> <p>¹Resonant Inc., Santa Barbara, USA; ²Uppsala University, Uppsala, Sweden; ³GTR Trade SA, Chex-le-Bart, Switzerland</p>
<p>2:15 pm</p>	<p>1B-5 Photoacoustic microscopy using four-wave mixing in a multimode fiber</p> <p>Margaret Ferrari¹, Jessica Farland¹, Takashi Buma¹</p> <p>¹Union College, USA</p>	<p>8B-6 A Commercialized High Frequency CMUT Probe for Medical Ultrasound Imaging</p> <p>Danhua Zhao¹, Steve Zhuang¹, Ron Dagle²</p> <p>¹Kolo Medical Inc, USA; ²Verasonics Inc, USA</p>

Oral --- Thursday, October 22, 2015

3:30 pm - 5:00 pm				Oral --- Thursday, October 22, 2015												
Session 1C. MCA: High Temporal and Spatial Resolution Contrast Imaging		Session 2C. MBF: New Vascular Mapping Tools		Session 3C. MTH: Brain		Session 4C. MBB: Beamforming II		Session 5C. NDE		Session 6C. Nonlinear Acoustics		Session 7C. RF Frontend Devices		Session 8C. Transducer Design, Fabrication and Applications		
Chair: Ayache Bouakaz Inserm		Chair: Damien Garcia University of Montreal		Chair: Kullervo Hynynen Univ. of Toronto		Chair: Jeremy Dahl Stanford University		Chair: Lawrence Kessler Somoscan Inc.		Chair: Koen W.A. Van Dongen Delft University of Technology		Chair: Jidong Dai Murata Electronics, Inc.		Chair: Sandy Cochran University of Dundee		
Plenary Hall		VIP		201BC		201DE		103		201F		201A		102		
3:30 pm	1C-1 High Frame Rate Contrast-Enhanced Flow Vectorgraphy with Wide Velocity Estimation Dynamic Range Based on Multi-Band Processing	Alfred C. H. Yu ¹ , Billy Y. S. Yui ¹ ¹ Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong	2C-1 Functional connectivity of the mouse brain using transcranial functional ultrasound (tUS)	Elodie Tiran ¹ , Jerémy Ferrière ² , Bruno-Félix Osmański ¹ , Thomas Delbecq ¹ , Sophie Pezet ² , Zsolt Lenkei ³ , Mickael Tanter ¹ ¹ Institut Langevin, ESPCI-ParisTech, PSL University, INSERM U979, CNRS UMR7587, France, ² Laboratoire de Neurobiologie, ESPCI-ParisTech, PSL University, CNRS UMR8249, France	3C-1 Pupil dilation and motor response elicitation by ultrasound neurostimulation	Hermes Kamimura ^{1,2} , Shutao Wang ¹ , Hong Chen ¹ , Qi Wang ¹ , Christian Aurup ¹ , Camillo Acosta ¹ , Antonio Carneiro ² , Elisa Konoïagoul ¹ ¹ Columbia University, New York, NY, USA, ² University of Sao Paulo, Brazil	4C-1 Synthetic aperture imaging using a semi-analytic model for the transmit beams	Svetoslav Ivanov Nikolov ¹ , Jens Munk Hansen ¹ ¹ BK Ultrasonud, Herlev, Denmark	5C-1 Measurement of the Clamping Force Applied by Load-Bearing Bolts Using a Combination of Compression and Shear Ultrasonic Waves	Johan E. Carlsson ¹ , Peter Landin ² ¹ Div. of Signals and Systems, Lulea University of Technology, Lulea, Sweden, ² Svevea KIMAB, Kista, Sweden	6C-1 Nonlinear Acoustic Pulse Evolution at the Edge of a Silicon Crystal	Alexey M. Lomonosov ^{1,2} , Pavel D. Popyrev ^{1,3} , Peter Hess ⁴ , Andreas P. Mayer ³ ¹ General Physics Institute, Moscow, Russian Federation, ² University of Heidelberg, Heidelberg, Germany, ³ HIS Offenburg - University of Applied Sciences, Gengenbach, Germany	7C-1 Current developments and future trends in mobile terminal frontend architectures	Harald Pretl ¹ ¹ DMCE GmbH & Co KG, Austria	8C-1 Piezoelectric Micromachined Ultrasonic Transducers with Increased Coupling Coefficient via Series Transduction	Yipeng Lu ¹ , Qi Wang ¹ , David Horsley ¹ ¹ University of California, Davis, Davis, CA, USA
	3:45 pm	1C-2 Visualizing tumour perfusion with plane-wave contrast-enhanced Doppler: concepts and trade-offs	Charles Tremblay-Darveau ¹ , Ross Williams ² , Paul S. Sheeran ^{1,2} , Laurent Milot ^{2,3} , Matthew Bruce ⁴ , Peter N. Burns ^{1,2} ¹ Medical Biophysics, University of Toronto, Toronto, Canada, ² Sunnybrook Research Institute, Toronto, Canada, ³ Department of Medical Imaging, University of Toronto, Toronto, Canada, ⁴ Supersonic Imagine, Aix-en-Provence, France	2C-2 Investigating functional ultrasound imaging for in vivo dissection of the visual pathway using light stimulations.	Marc Gessnik ¹ , Laura Zamfir ² , Paul-Henri Prevot ² , Laëtitia Dubamel ² , Serge Picaud ² , José-Alain Sahel ² , Mathias Fink ¹ , Thomas Deflieux ¹ , Jean-Luc Gennisson ¹ , Mickael Tanter ¹ ¹ Institut Langevin, Paris, France, ² Institut de la Vision, Paris, France	3C-2 Linearity of the Targeting Parameters and Gray-to-White-Matter Ratio Dependence on the Focused-Ultrasound Induced Blood-Brain Barrier Opening Volume across Non-Human Primates	Maria Eleni (Marilena) Karakatsani ¹ , Geshimani Samiotaki ¹ , Mathew Downs ¹ , Vincent Ferreira ² , Elisa Konoïagoul ^{1,3} ¹ Biomedical Engineering, Columbia University, New York, NY, USA, ² Neuroscience, Columbia University, New York, NY, USA, ³ Radiology, Columbia University, New York, NY, USA	4C-2 Increasing the Robustness and Convergence Rate of the Kaczmarz Method in Reconstructing the Speed of Sound (SoS) in Solid Materials using Analytical Signals	Leïli Salehi ¹ , Georg Schmitz ² ¹ Department of Medical Engineering, Ruhr Universität Bochum, Bochum, Germany, ² Department of Medical Engineering, Ruhr Universität Bochum, Germany	5C-2 Development and Application of Guided Wave Technology for Buried Piping Examination in Nuclear Power Plant	Kuang-Chih Pei ¹ , Hung-Fa Shyu ¹ , Bing-Hung Lee ² , Jian-Chung Tsoung ¹ ¹ Nondestructive Testing Lab., NFM, Institute of Nuclear Energy Research, Taoyuan City, Taiwan, ² Taiwan Metal Quality Control CO., Taiwan, Taiwan Power Company, Taiwan	6C-2 Application of electrode stress for improving frequency-temperature behavior of UHF quartz resonators	Yook-Kong Yong ¹ , Jianfeng Chen ¹ , Randall Kubena ² , Deborah Kirby ² , David Chang ² ¹ Rutgers University, Piscataway, NJ, USA, ² HRL Laboratories, Malibu, CA, USA	8C-2 Micro-replication using Photorealist Moulds for Water-scale Fabrication of Fine-scale Piezocomposites	Yun Jiang ¹ , Hana Hughes ^{2,3} , Tanikan Thongchai ¹ , Carl Meggs ^{1,3} , Tim Button ^{1,2} ¹ School of Metallurgy and Materials, University of Birmingham, Birmingham, United Kingdom, ² Central European Institute of Technology, Brno, Czech Republic, ³ Applied Functional Materials Ltd, Birmingham, United Kingdom	

<p>4:00 pm</p>	<p>1C-3 Super-resolution imaging of microbubble contrast agents Robert Eckerley</p>	<p>2C-3 Non-invasive Estimation of Intravascular Pressure Changes using Ultrasound Jacob Bjerring Olesen¹, Carlos Armando Villagómez-Hoyos², Marie Sand Trøberg¹, Carsten Erik Thomsen¹, Jørgen Arendt Jensen¹, ¹Center for Fast Ultrasound Imaging, Dept. of Elec. Eng. DTU, Kgs. Lyngby, Denmark; ²Dept. of Radiology, Copenhagen University Hospital, Copenhagen, Denmark</p>	<p>3C-3 Enhanced intranasal brain drug delivery by focused ultrasound-activated microbubbles Hong Chen¹, Camilo Acosta², Carlos Sierra Sanchez², Marielena Karakatsani¹, Elisa Konoigou¹ ¹Columbia University, New York, NY, USA</p>	<p>4C-3 Phantom and in vivo demonstration of swept synthetic aperture imaging Nick Bortonus¹, Will Long¹, David Bradway¹, Gregg Trabej², ¹Biomedical Engineering, Durham, North Carolina, USA; ²Radiology, Duke University, Durham, North Carolina, USA</p>	<p>5C-3 Attenuation and Phase Compensation for Guided Wave Based Inspection Using a Filter Approach Christian Kexel¹, Joel Hartley², Jochen Moll¹, ¹Department of Physics, Goethe University of Frankfurt, Germany; ²Department of Electrical and Computer Engineering, University of Utah, Salt Lake City, UT, USA</p>	<p>6C-3 Temperature control of a droplet on disposable type microfluidic system based on a surface acoustic wave device for blood coagulation monitoring Noriyuki Ohashi¹, Jun Kondoh¹, ¹Shizuoka University, Hamamatsu-shi, Japan</p>	<p>7C-2 Full band 41 filter with high Wi-Fi rejection – design and manufacturing challenges Susanne Kreuzer¹, Alexandre Volatier¹, Gernot Fattinger¹, Fabien Dumont¹, ¹BAW R&D, Qorvo, Apopka, Florida, USA</p>	<p>8C-3 Gas Coupled Polymeric Capacitive Transducers via Pad Printing Richard O'Leary¹, ¹University of Strathclyde, United Kingdom</p>
<p>4:15 pm</p>	<p>1C-4 Ultrafast localization microscopy of the living brain vasculature at the capillary scale Claudia Errico¹, Juliette Pierre¹, Sophie Pezet², Yann Desailly¹, Zsolt Lenkei², Mickael Tanter¹, Olivier Couture¹, ¹Institut Langevin, (ESPCI-ParisTech, CNRS UMR7587, INSERM U979, Paris, France; ²INSERM U935 Equipe 03, Université Paris Est Créteil et Ecole Nationale Vétérinaire d'Alfort, Maisons-Alfort, France</p>	<p>2C-4 Ultrafast Doppler imaging of intramyocardial coronary arteries David Maresca¹, Maïfida Correa¹, Olivier Villemain¹, Bijan Ghaheri², Mickael Tanter¹, Mathieu Pernot¹, ¹Institut Langevin, (ESPCI-ParisTech, CNRS UMR 7587, INSERM U979, Paris, France; ²INSERM U935 Equipe 03, Université Paris Est Créteil et Ecole Nationale Vétérinaire d'Alfort, Maisons-Alfort, France</p>	<p>3C-4 Dopaminergic neuron regeneration after Neurturin delivery through the FUS-induced BBB opening in a Parkinsonian model Gesthimani Samiotaki¹, Camilo Acosta², Maria Eleni Karakatsani², Shuao Wang¹, Elisa Konoigou¹, ¹Columbia University, New York, NY, USA; ²Columbia University, USA</p>	<p>4C-4 Real-time Channel Data Compression for Improved Software Beamforming Using Micro-Beamforming with Error Compensation U-Wai Lok¹, Hua-Shun Shih¹, Pai-Chi Li², ¹Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan; ²Electrical Engineering, National Taiwan University, Taipei, Taiwan, Taiwan</p>	<p>5C-4 Numerical simulations of ultrasonic flexural waves in cased wellbores and cement bond quality evaluations of the Xiao He¹, Hao Chen¹, Xiuming Wang¹, ¹State Key Laboratory of Acoustics, Institute of Acoustics, Chinese Academy of Sciences, Beijing, China, People's Republic of</p>	<p>6C-4 Numerical simulation of nonlinear attenuation in bubbly mediums Amin Jafarizadehrood¹, Rafi Karshatlian², Michael C. Kolos², ¹Physics, Ryerson University, Canada, Ryerson University, Toronto, Canada</p>	<p>7C-3 Study of power durability measurement for RP-SAW devices for IEC standardization Tatsuya Omori¹, Shunsuke Ohara¹, Chang-Jun Ahn¹, Ken-ya Hashimoto¹, Unger¹, Maik Hoffmann², Konetake², Alexander Sivaram Nishal Ramadas³, Steve Dixon³, Mario Kupnik¹, ¹Technische Universität Darmstadt, Germany; ²BTU Cottbus-Straßenberg, Germany; ³University of Warwick, Coventry, United Kingdom; ⁴Elsier-Instromet, Belgium</p>	<p>8C-4 Extending the receive performance of phased micromachined ultrasonic transducer arrays in air down to 40 kHz and below Matthias Rutsch¹, Eric Konetake², Alexander Sivaram Nishal Ramadas³, Steve Dixon³, Mario Kupnik¹, ¹Technische Universität Darmstadt, Germany; ²BTU Cottbus-Straßenberg, Germany; ³University of Warwick, Coventry, United Kingdom; ⁴Elsier-Instromet, Belgium</p>
<p>4:30 pm</p>	<p>1C-4 Ultrafast microscopy of the living brain vasculature at the capillary scale Claudia Errico¹, Juliette Pierre¹, Sophie Pezet², Yann Desailly¹, Zsolt Lenkei², Mickael Tanter¹, Olivier Couture¹, ¹Institut Langevin, (ESPCI-ParisTech, CNRS UMR7587, INSERM U979, Paris, France; ²INSERM U935 Equipe 03, Université Paris Est Créteil et Ecole Nationale Vétérinaire d'Alfort, Maisons-Alfort, France</p>	<p>2C-5 Velocity measurement of the main portal vein with Transverse Oscillation Andreas Hjeltn Brandt¹, Kristoffer Lindskov Hansen¹, Michael Bachmann Nielsen¹, Jørgen Arendt Jensen¹, ¹Dept. of Radiology, Copenhagen University Hospital, Rigshospitalet, Denmark; ²Center for Fast Ultrasound Imaging, Technical University of Denmark, Denmark</p>	<p>3C-5 Improving targeting of ultrasound-mediated blood-brain barrier opening using chirp and random-based modulations Hermes Kaminura^{1,2}, Shuao Wang¹, Shih-Ying Wu¹, Marielena Karakatsani¹, Camilo Acosta¹, Antonio Carneiro², Elisa Konoigou¹, ¹Columbia University, New York, NY, USA; ²University of Sao Paulo, Brazil</p>	<p>4C-5 Real-Time High-Framerate In Vivo Cardiac SLSC Imaging on a GPU-Based Beamformer Dongwoon Hyun¹, Gregg Trabej¹, Jeremy Dahl², ¹Biomedical Engineering, Durham, North Carolina, USA; ²Radiology, Stanford University, Stanford, CA, USA</p>	<p>5C-5 Laser ultrasound imaging of defects in curved structures with a flexible ultrasonic transducer Makiko Kobayashi¹, Chih-Chieh Wu², Po-Hsieh Tung², Che-Hua Yang², ¹Graduate School of Science and Technology, Kumamoto University, Japan; ²College of Mechanical and Electrical Engineering, National Taipei University of Technology, Taiwan</p>	<p>6C-5 Dynamic behaviour of laser nucleated bubbles in a focused ultrasound field Lian Sheng Wang¹, Gianluca Mernoli¹, Mark Hobart¹, Bajram Zeqiri¹, ¹National Physical Laboratory, Teddington, United Kingdom</p>	<p>7C-4 Design Considerations for High Power BAW Duplexers for Base Station Applications Jeff Galipeau¹, Rodolfo Chang¹, ¹QORVO, Apopka, Florida, USA</p>	<p>8C-5 Spiral array inspired multi-depth cost function for 2D sparse array optimization Emmanuel Roux^{1,2}, Alessandro Ramalli², Marc Robini¹, Hervé Liebgott¹, Christian Cachard¹, Piero Tortoli², ¹CREATIS, Université de Lyon, CNRS UMR 5220, INSERM U1044, Université Claude Bernard Lyon 1, INSÀ-Lyon, Villeurbanne, France; ²Ingeniería dell'Informazione, Università degli studi di Firenze, Firenze, Italy</p>

3:30 pm - 5:00 pm		Oral --- Thursday, October 22, 2015	
4:45 pm	1C-5 Parametric Perfusion Imaging with Single-pixel Resolution and High Signal to Clutter Ratio	Diya Wang¹, Xuan Yang¹, Hong Hu¹, Hui Zhong¹, Lei Zhang¹, Mingxi Wan¹ <i>¹The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi, China, People's Republic of</i>	
	2C-6 Intraoperative vector flow imaging of the ascending aorta: Is systolic backflow and atherosclerosis related?	Kristoffer Lindskov Hansen¹, Hanne Moller-Sorensen², Jesper Kjaergaard³, Maiken Jensen², Jens Lund⁴, Jorgen Arendt Jensen⁵, Michael Bachmann Nielsen¹ <i>¹Department of Radiology, Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark, ²Department of Cardiothoracic Anesthesiology, Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark, ³Department of Cardiology, Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark, ⁴Department of Cardiothoracic Surgery, Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark, ⁵DTU Elektro, Center for Fast Ultrasound Imaging, Technical University of Denmark, Lyngby, Denmark</i>	
	3C-6 Optimization of ultrasound-microbubble mediated drug transport in a new and realistic model of the human blood-brain barrier in vitro	Charles SENNOGA¹, Aya Zeghimi¹, Kayabiri Ganesamoorthy², Pierre-Olivier Couraud³, Ignacio Romero³, Babette Weksler⁴, Ayache Bouakaz¹ <i>¹Inserm U930, Université François-Rabelais de Tours, France, ²Inserm 1016, Institut Cochin, Paris, France</i>	
	4C-6 Linear Array Beamformation Using Virtual Sub-wavelength Receiving Elements	Shao-Yu Peng¹, Meng-Lin Li^{1,2} <i>¹Dept. of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan, ²Institute of Photonics Technologies, National Tsing Hua University, Taiwan</i>	
	5C-6 A novel split inductively coupled piezoelectric transducer for flaw detection in pipes	David Greve¹, Peng Gong², Irving Oppenheim² <i>¹Department of Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, USA, ²Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA, USA</i>	
	6C-6 Experimental results on the Pressure Dependence of the Minnaert Resonance Frequency for three different Gases in Water	Jarle Andre Johansen¹, Bern Inge Hansen¹ <i>¹Department of engineering and safety, UII The Arctic University of Norway, TROMSO, Norway</i>	
	7C-5 A zero TCF band 13 SAW duplexer	Yi-lin Wang¹, Marc Solal¹, Ben Abbott¹, Alan Chen¹, Timothy Daniel¹, Svetlana Malocha¹, Keqi Qin¹, Kurt Steiner¹, William Wu¹ <i>¹Qorvo Inc., USA</i>	
	8C-6 Design and fabrication of relaxor-ferroelectric single crystal P1MNT/epoxy 2-2 composite based array transducer	Qingwen Yue¹ <i>¹Sianghai Institute of Ceramics, Chinese Academy of Science, China, People's Republic of</i>	

<p>Session P1A1. MEL: Elasticity Imaging: Simulations and Experimental Studies</p> <p><i>Chair: Brett Byram</i> Vanderbilt University</p>	<p>P1A1-8 Feasibility of micro-elastography for tissue surrounding phase-change microbubbles using bubble wavelet transform</p> <p>Runna Liu¹, Rui Huo¹, Hong Hu¹, Shanshan Xu¹, Supin Wang¹, Mingxi Wan¹ ¹The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi, China, People's Republic of</p>	<p>P1A2-7 Controlled thermal-sensitive liposomes release on a disposable microfluidic device</p> <p>Long Meng¹, Zhiting Deng¹, Lili Niu¹, Feiyun Cai¹, Haitong Zheng¹ ¹Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China, People's Republic of</p>	<p>P1A3-6 Assessment of the Potential of Beamforming for Needle Enhancement in Punctures</p> <p>Stefanie Detels¹, Georg Schmitz¹ ¹Chair for Medical Engineering, Ruhr-Universität Bochum, Germany</p>	<p>P1A4-4 Compressive Adaptive Beamforming in 2D and 3D Ultrafast Active Cavitation Imaging</p> <p>Chen Bai¹, Shanshan Xu¹, Bowen Jing¹, Miao Yang¹, Mingxi Wan¹ ¹The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi, China, People's Republic of</p>
<p>P1A1-1 RSNB QIBA Ultrasound Shear Wave Speed Phase II Phantom Study in Viscoelastic Media</p> <p>Mark Palmer¹, Shigao Chen², Ted Lynch³, Kathryn Nightingale⁴, Ned Rouze⁵, Pengfei Song⁶, Matthew Urban⁷, Hua Xie⁸, Keith West⁹, Brian Garra⁸, Andy Milkowski⁶, Paul Carson¹, Richard Barr⁸, Vijay Shamdassan⁹, Michael Macdonald¹⁰, Yasuo Miyajima¹¹, Timothy Hall¹² ¹Biomedical Engineering, Duke University, Durham, NC, USA; ²Mayo Clinic, USA; ³CRS, Inc., USA; ⁴Philips Research, USA; ⁵US Food and Drug Administration, USA; ⁶Siemens Healthcare, USA; ⁷University of Michigan Ann Arbor, USA; ⁸Radiology Consultants, Inc., USA; ⁹Philips Healthcare-Ultrasound, USA; ¹⁰GE Healthcare, USA; ¹¹Toshiba Medical Research Institute USA, Inc., USA; ¹²Medical Physics, University of Wisconsin Madison, Madison, WI, USA</p>	<p>Session P1A2. MBE: Bioeffects in Cells and Tissue</p> <p><i>Chair: Jonathan Mamou</i> Riverside Research</p>	<p>P1A2-8 The Contribution of Shear Wave Absorption to Ultrasound Heating in Bones: Coupled Elastic-Thermal Modeling Using the k-Wave Toolbox</p> <p>Bradley Treeby¹, Teedah Saratoon¹ ¹Medical Physics and Biomedical Engineering, University College London, London, United Kingdom</p>	<p>P1A3-7 Pulse inversion based multi-subharmonic composite cavitation imaging</p> <p>Hui Zhong¹, Mingxi Wan¹ ¹Xi'an Jiaotong University, Xi'an, Shaanxi Province, China, People's Republic of</p>	<p>P1A4-5 Compressed Sensing-Synthetic Focusing for High Frame Rate, High Resolution and High Contrast Ultrasound Imaging</p> <p>Jing Liu¹, Qiong He¹, Jianwen Luo¹ ¹Department of Biomedical Engineering, Tsinghua University, Beijing, China, People's Republic of</p>
<p>P1A1-2 Estimation of degree of anisotropy in transversely isotropic (TI) elastic materials from acoustic radiation force (ARF)-induced peak displacements (PD)</p> <p>Md Murad Hossain¹, Caterina Gallippi^{1,2} ¹Joint Department of Biomedical Engineering, University of North Carolina, Chapel Hill, North Carolina, USA; ²Electrical and Computer Engineering, North Carolina State University, Raleigh, North Carolina, USA</p>	<p>P1A2-1 Study the Cell Death Induced by Subcellular Localized Sonodynamic Therapy</p> <p>Yongmin Huang¹, Zhihai Qiu¹, Yaobeng Yang¹, Chang Liu¹, SUN Lei¹ ¹The Hong Kong Polytechnic University, Hong Kong</p>	<p>Session P1A3. MIM: Ultrasound Image Formation</p> <p><i>Chair: Gregg Trahey</i> Duke University</p>	<p>P1A3-8 Contrast-enhanced ultrasound tomography using the cumulative phase delay between second harmonic and fundamental component</p> <p>Libertario Demi¹, Ruid J.G. van Sloun¹, Hessel Wijkstra^{1,2}, Massimo Mischl¹ ¹Biomedical Diagnostics Lab, Eindhoven University of Technology, Netherlands; ²Academic Medical Center Amsterdam, Netherlands</p>	<p>P1A4-6 Plane-wave Ultrasound Imaging Based on Compressive Sensing with Low Memory Occupation</p> <p>Congzhi Wang¹, Hairong Zheng¹ ¹Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, People's Republic of</p>
<p>P1A1-3 Experimental study on the effect of the cylindrical vessel geometry on arterial shear wave elastography</p> <p>Darya Shecherbakova¹, Annette Caenen¹, Simon Chatelet², Clement Papadacci², Mathieu Pernot², Abigail Swillens¹, Patrick Segers¹ ¹Minds Medical IT, IBM/TechnoM4Media, Ghent University, Ghent, Belgium; ²Institut Languevin, ESPCI ParisTech, CNRS UMR7587, INSERM U1979, Paris, France</p>	<p>P1A2-2 Impact of Microbubble-to-cell Parameters on Heterogeneous Sonoporation at the Single-Cell Level</p> <p>Peng Qin¹, Yutong Lin¹, Jiliang Jin², Lianfang Du², Alfred C H Yu³ ¹Instrumentation Science and Engineering, Shanghai Jiao Tong University, Shanghai, China; ²Department of Ultrasound, Shanghai Jiaotong University-Affiliated the First People's Hospital, Shanghai, China, People's Republic of; ³Medical Engineering Program, The University of Hong Kong, Hong Kong</p>	<p>P1A3-1 6-DOF Free-hand Navigation Interface for Volumetric 3-dimensional Ultrasound Imaging: Preliminary Results</p> <p>JongJun LEE¹, Jeeun KANG¹, Ta-Kyong SONG¹ ¹Department of electronic engineering, Sogang university, Seoul, Korea, Republic of</p>	<p>P1A3-9 Microultrasound Capsule Endoscopy Inflammatory Imaging: Phantom Studies</p> <p>Benjamin F Cox¹, Vipin Seetohul¹, Holly Lay¹, Sandy Cochran¹ ¹Imaging & Technology, University of Dundee, Dundee, United Kingdom</p>	<p>P1A4-7 Fourier Beamformation of Multistatic Synthetic Aperture Ultrasound Imaging</p> <p>Elahe Moghimirad¹, Carlos A. Villagomez Hoyos², Ali Mahloofifar¹, Babak Mohammadzadeh Asl¹, Jørgen Arendt Jensen² ¹Dep. of Elec. and Comp. Eng., Turbina Modares University, Tehran, Iran; ²Center for Fast Ultrasound Imaging, Dept. of Elec. Eng., Bldg. 349, Technical University of Denmark, Denmark</p>

<p>P1A1-4 High line-density pulse wave imaging for local pulse wave velocity estimation using motion matching: A feasibility study on vessel phantoms</p> <p>Fubing Li¹, Qiong He¹, Chengwu Huang¹, Jianwen Luo¹ ¹Department of Biomedical Engineering, Tsinghua University, Beijing, China, People's Republic of</p>	<p>P1A2-3 Effects of low-intensity pulsed ultrasound on nerve growth factor-induced neurite outgrowth and signaling in PC12 cells</p> <p>Liu Zhao¹, Yi Feng¹, Mingxi Wan¹ ¹The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi, China, People's Republic of</p>	<p>P1A3-2 Advanced Automated Gain Adjustments for In-Vivo Ultrasound Imaging</p> <p>Ramin Moshavegh¹, Martin Christian Hemmssen¹, Bo Martins², Andreas Helm Brandt¹, Thor Bedsgaard³, Kristoffer Lindskov Hansen³, Caroline Ewertsen³, Michael Bachmann Nielsen³, Jørgen Arendt Jensen¹ ¹Electrical engineering, Technical University of Denmark, Lyngby, Denmark, ²BK Medical ApS, Herlev, Denmark, ³Department of Radiology, Copenhagen University Hospital, Copenhagen, Denmark</p>	<p>Session P1A4. IMBB: Beamforming I</p> <p><i>Chair: Meng-Lin Li</i> National Tsing Hua University</p>	<p>P1A4-8 Comparison of spatial and temporal averaging on Ultrafast imaging in presence of quantization errors</p> <p>Asra Mohamed Moubark¹, Zamab Akomari¹, Sevan Hampul¹, Steven Freear¹ ¹School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom</p>
<p>P1A1-5 Viscoelastic tissue mimicking phantom validation study with shear wave elastography and viscoelastic spectroscopy</p> <p>Carolina Amador¹, Randall Kinnick¹, Matthew Urban¹, Mostafa Fatehi¹, James Greenleaf¹ ¹Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, Minnesota, USA</p>	<p>P1A2-4 Sonodynamic Therapy of Breast Tumor by Using of IR-780 Dye</p> <p>Fei Yan¹, Yekuo Li², Zhiting Deng¹, Hairong Zheng¹ ¹Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, China, People's Republic of, ²Giangzhou General Hospital, China, People's Republic of</p>	<p>P1A3-3 Quantifying the benefit of elevated acoustic output in harmonic imaging</p> <p>Yufeng Deng¹, Mark Palmieri¹, Ned Rouze¹, Kathryn Nightingale¹ ¹Duke University, Durham, North Carolina, USA</p>	<p>P1A4-1 Dual-Domain Compressed Beamforming for Medical Ultrasound Imaging</p> <p>Bo Zhang¹, Jean-Luc Robert², Guillaume David³ ¹Medsys, Philips Research France, Suresnes, France, ²Philips Research North America, Briarcliff, USA, ³Columbia University, New York, USA</p>	<p>P1A4-9 Single transmission plane wave compounding for ultrafast ultrasound imaging</p> <p>Natan Pages¹, Barbara Nicolas¹, Herve Liebgott¹ ¹CREATIS, France</p>
<p>P1A1-6 Comparison of techniques for estimating shear-wave velocity in arterial wall using shear-wave elastography - FEM and phantom study</p> <p>Jun-keun Jang¹, Kengo Kondo¹, Takeshi Namita¹, Makoto Yamakawa¹, Tsuyoshi Shima¹ ¹Graduate School of Medicine, Kyoto University, Kyoto, Japan</p>	<p>P1A2-5 DNA packing by low-intensity ultrasound</p> <p>Donghee Park¹, Gilsoo Song², Hyunjin Park³, Hyungbeen Lee³, Ji-Yong Jang¹, Han-Sung Kim², Chul-Woo Kim¹, Jonghwan Seo¹ ¹Cancer Research Institute, Seoul National University College of Medicine, Seoul, Korea, Republic of, ²Department of Biomedical Engineering, Yonsei University, Wonju, Korea, Republic of, ³School of Electronic Electrical Engineering, Sungkyunkwan University, Suwon, Korea, Republic of</p>	<p>P1A3-4 3D Super-Resolution Ultrasound using Microbubbles</p> <p>Kirsten Christensen-Jeffries¹, Meng-Xing Tang², Joseph V Hajnal¹, Paul Aljabar¹, Christopher Dunsby⁴, Robert J Eckersley¹ ¹Biomedical Engineering, Division of Imaging Sciences, Kings College London, London, United Kingdom, ²Bioengineering, Imperial College London, London, United Kingdom, ³Department of Physics, Imperial College London, London, United Kingdom, ⁴Centre for Histopathology, Imperial College London, London, United Kingdom</p>	<p>P1A4-2 Efficiency of Multi-look Beamformers under Strong Wave Aberration Conditions</p> <p>Teichiro Ikeda¹, Shinta Takamo¹, Hiroshi Masuzawa¹ ¹Htachi Ltd., Tokyo, Japan</p>	<p>P1A4-10 Increased frame rate for plane wave imaging without loss of image quality</p> <p>Jonas Jensen¹, Matthias Bo Stuer¹, Jørgen Arendt Jensen¹ ¹Dept. of Elect. Eng, Technical University of Denmark, Kgs. Lyngby, Denmark</p>
<p>P1A1-7 Viscoelasticity and shear wave velocity of liver tissue evaluated by dynamic mechanical analysis</p> <p>Kenoh Murakami¹, Kenji Yoshida², Kazuya Kawamura², Mariko Tsukune², Yo Kobayashi², Masakatsu Fujie³, Riva Kishimoto⁶, Takayuki Obata⁶, Tadashi Yamaguchi⁷ ¹Graduate School of Engineering, Chiba University, Chiba, Japan, ²Center for Frontier Medical Engineering, Chiba University, Chiba, Japan, ³Graduate School of Science and Engineering, Institute of Advanced Active Aging Research, Waseda University, Tokyo, Japan, ⁴Research Institute for Science and Engineering, Waseda University, Tokyo, Japan, ⁵Faculty of Science and Engineering, Waseda University, Tokyo, Japan, ⁶Research center for charged particle therapy, National Institute of Radiological Science, Chiba, Japan</p>	<p>P1A2-6 On the thermal effect in biological tissues exposed to ultrasound of longer pulse duration after administration of contrast agents</p> <p>Kazuki Akai¹, Yasunao Ishiguro², Naotaka Nitta³, Hideki Sasamura², Nobuyuki Taniguchi¹, Iwaki Akiyama¹ ¹Faculty of Life and Medical Sciences, Doshisha University, Kyotanabe, Kyoto, Japan, ²Department of Surgery, Jichi Medical University, Shimotsuke, Tochigi, Japan, ³Human Technology Research Institute, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan, ⁴Department of Clinical Laboratory Medicine, Jichi Medical University, Shimotsuke, Tochigi, Japan</p>	<p>P1A3-5 A Study for B-Mode Imaging using 100-MHz-Range Ultrasound through a Fused Quartz Fiber</p> <p>Takasuke Irie^{1,2}, Masasumi Yoshizawa³, Norio Tagawa⁴, Tadashi Moriya¹ ¹Graduate School of System Design, Tokyo Metropolitan University, Tokyo, Japan, ²Microsonic Co., Ltd., Japan, ³Metropolitan College of Industrial Technology, Japan, ⁴Tokyo Metropolitan University, Tokyo, Japan</p>	<p>P1A4-3 Hadamard-Encoded Synthetic Transmit Aperture Imaging with a Reduced Number of Receiving Channels</p> <p>Ying Li¹, Ping Gong¹, Michael C. Kolos¹, Yuan Xu¹ ¹Biomedical Physics, Ryerson University, Toronto, ON, Canada</p>	<p>P1A4-11 Motion-Corrected Coherent Compounding for Improved Beamforming in Ultrafast Imaging</p> <p>Jean Provost¹, Maïaïda Correia¹, Mickael Taniet¹, Mathieu Pernot¹ ¹Institut Langevin, ESPCI, Paristech, INSERM, France</p>

THURSDAY POSTER

8:00 am - 5:00 pm	Poster --- Thursday, October 22, 2015			4th floor
<p>Session P1A5. MTH: Therapeutic Methods</p> <p><i>Chair: Helen Mulvana</i> <i>University of Glasgow</i></p>	<p>P1A5-8 New discovery of thin catheter movement under acoustical field of focused transducer</p> <p>Takashi Mochizuki¹, Nobuhiro Tsurui¹, Naoto Hosaka¹, Kohji Masuda¹ ¹Tokyo University of Agriculture and Technology, Tokyo, Japan</p>	<p>Session P1A6. MSP: Medical Signal Processing</p> <p><i>Chair: Martin Hemmen</i> <i>Technical University of Denmark</i></p>	<p>P1A6-8 A Multiparametric Approach Integrating Vessel Diameter, Wall Shear Rate and Physiologic Signals for Optimized Flow Mediated Dilation Studies</p> <p>Alessandro Ramalho¹, Michal Byra², Alessandro Dallal¹, Carlo Palombo³, Kunihiko Aizawa¹, Piero Tortoli¹ ¹Information Engineering Department, University of Florence, Florence, Italy; ²Department of Ultrasound, Institute of Fundamental Technological Research, P.O.S. Warsaw, Poland; ³Department of Surgical, Medical, Molecular, and Critical Area Pathology, University of Pisa, Pisa, Italy; ⁴Diabetes and Vascular Medicine Research Centre, NIHR Exeter Clinical Research Facility, University of Exeter Medical School, Exeter, United Kingdom</p>	<p>P1A7-5 Thin-Walled Carotid Bifurcation Phantom Systems for Vascular Strain-Flow Imaging Investigations</p> <p>Adrian J. Y. Chee¹, Billy Y. S. Yui¹, Alfred C. H. Yu¹ ¹Medical Engineering Program, The University of Hong Kong, Hong Kong</p>
<p>P1A5-1 New cancer treatment method utilizing intratumoral drug distribution control with mechanical effects of cavitation</p> <p>Ken-ichi Kawabata¹, Takashi Maruoka¹, Rei Asami¹, Hideki Yoshikawa¹, Reiko Ashida² ¹Hitachi, Ltd., Tokyo, Japan; ²Osaka Medical Center for Cancer and Cardiovascular Diseases, Osaka, Japan</p>	<p>P1A6-1 Sub-sampled Doppler ultrasound reconstruction using block sparse Bayesian learning</p> <p>Oana Lorintiu¹, Hervé Liebgott¹, Olivier Bernard¹, Denis Friboulet¹ ¹Université de Lyon, CREATIS; CNRS UMR5220; Inserm U1044; INSA-Lyon; Université Lyon 1, Lyon, France</p>	<p>P1A6-9 A Novel Side Lobe Estimation Method in Medical Ultrasound Imaging Systems</p> <p>Mok Kim Jeong¹, Sung Jae Kwon¹ ¹Electric, Electronic and communication engineering, Daegu University, Pocheon, Kyeonggi, Korea, Republic of</p>	<p>P1A7-6 Receiver Operating Characteristics Analysis of Eigen-Based Clutter Filters for Ultrasound Color Flow Imaging</p> <p>Adrian J. Y. Chee¹, Alfred C. H. Yu¹ ¹Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong</p>	<p>P1A7-7 Wall Shear Rate Method Validation Through Multi-physics Simulations</p> <p>Stefano Ricci¹, Abigail Swillens², Alessandro Ramalho¹, Patrick Segers², Piero Tortoli¹ ¹Information Engineering Dept., Università di Firenze, Florence, Italy; ²IBTech-bioMeda, iMinds Medical IT, Gent University, Belgium</p>
<p>P1A5-2 High resolution coagulation size estimation with multiple modulation frequencies for localized motion imaging</p> <p>Takashi Azuma¹, Ryoisuke Sugiyama¹, Chen Opatovskiy¹, Mika Seki¹, Hideaki Takeuchi¹, Keisuke Fujiwara², Kazunori Imai², Kiyoshi Yoshimaka³, Shu Takagi¹, Yoichiro Matsumoto¹ ¹The University of Tokyo, Japan; ²Hitachi Aloka Medical, Japan; ³National Institute of Advanced Industrial Science and Technology, Japan</p>	<p>P1A6-2 B-field energy dependent phase lag dispersion in Magnetomotive ultrasound imaging</p> <p>Roger Andersson¹, Magnus Cinthio¹, Maria Everissson¹, Hanna Toftedal², Anders Wahlström³, Sarah Fredriksson⁴, Göran Nybom⁵, Tomas Jansson⁶ ¹Biomedical Engineering, Lund University, Lund, Sweden; ²Geccodis AB, Lund, Sweden; ³Lundinova AB, Lund, Sweden; ⁴Genovis AB, Lund, Sweden; ⁵JOIN Business & Technology AB, Lund, Sweden; ⁶Clinical Sciences Lund, Biomedical Engineering, Lund University, Sweden; ⁷Medical Services, Skåne University Hospital, Lund, Sweden</p>	<p>P1A6-3 Discover layered structure in ultrasound images with a joint sparse representation model</p> <p>Junbo Duan¹, Hui Zhong¹, Bowen Jing¹, Siyuan Zhang¹, Mingxi Wan¹ ¹The Key Laboratory of Biomedical Information Engineering, Ministry of Education, Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi, China, People's Republic of</p>	<p>P1A6-10 Estimation of Arteriovenous Fistula Stenosis by Quantitative Doppler Ultrasound Using Adaptive Gray Relation Method</p> <p>Jian-Xing Wu¹, Tainson Chen² ¹National Synchrotron Radiation Research Center, Hsinchu, Taiwan; ²Department of Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan</p>	<p>Session P1A7. MBF: Performance Investigations and Phantom Design</p> <p><i>Chair: Lars Lovstakken</i> <i>NTNU</i></p>
<p>P1A5-3 Temperature distribution analysis for High Intensity Focused Ultrasound Breast Cancer Treatment by Numerical Simulation</p> <p>Mingzhen ZHANG¹, Takashi AZUMA¹, Kohei OKITA², Xiaoli OU¹, Ryuta NARUMI¹, Hidemi FURUSAWA³, Junichi SHIDOOKA³, Shu TAKAGI¹, Yoichiro MATSUMOTO¹ ¹Graduate School of Engineering, The University of Tokyo, Japan; ²College of Industrial Technology, Nihon University, Japan; ³Breastopia Medical Corporation, Breastopia Namba Hospital, Japan</p>	<p>P1A6-3 B-field energy dependent phase lag dispersion in Magnetomotive ultrasound imaging</p> <p>Roger Andersson¹, Magnus Cinthio¹, Maria Everissson¹, Hanna Toftedal², Anders Wahlström³, Sarah Fredriksson⁴, Göran Nybom⁵, Tomas Jansson⁶ ¹Biomedical Engineering, Lund University, Lund, Sweden; ²Geccodis AB, Lund, Sweden; ³Lundinova AB, Lund, Sweden; ⁴Genovis AB, Lund, Sweden; ⁵JOIN Business & Technology AB, Lund, Sweden; ⁶Clinical Sciences Lund, Biomedical Engineering, Lund University, Sweden; ⁷Medical Services, Skåne University Hospital, Lund, Sweden</p>	<p>P1A6-3 Discover layered structure in ultrasound images with a joint sparse representation model</p> <p>Junbo Duan¹, Hui Zhong¹, Bowen Jing¹, Siyuan Zhang¹, Mingxi Wan¹ ¹The Key Laboratory of Biomedical Information Engineering, Ministry of Education, Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi, China, People's Republic of</p>	<p>P1A6-10 Estimation of Arteriovenous Fistula Stenosis by Quantitative Doppler Ultrasound Using Adaptive Gray Relation Method</p> <p>Jian-Xing Wu¹, Tainson Chen² ¹National Synchrotron Radiation Research Center, Hsinchu, Taiwan; ²Department of Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan</p>	<p>Session P1A7. MBF: Performance Investigations and Phantom Design</p> <p><i>Chair: Lars Lovstakken</i> <i>NTNU</i></p>

