US IEEE International Ultrasonics Symposium Including Short Courses October 22 -25, 2018 Portopia Hotel, Kobe, Japan



PROGRAM BOOK





Message from the General Co-Chairs

On behalf of the Symposium Organizing Committee and the Administrative Committee of the IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society, we would like to welcome you in Kobe, Japan for participating in the 2018 IEEE International Ultrasonics Symposium, that will be held October 22-25, 2018, at the Portopia Hotel in Kobe, Japan. The site of the symposium is located on Kobe Port Island. This is the second time the Symposium will come to Japan. First time was Sendai, Japan in 1998. Originally, the 2011 IEEE International Ultrasonics Symposium was scheduled to be held in Kobe. But due to extensive uncertainties resulting from the M-9 earthquake that devastated part of Japan, the venue was changed to its back-up (Orlando, FL, USA). Thus coming back to Japan is symbolic as its recovery from the disaster.

This year's Technical Program Committee, chaired by Jan D'hooge, has worked hard to put together another outstanding technical program. As before, there will be a mix of invited and contributed papers. Student paper awards will be also given this year.

Kobe itself is well known as a city having a unique style with the exotic atmosphere in Japan, which has been affected by the foreign cultures and flourished as the international port since old days. World Heritage Himeji Castle known as "White Heron Castle" can be reached from the Symposium venue in one hour by regional trains. World Heritage Kyoto might be well known. But we do not arrange a guided tour because one day trip is too short to look around there. We strongly recommend that you plan for an extended visit to Kyoto on the week-end before or after the symposium. World Heritage Nara, which is well known from 1,200 years' history, can be reached easily from Kyoto.

We are looking forward to an excellent program, and to the opportunity of welcoming you at the 2018 IEEE International Ultrasonics Symposium in Kobe.



Ken-ya Hashimoto, Chiba University General CoChair



Clemens Ruppel, EPCOS AG, retired General CoChair

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Registration Information

Registration Type	Before September 17, 2018 After September 17, 2018	
IEEE Members*	\$725	\$875
Non-IEEE Members*	\$925	\$1075
Student*	\$250 (IEEE Member)	\$400 (IEEE Member)
(Show valid student ID at conference)	\$425 (Non-IEEE Member)	\$550 (Non-IEEE Member)
Retiree*	\$250	\$400
Life IEEE Member* (Show life member card at conference)	\$250	\$400
One-Day Registration**	\$400	\$400
Short Courses***	\$250 (One Short Course) \$400 (Two Short Courses)	\$350 (One Short Course) \$500 (Two Short Courses)
Short Courses ***	\$150 (One Short Course)	\$250 (One Short Course)
(Student with valid student ID) or Retiree	\$250 (Two Short Courses)	\$400 (Two Short Courses)
Guest****	\$175	\$175
Banquet	\$90	\$90

Industry & University Employer / Job Seeker Network Session, Monday, October 22, 7:00 – 10:00 PM Women in Engineering Lunch, Wednesday, October 24, 12:00 – 1:30 PM

Life Member is defined by IEEE as at least 65-years 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.

Refunds: General attendees (non-authors) are eligible for a registration refund if the refund is requested in writing prior to September 17, 2018 and will incur a processing fee of \$50. There are no registration refunds after September 17, 2018. Exceptions may apply for individuals affected by government-imposed travel restrictions. See symposium website for details. Authors who have uploaded their papers are NOT entitled to refunds.

^{*} Registration includes access to all sessions, exhibits, welcome reception, banquet, conference program, and password-controlled internet access to the conference proceedings. Short courses are not included.

^{**}One Day Registration includes password-controlled internet access to the conference proceedings and reception (if it coincides with the day of reception), but it does not include banquet. The banquet is optional and is \$90.

^{***}Short Course Only Registration does not include access to conference sessions, banquet, reception, or exhibits. It includes password-controlled internet access to the conference proceedings.

^{****}Guest registration includes attendance at the Wednesday night banquet, the Tuesday night reception, coffee breaks, the Wednesday evening Awards Ceremony and Concert, the Tuesday Plenary Talk and the Thursday Closing Ceremony. Guests are NOT allowed to attend any technical sessions other than the Plenary Session. Only ages 10 and older need to register.

Registration Room

The Registration Room (Matsu and Take) locates in the B1 floor of Main Building of the Portopia Hotel.

Sunday: 6:00 pm – 9:00 pm

Monday to Wednesday: 7:00 am-5:00 pm

Thursday: 7:00 am-4:00 pm

Speaker Ready Room

The Speaker Ready Room (Rose and Iris) locates in the B1 floor of South Wing of the Portopia Hotel. Please check submitted presentation data in person to the Speakers Ready Room at least half day before the beginning of session. For the morning sessions please check presentations by the end of the prior day.

The Speaker ready hours for submitting presentations are:

Monday: 12:00 am-5:00pm

Tuesday and Wednesday: 7:00 am-5:00pm

Thursday: 7:00 am-4:00pm

IEEE Event Photography Statement

Attendance at, or participation in this conference constitutes to the use of distribution by IEEE of the attendee's image or voice for informational, publicity, promotional and/or reporting purpose by print or electronic communications media. No flash photography will 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.

Industry & University Employer / Job Seeker Network Session

Sponsored by Onscale

This event will give students the opportunity to network with employers in academic and industrial setting. It will be held on **Monday, October 22 from 7:00 pm to 10:00 pm**. The event will start with a speed networking activity, where students will present two-minute elevator pitches to industry members. A social reception will follow, where students and industry members will be able to network with each other. You must register for this event when you register for the symposium, indicating participation as a student or employer.

Monday, October 22 from 7:00-10:00 pm

Location: Nunoniki/Kitano (Main Building B1F)

Student Lunch

All students attending IUS are invited to participate in a complementary lunch on **Tuesday**, **October 23 from 12:00 to 1:30 pm**. This is a great opportunity for students to network with future colleagues, and meet the Administrative Committee members of the UFFC Society.

Tuesday, October 23 from 12:00 – 1:30 pm Location: Rainbow (South Wing 16th Floor)

Student-Professor Breakfast

Sponsored by IEEE UFFC ADCOM

This event is addressed for student members to have the opportunity to network with society academic leaders over breakfast sponsored by UFFC. It will be held on **Thursday, October 25 from 7:00 am to 8:00 am**. One-on-one tables are assigned, for each student and professor, matched by common research topics at the conference. For this event, registrations will be based on a first come-first served basis, by email invitation from UFFC Student AdCom, after registration for the symposium.

Thursday, October 25 from 7:00 – 8:00 am Location: Cosmopolitan (Main Building 2F)

Women in Engineering

All women active in the technical areas of the IUS are invited to attend and participate in an elevator pitch networking lunch organized by the women in UFFC group on **Wednesday October 24 from 12:00 – 1:30 pm**. The event will start with a primer on elevator pitches, then transition to participants sharing their prepared pitches in small groups, and end with a select few pitches to be shared with all participants for judging and critique. All attendees are encouraged to come prepared with an elevator pitch to contribute to the success of this event. This is also a great opportunity to share your latest research projects, network with fellow women in the ultrasound field, and meet organization members of the UFFC society.

Location: Rainbow (South Wing 16th Floor)

Contact:

Muyinatu A. Lediju Bell, Ph.D.
IEEE UFFC WIE Committee, Ultrasonics Representative

Assistant Professor & PULSE Lab Director
Johns Hopkins University

Email: mledijubell@jhu.edu



Challenge Session

Sponsored by Verasonics

Given the positive response to the IUS 2016 challenge on plane wave imaging (PICMUS), IUS 2018 will host a new challenge on synthetic aperture (SA) 2-D vector flow imaging (VFI). The challenge was coordinated Jørgen Arendt Jensen (DTU) and consists on estimating blood flow velocities from both simulated and measured ultrasound RF element data sets. The challenge will be deployed using a similar web platform as the one used for the PICMUS challenge. The results will be presented during the next IEEE International Ultrasonics Symposium 2018 in Kobe (Japan) on **Wednesday October 24** from 12:00 – 1:30 pm. Complementary lunch boxes will be provided for those participating in the session.

All information can be found in the attached PDF file 2018 IEEE IUS SA-VFI Challenge or following the link to the challenge website Webpage for SA-VFI Challenge.

Location: room Ruby (South Wing B1F)

Joint Sessions

IUS traditionally hosts lectures in different technical disciplines of ultrasonics. In order to stimulate cross-talk between disciplines on topics that are of mutual interest, two joint sessions have been set up at IUS 2018.

The **Spotlight Session on Photo-acoustics** (Tuesday 10:30am-12:00pm; room Diamond) hosts three invited lecturers that address photo-acoustics from the perspectives of Medical Ultrasonics; Sensors, NDE & Industrial application; and Physical acoustics.

The **Special Session on Technologies and Challenges for 3D Imaging** (Wednesday 10:30am-12:00pm; room Ruby) provides the perspectives from Medical Ultrasonics and Transducers and Transducers material by 4 contributed presentations followed by a 30min expert panel discussion.

Conference Proceedings

In order for the 2018 IEEE International Ultrasonics Symposium Proceedings 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 papers presented at the conference as part of their full registration fee.

As the Proceedings is a record of the 2018 IEEE International Ultrasonics Symposium, only those papers which are actually presented and defended at the Symposium by the author during 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 the poster or oral session 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 chairs 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:

<u>http://www.ieee.org/conferences_events/conferences/publishing/templates.html</u>. 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.



IEEE International Ultrasonics Symposium 6 - 9 October 2019, SEC, Glasgow, Scotland, UK sites.ieee.org/ius-2019



CALL FOR PAPERS

All abstracts should be submitted in electronic form according to the abstract guidelines available on the website. Each abstract will be carefully reviewed and evaluated by the Technical Program Committee.

Papers are solicited for this conference describing original work in the field of Ultrasonics from the following subject classifications:



Medical Ultrasonics

Sensors, NDE & Industrial Applications

Physical Acoustics

Microacoustics-SAW, BAW & MEMS

Transducers & Transducer
Materials



KEY DATES

Submission Open Friday, 08 February 2019

Submission Deadline Monday, 08 April 2019

Notification to Authors Friday, 07 June 2019

ABSTRACT SUBMISSION AND CONTACT

Visit our website for further information regarding the guidelines and deadlines to submit your abstract

sites.ieee.org/ius-2019/abstract-submission/

For any queries regarding abstract submissions, please contact ieee-ius2019@in-conference.org.uk











EXPLORING SCOTLAND

We encourage all delegates to explore Glasgow and Scotland together with family, friends and colleagues before or after IEEE IUS 2019. The Scottish Exhibition Centre (SEC) is located close to the city centre of Glasgow, with a variety of accommodation options, restaurants, parks and sights nearby.

Visit our website for recommended tours and travel inspiration!

WE LOOK FORWARD TO WELCOMING YOU TO IEEE IUS 2019!

Exhibitors

Acertara Acoustic Labs



At Acertara, we are focused on advancing both the science and application of diagnostic ultrasound. We offer unique and patented ultrasound probe testing devices, our ISO17025:2005 accredited FDA and IEC.

Acoustic Life Science Co., Ltd.



Founded in Zhangjiang Hi-tech Park, Shanghai, Acoustic Life Science Co., Ltd. (ALS) is specialized in high-end medical imaging ultrasound products, including ceramic probes, composite/single crystal probes, high frequency probes and imaging catheters.

Advanced Modular Systems, Inc.



Advanced Modular Systems, Inc. http://www.amssb.co (known as AMSystems, or AMS, Inc.) is a world leader in manufacturing of deposition systems for Piezoelectric AlN and AlScN thin films as well as thickness and frequency trimming used in FBAR/BAW/SAW and other wireless applications.

Advanced OEM Solutions



High-performance, compact phased array and multichannel ultrasound instruments that are open platform for customizing dedicated applications. Offerings include advanced imaging technology like Full-Matrix Capture (FMC), Total Focusing Method (TFM) and Ultra Fast Data Speeds at 160MB/s.

Cephasonics Ultrasound Solutions



Providing complete custom high-performance AI-enabled ultrasound systems for research, product development and OEM ultrasound applications.

Cornes Technologies, Ltd. & PhotoSound



CORNES offers tabletop 3D PAFT & PAM Imaging Systems, fast acquisition switchable PAM upgrade with MEMS mirror. For In Vivo Imaging of capillaries, single cell to organ. Non-invasive molecular imaging tools for advanced cancer, brain, regenerative tissue and developmental biology research applications. Our partner PhotoSound Technologies Inc. is a research, development, and manufacturing company specializing in biomedical applications of photoacoustic imaging.

CYBERDYNE, Inc.



Cyberdyne offers Photoacoustic Imaging Systems.

Doppler Electronic Technologies Co., Ltd.



Doppler's Products- 1. Conventional Ultrasonic / Phased Array Flaw Detectors; 2. Ultrasonic Thickness Gauge; 3. Conventional / Phased Array Transducers; 4. Cobra Scanner, TOFD Scanner, Adaptor and other accessories; 5. Offering any customized demands and service.

Electronics & Innovation, Ltd.



E&I is a focused and dynamic company fulfilling the market demand for rugged and reliable RF power amplifiers. Our goal is to provide our customers with solutions from research to production, benchtop to module. E&I services and supports globally through distributor outlets worldwide.

FujiFilm VisualSonics, Inc.



FUJIFILM VisualSonics, Inc. is the undisputed world leader in real-time, in vivo, high-resolution, micro-imaging systems, providing modalities specifically designed for preclinical research.

IMASONIC



IMASONIC manufactures ultrasonic transducers for health and safety applications. Since its creation in 1989, IMASONIC has been involved in the development of innovative solutions for medical (HIFU & diagnosis) and industrial applications (NDT). The company has 103 employees in France.

Innovia Materials Co., Ltd.



Innovia provides sensor solutions in Medical Ultrasound, NDT, Infrared and MEMS market. Our products include PMN-PT, PIN-PMN-PT crystals up to 3 inch in diameter; and PZT composite with adjustable piezoelectric properties. In addition, we are capable of OEM ultrasound and NDT transducers.

Kolo Medical, Inc.



Kolo Medical is a world leader in development, design, and commercialization of cMUT imaging transducers and arrays. Our engineering team has developed a portfolio of HF and UHF imaging probes for research and clinical medical imaging, delivering superior image resolution.

Lyncée Tec SA



Lyncée Tec SA is the reference company in the field of 4D microscopy. Its unique technology, based on digital holography DHM®, provides simultaneously high acquisition rate and interferometric resolution. It enables new quality control and novel research opportunities not possible before.

Malvern Panalytical A division of Spectris Co., Ltd



For the IEEE congress, we would like to introduce you to our Particle Metrology System, called Archimedes. It can detect and count particles in the size range from 50nm to 5micron. It is suitable to detect and count nanobubbles (micro bubble). Please come to our booth number 10 to speak to our specialists!

Meggitt A/S



Meggitt Denmark offers high quality piezoceramic components for the professional user. We offer the world's best quality piezoceramics for medical and industrial applications and provide uniform products with the highest batch reproducibility in the industry.

Neoark



Manufacturing, marketing and export of lasers and laser applied products for various fields of interests, like medical care and environmental protection.

OnScale



OnScale provides engineers with on-demand access to fast, efficient Multiphysics simulations by coupling its solvers directly with a scalable Cloud high-performance computing (HPC) engine. OnScale breaks cost and performance barriers for engineers by providing near-limitless Cloud HPC resources to solve today's toughest engineering challenges. With OnScale, engineers can run massive multi-million element problems and vast numbers of simulations in parallel for applications like RF Acoustic Filters, Piezoelectric MEMS, Biomedical Transducers, and NDE.

Philips Ultrasound (Shanghai) Co., Ltd.



Since 1997 Philips Ultrasound Shanghai's people have been dedicated in providing OEM Ultrasound Transducers, we are an innovative and technological company that owns a number of patents from sensor design, transducer technology to manufacturing process.

PolyK Technologies

PolyK offers piezoelectric polymer film and high voltage dielectric test instruments



Polytec Technologies



Polytec offers non-contact Vibrometers.

Precision Acoustics Ltd

A leading manufacturer of test equipment for high frequency ultrasound measurement.



S-Sharp Corporation



S-Sharp provides cutting edge solutions to preclinical and clinical research ultrasound. Our core competence is the ability to leverage advanced electronics technologies to address our customer's needs by providing programmability, power and speed.

scia Systems GmbH



scia Systems is a full range supplier of ion beam and plasma processing equipment. The systems are applicable for coating and etching processes in the production of microelectronics, MEMS and precision optical components, in high volume production and research and development environments.

SHINCRON Co., Ltd.

Shincron is the world's best vacuum coater brand supported by experienced customer all over the world.

SHINCRON CO.,LTD.

Sonic Concepts, Inc.



Sonic Concepts delivers premium ultrasonic systems to the biomedical, industrial, marine and research markets. We design and manufacture High Intensity Focused Ultrasound (HIFU) transducers, electronics and software.

STMicroelectronics



STMicroelectronics is a world leader in providing the semiconductor solutions that make a positive contribution to people's lives, today and into the future.

Sumitomo Electric Industries, Ltd. & CBC Co., Ltd.





Sumitomo Electric Industries (SEI) is the excellent supplier of new materials for SAW devices. SEI has introduced the "industry's first" Bonding Wafer of Spinel with LiTaO3 for TC-SAW Devices. With advanced technology, it's spinel achieves small CTE, high stiffness, and excellent machining performance. In addition, it's LT/Spinel bonding Wafer provides superior performance of Q factor, TCF and K2. CBC is a supplier of industrial optics materials, and distribute them through the worldwide sales network. CBC also works as the sole distributor for Infrared Transmission material produced by SEI.

us4us Ltd.



us4us Ltd. is offering 1) a family of scalable ultrasonic research systems featuring a direct RF acquisition and processing on GPUs; 2) OEM ultrasound modules targeted to Software Defined Ultrasound and Point-of-Care scanners; 3) services for ultrasound R&D and medical devices. development.

Verasonics Inc.



Verasonics designs and sells leading edge Vantage ultrasound research systems for academic and commercial investigators. With unparalleled flexibility, Vantage simplifies the acquisition and analysis of acoustic data to advance biomedical research.

VERMON



VERMON is committed to serve the industry, designing and manufacturing advanced and unique transducer technologies. The industrial organization addresses a very diverse customer base, from early stage R&D performers to ultrasound market leaders over a very broad product portfolio.

Venue: Portopia Hotel

10-1, 6 Chome, Minatojima Nakamachi Chuo-ku, Kobe, 650-0046 Japan Tel: +81 - 78 - 302 - 1111

> Fax: +81 - 78 - 302 - 6877 http://www.portopia.co.jp/en/

745 rooms offer exquisitely relaxing and comfortable moments. 13 restaurants and bars pursue beauty in seasonal colors and crafts new tastes. The fitness gym, esthetic Salon and shopping arcade will meet the various needs of the guests as the hotel proudly provides them with a variety of fine facilities. Enjoy the panorama of this port town nestled between the mountains and the sea. The hotel provides rooms with different themes, including the "European Contemporary" rooms on Executive floor the "Oval Club", the "Mid-century Style" rooms on the upper floors of the main building, and the "Resort in South France" rooms in the South Wing.



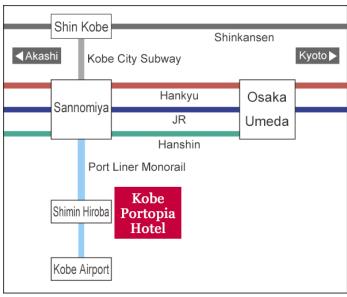
Directions

From / to Shin Kobe Station

- Complimentary shuttle bus takes about 25 minutes
- By taxi, the time required is about 20 minutes; fare is approximately ¥2,000

From / to Sannomiya Station (JR, Hankyu, Hanshin, Kobe City Subway, Port Liner Monorail)

- Complimentary hotel shuttle takes about 15 minutes
- By taxi, the time required is about 10 minutes; fare is approximately \(\frac{\pma}{1,500}\)
- Port Liner monorail takes about 10 minutes to P-06, Shimin Hiroba Station
 * Actual taxi fares depend on traffic conditions; evening and late night surcharges may apply



From / to the airport

From / to Kobe Airport

- Port Liner monorail takes about 8 minutes to P-06, Shimin Hiroba Station
- By taxi, the time required is about 8 minutes; fare is approximately \(\xi\$1,500\)
 - * Actual taxi fares depend on traffic conditions; evening and late night surcharges may apply

From/to Kansai International Airport and Osaka (Itami) Airport

• Airport Limousine Bus

Kansai International Airport ↔ Sannomiya about 65 minutes

Osaka (Itami) Airport ↔ Sannomiya about 40 minutes

* From Sannomiya, please take the hotel courtesy shuttle, Port Liner monorail or taxi to the Kobe Portopia Hotel. The airport limousine stop is a short walk from the hotel courtesy shuttle stop (Mint Kobe building) and Sannomiya Station

• By Kobe Kansai Airport Bay Shuttle Ferry

The high speed ferry ride takes approximately 31 minutes.

For information about fares and schedules, please visit http://www.kobe-access.jp/en/

- * The Bay Shuttle bus to the Port Liner monorail station at Kobe Airport takes about 2-3 minutes
- * Port Liner monorail takes about 8 minutes to P-06, Shimin Hiroba Station

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Clemens Ruppel, EPCOS AG, retired General CoChair



Jan D'hooge, Catholic Univ. of Leuven Technical Program



Kentaro Nakamura, Tokyo Inst. of Tech. Proceedings



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Shin-ichiro Umemura, Tohoku Universtiy Finance



Pai-Chi Li, National Taiwan University Short Course



Amelie Hagelauer, Univ. of Erlangen-Nuremberg WEB



Muyinatu A. Lediju Bell, Johns Hopkins University Communications



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Ryo Nakagawa, Murata MFG Local Arrangement

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- 42. James G. Miller, Washington University in St. Louis, USA
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Group 2 Sensors, NDE & Industrial application



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- 5. James Friend, UCSD, USA
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- 11. Lawrence W. Kessler, Sonoscan Inc.
- 12. Mario Kupnik, Technische Universität Darmstadt, Germany
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- 15. Jennifer Michaels, Georgia Tech, USA
- 16. Kentaro Nakamura, Tokyo Institute of Technology, Japan
- 17. Erdal Oruklu, Illinois Institute of Technology, USA
- 18. Nishal Ramadas, Elster Instromet, Belgium, UK

- 19. Jafar Saniie, Illinois Institute of Technology, USA
- 20. Bernhard Tittman, Pennsylvania State University, USA
- 21. Jiromaru Tsujino, Kanagawa University, Japan
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- 23. Paul Wilcox, University of Bristol, UK
- 24. William Wright, University College Cork, Ireland
- 25. Donald E. Yuhas, Industrial Measurement Systems, USA

Group 3 Physical acoustics



Vice Chair: Koen W.A. van Dongen, Delft Univ.ersity of Technology, Netherlands

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- 2. Anne Bernassau, Heriot Watt University, UK
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- 4. Charles Courtney, University of Bath, UK
- 5. Jianke Du, Ningbo University, China
- 6. Dave Feld, Broadcom Ltd, USA
- 7. Yun Jing, North Carolina State University, USA
- 8. Takefumi Kanda, Okayama University, Japan
- 9. Eun Sok Kim, University of Southern California, USA
- 10. Kimmo Kokkonen, Qorvo, Germany
- 11. Minoru Kuribayashi Kurosawa, Tokyo Institute of Technology, Japan
- 12. Amit Lal, Cornell University, USA
- 13. John Larson, Broadcom Ltd, USA
- 14. Vincent Laude, FEMTO-ST / CNRS, France
- 15. Margaret Lucas, University of Glasgow Scotland, UK
- 16. Andreas Mayer, HS Offenburg Univ. of Applied Sciences, Germany
- 17. Alex Maznev, MIT, USA
- 18. Robert J. McGough, MSU, USA
- 19. Farid Mitri, Chevron, USA
- 20. Mihir Patel, Schlumberger-Doll Research, USA
- 21. Yan Pennec, IEMN / Universite de Lille 1, France
- 22. Bikash Sinha, USA
- 23. Masaya Takasaki, Saitama University, Japan
- 24. Robert Thalhammer, Broadcom Ltd, Germany
- 25. Koen W.A. van Dongen, Delft University of Technology, Netherlands
- 26. István A. Veres, Qorvo Inc., USA
- 27. Jörg Wallaschek, Leibniz Universität Hannover, Germany
- 28. Ji Wang, Ningbo University, China
- 29. Takahiko Yanagitani, Waseda University, Japan
- 30. Yook-Kong Yong, Rutgers University, USA
- 31. Jiun-Der Yu, Qualcomm Technologies, Inc., USA

Group 4 Micro-acoustics SAW, FBAR, MEMS



Vice Chair: Shuji Tanaka, Tohoku University, Japan

- 1. Sylvain Ballandras, frec | n | sys SASU, France
- 2. Sunil Bhave, Purdue University, USA
- 3. Sergey Biryukov, Leibniz Institute for Solid State and Materials Research, Germany
- 4. Paul Bradley, Broadcom Ltd, USA
- 5. Jidong Dai, Murata Electronics North America, Inc., USA
- 6. Omar Elmazria, Université de Lorraine, France
- 7. Gerhard Fischerauer, Universität Bayreuth, Germany
- 8. Amelie Hagelauer, University of Erlangen-Nuremberg, Germany
- 9. Tao Han, Shanghai Jiao Tong University, China
- 10. Ken-ya Hashimoto, Chiba University, Japan
- 11. Shogo Inoue, Qorvo, Inc, USA
- 12. Michio Kadota, Tohoku University, Japan
- 13. Jyrki Kaitila, Broadcom Ltd, Germany
- 14. Jan Kuypers, Qorvo, Inc, USA
- 15. Ryo Nakagawa, Murata Manufacturing Co., Ltd., Japan
- 16. Hiroyuki Nakamura, Skyworks Solutions, Inc., Japan
- 17. Natalya Naumenko, National University of Science and Technology "MISIS", Russia
- 18. Tuomas Pensala, VTT Technical Research Centre of Finland, Finland
- 19. Mauricio Pereira da Cunha, University of Maine, USA
- 20. Maximilian Pitschi, RF360 Europe GmbH, Germany
- 21. Leonhard Reindl, Albert-Ludwigs-Universität Freiburg, Germany
- 22. Rich Ruby, Broadcom Ltd, USA
- 23. Marc Solal, Qorvo, Inc, USA
- 24. Shuji Tanaka, Tohoku University, Japan
- 25. Masanori Ueda, TAIYO YUDEN CO., LTD., JAPAN
- 26. Karl Wagner, RF360 Europe GmbH, Germany
- 27. Robert Weigel, University of Erlangen-Nuremberg, Germany
- 28. Ventsislav Yantchev, Chalmers University of Technology, USA
- 29. Sergei Zhgoon, National Research University "MPEI", Russia

Group 5 Transducers and transducers material



Vice Chair: Sandy Cochran, University of Glasgow, UK

- 1. Jeremy Brown, Dalhousie University, Halifax, Canada
- 2. Sandy Cochran, University of Glasgow, UK
- 3. David Cowell, University of Leeds, UK
- 4. Christopher Daft, River Sonic Solutions, USA
- 5. Loriann Davidsen, Philips Healthcare, USA
- 6. Christine Démoré, University of Glasgow, UK
- 7. Charles Emery, Ulthera Inc., USA
- 8. Arif Sanli Ergun, TOBB University, Turkey
- 9. Lynn Ewart-Paine, NUWC, USA
- 10. Nicolas Felix, Vermon SA, France
- 11. Tomas Gomez, CSIC, Madrid, Spain
- 12. Anne-Christine Hladky, Institut Supérieur d'Electronique et du Numérique, France
- 13. Xiaoning Jiang, North Carolina State University, USA
- 14. Valsala Kurusingal, Thales Australia, Australia
- 15. Ho-yong Lee, Ceracomp Co., Ltd, Korea
- 16. Richard O'Leary, University of Strathclyde, UK
- 17. Franck Levassort, Francois-Rabelais University of Tours, Tours, France
- 18. Omer Oralkan, North Carolina State University, USA
- 19. Weibao Qiu, Shenzhen Institutes of Advanced Technology, China
- 20. Wei Ren, Xi'an Jiaotong University, China
- 21. Yongrae Roh, Kyungpook National University, Korea
- 22. Stefan Rupitsch, University of Erlangen-Nuremberg, Germany
- 23. Jean-Francois Saillant, Areva, France
- 24. Alessandro Savoia, Universita degli Studi Roma Tre, Italy
- 25. Wallace Smith, Office of Naval Research, USA
- 26. Susan Trolier-McKinstry, Pennsylvania State University, USA
- 27. Jian Yuan, ALS Shanghai, China
- 28. Shujun Zhang, University of Wollongong, Australia
- 29. Qifa Zhou, University of Southern California, USA

Plenary Session

Portopia Hall Tuesday, October 23, 2018 8:00 a.m. – 09:00 a.m.

