IEEE

IUS 2025

International Ultrasonics Symposium

September 15 - 18, 2025 || Utrecht, Netherlands

2025 IEEE INTERNATIONAL ULTRASONICS SYMPOSIUM

SYMPOSIUM PROGRAM

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2025.ieee-ius.org

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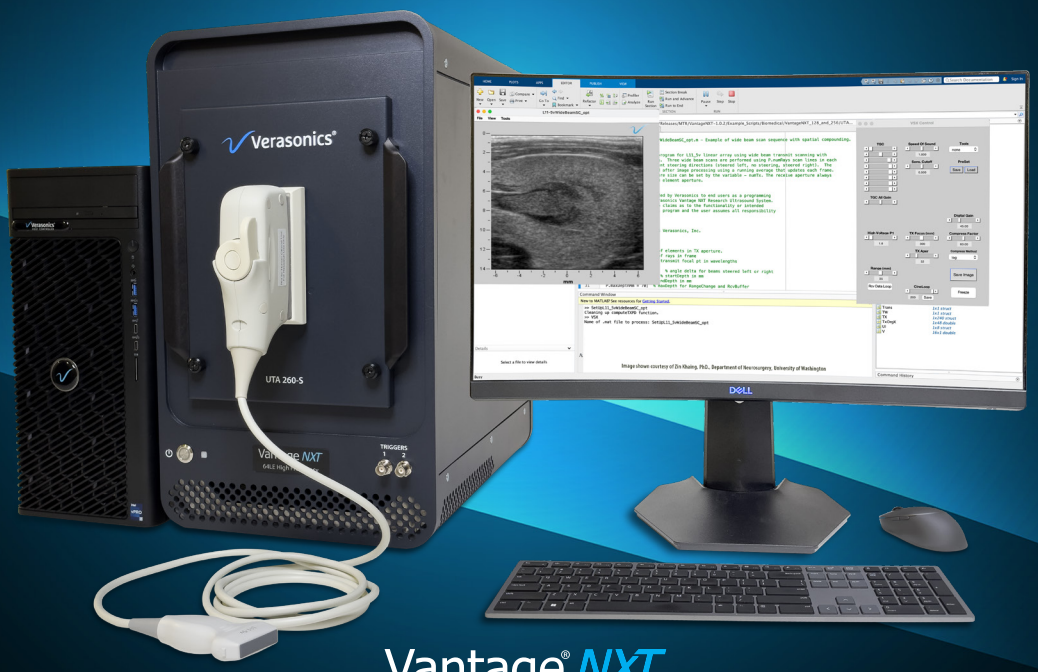

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- Volume imaging

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Vantage® NXT Seminar
17 September at 10:30 AM
Location: Spark Room

**20kHz - future availability*

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Welcome Message – General Chair

Welcome to IEEE IUS 2025, Jaarbeurs, Utrecht, The Netherlands

I am thrilled to host the IEEE IUS 2025 in Utrecht, The Netherlands. I consider the IEEE IUS meeting the most prestigious meeting in the field of ultrasound technology as demonstrated with the high and constantly increasing number of participants. After the first applications of ultrasound in the medical field in the fifties of the last century, it became the most used imaging modality in hospitals. And with the current miniaturization in combination with artificial intelligence, it is currently moving also out of hospitals and finding its way in low resource settings, in the first line of care, and even at home. Most revolutions in ultrasound imaging were first presented at an IEEE IUS meeting. I am delighted that also this year so many of you are joining this meeting since without your participation, this meeting would not be possible. In fact, this is the first time after the COVID pandemic restrictions that visa complications are minimal allowing delegates from all over the world to join this fantastic meeting as illustrated by the record number of registrations and facilitating exchange of knowledge, strengthening friendships, and above all fulfill you with great new ideas to move our field further.

The Netherlands have a rich history which is characterized by pioneering, bridging gaps, inclusiveness, and reaching out. Utrecht is the embodiment of all of this. It is one of the oldest cities in the Netherlands founded in the Roman Times and one of the first cities that got city rights in 1122. In fact, it was the bishop of Utrecht that gave Amsterdam its city rights. The rich history can still be explored by visiting the impressive Dom cathedral with its famous tower, the unique city center with the canals and wharf cellars and the city castles. Utrecht is selected as the number 1 in the Regional Competitiveness Index of the European Union because of its economy, health, infrastructure etc. and is currently focusing on “Heart of Health” positioning the city as a leading hub for health innovation, sustainable living, and well-being.

Also for ultrasound imaging, Utrecht has a rich history. In 1845, prof. Buys-Ballot demonstrated the Doppler effect for sound after it had been postulated by prof Christian Doppler for light. For this demonstration, he used the fastest moving object with a constant speed available at that time, a train called “the Arend” that was riding between Utrecht and the small village Maarssen. During the social event on Wednesday September 17th at the “Railway Museum”, we will pay special attention to this as this train is still on display. In the sixties of the last century, the first phased array transducer was developed by dr. Jan Somer in Utrecht. Currently, medical ultrasound is blossoming in the Netherlands with 6 ultrasound laboratories that are united in the Netherlands Society for Medical Ultrasound (www.nvmu.nl). For the first time, site visits to the 6 ultrasound labs in the region are part of the official IUS program: the Dutch Ultrasound Ecosystem day (DUE day). This initiative turned out to be very successful since it was fully booked far before the early registration deadline.

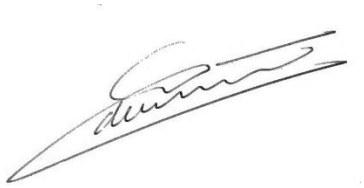
The Netherlands also has a rich history in church bells. These bells have been produced for many centuries. Royal Eijsbouts, the largest company in the world producing, maintaining and tuning these bells is located in the Netherlands. There is a fair chance that there is a carillon produced by Royal Eijsbouts in your hometown. During the keynote lecture you will find out that there is a remarkable resemblance between the science behind designing, casting and tuning church bells and ultrasound imaging.

Welcome Message (cont.)

We are very grateful to all the patrons and exhibitors who are supporting our conference. This year, we have the highest number of companies and organizations contributing to an IEEE IUS meeting. Their financial contributions is essential for organizing the technical and social events, while their presence at the meeting will provide a valuable source of information about state-of-the-art commercial technologies in our field. Special thanks are extended for the especially strong support provided by Verasonics and Vermon as Platinum patron, Xiver as Silver Plus, and us4us and CTS Silver patrons. Please see the full list of sponsors here: https://2025.ieee-ius.org/sponsors-exhibitors/listing. We also thank the city of Utrecht for their sponsorship of the Opening Reception on Tuesday, September 16th. But most of all, I am extremely thankful to the organization committee for their hard work, the very pleasant atmosphere of working, and the great technical and social program we were able to establish to make this meeting an enormous success: https://2025.ieee-ius.org/about/organizers. We have been accompanied in this task by the outstanding members of the professional conference organizers of Conference Catalysts.

Please have a look at the IUS 2025 website since a lot of information is available on travelling to Utrecht, the technical program and satellite events, and great places for lunch and dinner and additional information on the city of Utrecht.

I very sincerely wish you an exciting and productive time in Utrecht



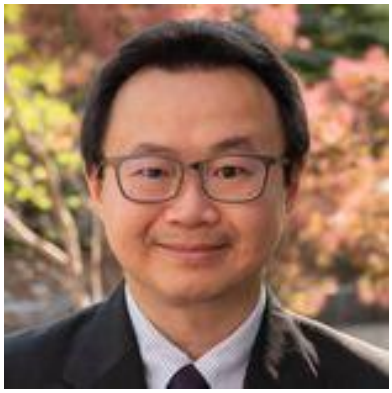
Chris de Korte
Radboudumc
IUS 2025 General Chair

Welcome Message – TP Chair

On behalf of the IUS Technical Program Committee, we are excited to welcome you to a vibrant three-day scientific program at IUS 2025 on September 16-18 that will showcase the latest research and technological advances in ultrasonics. IUS 2025 will feature a record number of 1,370 presentations (618 orals and 752 posters) in various branches of the field including medical ultrasonics, industrial ultrasonics, physical acoustics, microacoustics, and transducer design. There will also be 14 short courses on September 15 covering a range of special topics in ultrasonics.

The 1,370 contributed presentations were selected from a pool of 1,762 original submissions. In developing the IUS 2025 scientific program, we have used strict author instructions. We have paid special attention to the abstracts to prevent violation of the double-blind review protocol and overlength size. The abstracts that were too long were allowed one resubmission. Thereafter the abstracts that did violate one of both criteria were rejected. This peer review strategy is intended to enhance the scientific inclusivity of IUS 2025 by substantially reducing confirmation bias attributed to the identity of authors and their institutional affiliations. As a result, the acceptance rate of papers submitted by different regions (Asia/Pacific, Europe, Latin America, Middle East/Africa, North America) is generally well balanced. With the double-blind review protocol in place, we are proud to assure authors that your contributed papers to IUS 2025 are selected based on the merit of scientific work you have done, not who you are or where you are based.

IUS 2025 will be delivered in a hybrid format. In-person attendees will enjoy a premium on-site conference experience in the 10 lecture rooms and 3 poster halls at the Jaarbeurs in Utrecht. All lectures will be live streamed and all presentations will be available on demand after the conference. All posters will be available on demand during and after the conference. In this way on line attendees will enjoy the viewing of scientific presentations, and all attendees will be able to connect with each other online.



As already mentioned in the General Chairs' remarks, we are extremely honored to have Miguel Carvallo, the campanologist of Royal Eijsbouts, the largest church bell foundry in the world, as the keynote speaker. He will reveal us the more than 10 century journey from magic to science when it comes to founding, casting, and tuning church bells. We promise you will meet several of your ultrasound heroes in this journey.

The IUS 2025 scientific program contains a special session on AI Driven Handheld Ultrasound (Wednesday September 17, 2025 (11:00 - 12:30), Kinepolis 7) and a clinical special session with 3 invited talks on recent advances in clinical ultrasound (Thursday September 18, 2025 (11:00 - 12:30), Kinepolis 7). There will also be 18 invited speakers who will be speaking in the oral sessions of individual topical groups. IUS 2025 will be ending with a Closing Session on September 18 at 17:45-19:00 (Polar). In this final session, a few active researchers will come on stage to each make a 5-minute recap presentation on what they think are the scientific highlights and the most exciting ideas presented at this year's conference.

Welcome Message (cont.)

In addition to its main scientific contents, the IUS 2025 program will include award presentations on September 14 to celebrate the excellence and achievements of top colleagues in the ultrasonics community. Also, the IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control will be hosting a Reviewer Training Workshop to engage prospective reviewers of the UFFC Society's flagship journal. Moreover, the UFFC Young Professionals Group will be hosting various professional development events throughout the conference.

IUS has long been considered the prime annual forum for the global ultrasound community to share cutting-edge advances in the field. We sincerely hope you will enjoy your time at IUS 2025. We look forward to welcoming you at the conference and discussing the latest R&D developments in ultrasonics!

IUS Technical Program Chair
Ton van der Steen, Erasmus University Medical Centre Rotterdam (the Netherlands)

IUS Technical Program Chair
Alfred C. H. Yu, University of Waterloo (Canada)

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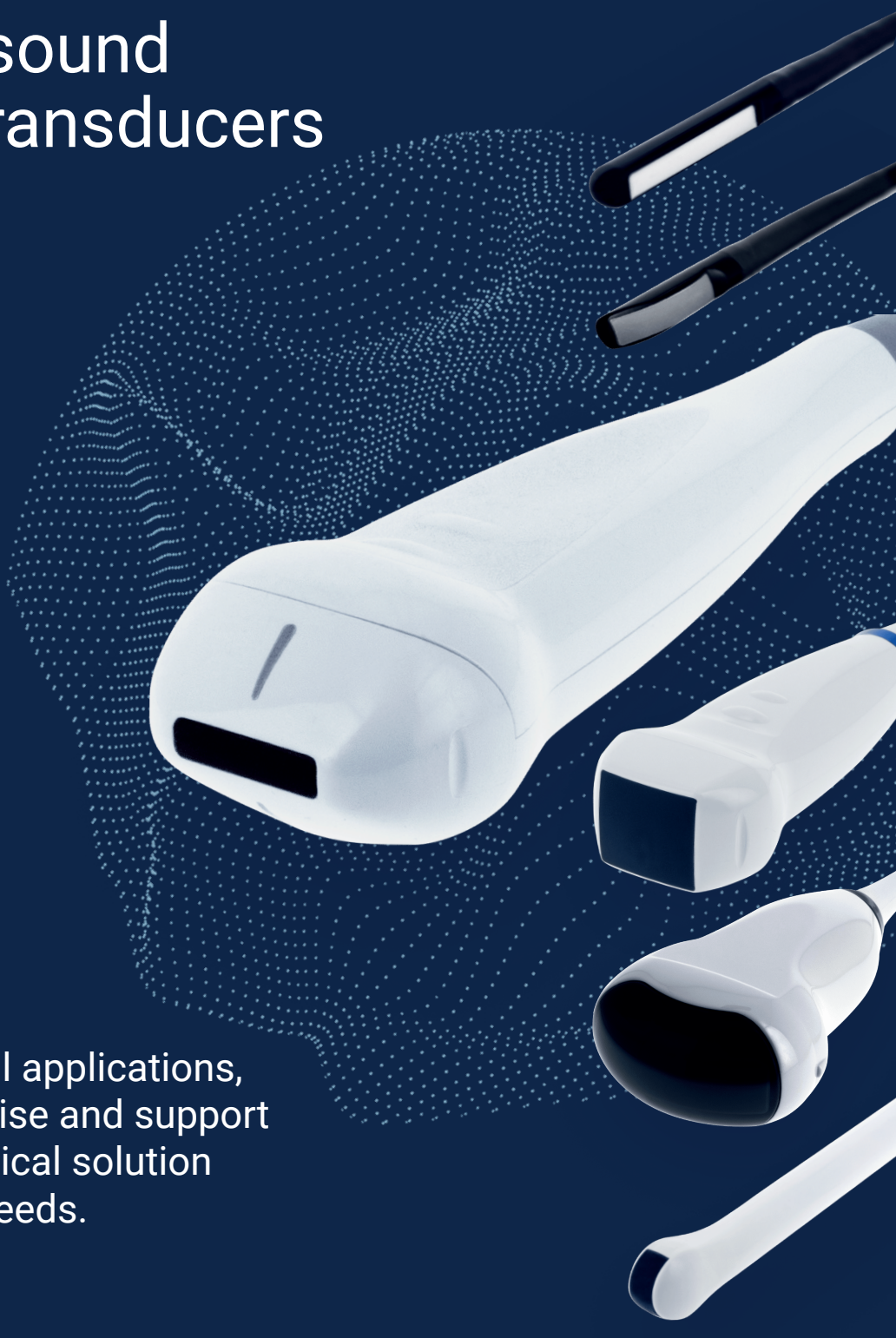

From research to clinical applications, Vermon provides expertise and support to deliver the best technical solution tailored to application needs.