<p>P1A5-4 Generation of calibration curve with pulse compression technique for ultrasound-based temperature estimation</p> <p>Su A Lee¹, Jong Seob Jeong¹ ¹Medical Biotechnology, Dongguk University, Gyeonggi-do, Korea, Republic of</p>	<p>P1A5-12 The dynamic excitation of a chain of pre-stressed spheres for biomedical ultrasound applications: contact mechanics finite element analysis and validation</p> <p>Pierre Gebai¹, Nader Saffari¹, David Hutchins², Jia Yang², Omololu Akanni², Peter Thomas³, Lee Davis³, Steven Trear³, Sevan Harput³ ¹UCL Mechanical Engineering, University College London, United Kingdom, ²School of Engineering, University of Warwick, United Kingdom, ³School of Electronic and Electrical Engineering, University of Leeds, United Kingdom</p>	<p>P1A6-4 A Sub-Nyquist Sampling Analog Front-End with Mixer-Based Subarray Beamforming for B-Mode Ultrasound Imaging</p> <p>Jonathon Spaulding¹, Boris Murrmann¹ ¹Stanford University, Stanford, California, USA</p>	<p>P1A7-1 In vivo Investigation for Accuracy Estimation of Vector Flow Mapping</p> <p>Tomohiko Tanaka¹, Takashi Okada², Tomohide Nishiyama², Yoshinori Seki², Ken-ichi Kawabata¹ ¹Hitaichi, Ltd., Japan, ²Hitaichi Aloka Medical, Ltd., Japan</p>	<p>Session P2A1. Ultrasonics in Air and Water</p> <p>Chair: Hiromaru Tsujino Kanagawa University</p>
<p>P1A5-5 Visualization of the intensity field of a high intensity focused ultrasound (HIFU) source in situ</p> <p>Trong Nguyen¹, Minh Do¹, Michael L. Oelze¹ ¹Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, USA</p>	<p>P1A5-13 Extracorporeal Acute Cardiac Pacing by High Intensity Focused Ultrasound in Practice and Theory</p> <p>Amit Livneh¹, Eitan Kimmel¹, Dan Adam¹ ¹Biomedical Engineering, Technion-Israel Institute of Technology, Haifa, Israel</p>	<p>P1A6-5 Combined use of edge-detection and tissue Doppler for robust left ventricle segmentation</p> <p>Sigurd Storve¹, Fredrik Orderud², Hans Torp¹ ¹Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Norway, ²GE Vingmed Ultrasound, Norway</p>	<p>P1A7-2 Validation of a novel vector method for blood peak detection in an anthropomorphic phantom</p> <p>Riccardo Matera¹, Stefano Ricci¹, Alfred C.H. Yu², Billy Y.S. Yu², Piero Tortoli¹ ¹Information Engineering Dept., Università di Firenze, Florence, Italy, ²Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong</p>	<p>P2A1-1 Ultrasonic transducer characterization in air based on an indirect acoustic radiation pressure measurement</p> <p>Anastasia Gusva¹, Maik Hoffmann¹, Alexander Unger², Silvia Zulk³, Mohamed Balla El Amien¹, Emes Saradi¹, Mario Kupnik² ¹BTU Cottbus-Seiffen, Germany, ²Technische Universität Darmstadt, Germany, ³Leibniz Universität Hannover, Germany, ⁴University of Sharjah, United Arab Emirates</p>
<p>P1A5-6 Inducing antivascular effects in tumors with ultrasound stimulated micron sized bubbles</p> <p>Naomi Matsuura¹, Minseok Seo³, Nitro Sivapalan², Siqi Zhu², Ben Leung², David Goertz^{2,4} ¹Medical Imaging, University of Toronto, Canada, ²Sunnybrook Research Institute, Canada, ³Sunnybrook Research Institute, Toronto, ON, Canada, ⁴Medical Biophysics, University of Toronto, Canada</p>	<p>P1A5-14 HIFU real-time feedback control using localized motion imaging with dynamic cross correlation window</p> <p>Xiaolei Qu¹, Takashi Azuma¹, Ryusuke Sugiyama¹, Kengo Kamazawa¹, Mika Seki¹, Akira Sasaki¹, Hideki Takeuchi¹, Katsuke Fujiwara², Kazunori Imai², Satoshi Tamano³, Shu Takagi¹, Ichiro Sakuma⁴, Yoichiro Matsumoto¹ ¹The University of Tokyo, Japan, ²Hitaichi Aloka Medical, Ltd., Japan, ³Tohoku University, Japan</p>	<p>P1A6-6 Streak artifact reduction for blind deconvolution of multibeam image</p> <p>Kangwon Jeon¹, Hyunjaek Lee¹, Munkyeong Hwang¹, Yongsup Park¹ ¹Digital Media & Communications R&D Center, Samsung Electronics, Suwon, Gyeonggi, Korea, Republic of</p>	<p>P1A7-3 Novel Design of Patient-Specific Cerebral Aneurysm Phantoms for Intraoperative Ultrasound Investigations</p> <p>C. K. Ho¹, Adrian J. Y. Chee¹, Billy Y. S. Yui¹, Anderson C. O. Tsang², K. W. Chow³, Alfred C. H. Yu¹ ¹Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong, ²Department of Surgery, University of Hong Kong, Pokfulam, Hong Kong, ³Department of Mechanical Engineering, University of Hong Kong, Pokfulam, Hong Kong</p>	<p>P2A1-2 Side Lobe Suppression for Air-Coupled Ultrasonic Transducers with Parabolic Horn</p> <p>Koji Iwata¹, Rokuzo Hara¹, Tomonori Kimura¹, Toru Fukasawa¹, Hiroaki Miyashita¹, Satoru Inoue¹ ¹Mitsubishi Electric Corporation, Japan</p>
<p>P1A5-7 Enhanced Cavitation Activities from Axial Split Foci Using Second/Third-Harmonic Superimposition for Focused Ultrasound Surgery</p> <p>Mingzhu Lu¹, Yubo Guan¹, Yujiao Li¹, Mingxi Wao¹ ¹Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Xi'an, Shaanxi, China, People's Republic of</p>	<p>P1A5-15 Pulse Inversion Technique for HIFU Treatment Monitoring in Real Time</p> <p>Byungwoo Kang¹, Hyuncheol Kim^{2,3}, Jin Ho Chang³ ¹Electronic Engineering, Sogang University, Korea, Republic of, ²Chemical and Biomolecular Engineering, Sogang University, Korea, Republic of, ³Interdisciplinary Program of Integrated Biotechnology, Sogang University, Korea, Democratic People's Republic of</p>	<p>P1A6-7 Dynamic Baseband Pulse Compression for Coded Excitation Imaging</p> <p>Yeajin Kim¹, Jinhum Kang¹, Yangmo Yoo^{1,2} ¹Electronic Engineering, Sogang University, Seoul, Korea, Republic of, ²Interdisciplinary Program of Integrated Biotechnology, Sogang University, Korea, Democratic People's Republic of</p>	<p>P1A7-4 Implementation and evaluation of slow-time Golay decoding for pre-clinical high-frequency color Doppler imaging in mice</p> <p>Che-Chou Shen¹, Jyun-Gong Yu¹, Gency Jeng² ¹Electrical Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan, ²Sharp Corporation, Taiwan</p>	<p>P2A1-3 Calibration of ultrasonic hydrophones based on spherically focused self-reciprocity technique</p> <p>Guangzhen Xing¹, Ping Yang², Pengcheng Hu¹ ¹Institute of Ultra-precision Optoelectronic Instrument Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, China, People's Republic of, ²Division of Mechanics and Acoustics, National Institute of Metrology, Beijing, China, People's Republic of</p>

THURSDAY POSTER

8:00 am - 5:00 pm	Poster --- Thursday, October 22, 2015	4th floor
<p>Session P2A2. SHM in Concrete</p> <p><i>Chair: Joel Harley</i> <i>University of Utah</i></p>	<p>P2A2-1 Low Frequency Coded Waveform for the Inspection of Concrete Structure</p> <p>M.N.I.B. Mohamed¹, S. Laurent^{1,2}, M. Ricci², L.A.J. Davis¹, P. Burrasciano³, D.A. Hutchins¹, ¹School of Engineering, University of Warwick, Coventry, United Kingdom, ²Polo Scientifico Didattico di Terni, Università degli Studi di Perugia, Terni, Italy</p>	<p>P2A2-1 Optimized Response of AIN Stack For Chip-scale GHz Ultrasonics</p> <p>Jason Hoople¹, Justin Kuo¹, Jeffrey Soon Bo Woon¹, Navab Singhi¹, Amit Lal¹ ¹Electrical and Computer Engineering, Cornell University, USA, ²Institute of Microelectronics, Singapore</p>
<p>P2A2-2 Reverse Time Migration Based Ultrasonic Imaging of Rebars Embedded in Concrete</p> <p>Surendra Beniwal¹, Abhijit Ganguli¹ ¹Civil Engineering, Indian Institute of Technology Delhi, Delhi, India</p>	<p>P2A2-3 Acoustic Micro-resonator Utilizing Hemispherical Air Cavity for Sensitivity Enhancement</p> <p>Anton Shked¹, Eun Sok Kim¹ ¹Electrical Engineering, University of Southern California, Los Angeles, CA, USA</p>	<p>P2A2-2 Low Loss and Wide Band Filters Using New Dispersive Transducers with Floating Electrodes</p> <p>Kazuhiko Yamanouchi¹ ¹Acoustic Wave Labo., Ltd, Japan</p>
<p>P2A2-3 Optimal Lamb wave mode and frequency selection for assessment of creep damage in titanium alloy plates</p> <p>Yanxun Xiang¹, Fu-Zhen Xuan² ¹East China University of Science and Technology, Shanghai, Shanghai, China, ²People's Republic of East China University of Science and Technology, China, People's Republic of</p>	<p>P2A1-1 Investigation of langasite surface acoustic wave pressure sensors with a structure of reinforcing its pressure sensitivity</p> <p>Honglang Li¹, Yabing Ke¹, Yiyu Zhao¹, Lina Cheng¹, Shitang He¹ ¹Institute of acoustics, China, People's Republic of</p>	<p>P2A2-3 High-Q piezoelectric Lamb wave resonators based on AIN plates with chamfered corners</p> <p>Chih-Ming Lin¹, Jie Zou¹, Yung-Yu Chen², Albert Pisano³ ¹Mechanical Engineering, University of California, Berkeley, CA, USA, ²Mechanical Engineering, Tsinghua University, Taipei, Taiwan, ³Mechanical and Aerospace Engineering, University of California, San Diego, CA, USA</p>
<p>P2A2-4 Study on Non-Contact Acoustic Imaging Method for Concrete Structures - The 2nd Construction Method using a Strong Ultrasonic Sound Source-</p> <p>Tsuneyoshi Sugimoto¹, Kazuko Sugimoto², Noriyuki Utagawa³, Kageyoshi Katakura⁴ ¹Graduate School of Engineering, Toin University of Yokohama, Yokohama, Japan, ²Graduate School of Engineering, Toin University of Yokohama, Japan, ³SatoKogyo Co., Ltd., Japan, ⁴Meitoku Engineering, Japan</p>	<p>P3A1-1 Development of langasite surface acoustic wave pressure sensors with a structure of reinforcing its pressure sensitivity</p> <p>Honglang Li¹, Yabing Ke¹, Yiyu Zhao¹, Lina Cheng¹, Shitang He¹ ¹Institute of acoustics, China, People's Republic of</p>	<p>P2A2-4 Ultrasonic batch processing of ultra heavy crude oil for viscosity reduction on the industrial scale</p> <p>Delong Xu¹, Jingjun Deng¹, Weijun Lin¹, Chao Li¹, Lixin Bai¹ ¹Institute of Acoustics, Chinese Academy of Sciences, Beijing, China, People's Republic of</p>
<p>P2A3-3 Ultrasonic studies of physicochemical parameters of biofuels in a broad range of pressures and temperatures</p> <p>Piotr Kietczyński¹, Marek Szalewski¹, Andrzej Balcerzak¹, Krzysztof Węja¹, Aleksander Rostocki¹, Ryszard Siegoczyński¹, Stanisław Pasznik³ ¹Polish Academy of Sciences, Poland, ²Warsaw University of Technology, Poland, ³Institute of Agricultural and Food Biotechnology, Poland</p>	<p>P3A1-2 Development of SAW current sensor based on the magnetomechanics effect</p> <p>Yana Jia¹, Wen Wang¹, Xinlu Liu¹, Shitang He¹ ¹Chinese Academy of Sciences, Institute of Acoustics, Beijing, China, People's Republic of</p>	<p>P3A1-3 Development of practical ball surface acoustic wave trace moisture analyzer by undersampling</p> <p>Toshihiro Tsuji¹, Toru Ozumi¹, Nobuo Takeda¹, Singo Akao¹, Yusuke Tsukahara¹, Kazushi Yamanaka¹ ¹Tohoku University, Sendai, Japan</p>
<p>P2A3-4 Detection of Low-frequency Components in Ultrasonic Waves Transmitted through Contact Solids</p> <p>Yuji Kato¹, Hirotsuka Tanaka¹, Toshihiko Sugaura¹ ¹Keio University, Japan</p>	<p>P3A1-4 Experimental investigation on the Jet-like Acoustic Streaming in front of an Oscillating Circular Piston</p> <p>Artur Santillan¹ ¹Department of Technology and Innovation, University of Southern Denmark, Odense M, Fyn, Denmark</p>	<p>P3A1-4 Experimental investigation on the Jet-like Acoustic Streaming in front of an Oscillating Circular Piston</p> <p>Artur Santillan¹ ¹Department of Technology and Innovation, University of Southern Denmark, Odense M, Fyn, Denmark</p>
<p>P2A3-5 Reconfigurable and Programmable System-on-Chip Hardware Platform for Real-time Ultrasonic Testing Applications</p> <p>Pramod Govindan¹, Boyang Wang¹, Pingping Wu¹, Ivan Palkov¹, Vidya Vasudevan¹, Jafar Sanjie² ¹Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, Illinois, USA</p>	<p>P3A1-5 Dyadic Universal Functions and Simultaneous Near-field/Far-field Regularization of Elasto-dynamic Dyadic Green's Functions for 3D Mass-loading Analysis in Micro-acoustic Devices</p> <p>Alireza Baghai-Wadji¹ ¹Electrical Engineering, University of Cape Town, Cape Town, South Africa</p>	<p>P3A1-5 Dyadic Universal Functions and Simultaneous Near-field/Far-field Regularization of Elasto-dynamic Dyadic Green's Functions for 3D Mass-loading Analysis in Micro-acoustic Devices</p> <p>Alireza Baghai-Wadji¹ ¹Electrical Engineering, University of Cape Town, Cape Town, South Africa</p>
<p>P2A3-6 Model-based parameter estimation for defect characterization in ultrasonic NDE applications</p> <p>Yufeng Lu¹, Jafar Sanjie² ¹Electrical and Computer Engineering, Bradley University, Peoria, Illinois, USA, ²Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, Illinois, USA</p>	<p>P3A1-6 Ultrasonic batch processing of ultra heavy crude oil for viscosity reduction on the industrial scale</p> <p>Delong Xu¹, Jingjun Deng¹, Weijun Lin¹, Chao Li¹, Lixin Bai¹ ¹Institute of Acoustics, Chinese Academy of Sciences, Beijing, China, People's Republic of</p>	<p>P3A1-6 Ultrasonic batch processing of ultra heavy crude oil for viscosity reduction on the industrial scale</p> <p>Delong Xu¹, Jingjun Deng¹, Weijun Lin¹, Chao Li¹, Lixin Bai¹ ¹Institute of Acoustics, Chinese Academy of Sciences, Beijing, China, People's Republic of</p>

<p>P2A2-4 Detection of Delamination in Concrete Medium Using Rayleigh Waves</p> <p>Debdutta Ghosh¹, Surendra Beniwal¹, Abhijit Ganguli¹ ¹Civil Engineering, Indian Institute of Technology Delhi, Delhi, India</p>	<p>P2A3-7 Instrument for Rock Bolt Inspection by Means of Ultrasound</p> <p>Tadeusz Stepinski¹, Karl-Johan Mattsson² ¹WIMR, AGH, Univ. of Science and Technology, Krakow, Poland, ²Geosigna AB, Sweden</p>	<p>P3A1-7 A basic study of technique for stirring of liquid in non-contact way using high-intensity aerial ultrasonic waves</p> <p>Taichi Urakami¹, Ayumu Osumi¹, Youich Itoh¹ ¹Nihon University, Japan</p>	<p>P4A1-4 Stabilization of SAW atomizer for a wearable offactory display</p> <p>Kazuki Hashimoto¹, Takamichi Nakamoto¹ ¹Tokyo Institute of Technology, Kanagawa-Ken, Japan</p>	<p>P4A2-5 HBAR AS HIGH FREQUENCY HIGH STRESS GENERATOR</p> <p>Tanay Gosavi¹, Evan MacQuarrie¹, Gregory Fuchs¹, Samil Bhawe² ¹Cornell University, NY, USA, ²Analog Devices Inc, Woburn, MA, USA</p>
<p>Session P2A3. Flaw Detection</p> <p><i>Chair: Erdal Oruklu</i> Illinois Institute of Technology</p>	<p>Session P3A1. General Physical Acoustics</p> <p><i>Chair: Yook-Kong Yong</i> Rutgers University</p>	<p>P3A1-8 Composite Lateral Electric Field Excited Piezoelectric Resonator</p> <p>Boris Zaitsev¹, Alexander Shikhabudinov¹, Andrey Teplykh¹, Irina Borodina¹, Iren Kuznetsova² ¹Saratov Branch, Kotelnikov's Institute of Radio Engineering and Electronics of RAS, Russian Federation, ²Kotel'nikov's Institute of Radio Engineering and Electronics of RAS, Russian Federation</p>	<p>P4A1-5 Conductivity measurement of liquid by SH-SAW sensor consisting of IDT(11-20) oriented ZnO film/silica glass substrate</p> <p>Shoko Hiyama¹, Takahiko Yangaitani², Shinji Takayanagi¹, Mami Matsukawa¹ ¹Wave electronics research center, Laboratory of Ultrasonic Electronics, Doshisha university, Kyoto, Japan, ²Waseda University, Tokyo, Japan</p>	<p>Session P4A3. Materials & Propagation</p> <p><i>Chair: Sergei Zhigoo</i> National Research University Moscow Power Engineering Institute</p>
<p>P2A3-1 Nonlinear Rayleigh Surface Acoustic Waves for Determining Yielding of Alloys</p> <p>Kui Yao¹, Shijiang Guo¹, Lei Zhang¹, Shuting Chen¹, Yi Fan Chen¹, Meysam Sharifzadeh Mirshekarloo¹, Huijun Liu¹, Zhiyuan Shen¹ ¹Institute of Materials Research and Engineering, A*STAR(Agency for Science, Technology and Research), Singapore</p>	<p>P3A1-1 Lateral Electric Field Excited Resonator Based On Pzt Ceramics</p> <p>Andrey Teplykh¹, Boris Zaitsev¹, Iren Kuznetsova² ¹Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Saratov Branch, Saratov, Russian Federation, ²Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Moscow, Russian Federation</p>	<p>P3A1-9 Influence of Liquid on Properties of Backward Acoustic Waves in Piezoelectric Plates</p> <p>Iren Kuznetsova¹, Boris Zaitsev², Ilya Nedospasov¹, Anastasia Kuznetsova² ¹Moscow Department, Kotelnikov Institute of Radio Engineering and Electronics of RAS, Moscow, Russian Federation, ²Saratov Department, Kotelnikov Institute of Radio Engineering and Electronics of RAS, Saratov, Russian Federation</p>	<p>P4A1-6 Comparative analysis of the experience obtained from the use of SAW and BAW wireless resonator temperature sensors for surgery</p> <p>Ivan Ancev¹, Sergei Boguslovsky¹, Genadiy Sapozhnikov¹, Sergei Zhigoo², Alexander Shvetsov² ¹Joint Stock Company "NPP "Radar mms", St Petersburg, Russian Federation, ²MPEI, Moscow, Russian Federation</p>	<p>P4A3-1 Investigation on Surface Acoustic Wave propagation for a non-planar piezoelectric thin film device</p> <p>Mohanraj Soundara pandian¹, Eloi Marigo Ferrer¹, Munianay Shanmugam¹, Rubiyatulniza Binti Hussain¹, Charlie Tay Wee Song¹, Jazri Bin Jamil Din¹, Chan Buan Fel¹, Venkatesh Madhavan¹, Arjun Kumar Kantimahanti¹, Aamir Farooq Malik², Varun Jeoti² ¹SITI Terra Malaysia Sdn Bhd, Kulim, Kedah, Malaysia, ²Universiti Teknologi PETRONAS, Malaysia</p>
<p>P2A3-2 Combination of direct, half-skip and full-skip TFM to characterize multi-faceted crack in weld</p> <p>Xiaoli Han¹, Wentao Wu^{1,2}, Ping Li¹, Jing Lin² ¹Institute of Acoustics, Chinese Academy of Sciences, China, People's Republic of, ²State Key Laboratory for Manufacturing System Engineering, Xi'an Jiaotong University, Sha anxi, China, People's Republic of</p>	<p>P3A1-2 "inverse method for evaluation of elastic parameters in functionally graded materials using ultrasonic Love waves"</p> <p>Piotr Kieleczyski¹, Marek Szalewski¹, Andrzej Balcerek¹, Krzysztof Wlajka ¹Polish Academy of Sciences, Poland</p>	<p>P3A1-10 A Conservative Edge-free and Corner-free Finite Difference Method Formulation for Analysing Mass-loading Problems in Three Dimensions</p> <p>Ireka Ikema¹, Mebratu Fenta¹, alireza baghai-wadji² ¹Department of Mathematics and Applied Mathematics Mathematics, University of Cape Town, Cape Town, South Africa, ²Electrical Engineering, University of Cape Town, Cape Town, South Africa</p>	<p>Session P4A2. Microacoustic Resonators</p> <p><i>Chair: Maximilian Pitschi</i> TDK Corporation</p>	<p>P4A3-2 Effect of Sintering temperature on the Dielectric and Piezoelectric Properties of (Na0.525K0.443Li0.037)(Nb0.883Sb0.087Ta0.037)O3 Ceramics for piezoelectric Actuators</p> <p>Gwang Min Lee¹, Ju Hyun Yoo^{1,2}, Yeong Ho Jeong¹, Lark Hoon Hwang¹ ¹Semyung University, Republic of Korea, ²Electrical Engineering, Semyung University, Jecheon, Chungbuk, Republic of Korea, ³Korea National University of Transportation, Republic of Korea</p>

THURSDAY POSTER

8:00 am - 5:00 pm	Poster ---- Thursday, October 22, 2015		4th floor
<p>P4A3-3 Plate Modes in Langasite</p> <p>Natalya Naumenko¹ ¹Acousto-optical Research Center, National University of Science and Technology, Moscow, Russian Federation</p>	<p>Session P5A2. Thick and Thin Films</p> <p><i>Chair: Yasuhito Takeuchi</i> Asahikawa Medical University</p>	<p>P5A2-8 Characterization of a MEMS 3D Piezoelectric Ultrasound Transducer for Portable Imaging Systems</p> <p>Corina Nistorita¹, Dimitre Latev¹, Deane Gardner¹, Darren Ima¹, Chris Datt² ¹FUJIFILM Dimatix, Inc. USA, ²River Sonic Solutions, USA</p>	
<p>P4A3-4 Measurements of Acoustical Physical Constants for Ca,Nb(Ga_{0.75}Al_{0.25})₂Si₂O₇ Single Crystal Using the Ultrasonic Microspectroscopy System</p> <p>Yuji Ohashi¹, Yumi Yokota¹, Tetsuo Kudo¹, Shunsuke Kurosawa¹, Kei Kamada², Akira Yoshikawa^{1,2} ¹Tohoku University, Japan, ²CK&Co., Japan</p>	<p>P5A2-1 (100)-Textured Lead-free KNN-based Thick Film for IVUSE: >50MHz@imaging</p> <p>Benpeng Zhu¹, Teng Ma², Yongxiang Li³, Xiaofei Yang¹, Kirk Shung⁴, Qih Zhou² ¹Huazhong University of Science and Technology, China, ²People's Republic of, ³Department of Biomedical Engineering, NIH Transducer Resource Center, University of Southern California, USA, ⁴Key Laboratory of Inorganic Functional Materials and Devices, Chinese Academy of Sciences, China, ⁵People's Republic of</p>	<p>Session P5A3. Transducer Design and Modeling</p> <p><i>Chair: Yasuhito Takeuchi</i> Asahikawa Medical University</p>	
<p>P4A3-5 Loss Reduction of Leaky Surface Acoustic Wave by Loading with High-Velocity Thin Film</p> <p>Shoji Kakio¹, Keiko Hosaka¹ ¹Interdisciplinary Graduate School of Medicine and Engineering, University of Yamanashi, Japan</p>	<p>P5A2-2 Domain Engineering in Epitaxial Ferroelectric Thin Films</p> <p>Mahamuda Mtebwa¹, Nava Setter¹ ¹Ceramics Laboratory, EPFL, Lausanne, Switzerland</p>	<p>P5A3-1 Design of a bullet beam pattern of an ultrasound transducer by use of a multifocal lens and a shaded electrode</p> <p>Euna Choi¹, Yongrae Roh¹ ¹School of Mechanical Engineering, Kyungpook National University, Daegu, Korea, Republic of</p>	
<p>Session P5A1. Transducer Materials</p> <p><i>Chair: Yasuhito Takeuchi</i> Asahikawa Medical University</p>	<p>P5A2-3 High power piezoelectric characteristics of KNbO₃ thick films by hydrothermal method.</p> <p>Mutsuo Ishikawa¹, Yousuke Uchida¹, Motoko Shibuya¹, Nobuaki Kosuge¹, Minoru Kurosawa¹, Hiroshi Funakubo² ¹Toin Univ. of Yokohama, Japan, ²Tokyo Inst. of Tech., Japan</p>	<p>P5A3-2 Impedance Conversion of Matching Layer for Air Ultrasonic Transducers</p> <p>Minoru Toda¹, Minoru Toda² ¹Sensor Solution, TE Connectivity, USA, ²TE Connectivity, USA</p>	

<p>P5A1-1 Novel Spring-Mass Matching Layer Fabrication for Ultrasound Transducers</p> <p>Mikel Gorostiaga¹, Matthias C. Wapler¹, Ulrike Wallrab¹ ¹Department of Microsystems Engineering, Laboratory for Microactuators, IMTEK - University of Freiburg, Freiburg im Breisgau, Germany</p>	<p>P5A2-4 Fundamental Study on the Miniature Coiled Stator-UltraSound Motor with hydrothermally synthesized lead zirconate titanate poly-crystalline film transducer for medical applications</p> <p>Seiya Ozeki¹, Toshinobu Abe¹, Tadashi Moriya², Takasuke Irie³, Minoru Kurosawa⁴, Shinichi Takeuchi¹ ¹Clinical Engineering, Toin University of YOKOHAMA, Yokohama, Kanagawa, Japan, ²Tokyo Metropolitan University, Hino, Tokyo, Japan, ³Micasonic Co., Ltd., Kokubunji, Tokyo, Japan, ⁴Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan</p>	<p>P5A3-3 Diffraction loss calculation based on boundary element method for an air-coupled phased array</p> <p>Rene Golinske¹, Maik Hoffmann¹, Eric Konezke¹, Alexander Unger², Matthias Rutsch², Mario Kumpik² ¹BTU Cottbus-Seiffenberg, Germany, ²Technische Universität Darmstadt, Germany</p>		
<p>P5A1-2 Additive manufacture of impedance matching layers for air-coupled ultrasonic transducers</p> <p>Sivaram Nishal Ramadas^{1,2}, Michael Hunter¹, John Thornby³, Chris Pursell⁴, Simon Leigh⁴, Steven Dixon¹ ¹Physics, University of Warwick, United Kingdom, ²Elster Instrument, Belgium, ³WAMG, University of Warwick, United Kingdom, ⁴School of Engineering, University of Warwick, United Kingdom</p>	<p>P5A2-5 Electrical and Acoustic Characterization of Scandium Aluminum Nitride (ScAlN) Piezoelectric Micromachined Ultrasonic Transducers (PMUT)</p> <p>Panu Koppinen¹, Sergey Gorelick¹, Feng Gao¹, James Dekker¹, Tommi Riekkinen¹, Alessandro Caspani² ¹Knowledge Intensive Products and Services, IIT Technical Research Centre of Finland Ltd, Espoo, Finland, ²Dipartimento di Elettronica, Informazione e Biomeccanica, Politecnico di Milano, Milano, Italy</p>	<p>P5A3-4 Optimization of the Structure of 1-3 Piezocomposite Materials to Maximize the Performance of an Underwater Transducer</p> <p>Yongrae Roh¹, Haejune Park¹ ¹School of Mechanical Engineering, Kyungpook National University, Daegu, Korea, Republic of</p>		
<p>P5A1-3 1-3 piezocomposites based on super-cell structuring for transducer applications</p> <p>Remi Rouffaud¹, Franck Levasort¹, Mai Pham Thi², Claire Bantignies³, Marc Lechiecq¹, Anne-Christine Hladky-Hennion⁴ ¹GREMAN UMR 7347 CNRS, Francois-Rabelais University, Tours, France, ²Thales Research & Technology, Palaiseau, France, ³FERMON SA, Tours, France, ⁴ISEN, EMN UMR 6520 CNRS, Lille, France</p>	<p>P5A2-6 Development of anti-cavitation hydrophone with hydrothermal PZT film - Estimation of durability-</p> <p>Michihisa Shihba^{1,2}, Nagaya Okada³, Minoru Kurosawa⁴, Shinichi Takeuchi¹ ¹Toin University of Yokohama, Japan, ²Research Fellow of Japan Society for the Promotion of Science, Japan, ³Honda Electronics Co., Ltd., Japan, ⁴Tokyo Institute of Technology, Japan</p>	<p>P5A3-5 A feasibility study of angled backing structure using FEM Simulation for lightweight ultrasound transducer</p> <p>Seon Mi Ji¹, Sung Min Kim¹, Jong Seob Jeong¹ ¹Medical Biotechnology, Dongguk University, Gyeonggi-do, Korea, Republic of</p>		
<p>P5A1-4 Design and Fabrication of Lead-free BNT Film High Frequency Ultrasound Transducers</p> <p>Wei Ren¹ ¹Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education, Xian Jiaotong University, China, People's Republic of</p>	<p>P5A2-7 Influence of Tough Hydrophone Shapes with Titanium Front Plate and Hydrothermal PZT Thick Film on Distribution of Acoustic Bubbles around Focal Point of HIFU Transducer</p> <p>Nagaya Okada¹, Michihisa Shihba², Minoru K. Kurosawa³, Shinichi Takeuchi¹ ¹Research and Development Div., HONDA ELECTRONICS CO., LTD., Japan, ²Department of Clinical Engineering, Faculty of Biomedical Engineering, Toin University of Yokohama, Japan, ³Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology, Japan</p>			

FRIDAY ORAL

8:00 am - 9:30 am		Oral -- Friday, October 23, 2015													
8:00 am		2011BC		2011DE		2011F		2011A		2011C					
Plenary Hall		VIP		2011BC		2011DE		2011F		2011A					
<p>Session 1D. MEL: Elasticity Imaging of small Structures</p> <p>Chair: Kathy Nightingale Duke University</p>	<p>Session 2D. MCA: Microbubbles and Nanodroplets Applications</p> <p>Chair: Nico de Jong Erasmus Medical Centre</p>	<p>Session 3D. MPA: Photoacoustic Imaging of Atherosclerosis and Cancer</p> <p>Chair: Georg Schmitz Ruhr-Universität Bochum</p>	<p>Session 4D. MIM: Image Fusion and Classification Methods for Improved Diagnostics</p> <p>Chair: Hans Bosch Erasmus Medical Center</p>	<p>Session 5D. Frontiers of Ultrasonics</p> <p>Chair: David Greve Carnegie Mellon University</p>	<p>Session 6D. Opto-Acoustics</p> <p>Chair: John Larson Avago Technologies</p>	<p>Session 7D. Reduction of TCF</p> <p>Chair: Robert Aigner Qorvo Inc.</p>	<p>Session 8D. Transducers for IVUS</p> <p>Chair: Qifa Zhou University of Southern California</p>	<p>1D-1 Characterizing Sclerotic Skin Stiffness with Acoustic Radiation Force Impulse (ARFI) and Shear Wave Elasticity Imaging (SWEI)</p> <p>Mark Palmeri¹, A. Rambi Cardones², Seung Yun Lee³, Kathryn Nightingale⁴ ¹Biomedical Engineering, Duke University, Durham, NC, USA; ²Dermatology, Duke University, Durham, NC, USA</p>	<p>2D-1 Live Cytodynamics Imaging During Single-Site Sonoporation: Rapid Activation of Annexin Self-Defense Response by Vibrating and Collapsing Microbubbles</p> <p>Wenjing Zhong¹, Alfred C. H. Yu¹ ¹Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong</p>	<p>3D-1 Ex-vivo photoacoustic imaging of atherosclerotic carotid plaques</p> <p>M. U. Arabul¹, H.M. Heres¹, M.C.M. Rutten², M.R.H.M. van Sambeek², R.G.P. Lopata¹ ¹Cardiovascular Biomechanics Group, Department of Biomedical Engineering, Technical University of Eindhoven, Netherlands; ²Vascular Surgery, Catharina Hospital Eindhoven, Netherlands</p>	<p>4D-1 Spatiotemporal registration of 3D volumetric echocardiographic images</p> <p>Adriyana Danudibroto^{1,2}, Jörn Bersvendsen³, Olivier Geard², Oana Mifret¹, Jan D'hooge¹, Egil Samsøe^{2,3} ¹Dept. of Cardiovascular Sciences, KU Leuven, Belgium; ²GE Vingmed Ultrasound, Oslo, Norway; ³University of Oslo, Oslo, Norway</p>	<p>5D-1 In-chip GHz Ultrasonic Pulses for Information Processing</p> <p>Amit Lal¹ ¹SonicMEMS, Electrical and Computer Engineering, Cornell University, Ithaca, NY, USA</p>	<p>6D-1 Depth-Profiling of Acoustic, Optic and Acousto-Optic Spatial Inhomogeneities by Picosecond Ultrasonic Interferometry</p> <p>Vitahyi Gusev¹ ¹LACOM, UMR-CNRS 6613, LUNAM, Université du Maine, Le Mans, France</p>	<p>7D-1 The study of the thermomechanical effect of fluorine-doped silicon dioxide (FSG) films using temperature dependent FTIR measurements</p> <p>Matthias Knapp^{1,2}, Philipp Jäger², Werner Kulle², Matthias Honal², Ingo Bleyl³, Leonhard M. Reindl¹ ¹Department of Microsystems Engineering, University of Freiburg, Freiburg, Germany; ²TDK Corporation, Munich, Germany</p>	<p>8D-1 High Frequency Single Crystal Composite for Ultrasound Applications</p> <p>Jian Tian¹, Kevin Meneou¹, Brandon Stone¹, Pengdi Han¹, Stephen Dymal¹ ¹CTG Advanced Materials, Bolingbrook, Illinois, USA</p>
<p>1D-2 Model-based assessment of the mechanical properties of the animal crystalline lens in situ using acoustic radiation force and optical coherence elastography system</p> <p>Chen Wu¹, Zhaolong Han¹, Shang Wang^{1,2}, Jiasong Li¹, Mamohan Singh¹, Chih-hao Liu¹, Stanislav Emelianov³, Fabrice Mamm³, Kirill Larin^{1,2}, Agyamov Salavat³ ¹Biomedical Engineering, University of Houston, Houston, Texas, USA; ²Molecular Physiology and Biophysics, Baylor College of Medicine, Houston, Texas, USA; ³Biomedical Engineering, University of Texas at Austin, Austin, Texas, USA; ⁴Bascom Palmer Eye Institute, University of Miami Miller School of Medicine, Miami, Florida, USA; ⁵Biomedical Engineering, University of Miami College of Engineering, Miami, Florida, USA</p>	<p>2D-2 Effect of shell loading on the mechanical properties and dynamic response of Optison™ microbubbles.</p> <p>Camilo Perez^{1,2}, Yujin Zong³, Cheng-Hui Wang⁴, Jarrod Svahel⁵, Juan Tu⁶, Thomas Mitula² ¹Bioengineering, University of Washington, Seattle, Washington, USA; ²Center for Industrial and Medical Ultrasound-Applied Physics Laboratory, University of Washington, Seattle, Washington, USA; ³Department of Biomedical Engineering, Xuan Jiaoqun University, Xi'an, China; ⁴People's Republic of Institute of Applied Acoustics, Shaanxi Normal University, Xi'an, China; ⁵People's Republic of Oceanography, Seattle of Washington, Seattle, Washington, USA; ⁶Physics, Nanjing University, China, People's Republic of USA</p>	<p>3D-2 Optical and acoustic spectroscopy of atherosclerotic plaque photoacoustics</p> <p>Verya Daechin¹, Min Wu¹, Antonius F. W. van der Steen^{1,2}, Gijs van Soest¹ ¹Erasmus MC, Rotterdam, Netherlands; ²Interuniversity Cardiology Institute of the Netherlands, Netherlands</p>	<p>4D-2 Anatomically Verified Algorithm for Image Fusion of 3D Echocardiography and Coronary Computed Tomography Angiography</p> <p>Tim Nordenfuer¹, Aleksandar Babic^{2,3}, Ivana Bulatovic⁴, Anders Giesecke⁴, Jonaz Ripsweden¹, Egil Samsøe^{2,3}, Rørdal Winter^{4,5}, Matilda Larsson¹ ¹Medical Engineering, KTH Royal Institute of Technology, Stockholm, Sweden; ²University of Oslo, Oslo, Norway; ³GE Vingmed Ultrasound, Oslo, Norway; ⁴Karolinska Institutet, Stockholm, Sweden; ⁵Department of Cardiology, Danderyd Hospital, Stockholm, Sweden</p>	<p>5D-2 Increased Piezoelectric Coupling Factor in Temperature Compensated Film Bulk Acoustic Resonators</p> <p>Tokihiko Nishihara¹, Shinji Taniguchi¹, Masanori Ueda¹ ¹TAIYO YUDEX CO., LTD., Japan</p>	<p>6D-2 A PMN-PT Micromachined 1-3 Composite IVUS Ultrasound Array</p> <p>Sibo Li¹, Zhuochen Wang¹, Jinwook Kim¹, Wenbin Huang¹, Jian Tian², Pengdi Han², Chao Zhang³, Xiaoming Jiang¹ ¹North Carolina State University, Raleigh, North Carolina, USA; ²CTG Advanced Materials, Bolingbrook, Illinois, USA; ³Tsinghua University in Shenzhen, Shenzhen, People's Republic of</p>										

