2015 IUS

IEEE International Ultrasonics Symposium

21-24 OCTOBER, 2015, TAIPEI, TAIWAN

PROGRAM BOOK

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

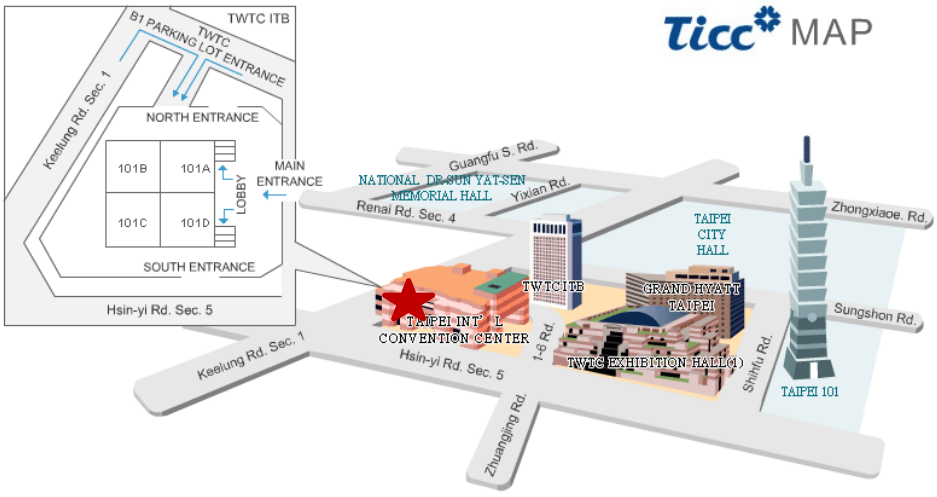
Venue Address:

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

Tel: +886(2)2725-5200

★ Taipei International Convention Center (TICC)

- TICC 500M – 5 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 *Banquet ticket is included (expect for one day, short course and guest registration). You may purchase additional tickets for accompanying guests.*	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 are 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.

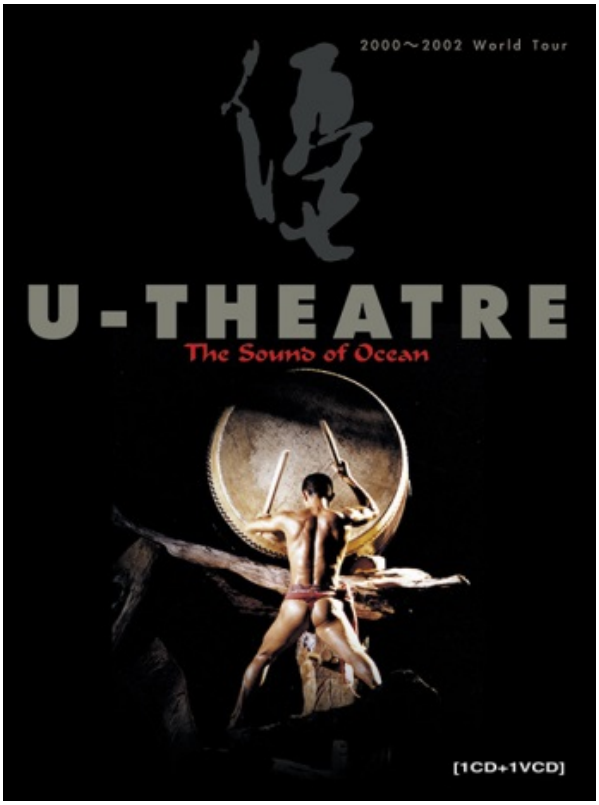
U-Theatre: Founded in Taiwan by Ms. Ruo-Yu Liu, its present art director, in October 1988, and joined by its drumming master and music director, Mr. Chih-Chun Huang, since 1993, U-Theatre has presented rigorous works of aesthetic beauty rooted in the disciplined study and practice of meditation, drumming, 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

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

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

ALS ULTRASOUND	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.
ALPINION MEDICAL SYSTEMS	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 powered by analogic	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.
AOS Advanced OEM Solutions	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	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.
Fraunhofer IBMT	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	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	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	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.
MEGGiTT	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	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.
Polytec	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.
PA PRECISION ACOUSTICS	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	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	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	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!

TECHNION Israel Institute of Technology Electrical Engineering Department Electronics Computers Communications S_A_MPL Signal Acquisition Modeling and Processing Lab Headed by Yonina Eldar	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	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.

Acknowledgements

國際貿易局 BUREAU OF FOREIGN TRADE

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科技部 Ministry of Science and Technology

Office of Naval Research GLOBAL Science & Technology

FUTURE CONFERENCE

General Chair
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Université F. Rabelais de Tours, Inserm, 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 Modeling
- AMP Materials & Propagation
- AMS Microacoustic Sensor Devices & Applications

Group 5: Tranducers & 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

UFFC IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society IEEE

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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 an**d** 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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- Qifa Zhou, University of Southern California, USA

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 Tsuyuki[1], Takefumi Kanda[1], Koichi Suzumori[2], Shin-ichiro Kawasaki[3], Shoki Ofuji[1], [1]Okayama University, Okayama, Japan, [2]Tokyo Institute of Technology, Tokyo, Japan, [3]National 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 Kawabe[1], Takahiko Yanagitani[2], Hayato Ichihashi[1], Shinji Takayanagi[1], Masashi Suzuki[3], Mami Matsukawa[1], [1]Doshisha University, Kyoto, Japan, [2]Waseda University, Tokyo, Japan, [3]Nagoya Institute of Technology, Nagoya, Japan

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

Takeshi Mori[1], Takahiko Yanagitani[2], Masashi Suzuki[1], [1]Nagoya Institute of Technology, Japan, [2]Waseda University, Tokyo, Japan

PA-4 *Multiphysics Modeling of BAW Filters*

Andreas Tag[1], Dominik Karolewski[2], Bernhard Bader[3], Maximilian Pitschi[3], Robert Weigel[1], Amelie Hagelauer[1], [1]Institute for Electronics Engineering, University of Erlangen-Nuremberg, Erlangen, Germany, [2]Institut für Mikroelektronik- und Mechatronik-Systeme gemeinnützige GmbH, Germany, [3]TDK Corporation, Germany

PA-5 *Evaluation of Acoustic Properties of $CaTiO_3$-(K,Na)NbO_3 Film Using Microfabricated Structure*

Ryosuke Kaneko[1], Michio Kadota[1], Yuji Ohashi[2], Jun-ichi Kushibiki[1], Shinsuke Ikeuchi[3], Shuji Tanaka[1], [1]Graduate school, Tohoku University, Sendai, Miyagi, Japan, [2]Institute for Material Research, Tohoku University, Sendai, Miyagi, Japan, [3]Devices Development, Murata Manufacturing Co., Ltd., Nagaokakyo, Kyoto, Japan

PA-6 *SAW Characteristics of AlN/SiO_2/3C-SiC Layered Structure with Embedded Electrodes*

Qiaozhen Zhang[1], Tao Han[1], Jing Chen[1], Kenya Hashimoto[2], [1]Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, Shanghai, Shanghai, China, People's Republic of, [2]Graduate School of Engineering, Chiba University, Japan

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

Ji Hoon Jang[1], Anshuman Bhuyan[1], Hyo-Seon Yoon[1], Jung Woo Choe[1], Amin Nikoozadeh[1], Douglas Stephens[2], Butrus Khuri-Yakub[1], [1]Electrical Engineering, Stanford University, Stanford, California, USA, [2]Biomedical Engineering, University of California, Davis, Davis, California, USA

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

Fraser Stewart[1], Antonella Verbeni[2], Yongqiang Qiu[1], Benjamin Cox[1], Jan Vorstius[3], Sandy Cochran[1], [1]Institute for Medical Science and Technology, University of Dundee, United Kingdom, [2]The BioRobotics Institute, Scuola Superiore Sant'Anna, Italy, [3]School 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 Chang[1], Marcus Weber[1], Jayant Charthad[1], Amin Nikoozadeh[1], Butrus T. Khuri-Yakub[1], Amin Arbabian[1], [1]Electrical Engineering, Stanford University, Stanford, CA, USA

PA-10 *Photoacoustic properties of plasmonic-nanoparticle coated microbubbles*

Adam Dixon[1], Song Hu[1], Alexander Klibanov[1], John Hossack[1], [1]Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA

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

Zhouye Chen[1], Adrian Basarab[1], Denis Kouamé[1], [1]IRIT, 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 Kuo[1], Yao Wang[1], Orlando Aristizabal[2,3], Daniel H. Turnbull[3], Jeffrey A. Ketterling[2], Jonathan Mamou[2], [1]Electronics and Computer Engineering, Polytechnic School of Engineering, New York University, Brooklyn, USA, [2]F. L. Lizzi Center for Biomedical Engineering, Riverside Research, New York, USA, [3]Skirball Institute of Biomolecular Medicine, New York University School of Medicine, New York, USA

PA-13 *Robust Sound Speed Estimation for Hepatic Steatosis Assessment*

Marion Imbault[1], Alex Faccinetto[2], Bruno-Félix Osmanski[1], Mathias Fink[1], Jean-Luc Gennisson[1], Valérie Vilgrain[2], Mickaël Tanter[1], [1]Institut Langevin, ESPCI ParisTech, PSL Research University, CNRS UMR 7587, INSERM U979, Paris, France, [2]Department of Radiology, Beaujon Hospital, Paris, France

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

Maria Evertsson[1], Magnus Cinthio[1], Pontus Kjellman[2,3], Sarah Fredriksson[2], Roger Andersson[1], Hanna Toftevall[2], Hans W Persson[1], Tomas Jansson[4,5], [1]Biomedical Engineering, Faculty of Engineering, LTH, Lund University, Lund, Sweden, [2]Genovis AB, Sweden, [3]Medical Radiation Physics, Clinical Sciences Lund, Lund University, Lund, Sweden, [45]Biomedical Engineering, Clinical Sciences Lund, Lund University, Lund, Sweden, [5]Medical Services, Skåne University Hospital, Lund, Sweden

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

Yu-Chun Huang[1], Jieh-Yuan Houng[1], Yi-Da Kang[2], San-Yuan Chen[2], Meng-Lin Li[1,3], [1]Dept. of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan, [2]Dept. of Materials Science and Engineering, National Chiao Tung University, Taiwan, [3]Institute of Photonics Technologies, National Tsing Hua University, Taiwan

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

Norman Thieme[1], Richard Nauber[1], Hannes Beyer[1], Hannes Radner[1], Lars Büttner[1], Paul Bönisch[2], Kaspars Dadzis[2], Lamine Sylla[2], Dagmar Meier[3], Olf Pätzold[3], Jürgen Czarske[1], [1]Laboratory for Measurement and Sensor System Techniques, Dresden University of Technology, Dresden, Germany, [2]SolarWorld Innovations GmbH, Freiberg, Germany, [3]Institut 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 Ito[1], Ryohei Nakamura[1], Hiroki Tanaka[1], Yosuke Mizuno[1], Marie Tabaru[1], Kentaro Nakamura[1], [1]Precision 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. Lee[1], Javier Jimenez[2], Xiang Zhang[1], Duane S. Boning[1], Brian W. Anthony[1], [1]Massachusetts Institute of Technology, Cambridge, MA, USA, [2]Madrid-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 1st floor**	**105 1st floor**	**103 1st floor**	**201AF 2nd floor**	**201BC 2nd floor**	**201DE 2nd 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 1st floor**	**105 1st floor**	**103 1st floor**	**201AF 2nd floor**	**201BC 2nd floor**	**201DE 2nd 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 3rd floor**	**VIP Room 4th floor**	**201BC 2nd floor**	**201DE 2nd floor**	**103 1st floor**	**201F 2nd floor**	**201A 2nd floor**	**102 1st floor**
08:00 - 09:30	Opening Plenary (Plenary Hall, 3rd floor)							
09:30 - 10:30	Coffee Break (101, 1st floor) & Poster Display (West Corridor, 4th 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 3rd floor**	**VIP Room 4th floor**	**201BC 2nd floor**	**201DE 2nd floor**	**103 1st floor**	**201F 2nd floor**	**201A 2nd floor**	**102 1st 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 3rd floor	VIP Room 4th floor	201BC 2nd floor	201DE 2nd floor	103 1st floor	201F 2nd floor	201A 2nd floor	102 1st 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, 1st floor) & Poster Display (West Corridor, 4th 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 4th floor**	**201ABC 2nd floor**	**201DE 2nd floor**	**103 1st floor**	**201F 2nd floor**		**102 1st 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, 1st floor) & Poster Display (West Corridor, 4th 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, 3rd floor							
19:00 - 21:00	Symposium Banquet (Banquet Hall, North Lounge & South Lounge, 3rd floor)							

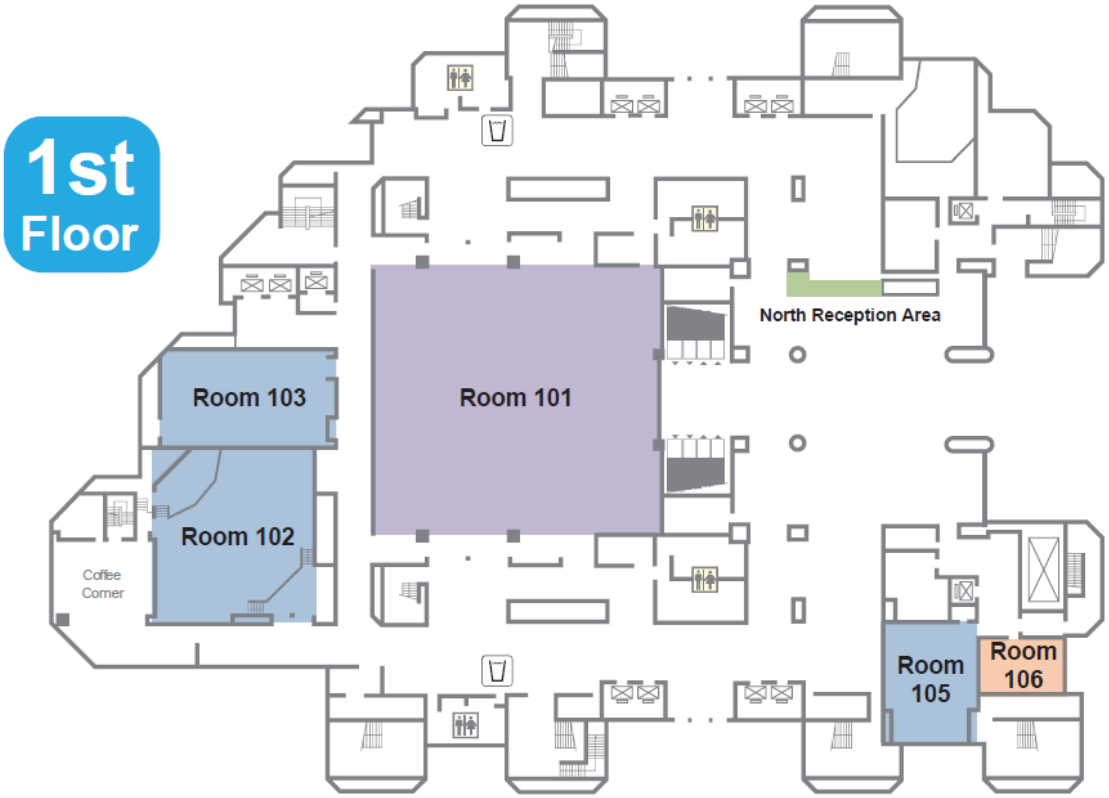
2015 IUS CONDENSED PROGRAM

Saturday, October 24, 2015

Time		VIP Room 4th floor	201ABC 2nd floor	201DE 2nd floor	103 1st floor	201F 2nd floor		102 1st 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, 1st floor) & Poster Display (West Corridor, 4th floor)							
10:30 - 12:00		Session 2I MIM: Advances in vascular and flow imaging	Session 3I MEL: Towards clincial 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 4th floor**	**201ABC 2nd floor**	**201DE 2nd floor**	**103 1st floor**	**201F 2nd floor**		**102 1st 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, 1st floor) & Poster Display (West Corridor, 4th 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 IK MSD: Novel high-frequency systems		Session 8K More Medical Transducer Applications

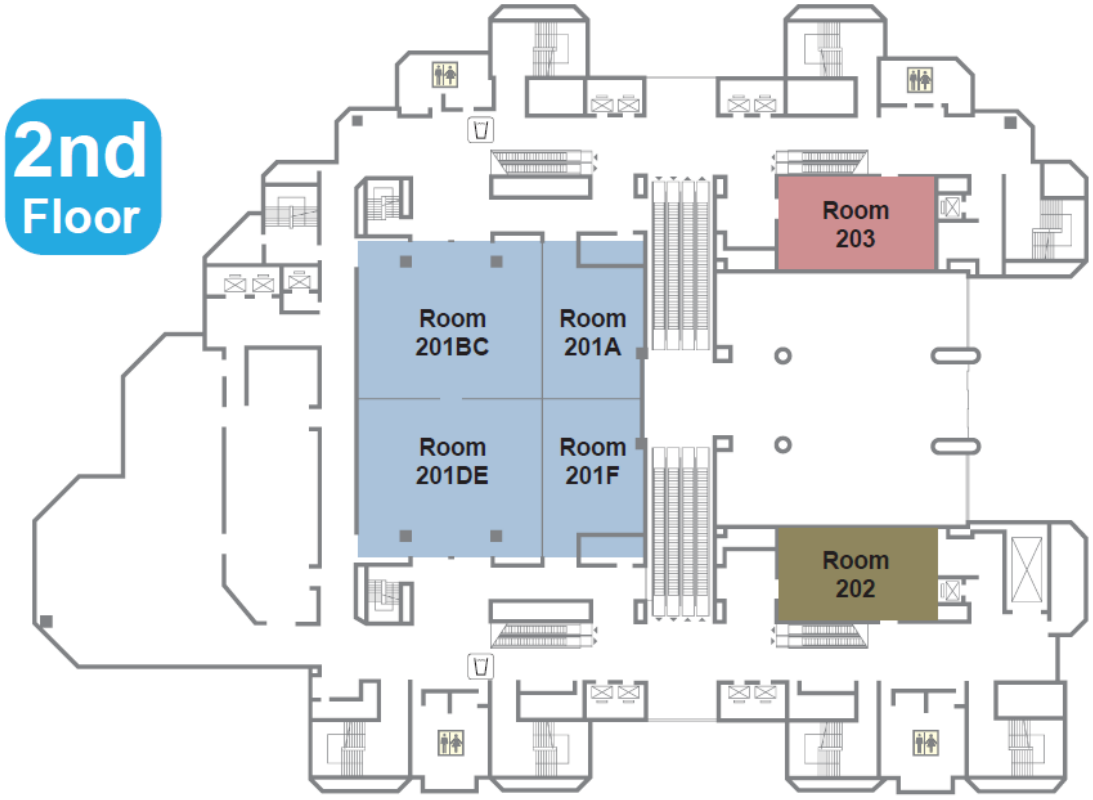
TAIPEI INTERNATIONAL CONVENTION CENTER FLOOR PLANS

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

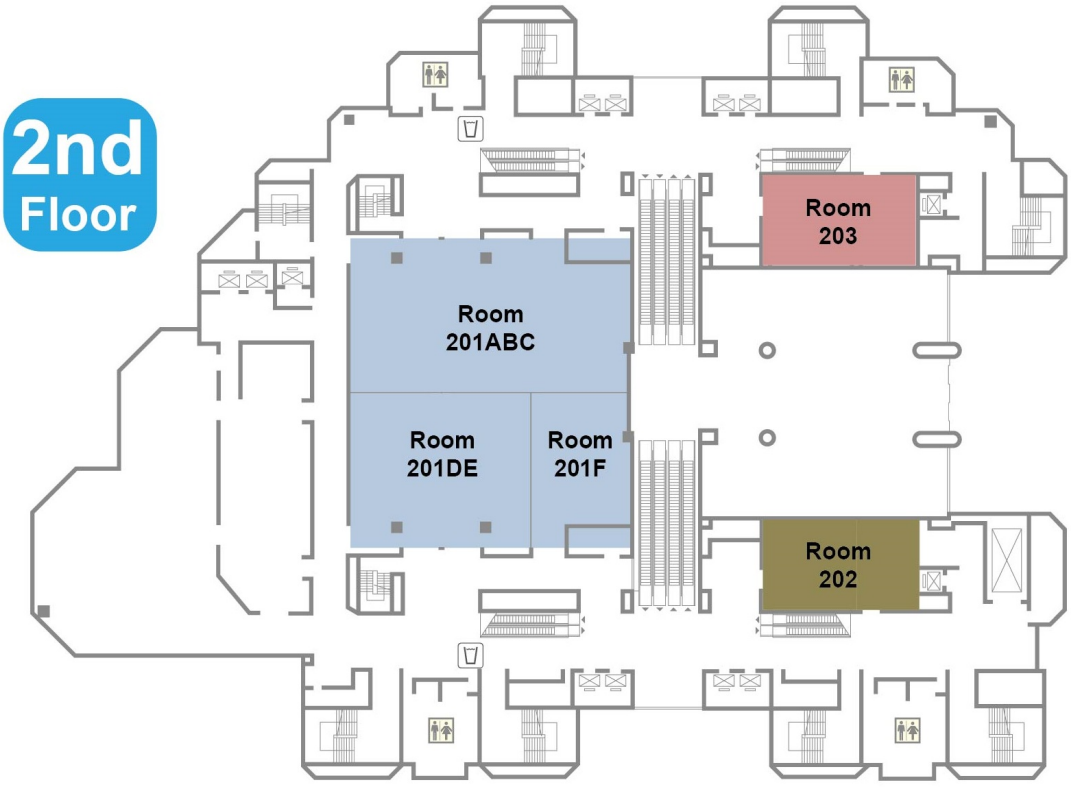


Session Rooms / Function Spaces	
Room 101	Exhibition & Student Poster Competition & Exhibitors Breakfast
Room 102	Oral Sessions & Short Course
Room 103	Oral Sessions & Short Course
Room 105	Oral Sessions & Short Course
Room 106	Family Room
North Reception Area	Registration Desk

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

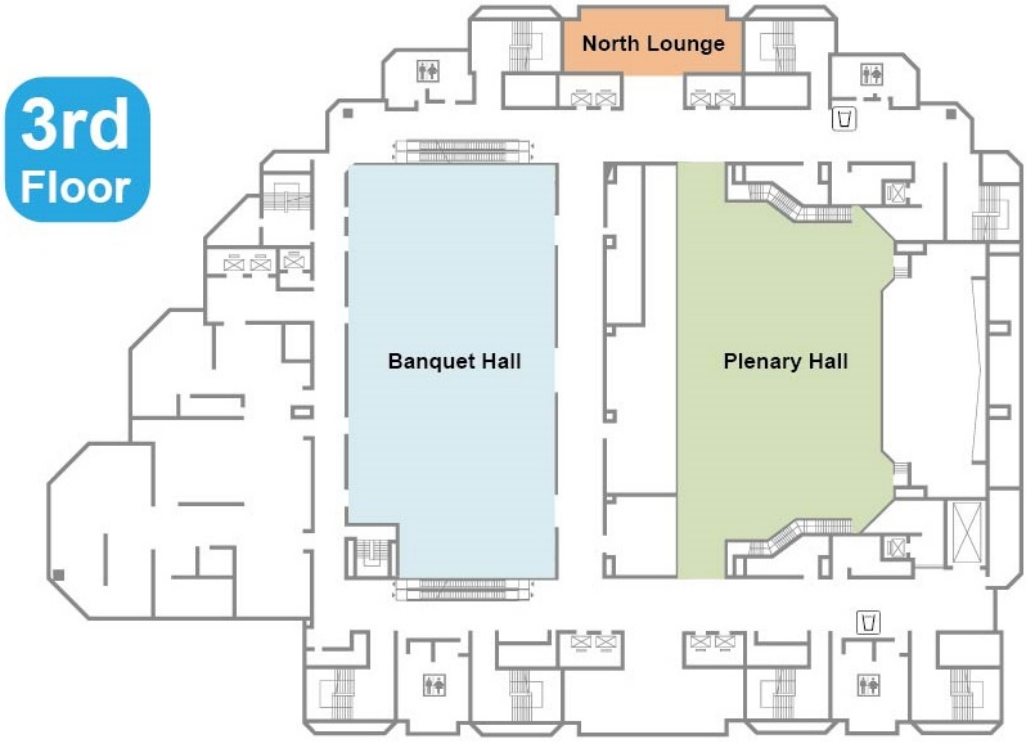


Second Floor Map: (Oral Sessions – 10/23PM~24, Speaker Ready Room, Secretariat Room)



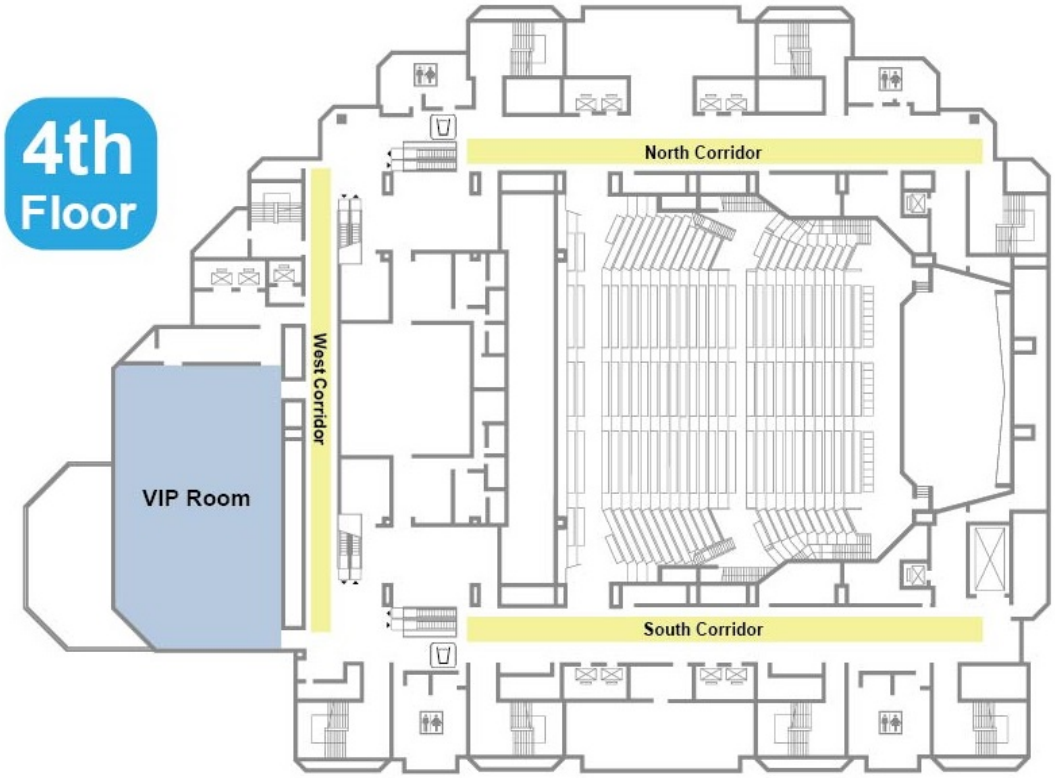
Session Rooms / Function Spaces	
Room 201 A	Oral Sessions
Room 201 BC	Oral Sessions & Short Course
Room 201 ABC	Oral Sessions
Room 201 DE	Oral Sessions & Short Course
Room 201 AF	Short Course
Room 201 F	Oral Sessions
Room 202	Secretariat Room
Room 203	Speaker Ready Room

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

Thursday 8:00 am - 6:00 pm — - Posters of Student Paper Competition -

Session PA. STUDENT PAPER COMPETITION FINALISTS

Chair: Chair: **Stanislav Emelianov**
Georgia Institute of Technology

PA-4 Multiphysics Modeling of BAW Filters

Andreas Tag[1], Dominik Karolewski[2], Bernhard Bader[3], Maximilian Pitschi[3], Robert Weigel[1], Amelie Hagelauer[1]
[1]*Institute for Electronics Engineering, University of Erlangen-Nuremberg, Erlangen, Germany,* [2]*Institut für Mikroelektronik- und Mechatronik-Systeme gemeinnützige GmbH, Germany,* [3]*TDK Corporation, Germany*

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

Fraser Stewart[1], Antonella Verbeni[2], Yongqiang Qiu[1], Benjamin Cox[1], Jan Vorstius[3], Sandy Cochran[1]
[1]*Institute for Medical Science and Technology, University of Dundee, United Kingdom,* [2]*The BioRobotics Institute, Scuola Superiore Sant'Anna, Italy,* [3]*School of Engineering, Mathematics and Physics, University of Dundee, United Kingdom*

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

Jen-wei Kuo[1], Yao Wang[1], Orlando Aristizabal[2,3], Daniel H. Turnbull[3], Jeffrey A. Ketterling[2], Jonathan Mamou[2]
[1]*Electronics and Computer Engineering, Polytechnic School of Engineering, New York University, Brooklyn, USA,* [2]*F. L. Lizzi Center for Biomedical Engineering, Riverside Research, New York, USA,* [3]*Skirball Institute of Biomolecular Medicine, New York University School of Medicine, New York, USA*

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

Norman Thieme[1], Richard Nauber[1], Hannes Beyer[1], Hannes Radner[1], Lars Büttner[1], Paul Bönisch[2], Kaspars Dadzis[2], Lamine Sylla[2], Dagmar Meier[3], Olf Pätzold[3], Jürgen Czarske[1]
[1]*Laboratory for Measurement and Sensor System Techniques, Dresden University of Technology, Dresden, Germany,* [2]*SolarWorld Innovations GmbH, Freiberg, Germany,* [3]*Institut für Nichteisen-Metallurgie und Reinststoffe, Technische Universität Bergakademie, Freiberg, Germany*

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

Shunsuke Tsuyuki[1], Takefumi Kanda[1], Koichi Suzumori[2], Shin-ichiro Kawasaki[3], Shoki Ofuji[1]
[1]*Okayama University, Okayama, Japan,* [2]*Tokyo Institute of Technology, Tokyo, Japan,* [3]*National Institute of Advanced Industrial Science and Technology, Miyagi, Japan*

PA-5 Evaluation of Acoustic Properties of $CaTiO_3$-(K,Na)NbO_3 Film Using Microfabricated Structure

Ryosuke Kaneko[1], Michio Kadota[1], Yuji Ohashi[2], Jun-ichi Kushibiki[1], Shinsuke Ikeuchi[3], Shuji Tanaka[1]
[1]*Graduate school, Tohoku University, Sendai, Miyagi, Japan,* [2]*Institute for Material Research, Tohoku University, Sendai, Miyagi, Japan,* [3]*Devices Development, Murata Manufacturing Co., Ltd., Nagaokakyo, Kyoto, Japan*

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

Ting Chia Chang[1], Marcus Weber[1], Jayant Charthad[1], Amin Nikoozadeh[1], Butrus T. Khuri-Yakub[1], Amin Arbabian[1]
[1]*Electrical Engineering, Stanford University, Stanford, CA, USA*

PA-13 Robust Sound Speed Estimation for Hepatic Steatosis Assessment

Marion Imbault[1], Alex Faccinetto[2], Bruno-Félix Osmanski[1], Mathias Fink[1], Jean-Luc Gennisson[1], Valérie Vilgrain[2], Mickaël Tanter[1]
[1]*Institut Langevin, ESPCI ParisTech, PSL Research University, CNRS UMR 7587, INSERM U979, Paris, France,* [2]*Department of Radiology, Beaujon Hospital, Paris, France*

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

Sae Ito[1], Ryohei Nakamura[1], Hiroki Tanaka[1], Yosuke Mizuno[1], Marie Tabaru[1], Kentaro Nakamura[1]
[1]*Precision and Intelligence Laboratory, Tokyo Institute of Technology, Yokohama, Japan*

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

Masahiko Kawabe[1], Takahiko Yanagitani[2], Hayato Ichihashi[1], Shinji Takayanagi[1], Masashi Suzuki[3], Mami Matsukawa[1]
[1]*Doshisha University, kyoto, Japan,* [2]*Waseda University, Tokyo, Japan,* [3]*Nagoya Institute of Technology, Nagoya, Japan*

PA-6 SAW Characteristics of AlN/SiO_2/3C-SiC Layered Structure with Embedded Electrodes

Qiaozhen Zhang[1], Tao Han[1], Jing Chen[1], Kenya Hashimoto[2]
[1]*Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, Shanghai, Shanghai, China, People's Republic of,* [2]*Graduate School of Engineering, Chiba University, Japan*

PA-10 Photoacoustic properties of plasmonic-nanoparticle coated microbubbles

Adam Dixon[1], Song Hu[1], Alexander Klibanov[1], John Hossack[1]
[1]*Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA*

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

Maria Evertsson[1], Magnus Cinthio[1], Pontus Kjellman[2,3], Sarah Fredriksson[2], Roger Andersson[1], Hanna Toftevall[2], Hans W Persson[1], Tomas Jansson[4,5]
[1]*Biomedical Engineering, Faculty of Engineering, LTH, Lund University, Lund, Sweden,* [2]*Genovis AB, Sweden,* [3]*Medical Radiation Physics, Clinical Sciences Lund, Lund University, Lund, Sweden,* [4]*5Biomedical Engineering, Clinical Sciences Lund, Lund University, Lund, Sweden,* [5]*Medical Services, Skåne University Hospital, Lund, Sweden*

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

John H. Lee[1], Javier Jimenez[2], Xiang Zhang[1], Duane S. Boning[1], Brian W. Anthony[1]
[1]*Massachusetts Institute of Technology, Cambridge, MA, USA,* [2]*Madrid-MIT M+Vision Consortium, Massachusetts Institute of Technology, Cambridge, MA, USA*

PA-3 **High order mode polarity inverted Al-polar (0001) ScAlN/O-polar (000-1) ZnO film resonator** **Takeshi Mori[1]**, Takahiko Yanagitani[2], Masashi Suzuki[1] *[1]Nagoya Institute of Technology, Japan, [2]Waseda University, Tokyo, Japan*	***PA-7*** **Dual-Mode Integrated Circuit for Imaging and HIFU With 2-D CMUT Arrays** **Ji Hoon Jang[1]**, Anshuman Bhuyan[1], Hyo-Seon Yoon[1], Jung Woo Choe[1], Amin Nikoozadeh[1], Douglas Stephens[2], Butrus Khuri-Yakub[1] *[1]Electrical Engineering, Stanford University, Stanford, California, USA, [2]Biomedical Engineering, University of California, Davis, Davis, California, USA*	***PA-11*** **Joint compressive sampling and deconvolution in ultrasound medical imaging** **Zhouye Chen[1]**, Adrian Basarab[1], Denis Kouamé[1] *[1]IRIT, UMR CNRS 5505, University of Toulouse, France*	***PA-15*** **Ultrafast Pulsed Magnetomotive Ultrasound Imaging of Sentinel Lymph Nodes: Small Animal Study** **Yu-Chun Huang[1]**, Jieh-Yuan Houng[1], Yi-Da Kang[2], San-Yuan Chen[2], Meng-Lin Li[1,3] *[1]Dept. of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan, [2]Dept. of Materials Science and Engineering, National Chiao Tung University, Taiwan, [3]Institute of Photonics Technologies, National Tsing Hua University, Taiwan*	

STUDENT PAPER COMPETITION

10:30 am - 12:00 pm	Oral --- Thursday, October 22, 2015							
	Session 1A. MEL: Carotid Elasticity Measurement Techniques *Chair:* **Ton van der Steen** *Erasmus Medical Centre*	***Session 2A. MCA: Molecular Imaging*** *Chair:* **Helen Mulvana** *University of Glasgow*	***Session 3A. MBF: Advances in Flow Imaging Methods*** *Chair:* **Piero Tortoli** *Università di Firenze*	***Session 4A. MBB: Beamforming I*** *Chair:* **Jesse Yen** *University of Southern California*	***Session 5A. Ultrasonics in Water and Air*** *Chair:* **Jiromaru Tsujino** *Kanagawa University*	***Session 6A. Acoustic Tweezers and Particle Manipulation*** *Chair:* **Amit Lal** *Cornell University*	***Session 7A. MEMS and FBAR Oscillators and Innovative Applications*** *Chair:* **Shuji Tanaka** *Tohoku University*	***Session 8A. Medical Applications of Transducers*** *Chair:* **Mark Schafer** *PhotoSonix Medical, Inc.*
	Plenary Hall	**VIP**	**201BC**	**201DE**	**103**	**201F**	**201A**	**102**
10:30 am	***1A-1*** **Elasticity measurement of carotid artery atherosclerotic plaque** **Chris de Korte**[1] *[1]Medical UltraSound Imaging Center (MUSIC), Department of Radiology and Nuclear Medicine, Radboud University Medical Center, Nijmegen, Netherlands*	***2A-1*** **The use of acoustic radiation force decorrelation weighted pulse inversion (ADW-PI) in enhancing microbubble contrast** Elizabeth Herbst[1], Sunil Unnikrishnan[1], **Shiying Wang**[1], Alexander Klibanov[1], Will Mauldin[1], John Hossack[1] *[1]Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA*	***3A-1*** **Adaptive Spectral Estimation Methods in Color Flow Imaging** **Yücel Karabiyik**[1], Ingvild Kinn Ekroll[1,2], Jørgen Avdal[1], Hans Torp[1], Lasse Løvstakken[1] *[1]Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway, [2]St. Olavs Hospital, Trondheim, Norway*	***4A-1*** **Coherence Beamforming Applied to Velocity Estimation and Partially Coherent Signals** **Jeremy Dahl**[1], You Li[2], Dongwoon Hyun[2] *[1]Radiology, Stanford University, Palo Alto, CA, USA, [2]Biomedical Engineering, Duke University, Durham, NC, USA*	***5A-1*** **Shear wave generation in soft tissues using electrolysis-induced bubbling** Sandra Montalescot[1],**Stefan Catheline**[2], Ali Zorgani[3], Benedicte Roger[1], Rémi Souchon[1] *[1]INSERM, University of Lyon, France,[2]INSERM, University of Lyon, Lyon, France,[3]University of Lyon, France*	***6A-1*** **Dynamic Acoustic Field for Tuneable and Scalable Particle Sorting** George Skotis[1], David Cumming[1], Jemma Roberts[1], Mathis Riehle[1],**Anne Bernassau**[2] *[1]University of Glasgow, United Kingdom, [2]Heriot-Watt University, United Kingdom*	***7A-1*** **GaN MEMS Resonators and Oscillators** **D. Weinstein**[1] *[1]MIT, Cambridge, MA, USA*	***8A-1*** ***In-vivo*** **navigation of neurosurgical biopsy needles using microultrasound transducers with M-mode imaging** **Rachael McPhillips**[1], Yun Jiang[2], Zhen Qiu[1], Syed Osama Mahboob[1], Han Wang[1], Carl Meggs[2], Giuseppe Schiavone[3], Daniel Rodriguez-Sanmartin[4], Sam Eljamel[1], Marc P. Y. Desmulliez[3], Christine E.M. Démoré[1], Tim Button[2], Sandy Cochran[1]
10:45 am		***2A-2*** **Quantification of the binding kinetics of targeted ultrasound contrast agent for molecular imaging of cancer angiogenesis** **Simona Turco**[1], Peter J. A. Frinking[2], Hessel Wijkstra[1,3], Massimo Mischi[1] *[1]Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands, [2]Bracco Suisse S.A., Geneva, Switzerland, [3]Urology, Academic Medical Center, University of Amsterdam, Amsterdam, Netherlands*	***3A-2*** **Robust Estimator Design for High Frame Rate Flow Vectorgraphy: The Least-Squares Vector Doppler Technique** **Billy Y. S. Yiu**[1], Alfred C. H. Yu[1] *[1]Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong*	***4A-2*** **Acoustic clutter suppression with weighted phase-difference coherence factor** **Zijian Guo**[1], Ting-Lan Ji[2], Albert Gee[1], Dave Napolitano[1], Ching-Hua Chou[1], Yuling Chen[1], D-L Donald Liu[2], Glen McLaughlin[1] *[1]Zonare Medical Systems, Mountain View, CA, USA, [2]Mindray North America, Mountain View, CA, USA*	***5A-2*** **Measurement of human body surface displacement by breathing using airborne ultrasound** **Shinnosuke Hirata**[1], Hiroyuki Hachiya[1] *[1]Dept. of Mechanical and Control Engineering, Tokyo Institute of Technology, Meguro-ku, Japan*	***6A-2*** **Traveling Standing Waves: a Feasibility Study** **Paul van Neer**[1], Ludwig Rasmijn[2], Armin Rasidovic[3], Arno Volker[1] *[1]Process and Instrumentation Development, TNO, Delft, Zuid-Holland, Netherlands, [2]TNO, Netherlands, [3]Applus RTD, Netherlands*		***8A-2*** **3/15 MHz Dual-layer Co-Linear Array for Transrectal Acoustic Angiography** **Sibo Li**[1], Jinwook Kim[1], Sandeep Kasoji[2], Paul Dayton[2], Xiaoning Jiang[1] *[1]Mechanical and Aerospace Engineering, North Carolina State University, Raleigh, North Carolina, USA,[2]Joint Department of Biomedical Engineering, University of North Carolina and North Carolina State University, Chapel Hill, North Carolina, USA*