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General Information

Venue

Jaarbeurs Event & Exhibition Centre
Address: Jaarbeursplein 6, 3521 AL Utrecht, Netherlands

Jaarbeurs is conveniently located in the centre of The Netherlands, only 30 minutes from Schiphol Airport, and is easily accessible by public transport or by car. Jaarbeurs is located within walking distance from Utrecht Central Station and offers ample parking.

Registration Hours

Please visit the registration desk at Polar Voorhall to pick up your registration materials. You will only need to check in once to pick up your badge.

Monday, September 15
7:30 - Short Course/Tutorial Attendee Badge Pick-Up Only
8:00 to 18:00 – Attendee Badge Pick-Up

Tuesday, September 16
7:30 to 19:00 – Registration Open

Wednesday, September 17
8:00 to 18:00 – Registration Open

Thursday, September 18
8:00 to 16:30 – Registration Open

CONFlux Virtual Platform

Login credentials will be sent out to all registrants a few days before the conference.

Proceedings

The final Proceedings will be sent to attendees post-conference.

Speaker-Ready Room

ALL speakers with an oral presentation who haven't already uploaded their slides MUST bring their deck (on a USB drive) to the speaker ready room (Quest) at least 30 minutes before their scheduled presentation session so that technicians there can upload the slides to the computer in the room.

It will NOT be possible to use presentations from personal laptops.

Gala Dinner Train Tickets

Two departure options are available: 18:47 or 19:17. Return trains will depart at 22:30 and 23:00.

Tickets will be distributed to attendees at the registration desk.

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Platinum Sponsors

Verasonics®
The leader in Research Ultrasound™

Verasonics offers Vantage® NXT Research Ultrasound Systems for academic and commercial investigators. With the latest technology from Verasonics, Vantage NXT includes an advanced, proprietary transceiver designed to meet and surpass the needs of current and future cutting-edge ultrasound research, plus the addition of industry-leading performance and features. Researchers in countries across the globe routinely rely on the flexibility of the Vantage NXT platform to advance the art and science of ultrasound through their own research efforts. In addition, every system can be upgraded to any configuration - protecting capital equipment investments and expanding research options. Verasonics Vantage NXT Systems are the ideal solution for ultrasound-driven research and development in biomedical, materials science, earth sciences, and the physics of acoustics.

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XIVER – More than a MEMS Foundry, leveraging a legacy of innovation

XIVER is a leading independent MEMS foundry specialized in process development, industrialization, and manufacturing of thin-film and MEMS devices. Empowered by a team of over 120+ highly skilled professionals, XIVER leverages decades of innovation and expertise from its Philips heritage.

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us4us Ltd. revolutionizes ultrasound with software-defined platforms — us4R, us4R-lite, and us4OEM — delivering unmatched flexibility, raw-RF data access, and performant GPU processing. Designed for research, innovations, and serial production, our scalable systems accelerate medical breakthroughs, AI integration, and industrial applications, turning bold research ideas into reality.

CTS is a leading designer and manufacturer of sensors, actuators and electronic components for original equipment manufacturers (OEMs) in a variety of markets. Piezoelectric Components from CTS enable complex and high-performance applications such as diagnostic and therapeutic medical equipment, underwater acoustics, flow/ vibration measurement and non-destructive testing.

Bronze Sponsors

Diagnostic handheld ultrasound with raw data access and API integrations.

The Ultrasound department at Fraunhofer IBMT is a leading research unit specializing in the development of customized ultrasound technologies. The expertise spans the entire spectrum of system solutions in medical, biotechnological, and technical applications, ranging from theoretical studies to the development of transducers, modular ultrasound systems, and innovative software solutions.

FUJIFILM VisualSonics specializes in high-frequency ultrasound and photoacoustic technology, offering resolutions as fine as 30 micrometers. Initially introduced for preclinical research, particularly in small animal disease models during the human genome project era, it enabled live animal study without safety concerns.

Sponsors (cont.)

Processor and refiner of precious metal

Innovation, together we do it

The National Physical Laboratory (NPL) is the UK's National Metrology Institute (NMI).

novosound is a Scottish company developing next-generation thin-film ultrasound technology for medical and industrial applications. Founded in 2018, its proprietary sensors enable flexible designs, high-resolution imaging, and continuous measurement, creating new possibilities in health and energy monitoring. Website: www.novosound.net

Join the revolution in ultrasonic technology with Onda, a leader in developing cutting-edge solutions for measuring sound waves and ensuring devices meet the highest safety and quality standards across medical and industrial sectors. Dive deeper into our expertise by attending the short course on “Hydrophone measurements for biomedical ultrasound applications” co-hosted by Sam Howard on Monday, Sept 15, from 14:00-18:00. Plus, don't miss our groundbreaking research on a novel hybrid measurement technique for Intravascular Lithotripsy (IVL) and other short pressure pulse applications, which we'll be presenting at Poster 11, MTH: Therapeutic Devices & Systems Session on Tuesday, Sept 16, from 15:30-16:30.

Sponsors (cont.)

TPAC offers Ultrasound Solutions for Research, specializing in medical research and NDE applications.
We offer the widest open platform with advanced systems, extensive API (Py, C, Matlab…) and comprehensive software. TPAC's worldwide prime support provides flexibility and versatility for researchers. Our OEM activity serves perfectly your projects deployment.

OpenSonics is the flagship of the TPAC Group—the leader in ultrasonic NDT—in the field of advanced medical research instruments, as well as OEM solutions for medical imaging. Specializing in fully open ultrasound scanners, OpenSonics offers a modular approach, ergonomic design, and support for multiple development languages.

Open-LIFU 2.0 is Openwater's Low Intensity Focused Ultrasound (LIFU)1 platform for researching the treatment of a variety of conditions. The platform is flexible, easy-to-use, and can deliver LIFU to targets located nearly anywhere in the head or body. While Open-LIFU 2.0 devices are ready to set up "out of the box", their open-source design allows customization and modification to support clinical research across diverse users and applications.

LASER DOPPLER VIBROMETERS High frequency vibration measurements ≤ 50MHz. High precision, highly linear, high sensitivity. Non contact and free from environmental influences. Out-of-plane & in-plane vibration measurement and visualization.

End-to-end ultrasound system integration for research and for Original Equipment Manufacturers (OEMs).

Sponsors (cont.)

Polytec has been developing and producing optical metrology solutions for research and industry for more than 50 years. This includes systems for non-contact vibration measurement, surface characterization, length and velocity measurement, process analytics and optical systems. Laser vibrometers manufactured by Polytec define the globally recognized standard for optical vibration measurement and test objects of various sizes - from entire car bodies to microcomponents such as MEMS.

ProbeHunter, the global leader within Dynamic testing and validation of the performance of ultrasound probes. Developed by the Swedish Med Tech Company BBS Medical. ProbeHunter, with 10 years on the market, can test 90% of all leading OEM´s ultrasound probes, GE, Siemens, Philips, Mindray, Samsung and more. The ProbeHunter adapters can be made for all leading US Research Platforms. The real-time test system is used around the world by hospitals, universities, OEM, MVS, repair-labs and the ultrasound industry.

Quanscient Allsolve is a cloud-native multiphysics simulation software designed for large-scale design exploration for ultrasound and MEMS device R&D. With us, you can 1000x your simulation throughput.

Wafer Fab Foundry Company

SinapTec provides cutting-edge ultrasonic OEM modules for healthcare, biotech, industry, and research, delivering worldwide trusted solutions from design to production. Based on a breakthrough patented intelligent system, our ultrasonic amplifiers and transducers are suitable for HIFU therapeutic applications, gene therapy, and sample preparation.

Sponsors (cont.)

Located in the Seattle area, Sonic Concepts is a pioneer in therapeutic focused ultrasound transducer development. With diverse expertise in engineering and electroacoustic techniques and material science, the technology team is globally recognized as the leading subject matter expert in designing and manufacturing ultrasound transducers and systems with complex requirements. With decades of experience, Sonic Concepts partners with its OEM customers to ensure innovative ultrasound products and systems are masterfully designed, manufactured, integrated, and delivered reducing development time, cost and risk – adding value by bringing the partners' projects to fruition quickly, safely and profitably.

Suzhou Norayso Technology Co., Ltd. is committed to the development and production of high-end ultrasound probes, providing the full range ultrasound probe solutions.

The product line including Convex, Linear, Phased, Endocavity and so on. The probe types include 1D, 1.5D, M4D, Matrix, ICE & IVUS, TEE and Laparoscope. The experienced RD team offering high end products, and the professional production team makes mass production stability and reliability. We aim to become a world-class supplier of medical ultrasound probes.

TNO is an independent, not-for-profit research organisation in the Netherlands. We create impactful innovations for the sustainable wellbeing and prosperity of society. Through our innovations we boost the earning power of industry.

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12: Suzhou Norayso Technology CO., LTD
13: SINAPTEC
14: XIVER MEMS Foundry
15: Acertara Acoustic Laboratories
16: National Physical Laboratory
17: Quanscient
18: Helbling Technik Bern AG
19: GAMPT mbH
20: Openwater
21: ProbeHunter
22: Hyus Meditec
23: Clarius
24: Onda Corporation

B1: Sonosilicon
B2: Furuya Metal Co., Ltd.
B3: Sound & Bright
B4: Zurich Instruments AG
B5: USkin
B6: SAWNICS Inc.
B7: Electronics and Innovation Ltd
B8: S-Sharp / Scintica
B9: Image Guided Therapy
B10: CliniSonix Inc.

F1: Municipality of Utrecht
F2: PI Ceramic
F3: Novosound
F4: TNO Ultrasound Innovations
F5: Sonic Concepts
F6: ULSO TECH
F10: Precision Acoustics Ltd

A: IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society
C: —
B: CYBERDYNE, Inc.

*Note: F1 - F6 Booths are transducer-focused.