<p>8:30 am</p>	<p>1D-3 Factors Impacting Detection of Untethered Scatterers within Viscoelastic Background by ARFI Surveillance of Hemorrhage (ASSH): In Silico Demonstration</p> <p>Tomasz Czernuszewicz¹, Robert Hinson¹, Caterina Gallipoli^{1,2}</p> <p>¹Joint Department of Biomedical Engineering, University of North Carolina/ North Carolina State University, Chapel Hill, NC, USA; ²Department of Electrical and Computer Engineering, North Carolina State University, Raleigh, NC, USA</p>	<p>2D-3 Effects of the Microbubble Shell Physicochemical Properties on Ultrasound-Mediated Drug Delivery to the Brain</p> <p>Shih-Ying Wu¹, Cherry Chen¹, Yao-Sheng Tung¹, Ohuyemi Olumolade¹, Elisa Konofigou^{1,2}</p> <p>¹Biomedical Engineering, Columbia University, New York, USA; ²Radiology, Columbia University, New York, USA</p>	<p>3D-3 Photoacoustic microscopy of lipids using a graded-index multimode fiber amplifier</p> <p>Jessica Farland¹, Margaret Ferrarri¹, Takashi Buma¹</p> <p>¹Union College, USA</p>	<p>4D-3 Simultaneous Positron Emission Tomography and Ultrafast Doppler Imaging in vivo</p> <p>Jean Provost¹, Aniketos garofalakis², Thomas Viel², Damien Bouda², Joëvin Sourdout², Mathieu Pernot³, Bertrand Tavittan², Mickael Tancer³</p> <p>¹Institut Langevin, ESPCI ParisTech, INSERM, Paris, France; ²PARCC INSERM UMR 970, France; ³Institut Langevin, ESPCI ParisTech, INSERM, France</p>	<p>5D-2 Mechanical Properties of Comet 67P/Churyumov-Gerasimenko Measured by CASSE and DIM on Board Rosetta's Lander Philae</p> <p>Walter Arnold^{1,2}, Thomas Albin³, Claudia Faber⁴, Hans-Herbert Fischer⁵, Alberto Flandes⁶, Attila Himi⁷, Martin Knapmeyer⁴, Harald Krüger⁴, Alexander Loose⁸, Diedrich Mohlmann⁹, Klaus Jürgen Seidensticker⁴, Klaus Thiel⁸</p> <p>¹Department of Materials and Materials Technology, Saarland University, Saarbrücken, Germany; ²Phys. Institut, Georg-August Universität, Göttingen, Germany; ³Max Planck Institute for Solar System Research, Germany; ⁴DLR Institute of Planetary Research, Germany; ⁵DLR MUSE Cologne, Germany; ⁶Instituto de Geofísica, Mexico; ⁷MTA Centre for Energy Research, Hungary; ⁸University of Cologne, Germany</p>	<p>6D-2 Fast wave velocity measurement by Brillouin scattering induced phonon from ScAIn piezoelectric thin film</p> <p>Masahiko KAWABE¹, Takahiko YANAGITANI², Hayato ICHIHASHI¹, Shinji TAKAYANAGI¹, Masashi SUZUKI³, Mami MATSUKAWA¹</p> <p>¹Doshisha University, Kyoto, Japan; ²Waseda University, Tokyo, Japan; ³Nagoya Institute of Technology, Nagoya, Japan</p>	<p>7D-3 c-Axis parallel oriented ScAIn films grown by ion-beam assisted RF magnetron sputtering</p> <p>Mineki Oka¹, Shinji Takayanagi¹, Takahiko Yanagitani¹, Mami Matsukawa¹</p> <p>¹Doshisha University, Kyotanabe, Japan; ²Waseda University, Tokyo, Japan</p>	<p>8D-3 Intravascular Acoustic Radiation Force Imaging: Feasibility Study</p> <p>Carl Herrickhoff¹, Mark Palmer², Jeremy Dahl¹</p> <p>¹Radiology, Stanford University, Palo Alto, CA, USA; ²Biomedical Engineering, Duke University, Durham, NC, USA</p>
<p>8:45 am</p>	<p>1D-4 High Frequency Point Shear Wave Elastography (HF-pSWE): A Novel Technique for High Resolution Soft Tissue Elasticity Mapping</p> <p>Pei-Yu Chen¹, Chih-Chung Huang¹, Ma Teng², Qia Zhou¹, K. Kirk Shung²</p> <p>¹Department of biomedical engineering, National Cheng Kung University, Taiwan; ²Department of Biomedical Engineering, University of Southern California, USA</p>	<p>2D-4 High-Speed Fluorescence Microscopy of Near-Wall Shedding of Drug-Lipid Complexes from Phase-Change Droplets</p> <p>Shih-Tsung Kang¹, Tsung-Lun Chang¹, Chih-Kuang Yeh¹</p> <p>¹Department of Biomedical Engineering & Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan</p>	<p>3D-4 Photoacoustic assessment of spatially and temporally varying oxygen saturation and perfusion in an orthotopic rat model of human hepatocellular carcinoma</p> <p>Katherine Dextraze^{1,2}, Nina Munoz³, Steven Huang³, Tomas Figueira³, Andrew Heimmiller⁴, Ronny Avritscher⁴, Richard Bouchard²</p> <p>¹Imaging Physics, University of Texas MD Anderson Cancer Center, Houston, TX, USA; ²University of Texas at Houston Graduate School of Biomedical Sciences, Houston, TX, USA; ³Interventional Radiology, University of Texas MD Anderson Cancer Center, Houston, TX, USA; ⁴FUJIFILM FisualSonics, Inc., Toronto, Canada</p>	<p>4D-4 Detection and Characterization of Sentinel Lymph Node using Contrast-Enhanced Ultrasound and Photoacoustic Imaging</p> <p>Stanislav Emelianov¹, Alexander Hammah¹, Geoffrey Luke¹</p> <p>¹University of Texas at Austin, Austin, Texas, USA</p>	<p>5D-3 Magnetic sensing by ultrasonic excitation</p> <p>Kenji Ikushima¹, Hisato Yamada¹, Miki Uehara¹</p> <p>¹Department of Applied Physics, Tokyo University of Agriculture and Technology, Tokyo, Japan</p>	<p>6D-3 Fourier synthesis and timbre tuning of radio frequency nanomechanical pulses</p> <p>Achim Wixforth¹, Florian Schueler², Hubert Krenner²</p> <p>¹Institute of Physics, University of Augsburg, Augsburg, Germany; ²University of Augsburg, Augsburg, Germany</p>	<p>7D-4 Estimation of temperature dependence of C_{44} elastic constant in 42°Y-X cut LiTaO₃ single crystals</p> <p>Minerva Gonzalez^{1,2}, Fabien Henrot¹, Florent Bassignot¹, Astrine Baratsyie¹, Bernard Dulmet¹, Sylvain Ballandras¹, Claudia Kaiyama¹, Ingo Bleyl¹, Jean Michel Brice²</p> <p>¹Institut FEMTO-ST, Besançon, France; ²TDK Electronics France SAS, Valbonne Sophia Antipolis, France; ³Freemix SASU, Besançon, France; ⁴Epcos Inc. (a TDK group company), San Jose, CA, USA; ⁵TDK Corporation, Munich, Germany</p>	<p>8D-4 Dual-element Ultrasonic Transducer for Intravascular Acoustic Radiation Force Impulse (IV-ARFI) Imaging</p> <p>Teng Ma¹, Xuejun Qian¹, Mingyue Yu¹, Qifa Zhou¹, K. Kirk Shung¹</p> <p>¹NIH Resource Center on Medical Ultrasound, Transducer Technology Department of Biomedical Engineering, University of Southern California, Los Angeles, CA, USA</p>

8:00 am - 9:30 am		Oral --- Friday, October 23, 2015						
9:00 am	<p>7D-5 Shear Wave Elasticity Imaging for Preclinical Research on Small Animals and 3D Cell Cultures</p> <p>Pat-Chi Li¹ ¹National Taiwan University, Taipei, Taipei, Taiwan, Taiwan</p>	<p>2D-5 Image-Guided Characterization of Phase-shift Droplets at Pre-clinical Frequencies In Vitro and In Vivo</p> <p>Paul S. Sheeran^{1,2}, Kimoon Yoo³, Ross Williams¹, Yasaman Daighi¹, Emmanuel Cheri¹, F. Stuart Foster^{1,4}, Peter N. Burns^{1,2} ¹Physical Sciences, Sunnybrook Research Institute, Toronto, Canada; ²Medical Biophysics, University of Toronto, Toronto, Canada; ³Chemical Engineering, University of Waterloo, Waterloo, Canada</p>	<p>3D-5 Detection of Lipid in Ex-Vivo Atherosclerotic Rabbit Vessels using a Dual-Frequency IntraVascular Imaging Probe for Ultrasound and Photoacoustic Imaging</p> <p>Robin Castellino^{1,2} Hyungyun Lee³, F. Stuart Foster^{1,2} ¹Medical Biophysics, University of Toronto, Canada; ²Imaging Research, Sunnybrook Research Institute, Canada</p>	<p>4D-5 Random Forest Classification and Local Region-Based, Level-Set Segmentation for Quantitative Ultrasound of Human Lymph Nodes</p> <p>Thanh Minh Bui¹, Alain Coron¹, Jonathan Mamout², Emi Saegusa-Beerof³, Junji Machi⁴, Lori Bridal⁵, Ernest Feleppa⁶ ¹Sorbonne Universités, UPMC Univ Paris 06, INSERM, CNRS, LIB, Paris, France; ²F. L. Lizzi Center for Biomedical Engineering, Riverside Research, New York, NEW YORK, USA; ³University of Hawaii and Kuakini Medical Center, Honolulu, Hawaii, USA</p>	<p>5D-4 Non-contact mass measurement of droplet based on free oscillation under ultrasonic levitation.</p> <p>Sae Ito¹, Ryohet Nakamura¹, Hiroki Tanaka¹, Yosuke Mizuno¹, Marie Tabaru¹, Kentaro Nakamura¹ ¹Precision and Intelligence Laboratory, Tokyo Institute of Technology, Yokohama, Japan</p>	<p>6D-4 Surface-wave resonance on substrates with copper nanowires</p> <p>Hirotsugu Ogi¹, Shoichi Masuda¹, Akira Nagakubo¹, Masahiko Hirao¹ ¹Osaka University, Japan</p>	<p>7D-5 Multiphysics Modeling of BAW Filters</p> <p>Andreas Tag¹, Dominik Karolewski², Bernhard Bader³, Maximilian Pitsch³, Robert Weigel¹, Amelie Hagelauer¹ ¹Institute for Electronics Engineering, University of Erlangen-Nuremberg, Erlangen, Germany; ²Institut für Mikroelektronik- und Mechatronik-Systeme gemeinnützige GmbH Germany; ³TDK Corporation, Germany</p>	<p>8D-5 Dual frequency IVUS transducer for acoustic radiation force impulse imaging (ARFI)</p> <p>Zhuochen Wang¹, Tomasz Czernuszewicz², Caterina Gallipò², Xiaoming Jiang¹ ¹North Carolina State University, USA; ²University of North Carolina, USA</p>
9:15 am	<p>2D-6 High-speed imaging of vaporization and recondensation dynamics of ICG-loaded PFP droplets irradiated by a short pulse laser</p> <p>Jaesok Yoo^{1,2}, Xueai Chen¹, Flordeliza S. Villanueva¹, Kang Kim^{1,2} ¹Center for Ultrasound Molecular Imaging and Therapeutics, University of Pittsburgh School of Medicine and University of Pittsburgh Medical Center, Pittsburgh, PA, USA; ²Department of Bioengineering, University of Pittsburgh School of Engineering, Pittsburgh, PA, USA</p>	<p>3D-6 Tri-modal imaging for surgical guidance, preliminary in vivo experiment</p> <p>Jeeun Kang¹, Jin Ho Chang², Brian C. Wilson^{3,4}, Sum Mi Kim⁵, Hak Jong Lee⁵, Tai Kyong Song¹ ¹Electronics Engineering, Sogang University, Seoul, Seoul, Korea, Republic of; ²Sogang Institute of Advanced Technology, Korea, Republic of; ³Princess Margaret Cancer Centre, University Health Network, Canada; ⁴Medical Biophysics, University of Toronto, Canada; ⁵Department of Radiology, Seoul National University of Bundang Hospital, Korea, Republic of</p>	<p>4D-6 Automatic detection of ischemic myocardium by spatio-temporal analysis of echocardiographic strain and strain rate curves</p> <p>Mahdi Tabassian^{1,2}, Martino Herboas³, Dana Mirea⁴, Jan Engval¹, Luca De Marchi⁵, Guido Masetti¹, Jan D'hooge⁶ ¹Department of Electrical, Electronic and Information Engineering, University of Bologna, Bologna, Italy; ²Department of Cardiovascular Sciences, Laboratory of Cardiovascular Imaging and Dynamics, KU Leuven, Belgium; ³Department of Medical and Health Sciences, Linköping University, Sweden</p>	<p>5D-5 High sensitivity liquid sensor based on slotted phononic crystal</p> <p>Liaofeng Geng^{1,2}, Feiyuan Cai¹, Fei Li¹, Long Meng³, Chen Wang², Shuhong Xie¹, Hairong Zheng² ¹School of Materials Science and Engineering, Xiangtan University, Xiangtan, Hunan, China, People's Republic of; ²Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, People's Republic of</p>	<p>6D-5 THz acoustic spectroscopy by using GaN-based double quantum wells as the acoustic transducer</p> <p>Jun Wei Fan¹, Jimn-Kong Sheu², Kung-Hsuan Lin¹ ¹Institute of Physics, Academia Sinica, Taipei, Taiwan; ²Department of Photonics, National Cheng Kung University, Tainan, Taiwan</p>	<p>7D-6 SAW Characteristics of AlN/SiO₂/SiC-Layered Structure with Embedded Electrodes</p> <p>Qiaozhen Zhang¹, Tao Han¹, Jing Chen¹, Kenya Hashimoto² ¹Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, Shanghai, Shanghai, China, People's Republic of; ²Graduate School of Engineering, Chiba University, Japan</p>	<p>8D-6 Design and Fabrication of Focused Ultrasound Transducers</p> <p>Junsu Lee¹, Jihun Jang¹, Jin Ho Chang^{1,2} ¹Department of Electronic Engineering, Sogang University, Korea, Republic of; ²Interdisciplinary Program of Integrated Biotechnology, Korea, Republic of</p>	

Oral --- Friday, October 23, 2015							
10:30 am - 12:00 pm	Session 1E: Clinical Ultrasound <i>Chair: Yi-Hong Chou Taipei Veterans General Hospital (Taiwan)</i>	Session 2E: MEL: Characterizing Vascular disease <i>Chair: Chris de Korte Radboud University Medical Center</i>	Session 3E: MTH: Bubbles and HIFU <i>Chair: Emad Ebhini Univ. of Minnesota</i>	Session 4E: MBB: Beamforming III <i>Chair: Jorgen Jensen Technical University of Denmark</i>	Session 5E: Signal Processing <i>Chair: Jafar Saniee Illinois Institute of Technology</i>	Session 6E: General Physical Acoustics & Ultrasonic Motors & Actuators <i>Chair: Andreas Mayer IIS Offenburg</i>	
VIP							
Plenary Hall							
10:30 am	<p>1E-1 Ultrasound-guided high intensity focused ultrasound: clinical experience</p> <p>Jae Young Lee¹ ¹Radiology, Seoul National University Hospital, Seoul, Korea, Republic of</p>	<p>2E-1 Evaluating Arterial and Plaque Elasticity with Shear Wave Elastography in an ex vivo Porcine Model</p> <p>Erik Widman^{1,2}, Eihra Maksuti¹, Carolina Amador Carrascal¹, Matthew W. Urban³, Matilda Larsson¹ ¹KTH Royal Institute of Technology, Stockholm, Sweden, ²Department of Molecular Medicine and Surgery, Karolinska Institutet, Stockholm, Sweden, ³Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, MN, USA</p>	<p>3E-1 Large diameter microbubbles produced by a catheter-based microfluidic device for sonothrombolysis applications</p> <p>Adam Dixon¹, Brian Shim¹, Vamsi Meeka¹, Joseph Khroy¹, Alexander Klibanov¹, John Hossack¹ ¹Biomedical Engineering, University of Virginia, Charlottesville, VA, USA</p>	<p>4E-1 An automatic method for determining the anatomical relevant space for fast volumetric cardiac imaging</p> <p>Alejandra Ortega¹, Brecht Heyde¹, João Pedrosa¹, Ling Tong², Jan D'hooge¹ ¹Department of Cardiovascular Sciences, KU Leuven, Leuven, Belgium, ²Department of Biomedical Engineering, Tsinghua University, Beijing, China, People's Republic of</p>	<p>5E-1 Sparse Inversion SVD for Multichannel Ultrasonic Guided Waves Analysis in Cortical Bone</p> <p>Kailiang Xu^{1,2}, Jean-Gabriel Minonzi², Dean Ta¹, Bo Hu¹, Wojai Wang¹, Pascal Laugier² ¹Department of Electronic Engineering, Fudan University, Shanghai, China, People's Republic of, ²Laboratoire d'Imagerie Biomédicale, UMR CNRS 7371 - INSERM U1146 - UPMC, Paris, France</p>	<p>6E-1 Four ways to justify temporal memory operators in the lossy wave equation</p> <p>Sverre Holm¹ ¹Informatics, University of Oslo, Oslo, Norway</p>	<p>6E-2 LONGITUDINAL SHEAR WAVE AND TRANSVERSE COMPRESSIONAL WAVE IN ELASTIC SOLIDS</p> <p>Stefan Catheline¹, Nicolas Benich², Ali Zargani³ ¹INSERM, University of Lyon, Lyon, France, ²Physics Institute, University of Montevideo, Montevideo, Uruguay, ³University of Lyon, France</p>
10:45 am		<p>2E-2 2D versus 3D cross-correlation-based radial and circumferential strain imaging in a 3D atherosclerotic carotid artery model using ultrafast plane wave ultrasound</p> <p>Stein Fåkkles¹, Abigail E.S. Swillens², Hendrik H.G. Hansen², Anne E.C.M. Saris¹, Maarje M. Nillesen¹, Francesco Iannaccone², Patrick Segers², Chris L. de Korte¹ ¹Medical UltraSound Imaging Center (MUSIC), Department of Radiology and Nuclear Medicine, Radboud university medical center, Nijmegen, Netherlands, ²Department of Electronics and Information Systems, Ghent University, Belgium</p>	<p>3E-2 High Pulse Reputation Frequency Crushing Model Renal Calculi Using Cavitation Bubbles Induced by Dual-Frequency Ultrasound Pulses</p> <p>Masamizu Osuga¹, Jun Yasuda¹, Hayato Jimbo¹, Shin Yoshizawa¹, Shin-ichiro Unerumi¹ ¹Tohoku University, Japan</p>	<p>4E-2 Coded Excitation Reconstruction by Impulse Response Estimation and Retrospective Acquisition: Application to B-mode Imaging</p> <p>John Flynn¹, Lauren Plugrath¹, Peter Kaczowski¹, Ron Daigle¹ ¹Verasonics, Inc, Kirkland, WA, USA</p>	<p>5E-2 Ultrasonic Flaw Detection using Support Vector Machine Classification</p> <p>Kushal Virupakishappa¹, Erdal Oruklu¹ ¹ECE Department, Illinois Institute of Technology, Chicago, Illinois, USA</p>	<p>6E-2 A Mixed-Signal Multiplexing System for Cable-Count Reduction in Ultrasound Probes</p> <p>Qilong Liu¹, Chao Chen¹, Zu-yao Chang¹, Christian Prins², Michiel A. P. Pertjjs¹ ¹Electronic Instrumentation Laboratory, Delft University of Technology, Delft, Netherlands, ²Obdelt Ultrasonid, Delft, Netherlands</p>	
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<p>11:00 am</p>	<p>1E-2 Clinical Application of Liver Elastography</p> <p>Yi-Hong Chou¹, Hsin-Kai Wang² ¹Taipei Veterans General Hospital, Taiwan</p>	<p>2E-3 A novel intravascular ultrasound (IVUS) elastography based on high resolution acoustic radiation force impulse (ARFI) imaging for assessing the elastic properties of atherosclerosis</p> <p>Cho-Chiang Shih¹, Pei-Yu Chen¹, Lei Sun², Chih-Chung Huang¹ ¹Department of biomedical engineering, National Cheng Kung University, Taiwan; ²Interdisciplinary division of biomedical engineering, The Hong Kong Polytechnic University, Hong Kong</p>	<p>3E-3 The accumulation and behaviour of ultrasound stimulated bubbles on a compliant surface: implications for sonothrombolysis</p> <p>Ben Leung¹, Christopher Accoia^{1,2}, Kullervo Hynynen^{1,2}, David Goertz^{1,2} ¹Physical Sciences Platform, Sunnybrook Research Institute, Toronto, Ontario, Canada; ²Medical Biophysics, University of Toronto, Canada</p>	<p>4E-3 Image quality degradation from transmit delay profile quantization</p> <p>Matthias Bo Stuart¹, Jørgen Arendt Jensen¹ ¹DTU - Technical University of Denmark, Kgs. Lyngby, Denmark</p>	<p>5E-3 Simultaneous Multi-Mode Analysis of Surface Acoustic Wave Device Temperature Stability using Time-Frequency Methods</p> <p>Christopher J. Harrison¹, Samuel J. Ippolito^{1,2}, K. M. Mohibul Kabir¹, Glenn I. Matthews¹ ¹School of Electrical and Computer Engineering (SECE), RMIT University, Melbourne, Victoria, Australia; ²Centre for Advanced Materials and Industrial Chemistry (CAMIC), School of Applied Sciences, RMIT University, Melbourne, Victoria, Australia</p>	<p>6E-3 Ultrasound bonding characterization of a bi-layer metal/epoxy with different chemical and mechanical interface treatments.</p> <p>Camille GAUTHIER¹, Damien LEDUC¹, Jocelyne Galy², Mounif ECHKERTANI¹, Jean-Louis IZBICKI¹ ¹LOMC CNRS 6294, University of Le Havre, Le Havre, France; ²IMP CNRS 5223, INSA of Lyon, France</p>	<p>7E-2 Transverse modes in STW resonators on quartz</p> <p>Victor Plesky¹, Ventsislav Yantchev², Weibiao Wang³, Michael Yang⁴, Bob Hsiao⁴ ¹GFR Trade SA, Switzerland; ²Uppsala University, Sweden; ³Nanjing Electronic Devices Institute, China; ⁴People's Republic of Taiwan; ⁵Tai-SAW Technology Ltd., Taiwan</p>	<p>8E-3 A Single-Cable PVDF Transducer Readout IC for Intravascular Photoacoustic Imaging</p> <p>Chao Chen¹, Veyra Daechim², Qing Ding¹, Gijis van Soest², Geert Springelinge¹, Ton van der Steen³, Michel Pertsjes¹, Nico de Jong^{2,3} ¹Electronic Instrumentation Lab, Delft University of Technology, Delft, Netherlands; ²Dept. of Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands; ³Lab of Acoustical Wavefield Imaging, Delft University of Technology, Delft, Netherlands</p>
<p>11:15 am</p>	<p>2E-4 A 1D model-based inverse problem for recovery of spatially varying vessel stiffness for Pulse Wave Imaging</p> <p>Matthew Megarry¹, Rompy Li¹, Iason Apostolakis¹, Elisa Konofigou^{1,2} ¹Biomedical Engineering, Columbia University, New York, New York, USA; ²Radiology, Columbia University, New York, NY, USA</p>	<p>3E-4 A Theoretical Model for Acoustic Microstreaming Generated by Two Interacting Contrast Microbubbles</p> <p>Alexander Domnikov¹, Ayache Bouakaz¹ ¹Inserm U930, Université François-Rabelais, Tours, France</p>	<p>4E-4 Enhancement of specular reflection using Directional Spatial Coherence with 2D Phased Array</p> <p>Raja Sekhar Bandaru^{1,2}, Anders Sornes¹, Margot Pasternaak^{1,2}, Eigil Samset^{1,3}, Jan D'hooge² ¹GE Vingmed Ultrasound, Oslo, Norway; ²Cardiovascular Imaging and Dynamics, KU Leuven, Leuven, Belgium; ³Department of Informatics, University of Oslo, Oslo, Norway</p>	<p>5E-4 A clustering-based damage segmentation for ultrasonic C-Scans of CFRP plates</p> <p>Antonio Rodriguez^{1,2}, Angel M. Gomez², Nicolas Boechud¹, Juan M. Soto², Antonio M. Penedo² ¹Deplo. de Teoría de la Señal y Comunicaciones, Universidad Carlos III de Madrid, Leganés, Madrid, Spain; ²Deplo. de Teoría de la Señal, Telemática y Comunicaciones and CITIC-UGR, Universidad de Granada, Granada, Spain; ³Deplo. de Mecánica de Estructuras e Ingeniería Hidráulica, Universidad de Granada, Granada, Spain</p>	<p>6E-4 Study on Micro Ultrasound Motor using a Preload Mechanism</p> <p>Tomoaki Mashimo¹ ¹Toyoashi University of Technology, Japan</p>	<p>7E-3 Characterization of Thin SoCIN Film based Natural Single-Phase Unidirectional SAW Transducers using Sagnac Interferometer</p> <p>Abhay Kochhar¹, Yasuo Yamamoto², Akhiko Teshigahara², Ken-ya Hashimoto², Shuji Tanaka¹, Masayoshi Esashi¹ ¹Tohoku University, Japan; ²DENSO CORPORATION, Japan; ³Chiba University, Japan</p>	<p>8E-4 A Row-Column Addressed CMUT Probe with Integrated Electronics for Volumetric Imaging</p> <p>Thomas Lehrmann Christensen¹, Mathias Engholm¹, Christopher Beets², Michael Berkeimer³, Lars Nordahl Mosner¹, Jan Peter Baagø², Matthias Bo Stuart⁴, Anders Lei¹, Søren Elin Diederichsen¹, Jørgen Arendt Jensen¹, Erik Vilain Thomsen¹ ¹Department of Micro- and Nanotechnology, Technical University of Denmark, Kgs. Lyngby, Denmark; ²Sound Technology, State College, PA, USA; ³BK Medical, Herlev, Denmark; ⁴Center for Fast Ultrasound Imaging, Department of Electrical Engineering, Technical University of Denmark, Kgs. Lyngby, Denmark</p>	

FRIDAY ORAL

<p>11:30 am</p>	<p>1E-3 Ultrasound Fusion Imaging of Liver Tumor: Recent Progress and Clinical Relevance</p> <p>Masatoshi Kudo¹ ¹Department of Gastroenterology and Hepatology, Kinki University School of Medicine</p>	<p>2E-5 Mechanical Characterization of Abdominal Aortic Ultrasound</p> <p>E.M.J. van Disseldorp^{1,2}, N.J. Petersen¹, F.N. van de Vosse¹, M.R. van Sambeek², R.G.P. Lopata¹ ¹Cardiovascular Biomechanics Group, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; ²Department of Vascular Surgery, Catharina Hospital, Eindhoven, Netherlands</p>	<p>3E-5 High Intensity Focused Ultrasound applied to the placental unit: First results of an in vivo study in monkeys</p> <p>David Melodelima¹, Jonathan Caloone^{1,2}, Anthony Kooc¹, Jeremy Vinceno¹, Cyril Huisoud² ¹LabTACU - U1032, INSERM, France; ²Hopital de la Croix Rousse, France</p>	<p>4E-5 2D Wire Orientation using Directional Spatial Coherence with 2D Phased Array</p> <p>Raja Sekhar Bandaru^{1,2}, Anders Sornes¹, Eigel Samsø^{1,3}, Jan Dhooge² ¹GE Vingmed Ultrasound, Oslo, Norway; ²Cardiovascular Imaging and Dynamics, KU Leuven, Leuven, Belgium; ³Department of Informatics, University of Oslo, Oslo, Norway</p>	<p>5E-5 A new methodology to reduce the activation sequence in SAFT techniques</p> <p>Javier Villazon-Terrazas¹, David Romero-Laorden¹, Alberto Bañez¹, Oscar Martinez-Graullera¹, Monserrat Parrilla¹ ¹Instituto de Tecnologías Físicas y de la Información Leonardo Torres Quevedo, Consejo Superior de Investigaciones Científicas, Madrid, Spain</p>	<p>6E-5 Small Size Pneumatic Valve for Smooth Flow Control using PZT Vibrator</p> <p>Daisuke HIROOKA¹, Tomomi YAMAGUCHI¹, Naomichi FURUSHIRO¹, Koichi SUZUMORI², Takefumi KANDA³ ¹Kansai University, Japan; ²Tokyo Institute of Technology, Japan; ³Okayama University, Japan</p>	<p>7E-4 Evaluation of Acoustic Properties of CaTiO₃(K,Na)NbO₃ Film Using Microfabricated Structure</p> <p>Ryosuke Kaneko¹, Michio Kadota¹, Yuii Ohashi², Jun-ichi Kushibiki¹, Shinsuke Ikeuchi³, Shuji Tanaka¹ ¹Graduate school, Tohoku University, Sendai, Miyagi, Japan; ²Institute for Material Research, Tohoku University, Sendai, Miyagi, Japan; ³Devices Development, Murata Manufacturing Co., Ltd., Nagasaki, Kyoto, Japan</p>	<p>8E-5 Front end circuit simulation for CMUT systems based on an accurate nonlinear CMUT array model</p> <p>Jaemyung Lim¹, Gwangrok Jung¹, Evren Faik Arkan², F. Levent Degenekin², Maysam Ghovanloo¹ ¹School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA; ²G.W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA</p>
<p>11:45 am</p>	<p>2E-6 Detection of Coronary Artery Disease with Myocardial Elastography with validation against myocardial perfusion imaging and coronary angiography</p> <p>Julien Grondin¹, Marc Waese², Vincent Svasseng¹, Elisa E. Konofagou^{1,3} ¹Department of Biomedical Engineering, Columbia University, New York, NY, USA; ²Department of Medicine, Columbia University, New York, NY, USA; ³Department of Radiology, Columbia University, New York, NY, USA</p>	<p>3E-6 3D focusing of high intensity ultrasound pulses using a time reversal cavity</p> <p>Justine Robin¹, Bastien Arnal¹, Mathias Fink¹, Mickael Tanter¹, Mathieu Perrot¹ ¹Institut Langevin, France</p>	<p>4E-6 Frequency Domain Beamforming for Coherent Plane-Wave Compounding</p> <p>Tanya Chernyakova¹, Regav Cohen¹, Yael Sde-chen¹, Christophe Fraschini¹, Jeremy Bercoff¹, Yonina Eldar¹ ¹EE, The Technion, ITT Haifa, Israel; ²Supersonic Imagine, France</p>	<p>5E-6 On the Use of Parametric Models for Cancelling Reverberations in Imaging of Thin Materials</p> <p>Miguel Castaño Arranz¹, Johan E. Carlsson¹, Biao Jiang¹, Philip Lindblad¹ ¹Div. of Signals and Systems, Department of Computer Science, Electrical and Space Engineering, Luleå University of Technology, Luleå, Sweden</p>	<p>6E-6 Low flow rate spraying using a torsional ultrasonic transducer</p> <p>Shunsuke Tsuyuki¹, Takekumi Kanda¹, Koichi Suzumori², Shin-ichiro Kawasaki¹, Shoki Ohji¹ ¹Okayama University, Okayama, Japan; ²Tokyo Institute of Technology, Tokyo, Japan; ³National Institute of Advanced Industrial Science and Technology, Miyagi, Japan</p>	<p>7E-5 Dry Deagglomeration and Alignment of Carbon Nanotubes using the Acoustic and Electric Fields of SAW</p> <p>Monteza Miansargazan^{1,2}, James Friend² ¹Mechanical and Aerospace Engineering, Monash University, Clayton, VIC, Australia; ²Center for Medical Devices, Dept of Mech and Aero Engineering, University of California, San Diego, La Jolla, CA, USA</p>	<p>8E-6 Development of High-Sensitive and Wideband FET-Based Ultrasound Receiver Directly Driven by Piezoelectric Effect</p> <p>Hiroki Makino¹, Jing Zhu¹, Tsuyoshi Okubo^{1,2}, Yhsin Ho¹, Norio Tagawa¹, Mng Yang¹ ¹Graduate School of System Design, Tokyo Metropolitan University, Tokyo, Japan; ²Konica Minolta, Inc., Japan</p>	

