IUS 2018

IEEE International Ultrasonics Symposium

Including Short Courses

October 22 -25, 2018

Portopia Hotel, Kobe, Japan

PROGRAM BOOK

IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society

IEEE

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* (Show valid student ID at conference)	$250 (IEEE Member) $425 (Non-IEEE Member)	$400 (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 *** (Student with valid student ID) or Retiree	$150 (One Short Course) $250 (Two Short Courses)	$250 (One Short Course) $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

* 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.

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

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

IEEE International Ultrasonics Symposium

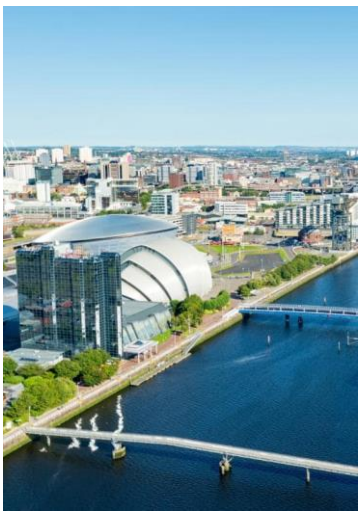
6 - 9 October 2019, SEC, Glasgow, Scotland, UK

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.

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

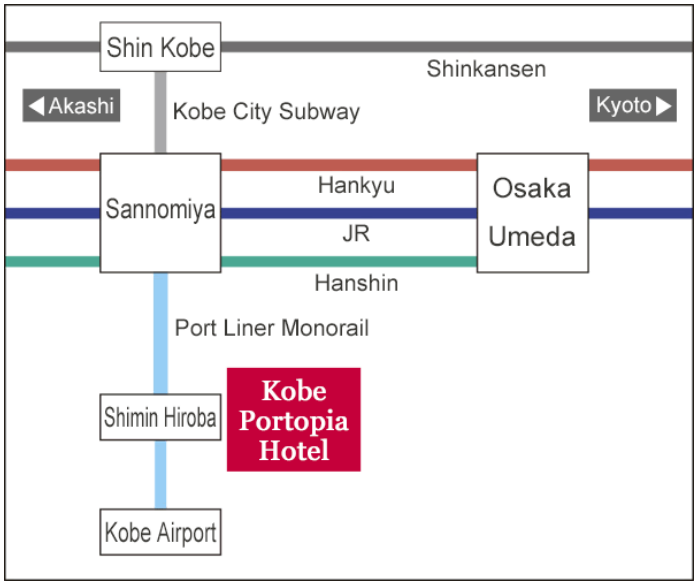
10-1, 6 Chome, Minatojima Nakamachi
Chuo-ku, Kobe, 650-0046 Japan
Tel: +81 - 78 - 302 - 1111
Fax: +81 - 78 - 302 - 6877
http://www.portopia.co.jp/en/

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 ¥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 ¥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

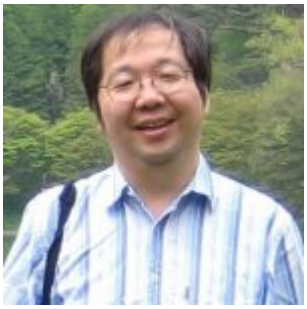
- By Kobe Kansai Airport Bay Shuttle Ferry

  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

Organizing Committee



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

Kentaro Nakamura,
Tokyo Inst. of Tech.
Proceedings

C.S. Lam,
Skyworks
Exhibition

Daniel Stevens,
Vectron, retired
Finance

Shin-ichiro Umemura,
Tohoku Universtiy
Finance

Pai-Chi Li,
National Taiwan University
Short Course

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Univ. of Erlangen-Nuremberg
WEB

Muyinatu A. Lediju Bell,
Johns Hopkins University
Communications

Robert Weigel,
Univ. of Erlangen-Nuremberg
Publicity

Ji Wang,
Ningbo University
Publicity

Tatsuya Omori
Chiba University
Audio/Visual

Masanori Ueda,
TAIYO YUDEN
Local Arrangement

Ryo Nakagawa,
Murata MFG
Local Arrangement

Technical Program Committee

Group 1 Medical Ultrasonics

Vice-Chair: Alfred C. H. Yu, University of Waterloo, Canada

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4. Lori Bridal, University Pierre and Marie Curie, France
5. Matthew F. Bruce, University of Washington, USA
6. Charles A. Cain, University of Michigan, USA
7. Jean-Yves Chapelon, INSERM, France
8. Magnus Cinthio, Lund University, Sweden
9. Guy Cloutier, University of Montreal, Canada
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11. Paul A. Dayton, University North Carolina/NCSU, USA
12. Marvin Doyley, University of Rochester, USA
13. Nico de Jong, Erasmus Medical Centre, The Netherlands
14. Chris de Korte, Radboud University Medical, The Netherlands
15. Jan Dhooge, Catholic University of Leuven, Belgium
16. Emad Ebbini, University of Minnesota, USA
17. Stas Emelianov, Georgia Institute of Technology and Emory University School of Medicine, USA
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28. Kullervo Hynynen, University of Toronto, Canada
29. Jørgen Arendt Jensen, Technical University Denmark, Denmark
30. Hiroshi Kanai, Tohoku University, Japan
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32. Kang Kim, University of Pittsburgh, USA
33. Michael Kolios, Ryerson University, Canada
34. Elisa Konofagou, Columbia University, USA
35. Nobuki Kudo, Hokkaido University, Japan
36. Roberto Lavarello, Pontificia Universidad Catolica, Peru
37. Pai-Chi Li, National Taiwan University, Taiwan
38. Hervé Liebgott, CREATIS, France
39. Thanasis Loupas, Philips Ultrasound, USA
40. Lasse Løvstakken, Norwegian University of Science and Technology, Norway
41. Jian-yu Lu, University of Toledo, USA

42. James G. Miller, Washington University in St. Louis, USA
43. Massimo Mischi, Einhoven University of Technology, The Netherlands
44. Larry Mo, GE Global Research, USA
45. Helen Mulvana, University of Glasgow, UK
46. Kathy Nightingale, Duke University, USA
47. Svetoslav Nikolov, BK Ultrasound, Denmark
48. William D. O'Brien, University of Illinois, USA
49. Michael Oelze, University of Illinois, USA
50. Georg Schmitz, Ruhr-Universitat Bochum, Germany
51. Ralf Seip, SonaCare Medical, USA
52. Mickael Tanter, INSERM, France
53. Kai E. Thomenius, Massachusetts Institute of Technology, USA
54. Hans Torp, University of Science and Technology, Norway
55. Piero Tortoli, University of Florence, Italy
56. Matthew W. Urban, Mayo Clinic, USA
57. Ton van der Steen, Erasmus Medical Centre, The Netherlands
58. Mingxi Wan, Xi'an Jiaotong University, China
59. Kendall Waters, Silicon Valley Medical Instruments, USA
60. Keith Wear, Food and Drug Administration, USA
61. Wilko G. Wilkening, Siemens Medical Solutions , USA
62. Chih-Kuang Yeh, National Tsing Hua University, Taiwan
63. Alfred Yu, University of Waterloo, Canada
64. Roger J. Zemp, University of Alberta, Canada
65. Hairong Zheng, Shenzhen Institutes of Advanced Technology, China

Group 2 Sensors, NDE & Industrial application

Vice-Chair: Oruklu Erdal, Illinois Institute of Technology, USA

1. Robert C. Addison, Rockwell Science Center
2. Walter Arnold, Fraunhofer Institute for NDT, Germany
3. James Blackshire, Air Force Research Laboratory, USA
4. Ramazan Demirli, Villanova University, USA
5. James Friend,UCSD, USA
6. David Greve, Carnegie Mellon University, USA
7. Edward Haeggström, University of Helsinki, Finland
8. Joel Harley, University of Utah, USA
9. Jacqueline Hines, Applied Sensor R&D Corporation, USA
10. Patrick Johnston, NASA Langley Research Center
11. Lawrence W. Kessler, Sonoscan Inc.
12. Mario Kupnik, Technische Universität Darmstadt, Germany
13. Roman Maev, University of Windsor
14. Donald McCann, Seadrill, USA
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
22. John F. Vetelino, University of Maine, USA
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

1. Arthur Ballato, Clemson University, USA
2. Anne Bernassau, Heriot Watt University, UK
3. Jan Brown, JB Consulting, USA
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

Bass
Minato Hattori

Violin
Risa Yamamoto

Keyboard
Sumito Kanza

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:

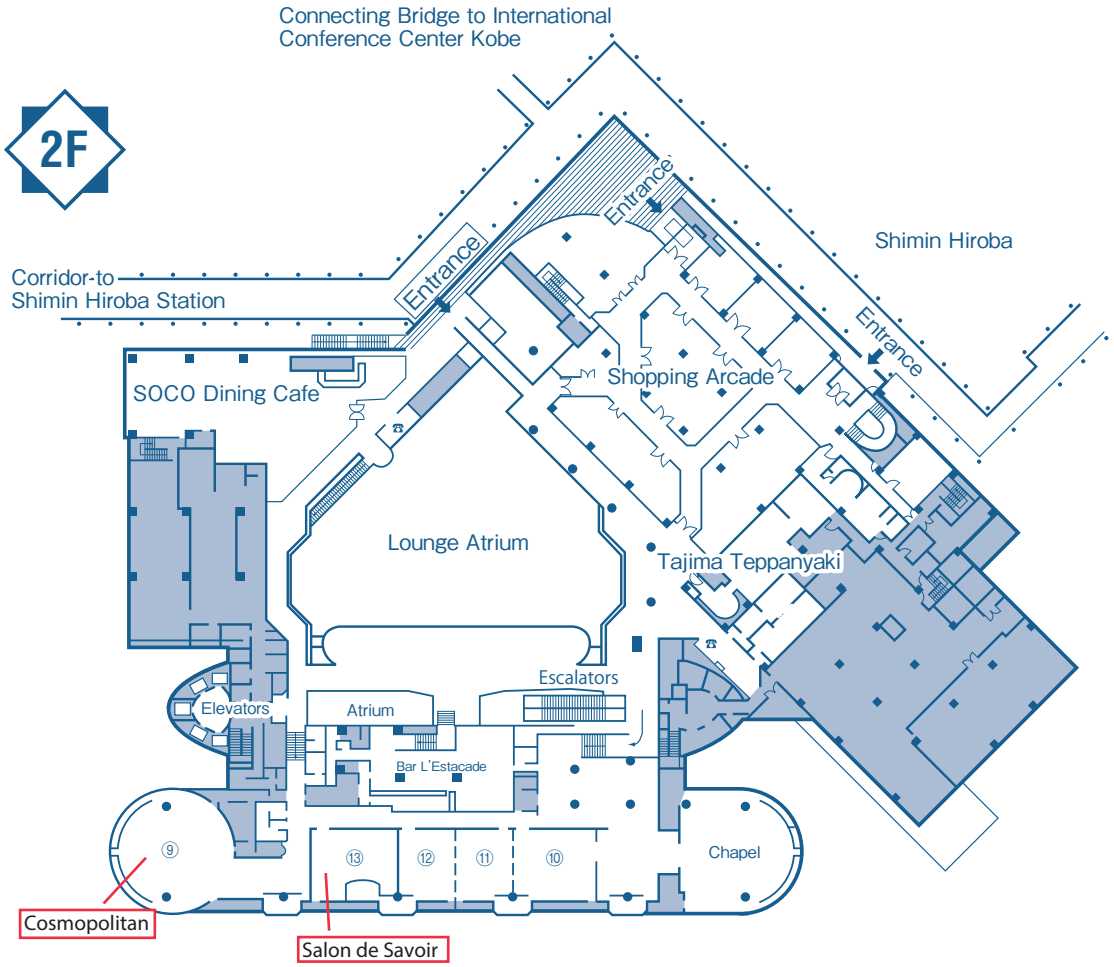
- Mornings: 9:30 am to 10:30 am (Posters with odd numbers will be presented)
- Afternoons: 3.00 pm to 4.00 pm (Posters with even numbers will be presented)

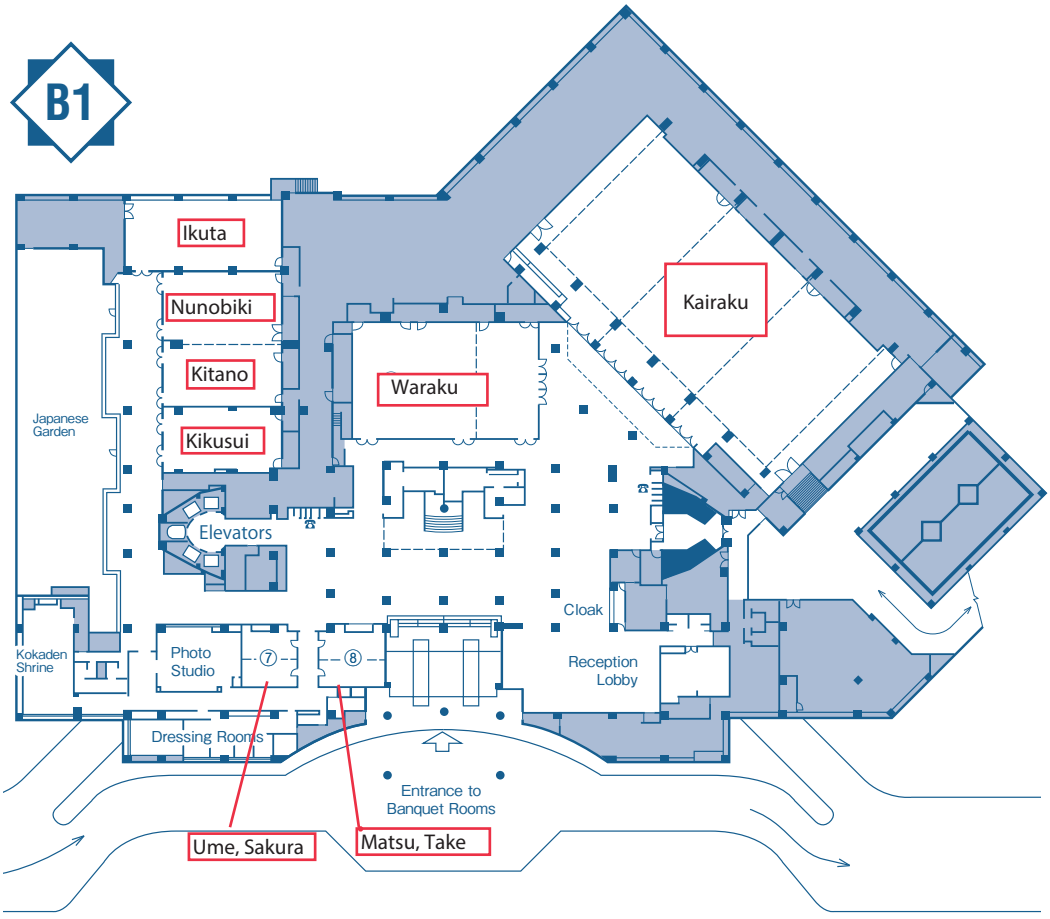
Posters must be posted in the morning between 7:30 am to 8:00 am. They must be removed between 5:30 pm to 6:00 pm at the end of the day. Therefore, each poster will be displayed for a full day (8:00 am to 5:30 pm).
Please note, on the last day of conference (Thursday October 25), posters need to be removed at 4:00 pm instead of 5:30 pm since exhibitor booths will be dismantled after 4:00pm.