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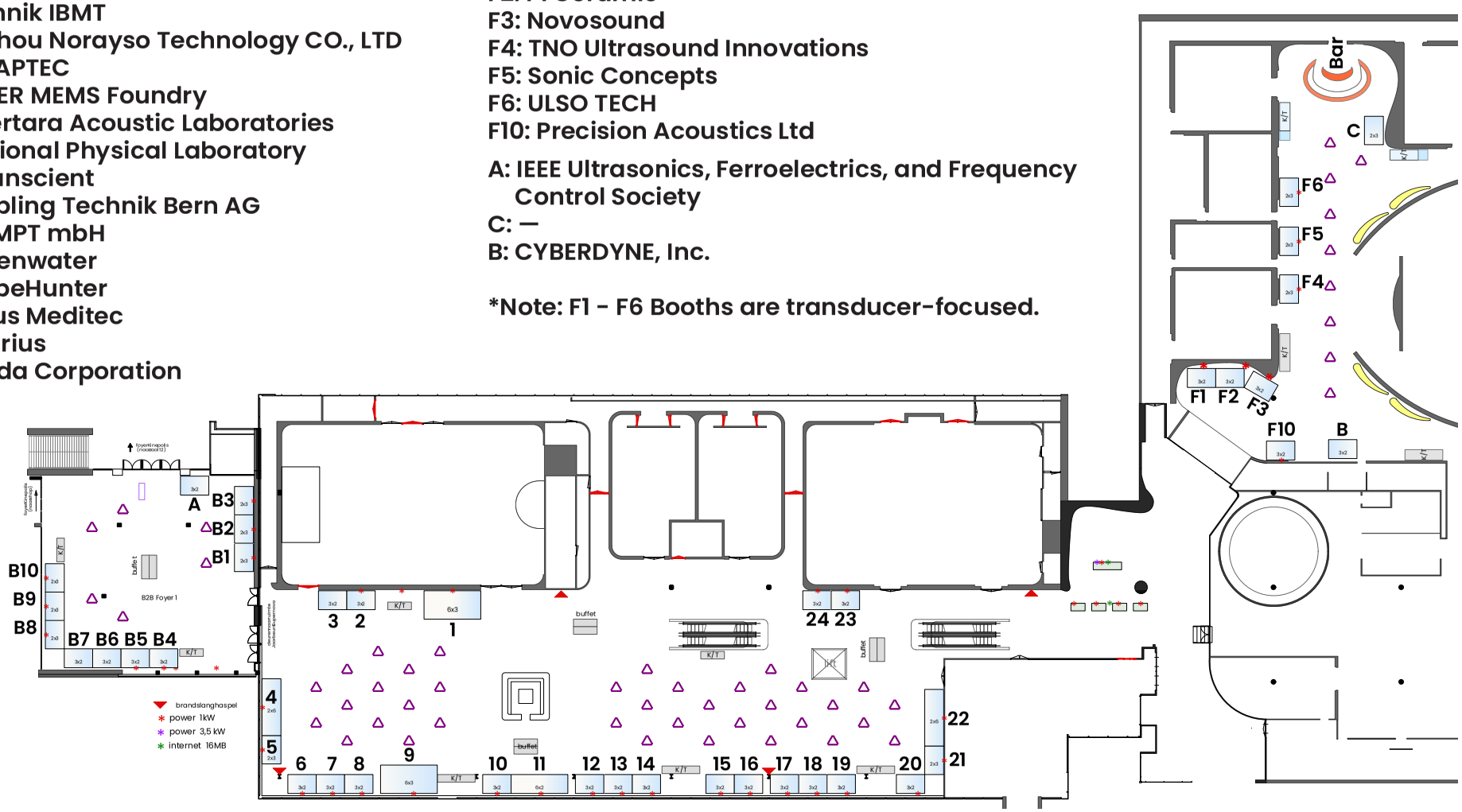
EXHIBIT HALL MAP



Student Travel Grant Winners

Congratulations to the IUS 2025 Student Travel Grant Award Winners!

Abhinav Kumar Singh, Indian Institute of Technology Gandhinagar
Akash Chandra, Indian Institute of Technology Gandhinagar
Alix Corentin, CNRS
Andre Rath, Technical University of Denmark
Andressa Araujo Andrade Sousa, KU Leuven
Anthony Yu, Georgia Institute of Technology
Arnaud Héroux, University of Montreal Hospital Research Centre
Belgharbi Hatim, University of North Carolina at Chapel Hill
Benjamin Seaman, Dalhousie University
Benjamin Frey, Stanford University
Bingze Dai, The University of Hong Kong
Celestine Lachambre, Labtau/Creatis
Ching-Yao Lu, National Tang Ming Chiao Tung University
Chuang Man, Shanghai Tech University
Connor Krolak, University of Washington
Daniel Maxime, Physics for Medicine Paris
Darren Dahunsi, University of Alberta
Eda Begum Erdogan, NC State University
Edoardo Bosco, University of Pavia
Elvira Catalina Vazquez Avila, University of Toronto
Enrique González-Mateo, Consejo Superior de Investigaciones Científicas (CSIC)
Eonho Lee, Sogang University
Fangsheng Qian, The Hong Kong University of Science and Technology
Gotshal Saar, Tel Aviv University
Haidour Nabil, Physics for Medicine Paris
Han Yichuang, Erasmus MC
Han Donghun, Dankook University
Hang Yu, Nanjing University of Aeronautics and Astronautics
Hao Quan, Shenzhen Institute of Advanced Technology
Henri Leroy, Physics for Medicine Paris
Hoi Yi Siu, University of South Eastern Norway
Hsiao Weicheng, Chang Gung University
Hyunhee Kim, POSTECH
Imad Bellouki, Delft University of Technology
Jessica Monaldi, Institut Jean Lamour, CNRS, Université de Lorraine
Jiao Xia, Peking University
Jiashuai Xu, The Hong Kong University of Science and Technology
Jiaxin Dong, University of Science and Technology of China
Jiehan Hong, Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences
Jinhao Lu, The University of British Columbia
Jose Timana Torres, Pontificia Universidad Católica del Perú
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Lei He, Huazhong University of Science and Technology
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Lin Yi-Hsien, National Tsing Hua University
Lu Chang, Shanghai Jiao Tong University
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Mathilde Dupouy, INSA LYON - CREATIS
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Nanami Suzuki, Waseda University
Paul Xing, Polytechnique Montreal
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Peng Jiaxing, Nanjing University
Pengcheng Wan, Shanghai Tech University
Robyn Klassen, University of Waterloo
Sait Kilinc, Georgia Institute of Technology
Salomé Vignat, Sorbonne Universite
Shane Steinberg, Carleton University
Shiqi Hu, Columbia University
Siyeoul Lee, Pusan National University
Song Zhen, Hong Kong Polytechnic University

Student Travel Grant Winners (cont.)

Spacone Giusy, ETH Zurich
Stefan Klemmer Chandia, Charité - Universitätsmedizin
Stephan Schaumann, Technische Universität Darmstadt
Sunho Moon, NC State University
Tessa Kosmides, CWRU
Ting-Wei Chen, National Taiwan University
Tiran Bercovici, Tel Aviv University
Tönnis Trittler, TU Dresden
Wei Chen Lo, University of California San Diego
Wei-Hong Ruan, National Taiwan University
Wren Wightman, Duke University
Yang Shang, Tongji University
Yang Shiqi, The University of Hong Kong
Yongquan Ma, Tianjin University
Youlong Hua, ZheJiang University
Yuanlong Li, Shanghai Tech Univeristy
Zhengshuyi Feng, University of York
Zoe Katz, Concordia University

Student Paper Competition Finalists

Group 1

2265: Intraoperative 4D Ultrasound Localization Microscopy of Deep Cerebral Perforating Arteries
Yichuang Han

3531: Sonogenetics Induced Non-Invasive Retinal Prosthesis
Jie Ji

2897: Ultrasound Cerebral Angiography Reveals Functional Dynamics of the Circle of Willis
Nabil Haidour

3645: Distributed Aberration Correction in Liver Imaging via Iterative Model-Based Sound Speed Estimation
Benjamin Frey

3751: ACS-Net: a Deep Unfolded ADMM Framework for Ultrasound Attenuation Imaging
José Timaná

2587: Vascular disruption: a Controllable Transient Vascular Tumor Reaction to Ultrasound Cavitation Treatments
Connor Krolak

Group 2

2676: Real-Time Adaptive Gain Adjustment for High-Contrast Photoacoustic Microscopy of Heterogeneous Biological Tissues
Huijian Zhang

3807: High-Frequency Bulk Acoustic Wave Resonator with Ferromagnetic Electrodes for Magnetic Field Sensing
Chuang Man

3363: Accelerating Total Focusing Method with pth Root Delay and Sum and Nth Coherence Factor Weighted Delay and Sum Using Sparse Arrays: a Comparative Study
Abhinav Kumar Singh

Competition Finalists (cont.)

Group 3

3776: Polarization-Inverted Sc0.4Al0.6N double-Layer SMR
Nanami Suzuki

3698: Low-Power Real-Time Holographic Acoustic Tweezers Using MEMS Ultrasound Arrays
Hang Gao

2692: A Novel Miniature Piezoelectric Tube Actuator for Intravascular Optical Coherence Tomography
Hang Yu

Group 4

2133: Transforming Spurious Into Bandwidth in cmWave Acoustic Resonators
Jiaxin Dong

2556: Boost the Acoustic Wave Resonator to Handle ultra-High Power Density Beyond 10 W/mm2
Fangsheng Qian

2347: Bilayer X-Cut Lithium Niobate YBAR Resonator for Wideband, High-Frequency Applications
Florian Hartmann

Group 5

2727: A Reconfigurable Transceiver ASIC for Wearable Ultrasound Applications
Imad Bellouki

3358: A Side-Looking Endoscopic Histotripsy Array with Integrated 20 MHz Imaging for Non-Invasive Tongue-Base Debulking
Benjamin Seaman

3560: Advanced Flow Imaging with a Handheld 128+128 Row-Column Addressed CMUT Array Probe: System Design and Phantom Validation
Eda Begum Erdogan

Dutch Ultrasound Ecosystem Day

Date: Monday, September 15, 2025
Cost: Free (includes travel and lunch)
Registration: Indicate interest during IUS registration – space is limited!

Join us for a unique opportunity to explore the vibrant Dutch ultrasound research community! Five leading universities across the Netherlands will open their labs to IEEE IUS participants for a day of discovery, live demonstrations, and hands-on interaction with top researchers. Travel from and to the conference venue in Utrecht is included. Space is limited and assigned on a first-come, first-served basis.

Participating Universities & Tour Details

Eindhoven University of Technology (TU/e)
- Explore ultrafast imaging, AI-powered beamforming, and elastography.
- Visit BM/d and PULS/e labs, part of the e/MTIC innovation center.
- Departs: 1:00 PM Returns: 6:00 PM Limit: 50 attendees

Delft University of Technology (TU Delft)
- Tour state-of-the-art transducer & ASIC fabrication labs.
- See cutting-edge 3D imaging, brain Doppler, and ultrasound wearables.
- Departs: 1:00 PM Returns: 6:00 PM Limit: 30 attendees

Radboud University Medical Center, Nijmegen
- Learn about functional imaging for cancer, vascular, liver, and prenatal care.
- Includes clinical lab demos and student research pitches.
- Departs: 1:00 PM Returns: 6:00 PM Limit: 30 attendees

University of Twente
- Visit TechMed Center and see research in HIFU/FUS therapies, contrast agents, and high-frame rate imaging.
- Includes simulated hospital and preclinical testbed tours.
- Departs: 11:00 AM Returns: 6:00 PM Limit: 30 attendees

UMC Utrecht
- Tour MR-guided focused ultrasound research and clinical trial facilities.
- Learn about Neuro FUS, drug delivery, and immune system stimulation.
- Departs: 2:00 PM Returns: 6:00 PM Limit: 30 attendees

Organized in partnership with the Dutch Association of Medical Ultrasound – http://www.nvmu.nl

Don’t miss this exciting day of science, innovation, and collaboration!

Women in Engineering

Career and Leadership Development - Lunchtime Seminar with Prof. Susan Trolier-McKinstry

“How To Grow as a Professional and a Leader -Regardless of Gender”

Date: Tuesday, September 16
Time: 12:30 - 14:00
Location: Expedition

Join us for a lunchtime seminar featuring Prof. Susan Trolier-McKinstry, a globally recognized expert in materials science and engineering.

Prof. Trolier-McKinstry is the Evan Pugh University Professor and Steward S. Flaschen Professor of Ceramic Science and Engineering at Penn State University.

She also serves as Director of the Center for Dielectrics and Piezoelectrics (CDP) and the Center for Three-Dimensional Ferroelectric Microelectronics (3DFeM).

She is a member of the U.S. National Academy of Engineering, former President of the IEEE Ultrasonics, Ferroelectrics, and Frequency Control Society (UFFC-S), and an IEEE Women in Engineering (WIE) Distinguished Lecturer.

In this seminar, Prof. Trolier-McKinstry will reflect on her personal journey and provide insights into how individuals—regardless of gender—can build rewarding careers and develop as leaders. The second half of the session will feature a live Q&A.

Lunch will be provided. All are welcome—regardless of gender—to join this opportunity for shared learning and inspiration.

Don’t miss this chance to hear from one of the foremost voices in science and engineering today.

Plenary Speaker

From Magic to Science: The Evolution of Bell Design and Tuning through the iconic example of the Utrecht Dom Tower

Date: Tuesday, September 16
Time: 8:15 - 9:30
Location: Beatrix Theatre

Miguel Carvalho, Royal Eijsbouts

One hundred and twelve meters above the city of Utrecht, the Dom Tower houses one of the most significant and heaviest bell ensembles in Europe, in a total of 49 tons of bell bronze which uniquely represents the key milestones in the history of bell tuning.

Based on empirical knowledge acquired through trial and error, bell tuning gradually evolved with the understanding that certain vibrational modes—specifically the first five—must align with fixed frequency ratios to produce a harmonious tone. For carillons, this internal tuning must be further refined across multiple bells to ensure accurate musical scales. Another distinctive aspect of bell acoustics stems from their near-axial symmetry. Inevitably, small imperfections introduced during the casting process disturb the degeneracy of normal modes, resulting in audible beats in the radiated sound, an effect known as "warble". Additionally, the perceived pitch—or strike note—remains a complex psychoacoustic phenomenon, often arising from virtual pitch effects rather than a single vibrational mode. These intricacies made bell tuning a rare and closely guarded craft, mastered by only a few founders over the centuries.

This presentation will explore more than ten centuries of gradual transformation and development of bell design and tuning through the lens of the exceptional example of the Utrecht Dom Tower, emphasizing how collaborative work between scientists and bellfounders shaped the art of bell making since its early mystical and secretive origins to the most recent scientific advances, where physical modelling, optimization techniques, psychoacoustics, and other state-of-the art engineering strategies play a central role.