11:00 am	**1A-2 Shear wave elastography for lipid content detection in transverse arterial cross-sections** **Hendrik Hansen**[1], Mathieu Pernot[2], Simon Chatelin[2], Mickael Tanter[2], Chris de Korte[1] *[1]Medical UltraSound Imaging Center (MUSIC), Department of Radiology and Nuclear Medicine, Radboud university medical center, Nijmegen, Netherlands, [2]Institut Langevin, École Supérieure de Physique et de Chimie Industrielles, Paris, France*	**2A-3 Molecular acoustic angiography: Demonstration of in vivo feasibility for high resolution superharmonic ultrasound molecular imaging** **Brooks Lindsey**[1], Sarah Shelton[1], James Tsuruta[2], F. Stuart Foster[3], Paul Dayton[1,4] *[1]Joint Department of Biomedical Engineering, University of North Carolina-Chapel Hill and NC State University, Chapel Hill, NC, USA,[2]Department of Pediatrics, University of North Carolina-Chapel Hill and NC State University, Chapel Hill, NC, USA, [3]Sunnybrook Research Institute, Toronto, ON, Canada,[4]Biomedical Research Imaging Center, University of North Carolina-Chapel Hill, Chapel Hill, NC, USA*	**3A-3 Unaliased vector Doppler imaging from unsteered plane waves** **Damien Garcia**[1], Shahrokh Shahriari[2], Daniel Posada[2], Julia Faurie[2] *[1]Department of radiology, University of Montreal, Canada,[2]University of Montreal, Canada*	**4A-3 Adaptive Imaging with Multi-Phase Apodization with Cross-correlation: Phantom and In-vivo Results** Junseob Shin[1], **Jesse Yen**[2] *[1]Earth and Environmental Sciences, Los Alamos National Laboratory, Los Alamos, NM, USA, [2]Biomedical Engineering, University of Southern California, Los Angeles, CA, USA*	**5A-3 Phased array transducer for emitting 40-kHz air-coupled ultrasound without grating lobes** Eric Konetzke[1], Matthias Rutsch[2], **Maik Hoffmann**[1], Alexander Unger[2], Rene Golinske[1], Dirk Killat[1], Sivaram Nishal Ramadas[3,4], Steve Dixon[3], Mario Kupnik[2] *[1]BTU Cottbus-Senftenberg, Germany,[2]Technische Universität Darmstadt, Germany,[3]University of Warwick, Coventry, United Kingdom, [4]Elster-Instromet, Belgium*	**6A-3 Phononic crystal guided parallel particles transport** **Fei Li**[1,2], Feiyan Cai[1], Chen Wang[1], Long Meng[1], Chaowei Xu[1], Liufeng Geng[1], Chengxiang Zhang[1], Hairong Zheng[1] *[1]Paul C. Lauterbur Research Centre for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, Shenzhen, Guangdong, China, People's Republic of, [2]Shenzhen Key Laboratory of Nanobiomechanics, Shenzhen Institutes of Advanced Technology, Shenzhen, Guangdong, China, People's Republic of*	**7A-2 Oven Controlled FBAR Oscillator** **Rich Ruby**[1], Kannan Sankaragomathi[2], Suresh Sridaran[3], Reed Parker[3] *[1]avago technologies, Menlo Park, Ca, USA, [2]GoogleX, Google, CA, USA,[3]avago technologies, USA*	**8A-3 Fabrication and Characterization of 15 MHz Concave Array Transducers for Ophthalmic Imaging** **Jung Hyui Cha**[1], Byungwoo Kang[2], Jihun Jang[2], Jin Ho Chang[1,2] *[1]Interdisciplinary Program of Integrated Biotechnology, Sogang University, Seoul, Korea, Republic of,[2]Department of Electronic Engineering, Sogang University, Seoul, Korea, Republic of*
11:15 am	**1A-3 Carotid artery wall dynamics captured with multi-plane high-frame-rate imaging** **Pieter Kruizinga**[1], Frits Mastik[1], Johannes G Bosch[1], Antonius FW van der Steen[1,2], Nico de Jong[1,2] *[1]Thorax Center - Biomedical Engineering, Erasmus Medical Center, Rotterdam, Netherlands,[2]Faculty of Applied Sciences - Acoustical Wavefield Imaging, Delft University of Technology, Delft, Netherlands*	**2A-4 Ultrasound Molecular Imaging with Modulated Acoustic Radiation Force-based Beam Sequence in Mouse Abdominal Aorta: A Feasibility Study** **Shiying Wang**[1], Sunil Unnikrishnan[1], Alexander L Klibanov[1,2], F William Mauldin Jr[1], John A Hossack[1] *[1]Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA, [2]Division of Cardiovascular Medicine, University of Virginia, Charlottesville, Virginia, USA*	**3A-4 Time-resolved Doppler vortography in the left ventricle** **Julia Faurie**[1], Daniel Posada[1], Amir Hodzic[2], François Tournoux[2], Damien Garcia[3] *[1]University of Montreal, Canada, [2]Department of echocardiography, University of Montreal Hospital, Canada,[3]Department of radiology, University of Montreal, Canada*	**4A-4 A comparison of analytical and numerical approaches for CT-based aberration correction in transcranial ultrasound: application to passive acoustic imaging** **Ryan Jones**[1,2], Kullervo Hynynen[1,2] *[1]Medical Biophysics, University of Toronto, Canada, [2]Physical Sciences Platform, Sunnybrook Research Institute, Canada*	**5A-4 Laser-ultrasound imaging of material porosity with a kHz rate fiber-optic pump-probe system** **Ivan Pelivanov**[1,2], Matthew O'Donnell[1] *[1]Bioengineering, University of Washington, Seattle, Washington, USA,[2]Physics Faculty, Moscow State University, Moscow, Russian Federation*	**6A-4 Self-acoustophoresis of metallic microparticles in ultrasonic standing waves: new tricks with old hats** **Wei Wang**[1] *[1]School of Materials Science and Engineering, Harbin Institute of Technology, Shenzhen Graduate School, Shenzhen, Guangdong, China, People's Republic of*	**7A-3 Towards a CMOS Compatible Acoustic Delay Line Memory** **Justin Kuo**[1], Jason Hoople[1], Amit Lal[1] *[1]School of Electrical and Computer Engineering, Cornell University, Ithaca, New York, USA*	**8A-4 Programmable delivery of macromolecules using high frequency ultrasound** **Sangpil Yoon**[1], Min Gon Kim[1], Yingxiao Wang[2], K. Kirk Shung[1] *[1]Department of Biomedical Engineering, University of Southern California, Los Angeles, California, USA,[2]Department of Bioengineering & Institute of Engineering in Medicine, University of California, San Diego, USA*

10:30 am - 12:00 pm	Oral --- Thursday, October 22, 2015							
11:30 am	**1A-4 Comparison of Different Pulse Waveforms for Local Pulse Wave Velocity Measurement in Healthy and Hypertensive Common Carotid Arteries In Vivo** **Chengwu Huang**[1], Yuan Su[2], Hong Zhang[2], Lin-Xue Qian[2], Jianwen Luo[1] *[1]Department of Biomedical Engineering, Tsinghua University, Beijing, China, People's Republic of, [2]Department of Ultrasound, Beijing Friendship Hospital, Capital Medical University, Beijing, China, People's Republic of*	**2A-5 A Theoretical Model for the Interaction of an Ultrasound-Activated Contrast Microbubble with a Wall at Arbitrary Separation Distances** Alexander Doinikov[1],**Ayache Bouakaz**[1] *[1]Inserm U930, Université François-Rabelais, Tours, France*	**3A-5 Improved Vector Velocity Estimation using Directional Transverse Oscillation for a Convex Array** **Jørgen Arendt Jensen**[1] *[1]Dept. of Elect. Eng., Center for Fast Ultrasound Imaging, Technical University of Denmark, Lyngby, Denmark*	**4A-5 Adaptive Beamformer Incorporating with Element Directivity** **Hideyuki Hasegawa**[1], Hiroshi Kanai[2] *[1]Graduate School of Science and Engineering for Research, University of Toyama, Toyama, Japan, [2]Graduate School of Engineering, Tohoku University, Sendai, Japan*	**5A-5 Investigation of Lamb Waves in Solid-Liquid Layers** **Detlef Pape**[1], Miklos Lenner[1], Tobias Kaufmann[1] *[1]Corporate Research, ABB Switzerland Ltd., Baden-Daettwil, Switzerland*	**6A-5 Recent advances in developing biomedical applications of single beam acoustic tweezers** **Ying Li**[1,2], Changyang Lee[1,2], Ruimin Chen[1,2], Hae Lim[1,2], Ming-Yi Lin[3], Kwok Ho Lam[4], Kirk Shung[1,2] *[1]Biomedical Engineering, University of Southern California, Los Angeles, USA, [2]NIH Resource Center on Medical Ultrasonic Transducer Technology, University of Southern California, USA, [3]Zilkha Neurogenetic Institute, University of Southern California, USA, [4]Department of Electrical Engineering, Hong Kong Polytechnic University, Hong Kong*	**7A-4 Chipscale GHz Ultrasonic Channels for Fingerprint Scanning** **Jason Hoople**[1], Justin Kuo[1], Mohamed Abdel-moneum[2], Amit Lal[1] *[1]Electrical and Computer Engineering, Cornell University, USA, [2]Intel Corporation, USA*	**8A-5 Wearable ultrasound applicators for wound healing and noninvasive drug delivery** **Peter A. Lewin**[1], Youhan Sunny[1], Christopher Bawiec[1], Leonid Zubkov[1], Michael Neidrauer[1], Michael S. Weingarten[1], David J. Margolis[2] *[1]Drexel University, USA, [2]University of Pennsylvania, USA*
11:45 am	**1A-5 In Vivo Carotid Plaque Stiffness Measurements with ARFI Ultrasound in Endarterectomy Patients** **Tomasz Czernuszewicz**[1], Jonathon Homeister[2], Melissa Caughey[3], Mark Farber[4], Joseph Fulton[3], Peter Ford[4], William Marston[4], Raghuveer Vallabhaneni[4], Timothy Nichols[2,3], Caterina Gallippi[1,5] *[1]Joint Department of Biomedical Engineering, University of North Carolina and North Carolina State University, Chapel Hill, NC, USA, [2]Department of Pathology and Laboratory Medicine, University of North Carolina, Chapel Hill, NC, USA, [3]Department of Medicine, University of North Carolina, Chapel Hill, NC, USA, [4]Department of Surgery, University of North Carolina, Chapel Hill, NC, USA, [5]Department of Electrical and Computer Engineering, North Carolina State University, Raleigh, NC, USA*	**2A-6 Modelling of ultrasound contrast agent oscillations in vessels based on an infinite mirror image method** **Martin Ward**[1,2], Yesna Yildiz[2], Virginie Papadopoulou[2], Robert Eckersley[3], Meng-Xing Tang[2] *[1]Department of Mathematics, Imperial College London, London, United Kingdom, [2]Department of Bioengineering, Imperial College London, London, United Kingdom, [3]Biomedical Engineering Department, Division of Imaging Sciences, King's College London, United Kingdom*	**3A-6 Small-diameter Vasculature Detection with Coherent Flow Power Doppler Imaging** **You Li**[1], Jeremy Dahl[2] *[1]Department of Biomedical Engineering, Duke University, Durham, North Carolina, USA, [2]Department of Radiology, School of Medicine, Stanford University, Stanford, California, USA*	**4A-6 Model-based clutter suppression in the presence of phase-aberration from *in vivo* data and simulations** **Kazuyuki Dei**[1], Brett Byram[1] *[1]Biomedical Engineering, Vanderbilt University, TN, USA*	**5A-6 Transducer beam diffraction effects in sound transmission near leaky Lamb modes in elastic plates at normal incidence** **Magne Aanes**[1,2], Kjetil Daae Lohne[2], Per Lunde[1,2], Magne Vestrheim[1] *[1]Department of Physics and Technology, University of Bergen, Bergen, Norway, [2]Christian Michelsen Research AS, Bergen, Norway*	**6A-6 Cell deformation by acoustic trapping with a single-element high-frequency ultrasound transducer: Potential to determine invasiveness of breast cancer cells** **Jae Youn Hwang**[1], Jinman Park[1], Chi Woo Yoon[2], Hae Gyun Lim[2], Jungwoo Lee[3], K. Kirk Shung[2] *[1]Daegu Gyeongbuk Institute of Science & Technology (DGIST), Daegu, Korea, Republic of, [2]Biomedical Engineering, University of Southern California, USA, [3]Electronic Engineering, Kwangwoon University, Korea, Republic of*	**7A-5 Pt-Ni / Pt-Zr Electrodes for Stable SAW Resonator Operation During Repeated Temperature Cycling up to 1000&[deg]C** **Mauricio Pereira da Cunha**[1], Anin Maskay[1], Robert Lad[1], David Frankel[1], Scott Moulzolf[1], Michael Call[1], George Bernhardt[1] *[1]Laboratory for Surface Science and Technology, University of Maine, Orono, ME, USA*	

1:00 pm -2:30 pm — Oral --- Thursday, October 22, 2015

	Session 1B. MPA: Photoacoustic Systems Chair: Stanislav Emelianov, Georgia Institute of Technology	Session 2B. MEL: New Shear Wave Imaging Techniques Chair: Mickael Tanter, INSERM	Session 3B. MTH: Treatment Monitoring Chair: Ayache Bouakaz, Inserm	Session 4B. MIM: Advances in Vascular Imaging Chair: Ton van der Steen, Erasmus Medical Centre	Session 5B. Arrays Chair: Robert Addison, Rockwell Science Center	Session 6B. Phononics Chair: Tsung-Tsong Wu, National Taiwan University	Session 7B. Microacoustic Modeling Chair: Ken-ya Hashimoto, Chiba University	Session 8B. CMUT Design Chair: Levent Degertekin, Georgia Institute of Technology
	Plenary Hall	**VIP**	**201BC**	**201DE**	**103**	**201F**	**201A**	**102**
1:00 pm	**1B-1 Optimization of the laser irradiation pattern in a high frame rate integrated photoacoustic / ultrasound (PAUS) imaging system** **Soon Joon Yoon**[1], Bao-Yu Hsieh[1], Chen-wei Wei[1], Thu-Mai Nguyen[1], Bastien Arnal[1], Ivan Pelivanov[1,2], Matthew O'Donnell[1] *[1]Department of Bioengineering, University of Washington, Seattle, Washington, USA, [2]International Laser Center, Moscow State University, Russian Federation*	**2B-1 Shear wave elastography with fast single-push multi-angle compounding** **Heechul Yoon**[1], 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 Thermal Strain Guided Intramural Cardiac Ablations** **Douglas Stephens**[1], Josquin Foiret[1], Steven Lucero[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, USA, [3]Stanford University, USA*	**4B-1 Coherent RF-data processing to enhance the Intima-Lumen interface** **Alfonso Rodriguez-Molares**[1], Lasse Lovstakken[1], Julio Martin-Herrero[2], Tore Gruner Bjastad[3], Hans Torp[1] *[1]Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway, [2]Signal Theory and Communications, University of Vigo, Vigo, Spain, [3]GE Vingmed Ultrasound, Horten, Norway*	**5B-1 Quantitative Phased Array Modeling and Imaging** **Lester Schmerr**[1] *[1]Center for NDE, Iowa State University, Woodward, Iowa, USA*	**6B-1 Phonon Dynamics in Electromechanical Resonators G3 topic: Phononics (PPN)** **Imran Mahboob**[1], Hirsohi Yamaguchi[1] *[1]NTT Basic Research Laboratories, Japan*	**7B-1 Efficient and Accurate WLP SMT SAW Duplexer EM Simulation in Module Integration** **Hao Dong**[1], Kevin Gamble[2], Jean Briot[2], Thor Thorvaldsson[2] *[1]Qorvo, Apopka, Florida, USA, [2]Qorvo, USA*	**8B-1 Experimental Study of Mutual Acoustic Coupling in CMUTs with Substrate-Embedded Springs** **Byung Chul Lee**[1], Amin Nikoozadeh[1], Butrus T. Khuri-Yakub[1] *[1]Stanford University, USA*
.	**1B-2 Optimizing a Single-Sided Reflection Mode Photoacoustic Setup for Clinical Imaging** **Martin F Beckmann**[1], Hans-Martin Schwab[1], Georg Schmitz[1] *[1]Chair for Medical Engineering, Ruhr-Universität Bochum, Bochum, Germany*	**2B-2 Magnetic Resonance-guided transient shear wave imaging using constructive multi-pulse transmission** **Yu Liu**[1], Brett Fite[1], Josquin Foiret[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 Takagi**[1], Hayato Jinbo[2], Ryosuke Iwasaki[1], Shin Yoshizawa[2], 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 Salles**[1], 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*			**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 Kyoya[1], Katsuhiro Nako[1], Ken-ya Hashimoto[2] *[1]Murata 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 Zhang**[1], 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*

1:30 pm	**1B-3 Handheld Photoacoustic Imaging with Integrated Diode Lasers** **Georg Schmitz**[1], Hans-Martin Schwab[1], Martin Beckmann[1] *[1]Chair for Medical Engineering, Ruhr-Universität Bochum, Bochum, Germany*	**2B-3 Moving beam shear wave reconstruction for both ultrasound and optical coherence tomography applications** **Bao-Yu Hsieh**[1], Shaozhen Song[1], Thu-Mai Nguyen[1], Soon Joon Yoon[1], Tueng Shen[2], Ruikang Wang[1,2], Matthew O'Donnell[1] *[1]Department of Bioengineering, University of Washington, Seattle, Washington, USA,[2]Department of Ophthalmology, University of Washington, Seattle, Washington, USA*	**3B-3 Visualization of 3D temperature distribution caused by exposure of HIFU with thermo-chromic liquid crystal phantom** **Toshihide Iwahashi**[1], Kazuhiro Matsui[1], Tang Tianhan[1], Keisuke Fujiwara[2], Kazunori Itani[2], Takashi Azuma[1], Kiyoshi Yoshinaka[3], Akira Sasaki[1], Shu Takagi[1], Yoichiro Matsumoto[1], Ichiro Sakuma[1] *[1]The University of Tokyo, Japan, [2]Hitachi-Aloka Medical, Japan,[3]National Institute of Advanced Industrial Science and Technology, Japan*	**4B-3 Intra-plaque stiffness mapping in carotid stenosis patients in vivo using high-frame rate Pulse Wave Imaging** **Ronny Li**[1], Jason Apostolakis[2], Edward Connolly[3], Elisa Konofagou[2,4] *[1]Department of Biomedical Engineering, Columbia University, USA, [2]Biomedical Engineering, Columbia University, USA,[3]Neurological Surgery, Columbia University, USA, [4]Radiology, Columbia University, USA*	**5B-2 Imaging Beyond Aliasing** **Paul van Neer**[1], Arno Volker[1] *[1]Process and Instrumentation Development, TNO, Delft, Zuid-Holland, Netherlands*	**6B-2 The generation of impulses from narrow bandwidth signals using resonant spherical chains** **David Hutchins**[1], Jia Yang[1], Omololu Akanji[1], Peter Thomas[1], Lee Davis[1], Steven Freear[2], Sevan Harput[2], Nader Saffari[3], Pierre Gelat[3] *[1]School of Engineering, University of Warwick, Coventry, United Kingdom, [2]School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom, [3]3Department of Mechanical Engineering, University College London, London, United Kingdom*	**7B-3 Effective nonlinear constants for SAW devices from FEM calculations** Andreas Mayer[1], Elena Mayer[1],**Markus Mayer**[2], Philipp Jaeger[2], Werner Ruile[2], Ingo Bleyl[2], Karl Wagner[2] *[1]Hochschule Offenburg, Germany, [2]TDK corporation, Munich, Germany*	**8B-3 Highly Reliable CMUT Cell Structure with Reduced Dielectric Charging Effect** **Shuntaro Machida**[1], Taiichi Takezaki[1], Takashi Kobayashi[1], Hiroki Tanaka[1], Tatsuya Nagata[2] *[1]Hitachi, Ltd., Tokyo, Japan,[2]Hitachi Aloka Medical, Ltd., Tokyo, Japan*
1:45 pm		**2B-4 Eliminating Speckle Noise with Three-dimensional Single-Track-Location Shear Wave Elasticity Imaging (STL-SWEI)** **Peter Hollender**[1], Samantha Lipman[1], Gregg Trahey[1,2] *[1]Biomedical Engineering, Duke University, Durham, North Carolina, USA,[2]Radiology, Duke University Medical Center, Durham, North Carolina, USA*	**3B-4 Monitoring of Radiofrequency Ablation with Shear Wave Delay Mapping** **William Shi**[1], Ajay Anand[1], Shriram Sethuraman[1], Sheng-Wen Huang[1], Hua Xie[1], Gary Ng[2] *[1]Philips Research North America, Briarcliff Manor, NY, USA, [2]Philips Ultrasound, Bothell, WA, USA*	**4B-4 Dual-frequency intravascular ultrasound imaging of *vasa vasorum*: *Ex vivo* and *in vivo* demonstration** **Brooks Lindsey**[1], K. Heath Martin[1], Jianguo Ma[1,2], Zhuochen Wang[1,2], Xiaoning Jiang[1,2], Paul Dayton[1,3] *[1]Joint Department of Biomedical Engineering, University of North Carolina-Chapel Hill and NC State University, Chapel Hill, NC, USA,[2]Department of Mechanical & Aerospace Engineering, North Carolina State University, Raleigh, NC, USA, [3]Biomedical Research Imaging Center, University of North Carolina-Chapel Hill, Chapel Hill, NC, USA*	**5B-3 Flexural Transducer Arrays for Industrial Non-Contact Applications** **Tobias Eriksson**[1], Sivaram Ramadas[1,2], Alexander Unger[3], Maik Hoffmann[4], Mario Kupnik[3], Steve Dixon[1] *[1]University of Warwick, United Kingdom,[2]Elster-Instromet, Belgium, [3]Technische Universität Darmstadt, Germany, [4]BTU, Cottbus-Senftenberg, Germany*	**6B-3 Tunable Bragg band gaps in piezocomposite phononic crystals** Charles CROËNNE[1], Marie-Fraise PONGE[1], Franck LEVASSORT[2], Lionel HAUMESSER[2], Mai PHAM THI[3], **Anne-Christine HLADKY**[1] *[1]IEMN, UMR 8520 CNRS, ISEN Department, Lille, France, [2]François-Rabelais University, GREMAN UMR 7347 CNRS, Tours, France,[3]Thales Research and Technology, Palaiseau, France*	**7B-4 Thermal Modeling of WLP-BAW Filters – Power Handling and Miniaturization** **Michael Fattinger**[1], Paul Stokes[1], Gernot Fattinger[1] *[1]BAW R&D, Qorvo, Apopka, Florida, USA*	**8B-4 Fabrication of polymer bonded capacitive micromachined ultrasonic transducers (CMUTs)** **Zhenhao Li**[1], Albert I. H. Chen[1], Shuai Na[1], Lawrence Wong[1], John T. W. Yeow[1,2] *[1]Systems Design Engineering, University of Waterloo, Waterloo, Ontario, Canada, [2]Waterloo Institute of Nanotechnology, University of Waterloo, Waterloo, Ontario, Canada*

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2:00 pm	**1B-4 In vitro and in vivo dynamic blood volume assessment using photoacoustics** **H.M. Heres**[1], M.Ü. Arabul[1], F.N. Van de Vosse[1], M.C.M. Rutten[1], R.G.P. Lopata[1] [1]*Biomedical Engineering, Cardiovascular Biomechanics Group, Eindhoven University of Technology, Netherlands*	**2B-5 Implementation of Shear Wave Elastography on Pediatric Cardiac Transducers with Pulse-inversion Harmonic Imaging and Time-aligned Sequential Tracking** **Pengfei Song**[1], Xiaojun Bi[2,3], Daniel C. Mellema[1], Armando Manduca[1], Matthew W. Urban[1], Shigao Chen[1], James F. Greenleaf[1] [1]*Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, Minnesota, USA,*[2]*Department of Cardiovascular Diseases, Mayo Clinic College of Medicine, Rochester, Minnesota, USA,*[3]*Department of Medical Ultrasound, Tongji Hospital Medical College, Wuhan, Hubei, China, People's Republic of*	**3B-5 Advances in thermal strain imaging: 3D motion and tumor validation studies** **Josquin Foiret**[1], Katherine W. Ferrara[1] [1]*Department of Biomedical Engineering, University of California, Davis, USA*	**4B-5 Improved Estimation of Thermal Strain Using Pulse Inversion Harmonic Imaging: An Ex Vivo Human Tissue Study** **Xuan Ding**[1,2], Man Nguyen[2], Isaac James[3], Kacey Marra[1,3], J. Peter Rubin[1,3], Steven Leers[4,5], Kang Kim[1,2] [1]*Department of Bioengineering, University of Pittsburgh School of Engineering, Pittsburgh, PA, USA,*[2]*Center for Ultrasound Molecular Imaging and Therapeutics, University of Pittsburgh School of Medicine, Pittsburgh, PA, USA,* [3]*Department of Plastic Surgery, University of Pittsburgh School of Medicine, Pittsburgh, PA, USA,*[4]*Heart and Vascular Institute, University of Pittsburgh School of Medicine, Pittsburgh, PA, USA,* [5]*Department of Surgery, University of Pittsburgh Medical Center, Pittsburgh, PA, USA*	**5B-4 High Resolution Autofocused Virtual Source Imaging (AVSI)** Jorge Camacho[1], **Jorge F. Cruza**[1] [1]*Ultrasonic Systems Group, Spanish National Research Council (CSIC), Madrid, Madrid, Spain*	**6B-4 Tunability of the band structure of a piezoelectric phononic crystal using electrical negative capacitance** **Bruno Morvan**[1,2], Sid Ali Mansoura[1,2], Pierre Maréchal[1,2], Paul Bénard[1,2], Anne-Christine Hladky-Hennion[2,3], Bertrand Dubus[2,3] [1]*LOMC UMR 6294 CNRS, Le Havre, France,*[2]*FANO FR CNRS 3110, France,* [3]*IEMN UMR 8520 CNRS, ISEN, Lille, France*	**7B-5 Theoretical and Experimental Investigation of Spurious Modes in a SAW Delay Line Based on Langasite** **Natalya Naumenko**[1,2], Pascal Nicolay[3], Jochen Bardong[3] [1]*Acousto-optical Research Center, National University of Science and Technology, Moscow, Russian Federation,*[2]*MTUCI, Moscow, Russian Federation,*[3]*Carinthian Tech Research (CTR AG), Villach, Austria*	**8B-5 CMUTs with vented cavities and non-uniform squeeze films** Nikhil Apte[1], **Amin Nikoozadeh**[1], Butrus (Pierre) T. Khuri-Yakub[1] [1]*E. L. Ginzton Laboratory, Stanford University, USA*
2:15 pm	**1B-5 Photoacoustic microscopy using four-wave mixing in a multimode fiber** Margaret Ferrari[1], Jessica Farland[1], **Takashi Buma**[1] [1]*Union College, USA*	**2B-6 Storage and Loss moduli imaging in soft solids using Supersonic Shear Imaging technique** **Eliana Budelli**[1,2], Javier Brum[3], Miguel Bernal[1], Thomas Deffieux[1], Mickael Tanter[1], Patricia Lema[2], Carlos Negreira[3], Jean-Luc Gennisson[1] [1]*Institut Langevin, Paris, France,* [2]*Instituto de Ingeniería Química, Uruguay,* [3]*Laboratorio de Acústica Ultrasonora, Uruguay*	**3B-6 Monitoring of Lesions Induced by Cavitation-Enhanced High-Intensity Focused Ultrasound Using Shear Wave Elastography** **Ryosuke Iwasaki**[1], Ryo Takagi[1], Ryo Nagaoka[1], Hayato Jimbo[2], Shin Yoshizawa[2], Yoshifumi Saijo[1], Shin-ichiro Umemura[1] [1]*Biomedical Engineering, Tohoku University, Sendai, Japan,* [2]*Communications Engineering, Tohoku University, Sendai, Japan*	**4B-6 In-vivo Demonstration of High-speed Integrated Intravascular Ultrasound and Optical Coherence Tomography Imaging on Atherosclerosis Animal Model** **Teng Ma**[1], Jiawen Li[2], Mingyue Yu[1], Dilbahar Mohar[3], Pranav M. Patel[3], K. Kirk Shung[1], Zhongping Chen[2], Qifa Zhou[1] [1]*NIH Resource Center for Medical Transducer Technology and Department of Biomedical Engineering, University of Southern California, USA,*[2]*Department of Biomedical Engineering, University of California Irvine, USA,* [3]*Division of Cardiology, University of California Irvine, USA*	**5B-5 Fast Calculation of Wideband Beam Pattern for Designing Large Planar Array** **Cheng Chi**[1], Zhaohui Li[2] [1]*Depatment of Electronics, Peking University, Beijing, China, People's Republic of,*[2]*Deparment of Electronics, Peking University, China, People's Republic of*	**6B-5 Phononic crystal based liquid sensor governed by localized defect resonances** **Aleksandr Oseev**[1], Marc-Peter Schmidt[1], Ralf Lucklum[1], Mikhail Zubtsov[1], Soeren Hirsch[2] [1]*Institute of Micro and Sensor Systems (IMOS), Otto-von-Guericke University Magdeburg, Magdeburg, Germany,*[2]*Department of Engineering, University of Applied Sciences Brandenburg, Brandenburg, Germany*	**7B-6 Analysis of the Spurious Lamb modes in Temperature Compensated LSAW hybrid Substrates** **Patrick Turner**[1], Ventsislav Yantchev[2], Sean McHugh[1], Victor Plessky[3] [1]*Resonant Inc., Santa Barbara, USA,* [2]*Uppsala University, Uppsala, Sweden,*[3]*GVR Trade SA, Chez-le-Bart, Switzerland*	**8B-6 A Commercialized High Frequency CMUT Probe for Medical Ultrasound Imaging** **Danhua Zhao**[1], Steve Zhuang[1], Ron Daigle[2] [1]*Kolo Medical Inc, USA,* [2]*Verasonics Inc, USA*

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	Session 1C. MCA: High Temporal and Spatial Resolution Contrast Imaging Chair: Ayache Bouakaz, Inserm	Session 2C. MBF: New Vascular Mapping Tools Chair: Damien Garcia, University of Montreal	Session 3C. MTH: Brain Chair: Kullervo Hynynen, Univ. of Toronto	Session 4C. MBB: Beamforming II Chair: Jeremy Dahl, Stanford University	Session 5C. NDE Chair: Lawrence Kessler, Sonoscan Inc.	Session 6C. Nonlinear Acoustics Chair: Koen W.A. Van Dongen, Delft University of Technology	Session 7C. RF Frontend Devices Chair: Jidong Dai, Murata Electronics, Inc.	Session 8C. Transducer Design, Fabrication and Applications 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. Yiu[1] [1]*Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong*	**2C-1 Functional connectivity of the mouse brain using transcranial functional ultrasound (fUS)** **Elodie Tiran**[1], Jérémy Ferrier[2], Bruno-Félix Osmanski[1], Thomas Deffieux[1], Sophie Pezet[2], Zsolt Lenkei[2], Mickaël 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], Camilo Acosta[1], Antonio Carneiro[2], Elisa Konofagou[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 Ultrasound, 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. Carlson**[1], Peter Lundin[2] [1]*Div. of Signals and Systems, Lulea University of Technology, Lulea, Sweden,* [2]*Swerea KIMAB, Kista, Sweden*	**6C-1 Nonlinear Acoustic Pulse Evolution at the Edge of a Silicon Crystal** Alexey M. Lomonosov[1,2], Pavel D. Pupyrev[1,3], Peter Hess[2], **Andreas P. Mayer**[3] [1]*General Physics Institute, Moscow, Russian Federation,* [2]*University of Heidelberg, Heidelberg, Germany,* [3]*HS 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 Gesnik**[1], Laura Zamfirov[2], Paul-Henri Prevot[2], Laëtitia Duhamel[2], Serge Picaud[2], José-Alain Sahel[2], Mathias Fink[1], Thomas Deffieux[1], Jean-Luc Gennisson[1], Mickaël 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], Gesthimani Samiotaki[1], Matthew Downs[1], Vincent Ferrera[2], Elisa Konofagou[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** **Leili 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], Jean-Chung Toung[3] [1]*Nondestructive Testing Lab., NFMD, Institute of Nuclear Energy Research, Taoyuan City, Taiwan,* [2]*Taiwan Metal Quality Control CO., Taiwan,* [3]*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 Photoresist Moulds for Wafer-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*

4:00 pm	**1C-3 Super-resolution imaging of microbubble contrast agents** **Robert Eckersley**	**2C-3 Non-invasive Estimation of Intravascular Pressure Changes using Ultrasound** **Jacob Bjerring Olesen**[1], Carlos Armando Villagómez-Hoyos[1], Marie Sand Traberg[1], Carsten Erik Thomsen[2], Jørgen Arendt Jensen[1] *[1]Center for Fast Ultrasound Imaging, Dept. of Elec. Eng. DTU, Kgs. Lyngby, Denmark,[2]Dept. of Radiology, Copenhagen University Hospital, Copenhagen, Denmark*	**3C-3 Enhanced intranasal brain drug delivery by focused ultrasound-activated microbubbles** **Hong Chen**[1], Camilo Acosta[1], Carlos Sierra Sánchez[1], Marilena Karakatsani[1], Elisa Konofagou[1] *[1]Columbia University, New York, NY, USA*	**4C-3 Phantom and *in vivo* demonstration of swept synthetic aperture imaging** **Nick Bottenus**[1], Will Long[1], David Bradway[1], Gregg Trahey[1,2] *[1]Biomedical Engineering, Duke University, Durham, North Carolina, USA,[2]Radiology, Duke University, Durham, North Carolina, USA*	**5C-3 Attenuation and Phase Compensation for Guided Wave Based Inspection Using a Filter Approach** Christian Kexel[1], **Joel Harley**[2], Jochen Moll[1] *[1]Department of Physics, Goethe University of Frankfurt, Germany,[2]Department of Electrical and Computer Engineering, University of Utah, Salt Lake City, UT, USA*	**6C-3 Temperature control of a droplet on disposable type microfluidic system based on a surface acoustic wave device for blood coagulation monitoring** Noriyuki Ohashi[1], **Jun Kondoh**[1] *[1]Shizuoka University, Hamamatsu-shi, Japan*	**7C-2 Full band 41 filter with high Wi-Fi rejection – design and manufacturing challenges** **Susanne Kreuzer**[1], Alexandre Volatier[1], Gernot Fattinger[1], Fabien Dumont[1] *[1]BAW R&D, Qorvo, Apopka, Florida, USA*	**8C-3 Gas Coupled Polymeric Capacitive Transducers via Pad Printing** **Richard O'Leary**[1] *[1]University of Strathclyde, United Kingdom*
4:15 pm		**2C-4 Ultrafast Doppler imaging of intramyocardial coronary arteries** **David Maresca**[1], Mafalda Correia[1], Olivier Villemain[1], Bijan Ghaleh[2], Mickael Tanter[1], Mathieu Pernot[1] *[1]Institut Langevin, ESPCI ParisTech, CNRS UMR 7587, INSERM U979, Paris, France, [2]INSERM U955 Equipe 03, Université Paris Est Créteil et Ecole Nationale Vétérinaire d'Alfort, Maisons-Alfort, France*	**3C-4 Dopaminergic neuron regeneration after Neurturin delivery through the FUS-induced BBB opening in a Parkinsonian model** **Gesthimani Samiotaki**[1], Camilo Acosta[2], Maria Eleni Karakatsani[2], Shutao Wang[1], Elisa Konofagou[1] *[1]Columbia University, New York, NY, USA,[2]Columbia University, USA*	**4C-4 Real-time Channel Data Compression for Improved Software Beamforming Using Micro-beamforming with Error Compensation** **U-Wai Lok**[1], Huai-Shun Shih[1], Pai-Chi Li[2] *[1]Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan, [2]Electrical Engineering, National Taiwan University, Taipei, Taipei, Taiwan, Taiwan*	**5C-4 Numerical simulations of ultrasonic flexural waves in cased wellbores and evaluations of the cement bond quality** **Xiao He**[1], Hao Chen[1], Xiuming Wang[1] *[1]State Key Laboratory of Acoustics, Institute of Acoustics, Chinese Academy of Sciences, Beijing, China, People's Republic of*	**6C-4 Numerical simulation of nonlinear attenuation in bubbly mediums** **Amin Jafarisojahrood**[1], Raffi Karshafian[2], Michael C. Kolios[2] *[1]Physics, Ryerson University, Canada,[2]Ryerson University, Toronto, Canada*	**7C-3 Study of power durability measurement of RF SAW devices for IEC standardization** **Tatsuya Omori**[1], Shunsuke Ohara[1], Chang-Jun Ahn[1], Ken-ya Hashimoto[1] *[1]Electrical & Electronics Engineering, Chiba University, Chiba, Chiba, Japan*	**8C-4 Extending the receive performance of phased micromachined ultrasonic transducer arrays in air down to 40 kHz and below** Matthias Rutsch[1], Eric Konetzke[2],**Alexander Unger**[1], Maik Hoffmann[2], Sivaram Nishal Ramadas[3,4], Steve Dixon[3], Mario Kupnik[1] *[1]Technische Universität Darmstadt, Germany, [2]BTU Cottbus-Senftenberg, Germany,[3]University of Warwick, Coventry, United Kingdom, [4]Elster-Instromet, Belgium*
4:30 pm	**1C-4 Ultrafast ultrasound localization microscopy of the living brain vasculature at the capillary scale** **Claudia Errico**[1], Juliette Pierre[1], Sophie Pezet[2], Yann Desailly[1], Zsolt Lenkei[2], Mickael Tanter[1], Olivier Couture[1] *[1]Intitut Langevin, (ESPCI-ParisTech,CNRS UMR7587, INSERM ERL U979), Paris, France,[2]Brain Plasticity Unit (ESPCI-ParisTech, CNRS UMR 8249), Paris, France*	**2C-5 Velocity measurement of the main portal vein with Transverse Oscillation** **Andreas Hjelm Brandt**[1], Kristoffer Lindskov Hansen[1], Michael Bachmann Nielsen[1], Jørgen Arendt Jensen[2] *[1]Dept. of Radiology, Copenhagen University Hospital, Rigshospitalet, Denmark, [2]Center for Fast Ultrasound Imaging, Technical University of Denmark, Denmark*	**3C-5 Improving targeting of ultrasound-mediated blood-brain barrier opening using chirp and random-based modulations** **Hermes Kamimura**[1,2], Shutao Wang[1], Shih-Ying Wu[1], Marilena Karakatsani[1], Camilo Acosta[1], Antonio Carneiro[2], Elisa Konofagou[1] *[1]Columbia University, New York, NY, USA,[2]University of Sao Paulo, Brazil*	**4C-5 Real-Time High-Framerate In Vivo Cardiac SLSC Imaging on a GPU-Based Beamformer** **Dongwoon Hyun**[1], Gregg Trahey[1], Jeremy Dahl[2] *[1]Biomedical Engineering, Duke University, Durham, NC, USA, [2]Radiology, Stanford University, Stanford, CA, USA*	**5C-5 Laser ultrasound imaging of defects in curved structures with a flexible ultrasonic transducer** Makiko Kobayashi[1], Chin-Chi Chen[2], **Tai-Chieh Wu**[2], Po-Hsieh Tung[2], Che-Hua Yang[2] *[1]Graduate School of Science and Technology, Kumamoto University, Japan,[2]College of Mechanical and Electrical Engineering, National Taipei University of Technology, Taiwan*	**6C-5 Dynamic behaviour of laser nucleated bubbles in a focused ultrasound field** **Lian Sheng Wang**[1], Gianluca Memoli[1], Mark Hodnett[1], Bajram Zeqiri[1] *[1]National Physical Laboratory, Teddington, United Kingdom*	**7C-4 Design Considerations for High Power BAW Duplexers for Base Station Applications** **Jeff Galipeau**[1], Rodolfo Chang[1] *[1]QORVO, Apopka, Florida, USA*	**8C-5 Spiral array inspired multi-depth cost function for 2D sparse array optimization** **Emmanuel Roux**[1,2], Alessandro Ramalli[2], Marc Robini[1], Hervé Liebgott[1], Christian Cachard[1], Piero Tortoli[2] *[1]CREATIS, Université de Lyon, CNRS UMR 5220, INSERM U1044, Université Claude Bernard Lyon 1, INSA-Lyon, Villeurbanne, France,[2]Ingenieria dell'informazione, Università degli studi di Firenze, Firenze, Italy*

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 Wang**[1], Xuan Yang[1], Hong Hu[1], Hui Zhong[1], Lei Zhang[1], Mingxi Wan[1] *[1]The 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*	*2C-6* **Intraoperative vector flow imaging of the ascending aorta: Is systolic backflow and atherosclerosis related?** **Kristoffer Lindskov Hansen**[1], Hasse Møller-Sørensen[2], Jesper Kjaergaard[3], Maiken Jensen[2], Jens Lund[4], Jørgen Arendt Jensen[5], Michael Bachmann Nielsen[1] *[1]Department of Radiology, Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark, [2]Department of Cardiothoracic Anesthesiology, Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark, [3]Department of Cardiology, Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark, [4]Department of Cardiothoracic Surgery, Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark, [5]DTU Elektro, Center for Fast Ultrasound Imaging, Technical University of Denmark, Lyngby, Denmark*	*3C-6* **Optimization of ultrasound-microbubble mediated drug transport in a new and realistic model of the human blood-brain barrier in vitro** **Charles SENNOGA**[1], Aya Zeghimi[1], Kayathiri Ganeshamoorthy[2], Pierre-Olivier Couraud[2], Ignacio Romero[2], Babette Weksler[2], Ayache Bouakaz[1] *[1]Inserm U930, Université François-Rabelais de Tours, France, [2]Inserm 1016, Institut Cochin, Paris, France*	*4C-6* **Linear Array Beamformation Using Virtual Sub-wavelength Receiving Elements** **Shao-Yu Peng**[1], Meng-Lin Li[1,2] *[1]Dept. of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan,[2]Institute of Photonics Technologies, National Tsing Hua University, Taiwan*	*5C-6* **A novel split inductively coupled piezoelectric transducer for flaw detection in pipes** **David Greve**[1], Peng Gong[2], Irving Oppenheim[2] *[1]Department of Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, USA,[2]Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA, USA*	*6C-6* **Experimental results on the Pressure Dependence of the Minnaert Resonance Frequency for three different Gases in Water** **Jarle Andre Johansen**[1], Bern Inge Hansen[1] *[1]Department of engineering and safety, UiT The Arctic University of Norway, TROMSO, Norway*	*7C-5* **A zero TCF band 13 SAW duplexer** **Yiliu Wang**[1], Marc Solal[1], Taeho Kook[1], Jean Briot[1], Ben Abbott[1], Alan Chen[1], Timothy Daniel[1], Svetlana Malocha[1], Keqi Qin[1], Kurt Steiner[1], William Wu[1] *[1]Qorvo Inc., USA*	*8C-6* **Design and fabrication of relaxor-ferroelectric single crystal PIMNT/epoxy 2-2 composite based array transducer** **Qingwen Yue**[1] *[1]Shanghai Institute of Ceramics,Chinese Academy of Science, China, People's Republic of*

8:00 am - 5:00 pm	Poster --- Thursday, October 22, 2015			4th floor
Session P1A1. **MEL: Elasticity Imaging: Simulations and Experimental Studies** *Chair:* **Brett Byram** *Vanderbilt University*	**P1A1-8 Feasibility of micro-elastography for tissue surrounding phase-change microbubbles using bubble wavelet transform** **Runna Liu**[1], Rui Huo[1], Hong Hu[1], Shanshan Xu[1], Supin Wang[1], Mingxi Wan[1] *[1]The 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*	**P1A2-7 Controlled thermal-sensitive liposomes release on a disposable microfluidic device** **Long Meng**[1], Zhiting Deng[1], Lili Niu[1], Feiyan Cai[1], Hairong Zheng[1] *[1]Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China, People's Republic of*	**P1A3-6 Assessment of the Potential of Beamforming for Needle Enhancement in Punctures** **Stefanie Dencks**[1], Georg Schmitz[1] *[1]Chair for Medical Engineering, Ruhr-Universität Bochum, Germany*	**P1A4-4 Compressive Adaptive Beamforming in 2D and 3D Ultrafast Active Cavitation Imaging** **Chen Bai**[1], Shanshan Xu[1], Bowen Jing[1], Miao Yang[1], Mingxi Wan[1] *[1]The 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*
P1A1-1 RSNA QIBA Ultrasound Shear Wave Speed Phase II Phantom Study in Viscoelastic Media **Mark Palmeri**[1], Shigao Chen[2], Ted Lynch[3], Kathryn Nightingale[1], Ned Rouze[1], Pengfei Song[2], Matthew Urban[2], Hua Xie[4], Keith Wear[5], Brian Garra[5], Andy Milkowski[6], Paul Carson[7], Richard Barr[8], Vijay Shamdasani[9], Michael Macdonald[10], Yasuo Miyajima[11], Timothy Hall[12] *[1]Biomedical Engineering, Duke University, Durham, NC, USA, [2]Mayo Clinic, USA, [3]CIRS, Inc., USA, [4]Philips Research, USA, [5]US Food and Drug Administration, USA, [6]Siemens Healthcare, USA, [7]University of Michigan Ann Arbor, USA, [8]Radiology Consultants, Inc., USA, [9]Philips Healthcare-Ultrasound, USA, [10]GE Healthcare, USA,[11]Toshiba Medical Research Institute USA, Inc., USA, [12]Medical Physics, University of Wisconsin Madison, Madison, WI, USA*	**Session P1A2.** **MBE: Bioeffects in Cells and Tissue** *Chair:* **Jonathan Mamou** *Riverside Research*	**P1A2-8 The Contribution of Shear Wave Absorption to Ultrasound Heating in Bones: Coupled Elastic-Thermal Modeling Using the k-Wave Toolbox** **Bradley Treeby**[1], Teedah Saratoon[1] *[1]Medical Physics and Biomedical Engineering, University College London, London, United Kingdom*	**P1A3-7 Pulse inversion based multi-subharmonic composite cavitation imaging** **Hui Zhong**[1], Mingxi Wan[1] *[1]Xi'an Jiaotong University, Xi'an, Shaanxi Province, China, People's Republic of*	**P1A4-5 Compressed Sensing-Synthetic Focusing for High Frame Rate, High Resolution and High Contrast Ultrasound Imaging** **Jing Liu**[1], Qiong He[1], Jianwen Luo[1] *[1]Department of Biomedical Engineering, Tsinghua University, Beijing, China, People's Republic of*
P1A1-2 Estimation of degree of anisotropy in transversely isotropic (TI) elastic materials from acoustic radiation force (ARF)-induced peak displacements (PD) **Md Murad Hossain**[1], Caterina Gallippi[1,2] *[1]Joint Department of Biomedical Engineering, University of North Carolina, Chapel hill, North Carolina, USA, [2]Electrical and Computer Engineering, North Carolina State University, Raleigh, North Carolina, USA*	**P1A2-1 Study the Cell Death Induced by Subcellular Localized Sonodynamic Therapy** **Yongmin Huang**[1], Zhihai Qiu[1], Yaoheng Yang[1], Cheng Liu[1], SUN Lei[1] *[1]The Hong Kong Polytechnic University, Hong Kong*	**Session P1A3.** **MIM: Ultrasound Image Formation** *Chair:* **Gregg Trahey** *Duke University*	**P1A3-8 Contrast-enhanced ultrasound tomography using the cumulative phase delay between second harmonic and fundamental component** **Libertario Demi**[1], Ruud J.G. van Sloun[1], Hessel Wijkstra[1,2], Massimo Mischi[1] *[1]Biomedical Diagnostics Lab., Eindhoven University of Technology, Netherlands, [2]Academic Medical Center Amsterdam, Netherlands*	**P1A4-6 Plane-wave Ultrasound Imaging Based on Compressive Sensing with Low Memory Occupation** **Congzhi Wang**[1], Hairong Zheng[1] *[1]Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, People's Republic of*
P1A1-3 Experimental study on the effect of the cylindrical vessel geometry on arterial shear wave elastography **Darya Shcherbakova**[1], Annette Caenen[1], Simon Chatelin[2], Clement Papadacci[2], Mathieu Pernot[2], Abigail Swillens[1], Patrick Segers[1] *[1]iMinds Medical IT, IBiTech-bioMMeda, Ghent University, Ghent, Belgium, [2]Institut Langevin, ESPCI ParisTech, CNRS UMR7587, INSERM U979, Paris, France*	**P1A2-2 Impact of Microbubble-to-cell Parameters on Heterogeneous Sonoporation at the Single-Cell Level** **Peng Qin**[1], Yutong Lin[1], lifang Jin[2], Lianfang Du[2], Alfred C H Yu[3] *[1]Instrumentation Science and Engineering, shanghai Jiao Tong University, Shanghai, China, People's Republic of, [2]Department of Ultrasound, Shanghai Jiaotong University Affiliated the First People's Hospital, Shanghai, China, People's Republic of, [3]Medical Engineering Program, The Univeristy of Hong Kong, Hong Kong*	**P1A3-1 6-DOF Free-hand Navigation Interface for Volumetric 3-dimensional Ultrasound Imaging: Preliminary Results** **JongJun LEE**[1], Jeeun KANG[1], Tai-kyong SONG[1] *[1]Department of electronic engineering, Sogang university, Seoul, Korea, Republic of*	**P1A3-9 Microultrasound Capsule Endoscopy Inflammatory Imaging: Phantom Studies** **Benjamin F Cox**[1], Vipin Seetohul[1], Holly Lay[1], Sandy Cochran[1] *[1]Imaging & Technology, University of Dundee, Dundee, United Kingdom*	**P1A4-7 Fourier Beamformation of Multistatic Synthetic Aperture Ultrasound Imaging** **Elahe Moghimirad**[1], Carlos A. Villagomez Hoyos[2], Ali Mahloojifar[1], Babak Mohammadzadeh Asl[1], Jørgen Arendt Jensen[2] *[1]Dep. of Elec. and Comp. Eng., Tarbiat Modares University, Tehran, Iran, [2]Center for Fast Ultrasound Imaging, Dept. of Elec. Eng., Bldg. 349,Technical University of Denmark, Denmark*