Welcome

Ken-ya Hashimoto and Clemens Ruppel, General Co-Chairs

Opening Remarks

Nazanin Bassiri-Gharb, UFFC-S President

Technical Program

Jan D'hooge, Technical Program Chairs

2018 UFFC-S Plenary Speaker

1995 Kobe and 2011 Tohoku earthquakes

An earthquake is a sudden slip along a fault plane in the crust or the upper mantle of the Earth. This slip generates seismic waves traveling through the Earth to the ground. They then strongly shake the ground close to the earthquake, if the earthquake is shallow and large. Such strong ground motions damage buildings and the people inside. In 1995, shallow faults neighboring downtown Kobe suddenly slipped causing the great Hanshin-Awaji earthquake disaster. Seismic waves from the Kobe earthquake with a magnitude of 6.9 were observed by seismometers all over the world. We have recovered the slip history on the faults and ground motions in downtown Kobe from the observed seismograms. The results show the features of a shallow crustal earthquake. Sixteen years after the Kobe earthquake, much greater earthquake with a magnitude of 9 occurred offshore the Tohoku district in northeastern Japan, due to slips of about 30 m along the upper boundary of the Pacific plate subducting beneath the North American plate. Tsunamis and seismic waves from the Tohoku earthquake caused the great East Japan earthquake disaster. I will explain these earthquakes and their consequences including the Fukushima nuclear accident.



Kazuki Koketsu is a professor in Applied Seismology and the Director of Outreach and Public Relations Office at the Earthquake Research Institute (ERI), University of Tokyo. He obtained Ph.D. in Geophysics from the University of Tokyo. He has worked at ERI as an assistant and associate professor from 1980, and also at the Research School of Earth Sciences, Australian National University as a visiting fellow from 1989 to 1990. He is now a member of the Subcommittees for Survey and Observation Plans and for Evaluation of Strong Ground Motion in the Headquarters, and the Seismic Safety and Structural Design Subcommittee in the Nuclear and Industrial Safety Agency.

Awards Ceremony and Concert

Portopia Hall Wednesday, October 24, 2018 5:50 p.m. – 08:00 p.m.

Opening by Murata Cheerleaders Coutesy of Murata Manufacturing Co. Ltd.



The Murata Cheerleaders get around balanced on a ball. Their key features are stabilization, which keeps them upright, and synchronization, which keeps them from colliding.

Awards and Recognitions

UFFC Society Awards

- Achievement Award
- Distinguished Service Award
- Distinguished Lecturer Award
- Outstanding Paper Award
- Fellow Awards

Presenter Jan Brown, UFFC-S Awards Committee Chair

Ultrasonics Awards

- IEEE Ultrasonics Early Career Investigator Award
- IEEE Carl Hellmuth Hertz Ultrasonics Award
- Rayleigh Award

Presenter: **Jafar Saniie**. Awards Chair for Utrasonics Subcommittee

Student Paper Competition Winners

Presenter Jan D'hooge, IUS2018 TPC Chair

Concert

A Sweet and Fashionable Night with IUS2018 Special Quintet — Pops Masterpieces from 1970's to Present —



Vocal Saharu Saito



Keyboard Sumito Kanza



Bass Minato Hattori



Violin Risa Yamamoto



Drums Ryoichi Kikushima

Conference Reception

Tuesday, October 23th, 2018 Time: 7:30pm-9:30pm Location: Portopia Hotel Owada

The Conference Reception will be held in the Ohwada in the south wing. 1F

Conference Banquet

Wednesday, October 24th, 2017 Time: 8:20pm-10:00pm Location: Portopia Hotel Owada

The Conference Banquet will be held in the Ohwada in the south wing. 1F right after the Awards Ceremony and Concert held in Portopia Hall.

Food preferences:

- Regular
- Vegetarian*
- Muslim*
- * Advance request is necessary at the web registration.

Highlight session

Sponsored by Shincron Co. Ltd.

Thursday, October 25, 2018 Time: 5:45 p.m. – 6:45 p.m. Location Portopia Hotel Topaz

To accommodate the continuous growth of IUS, the technical program runs 8 parallel tracks for the entire duration of the conference. Although such growth is good and shows that our society is innovative and healthy, it also implies that participants might miss interesting lectures / developments. In order to avoid this, the symposium will end with a highlight session on Thursday eve. During this session, established researchers will very briefly present what they considered the conference's highlights within their field of expertise. In this way, we hope to update all participants of the most important evolutions in the respective scientific disciplines presented at IUS. Free drinks will be offered to those participating in the session.

Short Courses

Special Photoacoustics Session:

1A - Biomedical photoacoustics

By: Michael Kolios, Ryerson University, Toronto, Ontario, Canada

8:00am-12:00am Monday, October 22, Room: Topaz (South Wing B1)

2A - Fundametals of laser ultrasonics

By: Osamu Matsuda, Division of Applied Physics, Faculty of Engineering, Hokkaido University

14:00pm-18:00pm Monday, October 22, Room: Topaz (South Wing B1)

Group 1 Medical Ultrasonics:

1B - Ultrafast Ultrasound Imaging: Basic Principles and Applications

By: Mickaël Tanter, Inserm U979 Physics for Medicine, Institut Langevin (ESPCI/CNRS/Inserm), Paris

8:00am-12:00am Monday, October 22, Room: Diamond (South Wing B1)

2B - Motion Estimation Algorithms in Ultrasound Imaging: Principles and Hands-On Development By: Damien Garcia, Creatis, Lyon, France

14:00pm-18:00pm Monday, October 22, Room: Diamond (South Wing B1)

1C - Microbubbles and Nanodroplets for Biomedical Ultrasound Applications: Design Principles and Methods

By: Mark Borden, University of Colorado, USA and Hendrik Vos, Erasmus Medical Center, Netherlands

8:00am-12:00am Monday, October 22, Room: Emerald (South Wing B1)

2C –Ultrasound System Design and Software Beamformation

By: Kai Thomenius, MIT, USA

14:00pm-18:00pm Monday, October 22, Room: Emerald (South Wing B1)

Group 2 Sensors, NDE & Industrial application:

1D – Micro and Nano-Scale Acoustofluidics

By: James Friend, University of California San Diego, USA

8:00am-12:00am Monday, October 22, Room: Kikusui (Main Building B1)

2D - Signal Processing and System-on-Chip Designs for Ultrasonic Imaging, Echo Estimation, Data Compression, and Software-Defined Communications

By: Jafar Saniie and Erdal Oruklu, Illinois Institute of Technology, Chicago, USA

14:00pm-18:00pm Monday, October 22, Room: Kikusui (Main Building B1)

Group 3 Physical acoustics:

1E - Interferometric imaging of surface vibration fields in microacoustic devices: application to research and development of SAW, BAW and MEMS components

By: Kimmo Kokkonen, Qorvo Munich GmbH

8:00am-12:00am Monday, October 22, Room: Sapphire (South Wing B1)

2E - Fundamental Principles of Bulk-Acoustic-Wave Resonator Acoustics By: Robert Thalhammer, Avago Technologies, a Broadcom Ltd company, Munich, Germany 14:00pm-18:00pm Monday, October 22, Room: Sapphire (South Wing B1)

Group 4 Micro-acoustics SAW, FBAR, MEMS:

1F - Multilayered structures for new generation of SAW devices with improved performance: fundamentals, wave characteristics and applications

By: Natalya F. Naumenko, National University of Science and Technology, Moscow, Russia 8:00am-12:00am Monday, October 22, Room: Ikuta (Main Building B1)

2F - Transverse Mode Analysis in SAW/BAW Devices

By: Ken-ya Hashimoto, Chiba University

14:00pm-18:00pm Monday, October 22, Room: Ikuta (Main Building B1)

Group 5 Transducers and transducers material:

1G - Medical Ultrasound Transducers

By: David Mills and Scott Smith, GE Global Research

8:00am-12:00am Monday, October 22, Room: Ruby (South Wing B1)

2G - Electronic systems for ultrasound

By: David Cowell, University of Leeds, UK and Omer Oralkan, North Carolina State University, USA

14:00pm-18:00pm Monday, October 22, Room: Ruby (South Wing B1)

Clinical Session

Tuesday, October 23th, 2018 Time: 1:30pm-3:00pm Location: Room Topaz (South Wing)

1. Echocardiographic Particle Image Velocimetry in Heart Diseases



Echocardiographic particle image velocimetry (Echo-PIV) is an emerging technique to provide us useful information of the left ventricular blood flow and vortex in various heart diseases. The audience will understand the potential of clinical application of Echo-PIV.

Haruhiko Abe, Osaka National Hospital

2. Novel Non-Shelled Nanobubbles as a New Ultrasound Imaging and Drug Delivery Tool



Recently, various nanobubbles for ultrasound contrast imaging are under development. The advantage of nanobubbles is its size which permit more detail images of biological tissues thus making it a superior contrast agent compared to microbubbles. In addition, nanobubble can be used as drug carriers and boosters for sonoporation. Recent advance on this subject will be presented.

Katsuro Tachibana, Fukuoka University

3. Viscoelasticity Measurement in the Liver Using Dispersion Imaging of Shear Wave US Elastography

Fully quantitative measurements of tissue stiffness can be obtained using shear wave elastography (SWE). When integrated with ultrasound imaging, this method employs acoustic radiation force to generate laterally propagating shear waves (SWs) that can be tracked to determine their velocity. However, not only elasticity, but also viscosity, plays an important role in the SW propagation process in the tissue such as liver. In fact, viscosity itself is a parameter that can be used to evaluate liver disease. It is now well known that dispersion is related to the frequency dependence of the speed of SWs and the attenuation of SWs in the viscous component. If a tissue is dispersive, the speed of SWs and the attenuation of SWs will increase with frequency. Accordingly, analysis of the dispersion properties of SWs can serve as an indirect method for measuring viscosity. I will talk a new US elastographic method which is based on analyzing SW dispersion to quantitatively measure not only the SW speed (which is related to viscoelasticity) but also the dispersion slope (which is related to viscosity) in the liver. The SW speed is a more effective predictor of the degree of



fibrosis than the dispersion slope and also suggest that the dispersion slope is a more effective predictor of the degree of necroinflammation than the SW speed. The dispersion slope, which reflects viscosity, may provide additional pathophysiological insight into liver disease.

Fuminori Moriyasu, Sanno Hospital

Invited Speakers

Medical Ultrasonics

- 1. *Transcranial Acoustoelectric Brain Imaging: Progress and Challenges* Russell Witte, University of Arizona Health Sciences, Arizona, US
- 2. *Ultrasound image reconstruction using deep learning: a new paradigm*Maxime Gasse, Creatis Medical Imaging Research Centre, INSA, Lyon, France
- 3. *Molecular modulation of biological membranes by phospholipid-shelled microbubbles* Eleanor Stride, Institute of Biomedical Engineering, Oxford University, UK
- 4. *Matrix transducers for real-time 3D imaging: From intra-cardiac to trans-cranial applications* Nico de Jong, Erasmus MC, Rotterdam, the Netherlands / TU Delft, Delft, the Netherlands
- 5. Passive elastography: a seismic imaging of soft tissues Stefan Catheline, LabTAU, INSERM, Lyon, Franch
- 6. *Next-generation echocardiography opportunities and challenges*Lasse Lovstakken, Norwegian University of Science and Technology, Trondheim, Norway

Sensors, NDE & Industrial application

- 1. Automated Robotically Enabled Ultrasonic Sensing for Additive Manufacturing
 Anthony Gachagan, University of Strathclyde
- 2. Information transmission through solids using Ultrasound Jafar Saniie, Illinois Institute of Technology
- 3. *Full-field Laser-Ultrasound for Practical Nondestructive Inspection*Eric Flynn, Intelligence and Space Research Division, Los Alamos National Laboratory

Physical acoustics

1. Magnetic-Free Radio Frequency Circulator Based on Spatiotemporal Modulation of MEMS Resonators

Matteo Rinaldi, Northeastern University

2. Moving acoustic field for the control of electronic excitations in semiconductor nanostructures

Paulo V. Santos, Paul-Drude-Institut für Festkörperelektronik, Berlin, Germany

3. Evaluation method for high-power piezoelectric materials and devices
Takeshi Morita, Graduate School of Frontier Sciences, The University of Tokyo

Micro-acoustics SAW, FBAR, MEMS

- 1. Hierarchical Cascading in FEM Simulations of SAW Devices
 Julius Koskela and Victor Plessky, GVR Trade, SA and Resonant Inc.
- 2. Transverse modes in temperature compensated surface acoustic wave devices Ken-ya Hashimoto, Chiba University
- 3. *Prof. Eric Adler's Legacy to Microwave Acoustics* Mauricio Pereira da Cunha, University of Maine

Transducers and transducers material

- 1. Collapse-mode CMUT: design and characterization
 Chris van Heesch, Philips Research, Eindhoven, the Netherlands
- 2. Piezoelectric Thin Films for Micromachined Ultrasound Transducers
 Susan Trolier-McKinstry, The Pennsylvania State University, PA 16802, USA
- 3. Technology development of Photoacousitc imaging system in CANON Kenichi Nagae, Canon Inc., Tokyo, Japan

Student Paper Competition

Medical Ultrasonics

- 1. Nonlinear X-wave ultrasound imaging of acoustic biomolecules, Daniel Sawyer,
- 2. A fast 4D B-spline framework for model-based reconstruction and regularization in vector flow imaging, Thomas Groenli,
- 3. Ultrasound/Photoacoustic Imaging Platform to Expedite Development of Novel Glaucoma Treatments, Kelsey Kubelick
- 4. Ultrafast 4D Doppler Imaging of the rat brain with a large aperture Row Column addressed probe, Jack Sauvage
- 5. Single-Chip Reduced-Wire CMUT-on-CMOS System for Intracardiac Echocardiography, Gwangrok Jung
- 6. Prostate Shear Wave Elastography: Multiresolution Reconstruction Dependence on Push Beam Spacing, Derek Y. Chan

Sensors, NDE & Industrial application

- 1. Omnidirectional spiral surface acoustic waves for particles manipulation and multi-size particles separation in a microliter sessile drop, Naiqing Zhang
- 2. **3D flow mapping for Lorentz force driven liquid metal flows in crystallization experiments**, Kevin Mäder
- 3. Design of Lab-on-a-Chip Surface Acoustic Resonance (SAR) Sensor with Enhanced Sensitivity and Integrated EIS, Kiryl Kustanovich

Physical acoustics

- 1. Redatuming for Breast Ultrasound, Ulas Taskin
- 2. Trajectory Optimization of Levitated Particles in Mid-air Ultrasonic Standing Wave Levitators, Tatsuki Fushimi
- 3. A Quasi-LTI Frequency-Selective SAW Circulator, Giuseppe Michetti

Micro-acoustics SAW, FBAR, MEMS

- 1. Novel pMUT-Based Acoustic Duplexer for Underwater and Intra-Body Communication , Flavius Pop
- 2. Use of Hierarchical Cascading Technique for FEM Analysis of Transverse Mode Behaviors in SAW Devices, Xinyi Li, University of Electronic Science and Technology of China
- 3. **S0-Mode Lithium Niobate Acoustic Delay Lines with 1 dB Insertion Loss**, Ruochen Lu, University of Illinois Urabana-Champaign

Transducers and transducers material

- 1. In vivo imaging of a porcine coronary artery with a 30/80 MHz dual frequency intravascular ultrasound catheter, Chelsea Munding
- 2. ASIC design for a single-cable 64-element ultrasound probe, Douwe van Willigen
- 3. Modular fabrication and assembly of large 2D Arrays with interface ASICs, PIN-PMN-PT composite, and 3D printed backing, Robert Wodnicki

Oral Presentation Guidelines

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 min, leaving 5 min. 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 parallel sessions this is critical to the overall success of the
 conference.

Organization of Oral Sessions

- There are eight parallel sessions in the conference and the Technical Program Committee will try to minimize conflicts of topics between parallel sessions.
- 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.
- The computers are equipped with Windows 10 as well as Microsoft PowerPoint 2016 (Office), Internet Explorer/Edge (latest), Adobe Acrobat Reader DC/Flash Player, Windows Media Player 12 and QuickTime 7.
- To submit (upload) the presentation data, use the unique (personalized) link to the paper management system. The unique link to the paper management system has been emailed to the presenting author. Please upload the presentation materials no later than 24:00 (PST), Thursday, 18 October 2018.
- All the authors are requested to (a) visit the Speaker Ready Room at least one day prior to the session, (b) verify their presentation for compatibility and proper operation. If necessary, especially if you have embedded multi-media content, you will have the final opportunity to adjust or tweak your presentation at that time. We suggest the presenting author to bring his/her own computer and a USB thumb drive with presentation materials as backup.
- Since your computer may have sophisticated fonts (such as special equation symbols) that the conference computers may 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 will 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 (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.

Good Practices

- Show no more than 1 slide per minute of speaking time. This means approximately 10-12 slides MAXIMUM for the 12 minutes 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 BIG ENOUGH. Suggested minimum font 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.

Poster Presentation Guidelines

Posters will be on display in the Poster Area located in the **Kairaku** and **Waraku** rooms in the basement 1 of Main Building. This year we will have three full day poster sessions. Each poster session is divided into two time slots, as follows:

- Mornings: 9:30 am to 10:30 am (Posters with odd numbers will be presented)
- Afternoons: 3.00 pm to 4.00 pm (Posters with even numbers will be presented)

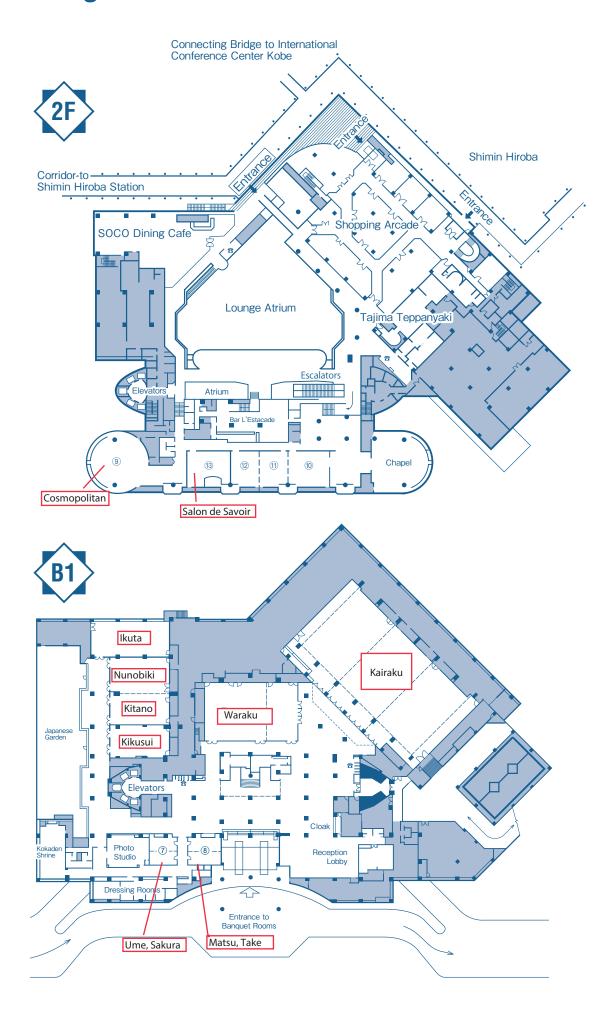
Posters must be posted in the morning between 7:30 am to 8:00 am. They must be removed between 5:30 pm to 6:00 pm at the end of the day. Therefore, each poster will be displayed for a full day (8:00 am to 5:30 pm).

Please note, on the last day of conference (Thursday October 25), posters need to be removed at 4:00 pm instead of 5:30 pm since exhibitor booths will be dismantled after 4:00pm.

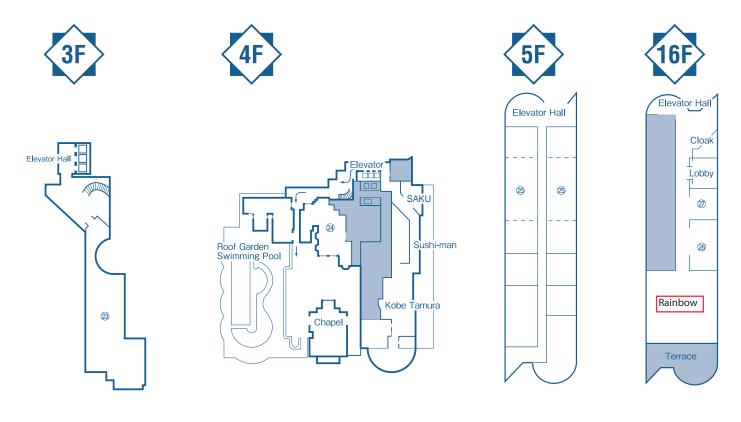
Instructions

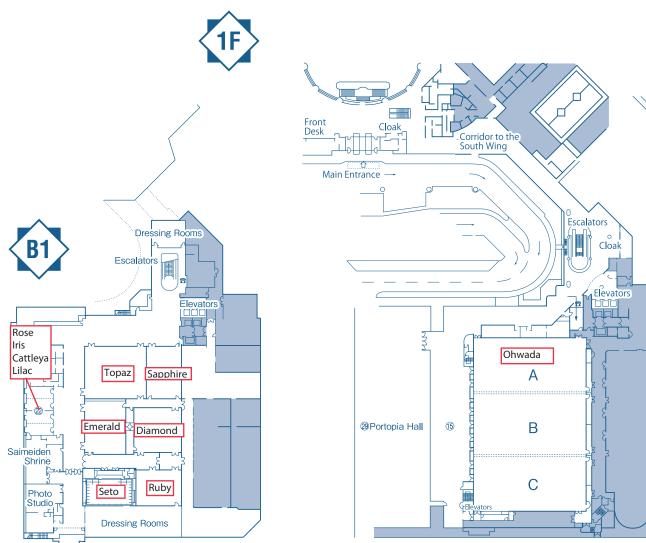
- One poster board is allocated to each presentation. The recommended poster size is **Landscape format**, Arch E which is 36 inches high by 48 inches wide (92 cm x 122 cm). European alternative ISO A0 (84 cm x 119 cm) can also be used.
- Posters must be mounted using push pins provided by the organizing 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 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 AT 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 the written version of your paper available for those viewers who may want to study specifics of your work in more detail.
- Have your business cards available for those who may wish to contact you at a later date.
- Bring along a tablet of blank paper that you may use for a discussion of technical details relating to your poster.