Short Courses

Therapeutic Applications of Focused Ultrasound: From Biophysics to Clinical Application

Room: Solar

Monday | September 15, 2025 | 8:30 – 12:30

This short course gives an introduction to therapeutic use of ultrasound that is currently transitioning from research studies to clinical practice. The ultrasound induced bio-effects useful for therapy will be reviewed along with the generation of ultrasound. Mainly the absorption of ultrasound waves in soft biological tissues leading to heat creation will be described as well as the concept of the equivalent time at 43°C. The second half of the course will cover mechanical effects of ultrasound, and will discuss non-thermal therapy approaches, including lithotripsy, histotripsy, non-thermal ablation and targeted drug delivery. The potential of therapeutic methods using ultrasound currently in preclinical evaluation and clinical practice will be discussed together with the future directions and potential impact of therapeutic ultrasound. The course will emphasize technological issues and system architecture constraints, and will cover the current therapy ultrasound systems and their use in clinical practice. Examples of the results of the clinical studies will be reviewed.

David Melodelima
LabTAU

Maxime Lafond
LabTAU

Basics of RF Acoustic Resonators

Room: Neon

Monday | September 15, 2025 | 8:30 – 12:30

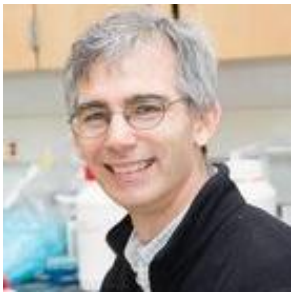
Owing to excellent performance, radio frequency (RF) surface and bulk acoustic wave (SAW/BAW) devices are widely used in the RF frontend of current smartphones. Nevertheless, SAW/BAW engineers are always requested to further improve the device performance. But how? [Read More]

Ken-ya Hashimoto
University of Electronic Science and Technology of China

Short Courses (cont.)

Ultrasound Imaging of Low Velocity Blood Flow
Room: Fluor
Monday | September 15, 2025 | 8:30 – 12:30

This short course will present an overview of the basic techniques of Doppler blood flow imaging used in industry, followed by the limitations of these conventional approaches to image lower velocity blood flow. The course will then cover how low velocity flow detection has vastly improved with the advent of recent microvascular Doppler flow imaging modes now present on many commercial imaging systems. The second part of the course covers how the introduction of microbubbles solves a key limitation of even these new microvascular Doppler modes to provide visualization of relative differences in microvascular flow. [Read More]



Matt Bruce
University of Washington

Quantitative Ultrasound in Soft Tissues
Room: Glow
Monday | September 15, 2025 | 8:30 – 12:30

This course will focus on the theoretical and experimental aspects of three families of quantitative ultrasound (QUS) methods: those based on the backscatter coefficient, envelope statistics, and ultrasound attenuation. QUS methods permit quantifying tissue microstructure in great details in a user- and system-independent fashion. Therefore, QUS methods can be used to diagnose diseases, monitor treatment, or for active surveillance. These methods have a long history of success in numerous organ systems. [Read More]

Aiguo Han
Virginia Tech

Ivan Rosado Mendez
University of Wisconsin-Madison

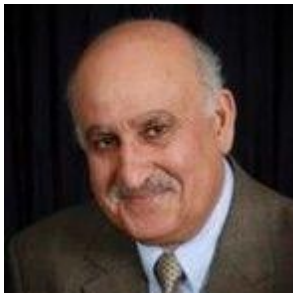
Cameron Hoerig
Weill Cornell Medicine

Jonathan Mamou
Weill Cornell Medicine

Short Courses (cont.)

Machine Learning and Signal Analysis Applications in Ultrasonic Non-Destructive Evaluation, Imaging, Data Compression, and Communications
Room: Beam
Monday | September 15, 2025 | 8:30 – 12:30

This concise course offers a comprehensive overview of machine learning and signal processing techniques tailored for ultrasonic imaging applications. We will present a range of case studies that address critical real-world challenges, including defect detection in essential components at nuclear facilities, pulse-echo chirplet estimation, and flaw identification in coarse-grained materials through advanced order statistics and deep learning networks. Additionally, the course delves into ultrasonic data compression via machine learning, the development of software-defined ultrasonic systems for communication across solid mediums, and the integration of hardware and software in system-on-chip designs specifically for ultrasonic signal processing tasks.



Jafar Saniie
Illinois Institute of Technology

Erdal Oruklu
Illinois Institute of Technology

Fundamentals of Physical Acoustics for the Analysis of Acoustic Wave Resonators
Room: Osram
Monday | September 15, 2025 | 8:30 – 12:30

With the rapid miniaturization of acoustic wave resonators for frequency control and sensor applications, the analysis and design of these devices are increasingly transitioning to computer-based digital processes. This shift necessitates a strong emphasis on formulation and modeling that takes into account material properties and dynamic characteristics. In light of the heavy reliance on design tools, it is essential to begin with the fundamental theories underlying acoustic wave devices to support numerical analyses. [Read More]

Ji Wang
Ningbo University, China

Short Courses (cont.)

Ultrasound System Design: Analog Front-End Circuits, In-Probe Electronics, and Imaging Systems
Room: Flash
Monday | September 15, 2025 | 8:30 – 12:30

This short course explores the interaction of Analog Front End (AFE) electronics with passive ultrasound transducers, advances to the integration of the AFE with in-probe electronics, and finally considers the implications on ultrasound system design. The course starts by considering the electronics within a typical AFE. A basic electronics primer is provided including Characteristic Impedance, Impedance Matching, Cable Selection then Analog and Switched Mode Transmit Circuits, Transmit/Receive Switches and Multiplexers, Receiver AFE, Amplification including Noise Factor and Noise Figure, Filtering and Analog to Digital Convertors (ADC). [Read More]

Michiel A. P. Pertijs
Delft University of Technology

David Cowell
University of Leeds

Enrico Boni
University of Florence

Super-Resolution Ultrasound Imaging
Room: Spark
Monday | September 15, 2025 | 14:00 – 18:00

Super-resolution ultrasound imaging has the capacity to distinguish and map structures that are smaller than the classical limit, typically a fraction of the wavelength. For ultrasound imaging, this means exploring features, such as blood vessels, in the micrometric range deep inside tissue. At the end of this course, students should be able to understand and reproduce super-resolution ultrasound imaging experiments, from data acquisition to image reconstruction, and apply such knowledge in their specific fields. [Read More]

Pengfei Song
Duke University

Jean Provost
Polytechnique Montréal

Short Courses (cont.)

Hydrophone Measurements for Biomedical Ultrasound Applications
Room: Flash
Monday | September 15, 2025 | 14:00 – 18:00

This short course is based on a recent review article (https://ieeexplore.ieee.org/abstract/document/9913943) and will present basic principles of hydrophone measurements, including mechanisms of action for various hydrophone designs, sensitivity and directivity calibration procedures, practical considerations for performing measurements, signal processing methods to correct for both frequency-dependent sensitivity and spatial averaging across the hydrophone sensitive element, uncertainty in hydrophone measurements, special considerations for high-intensity therapeutic ultrasound, and advice for choosing an appropriate hydrophone for a particular measurement task. Recommendations will be made for information to be included in hydrophone measurement reporting. The instructors are world-leading hydrophone experts who are active in the development of International Electrotechnical Commission standards on hydrophones and collectively have authored over 50 papers concerning hydrophone methodology in peer-reviewed journals. A live demonstration of hydrophone measurements will be presented.

Samuel Howard
Onda Corporation

Andrew Hurrell
Precision Acoustics Ltd.

Peter A. Lewin
Drexel University

Elly Martin
University College London

Srinath Rajagopal
National Physical Laboratory

Keith Wear

Volker Wilkens
Physikalisch-Technische Bundesanstalt (PTB)

Short Courses (cont.)

Biomolecular Ultrasound Imaging
Room: Beam
Monday | September 15, 2025 | 14:00 – 18:00

This short course will provide an overview of techniques that are being developed in the field of Biomolecular Ultrasound, which consists in visualizing molecular and cellular processes occurring deep within living organs.

While ultrasound is widely used to assess human anatomy and physiology, it plays a very minor role in the field of molecular imaging. Recent advances are beginning to address this limitation thanks to molecular tools that allow ultrasound waves to connect to specific cellular functions.

David Maresca
Delft University of Technology

Mikhail Shapiro
California Institute of Technology

Meta-transducers for Ultrasonic Guided Wave Inspections
Room: Solar
Monday | September 15, 2025 | 14:00 – 18:00

Conventional ultrasonic guided wave inspections typically rely on large phased-array systems, which are limited by bulky hardware, high power consumption, and complex data acquisition. Meta-transducers, on the other hand, integrate advanced functionalities such as beam steering or mode filtering directly into the transducer design. This “in-sensor” approach significantly reduces hardware requirements and simplifies signal processing, enabling in-situ, low-power, and real-time structural health monitoring. This course is divided into two parts. [Read More]

Luca De Marchi
University of Bologna

Masoud Mohammadgholiha
University of Bologna

Short Courses (cont.)

Acoustic Tweezers: From Basic Principles to its Biological Applications
Room: Neon
Monday | September 15, 2025 | 14:00 – 18:00

Acoustic tweezers, a cutting-edge technology at the intersection of acoustics, microfluidics, and biomedical engineering, have emerged as a powerful tool for the precise manipulation and sorting of microscale objects. This tutorial provides a comprehensive overview of the design, fabrication, and diverse applications of acoustic tweezers. The tutorial begins by introducing the fundamental principles of acoustic tweezers, highlighting the underlying physics of acoustic wave propagation and the generation of acoustic radiation forces. It explores various design strategies for creating acoustic tweezer devices, including transducer configurations, materials selection, and system designs. [Read More]


Jae Youn Hwang
DGIST


Hyung Ham Kim
POSTECH


Teng Ma
SIAT


Itziar Gonzalez
ITEFI

Bulk Acoustic Wave Design Fundamentals for Filter Applications
Room: Fluor
Monday | September 15, 2025 | 14:00 – 16:30

Piezoelectric MEMS based acoustic wave resonators have been the backbone for low loss, high-rejection and compact RF filters over the past 30 years. This course will provide an overview on basic principles of piezoelectric theory and acoustic wave propagation, material selection, underlying bulk acoustic wave resonator design, and measurement techniques for the design of RF bulk acoustic wave (BAW) filters. [Read More]


David A. Feld
Skyworks


Mihir S. Patel
OnScale Ltd

Short Courses (cont.)

Bridging Research and Industry in Ultrasound: Practical Insights for Emerging Innovators
Room: Glow
Monday | September 15, 2025 | 14:00 – 18:00

Successfully translating ultrasound innovations from research to industry requires a comprehensive understanding of product development, regulatory frameworks, intellectual property strategies, and commercialization pathways. This short course is designed to equip researchers, engineers, and entrepreneurs with the critical knowledge and practical skills necessary to navigate this complex landscape and drive innovation from concept to market. [Read More]


Jessica Liu Strohmann
Qualcomm


Charles D. Emery
Sciton, Inc.


David A. Horsley
Northeastern University


Chris Daft
River Sonic Solutions

Invited Speakers

Group 1

- Chih-Chung Huang, National Cheng Kung University
  "High-Frequency Ultrafast Ultrasound Imaging for High-Resolution Elastography and Blood Flow Mapping"
- David Maresca, Delft University of Technology
  "Nonlinear Sound-Sheet Microscopy"
- Jeffrey A. Ketterling, Weill Cornell Medicine
  "High-Speed Imaging of Intraventricular Flow Patterns for Murine Cardiovascular Studies"
- Jeremy Dahl, Stanford University
  "Distributed Aberration Correction in Pulse-Echo Ultrasound via Sound-Speed-Adapting Beamformers"
- Kibo Nam, Thomas Jefferson University
  "Contrast-Enhanced Ultrasound for Women's Health"
- *Caterina Gallippi, The University of North Carolina at Chapel Hill*
  "Double Vision: Advancing Quantitative On-Axis Modulus Estimation with DoPIo Ultrasound"
- *Emmanuel Vidal, PRAESENS, Belgium*
  "How Can AI-Driven Handheld Ultrasound Revolutionize Healthcare for Everyone"

Group 2

- Paul van Neer, TNO
  "New Ultrasound Transducer Concepts: Pushing the Boundaries in Sensitivity, Form Factor and Applications"
- Mauricio Pereira da Cunha, University of Maine, Dept. of Electrical and Computer Engineering and Frontier Institute for Research in Sensor Technology
  "Extreme-Environment Sensor Systems for Industrial Applications"
- Qian Cheng, Tongji University
  "Scanning X-acoustic Microscopy: Detection of Multi-Physical Properties at nm-µm"

Group 3

- Michael Baudoin, Université de Lille
  "IDTs-based active holograms: from selective 2D and 3D manipulation to complex pattern formation"

Group 4

- Tetsuya Kimura, Resonant Inc. A Murata Company
  "XBAR Filter Technologies for Wi-Fi Application"
- Henry Yue, TEL
  "Gas Cluster Beam: High-Precision Trimming for RF Filter Devices in High-Volume Manufacturing"
- Ausrine Bartasyte, Institute FEMTO-ST/C2N/IUF
  "Advances and Challenges in Growth of LiNbO3-LiTaO3 Thin Films for Acoustic Devices"

Group 5

- Zhen Xu, University of Michigan
  "Histotripsy Instrumentation for Non-invasive Cancer Treatment"
- Amir Rosenthal, Technion - Israel Institute of Technology
  "The Silicon-Photonics Acoustic Detector (SPADE): Advancing Wideband Ultrasound Technology"
- Weibao Qiu, Shenzhen Institutes of Advanced Technology (SIAT), Chinese Academy of Science
  "Novel High-frequency Transducer and System for High-resolution Ultrasound Imaging"

Invited Speakers (cont.)