P1A1-4 High line-density pulse wave imaging for local pulse wave velocity estimation using motion matching: A feasibility study on vessel phantoms

Fubing Li[1], **Qiong He[1]**, Chengwu Huang[1], Jianwen Luo[1]
[1]Department of Biomedical Engineering, Tsinghua University, Beijing, China, People's Republic of

P1A1-5 Viscoelastic tissue mimicking phantom validation study with shear wave elasticity imaging and viscoelastic spectroscopy

Carolina Amador[1], Randall Kinnick[1], Matthew Urban[1], Mostafa Fatemi[1], James Greenleaf[1]
[1]Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, Minnesota, USA

P1A1-6 Comparison of techniques for estimating shear-wave velocity in arterial wall using shear-wave elastography - FEM and phantom study

Jun-keun Jang[1], Kengo Kondo[1], Takeshi Namita[1], Makoto Yamakawa[1], Tsuyoshi Shiina[1]
[1]Graduate School of Medicine, Kyoto University, Kyoto, Japan

P1A1-7 Viscoelasticity and shear wave velocity of liver tissue evaluated by dynamic mechanical analysis

Kenoh Murakami[1], Kenji Yoshida[2], Kazuya Kawamura[2], Mariko Tsukune[3], Yo Kobayash[4], Masakatsu Fujie[5], Riwa Kishimoto[6], Takayuki Obata[6], Tadashi Yamaguchi[2]
[1]Graduate School of Engineering, Chiba University, Chiba, Japan, [2]Center for Frontier Medical Engineering, Chiba University, Chiba, Japan, [3]Graduate School of Science and Engineeringand Institute of Advanced Active Aging Research, Waseda University, Tokyo, Japan, [4]Research Institute for Science and Engineering, Waseda University, Tokyo, Japan,[5]Faculty of Science and Engineering, Waseda University, Tokyo, Japan, [6]Research center for charged particle therapy, National Institute of Radiological Science, Chiba, Japan

P1A2-3 Effects of low-intensity pulsed ultrasound on nerve growth factor-induced neurite outgrowth and signaling in PC12 cells

Lu Zhao[1], Yi Feng[1], Mingxi Wan[1]
[1]The 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, Shannxi, China, People's Republic of

P1A2-4 Sonodynamic Therapy of Breast Tumor by Using of IR-780 Dye

Fei Yan[1], Yekuo Li[2], Zhiting Deng[1], Hairong Zheng[1]
[1]Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, China, People's Republic of, [2]Guangzhou General Hospital, China, People's Republic of

P1A2-5 DNA packing by low-intensity ultrasound

Donghee Park[1], Gillsoo Song[2], Hyunjin Park[3], Hyungbeen Lee[2], Ji-Young Jang[1], Han-Sung Kim[2], Chul-Woo Kim[1], Jongbum Seo[2]
[1]Cancer Research Institute, Seoul National University College of Medicine, Seoul, Korea, Republic of,[2]Department of Biomedical Engineering, Yonsei University, Wonju, Korea, Republic of,[3]School of Electronic Electrical Engineering, Sungkyunkwan University, Suwon, Korea, Republic of

P1A2-6 On the thermal effect in biological tissues exposed to ultrasound of longer pulse duration after administration of contrast agents

Kazuki Akai[1], Yasunao Ishiguro[2], Naotaka Nitta[3], Hideki Sasanuma[2], Nobuyuki Taniguchi[4], Iwaki Akiyama[1]
[1]Faculty of Life and Medical Sciences, Doshisha University, Kyotanabe, Kyoto, Japan, [2]Department of Surgery, Jichi Medical University, Shimotsuke, Tochigi, Japan, [3]Human Technology Research Institute, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan, [4]Department of Clinical Laboratory Medicine, Jichi Medical University, Shimotsuke, Tochigi, Japan

P1A3-2 Advanced Automated Gain Adjustments for *In-Vivo* Ultrasound Imaging

Ramin Moshavegh[1], Martin Christian Hemmsen[1], Bo Martins[2], Andreas Hjelm Brandt[3], Thor Bechsgaard[3], Kristoffer Lindskov Hansen[3], Caroline Ewertsen[3], Michael Bachmann Nielsen[3], Jørgen Arendt Jensen[1]
[1]Electrical engineering, Technical University of Denmark, Lyngby, Denmark, [2]BK Medical ApS, Herlev, Denmark, [3]Department of Radiology, Copenhagen University Hospital, Copenhagen, Denmark

P1A3-3 Quantifying the benefit of elevated acoustic output in harmonic imaging

Yufeng Deng[1], Mark Palmeri[1], Ned Rouze[1], Kathryn Nightingale[1]
[1]Duke University, Durham, North Carolina, USA

P1A3-4 3D Super-Resolution Ultrasound using Microbubbles

Kirsten Christensen-Jeffries[1], Meng-Xing Tang[2], Joseph V Hajnal[1], Paul Aljabar[1], Christopher Dunsby[3,4], Robert J Eckersley[1]
[1]Biomedical Engineering, Division of Imaging Sciences, Kings College London, London, United Kingdom, [2]Bioengineering, Imperial College London, London, United Kingdom, [3]Department of Physics, Imperial College London, London, United Kingdom, [4]Centre for Histopathology, Imperial College London, London, United Kingdom

P1A3-5 A Study for B-Mode Imaging using 100-MHz-Range Ultrasound through a Fused Quartz Fiber

Takasuke Irie[1,2], Masasumi Yoshizawa[3], Norio Tagawa[1], Tadashi Moriya[4]
[1]Graduate School of System Design, Tokyo Metropolitan University, Tokyo, Japan, [2]Microsonic Co., Ltd., Japan,[3]Metropolitan College of Industrial Technology, Japan,[4]Tokyo Metropolitan University, Tokyo, Japan

Session P1A4.
MBB: Beamforming I

Chair: **Meng-Lin Li**
National Tsing Hua University

P1A4-1 Dual-Domain Compressed Beamforming for Medical Ultrasound Imaging

Bo Zhang[1], Jean-Luc Robert[2], Guillaume David[3]
[1]Medisys, Philips Research France, Suresnes, France, [2]Philips Research North America, Briarcliff, USA, [3]Columbia University, New York, USA

P1A4-2 Efficiency of Multi-look compounding of MVDR and APES Beamformers under Strong Wave Aberration Conditions

Teiichiro Ikeda[1], Shinta Takano[1], Hiroshi Masuzawa[1]
[1]Hitachi Ltd., Tokyo, Japan

P1A4-3 Hadamard-Encoded Synthetic Transmit Aperture Imaging with a Reduced Number of Receiving Channels

Ying Li[1], Ping Gong[1], Michael C. Kolios[1], Yuan Xu[1]
[1]Biomedical Physics, Ryerson University, Toronto, ON, Canada

P1A4-8 Comparison of spatial and temporal averaging on Ultrafast Imaging in presence of quantization errors

Asraf Mohamed Moubark[1], Zainab Alomari[1], Sevan Harput[1], **Steven Freear[1]**
[1]School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom

P1A4-9 Single transmission plane wave compounding for ultrafast ultrasound imaging

Natan Pages[1], Barbara Nicolas[1], **Herve Liebgott[1]**
[1]CREATIS, France

P1A4-10 Increased frame rate for plane wave imaging without loss of image quality

Jonas Jensen[1], Matthias Bo Stuart[1], Jørgen Arendt Jensen[1]
[1]Dept. of Elect. Eng, Technical University of Denmark, Kgs. Lyngby, Denmark

P1A4-11 Motion-Corrected Coherent Compounding for Improved Beamforming in Ultrafast Imaging

Jean Provost[1], Mafalda Correia[1], Mickael Tanter[1], Mathieu Pernot[1]
[1]Institut Langevin, ESPCI, Paristech, INSERM, France

8:00 am - 5:00 pm	Poster --- Thursday, October 22, 2015			4th floor
Session P1A5. **MTH: Therapeutic Methods** *Chair:* **Helen Mulvana** *University of Glasgow*	**P1A5-8** **New discovery of thin catheter movement under acoustical field of focused transducer** **Takashi Mochizuki**[1], Nobuhiro Tsurui[1], Naoto Hosaka[1], Kohji Masuda[1] [1]*Tokyo University of Agriculture and Technology, Tokyo, Japan*	**ession P1A6.** **MSP: Medical Signal Processing** *Chair:* **Martin Hemmsen** *Technical University of Denmark*	**P1A6-8** **A Multiparametric Approach Integrating Vessel Diameter, Wall Shear Rate and Physiologic Signals for Optimized Flow Mediated Dilation Studies** **Alessandro Ramalli**[1], Michal Byra[2], Alessandro Dallai[1], Carlo Palombo[3], Kunihiko Aizawa[4], Piero Tortoli[1] [1]*Information Engineering Department, University of Florence, Firenze, Italy,*[2]*Department of Ultrasound, Institute of Fundamental Technological Research PAS, Warsaw, Poland,* [3]*Department of Surgical, Medical, Molecular, and Critical Area Pathology, University of Pisa, Pisa, Italy,* [4]*Diabetes and Vascular Medicine Research Centre, NIHR Exeter Clinical Research Facility, University of Exeter Medical School, Exeter, United Kingdom*	**P1A7-5** **Thin-Walled Carotid Bifurcation Phantom Systems for Vascular Strain-Flow Imaging Investigations** **Adrian J. Y. Chee**[1], Billy Y. S. Yiu[1], Alfred C. H, Yu[1] [1]*Medical Engineering Program, The University of Hong Kong, Hong Kong*
P1A5-1 **New cancer treatment method utilizing intratumoral drug distribution control with mechanical effects of cavitation** **Ken-ichi Kawabata**[1], Takashi Maruoka[1], Rei Asami[1], Hideki Yoshikawa[1], Reiko Ashida[2] [1]*Hitachi, Ltd., Tokyo, Japan,* [2]*Osaka Medical Center for Cancer and Cardiovascular Diseases, Osaka, Japan*	**P1A5-9** **Features of acoustic radiation function on thin catheter as a tube** **Takashi Mochizuki**[1], Nobuhiro Tsurui[1], Kohji Masuda[1] [1]*Graduate school of Bio-Application & System Engineering, Tokyo University of Agriculture and Technology, Tokyo, Japan*	**P1A6-1** **Sub-sampled Doppler ultrasound reconstruction using block sparse Bayesian learning** **Oana Lorintiu**[1], Hervé Liebgott[1], Olivier Bernard[1], Denis Friboulet[1] [1]*Université de Lyon, CREATIS ; CNRS UMR5220 ; Inserm U1044 ; INSA-Lyon ; Université Lyon 1, Lyon, France*	**P1A6-9** **A Novel Side Lobe Estimation Method in Medical Ultrasound Imaging Systems** **Mok Kun Jeong**[1], Sung Jae Kwon[1] [1]*Electric, Electronic and communication engineering, Daejin University, Pocheon, Kyeonggi, Korea, Republic of*	**P1A7-6** **Receiver Operating Characteristics Analysis of Eigen-Based Clutter Filters for Ultrasound Color Flow Imaging** **Adrian J. Y. Chee**[1], Alfred C. H. Yu[1] [1]*Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong*
P1A5-2 **High resolution coagulation size estimation with multiple modulation frequencies for localized motion imaging** **Takashi Azuma**[1], Ryusuke Sugiyama[1], Chen Optatovsky[1], Mika Seki[1], Hideki Takeuchi[1], Keisuke Fujiwara[2], Kazunori Itani[2], Kiyoshi Yoshinaka[3], Shu Takagi[1], Yoichiro Matsumoto[1] [1]*The University of Tokyo, Japan,* [2]*Hitachi Aloka Medical, Japan,* [3]*National Institute of Advanced Industrial Science and Technology, Japan*	**P1A5-10** **Ultrasound image-based dynamic fusion modeling for estimating the impact of organ motion on HIFU therapies and evaluating motion compensation strategies** **W. Apoutou N'DJIN**[1], Jean-Yves CHAPELON[1], David MELODELIMA[1] [1]*LabTau, Inserm, U1032; Université de Lyon, Lyon, France*	**P1A6-2** **B-field energy dependent phase lag dispersion in Magnetomotive ultrasound imaging** **Roger Andersson**[1], Magnus Cinthio[1], Maria Evertsson[1], Hanna Toftevall[2], Anders Wahlström[3], Sarah Fredriksson[4], Göran Nybom[5], Tomas Jansson[6,7] [1]*Biomedical Engineering, Lund University, Lund, Sweden,* [2]*Geccodots AB, Lund, Sweden,*[3]*Lundinova AB, Lund, Sweden,* [4]*Genovis AB, Lund, Sweden,* [5]*JOIN Business & Technology AB, Lund, Sweden,* [6]*Clinical Sciences Lund, Biomedical Engineering, Lund University, Sweden,* [7]*Medical Services, Skåne University Hospital, Lund, Sweden*	**P1A6-10** **Estimation of Arteriovenous Fistula Stenosis by Quantitative Doppler Ultrasound Using Adaptive Gray Relation Method** **Jian-Xing Wu**[1], Tainsong Chen[2] [1]*National Synchrotron Radiation Research Center, Hsinchu, Taiwan,*[2]*Department of Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan*	**P1A7-7** **Wall Shear Rate Method Validation Through Multi-physics Simulations** **Stefano Ricci**[1], Abigail Swillens[2], Alessandro Ramalli[1], Patrick Segers[2], Piero Tortoli[1] [1]*Information Engineering Dept., Università di Firenze, Florence, Italy,* [2]*IBiTech-bioMMeda, iMinds Medical IT, Gent University, Belgium*
P1A5-3 **Temperature distribution analysis for High Intensity Focused Ultrasound Breast Cancer Treatment by Numerical Simulation** **Mingzhen ZHANG**[1], Takashi AZUMA[1], Kohei OKITA[2], Xiaolei QU[1], Ryuta NARUMI[1], Hidemi FURUSAWA[3], Junichi SHIDOOKA[3], Shu TAKAGI[1], Yoichiro MATSUMOTO[1] [1]*Graduate School of Engineering, The University of Tokyo, Japan,* [2]*College of Industrial Technology, Nihon University, Japan,* [3]*Breastopia Medical Corporation, Breastopia Namba Hospital, Japan*	**P1A5-11** **Enhanced spatio-temporal control of acoustic cavitation during flow using a novel short-pulse ultrasonic pulse sequence and passive acoustic mapping** **Antonios Pouliopoulos**[1], Marc Tinguely[2], Caiqin Li[1], Mengxing Tang[1], Valeria Garbin[2], James Choi[1] [1]*Bioengineering, Imperial College London, United Kingdom,* [2]*Chemical Engineering, Imperial College London, United Kingdom*	**P1A6-3** **Discover layered structure in ultrasound images with a joint sparse representation model** **Junbo Duan**[1], Hui Zhong[1], Bowen Jing[1], Siyuan Zhang[1], Mingxi Wan[1] [1]*The 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*	**Session P1A7.** **MBF: Performance Investigations and Phantom Design** *Chair:* **Lasse Løvstakken** *NTNU*	**P1A7-8** **Investigation of Twinkling Artifact by Controlling Oscillating Disturbance** **Yu Naito**[1], Masayuki Tanabe[1], Masahiko Nishimoto[1], Hiroshi Hashimoto[2], Takao Jibiki[2], Tadashi Shimazaki[2] [1]*Graduate School of Science and Technology, Kumamoto University, Kumamoto,*

P1A5-4 **Generation of calibration curve with pulse compression technique for ultrasound-based temperature estimation**

Su A Lee[1], Jong Seob Jeong[1]
[1]*Medical Biotechnology, Dongguk University, Gyeonggi-do, Korea, Republic of*

P1A5-5 **Visualization of the intensity field of a high intensity focused ultrasound (HIFU) source in situ**

Trong Nguyen[1], Minh Do[1], **Michael L. Oelze**[1]
[1]*Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, USA*

P1A5-6 **Inducing antivascular effects in tumors with ultrasound stimulated micron sized bubbles**

Naomi Matsuura[1], Minseok Seo[2], Niroo Sivapalan[2], Siqi Zhu[2], Ben Leung[2], **David Goertz**[3,4]
[1]*Medical Imaging, University of Toronto, Canada,* [2]*Sunnybrook Research Institute, Canada,* [3]*Sunnybrook Research Institute, Toronto, ON, Canada,* [4]*Medical Biophysics, University of Toronto, Canada*

P1A5-7 **Enhanced Cavitation Activities from Axial Split Foci Using Second/Third-Harmonic Superimposition for Focused Ultrasound Surgery**

Mingzhu Lu[1], Yubo Guan[1], Yujiao Li[1], Mingxi Wan[1]
[1]*Department 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*

P1A5-12 **The dynamic excitation of a chain of pre-stressed spheres for biomedical ultrasound applications: contact mechanics finite element analysis and validation**

Pierre Gelat[1], Nader Saffari[1], David Hutchins[2], Jia Yang[2], Omololu Akanji[2], Peter Thomas[2], Lee Davis[2], Steven Freear[3], Sevan Harput[3]
[1]*UCL Mechanical Engineering, University College London, United Kingdom,* [2]*School of Engineering, University of Warwick, United Kingdom,* [3]*School of Electronic and Electrical Engineering, University of Leeds, United Kingdom*

P1A5-13 **Extracorporeal Acute Cardiac Pacing by High Intensity Focused Ultrasound in Practice and Theory**

Amit Livneh[1], Eitan Kimmel[1], Dan Adam[1]
[1]*Biomedical Engineering, Technion-Israel Institute of Technology, Haifa, Israel*

P1A5-14 **HIFU real-time feedback control using localized motion imaging with dynamic cross correlation window**

Xiaolei Qu[1], Takashi Azuma[1], Ryusuke Sugiyama[1], Kengo Kanazawa[1], Mika Seki[1], Akira Sasaki[1], Hideki Takeuchi[1], Keisuke Fujiwara[2], Kazunori Itani[2], Satoshi Tamano[3], Shu Takagi[1], Ichiro Sakuma[1], Yoichiro Matsumoto[1]
[1]*The University of Tokyo, Japan,* [2]*Hitachi Aloka Medical, Ltd., Japan,* [3]*Tohoku University, Japan*

P1A5-15 **Pulse Inversion Technique for HIFU Treatment Monitoring in Real Time**

Byungwoo Kang[1], Hyuncheol Kim[2,3], Jin Ho Chang[1,3]
[1]*Electronic Engineering, Sogang University, Korea, Republic of,* [2]*Chemical and Biomolecular Engineering, Sogang University, Korea, Republic of,* [3]*Interdiciplinary Program of Integrated Biotechnology, Sogang University, Korea, Republic of*

P1A6-4 **A Sub-Nyquist Sampling Analog Front-End with Mixer-Based Subarray Beamforming for B-Mode Ultrasound Imaging**

Jonathon Spaulding[1], Boris Murmann[1]
[1]*Stanford University, Stanford, California, USA*

P1A6-5 **Combined use of edge-detection and tissue Doppler for robust left ventricle segmentation**

Sigurd Storve[1], Fredrik Orderud[2], Hans Torp[1]
[1]*Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Norway,* [2]*GE Vingmed Ultrasound, Norway*

P1A6-6 **Streak artifact reduction for blind deconvolution of multibeam image**

Kangwon Jeon[1], Hyuntaek Lee[1], Munkyeong Hwang[1], Yongsup Park[1]
[1]*Digital Media & Communications R&D Center, Samsung Electronics, Suwon, Gyeonggi, Korea, Republic of*

P1A6-7 **Dynamic Baseband Pulse Compression for Coded Excitation Imaging**

Yeajin Kim[1], Jinbum Kang[1], Yangmo Yoo[1,2]
[1]*Electronic Engineering, Sogang University, Seoul, Korea, Republic of,* [2]*Interdisciplinary Program of Integrated Biotechnology, Sogang University, Korea, Democratic People's Republic of*

P1A7-1 ***In vivo*** **Investigation for Accuracy Estimation of Vector Flow Mapping**

Tomohiko Tanaka[1], Takashi Okada[2], Tomohide Nishiyama[2], Yoshinori Seki[2], Ken-ichi Kawabata[1]
[1]*Hitachi, Ltd., Japan,* [2]*Hitachi Aloka Medical, Ltd., Japan*

P1A7-2 **Validation of a novel vector method for blood peak detection in an anthropomorphic phantom**

Riccardo Matera[1], **Stefano Ricci**[1], Alfred C.H. Yu[2], Billy Y.S. Yiu[2], Piero Tortoli[1]
[1]*Information Engineering Dept., Università di Firenze, Florence, Italy,* [2]*Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong*

P1A7-3 **Novel Design of Patient-Specific Cerebral Aneurysm Phantoms for Intraoperative Ultrasound Investigations**

C. K. Ho[1], Adrian J. Y. Chee[1], Billy Y. S. Yiu[1], Anderson C. O. Tsang[2], K. W. Chow[3], Alfred C. H. Yu[1]
[1]*Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong,* [2]*Department of Surgery, University of Hong Kong, Pokfulam, Hong Kong,* [3]*Department of Mechanical Engineering, University of Hong Kong, Pokfulam, Hong Kong*

P1A7-4 **Implementation and evaluation of slow-time Golay decoding for pre-clinical high-frequency color Doppler imaging in mice**

Che-Chou Shen[1], Jyun-Gong Yu[1], Gency Jeng[2]
[1]*Electrical Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan,* [2]*S-Sharp Corporation, Taiwan*

Session P2A1.
Ultrasonics in Air and Water

Chair: **Jiromaru Tsujino**
Kanagawa University

P2A1-1 **Ultrasonic transducer characterization in air based on an indirect acoustic radiation pressure measurement**

Anastasia Guseva[1], Maik Hoffmann[1], Alexander Unger[2], Silvia Zulk[3], Mohamed Balla El Amien[4], Ennes Sarradj[1], Mario Kupnik[2]
[1]*BTU Cottbus-Senftenberg, Germany,* [2]*Technische Universität Darmstadt, Germany,* [3]*Leibniz Universität Hannover, Germany,* [4]*University of Sharjah, United Arab Emirates*

P2A1-2 **Side Lobe Suppression for Air-Coupled Ultrasonic Transducers with Parabolic Horn**

Koji Ibata[1], Rokuzo Hara[1], Tomonori Kimura[1], Toru Fukasawa[1], Hiroaki Miyashita[1], Satoru Inoue[1]
[1]*Mitsubishi Electric Corporation, Japan*

P2A1-3 **Calibration of ultrasonic hydrophones based on spherically focused self-reciprocity technique**

Guangzhen Xing[1], Ping Yang[2], Pengcheng Hu[1]
[1]*Institute of Ultra-precision Optoelectronic Instrument Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, China, People's Republic of,* [2]*Division of Mechanics and Acoustics, National Institute of Metrology, Beijing, Beijing, China, People's Republic of*

8:00 am - 5:00 pm	Poster --- Thursday, October 22, 2015			4th floor
Session P2A2. **SHM in Concrete** *Chair:* **Joel Harley** *University of Utah*	**P2A3-3** **Optimal Lamb wave mode and frequency selection for assessment of creep damage in titanium alloy plates** **Yanxun Xiang**[1], Fu-Zhen Xuan[2] [1]*East China University of Science and Technology, Shanghai, Shanghai, China, People's Republic of,* [2]*East China University of Science and Technology, China, People's Republic of*	**P3A1-3** **"Ultrasonic studies of physicochemical parameters of biofuels in a broad range of pressures and temperatures"** **Piotr Kielczynski**[1], Marek Szalewski[1], Andrzej Balcerzak[1], Krzysztof Wieja[1], Aleksander Rostocki[2], Ryszard Siegoczyński[2], Stanislaw Ptasznik[3] [1]*Polish Academy of Sciences, Poland,* [2]*Warsaw University of Technology, Poland,* [3]*Institute of Agricultural and Food Biotechnology, Poland*	**Session P4A1.** **Sensors & Applications I** *Chair:* **Mauricio Pereira da Cunha** *University of Maine*	**P4A2-1** **Optimized Response of AlN Stack For Chipscale GHz Ultrasonics** **Jason Hoople**[1], Justin Kuo[1], Jeffrey Soon Bo Woon[2], Navab Singh[2], Amit Lal[1] [1]*Electrical and Computer Engineering, Cornell University, USA,* [2]*Institute of Microelectronics, Singapore*
P2A2-1 **Low Frequency Coded Waveform for the Inspection of Concrete Structure** **M.N.I.B. Mohamed**[1], S. Laureti[1,2], M. Ricci[2], L.A.J. Davis[1], P. Burrascano[2], D.A. Hutchins[1] [1]*School of Engineering, University of Warwick, Coventry, United Kingdom,* [2]*Polo Scientifico Didattico di Terni, Università degli Studi di Perugia, Terni, Italy*	**P2A3-4** **Detection of Low-frequency Components in Ultrasonic Waves Transmitted through Contact Solids** **Yuji Kato**[1], Hirotaka Tanaka[1], Toshihiko Sugiura[1] [1]*Keio University, Japan*	**P3A1-4** **Experimental Investigation on the Jet-like Acoustic Streaming in front of an Oscillating Circular Piston** **Arturo Santillan**[1] [1]*Department of Technology and Innovation, University of Southern Denmark, Odense M, Fyn, Denmark*	**P4A1-1** **Investigation of langasite surface acoustic wave pressure sensors with a structure of reinforcing its pressure sensitivity** **Honglang Li**[1], Yabing Ke[1], Yiyu Zhao[1], Lina Cheng[1], Shitang He[1] [1]*Institute of acoustics, China, People's Republic of*	**P4A2-2** **Low Loss and Wide Band Filters Using New Dispersive** □@Interd **Transduceres with Floating Electrodes** **Kazuhiko Yamanouchi**[1] [1]*Acoustic Wave Labo., Ltd, Japan*
P2A2-2 **Reverse Time Migration Based Ultrasonic Imaging of Rebars Embedded in Concrete** **Surendra Beniwal**[1], Abhijit Ganguli[1] [1]*Civil Engineering, Indian Institute of Technology Delhi, Delhi, India*	**P2A3-5** **Reconfigurable and Programmable System-on-Chip Hardware Platform for Real-time Ultrasonic Testing Applications** Pramod Govindan[1], Boyang Wang[1], Pingping Wu[1], Ivan Palkov[1], Vidya Vasudevan[1], **Jafar Saniie**[1] [1]*Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, Illinois, USA*	**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** **Alireza Baghai-Wadji**[1] [1]*Electrical Engineering, University of Cape Town, Cape Town, South Africa*	**P4A1-2** **Development of SAW current sensor based on the magnetomechanics effect** Yana Jia[1], Wen Wang[1], Xinlu Liu[1], **Shitang He**[1] [1]*Chinese Academy of Sciences, Institute of Acoustics, Beijing, China, People's Republic of*	**P4A2-3** **Acoustic Micro-resonator Utilizing Hemispherical Air Cavity for Sensitivity Enhancement** **Anton Shkel**[1], Eun Sok Kim[1] [1]*Electrical Engineering, University of Southern California, Los Angeles, CA, USA*
P2A2-3 **Study on Non-Contact Acoustic Imaging Method for Concrete Structures - The 2nd Construction Method using a Strong Ultrasonic Sound Source-** **Tsuneyoshi Sugimoto**[1], Kazuko Sugimoto[2], Noriyuki Utagawa[3], Kageyoshi Katakura[4] [1]*Graduate School of Engineering, Toin University of Yokohama, Yokohama, Japan,* [2]*Graduate School of Engineering, Toin University of Yokohama, Japan,* [3]*SatoKogyo Co., Ltd., Japan,* [4]*Meitoku Engineering, Japan*	**P2A3-6** **Model-based parameter estimation for defect characterization in ultrasonic NDE applications** Yufeng Lu[1], **Jafar Saniie**[2] [1]*Electrical and Computer Engineering, Bradley University, Peoria, Illinois, USA,* [2]*Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, Illinois, USA*	**P3A1-6** **Ultrasonic batch processing of ultra heavy crude oil for viscosity reudction on the industrial scale** **Delong Xu**[1], Jingjun Deng[1], Weijun Lin[1], Chao Li[1], Lixin Bai[1] [1]*Institute of Acoustics, Chinese Academy of Sciences, Beijing, China, People's Republic of*	**P4A1-3** **Development of practical ball surface acoustic wave trace moisture analyzer by undersampling** **Toshihiro Tsuji**[1], Toru Oizumi[1], Nobuo Takeda[1], Singo Akao[1], Yusuke Tsukahara[1], Kazushi Yamanaka[1] [1]*Tohoku University, Sendai, Japan*	**P4A2-4** **High-Q piezoelectric Lamb wave resonators based on AlN plates with chamfered corners** Chih-Ming Lin[1], Jie Zou[1], **Yung-Yu Chen**[2], Albert Pisano[3] [1]*Mechanical Engineering, University of California, Berkeley, CA, USA,* [2]*Mechanical Engineering, Tatung University, Taipei, Taiwan,* [3]*Mechanical and Aerospace Engineering, University of California, San Diego, CA, USA*

P2A2-4 Detection of Delamination in Concrete Medium Using Rayleigh Waves

Debdutta Ghosh[1], **Surendra Beniwal[1]**, Abhijit Ganguli[1]
[1]Civil Engineering, Indian Institute of Technology Delhi, Delhi, India

P2A3-7 Instrument for Rock Bolt Inspection by Means of Ultrasound

Tadeusz Stepinski[1], Karl-Johan Mattsson[2]
[1]WIMR, AGH Univ. of Science and Technology, Krakow, Poland, [2]Geosigma AB, Sweden

P3A1-7 A basic study of technique for stirring of liquid in non-contact way using high-intensity aerial ultrasonic waves

Taichi Urakami[1], Ayumu Osumi[1], Youich Itoh[1]
[1]Nihon University, Japan

P4A1-4 Stabilization of SAW atomizer for a wearable olfactory display

Kazuki Hashimoto[1], Takamichi Nakamoto[1]
[1]Tokyo Institute of Technology, Kanagawa-Ken, Japan

P4A2-5 HBAR AS HIGH FREQUENCY HIGH STRESS GENERATOR

Tanay Gosavi[1], Evan MacQuarrie[1], Gregory Fuchs[1], Sunil Bhave[2]
[1]Cornell University, NY, USA, [2]Analog Devices Inc, Woburn, MA, USA

Session P2A3.
Flaw Detection

Chair: **Erdal Oruklu**
Illinois Institute of Technology

Session P3A1.
General Physical Acoustics

Chair: **Yook-Kong Yong**
Rutgers University

P3A1-8 Composite Lateral Electric Field Excited Piezoelectric Resonator

Boris Zaitsev[1], Alexander Shikhabudinov[1], Andrey Teplykh[1], Irina Borodina[1], Iren Kuznetsova[2]
[1]Saratov Branch, Kotel'nikov's Institute of Radio Engineering and Electronics of RAS, Russian Federation, [2]Kotel'nikov's Institute of Radio Engineering and Electronics of RAS, Russian Federation

P4A1-5 Conductivity measurement of liquid by SH-SAW sensor consisting of IDT/(11-20) oriented ZnO film/silica glass substrate

Shoko Hiyama[1], Takahiko Yanagitani[2], Shinji Takayanagi[1], Mami Matsukawa[1]
[1]Wave electronics research center, Laboratory of Ultrasonic Electronics, Doshisha university, Kyoto, Japan, [2]Waseda University, Tokyo, Japan

Session P4A3.
Materials & Propagation

Chair: **Sergei Zhgoon**
National Research University Moscow Power Engineering Institute

P2A3-1 Nonlinear Rayleigh Surface Acoustic Waves for Determining Yielding of Alloys

Kui Yao[1], Shifeng Guo[1], Lei Zhang[1], Shuting Chen[1], Yi Fan Chen[1], Meysam Sharifzadeh Mirshekarloo[1], Huajun Liu[1], Zhiyuan Shen[1]
*[1]Institute of Materials Research and Engineering, A*STAR(Agency for Science, Technology and Research), Singapore*

P3A1-1 Lateral Electric Field Excited Resonator Based On Pzt Ceramics

Andrey Teplykh[1], Boris Zaitsev[1], Iren Kuznetsova[2]
[1]Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Saratov Branch, Saratov, Russian Federation, [2]Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Moscow, Russian Federation

P3A1-9 Influence of Liquid on Properties of Backward Acoustic Waves in Piezoelectric Plates

Iren Kuznetsova[1], Boris Zaitsev[2], Ilya Nedospasov[1], Anastasia Kuznetsova[2]
[1]Moscow Department, Kotel'nikov Institute of RadioEngineering and Electronics of RAS, Moscow, Russian Federation, [2]Saratov Department, Kotel'nikov Institute of RadioEngineering and Electronics of RAS, Saratov, Russian Federation

P4A1-6 Comparative analysis of the experience obtained from the use of SAW and BAW wireless resonator temperature sensors for surgery

Ivan Ancev[1], **Sergei Bogoslovsky[1]**, Gennadiy Sapozhnikov[1], Sergei Zhgoon[2], Alexander Shvetsov[2]
[1]Joint Stock Company "NPP "Radar mms", St Petersburg, Russian Federation,[2]MPEI, Moscow, Russian Federation

P4A3-1 Investigation on Surface Acoustic Wave propagation for a non-planar piezoelectric thin film device

Mohanraj Soundara pandian[1], Eloi Marigo Ferrer[1], Muniandy Shunmugam[1], Rubiyatulniza Binti Hussain[1], Charlie Tay Wee Song[1], Jazril Bin Jamil Din[1], Chan Buan Fei[1], Venkatesh Madhaven[1], Arjun Kumar Kantimahanti[1], Aamir Farooq Malik[2], Varun Jeoti[2]
[1]SilTerra Malaysia Sdn Bhd, Kulim, Kedah, Malaysia, [2]Universiti Teknologi PETRONAS, Malaysia

P2A3-2 Combination of direct, half-skip and full-skip TFM to characterize multi-faceted crack in weld

Xiaoli Han[1], Wentao Wu[1,2], Ping Li[1], Jing Lin[2]
[1]Institute of Acoustics, Chinese Academy of Sciences, China, People's Republic of, [2]State Key Laboratory for Manufacturing System Engineering, Xi'an Jiaotong University, Sha'anxi, China, People's Republic of

P3A1-2 "Inverse method for evaluation of elastic parameters in functionally graded materials using ultrasonic Love waves"

Piotr Kielczynski[1], Marek Szalewski[1], Andrzej Balcerzak[1], Krzysztof Wieja[1]
[1]Polish Academy of Sciences, Poland

P3A1-10 A Conservative Edge-free and Corner-free Finite Difference Method Formulation for Analysing Mass-loading Problems in Three Dimensions

Ireka Ikenna[1], Mebratu Fenta[1],**alireza baghai-wadji[2]**
[1]Department of Mathematics and Applied Mathematics Mathematics, University of Cape Town, Cape Town, South Africa,[2]Electrical Engineering, University of Cape Town, Cape Town, South Africa

Session P4A2.
Microacoustic Resonators

Chair: **Maximilian Pitschi**
TDK Corporation

P4A3-2 Effect of Sintering temperature on the Dielectric and Piezoelectric Properties of (Na0.525K0.443Li0.037)(Nb0.883Sb0.08Ta0.037)O3 Ceramics for piezoelectric Actuators

Gwang Min Lee[1], Ju Hyun Yoo[1,2], Yeong Ho Jeong[3], Lark Hoon Hwang[1]
[1]Semyung University, Republic of Korea, [2]Electrical Engineering, Semyung University, Jecheon, Chungbuk, Republic of Korea, [3]Korea National University of Transportation, Republic of Korea

8:00 am - 5:00 pm	Poster --- Thursday, October 22, 2015			4th floor
P4A3-3 Plate Modes in Langasite **Natalya Naumenko**[1] *[1]Acousto-optical Research Center, National University of Science and Technology, Moscow, Russian Federation*	**Session P5A2.** **Thick and Thin Films** *Chair:* **Yasuhito Takeuchi** *Asahikawa Medical University*	**P5A2-8** Characterization of a MEMS 3D Piezoelectric Ultrasound Transducer for Portable Imaging Systems **Corina Nistorica**[1], Dimitre Latev[1], Deane Gardner[1], Darren Imai[1], Chris Daft[2] *[1]FUJIFILM Dimatix, Inc, USA, [2]River Sonic Solutions, USA*		
P4A3-4 Measurements of Acoustical Physical Constants for $Ca_3Nb(Ga_{0.75}Al_{0.25})_3Si_2O_{14}$ Single Crystal Using the Ultrasonic Microspectroscopy System **Yuji Ohashi**[1], Yuui Yokota[1], Tetsuo Kudo[1], Shunsuke Kurosawa[1], Kei Kamada[1,2], Akira Yoshikawa[1,2] *[1]Tohoku University, Japan, [2]C&A Co., Japan*	**P5A2-1** (100)-Textured Lead-free KNN-based Thick Film for IVUS£¨>50MHz£©Imaging **Benpeng Zhu**[1], Teng Ma[2], Yongxiang Li[3], Xiaofei Yang[1], K.kirk Shung[2], Qifa Zhou[2] *[1]Huazhong University of Science and Technology, China, People's Republic of,[2]Department of Biomedical Engineering, NIH Transducer Resource Center, University of Southern California, USA,[3]Key Laboratory of Inorganic Functional Materials and Devices, Chinese Academy of Sciences, China, People's Republic of*	**Session P5A3.** **Transducer Design and Modeling** *Chair:* **Yasuhito Takeuchi** *Asahikawa Medical University*		
P4A3-5 Loss Reduction of Leaky Surface Acoustic Wave by Loading with High-Velocity Thin Film **Shoji Kakio**[1], Keiko Hosaka[1] *[1]Interdisciplinary Graduate School of Medicine and Engineering, University of Yamanashi, Japan*	**P5A2-2** Domain Engineering in Epitaxial Ferroelectric Thin Films Mahamudu Mtebwa[1], **Nava Setter**[1] *[1]Ceramics Laboratory, EPFL, Lausanne, Switzerland*	**P5A3-1** Design of a bullet beam pattern of an ultrasound transducer by use of a multifocal lens and a shaded electrode **Euna Choi**[1], Yongrae Roh[1] *[1]School of Mechanical Engineering, Kyungpook National University, Daegu, Korea, Republic of*		
Session P5A1. **Transducer Materials** *Chair:* **Yasuhito Takeuchi** *Asahikawa Medical University*	**P5A2-3** High power piezoelectric characteristics of KNbO3 thick films by hydrothermal method. **Mutsuo Ishikawa**[1], Yousuke Uchida[1], Motoko Shibuya[1], Nobuaki Kosuge[1], Minoru Kurosawa[2], Hiroshi Funakubo[2] *[1]Toin Univ. of Yokohama, Japan,[2]Tokyo Inst. of Tech., Japan*	**P5A3-2** Impedance Conversion of Matching Layer for Air Ultrasonic Transducers Minoru Toda[1], **Minoru Toda**[2] *[1]Sensor Solution, TE Connectivity, USA, [2]TE Connectivity, USA*		

P5A1-1 Novel Spring-Mass Matching Layer Fabrication for Ultrasound Transducers **Mikel Gorostiaga**[1], Matthias C. Wapler[1], Ulrike Wallrabe[1] *[1]Department of Microsystemsengineering, Laboratory for Microactuators, IMTEK - University of Freiburg, Freiburg im Breisgau, Germany*	**P5A2-4 Fundamental Study on the Miniature Coiled Stator-UltraSound Motor with hydrothermally synthesized lead zirconate titanate poly-crystalline film transducer for medical applications** **Seiya Ozeki**[1], Toshinobu Abe[1], Tadashi Moriya[2], Takasuke Irie[3], Minoru Kurosawa[4], Shinichi Takeuchi[1] *[1]Clinical Engineering, Toin University of YOKOHAMA, Yokohama, kanagawa, Japan, [2]Tokyo Metropolitan University, Hino, Tokyo, Japan, [3]Microsonic Co., Ltd., Kokubunji, Tokyo, Japan,[4]Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan*	**P5A3-3 Diffraction loss calculation based on boundary element method for an air-coupled phased array** **Rene Golinske**[1], Maik Hoffmann[1], Eric Konetzke[1], Alexander Unger[2], Matthias Rutsch[2], Mario Kupnik[2] *[1]BTU Cottbus-Senftenberg, Germany,[2]Technische Universität Darmstadt, Germany*		
P5A1-2 Additive manufacture of impedance matching layers for air-coupled ultrasonic transducers **Sivaram Nishal Ramadas**[1,2], Michael Hunter[1], John Thornby[3], Chris Purssell[4], Simon Leigh[4], Steven Dixon[1] *[1]Physics, University of Warwick, United Kingdom, [2]Elster Instromet, Belgium, [3]WMG, University of Warwick, United Kingdom,[4]School of Engineering, University of Warwick, United Kingdom*	**P5A2-5 Electrical and Acoustic Characterization of Scandium Aluminum Nitride (ScAlN) Piezoelectric Micromachined Ultrasonic Transducers (PMUT)** **Panu Koppinen**[1], Sergey Gorelick[1], Feng Gao[1], James Dekker[1], Tommi Riekkinen[1], Alessandro Caspani[2] *[1]Knowledge Intensive Products and Services, VTT Technical Research Centre of Finland Ltd, Espoo, Finland,[2]Dipartimento di Elettronica, Informazione e Bioingegneria, Politecnico di Milano, Milano, Italy*	**P5A3-4 Optimization of the Structure of 1-3 Piezocomposite Materials to Maximize the Performance of an Underwater Transducer** Yongrae Roh[1], **Haejune Park**[1] *[1]School of Mechanical Engineering, Kyungpook National University, Daegu, Korea, Republic of*		
P5A1-3 1-3 piezocomposites based on super-cell structuring for transducer applications Remi Rouffaud[1], **Franck Levassort**[1], Mai PhamThi[2], Claire Bantignies[3], Marc Lethiecq[1], Anne-Christine Hladky-Hennion[4] *[1]GREMAN UMR 7347 CNRS, François-Rabelais University, Tours, France, [2]Thales Research & Technology, Palaiseau, France,[3]VERMON SA, Tours, France, [4]ISEN, IEMN UMR 8520 CNRS, Lille, France*	**P5A2-6 Development of anti-cavitation hydrophone with hydrothermal PZT film - Estimation of durability-** **Michihisa Shiiba**[1,2], Nagaya Okada[3], Minoru Kurosawa[4], Shinichi Takeuchi[1] *[1]Toin University of Yokohama, Japan,[2]Research Fellow of Japan Society for the Promotion of Science, Japan, [3]Honda Electronics Co., Ltd., Japan, [4]Tokyo Institute of Technology, Japan*	**P5A3-5 A feasibility study of angled backing structure using FEM Simulation for lightweight ultrasound transducer** **Seon Mi Ji**[1], Sung Min Kim[1], Jong Seob Jeong[1] *[1]Medical Biotechnology, Dongguk University, Gyeonggi-do, Korea, Republic of*		
P5A1-4 Design and Fabrication of Lead-free BNT Film High Frequency Ultrasound Transducers **Wei Ren**[1] *[1]Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education, Xi'an Jiaotong University, China, People's Republic of*	**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** **Nagaya Okada**[1], Michihisa Shiiba[2], Minoru K. Kurosawa[3], Shinichi Takeuchi[2] *[1]Research and Development Div., HONDA ELECTRONICS CO., LTD., Japan, [2]Department of Clinical Engineering, Faculty of Biomedical Engineering, Toin University of Yokohama, Japan, [3]Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology, Japan*			