Main Building



South Wing





	- Posters	of Student Paper Competition -		Kairaku
Session P1-SPC. Student paper competition	P1-SPC-4 Ultrafast 4D Doppler Imaging of the rat brain with a large aperture Row Column addressed probe	P1-SPC-8 3D flow mapping for Lorentz force driven liquid metal flows in crystallization experiments	P1-SPC-12 A Quasi-LTI Frequency-Selective SAW Circulator	P1-SPC-16 In vivo imaging of a porcine coronary artery with a 30/80 MHz dual frequency intravascular ultrasound catheter
Chair: Thanasis Loupas Philips Ultrasound	Jack Sauvage¹, Jonathan Porée¹, Claire Rabut¹, Baptiste Heiles¹, Guillaume Ferin², Martin Flesch², An Nguyen-Dinh², Mickaël Tanter¹, Mathieu Pernot¹, Thomas Deffieux¹ ¹Institut Langevin, ESPCI Paris, PSL Research University, CNRS UMR 7587, INSERM U979, France, ²Vermon SA, 180 rue du General Renault, 37000 TOURS, France, France	Kevin Mäder ¹ , Norman Thieme ¹ , Dagmar Meier ² , Richard Nauber ¹ , Lars Büttner ¹ , Olf Pätzold ² , Jürgen Czarske ¹ ¹ Laboratory of Measurement and Sensor System Techniques, Technische Universität Dresden, Dresden, Germany, ² Institute of Nonferrous Metallurgy and Purest Materials, Technische Universität Bergakademie Freiberg, Freiberg, Germany	Giuseppe Michetti ¹ , Cristian Cassella ¹ , Flavius Pop ¹ , Ahmed Kord ² , Dimitrios Sounas ² , Andrea Alà ² , Matteo Rinaldi ¹ 'Northeastern University, Boston, MA, United States, ² University of Texas at Austin, United States	Chelsea Munding ¹ , Emmanuel Cherin ² , Natasha Alves ² , David Goertz ^{1,2} , Brian Courtney ^{2,3,4} , F. Stuart Foster ^{1,2} ¹ University of Toronto, Toronto, ON, Canada, ² Sunnybrook Research Institute, Toronto, ON, Canada, ³ Sunnybrook Health Sciences Centre, Toronto, ON, Canada, ⁴ Conavi Medical Inc., Toronto, ON, Canada
SPC-1 Nonlinear X-wave ultrasound imaging of acoustic biomolecules	P1-SPC-5 Single-Chip Reduced-Wire CMUT-on- CMOS System for Intracardiac Echocardiography	P1-SPC-9 Design of Lab-on-a-Chip Surface Acoustic Resonance (SAR) Sensor with Enhanced Sensitivity and Integrated EIS	P1-SPC-13 Novel pMUT-Based Acoustic Duplexer for Underwater and Intra-Body Communication	P1-SPC-17 ASIC design for a single-cable 64- element ultrasound probe
Daniel Sawyer¹, David Maresca², Guillaume Renaud³, Audrey Lee-Gosselin², Mikhail Shapiro⁴ ¹Bioengineering, Caltech, Pasadena, CA, United States, ²Chemical Engineering, Caltech, United States, ³Sorbonne Université, France, ⁴Caltech, United States	Gwangrok Jung ¹ , Amirabbas Pirouz ¹ , Coskun Tekes ² , Thomas M. Carpenter ³ , M. Wasequr Rashid ¹ , Ahmad Rezvanitabar ¹ , David Cowell ³ , Steven Freear ³ , Maysam Ghovanloo ¹ , F. Levent Degertekin ^{1,2} ¹ School of Electrical & Computer Engineering, Georgia Institute of Technology, Atlanta, GA, United States, ² G.W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA, United States, ³ School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom	Kiryl Kustanovich ¹ , Aldo Jesorka ¹ , Ventsislav Yantchev ¹ ¹ Chalmers University of Technology, Goteborg, Sweden	Flavius Pop ¹ , Bernard Herrera ¹ , Guofeng Chen ¹ , Emrecan Demirors ¹ , Raffaele Guida ¹ , Cristian Cassella ¹ , Tommaso Melodia ¹ , Matteo Rinaldi ¹ ¹ Northeastern University, Boston, MA, United States	Douwe van Willigen ¹ , Jovana Janjic ² , Eunchul Kang ¹ , Zu Yao Chang ¹ , Emile Noothout ³ , Martin D. Verweij ^{2,3} , Nicolaas de Jong ^{2,3} , Michiel Pertijs ¹ ¹ Electronic Instrumentation Laboratory, Delft University of Technology, Delft, Netherlands, ² Thorax Centre, Erasmus MC, Rotterdam, Netherlands, ³ Laboratory of Acoustical Wavefield Imaging, Delft University of Technology, Delft, Netherlands
P1-SPC-2 A fast 4D B-spline framework for model-based reconstruction and regularization in vector flow imaging	P1-SPC-6 Prostate Shear Wave Elastography: Multiresolution Reconstruction Dependence on Push Beam Spacing	P1-SPC-10 Redatuming for Breast Ultrasound Ulas Taskin ¹ , Joost van der Neut ¹ , Koen w.a. van	P1-SPC-14 Use of Hierarchical Cascading Technique for FEM Analysis of Transverse Mode Behaviors in SAW Devices	P1-SPC-18 Modular fabrication and assembly of large 2D Arrays with interface ASICs, PIN-PMN-PT composite, and 3D printed backing
Thomas Groenli ^{1,2} , Morten Wigen ^{1,2} , Patrick Segers ³ , Lasse Lovstakken ^{1,2} ¹ Department of Circulation and Medical Imaging, Norwegian University of Science and Technology (NTNU), Trondheim, Norway, ² Centre for Innovative Ultrasound Solutions (CIUS), Norway, ³ IBiTechbioMMeda, Ghent University, Ghent, Belgium	Derek Y. Chan¹, Samantha Lipman¹, Mark Palmeri¹, D. Cody Morris¹, Thomas J. Polascik², Ned C. Rouze¹, Kathryn Nightingale¹ 'Biomedical Engineering, Duke University, Durham, NC, United States, 'Surgery, Duke University, Durham, NC, United States	Dongen¹ ¹Department of Imaging Physics, Faculty of Applied Sciences, TU Delft, Delft, Netherlands	Xinyi Li ^{1,2} , Jingfu Bao ¹ , Yulin Huang ^{1,2} , Benfeng Zhang ^{2,3} , Tatsuya Omori ² , Ken-ya Hashimoto ^{2,3} ¹ University of Electronic Science and Technology of China, Chengdu, China, People's Republic of, ² Chiba University, Chiba, Japan, ³ Shanghai Jiao Tong University, China, People's Republic of	Robert Wodnicki ¹ , Haochen Kang ¹ , Jayesh Adhikari ¹ , Rui Zhang ² , Ruimin Chen ¹ , Laiming Jiang ¹ , Nestor Cabrera-Munoz ¹ , Yu Liu ² , Victoria Chiu ² , Hayong Jung ¹ , Josquin Foiret ² , Qifa Zhou ^{1,3} , Douglas N. Stephens ² , Katherine Ferrara ² ¹ Department of Biomedical Engineering, University of Southern California, Los Angeles, CA, United States, ² Department of Biomedical Engineering, University of California, Davis, Davis, CA, United States, ³ Department of Ophthalmology, University of Southern California, Los Angeles, CA, United States
P1-SPC-3 Ultrasound/Photoacoustic Imaging Platform to Expedite Development of Novel Glaucoma Treatments	P1-SPC-7 Omnidirectional spiral surface acoustic waves for particles manipulation and multi-size particles separation in a microliter sessile drop	P1-SPC-11 Trajectory Optimization of Levitated Particles in Mid-air Ultrasonic Standing Wave Levitators	P1-SPC-15 S0-Mode Lithium Niobate Acoustic Delay Lines with 1 dB Insertion Loss	
Kelsey Kubelick ¹ , Eric Snider ¹ , Andrei Karpiouk ² , C. Ross Ethier ¹ , Stanislav Emelianov ^{1,2} ¹ Wallace H. Coulter Department of Biomedical Engineering, Georgia Institute of Technology & Emory University, Atlanta, GA, United States, ² School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, GA, United States	Naiqing Zhang ¹ , Gopesh Tilvawala ¹ , James Friend ¹ ¹ Center for Medical Devices and Instrumentation, University of California, San Diego, La Jolla, CA, United States	Tatsuki Fushimi ¹ , Asier Marzo ¹ , Thomas L. Hill ¹ , Bruce W. Drinkwater ¹ ¹ Department of Mechanical Engineering, University of Bristol, Bristol, United Kingdom	Ruochen Lu ¹ , Tomas Manzaneque ¹ , Yansong Yang ¹ , Songbin Gong ¹ 'University of Illinois at Urbana-Champaign, Urbana, IL, United States	

Chinese Academy of

11:15 am	1A-4 In vivo estimation of myocardial mechanical wave propagation in the fetus Solveig Fadnes, et al Department of Circulation and Medical Imaging, NTNU		3A-4 Time-Resolved Wall Shear Rate Mapping: Spatiotemporal Profiling of a Key Hemodynamic Factor Related to Atherosclerosis Chung Kit Ho, et al University of Waterloo	4A-4 Enhancement of Radiation Response Using Ultrasound-Stimulated Microbubbles: ASMase Dependence Gregory Czarnota, et al Sunnybrook Health Sciences Centre	5A-4 Advanced characterization of surface acoustic wave fields at high temperature Robert Weser, et al IFW Dresden	6A-4 Reconfigurable 1.5D Source Arrays for Improved Elevational Focussing in All- Optical Ultrasound Imaging Erwin Alles, et al University College London	7A-4 Development of double Nakagami distribution model for quantitative evaluation of early-stage fatty-liver disease Kazuki Tamura, et al Chiba university	8A-4 A 5 mm x 5 mm Square, Aluminum Lens Based Histotripsy Transducer: Reaching the Endoscopic Form Factor Jeffrey Woodacre, et al Dalhousie University
11:30 am	1A-5 4D cardiac ultrafast imaging of natural mechanical waves: towards quantitative elastography of the human ventricle Victor Finel, et al Institut Langevin, INSERM U979, ESPCI, CNRS UMR 7587, ART	2A-3 Compressed Sensing in Photoacoustic Tomography Markus Haltmeier, et al Universität Innsbruck	3A-5 In vivo wall shear stress and blood flow mapping using native blood speckle or contrast enhanced echo particle image velocimetry and plane wave imaging Kai Riemer, et al Imperial College London	4A-5 Ultrasound- mediated microbubble destruction suppressed mouse glioblastoma growth as effectively as radiation therapy Lifei Zhu, et al Washington University in St louis	5A-5 High Quality Factor SAW Resonators Based on Al / AIN / Sapphire for High Temperature Wireless Applications Jérémy Streque, et al Université de Lorraine, CNRS	6A-5 Fibre-Optic Ultrasound Imaging Devices for Guidance of Minimally Invasive Procedures Richard Colchester, et al University College London	7A-5 System- Independent Ultrasound Attenuation Coefficient Estimation Using Spectra Normalization Ping Gong, et al Mayo Clinic College of Medicine and Science	8A-5 3D Ultrasound Image Guidance and Therapy through the Rib Cage with a Therapeutic Random Phased Array Muhammad Zubair, et al Imperial College London
11:45 am	1A-6 Ultrafast ultrasound imaging grants alternate methods for assessing diaphragm function. Damien Bachasson, et al Institute of Myology		3A-6 Clinical evaluation of wall shear stress by ultrafast vector flow imaging in carotid atherosclerotic stenosis Guillaume Goudot, et al Institut Langevin, INSERM U979	4A-6 Tumor Vascular Normalization by Oxygen-Microbubbles with Ultrasound Shu-Wei Chu, et al National Tsing Hua University	5A-6 Separation of Frequency and Amplitude Modulation Contributions due to External Vibration on a SAW Resonator Anin Maskay, et al University of Maine	6A-6 Design of a fully populated phased array for transcranial HIFU therapies based on shock-wave exposures with aberration correction Pavel Rosnitskiy, et al Physics Faculty, Moscow State University	7A-6 A deep learning method of transient elastography for assessment of liver fibrosis Yongshuai Li, et al School of Medicine, Tsinghua University, Beijing	8A-6 Planar CMUT annular-array and embedded imaging for ultrasound-guided HIFU therapy W. Apoutou N'Djin, et al LabTAU, INSERM, Centre Léon Bérard, Université Lyon 1, Univ Lyon

01:30 p	m -03:00 pm			Oral Tuesday,	October 23				
	Session 1B. Advances in Clinical Ultrasound Chair: Yoshifumi Saijo Tohoku University	Session 2B. Photoacoustic Contrast and Theranostic Agents Chair: Roger Zemp University of Alberta	Session 3B. Tips and Tricks for Doppler and Contrast Imaging Chair: Svetoslav Nikolov BK Ultrasound	Session 4B. Contrast Imaging Applications Chair: Jeffrey Ketterling Riverside Research	Session 5B. SAW Modeling & Design 1 Chair: Karl Wagner RF360 Europe GmbH		Session 6B. Transducers Chair: Kentaro Nakamura Tokyo Institute of Technology	Session 7B. Carotid Elasticity Chair: Chris de Korte Radboud University Medical Center	Session 8B. PTF & PTE: Thin Films and High Power Ultrasonics Chair: Andreas Mayer HS Offenburg - Univ. of Applied Sciences, Gengenbach
	Topaz (400)	Diamond (300)	Emerald (280)	Sapphire (220)	Ikuta (200)		Nunobiki (150)	Kikusui (140)	Ruby (200)
01:30 pm	1B-1 Viscoelasticity Measurement in the Liver Using Dispersion Imaging of Shear Wave US Elastography Fuminori Moriyasu, et al Sanno Hospital	2B-1 Plasmonic gold nanoparticles for combined photoacoustic imaging and photothermal therapy using a pulsed laser Oscar Knights, et al University of Leeds 2B-2 In vivo Photoacoustic, 19F MR and fluorescent imaging of clinicallyapplicable perfluorocarbonloaded nanoparticles Khalid Daoudi, et al Radboud university medical center	3B-1 Higher order singular value decomposition for high contrast microvascular imaging Chee Hau Leow, et al Imperial College London 3B-2 Adaptive grayscale mapping to improve molecular ultrasound difference images Jasmine Shu, et al Stanford University	4B-1 Contrast enhanced ultrasound imaging of chronic rat spinal cord injury Matthew Bruce, et al University of Washington 4B-2 Quantification of lipid microbubble shell pharmacokinetics enabled by copper- porphyrin-lipid labeling Maneesha Rajora, et al University Health Network	5B-1 Thin Film Acoustoelectric GHZ SAW Amplifier Design Donald Malocha, et al Pegasense 5B-2 Simplified BEM Model for Fast and Accurate Simulation of Surface Acoustic Wave Devices Takanao Suzuki, et al Murata Manufacturing Co., Ltd., Kyoto		6B-1 Printed polymer transducers for mid-air haptic feedback Paul van Neer, et al TNO 6B-2 Linear Ultrasonic Array Development incorporating Cantor Set Fractal Geometry Haoyu Fang, et al University of Strathclyde	7B-1 Evaluation of carotid biomechanical properties by simultaneous analysis of arterial stiffening and deformation Guillaume Goudot, et al Institut Langevin, INSERM U979 7B-2 Strain Discontinuities in Carotid Atherosclerotic Plaques – a Novel Marker for Plaque Vulnerability? Tim Vonk, et al Maastricht University Medical Center	8B-1 Evaluation method for high-power piezoelectric materials and devices Takeshi Morita, et al The Univ. of Tokyo
02:00 pm	1B-2 Echocardiographic Particle Image Velocimetry in Heart Diseases Haruhiko Abe, et al Osaka National Hospital	2B-3 Ultrasound and Photoacoustic Imaging to Aid Design, Optimization, and Validation of Pathogen-like Particle Vaccines Kelsey Kubelick, et al Georgia Institute of Technology & Emory University	3B-3 Understanding the origin of flashing artefacts due to Singular Value Decomposition clutter filter Jiaqi Zhu, et al Imperial College London	4B-3 Contrast- Enhanced Micro- Vasculature Imaging: A New Statistical Approach Billy Y. S. Yiu, et al University of Waterloo	5B-3 Multi-mode P- matrix models for the description of interacting modes in TCSAW and LSAW devices Markus Mayer, et al RF360 Europe GmbH	***************************************	6B-3 Broadband Piezocrystal Transducer Array for Non-Destructive Evaluation Imaging Applications Zhen Qiu, et al University of Strathclyde	7B-3 In vivo 3D strain imaging of the carotid artery Stein Fekkes, et al Radboud university medical center	8B-2 An Ultrasonically Assisted Sagittal Saw Daniel Richards, et al University of Glasgow

02:15 pm		2B-4 A feasibility study of targeted nanoparticled-based photoacoustic imaging of ex vivo endoscopic mucosal resection tissue from Barrett's esophagus patients Han Ho Jeon, et al University Health Network	3B-4 Identifying Directional Components in an Augmented Pulse Wave: A Spatial- Velocity Gradient Approach Adrian J. Y. Chee, et al University of Waterloo	4B-4 Precise collection of microbubbles by acoustic vortex under flow conditions Wei Chen Lo, et al National Tsing Hua University	5B-4 Nonclassical power law of third order intermodulation in TC-SAW devices Thomas Finteis, et al RF360 Europe GmbH	6B-4 A novel design of piezoelectric ultrasonic transducer with high temperature resistance Xianwei Yuan, et al Harbin Institute Of Technology	7B-4 Carotid elastography for detection of vulnerable atherosclerotic plaques: An inter-operator reproducibility study Zhi Liu, et al Tsinghua University	8B-3 Improvement of crystalline orientation and electromechanical coupling in ScAIN film in view of negative ion bombardment during sputtering deposition Shinji Takayanagi, et al Nagoya Institute of Technology
02:30 pm	1B-3 Novel Non-Shelled Nanobubbles as a New Ultrasound Imaging and Drug Delivery Tool Katsuro Tachibana, et al Fukuoka University	2B-5 Sono-Photoacoustic Vaporization of Polypyrrole coated Perfluorocarbon Droplets for Clot Lysis David Li, et al University of Washington	3B-5 Fetal heart rate measurements of twins using a single flexible ultrasound transducer matrix Paul Hamelmann, et al Eindhoven University of Technology	4B-5 Real-Time Closed-Loop Spatiotemporal Control of Cavitation Activity with Passive Acoustic Mapping Scott Schoen Jr., et al Georgia Institute of Technology	5B-5 Transverse modes in temperature compensated surface acoustic wave devices Ken-ya Hashimoto, et al Chiba University	6B-5 Densification behavior and Mechanical Properties of PBX Substitute Composites Fabricated by Ultrasonic Assisted Pressing of Powder Kezhen Lyu, et al Institute of Chemical Materials, China Academy of Engineering Physics	7B-5 A Machine Learning Approach to Delineating Carotid Atherosclerotic Plaque Structure and Composition by ARFI Ultrasound, In Vivo Gabriela Torres, et al The University of North Carolina at Chapel Hill	8B-4 High-volume production and non-destructive piezo-property mapping of 30% Sc-doped aluminium nitride thin films Stefan Mertin, et al VTT Technical Research Centre of Finland
02:45 pm		2B-6 Nanobubble Facilitated Optoporation and Ultra High Frequency Photoacoustic Imaging of BT-474 Breast Cancer Cells in Vitro Filip Bodera, et al Ryerson University	3B-6 Unambiguous detection and visualizing of a catheter with multiple active acoustic sources: in-vivo validation in a swine model Viksit Kumar, et al Mayo Clinic College of Medicine and Science	4B-6 Dual-Frequency-Chirp Passive Cavitation Imaging in Brain Hsiang-Ching Lin, et al National Tsing Hua University		6B-6 High Temperature condition monitoring with a novel, flexible, thin film sensor Daniel Irving, et al novosound	7B-6 Hadamard Encoded Multi-element Synthetic Aperture Imaging (H-MSA) for High Quality Tracking of Shear Waves Rifat Ahmed, et al University of Rochester	8B-5 PZT epitaxial thick film for ultrasonic transducer at frequencies below 100 MHz Yuka Mazda, et al Waseda University

04:45 pm		2C-4 Alternative elasticity measurement in deep tissue using strain-photoacoustic imaging Guan Xu, et al University of Michigan	3C-4 Individual perfluorocarbon nanodrop vaporization with 18-MHz plane waves Jeffrey Ketterling, et al Riverside Research	4C-4 Development of a microvascular phantom for studies on microbubble dynamics and bubblecell interaction inside a capillary Shinji Imai, et al Hokkaido University	5C-4 A Hybrid 3D Thermal / 1D Piezoelectric Finite Element Model for Rapid Simulation of FBAR Filter Response under High Power Christopher Kirkendall, et al Broadcom Inc	6C-4 Experimental validation of non-collinear wave mixing model Hector Hernandez Delgadillo, et al University of Twente	7C-4 Pulse Wave Imaging for monitoring non-linear material behavior in an Ang-II induced hypertensive mouse model Paul Kemper, et al Columbia University	8C-3 Design of High- Frequency Ultra- Wideband 1-D CMUT Arrays for Acoustic Angiography Applications Oluwafemi Adelegan, et al North Carolina State University
05:00 pm	1C-4 Ultrafast Doppler Observation in Rat Stroke Model Comparison with High Field Magnetic Resonance Imaging Yu-Chieh Kao, et al Taipei Medical University	2C-5 Portable LED- based photoacoustic and ultrasound imaging system for guiding minimally invasive procedures with peripheral tissue targets Mithun Kuniyil Ajith Singh, et al PreXion Corporation	3C-5 HER2 Targeted Perfluorocarbon Nanodroplets for Super-Resolution Ultrasound Imaging Austin Van Namen, et al Dartmouth College	4C-5 Dynamics and Mechanisms of Ultrasound and Microbubble Facilitated Intracellular Plasmid DNA Uptake Ning Rong, et al Tianjin University	5C-5 Hafnium nitride as high acoustic impedance material for fully insulating acoustic reflectors Mario DeMiguel-Ramos, et al University of Cambridge	6C-5 Full-field Laser- Ultrasound for Practical Nondestructive Inspection Eric Flynn, et al Los Alamos National Laboratory	7C-5 Establishing Reliable Reference Values for Ultrasound Pulse Wave Velocity Measurement Methods: An Arterial Phantom Validation Study Adrian J. Y. Chee, et al University of Waterloo	8C-4 Microbubble Contrast Agent Imaging Using Multi- Frequency CMUT Arrays Mohammad Maadi, et al University of Alberta
05:15 pm	1C-5 The continuous cardiac thick-slice acquisition - for simultaneous flow and tissue motion estimation Morten Wigen, et al NTNU	2C-6 Characterizing non-resolvable tissue structures in photoacoustic imaging Eno Hysi, et al Ryerson University	3C-6 High-frequency molecular ultrasound imaging using targeted phase-change nanodroplets Trevor Mitcham, et al MD Anderson Cancer Center	4C-6 New Insights in the Actin Cytoskeleton Dynamics of the Sonoporated Human Umbilical Vein Endothelial Cells Caixia Jia, et al Shanghai Jiao Tong University	5C-6 Alloy Engineered Single Crystal BAW RF Filters for 5-6GHz Applications Ramakrishna Vetury, et al Akoustis		7C-6 An ultrasound phantom material with unique features: changing viscoelastic properties while keeping the speed of sound constant Benjamin Meirza, et al Lund University	8C-5 Broadband vs. sensitive CMUT linear array: a comparative study from bare chip up to the image Maxime Hery, et al Tours University

09:30 am - 04:00 pm	Poster -	Tuesday, October 23		Kairaku (posters 1)
Session P1-A2. Cell Stimulation, HIFU, and Pressure Measurement Chair: Brandon Helfield University of Toronto	Session P1-A3. Multifunctional Bubbles and Applications Chair: Agata Exner Case Western Reserve University	P1-A4-3 Contrast-Enhanced Time-Resolved Vector Flow Imaging of Urinary Flow Dynamics Takuro Ishii, et al University of Waterloo	P1-A5-7 Toward a Shear Wave Based Mode to Sonographically Monitor the Enrichment of Iron Oxide Nanoparticles in Drug Targeting Applications Michael Fink, et al University of Erlangen-Nuremberg	P1-A7-2 Receive angle steering and clutter reduction for imaging the speed-of-sound inside large blood vessels Maju Kuriakose, et al University of Bern
P1-A2-1 Behavioral responses of ultrasonic neuromodulation in freely moving mice Guofeng Li, et al Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences	P1-A3-1 Biomimetic synthesis of neutrophil- microbubble for robust in vivo targeting of atherosclerotic vulnerable plaques yang mao, et al The Key Laboratory of Cardiovascular Remodeling and Function Research, Chinese Ministry of Education	P1-A4-4 Characterization of Heterogeneous Perfusion in Contrast-enhanced Ultrasound Michelle Kleckler, et al University of Minnesota Twin Cities	P1-A5-8 Shear Wave Computed Tomography with Directional Filtering Chia-Lin Lee, et al National Taiwan University	P1-A7-3 Computationally Efficient Spatially Variant Deconvolution in Ultrasound Imaging Mihai Florea, et al Aalto University
P1-A2-2 Ultrasound stimulation of dopamine neurons in the ventral tegmental area induces reanimation from general anesthesia Tianyuan Bian, et al Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences	P1-A3-2 In vivo acoustic trapping of microbubbles by a resonant stent Fei Ii, et al shenzhen institutes of advanced technology, Chinese academy of sciences	P1-A4-5 Validation of NSSA-based filtering using differential targeted enhancement Elizabeth B. Herbst, et al University of Virginia	Session P1-A6. Cardiovascular Elasticity Imaging Chair: Hendrik Hansen Radboud University Medical Center	P1-A7-4 Development of extended field of view, extended aperture and 3D spatial compounding of 3D images to improve ultrasound-based localization of the uterus for radiotherapy treatment Sarah Mason, et al Institute of Cancer Research
P1-A2-3 Ultrasound brain stimulation via activation of Piezo1 Zhihai Qiu, et al The Hong Kong Polytechnic University	P1-A3-3 Ultrasound Driven Penetration of Gold Nanocones in a Tissue Model Xiaoqian Su, et al Nanyang Technological University	P1-A4-6 Dynamic contrast enhanced ultrasound imaging; the effect of imaging modes and parameter settings for a microvascular phantom Elahe Moghimirad, et al Joint Department of Physics and CRUK Cancer Imaging Centre, The Institute of Cancer Research and Royal Marsden NHS Foundation Trust, Sutton, London	P1-A6-1 Estimation of the spatial resolution of a 2D strain estimator using synthetic cardiac images Bidisha Chakraborty, et al KU Leuven	P1-A7-5 A new adaptive frequency compounding method based on a saliency map Sunyoung Oh, et al SOGANG UNIVERSITY
P1-A2-4 Transcranial focus ultrasound stimulation modulates saccadic behaviors in monkey Xiaojing Long, et al Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences	P1-A3-4 Indirect assessment of nanobubble size through agarose trapping and ultrasound M-Mode imaging Michael Moore, et al Ryerson University	P1-A4-7 A fluid dynamic model for quantitative contrast-enhanced ultrasound imaging: validation for the assessment of uteroplacental perfusion Baudouin Denis de Senneville, et al Institut de Mathématiques de Bordeaux	P1-A6-2 Investigating the degree of shear wave speed anisotropy in function of studied ventricular zone Annette Caenen, et al Ghent University	P1-A7-6 Transcranial Imaging Using Coded Multiple Transmit Focus Wavefront Synthesis Parker O'Brien, et al University of Minnesota Twin Cities
P1-A2-5 High Intensity Focused Ultrasound Induced Assembly of Suprametallomolecular Hydrogel Umesh Jonnalagadda, et al Nanyang Technological University	P1-A3-5 Acoustic characterization of microbubbles with indocyanine green derivatives for dual contrast imaging using ultrasound and near infrared fluorescence Kenji Yoshida, et al Chiba University	Session P1-A5. New Elasticity Imaging Methods Chair: Arun Kumar Thittai IIT Madras	P1-A6-3 High frame rate imaging to assess myocardial contractility Marta Orlowska, et al KU Leuven	P1-A7-7 Shear shock wave focusing in human skull phantom: observations with high-frame rate ultrasound imaging and matched simulations Bharat Tripathi, et al University of North Carolina-Chapel Hill