Clinical

- Sadaf Soloukey, Erasmus MC Rotterdam
  "Ultrafast Ultrasound imaging of Brain Tumors: Clinical opportunities in- and outside of the neurosurgical operating room"
- Michel Reijnen, Department of Surgery, Rijnstate Arnhem and Multi-Modality Medical Imaging Group, University of Twente, Enschede, The Netherlands
  "Ultrasound Vascular Flow Imaging: Pushing Boundaries, Shaping the Future"
- Alan Fraser, University Hospital of Wales
  "What Has Driven Innovation in Cardiovascular Ultrasound – Inspiration, Serendipity, Collaboration, Technology, Commerce, or Clinical Need?"

PROGRAM AT A GLANCE

IEEE IUS 2025
International Ultrasonics Symposium
September 15 - 18, 2025 || Utrecht, Netherlands

MONDAY (SEPT 15)

8:30 - 10:30	Short Courses AM (Part 1)
10:30 - 11:00	Coffee Break
11:00 - 12:30	Short Courses AM (Part 2)
12:30 - 14:00	Lunch (on own)
14:00 - 16:00	Short Courses PM (Part 1)
16:00 - 16:30	Coffee Break
16:30 - 18:00	Short Courses PM (Part 2)

TUESDAY (SEPT 16)

8:00 - 9:45	Official Opening and Plenary Session
10:00 - 11:00	Posters, exhibitors, and coffee break
11:00 - 12:30	Lecture Sessions
12:30 - 14:00	Lunch (on own)
14:00 - 15:30	Lecture Sessions
15:30 - 16:30	Posters, exhibitors, and coffee break
16:30 - 18:00	Lecture Sessions
18:00 - 19:00	Ultrasonics Awards
19:15 - 21:00	Welcome Reception

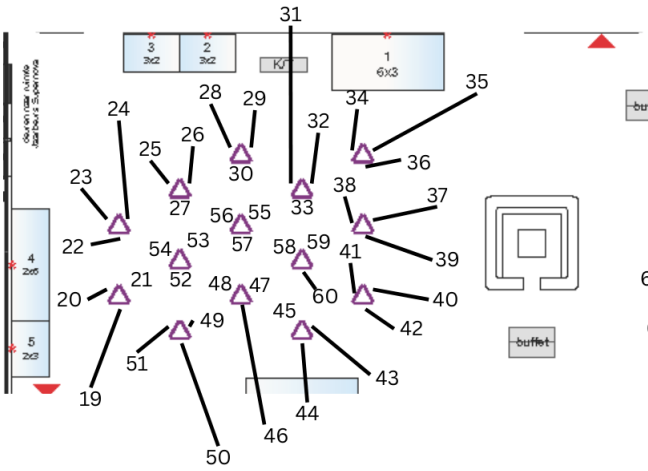
WEDNESDAY (SEPT 17)

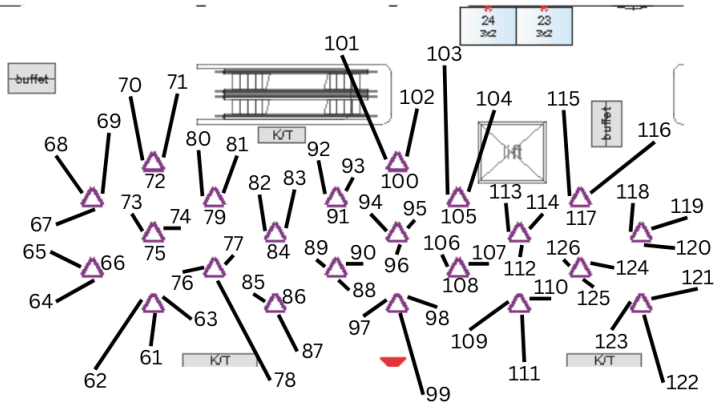
8:30 - 10:00	Lecture Sessions
10:00 - 11:00	Posters, exhibitors, and coffee break
11:00 - 12:30	Lecture Sessions
12:30 - 14:00	Lunch (on own)
14:00 - 15:30	Lecture Sessions
15:30 - 16:30	Posters, exhibitors, and coffee break
16:30 - 18:00	Lecture Sessions
18:00 - 18:30	Travel to Banquet Dinner
18:30 - 23:00	Banquet Dinner

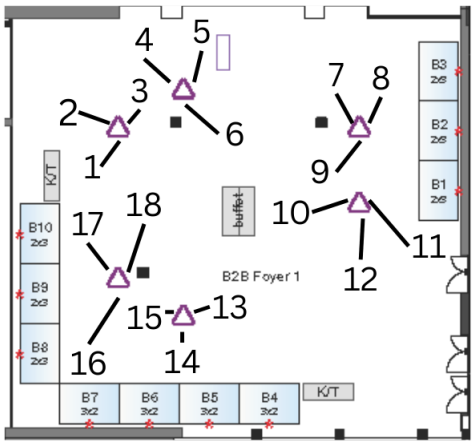
THURSDAY (SEPT 18)

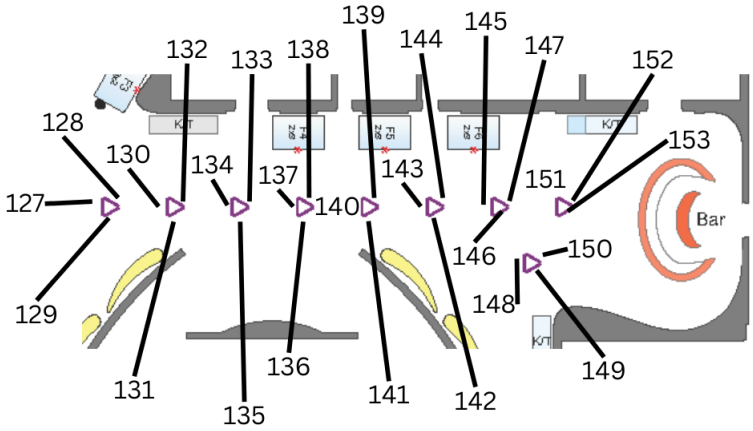
8:30 - 10:00	Lecture Sessions
10:00 - 11:00	Posters, exhibitors, and coffee break
11:00 - 12:30	Lecture Sessions
12:30 - 14:00	Lunch (on own)
14:00 - 15:30	Lecture Sessions
15:30 - 16:30	Posters, exhibitors, and coffee break
16:30 - 17:30	Lecture Sessions
17:45 - 19:00	Closing
18:00 - 19:30	Student Social

Poster Hall Layout









Poster Hall Layout (cont.)

	16-Sep		17-Sep		18-Sep	
Poster Spot	10:00	15:30	10:00	15:30	10:00	15:30
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2	2997	3324	2580	2375	2702	2242
3	3180	3374	2712	3458	3331	2468
4	3200	3566	3080	3644	3380	2517
5	3257	3616	3783	3782	3553	2794
6	3562	3622	2905	2789	2824	3373
7	3808	3747	3669	2413	2659	3444
8	2067	2836	3805	2726	3357	3704
9	2263	3079	2937	2731	2295	3284
10	2615	3503	3074	3118	2719	2011
11	2694	3712	3721	3709	2766	2647
12	2987	2643	2311	2181	2880	3286
13	3459	3724	3637	2805	3395	3323
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20	2435	2940	2196	2448	2929	2950
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23	3546	2452	2934	2529	2746	3832
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25	2101	2935	3653	2837	3137	2442
26	2210	3421	2088	3005	3154	2918
27	3313	3663	2505	3273	3176	3026
28	3793	3723	3196	3468	3241	3247
29	2293	2235	3367	3607	3308	3258
30	2742	2238	3484	3660	3640	3445
31	2749	2503	3526	2064	2203	3835
32	2772	2882	2029	2190	2219	2414
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34	3481	3081	2332	2562	2668	3376
35	2058	3225	2798	2803	2859	3586
36	2471	2100	2984	3096	2917	3638
37	2504	2176	3652	3245	2953	2522
38	2509	2472	3773	3294	3099	2549
39	2913	2799	3170	3302	3685	2645
40	3103	2870	3231	3450	2178	2857

Poster Hall Layout (cont.)

	16-Sep		17-Sep		18-Sep	
Poster Spot	**10:00**	**15:30**	**10:00**	**15:30**	**10:00**	**15:30**
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66	3492	3031	2592	3417	3501	3269
67	3601	3473	2782	3766	3568	3393
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69	2212	2232	3214	2751	2410	3517
70	2236	2327	3383	3122	2428	3656
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73	3813	3420	2381	2621	3230	2914
74	2209	3516	2706	2850	2043	2845
75	3158	3598	2738	2577	2390	2576
76	3838	3667	3322	2966	2628	2872
77	2094	2324	2487	3038	3025	2890
78	2321	2107	2610	2356	3132	2354
79	2383	2108	2104	2072	3256	2057
80	2774	2110	2193	2249	3425	2276

Poster Hall Layout (cont.)

	16-Sep		17-Sep		18-Sep	
Poster Spot	**10:00**	**15:30**	**10:00**	**15:30**	**10:00**	**15:30**
81	2784	3070	2613	2769	3760	2319
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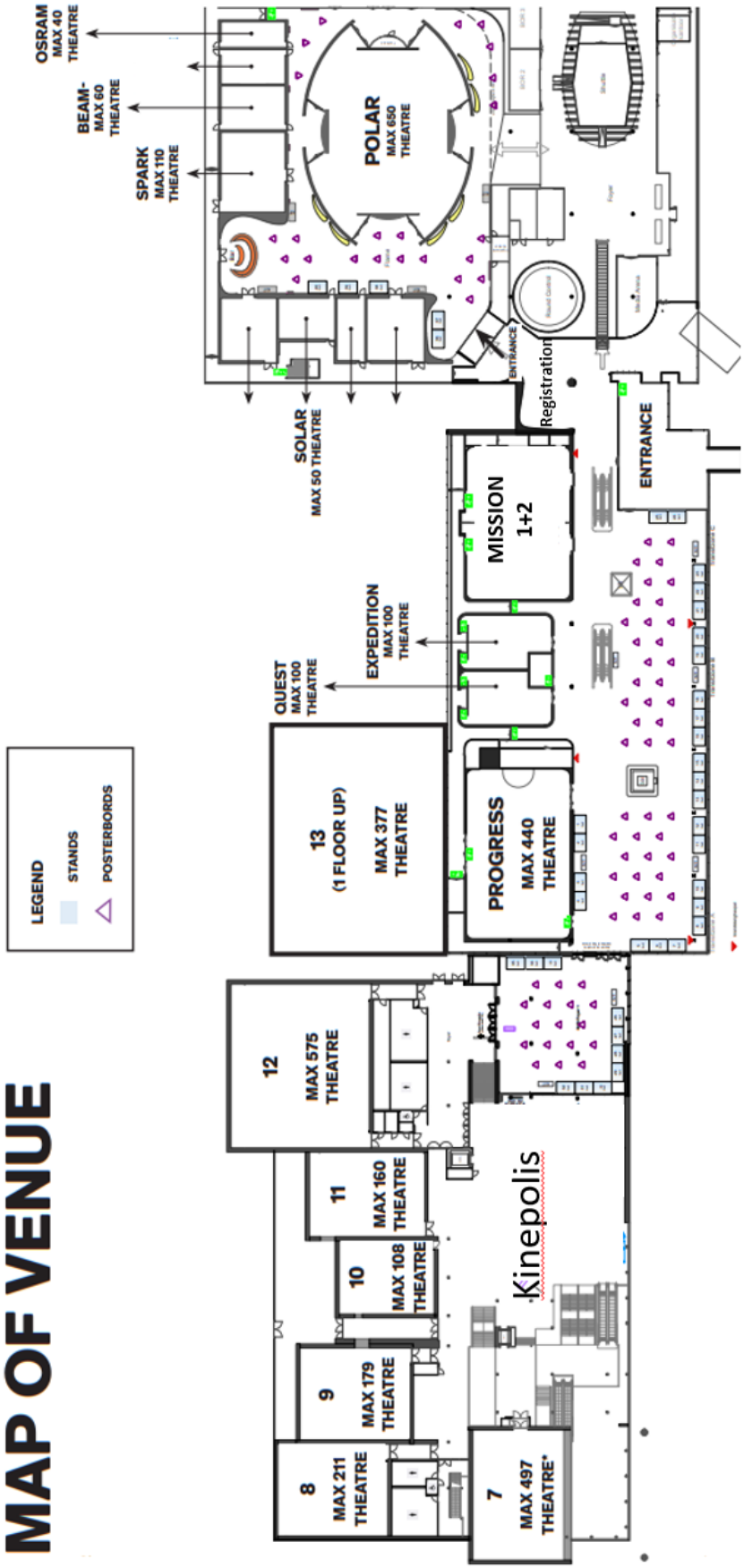
93	2146	3155	2607	3094	3693	-
94	2274	2721	2785	3377	3810	2273
95	2860	3312	3643	3382	2553	2473
96	3159	2308	2267	3597	2939	2497
97	3171	2389	3000	3044	3636	2964
98	2070	2876	3021	3059	2033	3240
99	2551	3569	3077	2083	2046	3559
100	2741	3580	3547	2160	2142	3682
101	2855	3809	3595	2167	2350	3462
102	2998	2244	3697	2259	2536	
103	3002	2246	3803	2262	3036	
104	3032	2366	2422	2358	2148	
105	3447	2397	3262	2260	2986	
106	3681	2400	3759	2120	2333	
107	3836	2431	3799	2701	2491	
108	2692	2601		3067	2817	
109	3363	3320		2111	3107	
110	3807	3364		3163	3290	
111		2126		2062	2056	
112		2602		2862	2182	
113		2901		2911	2969	
114		3536		3201	2996	
115		3548		2345	3113	
116		3626		2467	3347	
117				2604	3431	
118				3625	2972	