Instructions

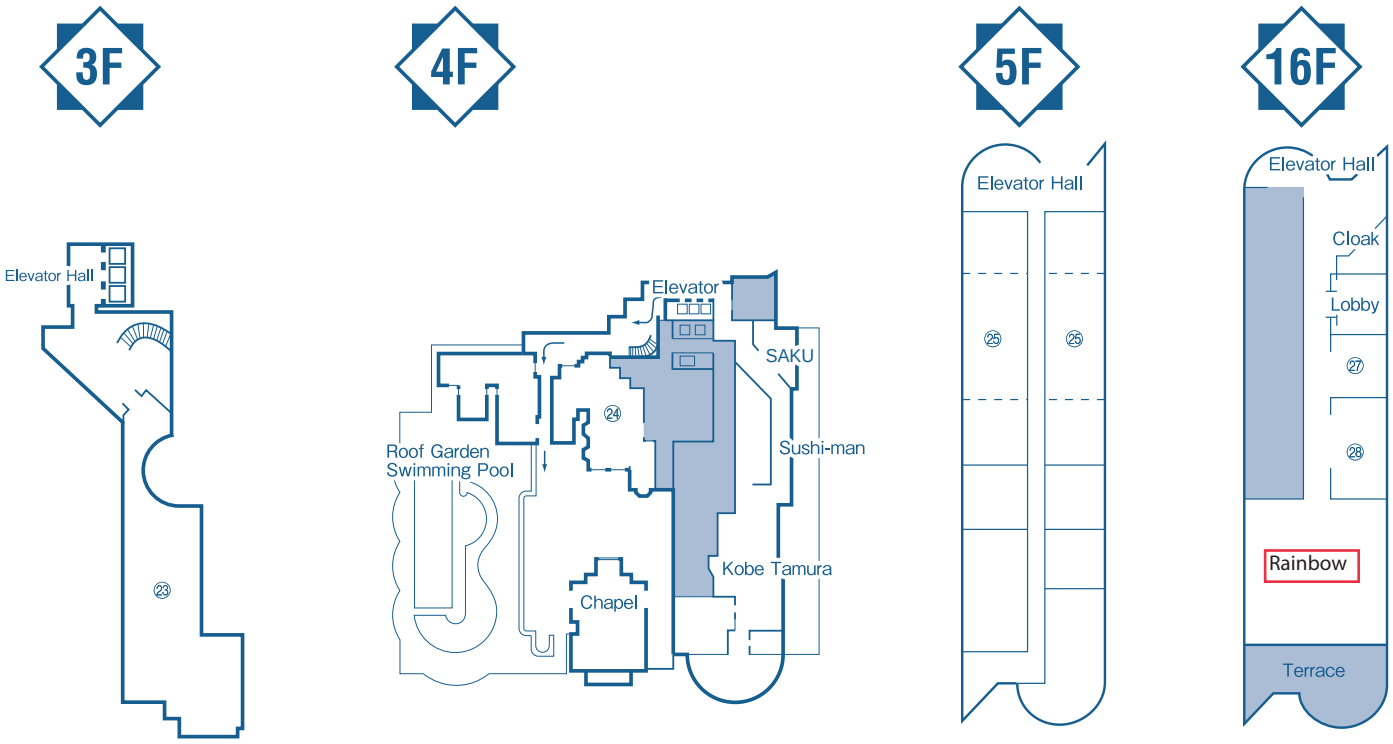
- One poster board is allocated to each presentation. The recommended poster size is **Landscape format**, Arch E which is 36 inches high by 48 inches wide (92 cm x 122 cm). European alternative ISO A0 (84 cm x 119 cm) can also be used.
- Posters must be mounted using push pins provided by the organizing 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


3F
Elevator Hall
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Swimming Pool
Sushi-man
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Chapel
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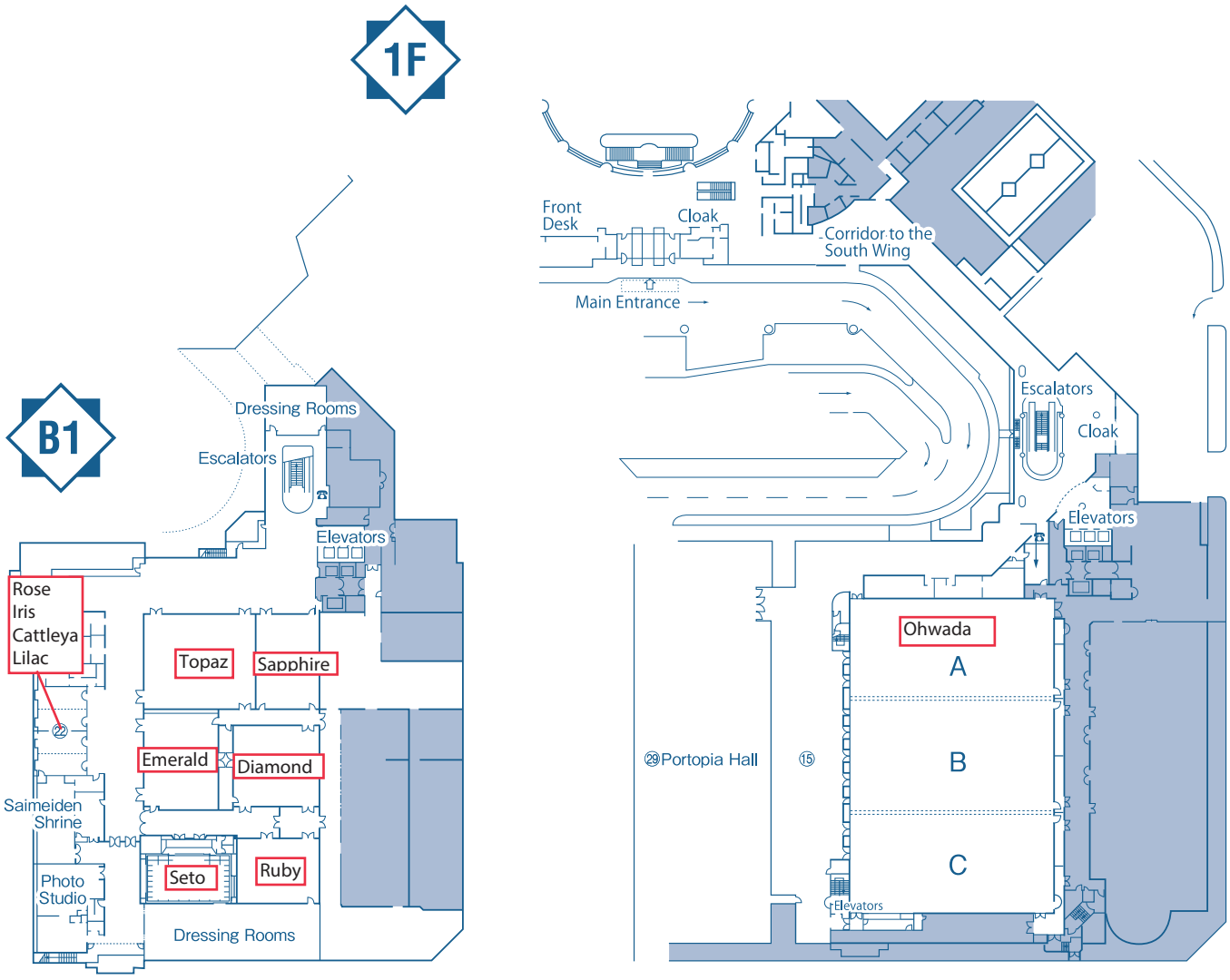
Elevator Hall
Cloak
Lobby
27
28
Rainbow
Terrace


1F
Front
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South Wing
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Elevators
B1
Dressing Rooms
Escalators
Elevators
Rose
Iris
Cattleya
Lilac
Topaz
Sapphire
22
Emerald
Diamond
Saimeiden
Shrine
Photo
Studio
Seto
Ruby
Dressing Rooms

- Posters of Student Paper Competition -

Kairaku

Session P1-SPC. **Student paper competition** *Chair:* **Thanasis Loupas** *Philips Ultrasound*	**P1-SPC-4 Ultrafast 4D Doppler Imaging of the rat brain with a large aperture Row Column addressed probe** **Jack Sauvage[1]**, Jonathan Porée[1], Claire Rabut[1], Baptiste Heiles[1], Guillaume Ferin[2], Martin Flesch[2], An Nguyen-Dinh[2], Mickaël Tanter[1], Mathieu Pernot[1], Thomas Deffieux[1] *[1]Institut Langevin, ESPCI Paris, PSL Research University, CNRS UMR 7587, INSERM U979, France, [2]Vermon SA, 180 rue du General Renault, 37000 TOURS, France, France*	**P1-SPC-8 3D flow mapping for Lorentz force driven liquid metal flows in crystallization experiments** **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*	**P1-SPC-12 A Quasi-LTI Frequency-Selective SAW Circulator** **Giuseppe Michetti[1]**, Cristian Cassella[1], Flavius Pop[1], Ahmed Kord[2], Dimitrios Sounas[2], Andrea Alù[2], Matteo Rinaldi[1] *[1]Northeastern University, Boston, MA, United States, [2]University of Texas at Austin, United States*	**P1-SPC-16 In vivo imaging of a porcine coronary artery with a 30/80 MHz dual frequency intravascular ultrasound catheter** **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 **Daniel Sawyer[1]**, David Maresca[2], Guillaume Renaud[3], Audrey Lee-Gosselin[2], Mikhail Shapiro[4] *[1]Bioengineering, Caltech, Pasadena, CA, United States, [2]Chemical Engineering, Caltech, United States, [3]Sorbonne Université, France, [4]Caltech, United States*	**P1-SPC-5 Single-Chip Reduced-Wire CMUT-on-CMOS System for Intracardiac Echocardiography** **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*	**P1-SPC-9 Design of Lab-on-a-Chip Surface Acoustic Resonance (SAR) Sensor with Enhanced Sensitivity and Integrated EIS** **Kiryl Kustanovich[1]**, Aldo Jesorka[1], Ventsislav Yantchev[1] *[1]Chalmers University of Technology, Goteborg, Sweden*	**P1-SPC-13 Novel pMUT-Based Acoustic Duplexer for Underwater and Intra-Body Communication** **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*	**P1-SPC-17 ASIC design for a single-cable 64-element ultrasound probe** **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 **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]IBiTech-bioMMeda, Ghent University, Ghent, Belgium*	**P1-SPC-6 Prostate Shear Wave Elastography: Multiresolution Reconstruction Dependence on Push Beam Spacing** **Derek Y. Chan[1]**, Samantha Lipman[1], Mark Palmeri[1], D. Cody Morris[1], Thomas J. Polascik[2], Ned C. Rouze[1], Kathryn Nightingale[1] *[1]Biomedical Engineering, Duke University, Durham, NC, United States, [2]Surgery, Duke University, Durham, NC, United States*	**P1-SPC-10 Redatuming for Breast Ultrasound** **Ulas Taskin[1]**, Joost van der Neut[1], Koen w.a. van Dongen[1] *[1]Department of Imaging Physics, Faculty of Applied Sciences, TU Delft, Delft, Netherlands*	**P1-SPC-14 Use of Hierarchical Cascading Technique for FEM Analysis of Transverse Mode Behaviors in SAW Devices** **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*	**P1-SPC-18 Modular fabrication and assembly of large 2D Arrays with interface ASICs, PIN-PMN-PT composite, and 3D printed backing** **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 **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*	**P1-SPC-7 Omnidirectional spiral surface acoustic waves for particles manipulation and multi-size particles separation in a microliter sessile drop** **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*	**P1-SPC-11 Trajectory Optimization of Levitated Particles in Mid-air Ultrasonic Standing Wave Levitators** **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*	**P1-SPC-15 S0-Mode Lithium Niobate Acoustic Delay Lines with 1 dB Insertion Loss** **Ruochen Lu[1]**, Tomas Manzaneque[1], Yansong Yang[1], Songbin Gong[1] *[1]University of Illinois at Urbana-Champaign, Urbana, IL, United States*	