P1-A2-6 On the use of spatial coherence for in situ peak rarefaction pressure estimation Bofeng Zhang, et al Duke University	P1-A3-6 Porphyrin/Camptothecin-Fluoroxyuridine Triad Microbubbles Along with Ultrasound and Photodynamic Therapy for Overcoming Multidrug Resistance in Colorectal Cancer Min Chen, et al Department of Biomedical Engineering, Peking University	P1-A5-1 Hybrid elastography: a new technique for the assessment of tissue stiffness. Hugo Lorée, et al Echosens	P1-A6-4 Imaging the contraction of mechanically supported ex vivo beating hearts Louis Fixsen, et al Eindhoven University of Technology	P1-A7-8 3D Motion Correction for Volumetric Super-Resolution Ultrasound Imaging Sevan Harput, et al Imperial College London
P1-A2-7 Ultrasound stimulates insulin secretion via activating mechanical sensitive ion channels in pancreatic islet ß cells Jinghui Guo, et al The Hong Kong Polytechnic University	P1-A3-7 Ultrasound contrast agent of camptothecin-floxuridine microbubbles for achieving in situ tumor drug accumulation and enhancing combined chemotherapeutic efficacy Xiaolong Liang, et al Peking University Third Hospital	P1-A5-2 Design and Experimental Validation of Miniature External Mechanical Vibrators towards Clinical Ultrasound Shear Wave Elastography Heng Yang, et al MIT	P1-A6-5 Bi-directional Ultrasound Assessment of Nonlinear Mechanical Behavior of Physiologically Pressurized Artery in Both Normal and Hardening Conditions Yahua Wang, et al The University of Hong Kong	P1-A7-9 A Harmonic Motion Imaging (HMI) clinical system for detection and characterization of in-vivo human breast tumors – Initial feasibility Niloufar Saharkhiz, et al Columbia University
P1-A2-8 Study on dependence of mechanotransduction sensitivity on cytoskeletal development using cultured cardiomyocytes. Shota Negishi, et al Hokkaido University	P1-A3-8 The Effect of Lipid Solubilization on the Performance of Doxorubicin-loaded Nanobubbles Pinunta Nittayacharn, et al Case Western Reserve University	P1-A5-3 Quantitative quasi-static ultrasound elastography using reference layer: A preliminary Assessment Sathiyamoorthy Selladurai, et al Indian Institute of Technology Madras(IITM)	P1-A6-6 In Vivo Pulse Wave Imaging for Mice Carotid Artery Based on 40 MHz Array Ultrafast Ultrasound Vector Velocity Estimation Yi-Jie Wang, et al National Cheng Kung University	P1-A7-10 Quantitative analysis of uterine motion outside pregnancy by dedicated ultrasound speckle tracking Federica Sammali, et al Eindhoven University of Technology
P1-A2-9 Real-time field mapping using an ultrasound scanner Kazuhiro Matsui, et al INSERM	Session P1-A4. Contrast-Enhanced Ultrasound Chair: Hairong Zheng Shenzhen Institutes of Advanced Technology	P1-A5-4 A Convolution Neural Network-based Speckle Tracking Method for Ultrasound Elastography Bo Peng, et al Southwest Petroleum University	P1-A6-7 High Spatio-Temporal Resolution Arterial Pulse Wave Assessment Using Multiplane Wave Sliding Decoding Sequence Jinbum Kang, et al Sogang University	P1-A7-11 Characterization of the performances of 4D DCE-US Virginie Grand-Perret, et al IR4M UMR8081 (CNRS, Univ. Paris-Sud, Université Paris-Saclay)
P1-A2-10 Retrospective analysis and theoretical simulation of the first HIFU treatment point of isointense uterine fibroids on T2WI: a retrospective comparative study Faqi Li, et al Chongqing Medical University	P1-A4-1 3D local convective-dispersion characterisation in dynamic contrast-enhanced ultrasound recordings based on a finite-element scheme Rogier R. Wildeboer, et al Eindhoven University of Technology	P1-A5-5 Mechanical waves in time-dependent media may offer a new view on tissue elasticity imaging Alberico Sabbadini, et al Delft University of Technology	Session P1-A7. New Methods and Techniques for Imaging Chair: Hiroshi Kanai Tohoku University	Session P1-A8. Image Guidance and Acoustic Microscopy Chair: Shinichiro Umemura Tohoku University
P1-A2-11 Investigation on interaction between ultrasound and living tissue Satoshi Sobue, et al The University of Tokyo	P1-A4-2 Contrast-agent detection using orthogonal decoding with pulse-inversion harmonic suppression in Hadamard-encoded multi-pulses (HEM) transmission Che-Chou Shen, et al National Taiwan University of Science and Technology	P1-A5-6 Non-contact sub-surface elastography using airborne ultrasound surface motion camera Antoine Aminot, et al Institut Langevin, CNRS, ESPCI Paris, PSL Research University	P1-A7-1 Characterization of B-mode image quality using lag-one coherence (LOC) Will Long, et al Duke University	P1-A8-1 3-D observation of punctual needle by 2-D shear wave imaging under forced vibration of needle Yoshiki Yamakoshi, et al Gunma University



09:30 am - 04:00 pm	Poster -	Tuesday, October 23		Kairaku (posters 1)
P1-A8-2 In vivo microultrasound visualisation of nerve trauma due to regional anaesthesia needle insertion and injection Anu Chandra, et al University of Dundee	P1-A9-7 Enhanced Second Harmonic Imaging using a Pulse Compression Technique Combined with Ultrasound Pulse Inversion Yanis Mehdi Benane, et al Univ.Lyon, INSA-Lyon, UCBL1, UJM-Saint Etienne, CNRS, Inserm, CREATIS UMR 5220, U1206	P1-A11-3 Rapid Histotripsy Treatment Using Protocol of Fundamental and Second Harmonic Superposition Combined with Hundred-Microsecond Ultrasound Pulses with Sector Array Approach: Initial Experiments Mingzhu Lu, et al The key Laboratory of Biomedical Information Engineering of Ministry of Education, Xian Jiaotong Univ.	P1-A12-4 High Voltage Excitation and Nonlinear Transmission of a 16 MHz AIN-Based Piezoelectric Micro-Machined Ultrasonic Transducer Wen-Juan Liu, et al IEMN-DOAE	P1-A13-6 Tunable Manipulation of Microparticles by CMUT Changde He, et al North University of China
P1-A8-3 Thermal Strain Imaging for Sonodynamic Therapy Monitoring: ex vivo and in vivo Feasibility Studies Fu-Feng Lee, et al Department of Biomedical Engineering, Tsinghua University	Session P1-A10. Cardiovascular System Chair: Chih-Chung Huang National Cheng Kung University	P1-A11-4 Thrombotripsy for venous recanalization using a high frequency transducer of 2.25MHz in a porcine model of femoral venous thrombosis Guillaume Goudot, et al Institut Langevin, INSERM U979	P1-A12-5 A Row–Column-Addressed 2D Probe with an Integrated Compound Diverging Lens Mathias Engholm, et al Technical University of Denmark	P1-A13-7 A 50MHz CMUT Probe for Medical Ultrasound Imaging Steve Zhuang, et al Kolo Medical Inc.
P1-A8-4 Reconstruction of Quantitative Acoustic Microscopy Images from RF Signals Sampled at Innovation Rate	P1-A10-1 Characterizing the erythrocyte aggregation using the anisotropy of ultrasonic backscatter	P1-A11-5 Generation of medium-high intensity focused acoustic vortex and its application in sonothrombolysis	P1-A12-6 Flexible piezoelectric micromachined ultrasonic transducers towards new applications	P1-A13-8 CMUT surface functionalization with imine-based polymer for SO2 gas detection applications
Jong-Hoon Kim, et al University of Toulouse	Julien Rouyer, et al Aix-Marseille université, CNRS, Centrale Marseille	Shifang Guo, et al School of Life Science and Technology, Xi an Jiaotong University	Sheng Sun, et al Tianjin University	Dovydas Barauskas, et al Kaunas University of Technology
P1-A8-5 A Study for B-Mode Imaging using 100- MHz-Range Ultrasound through a Fused Quartz Fiber	P1-A10-3 Coronary Plaque Characterization from IVUS Image by using Artificial Intelligence Technique	P1-A11-6 Dual-frequency ultrasound thrombolysis using a high intensity focused ultrasound transducer array	P1-A12-7 A Study on Structural Parameters for Optimizing Wide-band Property of Diaphragm-Type Transducer Using Piezoelectric Thick Film	P1-A13-9 Analysis and Design of High Frequency CMUT Arrays in Non-Collapsed Mode
Takasuke Irie, et al Microsonic Co., Ltd	Yi-Chen Li, et al National Cheng Kung University	Wu Sun, et al Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences	Yuya Ishiguro, et al Tokyo Metropolitan University	Evren Arkan, et al Georgia Institute of Technology
P1-A8-6 In vitro volume imaging of articular cartilage using chirped coded high frequency ultrasound	P1-A10-4 Quantitative ultrasound spectroscopy measurements of erythrocyte aggregation within superficial veins	P1-A11-7 High intensity focused ultrasound (HIFU) combines shear wave optical coherence elastography (SW-OCE) for diseases treatment and evaluation	P1-A12-8 A 6-Degree-of-Freedom Piezoelectric Vibration Microstage with Reduced Cross-Axis Coupling	
Anowarul Habib, et al UiT The Arctic University of Norway	Guy Cloutier, et al University of Montreal Hospital	Kanheng Zhou, et al University of Dundee	Yi Zhang, et al University of Electronic Science and Technology of China	
Session P1-A9. Leveraging Deep Learning and Pulse Compression Chair: Mathieu Pernot INSERM	P1-A10-5 Experimental verification of relationship between red blood cell aggregation degree and peak frequency of ultrasonic reflection spectrum with real blood Takayuki Sato, et al Tokyo Metropolitan University	P1-A11-8 Low-cost ultrasound thermometry for HIFU therapy using CNN Younsu Kim, et al Johns Hopkins University	P1-A12-9 Electrical Tuning of Focal Size with Single Focused Ultrasonic Transducer Yongkui Tang, et al University of Southern Califronia	

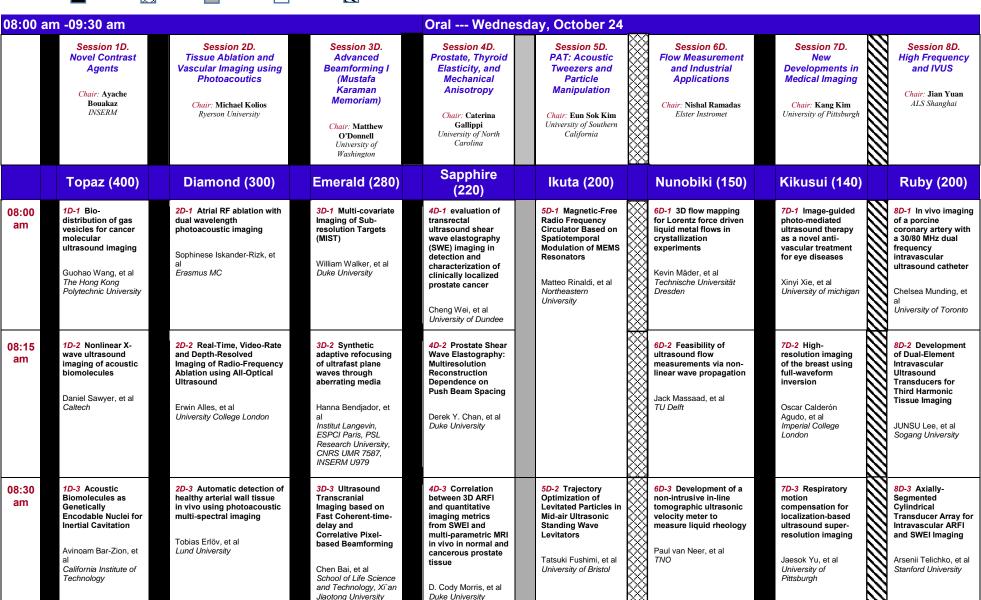
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P1-A9-1 Learning Doppler with convolutional neural networks (DopplerNet) and its application to intra-cardiac echography Ruud J. G. van Sloun, et al Eindhoven University of Technology	P1-A10-6 Red blood cell aggregation measurement with 40-MHz ultrasound has a possibility for noninvasive evaluation of blood glucose level in patients with diabetes Kanta Nagasawa, et al Tohoku University	P1-A11-9 Feasibility Study on Noise Reduction Using Continuous Wave Response of Therapeutic Ultrasound for High Intensity Focused Ultrasound Treatment Ryo Takagi, et al National Institute of Advanced Industrial Science and Technology (AIST)	Session P1-A13. Micromachined Transducers - II Chair: Omer Oralkan North Carolina State University	
P1-A9-2 WaveFlow – Towards Integration of Ultrasound Processing with Deep Learning Piotr Jarosik, et al Institute of Fundamental Technological Research, Polish Academy of Sciences	P1-A10-7 Nonlinearly Generated Second Harmonic Ultrasonic Backscatter for Determining Composition of Human Carotid Plaque Russell Fedewa, et al Cleveland Clinic	P1-A11-10 Patched Optimal Scanning Pathway with Brute-force Approach for Time Reduction in High Intensity Focused Ultrasound Treatment Euisuk Chung, et al Sogang University	P1-A13-1 A 120+120-Element Crisscross CMUT Probe with Real-Time Switchable Electronic and Fresnel Focusing Capabilities Alessandro Stuart Savoia, et al Roma Tre University	
P1-A9-3 Localization of partially visible needles in 3D ultrasound using dilated convolutional neural networks Arash Pourtaherian, et al Eindhoven University of Technology	P1-A10-8 Laser-generated focused ultrasound back-scattered signal analysis for differentiating blood and clot: A quantitative study Deblina Biswas, et al Sungkyunkwan University	Session P1-A12. Micromachined Transducers - I Chair: Omer Oralkan North Carolina State University	P1-A13-2 CMUT based air coupled transducers for gas-mixture analysis Priyadarshini SHANMUGAM, et al GREMAN UMR-CNRS 7347, Université de TOURS	
P1-A9-4 Grading severity of rheumatoid arthritis on ultrasound images with deep convolutional neural networks Jian Tang, et al Nanjing University	Session P1-A11. Histotripsy, Sonothrombolysis and HIFU Chair: Shin Yoshizawa Tohoku University	P1-A12-1 Efficiency and bandwidth of experimental capacitive and commercial piezo transducers Borislav Gueorguiev Tomov, et al Technical University of Denmark	P1-A13-3 CMUT-based single element transducer applied to 1D transient ultrasound elastography Dominique Certon, et al Tours University	
P1-A9-5 Improved Decorrelation Based Elevational Motion Estimation with Singular Value Decomposition and Machine Learning Ching-Yen Lee, et al	P1-A11-1 Non-invasive Histotripsy Aberration Correction for Soft-Tissue using Cavitation- induced Shockwaves Jonathan Macoskey, et al	P1-A12-2 A PMUT array with dynamic directivity: A study of its underwater acoustic power intensity Sina Sadeghpour, et al	P1-A13-4 Capacitance-Voltage Characterization of CMUT Arrays: Analytical modeling, simulations, and experiments Erik Thomsen, et al	
National Taiwan University P1-A9-6 Ultrasound Probe Bandwidth Enhancement Combined with Non-Stationary Compression Filters to Improve Image Quality	University of Michigan P1-A11-2 Histotripsy Volume Ablation Enabled by Electronic Focal Steering and Bubble Coalescence	P1-A12-3 Study on Wide-band Piezoelectric Micro-machined Ultrasound Transducers (pMUT) by Combined Resonance Frequencies	Technical University of Denmark P1-A13-5 Electrode resistance considerations for large CMUT arrays	
Yanis Mehdi Benane, et al Univ.Lyon, INSA-Lyon, UCBL1, UJM-Saint Etienne, CNRS, Inserm, CREATIS UMR 5220, U1206, Lyon	Jonathan Lundt, et al University of Michigan	and Controlling Poling Directions. Kenji Suzuki, et al KONICAMINOLTA, INC.	Andreas Havreland, et al Technical University of sDenmark	

09:30 am - 04:00 pm	Poster -	Tuesday, October 23		Waraku (posters 2)
Session P2-A1. PTF & PTE: Thin Films and High Power Ultrasonics Chair: Koen W.A. van Dongen TU Delft	P2-A2-3 Effect of Backing on Carbon-Polymer Nanocomposite Sources for Laser Generation of Broadband and High Amplitude Ultrasound Srinath Rajagopal, et al University College London	P2-A3-6 Plane-Wave Phase Coherence Imaging with Singular Value Decomposition Hideyuki Hasegawa, et al University of Toyama	P2-A4-8 In Vivo 40 MHz Ultrafast Ultrasound Vector Doppler Imaging (VDI) for Mice Carotid Artery Hsin Huang, et al National Cheng Kung University	P2-A6-3 Deep learning for limited-view photoacoustic tomography reconstruction Yuan Zhou, et al Tsinghua University
P2-A1-1 DC-induced piezoelectric cubic PMN-PT/ piezoelectric tetragonal PZT epitaxial stack polarity inverted resonators for frequency switchable filters Takahiro Shimidzu, et al Waseda University	P2-A2-4 Magnetically mediated thermoacoustic signal enhanced by coupled magnetic resonance Yunqi Luo, et al Nanyang Technological University	P2-A3-7 Low-complexity Delay-Multiply-and- Sum (DMAS) beamforming using baseband spatial coherence Che-Chou Shen, et al National Taiwan University of Science and Technology	Session P2-A5. Novel Instrumentation and Approaches in Photoacoustic Imaging Chair: Sophinese Iskander-Rizk Erasmus Medical Center	P2-A6-4 Using deep neural networks to remove photoacoustic reflection artifacts in ex vivo tissue Derek Allman, et al Johns Hopkins University
P2-A1-2 Evaluation of frequency shifts in thickness-shear mode resonator consisting of c-axis parallel oriented ZnO film for viscosity measurement Masaya Miyata, et al Doshisha university	P2-A2-5 Improved lateral resolution using sub pitch sampling of ultrasound data for pulsed laser diode-based photoacoustic imaging Sowmiya Chandramoorthi, et al Indian Institute of Technology Madras(IITM)	P2-A3-8 Phase aberration correction of focused ultrasound by optimized refraction-compensation method Jun Yasuda, et al Hitachi, Itd.	P2-A5-1 An automated breast ultrasound scanner with integrated Doppler flow imaging and shear wave elastography Corey Kelly, et al University of British Columbia	Session P2-A7. Industrial Applications Chair: Kentaro Nakamura Tokyo Institute of Technology
P2-A1-3 ScAIN free-standing 0.1 mm plates with 30-50 MHz resonance frequency Chiaki Masamune, et al Waseda University	P2-A2-6 Analysis of Elastic Vortex Waves for Optical Orbital-Angular-Momentum Mode Conversion by Acoustooptic Interaction Takuya Shoro, et al Tokushima University	P2-A3-9 A New Compounding Method for High Contrast Ultrafast Ultrasound Imaging Based on Delay Multiply and Sum Dooyoung Go, et al Sogang University	P2-A5-2 3D Photoacoustic and Ultrafast Ultrasound Volumetric Flow Imaging with a Bias-Switchable Row-Column 2D Array Chris Ceroici, et al University of Alberta	P2-A7-1 Evaluation of engine oil deterioration using shear horizontal surface acoustic wave sensor based on acoustoelectric interaction Saya Kobayashi, et al Shizuoka University
P2-A1-4 Picosecond-ultrasound study on interlayer interaction of monocrystal graphite Atsuki Wake, et al Osaka University	P2-A2-7 Acousto-Optic Modulator Driven by Longitudinal Leaky Surface Acoustic Waves on Bonded Structures Kentaro Hakiri, et al Integrated Graduate School of Medicine, Engineering, and Agricultural Sciences, University of Yamanashi	P2-A3-10 A real-time lag one coherence tool for adaptive imaging Nick Bottenus, et al Duke University	P2-A5-3 Laser-generated focused ultrasound system using CNT-PDMS optoacoustic lenses for micro-precision tissue treatment Jeongmin Heo, et al Sungkyunkwan university	P2-A7-2 Application of Ultrasonic Assisted End Milling for Glass Material Akira Yoneyama, et al Yamanashi Industrial Technology Center
P2-A1-5 Morphology Change of Ultrathin Films Studied by Noncontact Piezoelectric Resonance Method Tomoya Ueno, et al Osaka University	P2-A2-8 Minimization of group delay dispersion for platelet piezoelectric transducers of acousto-optic devices Vladimir Molchanov, et al National University of Science and Technology MISIS	Session P2-A4. Vector Flow Measurements Chair: Adrian Chee University of Waterloo	P2-A5-4 The effectiveness of the omnidirectional illumination in full-ring photoacoustic tomography Suhail Alshahrani, et al Wayne State University	P2-A7-3 An ultrasonic flextensional array for acoustic emission techniques on concrete structures Monica La Mura, et al University of Salerno

P2-A1-6 Deposition of Pd semicontinuous films using resistive spectroscopy for hydrogen sensor	Session P2-A3. Adaptive Beamforming Chair: Francois Varray	P2-A4-1 Quantitative vascular blood flow imaging: A comparison of vector velocity estimation schemes	P2-A5-5 Internal-illumination Photoacoustic Computed Tomography with 15-cm Penetration Depth	P2-A7-4 Modelling and electrical characterization of a cantilever mechanical energy harvester
Nobutomo Nakamura, et al Osaka University	INSA Lyon	Ingvild Kinn Ekroll, et al CIUS, Norwegian University of Science and Technology, NTNU	Mucong Li, et al Duke University	Thien Hoang, et al Vermon SA
P2-A1-7 Investigation of morphotropic phase boundary in sputter-grown Pb(Zrx,Ti1-x)O3 epitaxial films	P2-A3-1 A New Compensated Coherence Factor Beamforming Method for Ultrasound B- mode Imaging: Preliminary Evaluation in Simulation and in-vivo Breast Studies	P2-A4-2 Intraventricular blood velocity measurements – a comparison between iVFM and blood speckle tracking	P2-A5-6 Axial-Resolution Improved Optical Resolution Photoacoustic Microscopy Using Minimum-Variance Spectral Apodization and Coherence Weighting	Session P2-A8. NDE Chair: Robert Addison Rockwell Science Center
Ryuta Noda, et al Waseda University	Youngjo Oh, et al Sogang University	Magnus Sælemsminde, et al Norwegian University of Science and Technology (NTNU)	Hong-Sheng Chen, et al National Tsing Hua University	Rockwell Science Center
P2-A1-8 Polymer films joining with High- Intensity Focused Ultrasound: investigation of the physical principles	P2-A3-2 Short-lag Spatial Coherence Imaging in 1.5-D and 1.75-D Arrays: Beamforming and Array Design Considerations	P2-A4-3 High Frequency Ultrafast Ultrasound Vector Flow Imaging for Mice Brain Without Contrast Agents	P2-A5-7 Simultaneous photoacoustic and ultrasound imaging using a hemispherical sensor array	P2-A8-1 A GPU-based Portable Phased-Array System with Full-Matrix Capture
Coralie Koo Sin Lin, et al Technische Universität Dresden	Matthew Morgan, et al Duke University	Chin-Fang Hsieh, et al National Cheng Kung University	Shunto Takaoka, et al Kyoto University	Marcin Lewandowski, et al Institute of Fundamental Technological Research, Polish Academy of Sciences
Session P2-A2. POA: Opto-Acoustics	P2-A3-3 Benefits of adaptive beamforming methods for contrast enhanced high frame-rate ultrasound	P2-A4-4 Vortex Ring Phantom for Investigation of Ultrasound Vector Flow Imaging	Session P2-A6. All-Optical Photoacoustic Imaging and Computational Approaches	P2-A8-2 Stress dependence of magnetic hysteresis properties through acoustically stimulated electromagnetic response in steel
Chair: Koen W.A. van Dongen TU Delfi	Antonio Stanziola, et al Imperial College London	Emilia Badescu, et al Université de Lyon, CREATIS; CNRS UMR5220; Inserm U1206; INSA-Lyon; Université Lyon 1, France	Chair: Meng-Lin Li National Tsing Hua University	Yuhei Suzuki, et al Tokyo Univ. of A & T
P2-A2-1 Sparsity-promoting opto-acoustic imaging with source estimation	P2-A3-4 A dynamic generalized coherence factor based on Van Cittert-Zernike theorem	P2-A4-5 Inter-leaved Synthetic Aperture Sequences for Measuring High Vector Flow Velocities	P2-A6-1 Dual-modality All-Optical Ultrasound and Photoacoustic Imaging Using Permanent Marker Ink	P2-A8-3 Defect detection in billet using plane- wave and time-of-flight deviation with transmission method
Rajiv Kumar, et al Georgia Institute of Technology	Ali Fatemi, et al NTNU	Jørgen Jensen, et al Technical University of Denmark	Richard Colchester, et al University College London	Ryusuke Miyamoto, et al University of Tsukuba
P2-A2-2 Regularized Capon Beamformer using L1-Norm Applied to Photoacoustic Imaging	P2-A3-5 Adaptive loading in minimum variance beamforming for passive imaging of acoustic cavitation	P2-A4-7 Simultaneous Tissue and Flow Estimation using Plane Waves and Transverse Oscillation on In Vivo Carotid	P2-A6-2 Adaptive All-Optical Ultrasound Imaging through Temporal Modulation of Excitation Light	P2-A8-4 Study about non-contact measurement of the acoustic property in an incline-sided tissue using pass-through airborne ultrasound
Roya Paridar, et al Tarbiat Modares University	Tao Sun, et al Brigham and Women's Hospital, Harvard Medical School	Vincent Perrot, et al Univ.Lyon, INSA-Lyon, UCB Lyon 1, UJM-Saint Etienne, CNRS, Inserm	Erwin Alles, et al University College London	Shinnosuke Hirata, et al Tokyo Institute of Technology