8:00 am - 9:30 am — Oral --- Friday, October 23, 2015

	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
	Chair: **Kathy Nightingale** *Duke University*	*Chair:* **Nico de Jong** *Erasmus Medical Centre*	*Chair:* **Georg Schmitz** *Ruhr-Universität Bochum*	*Chair:* **Hans Bosch** *Erasmus Medical Center*	*Chair:* **David Greve** *Carnegie Mellon University*	*Chair:* **John Larson** *Avago Technologies*	*Chair:* **Robert Aigner** *Qorvo Inc.*	*Chair:* **Qifa Zhou** *University of Southern California*
	Plenary Hall	**VIP**	**201BC**	**201DE**	**103**	**201F**	**201A**	**102**
8:00 am	*1D-1* **Characterizing Sclerotic Skin Stiffness with Acoustic Radiation Force Impulse (ARFI) and Shear Wave Elasticity Imaging (SWEI)** **Mark Palmeri**[1], A. Rambi Cardones[2], Seung Yun Lee[1], Kathryn Nightingale[1] *[1]Biomedical Engineering, Duke University, Durham, NC, USA,[2]Dermatology, Duke University, Durham, NC, USA*	*2D-1* **Live Cytodynamics Imaging During Single-Site Sonoporation: Rapid Activation of Annexin Self-Defense Response by Vibrating and Collapsing Microbubbles** **Wenjing Zhong**[1], Alfred C. H. Yu[1] *[1]Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong*	*3D-1* **Ex-vivo photoacoustic imaging of atherosclerotic carotid plaques** **M.U. Arabul**[1], H.M. Heres[1], M.C.M. Rutten[1], M.R.H.M. van Sambeek[2], R.G.P. Lopata[1] *[1]Cardiovascular Biomechanics Group, Department of Biomedical Engineering, Technical University of Eindhoven, Netherlands,[2]Vascular Surgery, Catharina Hospital Eindhoven, Netherlands*	*4D-1* **Spatiotemporal registration of 3D volumetric echocardiographic images** **Adriyana Danudibroto**[1,2], Jørn Bersvendsen[2,3], Olivier Gerard[2], Oana Mirea[1], Jan D'hooge[1], Eigil Samset[2,3] *[1]Dept. of Cardiovascular Sciences, KU Leuven, Belgium, [2]GE Vingmed Ultrasound, Oslo, Norway,[3]University of Oslo, Oslo, Norway*	*5D-1* **In-chip GHz Ultrasonic Pulses for Information Processing** **Amit Lal**[1] *[1]SonicMEMS, Electrical and Computer Engineering, Cornell University, Ithaca, NY, USA*	*6D-1* **Depth-Profiling of Acoustic, Optic and Acousto-Optic Spatial Inhomogeneities by Technique of Picosecond Ultrasonic Interferometry** **Vitalyi Gusev**[1] *[1]LAUM, UMR-CNRS 6613, LUNAM, Université du Maine, Le Mans, France*	*7D-1* **The study of the anomalous thermomechanical effect of fluorine-doped silicon dioxide (FSG) films using temperature dependent FTIR measurements** **Matthias Knapp**[1,2], Philipp Jäger[2], Werner Ruile[2], Matthias Honal[2], Ingo Bleyl[2], Leonhard M. Reindl[1] *[1]Department of Microsystems Engineering, University of Freiburg, Freiburg, Germany, [2]TDK Corporation, Munich, Germany*	*8D-1* **High Frequency Single Crystal Composite for Ultrasound Applications** **Jian Tian**[1], Kevin Meneou[1], Brandon Stone[1], Pengdi Han[1], Stephen Dynan[1] *[1]CTG Advanced Materials, Bolingbrook, Illinois, USA*
8:15 am	*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** Chen Wu[1], Zhaolong Han[1], Shang Wang[1,2], Jiasong Li[1], Manmohan Singh[1], Chih-hao Liu[1], Stanislav Emelianov[3], Fabrice Manns[4,5], Kirill Larin[1,2], **Aglyamov Salavat**[3] *[1]Biomedical Engineering, University of Houston, Houston, Texas, USA,[2]Molecular Physiology and Biophysics, Baylor College of Medicine, Houston, Texas, USA,[3]Biomedical Engineering, University of Texas at Austin, Austin, Texas, USA,[4]Bascom Palmer Eye Institute, University of Miami Miller School of Medicine, Miami, Florida, USA,[5]Biomedical Engineering, University of Miami College of Engineering, Miami, Florida, USA*	*2D-2* **Effect of shell loading on the mechanical properties and dynamic response of Optison™ microbubbles.** **Camilo Perez**[1,2], Yujin Zong[3], Cheng-Hui Wang[4], Jarred Swalwell[5], Juan Tu[6], Thomas Matula[2] *[1]Bioengineering, University of Washington, Seattle, Washington, USA,[2]Center for Industrial and Medical Ultrasound- Applied Physics Laboratory, University of Washington, Seattle, Washington, USA,[3]Department of Biomedical Engineering, Xian Jiaotong University, Xi'an, China, People's Republic of, [4]Institute of Applied Acoustics, Shaanxi Normal University, Xi 'an, China, People's Republic of,[5]Oceanography, University of Washington, Seattle, Washington, USA,[6]Physics, Nanjing University, China, People's Republic of*	*3D-2* **Optical and acoustic spectroscopy of atherosclerotic plaque photoacoustics** Verya Daeichin[1],**Min Wu**[1], Antonius F. W. van der Steen[1,2], Gijs van Soest[1] *[1]Erasmus MC, Rotterdam, Netherlands,[2]Interuniversity Cardiology Institute of the Netherlands, Netherlands*	*4D-2* **Anatomically Verified Algorithm for Image Fusion of 3D Echocardiography and Coronary Computed Tomography Angiography** **Tim Nordenfur**[1], Aleksandar Babic[2,3], Ivana Bulatovic[3], Anders Giesecke[4], Jonaz Ripsweden[4], Eigil Samset[2,3], Reidar Winter[4,5], Matilda Larsson[1] *[1]Medical Engineering, KTH Royal Institute of Technology, Stockholm, Sweden, [2]University of Oslo, Oslo, Norway, [3]GE Vingmed Ultrasound, Oslo, Norway,[4]Karolinska Institutet, Stockholm, Sweden,[5]Department of Cardiology, Danderyd Hospital, Stockholm, Sweden*			*7D-2* **Increased Piezoelectric Coupling Factor in Temperature Compensated Film Bulk Acoustic Resonators** **Tokihiro Nishihara**[1], Shinji Taniguchi[1], Masanori Ueda[1] *[1]TAIYO YUDEN CO.,LTD., Japan*	*8D-2* **A PMN-PT Micromachined 1-3 Composite IVUS Ultrasound Array** **Sibo Li**[1], Zhuochen Wang[1], Jinwook Kim[1], Wenbin Huang[1], Jian Tian[2], Pengdi Han[2], Chao Zhang[3], Xiaoning Jiang[1] *[1]North Carolina State University, Raleigh, North Carolina, USA,[2]CTG Advanced Materials, Bolingbrook, Iliinois, USA,[3]Tsinghua University in Shenzhen, Shenzhen, Guangdong, China, People's Republic of*

8:30 am	**1D-3 Factors Impacting Detection of Untethered Scatterers within Viscoelastic Background by ARFI Surveillance of Subcutaneous Hemorrhage (ASSH): In Silico Demonstration** **Tomasz Czernuszewicz**[1], Robert Hinson[1], Caterina Gallippi[1,2] *[1]Joint Department of Biomedical Engineering, University of North Carolina/North Carolina State University, Chapel Hill, NC, USA,[2]Department of Electrical and Computer Engineering, North Carolina State University, Raleigh, NC, USA*	**2D-3 Effects of the Microbubble Shell Physicochemical Properties on Ultrasound-Mediated Drug Delivery to the Brain** **Shih-Ying Wu**[1], Cherry Chen[1], Yao-Sheng Tung[1], Oluyemi Olumolade[1], Elisa Konofagou[1,2] *[1]Biomedical Engineering, Columbia University, New York, USA, [2]Radiology, Columbia University, New York, USA*	**3D-3 Photoacoustic microscopy of lipids using a graded-index multimode fiber amplifier** Jessica Farland[1], Margaret Ferrari[1],**Takashi Buma**[1] *[1]Union College, USA*	**4D-3 Simultaneous Positron Emission Tomography and Ultrafast Doppler Imaging in vivo** **Jean Provost**[1], Anikitos garofalakis[2], Thomas Viel[2], Damien Bouda[2], Joevin Sourdon[2], Mathieu Pernot[3], Bertrand Tavitian[2], Mickael Tanter[3] *[1]Institut Langevin, ESPCI ParisTech, INSERM, Paris, France, [2]PARCC INSERM UMR 970, France, [3]Institut Langevin, ESPCI ParisTech, INSERM, France*	**5D-2 Mechanical Properties of Comet 67P/Churyumov-Gerasimenko Measured by CASSE and DIM on Board Rosetta's Lander Philae** **Walter Arnold**[1,2], Thomas Albin[3], Claudia Faber[4], Hans-Herbert Fischer[5], Alberto Flandes[6], Attila Hirn[7], Martin Knapmeyer[4], Harald Krüger[3], Alexander Loose[3], Diedrich Möhlmann[4], Klaus-Jürgen Seidensticker[4], Klaus Thiel[8] *[1]Department of Materials and Materials Technology, Saarland University, Saarbrücken, Germany, [2]1. Phys. Institut, Georg-August Universität, Göttingen, Germany, [3]Max Planck Institute for Solar System Research, Germany, [4]DLR Institute of Planetary Research, Germany, [5]DLR MUSC Cologne, Germany,[6]Instituto de Geofísica, Mexico, [7]MTA Centre for Energy Research, Hungary,[8]University of Cologne, Germany*	**6D-2 Fast wave velocity measurement by Brillouin scattering using induced phonon from ScAlN piezoelectric thin film** **Masahiko KAWABE**[1], Takahiko YANAGITANI[2], Hayato ICHIHASHI[1], Shinji TAKAYANAGI[1], Masashi SUZUKI[3], Mami MATSUKAWA[1] *[1]Doshisha University, kyoto, Japan, [2]Waseda University, Tokyo, Japan, [3]Nagoya Institute of Technology, Nagoya, Japan*	**7D-3 c-Axis parallel oriented ScAlN films grown by ion-beam assisted RF magnetron sputtering** **Mineki Oka**[1], Shinji Takayanagi[1], Takahiko Yanagitani[2], Mami Matsukawa[1] *[1]Doshisha University, Kyotanabe, Japan, [2]Waseda University, Tokyo, Japan*	**8D-3 Intravascular Acoustic Radiation Force Imaging: Feasibility Study** **Carl Herickhoff**[1], Mark Palmeri[2], Jeremy Dahl[1] *[1]Radiology, Stanford University, Palo Alto, CA, USA,[2]Biomedical Engineering, Duke University, Durham, NC, USA*
8:45 am	**1D-4 High Frequency Point Shear Wave Elastography (HF-pSWE): A Novel Technique for High Resolution Soft Tissue Elasticity Mapping** **Pei-Yu Chen**[1], Chih-Chung Huang[1], Ma Teng[2], Qifa Zhou[2], K. Kirk Shung[2] *[1]Department of biomedical engineering, National Cheng Kung University, Taiwan,[2]Department of Biomedical Engineering, University of Southern California, USA*	**2D-4 High-Speed Fluorescence Microscopy of Near-Wall Shedding of Drug-Lipid Complexes from Phase-Change Droplets** **Shih-Tsung Kang**[1], Tsung-Lun Chang[1], Chih-Kuang Yeh[1] *[1]Department of Biomedical Engineering & Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan*	**3D-4 Photoacoustic assessment of spatially and temporally varying oxygen saturation and perfusion in an orthotopic rat model of human hepatocellular carcinoma** **Katherine Dextraze**[1,2], Nina Munoz[3], Steven Huang[3], Tomas Figueira[3], Andrew Heinmiller[4], Rony Avritscher[3], Richard Bouchard[1,2] *[1]Imaging Physics, University of Texas MD Anderson Cancer Center, Houston, TX, USA,[2]University of Texas at Houston Graduate School of Biomedical Sciences, Houston, TX, USA,[3]Interventional Radiology, University of Texas MD Anderson Cancer Center, Houston, TX, USA,[4]FUJIFILM VisualSonics, Inc., Toronto, Canada*	**4D-4 Detection and Characterization of Sentinel Lymph Node using Contrast-Enhanced Ultrasound and Photoacoustic Imaging** **Stanislav Emelianov**[1], Alexander Hannah[1], Geoffrey Luke[1] *[1]University of Texas at Austin, Austin, Texas, USA*	**5D-3 Magnetic sensing by ultrasonic excitation** **Kenji Ikushima**[1], Hisato Yamada[1], Miki Uehara[1] *[1]Department of Applied Physics, Tokyo University of Agriculture and Technology, Tokyo, Japan*	**6D-3 Fourier synthesis and timbre tuning of radio frequency nanomechanical pulses** **Achim Wixforth**[1], Florian Schuelein[2], Hubert Krenner[2] *[1]Institute of Physics, University of Augsburg, Augsburg, Germany,[2]University of Augsburg, Germany*	**7D-4 Estimation of temperature dependence of C_{44} elastic constant in 42°Y-X cut LiTaO< single crystals** **Minerva Gonzalez**[1,2], Fabien Henrot[1], Florent Bassignot[1], Ausrine Bartasyte[1], Bernard Dulmet[1], Sylvain Ballandras[3], Claudia Kajiyama[4], Ingo Bleyl[5], Jean Michel Brice[2] *[1]Institut FEMTO-ST, Besançon, France, [2]TDK Electronics France SAS, Valbonne Sophia Antipolis, France, [3]Frec|n|sys SASU, Besançon, France, [4]Epcos Inc. (a TDK group company), San Jose, CA, USA, [5]TDK Corporation, Munich, Germany*	**8D-4 Dual-element Ultrasonic Transducer for Intravascular Acoustic Radiation Force Impulse (IV-ARFI) Imaging** **Teng Ma**[1], Xuejun Qian[1], Mingyue Yu[1], Qifa Zhou[1], K. Kirk Shung[1] *[1]NIH Resource Center on Medical Ultrasonic Transducer Technology Department of Biomedical Engineering, University of Southern California, Los Angeles, CA, USA*

8:00 am - 9:30 am	Oral --- Friday, October 23, 2015							
9:00 am	**1D-5 Shear Wave Elasticity Imaging for Preclinical Research on Small Animals and 3D Cell Cultures** **Pai-Chi Li**[1] *[1]National Taiwan University, Taipei, Taipei, Taiwan, Taiwan*	**2D-5 Image-Guided Characterization of Phase-shift Droplets at Pre-clinical Frequencies *In Vitro* and *In Vivo*** **Paul S. Sheeran**[1,2], Kimoon Yoo[3], Ross Williams[1], Yasaman Daghighi[1], Emmanuel Cherin[1], F. Stuart Foster[1,2], Peter N. Burns[1,2] *[1]Physical Sciences, Sunnybrook Research Institute, Toronto, Canada, [2]Medical Biophysics, University of Toronto, Toronto, Canada, [3]Chemical Engineering, University of Waterloo, Waterloo, Canada*	**3D-5 Detection of Lipid in Ex-Vivo Atherosclerotic Rabbit Vessels using a Dual-Frequency Intravascular Imaging Probe for Ultrasound and Frequency Domain Photoacoustic Imaging** **Robin Castelino**[1,2], Hyunggyun Lee[2], F. Stuart Foster[1,2] *[1]Medical Biophysics, University of Toronto, Canada,[2]Imaging Research, Sunnybrook Research Institute, Canada*	**4D-5 Random Forest Classification and Local Region-Based, Level-Set Segmentation for Quantitative Ultrasound of Human Lymph Nodes** **Thanh Minh BUI**[1], Alain Coron[1], Jonathan Mamou[2], Emi Saegusa-Beecroft[3], Junji Machi[3], Lori Bridal[1], Ernest Feleppa[2] *[1]Sorbonne Universités, UPMC Univ Paris 06, INSERM, CNRS, LIB, Paris, France, [2]F. L. Lizzi Center for Biomedical Engineering, Riverside Research, New York, NEW YORK, USA,[3]University of Hawaii and Kuakini Medical Center, Honolulu, Hawaii, USA*	**5D-4 Non-contact mass measurement of droplet based on free oscillation under ultrasonic levitation.** **Sae Ito**[1], Ryohei Nakamura[1], Hiroki Tanaka[1], Yosuke Mizuno[1], Marie Tabaru[1], Kentaro Nakamura[1] *[1]Precision and Intelligence Laboratory, Tokyo Institute of Technology, Yokohama, Japan*	**6D-4 Surface-wave resonance on substrates with copper nanowires** **Hirotsugu Ogi**[1], Shoichi Masuda[1], Akira Nagakubo[1], Masahiko Hirao[1] *[1]Osaka University, Japan*	**7D-5 Multiphysics Modeling of BAW Filters** **Andreas Tag**[1], Dominik Karolewski[2], Bernhard Bader[3], Maximilian Pitschi[3], Robert Weigel[1], Amelie Hagelauer[1] *[1]Institute for Electronics Engineering, University of Erlangen-Nuremberg, Erlangen, Germany, [2]Institut für Mikroelektronik- und Mechatronik-Systeme gemeinnützige GmbH, Germany, [3]TDK Corporation, Germany*	**8D-5 Dual frequency IVUS transducer for acoustic radiation force impulse imaging (ARFI)** **Zhuochen Wang**[1], Tomasz Czernuszewicz[2], Caterina Gallippi[2], Xiaoning Jiang[1] *[1]North Carolina State University, USA, [2]University of North Carolina, USA*
9:15 am		**2D-6 High-speed imaging of vaporization and recondensation dynamics of ICG-loaded PFP droplets irradiated by a short pulse laser** **Jaesok Yu**[1,2], Xucai Chen[1], Flordeliza S. Villanueva[1], Kang Kim[1,2] *[1]Center for Ultrasound Molecular Imaging and Therapeutics, University of Pittsburgh School of Medicine and University of Pittsburgh Medical Center, Pittsburgh, PA, USA, [2]Department of Bioengineering, University of Pittsburgh School of Engineering, Pittsburgh, PA, USA*	**3D-6 Tri-modal imaging for surgical guidance: preliminary *in vivo* experiment** **Jeeun Kang**[1], Jin Ho Chang[1,2], Brian C. Wilson[3,4], Sun Mi Kim[5], Hak Jong Lee[5], Tai Kyong Song[1] *[1]Electronics Engineering, Sogang University, Seoul, Seoul, Korea, Republic of, [2]Sogang Institute of Advanced Technology, Korea, Republic of,[3]Princess Margaret Cancer Centre, University Health Network, Canada,[4]Medical Biophysics, University of Toronto, Canada,[5]Department of Radiology, Seoul National University of Bundang Hospital, Korea, Republic of*	**4D-6 Automatic detection of ischemic myocardium by spatio-temporal analysis of echocardiographic strain and strain rate curves** **Mahdi Tabassian**[1,2], Martino Alessandrini[2], Lieven Herbots[2], Oana Mirea[2], Jan Engvall[3], Luca De Marchi[1], Guido Masetti[1], Jan D'hooge[2] *[1]Department of Electrical, Electronic and Information Engineering, University of Bologna, Bologna, Italy,[2]Department of Cardiovascular Sciences, Laboratory of Cardiovascular Imaging and Dynamics, KU Leuven, Belgium, [3]Department of Medical and Health Sciences, Linkoping University, Sweden*	**5D-5 High sensitivity liquid sensor based on slotted phononic crystal** **Liufeng Geng**[1,2], Feiyan Cai[2], Fei Li[2], Long Meng[2], Chen Wang[2], Shuhong Xie[1], Hairong Zheng[2] *[1]School of Materials Science and Engineering, Xiangtan University, Xiangtan, Hunan, China, People's Republic of,[2]Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, People's Republic of*	**6D-5 THz acoustic spectroscopy by using GaN-based double quantum wells as the acoustic transducer** **Jun Wei Fan**[1], Jinn-Kong Sheu[2], Kung-Hsuan Lin[1] *[1]Institute of Physics, Academia Sinica, Taipei, Taiwan,[2]Department of Photonics, National Cheng Kung University, Tainan, Taiwan*	**7D-6 SAW Characteristics of AlN/SiO_2/3C-SiC Layered Structure with Embedded Electrodes** **Qiaozhen Zhang**[1], Tao Han[1], Jing Chen[1], Kenya Hashimoto[2] *[1]Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, Shanghai, Shanghai, China, People's Republic of, [2]Graduate School of Engineering, Chiba University, Japan*	**8D-6 Design and Fabrication of Intravascular Focused Ultrasound Transducers** **Junsu Lee**[1], Jihun Jang[1], Jin Ho Chang[1,2] *[1]1Department of Electronic Engineering, Sogang University, Korea, Republic of,[2]2Interdisciplinary Program of Integrated Biotechnology, Korea, Republic of*

FRIDAY ORAL

10:30 am -12:00 pm — Oral --- Friday, October 23, 2015

	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
	Chair: **Yi-Hong Chou** *Taipei Veterans General Hospital (Taiwan)*	*Chair:* **Chris de Korte** *Radboud University Medical Center*	*Chair:* **Emad Ebbini** *Univ. of Minnesota*	*Chair:* **Jørgen Jensen** *Technical University of Denmark*	*Chair:* **Jafar Saniie** *Illinois Institute of Technology*	*Chair:* **Andreas Mayer** *HS Offenburg*	*Chair:* **Jan Kuypers** *Qorvo Inc.*	*Chair:* **David Cowell** *University of Leeds*
	Plenary Hall	**VIP**	**201BC**	**201DE**	**103**	**201F**	**201A**	**102**
10:30 am	***1E-1*** **Ultrasound-guided high intensity focused ultrasound: clinical experience** **Jae Young Lee**[1] *[1]Radiology, Seoul National University Hospital, Seoul, Korea, Republic of*	***2E-1*** **Evaluating Arterial and Plaque Elasticity with Shear Wave Elastography in an *ex vivo* Porcine Model** **Erik Widman**[1,2], Elira Maksuti[1], Carolina Amador Carrascal[3], Matthew W. Urban[3], Matilda Larsson[1] *[1]KTH Royal Institute of Technology, Stockholm, Sweden,[2]Department of Molecular Medicine and Surgery, Karolinska Institutet, Stockholm, Sweden,[3]Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, MN, USA*	***3E-1*** **Large diameter microbubbles produced by a catheter-based microfluidic device for sonothrombolysis applications** **Adam Dixon**[1], Brian Shin[1], Vamsi Meka[1], Joseph Kilroy[1], Alexander Klibanov[1], John Hossack[1] *[1]Biomedical Engineering, University of Virginia, Charlottesville, VA, USA*	***4E-1*** **An automatic method for determining the anatomical relevant space for fast volumetric cardiac imaging** **Alejandra Ortega**[1], Brecht Heyde[1], João Pedrosa[1], Ling Tong[2], Jan D'hooge[1] *[1]Department of Cardiovascular Sciences, KU Leuven, Leuven, Belgium, [2]Department of Biomedical Engineering, Tsinghua University, Beijing, China, People's Republic of*	***5E-1*** **Sparse Inversion SVD for Multichannel Ultrasonic Guided Waves Analysis in Cortical Bone** **Kailiang Xu**[1,2], Jean-Gabriel Minonzio[2], Dean Ta[1], Bo Hu[1], Weiqi Wang[1], Pascal Laugier[2] *[1]Department of Electronic Engineering, Fudan University, Shanghai, China, People's Republic of,[2]Laboratoire d'Imagerie Biomedicine, UMR CNRS 7371 - INSERM U1146 - UPMC, Paris, France*	***6E-1*** **Four ways to justify temporal memory operators in the lossy wave equation** **Sverre Holm**[1] *[1]Informatics, University of Oslo, Oslo, Norway*	***7E-1*** **Heterogeneous integration technology using wafer-to-wafer transfer** **Shuji Tanaka**[1] *[1]Department of Bioengineering and Robotics, Tohoku University, Sendai, Japan*	***8E-1*** **Development of a Hybrid Custom / Commercial Multi-Channel, High-Frequency Transmit Pulser and Beamformer System** **Holly Lay**[1], Romans Poltarjonoks[1], Florence Ndum[1], David Lines[2], Geoffrey Lockwood[3], Sandy Cochran[1] *[1]University of Dundee, Dundee, United Kingdom,[2]Diagnostic Sonar Ltd, Livingston, United Kingdom,[3]Queen's University (deceased), Kingston, Canada*
10:45 am		***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** **Stein Fekkes**[1], Abigail E.S. Swillens[2], Hendrik H.G. Hansen[1], Anne E.C.M. Saris[1], Maartje M. Nillesen[1], Francesco Iannaccone[2], Patrick Segers[2], Chris L. de Korte[1] *[1]Medical UltraSound Imaging Center (MUSIC), Department of Radiology and Nuclear Medicine, Radboud university medical center, Nijmegen, Netherlands,[2]Department of Electronics and Information Systems, Ghent University, Belgium*	***3E-2*** **High Pulse Reputation Frequency Crushing Model Renal Calculi Using Cavitation Bubbles Induced by Dual-Frequency Ultrasound Pulses** **Masamizu Osuga**[1], Jun Yasuda[1], Hayato Jinbo[1], Shin Yoshizawa[1], Shin-ichiro Umemura[1] *[1]Tohoku University, Japan*	***4E-2*** **Coded Excitation Reconstruction by Impulse Response Estimation and Retrospective Acquisition: Application to B-mode Imaging** **John Flynn**[1], Lauren Pflugrath[1], Peter Kaczkowski[1], Ron Daigle[1] *[1]Verasonics, Inc, Kirkland, WA, USA*	***5E-2*** **Ultrasonic Flaw Detection using Support Vector Machine Classification** **Kushal Virupakshappa**[1], Erdal Oruklu[1] *[1]ECE Department, Illinois Institute of Technology, Chicago, Illinois, USA*	***6E-2*** **LONGITUDINAL SHEAR WAVE AND TRANSVERSE COMPRESSIONAL WAVE IN ELASTIC SOLIDS** **Stefan Catheline**[1], Nicolas Benech[2], Ali Zorgani[3] *[1]INSERM, University of Lyon, Lyon, France,[2]Physics institute, University of Montevideo, Montevideo, Uruguay,[3]University of Lyon, France*		***8E-2*** **A Mixed-Signal Multiplexing System for Cable-Count Reduction in Ultrasound Probes** **Qilong Liu**[1], Chao Chen[1], Zu-yao Chang[1], Christian Prins[2], Michiel A. P. Pertijs[1] *[1]Electronic Instrumentation Laboratory, Delft University of Technology, Delft, Netherlands,[2]Oldelft Ultrasound, Delft, Netherlands*

11:00 am	**1E-2 Clinical Application of Liver Elastography** **Yi-Hong Chou**[1], Hsin-Kai Wang[1] *[1]Taipei Veterans General Hospital, Taiwan*	**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** **Cho-Chiang Shih**[1], Pei-Yu Chen[1], Lei Sun[2], Chih-Chung Huang[1] *[1]Department of biomedical engineering, National Cheng Kung University, Taiwan,[2]Interdisciplinary division of biomedical engineering, The Hong Kong Polytechnic University, Hong Kong*	**3E-3 The accumulation and behaviour of ultrasound stimulated bubbles on a compliant surface: implications for sonothrombolysis** **Ben Leung**[1], Christopher Acconcia[1,2], Kullervo Hynynen[1,2], David Goertz[1,2] *[1]Physical Sciences Platform, Sunnybrook Research Institute, Toronto, Ontario, Canada, [2]Medical Biophysics, University of Toronto, Canada*	**4E-3 Image quality degradation from transmit delay profile quantization** **Matthias Bo Stuart**[1], Jørgen Arendt Jensen[1] *[1]CFU - Technical University of Denmark, Kgs. Lyngby, Denmark*	**5E-3 Simultaneous Multi-Mode Analysis of Surface Acoustic Wave Device Temperature Stability using Time-Frequency Methods** **Christopher J. Harrison**[1], Samuel J. Ippolito[1,2], K. M. Mohibul Kabir[2], Glenn I. Matthews[1] *[1]School of Electrical and Computer Engineering (SECE), RMIT University, Melbourne, Victoria, Australia,[2]Centre for Advanced Materials and Industrial Chemistry (CAMIC), School of Applied Sciences, RMIT University, Melbourne, Victoria, Australia*	**6E-3 Ultrasound bonding characterization of a bi-layer metal/epoxy with different chemical and mechanical interface treatments.** Camille GAUTHIER[1], Damien LEDUC[1], Jocelyne Galy[2],**Mounsif ECHCHERIF ELKETTANI**[1], Jean-Louis IZBICKI[1] *[1]LOMC CNRS 6294, University of Le Havre, Le Havre, France,[2]IMP CNRS 5223, INSA of Lyon, France*	**7E-2 Transverse modes in STW resonators on quartz** **Victor Plessky**[1], Ventsislav Yantchev[2], Weibiao Wang[3], Michael Yang[4], Bob Hsiao[4] *[1]GVR Trade SA, Switzerland,[2]Uppsala University, Sweden,[3]Nanjin Electronic Devices Institute, China, People's Republic of, [4]Tai-SAW Technology Ltd., Taiwan*	**8E-3 A Single-Cable PVDF Transducer Readout IC for Intravascular Photoacoustic Imaging** **Chao Chen**[1], Verya Daeichin[2], Qing Ding[1], Gijs van Soest[2], Geert Springeling[2], Ton van der Steen[2,3], Michiel Pertijs[1], Nico de Jong[2,3] *[1]Electronic Instrumentation Lab, Delft University of Technology, Delft, Netherlands,[2]Dept. of Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands, [3]Lab of Acoustical Wavefield Imaging, Delft University of Technology, Delft, Netherlands*
11:15 am		**2E-4 A 1D model-based inverse problem for recovery of spatially varying vessel stiffness for Pulse Wave Imaging** **Matthew Mcgarry**[1], Ronny Li[1], Iason Apostolakis[1], Elisa Konofagou[1,2] *[1]Biomedical Engineering, Columbia University, New York, New York, USA,[2]Radiology, Columbia University, New York, NY, USA*	**3E-4 A Theoretical Model for Acoustic Microstreaming Generated by Two Interacting Contrast Microbubbles** Alexander Doinikov[1], **Ayache Bouakaz**[1] *[1]Inserm U930, Université François-Rabelais, Tours, France*	**4E-4 Enhancement of specular reflection using Directional Spatial Coherence with 2D Phased Array** **Raja Sekhar Bandaru**[1,2], Anders Sornes[1], Margot Pasternak[1,2], Eigil Samset[1,3], Jan D'hooge[2] *[1]GE Vingmed Ultrasound, Oslo, Norway,[2]Cardiovascular Imaging and Dynamics, KU Leuven, Leuven, Belgium,[3]Department of Informatics, University of Oslo, Oslo, Norway*	**5E-4 A clustering-based damage segmentation for ultrasonic C-Scans of CFRP plates** Antonio Rodriguez[1,2], Angel M. Gomez[2], Nicolas Bochud[3],**Juan M. Soto**[2], Antonio M. Peinado[2] *[1]Depto. de Teoría de la Señal y Comunicaciones, Universidad Carlos III de Madrid, Leganés, Madrid, Spain, [2]Depto. de Teoría de la Señal, Telemática y Comunicaciones and CITIC-UGR, Universidad de Granada, Granada, Spain,[3]Depto. de Mecánica de Estructuras e Ingeniería Hidráulica, Universidad de Granada, Granada, Spain*	**6E-4 Study on Micro Ultrasonic Motor using a Preload Mechanism** **Tomoaki Mashimo**[1] *[1]Toyohashi University of Technology, Japan*	**7E-3 Characterization of Thin ScAlN Film based Natural Single-Phase Unidirectional SAW Transducers using Sagnac Interferometer** **Abhay Kochhar**[1], Yasuo Yamamoto[2], Akihiko Teshigahara[2], Ken-ya Hashimoto[3], Shuji Tanaka[1], Masayoshi Esashi[1] *[1]Tohoku University, Japan,[2]DENSO CORPORATION, Japan, [3]Chiba University, Japan*	**8E-4 A Row-Column Addressed CMUT Probe with Integrated Electronics for Volumetric Imaging** Thomas Lehrmann Christiansen[1],**Mathias Engholm**[1], Christopher Beers[2], Michael Berkheimer[2], Lars Nordahl Moesner[3], Jan Peter Bagge[3], Matthias Bo Stuart[4], Anders Lei[1], Søren Elmin Diederichsen[1], Jørgen Arendt Jensen[4], Erik Vilain Thomsen[1] *[1]Department of Micro- and Nanotechnology, Technical University of Denmark, Kgs. Lyngby, Denmark,[2]Sound Technology, State College, PA, USA,[3]BK Medical, Herlev, Denmark,[4]Center for Fast Ultrasound Imaging, Department of Electrical Engineering, Technical University of Denmark, Kgs. Lyngby, Denmark*

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11:30 am	***1E-3*** **Ultrasound Fusion Imaging of Liver Tumor: Recent Progress and Clinical Relevance** **Masatoshi Kudo** [1] *[1]Department of Gastroenterology and Hepatology, Kinki University School of Medicine*	***2E-5*** **Mechanical Characterization of Abdominal Aortic Aneurysms using 4D Ultrasound** **E.M.J. van Disseldorp**[1,2], N.J. Petterson[1], F.N. van de Vosse[1], M.R. van Sambeek[2], R.G.P. Lopata[1] *[1]Cardiovascular Biomechanics Group, Department of Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands,[2]Department of Vascular Surgery, Catharina Hospital Eindhoven, Netherlands*	***3E-5*** **High Intensity Focused Ultrasound applied to the placental unit: First results of an in vivo study in monkeys** **David Melodelima**[1], Jonathan Caloone[1,2], Anthony Kocot[1], Jeremy Vincenot[1], Cyril Huissoud[2] *[1]LabTAU - U1032, INSERM, France,[2]Hopital de la Croix Rousse, France*	***4E-5*** **2D Wire Orientation using Directional Spatial Coherence with 2D Phased Array** **Raja Sekhar Bandaru**[1,2], Anders Sornes[1], Eigil Samset[1,3], Jan D'hooge[2] *[1]GE Vingmed Ultrasound, Oslo, Norway,[2]Cardiovascular Imaging and Dynamics, KU Leuven, Leuven, Belgium,[3]Department of Informatics, University of Oslo, Oslo, Norway*	***5E-5*** **A new methodology to reduce the activation sequence in SAFT techniques** **Javier Villazon-Terrazas**[1], David Romero-Laorden[1], Alberto Ibañez[1], Oscar Martinez-Graullera[1], Montserrat Parrilla[1] *[1]Instituto de Tecnologías Físicas y de la Información Leonardo Torres Quevedo, Consejo Superior de Investigaciones Científicas, Madrid, Spain*	***6E-5*** **Small Size Pneumatic Valve for Smooth Flow Control using PZT vibrator** **Daisuke HIROOKA**[1], Tomomi YAMAGUCHI[1], Naomichi FURUSHIRO[1], Koichi SUZUMORI[2], Takefumi KANDA[3] *[1]Kansai University, Japan,[2]Tokyo Institute of Technology, Japan, [3]Okayama University, Japan*	***7E-4*** **Evaluation of Acoustic Properties of $CaTiO_3$-(K,Na)NbO_3 Film Using Microfabricated Structure** **Ryosuke Kaneko**[1], Michio Kadota[1], Yuji Ohashi[2], Jun-ichi Kushibiki[1], Shinsuke Ikeuchi[3], Shuji Tanaka[1] *[1]Graduate school, Tohoku University, Sendai, Miyagi, Japan,[2]Institute for Material Research, Tohoku University, Sendai, Miyagi, Japan,[3]Devices Development, Murata Manufacturing Co., Ltd., Nagaokakyo, Kyoto, Japan*	***8E-5*** **Front end circuit simulation for CMUT systems based on an accurate nonlinear CMUT array model** **Jaemyung Lim**[1], Gwangrok Jung[1], Evren Fatih Arkan[2], F. Levent Degertekin[2], Maysam Ghovanloo[1] *[1]School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA, [2]G.W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA*
11:45 am		***2E-6*** **Detection of Coronary Artery Disease with Myocardial Elastography with validation against myocardial perfusion imaging and coronary angiography** **Julien Grondin**[1], Marc Waase[2], Vincent Sayseng[1], Elisa E Konofagou[1,3] *[1]Department of Biomedical Engineering, Columbia University, New York, NY, USA,[2]Department of Medicine, Columbia University, New York, NY, USA,[3]Department of Radiology, Columbia University, New York, NY, USA*	***3E-6*** **3D focusing of high intensity ultrasound pulses using a time reversal cavity** **Justine Robin**[1], Bastien Arnal[1], Mathias Fink[1], Mickael Tanter[1], Mathieu Pernot[1] *[1]Institut Langevin, France*	***4E-6*** **Frequency Domain Beamforming for Coherent Plane-Wave Compounding** **Tanya Chernyakova**[1], Regev Cohen[1], Yael Sde-Chen[1], Christophe Fraschini[2], Jeremy Bercoff[2], Yonina Eldar[1] *[1]EE, The Technion, IIT, Haifa, Israel,[2]SuperSonic Imagine, France*	***5E-6*** **On the Use of Parametric Models for Cancelling Reverberations in Imaging of Thin Materials** **Miguel Castaño Arranz**[1], Johan E. Carlson[1], Biao Jiang[1], Philip Lindblad[1] *[1]Div. of Signals and Systems, Department of Computer Science, Electrical and Space Engineering, Luleå University of Technology, Luleå, Sweden*	***6E-6*** **Low flow rate spraying using a torsional ultrasonic transducer** **Shunsuke Tsuyuki**[1], Takefumi Kanda[1], Koichi Suzumori[2], Shin-ichiro Kawasaki[3], Shoki Ofuji[1] *[1]Okayama University, Okayama, Japan, [2]Tokyo Institute of Technology, Tokyo, Japan, [3]National Institute of Advanced Industrial Science and Technology, Miyagi, Japa*	***7E-5*** **Dry Deagglomeration and Alignment of Carbon Nanotubes using the Acoustic and Electric Fields of SAW** Morteza Miansarigavzan[1,2], **James Friend**[2] *[1]Mechanical and Aerospace Engineering, Monash University, Clayton, VIC, Australia,[2]Center for Medical Devices, Dept of Mech and Aero Engineering, University of California, San Diego, La Jolla, CA, USA*	***8E-6*** **Development of High-Sensitive and Wideband FET-Based Ultrasound Receiver Directly Driven by Piezoelectric Effect** **Hiroki Makino**[1], Jing Zhu[1], Tsuyoshi Okubo[1,2], Yhisin Ho[1], Norio Tagawa[1], Ming Yang[1] *[1]Graduate School of System Design, Tokyo Metropolitan University, Tokyo, Japan,[2]Konica Minolta, Inc., Japan*

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	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
	Chair: **Manfred Weihnacht** *Leibniz Institute for Solid State and Materials Research*	Chair: **Elisa Konofagou** *Columbia University*	Chair: **Svetoslav Nikolov** *BK Medical*	Chair: **Kentaro Nakamura** *Tokyo Institute of Technology*	Chair: **Piero Tortoli** *Università di Firenze*	Chair: **Omer Oralkan** *North Carolina State University*
	VIP	**201ABC**	**201DE**	**103**	**201F**	**102**
1:00 pm	**2F-1 Acoustic-property maps of cornea for improved high-frequency ultrasound corneal biometric accuracy** **Daniel Rohrbach**[1], Harriet O. Lloyd[2], Ronald H. Silverman[2], Raksha Urs[2], Jonathan Mamou[1] *[1]Lizzi Center for Biomedical Engineering, Riverside Research, New York, NY, USA,[2]Department of Ophthalmology, Columbia University Medical Center, New York, New York, USA*	**3F-1 Semi-3D strain imaging in normal and LVAD supported *ex vivo* beating hearts** **N.J. Petterson**[1], K.A.M.A. Pennings[1], S. van Tuijl[2], M.C.M. Rutten[1], F.N. van de Vosse[1], R.G.P. Lopata[1] *[1]Biomedical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands, [2]LifeTec Group, Eindhoven, Netherlands*	**4F-1 Joint compressive sampling and deconvolution in ultrasound medical imaging** **Zhouye Chen**[1], Adrian Basarab[1], Denis Kouamé[1] *[1]IRIT, UMR CNRS 5505, University of Toulouse, France*	**5F-1 Blind Component Separation Analysis for Highly Corrupted Ultrasonic Signals in Real-Time Spot Weld Inspection** **Aryaz Baradarani**[1], Andriy M. Chertov[1], Waldo Perez Regalado[1], Roman Maev[1] *[1]Institute for Diagnostic Imaging Research, University of Windsor, Windsor, Canada*	**1F-1 A Live Color Encoded Speckle Imaging Platform: Towards Bedside Visualization of Complex Flow Patterns** **Alfred C. H. Yu**[1], Billy Y. S. Yiu[1], Marcin Lewandowski[2], Mateusz Walczak[2], Damien Garcia[3] *[1]Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong,[2]Department of Ultrasound, Polish Academy of Sciences Institute of Fundamental Technological Research, Warsaw, Poland, [3]Department of Radiology, University of Montreal, Montreal, Canada*	**8F-1 Reliability measurements of CMUT arrays of a semiconductor manufacturer** **Christophe Antoine**[1], Erik Tarvin[1], Sushil Bharatan[1], Urvi Shah[1], Rob O'Reilly[1], Michael Judy[1] *[1]Analog Devices Inc., Wilmington, MA, USA*
1:15 pm	**2F-2 Theory and Experimental Analysis of Scratch Resistant Coating for Ultrasonic Fingerprint Sensors** **Stephanie Fung**[1], Yipeng Lu[1], Hao-Yen Tang[2], Julius M. Tsai[3], Michael Daneman[3], Bernhard E. Boser[2], David A. Horsley[1] *[1]Department of Mechanical and Aerospace Engineering, University of California, Davis, CA, USA,[2]Department of Electrical Engineering and Computer Sciences, University of California, Berkeley, CA, USA,[3]Invensense, San Jose, CA, USA*	**3F-2 Myocardial passive shear wave detection** **Hendrik Vos**[1,2], Bas van Dalen[3], Johannes Bosch[1], Antonius van der Steen[1,2], Nico de Jong[1,2] *[1]Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands,[2]Acoustical Wavefield imaging, Delft university of Technology, Netherlands,[3]Cardiology, Erasmus MC, Rotterdam, Netherlands*	**4F-2 Compressed sensing reconstruction of line-wise sub-sampled 3D echographic images based on dictionary learning: an experimental study** **Oana Lorintiu**[1], Hervé Liebgott[1], Adeline Berndard[1], Olivier Bernard[1], Denis Friboulet[1] *[1]Université de Lyon, CREATIS ; CNRS UMR5220 ; Inserm U1044 ; INSA-Lyon ; Université Lyon 1, Lyon, France*	**5F-2 Ultrasonic Welding Using a Long and Thin Complex Transverse Vibration Welding Tip with Vibration Detector and Static Pressure Controller** **Jiromaru Tsujino**[1,2], Eiichi Sugimoto[3] *[1]Kanagawa University, Yokohama, Japan, [2]R & D Center, Asahi EMS Co. Ltd, Yokohama, Kanagawa, Japan, [3]Asahi EMS Co. Ltd, Tokyo, Japan*	**1F-2 ULA-OP 256: a portable high-performance research scanner** **Enrico Boni**[1], Luca Bassi[1], Alessandro Dallai[1], Gabriele Giannini[1], Francesco Guidi[1], Valentino Meacci[1], Riccardo Matera[1], Alessandro Ramalli[1], Monica Scaringella[1], Jacopo Viti[1], Stefano Ricci[1], Piero Tortoli[1] *[1]Dipartimento di Ingegneria dell'Informazione, Università degli studi di Firenze, Firenze, Italy*	