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

TUESDAY ORAL

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

	Topaz (400)	Diamond (300)	Emerald (280)	Sapphire (220)	Ikuta (200)	Nunobiki (150)	Kikusui (140)	Ruby (200)
	Session 1A. Cardiac Elasticity *Chair:* **Guy Cloutier** *University of Montreal Hospital*	***Session 2A. Spotlight Session: Photo-acoustics*** *Chair:* **Koen W.A. van Dongen** *TU Delft*	***Session 3A. Hemodynamics: Estimation and Visualization*** *Chair:* **Kai Thomenius** *Massachusetts Institute of Technology*	***Session 4A. Use of Microbubbles and Cavitation in Ultrasound Therapy*** *Chair:* **Elisa Konofagou** *Columbia University*	***Session 5A. SAW Device & Application*** *Chair:* **Hiroyuki Nakamura** | *Skyworks Solutions, Inc.*	***Session 6A. Special Medical Systems*** *Chair:* **John Hossack** *University of Virginia*	***Session 7A. Abdominal and Pelvic Tissue Characterization*** *Chair:* **Timothy Hall** *University of Wisconsin-Madison*	***Session 8A. Therapeutic Transducers*** *Chair:* **Yongrae Roh** *Kyungpook National University*
10:30 am	***1A-1*** **Analyzing the shear wave mechanics in cardiac shear wave elastography using finite element simulations** Annette Caenen, et al *Ghent University*	***2A-1*** **Ultrasound-guided photoacoustics: from basic science tool to clinically-viable functional and molecular imaging** Stanislav Emelianov, et al *Georgia Institute of Technology and Emory University School of Medicine*	***3A-1*** **Simultaneous measurement of stimulus and response in Flow Mediated Dilation: a pilot clinical study** Alessandro Ramalli, et al *KU Leuven*	***4A-1*** **Correlation between passive cavitation imaging and positron emission tomography imaging of the radiolabeled-nanocluster delivery location and efficiency by FUS-mediated blood-brain barrier disruption** Yaoheng Yang, et al *Washington University in St louis*	***5A-1*** **Coexisting Surface and Bulk Gyroscopic Effects** Visarute Pinrod, et al *Cornell University*	***6A-1*** **A lightweight, motorized 3D ultrasound probe for remote monitoring of astronauts health from ground** Cyril Mossuz, et al *VERMON S.A.*	***7A-1*** **Measured fractional calculus parameters for shear waves in swine liver** Tom Humphrey, et al *Michigan State University*	***8A-1*** **Treatment of breast tumors using a toroidal HIFU transducer. Preliminary experiments in human samples.** Marine Sanchez, et al *LabTAU - INSERM unité 1032*
10:45 am	***1A-2*** **Validation of 2D non-rigid image registration to assess regional myocardial strain in a clinical setting** Bidisha Chakraborty, et al *KU Leuven*		***3A-2*** **Laterally-dependent velocity estimation bias in plane wave Doppler ultrasound** Luxi Wei, et al *University of Toronto*	***4A-2*** **Artificial stone comminution and behavior of cavitation bubbles with annular focused ultrasound** Shin Yoshizawa, et al *Tohoku University*	***5A-2*** **AlN based dual LCAT filters on a single chip for duplexing application** Yao Zhu, et al *Institutes of Microelectronics, A*STAR*	***6A-2*** **Development of a mechanically-scanning microultrasound capsule endoscopy device and demonstration in vivo** Yongqiang Qiu, et al *University of Glasgow*	***7A-2*** **Quantitative ultrasound imaging and characterization of uterine peristaltic waves** Yizhou Huang, et al *Eindhoven University of Technology*	***8A-2*** **Design, fabrication and testing of a dual-frequency transducer for Acoustic Cluster Therapy activation** Kenneth K. Andersen, et al *University College of Southeast Norway*
11:00 am	***1A-3*** **4D mechanical wave velocity mapping using Clutter Filter Wave Imaging. Healthy subjects versus Patients** Sebastien Salles, et al *NTNU*	***2A-2*** **Quantitative GHz ultrasonic imaging of biological cells and transparent structures** Oliver B. Wright, et al *Hokkaido University*	***3A-3*** **Real-Time Flow Visualization through Locally Activated Nanodroplets and High Frame Rate Imaging** Matthieu Toulemonde, et al *Imperial College London*	***4A-3*** **Differentiation of tissue, cavitation bubbles and blood flow imaging in cavitation-enhanced high-intensity focused ultrasound treatment** Hayato Ikeda, et al *Tohoku University*	***5A-3*** **Leaky SAW devices with Beryllium electrodes** Victor Plessky, et al *GVR Trade SA*	***6A-3*** **Feasibility study of a coherent multi-transducer US imaging system** Laura Peralta, et al *King's College London*	***7A-3*** **Temporal Correlations Between Cervical Smooth Muscle Force Generation and Acoustic Backscatter Coefficient Parameters** Andrew Santoso, et al *University of Wisconsin-Madison*	***8A-3*** **Development of Magnetic Resonance(MR) Compatible Transcranial 3072-elements Ultrasonic 2D Array for Deep Brain Stimulation and Neuromodulation** Teng Ma, et al *Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*

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 / AlN / 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*

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

TUESDAY ORAL

01:30 pm -03:00 pm — Oral --- Tuesday, October 23

	Topaz (400)	Diamond (300)	Emerald (280)	Sapphire (220)	Ikuta (200)	Nunobiki (150)	Kikusui (140)	Ruby (200)
	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*
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*	***3B-1*** **Higher order singular value decomposition for high contrast microvascular imaging** Chee Hau Leow, et al *Imperial College London*	***4B-1*** **Contrast enhanced ultrasound imaging of chronic rat spinal cord injury** Matthew Bruce, et al *University of Washington*	***5B-1*** **Thin Film Acoustoelectric GHZ SAW Amplifier Design** Donald Malocha, et al *Pegasense*	***6B-1*** **Printed polymer transducers for mid-air haptic feedback** Paul van Neer, et al *TNO*	***7B-1*** **Evaluation of carotid biomechanical properties by simultaneous analysis of arterial stiffening and deformation** Guillaume Goudot, et al *Institut Langevin, INSERM U979*	***8B-1*** **Evaluation method for high-power piezoelectric materials and devices** Takeshi Morita, et al *The Univ. of Tokyo*
01:45 pm		***2B-2*** **In vivo Photoacoustic, 19F MR and fluorescent imaging of clinically-applicable perfluorocarbon-loaded nanoparticles** Khalid Daoudi, et al *Radboud university medical center*	***3B-2*** **Adaptive grayscale mapping to improve molecular ultrasound difference images** Jasmine Shu, et al *Stanford University*	***4B-2*** **Quantification of lipid microbubble shell pharmacokinetics enabled by copper-porphyrin-lipid labeling** Maneesha Rajora, et al *University Health Network*	***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-2*** **Linear Ultrasonic Array Development incorporating Cantor Set Fractal Geometry** Haoyu Fang, et al *University of Strathclyde*	***7B-2*** **Strain Discontinuities in Carotid Atherosclerotic Plaques – a Novel Marker for Plaque Vulnerability?** Tim Vonk, et al *Maastricht University Medical Center*	
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 ScAlN 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*

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

TUESDAY ORAL

04:00 pm -05:30 pm — Oral --- Tuesday, October 23

	Topaz (400)	Diamond (300)	Emerald (280)	Sapphire (220)	Ikuta (200)	Nunobiki (150)	Kikusui (140)	Ruby (200)
	Session 1C. Cardiac and Cerebrovascular Imaging *Chair:* **Damien Garcia** *CREATIS*	***Session 2C. Technical Advances in Photoacoustic Imaging*** *Chair:* **Muyinatu Bell** *Johns Hopkins University*	***Session 3C. Nanodroplets Enhanced Imaging*** *Chair:* **Mingxi Wan** *Xi'an Jiaotong University*	***Session 4C. Microbubbles and Nanoparticles*** *Chair:* **Nobuki Kudo** *Hokkaido University*	***Session 5C. BAW Device*** *Chair:* **Rich Ruby** *Broadcom Ltd*	***Session 6C. NDE*** *Chair:* **Jafar Saniie** *Illinois Institute of Technology*	***Session 7C. Vascular Elasticity*** *Chair:* **Richard Lopata** *Einhoven University of Technology*	***Session 8C. CMUT Design and Applications*** *Chair:* **Alessandro Stuart Savoia** *Roma Tre University*
04:00 pm	***1C-1*** **Instantaneous Volumetric Flow Rate Measurement Using High-Frame-Rate Ultrasound** Billy Y. S. Yiu, et al *University of Waterloo*	***2C-1*** **Sparsity-Based Super-Resolution for Photoacoustic Tomography with a Ring Array Transducer** David Egolf, et al *University of Alberta*	***3C-1*** **Acoustic Wave Sparsely-Activated Localization Microscopy (AWSALM): A Fast and Flow Independent Ultrasound Super-Resolution Technique using Nanodroplets** Ge Zhang, et al *Imperial College London*	***4C-1*** **Enhancing Checkpoint Inhibitor Therapy with Ultrasound Stimulated Microbubbles** Sharshi Bulner, et al *Sunnybrook Research Institute*	***5C-1*** **A Fast Thermo-Piezoelectric Finite Element Model of 3D Transient FBAR Dynamics under Large RF Signal** Christopher Kirkendall, et al *Broadcom Inc*	***6C-1*** **GPU-based parallel processing for inverse computation of full-field material properties based on quantitative laser ultrasound visualization** Sheng-Po Tseng, et al *National Taipei University of Technology*	***7C-1*** **Stiffness Evaluation of Aortic Aneurysm using an Ultrafast Regularized Tissue-Doppler Optical-Flow Principal Strain Estimator** Diya Wang, et al *University of Montreal Hospital*	***8C-1*** **Collapse-mode CMUT: design and characterization** Chris van Heesch, et al *Philips Research*
04:15 pm	***1C-2*** **Volume flow estimation in valvular jets using 3D high frame rate ultrasound** Jørgen Avdal, et al *NTNU*	***2C-2*** **Sparsity-based optimization of the initial pressure distribution using a linear array transducer in photoacoustic imaging** Ruibo Shang, et al *Dartmouth College*	***3C-2*** **Spontaneous Nucleation of Perfluorocarbon Droplets** David Li, et al *University of Washington*	***4C-2*** **Targeted microbubble-cell interactions elucidated with combined confocal microscopy and Brandaris 128 ultra-high speed imaging** Ines Beekers, et al *Erasmus MC*	***5C-2*** **Determining the Off-resonance 3rd Order Nonlinear Constants of a BAW resonator** Jing Wu, et al *Broadcom*	***6C-2*** **Optoacoustic Tissue Differentiation using a Mach-Zehnder Interferometer: Preliminary Results** Herve Nguendon Kenhagho, et al *Biomedical Laser and Optics Group (BLOG) ,University of Basel*	***7C-2*** **A Longitudinal Study of the Mechanical Properties of Abdominal Aortic Aneurysms: the First Results** Emiel van Disseldorp, et al *Eindhoven University Of Technology*	
04:30 pm	***1C-3*** **Next-generation echocardiography – opportunities and challenges** Lasse Lovstakken, et al *NTNU*	***2C-3*** **Structured acousto-optic imaging with ultrafast ultrasonic plane waves** Jean-Luc Gennisson, et al *IR4M / CNRS / UPSUD / CEA*	***3C-3*** **Manipulating the Dynamic Behavior of Laser-Activated Perfluorocarbon Nanodroplets Using Transmit Pulse Shape of Ultrafast Ultrasound Imaging** Yiying I. Zhu, et al *Georgia Institute of Technology*	***4C-3*** **The effect of sonication on extravasation and distribution of nanoparticles and dextrans in tumor tissue imaged by multiphoton microscopy** Petros Tesfamichael Yemane, et al *Norwegian University of Science and Technology (NTNU)*	***5C-3*** **Prediction of the H2 Response of an FBAR Resonator Using Finite Element Method** Zongliang Cao, et al *Broadcom Inc*	***6C-3*** **Monitoring Changes in Mechanical Properties of Rock Bolts Using a Low-Power Coded-Excitation Scheme** Johan E. Carlson, et al *Lulea University of Technology*	***7C-3*** **Comparison of the shear wave velocities in anastomosis between excised pig aorta, Dacron, PTFE and custom made arterial models using shear wave elastography** Miguel Bernal, et al *Universidad Pontificia Bolivariana*	***8C-2*** **A Robust and High Output Pressure CMUT Design for Ultrasound Imaging and HIFU Ablation** Ji Hoon Jang, et al *Stanford 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 bubble-cell 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*

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

TUESDAY POSTER

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 li, 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*

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

TUESDAY POSTER

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 AlN-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** Jong-Hoon Kim, et al *University of Toulouse*	***P1-A10-1*** **Characterizing the erythrocyte aggregation using the anisotropy of ultrasonic backscatter** Julien Rouyer, et al *Aix-Marseille université, CNRS, Centrale Marseille*	***P1-A11-5*** **Generation of medium-high intensity focused acoustic vortex and its application in sonothrombolysis** Shifang Guo, et al *School of Life Science and Technology, Xi`an Jiaotong University*	***P1-A12-6*** **Flexible piezoelectric micromachined ultrasonic transducers towards new applications** Sheng Sun, et al *Tianjin University*	***P1-A13-8*** **CMUT surface functionalization with imine-based polymer for SO2 gas detection applications** 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** Takasuke Irie, et al *Microsonic Co., Ltd*	***P1-A10-3*** **Coronary Plaque Characterization from IVUS Image by using Artificial Intelligence Technique** Yi-Chen Li, et al *National Cheng Kung University*	***P1-A11-6*** **Dual-frequency ultrasound thrombolysis using a high intensity focused ultrasound transducer array** Wu Sun, et al *Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*	***P1-A12-7*** **A Study on Structural Parameters for Optimizing Wide-band Property of Diaphragm-Type Transducer Using Piezoelectric Thick Film** Yuya Ishiguro, et al *Tokyo Metropolitan University*	***P1-A13-9*** **Analysis and Design of High Frequency CMUT Arrays in Non-Collapsed Mode** Evren Arkan, et al *Georgia Institute of Technology*
P1-A8-6 **In vitro volume imaging of articular cartilage using chirped coded high frequency ultrasound** Anowarul Habib, et al *UiT The Arctic University of Norway*	***P1-A10-4*** **Quantitative ultrasound spectroscopy measurements of erythrocyte aggregation within superficial veins** Guy Cloutier, et al *University of Montreal Hospital*	***P1-A11-7*** **High intensity focused ultrasound (HIFU) combines shear wave optical coherence elastography (SW-OCE) for diseases treatment and evaluation** Kanheng Zhou, et al *University of Dundee*	***P1-A12-8*** **A 6-Degree-of-Freedom Piezoelectric Vibration Microstage with Reduced Cross-Axis Coupling** 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*	