09:30 am - 04:00 pm	Poster -	Tuesday, October 23		Waraku (posters 2)
P2-A8-5 Ultrasonic Pattern Recognition Algorithm based on Multilayer Perceptron Neural Network	P2-A9-9 Equivalent Circuit Analysis of a Piezoelectric Multilayered Structure for In-Air Ultrasound Sensors	P2-A11-2 Study for Temperature Coefficient of Frequency of Surface Acoustic Wave Devices with SiOxNy Film Using LiTaO3 Substrate	P2-A13-2 Microbubble Non-linear Oscillation Induced Acoustic Micromixing within Microfluidic Devices	
Boyang Wang, et al Illinois Institute of Technology	Muhammad Shakeel Afzal, et al Kyungpook National University	Atsushi Nishimura, et al Skyworks Solutions, Inc.	Wenjun Zhang, et al Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences	
P2-A8-6 Study of amount of gas in soft container using the noncontact acoustic inspection method	P2-A9-10 Blood Coagulation Time Measurement Using a 1µL of Whole Blood on a TE Mode BAW Resonator	P2-A11-3 Longitudinal Leaky SAW with Low Attenuation on LiTaO3 Thin Plate Bonded to Quartz Substrate	P2-A13-3 Nanocrystalline Optomechanical Cavity Excited by SAW Launchers	
Shigeya Kawai, et al Graduate School of Engineering, Toin University of Yokohama	Negar Majidi, et al Electrical and Electronics Engineering, Ozyegin University	Junki Hayashi, et al University of Yamanashi	Jouni Ahopelto, et al VTT Technical Research Centre of Finland	
P2-A8-7 Ultrasonic Communication System Design using Electromagnetic Acoustic Transducer Xin Huang, et al Illinois Institute of Technology	P2-A9-11 Non-contact measurement of surface wave speeds and estimation of Young's moduli of tissue-mimicking phantoms by using focused airborne ultrasound Marie Tabaru, et al Tokyo Institute of Technology	P2-A11-4 Optimized Y-rotated cut of LiNbO3 with least anisotropic and higher electromechanical in-plane properties for omnidirectional surface acoustic waves propagation Naiqing Zhang, et al University of California, San Diego	P2-A13-4 Improving PMUT Transmit Performance via Sub-Micron Thickness Scaling Xiaoyue Jiang, et al UC Berkeley	
Session P2-A9. Sensors	P2-A9-12 A Novel Phase Evaluation Method for Range Detection by Hybrid SAW sensors	P2-A11-5 Novel Cuts of Quartz Crystals for SAW Resonators with Cubic Frequency-temperature Relations	P2-A13-5 Specificity and sensitivity characterization of a resonant bio-sensor made of gallium arsenide	
Session P2-A9. Sensors Chair: David Greve DWGreve Consulting	Zixiao Lu, et al institute of acoustics, chinese academy of sciences	Shaoyun Wang, et al Ningbo University	Thérèse Leblois, et al FEMTO-ST	
P2-A9-1 ULTRA SONIC CAVITY RESONANCE METHOD FOR FLUID QUALITY MONITORING APPLICATION	Session P2-A10. SAW Modeling & Design I	Session P2-A12. BAW Device & Application I	P2-A13-6 High-throughput sonoporation of single cells within a microfluidic chip	
Daijiro Miyazaki, et al TE connectivity	Chair: Ryo Nakagawa Murata Manufacturing Co., Ltd.	Chair: Amelie Hagelauer University of Erlangen-Nuremberg	Xiufang Liu, et al Paul C. Lauterbur Research Center for Biomedical Imaging	
P2-A9-2 Acoustic sensor for non-contact analysis of bacterial cells in conducting suspensions	P2-A10-1 Acoustic Wave Filter Topologies for enhanced performance	P2-A12-1 A Hybrid Acoustic-Wave Resonator and Lumped-Element Ladder Filter	P2-A13-7 First steps towards simultaneous isolation and detection of exosomes with carbon nanotube-based SMRs	
Irina Borodina, et al Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Saratov Branch	Jordi Mateu, et al Universitat Politecnica de Catalunya	Michael Wagner, et al Friedrich-Alexander-University Erlangen- Nuremberg	Teona Mirea Universidad Politecnica de Madrid	

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P2-A9-3 A Delay-line Sensor Based on Wedge Waves	P2-A10-2 Fast SAW Device Simulation in COMSOL Using the Hierarchical Cascading Method	P2-A12-2 Resonant and antiresonant frequencies behavior with temperature changes in gravimetric sensors		
Che-Hua Yang, et al National Taipei University of Technology	Aleksey Shimko, et al Tai-Saw Technology Co. Ltd	Teona Mirea, et al Universidad Politecnica de Madrid		
P2-A9-4 Quantifying the performance of state of the art fiber optic sensors to measure guided elastic waves	P2-A10-3 A nonlinear FEM model to calculate third harmonics and intermodulation in TC-SAW devices	P2-A12-3 FBAR oscillator stabilized by Rb atomic resonator for SHF/EHF band wireless devices		
Gert-Jan van Groenestijn, et al TNO	Vikrant Chauhan, et al Friedrich-Alexander-University Erlangen- Nuremberg	Motoaki Hara, et al National Institute of Information and Communications Technology		
P2-A9-5 Integrated Transmitting and Receiving Mode Graphene Microphone Array	P2-A10-4 P-matrix model for third order electric and acoustic nonlinearities in TC-SAW devices	P2-A12-4 Laterally acoustically coupled BAW filters at 3.6 GHz		
Kaihua Cao, et al Wuhan University of Technology	Vikrant Chauhan, et al Friedrich-Alexander-University Erlangen- Nueremberg	Tuomas Pensala, et al VTT Technical Research Centre of Finland		
P2-A9-6 Gas sensor based on the piezoelectric resonator with lateral electric field and film of chitosan glucolate Boris Zaitsev, et al Kotelnikov's Institute of Radio Engineering and Electronics of RAS, Saratov Branch	P2-A10-5 Electrothermal modeling of TC SAW filter Wolfgang Akstaller, et al Friedrich-Alexander-University Erlangen- Nueremberg	P2-A12-5 Investigation of thermal and non-linear effects on the performance of the power amplifier - BAW filter - chain in a LTE transmitter Uwe Stehr, et al TU Ilmenau		
P2-A9-7 Influence of Viscoelastic Stress Relaxation of Glass-frit Sealing layer on the Frequency Stability of a Dual-mode Quartz Pressure Sensor under extreme Pressure Conditions Mihir Patel, et al Schlumberger Tech Corp	Session P2-A11. SAW Device & Application I Chair: Jidong Dai Murata Electronics North America, Inc.	Session P2-A13. MEMS & Application I Chair: Shuji Tanaka Tohoku University		
P2-A9-8 Pressure and Temperature Sensitivity of a Dual-mode Quartz Pressure Sensor for High Pressure Applications Mihir Patel, et al Schlumberger Tech Corp	P2-A11-1 Experimental observation of high- velocity surface acoustic wave (HVSAW) on highly-textured ScAIN/Sapphire bilayer structure. Application to high frequency devices. Florian Bartoli, et al CentraleSupélec	P2-A13-1 On the implementation of mode localization between physical and digital resonators Claude Humbert, et al FEMTO-ST		





08:45 am	1D-4 Fluorine- modified Superhydrophobic Amorphous Calcium Carbonate- Doxorubicin Nanoparticles for Ultrasound Theranostics Pei-Hua Chiang, et al National Tsing Hua University	2D-4 Multi-spectral photoacoustic morphology assessment of human carotid plaques using blind spectral unmixing and histologic validation Mustafa Umit Arabul, et al Eindhoven University of Technology	3D-4 Distributed Phase Aberration Correction Techniques Based on Local Sound Speed Estimates Rehman Ali, et al Stanford University	4D-4 Elastography of the thyroid by tracking shear waves generated by vocal cords vibrations Steve Beuve, et al UMR 1253 iBrain, Université de Tours, Inserm	5D-3 Acoustic Biomolecules Enable Acoustic Trapping and Manipulation of Genetically Engineered Cells Di Wu, et al Caltech	6D-4 Flow Imaging through a Multimode Waveguide using a Time Reversal Virtual Array Richard Nauber, et al TU Dresden	7D-4 3D Super- Resolution Ultrasound Imaging using a 2D Sparse Array with High Volumetric Imaging Rate Sevan Harput, et al Imperial College London	8D-4 A novel dual- frequency transducer for intravascular ultrasound Min Su, et al Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences
09:00 am	1D-5 Chemical and acoustic characterization of a novel ultrasound contrast agent Simone A. G. Langeveld, et al Erasmus MC	2D-5 Simulation of photoacoustic imaging of red blood cell aggregation using a numerical model of pulsatile blood flow Tae-Hoon Bok, et al Ryerson University	3D-5 Matrix approach of ultrasound imaging and quantification William Lambert, et al Institut Langevin	4D-5 Assessing Mechanical Anisotropy in Transversely Isotropic (TI) Elastic Materials Using ARFI-Induced Peak Displacement (PD) at Electronically Steered Rotation Angles Md Murad Hossain, et al The University of North Carolina at Chapel Hill	5D-4 Particle Manipulation and Separation Using Macro-Scale Bulk Angled Standing Waves Kedar Chitale, et al Flodesign Sonics	6D-5 27 kHz Ultrasonic Complex Vibration Welding System Using Various Exchangeable Welding Tips for Different Welding Specimens Jiromaru Tsujino, et al Kanagawa University	7D-5 Detection of distal forearm fractures using bone-enhanced 3D ultrasound imaging Von F. Botteicher, et al Rivanna Medical, LLC	8D-5 High frequency ultrasound needle transducer based on modified PMN-PT ceramic with ultrahigh clamped dielectric permittivity Zhiqiang Zhang, et al Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences
09:15 am	1D-6 Characterization of the in-vivo uptake of novel contrast agents using photoacoustic radiofrequency spectra Yanjie Wang, et al Ryerson University	2D-6 Improving tissue oxygenation estimation using photoacoustic spectral analysis Muhannad N. Fadhel, et al Keenan Research Centre for Biomedical Science of St. Michael's Hospital	3D-6 Experimental Cross –Talk reduction for 3D multi-line transmission Emilia Badescu, et al Université de Lyon, CREATIS; CNRS UMR5220; Inserm U1206; INSA-Lyon; Université Lyon 1, France	4D-6 Anisotropic Constructive Shearwave Interference (ACSI) Measurements of Transverse Anisotropic Elasticity Peter Hollender, et al Duke University	5D-5 Numerical simulation of particle motion in a phase modulated surface acoustic wave microfluidic device Gergely Simon, et al Heriot-Watt University	6D-6 Automatic estimation of borehole shape using ultrasonic data while drilling Hadrien DOLLFUS, et al Schlumberger K.K	7D-6 Implementation and Clinical Evaluation of a Fetal ALARA System Katelyn Flint, et al Duke University	8D-6 Development of a KNN ceramic based lead-free array transducer for high-frequency ultrasound Zhiqiang Zhang, et al Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences



10:30 a	m -12:00 pm			Oral Wednes	sda	ay, October 24			
	Session 1E. Microbubbles and Nanobubbles Chair: Mike Averkiou University of Washington	Session 2E. Photoacoustics and Imaging Chair: William Wright University College Cork	Session 3E. Advanced beamforming II Chair: Jeremy Dahl Stanford University	Session 4E. Abdominal Organ Elasticity Chair: Shigao Chen Mayo Clinic		Session 5E. SAW Modeling & Design 2 Chair: Marc Solal Qorvo,Inc	Session 6E. Cancer Chair: Gregory Czarnota University of Toronto	Session 7E. New Developments in Brain Imaging Chair: Russell Witte University of Arizona	Session 8E. Special Session: Technologies and Challenges for 3D Imaging Chair: Alfred Yu University of Waterloo
	Topaz (400)	Diamond (300)	Emerald (280)	Sapphire (220)		Ikuta (200)	Nunobiki (150)	Kikusui (140)	Ruby (200)
10:30 am	1E-1 Molecular Modulation of Biological Membranes by Phospholipid Microbubbles Eleanor Stride, et al Oxford University	2E-1 Guided acoustic wave in a single Pt nanowire Hiroki Tamura, et al Osaka University	3E-1 Experimental Implementation of Resolution Enhancement Compression for Ultrasound Diverging Wave Compounding using a Tri-State Voltage Drive Yanis Mehdi Benane, et al Univ.Lyon	4E-1 Feasibility of Young's modulus mapping in Pancreatic Ductal Adenocarcinoma (PDA) tumors Using Harmonic Motion Elastography (HME) ex vivo and in vivo Alireza Nabavizadeh, et al Columbia University		5E-1 Study on High- Isolation SAW Duplexer with On- Chip SAW Compensation Circuit Optimized for Isolated Multiple Frequency Bands Masafumi Iwaki, et al TAIYO YUDEN CO., LTD.	6E-1 Quantitative ultrasound-based detection of cancerous thyroid nodules Daniel Rohrbach, et al Riverside Research	7E-1 Ultrafast 4D Doppler Imaging of the rat brain with a large aperture Row Column addressed probe Jack Sauvage, et al Institut Langevin, ESPCI Paris	8E-1 Modular fabrication and assembly of large 2D Arrays with interface ASICs, PIN-PMN-PT composite, and 3D printed backing Robert Wodnicki, et al University of Southern California
10:45 am		2E-2 Imaging of wrinkles in CFRP composites with laser-ultrasound and tilt filter signal processing Lukasz Ambrozinski, et al AGH University of Science and Technology	3E-2 The Detection Probability of Adaptive Beamformers Alfonso Rodriguez- Molares, et al Department of Circulation and Medical Imaging, and CIUS	4E-2 The influence of shear modulus on drug uptake in pancreatic ductal adenocarcinoma: an in vitro study Hexuan Wang, et al University of Rochester		5E-2 Low-loss, high- frequency and large- coupling SH SAW resonators based on SiN/LiNbO3/Si Jie Zou, et al Resonant Inc.	6E-2 Quantitative Ultrasound and Texture Predictors of Breast Tumor Response to Chemotherapy Prior to Treatment Gregory Czarnota, et al Sunnybrook Health Sciences Centre/University of Toronto	7E-2 3D Transcranial Ultrasound Tomography of the Brain in Small Animals using Full- Waveform Inversion – an Initial Feasibility Study Thomas Robins, et al Imperial College London	8E-2 Prototype 3D real-time imaging system based on a sparse PZT spiral array Enrico Boni, et al University of Florence
11:00 am	1E-2 Investigating nonlinear porphyrin nanobubble behaviour for vascular and extravascular applications Carly Pellow, et al Sunnybrook Research Institute	2E-3 New signal processing for fast and accurate QEPAS measurements raphael Levy, et al ONERA- The French Aerospace Lab	3E-3 Iterative ADMIRE for high dynamic range b- mode Siegfried Schlunk, et al Vanderbilt University	4E-3 Plane wave based single track location shear wave elasticity imaging (pSTL-SWEI) enables high resolution in vivo and ex vivo murine pancreatic tumor imaging Rifat Ahmed, et al University of Rochester		5E-3 HIERARCHICAL CASCADING IN FEM SIMULATIONS OF SAW DEVICES Julius Koskela, et al GVR Trade SA	6E-3 Predicting Radiotherapy Response in Head and Neck Patients Using Quantitative Ultrasound William Tran, et al Sunnybrook Health Sciences Centre/University of Toronto	7E-3 Automatic segmentation of the cerebral ventricles in preterm neonates using deep learning with 3D reconstructed freehand ultrasound imaging. Matthieu Martin, et al Univ Lyon	8E-3 Single-Chip Reduced-Wire CMUT-on-CMOS System for Intracardiac Echocardiography Gwangrok Jung, et al Georgia Institute of Technology





11:15 am	1E-3 Stabilizing echogenic nanobubbles by nature-inspired elastic contrast shell design Al de Leon, et al Case Western Reserve University		2E-4 Ultrasonic Phased Array TFM Detection in Highly Attenuating Materials based on Modified Golay- Coded Excitation Teng Da, et al East China University of Science and Technology	3E-4 Accelerating Nonlinear Speed of Sound Reconstructions Using a Randomized Block Kaczmarz Algorithm Andreas Ihrig, et al Ruhr-University Bochum	4E-4 3D Liver Shear Wave Absolute Vibro-Elastography with an xMATRIX Array – A Healthy Volunteer Study Qi Zeng, et al University of British Columbia		6E-4 In vivo diagnosis of metastasis in cervical lymph nodes using backscatter coefficients Gloria Valenzuela, et al Pontificia Universidad Católica del Perú	7E-4 3D Multiplane Wave imaging for 4D Functional Ultrasound imaging of the whole-brain neuronal activity Claire Rabut, et al Institut Langevin, ESPCI Paris	8E-4 Fast Orthogonal Row- Column Electronic Scanning with Bias- Switchable Crossed- Electrode Relaxor Arrays and GPU Accelerated Volumetric Reconstruction Chris Ceroici, et al University of Alberta
11:30 am	1E-4 Nanobubble Extravasation in Prostate Tumors Imaged with Ultrasound: Role of Active versus Passive Targeting Reshani Perera, et al Case Western Reserve University	***************************************	2E-5 Cortical bone microstructure assessed by acoustic microscopy in the tibia and proximal femur shaft is correlated with hip stiffness and strength Gianluca lori, et al Charité - Universitätsmedizin Berlin	3E-5 High Frequency Ultrasonic Tomography Using Optimal Transport Distance Andreas Ihrig, et al Ruhr-University Bochum	4E-5 Shear wave velocity and attenuation in 85 post-transplant liver patients with acute cellular rejection and comparison with biopsy findings Ivan Nenadic, et al Mayo Clinic	5E-4 Use of Hierarchical Cascading Technique for FEM Analysis of Transverse Mode Behaviors in SAW Devices Xinyi Li, et al University of Electronic Science and Technology of China	6E-5 Machine-learning for the prediction of prostate cancer biopsy based on three-dimensional dynamic contrast-enhanced ultrasound quantification Rogier R. Wildeboer, et al Eindhoven University of Technology	7E-5 Quantitative ultrasound brain imaging in 3D Lluis Guasch, et al Imperial College London	8E-5 Panel Discussion Piero Tortoli, Jorgen Jensen, Steven Freear, Susan Trolier- McKinstry, Roger Zemp, Robert Wodnicki
11:45 am	1E-5 Virus-like and egg-yolk sandwich Fe3O4 mesoporous silica nanoparticles for photoacoustic imaging of prostate cancer Wenkun Bai, et al Shanghai Jiao Tong University		2E-6 Efficient and stable acoustical coupling for bottom Actuated GHz Subsurface Probe Microscopy Benoit Quesson, et al TNO	3E-6 REFOCUS: Ultrasound focusing for the software beamforming age Nick Bottenus, et al Duke University	4E-6 VisR, SWEI, and SDUV Ultrasound Detect Increased Degree of Mechanical Anisotropy Following Ischemia-Reperfusion Injury in Pig Kidney, In Vivo Md Murad Hossain, et al University of North Carolina at Chapel Hill	5E-5 FEM- calculation of nonlinear fields in SAW resonators with a finite number of electrodes Andreas Mayer, et al University of Applied Science	6E-6 Quantitative Ultrasound for in vivo monitoring of anti- angiogenic tumor therapy Régine Guillermin, et al Aix-Marseille université, CNRS, Centrale Marseille	7E-6 Low Frequency Ultrasound Transcranial Imaging with Coherent Compounding of Diverging Chirp Waves Chen Bai, et al School of Life Science and Technology, Xi an Jiaotong University	



01:30 p	m -03:00 pm			Oral Wedne	sday, October 24			
	Session 1F. Advanced Systems and Devices for Real- Time Applications Chair: Steven Freear University of Leeds	Session 2F. Novel Photoacoustic Imaging Techniques and Applications Chair: Geoffrey Luke Dartmouth College	Session 3F. Super Resolution Microbubble Imaging Chair: Mickael Tanter INSERM	Session 4F. 3D Flow Imaging Chair: Jørgen Jensen Technical University of Denmark	Session 5F. MEMS Resonator & Application Chair: Sunil Bhave Purdue University	Session 6F. Signal Processing Chair: Erdal Oruklu Illinois Institute of Technology	Session 7F. Applications of Therapeutic Ultrasound Chair: Zhen Xu University of Michigan	Session 8F. CMUT/PMUT Chair: Qifa Zhou University of Southern California
	Topaz (400)	Diamond (300)	Emerald (280)	Sapphire (220)	Ikuta (200)	Nunobiki (150)	Kikusui (140)	Ruby (200)
01:30 pm	1F-1 Real-Time, Multi-Angle Flow Vector Estimation with Dealising Using GPU Hassan Nahas, et al University of Waterloo	2F-1 Non-invasive mapping of rat visual cortex dynamics in vivo using transcranial photoacoustic voltage-sensitive dye imaging Jeeun Kang, et al Johns Hopkins University	3F-1 Deep-ULM: Super-resolution Ultrasound Localization Microscopy through Deep Learning Ruud J. G. van Sloun, et al Eindhoven University of Technology	4F-1 Full 3D Power, Color & Vector Doppler imaging using large aperture Row Column Array transducers Jonathan Porée, et al Institut Langevin, ESPCI Paris, PSL Research University, CNRS UMR 7587, INSERM U979	5F-1 S0-Mode Lithium Niobate Acoustic Delay Lines with 1 dB Insertion Loss Ruochen Lu, et al University of Illinois at Urbana-Champaign	6F-1 Information Transmission through Solids using Ultrasound Jafar Saniie, et al Illinois Institute of Technology	7F-1 Ultrasound and Microbubbles Promote the Retention of Fluorescent Compounds in the Small Intestine Mihnea Vlad Turcanu, et al University of Glasgow	8F-1 Design, Fabrication and Characterization of a Hybrid Piezoelectric- CMUT Dual- Frequency Ultrasonic Transducer Alessandro Stuart Savoia, et al Roma Tre University
01:45 pm	1F-2 High Frame Rate Vector Flow Imaging: Development as a New Diagnostic Mode on a Clinical Scanner Yigang Du, et al Shenzhen Mindray Bio-Medical Electronics Co., Ltd.	2F-2 Ultrasound/ Photoacoustic Imaging Platform to Expedite Development of Novel Glaucoma Treatments Kelsey Kubelick, et al Georgia Institute of Technology & Emory University	3F-2 A Systematic Investigation of Microbubble Spatial Sampling Requirement and Microbubble Localization Methods for Superresolution Imaging Pengfei Song, et al Mayo Clinic	4F-2 High-volume- rate 3D ultrasound imaging and stereoscopic PIV in a dynamic left ventricular phantom Jason Voorneveld, et al Erasmus MC	5F-2 Investigations on the Quality Factor of Lithium Niobate Laterally Vibrating Resonators with Figure of Merit greater than 1,500 Luca Colombo, et al Carnegie Mellon University		7F-2 Luminescence estimation of the region of reactive oxygen generation by focused ultrasound with multiple foci for sonodynamic treatment Daisaku Mashiko, et al Tohoku University	8F-2 36% Scandium ScAIN Air-coupled Piezoelectric Micromachined Ultrasonic Transducers Yuri Kusano, et al University of California, Davis
02:00 pm	1F-3 Parallel implementation of randomized singular value decomposition and randomized spatial downsampling for real time ultrafast microvessel imaging on a multi-core CPUs architecture U Wai Lok, et al Mayo Clinic	2F-3 Photoacoustic imaging of human inflammatory arthritis using light emitting diode Janggun Jo, et al University of Michigan	3F-3 Assessment of Diabetic Kidney Disease Using Ultrasound Localization Microscopy on the Microvasculature in a Rat Kidney: An in vivo Feasibility Study Yi Yang, et al Department of Biomedical Engineering, Tsinghua University	4F-3 The Helical Toroid Flow Phantom: A Twist for 3-D Flow Imaging Innovations Adrian J. Y. Chee, et al University of Waterloo	5F-3 PVDF- TrFE/SiO2 Composite Film Bulk Acoustic Wave Resonator for Frequency- Modulated Sensor Application Ryosuke Kaneko, et al Tohoku university	6F-2 Modelling of channels for intra- corporal communication Wentao Jiang, et al KU Leuven	7F-3 Antivascular photo-mediated ultrasound therapy for neovascularization in the eye Xinmai Yang, et al University of Kansas	8F-3 Thin Film PZT- based PMUT arrays Susan Trolier- McKinstry, et al Penn State University

02:15 pm	1F-4 Acoustic Navigation of Intramyocardial Injection Needle Catheter Using Color Doppler Echocardiography Minako Katayama, et al Mayo Clinic	2F-4 Characterizing intestinal strictures with an endoscopic photoacoustic probe in rabbits in vivo Hao Lei, et al University of Michigan	3F-4 Performance of Foreground-Background Separation Algorithms for the Detection of Microbubbles in Super-Resolution Imaging Marion Piepenbrock, et al Ruhr-University Bochum	4F-4 Simultaneous 4D ultrafast blood flow and tissue Doppler imaging of the human heart Clément Papadacci, et al Institut Langevin, INSERM U979, ESPCI, CNRS UMR 7587, ART	5F-4 Spurious mode free 3.5GHz AIN plate mode resonator with high FoM Nan Wang, et al Institutes of Microelectronics, A*STAR	6F-3 Optical Imaging of Far-Field Diffraction of GHz AIN Transducers into Silicon: Towards Physical Fast Fourier Transform Computing Yutong Liu, et al Cornell University	7F-4 Ultrasound Convolutional Neural Networks Imaging for Monitoring of Microwave Ablation Siyuan Zhang, et al Xi' an Jiaotong University	
02:30 pm	1F-5 Matrix transducers for real- time 3D imaging: From intra-cardiac to trans-cranial applications Nico de Jong, et al Erasmus Medical Centre	2F-5 Development of an ultrasound and photoacoustic endoscopy system for imaging of gynecological disorders Maryam Basij, et al Wayne State University	3F-5 Improved super-resolution by exploiting microbubble kinematics in ultrasound imaging Oren Solomon, et al Technion	4F-5 Combining automatic angle correction and 3-D tracking Doppler for Aortic Stenosis severity assessment Stefano Fiorentini, et al NTNU	5F-5 A Radio Frequency Comb Filter for Sparse Fourier Transform- based Spectrum Sensing Ruochen Lu, et al University of Illinois at Urbana-Champaign	6F-4 GHz Ultrasonic Digital to Analog Converter for Wavefront Signal processing Mamdouh Abdelmejeed, et al Cornell University	7F-5 A catheter based ultrasound device for treating chronic total occlusions Alex Wright, et al Sunnybrook Research Institute	8F-4 1D Lumped Parameter Modeling of CPUT: A Capacitive Transducer Without DC Bias or Pre- Charge Sushruta Surappa, et al Georgia Institute of Technology
02:45 pm		2F-6 Fast label-free photoacoustic histology system using a MEMS scanner Jin Woo Baik, et al Pohang University of Science and Technology	3F-6 What is the Resolving Power of Ultrasound Localization Microscopy? - Systematic Analysis Using a New Forked Microvessel Phantom Design Hanyue Shangguan, et al University of Waterloo	4F-6 Using functional ultrasound imaging and 3D navigation for neonatal sleep phases discrimination Jerome Baranger, et al Institut Langevin, ESPCI Paris, PSL Research University, CNRS UMR 7587, INSERM U979	5F-6 Novel topology for a non-reciprocal MEMS filter Michele Pirro, et al northeastern univeristy	6F-5 An inverse approach for ultrasonic imaging by total focusing point for close reflectors separation Nans Laroche, et al The Phased Array Company	7F-6 Ultrasound Oncotripsy: Targeting Cancer Cells Selectively Via Resonant Harmonic Excitation David Mittelstein, et al California Institute of Technology	8F-5 Design and Implementation of Wideband CMUTs for Airborne Applications Oluwafemi Adelegan, et al North Carolina State University