1:30 pm	**2F-3 Ultrasonics and Biometrics: 130 years past Galton** **James Wayman**[1] *[1]San José State University, San José, Ca, USA*	**3F-3 A Systematic Investigation of Feasible Acoustic Windows and the Impact of Myocardial Anisotropy for In Vivo Human Cardiac Shear Wave Elastography** **Pengfei Song**[1], Xiaojun Bi[2,3], Daniel C. Mellema[1], Armando Manduca[1], Matthew W. Urban[1], James F. Greenleaf[4], Shigao Chen[1] *[1]Dept. of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, Minnesota, USA,[2]Dept. of Cardiovascular Diseases, Mayo Clinic College of Medicine, Rochester, Minnesota, USA, [3]Department of Medical Ultrasound, Tongji Hospital Medical College, Wuhan, Hubei, People's Republic of China*	**4F-3 Compressed Sensing for Beamformed Ultrasound Computed Tomography** **Ruud van Sloun**[1], Ashish Pandharipande[2], Massimo Mischi[1], Libertario Demi[1] *[1]Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands, [2]Philips Research, Eindhoven, Netherlands*	**5F-3 Novel real-time diagnostic of injection molding process at nozzle by high-temperature ultrasonic transducer** Che-Hue Yang[1], Chin-Chi Cheng[2], Makiko Kobayashi[3], **Yi_Lin Wu**[1] *[1]Graduate Institute of Mechanical and Electrical Engineering, National Taipei University of Technology, Taiwan, [2]Dept. of Energy and Refrigerating Air-Conditioning Engineering, National Taipei University of Technology, Taipei, Taiwan,[3]Dept. of Computer Science and Electrical Engineering, Kumamoto University, Japan*	**1F-3 Implementation of real-time duplex synthetic aperture ultrasonography** **Martin Christian Hemmsen**[1], Thomas Kjeldsen[2], Lee Lassen[2], Jesper Mosegaard[2], Jørgen Arendt Jensen[1] *[1]Electrical Engineering, Technical University of Denmark, Lyngby, Denmark,[2]Computer Graphics Lab, Alexandra Institute, Aarhus, Denmark*	**8F-2 Dual-Mode Integrated Circuit for Imaging and HIFU With 2-D CMUT Arrays** **Ji Hoon Jang**[1], Anshuman Bhuyan[1], Hyo-Seon Yoon[1], Jung Woo Choe[1], Amin Nikoozadeh[1], Douglas Stephens[2], Butrus Khuri-Yakub[1] *[1]Electrical Engineering, Stanford University, Stanford, California, USA, [2]Biomedical Engineering, University of California, Davis, Davis, California, USA*
1:45 pm		**3F-4 Investigation of the effects of myocardial anisotropy for shear wave elastography at different frequencies using acoustic radiation force and harmonic vibration** **Matthew Urban**[1], Bo Qiang[1], Pengfei Song[1], Ivan Nenadic[1], Shigao Chen[1], James Greenleaf[1] *[1]Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, Minnesota, USA*	**4F-4 Extension of FM-Chirp Super Resolution Imaging for Ultrasound Synthetic Aperture System** **Takayuki Wada**[1], Yihsin Ho[1], Norio Tagawa[1], Kan Okubo[1] *[1]Graduate School of System Design, Tokyo Metropolitan University, Tokyo, Japan*	**5F-4 High temperature performance of $PbTiO_3$/PZT ultrasonic transducer above 400°C** **Taiga Kibe**[1], Tsukasa Kaneko[1], Makiko Kobayashi[1] *[1]Kumamoto University, Japan*	**1F-4 A New Wireless Hand-held Ultrasound System with Smartphone, Tablet for Mobile Healthcare** Dong-Ki Ahn[1], Suyeol Lee[1], Sung-Hyun Kim[1], **Jeongwon Ryu**[1,2] *[1]Advanced Medical Technology Laboratory, Healcerion Co., Ltd., Seoul, Korea, Republic of, [2]Clinical Neuroscience & Development Lab, Korea Advanced Institute of Science and Technology, Daejeon, Korea, Republic of*	**8F-3 A dual-mode CMUT array optimized for tissue harmonic imaging** **Søren Elmin Diederichsen**[1], Mathias Johannes Grøndahl Mølgaard[1], Anders Lei[1], Matthias Bo Stuart[2], Jørgen Arendt Jensen[2], Erik Vilain Thomsen[1] *[1]Dept. of Micro- and Nanotechnology, Technical University of Denmark, Denmark, [2]Center for Fast Ultrasound Imaging, Dept. of Electrical Engineering, Technical University of Denmark, Kgs. Lyngby, Denmark*
2:00 pm	**2F-4 Towards spoof proof fingertip biometrics using ultrasound** **Rainer M Schmitt**[1], Devin Delong[1], Andrea C Casanova[1], Joe Zeichman[1], Yanli Xie[1], Heng Zhao[1], Chen-Wei Wei[1] *[1]R & D, Sonavation Inc.*	**3F-5 Repeatability of Systolic-to-Diastolic Displacement Ratios in Transthoracic Cardiac ARFI Imaging** **Vaibhav Kakkad**[1], Lily Kuo[1], David Bradway[1], Joseph Sivak[2], Joseph Kisslo[2], Gregg Trahey[1] *[1]Biomedical Engineering, Duke University, Durham, North Carolina, USA,[2]Cardiology, Duke University Hospital, Durham, North Carolina, USA*	**4F-5 Spatiotemporal clutter filtering of Ultrafast ultrasound data highly increases Doppler and fUltrasound sensitivity** **Charlie Demené**[1], Thomas Deffieux[1], Mathieu Pernot[1], Olivier Baud[2], Mickael Tanter[1] *[1]Institut Langevin, ESPCI ParisTech, CNRS UMR7587, Inserm U979, Paris, France, [2]INSERM U1141 and Neonatal Intensive Care Unit, Paris Diderot University, Children's hospital Robert, Paris, France*	**5F-5 Non-contact Measurement of Elastic Property of Fruits by using Parabolic-Reflector Airborne Ultrasonic Transducer** **Marie Tabaru**[1], Kentaro Nakamura[1] *[1]Precision and Intelligence Laboratory, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan*	**1F-5 Fast ultrasound signal and image processing on a tablet device** **Gabriel Kiss**[1], Naiad Hossain Khan[1], Eva Tegnander[2,3], Sturla H. Eik-Nes[2,3], Hans Torp[1] *[1]Department of Circulation and Medical Imaging and MI Lab, Norwegian University of Science and Technology, Trondheim, Norway, [2]National Center for Fetal Medicine, St. Olavs Hospital, Norway, [3]Department of Laboratory Medicine, Children's and Women's Health, Norwegian University of Science and Technology, Trondheim, Norway*	**8F-4 A High-Frequency (~30-MHz), Broadband (FBW>100%) 1-D Linear CMUT Array Fabricated by Anodic Bonding** **Xiao Zhang**[1], 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*
2:15 pm		**3F-6 SNRe Improvements in Two-Dimensional Cardiac Strain Estimation using Coherent Compounding *in silico* and *in vivo*** **Ethan Bunting**[1], Julien Grondin[1], Clement Papadacci[1], Elisa Konofagou[1,2] *[1]Department of Biomedical Engineering, Columbia University, New York, New York, USA,[2]Department of Radiology, Columbia University, New York, New York, USA*	**4F-6 Contrast-Enhanced Ultrasound Imaging with Chirps: Signal Processing and Pulse Compression** **Sevan Harput**[1], James McLaughlan[1], David Cowell[1], Steven Freear[1] *[1]School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom*	**5F-6 Development of a real-time acoustic backscatter system for solids concentration measurement during nuclear waste cleanup** **David Cowell**[1], Hugh Rice[2], Tim Hunter[2], Derrick Njobuenwu[2], Jeff Peakall[3], Michael Fairweather[2], Geoff Randall[4], Steven Freear[1] *[1]School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom, [2]School of Chemical and Process Engineering, University of Leeds, Leeds, United Kingdom, [3]School of Earth and Environment, University of Leeds, Leeds, United Kingdom, [4]Sellafield Ltd, United Kingdom*	**1F-6 Miniature Single-Supply Ultrasonic Imager for Personal Fitness Tracking** **Hao-Yen Tang**[1], Dongjin Seo[1], Michel M. Maharbiz[1], Bernhard E. Boser[1] *[1]EECS, UC Berkeley, Berkeley, CA, USA*	**8F-5 Capsule Ultrasound (CUS) Device** **Farah Memon**[1], Gerard Touma[1], Amin Nikoozadeh[1], Jung Woo Choe[1], Amin Arbabian[1], Eric W. Olcott[2,3], R. Brooke Jeffrey[2], Butrus (Pierre) T. Khuri-Yakub[1] *[1]Stanford University, Stanford, California, USA, [2]Stanford University School of Medicine, Stanford, California, USA, [3]Palo Alto Veterans Affairs Health Care System, Palo Alto, California, USA*

FRIDAY ORAL

3:30 pm -5:00 pm — Oral --- Friday, October 23, 2015

	Session 2G. MBB: Beamforming IV Chair: Jan D'hooge, Catholic University of Leuven	Session 3G. MEL: New Applications of Elasticity Imaging Chair: Caterina Gallippi, UNC Chapel Hill and NCSU	Session 4G. MIM: Medical Imaging I Chair: John Hossack, Univ. of Virginia	Session 1G. MTC: High Frequency Tissue Characterization Chair: Michael Oelze, Univ. of Illinois	Session 6G. Physics of Thin-Film Resonators Chair: Vincent Laude, FEMTO-ST / CNRS	Session 8G. Transducers for Therapy Chair: Anne-Christine HLADKY, IEMN
	VIP	**201ABC**	**201DE**	**103**	**201F**	**102**
3:30 pm	**2G-1 Nonlinear beamforming of aperture domain signals** **Brett Byram**[1] [1]*Biomedical Engineering, Vanderbilt University, TN, USA*	**3G-1 Ultrasound Strain Relaxation Time Ratio: A Quantitative Marker for Assessment of Cortical Inflammation/edema in Renal Allografts** **Jing Gao**[1], Robert Min[1], Keith Hentel[1], Jonathan Rubin[2] [1]*Radiology, Weill Cornell Medical College, New York, New York, USA,*[2]*Radiology, University of Michigan, Ann Arbor, Michigan, USA*	**4G-1 Evaluation of directional reflectivity characteristics as new modality for 3D Ultrasound Computer Tomography** **Ernst Kretzek**[1], Patrick Hucker[1], Nicole Ruiter[1] [1]*Karlsruhe Institute of Technology (KIT), Institute for Data Processing and Electronics (IPE), Eggenstein-Leopoldshafen, Germany*	**1G-1 Fine resolution elastic property maps of myopic sclera by means of acoustic microscopy** **Daniel Rohrbach**[1], Quan Wen[2], Quan Hoang[2], Sally McFadden[3], Ronald H. Silverman[2], Jonathan Mamou[1] [1]*Lizzi Center for Biomedical Engineering, Riverside Research, USA,*[2]*Department of Ophthalmology, Columbia University Medical Center, USA,* [3]*Vision Sciences Group, Faculty of Science and IT, School of Psychology, University of Newcastle, NSW, Australia*	**6G-1 Finite element analysis of BAW devices: principles and perspectives** **Robert Thalhammer**[1], John Larson[2] [1]*Avago Technologies, Munich, Germany,* [2]*Avago Technologies, San Jose, CA, USA*	**8G-1 Capsule-based Ultrasound-mediated Targeted Gastrointestinal Drug Delivery** **Fraser Stewart**[1], Antonella Verbeni[2], Yongqiang Qiu[1], Benjamin Cox[1], Jan Vorstius[3], Sandy Cochran[1] [1]*Institute for Medical Science and Technology, University of Dundee, United Kingdom,* [2]*The BioRobotics Institute, Scuola Superiore Sant'Anna, Italy,*[3]*School of Engineering, Mathematics and Physics, University of Dundee, United Kingdom*
3:45 pm		**3G-2 Ex vivo measurement of shear wave speed dispersion in placenta using Transient Elastography.** **Samuel CALLE**[1], Emmanuel SIMON[1,2], Marie-Coline DUMOUX[1], Emmanuel NICOLAS[1], Franck PERROTIN[1,2], Jean-Pierre REMENIERAS[1] [1]*INSERM U930 - F. Rabelais University, TOURS, France,*[2]*Department of obstetrics, gynecology and fetal medicine, University Hospital Center of Tours, TOURS, France*	**4G-2 Quantitative imaging of speed of sound in echo ultrasonography** **Michael Jaeger**[1], Martin Frenz[1] [1]*University of Bern, Switzerland*	**1G-2 Ultrasonic Characterization of Extra-Cellular Matrix in Decellularized Murine Kidney and Liver** **Lauren A. Wirtzfeld**[1], Elizabeth S. L. Berndl[1], Michael C. Kolios[1] [1]*Ryerson University, Canada*		**8G-2 Capacitive Micro-machined Ultrasound Transducers for High Intensity Ultrasound Applications** **W. Apoutou N'DJIN**[1], Bjoern GEROLD[1], Michael CANNEY[2], Nicolas SENEGOND[3], Mathieu ROY[3], Alexandre CARPENTIER[2], Jean-Yves CHAPELON[1] [1]*LabTau, Inserm, U1032; Université de Lyon, Lyon, France,*[2]*CarThera, Paris, Ile-de-France, France,*[3]*Vermon SA, Tours, Centre, France*
4:00 pm	**2G-2 Improved array beam steering capability by compensation of inter-element cross-talk** **Alessandro Ramalli**[1], Alessandro Stuart Savoia[2], Giosuè Caliano[2], Piero Tortoli[1] [1]*Information Engineering Department, University of Florence, Firenze, Italy,* [2]*Department of Engineering, Università degli Studi Roma Tre Roma, Rome, Italy*	**3G-3 3D Ultrasound Strain Imaging of Skeletal Muscle Deformation** **Kaj Gijsbertse**[1], André Sprengers[2], Nico Verdonschot[2,3], Chris de Korte[1] [1]*Medical UltraSound Imaging Center (MUSIC), Department of Radiology and Nuclear Medicine, Radboud university medical center, Netherlands,*[2]*Orthopaedic Research Laboratory, Department of Orthopaedics, Radboud university medical center, Netherlands,*[3]*Department of Biomechanical Engineering, University of Twente, Netherlands*	**4G-3 Needle detection by Image Source Localization** **Alfonso Rodriguez-Molares**[1], Lasse Lovstakken[1], Ingvild Kinn Ekroll[1], Hans Torp[1] [1]*Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway*	**1G-3 Structure Function: Relating Ultrasonic Measurement to Theory and Histology** **Aiguo Han**[1], William D. O'Brien, Jr.[1] [1]*Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, Urbana, IL, USA*	**6G-2 Laterally Coupled FBAR resonator filters** **Kun Wang**[1], Robert Thalhammer[2], Steven Martin[3], Uli Koelle[1], John D Larson III[1] [1]*Avagotech, San Jose, USA,*[2]*Avagotech, Munich, Germany,* [3]*Avagotech, Fort Collins, USA*	**8G-3 Development and acoustic characterization of lead-free high intensity focused ultrasound transducers** **Elaheh Taghaddos**[1], Teng Ma[2], Mehdi Hejazi[1], Qifa Zhou[2], Hui Zhong[3], Ming Xi Wan[4], Ahmad Safari[1] [1]*Materials Science and Engineering, Rutgers University, Piscataway, NJ, USA,* [2]*Biomedical Engineering, University of Southern California, USA,* [3]*Xi'an Jiaotong University, China, People's Republic of,*[4]*Biomedical Engineering, Xi'an Jiaotong University, People's Republic of China*

4:15 pm	**2G-3 Time domain compressive beamforming: application to *in-vivo* echocardiography** **Guillaume David**[1], Jean-luc Robert[2], Bo Zhang[3], Andrew Laine[1] *[1]Biomedical Engineering, Columbia University, New York City, New York, USA, [2]Philips Research North America, USA,[3]Medisys, Philips Research France, France*	**3G-4 Prostate Vibro-Elastography: Multi-frequency 1D over 3D Steady-State Shear Wave Imaging for Quantitative Elastic Modulus Measurement** **Julio Lobo**[1], Ali Baghani[1], Hani Eskandari[1], Sara Mahdavi[2], Robert Rohling[1], Larry Goldenberg[3], William James Morris[4], Septimiu Salcudean[1] *[1]Electrical and Computer Engineering, University of British Columbia, Vancouver, BC, Canada, [2]British Columbia Cancer Agency, Vancouver, BC, Canada,[3]Department of Urologic Sciences, Vancouver General Hospital, Vancouver, BC, Canada,[4]Department of Oncology, British Columbia Cancer Agency, Vancouver, BC, Canada*	**4G-4 A sparse regularization approach for ultrafast ultrasound imaging** **Rafael Carrillo**[1], Adrien Besson[1], Miaomiao Zhang[2], Denis Friboulet[2], Yves Wiaux[3], Jean-Philippe Thiran[1], Olivier Bernard[2] *[1]LTS5, Swiss Federal Institute of Technology, Lausanne, Switzerland,[2]CREATIS, CNRS UMR5220, Inserm U630, University of Lyon, INSA-Lyon, University of Lyon1, Villeurbanne, France, [3]Institute of Sensors, Signals and Systems, Heriot-Watt University, Edinburgh, United Kingdom*	**1G-4 Viscoelastic Imaging Using Acoustic Impedance Microscope and Its Application to Biological Tissue** **Naohiro Hozumi**[1], Shota Kajima[1], Agus Indra Gunawan[1], Sachiko Yoshida[1], Kazuto Kobayashi[2], Yoshifumi Saijo[3], Seiji Yamamoto[4] *[1]Toyohashi University of Technology, Japan, [2]Honda Electronics Co., Ltd., Japan,[3]Tohoku University, Japan,[4]Hamamatsu Univ Sch Med, Japan*	**6G-3 High order mode polarity inverted Al-polar (0001) ScAlN/O-polar (000-1) ZnO film resonator** **Takeshi Mori**[1], Takahiko Yanagitani[2], Masashi Suzuki[1] *[1]Nagoya Institute of Technology, Japan, [2]Waseda University, Tokyo, Japan*	**8G-4 Broadband Dual-Mode HIFU Array used for Therapy and Therapy Monitoring** **Kyle Morrison**[1], George Keilman[1], Peter Kaczkowski[2] *[1]Sonic Concepts, Inc., Bothell, Washington, USA, [2]Verasonics, Inc., Kirkland, Washington, USA*
4:30 pm	**2G-4 Multi-line transmit beamforming for high frame rate wide field-of-view tissue Doppler imaging: in-vivo validation and initial clinical findings** **Ling Tong**[1,2], Alessandro Ramalli[3], Giuseppe Fradella[4], Sabina Caciolli[4], Piero Tortoli[3], Jianwen Luo[1], Jan D'hooge[2] *[1]Department of Biomedical Engineering, Tsinghua University, Beijing, China, People's Republic of, [2]Department of Cardiovascular Sciences, KU Leuven, Leuven, Belgium,[3]Department of Information Engineering, Università degli Studi di Firenze, Florence, Italy,[4]Cardiology Unit, Careggi Hospital, Florence, Italy*	**3G-5 Spleen Ultrasound Shear Wave Elastography in Monitoring Transjugular Intrahepatic Portosystemic Shunt Function** Yuan-Yi Zheng[1], Xiao Zheng[1], Hai-Tao Ran[1], Zhi-Gang Wang[1], **Jing Gao**[2] *[1]Ultrasound, Chongqing Medical University, Chongqing, China, People's Republic of,[2]Radiology, Weill Cornell Medical College, New York, New York, USA*	**4G-5 Extension of Ultrasound Fourier Slice Imaging Theory to Sectorial Acquisition** **Miaomiao Zhang**[1], Adrien Besson[2], Rafael E. Carrillo[2,3], François Varray[1], Hervé Liebgott[1], Jean-Philippe Thiran[2,3], Denis Friboulet[1], Olivier Bernard[1] *[1]CREATIS, CNRS UMR5220; Inserm U630;University of Lyon; INSA-Lyon; University of Lyon1, Villeurbanne, France, [2]Signal Processing Laboratory (LTS5), Ecole polytechnique fédérale de Lausanne (EPFL), Lausanne, Switzerland,[3]Department of Radiology, University Hospital Center (CHUV) and University of Lausanne (UNIL), Lausanne, Switzerland*	**1G-5 Ultrasound-scattering models based on quantitative acoustic microscopy of fresh samples and unstained fixed sections from cancerous human lymph nodes** **Jonathan Mamou**[1], Daniel Rohrbach[1], Emi Saegusa-Beecroft[2], Eugene Yanagihara[2], Junji Machi[2], Ernest J. Feleppa[1] *[1]F. L. Lizzi Center for Biomedical Engineering, Riverside Research, USA,[2]Department of General Surgery, University of Hawaii and Kuakini Medical Center, USA*	**6G-4 Elastic constant c_{ij}^{E} tensors of (0001) $Sc_xAl_{1-x}N$ films (x=0-0.63)** **Takahiko Yanagitani**[1,2], Hayato Ichihashi[3], Masashi Suzuki[2], Shinji Takayanagi[3], Mami Matsukawa[3] *[1]Faculty of Science and Engineering, Waseda University, Tokyo, Japan,[2]Nagoya Institute of Technology, Nagoya, Aichi, Japan, [3]Doshisha University, Kyotanabe, Kyoto, Japan*	**8G-5 Double-Focusing Ultrasound Transducer for Skin Disease Treatment** **Jihun Jang**[1], Jin Ho Chang[1,2] *[1]Department of Electronic Engineering, Sogang University, Seoul, Korea, Republic of, [2]Interdisciplinary Program of Integrated Biotechnology, Sogang University, Seoul, Korea, Republic of*
4:45 pm	**2G-5 Optimum beamformer strategy for detecting signals in clutter noise** **Hans Torp**[1], Alfonso Rodriguez-Molares[1], Lasse Lovstakken[1] *[1]Circulation and Medical Imaging, Norwegian University of Science and Technology, Norway*	**3G-6 Local Lung Ventilation Estimation Using Ultrasound Strain Measurements** **Jonathan Rubin**[1], Jeffrey Horowitz[2], Thomas Sisson[3], Kang Kim[4], Luis Ortiz[5], James Hamilton[6] *[1]Radiology, University of Michigan, Ann Arbor, Michigan, USA, [2]Department of Internal Medicine, University of Michigan, USA, [3]University of Michigan, USA [4]University of Pittsburgh, USA [5]University of Pittsburgh, USA, [6]Epsilon Imaging, USA*	**4G-6 3D Post-processing of pre-beamformed RF Data in the Frequency-wavenumber Domain** **Hendrik Vos**[1,2], Paul van Neer[3], Martin Verweij[2], Nico de Jong[1,2], Arno Volker[3] *[1]Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands,[2]Acoustical Wavefield imaging, Delft university of Technology, Netherlands, [3]TNO, Netherlands*	**1G-6 Plaque characterization using integrated electrochemical spectrum and intravascular ultrasound sensors** Rongsong Li[1], Xiaoxiao Zhang[2], Teng Ma[3], Nelson Jen[1], Tyler Beebe[1], **Jianguo Ma**[1], K. Kirk Shung[3], Qifa Zhou[3], Yu-Chong Tai[2], Tzung Hsiai[1] *[1]Department of Medicine, University of California, Los Angeles, California, USA,[2]Department of Electrical Engineering and Applied Science Division, California Institute of Technology, Pasadena, California, USA, [3]Department of Biomedical Engineering, University of Southern California, Los Angeles, California, USA*	**6G-5 Quasi-shear mode electromechanical coupling k'_{15} and shear wave velocity in c-axis tilted $Sc_xAl_{1-x}N$ films** **Masashi Suzuki**[1], Takahiko Yanagitani[2] *[1]Nagoya Institute of Technology, Japan, [2]Waseda University, Japan*	**8G-6 Non-linear generation of harmonic content within high intensity ultrasound signals using granular chains** **Sevan Harput**[1], James McLaughlan[1], Steven Freear[1], Pierre Gelat[2], Nader Saffari[2], Jia Yang[3], Omololu Akanji[3], Peter Thomas[3], David Hutchins[3] *[1]School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom, [2]Department of Mechanical Engineering, University College London, London, United Kingdom, [3]School of Engineering, University of Warwick, Coventry, United Kingdom*

8:00 am - 5:00 pm	Poster --- Friday, October 23, 2015			4th floor
Session P1B1. ***Elasticity Imaging Methods*** *Chair:* **Hendrik Hansen** *Radboud University Medical Center*	**P1B1-8 Spatial Variance Induced by Tissue Compression in Ultrasound Shear Wave Imaging** **Hideki Yoshikawa**[1], Teruyuki Sonoyama[2], Noriaki Inoue[2], Ken-ichi Kawabata[1] *[1]Hitachi, Ltd., Tokyo, Japan, [2]Engineering R&D Department 1, Hitachi Aloka Medical,Ltd., Tokyo, Japan*	**P1B2-4 Ultrasound-enhanced extravasation of dual-modality multifunctional nanodroplets** **Yujin Zong**[1], Xinru Zou[1], Rongrong Wang[1], Yi Feng[1], Xuan Du[1], Mingxi Wan[1] *[1]The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Xi'an Jiaotong University, Xi'an, Shaanxi, China, People's Republic of*	**P1B3-4 Effects of coherent compounding on Pulse Wave Imaging (PWI) in phantoms and *in vivo*** **Iason Zacharias Apostolakis**[1], Ronny Li[1], Matthew McGarry[1], Ethan Bunting[1], Elisa Konofagou[1,2] *[1]Biomedical Engineering, Columbia University, New York, New York, USA, [2]Radiology, Columbia University, New York, New York, USA*	**P1B4-4 Copolymer-in-oil phantoms for photoacoustic imaging** Luciana Cabrelli[1], Diego Sampaio[1], Joao Uliana[1], Alessandro Deana[2], Antonio Carneiro[1], **Theo Pavan**[1] *[1]Department of Physics, University of Sao Paulo, Ribeirão Preto, Brazil, [2]Department of Biophotonics, Universidade Nove de Julho, Sao Paulo, Brazil*
P1B1-1 Regularized, Weighted Temporal Multiresolution Speckle Tracking of Small Displacements in Ultrasound **Peter Hollender**[1], Vignesh Vudatha[1], Gregg Trahey[1,2] *[1]Biomedical Engineering, Duke University, Durham, North Carolina, USA, [2]Radiology, Duke University Medical Center, Durham, North Carolina, USA*	**P1B1-9 A reliability index of shear wave speed measurement for shear wave elastography** **Kiwan Choi**[1], Junho Park[1], Donggoen Kong[1], Hyoung-Ki Lee[1] *[1]Ultrasound R&D Group, Samsung Electronics, Seoul, Korea, Republic of*	**P1B2-5 Evaluation the potential of the hair growth enhancements with ultrasound-mediated minoxidil loaded microbubbles cavitation** **Ai-ho Liao**[1], Ying-jui Lu[1] *[1]National Taiwan University of Science and Technology, Taiwan*	**P1B3-5 Atlas-based mosaicing of 3D transesophageal echocardiography images of the left atrium** **Harriët W. Mulder**[1], Josien P.W. Pluim[1], Ben Ren[2], Alexander Haak[3], Max A. Viergever[1], Johan G. Bosch[3], Marijn van Stralen[1] *[1]Imaging Division, UMC Utrecht, Utrecht, Netherlands,[2]Cardiology, Erasmus MC Rotterdam, Rotterdam, Netherlands, [3]Biomedical Engineering, Erasmus MC Rotterdam, Rotterdam, Netherlands*	**P1B4-5 NIR Photoacoustic Spectroscopy for Continuous Non-Invasive Glucose Monitoring** **Praful Pai**[1], Pradyut Sanki[1], Arijit De[1], Swapna Banerjee[1] *[1]Department 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 Walsh**[1], Douglas Dumont[1], Mark Palmeri[2], Brett Byram[1] *[1]Biomedical Engineering, Vanderbilt University, Nashville, TN, USA, [2]Biomedical Engineering, Duke University, Durham, NC, USA*	**P1B1-10 Pixel-based ultrasound image reconstruction: impact of grid size on signal frequency content** Mahdi Bayat[1], Alireza Nabavizadeh[1,2], Azra Alizad[1,3], **Mostafa Fatemi**[1] *[1]Physiology and Biomedical Engineering, Mayo Clinic, Rochester, MN, USA, [2]Biomedical Informatics and Computational Biology, University of Minnesota, Rochester, MN, USA,[3]Department of Internal Medicine, Mayo Clinic, Rochester, MN, USA*	**P1B2-6 Quantification of endothelial αvβ3 expression with high frequency ultrasound and targeted microbubbles: in vitro and in vivo studies** **Verya Daeichin**[1], Ilya Skachkov[1], Judith C. Sluimer[2], Johan G. Bosch[1], Klazina Kooiman[1], Andrew Needles[3], Ben Janssen[4], Mat J.A.P. Daemen[5], Antonius van der Steen[1,6], Nico de Jong[1,6] *[1]Thoraxcenter Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands,[2]Pathology, CARIM, Maastricht University, Netherlands, [3]FUJIFILM VisualSonics, Inc., Canada, [4]Pharmacology, CARIM, Maastricht University, Netherlands,[5]Pathology, AMC, Netherlands, [6]Technical University Delft, Netherlands*	**P1B3-6 Estimation of Flow Mediated Vasodilatation of the radial artery** **Andrzej Nowicki**[1], Robert Olszewski[2], Wojciech Secomski[1], Marcin Lewandowski[1], Michal Byra[1] *[1]Ultrasound, Institute of Fundamental Technological Research, Warsaw, Poland,[2]Cardiology 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 LIU**[1], Qijin HE[1], Yaoheng YANG[1], Zhihai QIU[1], Yongmin HUANG[1], Thomas Ming-Hung LEE[1], Lei SUN[1] *[1]Interdisciplinary 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 Rojas[1], Juvenal Ormachea[2], Kevin Parker[2], **Benjamin Castañeda**[1] *[1]Departamento de Ingeniería, Sección Electricidad y Electrónica, Pontificia Universidad Católica del Perú, Lima, Peru, [2]Department 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 Jiao**[1], Jie Xu[1], Yongjia Xiang[1], Tianming Gu[1], Yaoyao Cui[1] *[1]Suzhou 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 Allen**[1], Rintaro Hayashi[1], Parag Chitnis[2], Jonathan Mamou[3], Jeffrey Ketterling[3] *[1]Mechanical Engineering, University of Hawaii, Honolulu, Hawaii, USA, [2]Department of Bioengineering, George Mason University, Fairfax, Virginia, USA, [3]Riverside 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 Costet**[1], Ethan Bunting[2], Elaine Wan[3], Elisa Konofagou[2,4] *[1]Biomedical Engineering, Columbia University, New York, New York, USA, [2]Biomedical Engineering, Columbia University, New York, NY, USA, [3]Medicine Cardiology, Columbia University Medical Center, New York, New York, USA,[4]Radiology, Columbia University, New York, NY, USA*	**P1B4-7 Optical-resolution photoacoustic endoscope** **Ruimin Chen**[1], Joon-Mo Yang[2], Chiye Li[2], Bin Rao[2], Junjie Yao[2], Cheng-Hung Yeh[2], Amos Danielli[2], Konstantin Maslov[2], K. Kirk Shung[1], Qifa Zhou[1], Lihong V. Wang[2] *[1]Ultrasonic Transducer Resource Center, Department of Biomedical Engineering, University of Southern California, Los Angeles, California, USA, [2]Optical Imaging Laboratory, Department of Biomedical Engineering, Washington University in St. Louis, St. Louis, Missouri, USA*

P1B1-4 Near Field Shear Wave Elasticity Imaging with High Frequency Single Element Transducers

Nien-Ching Ho[1], Pai-Chi Li[2]
[1]*Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan,*[2]*Electrical Engineering, National Taiwan University, Taipei, Taipei, Taiwan, Taiwan*

P1B1-5 Effects of Aberration in Crawling Wave Sonoelastography

Gabriela Torres[1], Kevin Parker[2], Roberto Lavarello[1], **Benjamin Castaneda**[1]
[1]*Electrical Engineering, Pontificia Universidad Catolica del Peru, Lima, Lima, Peru,* [2]*Electrical and Computer Engineering, University of Rochester, Rochester, USA*

P1B1-6 Acoustic particle palpation – a feasibility study on a novel stress source for elasticity imaging

Hasan Koruk[1,2], **Ahmed El Ghamrawy**[1], Mengxing Tang[1], James Choi[1]
[1]*Department of Bioengineering, Imperial College London, London, United Kingdom,*[2]*Mechanical Engineering Department, MEF University, Istanbul, Turkey*

P1B1-7 Novel imaging method of continuous shear wave by ultrasonic color flow imaging

Yoshiki Yamakoshi[1], Atsushi Yamamoto[2], Yasushi Yuminaka[1], Naoki Sunaguchi[1]
[1]*Grad. School of Science and Technology, Gunma University, Kiryu, Japan,* [2]*Department of Orthopaedic Surgery, Graduate School of Medicine, Gunma University, Maebashi, Japan*

Session P1B2.
MCA: Microbubbles and Nanodroplets

Chair: **Lori Bridal**
Univ. Pierre and Marie Curie

P1B2-1 Cosolvent-infused precursor bubbles and droplets for production of ultra-small, ultrasound-activatable, nanoscale perfluorcarbon agents

Minseok Seo[1], Siqi Zhu[1], Ross Williams[1], Naomi Matsuura[2]
[1]*Sunnybrook Research Institute, Canada,*[2]*University of Toronto, Canada*

P1B2-2 Influence of the surrounding media on the acoustic behavior of gas vesicle nanostructures at high ultrasound frequencies

Emmanuel Cherin[1], Raymond W. Bourdeau[2], Melissa Yin[1], Mikhail G. Shapiro[2], F. Stuart Foster[1]
[1]*Imaging Research, Sunnybrook Research Institute, Toronto, Ontario, Canada,* [2]*Division of Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, California, USA*

P1B2-3 Nonlinear Acoustic Properties Characterization of Nano Size Gas Vesicles

Yaoheng Yang[1], Yongmin Huang[1], Zhihai Qiu[1], Cheng Liu[1], Jiyan Dai[2], Lei Sun[1]
[1]*Interdisciplinary Division of Biomedical Engineering, The Hong Kong Polytechnic University, Hong Kong,* [2]*Department of Applied Physics, The Hong Kong Polytechnic University, Hong Kong*

Session P1B3.
MIM: Cardiovascular Imaging and Mechanics

Chair: **Richard Lopata**
Technical University Eindhoven

P1B3-1 Full-cycle left ventricular segmentation and tracking in 3D echocardiography using active appearance models

Marijn van Stralen[1], Alexander Haak[2], Esther Leung[3], Gerard van Burken[2], Clemens Bosch[1], Johan Bosch[2]
[1]*Imaging Division, UMC Utrecht, Utrecht, Netherlands,* [2]*Biomedical Engineering, Erasmus MC Rotterdam, Rotterdam, Netherlands,* [3]*Albert Schweitzer Hospital, Dordrecht, Netherlands*

P1B3-2 Optimization-based speckle tracking algorithm for LV strain estimation

Hanan Khamis[1], Nahum Smirin[1], Zvi Friedman[2], Dan Adam[1]
[1]*Department of Biomedical Engineering, Technion-Israel Institute of Technology, Haifa, Israel,* [2]*GE Ultrasound, Tirat Hacarmel, Israel*

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

Martino Alessandrini[1], Brecht Heyde[1], Ling Tong[1,2], Olivier Bernard[3], Jan D'hooge[1]
[1]*Cardiovascular Imaging and Dynamics, KU Leuven, Leuven, Belgium,* [2]*Center for Biomedical Imaging Research, Dept. of Biomedical Engineering, Tsinghua University, China, People's Republic of,*[3]*CNRS UMR 5220; INSERM U1044; Université Lyon 1; INSA Lyon, Lyon, France*

Session P1B4.
MPA: Photoacoustics

Chair: **Richard Lopata**
Technical University Eindhoven

P1B4-1 Optimizing Simultaneous Multispectral Emission Photoacoustics

Martin F Beckmann[1], Hans-Martin Schwab[1], Georg Schmitz[1]
[1]*Chair for Medical Engineering, Ruhr-Universität Bochum, Bochum, Germany*

P1B4-2 Dual-modal photoacoustic ocular imaging

Changhui Li[1], Ning Wu[2], Xiaoyi Zhu[2]
[1]*Biomedical Engineering, Peking University, China, People's Republic of,* [2]*Peking University, China, People's Republic of*

P1B4-3 Photoacoustic imaging of human inflammatory arthritis

Xueding Wang[1], Janggun Jo[2], Guan Xu[3], Sheeja Francis[3], April Marquardt[3], Jie Yuan[4], Gandikota Girish[3]
[1]*Biomedical Engineering, University of Michigan, Ann Arbor, Michigan, USA,*[2]*Radiology, University of Michigan, USA,*[3]*University of Michigan, USA,* [4]*Nanjing University, USA*

P1B4-8 Low power continuous wave photoacoustic microscope for bioimaging applications

Sathiyamoorthy Krishnan[1], Michael Kolios[1]
[1]*Department of physics, Ryerson university, Toronto, Ontario, Canada*

P1B4-9 Optical and Acoustic Observation of Photodisruption in Two Liquid Perfluorocarbons Induced by Nanosecond Laser

Yi Feng[1], Dui Qin[1], Yujing Zong[1], Mingxi Wan[1]
[1]*The 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*

P1B4-10 X-ray acoustic imaging for external beam radiation therapy dosimetry using a commercial ultrasound scanner

Diego Sampaio[1], Joao Uliana[1], Juliana Pavoni[1], Leandro Borges[2], Antonio Carneiro[1], **Theo Pavan**[1]
[1]*Department of Physics, University of Sao Paulo, Ribeirão Preto, Brazil,* [2]*Radiotherapy Service, University of Sao Paulo, Ribeirão Preto, Brazil*

Session P1B5.
MTH: Ultrasound-Mediated Agent Delivery

Chair: **John Hossack**
Univ. of Virginia

FRIDAY POSTER

8:00 am - 5:00 pm — Poster --- Friday, October 23, 2015 — 4th floor

P1B5-1 PET and fluorescence imaging demonstrate nanoparticle delivery and accumulation in a mouse breast tumor model using microbubbles-mediated ultrasound treatment

Josquin Foiret[1], Hua Zhang[1], Lisa M. Mahakian[1], Sara M. Tam[1], Jai Woong Seo[1], Katherine W. Ferrara[1]
[1]*Department of Biomedical Engineering, University of California, Davis, USA*

P1B5-2 Feasibility of Ultrasound Assisted Drug Delivery (UADD) via Noninvasive High Frequency Intense Therapy Ultrasound

Michael Slayton[1], Paul Jaeger[2]
[1]*Guided Therapy Systems, Mesa, AZ, USA,* [2]*Ardent Sound, Inc., Mesa, AZ, USA*

P1B5-3 Efficient generation of reactive oxygen species sonochemically generated by cavitation bubbles

Jun Yasuda[1], Shin Yoshizawa[1], Shin-ichiro Umemura[2]
[1]*Department of Communications Engineering, Tohoku.Univ., Sendai, Japan,*[2]*Department of Biomedical Engineering, Tohoku.Univ., Sendai, Japan*

P1B5-4 Uptake and Cellular Recovery Mechanisms in Microbubble-enhanced Ultrasound Delivery of Nanoparticles for Cancer Therapy

Lee Terron[1], Maria De Scrilli[1,2], Julien Reboud[1], Catherine Berry[3], Helen Mulvana[1]
[1]*School of Engineering, University of Glasgow, Glasgow, United Kingdom,* [2]*Department of Mechanical and Aerospace Engineering, Politecnico di Torino, Turin, Piedmont, Italy,* [3]*Centre for Cell Engineering, University of Glasgow, Glasgow, United Kingdom*

Session P1B6.
MTC: Soft Tissue Characterization

Chair: **Lori Bridal**
Univ. Pierre and Marie Curie

P1B6-1 Evaluation of ultrasound B-mode images of liver fibrosis using fibrotic probability image based on multi-Rayleigh model

Shohei Mori[1], Shinnosuke Hirata[1], Tadashi Yamaguchi[2], Hiroyuki Hachiya[1]
[1]*Tokyo Institute of Technology, Tokyo, Japan,* [2]*Chiba University, Chiba, Japan*

P1B6-2 Backscatter coefficient estimation from human thyroids in vivo

Tony Cueva[1], Julien Rouyer[1], Alberto Portal[2], Tamy Yamamoto[2], **Roberto Lavarello**[1]
[1]*Departamento de Ingeniería, Pontificia Universidad Católica del Perú, San Miguel, Lima, Peru,* [2]*Departmento de Radiologia, Clínica Centenario Peruano Japonesa, Pueblo Libre, Lima, Peru*

P1B6-3 Correcting the influence of tissue attenuation on Nakagami distribution shape parameter estimation

Michal Byra[1], Andrzej Nowicki[1], Hanna Piotrzkowska-Wroblewska[1], Katarzyna Dobruch-Sobczak[1,2], Jerzy Litniewski[1]
[1]*Ultrasound Department, Institute of Fundamental Technological Research PAS, Warsaw, Poland,* [2]*Maria Sklodowska-Curie Memorial Cancer Centre and Institute of Oncology, Poland*

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

Siyuan Zhang[1], Zhiwei Cui[1], Lei Zhang[1], Xingguang Zhu[1], Tianqi Xu[1], Supin Wang[1], Mingxi Wan[1]
[1]*Department of Biomedical Engineering, Xi'an Jiaotong University, Xi'an, China, People's Republic of*

P1B6-9 High-Resolution Strain and Strain Rate Imaging of Adult Zebrafish Myocardium

Chen Ho-Chiang[1], Chih-Chung Huang[1]
[1]*Department of Biomedical Engineering, National Cheng Kung University, Taiwan*

P1B6-10 Relation between Speed of Sound Measured by Using Ultrasound and Magnetic Resonance Images and Elasticity in Tissue-Engineered Cartilage

Naotaka Nitta[1], Masaki Misawa[1], Koji Hyodo[1], Yoshio Shirasaki[1], Kazuhiko Hayashi[1], Kazuhiro Homma[1], Tomokazu Numano[2]
[1]*National Institute of Advanced Industrial Science and Technology (AIST), Japan,*[2]*Tokyo Metropolitan University, Japan*

P1B6-11 Activation of Mechanosensitive Transcription Factors in murine C2C12 myoblasts by Focused Low-Intensity Pulsed Ultrasound (FLIPUS).