FRIDAY ORAL

Oral --- Friday, October 23, 2015				
1:00 pm -2:30 pm	Session 2F. Ultrasonics in Biometrics	Session 3F. MEL: Mechanical Characterization of the Heart	Session 4F. MSP: Compressive Sensing and Image Reconstruction	Session 5F. Industrial Applications
	<p>Chair: Manfred Wehnacht Leibniz Institute for Solid State and Materials Research</p>	<p>Chair: Ehsa Konaogou Columbia University</p>	<p>Chair: Svetoslav Nikolov BK Medical</p>	<p>Chair: Piero Tortoli Università di Firenze</p>
	<p>2F-1 Acoustic-property maps of cornea for improved high-frequency ultrasound corneal biometric accuracy</p> <p>Daniel Rohrbach¹, Harriet O. Lloyd², Ronald H. Silverman², Raksha Urs², Jonathan Mannou¹</p> <p>¹Leitz Center for Biomedical Engineering, Riverside Research, New York, NY, USA; ²Department of Ophthalmology, Columbia University Medical Center, New York, New York, USA</p>	<p>3F-1 Semi-3D strain imaging in normal and LVAD supported ex vivo beating hearts</p> <p>N.J. Peterson¹, K.A.M.A. Pennings¹, S. van Tuijl¹, M.C.M. Rutten¹, F.N. van de Vosse¹, R.G.P. Lopata¹</p> <p>¹Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; ²LifeTec Group, Eindhoven, Netherlands</p>	<p>4F-1 Joint compressive sampling and deconvolution in ultrasound medical imaging</p> <p>Zhouye Chen¹, Adrian Basarab¹, Denis Kouamé²</p> <p>¹IRIT, UMR CNRS 5505, University of Toulouse, France</p>	<p>5F-1 Blind Component Separation Analysis for Highly Corrupted Ultrasonic Signals in Real-Time Spot Weld Inspection</p> <p>Aryaz Baradaran¹, Andriy M. Chertov¹, Waldo Perez Regalado¹, Roman Maev¹</p> <p>¹Institute for Diagnostic Imaging Research, University of Windsor, Windsor, Canada</p>
201ABC				
	<p>2F-1 Theory and Experimental Analysis of Scratch Resistant Coating for Ultrasonic Fingerprint Sensors</p> <p>Stephanie Fung¹, Yipeng Lu¹, Hao-Yen Tang², Julius M. Tsai³, Michael Daneman¹, Bernhard E. Boser⁴, David A. Horsley¹</p> <p>¹Department of Mechanical and Aerospace Engineering, University of California, Davis, CA, USA; ²Department of Electrical Engineering and Computer Sciences, University of California, Berkeley, CA, USA; ³Imvense, San Jose, CA, USA</p>	<p>3F-2 Myocardial passive shear wave detection</p> <p>Hendrik Vos^{1,2}, Bas van Dalen¹, Johannes Bosch¹, Antonius van der Steen^{1,2}, Nico de Jong^{1,2}</p> <p>¹Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands; ²Acoustical Wavefield Imaging, Delft University of Technology, Netherlands; ³Cardiology, Erasmus MC, Rotterdam, Netherlands</p>	<p>4F-2 Compressed sensing reconstruction of line-wise subsampled 3D echographic images based on dictionary learning: an experimental study</p> <p>Oana Lorintiu¹, Hervé Liebgott¹, Adeline Bernhard¹, Olivier Bernard¹, Denis Friboulet¹</p> <p>¹UMR5220 ; Inserm U1044 ; INS-4-Lyon ; Université Lyon 1, Lyon, France</p>	<p>5F-2 Ultrasonic Welding Using a Long and Thin Complex Transverse Vibration Welding Tip with Vibration Detector and Static Pressure Controller</p> <p>Jiromaru Tsujino^{1,2}, Eiichi Sugimoto³</p> <p>¹Kanagawa University, Yokohama, Japan; ²R & D Center, Asahi EMS Co. Ltd, Yokohama, Kanagawa, Japan; ³Asahi EMS Co. Ltd, Tokyo, Japan</p>
201DE				
	<p>2F-2 Acoustic-property maps of cornea for improved high-frequency ultrasound corneal biometric accuracy</p> <p>Daniel Rohrbach¹, Harriet O. Lloyd², Ronald H. Silverman², Raksha Urs², Jonathan Mannou¹</p> <p>¹Leitz Center for Biomedical Engineering, Riverside Research, New York, NY, USA; ²Department of Ophthalmology, Columbia University Medical Center, New York, New York, USA</p>	<p>3F-2 Myocardial passive shear wave detection</p> <p>Hendrik Vos^{1,2}, Bas van Dalen¹, Johannes Bosch¹, Antonius van der Steen^{1,2}, Nico de Jong^{1,2}</p> <p>¹Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands; ²Acoustical Wavefield Imaging, Delft University of Technology, Netherlands; ³Cardiology, Erasmus MC, Rotterdam, Netherlands</p>	<p>4F-2 Compressed sensing reconstruction of line-wise subsampled 3D echographic images based on dictionary learning: an experimental study</p> <p>Oana Lorintiu¹, Hervé Liebgott¹, Adeline Bernhard¹, Olivier Bernard¹, Denis Friboulet¹</p> <p>¹UMR5220 ; Inserm U1044 ; INS-4-Lyon ; Université Lyon 1, Lyon, France</p>	<p>5F-2 Ultrasonic Welding Using a Long and Thin Complex Transverse Vibration Welding Tip with Vibration Detector and Static Pressure Controller</p> <p>Jiromaru Tsujino^{1,2}, Eiichi Sugimoto³</p> <p>¹Kanagawa University, Yokohama, Japan; ²R & D Center, Asahi EMS Co. Ltd, Yokohama, Kanagawa, Japan; ³Asahi EMS Co. Ltd, Tokyo, Japan</p>
201F				
	<p>1F-1 A Live Color Encoded Speckle Imaging Platform: Towards Beside Visualization of Complex Flow Patterns</p> <p>Alfred C. H. Yu¹, Billy Y. S. Yiu¹, Marcin Lewandowski¹, Mateusz Walezak², Damien Garcia³</p> <p>¹Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong; ²Department of Ultrasound, Polish Academy of Sciences Institute of Fundamental Technological Research, Warsaw, Poland; ³Department of Radiology, University of Montreal, Montreal, Canada</p>	<p>1F-2 ULA-OP 256: a portable high-performance research scanner</p> <p>Enrico Boni¹, Luca Bassi¹, Alessandro Dallai¹, Gabriele Giannini¹, Francesco Guidi¹, Valentino Meacci¹, Riccardo Matera¹, Alessandro Ramalifi¹, Monica Scaringella¹, Jacopo Viti¹, Stefano Ricci¹, Piero Tortoli¹</p> <p>¹Dipartimento di Ingegneria dell'Informazione, Università degli studi di Firenze, Firenze, Italy</p>	<p>1F-1 Reliability measurements of CMUT arrays of a semiconductor manufacturer</p> <p>Christophe Antoine¹, Erik Tarvin¹, Sushil Bharatan¹, Urvi Shah¹, Rob O'Reilly¹, Michael Judy¹</p> <p>¹Analog Devices Inc., Wilmington, MA, USA</p>	
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	<p>1:00 pm</p>	<p>1:15 pm</p>		

<p>1:30 pm</p>	<p>2F-3 Ultrasonics and Biometrics: 130 years past Galton</p> <p>James Wayman¹ ¹San José State University, San José, Ca, USA</p>	<p>3F-3 A Systematic Investigation of Feasible Acoustic Windows and the Impact of Myocardial Anisotropy for In Vivo Human Cardiac Shear Wave Elastography</p> <p>Pengfei Song¹, Xiaojun Bi^{2,3}, Daniel C. Meleran¹, Armando Manduca¹, Matthew W. Urban¹, James F. Greenleaf¹, Shigao Chen¹ ¹Dept. of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, Minnesota, USA; ²Dept. of Cardiovascular Diseases, Mayo Clinic College of Medicine, Rochester, Minnesota, USA; ³Department of Medical Ultrasound, Tongji Hospital Medical College, Wuhan, Hubei, People's Republic of China</p>	<p>4F-3 Compressed Sensing for Beamformed Ultrasound Computed Tomography</p> <p>Ruud van Sloun¹, Ashish Pandharipande², Massimo Mischl¹, Libertario Demi¹ ¹Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands; ²Philips Research, Eindhoven, Netherlands</p>	<p>5F-3 Novel real-time diagnostic of injection molding process at nozzle by high-temperature ultrasonic transducer</p> <p>Che-Hue Yang¹, Chin-Chi Cheng², Makiko Kobayashi³, Yi Lin Wu⁴ ¹Graduate Institute of Mechanical and Electrical Engineering, National Taipei University of Technology, Taiwan; ²Dept. of Energy and Refrigerating Air-Conditioning Engineering, National Taipei University of Technology, Taipei, Taiwan; ³Dept. of Computer Science and Electrical Engineering, Kumamoto University, Japan</p>	<p>1F-3 Implementation of real-time duplex synthetic aperture ultrasonography</p> <p>Martin Christian Hemmssen¹, Thomas Kjeldsen², Lee Lassen², Jesper Mosgaard², Jørgen Arendt Jensen¹ ¹Electrical Engineering, Technical University of Denmark, Lyngby, Denmark; ²Computer Graphics Lab, Alexandra Institute, Aarhus, Denmark</p>	<p>8F-2 Dual-Mode Integrated Circuit for Imaging and HIFU With 2-D CMUT Arrays</p> <p>Ji Hoon Jang¹, Anshuman Bhuyan¹, Hyo-Seon Yoon¹, Jung Woo Choe¹, Amin Nikoozadeh¹, Douglas Stephens², Batur Khuri-Yakub¹ ¹Electrical Engineering, Stanford University, Stanford, California, USA; ²Biomedical Engineering, University of California, Davis, Davis, California, USA</p>
<p>1:45 pm</p>	<p>3F-4 Investigation of the effects of myocardial anisotropy for shear wave elastography at different frequencies using acoustic radiation force and harmonic vibration</p> <p>Matthew Urban¹, Bo Qiang¹, Pengfei Song¹, Ivan Nenadic¹, Shigao Chen¹, James Greenleaf¹ ¹Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, Minnesota, USA</p>	<p>4F-4 Extension of FM-Chirp Super Resolution Imaging for Ultrasound Synthetic Aperture System</p> <p>Takayuki Wada¹, Yuhim Ho¹, Norio Tagawa¹, Kan Okubo¹ ¹Graduate School of System Design, Tokyo Metropolitan University, Tokyo, Japan</p>	<p>5F-4 High temperature performance of PbTiO₃/PZT ultrasonic transducer above 400°C</p> <p>Taiga Kibe¹, Tsukasa Kaneko¹, Makiko Kobayashi¹ ¹Kumamoto University, Japan</p>	<p>1F-4 A New Wireless Hand-held Ultrasound System with Smartphone, Tablet for Mobile Healthcare</p> <p>Dong-Ki Ahn¹, Suyeol Lee¹, Sung-Hyun Kim¹, Jeongwon Ryu^{1,2} ¹Advanced Medical Technology Laboratory, Haecheon Co., Ltd., Seoul, Korea, Republic of; ²Clinical Neuroscience & Development Lab, Korea Advanced Institute of Science and Technology, Daejeon, Korea, Republic of</p>	<p>8F-3 A dual-mode CMUT array optimized for tissue harmonic imaging</p> <p>Soren Elmin Diederichsen¹, Mathias Johannes Grøndahl Møllgaard¹, Anders Lei¹, Matthias Bo Stuart¹, Jørgen Arendt Jensen¹, Erik Vilain Thomsen¹ ¹Dept. of Micro- and Nanotechnology, Technical University of Denmark, Denmark; ²Center for East Ultrasound Imaging, Dept. of Electrical Engineering, Technical University of Denmark, Kgs. Lyngby, Denmark</p>	<p>8F-4 A High-Frequency (~30-MHz), Broadband (FBW>100%) 1-D Linear CMUT Array Fabricated by Anodic Bonding</p> <p>Xiao Zhang¹, F. Yalcin Yamaner², Omer Oralkan¹ ¹Department of Electrical and Computer Engineering, NCSU, Raleigh, North Carolina, USA; ²Department of Electrical and Electronics Engineering, Istanbul Medipol University, Istanbul, Turkey</p>
<p>2:00 pm</p>	<p>2F-4 Towards spoof proof fingertip biometrics using ultrasound</p> <p>Rainer M. Schmitt¹, Devin DeLong¹, Andreea C. Casanova¹, Joe Zeichman¹, Yanli Xie¹, Heng Zhao¹, Chen-Wen Wei¹ ¹R & D, Sonavation Inc.</p>	<p>3F-5 Repeatability of Systolic-to-Diastolic Displacement Ratios in Transthoracic Cardiac ARFI Imaging</p> <p>Vaibhav Kalkad¹, Lily Kuo¹, David Bradley¹, Joseph Sivak², Joseph Kisslo², Gregg Trahey¹ ¹Biomedical Engineering, Duke University, Durham, North Carolina, USA; ²Cardiology, Duke University Hospital, Durham, North Carolina, USA</p>	<p>4F-5 Spatiotemporal clutter filtering of Ultrafast ultrasound data highly increases Doppler and Ultrasound sensitivity</p> <p>Charlie Deneché¹, Thomas Defieux¹, Mathieu Pernot¹, Olivier Baud², Mickael Tanter¹ ¹Institut Langevin, ESPCI ParisTech, CNRS UMR7587, Inserm U979, Paris, France; ²INSERM U1141 and Neonatal Intensive Care Unit, Paris Diderot University, Children's hospital Robert, Paris, France</p>	<p>5F-5 Fast ultrasound signal and image processing on a tablet device</p> <p>Gabriel Kiss¹, Naad Hossain Khan¹, Eva Tegmänder^{2,3}, Sturla H. Ek-Nes^{2,3}, Hans Torp¹ ¹Department of Circulation and Medical Imaging and MI Lab, Norwegian University of Science and Technology, Trondheim, Norway; ²National Center for Fetal Medicine, St. Olavs Hospital, Norway; ³Department of Laboratory Medicine, Children's and Women's Health, Norwegian University of Science and Technology, Trondheim, Norway</p>	<p>8F-5 Capsule Ultrasound (CUS) Device</p> <p>Farah Memoni¹, Gerard Touma¹, Amin Nikoozadeh¹, Jung Woo Choe¹, Amin Arbabian¹, Eric W. Olcott^{2,3}, R. Brooke Jeffrey², Batur (Pierre) T. Khuri-Yakub¹ ¹Stanford University, Stanford, California, USA; ²Stanford University School of Medicine, Stanford, California, USA; ³Palo Alto Veterans Affairs Health Care System, Palo Alto, California, USA</p>	<p>1F-5 Miniature Single-Supply Ultrasound imager for Personal Fitness Tracking</p> <p>Hao-Yen Tang¹, Dongmin Seo¹, Michel M. Maharbiz¹, Bernhard E. Boser¹ ¹EECS, UC Berkeley, Berkeley, CA, USA</p>
<p>2:15 pm</p>	<p>3F-6 SNR Improvements in Two-Dimensional Cardiac Strain Estimation using Coherent Compounding in silico and in vivo</p> <p>Ethan Bunting¹, Julien Grondin¹, Clement Papadacci¹, Elisa Konofigou^{1,2} ¹Department of Biomedical Engineering, Columbia University, New York, New York, USA; ²Department of Radiology, Columbia University, New York, New York, USA</p>	<p>4F-6 Contrast-Enhanced Ultrasound Imaging with Chirps: Signal Processing and Pulse Compression</p> <p>Sevan Harput¹, James McLaughlan¹, David Cowell¹, Steven Freear¹ ¹School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom</p>	<p>5F-6 Development of a real-time acoustic backscatter system for solids concentration measurement during nuclear waste cleanup</p> <p>David Cowell¹, Hugh Rice², Tim Hunter², Derrick Nijboeruwu², Jeff Peakall¹, Michael Fairweather², Geoff Randall¹, Steven Freear¹ ¹School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom; ²School of Chemical and Process Engineering, University of Leeds, Leeds, United Kingdom; ³School of Earth and Environment, University of Leeds, Leeds, United Kingdom; ⁴Sellafield Ltd, United Kingdom</p>			

FRIDAY ORAL

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3:30 pm -5:00 pm

Oral --- Friday, October 23, 2015

3:30 pm -5:00 pm		Oral --- Friday, October 23, 2015				
	<p>Session 2G. MBB: Beamforming IV</p> <p>Chair: Jan D'hooge Catholic University of Leuven</p>	<p>Session 3G. MEL: New Applications of Elasticy Imaging</p> <p>Chair: Caterina Gallippi UNC Chapel Hill and NCSU</p>	<p>Session 4G. MIM: Medical Imaging I</p> <p>Chair: John Hossack Univ. of Virginia</p>	<p>Session 1G. MTC: High Frequency Tissue Characterization</p> <p>Chair: Michael Oelze Univ. of Illinois</p>	<p>Session 6G. Physics of Thin-Film Resonators</p> <p>Chair: Vincent Laude FEMTO-ST / CNRS</p>	<p>Session 8G. Transducers for Therapy</p> <p>Chair: Anne-Christine HLADKY IEMN</p>
	<p>2G-1 Nonlinear beamforming of aperture domain signals</p> <p>Brett Byram¹ ¹Biomedical Engineering, Vanderbilt University, TN, USA</p>	<p>3G-1 Ultrasound Strain Relaxation Time Ratio: A Quantitative Marker for Assessment of Cortical Inflammation/edema in Renal Allografts</p> <p>Jing Gao¹, Robert Min¹, Keith Hentel¹, Jonathan Rubin² ¹Radiology, Weill Cornell Medical College, New York, New York, USA; ²Radiology, University of Michigan, Ann Arbor, Michigan, USA</p>	<p>4G-1 Evaluation of directional reflectivity characteristics as new modality for 3D Ultrasound Computer Tomography</p> <p>Ernst Kretzek¹, Patrick Hucker¹, Nicole Ruter¹ ¹Karlsruhe Institute of Technology (KIT), Institute for Data Processing and Electronics (IPE), Eggenstein-Leopoldshafen, Germany</p>	<p>1G-1 Fine resolution elastic property maps of myopic sclera by means of acoustic microscopy</p> <p>Daniel Rohrbach¹, Quan Wen², Quan Hoang³, Sally McFadden³, Ronald H. Silverman³, Jonathan Mamou¹ ¹Lizzi Center for Biomedical Engineering, Riverside Research, USA; ²Department of Ophthalmology, Columbia University Medical Center, USA; ³Vision Sciences Group, Faculty of Science and IT, School of Psychology, University of Newcastle, NSW, Australia</p>	<p>6G-1 Finite element analysis of BAW devices: principles and perspectives</p> <p>Robert Thalhammer¹, John Larson² ¹Avago Technologies, Munich, Germany; ²Avago Technologies, San Jose, CA, USA</p>	<p>8G-1 Capsule-based Ultrasound-mediated Targeted Gastrointestinal Drug Delivery</p> <p>Fraser Stewart¹, Antonella Verbeni², Yongqiang Qiu¹, Benjamin Cox¹, Jan Vorstius³, Sandy Cochran¹ ¹Institute for Medical Science and Technology, University of Dundee, United Kingdom; ²The BioRobotics Institute, Scuola Superiore Sant'Anna, Italy; ³School of Engineering, Mathematics and Physics, University of Dundee, United Kingdom</p>
	<p>2G-2 Improved array beam steering capability by compensation of inter-element cross-talk</p> <p>Alessandro Ramalli¹, Alessandro Stuart Savoia², Giosue Caliano³, Piero Tortoli¹ ¹Information Engineering Department, University of Florence, Firenze, Italy; ²Department of Engineering, Università degli Studi Roma Tre, Roma, Rome, Italy</p>	<p>3G-2 Ex vivo measurement of shear wave speed dispersion in placenta using Transient Elastography.</p> <p>Samuel CALLE¹, Emmanuel SIMON^{1,2}, Marie-Coline DUMOUX¹, Emmanuel NICOLAS¹, Franck FERROTIN², Jean-Pierre REMENIERAS¹ ¹INSERM U930 - F. Rabatais University, TOURS, France; ²Department of obstetrics, gynecology and fetal medicine, University Hospital Center of Tours, TOURS, France</p>	<p>4G-2 Quantitative imaging of speed of sound in echo ultrasonography</p> <p>Michael Jaeger¹, Martin Frenz¹ ¹University of Bern, Switzerland</p>	<p>1G-2 Ultrasonic Characterization of Extra-Cellular Matrix in Decellularized Murine Kidney and Liver</p> <p>Lauren A. Wirtzfeld¹, Elizabeth S. L. Bendl¹, Michael C. Kolios² ¹Ryerson University, Canada</p>	<p>6G-2 Laterally Coupled FBAR resonator filters</p> <p>Kun Wang¹, Robert Thalhammer², Steven Martin³, Uli Koelle¹, John D Larson III¹ ¹Avagotech, San Jose, USA; ²Avagotech, Munich, Germany; ³Avagotech, Fort Collins, USA</p>	<p>8G-2 Capacitive Micro-machined Ultrasound Transducers for High Intensity Ultrasound Applications</p> <p>W. Apoutou N'DJIN¹, Bioem GEROLD¹, Michael CANNAY², Nicolas SENECOND¹, Mathieu ROY¹, Alexandre CARPENTIER², Jean-Yves CHAPELON¹ ¹Lab'Trau, Inserm, U1032; Université de Lyon, Lyon, France; ²CapThera, Paris, Ile-de-France, France; ³Vernon SA, Tours, Centre, France</p>
	<p>2G-3 3D Ultrasound Strain Imaging of Skeletal Muscle Deformation</p> <p>Kaj Gijbortse¹, André Sprengers², Nico Verdonsehoort^{2,3}, Chris de Kort¹ ¹Medical Ultrasound Imaging Center (MUSIC), Department of Radiology and Nuclear Medicine, Radboud university medical center, Netherlands; ²Orthopaedic Research Laboratory, Department of Orthopaedics, Radboud university medical center, Netherlands; ³Department of Biomechanical Engineering, University of Twente, Netherlands</p>	<p>4G-3 Needle detection by Image Source Localization</p> <p>Alfonso Rodriguez-Molares¹, Lasse Lovstakken¹, Ingvald Kinn Ekrol¹, Hans Torp¹ ¹Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway</p>	<p>6G-3 Structure Function: Relating Ultrasonic Measurement to Theory and Histology</p> <p>Aiguo Han¹, William D. O'Brien, Jr.¹ ¹Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, USA</p>	<p>8G-3 Development and acoustic characterization of lead-free high intensity focused ultrasound transducers</p> <p>Elahab Taghaddos¹, Teng Ma², Mehdi Beigzi¹, Qita Zhou², Hui Zhong¹, Ming Xi Wan¹, Ahmad Salari¹ ¹Materials Science and Engineering, Rutgers University, Piscataway, NJ, USA; ²Biomedical Engineering, University of Southern California, USA; ³Xi'an Jiaotong University, China, People's Republic of; ⁴Biomedical Engineering, Xi'an Jiaotong University, People's Republic of China</p>		
3:45 pm						
4:00 pm						

<p>4:15 pm</p>	<p>2G-3 Time domain compressive beamforming: application to in-vivo echocardiography</p> <p>Guillaume David¹, Jean-luc Robert², Bo Zhang³, Andrew Lane⁴ ¹Biomedical Engineering, Columbia University, New York City, New York, USA, ²Philips Research North America, USA, ³Medsys, Philips Research France, France</p>	<p>2G-4 Prostate Vibro-Elastography: Multi-frequency 1D over 3D Steady-State Shear Wave Imaging for Quantitative Elastic Modulus Measurement</p> <p>Julio Lobo¹, Ali Baghani¹, Hami Eskandari¹, Sara Mahdavi², Robert Rohling¹, Larry Goldenberg³, William James Morris³, Septimiu Salicrú⁴ ¹Electrical and Computer Engineering, University of British Columbia, Vancouver, BC, Canada, ²British Columbia Cancer Agency, Vancouver, BC, Canada, ³Department of Urologic Sciences, Vancouver General Hospital, Vancouver, BC, Canada, ⁴Department of Oncology, British Columbia Cancer Agency, Vancouver, BC, Canada</p>	<p>3G-4 A sparse regularization approach for ultrafast ultrasound imaging</p> <p>Rafael Carrillo¹, Adrien Besson¹, Miaomiao Zhang², Denis Friboulet², Yves Wiaux³, Jean-Philippe Thiran¹, Olivier Bernard² ¹UTS, Swiss Federal Institute of Technology, Lausanne, Switzerland, ²CREATIS, CNRS UMR5220, Inserm U630, University of Lyon, INS4-Lyon, University of Lyon1, Villeurbanne, France, ³Institute of Sensors, Signals and Systems, Heriot-Watt University, Edinburgh, United Kingdom</p>	<p>1G-4 Viscoelastic Imaging Using Acoustic Impedance Microscope and Its Application to Biological Tissue</p> <p>Naohiro Hozumi¹, Shota Kajima¹, Agus Indra Gunawan¹, Sachiko Yoshida¹, Kazuto Kobayashi², Yoshitomi Saijo³, Seiji Yamamoto⁴ ¹Toyoashi University of Technology, Japan, ²Honda Electronics Co., Ltd., Japan, ³Hokkaido University, Japan, ⁴Hanmatsu Univ Sch Med, Japan</p>	<p>8G-4 Broadband Dual-Mode HIFU Array used for Therapy and Therapy Monitoring</p> <p>Kyle Morrison¹, George Keilman¹, Peter Kaczkowski¹ ¹Sonic Concepts, Inc., Bohell, Washington, USA, ²Perasonics, Inc., Kirkland, Washington, USA</p>	<p>6G-3 High order mode polarity inverted Al-polar (0001) ScAlN/O-polar (000-1) ZnO film resonator</p> <p>Takeshi Mori¹, Takahiko Yanagitani¹, Masashi Suzuki¹ ¹Nagoya Institute of Technology, Japan, ²Waseda University, Tokyo, Japan</p>	<p>6G-4 Elastic constant c_{11} tensors of (0001) Sc_{1-x}Al_xN films ($x=0-0.63$)</p> <p>Takahiko Yanagitani^{1,2}, Hayato Ichihashi¹, Masashi Suzuki¹, Shinji Takayama¹, Mami Matsukawa³ ¹Faculty of Science and Engineering, Waseda University, Tokyo, Japan, ²Nagoya Institute of Technology, Nagoya, Aichi, Japan, ³Doshisha University, Kyoto, Japan</p>	<p>1G-5 Ultrasound-scattering models based on quantitative acoustic microscopy of fresh samples and unstained fixed lymph nodes</p> <p>Jonathan Mamou¹, Daniel Rohrbach¹, Emi Saegusa-Becroft², Eugene Yanagihara³, Junji Machi³, Ernest J. Feleppa⁴ ¹F. L. Lizzi Center for Biomedical Engineering, Riverside Research, USA, ²Department of General Surgery, University of Hawaii and Kuakini Medical Center, USA</p>	<p>8G-5 Double-Focusing Ultrasound Transducer for Skin Disease Treatment</p> <p>Jihun Jang¹, Jin Ho Chang^{1,2} ¹Department of Electronic Engineering, Sogang University, Seoul, Korea, ²Republic of Interdisciplinary Program of Integrated Biotechnology, Sogang University, Seoul, Korea, Republic of</p>	<p>4:30 pm</p>	<p>2G-5 Multi-line transmit beamforming for high frame rate wide field-of-view tissue Doppler imaging: in-vivo validation and initial clinical findings</p> <p>Ling Tong^{1,2}, Alessandro Ramalli³, Giuseppe Fradella⁴, Sabina Cacioli⁴, Piero Tortoli³, Jianwen Luo¹, Jan D'hooge² ¹Department of Biomedical Engineering, Tsinghua University, Beijing, China, ²People's Republic of Department of Cardiovascular Sciences, KU Leuven, Leuven, Belgium, ³Department of Information Engineering, Università degli Studi di Firenze, Florence, Italy, ⁴Cardiology Unit, Careggi Hospital, Florence, Italy</p>	<p>4G-5 Extension of Ultrasound Fourier Slice Imaging Theory to Sectorial Acquisition</p> <p>Miaomiao Zhang¹, Adrien Besson², Rafael E. Carrillo³, François Varray^{1,3}, Hervé Liebgott¹, Jean-Philippe Thiran^{2,3}, Denis Friboulet¹, Olivier Bernard² ¹CREATIS, CNRS UMR5220, Inserm U630, University of Lyon, INS4-Lyon, France, ²Signal Processing Laboratory, University of Lyon1, Villeurbanne, France, ³École polytechnique fédérale de Lausanne (EPFL), Lausanne, Switzerland, ⁴Department of Radiology, University Hospital Center (CHU) and University of Lausanne (UNIL), Lausanne, Switzerland</p>	<p>6G-5 Quasi-shear mode electromechanical coupling k_{15} and shear wave velocity in c-axis tilted Sc_{0.9}Al_{0.1}N films</p> <p>Masashi Suzuki¹, Takahiko Yanagitani² ¹Nagoya Institute of Technology, Japan, ²Waseda University, Japan</p>	<p>8G-6 Non-linear generation of harmonic content within high intensity ultrasound signals using granular chains</p> <p>Sevan Harput¹, James McLaughlin¹, Steven Freear¹, Pierre Gelat¹, Nader Saffari¹, Jia Yang¹, Omololu Akanji¹, Peter Thomas², David Hutchins³ ¹School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom, ²Department of Mechanical Engineering, University College London, London, United Kingdom, ³School of Engineering, University of Warwick, Coventry, United Kingdom</p>
<p>4:45 pm</p>	<p>2G-5 Optimum beamformer strategy for detecting signals in clutter noise</p> <p>Hans Torp¹, Alfonso Rodriguez-Molares¹, Lasse Lovstakken¹ ¹Circulation and Medical Imaging, Norwegian University of Science and Technology, Norway</p>	<p>4G-6 3D Post-processing of pre-beamformed RF Data in the Frequency-wavenumber Domain</p> <p>Hendrik Vos^{1,2}, Paul van Nee³, Martin Verweij², Nico de Jong^{1,2}, Arno Volker¹ ¹Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands, ²Acoustical Wavefield Imaging, Delft University of Technology, Netherlands, ³TNO, Netherlands</p>	<p>6G-6 Plaque characterization using integrated electrochemical spectrum and intravascular ultrasound sensors</p> <p>Rongsong Li¹, Xiaoxiao Zhang², Teng Ma¹, Nelson Jen¹, Tyler Beebe², Hanguo Ma¹, K. Kirk Shung¹, Qifa Zhou¹, Yuchong Tai¹, Tzung Hsai¹ ¹Department of Medicine, University of California, Los Angeles, California, USA, ²Department of Electrical Engineering and Applied Science Division, California Institute of Technology, Pasadena, California, USA, ³Department of Biomedical Engineering, University of Southern California, Los Angeles, California, USA</p>	<p>3G-6 Local Lung Ventilation Estimation Using Ultrasound Strain Measurements</p> <p>Jonathan Rubin¹, Jeffrey Horowitz², Thomas Sisson³, Kang Kim¹, Luis Ortiz⁵, James Hamilton⁶ ¹Radiology, University of Michigan, Ann Arbor, Michigan, USA, ²Department of Internal Medicine, University of Michigan, USA, ³University of Michigan, USA, ⁴University of Pittsburgh, USA, ⁵University of Pittsburgh, USA, ⁶Epsilon Imaging, USA</p>										

FRIDAY ORAL

8:00 am - 5:00 pm

Session P1B1.
Elasticity Imaging Methods

Chair: Hendrik Hansens
Radboud University Medical Center

P1B1-8 Spatial Variance Induced by Tissue Compression in Ultrasound Shear Wave Imaging
Hidetaki Yoshikawa¹, Tetsuyuki Sonoyama², Noriaki Inoue³, Ken-ichi Kawabata⁴
¹Hitachi, Ltd., Tokyo, Japan, ²Engineering R&D Department 1, Hitachi Aloka Medical, Ltd., Tokyo, Japan

P1B2-4 Ultrasound-enhanced extravasation of dual-modality multifunctional nanodroplets
Yujin Zong¹, Xiru Zou¹, Rongrong Wang¹, Yi Feng², Xuan Du¹, Mingxi Wan¹
¹The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Xi'an Jiaotong University, Xi'an, Shaanxi, China, ²People's Republic of

P1B3-4 Effects of coherent compounding on Pulse Wave Imaging (PWI) in phantoms and in vivo
Iason Zacharias Apostolakis¹, Ronny Li¹, Matthew McGarry¹, Ethan Bunting¹, Elisa Konohegou^{1,2}
¹Biomedical Engineering, Columbia University, New York, New York, USA, ²Radiology, Columbia University, New York, New York, USA

P1B4-4 Copolymer-in-oil phantoms for photoacoustic imaging
Luciana Cabrelli¹, Diego Sampaio¹, Joso Ullama¹, Alessandro Deana², Antonio Carneiro¹, Theo Pavan¹
¹Department of Physics, University of Sao Paulo, Ribeirão Preto, Brazil, ²Department of Biophotonics, Universidade Nove de Julho, Sao Paulo, Brazil

P1B1-1 Regularized, Weighted Temporal Multiresolution Speckle Tracking of Small Displacements in Ultrasound

Peter Hollender¹, Vignesh Yudatha¹, Gregg Trahey²
¹Biomedical Engineering, Duke University, Durham, North Carolina, USA, ²Radiology, Duke University Medical Center, Durham, North Carolina, USA

P1B1-9 A reliability index of shear wave speed measurement for shear wave elastography

Kiwan Choi¹, Junho Park¹, Donggeon Kong¹, Hyoung-Ki Lee¹
¹Ultrasound R&D Group, Samsung Electronics, Seoul, Korea, Republic of

P1B2-5 Evaluation of the potential of the hair growth enhancements with ultrasound-mediated minoxidil loaded microbubbles cavitation

Ai-ho Liao¹, Ying-ju Lu¹
¹National Taiwan University of Science and Technology, Taiwan

P1B3-5 Atlas-based mosaicing of 3D transesophageal echocardiography images of the left atrium

Harritt W. Mulder¹, Jostien P.W. Plum¹, Ben Riet¹, Alexander Haak¹, Max A. Vergever¹, Johan G. Bosch¹, Marin van Stralen¹
¹Imaging Division, UMC Utrecht, Utrecht, Netherlands, ²Cardiology, Erasmus MC, Rotterdam, Rotterdam, Netherlands, ³Biomedical Engineering, Erasmus MC Rotterdam, Rotterdam, Netherlands

P1B4-5 NIR Photoacoustic Spectroscopy for Continuous Non-Invasive Glucose Monitoring

Pratul Patil¹, Pradyut Sanki¹, Arijit De¹, Swapna Banerjee¹
¹Department of Electronics and Electrical Communication Engineering, Indian Institute of Technology Kharagpur, Kharagpur, West Bengal, India

P1B1-2 On-Axis Radiation-Force-based quantitative stiffness estimation with a Bayesian displacement estimator

Kristy Walsh¹, Douglas Dumont¹, Mark Palmeri², Brett Byram¹
¹Biomedical Engineering, Vanderbilt University, Nashville, TN, USA, ²Biomedical Engineering, Duke University, Durham, NC, USA

P1B1-10 Pixel-based ultrasound image reconstruction: impact of grid size on signal frequency content

Mahdi Bayat¹, Alireza Nabavizadeh^{1,2}, Azra Alizad^{1,3}, Mostafa Fatemi¹
¹Physiology and Biomedical Engineering, Mayo Clinic, Rochester, MN, USA, ²Biomedical Informatics and Computational Biology, University of Minnesota, Rochester, MN, USA, ³Department of Internal Medicine, Mayo Clinic, Rochester, MN, USA

P1B2-6 Quantification of endothelial $\alpha\beta3$ expression with high frequency ultrasound and targeted microbubbles: in vitro and in vivo studies

Verya Daechin¹, Ilya Skachkov¹, Judith C. Sluimer², Johan G. Bosch¹, Klazma Kooiman¹, Andrew Needles³, Ben Janssen¹, Mat J.A.P. Daemen¹, Antonius van der Steen^{1,6}, Nico de Jong^{1,6}
¹Thoraxcenter, Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands, ²Pathology, CARIM, Maastricht University, Netherlands, ³FU/FFLM VisualSonics, Inc., Canada, ⁴Pharmacology, Netherlands, ⁵Pathology, AMC, Netherlands, ⁶Technical University Delft, Netherlands

P1B3-6 Estimation of Flow Mediated Vasodilatation of the radial artery

Andrzej Nowicki¹, Robert Oszewski², Wojciech Seemski¹, Marcin Lewandowski¹, Michal Byra¹
¹Ultrasound, Institute of Fundamental Technological Research, Warsaw, Poland, ²Cardiology and Internal Medicine, Military Institute of Medicine, Warsaw, Poland

P1B4-6 In Vivo Assessment of Protease Activity in Colorectal Cancer by Using Activatable Molecular Photoacoustic Imaging

Cheng Jiu¹, Qijin He¹, Yaoheng YANG¹, Zhihai Qiu¹, Yongmin HUANG¹, Thomas Ming-Hung LEE¹, Lei SUN¹
¹Interdisciplinary Division of Biomedical Engineering, Faculty of Engineering, The Hong Kong Polytechnic University, HONG KONG, China, People's Republic of

P1B1-3 Crawling Waves Shear Wave Speed Estimation using Null Space Pursuit and AM-FM demodulation

Renán Rojas¹, Juvenal Ormaechea², Kevin Parker², Benjamin Castañeda¹
¹Departamento de Ingeniería, Sección Electricidad y Electrónica, Pontificia Universidad Católica del Perú, Lima, Perú, ²Department of Electrical & Computer Engineering, University of Rochester, Rochester, New York, USA

P1B1-11 A Shear Wave Propagation Tracking Method Based on Modal Assurance Criterion in Acoustic Radiation Force Impulse Imaging

Yang Jiao¹, Jie Xu¹, Yongjia Xiang¹, Tianming Gu¹, Yaoyao Cui¹
¹Suzhou Institute of Biomedical Engineering and Technology, CAS, Suzhou, Jiangsu, China, People's Republic of

P1B2-7 Subharmonic Threshold for Chirp Excitations of High Frequency Contrast Agents

John Allen¹, Rintaro Hayashi¹, Parag Chitnis², Jonathan Marmor¹, Jeffrey Ketterling¹
¹Mechanical Engineering, University of Hawaii, Honolulu, Hawaii, USA, ²Department of Bioengineering, George Mason University, Fairfax, Virginia, USA, ³Riverside Research Institute, New York City, New York, USA

P1B3-7 Electromechanical Eave Imaging of atrial tachycardia and myocardial infarct in vivo: a feasibility study

Alexandre Costet¹, Ethan Bunting², Elaine Wan³, Elisa Konohegou^{1,4}
¹Biomedical Engineering, Columbia University, New York, New York, USA, ²Biomedical Engineering, Columbia University, New York, NY, USA, ³Medicine Cardiology, Columbia University Medical Center, New York, New York, USA, ⁴Radiology, Columbia University, New York, NY, USA

P1B4-7 Optical-resolution photoacoustic endoscope

Ruimin Chen¹, Joon-Mo Yang², Chiye Li², Bin Rao², Junjie Yao², Cheng-Hung Yeh², Amos Danielli³, Konstantin Maslov³, Kirk Shung¹, Qifa Zhou¹, Libong V. Wang²
¹Ultrasonic Transducer Resource Center, Department of Biomedical Engineering, University of Southern California, Los Angeles, California, USA, ²Optical Imaging Laboratory, Department of Biomedical Engineering, Washington University in St. Louis, St. Louis, Missouri, USA