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 *National Taiwan University*	***P1-A11-1*** **Non-invasive Histotripsy Aberration Correction for Soft-Tissue using Cavitation-induced Shockwaves** Jonathan Macoskey, et al *University of Michigan*	***P1-A12-2*** **A PMUT array with dynamic directivity: A study of its underwater acoustic power intensity** Sina Sadeghpour, et al *KU Leuven*	***P1-A13-4*** **Capacitance-Voltage Characterization of CMUT Arrays: Analytical modeling, simulations, and experiments** Erik Thomsen, et al *Technical University of Denmark*	
P1-A9-6 **Ultrasound Probe Bandwidth Enhancement Combined with Non-Stationary Compression Filters to Improve Image Quality** Yanis Mehdi Benane, et al *Univ.Lyon, INSA-Lyon, UCBL1, UJM-Saint Etienne, CNRS, Inserm, CREATIS UMR 5220, U1206, Lyon*	***P1-A11-2*** **Histotripsy Volume Ablation Enabled by Electronic Focal Steering and Bubble Coalescence** Jonathan Lundt, et al *University of Michigan*	***P1-A12-3*** **Study on Wide-band Piezoelectric Micro-machined Ultrasound Transducers (pMUT) by Combined Resonance Frequencies and Controlling Poling Directions.** Kenji Suzuki, et al *KONICAMINOLTA, INC.*	***P1-A13-5*** **Electrode resistance considerations for large CMUT arrays** Andreas Havreland, et al *Technical University of sDenmark*	

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

TUESDAY POSTER

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

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

TUESDAY POSTER

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** Boyang Wang, et al *Illinois Institute of Technology*	***P2-A9-9*** **Equivalent Circuit Analysis of a Piezoelectric Multilayered Structure for In-Air Ultrasound Sensors** Muhammad Shakeel Afzal, et al *Kyungpook National University*	***P2-A11-2*** **Study for Temperature Coefficient of Frequency of Surface Acoustic Wave Devices with SiOxNy Film Using LiTaO3 Substrate** Atsushi Nishimura, et al *Skyworks Solutions, Inc.*	***P2-A13-2*** **Microbubble Non-linear Oscillation Induced Acoustic Micromixing within Microfluidic Devices** 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** Shigeya Kawai, et al *Graduate School of Engineering, Toin University of Yokohama*	***P2-A9-10*** **Blood Coagulation Time Measurement Using a 1μL of Whole Blood on a TE Mode BAW Resonator** Negar Majidi, et al *Electrical and Electronics Engineering, Ozyegin University*	***P2-A11-3*** **Longitudinal Leaky SAW with Low Attenuation on LiTaO3 Thin Plate Bonded to Quartz Substrate** Junki Hayashi, et al *University of Yamanashi*	***P2-A13-3*** **Nanocrystalline Optomechanical Cavity Excited by SAW Launchers** 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*** *Chair:* **David Greve** *DWGreve Consulting*	***P2-A9-12*** **A Novel Phase Evaluation Method for Range Detection by Hybrid SAW sensors** Zixiao Lu, et al *institute of acoustics, chinese academy of sciences*	***P2-A11-5*** **Novel Cuts of Quartz Crystals for SAW Resonators with Cubic Frequency-temperature Relations** Shaoyun Wang, et al *Ningbo University*	***P2-A13-5*** **Specificity and sensitivity characterization of a resonant bio-sensor made of gallium arsenide** Thérèse Leblois, et al *FEMTO-ST*	
P2-A9-1 **ULTRA SONIC CAVITY RESONANCE METHOD FOR FLUID QUALITY MONITORING APPLICATION** Daijiro Miyazaki, et al *TE connectivity*	***Session P2-A10.*** ***SAW Modeling & Design I*** *Chair:* **Ryo Nakagawa** *Murata Manufacturing Co., Ltd.*	***Session P2-A12.*** ***BAW Device & Application I*** *Chair:* **Amelie Hagelauer** *University of Erlangen-Nuremberg*	***P2-A13-6*** **High-throughput sonoporation of single cells within a microfluidic chip** 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** Irina Borodina, et al *Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Saratov Branch*	***P2-A10-1*** **Acoustic Wave Filter Topologies for enhanced performance** Jordi Mateu, et al *Universitat Politecnica de Catalunya*	***P2-A12-1*** **A Hybrid Acoustic-Wave Resonator and Lumped-Element Ladder Filter** Michael Wagner, et al *Friedrich-Alexander-University Erlangen-Nuremberg*	***P2-A13-7*** **First steps towards simultaneous isolation and detection of exosomes with carbon nanotube-based SMRs** Teona Mirea *Universidad Politecnica de Madrid*	

P2-A9-3 **A Delay-line Sensor Based on Wedge Waves** Che-Hua Yang, et al *National Taipei University of Technology*	***P2-A10-2*** **Fast SAW Device Simulation in COMSOL Using the Hierarchical Cascading Method** Aleksey Shimko, et al *Tai-Saw Technology Co. Ltd*	***P2-A12-2*** **Resonant and antiresonant frequencies behavior with temperature changes in gravimetric sensors** 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** Gert-Jan van Groenestijn, et al *TNO*	***P2-A10-3*** **A nonlinear FEM model to calculate third harmonics and intermodulation in TC-SAW devices** Vikrant Chauhan, et al *Friedrich-Alexander-University Erlangen-Nuremberg*	***P2-A12-3*** **FBAR oscillator stabilized by Rb atomic resonator for SHF/EHF band wireless devices** Motoaki Hara, et al *National Institute of Information and Communications Technology*		
P2-A9-5 **Integrated Transmitting and Receiving Mode Graphene Microphone Array** Kaihua Cao, et al *Wuhan University of Technology*	***P2-A10-4*** **P-matrix model for third order electric and acoustic nonlinearities in TC-SAW devices** Vikrant Chauhan, et al *Friedrich-Alexander-University Erlangen-Nueremberg*	***P2-A12-4*** **Laterally acoustically coupled BAW filters at 3.6 GHz** 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 ScAlN/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*		

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

08:00 am -09:30 am — Oral --- Wednesday, October 24

	Topaz (400)	Diamond (300)	Emerald (280)	Sapphire (220)	Ikuta (200)	Nunobiki (150)	Kikusui (140)	Ruby (200)
	Session 1D. Novel Contrast Agents *Chair:* **Ayache Bouakaz** *INSERM*	***Session 2D. Tissue Ablation and Vascular Imaging using Photoacoutics*** *Chair:* **Michael Kolios** *Ryerson University*	***Session 3D. Advanced Beamforming I (Mustafa Karaman Memoriam)*** *Chair:* **Matthew O'Donnell** *University of Washington*	***Session 4D. Prostate, Thyroid Elasticity, and Mechanical Anisotropy*** *Chair:* **Caterina Gallippi** *University of North Carolina*	***Session 5D. PAT: Acoustic Tweezers and Particle Manipulation*** *Chair:* **Eun Sok Kim** *University of Southern California*	***Session 6D. Flow Measurement and Industrial Applications*** *Chair:* **Nishal Ramadas** *Elster Instromet*	***Session 7D. New Developments in Medical Imaging*** *Chair:* **Kang Kim** *University of Pittsburgh*	***Session 8D. High Frequency and IVUS*** *Chair:* **Jian Yuan** *ALS Shanghai*
08:00 am	***1D-1*** **Bio-distribution of gas vesicles for cancer molecular ultrasound imaging** Guohao Wang, et al *The Hong Kong Polytechnic University*	***2D-1*** **Atrial RF ablation with dual wavelength photoacoustic imaging** Sophinese Iskander-Rizk, et al *Erasmus MC*	***3D-1*** **Multi-covariate Imaging of Sub-resolution Targets (MIST)** William Walker, et al *Duke University*	***4D-1*** **evaluation of transrectal ultrasound shear wave elastography (SWE) imaging in detection and characterization of clinically localized prostate cancer** Cheng Wei, et al *University of Dundee*	***5D-1*** **Magnetic-Free Radio Frequency Circulator Based on Spatiotemporal Modulation of MEMS Resonators** Matteo Rinaldi, et al *Northeastern University*	***6D-1*** **3D flow mapping for Lorentz force driven liquid metal flows in crystallization experiments** Kevin Mäder, et al *Technische Universität Dresden*	***7D-1*** **Image-guided photo-mediated ultrasound therapy as a novel anti-vascular treatment for eye diseases** Xinyi Xie, et al *University of michigan*	***8D-1*** **In vivo imaging of a porcine coronary artery with a 30/80 MHz dual frequency intravascular ultrasound catheter** Chelsea Munding, et al *University of Toronto*
08:15 am	***1D-2*** **Nonlinear X-wave ultrasound imaging of acoustic biomolecules** Daniel Sawyer, et al *Caltech*	***2D-2*** **Real-Time, Video-Rate and Depth-Resolved Imaging of Radio-Frequency Ablation using All-Optical Ultrasound** Erwin Alles, et al *University College London*	***3D-2*** **Synthetic adaptive refocusing of ultrafast plane waves through aberrating media** Hanna Bendjador, et al *Institut Langevin, ESPCI Paris, PSL Research University, CNRS UMR 7587, INSERM U979*	***4D-2*** **Prostate Shear Wave Elastography: Multiresolution Reconstruction Dependence on Push Beam Spacing** Derek Y. Chan, et al *Duke University*		***6D-2*** **Feasibility of ultrasound flow measurements via non-linear wave propagation** Jack Massaad, et al *TU Delft*	***7D-2*** **High-resolution imaging of the breast using full-waveform inversion** Oscar Calderón Agudo, et al *Imperial College London*	***8D-2*** **Development of Dual-Element Intravascular Ultrasound Transducers for Third Harmonic Tissue Imaging** JUNSU Lee, et al *Sogang University*
08:30 am	***1D-3*** **Acoustic Biomolecules as Genetically Encodable Nuclei for Inertial Cavitation** Avinoam Bar-Zion, et al *California Institute of Technology*	***2D-3*** **Automatic detection of healthy arterial wall tissue in vivo using photoacoustic multi-spectral imaging** Tobias Erlöv, et al *Lund University*	***3D-3*** **Ultrasound Transcranial Imaging based on Fast Coherent-time-delay and Correlative Pixel-based Beamforming** Chen Bai, et al *School of Life Science and Technology, Xi`an Jiaotong University*	***4D-3*** **Correlation between 3D ARFI and quantitative imaging metrics from SWEI and multi-parametric MRI in vivo in normal and cancerous prostate tissue** D. Cody Morris, et al *Duke University*	***5D-2*** **Trajectory Optimization of Levitated Particles in Mid-air Ultrasonic Standing Wave Levitators** Tatsuki Fushimi, et al *University of Bristol*	***6D-3*** **Development of a non-intrusive in-line tomographic ultrasonic velocity meter to measure liquid rheology** Paul van Neer, et al *TNO*	***7D-3*** **Respiratory motion compensation for localization-based ultrasound super-resolution imaging** Jaesok Yu, et al *University of Pittsburgh*	***8D-3*** **Axially-Segmented Cylindrical Transducer Array for Intravascular ARFI and SWEI Imaging** Arsenii Telichko, et al *Stanford University*

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

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*

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

10:30 am -12:00 pm — Oral --- Wednesday, 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 Iori, 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*		

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

01:30 pm -03:00 pm — Oral --- Wednesday, 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 Super-resolution 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 ScAlN 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 AlN 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 AlN 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*

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

04:00 pm -05:30 pm — Oral --- Wednesday, October 24

	Topaz (400)	Diamond (300)	Emerald (280)	Sapphire (220)	Ikuta (200)	Nunobiki (150)	Kikusui (140)	Ruby (200)
	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** *Chair:* **David Cowell** *University of Leeds*
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*	*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*	*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)*	*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*	*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*	*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*	*8G-1* **ASIC design for a single-cable 64-element ultrasound probe** Douwe van Willigen, et al *Delft University of Technology*
04:15 pm	*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*		*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-2* **Lagrangian coupling of SPH with ultrasound simulation for vector flow imaging investigation** Damien Garcia, et al *Creatis*	*5G-2* **Assessment of cardiomyocyte contractility using high frequency ultrasound** Eric Strohm, et al *University of Toronto*	*6G-2* **c-axis tilted ScAlN film shear mode resonators for biosensing** Hana Yazaki, et al *Waseda University*	*7G-2* **High-resolution Transcranial Passive Acoustic Mapping using Delay Multiple and Sum Beamformer** Shukuan Lu, et al *Xi'an Jiaotong University*	*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*

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

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 Minnesota--Twin 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 *Delft 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*