Regina Puts[1], Paul Rikeit[2], Karen Ruschke[2], Soyoung Hwang[3], Petra Knaus[1,2], Kay Raum[1]
[1]*Berlin-Brandenburg School for Regenerative Therapies, Charite Universitaet Berlin, Berlin, Germany,*[2]*Biochemistry, Freie Universitaet Berlin, Berlin, Germany,* [3]*Department of Biotechnology, Technische Universitaet Berlin, Berlin, Germany*

Session P1B7.
MBF: Flow Estimation Strategies: From 1D to 3D

Chair: **Jørgen Jensen**
Technical University of Denmark

P1B7-1 Real-time pulse compression in multigate spectral Doppler imaging

Alessandro Ramalli[1], Alessandro Dallai[1], Enrico Boni[1], Francesco Guidi[1], Stefano Ricci[1], Piero Tortoli[1]
[1]*Information Engineering Department, University of Florence, Firenze, Italy*

P1B7-2 A robust spectral envelope detection algorithm for automated blood flow measurements

Aditi Kathpalia[1,2], Yücel Karabiyik[2], Bente Simensen[3], Eva Tegnander[3,4], Sturla Eik-Nes[3,4], Hans Torp[2], Ingvild Kinn Ekroll[2,5], Gabriel Kiss[2]
[1]*School of Biomedical Engineering, Indian Institute of Technology (BHU), Varanasi, India,* [2]*Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway,* [3]*National Center for Fetal Medicine (NCFM), St. Olavs Hospital, Trondheim, Norway,* [4]*Department of Laboratory Medicine, Children's and Women's Health (LBK), NTNU, Trondheim, Norway,* [5]*St. Olavs Hospital, Trondheim, Norway*

P1B7-3 Contrast-based Transient Flow Vector Distribution in Arterial Stenosis based on Plane Wave Bubble Wavelet Imaging and Modified Optical Flow Method

Diya Wang[1], Bowen Jing[1], Jinjin Wan[1], Yingjie Jia[1], Yu Zhang[1], Mingxi Wan[1]
[1]*The 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*

P1B7-8 *In-vivo* High Dynamic Range Vector Flow Imaging

Carlos Armando Villagómez Hoyos[1], Matthias Bo Stuart[1], Jørgen Arendt Jensen[1]
[1]*Technical University of Denmark, Denmark*

P1B7-9 3-D Vector Flow Estimation with Row-Column Addressed Arrays

Simon Holbek[1], Thomas Lehrmann Christiansen[2], Morten Fischer Rasmussen[1], Matthias Bo Stuart[1], Erik Vilain Thomsen[2], Jørgen Arendt Jensen[1]
[1]*Department of Electrical Engineering, Technical University of Denmark, Lyngby, Denmark,*[2]*Department of Micro- and Nanotechnology, Technical University of Denmark, Lyngby, Denmark*

P1B7-10 Velocity vector in three dimensions using a high-frame-rate dual-array setup

Pieter Kruizinga[1,2], Hendrik J Vos[1,2], Johannes G Bosch[1], Antonius FW van der Steen[1,2], Nico de Jong[1,2]
[1]*Thorax Center - Biomedical Engineering, Erasmus Medical Center, Rotterdam, Netherlands,*[2]*Faculty of Applied Sciences - Acoustical Wavefield Imaging, Delft University of Technology, Delft, Netherlands*

P1B7-11 3D Ultrafast Vector Doppler Imaging for in vivo Complex Flow Quantification

Mafalda Correia[1], Jean Provost[1], Mickaël Tanter[1], Mathieu Pernot[1]
[1]*Institut Langevin, ESPCI ParisTech, CNRS UMR 7587, INSERM U979, Université Paris 7, Paris, France*

P1B5-5 Enhanced transdermal drug delivery with low frequency, low intensity (20 kHz, 100 mW/cm2) ultrasound exposure: In vivo feasibility study Gadi Cohen[1], Hiba Natsheh[1], Philip Lazarovici[1], Elka Touitou[1], Christopher Bawiec[2], Youhan Sunny[2], Melissa A. Lerman[3], Michael Neidrauer[2], Leonid Zubkov[2], W. Andrew Berger[4],**Peter A. Lewin[2]** *[1]Hebrew University Jerusalem, Israel, [2]Drexel University, USA,[3]Children's Hospital of Pennsylvania, USA, [4]University of Scranton, USA*	**P1B6-4 Variation of longitudinal strain along the arterial wall adjacent to the asymptomatic carotid plaque** **Spyretta Golemati[1]**, Symeon Lehareas[1], Aimilia Gastounioti[2], Konstantina Nikita[2], Achilles Chatziioannou[1], Despina Perrea[1] *[1]Medical School, National Kapodistrian University of Athens, Athens, Greece, [2]Electrical and Computer Engineering, National Technical University of Athens, Athens, Greece*	**P1B6-12 The measurement of acoustic impedance of the cells cultured with five kinds of the fatty acid** **Kazuyo Ito[1]**, Kenji Yoshida[2], So Irie[1], Jonathan Mamou[3], Hitoshi Maruyama[4], Tadashi Yamaguchi[2] *[1]Graduate School of Engineering, Chiba University, Chiba, Japan, [2]Center for Frontier Medical Engineering, Chiba University, Chiba, Japan, [3]Lizzi Center for Biomedical Engineering, Riverside Research, New York, NY, USA,[4]Graduate School of Medicine, Chiba University, Chiba, Japan*	**P1B7-4 Robust blood velocity estimation using point-spread-function-based beamforming and multi-step speckle tracking** **Anne E.C.M. Saris[1]**, Maartje M. Nillesen[1], Stein Fekkes[1], Hendrik H.G. Hansen[1], Chris L. de Korte[1] *[1]Medical UltraSound Imaging Center (MUSIC), Department of Radiology and Nuclear Medicine, Radboud university medical center, Nijmegen, Netherlands*	**P1B7-12 High frame rate 3D blood speckle tracking of intracardiac flows** **Morten Wigen[1]**, Jakob Høgenes[1], Joris van Cauwenberge[2], Sten Roar Snare[3], Patrick Segers[2], Solveig Fadnes[1], Abigail Swillens[2], Lasse Løvstakken[1] *[1]Norwegian University of Science and Technology, Norway,[2]Ghent University, Belgium, [3]University of Oslo, Norway*
P1B5-6 Echogenic liposome as a carrier of siRNA for sonoporation: an alternative microbubble for sonoporation **Jingam Park[1]**, Donghee Park[2], Unchul Shin[1], Jungwoo Son[1], Jinho Kim[1], Ohrum Cha[1], Yunsun Lee[1], Sangwoo Lee[1], Chul-woo Kim[2], Jongbum Seo[1] *[1]Department of Biomedical engineering, Univ. Yonsei, Wonju, Gangwon, Korea, Republic of, [2]Seoul National University College of Medicine, Korea, Republic of*	**P1B6-5 Assessment of Transmural Myocardial Orientation Using Nakagami Imaging in a Phased Array Configuration** **Xue Yu[1]**, Wei-Ning Lee[1,2] *[1]Electrical and Electronic Engineering, University of Hong Kong, Hong Kong, [2]Medical Engineering Programme, University of Hong Kong, Hong Kong*	**P1B6-13 Correction of scatterer-diameter and acoustic-concentration estimates in saturated high-frequency ultrasound signals acquired from cancerous human lymph nodes** **Kazuki Tamura[1]**, Jonathan Mamou[2], Alain Coron[3], Kenji Yoshida[4], Tadashi Yamaguchi[4], Ernest Feleppa[2] *[1]Graduate School of Engineering, Chiba University, Japan, [2]Lizzi Center for Biomedical Engineering, Riverside Research, USA, [3]Laboratoire d □fIn UPMC Univ Paris 06, CNRS, INSERM, France, [4]Center for Frontier Medical Engineering, Chiba University, Japan*	**P1B7-5 Two Dimensional Blood Velocity Estimation Using High Frame Rate Echocardiography with Transverse Oscillation Approach** **Hiroki Takahashi[1]**, Hideyuki Hasegawa[1] *[1]Graduate School of Science and Engineering for Research, University of Toyama, Toyama-shi, Toyama, Japan*	***Session P1B8.*** ***MSD: Implementation of Novel Ultrasound Methods*** *Chair:* **Massimo Mischi** *Eindhoven University of Technology*
P1B5-7 Passive delivery of liposomes with different sizes to the mouse brain after blood brain barrier opening induced by focused ultrasound with microbubbles Jinxuan Guo[1], Gaoshu Chen[1], Jian Chen[2], Chien Ting Chin[1], Yanyan Suo[3], **Yuanyuan Shen[1]** *[1]Department of Biomedical Engineering, Shenzhen University, Shenzhen, Guang Dong, China, People's Republic of, [2]School of pharmacy, Shanghai Jiaotong University, Shanghai, China, People's Republic of, [3]Shenzhen Entry-Exit Inspection and Quarantine Bureau, Shenzhen, China, People's Republic of*	**P1B6-6 Experimental estimation of effective scatterer diameters from physical phantoms using autoregressive spectral analysis** **Julius Diestra[1]**, Roberto Lavarello[1] *[1]Departamento de Ingeniería, Pontificia Universidad Católica del Perú, San Miguel, Lima, Peru*	**P1B6-14 A New Tissue-mimicking Material for Phantoms** **Kazuishi Sato[1]**, Tomoji Yoshida[1], Toshio Kondo[1], Masahiko Taniguchi[2], Kazuhiro Yasukawa[2] *[1]Tokushima Bunri University, Sanuki, Kagawa, Japan, [2]Takiron Co., Ltd., Kobe, Japan*	**P1B7-6 High Frame Rate Vector Velocity Estimation using Plane Waves and Transverse Oscillation** **Jonas Jensen[1]**, Matthias Bo Stuart[1], Jørgen Arendt Jensen[1] *[1]Dept. of Elect. Eng, Technical University of Denmark, Kgs. Lyngby, Denmark*	**P1B8-1 Real-time dynamic scheduling based adaptive ultrasound sequence programming for research and rapid prototyping** **Richard Tobias[1]**, Gary Yi Hou[1], Ashish Parikh[1] *[1]Cephasonics, Santa Clara, California, USA*
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 **Feng Wang[1]**, Xiaojian Jia[2], Yu Shi[3], Li Liu[3], Azhen Hu[1], Yun Chen[3] *[1]Biomedical Research Institute,Shenzhen PKU-HKUST Medical Center, China, People's Republic of, [2]1Biomedical Research Institute,Shenzhen PKU-HKUST Medical Center, China, People's Republic of, [3]Department of Ultrasound, Peking University Shenzhen Hospital, China, People's Republic of*	**P1B6-7 A Technique for Mapping Shear Wave Velocity and Attenuation from the Two-Dimensional Fourier Space** **Ivan Nenadic[1]**, Bo Qiang[1], Matthew Urban[1], James Greenleaf[1] *[1]Mayo Clinic, USA*	**P1B6-15 Differentiation of normal tissue and tissue lesions using statistical properties of backscattered ultrasound in breast** **Andrzej Nowicki[1]**, Hanna Piotrzkowska-Wroblewska[1], Katarzyna Dobruch-Sobczak[2], Jerzy Litniewski[1], Barbara Gambin[1], Michal Byra[1], Eleonora Kruglenko[1] *[1]Ultrasound, Institute of Fundamental Technological Research, Warsaw, Poland,[2]Maria Sklodowska-Curie Memorial, Cancer Center and Institute of Oncology, Warsaw, Poland*	**P1B7-7 Multi-angle imaging for robust vector Doppler and coherent compounding** **Ingvild Kinn Ekroll[1,2]**, Jørgen Avdal[1], Abigail Swillens[3], Hans Torp[1], Lasse Løvstakken[1] *[1]Norwegian University of Science and Technology, Norway, [2]St Olav's Hospital, Norway, [3]Ghent University, Belgium*	**P1B8-2 Newton's Method based Self Calibration for a 3D Ultrasound Tomography System** **Wei Yap Tan[1]**, Till Steiner[2], Nicole Ruiter[1] *[1]Institute for Data Processing and Electronics, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany,[2]Pepperl+Fuchs GmbH, Mannheim, Germany*

8:00 am - 5:00 pm	Poster --- Friday, October 23, 2015			4th floor
P1B8-3 A Study of the Driving Circuit for Array Transducer Considering the Impedance Properties **Hayato JIMBO**[1], Kota GOTO[1], Shin YOSHIZAWA[1], Shinnichiro UMEMURA[1] *[1]Tohoku university, Sendai, Miyagi, Japan*	***Session P2B1.*** ***Signal Processing NDE Methods*** *Chair:* **Erdal Oruklu** *Illinois Institute of Technology*	***Session P2B2.*** ***Wave Propagation Modeling*** *Chair:* **Walter Arnold** *Saarland University*	**P3B1-2** Controllable generation of acoustical vortices with sparse sources **Haixiang Zheng**[1], Qingyu Ma[1], Dong Zhang[2] *[1]School of Physics and Technology, Nanjing Normal University, Nanjing, Jiangsu, China, People's Republic of, [2]Institute of Acoustics, Nanjing University, Nanjing, Jiangsu, China, People's Republic of*	**P3B2-5** Design and characterization of 3D printed phononic crystals for sub-MHz ultrasound manipulation **Stefano Laureti**[1,2], Omololu Akanji[1], Lee Davis[1], Marco Ricci[2], Simon Leigh[1], David Hutchins[1] *[1]University of Warwick, United Kingdom, [2]Università degli studi di Perugia, Italy*
P1B8-4 Method for Generating Cell Aggregates using Ultrasonic Standing Wave Trapping in a Disposable Capsule **Yuta Kurashina**[1], Kenjiro Takemura[1], Shogo Miyata[1], James Friend[2] *[1]Mechanical Engineering, Keio University, Yokohama, Kanagawa, Japan, [2]Mechanical and Aerospace Engineering, University of California-San Diego, San Diego, California, USA*	**P2B1-1** A pulse compression procedure for the measurement and characterization of Non-linear systems based on Exponential Chirp signals. Pietro Burrascano[1], Stefano Laureti[1,2], David Hutchins[2], **Marco Ricci**[1], Luca Senni[1] *[1]Department of Engineering, Università degli studi di Perugia, Polo Scientifico Didattico di Terni, Italy, [2]University of Warwick, United Kingdom*	**P2B2-1** Acoustic Imaging of the Circular Wedge-like Acoustic Waveguides **Tai-Ho Yu**[1] *[1]National United University, Taiwan*	**P3B1-3** Transverse Manipulation of Microbubbles using Acoustic-Vortex Tweezers **Wei Chen Lo**[1], Shih Tsung Kang[1], Chih Kuang Yeh[1] *[1]Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan*	**P3B2-6** Anchor loss reduction of quartz resonators utilizing phononic crystals **Yung-Yu Chen**[1], Yan-Ruei Lin[1], Tsung-Tsong Wu[2], Shih-Yung Pao[3] *[1]Department of Mechanical Engineering, Tatung University, Taiwan, [2]Institute of Applied Mechanics, National Taiwan University, Taiwan, [3]TXC Corporation, Taiwan*
P1B8-5 Cell manipulation by using natural vibration of a cell culture substrate **Chikahiro Imashiro**[1], Yuta Kurashina[1], Kenjiro Takemura[1], Shogo Miyata[1], Jun Komotori[1] *[1]Mechanical engineering, Keio University, Yokohama, Kanagawa, Japan*	**P2B1-2** Visualization of Defects in Steel Billet using Back Propagation of Scattered Waves **Koichi Kakuma**[1], Koichi Mizutani[2], Naoto Wakatsuki[2] *[1]College of Engineering Systems, School of Science and Engineering, University of Tsukuba, Tsukuba, Ibaraki, Japan,[2]Faculty of Engineering, Information and Systems, University of Tsukuba, Tsukuba, Ibaraki, Japan*	**P2B2-2** Hybrid MM-MOC-based Numerical Simulation of Acoustic Wave Propagation with Non-uniform Grid and Perfectly Matched Layer Absorbing Boundaries **Yuta Matsumura**[1], Kan Okubo[1], Norio Tagawa[1], Takao Tsuchiya[2], Takashi Ishizuka[3] *[1]Tokyo Metropolitan University, Japan, [2]Doshisha University, Japan, [3]Shimizu Corporation, Japan*	**P3B1-4** Spatial selective trapping of microparticles using a quasi-periodic phononic crystal plate **Chen Wang**[1,2], Feiyan Cai[2], Li Fei[2], Long Meng[2], Yan Kang[1], Hairong Zheng[2] *[1]Sino-Dutch Biomedical and Information Engineering, Northeastern University, China, People's Republic of, [2]Shenzhen Institutes of Advanced Technology Chinese Academy of Sciences, China, People's Republic of*	**P3B2-7** Lowering diffraction of surface acoustic waves by phononic crystals **Jia-Hong Sun**[1], Yuan-Hai Yu[1] *[1]Department of Mechanical Engineering, Chang Gung University, Tao-Yuan, Taiwan*
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 Kim**[1], Kwanghyun Park[1], Ilseob Song[1], Yangmo Yoo[1,2] *[1]Electronic Engineering, Sogang University, Seoul, Korea, Republic of,[2]Interdisciplinary Program of Integrated Biotechnology, Sogang University, Korea, Republic of*	**P2B1-3** Feature extraction for robust impact damage classification of CFRP plates using ultrasonic signals **Juan M. Soto**[1], Antonio M. Peinado[1], Ángel M. Gómez [1], Nicolas Bochud[1] *[1]Teoría de la Señal, Telemática y Comunicaciones, University of Granada, Granada, Spain*	**P2B2-3** Backward guided modes with double zero-group-velocity points in liquid-filled pipes **Weijun lin**[1], Hanyin Cui[1] *[1]State Key Laboratory of Acoustics, Institute of Acoustics Chinese Academy of Sciences, beijing, China, China, People's Republic of*	***Session P3B2.*** ***Phononics II*** *Chair:* **Anne Bernassau** *Heriot-Watt University*	***Session P4B1.*** ***Acoustic Simulation & Modeling*** *Chair:* **Karl Wagner** *TDK Corporation*

P1B8-7 Speed-up of acoustic simulation techniques for 2D sparse array optimization by simulated annealing

Emmanuel Roux[1,2], Alessandro Ramalli[2], Piero Tortoli[2], Christian Cachard[1], Marc Robini[1], Hervé Liebgott[1]
[1]*CREATIS, Université de Lyon, CNRS UMR 5220, INSERM U1044, Université Claude Bernard Lyon 1, INSA-Lyon, Villeurbanne, France,* [2]*Ingenieria dell'informazione, Università degli studi di Firenze, Firenze, Italy*

P1B8-8 Development of an Acoustic Based Sensing System for Medical Ultrasound Image Simulator

Bo-Heng Chen[1], Kai-Sheng Heish[2], Chih-Chung Huang[1]
[1]*Department of Biomedical Engineering, National Cheng Kung University, Taiwan,* [2]*Kaoshiung Chang Geng Memorial Hopital, Taiwan*

P1B8-9 A New 2D Shear Wave Imaging System for Ultrasound Elastography

Weibao Qiu[1], Congzhi Wang[1], Yang Xiao[1], Ming Qian[1], Hairong Zheng[1]
[1]*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, People's Republic of*

P1B8-10 Assessment of the performance of an ultrasonic biopsy needle

Andrew Mathieson[1], Robert Wallace[2], Rebecca Cleary[1], Hamish Simpson[2], Margaret Lucas[1]
[1]*School of Engineering, University of Glasgow, United Kingdom,* [2]*School of Clinical Sciences, University of Edinburgh, United Kingdom*

P2B1-4 Ultrasonic Chirplet Echo Parameter Estimation using Time-Frequency Distributions

Pramod Govindan[1], Alireza Kasaeifard[1], **Jafar Saniie**[1]
[1]*Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, Illinois, USA*

P2B1-5 Sparse Deconvolution of Ultrasound NDE Echoes Accounting for Pulse Variance

Ramazan Demirli[1], Pramod Govindan[2], **Jafar Saniie**[2]
[1]*Center for Advanced Communications, Villanova University, Villanova, Pennsylvania, USA,* [2]*Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, Illinois, USA*

P2B1-6 Singular spectrum analysis for trend extraction in ultrasonic backscattered echoes

Yufeng Lu[1], **Jafar Saniie**[2]
[1]*Electrical and Computer Engineering, Bradley University, Peoria, USA,* [2]*Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, USA*

P2B1-7 Fast total focusing method for ultrasonic imaging

Ewen Carcreff[1], Dominique Braconnier[1], Gavin Dao[2]
[1]*The phased array company, West Chester, Ohio, USA,* [2]*AOS NDT, Cincinnati, Ohio, USA*

P2B2-4 An Optimized Guided Waves' Focus Method to Eliminate the Effect of Dispersion: Theoretical and Experimental Research

FuLi Xie[1], Shouguo Yan[1], Mingfei Cai[1], Han Dong[1], Bixing Zhang[1], Junjie Gong[1]
[1]*State Key Laboratory of Acoustics, Institute of Acoustics, Chinese Academy of Sciences, Beijing, China, People's Republic of*

P2B2-5 Anomalous dispersion of Stoneley waves in fluid-filled boreholes

Weijun lin[1], Hanyin Cui[1]
[1]*State Key Laboratory of Acoustics, Institute of Acoustics Chinese Academy of Sciences, beijing, China, China, People's Republic of*

Session P3B1.
Acoustic Tweezers and Particle Manipulation II

Chair: **Anne Bernassau**
Heriot-Watt University

P3B1-1 Tangential Streaming Analysis on Ultrasonically Levitated Droplet through the Boundary Layer Approximation with Moving Particle Semi-implicit and Distributed Point Source Method

Yuji Wada[1], Kohei Yuge[1], Hiroki Tanaka[2], Kentaro Nakamura[2]
[1]*Faculty of Science and Technology, Seikei University, Musashino, Japan,* [2]*Precision and Intelligence Laboratory, Tokyo Institute of Technology, Yokohama, Japan*

P3B2-1 Coupling and quality factor estimation of pillar resonators on a surface

Vincent Laude[1], Lyes Djoumi[1], Sarah Benchabane[1]
[1]*FEMTO-ST / CNRS, Besancon, France*

P3B2-2 Focalization of surface acoustic waves through a gradient index lens

Bernard Bonello[1], Jinfeng Zhao[2], Olga Boyko[2]
[1]*INSP, CNRS / Paris University, Paris, France,* [2]*INSP, Paris University, Paris, France*

P3B2-3 Molecular dynamics simulation of nonlinear waves in granular media

Jia Yang[1], David Hutchins[1], Lolu Akanji[1], Peter Thomas[1], Lee Davis[1], Steven Freear[2], Sevan Harput[2], Nader Saffari[3], Pierre Gelat[3]
[1]*School of Engineering, The University of Warwick, Coventry, West Midlands, United Kingdom,* [2]*The University of Leeds, United Kingdom,* [3]*University College London, United Kingdom*

P3B2-4 Effect of periodic patterned ZnO sensing film on a CO SAW resonator sensor

Tsung-Tsong Wu[1], Jia-Wei Luo[1], Lu-Chung Kuo[1]
[1]*Institute of Applied Mechanics, National Taiwan University, Taiwan*

P4B1-1 Numerical-analytical calculation of the maximum excitation current of precision quartz resonators.

Alaxandr Lepetaev[1], **Anatoly Kosykh**[1]
[1]*Redioelectronic, Omsk State Technical University, Omsk, Russian Federation*

P4B1-2 Optimization of Modified Hanma-Hunsinger Cell Geometry for the Design of High Performance SAW Filters

Pierre Dufilie[1], Pascal Ventura[2], Frederic Hecht[3]
[1]*Phonon Corp, Simsbury, CT, USA,* [2]*Laboratoire LEM3, Université de Lorraine, Metz, France,* [3]*Laboratoire Jacques Louis Lions, Universite Pierre et Marie Curie, Paris, France, Metropolitan*

P4B1-3 Temperature compensation of the AlN Lamb Wave Resonators utilizing the S1 mode

Jie Zou[1], Albert P. Pisano[2]
[1]*Mechanical Engineering, University of California, Berkeley, CA, USA,* [2]*University of California, San Diego, CA, USA*

P4B1-4 Thin Plate Model for Transverse Mode Analysis of Surface Acoustic Wave Devices

Gongbin Tang[1,2], Tao Han[1], Jing Chen[1], Tatsuya Omori[2], Ken-ya Hashimoto[2]
[1]*School of Electronic Information and Electrical Engineering, Shanghai Jiao Tong University, Shanghai, Shanghai, China, People's Republic of,* [2]*Graduate School of Engineering, Chiba University, Chiba, Chiba, Japan*

8:00 am - 5:00 pm	Poster --- Friday, October 23, 2015			4th floor
P4B1-5 Simulation of First Shear Horizontal Mode Plate Wave in LiNbO3 Showing 20 km/s Phase Velocity **Michio Kadota**[1], Shuji Tanaka[1], Tetsuya Kimura[2] *[1]Graduate School of Engineering, Tohoku University, Sendai, Miyagi, Japan,[2]Telecommunication Devision, Murata Manufacturing Co. Ltd., Yasu, Shiga, Japan*	**P5B1-1** Accurate performance evaluation of high frequency CMUT arrays using a nonlinear model Evren F. Arkan[1], Sarp Satir[1], **F. Levent Degertekin**[1] *[1]G.W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA*	**P5B1-9** Performance comparison of acoustic lens materials for Capacitive Micromachined Ultrasonic Transducers: simulation study Jin Ho Chang[1,2], **Sung Ho Kim**[1] *[1]Interdisciplinary Program of Integrated Biotechnology, Sogang University, Seoul, Korea, Republic of, [2]Electronic Engineering, Sogang University, Seoul, Korea, Republic of*		
Session P4B2. ***Sensors & Applications II*** *Chair:* **Natalya Naumenko** *National University of Science and Technology*	**P5B1-2** Mutual Radiation Impedance for Modeling of Multi-Frequency CMUT Arrays **Mohammad Maadi**[1], Ryan Chee[1], Roger Zemp[1] *[1]Electrical and Computer Engineering, University of Alberta, Edmonton, Alberta, Canada*	**P5B1-10** Comparison of Simulation Models for Electrical Characteristics of CMUT **Markus Klemm**[1], Anartz Unamuno[1] *[1]Fraunhofer IPMS, Germany*		
P4B2-1 Measurement of vibrating frequency of a cantilever using low frequency impedance-loaded SAW sensor Hiromitsu Hamashima[1], **Jun Kondoh**[1] *[1]Shizuoka University, Hamamatsu-shi, Japan*	**P5B1-3** Electrical Impedance Matching of CMUT Cells **Mohammad Maadi**[1], Roger Zemp[1] *[1]Electrical and Computer Engineering, University of Alberta, Edmonton, Alberta, Canada*	***Session P5B2.*** ***Applications of CMUTs*** *Chair:* **Michael Fink** *Friedrich-Alexander-Universität Erlangen-Nuremberg*		
P4B2-2 Continuous Temperature Monitoring Algorithm for SAW Sensors **Mykhaylo Yudytskiy**[1,2], René Fachberger[1] *[1]sensideon GmbH, Wels, Austria, [2]Johann Radon Institute for Computational and Applied Mathematics (RICAM), Linz, Austria*	**P5B1-4** Nonlinear Model with Lumped Parameters for Asymmetric CMUTs **Carlos Gerardo**[1], Edmond Cretu[1], Robert Rohling[1] *[1]Electrical and Computer Engineering, University of British Columbia, Vancouver, British Columbia, Canada*	**P5B2-1** cMUT technology applied to galvanic isolation : theory and experiments **Jacques Heller**[1], Audren Boulmé[1], Daniel Alquier[1], Sophie Ngo[1], Marie Perroteau[1], Dominique Certon[1] *[1]UMR CNRS 7347 - GREMAN, Université François Rabelais, TOURS, France*		

P4B2-3 Sensitivity improvement of a room-temperature SAW methane sensor incorporating Cryptophane-A film Wen Wang[1], Haoliang Hu[1], **Shitang He[1]**, Yong Pan[2], Caihong Zhang[3], Chuan Dong[3] *[1]Chinese Academy of Sciences, Institute of Acoustics, Beijing, China, People's Republic of, [2]Research Institute of Chemical Defense, China, People's Republic of, [3]Shanxi University, Shanxi, China, People's Republic of*	**P5B1-5 Efficient driving conditions of CMUT arrays for conventional and harmonic imaging** **Anders Lei[1]**, Søren Elmin Diederichsen[1], Matthias Bo Stuart[2], Jørgen Arendt Jensen[2], Erik Vilain Thomsen[1] *[1]Department of Micro- and Nanotechnology, Technical University of Denmark, Denmark,[2]Center for Fast Ultrasound Imaging, Department of Electrical Engineering, Technical University of Denmark, Denmark*	**P5B2-2 On-Chip Piezoelectric Polymer Ultrasonic Transceivers for Point-of-Care Testing** **Chien-Chong Hong[1]**, Kuan-Wen Chen[1] *[1]Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan*		
P4B2-4 Surface Acoustic Wave Accelerometer for High-G Applications Dmitry Lukyanov[1], Sergey Shevchenko[1], **Alexander Kukaev[1]**, Khivrich Maria[1] *[1]Laser Measurement and Navigation Systems, St.Petersburg Electrotechnical University, St. Petersburg, Russian Federation*	**P5B1-6 Optimization of the Backside Structures with Wideband Reflectivity Reduction for a CMUT** **Akifumi Sako[1]**, Hiroki Tanaka[1,2], Yasuhiro Yoshimura[2], Masahiro Sato[1], Tatsuya Nagata[1] *[1]Hitachi Aloka Medical,Ltd., Japan,[2]Hitachi, Ltd., Japan*	**P5B2-3 CMUT for high sensitivity greenhouse gas sensing** **Dovydas Barauskas[1]**, Donatas Pelenis[1], Gvidas Sergalis[1], Gailius Vanagas[1], Marius Mikolajunas[1], Darius Virzonis[1], Jonas Baltrusaitis[2] *[1]Panevezys Faculty of Technologies and Business, Kaunas University of Technology, Panevezys, Lithuania,[2]Chemical and Biomolecular Engineering, Lehigh University, Bethlehem, USA*		
P4B2-5 SAW force sensor based on reflective delay line quasi-mirror topology Ivan Ancev[1], **Sergei Bogoslovsky[1]**, Gennadiy Sapozhnikov[1], Sergei Zhgoon[2] *[1]Joint Stock Company "NPP "Radar mms", Russian Federation,[2]National Research University Moscow Power Engineering Institute, Moscow, Russian Federation*	**P5B1-7 Nonlinear Lumped Modelling of Large-Scale CMUT TOBE Architectures** **Christopher Ceroici[1]**, Ryan Chee[1], Roger Zemp[1] *[1]Electrical & Computer Engineering, University of Alberta, Edmonton, Canada*			
Session P5B1. ***CMUT Modeling and Design*** *Chair:* **Michael Fink** *Friedrich-Alexander-Universität Erlangen-Nuremberg*	**P5B1-8 Signal-to-Noise-Ratio Optimization For a CMUT based Medical Ultrasound Imaging System** **Reza Pakdaman Zangabad[1]**, Ayhan Bozkurt[2], Göksenin Yaralıoğlu[3] *[1]Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands, [2]Electronics Engineering, Sabanci University, Istanbul, Turkey, [3]Electronics Engineering, Ozyegin University, Istanbul, Turkey*			

8:00 am - 9:30 am — Oral --- Saturday, October 24, 2015

	Session 2H. MBB: Beamforming V Chair: Herve Liebgott, CREATIS	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	**2H-1 High Frame Rate 3D Tissue Velocity Imaging Using Sub-Aperture Beam Forming** **Pedro Santos**[1,2], Lasse Lovstakken[2,3], Eigil Samset[2,4], Jan D'hooge[1,3] *[1]Department of Cardiovascular Sciences, KU Leuven, Leuven, Belgium, [2]GE Vingmed Ultrasound AS, Horten, Norway,[3]Department of Circulation and Medical Imaging, NTNU, Trondheim, Norway, [4]Center for Cardiological Innovation, Oslo, Norway*	**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** Ned Rouze[1], **Mark Palmeri**[1], Kathryn Nightingale[1] *[1]Biomedical Engineering, Duke University, Durham, North Carolina, USA*	**4H-1 Ultrasound-triggered and targeted gene delivery by using cationic microbubbles to enhance GDNF gene transfection in a rat Parkinson&[prime]s disease model** **Ching-Hsiang Fan**[1], Chien-Yu Ting[1], En-Ling Chang[1], Hao-Li Liu[2], Hong-Lin Chan[3], You-Yin Chen[4], Chih-Kuang Yeh[1] *[1]Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Taiwan, [2]Department of Electrical Engineering, Chang-Gung University, Taiwan [3]Department of Medical Science and Institute of Bioinformatics and Structural Biology, National Tsing Hua University, Taiwan,[4]Department of Biomedical Engineering, National Yang Ming University, Taiwan*	**5H-1 SAW synthesis with inverse filter and IDT Arrays for microfluidic and biological applications: one ring to rule them all** **Michaël Baudoin**[1], Antoine Riaud[1,2], Jean-Louis Thomas[2], Adrien Bussonière[1], Olivier Bou Matar[1] *[1]IEMN, University of Lille, EC Lille, CNRS, France, [2]INSP, CNRS, Paris, France*	**1H-1 Robust Sound Speed Estimation for Hepatic Steatosis Assessment** **Marion Imbault**[1], Alex Faccinetto[2], Bruno-Félix Osmanski[1], Mathias Fink[1], Jean-Luc Gennisson[1], Valérie Vilgrain[2], Mickaël Tanter[1] *[1]Institut Langevin, ESPCI ParisTech, PSL Research University, CNRS UMR 7587, INSERM U979, Paris, France, [2]Department of Radiology, Beaujon Hospital, Paris, France*	**8H-1 Perpetual-operation Frequency Response and Equivalent Circuit Modelling of Piezoelectric Ultrasonic Atomizer Devices** Xinyi Zhong[1], **Sang Lam**[1] *[1]Department of Electrical & Electronic Engineering, Xi'an Jiaotong-Liverpool University, Suzhou, Jiangsu Province, China, People's Republic of*
8:15 am	**2H-2 A 50 MHz Phased Array Beamformer Using a Novel 'One Sample per Pixel' Variable Sampling Technique** **Christopher Samson**[1], Jeff Leadbetter[1], Jeremy Brown[1] *[1]Biomedical Engineering, Dalhousie University, Halifax, Nova Scotia, Canada*	**3H-2 Quantitative poroelastic property imaging combining shear wave and strain elastography** **Maria Theodorou**[1,2], Jérémie Fromageau[1,2], Nandita deSouza[2,3], Jeffrey C. Bamber[1,2] *[1]Joint Department of Physics, Sutton, London, United Kingdom, [2]Cancer Research UK Cancer Imaging Centre, Sutton, London, United Kingdom,[3]Department of Diagnostic Radiology, Royal Marsden NHS Foundation Trust, Sutton, London, United Kingdom*	**4H-2 In situ Activation of Doxorubicin using Ultrasound-Triggered Release of Composite Droplets** **Marine Bezagu**[1,2], Stellios Arseniyadis[2], Olivier Couture[3], Fabrice Monti[1], Patrick Tabeling[1], Janine Cossy[2], Mickael Tanter[3], Jonathan Clarhaut[4,5], Sebastien Papot[4] *[1]MMN (ESPCI, CNRS, UPMC), Paris, France, [2]LCO (ESPCI, CNRS, UPMC), Paris, France, [3]Institut Langevin (ESPCI, CNRS, INSERM), Paris, France,[4]IC2MP (Université de Poitiers, CNRS), Poitiers, France,[5]CHU Poitiers, Poitiers, France*		**1H-2 Monitoring and Delivery of Transcranial Therapies Using Dual-mode Ultrasound Arrays** **Alyona Haritonova**[1], Dalong Liu[2], Emad Ebbini[2] *[1]Biomedical Engineering, University of Minnesota, Minneapolis, MN, USA,[2]Electrical and Computer Engineering, University of Minnesota, USA*	**8H-2 Sol-Gel Composite Materials for Continuous Monitoring at 550&[deg]C** **YUSUKE INADA**[1], Makiko Kobayashi[1], Hajime Nagata[2], Tadashi Takenaka[2] *[1]Kumamoto University, Japan, [2]Tokyo University of Science, Japan*

8:30 am	**2H-3 Busting the ghost in coherent plane-wave imaging** **Alfonso Rodriguez-Molares**[1], Lasse Lovstakken[1], Bastien Denarie[2], Hans Torp[1] *[1]Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway,[2]GE Healthcare, Norway*	**3H-3 3D Elastic Tensor Imaging (ETI): characterization of soft tissues elastic anisotropy** **Mafalda Correia**[1], Jean Provost[1], Clément Papadacci[1], Thomas Deffieux[1], Jean-Luc Gennisson[1], Mickaël Tanter[1], Mathieu Pernot[1] *[1]Institut Langevin, ESPCI ParisTech, CNRS UMR 7587, INSERM U979, Université Paris 7, Paris, France*	**4H-3 Red Blood Cells as Therapeutic Ultrasound Agents** **Johnny Chen**[1], Ali Dhanaliwala[1], Justin Farry[1], John Hossack[1,2], Alexander Klibanov[1,2] *[1]Department of Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA, [2]Robert M. Berne Cardiovascular Research Center, Charlottesville, Virginia, USA*	**5H-2 Ultrasound Image-based Absolute Concentration Measurement Technique for Materials with Low Scatterer Concentration** **John H. Lee**[1], Javier Jimenez[2], Xiang Zhang[1], Duane S. Boning[1], Brian W. Anthony[1] *[1]Massachusetts Institute of Technology, Cambridge, MA, USA,[2]Madrid-MIT M+Vision Consortium, Massachusetts Institute of Technology, Cambridge, MA, USA*	**1H-3 Automatic Mouse Embryo Brain Ventricle Segmentation, Gestation Stage Estimation, and Mutant Detection from 3D 40-MHz Ultrasound Data** **Jen-wei Kuo**[1], Yao Wang[1], Orlando Aristizabal[2,3], Daniel H. Turnbull[3], Jeffrey A. Ketterling[2], Jonathan Mamou[2] *[1]Electronics and Computer Engineering, Polytechnic School of Engineering, New York University, Brooklyn, USA, [2]F. L. Lizzi Center for Biomedical Engineering, Riverside Research, New York, USA, [3]Skirball Institute of Biomolecular Medicine, New York University School of Medicine, New York, USA*	**8H-3 Ultrasonic biopsy needle based on the class IV flextensional configuration** **Andrew Mathieson**[1], Andrew Tweedie[2], Andrew Feeney[1], Margaret Lucas[1] *[1]School of Engineering, University of Glasgow, United Kingdom, [2]Weidlinger Assoc. Ltd., Glasgow, United Kingdom*
8:45 am	**2H-4 Coded excitation for crosstalk suppression during multi-line transmit beamforming: a simulation study** **Ling Tong**[1,2], Alejandra Ortega[2], Jianwen Luo[1], Jan D'hooge[2] *[1]Department of Biomedical Engineering, Tsinghua University, Beijing, Beijing, China, People's Republic of,[2]Department of Cardiovascular Sciences, KU Leuven, Leuven, Belgium*	**3H-4 Vibro-Elastography: Absolute Elasticity from Motorized 3D Ultrasound Measurements of Harmonic Motion Vectors** **Jeffrey Abeysekera**[1], Robert Rohling[1,2], Septimiu Salcudean[2] *[1]Mechanical Engineering, University of British Columbia, Vancouver, British Columbia, Canada,[2]Electrical and Computer Engineering, University of British Columbia, Vancouver, British Columbia, Canada*	**4H-4 Combining the antiangiogenic drug Sorafenib with the antivascular action of microbubbles for the treatment of hepatocellular carcinoma** Niroo Sivapalan[1], Ben Leung[1], **David Goertz**[1,2] *[1]Sunnybrook Research Institute, Toronto, Ontario, Canada,[2]Medical Biophysics, University of Toronto, Canada*	**5H-3 Particle separation using bulk acoustic waves in a tilted angle microfluidic channel** Erin Dauson[1], **David Greve**[2], Kelvin Gregory[1], Irving Oppenheim[1], Gregory Healy[1] *[1]Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA, USA,[2]Department of Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, USA*	**1H-4 Use of B-splines in fast dynamic ultrasound RF simulations** **Sigurd Storve**[1], Hans Torp[1] *[1]Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway*	**8H-4 Development of Air–Coupled Low Frequency Ultrasonic Transducers and Arrays with PMN-32%PT Piezoelectric Crystals** **Rymantas Jonas Kazys**[1], Reimondas Sliteris[1], Justina Sestoke[1] *[1]Ultrasound Institute of Kaunas University of Technology, Lithuania*
9:00 am	**2H-5 Filtered Spatial Compounding (FSC) in Synthetic Transmit Aperture Imaging** **Ping Gong**[1], Michael C. Kolios[1], Yuan Xu[1] *[1]Biomedical Physics, Ryerson University, Toronto, Canada*	**3H-5 Three-Dimensional Shear Wave Imaging Based on Full-Field Optical-Sectioned Laser Speckle Contrast Imaging** **Pei-Yu Chao**[1], Pai-Chi Li[2] *[1]Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan, [2]Electrical Engineering, National Taiwan University, Taipei, Taipei, Taiwan, Taiwan*	**4H-5 Focused ultrasound facilitated adenoviral delivery for optogenetic stimulation** **Shutao Wang**[1], Amanda Buch[1], Camilo Acosta[1], Oluyemi Olumolade[1], Elisa Konofagou[1,2] *[1]Biomedical Engineering, Columbia University, New York, New York, USA,[2]Radiology, Columbia University, New York, New York, USA*	**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] *[1]Faculty of Life and Medical Sciences, Doshisha University, Japan, [2]Wave Electronics Research Center, Doshisha University, Japan,[3]Faculty of Science and Engineering, Doshisha University, Japan*	**1H-5 Evaluation of a Huffman Sequence Based Mismatched Filter for the Bandwidth Limited 3D USCT system** **Shreyank Gupta**[1,2], Michael Zapf[1], Herbert Kraub[2], Nicole V. Ruiter[1] *[1]Institute of Data Processing and Electronics, Karlsruhe Institute of Technology, Germany, [2]Electrical Engineering and Information Technology, University of Applied Sciences Darmstadt, Germany*	**8H-5 Red blood cell manipulation using ultrasound microbeam** **Kwok Ho Lam**[1], Ying Li[2], Qifa Zhou[2], Kirk K Shung[2] *[1]Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong, [2]NIH Transducer Resource Center and Department of Biomedical Engineering, University of Southern California, USA*
9:15 am	**2H-6 Improving lateral resolution in ultrasonic imaging by utilizing nulls in the beam pattern** Jonathan Reeg[1],**Michael L. Oelze**[1] *[1]Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, USA*	**3H-6 A High Frame-rate and Low-cost Elastography System by Generating Shear Waves through Continuous Vibration of the Ultrasound Transducer** **Daniel C. Mellema**[1], Pengfei Song[1], Armando Manduca[1], Matthew W. Urban[1], Randall R. Kinnick[1], James F. Greenleaf[1], Shigao Chen[1] *[1]Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, MN, USA*	**4H-6 Local and targeted delivery of a therapeutic monoclonal antibody in a colorectal cancer model: in-vivo proof of concept** Thomas Barré[1], Emilie Dalloneau[2], Thierry Lecomte[3,4], Valérie Gouilleux-Gruart5[3,5], Nathalie Heuzé-Vourc'h[2], **Ayache Bouakaz**[1] *[1]UMR Inserm U930, Université François-Rabelais, TOURS, France, [2]Inserm, Centre d'Etude des Pathologies Respiratoires, UMR 1100, Université François Rabelais, TOURS, France,[3]CNRS, GICC UMR 7292, Université François Rabelais, France, [4]Service Hépato-Gastro-Onco-Entérologie – CHRU, Tours, France, [5]CHRU de TOURS, laboratoire d'immunologie, TOURS, France*	**5H-5 Splitting Drops using Surface Acoustic Waves** Sean Collingon[1],**James Friend**[1] *[1]Department of Mechanical and Aerospace Engineering, University of California, San Diego, La Jolla, CA, USA*	**1H-6 Towards Sub-Nyquist Doppler Ultrasound Imaging Using Non-Uniformly Spaced Stream of Pulses** **Avinoam Bar-Zion**[1], Martino Alessandrini[2], Jan D'hooge[2], Dan Adam[1], Yonina Eldar[3] *[1]Department of Biomedical Engineering, Technion - Israel Institute of Technology, Haifa, Israel,[2]Cardiovascular Imaging & Dynamics, Department of Cardiovascular Sciences, KU Leuven, Leuven, Belgium,[3]Department of Electrical Engineering, Technion - Israel Institute of Technology, Haifa, Israel*	**8H-6 Design of High-Efficiency, Miniaturized Ultrasonic Receivers for Powering Medical Implants with Reconfigurable Power Levels** **Ting Chia Chang**[1], Marcus Weber[1], Jayant Charthad[1], Amin Nikoozadeh[1], Butrus T. Khuri-Yakub[1], Amin Arbabian[1] *[1]Electrical Engineering, Stanford University, Stanford, CA, USA*