<p>P1B1-4 Near Field Shear Wave Elasticity Imaging with High Frequency Single Element Transducers</p> <p>Nien-Ching Ho¹, Pai-Chi Li² ¹Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan, ²Electrical Engineering, National Taiwan University, Taipei, Taiwan, Taipei, Taiwan</p>	<p>Session P1B2. MCA: Microbubbles and Nanodroplets</p> <p>Chair: Lori Bridal Univ. Pierre and Marie Curie</p>	<p>Session P1B3. MIM: Cardiovascular Imaging and Mechanics</p> <p>Chair: Richard Lopata Technical University Eindhoven</p>	<p>Session P1B4. MPA: Photoacoustics</p> <p>Chair: Richard Lopata Technical University Eindhoven</p>	<p>P1B4-8 Low power continuous wave photoacoustic microscope for bioimaging applications</p> <p>Sathyamoorthy Krishnan¹, Michael Kolios¹ ¹Department of physics, Ryerson university, Toronto, Ontario, Canada</p>
<p>P1B1-5 Effects of Aberration in Crawling Wave Sonoelastography</p> <p>Gabriela Torres¹, Kevin Parker², Roberto Lavarello¹, Benjamin Castaneda¹ ¹Electrical Engineering, Pontificia Universidad Católica del Perú, Lima, Peru, ²Electrical and Computer Engineering, University of Rochester, Rochester, USA</p>	<p>P1B2-1 Cosolvent-infused precursor bubbles and droplets for production of ultra-small, ultrasound-activatable, nanoscale perfluorocarbon agents</p> <p>Minsook Seo¹, Siqi Zhu¹, Ross Williams¹, Naomi Matsuura² ¹Sunnybrook Research Institute, Canada, ²University of Toronto, Canada</p>	<p>P1B3-1 Full-cycle left ventricular segmentation and tracking in 3D echocardiography using active appearance models</p> <p>Marijn van Stralen¹, Alexander Haak², Esther Leung³, Gerard van Bortke², Clemens Bosch¹, Johan Bosch² ¹Imaging Division, UMC Utrecht, Utrecht, Netherlands, ²Biomedical Engineering, Erasmus MC Rotterdam, Rotterdam, Netherlands, ³Albert Schweitzer Hospital, Dordrecht, Netherlands</p>	<p>P1B4-1 Optimizing Simultaneous Multispectral Emission Photoacoustics</p> <p>Martin F Beckmann¹, Hans-Martin Schwab¹, Georg Schmitz¹ ¹Chair for Medical Engineering, Ruhr-Universität Bochum, Bochum, Germany</p>	<p>P1B4-9 Optical and Acoustic Observation of Photodisruption in Two Liquid Perfluorocarbons Induced by Nanosecond Laser</p> <p>Yi Feng¹, Dui Qin¹, Yujing Zong¹, Mingsi Wan¹ ¹The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi, China, People's Republic of</p>
<p>P1B1-6 Acoustic particle palpation – a feasibility study on a novel stress source for elasticity imaging</p> <p>Hasan Koruk^{1,2}, Ahmed El Chamrawy¹, Mengxing Tang¹, James Choi¹ ¹Department of Bioengineering, Imperial College London, London, United Kingdom, ²Mechanical Engineering Department, MEF University, Istanbul, Turkey</p>	<p>P1B2-2 Influence of the surrounding media on the acoustic behavior of gas vesicle nanostructures at high ultrasound frequencies</p> <p>Emmanuel Cherin¹, Raymond W. Bourdeau², Melissa Yin¹, Mikhail G. Shapiro², F. Stuart Foster¹ ¹Imaging Research, Sunnybrook Research Institute, Toronto, Ontario, Canada, ²Division of Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, California, USA</p>	<p>P1B3-2 Optimization-based speckle tracking algorithm for LV strain estimation</p> <p>Hanan Khamis¹, Nahum Smir¹, Zvi Friedman², Dan Adam¹ ¹Department of Biomedical Engineering, Technion-Israel Institute of Technology, Haifa, Israel, ²GE Ultrasound, Tivat Hacarmel, Israel</p>	<p>P1B4-2 Dual-modal photoacoustic ocular imaging</p> <p>Changhui Li¹, Ning Wu², Xiaoyi Zhu² ¹Biomedical Engineering, Peking University, China, People's Republic of, ²Peking University, China, People's Republic of</p>	<p>P1B4-10 X-ray acoustic imaging for external beam radiation therapy dosimetry using a commercial ultrasound scanner</p> <p>Diego Sampaio¹, Joao Uliana¹, Juliana Pavoni¹, Leandro Borges², Antonio Carneiro¹, Theo Pavan¹ ¹Department of Physics, University of Sao Paulo, Ribeirão Preto, Brazil, ²Radiotherapy Service, University of Sao Paulo, Ribeirão Preto, Brazil</p>
<p>P1B1-7 Novel imaging method of continuous shear wave by ultrasonic color flow imaging</p> <p>Yoshiki Yamakoshi¹, Atsushi Yamamoto², Yasushi Yumimaka³, Naoki Sunaguchi¹ ¹Grad. School of Science and Technology, Gunma University, Kiryu, Japan, ²Department of Orthopaedic Surgery, Graduate School of Medicine, Gunma University, Maebashi, Japan</p>	<p>P1B2-3 Nonlinear Acoustic Properties Characterization of Nano Size Gas Vesicles</p> <p>Yaohong Yang¹, Yongmin Huang¹, Zhihai Qiu¹, Cheng Liu¹, Jiyun Dai¹, Lei Sun¹ ¹Interdisciplinary Division of Biomedical Engineering, The Hong Kong Polytechnic University, Hong Kong, ²Department of Applied Physics, The Hong Kong Polytechnic University, Hong Kong</p>	<p>P1B3-3 Tracking quality in plane-wave versus conventional cardiac ultrasound: a preliminary evaluation in-silico based on a state of the art simulation pipeline</p> <p>Martino Alessandrini¹, Brecht Heyde¹, Ling Tong^{1,2}, Olivier Bernard³, Jan Dhoooge¹ ¹Cardiovascular Imaging and Dynamics, KU Leuven, Leuven, Belgium, ²Center for Biomedical Imaging Research, Dept. of Biomedical Engineering, Tsinghua University, China, People's Republic of, ³CNRS UMR 5220: INSERM U1044; Université Lyon 1; INSA Lyon, Lyon, France</p>	<p>P1B4-3 Photoacoustic imaging of human inflammatory arthritis</p> <p>Xueding Wang¹, Jangsun Jo², Guan Xu³, Sheeja Francis⁴, April Marquardt¹, Jie Yuan⁴, Candikota Girish¹ ¹Biomedical Engineering, University of Michigan, Ann Arbor, Michigan, USA, ²Radiology, University of Michigan, USA, ³University of Michigan, USA, ⁴Nanjing University, USA</p>	<p>Session P1B5. MTH: Ultrasound-Mediated Agent Delivery</p> <p>Chair: John Hossack Univ. of Virginia</p>

FRIDAY POSTER

<p>8:00 am - 5:00 pm</p>	<p>P1B5-1 PET and fluorescence imaging demonstrate nanoparticle delivery and accumulation in a mouse breast tumor model using microbubbles-mediated ultrasound treatment</p> <p>Josquin Foiret¹, Hua Zhang¹, Lisa M. Mahakian¹, Sara M. Tam¹, Jai Woong Seo¹, Katherine W. Ferrara¹</p> <p>¹Department of Biomedical Engineering, University of California, Davis, USA</p>	<p>Session P1B6 MTC: Soft Tissue Characterization</p> <p>Chair: Lori Bridal Univ. Pierre and Marie Curie</p>	<p>P1B6-8 Feasibility of acoustic evaluation of thermal lesions at bone-soft tissue interface of an ex vivo bovine bone exposed to high-intensity focused ultrasound</p> <p>Siyuan Zhang¹, Zhiwei Cui¹, Lei Zhang¹, Xingguang Zhu¹, Tianqi Xu¹, Supin Wang¹, Mingxi Wan¹</p> <p>¹Department of Biomedical Engineering, Xi'an Jiaotong University, Xi'an, China, People's Republic of</p>	<p>Session P1B7 MBF: Flow Estimation Strategies: From 1D to 3D</p> <p>Chair: Jørgen Jensen Technical University of Denmark</p>	<p>P1B7-8 In-vivo High Dynamic Range Vector Flow Imaging</p> <p>Carlo Armando Villagómez Hoyos¹, Matthias Bo Stuart¹, Jørgen Arendt Jensen¹</p> <p>¹Technical University of Denmark, Denmark</p>
<p>P1B5-2 Feasibility of Ultrasound Assisted Drug Delivery (UADD) via Noninvasive High Frequency Intense Therapy Ultrasound</p> <p>Michael Shayton¹, Paul Jaeger²</p> <p>¹Guided Therapy Systems, Mesa, AZ, USA, ²Ardent Sound, Inc., Mesa, AZ, USA</p>	<p>P1B6-1 Evaluation of ultrasound B-mode images of liver fibrosis using fibrotic probability image based on multi-Rayleigh model</p> <p>Shohet Mori¹, Shimosuke Hirata¹, Tadaashi Yamaguchi², Hiroyuki Hachiyu¹</p> <p>¹Tokyo Institute of Technology, Tokyo, Japan, ²Chiba University, Chiba, Japan</p>	<p>P1B6-9 High-Resolution Strain and Strain Rate Imaging of Adult Zebrafish Myocardium</p> <p>Chen Ho-Chiang¹, Chih-Chung Huang¹</p> <p>¹Department of Biomedical Engineering, National Cheng Kung University, Taiwan</p>	<p>P1B7-9 3-D Vector Flow Estimation with Row-Column Addressed Arrays</p> <p>Simon Holbek¹, Thomas Lehmann Christiansen², Morten Fischer Rasmussen², Matthias Bo Stuart¹, Erik Vilain Thomsen¹, Jørgen Arendt Jensen¹</p> <p>¹Department of Electrical Engineering, Technical University of Denmark, Lyngby, Denmark, ²Department of Micro- and Nanotechnology, Technical University of Denmark, Lyngby, Denmark</p>	<p>P1B7-1 Real-time pulse compression in multigate spectral Doppler imaging</p> <p>Alessandro Ramalho¹, Alessandro Dallal¹, Enrico Boni¹, Francesco Guidi¹, Stefano Ricci¹, Piero Tortoli¹</p> <p>¹Information Engineering Department, University of Florence, Florence, Italy</p>	<p>P1B7-10 Velocity vector in three dimensions using a high-frame-rate dual-array setup</p> <p>Pieter Kruijzinga^{1,2}, Hendrik J Vos^{1,2}, Johannes G Bosch¹, Antonius FW van der Steen^{1,2}, Nico de Jong^{1,2}</p> <p>¹Thorax Center - Biomedical Engineering, Erasmus Medical Center, Rotterdam, Netherlands, ²Faculty of Applied Sciences - Acoustical Wavefield Imaging, Delft University of Technology, Delft, Netherlands</p>
<p>P1B5-3 Efficient generation of reactive oxygen species sonochemically generated by cavitation bubbles</p> <p>Jun Yasuda¹, Shin Yoshizawa¹, Shin-ichiro Umemura¹</p> <p>¹Department of Communications Engineering, Tohoku Univ., Sendai, Japan, ²Department of Biomedical Engineering, Tohoku Univ., Sendai, Japan</p>	<p>P1B6-10 Relation between Speed of Sound Measured by Using Ultrasound and Magnetic Resonance Images and Elasticity in Tissue-Engineered Cartilage</p> <p>Narutaka Nitta¹, Masaki Misawa¹, Koji Hyodo¹, Yoshio Shrasaki¹, Kazuhiko Hayashi¹, Kazuhito Homma¹, Tomokazu Numano²</p> <p>¹National Institute of Advanced Industrial Science and Technology (AIST), Japan, ²Tokyo Metropolitan University, Japan</p>	<p>P1B6-11 Activation of Mechanosensitive Transcription Factors in murine C2C12 myoblasts by Focused Low-Intensity Pulsed Ultrasound (FLIPUS).</p> <p>Regina Puts¹, Paul Rikker², Karen Ruschke², Soyoung Hwang³, Petra Knaus², Kay Raam¹</p> <p>¹Berlin-Brandenburg School for Regenerative Therapies, Charité University, Freie Universität Berlin, Berlin, Germany, ²Biochemistry, Freie Universität Berlin, Berlin, Germany, ³Department of Biotechnology, Technische Universität Berlin, Berlin, Germany</p>	<p>P1B7-11 3D Ultrafast Vector Doppler Imaging for in vivo Complex Flow Quantification</p> <p>Mafalda Correia¹, Jean Provost¹, Mickaël Tamer¹, Mathieu Pernot¹</p> <p>¹Insitut Langevin, ESPCI ParisTech, CNRS UMR 7387, INSEMER 0979, Université Paris 7, Paris, France</p>	<p>P1B7-2 A robust spectral envelope detection algorithm for automated blood flow measurements</p> <p>Aditi Kathpalia^{1,2}, Yücel Karabiyik², Bente Simensen³, Eva Tegnander^{3,4}, Sturla Erik-Nes^{3,4}, Hans Torp², Ingvald Kinn Ekdoll^{2,5}, Gabriel Kiss²</p> <p>¹School of Biomedical Engineering, Indian Institute of Technology (BHU), Varanasi, India, ²Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway, ³National Center for Petal Medicine (NCFM), St. Olavs Hospital, Trondheim, Norway, ⁴Department of Laboratory Medicine, Children's and Women's Health (LBK), NTNU, Trondheim, Norway, ⁵St. Olavs Hospital, Trondheim, Norway</p>	
<p>P1B5-4 Uptake and Cellular Recovery Mechanisms in Microbubble-enhanced Ultrasound Delivery of Nanoparticles for Cancer Therapy</p> <p>Lee Terrov¹, Maria De Scirilli^{1,2}, Julien Reboud¹, Catherine Berry³, Helen Mitvava¹</p> <p>¹School of Engineering, University of Glasgow, Glasgow, United Kingdom, ²Department of Mechanical and Aerospace Engineering, Politecnico di Torino, Turin, Piedmont, Italy, ³Centre for Cell Engineering, University of Glasgow, Glasgow, United Kingdom</p>	<p>P1B6-3 Correcting the influence of tissue attenuation on Nakagami distribution shape parameter estimation</p> <p>Michal Byra¹, Andrzej Nowicki¹, Hanna Piotrkowska-Wroblewska¹, Katarzyna Dobruch-Sobczak^{1,2}, Jerzy Litniewski¹</p> <p>¹Ultrasound Department, Institute of Fundamental Technological Research, PAS, Warsaw, Poland, ²Maria Skłodowska-Curie Memorial Cancer Centre and Institute of Oncology, Poland</p>	<p>P1B6-11 Contrast-based Transient Flow Vector Distribution in Arterial Stenosis Imaging and Modified Optical Flow Method</p> <p>Diyu Wang¹, Bowen Jing¹, Jinjin Wan¹, Yingjie Jia¹, Yu Zhang¹, Mingxi Wan¹</p> <p>¹The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi, China, People's Republic of</p>	<p>P1B7-11 Contrast-based Transient Flow Vector Distribution in Arterial Stenosis Imaging and Modified Optical Flow Method</p> <p>Diyu Wang¹, Bowen Jing¹, Jinjin Wan¹, Yingjie Jia¹, Yu Zhang¹, Mingxi Wan¹</p> <p>¹The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi, China, People's Republic of</p>	<p>P1B7-11 Contrast-based Transient Flow Vector Distribution in Arterial Stenosis Imaging and Modified Optical Flow Method</p> <p>Diyu Wang¹, Bowen Jing¹, Jinjin Wan¹, Yingjie Jia¹, Yu Zhang¹, Mingxi Wan¹</p> <p>¹The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi, China, People's Republic of</p>	

<p>P1B5-5 Enhanced transdermal drug delivery with low frequency, low intensity (20 kHz, 100 mW/cm²) ultrasound exposure: In vivo feasibility study</p> <p>Gadi Cohen¹, Hiba Natsheh¹, Philip Lazarovici¹, Elka Touitou¹, Christopher Bawiec², Youhan Sunny², Melissa A. Lerman³, Michael Neidrauer², Leonard Zubkov⁴, W. Andrew Berger⁵, Peter A. Lewin²</p> <p>¹Hebrew University, Jerusalem, Israel, ²Drexel University, USA, ³Children's Hospital of Pennsylvania, USA, ⁴University of Scranton, USA</p>	<p>P1B6-4 Variation of longitudinal strain along the arterial wall adjacent to the asymptomatic carotid plaque</p> <p>Spyretta Golemati¹, Symeon Lehareas¹, Amilia Gastounioti², Konstantina Nikita², Achilles Chatzioannou¹, Despina Perrea¹</p> <p>¹Medical School, National Kapodistrian University of Athens, Athens, Greece, ²Electrical and Computer Engineering, National Technical University of Athens, Athens, Greece</p>	<p>P1B6-12 The measurement of acoustic impedance of the cells cultured with five kinds of the fatty acid</p> <p>Kazuyo Ito¹, Kenji Yoshida², So Ire¹, Jonathan Mamou³, Hitoshi Maruyama⁴, Tadashi Yamaguchi²</p> <p>¹Graduate School of Engineering, Chiba University, Chiba, Japan, ²Center for Frontier Medical Engineering, Chiba University, Chiba, Japan, ³Lizzi Center for Biomedical Engineering, Riverside Research, New York, NY, USA, ⁴Graduate School of Medicine, Chiba University, Chiba, Japan</p>	<p>P1B7-4 Robust blood velocity estimation using point-spread-function-based beamforming and multi-step speckle tracking</p> <p>Anne E.C.M. Sarti¹, Maartje M. Nillesen¹, Sten Fokkes¹, Hendrik H.G. Hansen¹, Chris L. de Kort¹</p> <p>¹Medical Ultrasound Imaging Center (MUSIC), Department of Radiology and Nuclear Medicine, Radboud university medical center, Nijmegen, Netherlands</p>	<p>P1B7-12 High frame rate 3D blood speckle tracking of intracardiac flows</p> <p>Morten Wigen¹, Jakob Hogenes¹, Joris van Cauwenberge², Sten Roar Snaare², Patrick Segers², Solveig Fadnes¹, Abigail Swillens², Lasse Lovstakken¹</p> <p>¹Norwegian University of Science and Technology, Norway, ²Ghent University, Belgium, ³University of Oslo, Norway</p>
<p>P1B5-6 Echogenic liposome as a carrier of siRNA for sonoporation: an alternative microbubble for sonoporation</p> <p>Jingxun Park¹, Donghee Park², Uncheul Shin¹, Jungwoo Son¹, Inho Kim¹, Ohnam Cha¹, Yunsun Lee¹, Sangwoo Lee¹, Chul-woo Kim², Jongbum Seo¹</p> <p>¹Department of Biomedical engineering, Univ. Yonsei, Wonju, Gangwon, Korea, Republic of, ²Seoul National University College of Medicine, Korea, Republic of</p>	<p>P1B6-5 Assessment of Transmural Myocardial Orientation Using Nakagami Imaging in a Phased Array Configuration</p> <p>Xue Yu¹, Wei-Ning Lee^{1,2}</p> <p>¹Electrical and Electronic Engineering, University of Hong Kong, Hong Kong, ²Medical Engineering Programme, University of Hong Kong, Hong Kong</p>	<p>P1B6-13 Correction of scatterer-diameter and acoustic-concentration estimates in saturated high-frequency ultrasound signals acquired from cancerous human lymph nodes</p> <p>Kazuki Tamura¹, Jonathan Mamou², Alain Coron³, Kenji Yoshida⁴, Tadashi Yamaguchi¹, Ernest Feleppa⁵</p> <p>¹Graduate School of Engineering, Chiba University, Japan, ²Lizzi Center for Biomedical Engineering, Riverside Research, USA, ³Laboratoire UPMC Univ Paris 06, CNRS, INSERM, France, ⁴Center for Frontier Medical Engineering, Chiba University, Japan</p>	<p>P1B7-5 Two Dimensional Blood Velocity Estimation Using High Frame Rate Echocardiography with Transverse Oscillation Approach</p> <p>Himki Takahashi¹, Hideyuki Hasegawa¹</p> <p>¹Graduate School of Science and Engineering for Research, University of Toyama, Toyama-shi, Toyama, Japan</p>	<p>Session P1B8. MSD: Implementation of Novel Ultrasound Methods</p> <p><i>Chair: Massimo Mischi</i> Eindhoven University of Technology</p>
<p>P1B5-7 Passive delivery of liposomes with different sizes to the mouse brain after blood brain barrier opening induced by focused ultrasound with microbubbles</p> <p>Jinxuan Guo¹, Gaoshu Chen¹, Jian Chen², Chien Ting Chin³, Yanyan Suo⁴, Yanyuan Shen¹</p> <p>¹Department of Biomedical Engineering, Shenzhen University, Shenzhen, Guangdong, China, People's Republic of, ²School of pharmacy, Shanghai Jiaotong University, Shanghai, China, People's Republic of, ³Shenzhen Entry-Exit Inspection and Quarantine Bureau, Shenzhen, China, People's Republic of</p>	<p>P1B6-6 Experimental estimation of effective scatterer diameters from physical phantoms using autoregressive spectral analysis</p> <p>Julius Diestra¹, Roberto Lavarcello¹</p> <p>¹Departamento de Ingeniería, Pontificia Universidad Católica del Perú, San Miguel, Lima, Peru</p>	<p>P1B6-14 A New Tissue-mimicking Material for Phantoms</p> <p>Kazuishi Sato¹, Tomoji Yoshida¹, Toshio Kondo¹, Masahiko Taniguchi², Kazuhito Yasukawa²</p> <p>¹Tokushima Bunri University, Yamakita, Kagawa, Japan, ²Takiron Co., Ltd., Kobe, Japan</p>	<p>P1B7-6 High Frame Rate Vector Velocity Estimation using Plane Waves and Transverse Oscillation</p> <p>Jonas Jensen¹, Matthias Bo Stuaert¹, Jorgen Arendt Jensen¹</p> <p>¹Dept. of Elect. Eng. Technical University of Denmark, Kgs. Lyngby, Denmark</p>	<p>P1B8-1 Real-time dynamic scheduling based adaptive ultrasound sequence programming for research and rapid prototyping</p> <p>Richard Tobias¹, Gary Yi Hou¹, Ashish Parikh¹</p> <p>¹Cephasonics, Santa Clara, California, USA</p>
<p>P1B5-8 The study of targeted delivery of microbubbles binding GDNF through the blood-brain barrier by MRI-guided focused ultrasound on treatment of addiction</p> <p>Feng Wang¹, Xiaojian Jia², Yu Shi³, Li Liu³, Azhen Hu⁴, Yun Chen⁵</p> <p>¹Biomedical Research Institute, Shenzhen PKU-HKUST Medical Center, China, People's Republic of, ²Biomedical Research Institute, Shenzhen PKU-HKUST Medical Center, China, People's Republic of, ³Department of Ultrasound, Peking University Shenzhen Hospital, China, People's Republic of</p>	<p>P1B6-7 A Technique for Mapping Shear Wave Velocity and Attenuation from the Two-Dimensional Fourier Space</p> <p>Ivan Nenadic¹, Bo Qiang¹, Matthew Urban¹, James Greenleaf¹</p> <p>¹Mayo Clinic, USA</p>	<p>P1B6-15 Differentiation of normal tissue and tissue lesions using statistical properties of backscattered ultrasound in breast</p> <p>Andrzej Nowicki¹, Hanna Piotrkowska-Wroblewska¹, Katarzyna Dobuch-Sobczak², Jerzy Litniewski¹, Barbara Gambin¹, Michal Byra¹, Eleonora Kruglank¹</p> <p>¹Ultrasound, Institute of Fundamental Technological Research, Warsaw, Poland, ²Maria Sklodowska-Curie Memorial, Cancer Center and Institute of Oncology, Warsaw, Poland</p>	<p>P1B7-7 Multi-angle imaging for robust vector Doppler and coherent compounding</p> <p>Ingvald Kinn Ekroll^{1,2}, Jorgen Avdal¹, Abigail Swillens¹, Hans Torp¹, Lasse Lovstakken¹</p> <p>¹Norwegian University of Science and Technology, Norway, ²St Olav's Hospital, Norway, ³Ghent University, Belgium</p>	<p>P1B8-2 Newton's Method based Self Calibration for a 3D Ultrasound Tomography System</p> <p>Wei Yap Tan¹, Till Steiner², Nicole Ruitter¹</p> <p>¹Institute for Data Processing and Electronics, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany, ²Pepper + Fuchs GmbH, Mannheim, Germany</p>

FRIDAY POSTER

8:00 am - 5:00 pm

Poster --- Friday, October 23, 2015

4th floor

<p>P1B8-3 A Study of the Driving Circuit for Array Transducer Considering the Impedance Properties Hayato JIMBO¹, Kota GOTO¹, Shin YOSHIZAWA¹, Shimichiro UMEMURA¹ ¹Tohoku university, Sendai, Miyagi, Japan</p>	<p>Session P2B1. Signal Processing NDE Methods Chair: Erdal Oruklu Illinois Institute of Technology</p>	<p>Session P2B2. Wave Propagation Modeling Chair: Walter Arnold Surrey University</p>	<p>P3B1-2 Controllable generation of acoustical vortices with sparse sources Haixiang Zheng¹, Qingyu Ma¹, Dong Zhang² ¹School of Physics and Technology, Nanjing Normal University, Nanjing, Jiangsu, China, ²People's Republic of ²Institute of Acoustics, Nanjing University, Nanjing, Jiangsu, China, ²People's Republic of</p>	<p>P3B2-5 Design and characterization of 3D printed phononic crystals for sub-MHz ultrasound manipulation Stefano Laureti^{1,2}, Omololu Akamji¹, Lee Davis¹, Marco Ricci¹, Simon Leigh¹, David Hutchins¹ ¹University of Warwick, United Kingdom, ²Università degli studi di Perugia, Italy</p>
<p>P1B8-4 Method for Generating Cell Aggregates using Ultrasonic Standing Wave Trapping in a Disposable Capsule Yuta Kurashina¹, Kenjiro Takemura¹, Shogo Miyata¹, James Friend² ¹Mechanical Engineering, Keio University, Yokohama, Kanagawa, Japan, ²Mechanical and Aerospace Engineering, University of California-San Diego, San Diego, California, USA</p>	<p>P2B1-1 A pulse compression procedure for the measurement and characterization of Non-linear systems based on Exponential Chirp signals. Pietro Burrascano¹, Stefano Laureti^{1,2}, David Hutchins², Marco Ricci¹, Luca Senni¹ ¹Department of Engineering, Università degli studi di Perugia, Polo Scientifico Didattico di Terni, Italy, ²University of Warwick, United Kingdom</p>	<p>P2B2-1 Acoustic Imaging of the Circular Wedge-like Acoustic Waveguides Tai-Ho Yu¹ ¹National United University, Taiwan</p>	<p>P3B1-3 Transverse Manipulation of Microbubbles using Acoustic-Vortex Tweezers Wei Chen Lo¹, Shih Tsung Kang¹, Chih Kuang Yeh¹ ¹Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan</p>	<p>P3B2-6 Anchor loss reduction of quartz resonators utilizing phononic crystals Yung-Yu Chen¹, Yan-Ruei Lin¹, Tsung-Tsong Wu², Shih-Yung Pao³ ¹Department of Mechanical Engineering, Tatung University, Taiwan, ²Institute of Applied Mechanics, National Taiwan University, Taiwan, ³YXC Corporation, Taiwan</p>
<p>P1B8-5 Cell manipulation by using natural vibration of a cell culture substrate Chikahiro Imashiro¹, Yuta Kurashina¹, Kenjiro Takemura¹, Shogo Miyata¹, Jun Komoto¹ ¹Mechanical engineering, Keio University, Yokohama, Kanagawa, Japan</p>	<p>P2B1-2 Visualization of Defects in Steel Billet using Back Propagation of Scattered Waves Koichi Kakuma¹, Koichi Mizutani², Naoto Wakatsuki² ¹College of Engineering Systems, School of Science and Engineering, University of Tsukuba, Tsukuba, Ibaraki, Japan, ²Faculty of Engineering, Information and Systems, University of Tsukuba, Tsukuba, Ibaraki, Japan</p>	<p>P2B2-2 Hybrid MM-MOC-based Numerical Simulation of Acoustic Wave Propagation with Non-uniform Grid and Perfectly Matched Layer Absorbing Boundaries Yuta Matsumura¹, Kan Okubo¹, Norito Tagawa¹, Takao Tsuchiya², Takashi Ishizuka³ ¹Tokyo Metropolitan University, Japan, ²Doshisha University, Japan, ³Shimizu Corporation, Japan</p>	<p>P3B1-4 Spatial selective trapping of microparticles using a quasi-periodic phononic crystal plate Chen Wang^{1,2}, Feiyang Cai², Li Fei², Long Meng², Yan Kan³, Hairong Zheng² ¹Sino-Dutch Biomedical and Information Engineering, Northeastern University, China, ²People's Republic of, ³Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, ³People's Republic of</p>	<p>P3B2-7 Lowering diffraction of surface acoustic waves by phononic crystals Jia-Hong Sun¹, Yuan-Hai Yu¹ ¹Department of Mechanical Engineering, Chang Gung University, Tao-Yuan, Taiwan</p>
<p>P1B8-6 A Real-time Realization of the Automatic B-mode Image Optimization on a Smart Mobile Device for Point-of-Care Ultrasound Imaging JeeHoo Kim¹, Kwanghyun Park¹, Ilseob Song¹, Yangmo Yoo^{1,2} ¹Electronic Engineering, Sogang University, Seoul, Korea, ²Republic of, ²Interdisciplinary Program of Integrated Biotechnology, Sogang University, Korea, ²Republic of</p>	<p>P2B1-3 Feature extraction for robust impact damage classification of CFRP plates using ultrasonic signals Juan M. Soto¹, Antonio M. Pemaado¹, Ángel M. Gómez¹, Nicolás Bochad¹ ¹Teoría de la Señal, Telemática y Comunicaciones, University of Granada, Granada, Spain</p>	<p>P2B2-3 Backward guided modes with double zero-group-velocity points in liquid-filled pipes Weijun Lin¹, Hanyin Cui¹ ¹State Key Laboratory of Acoustics, Institute of Acoustics, Chinese Academy of Sciences, Beijing, China, ²China, ²People's Republic of</p>	<p>Session P3B2. Phononics II Chair: Anne Bemassau Heriot-Watt University</p>	<p>Session P4B1. Acoustic Simulation & Modeling Chair: Karl Wagner TDK Corporation</p>

<p>P1B8-7 Speed-up of acoustic simulation techniques for 2D sparse array optimization by simulated annealing</p> <p>Emmanuel Roux^{1,2}, Alessandro Ramalli², Pietro Tonoli², Christian Cauchard¹, Marc Robini¹, Hervé Liebgott¹ ¹CNRS/UMR 5220, INSERM U1044, Université Claude Bernard Lyon 1, INSU-Lyon, Villeurbanne, France, ²Ingenieria dell'informazione, Università degli studi di Firenze, Firenze, Italy</p>	<p>P2B1-4 Ultrasonic Chirplet Echo Parameter Estimation using Time-Frequency Distributions</p> <p>Pramod Govindan¹, Alireza Kasaeifard¹, Jafar Sanjic¹ ¹Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, Illinois, USA</p>	<p>P2B2-4 An Optimized Guided Waves' Focus Method to Eliminate the Effect of Dispersion: Theoretical and Experimental Research</p> <p>Fuli Xie¹, Shouguo Yan¹, Mingfei Cui¹, Han Dong¹, Bixing Zhang¹, Junjie Gong¹ ¹State Key Laboratory of Acoustics, Institute of Acoustics, Chinese Academy of Sciences, Beijing, China, People's Republic of</p>	<p>P3B2-1 Coupling and quality factor estimation of pillar resonators on a surface</p> <p>Vincent Laude¹, Lyes Djouml¹, Sarah Benhabane¹ ¹EMTO-ST / CNRS, Besancon, France</p>	<p>P4B1-1 Numerical-analytical calculation of the maximum excitation current of precision quartz resonators.</p> <p>Alexandr Lepetaev¹, Anatoly Kosykh¹ ¹Radioelectronic, Omsk State Technical University, Omsk, Russian Federation</p>
<p>P1B8-8 Development of an Acoustic Based Sensing System for Medical Ultrasound Image Simulator</p> <p>Bo-Heng Chen¹, Kai-Sheng Heist¹, Chih-Chung Huang¹ ¹Department of Biomedical Engineering, National Cheng Kung University, Taiwan; ²Kaohsiung Chang Geng Memorial Hospital, Taiwan</p>	<p>P2B1-5 Sparse Deconvolution of Ultrasound NDE Echoes Accounting for Pulse Variance</p> <p>Ramazan Demiri¹, Pramod Govindan², Jafar Sanjic² ¹Center for Advanced Communications, Villanova University, Villanova, Pennsylvania, USA, ²Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, Illinois, USA</p>	<p>P2B2-5 Anomalous dispersion of Stoneley waves in fluid-filled boreholes</p> <p>Weijun Lin¹, Hanyin Cui¹ ¹State Key Laboratory of Acoustics, Institute of Acoustics, Chinese Academy of Sciences, Beijing, China, China, People's Republic of</p>	<p>P3B2-2 Focalization of surface acoustic waves through a gradient index lens</p> <p>Bernard Bonello¹, Jinfeng Zhao², Olga Boyko² ¹INSP, CNRS / Paris University, Paris, France, ²INSP, Paris University, Paris, France</p>	<p>P4B1-2 Optimization of Modified Hammersinger Cell Geometry for the Design of High Performance SAW Filters</p> <p>Pierre Dufille¹, Pascal Ventura², Frederic Hecht³ ¹Phonon Corp, Simsbury, CT, USA, ²Laboratoire LEM3, Université de Lorraine, Metz, France, ³Laboratoire Jacques Louis Lions, Université Pierre et Marie Curie, Paris, France, Metropolitan</p>
<p>P1B8-9 A New 2D Shear Wave Imaging System for Ultrasound Elastography</p> <p>Weibao Qiu¹, Congzhi Wang¹, Yang Xiao¹, Ming Qian¹, Hairong Zheng¹ ¹Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, People's Republic of</p>	<p>P2B1-6 Singular spectrum analysis for trend extraction in ultrasonic backscattered echoes</p> <p>Yuteng Lu¹, Jafar Sanjic² ¹Electrical and Computer Engineering, Bradley University, Peoria, USA, ²Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, USA</p>	<p>Session P3B1. Acoustic Tweezers and Particle Manipulation II</p> <p>Chair: Anne Bernassau Heriot-Watt University</p>	<p>P3B2-3 Molecular dynamics simulation of nonlinear waves in granular media</p> <p>Jia Yang¹, David Hutchins¹, Lolu Akanji¹, Peter Thomas¹, Lee Davis¹, Steven Freear², Sevan Harput³, Nader Saffari³, Pierre Gelat³ ¹School of Engineering, The University of Warwick, Coventry, West Midlands, United Kingdom, ²The University of Leeds, United Kingdom, ³University College London, United Kingdom</p>	<p>P4B1-3 Temperature compensation of the AIN Lamb Wave Resonators utilizing the S1 mode</p> <p>Jie Zou¹, Albert P. Pisano² ¹Mechanical Engineering, University of California, Berkeley, CA, USA, ²University of California, San Diego, CA, USA</p>
<p>P1B8-10 Assessment of the performance of an ultrasonic biopsy needle</p> <p>Andrew Mathieson¹, Robert Wallace², Rebecca Cleary¹, Hamish Simpson², Margaret Lucas¹ ¹School of Engineering, University of Glasgow, United Kingdom, ²School of Clinical Sciences, University of Edinburgh, United Kingdom</p>	<p>P2B1-7 Fast total focusing method for ultrasonic imaging</p> <p>Ewen Carereff¹, Dominique Braconnier¹, Gavin Dao² ¹The phased array company, West Chester, Ohio, USA, ²AOS NDT, Cincinnati, Ohio, USA</p>	<p>P3B1-1 Tangential Streaming Analysis on Ultrasonically Levitated Droplet through the Boundary Layer Approximation with Moving Particle Semi-implicit and Distributed Point Source Method</p> <p>Yuji Wada¹, Kohei Yuge¹, Hiroki Tanaka², Kentaro Nakamura² ¹Faculty of Science and Technology, Seikei University, Musashino, Japan, ²Precision and Intelligence Laboratory, Tokyo Institute of Technology, Yokohama, Japan</p>	<p>P3B2-4 Effect of periodic patterned ZnO sensing film on a CO SAW resonator sensor</p> <p>Tsung-Tsong Wu¹, Jia-Wei Luo¹, Lu-Chung Kuo¹ ¹Institute of Applied Mechanics, National Taiwan University, Taiwan</p>	<p>P4B1-4 Thin Plate Model for Transverse Mode Analysis of Surface Acoustic Wave Devices</p> <p>Gongbin Tang^{1,2}, Tao Han¹, Jing Chen¹, Tatsuya Omori¹, Ken-ya Hashimoto¹ ¹School of Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, Shanghai, Shanghai, China, People's Republic of, ²Graduate School of Engineering, Chiba University, Chiba, Chiba, Japan</p>

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FRIDAY POSTER

8:00 am - 5:00 pm	Poster --- Friday, October 23, 2015		4th floor
<p>P4B1-5 Simulation of First Shear Horizontal Mode Plate Wave in LiNbO₃ Showing 20 km/s Phase Velocity</p> <p>Michio Kadota¹, Shuji Tanaka¹, Tetsuya Kimura² ¹Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan; ²Telecommunication Division, Murata Manufacturing Co. Ltd., Yasu, Shiga, Japan</p>	<p>P5B1-1 Accurate performance evaluation of high frequency CMUT arrays using a nonlinear model</p> <p>Evren F. Arkan¹, Sarp Satir¹, F. Levent Degertekin¹ ¹G.W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA</p>	<p>P5B1-9 Performance comparison of acoustic lens materials for Capacitive Micromachined Ultrasonic Transducers: simulation study</p> <p>Jin Ho Chang^{1,2}, Sung Ho Kim¹ ¹Interdisciplinary Program of Integrated Biotechnology, Sogang University, Seoul, Korea, Republic of ²Electronic Engineering, Sogang University, Seoul, Korea, Republic of</p>	
<p>Session P4B2. Sensors & Applications II</p> <p><i>Chair: Natalya Naumenko</i> National University of Science and Technology</p>	<p>P5B1-2 Mutual Radiation Impedance for Modeling of Multi-Frequency CMUT Arrays</p> <p>Mohammad Maadi¹, Ryan Chee¹, Roger Zemp¹ ¹Electrical and Computer Engineering, University of Alberta, Edmonton, Alberta, Canada</p>	<p>P5B1-10 Comparison of Simulation Models for Electrical Characteristics of CMUT</p> <p>Markus Klemm¹, Anartz Unamuno¹ ¹Fraunhofer IPMS, Germany</p>	
<p>P4B2-1 Measurement of vibrating frequency of a cantilever using low frequency impedance-loaded SAW sensor</p> <p>Hitomitsu Hamashima¹, Jun Kondoh¹ ¹Shizuoka University, Hamamatsu-shi, Japan</p>	<p>P5B1-3 Electrical Impedance Matching of CMUT Cells</p> <p>Mohammad Maadi¹, Roger Zemp¹ ¹Electrical and Computer Engineering, University of Alberta, Edmonton, Alberta, Canada</p>	<p>Session P5B2. Applications of CMUTs</p> <p><i>Chair: Michael Fink</i> Friedrich-Alexander-Universität Erlangen-Nuremberg</p>	
<p>P4B2-2 Continuous Temperature Monitoring Algorithm for SAW Sensors</p> <p>Mykhaylo Yudytskiy^{1,2}, René Fachberger¹ ¹sensidea GmbH, Wels, Austria, ²Johann Radon Institute for Computational and Applied Mathematics (RICAM), Linz, Austria</p>	<p>P5B1-4 Nonlinear Model with Lumped Parameters for Asymmetric CMUTs</p> <p>Carlos Gerardo¹, Edmond Cretu¹, Robert Rohling¹ ¹Electrical and Computer Engineering, University of British Columbia, Vancouver, British Columbia, Canada</p>	<p>P5B2-1 cMUT technology applied to galvanic isolation : theory and experiments</p> <p>Jacques Heller¹, Audren Boulmé¹, Daniel Alquier¹, Sophie Ngo¹, Marie Perroteau¹, Dominique Certon¹ ¹UMR CNRS 7347 - GREMAN, Université François Rabelais, TOURS, France</p>	