04:00 p	m -05:30 pm			Oral Wedneso	day, October 24		
	Session 1G. Functional Assesment by Remote Modulation Chair: Jan D'hooge KU Leuven	Session 2G. POA: Opto-Acoustics Chair: Vincent Laude CNRS	Session 3G. Super Resolution and Contrast Brain imaging Chair: Nico de Jong Erasmus Medical Centre	Session 4G. Vector Flow Imaging Chair: Enrico Boni University of Florence	Session 5G. Novel Measurement Systems and Modeling Methods for Tissue Characterization Chair: Jonathan Mamou Riverside Research	Session 6G. Bio & Chemical Sensors Chair: James Friend UCSD	Session 7G. Monitoring and Mapping Methods in Ultrasound Therapy Chair: Costas Arvanitis Georgia Tech Session 8G. Ultrasound Electronics Ultrasound Electronics University of Leeds
	Topaz (400)	Diamond (300)	Emerald (280)	Sapphire (220)	Ikuta (200)	Nunobiki (150)	Kikusui (140) Ruby (200)
04:00 pm	1G-1 Towards Tomographic Reconstruction of Current Source Densities with Multichannel Acoustoelectric Brain Imaging (mABI) Using Ellipsoidal Human Head Model Tushar Bera, et al University of Arizona 1G-2 Real-time displacement and cavitation imaging of non-invasive neuromodulation of the peripheral nervous system via focused ultrasound Stephen Lee, et al Columbia University	2G-1 Moving acoustic field for the control of electronic excitations in semiconductor nanostructures Paulo Santos, et al Paul-Drude-Institut für Festkörperelektronik	3G-1 Deep Transcranial Ultrasound Localization Microscopy of the adult human brain vascularization Charlie Demené, et al Institut Langevin, ESPCI Paris, PSL Research University, CNRS UMR 7587, INSERM U979 3G-2 Ultrafast Volumetric Ultrasound Localization Microscopy in vivo Baptiste Heiles, et al Institut Langevin, ESPCI Paris, PSL Research University, CNRS UMR 7587, INSERM U979	4G-1 A fast 4D B-spline framework for model-based reconstruction and regularization in vector flow imaging Thomas Groenli, et al Norwegian University of Science and Technology (NTNU) 4G-2 Lagrangian coupling of SPH with ultrasound simulation for vector flow imaging investigation Damien Garcia, et al Creatis	5G-1 In vivo estimation of cortical thickness and porosity by axial transmission: Comparison with high resolution computed tomography Donatien Ramiandrisoa, et al Bleu Solid 5G-2 Assessment of cardiomyocyte contractility using high frequency ultrasound Eric Strohm, et al University of Toronto	6G-1 Design of Lab-on- a-Chip Surface Acoustic Resonance (SAR) Sensor with Enhanced Sensitivity and Integrated EIS Kiryl Kustanovich, et al Chalmers University of Technology 6G-2 c-axis tilted ScAIN film shear mode resonators for biosensing Hana Yazaki, et al Waseda University	7G-1 Self-adaptive 3D time reversal cavity for safe ultrasound therapy through the ribcage Justine Robin, et al Institut Langevin, ESPCI Paris, PSL Research University, CNRS UMR 7587, INSERM U979 7G-2 High- resolution Transcranial Passive Acoustic Mapping using Delay Multiple and Sum Beamformer Shukuan Lu, et al Xi'an Jiaotong University 8G-1 ASIC design for a single-cable 64- element ultrasound probe Douwe van Willigen, et al Delft University of Technology 8G-2 Integrated Front End Circuitry for Microultrasound Capsule Endoscopy Holly Lay, et al University of Glasgow
04:30 pm	1G-3 Transcranial Acoustoelectric Brain Imaging: Progress and Challenges Russell Witte, et al University of Arizona Health Sciences	2G-2 Structural and Functional Imaging with Concurrent Photoacoustic and Ultrasound Microscopy Yuqi Tang, et al Duke University	3G-3 In vivo 3D imaging of lymph nodes via high frame rate contrast enhanced ultrasound and super resolution Jiaqi Zhu, et al Imperial College London	4G-3 Flow changes after biological and mechanical aortic valve implantation measured with VFI Kristoffer Hansen, et al Copenhagen University Hospital	5G-3 Estimation of viscoelastic properties of tissue with arbitrary power-law attenuation Bharat Tripathi, et al University of North Carolina-Chapel Hill and North Carolina State University	6G-3 Wireless CO2 SAW sensors with a nanoporous ZIF-8 sensing layer David Greve, et al DWGreve Consulting	7G-3 Detection of the focused- ultrasound-induced blood-brain barrier opening by diffusion tensor imaging in non-human primates Maria Eleni Karakatsani, et al Columbia University 8G-3 A 256-Element Spiral CMUT Array with Integrated Analog Front End and Transmit Beamforming Circuits Alessandro Stuart Savoia, et al Roma Tre University





Group 5	
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04:45 pm		2G-3 Design of Acoustooptical Devices Based on KY(WO4)2 Crystal Vladimir Molchanov, et al National University of Science and Technology MISIS	3G-4 Gas vesicles as hemodynamic enhancers for noninvasive functional ultrasound imaging of the mouse brain David Maresca, et al California Institute of Technology	4G-4 Vector Projectile Imaging to detect regional changes in extracranial blood velocity: A lower- body suction study Jason Au, et al University of Waterloo	5G-4 Ultrasound Multiple Scattering in Cortical Bone: Effect of Pore Size and Pore Concentration Yasamin Karbalaeisadegh, et al North Carolina State University	6G-4 Post- Complementary-Metal- Oxide-Semiconductor Compatible Piezoelectric Micro-Machined Ultrasonic Transducers Robert Reger, et al Sandia National Laboratories	7G-4 Wideband Image-based Transskull Refocusing of Ultrasound Beams Using Dual-Mode Ultrasound Arrays: Ex Vivo Results Hasan Aldiabat, et al University of MinnesotaTwin Cities	8G-4 Real-Time FIR Filter Normalisation of Ultrasound Analog Front Ends for Broadband Imaging Thomas Carpenter, et al University of Leeds
05:00 pm	1G-4 X-Ray Induced Acoustic Computed Tomography for Real-Time Monitoring of External Beam Radiotherapy Wei Zhang, et al University of Michigan	2G-4 High sensitivity sub- nanosecond pump probe measurement with surface plasmon resonance Hayato Ichihashi, et al Doshisha university	3G-5 Kalman Filter- based Microvessel Inpainting for Super- Resolution Imaging Pengfei Song, et al Mayo Clinic	4G-5 Vector Flow Imaging Validated by Patient-Specific Fluid-Structure Interaction (FSI) Models Marie Traberg, et al Technical University of Denmark	5G-5 Sizing cells using acoustic flow cytometry Eric Strohm, et al University of Toronto	6G-5 A compact and sensitive liquid sensor based on a circumferential mode Qin Lin, et al Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences	7G-5 Fast MR thermometry for FUS monitoring using an echo-shifted sequence with simultaneous multi- slice imaging Chao Zou, et al Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences	8G-5 A Power- Efficient Transmit Beamformer ASIC for 3-D Catheter- Based/ Endoscopic Probes Zhao Chen, et al Delit University of Technology
05:15 pm	1G-5 On the Performance of Delay Estimators for Magnetomotive Imaging Thomas Ersepke, et al Ruhr-University Bochum	2G-5 Modelling the iono- acoustic wave field for proton beam range verification Koen W.A. van Dongen, et al Delft University of Technology	3G-6 Human transcranial super- resolution imaging Danai Eleni Soulioti, et al University of North Carolina at Chapel Hill and North Carolina State University	4G-6 Combined contrast-enhanced echocardiography and 2D vector flow mapping at high frame rate using diverging waves Luzhen Nie, et al University of Leeds	5G-6 Skin Moisturizer Changes Morphology and Acoustic Impedance of Skin Yoshifumi Saijo, et al Tohoku University	6G-6 Improvement of signal to noise ratio for Quartz Crystal Microbalance with viscous damping Sawit Na songkhla, et al Tokyo Institute of Technology	7G-6 Passive cavitation mapping during blood-brain barrier opening is facilitated through treatment with ultrasonic pulses of inverse polarity Antonios Pouliopoulos, et al Columbia University	8G-6 Modified Harmonic Reduction Pulse Width Modulation (mHRPWM) for Switched Excitation of Resonant HIFU Transducers David Cowell, et al University of Leeds



09:30 am - 04:00 pm	Poster	· Wednesday, October 24		Kairaku (posters 1)
Session P1-B2. Emerging Methods and Initiatives Chair: Giulia Matrone University of Pavia	P1-B3-6 Real-time investigation of cell membrane damage induced by acoustic droplet vaporization in tissue mimicking hydrogel Lei Zhang, et al School of Life Science and Technology, Xi'an Jiaotong University	P1-B4-7 Separation of contrast agents from tissue via an unfolded deep learning scheme Oren Solomon, et al Technion	P1-B6-5 Measurement of Passive Elastic Property of Human Gastrocnemius Muscle in Vivo using Dynamic Ultrasound B-mode and Shear-wave Elastography Image Sequences Yang Xiao, et al Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences	P1-B7-8 Automatic spatial mechanical inhomogeneity detection in atherosclerotic carotid arteries in-vivo Grigorios Marios Karageorgos, et al Columbia University
P1-B2-1 Density- and Compressibility-Weighted Ultrasound Scattering Tomography Quinn Barber, et al University of Alberta	P1-B3-7 Lysosome Exocytosis Involved in the Resealing of the Perforated Membrane by Acoustic Cavitation Caixia Jia, et al Shanghai Jiao Tong University	Session P1-B5. Abdominal Elasticity Imaging Chair: Jianwen Luo Tsinghua University	P1-B6-6 Pulmonary edema model study using lung ultrasound surface wave elastography Jinling Zhou, et al Mayo Clinic	Session P1-B8. Functional Assessment by Remote Modulation Chair: Alessandro Ramalli University of Florence
P1-B2-2 The Ultrasound File Format Olivier Bernard, et al CREATIS	P1-B3-8 Experimental study for active control of bubble-surrounded cells by acoustic radiation force with considering optimal production and cell viability Kohji Masuda, et al Tokyo Univ. of A&T	P1-B5-1 Kidney biopsy score prediction based on shear wave elastography measurements and machine learning Luiz Vasconcelos, et al Mayo Clinic	P1-B6-7 Comparison of placental elastography and contrast-enhanced ultrasound imaging in a murine intrauterine growth restriction model Emmanuel Simon, et al UMR 1253, iBrain, University of Tours, Inserm	P1-B8-1 Mobile Platform for Acoustoelectric Brain Imaging in Rats Alex Burton, et al University of Arizona
P1-B2-3 Improving quality of high-frame-rate imaging with coherent and incoherent processing Jian-yu Lu, et al The University of Toledo	P1-B3-9 Ultrasound-Induced Acid-Base Neutralization-Generated CO2 microbubbles on Epidermal Penetration Hui-Ching Hsu, et al National Tsing Hua University	P1-B5-2 Obtaining Equivalent Liver Shear Wave Speed Measurements with Multiple Transducers Mallory Selzo, et al Siemens Healthineers	P1-B6-8 SHEAR WAVE SPEED DISPERSION COMPARISON IN NORMAL AND ABNORMAL PLACENTAS Emmanuel Simon, et al UMR 1253, iBrain, University of Tours, Inserm	P1-B8-2 Effects of Ultrasound Frequency and Beam Pattern on Acoustoelectric Cardiac Imaging Alexander Alvarez, et al University of Arizona
P1-B2-4 Synthetic transmit aperture beamforming for sound velocity estimation using channel-domain differential phase gradient Che-Chou Shen, et al National Taiwan University of Science and Technology	P1-B3-10 Microscopic examination of sonothrombolysis process inside the transparent to ultrasound parallel plate flow chamber Wojciech Secomski, et al Institute of Fundamental Technological Research	P1-B5-3 Could ultrasound elastography reflect liver function reserve? Tingting Qiu, et al Department of ultrasound, West China Hospital, Sichuan University	Session P1-B7. Cardiovascular Imaging Chair: Marie Traberg Technical University of Denmark	P1-B8-3 2D mapping of the electrical activation in the live heart using the acoustoelectric effect: a parametric study Beatrice Berthon, et al Institut Langevin, ESPCI Paris, PSL Research University, CNRS UMR 7587, INSERM U979
P1-B2-5 Efficient Pseudo-dynamic Delay Calculation using Optimal Zone Segmentation for Ultra-portable Ultrasound Imaging System Pilsu Kim, et al Sogang University	Session P1-B4. Acoustic Droplets and Bubbles Applications Chair: Klazina Kooiman Erasmus Medical Center	P1-B5-4 Large Field-of-View Shear Wave Imaging for Hepatocellular Carcinoma Screening Samantha Lipman, et al Duke University	P1-B7-1 Ultrasonically measured propagation speed of myocardial contraction rapidly decreased in swine heart just after avascularisation of coronary artery Akane Hayashi, et al Tohoku University	P1-B8-4 Real-time Thermoacoustic Imaging and Thermometry Using a Linear Ultrasound Array Chandra Karunakaran, et al University of Arizona

Session P1-B3. Microbubbles, Droplets, and Nanoparticles Chair: Katsuro Tachibana Fukuoka University	P1-B4-1 Evidence of Laser-Activated Perfluorocarbon Nanodroplet Extravasation In Vivo Steven K. Yarmoska, et al Georgia Institute of Technology and Emory University	P1-B5-5 A Two-dimensional (2D) Systems Biology-based Discrete Liver Tissue Model for Simulations of Ultrasound Shear Wave Elastography (SWE) Jingfeng Jiang, et al Michigan Technological University	P1-B7-2 Ultrasound imaging of cardiac fiber orientation: What are we looking at? Alessandro Ramalli, et al KU Leuven	P1-B8-5 Detectability of Model Thrombus as a Function of Size and Stiffness using Magnetomotive Ultrasound Benjamin Levy, et al The University of North Carolina at Chapel Hill
P1-B3-1 Reduction of ultrasound energy to induce cellular damage by selective intracellular aggregation of phase-change nano-droplets Ayumu Ishijima, et al The University of Tokyo	P1-B4-2 Ultrasound and Optical Imaging of Perfluorocarbon Nanodroplet Adhesion to Endothelial Cells under Atheroprone Flow Conditions Ge Zhang, et al Imperial College London	Session P1-B6. Elasticity in Pre-Clinical and Clinical Applications Chair: Gianmarco Pinton University of North Carolina	P1-B7-3 Detection of mechanical activation of the left ventricle using high frame rate ultrasound imaging Kaja Kvåle, et al GE Vingmed Ultrasound	P1-B8-6 Real-Time Magnetomotive Ultrasound Imaging Using a Recursive Estimator Tim C. Kranemann, et al Ruhr-University Bochum
P1-B3-2 Acoustic droplet vaporization induced physicochemical effects at the single-cell level Ching-Hsiang Fan, et al National Tsing Hua University	P1-B4-3 Enhanced Extravasation of Magnetic Perfluorocarbon Nanodroplets with Bimodal Size Distribution by Two-step Magnetic/Ultrasound Synergistic Manipulationa Jixiu Huang, et al Xi'an Jiaotong University	P1-B6-1 Subresolution displacements and shear shock wave tracking in the human brain Sandhya Chandrasekaran, et al North Carolina State University	P1-B7-4 Spiral complex movements of the heart wall at the beginning of myocardial contraction detected by high frame speckle tracking Hiroshi Kanai, et al Tohoku University	Session P1-B9. High-Frequency Tissue Characterization Chair: Eric Strohm University of Toronto
P1-B3-3 Effects of Pulse Length and Pulse Repetition Frequency on the Cavitation Dynamics of the flowing Microbubbles Population Mouwen Cheng, et al Shanghai Jiao Tong University	P1-B4-4 Effects of Flowing Lipid-shelled Microbubbles and Phase-shift Nanodroplets on the Characteristics of Cavitation during Focused Ultrasound Exposure Tianqi Xu, et al School of Life Science and Technology, Xi'an Jiaotong University	P1-B6-2 Measurement of the nonlinear elastic properties of ex vivo porcine brain: applications to traumatic brain injury David Espindola, et al University of North Carolina at Chapel Hill and North Carolina State University	P1-B7-5 Adaptive Normalized Convolution for 4D reconstruction of freehand- rotated 2D TEE sequences Raja Sekhar Bandaru, et al Erasmus MC	P1-B9-1 Estimating the change in cellular size variance during cell death using the polydisperse structure factor model Emilie Franceschini, et al Aix-Marseille université, CNRS, Centrale Marseille
P1-B3-4 Tumor hypoxic microenvironment alteration and cancer therapy with biogenic nanoparticle-based oxygen delivery Lin Song, et al The Hong Kong Polytechnic University	P1-B4-5 Synchronized ADV and ODV for enhanced cavitation Sy-Han Huang, et al National Taiwan University	P1-B6-3 A novel non-invasive ultrasound vibro- elastography technique for assessing patients with unilateral papilledema and choroidal folds Boran Zhou, et al Mayo Clinic	P1-B7-6 Ultrasound Sub-pixel Speckle Tracking with Off-plane Motion Detector for Precise Vascular Imaging Hideki Yoshikawa, et al HITACHI Ltd.	P1-B9-2 Verification of error factors and accuracy improvement in speed of sound analysis at ultra-high frequency Toshiki Matsuzaki, et al Chiba University
P1-B3-5 Acoustic phase-shift nanodroplets mediated miRNA therapy for hepatocellular carcinoma Wei Dong, et al Xi'an Jiaotong University	P1-B4-6 Ultrasound-based Cell Sorting with Microbubbles Thomas Matula, et al Univ. of Washington	P1-B6-4 Texture Features in Viscoelastic Response (VisR) Ultrasound Images Differentiate Dystrophic from Control Skeletal Muscles in a Dog Model of Duchenne Muscular Dystrophy, In Vivo Christopher Moore, et al University of North Carolina at Chapel Hill	P1-B7-7 Automatic quantification of Extra-Medial Thickness in carotid ultrasound Guillaume Zahnd, et al Chair for Computer Aided Medical Procedures & Augmented Reality, Technische Universität München	P1-B9-3 Speed of sound analysis from micro to macro size by wide area ultrasound microscopic measurement Takuya Ogawa, et al Chiba University



09:30 am - 04:00 pm	Poster	- Wednesday, October 24		Kairaku (posters 1)
P1-B9-4 Three-dimensional Acoustic Impedance Imaging for Cultured Biological Cells	P1-B10-7 Relative quality of tumor growth equations describing volume and vascular evolution assessed with ultrasound	P1-B12-4 High speed high frequency miniature forward-looking ultrasound system for clinical applications	P1-B13-7 Nonlinear Behavior of Contact- Resonance Atomic Force Microscopy due to Stick-Slip phenomena	P1-B14-8 Human Activity Recognition Based on Two-Dimensional Acoustic Arrays
Naohiro Hozumi, et al Toyohashi University of Technology	Jerome Griffon, et al Laboratoire d'Imagerie Biomédicale (Sorbonne University, CNRS, INSERM)	Xueqiao Wang, et al Newway Technology (US), Inc	M Kalyan Phani, et al OP Jindal University	Xinhua Guo, et al School of Mechanical and Electronic Engineering, Wuhan University of Technology
P1-B9-5 Enhancement of bandwidth and SNR with ultra-high-frequency ultrasound using chirps for acoustic microscopy Kazuyo Ito, et al Chiba University	Session P1-B11. Neuromodulation and Brain Applications Chair: James Kwan Nanyang Technological University of Singapore	P1-B12-5 Novel thin film transducers for durable high-resolution imaging in industry and medicine Ivan Shorokhov, et al Novosound Ltd, Biocity, Bo'ness Road, Newhouse, Scotland	P1-B13-8 A study on feasibility of method using high-intensity aerial ultrasonic waves for detection of foreign substance inside soft material Li Jin, et al Graduate School of Science and Technology,	P1-B14-9 A Recurrent Neural Network Classifier for Ultrasonic NDE Applications Michael Marino, et al Illinois Institute of Technology
P1-B9-6 Non-invasive intracellular observation of cancer cells associated with proliferation	P1-B11-1 Measurement of Focused Ultrasound Neural Stimulation; Somatosensory Evoked Potential at Two Separate Skin Temperatures	P1-B12-6 A Distal Micro-Motor Ultrasonic Imaging Catheter	Nihon University P1-B13-9 A Compressed Sensing Based Miniaturized Photoacoustic Imaging System	P1-B14-10 Analog computing for acoustic spatial signals based on metasurfaces
Thomas Tiong Kwong Soon, et al Toyohashi University of Technology	Lu Xu, et al UC San Diego	Yunfei Li, et al National-Regional Key Technology Engineering Laboratory for Medical Ultrasound	Haoran Jin, et al Nanyang Technological University	Qi Wei, et al Nanjing Normal University
P1-B9-7 Acoustic impedance analysis for internal structure of cultured cells by 250 MHz ultrasound Tamaki Honda, et al Chiba University	P1-B11-2 Temperature and cavitation monitoring for FUS peripheral neuromodulation Hermes Kamimura, et al Columbia University	P1-B12-7 Modeling and Characterization of an Acousto-optical Transducer for Catheter Tracking in Interventional Magnetic Resonance Imaging Yusuf Yaras, et al Georgia Institute of Technology	P1-B13-10 Imaging of disbond and delamination using flexural vibrations generated by laser modulation Takahiro Hayashi, et al Kyoto Universityd	
P1-B9-8 In vivo attenuation coefficient estimation of the healthy forearm and thigh human dermis	P1-B11-3 Transcranial Focused Ultrasound Stimulation Decreases Blood Pressure in Spontaneously Hypertensive Rats	P1-B12-8 High frequency Transducer Based on Ultrathin Li doped (K0.45Na0.55)NbO3 Single Crystal for 80MHz Intravascular Ultrasound and Photoacoustic Imaging	P1-B13-11 Suppression of surface wave signal artifacts in laser-ultrasound imaging of CFRP composites	
Ana Saavedra, et al Pontificia Universidad Católica del Perú	Dapeng Li, et al School of Life Science and Technology, Xi`an Jiaotong University	Tao Zhang, et al Huazhong University of Science and Technology	Lukasz Ambrozinski, et al AGH University of Science and Technology	
Session P1-B10. Spectral-Based and Elastographic Tissue Characterization		Session P1-B13. Acoustic Imaging	Session P1-B14. Signal Processing	
Chair: Emilie Franceschini CNRS	Min Pan, et al Shenzhen Hospital (Futian) of Guangzhou University of Chinese Medicine	Chair: Joel Harley University of Utah	Chair: Erdal Oruklu Illinois Institute of Technology	

P1-B10-1 In situ calibration to account for transmission losses in backscatter coefficient estimation. Trong Nguyen, et al University of Illinois at Urbana Champaign	P1-B11-5 Ultrasonic-magnetic Hybrid Genedelivery System for Parkinson's Disease Treatment Chun-Yao Wu, et al National Tsing Hua University	P1-B13-1 Preliminary experiments of 3-dimensional Fourier beamforming with no approximate interpolation for wavenumber matching Chikayoshi Sumi, et al Sophia University	P1-B14-2 A Subspace Based Method for Near Transducer Interference Suppression Johan E. Carlson, et al Lulea University of Technology	
P1-B10-2 Quantitative ultrasound and immunohistochemistry characterization at different stages of murine tumor development	P1-B11-6 Study on the antitumor effect of sonodynamic therapy on nude mice bearing intracranial glioblastoma xenografts	P1-B13-2 Ultrasonic Array Imaging through Reverberating Layers for Industrial Process Analysis	P1-B14-3 Sparse Representation with Partially Known Support and Subspace Expansion for Echo Estimation in Ultrasonic NDE Applications	
Jerome Griffon, et al Laboratoire d'Imagerie Biomédicale (Sorbonne University, CNRS, INSERM)	Yongpeng Huang, et al Shenzhen University	Marcus Ingram, et al University of Strathclyde	Yufeng Lu, et al Bradley University	
P1-B10-3 Coherent ultrasound scattering in the young Rhesus macaque brain: effects of exposure to anesthetics Ivan Rosado-Mendez, et al Universidad Nacional Autonoma de Mexico	Session P1-B12. Catheters and High-Frequency Transducers Chair: Nicolas Felix Vermon SA	P1-B13-3 Large-Panel Multitouch Ultrasonic Touchscreen using Lamb wave Ki Chang Kang, et al Hanyang University	P1-B14-4 Mode Separation and Reconstruction of Ultrasonic Guided Waves Based on Synchrosqueezed Wavelet Transform Zhenli Liu, et al Department of Electronic Engineering, Fudan University, Shanghai, 200433	
P1-B10-4 Lung Mass Density Analysis using Deep Neural Network and Lung Ultrasound Surface Wave Elastography: a sponge phantom study Boran Zhou, et al Mayo Clinic	P1-B12-1 Development of High-Frequency Miniature PNN-PZT-based Ceramic Ultrasonic Transducer Qi Zhang, et al The Hong Kong Polytechnic University	P1-B13-4 Ultrasonic focusing through a steel layer for acoustic imaging Andreas S. Talberg, et al NTNU	P1-B14-5 A High Performance Communication Platform for Ultrasonic Applications Boyang Wang, et al Illinois Institute of Technology	
P1-B10-5 Determination of Thermal Dose for Ablation Therapies: An Ex Vivo Tissue Experiment Ami Kling, et al Michigan Technological University	n Therapies: An Ex Vivo Tissue Crystal PMN-PT Composite for Medical Ultrasound Applications ng, et al Ramanarao Bommena, et al		P1-B14-6 Fluid layer thickness measurement using a shift-invariant sparse approach Quanchang Li, et al Chongqing University	
P1-B10-6 Analysis of the accuracy and precision of the least square fitting method for simultaneous estimation of backscatter and attenuation coefficients Johan Polack, et al Pontifica Universidad Catolica del Peru	P1-B12-3 Highly Sensitive Array Transducer based on a KNN-NTK Composite Lead-free Piezoelectric Ceramic for High-frequency Ultrasonic Imaging Application Ruimin Chen, et al University of Southern California	P1-B13-6 The Coupling Effects in Three Parallel Waveguides Guanjun Yin, et al Shaanxi Normal University	P1-B14-7 A Multi-Resolution Convolutional Neural Network Architecture for Ultrasonic Flaw Detection Kushal Virupakshappa, et al Illinois Institute of Technology	