Lecture Hall Map



2124: Spatially Variant Point Spread Functions Deconvolution with Untrained Neural Network for Reflection Ultrasound Computed Tomography Imaging
Zaituo Li, Zhaohui Liu, Ming Yuchi, Wu Qiu
Huazhong University of Science and Technology, China

2141: Deep Learning-Guided Lung Ultrasound Image Enhancement
Wenyu Xing{2}, Yiwen Liu{1}, Dean Ta{2}
{1}Donghua University, China; {2}Fudan University, China

2200: Deep Learning for Point Cloud Segmentation in 3D Freehand Ultrasound Imaging
Zhaoyang Chen{1}, Sandra Marcadent{2}, Johann Hêches{3}, Laureline Moser{3}, Julien Favre{3}, David Desseauve{3}, Jean-Philippe Thiran{2}
{1}École Polytechnique, France; {2}École Polytechnique Fédérale de Lausanne, Switzerland; {3}Lausanne University Hospital, Switzerland

2224: LADA Net: A Linear Attention Domain Adaptation Network for Ultrasound Image Reconstruction from Single Plane Wave RF Data
Jiajin Li{1}, Wenwen Sun{1}, Jinhua Zhou{1}, Chaoxue Zhang{2}, Yadan Wang{1}
{1}Anhui Medical University, China; {1}Anhui Medical University, Cuba; {2}First Affiliated Hospital of Anhui Medical University, China

2307: Lightweight Deep Learning Model for Lung Ultrasound Image Scoring
Heliang Ye{3}, Na Deng{3}, Chao He{2}, Wenyu Xing{1}
{1}Fudan University, China; {2}Shanghai Changzheng Hospital, China; {3}Shanghai University of Engineering Science, China

2337: ResNeXt-Based U-Net for Segmenting Sonomammograms
Malitha Gunawardhana{2}, Norbert Żołek{1}
{1}Institute of Fundamental Technological Research, Polish Academy of Sciences, Poland; {2}University of Auckland, New Zealand

2346: Preliminary Study on Image Reconstruction Using Estimated Average Speed of Sound for Ultrasonic Flow Images in Phantom Measurement
Ryo Nagaoka{3}, Muhammad Shiddiq Sayyid Hashuro{1}, Kei Kaneko{2}, Riko Hasegawa{2}, Masaaki Omura{3}, Makoto Ohta{2}, Hideyuki Hasegawa{3}
{1}Bandung Institute of Technology, Indonesia; {2}Tohoku University, Japan; {3}University of Toyama, Japan

2447: Quantitative Ultrasound-Based Characterization of Ex Vivo Renal Cancer Subtypes Using a High Frequency Micro-Ultrasound Transducer
Alexander Gleed{2}, Laura Zuluaga{1}, Jewel Bamby{1}, Roshane Perera{1}, Kennedy Okhawere{1}, Josh Levieddin{1}, Cameron Hoerig{2}, Ketan Badani{1}, Jonathan Mamou{2}
{1}Mount Sinai, United States; {2}Weill Cornell Medicine / Cornell University, United States

Virtual Posters (cont.)

2453: A Transparent Acoustic Lens for Integrated Ultrasound-Optical Systems
Younghun Kim, Yichi Zhang, Kamyar Firouzi, Pierre Khuri-Yakub
Stanford University, United States

2523: Resolution Enhancement in Ultrasound Localization Microscopy Using a Super-Resolution Generative Adversarial Network
Yujiao Xie{1}, Jiajin Li{1}, Yuanguo Wang{3}, Chaoxue Zhang{2}, Yadan Wang{1}
{1}Anhui Medical University, China; {2}First Affiliated Hospital of Anhui Medical University, China; {3}Hefei University of Technology, China

2531: LIFU Accelerates CSF Circulation and Alleviates Motor-Cognitive Dysfunction in Rat with Hydrocephalus
Kuo Zhang{2}, Jingwen Zhou{2}, Yanqiu Zhang{1}, Jiahe Liu{1}, Wanqi Zhou{2}, Tianya Xu{1}, Faheem Anwar{2}, Meijun Pang{2}, Dong Ming{2}, Xiuyun Liu{2}, Xiqi Jian{1}
{1}Tianjin Medical University, China; {2}Tianjin University, China

2548: Spearman's Rank Correlation Improved Adaptive Beamformer for Ultrafast Power Doppler Imaging
Hengrong Lan{2}, Yinglin Xiao{1}, Jianwen Luo{1}, Fei Gao{2}
{1}Tsinghua University, China; {2}University of Science and Technology of China, China

2557: Improving Resolution and Contrast of Multi-Covariate Imaging of Sub-Resolution Targets Using Adaptive Weighting for Medical Ultrasound Imaging
Yuanguo Wang{2}, Pei Tang{2}, Yan Fan{2}, Yadan Wang{1}, Zhihui Han{2}, Chichao Zheng{2}, Hu Peng{2}
{1}Anhui Medical University, China; {2}Hefei University of Technology, China

2563: Repeatability of Arterial Wave Velocities Measured by Arterial Dispersion Ultrasound Vibrometry (ADUV)
Md Aktharuzzaman{1}, Fang-Shu Ou{1}, Shaylene McCue{1}, Yuqi Wang{1}, Charles Capron{1}, Murthy Guddati{2}, Matthew W. Urban{1}
{1}Mayo Clinic, United States; {2}North Carolina State University, United States

2606: Liberate Radiologists from Tedious Work: Large Language Model Enhanced Contrastive Learning for Ultrasound Report Generation
Xinyao Liu{2}, Junchang Xin{2}, Hao Zhang{1}, Qi Shen{2}, Shudi Zhang{2}, Zhihong Huang{3}, Zhiqiong Wang{2}
{1}Cancer Hospital of China Medical University, Liaoning Cancer Hospital and Institute, China; {2}Northeastern University, China; {3}University of York, United Kingdom

2691: Multi-Scale Hybrid CNN-GNN Network with Attention-Guided Fusion for Echocardiography Segmentation
Xiaodi Li, Hongxu Li, Yue Hu
Harbin Institute of Technology, China

Virtual Posters (cont.)

2695: Low-Rank Tensor Regularized Network for Accurate Cardiac Motion Estimation in Echocardiography Videos
Xiaodi Li, Yingjiao Hu, Hongxu Li, Yue Hu
Harbin Institute of Technology, China

2732: LUS-BP: A Simple and Effective Brightness Profile Based Representation of LUS Data and its Classification for Pediatric Pulmonary Consolidations
Srishti Jain{3}, Umair Khan{3}, Russell Thompson{5}, Lauren Etter{6}, Saunak Bhattacharjee{3}, Rachel C. Pieciak{3}, Ingrid Camelo{1}, Ilse Castro-Aragon{2}, Bindu Setty{2}, Christopher C. Gill{4}, Margrit Betke{3}
{1}Augusta University, United States; {2}Boston Medical Center, United States; {3}Boston University, United States; {4}Gates Foundation, United States; {5}University of Massachusetts Dartmouth, United States; {6}University of Wisconsin–Madison, United States

2763: A Machine Learning Framework for Tissue Anisotropy Mapping Using ARFI Imaging
Md Walid Hassan, Md Ashiqur Rahman, Md Murad Hossain
University of Hawaii at Manoa, United States

2765: Deep Learning for Breast Mass Discrimination Using Multi-Modal Ultrasound Imaging with Automatic Lesion Segmentation
Md Walid Hassan, Md Murad Hossain
University of Hawaii at Manoa, United States

2770: CLARUS: Contrastive Learning and Anomaly Detection for Respiratory Ultrasound Screening
Saunak Bhattacharjee{3}, Umair Khan{3}, Russell Thompson{4}, Lauren Etter{5}, Srishti Jain{3}, Ingrid Camelo{1}, Rachel C. Pieciak{3}, Ilse Castro-Aragon{2}, Bindu Setty{2}, Christopher Gill{3}, Margrit Betke{3}
{1}Augusta University, United States; {2}Boston Medical Center, United States; {3}Boston University, United States; {4}University of Massachusetts Dartmouth, United States; {5}University of Wisconsin–Madison, United States

2801: Dual Attention Network and Automated Elastography for TRUS Prostate Cancer Analysis
Xiaohang Xu{2}, Jianjun Yu{2}, Dan Ran{2}, Zhiqian Wang{1}, Lei Li{2}, Muqing Lin{2}
{1}Ruijin Hospital, Shanghai Jiao Tong University School of Medicine, China; {2}Shenzhen Mindray Bio-Medical Electronics Co., Ltd., China

2828: Measurement of Instantaneous Velocity Vectors Using Dual Chirp Plane Wave and Steered Beamforming
Satoshi Nakayama, Wenlan Dong, Norio Tagawa
Tokyo Metropolitan University, Japan

2834: Towards Accurate Myocardial Motion Estimation in Echocardiography Video with Temporal Attention Aggregation
Xiaodi Li, Hongxu Li, Yue Hu
Harbin Institute of Technology, China

Virtual Posters (cont.)

2854: Cellular Density Estimation of 3D Cultured Cancer Spheroids with 80-MHz High Frequency Quantitative Ultrasound
Kazuyo Ito{2}, Kazuki Tamura{1}, Yuta Iijima{2}, Daisuke Yoshino{2}
{1}Hamamatsu University School of Medicine, Japan; {2}Tokyo University of Agriculture and Technology, Japan

2892: Virtualizing the Receive Aperture: ViRC for Enhanced Single-Shot Ultrasound Imaging
Qijun Hu{1}, Mengxuan Wang{2}, Zhifei Dai{2}, Miaomiao Zhang{1}
{1}Capital Normal University, China; {2}Peking University, China

3010: Nakagami Image-Based Initialization for Atherosclerosis Plaque Segmentation in Ultrasound Images
Meng Han{2}, Siqi Chen{2}, Dui Qin{1}
{1}Chongqing University of Posts and Telecommunications, China; {2}Henan University of Science and Technology, China

3019: Design and Implementation of Large-Scale Dual Transmit/Receive Function Airborne Ultrasound Array
Hsin-Jou Huang, Hao-Li Liu
National Taiwan University, Taiwan

3089: DeEV: Denoising Echocardiography Videos for Better Cardiac Structure Reconstruction
Xue Gao, Peng Huang, Yuanyuan Wang, Yi Guo
Fudan University, China

3197: In Vivo 3D Super Resolution Ultrasound Imaging of Pig Kidney Using a Row-Column Array
Jingke Zhang{2}, U-Wai Lok{2}, Ryan Deruiter{2}, Jingyi Yin{2}, Lijie Huang{2}, Jieyang Jin{2}, Xiangyang Zhu{2}, James Krier{2}, Lilach Lerman{2}, Pengfei Song{1}, Chengwu Huang{2}, Shigao Chen{2}
{1}Duke University, United States; {2}Mayo Clinic, United States

3271: Enhanced Contrast-Free In Vivo 3D Ultrasound Microvessel Imaging Using Hadamard Multipulse Diverging Wave Transmission and Denoising with a 32×32 Matrix Array
U-Wai Lok, Chengwu Huang, Jingke Zhang, Ryan Deruiter, Lijie Huang, Jingyi Yin, Shigao Chen
Mayo Clinic, United States

3301: Radiofrequency and IQ Signal Analysis of Pressure-Dependent Twinkling Artifacts in PMMA Breast Biopsy Markers
Abdullah Al Masud, Benjamin G. Wood, Christine U. Lee, Matthew W. Urban
Mayo Clinic, United States

3325: Propose of an Ultrasonic Assisted Electromagnetic Ballistic Lithotripter Based on Langevin Ultrasonic Transducer
Yanan Zhu, Zhicheng Liao, Shibo Zhang, Yongbo Wu
Southern University of Science and Technology, China

Virtual Posters (cont.)