<p>P4B2-3 Sensitivity improvement of a room-temperature SAW methane sensor incorporating Cryptophane-A film</p> <p>Wen Wang¹, Haoliang Hu¹, Shitang He¹, Yong Pan², Caibong Zhang³, Chuan Dong³ ¹Chinese Academy of Sciences, Institute of Acoustics, Beijing, China, ²People's Republic of, ³Research Institute of Chemical Defense, China, People's Republic of, ⁴Shanxi University, Shanxi, China, People's Republic of</p>	<p>P5B1-5 Efficient driving conditions of CMUT arrays for conventional and harmonic imaging</p> <p>Anders Lei¹, Soren Elmin Diederichsen¹, Mathias Bo Stuart², Jorgen Arendt Jensen¹, Erik Vilain Thomsen¹ ¹Department of Micro- and Nanotechnology, Technical University of Denmark, Denmark, ²Center for Fast Ultrasound Imaging, Department of Electrical Engineering, Technical University of Denmark, Denmark</p>	<p>P5B2-2 On-Chip Piezoelectric Polymer Ultrasonic Transceivers for Point-of-Care Testing</p> <p>Chien-Chong Hong¹, Kuan-Wen Chen¹ ¹Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan</p>		
<p>P4B2-4 Surface Acoustic Wave Accelerometer for High-G Applications</p> <p>Dmitry Lukyanov¹, Sergey Shevchenko¹, Alexander Kukaev¹, Khvrich Maria¹ ¹Laser Measurement and Navigation Systems, St. Petersburg Electrotechnical University, St. Petersburg, Russian Federation</p>	<p>P5B1-6 Optimization of the Backside Structures with Wideband Reflectivity Reduction for a CMUT</p> <p>Akifumi Sako¹, Hiroki Tanaka^{1,2}, Yasuhiro Yoshimura², Masahiro Sato¹, Tatsuya Nagata¹ ¹Hitachi Aloka Medical, Ltd., Japan, ²Hitachi, Ltd., Japan</p>	<p>P5B2-3 CMUT for high sensitivity greenhouse gas sensing</p> <p>Dovydas Barauskas¹, Donatas Pelešis¹, Gvidas Sergalis¹, Gailius Vanagas¹, Marius Mikolajunas¹, Darius Virzomsis¹, Jonas Baltrusaitis² ¹Panevezys Faculty of Technologies and Business, ²Kamias University of Technology, Panevezys, Lithuania, ³Chemical and Biomolecular Engineering, Lehigh University, Bethlehem, USA</p>		
<p>P4B2-5 SAW force sensor based on reflective delay line quasi-mirror topology</p> <p>Ivan Ancev¹, Sergei Bogoslovsky¹, Gemadly Sapozhnikov¹, Sergei Zhigoo¹ ¹Joint Stock Company "NPP "Radar mms", Russian Federation, ²National Research University Moscow Power Engineering Institute, Moscow, Russian Federation</p>	<p>P5B1-7 Nonlinear Lumped Modeling of Large-Scale CMUT TOBE Architectures</p> <p>Christopher Cerroci¹, Ryan Chee¹, Roger Zemp¹ ¹Electrical & Computer Engineering, University of Alberta, Edmonton, Canada</p>			
<p>Session P5B1. CMUT Modeling and Design</p> <p><i>Chair: Michael Fink</i> Friedrich-Alexander-Universität Erlangen-Nuremberg</p>	<p>P5B1-8 Signal-to-Noise-Ratio Optimization For a CMUT based Medical Ultrasound Imaging System</p> <p>Reza Pakdaman Zangabad¹, Ayhan Bozkurt¹, Göksemin Yaratloğlu¹ ¹Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands, ²Electronics Engineering, Sabanci University, Istanbul, Turkey, ³Electronics Engineering, Ozyegin University, Istanbul, Turkey</p>			

FRIDAY POSTER

SATURDAY ORAL

8:00 am - 9:30 am

Oral --- Saturday, October 24, 2015

Session 2H. MBB: Beamforming V CREATIS Chair: Hervé Liebgott		Session 3H. MEL: Methods for Elasticity Imaging Chair: Timothy Hall University of Wisconsin		Session 4H. MTH: Ultrasound-Mediated Agent Delivery Chair: Katherine Ferrara UC Davis		Session 5H. Microfluidics Chair: Pierre Khuri-Yakub Stanford University		Session 1H. MSP: Medical Signal Processing Chair: Svetoslav Nikolov BK Medical		Session 8H. Transducer Applications Chair: Scott Smith GE Global Research	
VIP		201ABC		201DE		103		201F		102	
8:00 am	<p>2H-1 High Frame Rate 3D Tissue Velocity Imaging Using Sub-Aperture Beam Forming</p> <p>Pedro Santos^{1,2}, Lasse Lovsgaarden^{2,3}, Egil Samset⁴, Jan Dhooge^{3,5} ¹Department of Cardiovascular Sciences, KU Leuven, Leuven, Belgium, ²GE Vingmed Ultrasound AS, Horten, Norway, ³Department of Circulation and Medical Imaging, NTNU, Trondheim, Norway, ⁴Center for Cardiological Innovation, Oslo, Norway</p>	<p>3H-1 Measurement of the frequency dependent phase velocity and attenuation from the Fourier description of shear wave propagation: addressing geometric spreading arising from spatially asymmetric Gaussian excitations</p> <p>Ned Rouze¹, Mark Palmer¹, Kathryn Nightingale¹ ¹Biomedical Engineering, Duke University, Durham, North Carolina, USA</p>	<p>4H-1 Ultrasound-triggered and targeted gene delivery by using cationic microbubbles to enhance GDNF gene transfection in a rat Parkinson's disease model</p> <p>Ching-Hsiang Fan¹, Chien-Yu Ting¹, En-Ling Chang¹, Hao-Li Liu², Hong-Lin Chan³, You-Yin Chen¹, Chih-Kuang Yeh¹ ¹Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Taiwan, ²Department of Electrical Engineering, Chang-Gung University, Taiwan, ³Department of Medical Science and Institute of Biostatistics and Structural Biology, National Tsing Hua University, Taiwan, Department of Biomedical Engineering, National Yang Ming University, Taiwan</p>	<p>5H-1 SAW synthesis with inverse filter and IDT Arrays for microfluidic and biological applications: one ring to rule them all</p> <p>Michaël Baudoin¹, Antoine Riaud^{1,2}, Jean-Louis Thomas¹, Adrien Bassoniere¹, Olivier Bou Matar¹ ¹JEMM, University of Lille, EC Lille, CNRS, France, ²INSP, CNRS, Paris, France</p>	<p>4H-2 In situ Activation of Doxorubicin using Ultrasound-Triggered Release of Composite Droplets</p> <p>Marine Bezagu^{1,2}, Stelios Arseniyadis², Olivier Couture³, Fabrice Mond¹, Patrick Labeling¹, Janine Cossy¹, Mickael Tauter¹, Jonathan Clarhaut^{4,5}, Sebastien Papot¹ ¹AMM (ESPICI) CNRS, UPMC, Paris, France, ²LCO (ESPICI) CNRS, UPMC, Paris, France, ³INSERM, Paris, France, ⁴INSERM, Paris, France, ⁵ICAMP (Université de Poitiers, CNRS), Poitiers, France, ⁶CHU Poitiers, Poitiers, France</p>	<p>8H-1 Perpetual-Operation Frequency Response and Equivalent Circuit Modelling of Piezoelectric Ultrasonic Atomizer Devices</p> <p>Xinyi Zhong¹, Sang Lam¹ ¹Department of Electrical & Electronic Engineering, Xian Jiaotong-Liverpool University, Suzhou, Jiangsu Province, China, People's Republic of</p>	<p>1H-2 Monitoring and Delivery of Transcranial Therapies Using Dual-mode Ultrasound Arrays</p> <p>Alyona Haritonova¹, Dalong Liu², Emad Ebbini² ¹Biomedical Engineering, University of Minnesota, Minneapolis, MN, USA, ²Electrical and Computer Engineering, University of Minnesota, USA</p>	<p>8H-2 Sol-Gel Composite Materials for Continuous Monitoring at 550&[deg]C</p> <p>YUSUKE INADA¹, Makiko Kobayashi¹, Hajime Nagata², Tadashi Takenaka² ¹Kumamoto University, Japan, ²Tokyo University of Science, Japan</p>			
8:15 am	<p>2H-2 A 50 MHz Phased Array Beamformer Using a Novel 'One Sample per Pixel' Variable Sampling Technique</p> <p>Christopher Samson¹, Jeff Leadbetter¹, Jeremy Brown¹ ¹Biomedical Engineering, Dalhousie University, Halifax, Nova Scotia, Canada</p>	<p>3H-2 Quantitative poroelastic property imaging combining shear wave and strain elastography</p> <p>Maria Theodorou^{1,2}, Jérémie Fromageau^{1,2}, Nandita deSouza^{2,3}, Jeffrey C. Bamber^{1,2} ¹Joint Department of Physics, Sutton, London, United Kingdom, ²Cancer Research UK Cancer Imaging Centre, Sutton, London, United Kingdom, ³Department of Diagnostic Radiology, Royal Marsden NHS Foundation Trust, Sutton, London, United Kingdom</p>	<p>4H-2 In situ Activation of Doxorubicin using Ultrasound-Triggered Release of Composite Droplets</p> <p>Marine Bezagu^{1,2}, Stelios Arseniyadis², Olivier Couture³, Fabrice Mond¹, Patrick Labeling¹, Janine Cossy¹, Mickael Tauter¹, Jonathan Clarhaut^{4,5}, Sebastien Papot¹ ¹AMM (ESPICI) CNRS, UPMC, Paris, France, ²LCO (ESPICI) CNRS, UPMC, Paris, France, ³INSERM, Paris, France, ⁴INSERM, Paris, France, ⁵ICAMP (Université de Poitiers, CNRS), Poitiers, France, ⁶CHU Poitiers, Poitiers, France</p>	<p>5H-1 SAW synthesis with inverse filter and IDT Arrays for microfluidic and biological applications: one ring to rule them all</p> <p>Michaël Baudoin¹, Antoine Riaud^{1,2}, Jean-Louis Thomas¹, Adrien Bassoniere¹, Olivier Bou Matar¹ ¹JEMM, University of Lille, EC Lille, CNRS, France, ²INSP, CNRS, Paris, France</p>	<p>1H-2 Monitoring and Delivery of Transcranial Therapies Using Dual-mode Ultrasound Arrays</p> <p>Alyona Haritonova¹, Dalong Liu², Emad Ebbini² ¹Biomedical Engineering, University of Minnesota, Minneapolis, MN, USA, ²Electrical and Computer Engineering, University of Minnesota, USA</p>	<p>8H-1 Perpetual-Operation Frequency Response and Equivalent Circuit Modelling of Piezoelectric Ultrasonic Atomizer Devices</p> <p>Xinyi Zhong¹, Sang Lam¹ ¹Department of Electrical & Electronic Engineering, Xian Jiaotong-Liverpool University, Suzhou, Jiangsu Province, China, People's Republic of</p>	<p>8H-2 Sol-Gel Composite Materials for Continuous Monitoring at 550&[deg]C</p> <p>YUSUKE INADA¹, Makiko Kobayashi¹, Hajime Nagata², Tadashi Takenaka² ¹Kumamoto University, Japan, ²Tokyo University of Science, Japan</p>				

<p>8:30 am</p>	<p>2H-3 Busting the ghost in coherent plane-wave imaging Alfonso Rodriguez-Molares¹, Lasse Lovstakken¹, Bastien Denarie², Hans Torp¹ ¹Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway; ²GE Healthcare, Norway</p>	<p>3H-3 3D Elastic Tensor Imaging (ETI): characterization of soft tissues elastic anisotropy Mafalda Correia¹, Jean Provost¹, Clément Papadacci¹, Thomas Defieux¹, Jean-Luc Gennisson¹, Mickaël Tanter¹, Mathieu Pernot¹ ¹Institut Langvin, ESPCI ParisTech, CNRS UMR 7587, INSERM U979, Université Paris 7, Paris, France</p>	<p>4H-3 Red Blood Cells as Therapeutic Ultrasound Agents Johnny Chen¹, Ali Dhamaliwal¹, Justin Farry¹, John Hossack^{1,2}, Alexander Klibanov^{1,2} ¹Department of Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA; ²Robert M. Berne Cardiovascular Research Center, Charlottesville, Virginia, USA</p>	<p>5H-2 Ultrasound Image-based Absolute Concentration Measurement Technique for Materials with Low Scatterer Concentration John H. Lee¹, Javier Jimenez², Xiang Zhang¹, Duane S. Boning¹, Brian W. Anthony¹ ¹Massachusetts Institute of Technology, Cambridge, MA, USA; ²Madrid-MIT M4-Vison Consortium, Massachusetts Institute of Technology, Cambridge, MA, USA</p>	<p>1H-3 Automatic Mouse Embryo Brain Ventricle Segmentation, Gestation Stage Estimation, and Mutant Detection from 3D 40-MHz Ultrasound Data Jen-wei Kuo¹, Yao Wang¹, Orlando Aristizabal^{2,3}, Daniel H. Turnbull¹, Jeffrey A. Kettering², Jonathan Mamou² ¹Electronics and Computer Engineering, Polytechnic School of Engineering, New York University, Brooklyn, USA; ²F. L. Lizzi Center for Biomedical Engineering, Riverside Research, New York, USA; ³Sklarball Institute of Biomolecular Medicine, New York University School of Medicine, New York, USA</p>	<p>8H-3 Ultrasonic biopsy needle based on the class IV flexensional configuration Andrew Mathieson¹, Andrew Tweedie², Andrew Feeney³, Margaret Lucas¹ ¹School of Engineering, University of Glasgow, United Kingdom; ²Wellinger Assoc. Ltd., Glasgow, United Kingdom</p>
<p>8:45 am</p>	<p>2H-4 Coded excitation for crosstalk suppression during multi-line transmit beamforming: a simulation study Ling Tong^{1,2}, Alejandra Ortega³, Jianwen Luo¹, Jan D'hooge² ¹Department of Biomedical Engineering, Tsinghua University, Beijing, Beijing, China; ²People's Republic of Department of Cardiovascular-Sciences, KU Leuven, Leuven, Belgium</p>	<p>3H-4 Vibro-Elastography: Absolute Elasticity from Motorized 3D Ultrasound Measurements of Harmonic Motion Vectors Jeffrey Abeysekera¹, Robert Rohling^{1,2}, Septimiu Salcudean¹ ¹Mechanical Engineering, University of British Columbia, Vancouver, British Columbia, Canada; ²Electrical and Computer Engineering, University of British Columbia, Vancouver, British Columbia, Canada</p>	<p>4H-4 Combining the antiangiogenic drug Sorafenib with the antivascular action of microbubbles for the treatment of hepatocellular carcinoma Nitro Sivapalan¹, Ben Leung¹, David Goertz^{1,2} ¹Sunnybrook Research Institute, Toronto, Ontario, Canada; ²Medical Biophysics, University of Toronto, Canada</p>	<p>5H-3 Particle separation using bulk acoustic waves in a tilted angle microfluidic channel Erin Dauson¹, David Greve², Kelvin Gregory¹, Irving Oppenheim¹, Gregory Healy¹ ¹Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA, USA; ²Department of Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, USA</p>	<p>1H-4 Use of B-splines in fast dynamic ultrasound RF simulations Sigurd Størve¹, Hans Torp¹ ¹Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway</p>	<p>8H-4 Development of Air-Coupled Transducers and Arrays with PMN-32%PT Piezoelectric Crystals Rymantas Jonas Kazys¹, Reimondas Sliiteris¹, Justina Sestokė¹ ¹Ultrasound Institute of Kaunas University of Technology, Lithuania</p>
<p>9:00 am</p>	<p>2H-5 Filtered Spatial Compounding (FSC) in Synthetic Transmit Aperture Imaging Ping Gong¹, Michael C. Kolos¹, Yuan Xu¹ ¹Biomedical Physics, Ryerson University, Toronto, Canada</p>	<p>3H-5 Three-Dimensional Shear Wave Imaging Based on Full-Field Optical-Sectioned Laser Speckle Contrast Imaging Pei-Yu Chao¹, Pai-Chi Li² ¹Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan; ²Electrical Engineering, National Taiwan University, Taipei, Taipei, Taiwan</p>	<p>4H-5 Focused ultrasound facilitated adenoviral delivery for optogenetic stimulation Shutao Wang¹, Amanda Buch¹, Camilo Acosta¹, Olayemi Olumolade¹, Elisa Konoigou^{1,2} ¹Biomedical Engineering, Columbia University, New York, New York, USA; ²Radiology, Columbia University, New York, New York, USA</p>	<p>5H-4 On-chip ultrasonic manipulation of micro-particles using flexural vibration of a glass substrate Ryota Yamamoto^{1,2}, Daisuke Koyama^{2,3}, Mami Matsukawa^{2,3} ¹Faculty of Life and Medical Sciences, Doshisha University, Japan; ²Wave Electronics Research Center, Doshisha University, Japan; ³Faculty of Science and Engineering, Doshisha University, Japan</p>	<p>1H-5 Evaluation of a Huffman Sequence Based Mismatched Filter for the Bandwidth Limited 3D USCT system Shreyank Gupta^{1,2}, Michael Zapf¹, Herbert Krauß², Nicole V. Rüter¹ ¹Institute of Data Processing and Electronics, Karlsruhe Institute of Technology, Germany; ²Electrical Engineering and Information Technology, University of Applied Sciences Dormstadt, Germany</p>	<p>8H-5 Red blood cell manipulation using ultrasound microbeam Kwok Ho Lam¹, Ying Li², Qia Zhou², Kirk K. Shung¹ ¹Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong; ²NH Transducer Resource Center and Department of Biomedical Engineering, University of Southern California, USA</p>
<p>9:15 am</p>	<p>2H-6 Improving lateral resolution in ultrasonic imaging by utilizing nulls in the beam pattern Jonathan Reeg¹, Michael L. Oelze¹ ¹Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, USA</p>	<p>3H-6 A High Frame-rate and Low-cost Elastography System by Generating Shear Waves through Continuous Vibration of the Ultrasound Transducer Daniel C. Malkam¹, Pengfei Song¹, Armando Manduca¹, Matthew W. Urban¹, Randall R. Kinnick¹, James F. Greenleaf¹, Shigao Chen¹ ¹Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, MN, USA</p>	<p>4H-6 Local and targeted delivery of a therapeutic monoclonal antibody in a colorectal cancer model: in-vivo proof of concept Thomas Bami¹, Emilie Dalloneau², Thierry Lescomie^{3,4}, Valérie Gouilleux-Guarré⁵, Nathalie Heuzé-Vourc'h⁶, Ayache Bouakaz⁷ ¹UMR Inserm U930, Université François-Rabelais, TOURS, France; ²Inserm, Centre d'Etude des Pathologies Respiratoires, UMR J100, Université François Rabelais, TOURS, France; ³CNRS, GICC UMR 7292, Université François Rabelais, France; ⁴Service Hépato-Gastro-Onco-Entérologie – CHRU, Tours, France; ⁵CHRU de TOURS, laboratoire d'immunologie, TOURS, France</p>	<p>5H-5 Splitting Drops using Surface Acoustic Waves Sean Collings¹, James Friend¹ ¹Department of Mechanical and Aerospace Engineering, University of California, San Diego, La Jolla, CA, USA</p>	<p>1H-6 Towards Sub-Nyquist Doppler Ultrasound Imaging Using Non-Uniformly Spaced Stream of Pulses Avinoam Bar-Zion¹, Martino Alessandrini², Jan Dhooze², Dan Adam¹, Yonina Eldar³ ¹Department of Biomedical Engineering, Technion - Israel Institute of Technology, Haifa, Israel; ²Cardiovascular Imaging & Dynamics, Department of Cardiovascular Sciences, KU Leuven, Leuven, Belgium; ³Department of Electrical Engineering, Technion - Israel Institute of Technology, Haifa, Israel</p>	<p>8H-6 Design of High-Efficiency, Miniaturized Ultrasonic Receivers for Powering Medical Implants with Reconfigurable Power Levels Ting Chia Chang¹, Marcus Weber¹, Jayant Charthad¹, Amin Nikoozadeh¹, Burut T. Khur-Yakub¹, Amin Arbabian¹ ¹Electrical Engineering, Stanford University, Stanford, CA, USA</p>

SATURDAY ORAL

10:30 am - 12:00 pm		Oral --- Saturday, October 24, 2015		
10:30 am	10:45 am	11:00 am	201ABC	201DE
VIP		201F		
102		103		
<p>Session 2I MIM: Advances in Vascular and Flow Imaging</p> <p><i>Chair:</i> Lasse Lovstakken NTNU</p>	<p>2I-1 Ultrafast vector flow imaging</p> <p>Damien Garcia¹ ¹University of Montreal, Canada</p>	<p>3I-1 Sonic Estimation of Elasticity via Resonance (SEER): Initial Results from a New Method of Assessing Hemostasis</p> <p>William Walker¹, F. Scott Corey² ¹HemoSonic, Charlottesville, Virginia, USA, ²Key Technologies, Inc., Baltimore, Maryland, USA</p>	<p>4I-1 Histotripsy Cardiac Therapy for Non Invasive Chordal Cutting</p> <p>Olivier Villedain¹, Wojciech Kwitewski¹, Justine Robin¹, Bastien Arnal¹, Alain Bel¹, Mickael Tauter¹, Emmanuel Messas², Mathieu Pernot¹ ¹Institut Langevin, France, ²Hopital Européen Georges Pompidou, France</p>	<p>Session 4I MTH: Histotripsy, Shockwaves and Liquefaction</p> <p><i>Chair:</i> Jean-Yves Chapelon INSERM</p>
<p>Session 3I MEL: Towards Clinical Application of Elasticity Imaging</p> <p><i>Chair:</i> Mark Palmeri Duke University</p>	<p>3I-2 Myocardial stiffness assessment in children using Shear Wave Imaging: an in-vitro and in-silico study</p> <p>Annette Caenen¹, Darya Shecherbakova¹, Clement Papadacci², Mathieu Pernot², Patrick Segers³, Abigail Swillens¹ ¹IBTech-bioMMeda, Ghent University, Ghent, Belgium, ²Institut Langevin, ESPCI ParisTech, Paris, France</p>	<p>4I-2 Non-invasive Thrombolysis using Histotripsy beyond the "intrinsic" Threshold (Microtripsy)</p> <p>Xi Zhang¹, Cabe Owens², Hitinder Gurm¹, Yu Ding¹, Charles Cain¹, Zhen Xu¹ ¹Department of Biomedical Engineering, University of Michigan, Ann Arbor, Ann Arbor, USA, ²Department of Pediatrics and Communicable Diseases, University of Michigan, Ann Arbor, Ann Arbor, USA, ³Department of Internal Medicine, University of Michigan, Ann Arbor, Ann Arbor, USA</p>	<p>5I-1 Local cavitation induced vessel wall injury of artery and its potential application in animal model of atherosclerosis</p> <p>Yujin Zong¹, Rongrong Wang¹, Xinru Zou¹, Lei Zhang¹, Yi Feng¹, Gang Liu¹, Mingxi Wan¹ ¹The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Xi'an Jiaotong University, Xi'an, Shaanxi, People's Republic of China</p>	<p>Session 5I MBE: Broeffects and Dosimetry</p> <p><i>Chair:</i> Jeff Ketterling Riverside Research</p>
<p>Session 2J MIM: Advances in Vascular and Flow Imaging</p> <p><i>Chair:</i> Lasse Lovstakken NTNU</p>	<p>2J-1 In-vivo Ultrafast Doppler Volumetric Imaging using Undersampled 2D Array</p> <p>Martin Flesch^{1,2}, Thomas Defieux¹, Jean Provost¹, Guillaume Fourn², An Nguyen-Dinh², Mathieu Pernot¹, Mickael Tauter¹ ¹Institut Langevin, ESPCI ParisTech, PSL Research University, CNRS UMR7587, INSERM U979, Paris VII, Paris, France, ²Vermon, Tours, France</p>	<p>3I-3 3-D ultrasound elastography of the breast: first steps towards ABVS implementation</p> <p>Gijs A.G.M. Hendriks¹, Bramslav Holländer¹, Jan J.M. Menssen¹, Hendrik H.G. Hansen¹, Chris L. de Korte¹ ¹Medical UltraSound Imaging Center (MUSIC), Department of Radiology and Nuclear Medicine, Radboud university medical center, Nijmegen, Netherlands</p>	<p>4I-3 Transcranial aberration correction using histotripsy pulse backscatter from the bubble clouds they create</p> <p>Jonathan Sukovich¹, Timothy Hall¹, Zhen Xu¹, Charles Cain¹ ¹Biomedical Engineering, University of Michigan, Ann Arbor, MI, USA</p>	<p>Session 1I MTC: Tissue Characterization</p> <p><i>Chair:</i> Pascal Laugier Université Pierre et Marie Curie</p>
<p>Session 8I CMUTs and Signal Processing</p> <p><i>Chair:</i> Jian Yuan Philips Shanghai Apex</p>	<p>8I-1 Phase Modulated Pulse Sequences for Nonlinear Imaging with CMUTs</p> <p>Sarp Satir¹, Levent Degertekin¹ ¹Georgia Institute of Technology, USA</p>	<p>8I-2 Second-Harmonic Reduction in CMUTs Using Unipolar Pulsers</p> <p>Alessandro Stuart Savoia¹, Giuseppe Scaglione¹, Marco Sauto², Andrea Mazzanti², Fabio Quaglia¹, Grosue Caliano¹ ¹Dipartimento di Ingegneria, Università degli Studi Roma Tre, Roma, Italy, ²Dipartimento di Ingegneria Industriale e dell'Informazione, Università degli Studi di Pavia, Pavia, Italy, ³STMICROelectronics, Cornaredo, Italy</p>	<p>8I-3 Revised amplitude modulation for contrast-enhanced ultrasound imaging with a cMUT array.</p> <p>Damien Fouan^{1,2}, Ayache Bouakaz^{1,2} ¹Inserm U930, Imagerie et Cerveau, Tours, France, ²Université François Rabelais de Tours, France</p>	<p>1I-1 In vivo biopsy by photoacoustic based tissue characterization</p> <p>Xueqing Wang¹, Guan Xu², Zhuo-xian Meng³, Jian-Die Lin³, Cheri Deng³, Paul Carson², Brian Fowlkes² ¹Biomedical Engineering, University of Michigan, Ann Arbor, Michigan, USA, ²University of Michigan, USA, ³University of Michigan, USA</p>

<p>11:15 am</p>	<p>2i-3 Super-Resolution Velocity Estimation in Microvessels using Multiple Hypothesis Tracking</p> <p>Dimitri Ackermann¹, Georg Schmitz¹ ¹Chair for Medical Engineering, Ruhr-Universität Bochum, Bochum, Germany</p>	<p>3i-4 In vivo liver shear wave motion detection and shear wave speed comparison between fundamental and harmonic imaging</p> <p>Carolina Amador¹, Pengfei Song¹, Duane Meixner², Shigao Chen¹, Matthew Urban¹ ¹Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, Minnesota, USA; ²Department of Radiology, Mayo Clinic College of Medicine, Rochester, Minnesota, USA</p>	<p>4i-4 Transcranial Histripsy Therapy to Treat Hemorrhagic Stroke</p> <p>Jonathan Sukovich¹, Yohan Kim¹, Aditya Pandey², Timothy Hall¹, Charles Cam¹, Zhen Xu¹ ¹Biomedical Engineering, University of Michigan, Ann Arbor, MI, USA; ²Neurological Surgery, University of Michigan, Ann Arbor, MI, USA</p>	<p>5i-4 Silicon Horn Transducer Based Ultrasonically Enhanced Nerve Firing</p> <p>Tiffany St. Bernard¹, Po-Cheng Chen², Jason Hoople², Bruce Johnson¹, Amit Lal¹ ¹Biomedical Engineering, Cornell University, Ithaca, NY, USA; ²Electrical and Computer Engineering, Cornell University, Ithaca, NY, USA; ³Neurobiology and Behavior, Cornell University, Ithaca, NY, USA</p>	<p>1i-4 Attenuation Measuring Ultrasound Shearwave Elastography (AMUSE) for Measuring Shear Wave Velocity and Attenuation: Application in 15 Post-Transplant Liver Patients and Comparison with Biopsy Findings</p> <p>Ivan Nenadic¹, Matthew Urban¹, William Sanchez¹, James Greenleaf¹, Shigao Chen¹ ¹Mayo Clinic, USA</p>	<p>8i-4 Feasibility of Interlaced Multi-Band CMUTs for Photoacoustic Imaging</p> <p>Ryan Chee¹, Roger Zemp¹ ¹University of Alberta, Canada</p>
<p>11:30 am</p>	<p>2i-4 Cerebral monitoring of neuroprotective ultrafast cooling post cardiac arrest via multiparametric ultrafast ultrasound imaging</p> <p>Charlie Demené¹, David Maresca¹, Matthias Kohlhauser¹, Fanny Lidouren², Bijan Ghaheri², Renaud Tissier², Matthieu Perrot¹, Mickael Tanter¹ ¹Institut Langevin, ESPCI ParisTech, CNRS UMR7587, Inserm U979, Paris, France; ²Inserm U955 Equipe 03, Université Paris Est Créteil et Ecole Nationale Vétérinaire d'Alfort, Maison Alfort, France</p>	<p>3i-5 Validation of Electromechanical Wave Imaging in canine left ventricles against electrography</p> <p>Julien Grondin¹, Alexandre Costel¹, Ethan Bunting¹, Alok Gambhir², Elaine Wan², Elisa E Konofagou^{1,3} ¹Department of Biomedical Engineering, Columbia University, New York, NY, USA; ²Department of Medicine, Columbia University, New York, NY, USA; ³Department of Radiology, Columbia University, New York, NY, USA</p>	<p>4i-5 Rapid HIFU-aided liquefaction for fine-needle aspiration of large extravascular hematomas: feasibility study</p> <p>Tatiana Khokhlova¹, Wayne Monks², Yasser Haider¹, Yak-Nam Wang¹, Thomas Matubi¹ ¹Medicine, University of Washington, Seattle, WA, USA; ²Radiology, University of Washington, Seattle, WA, USA; ³Urology, University of Washington, Seattle, WA, USA; ⁴Applied Physics Lab, University of Washington, Seattle, WA, USA</p>	<p>5i-5 Quantitative Measurement of Pulsed Ultrasound Pressure Field Using Optical Phase Contrast</p> <p>Seiji Oyama¹, Mohd Syahid¹, Jun Yasuda¹, Shin Yoshizawa¹, Shin-ichiro Umemura¹ ¹Communication Engineering, Tohoku University, Sendai, Japan; ²Biomedical Engineering, Tohoku University, Sendai, Japan</p>	<p>1i-5 Ultrasonic guided waves to predict fracture risk in post-menopausal women: Clinical findings</p> <p>Jean-Gabriel Minonzio¹, Quentin Vallet¹, Nicolas Bochad¹, Adrien Etcheot¹, Sami Kolla², Christian Roux², Pascal laugier¹ ¹Laboratoire d'Imagerie Biomedicale, Sorbonne Universités, UPMC Univ Paris 06, INSERM, CNRS, Paris, France; ²Service de Rhumatologie Centre d'Evaluation des Maladies Osseuses Hôpital Cochin, Paris, France</p>	<p>8i-5 Multi-frequency imaging with collapse-mode CMUT</p> <p>Martin Pekar^{1,2}, Wendy Dittmer¹, Nenad Mitajlovic¹ ¹In-Body Systems, Philips Research, Eindhoven, Netherlands; ²Department of Biomedical Engineering, Thorax Center, Erasmus MC, Rotterdam, Netherlands</p>
<p>11:45 am</p>	<p>2i-5 Cardiac Motion Estimation based on Transverse Oscillation and Ultrafast Circular Wave Imaging</p> <p>Philippe JOOS¹, Sébastien Salles¹, Didier Vray¹, Barbara Nicolas¹, Hervé Lieboigt¹ ¹CREATIS, Villeurbanne, Rhône, France</p>	<p>3i-6 Viscoelastic Response (VisR) Assessment of Longitudinal Dystrophic Degeneration in Clinical Duchenne Muscular Dystrophy</p> <p>Christopher Moore¹, Mallory Selzo², Melissa Caughey², James Howard, Jr¹, Caterina Gallippi^{1,2} ¹Department of Electrical and Computer Engineering, North Carolina State University, Chapel Hill, NC, USA; ²Joint Department of Biomedical Engineering, University of North Carolina and North Carolina State University, Chapel Hill, NC, USA; ³Department of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA; ⁴Department of Neurology, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA</p>	<p>4i-6 Preclinical evaluation of an MR-guided thermal HIFU ablation strategy using shockwaves and millisecond boiling in an in-vivo porcine liver model</p> <p>Pascal Ramaekers¹, Martin de Greef¹, Johanna van Breugel¹, Chrit Moonen¹, Mario Rues¹ ¹Imaging Division, UMC Utrecht, Utrecht, Netherlands</p>	<p>5i-6 Rapid spatial mapping of the acoustic pressure in high intensity focused ultrasound fields at clinical intensities using a novel planar Fabry-Perot interferometer</p> <p>Elly Martin¹, Edward Zhang¹, Paul Beard¹, Bradley Treeby¹ ¹Medical Physics and Biomedical Engineering, University College London, London, United Kingdom</p>	<p>1i-6 Estimation of bone quality on scoliotic subjects using ultrasonic reflection imaging method – a preliminary study</p> <p>Rui Zheng¹, Lawrence H Le², Doug Hill^{1,3}, Edmond Lou^{1,3} ¹Department of Surgery, University of Alberta, Edmonton, Alberta, Canada; ²Department of Radiology and Diagnostic Imaging, University of Alberta, Canada; ³Glenrose Rehabilitation Hospital, Alberta Health Services, Canada</p>	<p>8i-6 Practical S-Sequence Aperture Coding Schemes for Volumetric Imaging with Top Orthogonal to Bottom Electrode (TOBE) Arrays</p> <p>Roger Zemp¹, Tyler Harrison¹ ¹Electrical & Computer Engineering, University of Alberta, Edmonton, Alberta, Canada</p>

SATURDAY ORAL

1:00 pm - 2:30 pm

Oral --- Saturday, October 24, 2015

Session 2J. MPA: Photoacoustic Imaging and Reconstruction		Session 3J. MTC: Cardiovascular Tissue Characterization		Session 4J. MTH: Taming Cancer, Tumors, and Bacteria		Session 5J. Sensors and Sensing		Session 1J. MBF: 3D Imaging and Flow Simulations		Session 8J. Materials Fabrication and Characterization		
Chair: Michael Kolios Ryerson University		Chair: James G. Miller Washington University		Chair: Tom Matula University of Washington		Chair: James Friend University of California, San Diego		Chair: Alfred C. H. Yu University of Hong Kong		Chair: Wei Ren Xian Jiaotong University		
1:00 pm	2J-1 Photoacoustic Clutter Reduction using Plane Wave Ultrasound and a Linear Scatter Estimation Approach	Hans-Martin Schwab ¹ , Martin F. Beckmann ¹ , Georg Schmitz ² ¹ Chair for Medical Engineering, Ruhr-Universität Bochum, Bochum, NRW, Germany	3J-1 3D Ultrasound Backscatter Tensor Imaging (BTI) in vivo: assessment of the myocardial fiber orientation dynamic	Clement Papadacac ¹ , Jean Provost ¹ , Olivier Villenain ¹ , Jean Luc Gennisson ¹ , Mickael Tanter ¹ , Mathias Fink ¹ , Mathieu Pernot ¹ ¹ Institut Langevin, CNRS, INSERM, ESPCI, Paris 7, Paris, France	4J-1 Intra-operative toroidal HIFU transducer for the treatment of colorectal liver metastases: Results of a Phase I-II clinical study in 20 patients	David Melodelima ¹ , Aurelien Dupre ^{1,2} , Yao Chert ¹ , Jeremy Vincenot ¹ , David Perot ² , Jean-Yves Chapelon ¹ , Michel Riviere ^{1,2} ¹ LabTAU - U1032, INSERM, France; ² Centre Leon Berard, France	5J-1 Assessment of the nucleus to cytoplasmic ratio for tumor cell identification using high-frequency ultrasound and photoacoustics.	Michael Moore ¹ , Eric Strohm ¹ , Michael Kolios ² ¹ Ryerson University, Canada	1J-1 Patient-specific flow simulation of the left ventricle from 4D echocardiography - feasibility and robustness evaluation	David Larsson ¹ , Jeanette H Spühler ² , Tim Nordenfuir ¹ , Johan Hoffman ¹ , Massimiliano Colanetti-Tosti ¹ , Hang Gao ³ , Matilda Larsson ¹ ¹ Medical Engineering, KTH Royal Institute of Technology, Stockholm, Sweden, ² Computational Technology Laboratory, High Performance Computing and Virtualization, KTH Royal Institute of Technology, Stockholm, Sweden, ³ Lab on Cardiovascular Imaging and Dynamics, KU Leuven - University of Leuven, Leuven, Belgium	8J-1 Current Status and Future Prospects of High Performance Piezoelectric Single Crystals: Bridgman Method vs. Solid-state Single Crystal Growth (SSCG) Method	Ho-yong Lee ¹ ¹ Ceracomp Co. Ltd, Cheonan, Chungnam, Republic of Korea
	1:15 pm	2J-2 Volumetric photoacoustic and pulse echo imaging by elaborating a weighted synthetic aperture technique	Mohammad Azizian Kalkhoran ¹ , Francois Varay ¹ , Didier VRAY ¹ ¹ Université de Lyon, CREATIS, CNRS UMR5220; Inserm U1044; INSU-Lyon; Villeurbanne, France	3J-2 Scatter size estimation using time domain phase of ultrasound radio frequency data	Tobias Erlöv ¹ , Tomas Jansson ^{2,3} , Hans W Persson ³ , Magnus Cinthio ¹ ¹ Department of Biomedical Engineering, Lund University, Sweden ² Department of Clinical Sciences Lund, Biomedical Engineering, Lund University, Sweden ³ Medical Services, Skane University Hospital, Sweden	4J-2 Coincident light/ultrasound therapy to treat bacterial biofilms	Mark Schafer ¹ , Tessie McNeely ¹ ¹ PhotoSonic Medical, Inc., Ambler, Pennsylvania, USA	5J-2 Multiparametric Ultrasonic Monitoring of Composition and Physical Properties of Liquids	Aba Prieve ¹ , Slava Boktov ² , Lev Ostrovsky ³ ¹ Biochemistry and Molecular Biology, Hebrew University, Jerusalem, Israel; ² MDT Ultrasonics Ltd., Jerusalem, Israel; ³ Zel Technologies, University of Colorado, Boulder, Colorado, USA	1J-2 Three-dimensional intracardiac flow estimation using multi-planar echo particle image velocimetry: A feasibility study	Hang Gao ¹ , Qiong He ² , Jianwen Luo ² , Jan Phooke ¹ ¹ Lab. on Cardiovascular Imaging & Dynamics, KU Leuven, Belgium, ² Center for Bio-Medical Imaging Research, Dept. of Biomedical Engineering, Tsinghua University, China, People's Republic of	8J-2 Functional Characterization of Piezocrystals Monitored under High Power Driving Conditions
1:30 pm	2J-3 Differential phase photoacoustic imaging for high-resolution position sensing	Sophiane Iskander-Rizk ¹ , Pieter Kraitzing ¹ , Antonius RW Van der Steen ² , Gijb Van Soest ¹ ¹ Thorax center, Erasmus MC, Rotterdam, Netherlands, ² Delft University of Technology, Delft, Netherlands	3J-3 Noninvasive assessment of age-related arterial changes using the carotid stress-strain relationship in vivo	Spyretta Golemati ¹ , Marianna Tzortzi ¹ , Romy LF, Cesare Russo ² , Elisa Komolagou ^{3,4} ¹ Medical School, National Kapodistrian University of Athens, Athens, Greece, ² Biomedical Engineering, Columbia University, New York, NY, USA, ³ Medicine, Columbia University, New York, NY, USA, ⁴ Radiology, Columbia University, New York, NY, USA	4J-3 Improvement of Drug Penetration in Solid Tumors by Vascular Disruption with Acoustic Nanodroplet Vaporization	Yi-Ju Ho ¹ , Chih Kuang Yeh ¹ ¹ Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan	5J-3 Ultrasonic Viscometer with Integrated Depth Measurement	Po-Cheng Chen ¹ , Amri Lal ¹ ¹ SonicMEMS, School of Electrical and Computer Engineering, Cornell University, USA	1J-3 An in-vitro and numerical study of ultrafast vector flow imaging in the neonatal heart.	Joris Van Cauwenberge ¹ , Solveig Fadnes ² , Ingvid Kim Ekrol ^{2,3} , Lasse Lovstakker ¹ , Jan Verdecels ⁴ , Patrick Segers ⁵ , Abigail Swillens ¹ ¹ IBiTech - bioMedia, Ghent University, Ghent, Belgium, ² Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway, ³ Olav's University Hospital, Trondheim, Norway, ⁴ Department of Flow, heat and combustion mechanics, Ghent University, Ghent, Belgium	8J-2 Functional Characterization of Piezocrystals Monitored under High Power Driving Conditions	Xiaochun Liao ^{1,2} , Tngyi Jiang ¹ , Muhammad Sadiq ² , Zhihong Huang ¹ , Sandy Cochran ¹ ¹ School of Engineering, Physics and Mathematics, University of Dundee, Dundee, Scotland, United Kingdom, ² Institute for Medical Science and Technology (IMST), University of Dundee, Dundee, Scotland, United Kingdom