10:30 am - 12:00 pm — Oral --- Saturday, October 24, 2015

	Session 2I. MIM: Advances in Vascular and Flow Imaging Chair: Lasse Løvstakken, NTNU	Session 3I. MEL: Towards Clinical Application of Elasticity Imaging Chair: Mark Palmeri, Duke University	Session 4I. MTH: Histotripsy, Shockwaves and Liquefaction Chair: Jean-Yves Chapelon, INSERM	Session 5I. MBE: Bioeffects and Dosimetry Chair: Jeff Ketterling, Riverside Research	Session 1I. MTC: Tissue Characterization Chair: Pascal Laugier, Université Pierre et Marie Curie	Session 8I. CMUTs and Signal Processing Chair: Jian Yuan, Philips Shanghai Apex
	VIP	**201ABC**	**201DE**	**103**	**201F**	**102**
10:30 am	**2I-1 Ultrafast vector flow imaging** **Damien Garcia**[1] [1]*University of Montreal, Canada*	**3I-1 Sonic Estimation of Elasticity via Resonance (SEER): Initial Results from a New Method of Assessing Hemostasis** **William Walker**[1], F. Scott Corey[2] [1]*HemoSonics, Charlottesville, Virginia, USA,* [2]*Key Technologies, Inc., Baltimore, Maryland, USA*	**4I-1 Histotripsy Cardiac Therapy for Non Invasive Chordal Cutting** **Olivier Villemain**[1], Wojciech Kwiecinski[1], Justine Robin[1], Bastien Arnal[1], Alain Bel[2], Mickael Tanter[1], Emmanuel Messas[2], Mathieu Pernot[1] [1]*Institut Langevin, France,* [2]*Hopital Européen Georges Pompidou, France*	**5I-1 Local cavitation induced vessel wall injury of artery and its potential application in animal model of atherosclerosis** **Yujin Zong**[1], Rongrong Wang[1], Xinru Zou[1], Lei Zhang[1], Yi Feng[1], Gang Liu[1], Mingxi Wan[1] [1]*The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Xi'an Jiaotong University, Xi'an, Shaanxi, People's Republic of China*	**1I-1 In vivo biopsy by photoacoustic based tissue characterization** **Xueding Wang**[1], Guan Xu[2], Zhuo-xian Meng[2], Jian-Die Lin[2], Cheri Deng[2], Paul Carson[2], Brian Fowlkes[2] [1]*Biomedical Engineering, University of Michigan, Ann Arbor, Michigan, USA,* [2]*University of Michigan, USA*	**8I-1 Phase Modulated Pulse Sequences for Nonlinear Imaging with CMUTs** **Sarp Satir**[1], Levent Degertekin[1] [1]*Georgia Institute of Technology, USA*
10:45 am		**3I-2 Myocardial stiffness assessment in children using Shear Wave Imaging: an in-vitro and in-silico study** **Annette Caenen**[1], Darya Shcherbakova[1], Clément Papadacci[2], Mathieu Pernot[2], Patrick Segers[1], Abigaïl Swillens[1] [1]*IBiTech-bioMMeda, Ghent University, Ghent, Belgium,* [2]*Institut Langevin, ESPCI ParisTech, Paris, France*	**4I-2 Non-invasive Thrombolysis using Histotripsy beyond the "Intrinsic" Threshold (Microtripsy)** Xi Zhang[1], Cabe Owens[2], Hitinder Gurm[3], Yu Ding[1], Charles Cain[1], **Zhen Xu**[1] [1]*Department of Biomedical Engineering, University of Michigan, Ann Arbor, Ann Arbor, USA,* [2]*Department of Pediatrics and Communicable Diseases, University of Michigan, Ann Arbor, Ann Arbor, USA,* [3]*Department of Internal Medicine, University of Michigan, Ann Arbor, Ann Arbor, USA*	**5I-2 Understanding the Biophysical Origin of Protrusive Blisters in Sonoporated Cells: Actin Network Disruption and Membrane Blebbing** Ruen Shan Leow[1], Jennifer M. F. Wan[2], **Alfred C. H. Yu**[1] [1]*Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong,* [2]*School of Biological Sciences, University of Hong Kong, Pokfulam, Hong Kong*	**1I-2 In-Plane Anisotropy Method for the Characterization of the Elastic Properties of Anisotropic Materials** **Sara Aristizabal**[1], Ivan Z. Nenadic[1], Bo Qiang[1], Carolina Amador[1], James F. Greenleaf[1], Matthew W. Urban[1] [1]*Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, MN, USA*	**8I-2 Second-Harmonic Reduction in CMUTs Using Unipolar Pulsers** **Alessandro Stuart Savoia**[1], Giuseppe Scaglione[1], Marco Sautto[2], Andrea Mazzanti[2], Fabio Quaglia[3], Giosuè Caliano[1] [1]*Dipartimento di Ingegneria, Università degli Studi Roma Tre, Roma, Italy,* [2]*Dipartimento di Ingegneria Industriale e dell'Informazione, Università degli Studi di Pavia, Pavia, Italy,* [3]*STMicroelectronics, Cornaredo, Italy*
11:00 am	**2I-2 In-vivo Ultrafast Doppler Volumetric Imaging using Undersampled 2D Array** **Martin Flesch**[1,2], Thomas Deffieux[1], Jean Provost[1], Guillaume Ferin[2], An Nguyen-Dinh[2], Mathieu Pernot[1], Mickael Tanter[1] [1]*Institut Langevin, ESPCI ParisTech, PSL Reaserch University, CNRS UMR7587, INSERM U979, Paris VII, Paris, France,* [2]*Vermon, Tours, France*	**3I-3 3-D ultrasound elastography of the breast: first steps towards ABVS implementation** **Gijs A.G.M. Hendriks**[1], Branislav Holländer[1], Jan J.M. Menssen[1], Hendrik H.G. Hansen[1], Chris L. de Korte[1] [1]*Medical UltraSound Imaging Center (MUSIC), Department of Radiology and Nuclear Medicine, Radboud university medical center, Nijmegen, Netherlands*	**4I-3 Transcranial aberration correction using histotripsy pulse backscatter from the bubble clouds they create** Jonathan Sukovich[1], Timothy Hall[1], Zhen Xu[1], **Charles Cain**[1] [1]*Biomedical Engineering, University of Michigan, Ann Arbor, MI, USA*	**5I-3 Drug Delivery Is Promoted by Low-Intensity Ultrasound Due to an Increase in Clathrin-Mediated Endocytosis.** Sophie Tardoski[1], Evelyne Gineyts[2], Jacqueline Ngo[1], Anthony Kocot[1], Philippe Clézardin[2], **David Melodelima**[1] [1]*INSERM UMR 1032, France,* [2]*INSERM UMR 1033, France*	**1I-3 Measurements of the Shear wave Velocity and Attenuation of the Pancreas in Volunteers** **Ivan Nenadic**[1], Benjamin Wood[1], Carolina Amador Carrascal[1], James Greenleaf[1], Matthew Urban[1] [1]*Mayo Clinic, USA*	**8I-3 Revised amplitude modulation for contrast-enhanced ultrasound imaging with a cMUT array.** **Damien Fouan**[1,2], Ayache Bouakaz[1,2] [1]*Inserm U930, Imagerie et Cerveau, Tours, France,* [2]*Université François Rabelais de Tours, France*

11:15 am	**2I-3 Super-Resolution Velocity Estimation in Microvessels using Multiple Hypothesis Tracking** **Dimitri Ackermann**[1], Georg Schmitz[1] [1]*Chair for Medical Engineering, Ruhr-Universität Bochum, Bochum, Germany*	**3I-4 In vivo liver shear wave motion detection and shear wave speed comparison between fundamental and harmonic imaging** **Carolina Amador**[1], Pengfei Song[1], Duane Meixner[2], Shigao Chen[1], Matthew Urban[1] [1]*Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, Minnesota, USA,*[2]*Department of Radiology, Mayo Clinic College of Medicine, Rochester, Minnesota, USA*	**4I-4 Transcranial Histotripsy Therapy to Treat Hemorrhagic Stroke** Jonathan Sukovich[1], Yohan Kim[1], Aditya Pandey[2], Timothy Hall[1], Charles Cain[1], **Zhen Xu**[1] [1]*Biomedical Engineering, University of Michigan, Ann Arbor, MI, USA,*[2]*Neurological Surgery, University of Michigan, Ann Arbor, MI, USA*	**5I-4 Silicon Horn Transducer Based Ultrasonically Enhanced Nerve Firing** **Tiffany St. Bernard**[1], Po-Cheng Chen[2], Jason Hoople[2], Bruce Johnson[3], Amit Lal[2] [1]*Biomedical Engineering, Cornell University, Ithaca, NY, USA,* [2]*Electrical and Computer Engineering, Cornell University, Ithaca, NY, USA,*[3]*Neurobiology and Behavior, Cornell University, Ithaca, NY, USA*	**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** **Ivan Nenadic**[1], Matthew Urban[1], William Sanchez[1], James Greenleaf[1], Shigao Chen[1] [1]*Mayo Clinic, USA*	**8I-4 Feasibility of Interlaced Multi-Band CMUTs for Photoacoustic Imaging** **Ryan Chee**[1], Roger Zemp[1] [1]*University of Alberta, Canada*
11:30 am	**2I-4 Cerebral monitoring of neuroprotective ultrafast cooling post cardiac arrest via multiparametric ultrafast ultrasound Imaging** Charlie Demené[1],**David Maresca**[1], Matthias Kohlhauer[2], Fanny Lidouren[2], Bijan Ghaleh[2], Renaud Tissier[2], Mathieu Pernot[1], Mickaël Tanter[1] [1]*Institut Langevin, ESPCI ParisTech, CNRS UMR7587, Inserm U979, Paris, France,* [2]*Inserm U955 Equipe 03, Université Paris Est Créteil et Ecole Nationale Vétérinaire d'Alfort, Maison Alfort, France*	**3I-5 Validation of Electromechanical Wave Imaging in canine left ventricles against electrography** **Julien Grondin**[1], Alexandre Costet[1], Ethan Bunting[1], Alok Gambhir[2], Elaine Wan[2], Elisa E Konofagou[1,3] [1]*Department of Biomedical Engineering, Columbia University, New York, NY, USA,*[2]*Department of Medicine, Columbia University, New York, NY, USA,*[3]*Department of Radiology, Columbia University, New York, NY, USA*	**4I-5 Rapid HIFU-aided liquefaction for fine-needle aspiration of large extravascular hematomas: feasibility study** **Tatiana Khokhlova**[1], Wayne Monsky[2], Yasser Haider[3], Yak-Nam Wang[4], Thomas Matula[4] [1]*Medicine, University of Washington, Seattle, WA, USA,* [2]*Radiology, University of Washington, Seattle, WA, USA,* [3]*Urology, University of Washington, Seattle, WA, USA,* [4]*Applied Physics Lab, University of Washington, Seattle, WA, USA*	**5I-5 Quantitative Measurement of Pulsed Ultrasound Pressure Field Using Optical Phase Contrast** **Seiji Oyama**[1], Mohd Syahid[1], Jun Yasuda[1], Shin Yoshizawa[1], Shin-ichiro Umemura[2] [1]*Communication Engineering, Tohoku University, Sendai, Japan,* [2]*Biomedical Engineering, Tohoku University, Sendai, Japan*	**1I-5 Ultrasonic guided waves to predict fracture risk in post-menopausal women: Clinical findings** **Jean-Gabriel Minonzio**[1], Quentin Vallet[1], Nicolas Bochud[1], Adrien Etcheto[2], Sami Kolta[2], Christian Roux[2], Pascal laugier[1] [1]*Laboratoire d'Imagerie Biomedicale, Sorbonne Universites, UPMC Univ Paris 06, INSERM, CNRS, Paris, France,*[2]*Service de Rhumatologie Centre d'Evaluation des Maladies Osseuses Hopital Cochin, Paris, France*	**8I-5 Multi-frequency imaging with collapse-mode CMUT** **Martin Pekar**[1,2], Wendy Dittmer[1], Nenad Mihajlovic[1] [1]*In-Body Systems, Philips Research, Eindhoven, Netherlands,* [2]*Department of Biomedical Engineering, Thorax Center, Erasmus MC, Rotterdam, Netherlands*
11:45 am	**2I-5 Cardiac Motion Estimation based on Transverse Oscillation and Ultrafast Circular Wave Imaging** **Philippe JOOS**[1], Sebastien Salles[1], Didier Vray[1], Barbara Nicolas[1], Hervé Liebgott[1] [1]*CREATIS, Villeurbanne, Rhône, France*	**3I-6 Viscoelastic Response (VisR) Assessment of Longitudinal Dystrophic Degeneration in Clinical Duchenne Muscular Dystrophy** **Christopher Moore**[1], Mallory Selzo[2], Melissa Caughey[3], James Howard, Jr[4], Caterina Gallippi[1,2] [1]*Department of Electrical and Computer Engineering, North Carolina State University, Chapel-Hill, NC, USA,*[2]*Joint Department of Biomedical Engineering, University of North Carolina and North Carolina State University, Chapel Hill, NC, USA,*[3]*Department of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA,*[4]*Department of Neurology, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA*	**4I-6 Preclinical evaluation of an MR-guided thermal HIFU ablation strategy using shockwaves and millisecond boiling in an in-vivo porcine liver model** **Pascal Ramaekers**[1], Martijn de Greef[1], Johanna van Breugel[1], Chrit Moonen[1], Mario Ries[1] [1]*Imaging Division, UMC Utrecht, Utrecht, Netherlands*	**5I-6 Rapid spatial mapping of the acoustic pressure in high intensity focused ultrasound fields at clinical intensities using a novel planar Fabry-Peròt interferometer** **Elly Martin**[1], Edward Zhang[1], Paul Beard[1], Bradley Treeby[1] [1]*Medical Physics and Biomedical Engineering, University College London, London, United Kingdom*	**1I-6 Estimation of bone quality on scoliotic subjects using ultrasound reflection imaging method – a preliminary study** **Rui Zheng**[1], Lawrence H Le[2], Doug Hill[1,3], Edmond Lou[1,3] [1]*Department of Surgery, University of Alberta, Edmonton, Alberta, Canada,* [2]*Department of Radiology and Diagnostic Imaging, University of Alberta, Canada,* [3]*Glenrose Rehabilitation Hospital, Alberta Health Services, Canada*	**8I-6 Practical S-Sequence Aperture Coding Schemes for Volumetric Imaging with Top Orthogonal to Bottom Electrode (TOBE) Arrays** **Roger Zemp**[1], Tyler Harrison[1] [1]*Electrical & Computer Engineering, University of Alberta, Edmonton, Alberta, Canada*

1:00 pm - 2:30 pm — Oral --- Saturday, October 24, 2015

	Session 2J. MPA: Photoacoustic Imaging and Reconstruction Chair: Michael Kolios, Ryerson University	Session 3J. MTC: Cardiovascular Tissue Characterization Chair: James G. Miller, Washington University	Session 4J. MTH: Taming Cancer, Tumors, and Bacteria Chair: Tom Matula, University of Washington	Session 5J. Sensors and Sensing Chair: James Friend, University of California, San Diego	Session 1J. MBF: 3D Imaging and Flow Simulations Chair: Alfred C. H. Yu, University of Hong Kong	Session 8J. Materials Fabrication and Characterization Chair: Wei Ren, Xi'an Jiaotong University
	VIP	**201ABC**	**201DE**	**103**	**201F**	**102**
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[1] *[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 Papadacci**[1], Jean Provost[1], Olivier Villemain[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 Chen[2], Jeremy Vincenot[1], David Perol[2], Jean-Yves Chapelon[1], Michel Rivoire[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**[1] *[1]Ryerson University, Canada*	**1J-1 Patient-specific flow simulation of the left ventricle from 4D echocardiography – feasibility and robustness evaluation** **David Larsson**[1], Jeannette H Spühler[2], Tim Nordenfur[1], Johan Hoffman[2], Massimiliano Colarieti-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 Visualization, 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 optoacoustic and pulse echo imaging by elaborating a weigthed synthetic aperture technique** **Mohammad Azizian Kalkhoran**[1], François Varray[1], Didier VRAY[1] *[1]Université de Lyon, CREATIS ; CNRS UMR5220 ; Inserm U1044 ; INSA-Lyon ; Université Lyon 1, France., 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[1], 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, Skåne University Hospital, Sweden*	**4J-2 Coincident light/ultrasound therapy to treat bacterial biofilms** **Mark Schafer**[1], Tessie McNeely[1] *[1]PhotoSonix Medical, Inc., Ambler, Pennsylvania, USA*	**5J-2 Multiparametric Ultrasonic Monitoring of Composition and Physical Properties of Liquids** **Aba Priev**[1], Slava Boktov[2], Lev Ostrovsky[3] *[1]Biochemistry and Molecular Biology, Hebrew University, Jerusalem, Israel,[2]NDT Ultrasonics Ltd., Jerusalem, Israel, [3]Zel Technologies, University of Colorado, Bouder, Colorado, USA*	**1J-2 Three-dimensional intra-cardiac flow estimation using multi–planar echo particle image velocimetry: A feasibility study** **Hang Gao**[1], Qiong He[2], Jianwen Luo[2], Jan D'hooge[1] *[1]Lab. on Cardiovascular Imaging & Dynamics, Dept. of Cardiovascular Sciences, KU Leuven, Belgium, [2]Center for Bio-Medical Imaging Research, Dept. of Biomedical Engineering, Tsinghua University, China, People's Republic of*	
1:30 pm	**2J-3 Differential phase photoacoustic imaging for high-resolution position sensing** **Sophinese Iskander-Rizk**[1], Pieter Kruizinga[1], Antonius FW Van der Steen[1,2], Gijs 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], Ronny Li[2], Cesare Russo[3], Elisa Konofagou[2,4] *[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], Amit 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], Ingvild Kinn Ekroll[2,3], Lasse Løvstakken[2], Jan Vierendeels[4], Patrick Segers[1], Abigail Swillens[1] *[1]IBiTech - bioMMeda, Ghent University, iMinds Medical IT, Gent, Belgium, [2]Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway, [3]St Olav's University Hospital, Trondheim, Norway, [4]Department of Flow, heat and combustion mechanics, Ghent University, Gent, Belgium*	**8J-2 Functional Characterization of Piezocrystals Monitored under High Power Driving Conditions** **Xiaochun Liao**[1,2], Tingyi Jiang[1], Muhammad Sadiq[2], Zhihong Huang[1], Sandy Cochran[2] *[1]School of Engineering, Physics and Mathematics, University of Dundee, Dundee, Scotland, United Kingdom, [2]Institute for Medical Science and Technology (IMSaT), University of Dundee, Dundee, Scotland, United Kingdom*

1:45 pm	**2J-4 Photoacoustic properties of plasmonic-nanoparticle coated microbubbles** **Adam Dixon**[1], Song Hu[1], Alexander Klibanov[1], John Hossack[1] *[1]Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA*	**3J-4 Imaging the Ultrasonic Coefficient of Nonlinearity** **Ruud van Sloun**[1], Libertario Demi[1], Caifeng Shan[2], Massimo Mischi[1] *[1]Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands, [2]Philips Research, Netherlands*	**4J-4 Achieving a durable response by combining chemotherapy with focused ultrasound in mouse models of cancer** **Andrew Wong**[1], Azadeh Kheirolomoom[1], Yu Liu[1], Josquin Foiret[1], Brett Fite[1], Elizabeth Ingham[1], Katherine Ferrara[1] *[1]Biomedical Engineering, UC Davis, Davis, CA, USA*	**5J-4 Design and Performance of an Active Acoustic Back Cover Based on Piezoelectric Elements** **Nicola Lamberti**[1], Monica La Mura[1], Giosuè Caliano[2], Alessandro Stuart Savoia[2] *[1]DIIn, University of Salerno, Fisciano, Italy, [2]Dept. of Engineering, University Roma Tre, Rome, Italy*	**1J-4 Reconstruction of 3D vector flow fields from sparse measurements using B-spline regularization** Solveig Fadnes[1], Alberto Gomez[2], Morten S Wigen[1], Jakob Høgenes[1], Joris van Cauwenberge[3], Patrick Segers[3], Abigail Swillens[3], **Lasse Lovstakken**[1] *[1]Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, TRONDHEIM, Norway,[2]Department of Biomedical Engineering, King's College London, United Kingdom, [3]Ghent University, Belgium*	**8J-3 Characterization of Elastic Properties of $Ca_3TaGa_3Si_2O_{14}$ at High Temperatures by Antenna Transmission Acoustic Resonance** **Hongfei Zu**[1], Huiyan Wu[1], Quanming Lin[2], Yanqing Zheng[2], Qing-Ming Wang[1] *[1]University of Pittsburgh, USA, [2]Shanghai Institute of Ceramics, China, People's Republic of*
2:00 pm	**2J-5 Ratiometric Photoacoustic Imaging of Acidic pH** **Richard Bouchard**[1], Samit Guha[2], Trevor Mitcham[1], Gillian Shaw[2], Bradley Smith[2] *[1]Imaging Physics, University of Texas MD Anderson Cancer Center, USA,[2]Department of Chemistry and Biochemistry, University of Notre Dame, USA*	**3J-5 Determining carotid plaque vulnerability using the average phase derivative of ultrasound radio frequency data – first ex vivo and in vivo results** **Tobias Erlöv**[1], Isabel Goncalves[2,3], Andreas Edsfeldt[2], Simon Segstedt[1], Nuno Dias[4], Jan Nilsson[2], Magnus Cinthio[1] *[1]Department of Biomedical Engineering, Faculty of Engineering LTH, Lund University, Sweden, [2]Department of Clinical Sciences Malmö, Lund University, Sweden,[3]Department of Cardiology, Skåne University Hospital, Sweden, [4]Vascular Center, Skåne University Hospital, Sweden*	**4J-5 Low-Intensity Ultrasound Promotes Antitumoral Effect of Bisphosphonates in Breast Cancer Xenografts and Bone Metastasis** Sophie Tardoski[1], Jacqueline Ngo[2], Evelyne Gineyts[3], Jean-Paul Roux[3], Philippe Clézardin[3],**David Melodelima**[2] *[1]INSERM UMR 1032, Lyon, France,[2]INSERM UMR 1032, France, [3]INSERM UMR 1033, France*	**5J-5 Experimental evaluation of ultrasonic oscillating temperature sensors (UOTS) under cyclically changing temperatures** **Anas Hashmi**[1], Alexander Kalashnikov[1], Roger Light[1] *[1]Department of Electrical and Electronic Engineering, The University of Nottingham, United Kingdom*	**1J-5 *In vivo* 3-D Vector Flow Estimation with Continuous Data** **Simon Holbek**[1], Michael Johannes Pihl[1], Caroline Ewertsen[2], Michael Bachmann Nielsen[2], Jørgen Arendt Jensen[1] *[1]Department of Electrical Engineering, Technical University of Denmark, Lyngby, Denmark, [2]Department of Radiology, Copenhagen University Hospital, Copenhagen, Denmark*	**8J-4 Characterization of lead-free alkali niobate piezoceramics by the Inverse Method** **Kenji Ogo**[1], Manuel Weiß[2], Stefan Rupitsch[2], Reinhard Lerch[2], Ken-ichi Kakimoto[1] *[1]Department of Materials science and Engineering, Nagoya Institute of Technology, Nagoya, Japan, [2]Chair of Sensor Technology, Friedrich-Alexander University Erlangen-Nürnberg, Erlangen, Germany*
2:15 pm	**2J-6 Broadband detection of dynamic acoustic emission process induced by 6 MV therapeutic X-ray beam from a clinical linear accelerator** **Xianfen Diao**[1], Jing Zhu[1], Weihao Li[2], Nan Deng[1], Chien Ting Chin[1], Xinyu Zhang[1], Xin Chen[1], Xianming Li[2], Yu Kuang[3] *[1]Shenzhen University, China, People's Republic of, [2]Shenzhen People¡¯s Hospital, China, People's Republic of, [3]Dept. of Medical Physics, University of Nevada, Las Vegas, Las Vegas, USA*	**3J-6 Diffraction independent estimation of the ultrasound attenuation coefficient** **Natalia Ilyina**[1,2], Jeroen Hermans[3], Emiliano D'Agostino[3], Koen Van Den Abeele[4], Jan D'hooge[1] *[1]Dept. of Cardiovascular Sciences, KU Leuven, Belgium, [2]Belgian Nuclear Research Centre, SCK•CEN, Belgium, [3]DoseVue NV, Belgium, [4]Dept. Of Physics, KU Leuven Kulak, Belgium*	**4J-6 Thermal Ablation of a Confluent Lesion in the Porcine Kidney with Magnetic Resonance guided High Intensity Focused Ultrasound** **Johanna MM van Breugel**[1], Martijn de Greef[1], Joost W Wijlemans[2], Gerald Schubert[3], Chrit TW Moonen[1], Maurice AAJ van den Bosch[1], Mario G Ries[1] *[1]Center for Image Sciences, University Medical Center Utrehct, Utrecht, Netherlands,[2]University Medical Center Utrehct, Utrecht, Netherlands,[3]Philips Healthcare, Netherlands*	**5J-6 Smart Autonomous wireless acoustic sensors for aeronautical SHM applications** **Guillaume Ferin**[1], Yuvashankar Muralidharan[1], Naoufal Mesbah[1], Claire Bantignies[1], Hung Le Khanh[1], Pascal Chatain[1], Etienne Flesch[1], An Nguyen-Dinh[1] *[1]Advanced Research Dpt., VERMON, France*	**1J-6 Improved quality of freehand 3-D ultrasound color flow imaging by multi-angle compounding** **Daniel Høyer Iversen**[1,2], Frank Lindseth[3,4], Geirmund Unsgaard[5], Hans Torp[1], Lasse Lovstakken[1] *[1]Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway,[2]St.Olavs University Hospital, Trondheim, Norway, [3]Department of Computer and Information Science, Norwegian University of Science and Technology, Trondheim, Norway, [4]Department of Medical Technology, Sintef, Trondheim, Norway, [5]Department of Neurosurgery, St.Olavs University Hospital, Trondheim, Norway*	**8J-5 Development of PZT-Based Single Crystals as High-T and High-Performance Piezoelectric Materials** **Zuo-Guang Ye**[1,2], Bixia Wang[1], Yujuan Xie[1], Xiaoqing Wu[2], Wei Ren[2] *[1]Simon Fraser University, Burnaby, BC, Canada, [2]Xi'an Jiaotong University, China, People's Republic of*

3:30 pm - 5:00 pm — Oral --- Saturday, October 24, 2015

	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
	Chair: **Matthew O'Donnell** *University of Washington*	*Chair:* **Emad Ebbini** *Univ. of Minnesota*	*Chair:* **Massimo Mischi** *Eindhoven University of Technology*	*Chair:* **Walter Arnold** *Saarland University*	*Chair:* **Alfred C. H. Yu** *University of Hong Kong*	*Chair:* **Xiaoning Jiang** *North Carolina State University*
	VIP	**201ABC**	**201DE**	**103**	**201F**	**102**
3:30 pm	**2K-1 High Speed Imaging and Measurement of Laryngeal Vibration during Phonation Using Ultrafast Ultrasonography: a Preliminary Study** **Bowen Jing**[1], Shanshan Tang[1], Liang Wu[1], Supin Wang[1], Mingxi Wan[1] *[1]The 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*	**3K-1 The effect of tissue anisotropy on ultrasound strain imaging (USI): a preliminary study** **He Li**[1], Wei-Ning Lee[1] *[1]The University of Hong Kong, Hong Kong*	**4K-1 Fractal dimension of tumor microvasculature by dynamic contrast-enhanced ultrasound** **Massimo Mischi**[1], Carola Heneweer[2], Julian von Broich-Oppert[2], Tamerlan Saidov[1], Hessel Wijkstra[1,3] *[1]Eindhoven University of Technology, Netherlands, [2]University Hospital Schleswig-Holstein, Germany, [3]Academic Medical Center University of Amsterdam, Netherlands*	**5K-1 Effect of transducer port cavities in invasive ultrasonic transit-time gas flow meters** **Maik Hoffmann**[1], Alexander Unger[2], Axel Jäger[2], Mario Kupnik[2] *[1]BTU Cottbus-Senftenberg, Germany, [2]Technische Universität Darmstadt, Germany*	**1K-1 Real-time ophthalmic imaging with a hand-held, 20-MHz annular array** **Jeffrey A. Ketterling**[1], Daniel Gross[1], Ronald H. Silverman[1,2] *[1]Lizzi Center for Biomedical Engineering, Riverside Research, New York, NY, USA, [2]Department of Ophthalmology, Columbia University Medical Center, New York, NY, USA*	**8K-1 Cost-effective linear arrays for medical imaging fabricated using PZT thick film technology** Louise M. Borregaard[1], **Tomasz Zawada**[1], Michele Guizzetti[1], Ruichao Xu[1], Erling Ringgaard[1], Jan P. Bagge[2], Lars N. Moesner[2] *[1]Meggitt Sensing Systems, Kvistgaard, Denmark, [2]BK Medical, Herlev, Denmark*
3:45 pm	**2K-2 High spatial-resolution cavitation imaging of laser-triggered PFP droplets** **Jaesok Yu**[1,2], Nguyen Man[1], Kang Kim[1,2] *[1]Center for Ultrasound Molecular Imaging and Therapeutics, University of Pittsburgh School of Medicine and University of Pittsburgh Medical Center, Pittsburgh, PA, USA, [2]Department of Bioengineering, University of Pittsburgh School of Engineering, Pittsburgh, PA, USA*	**3K-2 Speckle Bias as a 3D Stationary Offset of the Tracking Location for Shear Wave Imaging** **Peter Hollender**[1], Gregg Trahey[1,2] *[1]Biomedical Engineering, Duke University, Durham, North Carolina, USA, [2]Radiology, Duke University Medical Center, Durham, North Carolina, USA*	**4K-2 Estimation of Local Perfusion Parameters from Non-uniform Contrast-Enhanced Ultrasound Temporal Samples** **Avinoam Bar-Zion**[1], Melissa Yin[2], Elizabeth Kuczynski[3,4], Robert S. Kerbel[3,4], Dan Adam[1], F. Stuart Foster[2,4] *[1]Department of Biomedical Engineering, Technion - Israel Institute of Technology, Haifa, Israel, [2]Physical Sciences, Sunnybrook Research Institute, Toronto, Ontario, Canada, [3]Biological Sciences, Sunnybrook Research Institute, Toronto, Ontario, Canada, [4]Department of Medical Biophysics, University of Toronto, Toronto, Ontario, Canada*	**5K-2 Embedded System for In-line Ultrasound Velocity Profile Detection** **Stefano Ricci**[1], Valentino Meacci[1], Beat Birkhofer[2], Johan Wiklund[3] *[1]Information Engineering Dept., Università di Firenze, Florence, Italy, [2]Sika Services AG, Zurich, Switzerland, [3]SP Technical Research Institute of Sweden, Gothenburg, Sweden*	**1K-2 Ultrahigh Frame Rate High-Frequency Array Imaging System for Time-Resolved Monitoring of Cardiac Dynamics in Spontaneous Hypertensive Rats** **Billy Y. S. Yiu**[1], Aung Moe Zaw[2], Erwan Filoux[3], Adrian J. Y. Chee[1], Leo T. O. Lee[2], Alfred C. H. Yu[1] *[1]Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong, [2]School of Biological Sciences, University of Hong Kong, Pokfulam, Hong Kong, [3]Vermon SA, Tours, France*	**8K-2 Heartbeat Interval Monitoring by PZT/PZT Flexible Piezoelectric Film Sensor** **Makiko Kobayashi**[1], Takahiko Ikari[1], Shugo Kurose[1], Tomohiko Igasaki[1] *[1]Kumamoto University, Japan*

4:00 pm	**2K-3 *In vivo* magnetomotive ultrasound imaging of rat lymph nodes – a pilot study** **Maria Evertsson**[1], Magnus Cinthio[1], Pontus Kjellman[2,3], Sarah Fredriksson[2], Roger Andersson[1], Hanna Toftevall[2], Hans W Persson[1], Tomas Jansson[4,5] *[1]Biomedical Engineering, Faculty of Engineering, LTH, Lund University, Lund, Sweden, [2]Genovis AB, Sweden, [3]Medical Radiation Physics, Clinical Sciences Lund, Lund University, Lund, Sweden, [4]5Biomedical Engineering, Clinical Sciences Lund, Lund University, Lund, Sweden, [5]Medical Services, Skåne University Hospital, Lund, Sweden*	**3K-3 Towards Low-push ARFI imaging: Overcoming limitations in Displacement SNR with a Bayesian Estimator** **Douglas Dumont**[1], Brett Byram[1] *[1]Biomedical Engineering, Vanderbilt University, Nashville, TN, USA*	**4K-3 Ultrasound Microbubble Capture Using Bioorthogonal Coupling: An In Vivo Validation** Melissa Yin[1], Aimen Zlitni[2], Judy Yan[1], John Valliant[2], **F. Stuart Foster**[1,3] *[1]Sunnybrook Research Institute, Toronto, Ontario, Canada,[2]Chemistry and Chemical Biology, McMaster University, Hamilton, Ontario, Canada, [3]Medical Biophysics, University of Toronto, Toronto, Ontario, Canada*	**5K-3 In-Situ Monitoring of Particle Velocities and Solids Concentration Variations in wet Low-Intensity Magnetic Separators** **Johan E. Carlson**[1], Jan F. Stener[1], Anders Sand[1], Bertil I. Pålsson[1] *[1]Lulea University of Technology, Lulea, Sweden*	**1K-3 Very high frequency ultrasound beamformer for biomedical applications and non-destructive testing** Christoph Risser[1], Hans Joachim Welsch[1], Heinrich Fonfara[1],**Holger Hewener**[1], Steffen Weber[1], Steffen Tretbar[1] *[1]Ultrasound, Fraunhofer IBMT, Sankt Ingbert, Germany*	**8K-3 An ultrasonically assisted sagittal saw for large bone surgeries** **Daniel Richards**[1], Andrew Mathieson[1], Margaret Lucas[1] *[1]School of Engineering, University of Glasgow, United Kingdom*
4:15 pm	**2K-4 Ultrafast Pulsed Magnetomotive Ultrasound Imaging of Sentinel Lymph Nodes: Small Animal Study** **Yu-Chun Huang**[1], Jieh-Yuan Houng[1], Yi-Da Kang[2], San-Yuan Chen[2], Meng-Lin Li[1,3] *[1]Dept. of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan,[2]Dept. of Materials Science and Engineering, National Chiao Tung University, Taiwan, [3]Institute of Photonics Technologies, National Tsing Hua University, Taiwan*	**3K-4 Spatial Resolution in Passive Elastography** **Ali Zorgani**[1], Rémi Souchon[1], Stefan Catheline[1] *[1]LabTau, UMR1032 INSERM, Lyon, France*	**4K-4 Contrast-Enhanced Ultrasound Imaging with High CTR and Improved Resolution by Bubble-Echo based Deconvolution** **Hong Hu**[1], Runna Liu[1], Diya Wang[1], Hui Zhong[1], Supin Wang[1], Mingxi Wan[1] *[1]The 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*	**5K-4 Modular Research Platform for Adaptive Flow Mapping in Liquid Metals** **Richard Nauber**[1], Hannes Beyer[1], Kevin Maeder[1], Arne Klass[1], Norman Thieme[1], Lars Buettner[1], Juergen Czarske[1] *[1]MST, TU Dresden, Dresden, Saxony, Germany*	**1K-4 An All-Digital Transmit-Beamforming ASIC for High-Frequency and Portable Ultrasound Imaging Systems** **Duo Sheng**[1], Chih-Chung Huang[2], Zong-Ru Yang[1], Yi-Shang Wang[1] *[1]Department of Electrical Engineering, Fu Jen Catholic University, New Taipei City, Taiwan,[2]Department of Biomedical Engineering, National Cheng Kung University, Tainan City, Taiwan*	**8K-4 Arbitrary Waveform Generation based on Phase and Amplitude Synthesis for Switched Mode Excitation of Ultrasound Imaging Arrays** **David Cowell**[1], Sevan Harput[1], Steven Freear[1] *[1]School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom*
4:30 pm	**2K-5 Sonographic Detection of Magnetic Nanoparticles in Weak Echogenic Tissue** **Michael Fink**[1], Helmut Ermert[1], Moritz Nüßlein[1], Stefan Lyer[2], Christoph Alexiou[2] *[1]Chair of Sensor Technology, Friedrich-Alexander-University Erlangen-Nuremberg, Germany, [2]Section for Experimental Oncology and Nanomedicine (SEON), University Hospital Erlangen, Germany*	**3K-5 System dependent sources of error in time-of-flight shear wave speed measurements** **Yufeng Deng**[1], Ned Rouze[1], Mark Palmeri[1], Kathryn Nightingale[1] *[1]Duke University, Durham, North Carolina, USA*	**4K-5 *In Vivo* Transcranial Imaging of Blood Perfusion in Rat Brain Using Contrast-enhanced Ultrasound** **JUAN DU**[1], Dalong Liu[1], Emad Ebbini[1] *[1]Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, USA*	**5K-5 Ultrasound flow mapping for the investigation of crystal growth** **Norman Thieme**[1], Richard Nauber[1], Hannes Beyer[1], Hannes Radner[1], Lars Büttner[1], Paul Bönisch[2], Kaspars Dadzis[2], Lamine Sylla[2], Dagmar Meier[3], Olf Pätzold[3], Jürgen Czarske[1] *[1]Laboratory for Measurement and Sensor System Techniques, Dresden University of Technology, Dresden, Germany, [2]SolarWorld Innovations GmbH, Freiberg, Germany,[3]Institut für Nichteisen-Metallurgie und Reinststoffe, Technische Universität Bergakademie, Freiberg, Germany*	**1K-5 Distortion Reduction for a Dental HFUS Microscanning Device** **Thorsten Vollborn**[1], Christoph Schorn[1], Daniel Habor[1], Fabrice Chuembou Pekam[1], Klaus Radermacher[1] *[1]Chair of Medical Engineering, RWTH Aachen, Germany*	**8K-5 A Discrete Source Model for Simulating Bowl-Shaped Focused Ultrasound Transducers on Regular Grids: Design and Experimental Validation** **Yan To Ling**[1], Elly Martin[1], Bradley Treeby[1] *[1]Medical Physics and Biomedical Engineering, University College London, London, United Kingdom*
4:45 pm	**2K-6 Non-Contact Thermoacoustic Imaging of Tissue with Airborne Ultrasound Detection** **Kevin C. Boyle**[1], Hao Nan[1], Nikhil Apte[2,3], Miaad S. Aliroteh[1], Anshuman Bhuyan[1], Amin Nikoozadeh[1,2], Butrus T. Khuri-Yakub[1,2], Amin Arbabian[1] *[1]Electrical Engineering, Stanford University, Stanford, CA, USA, [2]Edward L. Ginzton Lab, Stanford University, Stanford, CA, USA, [3]Mechanical Engineering, Stanford University, Stanford, CA, USA*	**3K-6 Performance comparison of rigid and affine models for motion estimation using ultrasound radio-frequency signals** **Xiaochang Pan**[1], Lingyun Huang[2], Jing Bai[1], Jianwen Luo[1] *[1]Department of Biomedical Engineering, Tsinghua University, Beijing, China, People's Republic of, [2]Philips Research China, Shanghai, China, People's Republic of*	**4K-6 Flow Phantom for Contrast Enhanced Ultrasound Research, Device Validation, and Clinical Training** John Kucewicz[1], Barbrina Dunmire[1], Vijay Shamdasani[2], Jeffry Powers[2],**Thomas Matula**[1] *[1]University of Washington, Seattle, WA, USA, [2]Philips Ultrasound, Bothell, WA, USA*		**1K-6 A Graphic Processing Unit based Intravascular Ultrasound (IVUS)** **Yongjia Xiang**[1], Tiejun Lv[1], Zhile Han[1], Jie Xu[1], Tianming Gu[1], Yaoyao Cui[1] *[1]Suzhou Institute of Bio-medical Engineering and Technology, CAS, China, People's Republic of*	**8K-6 Graphene Oxide Nanofabricated Ultrasonic Transducers (GO-NUTs)** Ka Hing Cheng[1], **Ching-Hsiang Cheng**[1], Dennis Kwong Chun Lo[1] *[1]Department of Industrial and Systems Engineering, The Hong Kong Polytechnic University, Hong Kong*

8:00 am - 5:00 pm — Poster --- Saturday, October 24, 2015 — 4th floor

Session P1C1.
MEL: Clinical Application of Elasticity Imaging

Chair: **Hiroshi Kanai**
Tohoku University

P1C1-1 VisR Ultrasound Evaluation of Dystrophic Muscle Degeneration in a Dog Cross-Section and Comparison to Histology and MRI

Mallory Selzo[1], Joe Kornegay[2], Amanda Bettis[2], Eric Snook[2], Martin Styner[3,4], Jiahui Wang[5], **Caterina Gallippi[1,6]**
[1]Biomedical Engineering, UNC Chapel Hill, USA, [2]Veterinary Integrative Biosciences, Texas A&M University, USA, [3]Psychiatry, UNC Chapel Hill, USA, [4]Computer Science, UNC Chapel Hill, USA, [5]Physciatry, UNC Chapel Hill, USA, [6]Radiology, UNC Chapel Hill, USA

P1C1-2 Elasticity mapping of abdominal organs using Harmonic Motion Imaging

Thomas Payen[1], Carmine Palermo[2], Steve Sastra[2], Hong Chen[1], Yang Han[1], Kenneth Olive[2], Elisa Konofagou[1,3]
[1]Biomedical Engineering, Columbia University, New York, NY, USA, [2]Herbert Irving Comprehensive Cancer Center, Columbia University, USA, [3]Department of Radiology, Columbia University, USA

P1C1-3 New Inverse problem for visco-elastic characterization of fatty liver using Vibration Controlled Transient Elastography

Jean-pierre Remenieras[1], Cecile Bastard[2], Veronique Miette[2], Jean-marc Perarnau[3], Frederic Patat[1,3]
[1]Equipe 5, UMR INSERM U930 University of Tours, Tours, France, [2]Echosens, Paris, France, [3]INSERM CIC IT 1415, Tours, France

Session P1C2.
MCA: Contrast Applications

Chair: **Hairong Zheng**
Shenzhen Institutes of Advanced Technology

P1C2-1 Imaging of the Dispersion Coefficient of Ultrasound Contrast Agents by Wiener System Identification for Prostate Cancer Localization

Ruud van Sloun[1], Libertario Demi[1], Hessel Wijkstra[1,2], Massimo Mischi[1]
[1]Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands, [2]Academic Medical Center Amsterdam, Netherlands

P1C2-2 Investigation of Membrane and Uptake Kinetics in Sonoporation Using a Giant Unilamellar Vesicle Cell Model

Ruen Shan Leow[1], Wenjing Zhong[1], Alexander L. Klibanov[2], Alfred C. H. Yu[1]
[1]Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong, [2]Division of Cardiovascular Medicine, University of Virginia, Charlottesville, Virginia, USA

P1C2-3 Feasibility of in vivo contrast-enhanced ultrasound imaging of the renal cortex during hemorrhagic shock