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

WEDNESDAY POSTER

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*

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

WEDNESDAY POSTER

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** Naohiro Hozumi, et al *Toyohashi University of Technology*	***P1-B10-7*** **Relative quality of tumor growth equations describing volume and vascular evolution assessed with ultrasound** Jerome Griffon, et al *Laboratoire d'Imagerie Biomédicale (Sorbonne University, CNRS, INSERM)*	***P1-B12-4*** **High speed high frequency miniature forward-looking ultrasound system for clinical applications** Xueqiao Wang, et al *Newway Technology (US), Inc*	***P1-B13-7*** **Nonlinear Behavior of Contact-Resonance Atomic Force Microscopy due to Stick-Slip phenomena** M Kalyan Phani, et al *OP Jindal University*	***P1-B14-8*** **Human Activity Recognition Based on Two-Dimensional Acoustic Arrays** 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, Nihon University*	***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** Thomas Tiong Kwong Soon, et al *Toyohashi University of Technology*	***P1-B11-1*** **Measurement of Focused Ultrasound Neural Stimulation; Somatosensory Evoked Potential at Two Separate Skin Temperatures** Lu Xu, et al *UC San Diego*	***P1-B12-6*** **A Distal Micro-Motor Ultrasonic Imaging Catheter** Yunfei Li, et al *National-Regional Key Technology Engineering Laboratory for Medical Ultrasound*	***P1-B13-9*** **A Compressed Sensing Based Miniaturized Photoacoustic Imaging System** Haoran Jin, et al *Nanyang Technological University*	***P1-B14-10*** **Analog computing for acoustic spatial signals based on metasurfaces** 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** Ana Saavedra, et al *Pontificia Universidad Católica del Perú*	***P1-B11-3*** **Transcranial Focused Ultrasound Stimulation Decreases Blood Pressure in Spontaneously Hypertensive Rats** Dapeng Li, et al *School of Life Science and Technology, Xi`an Jiaotong University*	***P1-B12-8*** **High frequency Transducer Based on Ultrathin Li doped (K0.45Na0.55)NbO3 Single Crystal for 80MHz Intravascular Ultrasound and Photoacoustic Imaging** Tao Zhang, et al *Huazhong University of Science and Technology*	***P1-B13-11*** **Suppression of surface wave signal artifacts in laser-ultrasound imaging of CFRP composites** Lukasz Ambrozinski, et al *AGH University of Science and Technology*	
Session P1-B10. ***Spectral-Based and Elastographic Tissue Characterization*** *Chair:* **Emilie Franceschini** *CNRS*	***P1-B11-4*** **Noninvasive delivery of adenoviral-mediated suicide gene to treat glioma through focused ultrasound-induced BBB opening** Min Pan, et al *Shenzhen Hospital (Futian) of Guangzhou University of Chinese Medicine*	***Session P1-B13.*** ***Acoustic Imaging*** *Chair:* **Joel Harley** *University of Utah*	***Session P1-B14.*** ***Signal Processing*** *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 Gene-delivery 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** Jerome Griffon, et al *Laboratoire d'Imagerie Biomédicale (Sorbonne University, CNRS, INSERM)*	***P1-B11-6*** **Study on the antitumor effect of sonodynamic therapy on nude mice bearing intracranial glioblastoma xenografts** Yongpeng Huang, et al *Shenzhen University*	***P1-B13-2*** **Ultrasonic Array Imaging through Reverberating Layers for Industrial Process Analysis** Marcus Ingram, et al *University of Strathclyde*	***P1-B14-3*** **Sparse Representation with Partially Known Support and Subspace Expansion for Echo Estimation in Ultrasonic NDE Applications** 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*	***P1-B12-2*** **High Performance 60MHz Single Crystal PMN-PT Composite for Medical Ultrasound Applications** Ramanarao Bommena, et al *CTS ADVANCED MATERIALS*	***P1-B13-5*** **A Study on Marked Muscle Fiber for Ultrasonic Skeletal Muscle** Pan Li, et al *Shaanxi Normal University*	***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*	

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

WEDNESDAY POSTER

09:30 am - 04:00 pm	Poster --- Wednesday, October 24			Waraku (posters 2)
Session P2-B1. ***PAT: Acoustic Tweezers and Particle Manipulation*** *Chair:* **Minoru Kuribayashi Kurosawa** *Tokyo Institute of Technology*	***P2-B2-2*** **Transferable Analytical Model of Phononic Bandgap in Cross-hole Phononic Crystals** Takahiro Nishino, et al *Okayama University*	***P2-B4-5*** **S-sequence Encoded Multiplane Wave Imaging: Phantom and In-vivo Validations** Yinran Chen, et al *Department of Biomedical Engineering, Tsinghua University*	***Session P2-B6.*** ***Photoacoustic Contrast and Theranostic Agents*** *Chair:* **Kelsey Kubelick** *Georgia Institute of Technology*	***Session P2-B8.*** ***Application-Specific Systems and Real-Time Acceleration*** *Chair:* **Billy Yiu** *University of Waterloo*
P2-B1-1 **Ultrasound-driven self-assembly of gold nanocages with different patterns** Mian Chen, et al *Shenzhen University*	***P2-B2-3*** **Design and Assessment of Phononic Crystals for Controlling Ultrasonic Wave via Optical Measurement Method** Kensuke Manabe, et al *Okayama University*	***P2-B4-6*** **Reducing Cross-Talk Artifacts for Ultrafast Ultrasound Imaging with Arbitrary Level Codes: Beam Clustering and Optimization Dimensionality Reduction** David Egolf, et al *University of Alberta*	***P2-B6-1*** **Monitoring liposome payload release by photoacoustic spectroscopy of indocyanine green** Adam J. Dixon, et al *University of Virginia*	***P2-B8-1*** **A portable ultrasound device for measuring the stiffness of carotid artery: comparison with SphygmoCor carotid-femoral pulse wave velocity** Chieh-Ju Tang, et al *National Cheng Kung University*
P2-B1-2 **Experimental feasibility study of non-contact acoustic picker considering effect of stage** Yutaka Yamamoto, et al *Tokyo Metropolitan University*	***P2-B2-4*** **Effective slowness surfaces for anisotropic elastic composites** Vincent Laude, et al *CNRS*	***Session P2-B5.*** ***Flow Estimation Methods and Applications*** *Chair:* **Pengfei Song** *Mayo Clinic*	***P2-B6-2*** **IR808-Anchored MnO Nanoparticles Imaging Tumor and Inducing Enhanced Phototherapy Effect via Mitochondria-mediated Pathway** Lihua Zhou, et al *Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*	***P2-B8-2*** **A Low-Cost Software-Defined Ultrasound System Capable of High-Speed Ultrasound Bubble Tracking** 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** Changhan Yoon, et al *Inje University*	***P2-B2-5*** **Surface wave attenuation mechanisms in pillar-based phononic crystals** Sebastien Aubert, et al *SENSeOR SAS*	***P2-B5-1*** **Spatiotemporal filtering for synthetic aperture slow flow imaging** Guillermo Galán Olleros, et al *Technical University of Denmark*	***P2-B6-3*** **Withdrawn**	***P2-B8-3*** **Automatic B-mode Ultrasound Image Optimization for a Wireless Mobile Ultrasound Imaging System** Hojung Lee, et al *Sogang University*
P2-B1-4 **Ultrasonic manipulation of particles on fluid surface using 2-D CMUT array** Chang Hoon Lee, et al *Hanyang University*	***Session P2-B3.*** ***PMI: Modelling and Inversion*** *Chair:* **Minoru Kuribayashi Kurosawa** *Tokyo Institute of Technology*	***P2-B5-2*** **An Adapted Coherent Flow Power Doppler Beamforming Scheme for Improved Sensitivity Towards Blood Signal Energy** Kathryn Ozgun, et al *Vanderbilt University*	***P2-B6-4*** **Transcranial photoacoustic imaging of NMDA-evoked focal circuit dynamics in rat forebrain** Jeeun Kang, et al *Johns Hopkins University School of Medicine*	***P2-B8-4*** **A Point-of-Care Ultrasound Scanner with Software Beamforming on Nvidia Tegra mobile GPU** 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** Yuji Wada, et al *Seikei University*	***P2-B3-1*** **Theoretical analysis of the slot acoustic waves in two piezoelectric plates of finite length separated by vacuum gap** Andrey Teplykh, et al *Kotelnikov's Institute of Radio Engineering and Electronics of RAS, Saratov Branch*	***P2-B5-3*** **High-frame-rate Ultrasound Motion Estimation Based on Pre-beamformed Multi-angle Plane Wave Images** He Li, et al *The University of Hong Kong*	***Session P2-B7.*** ***Disease and Therapy Monitoring using Photoacoustics*** *Chair:* **Pai Chi Li** *National Taiwan University*	***P2-B8-5*** **A Spline-based Spatial Impulse Response Ultrasound Simulator with GPU Implementation** 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 *Heriot-Watt University*	**P2-B3-2 Acoustic waves guided at the intersection of interfaces and surfaces** Pavel Pupyrev, et al *Prokhorov General Physics Institute of the Russian Academy of Sciences*	**P2-B5-4 De-aliasing color flow mapping with staggered pulse sequence at improved frame rate** Rei Asami, et al *Hitachi, Ltd*	**P2-B7-1 Photoacoustic imaging for assessing flow-mediated oxygenation for peripheral arterial disease.** Kathryn Khaw, et al *University of Pennsylvania*	**P2-B8-6 Feasibility of hands-free acquisitions of the skeletal muscles and the heart during exercise** Marloes Sjoerdsma, et al *Eindhoven University of Technology*
P2-B1-7 Acoustic manipulation of microbubbles based on implantable and biodegradable artificial structures Fei Li, et al *Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*	***Session P2-B4.*** ***Multi-Line and Multi-Plane Imaging*** *Chair:* **Dongwoon Hyun** *Stanford University*	**P2-B5-5 Super-resolution measurement of fluid velocity profiles within sub-wavelength microtubes** David Espindola, et al *University of North Carolina at Chapel Hill and North Carolina State University*	**P2-B7-2 Integration of Endovenous Laser Ablation and Photoacoustic Imaging Systems for Enhanced Treatment of Venous Insufficiency** Samuel John, et al *Wayne State University*	**P2-B8-7 Experimental study to bend thin catheter independent to ultrasound propagation direction by tempo-spatial division emission using multiple transducers** 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 Qin Lin, et al *Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*	**P2-B4-1 Spatial coherence based beamforming in multi-line transmit echocardiography** Giulia Matrone, et al *University of Pavia*	**P2-B5-6 An ultrafast ultrasound microvessel imaging technique for assessing patients with unilateral papilledema and choroidal folds** Boran Zhou, et al *Mayo Clinic*	**P2-B7-3 Photoacoustics for non-invasive monitoring of kidney damage due to diabetes and hypertension** Elizabeth Berndl, et al *Ryerson University*	**P2-B8-8 Comparison of longitudinal-mode and longitudinal-torsional mode ultrasonic bone biopsy devices** Rebecca Cleary, et al *University of Glasgow*
P2-B1-9 High Frequency Ultrasonic Levitation of Red Blood Cells Aggregation Hae Gyun Lim, et al *Pohang University of Science and Technology*	**P2-B4-2 Tri-plane cardiac imaging using multi-line transmission on a spiral array: a feasibility study** Alessandro Ramalli, et al *KU Leuven*	**P2-B5-7 RADIAL ARTERY REACTIVE RESPONSE AND SHEAR RATE MEASUREMENTS USING 20 MHZ SYSTEM** Andrzej Nowicki, et al *Institute of Fundamental Technological Research - PAS*	**P2-B7-4 Pathology Study for Blood Vessel of Ocular Fundus Images by photoacoustic tomography** Jiayao Zhang, et al *ShanghaiTech University*	**P2-B8-9 3D Forward-Looking Ultrasound Imaging from a Steerable Single-Element Intracardiac Catheter** Jovana Janjic, et al *Erasmus MC*
Session P2-B2. ***PPN: Phononics*** *Chair:* **Minoru Kuribayashi Kurosawa** *Tokyo Institute of Technology*	**P2-B4-3 Orthogonal Frequency Division Multiplexing Combined with Multi Line Transmission for Ultrafast Ultrasound Imaging: Experimental Findings** Libertario Demi, et al *University of Trento*	**P2-B5-8 Coded Multiple Parallel Focal Zone Scanning for Ultrafast Power Doppler Blood Flow Imaging** Tarek Kaddoura, et al *University of Alberta*	**P2-B7-5 Photoacoustic spectral analysis at ultraviolet wavelength for assessing the aggressiveness of prostate cancer** Guan Xu, et al *University of Michigan*	**P2-B8-10 Sonopill: Progress Towards Microultrasound Capsule Endoscopy** Holly Lay, et al *University of Glasgow*
P2-B2-1 Experimental evidence of compact waveguide based on whispering gallery in phononic crystals plate Jinfeng Zhao, et al *Tongji University*	**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** Grigoriy Zurakhov, et al *Technion - IIT*	**P2-B5-9 Towards Oxygen Metabolism Estimation with Ultrafast Speckle-Decorrelation Imaging and Functional Photoacoustic Imaging** Mayara Nascimento de Oliveira, et al *University of Alberta*	**P2-B7-6 Photoacoustic cepstrum analysis for studying vascular networks** Eno Hysi, et al *Ryerson University*	***Session P2-B9.*** ***Spectral Doppler and Clutter Filters*** *Chair:* **Ingvild Kinn Ekroll** *NTNU*

WEDNESDAY POSTER

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

WEDNESDAY POSTER

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*** **AlN-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 ScAlN/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*	**P2-B10-10 Feasibility of genetic algorithms in 2D ultrasound array optimization** Bakary Diarra, et al *Electrical, Electronics, Computer & Telecommunication Engineering Department, Botswana International University of Science & Technology (BIUST)*	**P2-B12-5 Acoustofluidics with high selectivity using spatio-temporal modulated SAWs** Liqiang Li, et al *College of mechanical engineering,Zhejiang University*	**P2-B14-2 Effects of post-deposition vacuum annealing on piezoelectric performance of AlScN 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 ScAlN 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.*		