09:30 am - 04:00 pm	Poster	Wednesday, October 24		Waraku (posters 2)	
Session P2-B1. PAT: Acoustic Tweezers and Particle Manipulation	P2-B2-2 Transferable Analytical Model of Phononic Bandgap in Cross-hole Phononic Crystals	P2-B4-5 S-sequence Encoded Multiplane Wave Imaging: Phantom and In-vivo Validations	Session P2-B6. Photoacoustic Contrast and Theranostic Agents	Session P2-B8. Application-Specific Systems and Real-Time Acceleration	
Chair: Minoru Kuribayashi Kurosawa Tokyo Institute of Technology	Takahiro Nishino, et al Okayama University	Yinran Chen, et al Department of Biomedical Engineering, Tsinghua University	Chair: Kelsey Kubelick Georgia Institute of Technology	Chair: Billy Yiu University of Waterloo	
P2-B1-1 Ultrasound-driven self-assembly of gold nanocages with different patterns	P2-B2-3 Design and Assessment of Phononic Crystals for Controlling Ultrasonic Wave via Optical Measurement Method	P2-B4-6 Reducing Cross-Talk Artifacts for Ultrafast Ultrasound Imaging with Arbitrary Level Codes: Beam Clustering and Optimization Dimensionality Reduction	P2-B6-1 Monitoring liposome payload release by photoacoustic spectroscopy of indocyanine green	P2-B8-1 A portable ultrasound device for measuring the stiffness of carotid artery: comparison with SphygmoCor carotid-femoral pulse wave velocity	
Mian Chen, et al Shenzhen University	Kensuke Manabe, et al Okayama University	David Egolf, et al University of Alberta	Adam J. Dixon, et al University of Virginia	Chieh-Ju Tang, et al National Cheng Kung University	
P2-B1-2 Experimental feasibility study of non- contact acoustic picker considering effect of stage	P2-B2-4 Effective slowness surfaces for anisotropic elastic composites Vincent Laude, et al	Session P2-B5. Flow Estimation Methods and Applications	P2-B6-2 IR808-Anchored MnO Nanoparticles Imaging Tumor and Inducing Enhanced Phototherapy Effect via Mitochondria-mediated Pathway	P2-B8-2 A Low-Cost Software-Defined Ultrasound System Capable of High-Speed Ultrasound Bubble Tracking	
Yutaka Yamamoto, et al Tokyo Metropolitan University	CNRS	Chair: Pengfei Song Mayo Clinic	Lihua Zhou, et al Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences	Pascal Alexander Hager, et al Integrated Systems Lab, ETH Zürich	
P2-B1-3 Immobilization of single cells by an array transducer based single-beam acoustic tweezers	P2-B2-5 Surface wave attenuation mechanisms in pillar-based phononic crystals	P2-B5-1 Spatiotemporal filtering for synthetic aperture slow flow imaging	P2-B6-3 Withdrawn	P2-B8-3 Automatic B-mode Ultrasound Image Optimization for a Wireless Mobile Ultrasound Imaging System	
Changhan Yoon, et al Inje University	Sebastien Aubert, et al SENSeOR SAS	Guillermo Galán Olleros, et al Technical University of Denmark		Hojung Lee, et al Sogang University	
P2-B1-4 Ultrasonic manipulation of particles on fluid surface using 2-D CMUT array	Session P2-B3. PMI: Modelling and Inversion	P2-B5-2 An Adapted Coherent Flow Power Doppler Beamforming Scheme for Improved Sensitivity Towards Blood Signal Energy	P2-B6-4 Transcranial photoacoustic imaging of NMDA-evoked focal circuit dynamics in rat forebrain	P2-B8-4 A Point-of-Care Ultrasound Scanner with Software Beamforming on Nvidia Tegra mobile GPU	
Chang Hoon Lee, et al Hanyang University	Chair: Minoru Kuribayashi Kurosawa Tokyo Institute of Technology	Kathryn Ozgun, et al Vanderbilt University	Jeeun Kang, et al Johns Hopkins University School of Medicine	Marcin Lewandowski, et al Institute of Fundamental Technological Research, Polish Academy of Sciences	
P2-B1-5 Finite element analysis of acoustic streaming in a Kundt tube with artificial ridge boundary	P2-B3-1 Theoretical analysis of the slot acoustic waves in two piezoelectric plates of finite length separated by vacuum gap	P2-B5-3 High-frame-rate Ultrasound Motion Estimation Based on Pre-beamformed Multi- angle Plane Wave Images	Session P2-B7. Disease and Therapy Monitoring using Photoacoustics	P2-B8-5 A Spline-based Spatial Impulse Response Ultrasound Simulator with GPU Implementation	
Yuji Wada, et al Seikei University	Andrey Teplykh, et al Kotelnikov's Institute of Radio Engineering and Electronics of RAS, Saratov Branch	He Li, et al The University of Hong Kong	Chair: Pai Chi Li National Taiwan University	Dimitris Perdios, et al Ecole Polytechnique Fédérale de Lausanne (EPFL)	

P2-B1-6 Simulation of interparticle radiation force between solid elastic spheres in a standing wave field Gergely Simon, et al	P2-B3-2 Acoustic waves guided at the intersection of interfaces and surfaces Pavel Pupyrev, et al Prokhorov General Physics Institute of the Russian	P2-B5-4 De-aliasing color flow mapping with staggered pulse sequence at improved frame rate Rei Asami, et al	P2-B7-1 Photoacoustic imaging for assessing flow-mediated oxygenation for peripheral arterial disease. Kathryn Khaw, et al	P2-B8-6 Feasibility of hands-free acquisitions of the skeletal muscles and the heart during exercise Marloes Sjoerdsma, et al	
Heriot-Watt University	Academy of Sciences	Hitachi, Ltd	University of Pennsylvania	Eindhoven University of Technology	
P2-B1-7 Acoustic manipulation of microbubbles based on implantable and biodegradable artificial structures	Session P2-B4. Multi-Line and Multi-Plane Imaging Chair: Dongwoon Hyun	P2-B5-5 Super-resolution measurement of fluid velocity profiles within sub-wavelength microtubes	P2-B7-2 Integration of Endovenous Laser Ablation and Photoacoustic Imaging Systems for Enhanced Treatment of Venous Insufficiency	P2-B8-7 Experimental study to bend thin catheter independent to ultrasound propagation direction by tempo-spatial division emission using multiple transducers	
Fei Li, et al Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences	Stanford University	David Espindola, et al University of North Carolina at Chapel Hill and North Carolina State University	Samuel John, et al Wayne State University	Hidetaka Ushimizu, et al Tokyo Univ. of A&T	
P2-B1-8 Acoustic trapping of microparticles at the inner and outer wall of a glass capillary	P2-B4-1 Spatial coherence based beamforming in multi-line transmit echocardiography	P2-B5-6 An ultrafast ultrasound microvessel imaging technique for assessing patients with unilateral papilledema and choroidal folds	P2-B7-3 Photoacoustics for non-invasive monitoring of kidney damage due to diabetes and hypertension	P2-B8-8 Comparison of longitudinal-mode and longitudinal-torsional mode ultrasonic bone biopsy devices	
Qin Lin, et al Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences	Giulia Matrone, et al University of Pavia	Boran Zhou, et al Mayo Clinic	Elizabeth Berndl, et al Ryerson University	Rebecca Cleary, et al University of Glasgow	
P2-B1-9 High Frequency Ultrasonic Levitation of Red Blood Cells Aggregation	P2-B4-2 Tri-plane cardiac imaging using multi- line transmission on a spiral array: a feasibility study	ransmission on a spiral array: a feasibility RESPONSE AND SHEAR RATE		P2-B8-9 3D Forward-Looking Ultrasound Imaging from a Steerable Single-Element Intracardiac Catheter	
Hae Gyun Lim, et al Pohang University of Science and Technology	Alessandro Ramalli, et al KU Leuven	Andrzej Nowicki, et al Institute of Fundamental Technological Research - PAS	Jiayao Zhang, et al ShanghaiTech University	Jovana Janjic, et al Erasmus MC	
Session P2-B2. PPN: Phononics	P2-B4-3 Orthogonal Frequency Division Multiplexing Combined with Multi Line Transmission for Ultrafast Ultrasound Imaging: Experimental Findings	P2-B5-8 Coded Multiple Parallel Focal Zone Scanning for Ultrafast Power Doppler Blood Flow Imaging	P2-B7-5 Photoacoustic spectral analysis at ultraviolet wavelength for assessing the aggressiveness of prostate cancer	P2-B8-10 Sonopill: Progress Towards Microultrasound Capsule Endoscopy	
Chair: Minoru Kuribayashi Kurosawa Tokyo Institute of Technology	Libertario Demi, et al University of Trento	Tarek Kaddoura, et al University of Alberta	Guan Xu, et al University of Michigan	Holly Lay, et al University of Glasgow	
P2-B2-1 Experimental evidence of compact waveguide based on whispering gallery in phononic crystals plate	P2-B4-4 Multi-Line Transmission and Multi-Line Acquisition with Synthetic Transmit and Filtered Delay Multiply and Sum Receive Beamforming in Cardiac Ultrasound Imaging	P2-B5-9 Towards Oxygen Metabolism Estimation with Ultrafast Speckle-Decorrelation Imaging and Functional Photoacoustic Imaging	P2-B7-6 Photoacoustic cepstrum analysis for studying vascular networks	Session P2-B9. Spectral Doppler and Clutter Filters	
Jinfeng Zhao, et al Tongji University	Grigoriy Zurakhov, et al Technion - IIT	Mayara Nascimento de Oliveira, et al University of Alberta	Eno Hysi, et al Ryerson University	Chair: Ingvild Kinn Ekroll NTNU	

09:30 am - 04:00 pm	Poster	- Wednesday, October 24		Waraku (posters 2)
P2-B9-1 Spectral Doppler Measurements with 2-D Sparse Arrays Paolo Mattesini, et al University of Florence	P2-B10-3 An ultrasonic probe to measure both radial arterial pressure and diameter at identical position for early diagnosis of arteriosclerosis Mototaka Arakawa, et al Tohoku University	P2-B11-3 Analysis of SAW Scattering at Discontinuity Between Periodic Gratings Using Travelling Wave Excitation and Hierarchical Cascading Technique Yulin Huang, et al University of Electronic Science and Technology of China	P2-B13-1 High frequency optical probe for BAW/SAW devices Hugo Chambon, et al CTR AG	
P2-B9-2 A New Flow Disturbance Mapping Technique Based on Doppler Bandwidth Measurements Billy Y. S. Yiu, et al University of Waterloo	P2-B10-4 Design of a novel zig-zag 192+192 Row Column Addressed Array Transducer for Rodent Super Resolution Imaging: A Simulation study. Mikkel Schou, et al Technical University of Denmark	P2-B11-4 Love Wave Mode Resonator with a Wide Stable Temperature Range Yang Yang, et al Shanghai Jiao Tong university	P2-B13-2 New Technique to Cancel IMD3 in Electroacoustic Filters Marta González-Rodríguez, et al Universitat Politecnica de Catalunya (UPC), Barcelona, Catalunya, Spain	
P2-B9-3 Sparse Transmission Strategy for Transverse Doppler Spectrum Estimation Regev Cohen, et al Technion	P2-B10-5 A row-column array for ultrasound-based tissue anisotropy measurement Huaiyu Wu, et al NC state university	Session P2-B12. SAW Sensor & Actuator I Chair: Tao Han Shanghai Jiao Tong University	P2-B13-3 Monolithic FBAR resonators using AlScN piezoelectric layers. Mohanraj Soundara pandian, et al SilTerra Malaysia Sdn Bhd	
P2-B9-4 Motion Tracking using Neural Networks for a 2D Sample Volume based Spectral Doppler Imaging Jihye Baek, et al Sogang University	P2-B10-6 A quantitative study on the impact of bit errors on image quality in ultrasound probes with in-probe digitization Zhao Chen, et al Delft University of Technology	P2-B12-1 Wireless, Direct Pressure Sensing with SAW Devices at Elevated Temperatures Gudrun Bruckner, et al CTR AG	P2-B13-4 Fast Nonlinear Procedure for the Nonlinear Analysis of BAW Resonators and Filters Rafael Perea-Robles, et al Universitat Politècnica de Catalunya (UPC), Barcelona, Catalunya	
P2-B9-5 Low-Complexity Rank-revealing Spatiotemporal Microvascular Clutter Filter John Flynn, et al Verasonics, Inc	P2-B10-7 Magnetostrictive-Vibration Isolated Probe Design for Backward-Mode Magnetomotive Ultrasound Ming-Chen Lu, et al National Tsing Hua University	P2-B12-2 Novel acoustic gratings with high reflection constant for surface acoustic wave gyroscopes Ashraf Mahmoud, et al Carnegie Mellon University	P2-B13-5 AIN-based solidly mounted resonators on glass substrates for high temperature applications Teona Mirea, et al GMME-CEMDATIC-ETSIT-Universidad Politecnica de Madrid. Spain.	
P2-B9-6 Efficient and flexible spatiotemporal clutter filtering of high frame rate images using subspace tracking Bas Generowicz, et al TU Delft	P2-B10-8 Development of Flexible and Kerfless Phased Array Using Sol-Gel Composite Spraying Technique Masayuki Tanabe, et al Kumamoto University	P2-B12-3 Cell detachment using guided surface acoustic waves Jiyang Mei, et al University of California, San Diego	Session P2-B14. Material for Acoustic Wave Device I Chair: Sergei Zhgoon National Research University "MPEI" (Moscow Power Engineering Institute)	

P2-B9-7 Low-Rank Adaptive Clutter Filtering for Robust Ultrasound Vector Flow Imaging Yigang Du, et al Shenzhen Mindray Bio-Medical Electronics Co., Ltd.	P2-B10-9 Design, Fabrication and Testing Highly Sensitive Single Element Doppler Transducers Per Kristian Bolstad, et al University of Southeast Norway	P2-B12-4 Shape effects and response to an applied magnetic field in (TbCo2/FeCo) multilayer-based SAW resonators.Shape effects and response to an applied magnetic field in (TbCo2/FeCo) multilayer-based SAW resonators. Harshad Mishra, et al Université de Lorraine	P2-B14-1 Temperature characteristics of ScAIN/SiO2 BAW resonators Honoka Igeta, et al Waseda University	
P2-B9-8 Spatial and Temporal Adaptive FIR Clutter Filtering Vincent Perrot, et al Univ.Lyon, INSA-Lyon, UCB Lyon 1, UJM-Saint Etienne, CNRS, Inserm	utter Filtering 2D ultrasound array optimization ncent Perrot, et al niv.Lyon, INSA-Lyon, UCB Lyon 1, UJM-Saint Bakary Diarra, et al Electrical, Electronics, Computer &		P2-B14-2 Effects of post-deposition vacuum annealing on piezoelectric performance of AlSch thin films sputtered on 200 mm production wafers Marta Clement, et al GMME-CEMDATIC-ETSIT-Universidad Politécnica de Madrid	
P2-B9-9 Adaptive Independent Component Analysis-Based Clutter Filtering for Improved Non-Contrast Perfusion Ultrasound Imaging Jaime Tierney, et al Vanderbilt University	P2-B10-11 Basic study on ultrasonic imaging using piezoelectric elements with polarization-inverted layer Ryo Nagaoka, et al University of Toyama	P2-B12-6 SAW Delay-Line Sensors Only Using Two Reflectors Jingping Ruan, et al Shanghai Jiao Tong University	P2-B14-3 Evaluation of bonded wafer for SAW devices using The Line-Focus-Beam Acoustic Microscope Osamu Kawachi, et al TAIYO YUDEN Mobile Technogy Co., LTd.	
Session P2-B10. Imaging Transducers Chair: Richard O'Leary University of Strathclyde	Session P2-B11. SAW Modeling & Design II Chair: Maximilian Pitschi RF360 Europe GmbH	P2-B12-7 SAW based tube rotation with wireless power transfer Sergey Biryukov, et al IFW Dresden	P2-B14-4 Stress control for highly doped Aluminum Scandium Nitride films Sergey Mishin, et al AMS, Inc.	
P2-B10-1 A 360° Electronic Radial Ultrasound Endoscope Based on Designed PMN-PT Single Crystal/Epoxy 2-2 Composite Ting Zhang, et al National-Regional Key Technology Engineering Laboratory for Medical Ultrasound	P2-B11-1 FEM-Based Estimation of SAW Power Flow Angle in Periodic Gratings Benfeng Zhang, et al Shanghai Jiao Tong University	P2-B12-8 Glue-less and robust assembly method for SAW strain sensors Pascal Nicolay, et al CTR AG		
P2-B10-2 A kerfless PVDF array for photoacoustic imaging Reza Pakdaman Zangabad, et al Erasmus Medical Center	P2-B11-2 Theoretical analysis and design of longitudinal leaky SAW device consisting of ScAIN film / piezoelectric single crystal substrate Masashi Suzuki, et al University of Yamanashi	Session P2-B13. BAW Device & Application II Chair: Masanori Ueda TAIYO YUDEN CO., LTD.		

08:45 am	1H-4 Near-field effect on elastic wave propagation in shear wave elastography Salavat Aglyamov, et al University of Houston	2H-4 Improved performance and safety of drug delivery to the brain in vivo with Rapid Short-Pulse (RaSP) sequences Sophie V Morse, et al Imperial College London	3H-4 Automated Detection of Fetal Presentation and Gestational Age using Low-cost Ultrasound and Deep Learning in a Resource-Limited Setting Thomas van den Heuvel, et al Radboud university medical center	4H-4 Assessment of tissue boundary delineation using fundamental and harmonic ADMIRE and SLSC for percutaneous biopsy guidance Kazuyuki Dei, et al Vanderbilt University	5H-4 Real-Time Monitoring of Size and Concentration of Nanoparticles inside a reactor using ultrasound Gert-Jan van Groenestijn, et al TNO	6H-4 Immersion PMUTs Fabricated with a Low Thermal- Budget Surface Micromachining Process Guo-Lun Luo, et al University of California	7H-4 Double Negativity in Double- sided Pillared Metamaterial Bernard Bonello, et al CNRS/Sorbonne Université	8H-4 Progress towards Piezocrystal and Pb-Free Piezoceramic Performance Prediction for High Power Ultrasound Devices Nicola Fenu, et al University of Glasgow
09:00 am	1H-5 Cellquake elastography: applying shear wave elastography on cells Pol Grasland-Mongrain, et al ENS de Lyon	2H-5 Bi-modal modulation of neuronal excitability by ultrasound stimulation in human temporal lobe epilepsy Zhengrong Lin, et al Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China	3H-5 Fully Automatic Assessment of Mitral Valve Morphology from 3D Transthoracic Echocardiography João Pedrosa, et al KU Leuven	4H-5 Clinical Feasibility of Coherence-Based Beamforming to Distinguish Solid from Fluid Hypoechoic Breast Masses Alycen Wiacek, et al Johns Hopkins University	5H-5 Evaluation of viscoelastic properties of liquids based on the oblique incidence technology using shear horizontal waves at frequencies above 100 megahertz from c-axis tilted ScAIN thin films Yui Yamakawa, et al Waseda University	6H-5 Neuronal stimulation and calcium imaging of retinal neurons using surface acoustic waves Melanie Stamp, et al University of Melbourne	7H-5 Topologically Valley-protected Lamb Waves in Pillared Metamaterial Wei Wang, et al Sorbonne Université, UPMC Université Paris 06 (INSP-UMR CNRS 7588)	8H-5 Determination of elastic and piezoelectric properties of Al0.84Sc0.16N thin films Nicolas Kurz, et al University Freiburg
09:15 am	1H-6 Dispersion analysis of guided waves in bounded media induced by acoustic micro- tapping Liang Gao, et al University of Washington	2H-6 High-resolution, focused ultrasound-mediated neuromodulation and detailed analysis of electromyography characteristics reveals a high degree of spatial specificity in elicited responses in mice in vivo Christian Aurup, et al Columbia University	3H-6 Semi-automatic 3D geometry assessment of bifurcated carotid artery Joerik de Ruijter, et al Eindhoven University of Technology	4H-6 Cardiac deformation imaging based on coherent compounding of diverging waves with coded excitation Feifei Zhao, et al Department of Biomedical Engineering, Tsinghua University, Beijing	5H-6 Forces and torques on rods in an ultrasonic standing wave David Greve, et al DWGreve Consulting	6H-6 Evaluation of SH-SAW Biosensor in Whole Blood Koji Kano, et al Japan Radio Co., Ltd.	7H-6 Lamb wave propagation in coupled-resonator elastic waveguides Yan-Feng Wang, et al Beijing Jiaotong University	8H-6 High Piezoelectric Properties and Complex Phase Transformations in New Ternary Perovskite Single Crystals Zuo-Guang Ye, et al Simon Fraser University

11:15 am	11-4 3-D Speckle Tracking with Two- Pass Searching and Phase-Rotated Correlation Filtering Geng-Shi Jeng, et al University of Washington	21-4 Ex-vivo recording of LEUS- generated neural responses from mouse brain slices using a MicroElectrode Array (MEA) system Ivan Suarez Castellanos, et al INSERM	31-4 Automatic functional imaging in echocardiography using deep learning based segmentation and flow estimation Andreas Østvik, et al Norwegian University of Science and Technology	4I-4 3D anatomical scanning using a conical transmit wave: preliminary simulation findings Pedro Santos, et al KU Leuven		61-4 Acoustically stimulated electromagnetic imaging in biomedical tissues Kenji Ikushima, et al Tokyo University of A & T	71-4 Modeling of Wave Propagation in Heterogeneous Media Using a Modified Mixed Domain Method Juanjuan Gu, et al North Carolina State University	81-3 Dual Frequency array for contrast superharmonic imaging Emmanuel Cherin, et al Sunnybrook Research Institute
11:30 am	11-5 Passive elastography: a seismic imaging of soft tissues Stefan Catheline, et al LabTAU	2I-5 Experimental identification of the locus of interaction between Low-Energy UltraSound and the nervous system of lumbricus terrestris during the phenomenon of neurostimulation Jérémy Vion-Bailly, et al INSERM	3I-5 Deep Convolutional Neural Network for Ultrasound Image Enhancement Dimitris Perdios, et al Ecole Polytechnique Fédérale de Lausanne (EPFL)	4I-5 Performance of F-DMAS beamforming with adjustable maximum spatial lag in Multi-Line Transmission ultrasound imaging Giulia Matrone, et al University of Pavia	51-4 Characterizing Micro- and Nano- Materials based on their Ultrasonic Dispersion Properties: A Feasibility Study Daniel Alabi, et al University of Florida	61-5 Carotid artery plaque components classification using homodyned-K parametric maps, elastograms and echogenicity analysis Marie-Hélène Roy Cardinal, et al University of Montreal Hospital	71-5 Strongly Nonlinear Ultrasound Simulations in an Axisymmetric Coordinate System using k-Wave Bradley Treeby, et al University College London	8I-4 High performance ultrasonic transducers from nanostructured and multilayered piezoelectric materials Kui Yao, et al IMRE, A*STAR
11:45 am		21-6 Potential of Low Energy UltraSound for inducing cardioprotection mechanisms: in-vitro investigations on a hypoxy-reoxygenation model of cardiac cells Lorena Petrusca, et al Univ Lyon, UJM-Saint-Etienne, INSA, CNRS UMR 5520, INSERM U1206, CREATIS, F-42023, SAINT-ETIENNE	31-6 Ultrasound image processing based on deep learning Fabian Dietrichson, et al Norwegian University of Science and Technology (NTNU)	41-6 Compressed Sensing Reconstruction of Synthetic Transmit Aperture Dataset for Volumetric Diverging Wave Imaging: A Simulation Study Yinran Chen, et al Department of Biomedical Engineering, Tsinghua University	51-5 Mechanical Properties of Comet 67P/Churyumov- Gerasimenko Measured by CASSE and DIM on Board Rosetta's Lander Philae Walter Arnold, et al Saarland University	61-6 Fatty liver assessment using ultrasound multifeatures based on machine learning YingHsiu Lin, et al ChangGungUniversity	71-6 Distinguishing between noncausal and nonlocal behavior in a time-fractional wave equation James F. Kelly, et al Michigan State University	81-5 A novel Row-Column Addressed stack architecture for enhanced cardiac imaging Guillaume Ferin, et al Vermon SA