3403: DOPCon: A Double-Pass Convolution Beamformer for High-Resolution Imaging in Handheld Ultrasound Systems
Banhimitra Kundu, Chandra Sekhar Seelamantula, Chetan Singh Thakur
Indian Institute of Science, India

3430: Expanded 3D Digital Phantom Dataset of the Male Pelvis for Ultrasound and Photoacoustic Imaging
Yixuan Wu{1}, Toshini Rajesh{1}, Laetitia Saccenti{4}, Mahban Gholijafari{1}, Jeeun Kang{2}, Jacob Enders{4}, James Wiskin{5}, Ayele Negussie{3}, Lindsey Hazen{3}, Sheng Xu{3}, Baris Turkbey{4}, Peter Pinto{4}, Bradford Wood{3}, Emad Boctor{1}
{1}Johns Hopkins University, United States; {2}Johns Hopkins University / SOM Ane Cardiac Anesthesiology, United States; {3}National Institutes of Health, United States; {4}National Institutes of Health, Clinical Center, United States; {5}QT Imaging Holdings Inc., United States

3457: High-Efficiency Dual High-Voltage Converter for Handheld Ultrasound Systems
Franco Bozzetto, Carlos Julián Martín Arguedas
University of Alcalá, Spain

3466: Frequency-Dependent F-Numbers Suppress Grating Lobes and Improve Both the Signal-to-Noise Ratio and the Lateral Resolution in Synthetic Aperture Imaging
Martin Schiffner
Ruhr University Bochum, Germany

3512: Boost Calibration for Dual-Arm Co-Robotic Ultrasound System
Shengtai Yao, Yixuan Wu, Russell Taylor, Emad Boctor
Johns Hopkins University, United States

3513: Numerical Analysis of Transcranial Phase Aberration Correction Techniques
Zixuan Tian{2}, Yun Jing{1}, Aiguo Han{3}
{1}Pennsylvania State University, United States; {2}University of Illinois Urbana-Champaign, United States; {3}Virginia Polytechnic Institute and State University, United States

3534: Fast and Resource-Efficient Ultrasound Segmentation Using FPGAs
Joseph Kang, Ahmed Al-Qurri, Mohamed Almekkawy
Pennsylvania State University, United States

3544: Ultrasound-Induced Adiponectin Release in Subcutaneous Adipose Tissue: Implications for Obesity Treatment
Tiba Alshammari{1}, Omar Al-Dulaimi{2}, Vesna Zderic{1}, Aleksander Jeremic{1}
{1}George Washington University, United States; {2}Virginia Commonwealth University, United States

Virtual Posters (cont.)

3608: Fasciculation Detection in Ultrasound Images for ALS Diagnosis Based on Black Box Variational Inference
Turrnum Shahzadi{3}, Norio Tagawa{3}, Shuhei Tarashima{1}, Kota Bokuda{2}
{1}NTT Communications Corporation, Japan; {2}Tokyo Metropolitan Neurological Hospital, Japan; {3}Tokyo Metropolitan University, Japan

3620: NoGL-Net: A Deep Learning Approach to Grating Lobe Rejection Using Sparse RF Channel Interpolation in Synthetic Radial Aperture Focusing
Yiyang You{1}, Ananya Tandri{1}, Emad Boctor{1}, Youzuo Lin{3}, Jeeun Kang{2}
{1}Johns Hopkins University, United States; {2}Johns Hopkins University / SOM Ane Cardiac Anesthesiology, United States; {3}University of North Carolina at Chapel Hill, United States

3654: Adaptive Blind Source Separation Filtering for Improving Image Quality of Multifrequency Acoustic Radiation Force-Induced Displacement Imaging (MARDI)
Junheng Chen, Md Murad Hossain
University of Hawaii at Manoa, United States

3661: Investigation of Skull Bone Speed of Sound Using Computed Tomography and Ultrasound Imaging
Md Rizwanul Kabir{2}, Preeya Achari{2}, Yun Jing{1}, Caitlyn Collins{2}, Aiguo Han{2}
{1}Pennsylvania State University, United States; {2}Virginia Polytechnic Institute and State University, United States

3781: A Machine Learning Framework to Overcome Displacement Underestimation in Acoustic Radiation Force Impulse (ARFI) Imaging
Junheng Chen, Md Ashiqur Rahman, Md Murad Hossain
University of Hawaii at Manoa, United States

2648: Effect of Solution Ion Concentration on Ultrasonic Vibration Potentials
Tianyu Li, Ran Jia, Gangnan Han, Xizi Song
Tianjin University, China

3715: Sound Speed and Probe Misalignment Estimation for Diverging-Wave Imaging of Pipes
Haoyun Chen{2}, Daler Rakhmatov{2}, Carlos Da Costa Filho{1}, Derrell D'Souza{1}, Reza Zahiri{1}
{1}DarkVision Technologies, Canada; {2}University of Victoria, Canada

Virtual Posters (cont.)

3811: A Fundamental Study on Regularization with Intensively Higher-Order Differential Operator in Vectoral Doppler Measurement
Chikayoshi Sumi
Sophia University, Japan

3542: Numerical and Experimental Assessment of a Frequency Steerable Electromagnetic Acoustic Transducer for Lamb Wave Generation
Lucas Martinho{2}, Masoud Mohammadgholiha{3}, João Pedro Andrade{2}, Luca De Marchi{1}, Alan Kubrusly{2}
{1}ARCES - University of Bologna, Italy; {2}Pontifical Catholic University of Rio de Janeiro, Brazil; {3}University of Bologna, Italy

3519: Underwater Imaging with an Air-Coupled Piezoelectric Micromachined Ultrasonic Transducer Phased Array
Megan Zeng, William Meng, Aidan Fitzpatrick, Ajay Singhvi, Felipe Monteiro, Max Yates, Alexander Suen, Amin Arbabian
Stanford University, United States

2231: 3D Airborne Ultrasound Wave Prediction and Digital Twin Construction via Physics-Informed Neural Operators (PINO)
Guo-Wei Hong, Hao-Li Liu
National Taiwan University, Taiwan

3232: Stress-Amplified Piezoelectric MEMS Microphone with Concave-Convex Rings
Liangyu Lu{2}, Wenjuan Liu{2}, Chaoxiang Yang{2}, Yao Cai{2}, Yan Liu{3}, Chengliang Sun{1}
{1}Institute of Technological Sciences, Wuhan University, China; {2}Wuhan University, China; {3}Wuhan University / Wuhan Textile University, China

2634: Deep Learning-Enhanced Total Focusing Method for Guided Wave Damage Detection
Zhaohui Han, Jin Li, Yang Liu, Xiao Ying, Zhoumo Zeng, Jian Li
State Key Laboratory of Precision Measuring Technology and Instruments, Tianjin University, China

2685: A Self-Powered Synchronous Electric Charge Complete Extraction Interface Circuit with Superior Load-Independency for Piezoelectric Energy Harvesting
Hongcheng Qiu, Zhaoliang Peng, Xingyu Wei, Lei Shao
Shanghai Jiao Tong University, China

3727: Localization and Sizing of Cracks in Pipe Walls Using Multimode Ultrasound Images
Vladislav Govor{2}, Daler Rakhmatov{2}, Carlos Da Costa Filho{1}, Derrell D'Souza{1}, Reza Zahiri{1}
{1}DarkVision Technologies, Canada; {2}University of Victoria, Canada

Virtual Posters (cont.)

2676: Real-Time Adaptive Gain Adjustment for High-Contrast Photoacoustic Microscopy of Heterogeneous Biological Tissues
Huijian Zhang{1}, Xuanxuan Ye{1}, Hengrong Lan{2}, Fei Gao{2}, Xianzeng Zhang{1}, Daohuai Jiang{1}
{1}Fujian Normal University, China; {2}University of Science and Technology of China, China

2322: Dynamic and Multifunctional Manipulation of Cells in a Multi-Well Plate Using Acoustic Vortex Tweezer
Shifang Guo, Xinru Hu, Wanlin Jia, Yan Li, Zhen Ya, Hongmei Zhang, Mingxi Wan
Xi'an Jiaotong University, China

2533: Acoustic Annular Slotted Resonators for Trapping and Sensing Sub-Wavelength Particles
Qin Lin{1}, Feiyan Cai{2}, Shiyao Chen{1}, Rujun Zhang{2}, Hairong Zheng{2}, Huailing Zhang{1}
{1}Guangdong Medical University, China; {2}Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

2928: MEMS Amplitude-Gradient Acoustic Transducer (AGAT) for Controllable Particle Transportation
Jiaqi Li, Zhenhuan Sun, Song Liu
ShanghaiTech University, China

2521: Modeling of Acoustic Fields and Experimental Validation of Flexural Guided Wave Modes in Fluid-Constrained Dual-String Pipe Systems
Yulei Ji, Yiwei Liu, Shili Chen, Jian Li, Zhoumo Zeng, Yang Liu
State Key Laboratory of Precision Measuring Technology and Instruments, Tianjin University, China

2777: A Hybrid PSM-CNN-LSTM Network for Scattered Acoustic Field Prediction
Yansong Liang{2}, He Sun{1}, Linfeng Wang{1}, Jian Li{1}, Zhoumo Zeng{1}, Yang Liu{1}
{1}State Key Laboratory of Precision Measuring Technology and Instruments, Tianjin University, China; {2}Tianjin University, China

3541: Effect of Boundary Parameters and Geometry in Direct Sound 3D Printing
Iris Handa, Shervin Foroughi, Muthukumaran Packirisamy
Concordia University, Canada

2679: Refractive Index Change Under High-Frequency, High-Intensity Ultrasonic Irradiation and its Relation to Nanobubble Density Distribution
Yuki Harada{3}, Ryoya Mizuno{1}, Mutsuo Ishikawa{2}, Mami Matsukawa{1}, Daisuke Koyama{1}
{1}Doshisha University, Japan; {2}Toin University of Yokohama, Japan; {3}University of Yamanashi, Japan

2501: Spurious Mode Response Level: Analysis and Application in Piezoelectric Resonators
Zihao Xie{2}, Feng Gao{3}, Xianhao Le{1}, Jin Xie{2}
{1}Functional Materials and Device Heterogeneous Integration Research Center Yongjiang Laboratory, China; {2}State Key Laboratory of Fluid Power and Mechatronic Systems, Zhejiang University, China; {3}Zhejiang University, China

Virtual Posters (cont.)

2866: Laterally-Excited Bulk Acoustic Resonators (XBAR) with a Suspended Electrode
Qianxi Lu{2}, Hongli Wang{1}, Xinguo Ma{2}
{1}Hubei Jiufengshan Laboratory, China; {2}Hubei University of Technology, China

3216: AlN Film Bulk Acoustic Resonators with Lithographically Tunable Resonant Frequency
Chen Ma{2}, Xudong Xu{2}, Xi He{2}, Feixuan Huang{2}, Xing Haw Marvin Tan{1}, Nan Wang{2}
{1}Agency for Science, Technology and Research, Singapore; {2}Shanghai University, China

3054: Thermal Optimization of High-Power-Handling Bulk Acoustic Wave Filters via Acoustic-Electromagnetic-Thermal Multi-Physics Coupling Model
Tao Zhou{1}, Yang Gao{1}, Zhiguo Lai{2}, Wanchun Ren{1}
{1}Southwest University of Science and Technology, China; {2}Suzhou HunterSun Electronics Co, China

2476: Predicting Dispersion Velocity for Matrix Transducer Modeling
Xuan-Ming Lu{1}, SeungHee Lee{2}
{1}Siemens Healthineers, United States; {2}Siemens HealthineersSiemens Healthineers Ltd, Korea

3508: Accurate and Efficient Modeling of Acoustic and Elastic Absorption in Medical Ultrasound Simulations
Zixuan Tian{2}, Yun Jing{1}, Aiguo Han{3}
{1}Pennsylvania State University, United States; {2}University of Illinois Urbana-Champaign, United States; {3}Virginia Polytechnic Institute and State University, United States

3791: A Large Bandwidth Scandium Aluminum Nitride Piezoelectric Micromachined Ultrasonic Transducer Based on Sacrificial Layer Technology
Yunhao Wang{1}, Yue He{1}, Hao Yu{1}, Junxiang Cai{2}, Yi Sun{1}, Tao Wu{2}, Xinxin Li{1}
{1}Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China; {2}ShanghaiTech University, China

2369: A Flexible Ultrasound Transducer Array for Deep Vein Thrombosis Monitoring
Pengda Lu, Yuanlong Li, Chang Peng
ShanghaiTech University, China

2377: Design of a Flexible Two-Dimensional Array Structure Based on Laser Dislocation Stacking Technology
Yirui Li, Xinyi Li, Zhe Zhang, Yaoyang Zhang, Jia Cao, Dawei Wu
Nanjing University of Aeronautics and Astronautics, China

2508: Flexible Lead-Free Piezoelectric Microcone Array for Direct Assessment of Vascular Stiffness
Yankun Li, Xiao Wei, Jianzhong Chen, Yirui Li, Dawei Yiran Wu, Jianbin Zhou, Yaoyang Zhang, Jing Wang, Dawei Wu
Nanjing University of Aeronautics and Astronautics, China

3428: Design and Fabrication of Wearable Ultrasound 2D Array for Imaging Applications
Yushun Zeng, Junhang Zhang, Baoqiang Liu, Robert Wodnicki, Xin Sun, Matthew Ren, Chifeng Chang, Qifa Zhou
University of Southern California, United States

Virtual Posters (cont.)