<p>1:45 pm</p>	<p>2J-4 Photoacoustic properties of plasmonic-nanoparticle coated microbubbles</p> <p>Adam Dixon¹, Song Hu¹, Alexander Kibanov¹, John Hossack¹ ¹Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA</p>	<p>3J-4 Imaging the Ultrasonic Coefficient of Nonlinearity</p> <p>Ruud van Sloun¹, Liberto Demi¹, Carleng Shari¹, Massimo Mischl¹ ¹Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands, ²Philips Research, Netherlands</p>	<p>4J-4 Achieving a durable response by combining chemotherapy with focused ultrasound in mouse models of cancer</p> <p>Andrew Wong¹, Azadeh Kheirloomoni¹, Yu Liu¹, Josephin Forica¹, Brett Fite¹, Elizabeth Ingram¹, Katherine Ferrara¹ ¹Biomedical Engineering, UC Davis, Davis, CA, USA</p>	<p>5J-4 Design and Performance of an Active Acoustic Back Cover Based on Piezoelectric Elements</p> <p>Nicola Lamberti¹, Monica La Mura¹, Giosuè Callano², Alessandro Stuart Savoia² ¹DiIn, University of Salerno, Fisciano, Italy, ²Dept. of Engineering, University Roma Tre, Rome, Italy</p>	<p>1J-4 Reconstruction of 3D vector flow fields from sparse measurements using B-spline regularization</p> <p>Solveig Fadnes¹, Alberto Gomez², Morten S Wigen¹, Jakob Hogenes¹, Joris van Cauwenbergh³, Patrick Segers³ ¹Abigail Swillens¹, Lasse Lovstakken¹ ¹Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, TRONDHEIM, Norway, ²Department of Biomedical Engineering, King's College London, United Kingdom, ³Ghent University, Belgium</p>	<p>8J-3 Characterization of Elastic Properties of Ca₃TaGa₂Si₃O₁₄ at High Temperatures by Antenna Transmission Acoustic Resonance</p> <p>Hongfei Zu¹, Huiyan Wu¹, Qunming Lin², Yanqing Zheng², Qing-Ming Wang¹ ¹University of Pittsburgh, USA, ²Shanghai Institute of Ceramics, China, People's Republic of</p>
<p>2:00 pm</p>	<p>2J-5 Ratiometric Photoacoustic Imaging of Acidic pH</p> <p>Richard Bouchard¹, Samit Guha², Trevor Michlam¹, Gillian Shaw², Bradley Smith² ¹Imaging Physics, University of Texas MD Anderson Cancer Center, USA, ²Department of Chemistry and Biochemistry, University of Notre Dame, USA</p>	<p>3J-5 Determining carotid plaque vulnerability using the average phase derivative of ultrasound radio frequency data – first ex vivo and in vivo results</p> <p>Tobias Erlöv¹, Isabel Goncalves³, Carleens Edsfield², Simon Segstedt¹, Nuno Dias⁴, Jan Nilsson², Magnus Cuthbert¹ ¹Department of Biomedical Engineering, Faculty of Engineering LTH, Lund University, Sweden, ²Department of Clinical Sciences Malmö, Lund University, Sweden, ³Department of Cardiology, Skåne University Hospital, Sweden, ⁴Vascular Center, Skåne University Hospital, Sweden</p>	<p>4J-5 Low-intensity Ultrasound Promotes Antitumoral Effect of Bisphosphonates in Breast Cancer Xenografts and Bone Metastasis</p> <p>Sophie Tardoski¹, Jacqueline Ngo², Evelyne Gineys¹, Jean-Paul Roux¹, Philippe Glezard¹, David Melodelima² ¹INSERM UMR 1032, Lyon, France, ²INSERM UMR 1032, France, ³INSERM UMR 1033, France</p>	<p>5J-5 Experimental evaluation of ultrasonic oscillating temperature sensors (UOTS) under cyclically changing temperatures</p> <p>Anas Hashmi¹, Alexander Kalashnikov¹, Roger Light¹ ¹Department of Electrical and Electronic Engineering, The University of Nottingham, United Kingdom</p>	<p>1J-5 In vivo 3-D Vector Flow Estimation with Continuous Data</p> <p>Simon Holbek¹, Michael Johannes Pihl¹, Caroline Ewertsen², Michael Bachmann Niebert³, Jørgen Arendt Jensen⁴ ¹Department of Electrical Engineering, Technical University of Denmark, Lyngby, Denmark, ²Department of Radiology, Copenhagen University Hospital, Copenhagen, Denmark</p>	<p>8J-4 Characterization of lead-free alkali niobate piezoceramics by the Inverse Method</p> <p>Kenji Ogo¹, Manuel Weib², Stefan Rupitsch², Reinhard Lerch², Ken-ichi Kakimoto¹ ¹Department of Materials Science and Engineering, Nagoya Institute of Technology, Nagoya, Japan, ²Chair of Sensor Technology, Friedrich-Alexander University Erlangen-Nürnberg, Erlangen, Germany</p>
<p>2:15 pm</p>	<p>2J-6 Broadband detection of dynamic acoustic emission process induced by 6 MV therapeutic X-ray beam from a clinical linear accelerator</p> <p>Xianfen Diao¹, Jing Zhu¹, Weihao Li², Nian Deng¹, Chen Ting Chen¹, Xinyu Zhang¹, Xin Chen¹, Xianming Li², Yu Kuang³ ¹Shenzhen University, China, People's Republic of, ²Shenzhen People's Hospital, China, People's Republic of, ³Dept. of Medical Physics, University of Nevada, Las Vegas, Las Vegas, USA</p>	<p>3J-6 Diffraction independent estimation of the ultrasound attenuation coefficient</p> <p>Natalia Ilyina^{1,2}, Jeroen Hermans³, Emiliano D'Agostino¹, Koen Van Den Abeele¹, Jan D'hooge¹ ¹Dept. of Cardiovascular Sciences, KU Leuven, Belgium, ²Belgian Nuclear Research Centre, SCK•CEN, Belgium, ³DoseLab, NY, Belgium, ⁴Dept. Of Physics, KU Leuven Kulak, Belgium</p>	<p>4J-6 Thermal Ablation of a Confluent Lesion in the Porcine Kidney with Magnetic Resonance guided High Intensity Focused Ultrasound</p> <p>Johanna MM van Breugel¹, Martijn de Greef¹, Joost W Wijlemans¹, Gerald Schubert², Chrit TW Moonen¹, Maurice AAJ van den Bosch¹, Mario G Ries¹ ¹Center for Image Sciences, University Medical Center Utrecht, Utrecht, Netherlands, ²University Medical Center Utrecht, Utrecht, Netherlands, ³Philips Healthcare, Netherlands</p>	<p>5J-6 Smart Autonomous wireless acoustic sensors for aeronautical SHM applications</p> <p>Guillaume Forin¹, Yuvashankar Muralidharan¹, Naoufal Mesbah¹, Claire Bantignes¹, Hung Le Khanh¹, Pascal Chatain¹, Etienne Flesch¹, An Nguyen-Dinh¹ ¹Advanced Research Dpt., VERMON, France</p>	<p>1J-6 Improved quality of freehand 3-D ultrasound color flow imaging by multi-angle compounding</p> <p>Daniel Hoyer Iversen^{1,2}, Frank Lindseth^{3,4}, Geirrud Usgaard⁵, Hans Toop¹, Lasse Lovstakken¹ ¹Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway, ²St. Olavs University Hospital, Trondheim, Norway, ³Department of Computer and Information Science, Norwegian University of Science and Technology, Trondheim, Norway, ⁴Department of Medical Technology, Stinf, Trondheim, Norway, ⁵Department of Neurosurgery, St. Olavs University Hospital, Trondheim, Norway</p>	<p>8J-5 Development of PZT-Based Single Crystals as High-T and High-Performance Piezoelectric Materials</p> <p>Zuo-Guang Ye^{1,2}, Bixia Wang¹, Yujuan Xie¹, Xiaoping Wu¹, Wei Ren¹ ¹Simon Fraser University, Burnaby, BC, Canada, ²Xian Jiaotong University, China, People's Republic of</p>

SATURDAY ORAL

3:30 pm - 5:00 pm

Oral --- Saturday, October 24, 2015

<p>Session 2K. MIM: Medical Imaging II</p> <p>Chair: Matthew O'Donnell <i>University of Washington</i></p>	<p>Session 3K. MEL: Fundamental Elastography Studies</p> <p>Chair: Emad Ebbini <i>Univ. of Minnesota</i></p>	<p>Session 4K. MCA: Contrast Perfusion Imaging</p> <p>Chair: Massimo Mischì <i>Eindhoven University of Technology</i></p>	<p>Session 5K. Flow Measurement</p> <p>Chair: Walter Arnold <i>Saarland University</i></p>	<p>Session 1K. MSD: Novel High-Frequency Systems</p> <p>Chair: Alfred C. H. Yu <i>University of Hong Kong</i></p>	<p>Session 8K. More Medical Transducer Applications</p> <p>Chair: Xiaoning Jiang <i>North Carolina State University</i></p>	
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<p>3:30 pm</p>	<p>2K-1 High Speed Imaging and Measurement of Laryngeal Vibration during Phonation Using Ultrafast Ultrasonography: a Preliminary Study</p> <p>Bowen Jing¹, Shanshan Tang¹, Liang Wu¹, Supin Wang¹, Mingxi Wan¹ <i>¹The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, People's Republic of China</i></p>	<p>3K-1 The effect of tissue anisotropy on ultrasound strain imaging (USI): a preliminary study</p> <p>He Li¹, Wei-Ning Lee¹ <i>¹The University of Hong Kong, Hong Kong</i></p>	<p>4K-1 Fractal dimension of tumor microvasculature by dynamic contrast-enhanced ultrasound</p> <p>Massimo Mischì¹, Carola Heneweer², Julian von Broich-Opfert³, Tamerlan Saidov¹, Hessel Wijkstra^{1,3} <i>¹Eindhoven University of Technology, Netherlands; ²University Hospital Schleswig-Holstein, Germany; ³Academic Medical Center University of Amsterdam, Netherlands</i></p>	<p>5K-1 Effect of transducer port cavities in invasive ultrasonic transit-time gas flow meters</p> <p>Maik Hoffmann¹, Alexander Unger², Axel Jäger³, Mario Kupnik² <i>¹BTU Cottbus-Senftenberg, Germany; ²Technische Universität Darmstadt, Germany</i></p>	<p>1K-1 Real-time ophthalmic imaging with a hand-held, 20-MHz annular array</p> <p>Jeffrey A. Ketterling¹, Daniel Gross¹, Ronald H. Silverman² <i>¹Lizzi Center for Biomedical Engineering, Riverside Research, New York, NY, USA; ²Department of Ophthalmology, Columbia University Medical Center, New York, NY, USA</i></p>	<p>8K-1 Cost-effective linear arrays for medical imaging fabricated using PZT thick film technology</p> <p>Louise M. Borregaard¹, Tomasz Zawada¹, Michele Guizzetti¹, Ruichao Xu¹, Erling Ringgaard¹, Jan P. Bagge², Lars N. Møssner¹ <i>¹Meggitt Sensing Systems, Kyivsgaard, Denmark; ²BK Medical, Herlev, Denmark</i></p>
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<p>3:45 pm</p>	<p>2K-2 High spatial-resolution cavitation imaging of laser-triggered PFP droplets</p> <p>Jaesok Yu^{1,2}, Nguyen Man¹, Kang Kim^{1,2} <i>¹Center for Ultrasound Molecular Imaging and Therapeutics, University of Pittsburgh School of Medicine and University of Pittsburgh Medical Center, Pittsburgh, PA, USA; ²Department of Bioengineering, University of Pittsburgh School of Engineering, Pittsburgh, PA, USA</i></p>	<p>3K-2 Speckle Bias as a 3D Stationary Offset of the Tracking Location for Shear Wave Imaging</p> <p>Peter Hollender¹, Gregg Trahey^{1,2} <i>¹Biomedical Engineering, Duke University, Durham, North Carolina, USA; ²Radiology, Duke University Medical Center, Durham, North Carolina, USA</i></p>	<p>4K-2 Estimation of Local Perfusion Parameters from Non-uniform Contrast-Enhanced Ultrasound Temporal Samples</p> <p>Avinoam Bar-Zion¹, Melissa Yin², Elizabeth Kuczyński³, Robert S. Kerbel^{1,4}, Dan Adam¹, F. Stuart Foster⁴ <i>¹Department of Biomedical Engineering, Technion - Israel Institute of Technology, Haifa, Israel; ²Physical Sciences, Sunnybrook Research Institute, Toronto, Ontario, Canada; ³Biological Sciences, Sunnybrook Research Institute, Toronto, Ontario, Canada; ⁴Department of Medical Biophysics, University of Toronto, Toronto, Ontario, Canada</i></p>	<p>5K-2 Embedded System for In-line Ultrasound Velocity Profile Detection</p> <p>Stefano Ricci¹, Valentino Meacci¹, Beat Birkofer², Johan Wiklund³ <i>¹Information Engineering Dept., Università di Firenze, Florence, Italy; ²Sika Services AG, Zurich, Switzerland; ³SP Technical Research Institute of Sweden, Gothenburg, Sweden</i></p>	<p>1K-2 Ultrahigh Frame Rate High-Frequency Array Imaging System for Time-Resolved Monitoring of Cardiac Dynamics in Spontaneous Hypertensive Rats</p> <p>Billy Y. S. Yiu¹, Aung Moe Zaw², Erwan Filoux³, Adrian J. Y. Chee¹, Leo T. O. Lee², Alfred C. H. Yu¹ <i>¹Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong; ²School of Biological Sciences, University of Hong Kong, Pokfulam, Hong Kong; ³Vermon SA, Tours, France</i></p>	<p>8K-2 Heartbeat Interval Monitoring by PZT/PZT Flexible Piezoelectric Film Sensor</p> <p>Makiko Kobayashi¹, Takahiko Ikari¹, Shugo Kurose¹, Tomohiko Igaraki¹ <i>¹Kumamoto University, Japan</i></p>
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<p>4:00 pm</p>	<p>2K-3 In vivo magnetomotive ultrasound imaging of rat lymph nodes – a pilot study</p> <p>Maria Everstson¹, Magnus Cinthio¹, Pontus Kjellman^{2,3}, Sarah Fredriksson², Roger Andersson¹, Hanna Toftveall², Hans W Pettersson¹, Tomas Jansson^{4,5}</p> <p>¹Biomedical Engineering, Faculty of Engineering, LTH, Lund University, Lund, Sweden, ²Genovis AB, Sweden, ³Medical Radiation Physics, Clinical Sciences Lund, Lund University, Lund, Sweden, ⁴Biomedical Engineering, Clinical Sciences Lund, Lund University, Lund, Sweden, ⁵Medical Services, Skåne University Hospital, Lund, Sweden</p>	<p>3K-3 Towards Low-push ARFI imaging: Overcoming limitations in Displacement SNR with a Bayesian Estimator</p> <p>Douglas Dumont¹, Brett Byram¹</p> <p>¹Biomedical Engineering, Vanderbilt University, Nashville, TN, USA</p>	<p>4K-3 Ultrasound Microbubble Capture Using Bioorthogonal Coupling: An In Vivo Validation</p> <p>Melissa Yin¹, Aimen Zilim², Judy Yan¹, John Valliant², F. Stuart Foster^{3,4}</p> <p>¹Sunnybrook Research Institute, Toronto, Ontario, Canada, ²Chemistry and Chemical Biology, McMaster University, Hamilton, Ontario, Canada, ³Medical Biophysics, University of Toronto, Toronto, Ontario, Canada</p>	<p>5K-3 In-Situ Monitoring of Particle Velocities and Solids Concentration Variations in wet Low-Intensity Magnetic Separators</p> <p>Johan E. Carlsson¹, Jan F. Stener¹, Anders Sand¹, Bertil I. Pålsson¹</p> <p>¹Luleå University of Technology, Luleå, Sweden</p>	<p>1K-3 Very high frequency ultrasound beamformer for biomedical applications and non-destructive testing</p> <p>Christoph Risser¹, Hans Joachim Welsch¹, Heinrich Fofana¹, Holger Hewener¹, Steffen Weber¹, Steffen Treiber¹</p> <p>¹Ultrasound, Fraunhofer-IBMT, Sankt Ingbert, Germany</p>	<p>8K-3 An ultrasonically assisted sagittal saw for large bone surgeries</p> <p>Daniel Richards¹, Andrew Matheson¹, Margaret Lucas¹</p> <p>¹School of Engineering, University of Glasgow, United Kingdom</p>
<p>4:15 pm</p>	<p>2K-4 Ultrafast Pulsed Magnetomotive Ultrasound Imaging of Sentinel Lymph Nodes: Small Animal Study</p> <p>Yu-Chun Huang¹, Jieh-Yuan Houng¹, Yi-Da Kang², San-Yuan Chen³, Meng-Lin Li^{1,3}</p> <p>¹Dept. of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan, ²Dept. of Materials Science and Engineering, National Chiao Tung University, Taiwan, ³Institute of Photonics Technologies, National Tsing Hua University, Taiwan</p>	<p>3K-4 Spatial Resolution in Passive Elastography</p> <p>Ali Zargani¹, Rémi Souchoin¹, Stefan Catheline¹</p> <p>¹LaB2a, UMR 032 INSERM, Lyon, France</p>	<p>4K-4 Contrast-Enhanced Ultrasound Imaging with High CTR and Improved Resolution by Bubble-Echo based Deconvolution</p> <p>Hong Hu¹, Runma Liu¹, Diya Wang¹, Hui Zhong², Supin Wang², Mingxi Wan¹</p> <p>¹The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, People's Republic of China</p>	<p>5K-4 Modular Research Platform for Adaptive Flow Mapping in Liquid Metals</p> <p>Richard Nauber¹, Hannes Beyer¹, Kevin Maeder¹, Arne Klass¹, Norman Czarske¹, Lars Buettner¹, Juergen Thiemie¹</p> <p>¹MST, TU Dresden, Dresden, Saxony, Germany</p>	<p>1K-4 An All-Digital Transmitter Beamforming ASIC for High-Frequency and Portable Ultrasound Imaging Systems</p> <p>Duo Sheng¹, Chih-Chung Huang², Zong-Ru Yang¹, Yi-Shang Wang¹</p> <p>¹Department of Electrical Engineering, Fu Jen Catholic University, New Taipei City, Taiwan, ²Department of Biomedical Engineering, National Cheng Kung University, Tainan City, Taiwan</p>	<p>8K-4 Arbitrary Waveform Generation based on Phase and Amplitude Synthesis for Switched Mode Excitation of Ultrasound Imaging Arrays</p> <p>David Cowell¹, Sevan Harput¹, Steven Freear¹</p> <p>¹School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom</p>
<p>4:30 pm</p>	<p>2K-5 Sonographic Detection of Magnetic Nanoparticles in Weak Echogenic Tissue</p> <p>Michael Fink¹, Helmut Emmert¹, Moritz Nüßlein¹, Stefan Leyer¹, Christoph Alexou²</p> <p>¹Chair of Sensor Technology, Friedrich-Alexander-University Erlangen-Nuremberg, Germany, ²Section for Experimental Oncology and Nanomedicine (SEON), University Hospital Erlangen, Germany</p>	<p>3K-5 System dependent sources of error in time-of-flight shear wave speed measurements</p> <p>Yufeng Deng¹, Ned Rouze¹, Mark Palmeri¹, Kathryn Nighthingale¹</p> <p>¹Duke University, Durham, North Carolina, USA</p>	<p>4K-5 In Vivo Transcranial Imaging of Blood Perfusion in Rat Brain Using Contrast-enhanced Ultrasound</p> <p>JUAN DU¹, Dakong Liu¹, Emad Ebbini¹</p> <p>¹Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, USA</p>	<p>5K-5 Ultrasound flow mapping for the investigation of crystal growth</p> <p>Norman Thiemie¹, Richard Nauber¹, Hannes Beyer¹, Hannes Radner¹, Lars Büttner¹, Paul Bönsch¹, Kaspar Dadzis¹, Lamine Sylla¹, Dagmar Meier³, Olaf Pätzold³, Jürgen Czarske¹</p> <p>¹Laboratory for Measurement and Sensor-System Techniques, Dresden University of Technology, Dresden, Germany, ²SolarWorld Innovations GmbH, Freiberg, Germany, ³Institut für Nichtisen-Metallurgie und Reinstoffe, Technische Universität Bergakademie, Freiberg, Germany</p>	<p>1K-5 Distortion Reduction for a Dental HFUS Microscanning Device</p> <p>Thorsten Vollborn¹, Christoph Schorn¹, Daniel Haber¹, Fabrice Chembou Pekam¹, Klaus Radermacher¹</p> <p>¹Chair of Medical Engineering, RWTH Aachen, Germany</p>	<p>8K-5 A Discrete Source Model for Simulating Bowl-Shaped Focused Ultrasound Transducers on Regular Grids: Design and Experimental Validation</p> <p>Yan To Ling¹, Ely Martin¹, Bradley Treeby¹</p> <p>¹Medical Physics and Biomedical Engineering, University College London, London, United Kingdom</p>
<p>4:45 pm</p>	<p>2K-6 Non-Contact Thermoacoustic Imaging of Tissue with Airborne Ultrasound Detection</p> <p>Kevin C. Boyle¹, Hao Nan¹, Nikhil Apte^{2,3}, Miaad S. Alroob¹, Anshuman Bhayani¹, Amin Nikoozadeh^{1,2}, Butrus T. Khuri-Yakub³, Amin Arbabian¹</p> <p>¹Electrical Engineering, Stanford University, Stanford, CA, USA, ²Edward L. Ginzton Lab, Stanford University, Stanford, CA, USA, ³Mechanical Engineering, Stanford University, Stanford, CA, USA</p>	<p>3K-6 Performance comparison of rigid and affine models for motion estimation using ultrasound radio-frequency signals</p> <p>Xiaochang Pan¹, Lingyun Huang², Jing Bai¹, Jianwen Luo¹</p> <p>¹Department of Biomedical Engineering, Tsinghua University, Beijing, China, ²People's Republic of -Philips Research China, Shanghai, China, ³People's Republic of -Philips Research</p>	<p>4K-6 Flow Phantom for Contrast Enhanced Ultrasound Research, Device Validation, and Clinical Training</p> <p>John Kuczewicz¹, Barbina Dumire¹, Vijay Shandasani², Jeffrey Powers³, Thomas Matula¹</p> <p>¹University of Washington, Seattle, WA, USA, ²Philips Ultrasound, Bothell, WA, USA</p>	<p>5K-6 Graphene Oxide Nanofabricated Ultrasound Transducers (GO-NUTs)</p> <p>Ka Hing Cheng¹, Ching-Hsiang Cheng¹, Dennis Kwong Chun Lo¹</p> <p>¹Department of Industrial and Systems Engineering, The Hong Kong Polytechnic University, Hong Kong</p>	<p>1K-6 A Graphic Processing Unit based Intravascular Ultrasound (IVUS)</p> <p>Yongjia Xiang¹, Tejun Lv¹, Zhile Han¹, Jie Xu¹, Tanning Gu¹, Yaoyao Cui¹</p> <p>¹Suzhou Institute of Bio-medical Engineering and Technology, CAS, China, People's Republic of</p>	<p>8K-6 Graphene Oxide Nanofabricated Ultrasound Transducers (GO-NUTs)</p> <p>Ka Hing Cheng¹, Ching-Hsiang Cheng¹, Dennis Kwong Chun Lo¹</p> <p>¹Department of Industrial and Systems Engineering, The Hong Kong Polytechnic University, Hong Kong</p>

SATURDAY ORAL

8:00 am - 5:00 pm	Poster --- Saturday, October 24, 2015			4th floor
<p>Session P1C1. MEL: Clinical Application of Elasticity Imaging</p> <p>Chair: Hiroshi Kanai Tohoku University</p>	<p>Session P1C2. MCA: Contrast Applications</p> <p>Chair: Haihong Zheng Shenzhen Institutes of Advanced Technology</p>	<p>P1C1-1 VisR Ultrasound Evaluation of Dystrophic Muscle Degeneration in a Dog Cross-Section and Comparison to Histology and MRI</p> <p>Mallory Seizo¹, Joe Komegy², Amanda Bettis², Eric Snook³, Martin Snyer⁴, Jiahui Wang⁵, Caterina Gallippi⁶ ¹Biomedical Engineering, UNC Chapel Hill, USA, ²Veterinary Integrative Biosciences, Texas A&M University, USA, ³Psychiatry, UNC Chapel Hill, USA, ⁴Computer Science, UNC Chapel Hill, USA, ⁵Physiatry, UNC Chapel Hill, USA, ⁶Radiology, UNC Chapel Hill, USA</p>	<p>P1C2-1 Imaging of the Dispersion Coefficient of Ultrasound Contrast Agents by Wiener System Identification for Prostate Cancer Localization</p> <p>Ruud van Sloun¹, Liberto Demij¹, Hessel Wijkstra^{1,2}, Massimo Mischi¹ ¹Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands, ²Academic Medical Center Amsterdam, Netherlands</p>	<p>P1C1-2 Elasticity mapping of abdominal organs using Harmonic Motion Imaging</p> <p>Thomas Payon¹, Carmine Palermo², Steve Sastra², Hong Chen¹, Yang Han¹, Kenneth Olive², Elisa Konoigout^{1,3} ¹Biomedical Engineering, Columbia University, New York, NY, USA, ²Herbert Irving Comprehensive Cancer Center, Columbia University, USA, ³Department of Radiology, Columbia University, USA</p>
<p>Session P1C3. MIM: Medical Imaging</p> <p>Chair: Kai Thomecnis GE Corporate R&D</p>	<p>P1C2-2 Investigation of Membrane and Uptake Kinetics in Sonoporation Using a Giant Unilamellar Vesicle Cell Model</p> <p>Ruen Shan Leow¹, Weijing Zhong¹, Alexander L. Kilbanov², Alfred C. H. Yu¹ ¹Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong, ²Division of Cardiovascular Medicine, University of Virginia, Charlottesville, Virginia, USA</p>	<p>P1C2-3 Feasibility of in vivo contrast-enhanced ultrasound imaging of the renal cortex during hemorrhagic shock</p> <p>Tom van Rooij¹, Alexandre Lima², Verva Deutchin¹, Patricia A. C. Specht³, Bulent Ergin⁴, Yasin Ince^{2,4}, Nico de Jong^{1,5}, Cam Ince^{2,4}, Klazina Kooman¹ ¹Department of Biomedical Engineering, Thorax Center, Erasmus MC, Rotterdam, Netherlands, ²Department of Intensive Care Adults, Erasmus MC, Rotterdam, Netherlands, ³Laboratory of Experimental Anesthesiology, Department of Anesthesiology, Erasmus MC, Netherlands, ⁴Department of Translational Physiology, Academic Medical Center, Amsterdam, Netherlands, ⁵Laboratory of Acoustical Wavefield Imaging, Faculty of Applied Sciences, Technical University Delft, Delft, Netherlands</p>	<p>P1C3-7 Sparse Constrained Born Inversion for Breast Cancer Detection</p> <p>Ana Ramirez¹, Koen W. A. van Dongen² ¹Department of Electrical, Electronics and Telecommunications Engineering, Universidad Industrial de Santander, Bucaramanga, Colombia, ²Department of Imaging Physics, Delft University of Technology, Delft, Netherlands</p>	<p>P1C1-3 New inverse problem for visco-elastic characterization of fatty liver using Vibration Controlled Transient Elastography</p> <p>Jean-pierre Remenieras¹, Cecile Bastard², Veronique Miette², Jean-marie Perama³, Frederic Pata^{1,3} ¹Equipe 5, UMR INSERM U930 University of Tours, Tours, France, ²Echocens, Paris, France, ³INSERM CIC IT 1415, Tours, France</p>
<p>P1C2-8 Optical Observation of Microbubble Behaviors to Modulated Acoustic Radiation Force in Large Vessels</p> <p>Shiyang Wang¹, Claudia Y Wang¹, Alexander L. Kilbanov^{1,2}, John A Hossack¹, F William Mauldin Jr¹ ¹Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA, ²Division of Cardiovascular Medicine, University of Virginia, Charlottesville, Virginia, USA</p>	<p>P1C3-8 Adaptive learning of tissue reflectivity statistics and its application for blind deconvolution of medical ultrasound scans</p> <p>Oleg Michailovich¹, Yogesh Rath² ¹Electrical and Computer Engineering, University of Waterloo, Waterloo, Ontario, Canada, ²Harvard Medical School, USA</p>	<p>P1C3-9 3D Contrast Ultrasound Dispersion Imaging by Mutual Information for Prostate Cancer Localization</p> <p>Stefan Schalk¹, Liberto Demij¹, Martijn Smenage², Jean de la Rosette², Pintong Huang³, Hessel Wijkstra^{1,2} ¹Biomedical Diagnostics, Eindhoven University of Technology, Eindhoven, Netherlands, ²Dept. of Urology, AMC University Hospital, Amsterdam, Netherlands, ³Dept. of Ultrasound, Zhejiang University School of Medicine, Zhejiang, China, People's Republic of</p>	<p>P1C3-10 3D Contrast Ultrasound Dispersion Imaging by Mutual Information for Prostate Cancer Localization</p> <p>Stefan Schalk¹, Liberto Demij¹, Martijn Smenage², Jean de la Rosette², Pintong Huang³, Hessel Wijkstra^{1,2} ¹Biomedical Diagnostics, Eindhoven University of Technology, Eindhoven, Netherlands, ²Dept. of Urology, AMC University Hospital, Amsterdam, Netherlands, ³Dept. of Ultrasound, Zhejiang University School of Medicine, Zhejiang, China, People's Republic of</p>	<p>P1C4-3 CW-Doppler focal plane array imaging for deep intra-corporeal vascular mapping: feasibility study with 1:1 focused projection to single pixel receiver and phase continuous Fresnel lens</p> <p>Seiji Matsumoto¹, Yasuhiro Takeuchi¹, Hidehiro Kakizaki¹ ¹Renal and Urologic Surgery, Asahikawa Medical University, Asahikawa, Japan</p>
<p>P1C2-1 Monitoring imaging of lesions induced by high intensity focused ultrasound based on a matching pursuit method</p> <p>Weidong Song¹, Siyuan zhang¹, Minxi Wan¹, Jim Wan¹ ¹Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, China, People's Republic of</p>	<p>P1C3-10 3D Contrast Ultrasound Dispersion Imaging by Mutual Information for Prostate Cancer Localization</p> <p>Stefan Schalk¹, Liberto Demij¹, Martijn Smenage², Jean de la Rosette², Pintong Huang³, Hessel Wijkstra^{1,2} ¹Biomedical Diagnostics, Eindhoven University of Technology, Eindhoven, Netherlands, ²Dept. of Urology, AMC University Hospital, Amsterdam, Netherlands, ³Dept. of Ultrasound, Zhejiang University School of Medicine, Zhejiang, China, People's Republic of</p>	<p>P1C4-4 Volumetric Synthetic Aperture Ultrasound Imaging with Row-Column Addressed 2-D Arrays Using Spatial Matched Filter Beamforming</p> <p>Hamed Bouzari¹, Morten Fischer Rasmussen¹, Mathias Bo Stuart¹, Sviatoslav Ivanov Nikobov², Jørgen Arendt Jensen¹ ¹Technical University of Denmark, Lyngby, Denmark, ²BK Medical ApS, Herlev, Denmark</p>	<p>P1C4-5 An Optimized Plane Wave Synthetic Focusing Imaging for High-Resolution Convex Array Imaging</p> <p>Sua Bae¹, Pilsoo Kim¹, Jeemin Kang¹, Tai-kyong Song¹ ¹Department of Electronic Engineering, Sogang University, Seoul, Korea, Republic of</p>	<p>P1C4-6 Synthetic Aperture Sequential Beamforming for Phased Array Imaging</p> <p>Deep Bera¹, Johan G. Bosch¹, Nico de Jong¹, Hendrik J. Vos¹ ¹Erasmus MC, Rotterdam, Netherlands</p>

<p>P1C1-4 An acoustical generator to induce low amplitude shear waves in the human brain</p> <p>Emmanuel Nicolas¹, Samuel Caillé², Jean-Pierre Remeuils³ ¹INSERM U930 - Tours University, TOURS, France</p>	<p>P1C2-4 Molecular Ultrasound Assessment of Colorectal Tumor Angiogenesis with Endoglin-targeted Contrast Microbubbles</p> <p>Cheng JIU¹, Yaoheng YANG¹, Zhihai QIU¹, Yongmin HUANG¹, Fei YAN², Lei SUN¹ ¹Interdisciplinary Division of Biomedical Engineering, Faculty of Engineering, The Hong Kong Polytechnic University, HONG KONG, China, People's Republic of; ²Pail C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China, People's Republic of</p>	<p>P1C3-3 Automatic Detection and Measurement of Fetal Femur Length using a Portable Ultrasound Device</p> <p>Naiad Hossain Khan¹, Eva Tegmänder^{2,3}, Johan Morten Dreier², Sturla Eik-Nes^{2,3}, Hans Torp¹, Gabriel Kiss¹ ¹SB, MI Lab and Department of Circulation and Medical Imaging, NTNU, Trondheim, Norway; ²National Center for Fetal Medicine (NCFM), St. Olavs Hospital, Trondheim, Norway; ³Department of Laboratory Medicine, Children's and Women's Health (LBK), NTNU, Trondheim, Norway</p>	<p>P1C3-11 Functional Transcranial Doppler and Cerebral Lateralization during Two Visuospatial Tasks</p> <p>Benjamin Hage¹, Mohammed Alwathan¹, Erin Barney¹, Mark Mills², Michael Dodd², Edward Truempel³, Gregory Bushford¹ ¹Department of Biological Systems Engineering, University of Nebraska-Lincoln, Lincoln, NE, USA; ²Department of Psychology, University of Nebraska-Lincoln, NE, USA; ³Department of Pediatric Intensive Care, Children's Hospital & Medical Center, Omaha, NE, USA</p>	<p>P1C4-7 A New Synthetic Aperture Imaging Method Using Virtual Elements on Both Transmit and Receive</p> <p>MooHo Bae¹, Nam Ouk Kim¹, Moon Jeong Kang¹, Sung-Jae Kwon² ¹Hajon University, Chuncheon, Korea, Republic of; ²Daejin University, Korea, Republic of</p>
<p>P1C1-5 An Arrayed-Range-Gate Data Acquisition for Spatial Distribution Analysis of Myocardial Tissue Vibration from Stenosis in Coronary Doppler Vibrometry</p> <p>Daehyeon Lee¹, Sungwoo Yoo², Dong-Bin Kim³ ¹Department of Electrical Engineering, Pohang University of Science and Technology, Pohang, Korea, Republic of; ²Department of Computer Science and Engineering, Seoul National University, Seoul, Korea, Republic of; ³Division of Cardiology, College of Medicine, The Catholic University of Korea, Seoul, Korea, Republic of</p>	<p>P1C2-5 Evaluation of Accuracy of Bolus and Burst Method for Quantitative Ultrasound Perfusion Analysis with Various Arterial Input Function Models</p> <p>Martin Metz^{1,2}, Radovan Jirik^{1,3}, Karel Soucek^{4,5}, Radim Kolar^{1,2} ¹Center for Biomedical Engineering, International Clinical Research Center, St. Anne's University Hospital Brno, Brno, Czech Republic; ²Department of Biomedical Engineering, Brno University of Technology, Brno, Czech Republic; ³Institute of Scientific Instruments of the ASCR, v. i. Brno, Czech Republic; ⁴Department of Cytokinetics, Institute of Biophysics, Academy of Sciences of the Czech Republic, v. i. Brno, Czech Republic; ⁵Center of Biomolecular and Cellular Engineering, International Clinical Research Center, St. Anne's University Hospital Brno, Brno, Czech Republic</p>	<p>P1C3-4 3D printed phantom for high frequency ultrasound imaging</p> <p>Jean-Rene Jacques¹, Frederic Ossant^{1,2}, Franck Levassort¹, Jean-Marc Gregoire¹ ¹Université François-Rabelais de Tours, Inserm, Imagerie et Cerveau UMR U930, Tours, France; ²CHRU de Tours, Tours, France; ³France, Université François-Rabelais de Tours, GREMAN, UMR 7347 CNRS, Tours, France</p>	<p>Session P1C4. MBB: Beamforming II</p> <p>Chair: Mingxi Wan Xi'an Jiaotong University</p>	<p>P1C4-8 Phase Aberration Correction with Adaptive Curve Fitting for Medical Ultrasound Imaging</p> <p>Yeokyeong YOON¹, Jinbum Kang¹, Ilseob SONG¹, Yangmo Yoo^{1,2} ¹Electronic Engineering, Sogang University, Seoul, Korea, Republic of; ²Interdisciplinary Program of Integrated Biotechnology, Sogang University, Korea, Republic of</p>
<p>P1C1-6 How Calcifications Affect Shear Wave Speed Estimations? An Experimental Study</p> <p>Adrianaa Gregory¹, Mahdi Bayat¹, Max Denis¹, Qiang Bo¹, Mohammad Mehroohmadi^{1,2}, Mostafa Fatemi¹, Azra Alizad¹ ¹Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, Minnesota, USA; ²Biomedical Engineering, Wayne State University, Detroit, Michigan, USA</p>	<p>P1C2-6 An imageJ plugin for the sizing and counting of microbubbles</p> <p>Charles SENNOGA¹, Emma Kanbar¹, Ayache Bouakaz¹ ¹Inserm U930, Université François-Rabelais de Tours, France</p>	<p>P1C3-5 Mobile 3D augmented reality system for ultrasound applications</p> <p>Gabriel Kiss¹, Cameron Lowell Palmer¹, Bjorn Olav Haugen¹, Eva Tegmänder^{2,3}, Sturla H. Eik-Nes^{2,3}, Hans Torp¹ ¹Department of Circulation and Medical Imaging and MI Lab, Norwegian University of Science and Technology, Trondheim, Norway; ²National Center for Fetal Medicine, St. Olavs Hospital, Trondheim, Norway; ³Department of Laboratory Medicine, Children's and Women's Health, Norwegian University of Science and Technology, Trondheim, Norway</p>	<p>P1C4-1 Ex vivo evaluation of an eye-adapted beamforming for axial B-scans using a 20 MHz linear array</p> <p>Tony Matso¹, Yasmine Mofid¹, Frédéric Ossant^{1,2} ¹Imagerie et Ultrasons, UMR Inserm U930 - Université François Rabelais de Tours, Tours, France; ²CHRU de Tours, Tours, France</p>	<p>P1C4-9 Multi-focus tissue harmonic images obtained with parallel transmit beamforming by means of orthogonal frequency division multiplexing</p> <p>Libertario Dami¹, Gabriele Giannini², Alessandro Ramalif², Piero Tortoli², Massimo Mischi¹ ¹Biomedical Diagnostics Lab, Eindhoven University of Technology, Eindhoven, Netherlands; ²Information Engineering Dept, Università degli Studi di Firenze, Firenze, Italy</p>
<p>P1C1-7 Evaluating Hepatic Fibrosis in Rat Liver by using Ultrasound Elastography: Comparison between Model-dependent and Model-independent Approaches</p> <p>Haoming Lin¹, Xinyu Zhang¹, Xin Chen¹, Yuanquan Shen¹, Xianfen Diao¹, Chien Ting Chin¹, Yi Zheng², Yanrong Guo¹, Tianli Wang¹, Siping Chen¹ ¹Shenzhen University, Shenzhen, China, People's Republic of; ²St. Cloud State University, St. Cloud, MN 56301, USA</p>	<p>P1C2-7 The evaluation system for measuring sensitivity of microbubbles to target molecules using a quartz crystal microbalance</p> <p>Yasuhiro Yokoi¹, Kenji Yoshida², Ryosuke Shimoya¹, Yoshiaki Watanabe¹ ¹Doshisha University, Japan; ²Chiba University, Japan</p>	<p>P1C3-6 Feasibility of uterine speckle tracking for improved embryo implantation</p> <p>Massimo Mischi¹, Nienke Kuijsters^{1,2}, Chiara Rabotti¹, Benedictus Schoot¹ ¹Eindhoven University of Technology, Netherlands; ²Catharina Ziekenhuis Eindhoven, Netherlands</p>	<p>P1C4-2 Synthetic transmit beam steering for spatial compounding applications using continuous transmit focusing</p> <p>David Napolitano¹, Robert Steins¹, Al Gee¹, Ting-Lan Ji², Ching-Hua Chou¹, Glen McLaughlin¹ ¹Advanced Technology, Zonare Medical Systems, Mountain View, California, USA; ²Mindray, Mountain View, California, USA</p>	<p>P1C4-10 Low-complexity adaptive beamforming using autocorrelation-based generalized coherence factor</p> <p>Yong-Qi Xing¹, Shue-Han Jiang¹, Gency Jeng², Che-Chou Shen¹ ¹Electrical Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan; ²SSharp Corporation, Taiwan</p>