01:30 pr	n -03:00 pm			Oral Thursda	y, October 25			
	Session 1J. Deep Neural Networks for Ultrasound Image Formation Chair: Adrian Basarab University of Toulouse	Session 2J. Ultrasound Mediated Agent Delivery Chair: Mark Borden University of Colorado Boulder	Session 3J. High Frame Rate Cardiac Imaging Chair: Massimo Mischi Eindhoven University of Technology	Session 4J. Flow Processing: Methods and Applications Chair: Lasse Lovstakken NTNU	Session 5J. Sensors and Actuators Chair: Robert Addison Rockwell Science Center	Session 6J. New Class of SAW Device Chair: Clemens Ruppel	Session 7J. PGP & PNL: General Physical and Non-Linear Acoustics Chair: Dave Feld Broadcom Ltd	Session 8J. Compressed Sensing and Quantification Chair: Miaomiao Zhang KU Leuven
	Topaz (400)	Diamond (300)	Emerald (280)	Sapphire (220)	Ikuta (200)	Nunobiki (150)	Kikusui (140)	Ruby (200)
01:30 pm	1J-1 Evaluating the Robustness of Ultrasound Beamforming with Deep Neural Networks Adam Luchies, et al Vanderbilt University 1J-2 Beamforming and speckle reduction using deep neural networks Dongwoon Hyun, et al Stanford University	2J-1 Focused Ultrasound Enhanced Intranasal Delivery of Neurotrophic Factors Exhibit Neurorestorative Effects in Parkinson's Disease Mouse Model Robin Ji, et al Columbia University 2J-2 Comparison of focused ultrasound- mediated intranasal brain drug delivery and focused ultrasound-induced blood-brain barrier disruption in the delivery of gold nanoclusters to the brainstem	3J-1 High frame rate imaging of natural shear waves in the human heart Pedro Santos, et al KU Leuven 3J-2 Longitudinal and Transversal Particle Motion Induced by Aortic Valve Closure in the Interventricular Septum L.B.H. Keijzer, et al Erasmus MC	4J-1 Dual-Frequency Alias-Free Color Doppler using Chirping and Pulse Compression Vincent Perrot, et al Univ.Lyon, INSA-Lyon, UCB Lyon 1, UJM-Saint Etienne, CNRS, Inserm 4J-2 In-vivo Abdominal Microvasculature Evaluation based on Ultrafast Curved Array Imaging Jinbum Kang, et al Sogang University	5.J-1 High-temperature Microwave Acoustic Vibration Sensor Anin Maskay, et al University of Maine 5.J-2 Ultra-Wide-Band SAW Sensor with HFM Etched Reflectors Victor Plessky, et al GVR Trade SA	6J-1 Prof. Eric Adler's Legacy to Microwave Acoustics Mauricio Pereira da Cunha, et al University of Maine	7.J-1 Multiple steerable acoustic fields using a single element bowl transducer and 3D- printed kinoform Michael Brown, et al University College London 7.J-2 Source Correction for k- space Pseudospectral Time Domain Models Ben Cox, et al University College London	8J-1 Ultrasound signal reconstruction from sparse samples using a low-rank and joint-sparse model Miaomiao ZHANG, et al KU Leuven 8J-2 Compressive Multiplexing of Ultrasound Signals Adrien Besson, et al Ecole Polytechnique Fédérale de Lausanne
02:00 pm	1J-3 Reverberation Noise Suppression in the Aperture Domain	2J-3 Ultrasound and microbubble-mediated targeted	3J-3 Monitoring canine myocardial infarction formation	4J-3 High Sensitivity Liver Vasculature Visualization Using a	5J-3 Microwave Resonator Ultrasound Receivers	6J-2 Suprious-Free, Near-Zero-TCF Hetero Acoustic Layer (HAL)	7J-3 Changing the Speed of Ultrasonic Pulses Through	8J-3 Strategic lateral undersampling and Compressed Sensing
	Using 3D Fully Convolutional Neural Networks Leandra Brickson, et al Stanford University	delivery of drug- loaded nanoparticles to porcine liver Tommaso Di Ianni, et al Stanford University	and recovery with transthoracic cardiac strain imaging Vincent Sayseng, et al Columbia University	Real-time Coherent Flow Power Doppler (CFPD) Imaging System: A Pilot Clinical Study You Li, et al Stanford University	Tom S Robbins, et al University College London	SAW Resonators Using LiTaO3 Thin Plate on Quartz Michio Kadota, et al Tohoku university	Spatial Structuring of the Acoustic Wavefront Grace Richard, et al University of Glasgow	recovery in ultrasound imaging Anand R, et al Indian Institute of Technology Madras(IITM)

02:15 pm	1J-4 A fully convolutional neural network for beamforming ultrasound images Arun Nair, et al Johns Hopkins	2J-4 Focused- ultrasound mediated anti-alpha-synuclein antibody delivery for the treatment of Parkinson's disease Hairong Zhang, et al Columbia University	3J-4 An angle independent motion estimator for high frame rate cardiac data sets Bidisha Chakraborty, et al KU Leuven	4J-4 In vivo Adaptive focusing for clinical Transcranial Ultrafast Ultrasound Imaging by Time Reversal of Moving Speckle Noise Justine Robin, et al Institut Langevin, ESPCI Paris, PSL Research University, CNRS UMR 7587, INSERM U979	5J-4 Wireless inertial sensing platform self-powered by piezoelectric energy harvester for industrial predictive maintenance Maxime Benchemoul, et al Vermon SA	6J-3 Transverse Modes in I.H.P. SAW Resonator and Their Suppression Method Hideki Iwamoto, et al Murata Manufacturing Co., Ltd.	7J-4 Focused Ultrasonic Transducer with Electrically Controllable Focal- Point Location Lurui Zhao, et al UNIVERSITY OF SOUTHERN CALIFORNIA	8J-4 In-silico validation of microstructure estimation from cortical bone backscatter Juan Du, et al Charité - Universitätsmedizin Berlin
02:30 pm	1J-5 Ultrasound image reconstruction using deep learning: a new paradigm Maxime Gasse, et al Creatis Medical Imaging Research Centre	2J-5 Ultrasound- Enhanced Distribution and Treatment Efficacy of Dox-loaded Intratumoral In Situ Forming Implants in Murine HCT-15 Tumors Selva Jeganathan, et al Case Western Reserve University	3.J-5 4D ultrafast imaging of myocardial contraction activation in normal and pathological isolated rat hearts Victor Finel, et al Institut Langevin, INSERM U979, ESPCI, CNRS UMR 7587, ART	4J-5 High frequency functional ultrasound in mice Bas Koekkoek, et al Erasmus MC	5.J-5 Modeling and experimental parametric study of a dual-cantilever piezomagneto-elastic energy harvester Xiaobo Rui, et al State Key Laboratory of Precision Measurement Technology and Instrument, Tianjin University	6.J-4 Oriented single- crystal LiTaO3 thin film on Silicon for high performances SAW components Marie Gorisse, et al Soitec	7J-5 Bayesian spectrum analysis of non-linear ultrasound contrast microbubble signals Konstantinos Diamantis, et al Heriot-Watt University	8J-5 Quantification of multispectral photoacoustic images: unsupervised unmixing methods comparison Aneline Dolet, et al CREATIS
02:45 pm		2J-6 Abraxane delivery with microbubble-assisted ultrasound in human pancreatic cancer mouse model Jean-Michel Escoffre, et al Inserm UMR1253 iBrain	3J-6 Enhancing Cardiac Positron Emission Tomography using Ultrafast Ultrasound Imaging Jonathan Porée, et al Institut Langevin, ESPCI Paris, PSL Research University, CNRS UMR 7587, INSERM U979	4J-6 Simultaneous Noise Suppression and Incoherent Artifact Reduction In Ultrafast Ultrasound Microvessel Imaging Chengwu Huang, et al Mayo Clinic	5J-6 Accelerated aging procedures of bending piezoelectric structures using electrical stress induced approaches Thien Hoang, et al Vermon SA	6.J-5 Spurious Free SAW Resonators on Layered Substrate with Ultra-High Q, High Coupling and Small TCF Shogo Inoue, et al Qorvo, Inc.	7J-6 HIFU beam: a software package for modeling axially-symmetric nonlinear ultrasound beams radiated by focused therapeutic transducers Petr Yuldashev, et al Physics Faculty, Moscow State University	8J-6 Improved arbitrary waveform synthesis for tri-state transmitters by an impulse response factorization enabling use of the Viterbi algorithm John Flynn, et al Verasonics, Inc

Key: Group 1 Group 2 Group 3 Group 4 Group 5

04:45 pm	1K-4 Full-wave ultrasound reconstruction with linear arrays based on a Fourier split step approach Hans-Martin Schwab, et al Ruhr-University Bochum	2K-4 Multi-Parametric Assessment of Treatment Response from 3D Dynamic Contrast-Enhanced Ultrasound Ahmed El Kaffas, et al Stanford University	3K-4 3D direct visualization and non- invasive localization of atrial and ventricular arrhythmias using Electromechanical Wave Imaging in patients Lea Melki, et al Columbia University	4K-4 Noise Debiasing for Real-Time SVD Clutter Filter-Based Ultrafast Microvessel Imaging Chengwu Huang, et al Mayo Clinic	5K-4 GPU- accelerated matrix- free 3D reconstruction for ultrasonic nondestructive testing Jan Kirchhof, et al Fraunhofer IZFP	6K-4 Polarity inverted ScAIN multilayer for application to transformer in rectifying antenna Rei Karasawa, et al Waseda University	7K-4 A Quasi-LTI Frequency-Selective SAW Circulator Giuseppe Michetti, et al Northeastern University	8K-4 A Broadband Technique for Couplant- Corrected Pulse-Echo Measurements in a Large Volume Pressure Cell Blake Sturtevant, et al Los Alamos National Laboratory
05:00 pm	1K-5 Advanced beamforming techniques for passive imaging of stable and inertial cavitation Maxime Polichetti, et al University Lyon, INSA-Lyon, UCBL, UJM-Saint-Etienne, CNRS, Inserm, CREATIS UMR 5220, U1206, F-69100 Villeurbanne, France	2K-5 High-contrast 3D in vivo microvascular imaging using scanning 2D ultrasound and acoustic sub-aperture processing (ASAP) Chee Hau Leow, et al Imperial College London	3K-5 Ultrafast imaging of the heart dynamics with cascaded-wave ultrasound Yang Zhang, et al The University of Hong Kong	4K-5 Non-invasive small vessel imaging of human thyroid using motion-corrected Power Doppler Imaging: Preliminary in vivo study Rohit Nayak, et al Mayo Clinic	5K-5 Outer wall inspection using acoustic irradiation induced vibration from UAV for noncontact acoustic inspection method Tsuneyoshi Sugimoto, et al Toin University of Yokohama	6K-5 Extraction of electromechanical coupling coefficient of film/substrate structure by using the ratio of a third mode resonant frequency to a fundamental mode resonant frequency Makoto Totsuka, et al Waseda University	7K-5 A Radio Frequency Non- reciprocal Network Based on Switched Low-Loss Acoustic Delay Lines Ruochen Lu, et al University of Illinois at Urbana-Champaign	8K-5 A 30 MHz, 3D Imaging, Forward Looking Miniature Endoscope based on a 128-element Relaxor Array Katherine Latham, et al Dalhousie University
05:15 pm	1K-6 Decimated Analytic Signal based Beamformer for Efficient Reconstruction of Passive Acoustic Mapping Pilsu Kim, et al Sogang University	2K-6 Novel Motion Correction Algorithm for 3D Dynamic Contrast Ultrasound Without Anatomical Bmode Images Ahme El Kaffas, et al Stanford	3K-6 Ventricular tachycardia re-entry mapping with 3D electromechanical wave imaging Julien Grondin, et al Columbia University	4K-6 Wall Signal Removal in Doppler Ultrasound using Principal Component Pursuit Gustavo Chau, et al Stanford University	5K-6 Progressive online 3-D SAFT processing by matrix structure exploitation Fabian Krieg, et al Fraunhofer Institute for Nondestructive Testing IZFP	6K-6 A new method for extracting Q factor of the piezoelectric film without removing substrate Sarina Kinoshita, et al Waseda University	7K-6 Measurement of elastic constants of monoclinic Ga2O3 using resonant ultrasound spectroscopy Takeuchi Naoto, et al Osaka university	8K-6 Backside clamped phased array transducer: From FEM to characterization Cyril Meynier, et al Vermon SA

09:30 am - 04:00 pm	Poster -	Thursday, October 25		Kairaku (posters 1)
Session P1-C2. Improving Image Quality with Limited Data	Session P1-C3. Modelling in Beamforming	Session P1-C5. Elasticity Imaging of the Skin	P1-C6-6 2D motion estimation based on diverging wave coherent compounding and transverse oscillations	P1-C7-9 Ultrasound Imaging Improved by the Context Encoder Reconstruction Generative Adversarial Network
Chair: Pieter Kruizinga Erasmus Medical Center	Chair: Sebastian Salles NTNU	Chair: Brett Byram Vanderbilt University	Feifei Zhao, et al Department of Biomedical Engineering, Tsinghua University, Beijing	Chao-Yi Huang, et al National Chung Cheng University
P1-C2-1 Sparse Orthogonal Diverging Wave Imaging on a High-Frequency Phased Array Endoscope	P1-C3-1 Determination of Delay Resolution in Baseband I/Q Beamformer Using Error Model of Array Gain	P1-C5-1 Young's Modulus of Dermis and Hypodermis of Healthy Volunteers Measured with High Frequency Transient Elastography	P1-C6-7 Influence of Factors on Motion Artifacts in Strain Estimation with Spatial Angular Compounding	P1-C7-10 RF Data Restoration using Deep Neural Network in Subjects Including Bone for Ultrasound Computed Tomography
Christopher Samson, et al Dalhousie University	Jintae Jang, et al Sogang University	Caroline Chartier, et al UMR Inserm U1253, Tours, France	Zonghui Pan, et al Department of Biomedical Engineering, Tsinghua University	Yoshiki Watanabe, et al The University of Tokyo
P1-C2-2 Deepforming: a deep learning strategy for ultrasound beamforming applied to subsampled data	P1-C3-2 A simple, artifact-free virtual source model	P1-C5-2 Clinical Interest of High Frequency Transient Elastography to Assess Dermis Fibrosis in Patients with Venous Insufficiency	P1-C6-8 Shear-wave based monitoring of radiofrequency ablations at clinically relevant depths	P1-C7-11 Machine learning of regional myocardial strain curves to predict myocardial viability
Walter Simson, et al Chair for Computer Aided Medical Procedures & Augmented Reality, Technische Universität München	Ole Marius Hoel Rindal, et al University of Oslo	Yassine Mofid, et al UMR Inserm U1253, Tours, France	Jochen Kruecker, et al Philips Research North America	Mahdi Tabassian, et al KU Leuven
P1-C2-3 The partial Hadamard matrix for performance optimization of compressed sensing based synthetic transmit aperture	P1-C3-3 Modeling the acoustic field produced by diagnostic ultrasound arrays in plane wave mode	P1-C5-3 On-Axis Acoustic Radiation Force- based Elasticity Measurement in Homogeneous and Layered, Skin-Mimicking Phantoms	Session P1-C7. Machine Learning for Image Processing	P1-C7-12 Use of Deep Learning to Reconstruct Limited-Angle Ultrasound Tomography Images in Prostate Cancer: A Simulation Feasibility Study
Jing Liu, et al School of Medicine, Tsinghua University	Ting-Yu Lai, et al University of Washington	Kristy Walsh, et al Vanderbilt University	Chair: Grant Kruger University of Michigan	Alexis Cheng, et al National Institutes of Health
P1-C2-4 Virtually Extended Array imaging improves lateral resolution in high frame rate volumetric imaging	Session P1-C4. Bubbles Imaging	P1-C5-4 Noninvasive measurement of lung and skin stiffness for assessing interstitial lung disease and skin involvement in systemic sclerosis	P1-C7-1 Automatic classification of cardiac events from ultrasound images using deep learning	Session P1-C8. Signal Processing for Hard and Soft Tissue Imaging
Mehdi Soozande, et al Erasmus MC	Chair: Wei-Ning Lee University of Hong Kong	Xiaoming Zhang, et al Mayo Clinic	Adrian Meidell Fiorito, et al Norwegian University of Science and Technology	Chair: Veronica He Infraredx Inc.
P1-C2-5 Gap-filling method for suppressing the grating lobes in ultrasound imaging	P1-C4-1 Comparing Microbubble Detection Algorithms for Super-Resolution Imaging	P1-C5-5 High resolution SAW elastography for ex-vivo porcine skin specimen	P1-C7-2 Ultrasound image synthesis and anatomical encoding using generative adversary neural networks	P1-C8-1 Enhancing Microcalcifications in Breast Images by Shrinkage of Wavelet Coefficients
Bae-Hyung Kim, et al Mayo Clinic College of Medicine & Science	Jemma Brown, et al King's College London	Kairui Feng, et al University of Dundee	Oudom Somphone, et al Philips Research France	Stine M. Hverven, et al University of Oslo

P1-C2-6 Optimal virtual sources distribution in 3-D Diverging Wave Ultrasound Imaging: an experimental study Paolo Mattesini, et al University of Florence	P1-C4-2 Development of Simultaneous Optical Imaging and Super-Resolution Ultrasound to Improve Microbubble Localisation Accuracy Jemma Brown, et al King's College London	Session P1-C6. Methods for Elasticity Imaging Chair: Hideyuki Hasegawa University of Toyama	P1-C7-3 Ultrasound – computerized tomography registration using generative adversarial networks Naama Cohen, et al Technion	P1-C8-2 Parameter-sweep inversion for thickness and elastic velocities of long bone using axially-transmitted ultrasonic guided waves Tho N.H.T. Tran, et al University of Alberta
P1-C2-7 Improving contrast and grating lobe suppression in sparse array imaging using convolutional neural network Viksit Kumar, et al Mayo clinic	P1-C4-3 Subharmonic Plane Wave Imaging of Liposome-loaded Microbubbles Luzhen Nie, et al University of Leeds	P1-C6-1 Optimization of angular displacement compounding in plane-wave ultrasound imaging to improve accuracy of lateral displacements and strain estimates. Gijs Hendriks, et al Radboud university medical center	P1-C7-4 Deep learning applied to multi- structures segmentation in 2D echocardiography : a preliminary investigation of the required database size Sarah Leclerc, et al CREATIS	P1-C8-3 Application of Dynamic Time Warping Technique to Evaluate Microstructures of Cancellous Bones Boyi Li, et al Fudan University
P1-C2-8 Portable Ultrasound through Compressive Beamforming with Improved Contrast Jovan Mitrovic, et al University of Rochester	P1-C4-4 3D In Vitro Ultrasound Super- Resolution Imaging using a Clinical System Kirsten Christensen-Jeffries, et al Kings College London	P1-C6-2 Multi-frequency 3D phase tracking method with phased-array beamforming in Cartesian coordinate system Soichiro Nunome, et al University of Toyama	P1-C7-5 The Feasibility of Classification of thyroid nodules integrated expriences based inference of radiologist and extracted feature vectors in ultrasound images Shijie Zhang, et al Peking University	P1-C8-4 Ringdown suppression for a sonothrombolysis catheter using principal component analysis filtering Adam J. Dixon, et al University of Virginia
P1-C2-9 Artifact Suppressed Sparse Coherent Plane Wave Compounding Using Modified Vernier-Interpolation Angle Sequence Ya-Ling Hsieh, et al National Tsing Hua University	P1-C4-5 A study of radiation force effects in plane-wave transmission mode Francesco Guidi, et al University of Florence	P1-C6-3 Intra-Scan Variability of Natural Shear Wave Measurements L.B.H. Keijzer, et al Erasmus MC	P1-C7-6 Deep CNN based ultrasound super resolution for high-speed high-resolution B-mode imaging Woosuk Choi, et al KAIST	P1-C8-5 Reconstruction acceleration for compressed sensing based synthetic transmit aperture using quadrature sampling Jing Liu, et al School of Medicine, Tsinghua University
P1-C2-10 High-frame rate 3D-synthetic transmit aperture imaging with a reduced number of receiving channels Ying Li, et al Ryerson University	P1-C4-6 Poisson Statistical Model of Ultrasound Super-Resolution Image Acquisition Time Kirsten Christensen-Jeffries, et al King's College London	P1-C6-4 Fast randomized singular value decomposition based clutter filtering for shear wave imaging Yuanyuan Wang, et al Department of Biomedical Engineering, Tsinghua University	P1-C7-7 Cardiac Motion Estimation with Dictionary Learning and Robust Sparse Coding in Ultrasound Imaging Nora Ouzir, et al University of Toulouse	P1-C8-6 Wavelet-based Cepstral Analysis for the Estimation of the Mean Scatterer Spacing Remie Nasr, et al Lebanese University
P1-C2-11 Ultrafast Ultrasound Imaging with Stretchable Probe on Nonplanar Surface: A Simulation Study Congzhi Wang, et al Shenzhen Institutes of Advanced Technology, the Chinese Academy of Sciences	P1-C4-7 Chirp-Coded Excitation for Enhancing the Transcranial Penetration in Ultrasound Localization Microscopy: An ex vivo Validation Study Fu-Feng Lee, et al Department of Biomedical Engineering, Tsinghua University	P1-C6-5 A Comparative Study of Displacement De-noising Strategies: An In Vivo Feasibility Study Using 3D Whole Breast Ultrasound Data Jingfeng Jiang, et al Michigan Technological University	P1-C7-8 Quality assessment of transperineal ultrasound images of the male pelvic region using deep learning Saskia Camps, et al Eindhoven University of Technology	P1-C8-7 Jointly Optimized Modulation / Filtering Technique for Pseudo-Orthogonal Binary Sequences Denis Bujoreanu, et al Univ. Lyon, INSA-Lyon, UCBL1, UJM-Saint Etienne, CNRS, Inserm, CREATIS UMR 5220, U1206

09:30 am - 04:00 pm Poster		Thursday, October 25		Kairaku (posters 1)	
Session P1-C9. Musculoskeletal System Chair: Tadashi Yamaguchi Chiba University	Session P1-C10. Liver Chair: Michael Oelze University of Illinois	P1-C11-4 Accumulation of Magnetic Nanoparticles Employing High Intensity Focused Ultrasound for Drug Targeting Applications Michael Fink, et al University of Erlangen Nuremberg	P1-C12-7 Theoretical Electroelastic Moduli of Porous Textured Piezoceramics Antoine Balé, et al Université de Tours - GREMAN UMR 7347 CNRS	P1-C14-4 Near-field multiple traps of acoustic vortices generated by a sector transducer array and its application in object manipulation Qingyu Ma, et al Nanjing Normal University	
P1-C9-1 Ultrasound radiation from bovine cortical bone Taiki Makino, et al Doshisha university	P1-C10-1 Sensitivity analysis of reference-free quantitative ultrasound tissue classification. Trong Nguyen, et al University of Illinois at Urbana Champaign	P1-C11-5 Controlled Transdermal Hepatitis B Immunization using Focused Ultrasound Mei Yang, et al Shenzhen University	P1-C12-8 Eccentric design of Fabry-Perot interferometer for high sensitivity and broadband ultrasound sensing Bingxue Liu, et al School of Instrumentation Science and Optoelectronics Engineering, Beihang University	P1-C14-5 Ultrasonic auger for narrow-gauge bore-hole drilling David Firstbrook, et al University of Glasgow	
P1-C9-2 Ex vivo radius fracture discrimination from cortical thickness and porosity obtained by axial transmission Jean-Gabriel Minonzio, et al Sorbonne Université	P1-C10-2 Investigation of A Method for Quantifying Diffuse Liver Disease Based on Histogram of Ultrasound Signal-to-Noise Ratio Takuma Oguri, et al GE Healthcare	P1-C11-6 Ultrasound targeted microbubble destruction promotes the homing of MSCs in rat model of acute injury liver Ting Sun, et al Shanghai General Hospital	Session P1-C13. Therapeutic Transducers Chair: Ho-yong Lee Ceracomp Co., Ltd	P1-C14-6 Lead free Ceramic Transducers for Sonar Applications Valsala Kurusingal, et al Thales Australia	
P1-C9-3 Interpretation of Physical Meaning of Speed of Sound in Cartilage Tissue: Through Comparison with Elasticity and Magnetic Resonance Parameters Naotaka Nitta, et al National Institute of Advanced Industrial Science and Technology (AIST)	P1-C10-3 Quantitative Ultrasound Spectroscopy to Differentiate Between Cirrhotic and Non-Cirrhotic Patients Ahmed El Kaffas, et al Stanford University	P1-C11-7 Photoacoustic Imaging in the Spinal Cord: Monitoring Stem Cell Therapies for Image-Guided Regenerative Medicine Kelsey Kubelick, et al Georgia Institute of Technology & Emory University	P1-C13-1 Miniaturized Sub-megahertz Focused Ultrasound Transducers Composed of Multilayer Hard PZT ceramics Ho-Wuk Kim, et al North Carolina State University		
P1-C9-4 A three-parameter empirical model of the angular dependence of the speed of sound in cortical bone Quentin Grimal, et al Sorbonne Universite', UPMC Univ Paris 06, INSERM, CNRS, Laboratoire Imagerie Biomédicale	P1-C10-4 Envelope statistics and backscattered power-spectrum analysis of rat livers with high-frequency annular array Takeru Mizoguchi, et al Chiba University	P1-C11-8 Ultrasound stimulation of synthetic platelets in vitro. Influence of cross-linkage, applications to healing and effect on drug release kinetics. Seema Nandi, et al North Carolina State University	P1-C13-2 High intensity focused ultrasound (HIFU) combines Optical Coherence tomography (OCT) for skin superficial diseases treatment and evaluation Guan Wang, et al University of Dundee		
P1-C9-5 Study on the wave convergence in bone for the effective ultrasound radiation Masaya Saeki, et al Doshisha university	P1-C10-5 Characterization of concentrated scattering media using ultrasound parameric imaging based on Homodyned-K Distribution Jui Fang, et al Chang Gung University	Session P1-C12. Transducer Modeling and Characterization Chair: Stefan Rupitsch Friedrich-Alexander University	P1-C13-3 Development of low frequency (20 kHz) clinically viable ultrasound applicator for chronic wound treatment Olivia Ngo, et al Drexel University School of Biomed		

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P1-C9-6 In-bioreactor ultrasonic monitoring of human engineered cartilage	P1-C10-6 Quantitative evaluation method for liver fibrosis in clinical ultrasound B-mode image based on optimized multi-Rayleigh model	P1-C12-1 Assessment of Electromechanical Coupling Coefficient for a Completed PIN-PMN-PT Array	P1-C13-4 Virtual Prototyping of a Catheter Transducer Array for Internal Hepatic Sonoporation	
Guillermo Rus, et al University of Granada	Shohei Mori, et al Tohoku University	Douglas N. Stephens, et al University of Calif, Davis	Alexandru Moldovan, et al University of Strathclyde	
P1-C9-7 Monitoring of Tetanic Contractions of Skeletal Muscle Using Wearable Ultrasonic Sensors	P1-C10-7 Verification of frequency dependence and accuracy in backscatter coefficient analysis of fatty liver	P1-C12-2 Comparison of two models for power dissipation and temperature in piezoelectric transducers	P1-C13-5 Lead Free Piezoceramic Based Ultrasonic Devise for Medical Application	
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