Tom van Rooij[1], Alexandre Lima[2], Verya Daeichin[1], Patricia A.C. Specht[3], Bulent Ergin[4], Yasin Ince[2,4], Nico de Jong[1,5], Can Ince[2,4], Klazina Kooiman[1]
[1]Department of Biomedical Engineering, Thorax Center, Erasmus MC, Rotterdam, Netherlands, [2]Department of Intensive Care Adults, Erasmus MC, Rotterdam, Netherlands, [3]Laboratory of Experimental Anesthesiology, Department of Anesthesiology, Erasmus MC, Netherlands, [4]Department of Translational Physiology, Academic Medical Center, Amsterdam, Netherlands, [5]Laboratory of Acoustical Wavefield Imaging, Faculty of Applied Sciences, Technical University Delft, Delft, Netherlands

P1C2-8 Optical Observation of Microbubble Behaviors to Modulated Acoustic Radiation Force in Large Vessels

Shiying Wang[1], Claudia Y Wang[1], Alexander L Klibanov[1,2], John A Hossack[1], F William Mauldin Jr[1]
[1]Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA, [2]Division of Cardiovascular Medicine, University of Virginia, Charlottesville, Virginia, USA

Session P1C3.
MIM: Medical Imaging

Chair: **Kai Thomenius**
GE Corporate R&D

P1C3-1 Spatial mapping of electromechanical properties in bone measured through acoustically stimulated electromagnetic response

Kakeru Watanabe[1], Shuntaro Hamazumi[1], Hisato Yamada[1], Kenji Ikushima[1], Yoshitsugu Kojima[2], Nobuo Niimi[2], Yoshihiro Hagiwara[3]
[1]Department of Applied Physics, Tokyo University of Agriculture and Technology, Koganei, Japan, [2]Nippon Sigmax Co. Ltd., Tokyo, Japan, [3]Department of Orthopaedic Surgery, Tohoku University School of Medicine, Sendai, Japan

P1C3-2 Assessment of Scoliosis Using 3D Ultrasound Volume Projection Imaging with Automatic Detection of Spine Curvature

Guang-Quan Zhou[1], **Yong-Ping Zheng[1]**
[1]The Hong Kong Polytechnic University, Hong Kong

P1C3-7 Sparse Constrained Born Inversion for Breast Cancer Detection

Ana Ramirez[1], **Koen W. A. van Dongen[2]**
[1]Department of Electrical, Electronics and Telecommunications Engineering, Universidad Industrial de Santander, Bucaramanga, Colombia, [2]Department of Imaging Physics, Delft University of Technology, Delft, Netherlands

P1C3-8 Monitoring imaging of lesions induced by high intensity focused ultrasound based on a matching pursuit method

Weidong Song[1], Siyuan zhang[1], Minxi Wan[1], **Jin Wan[1]**
[1]Department of Biomedical Engineering, School of Life Science and Technology, Xi¡¯an Jiaotong University, China, People's Republic of

P1C3-9 Adaptive learning of tissue reflectivity statistics and its application for blind deconvolution of medical ultrasound scans

Oleg Michailovich[1], Yogesh Rathi[2]
[1]Electrical and Computer Engineering, University of Waterloo, Waterloo, Ontario, Canada, [2]Harvard Medical School, USA

P1C3-10 3D Contrast Ultrasound Dispersion Imaging by Mutual Information for Prostate Cancer Localization

Stefan Schalk[1], Libertario Demi[1], Martijn Smeenge[2], Jean de la Rosette[2], Pintong Huang[3], Hessel Wijkstra[1,2]
[1]Biomedical Diagnostics, Eindhoven University of Technology, Eindhoven, Netherlands, [2]Dept. of Urology, AMC University Hospital, Amsterdam, Netherlands, [3]Dept. of Ultrasound, Zhejiang University School of Medicine, Zhejiang, China, People's Republic of

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

Seiji Matsumoto[1], Yasuhito Takeuchi[1], Hidehiro Kakizaki[1]
[1]Renal and Urologic Surgery, Asahikawa Medical University, Asahikawa, Japan

P1C4-4 Volumetric Synthetic Aperture Ultrasound Imaging with Row-Column Addressed 2-D Arrays Using Spatial Matched Filter Beamforming

Hamed Bouzari[1], Morten Fischer Rasmussen[1], Matthias Bo Stuart[1], Svetoslav Ivanov Nikolov[2], Jørgen Arendt Jensen[1]
[1]Technical University of Denmark, Lyngby, Denmark, [2]BK Medical ApS, Herlev, Denmark

P1C4-5 An Optimized Plane Wave Synthetic Focusing Imaging for High-Resolution Convex Array Imaging

Sua Bae[1], Pilsu Kim[1], Jeeun Kang[1], Tai-kyong Song[1]
[1]Department of Electronic Engineering, Sogang University, Seoul, Korea, Republic of

P1C4-6 Synthetic Aperture Sequential Beamforming for Phased Array Imaging

Deep Bera[1], Johan G. Bosch[1], Nico de Jong[1], Hendrik J. Vos[1]
[1]Erasmus MC, Rotterdam, Netherlands

P1C1-4 An acoustical generator to induce low amplitude shear waves in the human brain

Emmanuel Nicolas[1], Samuel Callé[1], **Jean-Pierre Remenieras[1]**
[1]INSERM U930 - Tours University, TOURS, France

P1C2-4 Molecular Ultrasound Assessment of Colorectal Tumor Angiogenesis with Endoglin-targeted Contrast Microbubbles

Cheng LIU[1], Yaoheng YANG[1], Zhihai QIU[1], Yongmin HUANG[1], Fei YAN[2], Lei SUN[1]
[1]Interdisciplinary Division of Biomedical Engineering, Faculty of Engineering, The Hong Kong Polytechnic University, HONG KONG, China, People's Republic of, [2]Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China, People's Republic of

P1C3-3 Automatic Detection and Measurement of Fetal Femur Length using a Portable Ultrasound Device

Naiad Hossain Khan[1], Eva Tegnander[2,3], Johan Morten Dreier[2], Sturla Eik-Nes[2,3], Hans Torp[1], Gabriel Kiss[1]
[1]ISB, MI Lab and Department of Circulation and Medical Imaging, NTNU, Trondheim, Norway,[2]National Center for Fetal Medicine (NCFM), St. Olavs Hospital, Trondheim, Norway, [3]Department of Laboratory Medicine, Children's and Women's Health (LBK), NTNU, Trondheim, Norway

P1C3-11 Functional Transcranial Doppler and Cerebral Lateralization during Two Visuospatial Tasks

Benjamin Hage[1], Mohammed Alwatban[1], Erin Barney[1], Mark Mills[2], Michael Dodd[2], Edward Truemper[3], **Gregory Bashford[1]**
[1]Department of Biological Systems Engineering, University of Nebraska-Lincoln, Lincoln, NE, USA,[2]Department of Psychology, University of Nebraska-Lincoln, NE, USA,[3]Department of Pediatric Intensive Care, Children's Hospital & Medical Center, Omaha, NE, USA

P1C4-7 A New Synthetic Aperture Imaging Method Using Virtual Elements on Both Transmit and Receive

MooHo Bae[1], Nam Ouk Kim[1], Moon Jeong Kang[1], Sung-Jae Kwon[2]
[1]Hallym University, Chuncheon, Korea, Republic of, [2]Daejin University, Korea, Republic of

P1C1-5 An Arrayed-Range-Gate Data Acquisition for Spatial Distribution Analysis of Myocardial Tissue Vibration from Stenosis in Coronary Doppler Vibrometry

Daehyeon Lee[1], Sungjoo Yoo[2], Dong-Bin Kim[3]
[1]Department of Electrical Engineering, Pohang University of Science and Technology, Pohang, Korea, Republic of,[2]Department of Computer Science and Engineering, Seoul National University, Seoul, Korea, Republic of, [3]Division of Cardiology, College of Medicine, The Catholic University of Korea, Seoul, Korea, Republic of

P1C2-5 Evaluation of Accuracy of Bolus and Burst Method for Quantitative Ultrasound Perfusion Analysis with Various Arterial Input Function Models

Martin Mezl[1,2], Radovan Jirik[1,3], Karel Soucek[4,5], Radim Kolar[1,2]
[1]Center for Biomedical Engineering, International Clinical Research Center, St. Anne's University Hospital Brno, Brno, Czech Republic, [2]Department of Biomedical Engineering, Brno University of Technology, Brno, Czech Republic,[3]Institute of Scientific Instruments of the ASCR, v. v. i., Brno, Czech Republic, [4]Department of Cytokinetics, Institute of Biophysics, Academy of Sciences of the Czech Republic, v.v.i., Brno, Czech Republic, [5]Center of Biomolecular and Cellular Engineering, International Clinical Research Center, St. Anne's University Hospital Brno, Brno, Czech Republic

P1C3-4 3D printed phantom for high frequency ultrasound imaging

Jean-Rene Jacquet[1], Frederic Ossant[1,2], franck Levassort[3], Jean-Marc Gregoire[1]
[1]Université François-Rabelais de Tours, Inserm, Imagerie et Cerveau UMR U930, Tours, France, [2]CHRU de Tours, Tours, France, France, [3]Université François-Rabelais de Tours, GREMAN, UMR 7347 CNRS, Tours, France

Session P1C4.
MBB: Beamforming II

Chair: **Mingxi Wan**
Xi'an Jiaotong University

P1C4-8 Phase Aberration Correction with Adaptive Curve Fitting for Medical Ultrasound Imaging

Yeokyeong YOON[1], Jinbum Kang[1], Ilseob SONG[1], Yangmo Yoo[1,2]
[1]Electronic Engineering, Sogang University, Seoul, Korea, Republic of, [2]Interdisciplinary Program of Integrated Biotechnology, Sogang University, Korea, Republic of

P1C1-6 How Calcifications Affect Shear Wave Speed Estimations? An Experimental Study

Adriana Gregory[1], Mahdi Bayat[1], Max Denis[1], Qiang Bo[1], Mohammad Mehrmohammadi[1,2], Mostafa Fatemi[1], Azra Alizad[1]
[1]Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, Minnesota, USA,[2]Biomedical Engineering, Wayne State University, Detroit, Michigan, USA

P1C2-6 An ImageJ plugin for the sizing and counting of microbubbles

Charles SENNOGA[1], Emma Kanbar[1], Ayache Bouakaz[1]
[1]Inserm U930, Université François-Rabelais de Tours, France

P1C3-5 Mobile 3D augmented reality system for ultrasound applications

Gabriel Kiss[1], Cameron Lowell Palmer[1], Bjørn Olav Haugen[1], Eva Tegnander[2,3], Sturla H. Eik-Nes[2,3], Hans Torp[1]
[1]Department of Circulation and Medical Imaging and MI Lab, Norwegian University of Science and Technology, Trondheim, Norway, [2]National Center for Fetal Medicine, St. Olavs Hospital, Trondheim, Norway, [3]Department of Laboratory Medicine, Children's and Women's Health, Norwegian University of Science and Technology, Trondheim, Norway

P1C4-1 *Ex vivo* evaluation of an eye-adapted beamforming for axial B-scans using a 20 MHz linear array

Tony Matéo[1], Yassine Mofid[1], Frédéric Ossant[1,2]
[1]Imagerie et Ultrasons, UMR Inserm U930 - Université François Rabelais de Tours, Tours, France, [2]CHRU de Tours, Tours, France

P1C4-9 Multi-focus tissue harmonic images obtained with parallel transmit beamforming by means of orthogonal frequency division multiplexing

Libertario Demi[1], Gabriele Giannini[2], Alessandro Ramalli[2], Piero Tortoli[2], Massimo Mischi[1]
[1]Biomedical Diagnostics Lab., Eindhoven University of Technology, Eindhoven, Netherlands, [2]Information Engineering Dept, Università degli Studi di Firenze, Firenze, Italy

P1C1-7 Evaluating Hepatic Fibrosis in Rat Liver by using Ultrasound Elastography: Comparison between Model-dependent and Model-independent Approaches

Haoming Lin[1], Xinyu Zhang[1], **Xin Chen[1]**, Yuanyuan Shen[1], Xianfen Diao[1], Chien Ting Chin[1], Yi Zheng[2], Yanrong Guo[1], Tianfu Wang[1], Siping Chen[1]
[1]Shenzhen University, Shenzhen, China, People's Republic of, [2]St. Cloud State University, St. Cloud, MN 56301, USA

P1C2-7 The evaluation system for measuring sensitivity of microbubbles to target molecules using a quartz crystal microbalance

Yasuhiro Yokoi[1], Kenji Yoshida[2], Ryosuke Shimoya[1], Yoshiaki Watanabe[1]
[1]Doshisha University, Japan, [2]Chiba Univercity, Japan

P1C3-6 Feasibility of uterine speckle tracking for improved embryo implantation

Massimo Mischi[1], Nienke Kuijsters[1,2], Chiara Rabotti[1], Benedictus Schoot[2]
[1]Eindhoven University of Technology, Netherlands,[2]Catharina Ziekenhuis Eindhoven, Netherlands

P1C4-2 Synthetic transmit beam steering for spatial compounding applications using continuous transmit focusing

David Napolitano[1], Robert Steins[1], Al Gee[1], Ting-Lan Ji[2], Ching-Hua Chou[1], Glen McLaughlin[1]
[1]Advanced Technology, Zonare Medical Systems, Mountain View, California, USA, [2]Mindray, Mountain View, California, USA

P1C4-10 Low-complexity adaptive beamforming using autocorrelation-based generalized coherence factor

Yong-Qi Xing[1], **Shue-Han Jiang[1]**, Gency Jeng[2], Che-Chou Shen[1]
[1]Electrical Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan, [2]S-Sharp Corporation, Taiwan

8:00 am - 5:00 pm — Poster --- Saturday, October 24, 2015 — 4th floor

P1C4-11 Study of Phase Aberration on Coherent Plane Wave Compounding

Chang-Lin Hu[1,2], Meng-Lin Li[1,3]
[1]*Dept. of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan,* [2]*Industrial Technology Research Institute, Taiwan,* [3]*Institute of Photonics Technologies, National Tsing Hua University, Taiwan*

P1C5-7 Histotripsy Produced by Hundreds of Microsecond Focused Ultrasound Pulses in Gels and Tissue *ex vivo*

Yubo Guan[1], Mingzhu Lu[1], Yujiao Li[1], Mingxi Wan[1]
[1]*The 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*

P1C6-5 Numerical Analysis of Fast and Slow Waves Backscattered from Various Depths in Cancellous Bone

Atsushi Hosokawa[1]
[1]*Department of Electrical and Computer Engineering, National Institute of Technology, Akashi College, Akashi, Japan*

Session P1C7.
MSD: Novel Hardware for Ultrasound Research

Chair: **Andrzej Nowicki**
Institute of Fundamental Technological Research

P1C7-8 A portable dual-mode ultrasound platform with multi-rail voltage power supply for adaptive diagnostic imaging and therapy sequence programming

Gary Yi Hou[1], Bob Uvacek[1], Richard Tobias[1]
[1]*Cephasonics, Santa Clara, California, USA*

Session P1C5.
MTH: In Vitro and In Vivo Therapeutics

Chair: **Nobuki Kudo**
Hokkaido University

P1C5-8 Motion-triggered Lesion Formation with Close-loop Control in Rats Liver *In Vivo*

Dalong Liu[1], Emad Ebbini[1]
[1]*Electrical and Computer Engineering, University of Minnesota, Minneapolis, Minnesota, USA*

P1C6-6 An anisotropic bi-layered model to estimate cortical bone properties from guided-wave measurements

Nicolas Bochud[1], Jean-Gabriel Minonzio[1], Quentin Vallet[1], Pascal Laugier[1]
[1]*Laboratoire d'Imagerie Biomedicale, Sorbonne Universites, UPMC Univ Paris 06, INSERM, CNRS, Paris, France*

P1C7-1 FPGA Implementation of Low-Power 3D Ultrasound Beamformer

Richard Sampson[1], Ming Yang[2], Siyuan Wei[2], Rungroj Jintamethasawat[3], Brian Fowlkes[3], Oliver Kripfgans[3], Chaitali Chakrabarti[2], Thomas F. Wenisch[1]
[1]*Department of Electrical Engineering and Computer Science, University of Michigan, Ann Arbor, MI - Michigan, USA,* [2]*School of Electrical, Computer, and Energy Engineering, Arizona State University, Tempe, Arizona, USA,* [3]*Department of Radiology, University of Michigan, Ann Arbor, MI - Michigan, USA*

P1C7-9 Mobile ultrafast ultrasound imaging system based on smartphone and tablet devices

Holger Hewener[1], Steffen Tretbar[1]
[1]*Ultrasound, Fraunhofer IBMT, Sankt Ingbert, Germany*

P1C5-1 Ultrasound stimulation of carotid baroreceptors: initial canine results

Jesse Yen[1], Mike Partsch[2], Yu Chen[1], Alejandro Covalin[3]
[1]*University of Southern California, Los Angeles, CA, USA,* [2]*Accelemed, San Francisco, CA, USA,* [3]*Atidtek, CA, USA*

P1C5-9 Sonogenetics Non-invasive Brain Stimulation: Examination of thermal effect of ultrasound

Lili Niu[1], Long Meng[1], Fei Li[1], Fei Yan[1], Ming Qian[1], Yang Xiao[1], Hairong Zheng[1]
[1]*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China, People's Republic of*

P1C6-7 Combined Estimation of Thickness and Velocities of cortical shell using reflected waves: Study on bone phantoms and samples

Jerzy Litniewski[1], Yurij Tasinkevych[1], Jerzy Podhajecki[1], Katarzyna Falinska[1]
[1]*Institute of Fundamental Technological Research, Poland*

P1C7-2 A FPGA-Based Multi-Channel Analog Front-End Device for High-Frequency Ultrasound Plane Wave Imaging System

Po-Yang Lee[1], Hao-Li Liu[2], Chih-Chung Huang[1]
[1]*Department of Biomedical Engineering, National Cheng Kung University, Taiwan,* [2]*Department of Electrical Engineering, Chang Gung University, Taiwan*

P1C7-10 Real Time Imaging System using a 12-MHz Forward Looking Catheter with Single Chip CMUT-on-CMOS Array

Coskun Tekes[1], Thomas M. Carpenter[1], Toby Xu[1], Sebastian Bette[2], Uwe Schnakenberg[2], David Cowell[3], Steven Freear[3], Ozgur Kocaturk[4], Robert J. Lederman[4], F. Levent Degertekin[1]
[1]*G.W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, Georgia, USA,* [2]*Institute of Materials in Electrical Engineering, RWTH Aachen University, Aachen, Germany,* [3]*School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom,* [4]*Division of Intramural Research, National Institute of Health, Bethesda, Maryland, USA*

P1C5-2 Pulsed high-intensity focused ultrasound exposure decreases shear wave speed of rabbit¡¦s Achilles tendons

Chia-Lun Yeh[1], Pa-Chi Li[1], **Po-Ling Kuo**[2,3]
[1]*Graduate Institute of Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan,* [2]*Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan,*[3]*Department of Rehabilitation, National Taiwan University Hospital, Taipei, Taiwan*

Session P1C6.
MTC: Bone

Chair: **Mami Matsukawa**
Doshisha University

P1C6-8 Clinical study of multisite axial transmission measurements in postmenopausal women using optimized first arriving signal velocity measurements

Johannes Schneider[1], Jean-Gabriel Minonzio[2], Timo Zippelius[3], Peter Varga[1], Patrick Strube[4], Pascal Laugier[2], Kay Raum[1]
[1]*BCRT, Charité Universitätsmedizin Berlin, Berlin, Germany,* [2]*Laboratoire d'Imagerie Biomédicale, Université Pierre et Marie Curie, Paris, France,* [3]*CMSC, Charité Universitätsmedizin Berlin, Germany,* [4]*CMSC, Charité Universitätsmedizin Berlin, Berlin, Germany*

P1C7-3 A FPGA-based Wearable Ultrasound Device for Monitoring Obstructive Sleep Apnea Syndrome

Chi-Kai Weng[1], Jeng-Wen Chen[2], Chih-Chung Huang[1]
[1]*Department of Biomedical Engineering, National Cheng Kung University, Taiwan,* [2]*Department of Otolaryngology Head and Neck Surgery, Cardinal Tien Hospital, Taiwan*

P1C7-11 Characterization of the STHV748 integrated pulser for generating push sequences

Mateusz Walczak[1], Beata Witek[1], Marcin Lewandowski[1]
[1]*Institute of Fundamental Technological Research, Polish Academy of Sciences, Poland*

P1C5-3 Optically Transparent and Acoustically Scattering Bovine Serum Albumin Gel Phantoms for Therapeutic Ultrasound Dosimetry **Rei Asami**[1], Takashi Maruoka[1], Kenichi Kawabata[1] *[1]Hitachi, Ltd, Japan*	**P1C6-1 Noninvasive Bone Assessment Using Ultrasound Radiation Force** **Max Denis**[1], Mostafa Fatemi[1], Azra Alizad[1,2] *[1]Department of Physiology and Biomedical Engineering, Mayo College of Medicine, Rochester, MN, USA,[2]Department of Internal Medicine, Mayo College of Medicine, Rochester, MN, USA*	**P1C6-9 Hypersonic wave velocity in drying collagen film with AGE crosslinks** **Yuki Imoto**[1], Shinji Takayanagi[1], Mitsuru Saito[2], Keishi Marumo[2], Mami Matsukawa[1] *[1]Wave Electronics Research Center, Doshisha University, Kyotanabe Kyoto, Japan, [2]Department of Orthopaedic Surgery, Jikei University School of Medicine, Tokyo, Japan*	**P1C7-4 HD-PULSE: High channel Density Programmable ULtrasound System based on consumer Electronics** **Alejandra Ortega**[1], David Lines[2], João Pedrosa[1], Bidisha Chakraborty[1], Hans Gassert[2], Jan D'hooge[1] *[1]Department of Cardiovascular Sciences, KU Leuven, Leuven, Belgium,[2]Diagnostic Sonar Ltd., Livingston, United Kingdom*	**Session P2C1.** ***Microfluidics*** *Chair:* **David Greve** *Carnegie Mellon University*
P1C5-4 Ex-vivo Perfused Swine Kidney Simulating in FUS Therapy **Jiaqiu Wang**[1], Xu Xiao[1], Robyn Duncan[2], Helen McLeod[3], Benjamin Cox[4], Andreas Melzer[1] *[1]Institute for Medical Science and Technology, University of Dundee, Dundee, United Kingdom, [2]Centre for Anatomy and Human Identification, University of Dundee, Dundee, United Kingdom, [3]Division of Cardiovascular & Diabetes Medicine, University of Dundee, Dundee, United Kingdom,[4]Division of Imaging & Technology, University of Dundee, Dundee, United Kingdom*	**P1C6-2 High-frequency backscatter measurements reveals large basic multicellular units in in cortical bone** Adeline Bourgnon[1], **Kay Raum**[1] *[1]Charité-Universitätsmedizin Berlin, Germany*	**P1C6-10 Ultrasound radiation from bone transducer in the MHz range** **Sayaka Matsukawa**[1], Hiroko Tsuneda[1], Isao Mano[1], Katsunori Mizuno[2], Takahiko Yanagitani[3], Shinji Takayanagi[1], Mami Matsukawa[1] *[1]Doshisha University, Japan, [2]University of Tokyo, Japan,[3]Waseda University, Japan*	**P1C7-5 Smartphone-based Portable Ultrasound Imaging System: Prototype Implementation and Evaluation** **Sewoong Ahn**[1], Jeeun Kang[1], Pilsu Kim[1], Gunho Lee[1], Eunji Jung[1], Woojin Jung[1], Minsuk Park[1], Tai-kyong Song[1] *[1]Department of Electronic Engineering, Sogang University, Seoul, Korea, Republic of*	**P2C1-1 Measurement of Very Low Concentration of Microparticles in Fluid by Single Particle Detection using Acoustic Radiation Force Induced Particle Motion** **John Lee**[1], Javier Jimenez[2], Ian R. Butterworth[2], Carlos Castro-González[2], Shiva K. Shukla[3], Berta Marti-Fuster[2], Luis Elvira[3], Duane S. Boning[1], Brian W. Anthony[1] *[1]Massachusetts Institute of Technology, Cambridge, MA, USA, [2]Madrid-MIT M+Vision Consortium, Massachusetts Institute of Technology, Cambridge, MA, USA,[3]Instituto de Tecnologías Físicas y de la Información (CSIC), Madrid, Spain*
P1C5-5 Neuronavigation-Guided Focused Ultrasound-Induced Blood-Brain Barrier Opening: Feasibility When Considering The Human Skull **Meng-Yen Tsai**[1], Po-Chun Chu[1], Hong-Li Wang[2], Hao-Li Liu[1] *[1]Department of Electrical Engineering, Chang Gung University, Tao-Yuan, Taiwan, [2]School of Information and Electronic Engineering, Zhejiang Gongshang University, Hangzhou, China, People's Republic of*	**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** **Tho N.H.T. Tran**[1], Lawrence H. Le[1,2], Vu-Hieu Nguyen[3], Kim-Cuong T. Nguyen[1,4], Mauricio D. Sacchi[2] *[1]Department of Radiology and Diagnostic Imaging, University of Alberta, Canada,[2]Department of Physics, University of Alberta, Canada, [3]Laboratoire Modélisation et Simulation Multi Echelle UMR 8208 CNRS, Université Paris Est, France, [4]Department of Dentistry, University of Alberta, Canada*	**P1C6-11 An optimization method for pairing in-vivo guided wave measurements with theoretical Rayleigh-Lamb modes** **Nicolas Bochud**[1], Jean-Gabriel Minonzio[1], Quentin Vallet[1], Pascal Laugier[1] *[1]Laboratoire d'Imagerie Biomedicale, Sorbonne Universites, UPMC Univ Paris 06, INSERM, CNRS, Paris, France*	**P1C7-6 A Cost-effective Portable Ultrasound Imaging System with Wireless Connection** **Heyuan Qiao**[1], Bingjing Zhao[2] *[1]School of Medical Engineering, Hefei University of Technology, Hefei, Anhui, China, People's Republic of,[2]Anhui University, Hefei, Anhui, China, People's Republic of*	**P2C1-2 Investigation of surface-acoustic-wave atomization using Phase Doppler Anemometry** **Taiki Hiromoto**[1], Motoaki Hara[1], Taku Kudo[2], Hideaki Kobayashi[2], Hiroki Kuwano[1] *[1]Graduate school of Engineering, Tohoku University, Japan, [2]Institute of Fluid Science, Tohoku University, Japan*
P1C5-6 Ultrasonic Monitoring of Cavitation Bubbles Induced by High-Intensity Focused Ultrasound in Gel Phantom Containing Thin Layer of Graphite Gel **Kei Taguchi**[1], Ryo Takagi[1], Jun Yasuda[2], Shin Yoshizawa[2], Shin-ichiro Umemura[1] *[1]Biomedical Engineering, Tohoku University, Sendai, Japan, [2]Communication Engineering, Tohoku University, Sendai, Japan*	**P1C6-4 Axial Transmission Measurements in Cortical Bone: A Comparison between Linear Radon Transform and SVD-based Approaches** **Kailiang Xu**[1,2], Jean-Gabriel Minonzio[2], Dean Ta[1], Bo Hu[1], Weiqi Wang[1], Pascal Laugier[2] *[1]Department of Electronic Engineering, Fudan University, Shanghai, China, People's Republic of, [2]Laboratoire d'Imagerie Biomedicine, UMR CNRS 7371 - INSERM U1146 - UPMC, Paris, France*	**P1C6-12 Identifying novel clinical surrogates to assess the strength of human bones: An *ex vivo* study.** Quentin Vallet[1], **Jean-Gabriel Minonzio**[1], Nicolas Bochud[1], Yohann Bala[2], François Duboeuf[3], Rémy Gauthier[4], Edison Zapata[3,4], Hélène Follet[3], David Mitton[4], Pascal Laugier[1] *[1]Laboratoire d'Imagerie Biomédicale, Sorbonne Universités, UPMC Univ Paris 06, INSERM, CNRS, Paris, France, [2]Laboratoire Vibrations Acoustique, INSA Lyon, Villeurbanne, France, [3]INSERM UMR 1033, Université de Lyon, Université Claude Bernard Lyon 1, Lyon, France, [4]IFSTTAR, UMR_T9406, LBMC, Université de Lyon, Université Claude Bernard Lyon 1, Lyon, France*	**P1C7-7 Color Doppler Imaging on a Smartphone-based Portable US System: Preliminary Study** **Eunji Jeong**[1], Sua Bae[1], Minsuk Park[1], Woojin Jung[1], Jeeun Kang[1], Tai-kyong Song[1] *[1]Department of Electronic Engineering, Sogang University, Korea, Republic of*	**P2C1-3 The Plate Acoustic Wave Sensor for Detection of Bacterial Cells in Liquid Phase** **Irina Borodina**[1], Boris Zaitsev[1], Andrey Teplykh[1], Alexander Shikhabudinov[1], Iren Kuznetsova[2], Olga Guliy[3], Andrey Smirnov[4] *[1]Saratov Branch, Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russian Federation, [2]Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Russian Federation, [3]Institute of Biochemistry & Physiology of Plants & Microorganisms RAS, Russian Federation, [4]Saratov State University, Russian Federation*

8:00 am - 5:00 pm — Poster --- Saturday, October 24, 2015 — 4th floor

P2C1-4 Particle Size of Non-Contact Atomization of Low Surface Tension Liquid by Powerful Aerial Ultrasonic.

Arisa Endo[1], Takuya Asami[1], Takashi Ono[1], Hikaru Miura[1]
[1]*College of Science & Technology, Nihon University, Tokyo, Japan*

Session P2C2. Transducers and Wave Generation

Chair: **Kentaro Nakamura**
Tokyo Institute of Technology

P2C2-1 Study of ultrasonic machining using longitudinal and torsional vibration

Takuya Asami[1], Hikaru Miura[1]
[1]*College of Science & Technology, Nihon University, Chiyoda-ku, Tokyo, Japan*

P2C2-2 ScAlN thin film transducers for ultrasonic microscopy in the VHF range

Yusuke Korai[1], Masashi Suzuki[2], Takahiko Yanagitani[2,3]
[1]*Hitachi, Ltd., Hitachi, Japan,*[2]*Nagoya Institute of Technology, Japan,* [3]*Waseda University, Japan*

Session P2C3. Sensing and Energy Harvesting

Chair: **Pierre Khuri-Yakub**
Stanford University

P2C3-1 Study on Movement Detection in Care Environment Using Precise Ultrasonic Distance Measurement at 40 kHz Installed in Sensor Network

Yukari Kaneda[1], Takeo Sato[1], Mitsutaka Hikita[1]
[1]*Department of GE, Kogakuin University, Tokyo, Japan*

P2C3-2 Research on Improving the Sensitivity of SAW/GC Gas Sensors

Jiuling Liu[1], Minghua Liu[1], Shitang He[1]
[1]*Institute of Acoustics, Chinese Academy of Sciences, Beijing, China, People's Republic of*

P2C3-3 Powering autonomous wireless sensors with miniaturized piezoelectric based energy harvesting devices for NDT applications

Claire Bantignies[1], Thien Hoang[1], Hung Le Khanh[1], Guillaume Ferin[1], Etienne Flesch[1], An Nguyen-Dinh[1]
[1]*Advanced Research Dpt., VERMON, France*

P3C1-1 c-axis parallel polarity inverted multilayer ZnO film resonators fabricated by grazing ion beam assisted RF magnetron sputtering

Takeshi Mori[1], Takahiko Yanagitani[2], Masashi Suzuki[1]
[1]*Nagoya Institute of Technology, Japan,* [2]*Waseda University, Tokyo, Japan*

P3C1-2 Shear mode properties of c-axis parallel oriented $Sc_xAl_{1-x}N$ films grown by RF bias sputtering

Shinji Takayanagi[1], Takahiko Yanagitani[2], Mami Matsukawa[1]
[1]*Doshisha University, Kyotanabe, Japan,* [2]*Waseda University, Tokyo, Japan*

P3C1-3 Measurement of acoustic wave velocity and refractive index in thickness direction of c-axis oriented ScAlN films by Brillouin scattering

Shota Tomita[1], Takahiko Yanagitani[2], Masashi Suzuki[2], Hayato Ichihashi[1], Shinji Takayanagi[1], Mami Matsukawa[1]
[1]*Doshisha University, Kyotanabe, Kyoto, Japan,*[2]*Waseda University, Okubo Shinjuku, Tokyo, Japan*

Session P3C2. Nonlinear Acoustics II

Chair: **John Larson**
Avago Technologies

P3C3-2 Study on Achievement of Simultaneous X, Y Movements and Theta Rotation Using Straight-Move Ultrasonic Vibrators

Toshiaki Sakayachi[1], Yusuke Nagira[1], Mitsutaka Hikita[1]
[1]*Department of GE, Kogakuin University, Tokyo, Japan*

P3C3-3 An ultrasonic motor using transmission line and horn with oblique slits driven by a Langevin transducer.

Takaaki Ishii[1], Souichiro Takehana[1], Tsuyoshi Shimizu[1]
[1]*Mechatronics, University of Yamanashi, Kofu, Yamanashi, Japan*

P3C3-4 An ultrasonic motor using transmission line and spiral structure driven by a Langevin transducer.

Takaaki Ishii[1], Masaki Mochizuki[1], Tsuyoshi Shimizu[1]
[1]*Mechatronics, University of Yamanashi, Kofu, Yamanashi, Japan*

P3C3-5 Precise Positioning Characteristics of Multi-Mode Ultrasonic Motor

Masaya Takasaki[1], Shuo Zhang[1], Masayuki Hara[1], Daisuke Yamaguchi[1], Yuji Ishino[1], Takeshi Mizuno[1]
[1]*Dept. Mechanical Eng., Saitama University, Saitama, Japan*

Session P5C2. Transducer for Imaging and Diagnosis

Chair: **Christine Démoré**
University of Dundee

P5C2-1 Acoustic Characterisation of a PZT Matrix With Integrated Electronics for a 3D-TEE Probe

Shreyas Raghunathan[1], Chao Chen[2], Maysam Shabanimotlagh[1], Zhao Chen[2], Sandra Blaak[3], Zili Yu[2], Christian Prins[3], Michiel Pertijs[2], Johan Bosch[4], Nico de Jong[1,4], Martin Verweij[1,4]
[1]*Lab of Acoustic Wavefield Imaging, Delft University of Technology, Netherlands,*[2]*Electronic Instrumentation Lab., Delft University Of Technology, Netherlands,*[3]*Oldelft Ultrasound, Netherlands,* [4]*Dept. of Biomedical Engineering, Erasmus Medical Centre, Netherlands*

P5C2-2 Dual frequency IVUS array for contrast enhanced intravascular ultrasound imaging

Zhuochen Wang[1], Wenbin Huang[1], Karl Heath Martin[2], Paul A. Dayton[2], Xiaoning Jiang[1]
[1]*North Carolina State University, USA,* [2]*University of North Carolina, USA*

P5C2-3 A simulation frame work to optimize volumetric cardiac imaging on a multiplexed system

Carolina Vallecilla[1], Alejandra Ortega[1], Martino Alessandrini[1], Jan D'hooge[1]
[1]*Cardiovascular Imaging and Dynamics, KU Leuven, Leuven, Belgium*

P2C2-3 **Source Location Techniques in Plate-like Structures based on Fiber Coupler Sensors**

Fengmei Li[1], Yiying Liu[1], Linjie Wang[1], Zhenyu Zhao[1]
[1]*xi'an jiaotong university, China, People's Republic of*

P2C2-4 **Research on ultrasonic detection method of fuel tank leakage**

Hua Xue[1], Di Wu[1], Yongping Teng[1], Yaping Wang[1], Zhenning Zhao[1]
[1]*Beijingjiaotong University, China, People's Republic of*

P2C2-5 **Ultrasonic phased array on the inner surface of circular stage for detecting the circumferential flaw in a pipe**

Zhongcun Guo[1], Yitao Tan[1], Fangfang Shi[1], Bixing Zhang[1], Junjie Gong[1]
[1]*State Key Laboratory of Acoustics,Institute of Acoustics,Chinese Academy of Sciences, China, People's Republic of*

P2C2-6 **Flexible Ultrasonic Transducers for Transverse Horizontal Guided Waves in Structures**

Ching-Chung Yin[1], Wei-Che Tsai[1]
[1]*Department of Mechanical Engineering, National Chiao Tung University, Hsinchu, Taiwan*

P2C3-4 **3D Ultrasound Palmprint recognition system based on a mechanically tilted linear probe**

Antonio Iula[1], Donatella Nardiello[1], Alessandro Ramalli[2], Francesco Guidi[2]
[1]*University of Basilicata, Potenza, Italy,*[2]*University of Firenze, Italy*

P2C3-5 **A three-dimensional, wideband vibration energy harvester using magnetostrictive/piezoelectric composite transducer**

Jin Yang[1], Qiangmo Yu[2], Jiangxin Zhao[2], Nian Zhao[2], Yumei Wen[2], Ping Li[2]
[1]*Chongqing University, Shapingba, Chongqing, China, People's Republic of,* [2]*Chongqing University, China, People's Republic of*

P2C3-6 **A Resonant Sensor for Liquid Density Measurement Based on a Piezoelectric Bimorph**

Nicola Lamberti[1], Monica La Mura[1], Valerio Apuzzo[1], Pasquale D'Uva[1], Alessandra Casella[1], Giosuè Caliano[2], Alessandro Stuart Savoia[2]
[1]*DIIn, University of Salerno, Fisciano, Italy,* [2]*Dept. of Engineering, University Roma Tre, Rome, Italy*

Session P3C1.
Thin Films

Chair: **John Larson**
Avago Technologies

P3C2-1 **Nonlinear elastic properties of the interface solid - granular unconsolidated media**

Natalia Shirgina[1], Aleksey Kokshaiskiy[1], Alexandr Korobov[1]
[1]*Department of Physics, M.V. Lomonosov Moscow State University, Moscow, Russian Federation*

P3C2-2 **Influence of transmission-reception characteristics of ultrasound transducers on statistics of echoes from nonhomogeneous media**

Norbert Zolek[1], Janusz Wojcik[1], Marcin Lewandowski[1]
[1]*Institute of Fundamental Technological Research, Warsaw, Poland*

Session P3C3.
Ultrasonic Motors & Actuators

Chair: **John Larson**
Avago Technologies

P3C3-1 **Ultra femto-liter mist generation using surface acoustic wave device for sterilization and eradication in the atmosphere**

Tatsuya Sugiyama[1], Takashi Kimura[1], Jun Kondoh[1]
[1]*Shizuoka University, Hamamatsu-shi, Japan*

P3C3-6 **Research on a vibration induced low friction pneumatic actuator with radial-direction vibration mode**

Han Gao[1], Jun Wang[2], Marius Nabuurs[2], Jun Qian[2], Gang Bao[1], Michaël De Volder[2], Dominiek Reynaerts[2]
[1]*Harbin Institute of Technology, China, People's Republic of,* [2]*Katholieke Universiteit Leuven, Belgium*

Session P5C1.
Front-end and Integrated Electronics

Chair: **Christine Démoré**
University of Dundee

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**

Bae-Hyung Kim[1], Seungheun Lee[1], Kangsik Kim[1]
[1]*Ultrasound R&D Group, Samsung Electronics Co., Ltd., Seoul, Korea, Republic of*

P5C1-2 **Real time autofocusing hardware for ultrasonic imaging with interfaces**

Jorge F. Cruza[1], Luis Medina-Valdes[1], Carlos Fritsch[1]
[1]*Ultrasonic Systems Group, Spanish National Research Council (CSIC), Madrid, Madrid, Spain*

P5C2-4 **Press-focused 226MHz Ultrahigh Frequency Ultrasound Transducer for Programmable Particle Manipulation**

Ming Qian[1], Ying Li[2], Qifa Zhou[2], K. Kirk Shung[2], Hairong Zheng[1]
[1]*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, People's Republic of,*[2]*NIH Ultrasonic Transducer Resource Center and Department of Biomedical Engineering, University of Southern California, USA*

P5C2-5 **The Effect of the Transducer Parameters on Spatial Resolution in Plane-Wave Imaging**

Zainab Alomari[1,2], **Sevan Harput**[2], Safeer Hyder[2], Steven Freear[2]
[1]*Electronics Engineering College, Mosul University, Mosul, Iraq,* [2]*School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom*

P5C2-6 **Fabrication and Characterisation of Miniature Parabolic Acoustic Lenses**

Erwin J Alles[1], Daniil Nikitichev[1], Adrien E Desjardins[1]
[1]*Department of Medical Physics & Biomedical Engineering, University College London, London, United Kingdom*

P5C2-7 **Design of linear array transducer using inversion layer for ultrasound harmonic imaging**

Chan Yuk Park[1], Jin Ho Sung[1], Jong Seob Jeong[1]
[1]*Medical Biotechnology, Dongguk University, Gyeonggi-do, Korea, Republic of*

8:00 am - 5:00 pm	Poster --- Saturday, October 24, 2015			4th floor
P5C2-8 Non-Elevation-Focused Probe (NEFP) Designed for Pure Plane-wave Ultrasound Imaging **Congzhi Wang**[1], Ning Guo[1], Yang Xiao[1], Weibao Qiu[1], Hairong Zheng[1] [1]*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, People's Republic of*	**P5C3-3 Study of Ultrasound Transducer Which Produces Second Harmonic Superimposed Signal** **Zulfadhli Zaini**[1], Hayato Jimbo[1], Ryo Takagi[1], Shin Yoshizawa[1], Shin-ichiro Umemura[1] [1]*Tohoku University, Japan*			
P5C2-9 An Integrated Convex Ultrasound Endoscope for Digestive Tract Imaging **Jue PENG**[1,2], Zhifei Qin[1,2], Xiaojian PENG[1,2], Tianfu WANG[1,2], Siping CHEN[1,2] [1]*Department of Biomedical Engineering, School of Medicine, Shenzhen University, National-Regional Key Technology Engineering Laboratory for Medical Ultrasound, Shenzhen, China, People's Republic of,* [2]*Department of Biomedical Engineering, School of Medicine, Shenzhen University, Guangdong Key Laboratory for Biomedical Measurements and Ultrasound Imaging, Shenzhen, China, People's Republic of*				
P5C2-10 Fabrication and Performance of a Micro 50-MHz IVUS Transducer Based on a 1-3 Composite with Geometric Focusing **Xiaohua Jian**[1], Zhile Han[1], Weiwei Shao[1], Zhangjian Li[1], Yaoyao Cui[1] [1]*Suzhou Institute of Biomedical Engineering and Technology, CAS, Suzhou, China, People's Republic of*				
P5C2-11 Evaluation of piezo composite based omnidirectional single fibre transducers for 3D USCT **Michael Zapf**[1], Kai Hohlfeld[2], Gourav Shah[1], Sylvia Gebhardt[3], Hartmut Gemmeke[1], Alexander Michaelis[2,3], Nicole V. Ruiter[1] [1]*Institute for Data Processing and Electronics, Karlsruhe Institute of Technology, Eggenstein-Leopoldshafen, Germany,* [2]*Institute of Materials Science, TU Dresden, Dresden, Germany,*[3]*IKTS, Fraunhofer Institute, Dresden, Germany*				

P5C2-12 **Quantifying the effect of dicing on element vibration in ultrasound transducers** **Jovana Janjic**[1], Maysam Shabanimotlagh[2], Martin D. Verweij[1,2], Nico de Jong[1,2], Gijs van Soest[1], Antonius F.W. van der Steen[1,2] *[1]Dept. of Biomedical Engineering, Erasmus MC, Rotterdam, Netherlands, [2]Lab. of Acoustical Wavefield Imaging, Delft University of Technology, Delft, Netherlands*				
Session P5C3. ***Transducers for Therapy*** *Chair:* **Christine Démoré** *University of Dundee*				
P5C3-1 **Design and fabrication of a novel three-row dual frequency ultrasound transducer for image-guided drug delivery** Min Su[1], Shu Xue[1], Yongchuan Li[1], Lili Niu[1], Weibao Qiu[1], Yang Xiao[1], Congzhi Wang[1], Hairong Zheng[1], **Ming Qian**[1] *[1]Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, People's Republic of*				
P5C3-2 **Sparse spherical HIFU arrays based on Fermat's Spiral** Mario Ries[1], Martijn de Greef[1],**Pascal Ramaekers**[1], Chrit Moonen[1] *[1]Imaging Division, University Medical Center Utrecht, Netherlands*				

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