8:00 am - 5:00 pm	Poster --- Saturday, October 24, 2015			4th floor
<p>P1C4-11 Study of Phase Aberration on Coherent Plane Wave Compounding</p> <p>Chang-Lin Hsu^{1,2}, Meng-Lin Li^{1,3} ¹Dept. of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan, ²Industrial Photonics Research Institute, Taiwan, ³Institute of Photonics Technologies, National Tsing Hua University, Taiwan</p>	<p>P1C5-7 Histotripsy Produced by Hundreds of Microsecond Focused Ultrasound Pulses in Gels and Tissue <i>ex vivo</i></p> <p>Yubo Guan¹, Mingzhu Lu¹, Yujiao Li¹, Mingxi Wan¹ ¹The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi, China, People's Republic of</p>	<p>P1C6-5 Numerical Analysis of Fast and Slow Waves Backscattered from Various Depths in Cancellous Bone</p> <p>Atsushi Hosokawa¹ ¹Department of Electrical and Computer Engineering, National Institute of Technology, Akashi College, Akashi, Japan</p>	<p>Session P1C7: MSD: Novel Hardware for Ultrasound Research</p> <p>Chair: Andrzej Nowicki Institute of Fundamental Technological Research</p>	<p>P1C7-8 A portable dual-mode ultrasound platform with multi-rail voltage power supply for adaptive diagnostic imaging and therapy sequence programming</p> <p>Gary Yi Hou¹, Bob Uvack¹, Richard Tobias¹ ¹Cephasonics, Santa Clara, California, USA</p>
<p>Session P1C5: MTH: In Vitro and In Vivo Therapeutics</p> <p>Chair: Nobuki Kudo Hokkaido University</p>	<p>P1C5-8 Motion-triggered Lesion Formation with Close-loop Control in Rats Liver <i>In Vivo</i></p> <p>Dalong Liu¹, Emaad Ebbini¹ ¹Electrical and Computer Engineering, University of Minnesota, Minneapolis, Minnesota, USA</p>	<p>P1C6-6 An anisotropic bi-layered model to estimate cortical bone properties from guided-wave measurements</p> <p>Nicolas Bochud¹, Jean-Gabriel Minonzio¹, Quentin Vallet¹, Pascal Laugier¹ ¹Laboratoire d'Imagerie Biomédicale, Sorbonne Universities, UPMC Univ Paris 06, INSERM, CNRS, Paris, France</p>	<p>P1C7-1 FPGA Implementation of Low-Power 3D Ultrasound Beamformer</p> <p>Richard Sampson¹, Ming Yang², Siyuan Wei², Rungroj Jintanathasawat¹, Brian Fowlkes³, Oliver Krippligans³, Chaitali Chakrabarti², Thomas F. Wensink¹ ¹Department of Electrical Engineering and Computer Science, University of Michigan, Ann Arbor, MI - Michigan, USA, ²School of Electrical, Computer, and Energy Engineering, Arizona State University, Tempe, Arizona, USA, ³Department of Radiology, University of Michigan, Ann Arbor, MI - Michigan, USA</p>	<p>P1C7-9 Mobile ultrafast ultrasound imaging system based on smartphone and tablet devices</p> <p>Holger Hewener¹, Steffen Trethar¹ ¹Ultrasound, Fraunhofer IBMT, Sankt Ingbert, Germany</p>
<p>P1C5-1 Ultrasound stimulation of carotid baroreceptors: initial canine results</p> <p>Jesse Yen¹, Mike Parsesh², Yu Chen¹, Alejandro Covallin³ ¹University of Southern California, Los Angeles, CA, USA, ²Accelmed, San Francisco, CA, USA, ³Atidek, CA, USA</p>	<p>P1C5-9 Sonogenetics Non-invasive Brain Stimulation: Examination of thermal effect of ultrasound</p> <p>Lili Niu¹, Long Meng¹, Fei Li¹, Fei Yan¹, Ming Qian¹, Yang Xiao¹, Hairong Zheng¹ ¹Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China, People's Republic of</p>	<p>P1C6-7 Combined Estimation of Thickness and Velocities of cortical shell using reflected waves: Study on bone phantoms and samples</p> <p>Jerzy Litniewski¹, Yurij Tasinkevych¹, Jerzy Podtajecki¹, Katarzyna Falmiska ¹Institute of Fundamental Technological Research, Poland</p>	<p>P1C7-2 A FPGA-Based Multi-Channel Analog Front-End Device for High-Frequency Ultrasound Plane Wave Imaging System</p> <p>Po-Yang Lee¹, Hao-Li Liu², Chih-Chung Huang¹ ¹Department of Biomedical Engineering, National Cheng Kung University, Taiwan, ²Department of Electrical Engineering, Chang Gung University, Taiwan</p>	<p>P1C7-10 Real Time Imaging System using a 12-MHz Forward Looking Catheter with Single Chip CMUT-on-CMOS Array</p> <p>Coskun Tekes¹, Thomas M. Carpenter¹, Toby Xu¹, Sebastian Bette², Uwe Schmalenberg², David Cowell³, Steven Freear³, Ozgur Kocaturk⁴, Robert J. Lederman⁵, F. Levent Degertekin⁶ ¹G.H. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA, ²Institute of Materials in Electrical Engineering, RWTH Aachen University, Aachen, Germany, ³School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom, ⁴Division of Intramural Research, National Institute of Health, Bethesda, Maryland, USA</p>
<p>P1C5-2 Pulsed high-intensity focused ultrasound exposure decreases shear wave speed of rabbit's Achilles tendons</p> <p>Chia-Lun Yeh¹, Pa-Chi Li¹, Po-Ling Kuo^{2,3} ¹Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan, ²Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan, ³Department of Rehabilitation, National Taiwan University Hospital, Taipei, Taiwan</p>	<p>Session P1C6: MTC: Bone</p> <p>Chair: Mami Matsukawa Doshisha University</p>	<p>P1C6-8 Clinical study of multisite axial transmission measurements in postmenopausal women using optimized first arriving signal velocity measurements</p> <p>Johannes Schneider¹, Jean-Gabriel Minonzio², Timo Zippelius³, Peter Yagci⁴, Patrick Strube⁴, Pascal Laugier⁵, Kay Raun⁶ ¹BCRT, Charité Universitätsmedizin Berlin, Berlin, Germany, ²Laboratoire d'Imagerie Biomédicale, Université Pierre et Marie Curie, Paris, France, ³CMS, Charité Universitätsmedizin Berlin, Germany, ⁴CMS, Charité Universitätsmedizin Berlin, Germany</p>	<p>P1C7-3 A FPGA-based Wearable Ultrasound Device for Monitoring Obstructive Sleep Apnea Syndrome</p> <p>Chi-Kai Weng¹, Jeng-Wen Chen², Chih-Chung Huang¹ ¹Department of Biomedical Engineering, National Cheng Kung University, Taiwan, ²Department of Otolaryngology Head and Neck Surgery, Cardinal Tien Hospital, Taiwan</p>	<p>P1C7-11 Characterization of the STHW48 integrated pulser for generating push sequences</p> <p>Matensz Walczak¹, Beata Witak¹, Marcin Lewandowski¹ ¹Institute of Fundamental Technological Research, Polish Academy of Sciences, Poland</p>

<p>P1C5-3 Optically Transparent and Acoustically Scattering Bovine Serum Albumin Gel Phantoms for Therapeutic Ultrasound Dosimetry</p> <p>Rei Asami¹, Takashi Manuoka¹, Kenichi Kawabata¹ ¹Hitech, Ltd., Japan</p>	<p>P1C5-4 Ex-vivo Perfused Swine Kidney Simulating in FUS Therapy</p> <p>Jiaqiu Wang¹, Xu Xiao¹, Robyn Duncan², Helen McLeod³, Benjamin Cox⁴, Andreas Melzer⁵ ¹Institute for Medical Science and Technology, University of Dundee, Dundee, United Kingdom, ²Centre for Anatomy and Human Identification, University of Dundee, Dundee, United Kingdom, ³Division of Cardiovascular & Diabetes Medicine, University of Dundee, Dundee, United Kingdom, ⁴Division of Imaging & Technology, University of Dundee, Dundee, United Kingdom</p>	<p>P1C5-5 Neuronavigation-Guided Focused Ultrasound-Induced Blood-Brain Barrier Opening: Feasibility When Considering The Human Skull</p> <p>Meng-Yen Tsai¹, Po-Chun Chu¹, Hong-Li Wang², Hao-Li Liu¹ ¹Department of Electrical Engineering, Chang Gung University, Tao-Yuan, Taiwan, ²School of Information and Electronic Engineering, Zhejiang Gongshang University, Hangzhou, China, People's Republic of</p>	<p>P1C6-1 Noninvasive Bone Assessment Using Ultrasound Radiation Force</p> <p>Max Denis¹, Mostafa Fatemi¹, Azra Alizad^{1,2} ¹Department of Physiology and Biomedical Engineering, Mayo College of Medicine, Rochester, MN, USA, ²Department of Internal Medicine, Mayo College of Medicine, Rochester, MN, USA</p>	<p>P1C6-2 High-frequency backscatter measurements reveals large basic multicellular units in cortical bone</p> <p>Adeline Bourgonn¹, Kay Raum¹ ¹Charité-Universitätsmedizin Berlin, Germany</p>	<p>P1C6-3 Sensitivity analysis of leaky-Lamb modes to the thickness and material properties of cortical bone with soft tissue: a semi-analytical finite-element (SAFE) based simulation study</p> <p>Tho N.H.T. Tran¹, Lawrence H. Le^{1,2}, Vu-Hieu Nguyen³, Kim-Cuong T. Nguyen⁴, Mauricio D. Sacchi² ¹Department of Radiology and Diagnostic Imaging, University of Alberta, Canada, ²Department of Physics, University of Alberta, Canada, ³Laboratoire Modélisation et Simulation Multi Echelle UMR 8208 CNRS, Université Paris Est, France, ⁴Department of Dentistry, University of Alberta, Canada</p>	<p>P1C6-4 Axial Transmission Measurements in Cortical Bone: A Comparison between Linear Radon Transform and SVD-based Approaches</p> <p>Kailiang Xu^{1,2}, Jean-Gabriel Minonzio³, Dean Ta¹, Bo Hu¹, Weiqi Wang¹, Pascal Laugier² ¹Department of Electronic Engineering, Fudan University, Shanghai, China, ²People's Republic of, ³Laboratoire d'Imagerie Biomédicale, UMR CNRS 7371 - INSERM U1146 - UPMC, Paris, France</p>
<p>P1C6-9 Hypersonic wave velocity in drying collagen film with AGE crosslinks</p> <p>Yuki Imoto¹, Shinji Takayanagi¹, Mitsuru Saito², Keishi Marumo³, Mami Matsukawa¹ ¹Wave Electronics Research Center, Doshisha University, Kyotanabe Kyoto, Japan, ²Department of Orthopaedic Surgery, Jikei University School of Medicine, Tokyo, Japan</p>	<p>P1C6-10 Ultrasound radiation from bone transducer in the MHz range</p> <p>Sayaka Matsukawa¹, Hiroko Tsuneda¹, Isao Mano¹, Katsunori Mizuno², Takahiko Yanagita³, Shinji Takayanagi¹, Mami Matsukawa¹ ¹Doshisha University, Japan, ²University of Tokyo, Japan, ³Waseda University, Japan</p>	<p>P1C6-11 An optimization method for pairing in-vivo guided wave measurements with theoretical Rayleigh-Lamb modes</p> <p>Nicolas Bochud¹, Jean-Gabriel Minonzio¹, Quentin Vallet¹, Pascal Laugier² ¹Laboratoire d'Imagerie Biomédicale, Sorbonne Universités, UPMC Univ Paris 06, INSERM, CNRS, Paris, France</p>	<p>P1C7-4 HD-PULSE: High channel Density Programmable Ultrasound System based on consumer Electronics</p> <p>Alejandra Ortega¹, David Lines², João Pedrosa¹, Bidisha Chakraborty¹, Hans Cassert², Jan Dhoooge¹ ¹Department of Cardiovascular Sciences, KU Leuven, Leuven, Belgium, ²Diagnostic Sonar Ltd., Livingston, United Kingdom</p>	<p>P1C7-5 Smartphone-based Portable Ultrasound Imaging System: Prototype Implementation and Evaluation</p> <p>Sewoong Ahn¹, Jeeun Kang¹, Pilsu Kim¹, Gunho Lee¹, Eunji Jung¹, Woojin Jung¹, Minsuk Park¹, Taikyong Song¹ ¹Department of Electronic Engineering, Sogang University, Seoul, Korea, Republic of</p>	<p>P1C7-6 A Cost-effective Portable Ultrasound Imaging System with Wireless Connection</p> <p>Heyuan Qiao¹, Bingting Zhao² ¹School of Medical Engineering, Hebei University of Technology, Hebei, Anhui, China, ²People's Republic of, Anhui University, Hebei, Anhui, China, People's Republic of</p>	<p>P1C7-7 Color Doppler Imaging on a Smartphone-based Portable US System: Preliminary Study</p> <p>Eunji Jeong¹, Sua Bae¹, Minsuk Park¹, Woojin Jung¹, Jeeun Kang¹, Taikyong Song¹ ¹Department of Electronic Engineering, Sogang University, Korea, Republic of</p>
<p>Session P2C-1. Microfluidics</p> <p>Chair: David Greve Carnegie Mellon University</p>	<p>P2C1-1 Measurement of Very Low Concentration of Microparticles in Fluid by Single Particle Detection using Acoustic Radiation Force Induced Particle Motion</p> <p>John Lee¹, Javier Jimenez², Ian R. Butterworth³, Carlos Castro-González², Shiva K. Shukla³, Berta Martí-Fuster², Luis Elvira³, Duane S. Boning¹, Brian W. Anthony¹ ¹Massachusetts Institute of Technology, Cambridge, MA, USA, ²Madrid-MIT F+ Fusion Consortium, Massachusetts Institute of Technology, Cambridge, MA, USA, ³Instituto de Tecnologías Físicas y de la Información (CSIC), Madrid, Spain</p>	<p>P2C1-2 Investigation of surface-acoustic-wave atomization using Phase Doppler Anemometry</p> <p>Taiki Hiromoto¹, Motoaki Hara¹, Taku Kudo², Hideaki Kobayashi², Hiroki Kuwano¹ ¹Graduate school of Engineering, Tohoku University, Japan, ²Institute of Fluid Science, Tohoku University, Japan</p>	<p>P2C1-3 The Plate Acoustic Wave Sensor for Detection of Bacterial Cells in Liquid Phase</p> <p>Irina Borodina¹, Boris Zaitsev¹, Andrey Teplykh¹, Alexander Shikhabudinov¹, Iren Kuznetsova¹, Olga Guly¹, Andrey Smirnov⁴ ¹Saratov Branch, Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russian Federation, ²Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russian Federation, ³Institute of Biochemistry & Physiology of Plants & Microorganisms RAS, Russian Federation, ⁴Saratov State University, Russian Federation</p>			

8:00 am - 5:00 pm		Poster --- Saturday, October 24, 2015		4th floor	
<p>P2C1-4 Particle Size of Non-Contact Atomization of Low Surface Tension Liquid by Powerful Aerial Ultrasonic.</p> <p>Arisa Endo¹, Takiya Asami¹, Takashi Ono¹, Hikaru Miura¹ ¹College of Science & Technology, Nihon University, Tokyo, Japan</p>	<p>Session P2C3. Sensing and Energy Harvesting</p> <p><i>Chair:</i> Pierre Khuri-Yakub Stanford University</p>	<p>P3C1-1 c-axis parallel polarity inverted multilayer ZnO film resonators fabricated by grazing ion beam assisted RF magnetron sputtering</p> <p>Takeshi Mori¹, Takahiko Yanagitani², Masashi Suzuki¹ ¹Nagoya Institute of Technology, Japan, ²Waseda University, Tokyo, Japan</p>	<p>P3C3-2 Study on Achievement of Simultaneous X, Y Movements and Theta Rotation Using Straight-Move Ultrasonic Vibrators</p> <p>Toshiaki Sakayachi¹, Yusuke Nagata¹, Mitsutaka Hikita¹ ¹Department of GE, Kogakuin University, Tokyo, Japan</p>	<p>Session P5C2. Transducer for Imaging and Diagnosis</p> <p><i>Chair:</i> Christine Demoré University of Dundee</p>	<p>P5C2-1 Acoustic Characterisation of a PZT Matrix With Integrated Electronics for a 3D-TEE Probe</p> <p>Shreyas Raghunathan¹, Chao Chen², Maysam Shabanimogh¹, Zhao Chen², Sandra Blaak³, Zili Yu², Christian Prins³, Michiel Perleij², Johan Bossch⁴, Nico de Jong⁴, Martin Verveij⁴ ¹Lab of Acoustic Wavefield Imaging, Delft University of Technology, Netherlands; ²Electronic Instrumentation Lab., Delft University of Technology, Netherlands; ³Oldefit Ultrasound, Netherlands; ⁴Dept. of Biomedical Engineering, Erasmus Medical Centre, Netherlands</p>
<p>Session P2C2. Transducers and Wave Generation</p> <p><i>Chair:</i> Kentaro Nakamura Tokyo Institute of Technology</p>	<p>P2C3-1 Study on Movement Detection in Care Environment Using Precise Ultrasonic Distance Measurement at 40 kHz Installed in Sensor Network</p> <p>Yukari Kaneda¹, Takeo Sato¹, Mitsutaka Hikita¹ ¹Department of GE, Kogakuin University, Tokyo, Japan</p>	<p>P3C1-2 Shear mode properties of c-axis parallel oriented ScAl_{1-x}N films grown by RF bias sputtering</p> <p>Shinji Takayanagi¹, Takahiko Yanagitani², Mami Matsukawa¹ ¹Doshisha University, Kyotoabe, Japan, ²Waseda University, Tokyo, Japan</p>	<p>P3C3-3 An ultrasonic motor using transmission line and horn with oblique slits driven by a Langevin transducer.</p> <p>Takaaki Ishii¹, Souichiro Takehana¹, Tsuyoshi Shimizu¹ ¹Mechatronics, University of Yamaguchi, Kofu, Yamaguchi, Japan</p>	<p>P5C2-2 Dual frequency IVUS array for contrast enhanced intravascular ultrasound imaging</p> <p>Zhuochen Wang¹, Wenbin Huang¹, Karl Heath Martini², Paul A. Dayton², Xiaoning Jiang¹ ¹North Carolina State University, USA, ²University of North Carolina, USA</p>	<p>P5C2-3 A simulation frame work to optimize volumetric cardiac imaging on a multiplexed system</p> <p>Carolina Vallecilla¹, Alejandra Ortega¹, Martino Alessandrini¹, Jan Dhooze¹ ¹Cardiovascular Imaging and Dynamics, KU Leuven, Leuven, Belgium</p>
<p>P2C2-1 Study of ultrasonic machining using longitudinal and torsional vibration</p> <p>Takiya Asami¹, Hikaru Miura¹ ¹College of Science & Technology, Nihon University, Chiyoda-ku, Tokyo, Japan</p>	<p>P2C3-2 Research on Improving the Sensitivity of SAW/GC Gas Sensors</p> <p>Jiuling Liu¹, Minghua Liu¹, Shitang He¹ ¹Institute of Acoustics, Chinese Academy of Sciences, Beijing, China, People's Republic of</p>	<p>P3C1-3 Measurement of acoustic wave velocity and refractive index in thickness direction of c-axis oriented ScAlN films by Brillouin scattering</p> <p>Shota Tomita¹, Takahiko Yanagitani², Masashi Suzuki², Hayato Ichihashi¹, Shinji Takayanagi¹, Mami Matsukawa¹ ¹Doshisha University, Kyotoabe, Kyoto, Japan, ²Waseda University, Okubo Shinjuku, Tokyo, Japan</p>	<p>P3C3-4 An ultrasonic motor using transmission line and spiral structure driven by a Langevin transducer.</p> <p>Takaaki Ishii¹, Masaki Mochizuki¹, Tsuyoshi Shimizu¹ ¹Mechatronics, University of Yamaguchi, Kofu, Yamaguchi, Japan</p>	<p>P5C2-2 Dual frequency IVUS array for contrast enhanced intravascular ultrasound imaging</p> <p>Zhuochen Wang¹, Wenbin Huang¹, Karl Heath Martini², Paul A. Dayton², Xiaoning Jiang¹ ¹North Carolina State University, USA, ²University of North Carolina, USA</p>	<p>P5C2-3 A simulation frame work to optimize volumetric cardiac imaging on a multiplexed system</p> <p>Carolina Vallecilla¹, Alejandra Ortega¹, Martino Alessandrini¹, Jan Dhooze¹ ¹Cardiovascular Imaging and Dynamics, KU Leuven, Leuven, Belgium</p>
<p>P2C2-2 ScAlN thin film transducers for ultrasonic microscopy in the VHF range</p> <p>Yusuke Kora¹, Masashi Suzuki², Takahiko Yanagitani^{2,3} ¹Hitachi, Ltd., Hitachi, Japan, ²Nagoya Institute of Technology, Japan, ³Waseda University, Japan</p>	<p>Session P3C2. Nonlinear Acoustics II</p> <p><i>Chair:</i> John Larson Avago Technologies</p>	<p>P3C1-3 Measurement of acoustic wave velocity and refractive index in thickness direction of c-axis oriented ScAlN films by Brillouin scattering</p> <p>Shota Tomita¹, Takahiko Yanagitani², Masashi Suzuki², Hayato Ichihashi¹, Shinji Takayanagi¹, Mami Matsukawa¹ ¹Doshisha University, Kyotoabe, Kyoto, Japan, ²Waseda University, Okubo Shinjuku, Tokyo, Japan</p>	<p>P3C3-5 Precise Positioning Characteristics of Multi-Mode Ultrasonic Motor</p> <p>Masaya Takasaki¹, Shuo Zhang¹, Masayuki Hara¹, Daisuke Yamaguchi¹, Yuji Ishino¹, Takeshi Mizuno¹ ¹Dept. Mechanical Eng., Saitama University, Saitama, Japan</p>	<p>P5C2-2 Dual frequency IVUS array for contrast enhanced intravascular ultrasound imaging</p> <p>Zhuochen Wang¹, Wenbin Huang¹, Karl Heath Martini², Paul A. Dayton², Xiaoning Jiang¹ ¹North Carolina State University, USA, ²University of North Carolina, USA</p>	<p>P5C2-3 A simulation frame work to optimize volumetric cardiac imaging on a multiplexed system</p> <p>Carolina Vallecilla¹, Alejandra Ortega¹, Martino Alessandrini¹, Jan Dhooze¹ ¹Cardiovascular Imaging and Dynamics, KU Leuven, Leuven, Belgium</p>
<p>P2C2-2 ScAlN thin film transducers for ultrasonic microscopy in the VHF range</p> <p>Yusuke Kora¹, Masashi Suzuki², Takahiko Yanagitani^{2,3} ¹Hitachi, Ltd., Hitachi, Japan, ²Nagoya Institute of Technology, Japan, ³Waseda University, Japan</p>	<p>P2C3-3 Powering autonomous wireless sensors with miniaturized piezoelectric based energy harvesting devices for NDT applications</p> <p>Claire Bantignies¹, Thien Hoang¹, Hung Le Khanh¹, Guillaume Ferni¹, Etienne Flesch¹, An Nguyen-Dinh¹ ¹Advanced Research Dpt., VERMON, France</p>	<p>P3C1-3 Measurement of acoustic wave velocity and refractive index in thickness direction of c-axis oriented ScAlN films by Brillouin scattering</p> <p>Shota Tomita¹, Takahiko Yanagitani², Masashi Suzuki², Hayato Ichihashi¹, Shinji Takayanagi¹, Mami Matsukawa¹ ¹Doshisha University, Kyotoabe, Kyoto, Japan, ²Waseda University, Okubo Shinjuku, Tokyo, Japan</p>	<p>P3C3-5 Precise Positioning Characteristics of Multi-Mode Ultrasonic Motor</p> <p>Masaya Takasaki¹, Shuo Zhang¹, Masayuki Hara¹, Daisuke Yamaguchi¹, Yuji Ishino¹, Takeshi Mizuno¹ ¹Dept. Mechanical Eng., Saitama University, Saitama, Japan</p>	<p>P5C2-2 Dual frequency IVUS array for contrast enhanced intravascular ultrasound imaging</p> <p>Zhuochen Wang¹, Wenbin Huang¹, Karl Heath Martini², Paul A. Dayton², Xiaoning Jiang¹ ¹North Carolina State University, USA, ²University of North Carolina, USA</p>	<p>P5C2-3 A simulation frame work to optimize volumetric cardiac imaging on a multiplexed system</p> <p>Carolina Vallecilla¹, Alejandra Ortega¹, Martino Alessandrini¹, Jan Dhooze¹ ¹Cardiovascular Imaging and Dynamics, KU Leuven, Leuven, Belgium</p>

<p>P2C2-3 Source Location Techniques in Plate-like Structures based on Fiber Coupler Sensors</p> <p>Fengmei Li¹, Yiyang Liu¹, Linjie Wang¹, Zhenyu Zhao¹, Zhenning Zhao¹</p> <p>¹Xi'an Jiaotong University, China, People's Republic of</p>	<p>P2C3-4 3D Ultrasound Palmprint recognition system based on a mechanically tilted linear probe</p> <p>Antonio Iula¹, Donatella Nardello¹, Alessandro Ramalli², Francesco Guidi²</p> <p>¹University of Basilicata, Potenza, Italy, ²University of Firenze, Italy</p>	<p>P3C2-1 Nonlinear elastic properties of the interface solid - granular unconsolidated media</p> <p>Natalia Shirgina¹, Aleksey Koksharskiy¹, Alexandr Korobov¹</p> <p>¹Department of Physics, M.V. Lomonosov Moscow State University, Moscow, Russian Federation</p>	<p>P3C3-6 Research on a vibration induced low friction pneumatic actuator with radial-direction vibration mode</p> <p>Han Gao¹, Jun Wang², Marus Naburs², Jun Qian², Gang Bao¹, Michael De Volder², Dominiek Reynaerts²</p> <p>¹Harbin Institute of Technology, China, People's Republic of, ²Katholieke Universiteit Leuven, Belgium</p>	<p>P5C2-4 Press-focused 226MHz Ultrahigh Frequency Ultrasound Transducer for Programmable Particle Manipulation</p> <p>Ming Qian¹, Ying Li², Qifa Zhou², K. Kirk Shung², Haihong Zheng¹</p> <p>¹Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, People's Republic of, ²NIH Ultrasonic Transducer Resource Center and Department of Biomedical Engineering, University of Southern California, USA</p>
<p>P2C2-4 Research on ultrasonic detection method of fuel tank leakage</p> <p>Hua Xue¹, Di Wu¹, Yongping Teng¹, Yaping Zhang¹, Zhenning Zhao¹</p> <p>¹Beijingiaotong University, China, People's Republic of</p>	<p>P2C3-5 A three-dimensional, wideband vibration energy harvester using magnetostriptive/piezoelectric composite transducer</p> <p>Jin Yang¹, Qiangmo Yu², Jiangxin Zhao², Nian Zhao², Yumei Wen², Ping Li²</p> <p>¹Chongqing University, Shapingba, Chongqing, China, People's Republic of, ²Chongqing University, China, People's Republic of</p>	<p>P3C2-2 Influence of transmission-reception characteristics of ultrasound transducers on statistics of echoes from nonhomogeneous media</p> <p>Norbert Zolek¹, Janusz Wojcik¹, Marcin Lewandowski¹</p> <p>¹Institute of Fundamental Technological Research, Warsaw, Poland</p>	<p>Session P5C1. Front-end and Integrated Electronics</p> <p><i>Chair: Christine Demoré</i> University of Dundee</p>	<p>P5C2-5 The Effect of the Transducer Parameters on Spatial Resolution in Plane-Wave Imaging</p> <p>Zamab Alomari^{1,2}, Sevan Harput², Sa Icer Hyder², Steven Freear²</p> <p>¹Electronics Engineering College, Mosul University, Mosul, Iraq, ²School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom</p>
<p>P2C2-5 Ultrasonic phased array on the inner surface of circular pipe for detecting the circumferential flaw in a pipe</p> <p>Zhongqun Guo¹, Yitao Tan¹, Fangfang Shi¹, Bixing Zhang¹, Junjie Gong¹</p> <p>¹State Key Laboratory of Acoustics, Institute of Acoustics, Chinese Academy of Sciences, China, People's Republic of</p>	<p>P2C3-6 A Resonant Sensor for Liquid Density Measurement Based on a Piezoelectric Bimorph</p> <p>Nicola Lamberti¹, Monica La Mura¹, Valerio Apuzzo¹, Pasquale D'Uva¹, Alessandra Casella¹, Giosuè Caliano², Alessandro Stuart Savoia²</p> <p>¹DIIn, University of Salerno, Fisciano, Italy, ²Dept. of Engineering, University Roma Tre, Rome, Italy</p>	<p>Session P3C3. Ultrasonic Motors & Actuators</p> <p><i>Chair: John Larson</i> Avago Technologies</p>	<p>P5C1-1 A feasibility study for arbitrary waveform generator using on-off pulses and modified PWM waveforms in the front-end circuit integrated with 2D array transducer</p> <p>Bae-Hyung Kim¹, Seungheun Lee¹, Kangsik Kim¹</p> <p>¹Ultrasonic R&D Group, Samsung Electronics Co., Ltd., Seoul, Korea, Republic of</p>	<p>P5C2-6 Fabrication and Characterisation of Miniature Parabolic Acoustic Lenses</p> <p>Erwin J Alles¹, Danil Nikitchev¹, Adrien E Desjardins¹</p> <p>¹Department of Medical Physics & Biomedical Engineering, University College London, London, United Kingdom</p>
<p>P2C2-6 Flexible Ultrasonic Transducers for Transverse Horizontal Guided Waves in Structures</p> <p>Ching-Chung Yin¹, Wei-Che Tsai¹</p> <p>¹Department of Mechanical Engineering, National Chiao Tung University, Hsinchu, Taiwan</p>	<p>Session P3C1. Thin Films</p> <p><i>Chair: John Larson</i> Avago Technologies</p>	<p>P3C3-1 Ultra femto-liter mist generation using surface acoustic wave device for sterilization and eradication in the atmosphere</p> <p>Tatsuya Sugiyama¹, Takashi Kimura¹, Jun Komodo¹</p> <p>¹Shizuoka University, Hamamatsu-shi, Japan</p>	<p>P5C1-2 Real time autofocusing hardware for ultrasonic imaging with interfaces</p> <p>Jorge F. Cruza¹, Luis Medina-Valdes¹, Carlos Fritsch¹</p> <p>¹Ultrasonic Systems Group, Spanish National Research Council (CSIC), Madrid, Madrid, Spain</p>	<p>P5C2-7 Design of linear array transducer using inversion layer for ultrasound harmonic imaging</p> <p>Chan Yuk Park¹, Jin Ho Sung¹, Jong Seob Jeong¹</p> <p>¹Medical Biotechnology, Dongguk University, Gyeonggi-do, Korea, Republic of</p>

SATURDAY POSTER

8:00 am - 5:00 pm		Poster --- Saturday, October 24, 2015		4th floor
<p>P5C2-8 Non-Elevation-Focused Probe (NEFP) Designed for Pure Plane-wave Ultrasound Imaging</p> <p>Congzhi Wang¹, Ning Guo¹, Yang Xiao¹, Weibao Qiu¹, Hairong Zheng¹, ¹Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, People's Republic of</p>	<p>P5C3-3 Study of Ultrasound Transducer Which Produces Second Harmonic Superimposed Signal</p> <p>Zarifadhii Zaini¹, Hayato Jimbo¹, Ryo Takagi¹, Shin Yoshizawa¹, Shin-ichiro Umemura¹ ¹Tohoku University, Japan</p>			
<p>P5C2-9 An Integrated Convex Ultrasound Endoscope for Digestive Tract Imaging</p> <p>Jue PENG^{1,2}, Zhifei Qin^{1,2}, Xiaojian PENG^{1,2}, Tianli WANG^{1,2}, Sping CHEN^{1,2}, ¹Department of Biomedical Engineering, School of Medicine, Shenzhen University, National-Regional Key Technology Engineering Laboratory for Medical Ultrasound, Shenzhen, China, People's Republic of; ²Department of Biomedical Engineering, School of Medicine, Shenzhen University, Guangdong Key Laboratory for Biomedical Measurements and Ultrasound Imaging, Shenzhen, China, People's Republic of</p>				
<p>P5C2-10 Fabrication and Performance of a Micro 50-MHz IVUS Transducer Based on a 1-3 Composite with Geometric Focusing</p> <p>Xiaohua Jian¹, Zhile Han¹, Weiwei Shao¹, Zhangjian Li¹, Yaoyao Cui¹ ¹Suzhou Institute of Biomedical Engineering and Technology, CAS, Suzhou, China, People's Republic of</p>				
<p>P5C2-11 Evaluation of piezo composite based omnidirectional single fibre transducers for 3D USCT</p> <p>Michael Zapf¹, Kai Hohlfeld², Gourav Shah¹, Sylvia Gebhardt³, Hartmut Genneke⁴, Alexander Michaelis^{5,6}, Nicole Y. Rüter¹ ¹Institute for Data Processing and Electronics, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany; ²Institute of Materials Science, TU Dresden, Dresden, Germany; ³IKTS, Fraunhofer Institute, Dresden, Germany</p>				

<p>P5C2-12 Quantifying the effect of dicing on element vibration in ultrasound transducers</p> <p>Jovana Janjic¹, Maysam Shabanmogh², Martin D. Verweij^{1,2}, Nico de Jong², Gijs van Soest¹, Antonius F.W. van der Steen^{1,2}</p> <p>¹Dept. of Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands, ²Lab. of Acoustical Wavefield Imaging, Delft University of Technology, Delft, Netherlands</p>	<p>Session P5C3. Transducers for Therapy</p> <p><i>Chair:</i> Christine D'émoré University of Dundee</p>	<p>P5C3-1 Design and fabrication of a novel three-row dual frequency ultrasound transducer for image-guided drug delivery</p> <p>Min Su¹, Shu Xue¹, Yongchuan Li¹, Lili Niu¹, Weibao Qiu¹, Yang Xiao¹, Congzhi Wang¹, Hairong Zheng¹, Ming Qian¹</p> <p>¹Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, People's Republic of</p>	<p>P5C3-2 Sparse spherical HIFU arrays based on Fermat's Spiral</p> <p>Mario Ries¹, Martijn de Greef¹, Pascal Ramaekers¹, Christ Moonen¹</p> <p>¹Imaging Division, University Medical Center Utrecht, Netherlands</p>

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Session Chairs

Addison, Robert.....	5B	Hossack, John.....	4G, P1B5	Oelze, Michael.....	1G
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Arnold, Walter.....	5L, P2B2	Jensen, Jørgen.....	4E, P1B7	Oruklu, Erdal.....	P2A3, P2B1
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Bouakaz, Ayache.....	1C, 3B	Kessler, Lawrence.....	5C	Pitschi, Maximilian.....	P4A2
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Chapelon, Jean-Yves.....	4I	Kolios, Michael.....	2J	Schafer, Mark.....	8A
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Cowell, David.....	8E	Kuypers, Jan.....	7E	Takeuchi, Yasuhito.....	P5A1, P5A2, P5A3
Dahl, Jeremy.....	4C	Lal, Amit.....	6A	Tanaka, Shuji.....	7A
Dai, Jidong.....	7C	Larson, John.....	6D, P3C1, P3C2, P3C3	Tanter, Mickael.....	2B
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