WEDNESDAY POSTER

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

THURSDAY ORAL

08:00 am -09:30 am — Oral --- Thursday, October 25

	Topaz (400)	Diamond (300)	Emerald (280)	Sapphire (220)	Ikuta (200)	Nunobiki (150)	Kikusui (140)	Ruby (200)
	Session 1H. Shear Wave Methods I *Chair:* **Matthew Urban** *Mayo Clinic*	***Session 2H. Neuromodulation and Brain Applications*** *Chair:* **William Apoutou N'Djin** *INSERM*	***Session 3H. Automated Image Quantification*** *Chair:* **Piero Tortoli** *University of Florence*	***Session 4H. Beamforming for Other Applications*** *Chair:* **Georg Schmitz** *Ruhr-Universität Bochum*	***Session 5H. Acoustic Microfluidics*** *Chair:* **David Greve** *DWGreve Consulting*	***Session 6H. Ultrasonic Transducer & Sensor*** *Chair:* **Mauricio Pereira da Cunha** *University of Maine*	***Session 7H. PPN: Phononics*** *Chair:* **John Larson** *Broadcom Ltd*	***Session 8H. Piezoelectric Transducers*** *Chair:* **Sandy Cochran** *University of Glasgow*
08:00 am	***1H-1*** **Ultrasound Shear Wave Elastography of Viscoelastic Media Using Local Phase Velocity Based Imaging (LPVI) Approach** Piotr Kijanka, et al *Mayo Clinic*	***2H-1*** **Inhibitory effects of motor neuron activity in mouse peripheral nerve system using ultrasound-guided focused ultrasound in vivo** Min Gon Kim, et al *Columbia University*	***3H-1*** **Experimental Validation of an Improved Local Speed-of-Sound Estimator Using Pulse-Echo Ultrasound** Marko Jakovljevic, et al *Stanford University*	***4H-1*** **Segmenting bone structures in ultrasound images with Locally Weighted SLSC (LW-SLSC) beamforming** Eduardo Gonzalez, et al *Johns Hopkins University*	***5H-1*** **Omnidirectional spiral surface acoustic waves for particles manipulation and multi-size particles separation in a microliter sessile drop** Naiqing Zhang, et al *University of California, San Diego*	***6H-1*** **Fabrication of transparent capacitive micromachined ultrasonic transducers (CMUTs)** Zhenhao Li, et al *University of Alberta*	***7H-1*** **Radiative damping of vibrational modes of a microsphere on an elastic substrate** Alexei Maznev, et al *MIT*	***8H-1*** **The impact of local structural heterogeneity on piezoelectric properties of perovskite ferroelectrics** Shujun Zhang, et al *University of Wollongong*
08:15 am	***1H-2*** **Ultrasound Shear Wave Elastography of Small Inclusions Using Local Phase Velocity Based Imaging (LPVI) Approach** Piotr Kijanka, et al *Mayo Clinic*	***2H-2*** **Low intensity pulsed ultrasound stimulation improves sensorimotor function in a mouse model of Parkinson's disease** Hui Zhou, et al *Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*	***3H-2*** **Fully automatic real-time ejection fraction and MAPSE measurements in 2D echocardiography using deep neural networks** Erik Smistad, et al *Norwegian University of Science and Technology (NTNU)*	***4H-2*** **Influence of beamforming methods on velocity estimation: in vitro experiments** Maxime Polichetti, et al *University Lyon, INSA-Lyon, UCBL, UJM-Saint-Etienne, CNRS, Inserm, CREATIS UMR 5220, U1206, F-69100 Villeurbanne, France*	***5H-2*** **Safe and rapid recharging in lithium metal batteries possessing significantly greater charge capacities via integrated surface acoustic wave turbulent electrolyte mixing** An Huang, et al *University of California, San Diego*	***6H-2*** **Research on Ultrasound-sensitive Ion Channels by using Ultrasound Neuro-modulation Chip** Xinhui Wang, et al *Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*	***7H-2*** **Coupled phonons, photons and RF read-out for phononic circuits** Daniel Navarro Urrios, et al *Universidad de Barcelona*	***8H-2*** **Piezoelectric Single Crystal Standard Development** Lynn Ewart, et al *Naval Undersea Warfare Center*
08:30 am	***1H-3*** **Enhanced Shear Wave Elastography for HIFU Monitoring of Stiff Uterine Fibroids** Sua Bae, et al *Sogang University*	***2H-3*** **Focused Ultrasound-enabled Brain Tumor Liquid Biopsy** Lifei Zhu, et al *Washington University in St. Louis*	***3H-3*** **Zonal segmentation in transrectal ultrasound images of the prostate through deep learning** Ruud J. G. van Sloun, et al *Eindhoven University of Technology*	***4H-3*** **Evaluation of coherence-based beamforming for B-mode and speckle tracking echocardiography** Pedro Santos, et al *KU Leuven*	***5H-3*** **Localized Microfluidic Mixer Using Planar Fresnel Type GHz Ultrasonic Transducer** Adarsh Ravi, et al *Cornell University*	***6H-3*** **Novel pMUT-Based Acoustic Duplexer for Underwater and Intra-Body Communication** Flavius Pop, et al *Northeastern University*	***7H-3*** **Surface-mediated mechanical coupling of pillar pairs** Laetitia Raguin, et al *Femto-st, CNRS, Université de Bourgogne Franche-Comté*	***8H-3*** **Piezoelectric PMN-PZT Single Crystal-Polymer Composites with Wide Usage Range of Temperature and Driving Electric Field** Dong-Ho Kim, et al *Ceracomp 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 ScAlN 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*

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

THURSDAY ORAL

10:30 am -12:00 pm — Oral --- Thursday, October 25

	Topaz (400)	Diamond (300)	Emerald (280)	Sapphire (220)	Ikuta (200)	Nunobiki (150)	Kikusui (140)	Ruby (200)
	Session 1I. Shear Wave Methods II *Chair:* **Kathy Nightingale** *Duke University*	***Session 2I. Neuromodulation and Cellular Bioeffects*** *Chair:* **Eleanor Stride** *University of Oxford*	***Session 3I. Machine Learning for Image Reconstruction and Interpretation*** *Chair:* **Olivier Bernard** *INSA Lyon*	***Session 4I. Compressed Imaging*** *Chair:* **Yonina Eldar** *Technion*	***Session 5I. Material and Defect Characterization*** *Chair:* **Walter Arnold** *Saarland University*	***Session 6I. Multi-Parametric and Multi-Wave Tissue Characterization*** *Chair:* **Roberto Lavarello** *Pontificia Universidad Católica del Perú*	***Session 7I. PMI: Modelling and Inversion*** *Chair:* **Robert Thalhammer** *Broadcom Ltd*	***Session 8I. Multimodal Imaging Transducers*** *Chair:* **Christine Démoré** *Sunnybrook Research Institute*
10:30 am	***1I-1*** **Feasibility of monitoring HIFU treatments by passive elastography** Bruno Giammarinaro, et al *LabTAU, INSERM, Centre Léon Bérard, Université Lyon 1*	***2I-1*** **Controllable Single Neuron GHz Ultrasonic Stimulation of Ion Channels in Vitro** Priya S. Balasubramanian, et al *Cornell University*	***3I-1*** **Machine learning to improve breast cancer diagnosis by multimodal ultrasound** Laith Sultan, et al *University of Pennsylvania*	***4I-1*** **Structured Ultrasound Microscopy** Jovana Janjic, et al *Erasmus MC*	***5I-1*** **Ultrasonic evaluation of segmental variability in additively manufactured metal components** Manish Roy, et al *University of Utah*	***6I-1*** **In vivo assessment of interstitial fibrosis in renal allografts using quantitative ultrasound – comparison with estimated glomerular filtration rates** Roberto Lavarello, et al *Pontificia Universidad Católica del Perú*	***7I-1*** **Redatuming for Breast Ultrasound** Ulas Taskin, et al *TU Delft*	***8I-1*** **Technology development of Photoacousitc imaging system in CANON** Ken-ichi Nagae, et al *Canon Inc.*
10:45 am	***1I-2*** **Real-time X-Plane Shear Wave Elastography Feasibility on Philips 2D xMatrix Transducer** Man Nguyen, et al *Philips Research North America*	***2I-2*** **Low-Frequency, Low-Intensity Ultrasound Induces Autophagy in SH-SY5Y Neuronal Cells** Xiaowei Huang, et al *Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*	***3I-2*** **Machine learning for quality assurance of myocardial strain curves** Mahdi Tabassian, et al *KU Leuven*	***4I-2*** **Joint optimization of coding mask and scan positions for compressive single sensor imaging** Pim van der Meulen, et al *Delft University of Technology*	***5I-2*** **Full waveform inversion for material property mapping using ultrasonic phased arrays** Katherine Tant, et al *University of Strathclyde*	***6I-2*** **Evaluation of the microstructural changes occurring in the myopic sclera using high-frequency quantitative ultrasound** Jonathan Mamou, et al *Riverside Research*	***7I-2*** **Sparse recovery of strong reflectors with an application to non-destructive evaluation** Eric Bezzam, et al *Ecole Polytechnique Fédérale de Lausanne*	
11:00 am	***1I-3*** **3D Shear Wave Elasticity Tomography based on Laser Speckle Contrast Imaging** Pei-Yu Chao, et al *National Taiwan University*	***2I-3*** **Bioelectric identification of aggressive prostate cancer using ultrasound cell stimulation** Haichong K. Zhang, et al *Johns Hopkins University*	***3I-3*** **High-quality Reconstruction of Plane-wave Imaging Using Generative Adversarial Network** Xi Zhang, et al *Tsinghua University*	***4I-3*** **Sparse Beamforming based on Cantor Arrays** Regev Cohen, et al *Technion*	***5I-3*** **Automated Robotically Enabled Ultrasonic Sensing for Additive Manufacturing** Anthony Gachagan, et al *University of Strathclyde*	***6I-3*** **Multi-parametric Acoustic Imaging of Cervical Insufficiency** Yan Yan, et al *Wayne State University*	***7I-3*** **Resolution analysis and uncertainty quantification for ultrasound computed tomography** Christian Boehm, et al *ETH Zurich*	***8I-2*** **Development of a Transrectal Probe for Combined Ultrasound and Photoaoustic Imaging** Jihun Jang, et al *Sogang University*

11:15 am	***1I-4*** **3-D Speckle Tracking with Two-Pass Searching and Phase-Rotated Correlation Filtering** Geng-Shi Jeng, et al *University of Washington*	***2I-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*	***3I-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*			***6I-4*** **Acoustically stimulated electromagnetic imaging in biomedical tissues** Kenji Ikushima, et al *Tokyo University of A & T*	***7I-4*** **Modeling of Wave Propagation in Heterogeneous Media Using a Modified Mixed Domain Method** Juanjuan Gu, et al *North Carolina State University*	***8I-3*** **Dual Frequency array for contrast superharmonic imaging** Emmanuel Cherin, et al *Sunnybrook Research Institute*
11:30 am	***1I-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*		***5I-4*** **Characterizing Micro- and Nano-Materials based on their Ultrasonic Dispersion Properties: A Feasibility Study** Daniel Alabi, et al *University of Florida*	***6I-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*	***7I-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		***2I-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*	***3I-6*** **Ultrasound image processing based on deep learning** Fabian Dietrichson, et al *Norwegian University of Science and Technology (NTNU)*	***4I-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*		***5I-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*	***6I-6*** **Fatty liver assessment using ultrasound multifeatures based on machine learning** YingHsiu Lin, et al *ChangGungUniversity*	***7I-6*** **Distinguishing between noncausal and nonlocal behavior in a time-fractional wave equation** James F. Kelly, et al *Michigan State University*	***8I-5*** **A novel Row-Column Addressed stack architecture for enhanced cardiac imaging** Guillaume Ferin, et al *Vermon SA*

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

THURSDAY ORAL

01:30 pm -03:00 pm — Oral --- Thursday, October 25

	Topaz (400)	Diamond (300)	Emerald (280)	Sapphire (220)	Ikuta (200)	Nunobiki (150)	Kikusui (140)	Ruby (200)
	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*
01:30 pm	***1J-1*** **Evaluating the Robustness of Ultrasound Beamforming with Deep Neural Networks** Adam Luchies, et al *Vanderbilt 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*	***3J-1*** **High frame rate imaging of natural shear waves in the human heart** Pedro Santos, et al *KU Leuven*	***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*	***5J-1*** **High-temperature Microwave Acoustic Vibration Sensor** Anin Maskay, et al *University of Maine*	***6J-1*** **Prof. Eric Adler's Legacy to Microwave Acoustics** Mauricio Pereira da Cunha, et al *University of Maine*	***7J-1*** **Multiple steerable acoustic fields using a single element bowl transducer and 3D-printed kinoform** Michael Brown, 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*
01:45 pm	***1J-2*** **Beamforming and speckle reduction using deep neural networks** Dongwoon Hyun, et al *Stanford 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** Dezhuang Ye, et al *Washington University in St louis*	***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-2*** **In-vivo Abdominal Microvasculature Evaluation based on Ultrafast Curved Array Imaging** Jinbum Kang, et al *Sogang University*	***5J-2*** **Ultra-Wide-Band SAW Sensor with HFM Etched Reflectors** Victor Plessky, et al *GVR Trade SA*		***7J-2*** **Source Correction for k-space Pseudospectral Time Domain Models** Ben Cox, et al *University College London*	***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 Using 3D Fully Convolutional Neural Networks** Leandra Brickson, et al *Stanford University*	***2J-3*** **Ultrasound and microbubble-mediated targeted delivery of drug-loaded nanoparticles to porcine liver** Tommaso Di Ianni, et al *Stanford University*	***3J-3*** **Monitoring canine myocardial infarction formation and recovery with transthoracic cardiac strain imaging** Vincent Sayseng, et al *Columbia University*	***4J-3*** **High Sensitivity Liver Vasculature Visualization Using a Real-time Coherent Flow Power Doppler (CFPD) Imaging System: A Pilot Clinical Study** You Li, et al *Stanford University*	***5J-3*** **Microwave Resonator Ultrasound Receivers** Tom S Robbins, et al *University College London*	***6J-2*** **Suprious-Free, Near-Zero-TCF Hetero Acoustic Layer (HAL) SAW Resonators Using LiTaO3 Thin Plate on Quartz** Michio Kadota, et al *Tohoku university*	***7J-3*** **Changing the Speed of Ultrasonic Pulses Through Spatial Structuring of the Acoustic Wavefront** Grace Richard, et al *University of Glasgow*	***8J-3*** **Strategic lateral undersampling and Compressed Sensing 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 l.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*	***3J-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*	***5J-5*** **Modeling and experimental parametric study of a dual-cantilever piezo-magneto-elastic energy harvester** Xiaobo Rui, et al *State Key Laboratory of Precision Measurement Technology and Instrument,Tianjin University*	***6J-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*	***6J-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

THURSDAY ORAL

04:00 pm -05:30 pm — Oral --- Thursday, October 25

	Topaz (400)	Diamond (300)	Emerald (280)	Sapphire (220)	Ikuta (200)	Nunobiki (150)	Kikusui (140)	Ruby (200)
	Session 1K. Fourier Beamforming and Passive Imaging *Chair:* **Marvin Doyley** *University of Rochester*	***Session 2K. Coding, Beamforming and Parametric Contrast Imaging*** *Chair:* **Chih-Kuang Yeh** *National Tsing Hua University*	***Session 3K. Cardiovascular Imaging*** *Chair:*	***Session 4K. Flow Processing: Segmentation*** *Chair:* **Matthew Bruce** *University of Washington*	***Session 5K. Structural Health Monitoring*** *Chair:* **Patrick Johnston** *NASA Langley Research Center*	***Session 6K. Material for Acoustic Wave Device*** *Chair:* **Omar Elmazria** *Université de Lorraine*	***Session 7K. Ultrasonic Devices*** *Chair:* **Margaret Lucas** *University of Glasgow*	***Session 8K. Novel Designs and Applications*** *Chair:* **Valsala Kurusingal** *Thales Australia*
04:00 pm	***1K-1*** **Implications of lag one coherence on real-time adaptive frequency selection** James Long, et al *Duke University*	***2K-1*** **Nondestructive targeted microbubble detection using a dual-frequency beamforming deep neural network** Dongwoon Hyun, et al *Stanford University*	***3K-1*** **Differentiation of carotid artery plaque composition in asymptomatic individuals using compound ultrasound strain imaging validated by magnetic resonance imaging** Hendrik Hansen, et al *Radboud university medical center*	***4K-1*** **Non-Contrast Perfusion Ultrasound Imaging for Assessment of Trans-arterial Chemoembolization of Hepatic Malignancy** Jaime Tierney, et al *Vanderbilt University*	***5K-1*** **Exploiting complex boundaries through full waveform ultrasonic imaging** Fan Shi, et al *Imperial College London*	***6K-1*** **SAW based wireless flexible temperature sensors for on-body applications** Cécile Floer, et al *Université de Lorraine - CNRS*	***7K-1*** **A novel swimmer actuator via leaky surface acoustic wave** Deqing Kong, et al *Tokyo Institute of Technology*	***8K-1*** **Fibonnaci Spiral Arranged Ultrasound Phased Array for Mid-Air Haptics** Adam Price, et al *Ultrahaptics*
04:15 pm	***1K-2*** **Regularized Inversion Method for Frequency-Domain Reconstruction of Full Synthetic Aperture Dataset From Focused Transmissions** Rehman Ali, et al *Stanford University*	***2K-2*** **Improved Contrast-Enhanced Ultrasound Imaging by combining Hadamard-encoded Multi-pulses with Multiplane Wave Transmission** Ping Gong, et al *Mayo Clinic College of Medicine and Science*	***3K-2*** **New Denoising Unsharp Masking Methods for Improved Intima Media Thickness Measurements with Active Contour Segmentation** Asraf Moubark, et al *University of Leeds*	***4K-2*** **Adaptive SVD clutter filter for Ultrafast Doppler imaging using Spatial Similarity Matrix** Jerome Baranger, et al *Institut Langevin, ESPCI Paris, PSL Research University, CNRS UMR 7587, INSERM U979*	***5K-2*** **Ultrafast Phased Array Imaging: an Application to Closed Crack Characterization** Yoshikazu Ohara, et al *Tohoku University*	***6K-2*** **Piezoresistive Graphene SAW Transducer** Benyamin Davaji, et al *Cornell University*	***7K-2*** **Ultrasonic Propeller with Electrically Controllable Propulsion Direction** Lurui Zhao, et al *UNIVERSITY OF SOUTHERN CALIFORNIA*	***8K-2*** **Lead-free sodium potassium niobate based piezoelectric thick film bimorph structure for energy harvesting** Claire Bantignies, et al *VERMON*
04:30 pm	***1K-3*** **Frequency domain Two-Stage Beamforming for Phased Array Imaging using the Fast Hankel Transform** Fabian Fool, et al *Delft University of Technology*	***2K-3*** **Acoustic sub-aperture processing (ASAP) for super-contrast microvascular imaging: in vivo demonstration for preclinical contrast and non-contrast imaging** Chee Hau Leow, et al *Imperial College London*	***3K-3*** **Non-invasive myocardial performance mapping using 3D echocardiographic stress-strain loops: validation against PET** João Pedrosa, et al *KU Leuven*	***4K-3*** **3D HOSVD clutter filtering with automatic cutoff selection applied to circular wave cardiac Doppler imaging** Julia Faurie, et al *Universite de Montreal*	***5K-3*** **High frequency ultrasonic and photoacoustic studies of polymer composites with nanoinclusions** Vytautas Samulionis, et al *Physics Faculty of Vilnius University*	***6K-3*** **Investigation of Temperature Characteristics and Substrate Influence on AlScN-based SAW Resonators** Anli Ding, et al *Fraunhofer IAF*	***7K-3*** **Special Nonlinear Effects of the Harmonic 3rd Overtone Thickness-shear Mode on its Fundamental Mode in f-3f Modal Interactions and Drive Level Dependency** Yook-Kong Yong, et al *Rutgers University*	***8K-3*** **Sparse volumetric PZT array with density tapering** Hendrik J. Vos, et al *Erasmus MC*

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 ScAlN 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*

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

THURSDAY POSTER

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

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

THURSDAY POSTER

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 Opto-electronics 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 Instiute 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*	

P1-C9-6 **In-bioreactor ultrasonic monitoring of human engineered cartilage** Guillermo Rus, et al *University of Granada*	***P1-C10-6*** **Quantitative evaluation method for liver fibrosis in clinical ultrasound B-mode image based on optimized multi-Rayleigh model** Shohei Mori, et al *Tohoku University*	***P1-C12-1*** **Assessment of Electromechanical Coupling Coefficient for a Completed PIN-PMN-PT Array** Douglas N. Stephens, et al *University of Calif, Davis*	***P1-C13-4*** **Virtual Prototyping of a Catheter Transducer Array for Internal Hepatic Sonoporation** Alexandru Moldovan, et al *University of Strathclyde*	
P1-C9-7 **Monitoring of Tetanic Contractions of Skeletal Muscle Using Wearable Ultrasonic Sensors** Ibrahim AlMohimeed, et al *Carleton University*	***P1-C10-7*** **Verification of frequency dependence and accuracy in backscatter coefficient analysis of fatty liver** Atsuko Yamada, et al *Chiba University*	***P1-C12-2*** **Comparison of two models for power dissipation and temperature in piezoelectric transducers** Marcus Wild, et al *University of South-Eastern Norway*	***P1-C13-5*** **Lead Free Piezoceramic Based Ultrasonic Devise for Medical Application** Muhammad Sadiq, et al *Active Needle Technology Ltd.*	
P1-C9-8 **Inferring porosity from frequency dependent attenuation in bone mimicking porous materials** Marie Muller, et al *North Carolina State University*	***Session P1-C11.*** ***Applications of Therapeutic Ultrasound*** *Chair:* **Hong Chen** *Washington University at St. Louis*	***P1-C12-3*** **A FEM-based Method for Complete Parameter Identification of Thin Piezoceramic Bars** Amirfereydoon Mansoori, et al *University College of Southeast Norway*	***Session P1-C14.*** ***Transducer Design and Applications*** *Chair:* **Xiaoning Jiang** *North Carolina State University*	
P1-C9-9 **Effects of Microstructure on Ultrasonic Attenuation in Skull Bone** Jinjin Liu, et al *The First Affiliated Hospital of Wenzhou Medical University*	***P1-C11-1*** **Tumor Recruitment by Fusogenic Nanodroplets in Stem Cell-Mediated Drug-Delivery System** Yi-Ju Ho, et al *National Tsing Hua University*	***P1-C12-4*** **Temporal evolutional acoustic pattern generated by a 3D printed Fresnel lens-focused transducer** Chunlong Fei, et al *Xidian University*	***P1-C14-1*** **Development of anti-cavitation hydrophone -Study on the novel hydrophone with new cap structure titanium front plate -** Michihisa Shiiba, et al *Nihon Institute of Medical Science*	
P1-C9-10 **Influence of porosity on apparent absorption coefficient in porous structures mimicking cortical bone** Yasamin Karbalaeisadegh, et al *North Carolina State University*	***P1-C11-2*** **Catalase-Loaded Mesoporous Zeolite as Implantable Nanocapsules for Ultrasound-Guided Oxygen Self-Sufficient Photodynamic Therapy against Pancreatic Cancer** Zonghai Sheng, et al *Shenzhen Institute of Advance Technology Chinese Academy of Sciences*	***P1-C12-5*** **Multilayered Carbon Nanotube Yarn Based Optoacoustic Transducer** Zeyu Chen, et al *University of Southern California*	***P1-C14-2*** **High efficiency ultrasonic transducer using polarity inverted ZnO thin film** Tsuyoshi Majima, et al *Waseda University*	
P1-C9-11 **Neural Network based Bone Density Estimation from the Ultrasound Waveforms inside Cancellous Bone derived by FDTD simulations** Yoshiki Nagatani, et al *Kobe City College of Technology*	***P1-C11-3*** **Investigation of Combined Sonodynamic and Radiotherapy for Pancreatic Cancer** Richard Browning, et al *University of Oxford*	***P1-C12-6*** **Micro-Stereolithography of KNN Piezoceramics for Ultrasonic Transducers** Weicen Chen, et al *Nanjing University of Aeronautics and Astronautics*	***P1-C14-3*** **New Lead-Free Bi4Ti3O12 Based Sol-Gel Composites for Ultrasonic Transducers** Shohei Nozawa, et al *Kumamoto University*	

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Session P2-C1. ***PGP & PNL: General Physical and Non-Linear Acoustics*** *Chair:* **Yun Jing** *North Carolina State University*	***P2-C2-2*** **A cylindrical ultrasonic vibration mixer for continuous flow chemical process** Kazuki Harita, et al *Graduate School of Natural Science and Technology, Okayama University, okayama, Japan*	***P2-C3-5*** **Volumetric Color Flow Mapping using a Row-Column Array** Jørgen Jensen, et al *Technical University of Denmark*	***P2-C4-8*** **Imaging-guided dual-target brain stimulation on mouse using array ultrasound** Guofeng Li, et al *Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*	***P2-C6-2*** **Preparation and sonocatalytic performance of a hierarchical structures Bi2WO6 microsphere for degradation of Methylene blue** Apeng Sun, et al *Shaanxi Normal University*
P2-C1-1 **Ultrasound radiation force to remotely control implanted medical devices** Samuel Callé, et al *GREMAN UMR 7347, Université de Tours, CNRS, INSA Centre Val de Loire*	***P2-C2-3*** **A cryogenic rotary valve using bolt-clamped type transducer** Takefumi Kanda, et al *Okayama University*	***P2-C3-6*** **Relative blood volume estimation from clinical super-resolution US imaging in breast cancer** Stefanie Dencks, et al *Ruhr-Universität Bochum*	***P2-C4-9*** **Revolving Permanent Magnet for Magnetomotive Ultrasound** Sandra Sjöstrand, et al *Lund University*	***P2-C6-3*** **Degradation of Rhodamine B in seawater using ultrasonic combined with periodate** Dongdong Du, et al *Shaanxi Normal University*
P2-C1-2 **Scattering cross-section estimation using passive imaging in reverberating elastic plates : case study of rigid isotropic inclusion** Lynda chehami, et al *Univ. Valenciennes, CNRS, Univ. Lille, YNCREA, Centrale Lille, UMR 8520 - IEMN, DOAE, F-59313 Valenciennes*	***P2-C2-4*** **Vibration Amplitude Modulation for Roughness Sensation Rendering with Ultrasoinc Vibration** Masaya Takasaki, et al *Saitama University*	***P2-C3-7*** **The use of ultrasound Doppler in Dentistry: pulpal blood flow measurement and its clinical advantage over electirc pulp tester.** Dohyun Kim, et al *Yonsei University, Dept. of Conservative Dentistry*	***P2-C4-10*** **Sources of 2nd harmonic generation in a medical ultrasound probe** Thong Huynh, et al *University College in Southeastern Norway*	***P2-C6-4*** **Design of an Underwater Vector Hydrophone using a Shear Mode Accelerometer made of Piezoelectric Single Crystals** Seonghun Pyo, et al *Kyungpook National University*
P2-C1-3 **Effects of Ultrasonication on Gold Nanowire Arrays** Hannah Johnston, et al *Queen's University Belfast*	***P2-C2-5*** **An ultrasonic motor with 2 mm in rotor diameter using transmission line and a spring washer driven by a Langevin transducer.** Keishu Hosokawa, et al *University of Yamanashi*	***P2-C3-8*** **Functional ultrasound imaging in the non-human primate posterior parietal cortex during a memory-guided saccade task** David Maresca, et al *California Institute of Technology*	***Session P2-C5.*** ***Transducers*** *Chair:* **Jiromaru Tsujino** *Kanagawa University*	***P2-C6-5*** **Experimental Evaluation of High Intensity Ultrasound Source System using Acoustic Waveguide and Concave Transducer with 100 mm Diameter for Calibration of Hydrophone** Shigeru Igarashi, et al *Polytechnic University*
P2-C1-4 **Electrification of sonoluminescing bubble in water** Hyang-Bok Lee, et al *Meiji University*	***P2-C2-6*** **Modeling and Experimental Study on the Current Harmonics of a High Power Ultrasonic Motor** Xiaoniu Li, et al *Nanjing University of Aeronautics and Astronautics*	***P2-C3-9*** **3D Printed Flow Phantoms with Fiducial Markers for Super-Resolution Ultrasound Imaging** Martin Lind Ommen, et al *Technical University of Denmark*	***P2-C5-1*** **Design, realization and characterization of a di?erential charge ampli?er for ultrasonic piezopolymer transducers** Pietro Giannelli, et al *University of Florence*	***Session P2-C7.*** ***Material and Defect Characterization*** *Chair:* **Patrick Johnston** *NASA Langley Research Center*
P2-C1-5 **Looking at the skull in a new light: Rayleigh-Lamb waves in cranial bone.** Hector Estrada, et al *Helmholtz Center Munich*	***P2-C2-7*** **Numerical Simulation of Non-reciprocal Acoustic Waveguide based on Indirect Interband Transitions** Junyi Ge, et al *Okayama University*	***Session P2-C4.*** ***Multimodal Systems*** *Chair:* **Mohammad Mehrmohammadi** *Wayne State University*	***P2-C5-2*** **Performance prediction of ultrasonic sensor for automotive application** Youngsoo Choi, et al *Hyundai Mobis, APS Control Engineering Team*	***P2-C7-1*** **Ultrasonic detection of stress corrosion cracks in pipe samples using guided waves** Petter Norli, et al *Halfwave*

P2-C1-6 **Effect of Electrode Configurations on the Q-factor and Spurious modes for a Doubly Rotated Contoured Quartz Resonator** Mihir Patel, et al *Schlumberger Tech Corp*	***P2-C2-8*** **Design of Non-reciprocal Lamb Wave Filter by Heterojunction Phononic Crystals** Kenji Tsuruta, et al *Okayama University*	***P2-C4-2*** **An open real-time photoacoustic imaging scanner** Aneline Dolet, et al *CREATIS*	***P2-C5-3*** **Multielement Interdigital Transducers for Structural Health Monitoring** Andrea Bulletti, et al *Università degli Studi di Firenze*	***P2-C7-2*** **Forward and inverse researches on scattering of ultrasonic surface waves by near-surface cavities** Bin Wang, et al *Nanjing University of Aeronautics and Astronautics*
P2-C1-7 **The use of airborne ultrasound for Varroa destructor mite control in beehives** Brendan Barry, et al *University College Cork*	***Session P2-C3.*** ***Volume and 2D/3D Flow Imaging*** *Chair:* **Charlie Demené** *INSERM*	***P2-C4-3*** **A configurable module-based ultrasound imaging system: all-in-one ultrasound, photoacoustics, and elasticity imaging** Heechul Yoon, et al *Georgia Institute of Technology*	***P2-C5-4*** **Detection effect of resonance frequency of both laser Doppler vibrometer and internal defect of concrete structure by spatial spectral entropy** Kazuko Sugimoto, et al *Toin University of Yokohama*	***P2-C7-3***
P2-C1-8 **Localization of fatigue cracks using low-frequency nonlinear Lamb waves in numerical perspective** Xu Jichao, et al *East China University of Science and Technology*	***P2-C3-1*** **4D Ultrasensitive Doppler monitoring of in situ thromboembolic stroke and reperfusion using tissue-type plasminogen activator in mouse model** Vincent Hingot, et al *Institut Langevin, ESPCI Paris, PSL Research University, CNRS UMR 7587, INSERM U979*	***P2-C4-4*** **Design, Development and Cadaveric Validation of a Minimally Invasive Theranostic Device for Ablative Neuro-Oncology** Nao Gamo, et al *Johns Hopkins University*	***P2-C5-5*** **Autonomous Ultrasonic Inspection for Complex Geometry Using Unmanned Aerial Vehicle** Dayi Zhang, et al *University of Strathclyde*	***P2-C7-4*** **Characterization of ferroelastic martensites by resonant ultrasound spectroscopy.** Hanus Seiner, et al *Institute of Thermomechanics, Czech Academy of Sciences*
P2-C1-9 **What Information about High-Pressure Thermophysical Properties of Liquids Can be Provided by Low-Intensity Ultrasonic Waves?** Piotr Kielczynski, et al *Polish Academy of Sciences*	***P2-C3-2*** **3D Flow Reconstruction and Wall Shear Stress Evaluation with 2D Ultrafast Ultrasound Particle Imaging Velocimetry** Xinhuan Zhou, et al *Imperial College London*	***P2-C4-5*** **Design, Modeling, and characteration of a subject specific acoustic collimator for multi-index ultrasound neuron modulation system** Chih-Hsien Huang, et al *imec*	***P2-C5-6*** **Estimating Rheological Properties of Non-Newtonian Drilling Fluids using Machine Learning and Ultrasonic Through-Transmission Techniques** Morten Hansen Jondahl, et al *University College of Southeast Norway*	***P2-C7-5*** **Study on The Effect of Fiber Weaving on Properties of Composite Materials by Acoustic Emission** Yuan Mi, et al *Nanjing University of Aeronautics and Astronautics*
Session P2-C2. ***PUM & PNR: Ultrasonic Devices and Non-Reciprocal Acoustics*** *Chair:* **Yun Jing** *North Carolina State University*	***P2-C3-3*** **3D coronary blood flow imaging: A comparison of automatic adaptive clutter filter algorithms** Cristiana Golfetto, et al *NTNU*	***P2-C4-6*** **Design and Implementation of a Dual-Transmit/ Receive-Mode Therapeutic Ultrasound Phased Array System for Brain Therapy** Hao-Li Liu, et al *Chang Gung University*	***Session P2-C6.*** ***Underwater Acoustics*** *Chair:* **Jafar Saniie** *Illinois Institute of Technology*	***P2-C7-6*** **Defect Imaging Using Sub-Sampled Array Data with Least-Squares Migration** Katherine Tant, et al *University of Strathclyde*
P2-C2-1 **High-power non-metal ultrasonic motor with an alumina vibrator** Jiang Wu, et al *Tokyo Institute of Technology*	***P2-C3-4*** **3D velocity and volume flow measurement using speckle decorrelation and high frame rate contrast-enhanced ultrasound** Xiaowei Zhou, et al *Imperial College London*	***P2-C4-7*** **Precise Transcranial Ultrasound Imaging/HIFU by Adaptive Beamforming via a Dual-Mode Hand-Held Probe** Kiyanoosh Shapoori, et al *Institute for Diagnostic Imaging Research (IDIR)*	***P2-C6-1*** **Design of an Acoustic Modular Projector for Active Sonobuoys** Hayeong Shim, et al *Kyungpook National University*	***P2-C7-7*** **Effect of Spot Weld Indentation on Spot Weld Nugget Characterization** Xiaoli Han, et al *Institute of Acoustics,Chinese Academy of Sciences*

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09:30 am - 04:00 pm	Poster --- Thursday, October 25			Waraku (posters 2)
P2-C7-8 **Numerical investigations on localization of material degradation using guided mixing wave** Tang Bo, et al *East China University of Science and technology*	***P2-C9-4*** **Diamond SAW resonators made by Minimal-Fab process** Satoshi Fujii, et al *National Institute of Technology, Okinawa College*	***P2-C11-3*** **Flexible Lamb wave resonators based on lithium niobate thin film** Xin Sun, et al *Tianjin University*		
Session P2-C8. ***Flow Measurement and Microfluidics*** *Chair:* **Nishal Ramadas** *Elster Instromet*	***P2-C9-5*** **Suppression of Propagation Losses in TC SAW Resonators Using Thin Plates of LiTaO3 Bonded to Quartz Substrates** Natalya Naumenko, et al *National University of Science and Technology 'MISIS'*	***P2-C11-4*** **An Improved Design for 2D Arrays of Capacitive Micromachined Ultrasound Transducers: Modeling, Fabrication, and Characterization** Mario Baum, et al *Fraunhofer ENAS*		
P2-C8-1 **Surface Acoustic Wave Based Acoustofluidic Device for Particle Size Filtering** Jin-Chen Hsu, et al *National Yunlin University of Science and Technology*	***Session P2-C10.*** ***SAW Sensor & Actuator II*** *Chair:* **Hagen Schmidt** *IFW Dresden*	***P2-C11-5*** **Apodization technique for significant spurious mode suppression of AlN plate mode resonators** Yao Zhu, et al *Institutes of Microelectronics, A*STAR*		
P2-C8-2 **Analysis of Influence of Inconsistent Performances of Array Elements on Flexural Ultrasonic Phased Array for Measurement of Ultrasonic Generation and Reception in Fluids** Lei Kang, et al *University of Warwick*	***P2-C10-1*** **AlN/Si based SAW resonators for very high sensitivity temperature sensors** Alexandra Nicoloiu, et al *IMT-Bucharest*	***P2-C11-6*** **Quality Factor Improvement of a 2.4GHz AlN Checker Mode Resonator by Novel Distributed Anchor Design** Yao Zhu, et al *Institutes of Microelectronics, A*STAR*		
P2-C8-3 **Selective killing of tumor cells based on patterned gold nanoparticles via surface acoustic wave device** Wei Zhou, et al *Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*	***P2-C10-2*** **Displacement of Microparticles on Surface Acoustic Wave Delay Line Using High RF Power** Melvin Paquit, et al *AR-Electronique*	***Session P2-C12.*** ***Material for Acoustic Wave Device II*** *Chair:* **Sylvain Ballandras** *frec|n|sys SASU*		
P2-C8-4 **Minimizing the zero-flow error in transit time ultrasonic flow meters** Douwe van Willigen, et al *Delft University of Technology*	***P2-C10-3*** **PbS colloidal quantum dots coated SAW-based sensor for nitrogen dioxide room temperature detection** Chen Fu, et al *Shenzhen University*	***P2-C12-1*** **The dielectric loss of wurtzite Al0.67Sc0.33N thin films for mass production of piezoelectric MEMS** Andrea Mazzalai, et al *Evatec AG*		

P2-C8-5 **Viscosity Dependence of Harmonics and Ultra-harmonics of Acoustic Cavitation Noise** Takanobu Kuroyama, et al *National Institute of Technology, Gifu College*	***P2-C10-4*** **Towards an AlScN-based packageless acoustic wave sensor with RFID capabilities, for applications above 350°C.** Pascal Nicolay, et al *CTR AG*	***P2-C12-2*** **Study of Cr5Si3 Electrodes on Langasite Surface Acoustic Wave Resonators for High Temperature Sensing** Jérémy Streque, et al *Université de Lorraine, CNRS*		
P2-C8-6 **Acoustic field characterisation of an ultrasonic phased array for a novel flow sensor using an optical microphone.** Reinhard Klambauer, et al *Graz University of Technology*	***P2-C10-5*** **Development of surface acoustic wave magnetic field sensor incorporating with FeCo dot array** Yana Jia, et al *Institute of Acoustics,Chinese Academy of Sciences*	***P2-C12-3*** **Evaluation of Piezoelectric Ta2O5 Thin Films Using Line-Focus-Beam Ultrasonic Material Characterization System** Ryota Suenaga, et al *University of Yamanashi*		
Session P2-C9. ***SAW Device & Application II*** *Chair:* **Shogo Inoue** *Qorvo, Inc.*	***P2-C10-6*** **Pd-Cu nanowires coated SAW sensor for fast Hydrogen gas sensing** Wen Wang, et al *Institute of Acoustics, Chinese Academy of Sciences*	***P2-C12-4*** **The influence of negative ions generation on the arc-melted and hot press sintered ScAl alloy targets to the crystalline orientation and kt2 of the ScAlN films** Yuka Endo, et al *Waseda University*		
P2-C9-1 **Programmable Low Loss Orthogonal Frequency Coded SAW Correlator Filters** Marshall Smith, et al *University of Central Florida*	***Session P2-C11.*** ***MEMS & Application II*** *Chair:* **Jan Kuypers** *Blickfeld GmbH*			
P2-C9-2 **Surface acoustic wave velocity anomaly in thin piezoelectric film detected by Picosecond Acoustics: application to extraction of piezoelectric coefficients** Arnaud DEVOS, et al *IEMN CNRS*	***P2-C11-1*** **Micromachined Aluminum Scandium Nitride Lamb Wave Resonators Utilizing Low Order Symmetric Modes** Fazel Parsapour, et al *EPFL*			
P2-C9-3 **SH-type Spurious Response Free TC-SAW Resonators Using Low Acoustic Velocity Rayleigh SAW on LiNbO3 Substrate** Masakazu Mimura, et al *Murata Manufacturing Co., Ltd.*	***P2-C11-2*** **ACTIVE AND INACTIVE FRAMES IMPROVE FIGURE OF MERIT OF TWO DIMENSIONAL MODE RESONATORS** Jeronimo Segovia-Fernandez, et al *Texas Instruments Kilby Labs*			

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