3736: Photoacoustic Imaging with a Compact 50 MHz Linear Array
Felipe Roa{2}, Nidhi Singh{2}, Emmanuel Chérin{1}, Stuart Foster{2}, Christine E.M. Demore{2}
{1}Sunnybrook Research Institute, Canada; {2}Sunnybrook Research Institute, University of Toronto, Canada

2792: Multi-State Switching of the Ferroelectric AlScN FBAR via Dynamic Waveform Modulation
Bozuo Jing, Zhiqiang Mu, Xuanqi Huang
Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China

2399: Dual-Frequency Stretchable Ultrasound Transducer Using Inversion Layer Technique
Yaoyang Zhang, Xinyi Li, Zhe Zhang, Yirui Li, Jia Cao, Dawei Wu
Nanjing University of Aeronautics and Astronautics, China

2527: Miniaturized Focused Ultrasound Transducer Based on a 3D-Printed Phase-Reversal Fresnel Acoustic Lens
Dawei Yiran Wu, Xinyi Li, Jianzhong Chen, Yirui Li, Zhe Zhang, Yankun Li, Yaoyang Zhang, Jianbin Zhou, Kang Yan, Dawei Wu
Nanjing University of Aeronautics and Astronautics, China

2583: Machine Learning-Guided Design of t-FUS Transducers for Deep Brain Neuromodulation in Obesity Treatment in a Mouse Model
Sadman Labib, Jingfei Liu
Texas Tech University, United States

Technical Program: 15 September

7:30 - 8:30
Registration
Room: Polar Voorhall

8:30 - 12:30
Short Course: Ultrasound Imaging of Low Velocity Blood Flow
Room: Fluor

8:30 - 12:30
Short Course: Ultrasound System Design: Analog Front-End Circuits, In-Probe Electronics, and Imaging
Room: Flash

8:30 - 12:30
Short Course: Machine Learning and Signal Analysis Applications in Ultrasonic Non-Destructive Evalua
Room: Beam

8:30 - 12:30
Short Course: Basics of RF Acoustic Resonators
Room: Neon

8:30 - 12:30
Short Course: Therapeutic Applications of Focused Ultrasound: From Biophysics to Clinical Application
Room: Solar

8:30 - 12:30
Short Course: Quantitative Ultrasound in Soft Tissues
Room: Glow

8:30 - 12:30
Short Course: Fundamentals of Physical Acoustics for the Analysis of Acoustic Wave Resonators
Room: Osram

10:30 - 11:00
Coffee Break
Room: Flame Foyer

12:30 - 14:00
Lunch - *On Own*

14:00 - 18:00
Short Course: Bulk Acoustic Wave Design Fundamentals for Filter Applications
Room: Fluor

Technical Program: 15 September

14:00 - 18:00
Short Course: Hydrophone Measurements for Biomedical Ultrasound Applications
Room: Flash

14:00 - 18:00
Short Course: Biomolecular Ultrasound Imaging
Room: Beam

14:00 - 18:00
Short Course: Acoustic Tweezers: From Basic Principles to Its Biological Applications
Room: Neon

14:00 - 18:00
Short Course: Meta-Transducers for Ultrasonic Guided Wave Inspections
Room: Solar

14:00 - 18:00
Short Course: Bridging Research and Industry in Ultrasound: Practical Insights for Emerging Innovators
Room: Glow

14:00 - 18:00
Short Course: Super Resolution Ultrasound Imaging
Room: Spark

16:00 - 16:30
Coffee Break
Room: Flame Foyer

7:30 - 8:00
Registration
Room: Polar Voorhall

8:15 - 9:30
Opening Ceremony
Room: Beatrix Theater

8:15 - 9:30
Plenary Speaker
From Magic to Science: The Evolution of Bell Design and Tuning through the iconic example of the Utrecht Dom Tower
Miguel Carvalho, Royal Eijsbouts
Room: Beatrix Theater
Session Chair(s): Ton van der Steen, Erasmus MC Rotterdam

10:00 - 11:00
Coffee Break
Room: Transit Zone

10:00 - 11:00
A1P-11: MIM: Tissue Characterization & Quantitative Ultrasound
Room: Transit Zone
Session Chair(s): Magnus Cinthio, Lund University

2342: Video-Level Hierarchical Binary Classification of Lung Ultrasound Clinical Data
Xi Han{3}, Emanuela Zannin{1}, Camilla Rigotti{1}, Federico Cattaneo{1}, Giulia Dognini{1}, Maria Luisa Ventura{1}, Tiziano Perrone{2}, Andrea Smargiassi{4}, Riccardo Inchingolo{4}, Libertario Demi{3}
{1}Fondazione IRCCS San Gerardo Dei Tintori Monza, Italy; {2}Medicina Interna e Medicina d'Urgenza, Humanitas Gavazzeni, Italy; {3}University of Trento, Italy; {4}UOC Pneumologia, Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Italy

2997: On-Device Attention Network with Multiple Receptive Fields for Real-Time Ultrasound Diagnosis of Incomplete Kawasaki Disease
Dohyeon Kim{1}, Haeyun Lee{2}, Lucy Youngmin Eun{3}, Gain Kim{1}, Jae Youn Hwang{1}
{1}Daegu Gyeongbuk Institute of Science and Technology, Korea; {2}Korea University of Technology and Education, Korea; {3}Yonsei University College of Medicine, Korea

3180: Quantitative Ultrasound Measurement of the Scattering Mean Free Path in Liver
Emma Brenner{3}, Naiara Korta{1}, William Lambert{5}, Nicolas Etaix{4}, Mathias Fink{2}, Alexandre Aubry{2}
{1}ESPCI Paris, France; {2}ESPCI Paris / Institut Langevin, France; {3}ESPCI Paris, SuperSonic Imagine, CNRS, PSL, France; {4}SuperSonic Imagine, France; {5}Supersonic Imagine / BIOMAPS, France

3200: A Multi-Task Intelligent Grading System for Thyroid Ultrasound Images
Xu Fang, Yue Zhao, Dandan Li
Harbin Institute of Technology, China

3257: Spatial Heterogeneity Mapping of Chorion Structures via Habitat Imaging and Deep Learning Predicts Early Pregnancy Loss
Ailin Cui
Zhejiang Provincial People's Hospital, China

3562: Hydro-Locked Hydrogel-Based Retinal Phantom Development for Ultrasound Imaging Applications
Dorottya Palkovits{2}, Roger Domingo-Roca{2}, Kwok-Ho Lam{1}, James Windmill{2}
{1}University of Glasgow, United Kingdom; {2}University of Strathclyde, United Kingdom

3808: Impact of Calibration Depth Offset on Quantitative Ultrasound Parameter Accuracy in Phantom and Human Placenta
Hamid Moradi{1}, Billy Hempstead{2}, Farah Deeba{2}, Robert Rohling{1}
{1}University of British Columbia, Canada; {2}University of North Carolina at Charlotte, United States

10:00 - 11:00
A1P-12: MBE: Brain & Neurological II
Room: Transit Zone
Session Chair(s): Chih-Kuang Yeh, National Tsing Hua University

2067: Skull and Brain Response Based on Different Action Potential Threshold Intensities
Saeed Charbenny, Zhihong Huang
University of York, United Kingdom

2263: Influence of Interval Between Acoustic Pulses on Repetitively Activated Cells
Yuhang Ma, Ruchuan Shi, Peng Qin
Shanghai Jiao Tong University, China

2615: Enhancing Blood-Brain Barrier Permeability in Mice via Vortex-Focused Ultrasound
Chih-Hsien Li, Ching-Hsiang Fan
National Cheng Kung University, Taiwan

2694: Modulation of Cilia Motility by Vortex Ultrasound-Induced Shear Stress
Thi-Nhan Phan, Hsien-Chu Wang, Yu-Chun Lin, Chih-Kuang Yeh
National Tsing Hua University, Taiwan

2987: Involvement of Actin Cytoskeletal Structure in TRPA1 Ultrasound Responsiveness
Lisa Mitsuda{2}, Shun Koda{2}, Shigenori Miura{1}, Yuta Kurashina{2}
{1}Hiroshima University, Japan; {2}Tokyo University of Agriculture and Technology, Japan

3459: The In Vivo Effect of Focused Ultrasound on Astrocytes
Manaal Shah, Hillarey Tsui, Varshini Packiyathasan, Andriy Kozlov, Sophie Morse
Imperial College London, United Kingdom

10:00 - 11:00
A1P-13: MBE: Mechanisms
Room: Transit Zone
Session Chair(s): Yujin Zong, Xi'an Jiaotong University

2538: Acoustic Enrichment of Sperm for Fertilization In Vitro
Chunqiu Zhang, Pengqi Li, Long Meng
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

2617: Remote Biofilm Dislodgment Using Focused Acoustic Vortex
Chih-Hsien Li, Ching-Hsiang Fan
National Cheng Kung University, Taiwan

2912: Impacts of Ultrasound Waves on the Lipid Order of the Cell Membrane
Noboru Sasaki, Nobuki Kudo, Mitsuyoshi Takiguchi
Hokkaido University, Japan

2985: Effect of High-Frequency Sonochemistry with Lithium Niobate Thickness Vibration Mode on the Formation of Reactive Oxygen Species in Cells
Kotaro Fujishiro{3}, Satoshi Okada{1}, Takahiro Kuchimaru{2}, Yuta Kurashina{3}
{1}Institute of Science Tokyo, Japan; {2}Jichi Medical University, Japan; {3}Tokyo University of Agriculture and Technology, Japan

3015: Nanoscale Measurement of Vibration of In Vitro Systems Can Provide New Information to Understand Cellular Responses to Pulsed Ultrasound
Andrea Orthodoxou, Margaret Lucas, Helen Mulvana
University of Glasgow, United Kingdom

3520: Effects of Ultrasonic Oscillation of Needle in Fine-Needle Aspiration Biopsy on Cellular Morphometrics
Ona Westerlund{3}, Emanuele Perra{2}, Heikki J. Nieminen{1}
{1}Aalto University, Finland; {2}Karolinska Institutet, KTH Royal Institute of Technology, Sweden; {3}Medical Ultrasonics Laboratory, Aalto University, Finland

10:00 - 11:00
A1P-14: MSD: Transducer Technologies & Acoustic Field Control
Room: Transit Zone
Session Chair(s): Mototaka Arakawa, Tohoku University

2435: Acoustic Lens Design Strategy for Increasing the Effective Field of View of Row-Column Transducers
Mélanie Audoin{1}, Ali Salari{3}, Jørgen Arendt Jensen{2}, Erik Vilain Thomsen{3}
{1}DTU Health Tech, Denmark; {2}Technical University of Denmark, Denmark; {3}Technical University of Denmark / DTU Health Tech, Denmark

2791: Estimation of Arterial Radial Wall Displacement Using a Low-Profile Ultrasonic Transducer
Jin Hyuk Kim, Jeong Hoon Kim, Hyun Su Kim, Kwan Kyu Park
Hanyang University, Korea

3802: Vibration Control of Thin Catheter in Blood Vessel Using Phase-Sweeping of Interference Acoustic Field
Nodoka Tanaka, Ayako Noguchi, Kohji Masuda
Tokyo University of Agriculture and Technology, Japan

3546: Design of Acoustic Lenes Topologies for High Frequency Transcranial Ultrasound
Costas Arvanitis, Pradosh Pritam Dash
Georgia Institute of Technology, United States

2112: All-Optical Broadband Ultrasound Transmission Matrix Measurement with High Signal Fidelity
Ron Moisseev, Amir Rosenthal
Technion - Israel Institute of Technology, Israel

10:00 - 11:00
A1P-15: MBB: Deep Learning & Beamforming Algorithms
Room: Transit Zone
Session Chair(s): Jeeun Kang, John Hopkins University

2101: Window-Based Plane Wave Ultrasound Beamforming with Efficient Angle Selection
Soham Nivargi, Satish Mulleti
Indian Institute of Technology Bombay, India

2210: Adaptive Phase Coherence Factor for Enhanced Image Quality in Handheld Ultrasound Beamforming
Chang-Lin Hu, Chien-Ju Li
Industrial Technology Research Institute, Taiwan

3313: Learning Continuous Receive Apodization Weights via Implicit Neural Representation for Ultrafast ICE Ultrasound Imaging
Remi Delaunay, Christoph Hennersperger, Stefan Wörz
LUMA Vision GmbH, Germany

3793: A Modified Wavenumber Algorithm That Preserves the DAS Image
Sufayan Ikabal Mulani, Mahsa Sotoodeh Ziksari, Andreas Austeng, Sven Peter Näsholm
University of Oslo, Norway

10:00 - 11:00
A1P-16: MEL: Vibration Sources
Room: Transit Zone
Session Chair(s): Javier Brum, Instituto de Física, Facultad de Ciencias, UdelaR

2293: Comparative Evaluation of Ultrasound Transducers for Extended Transmit and Shear Wave Elastography Using Vantage and Vantage NXT Systems
Miguel Bernal, Juvenal Ormachea, Andrew Lundberg, Christian Coviello
Verasonics Inc, United States

2742: Simulation of Focused Shear Wave Penetration to the Deep Liver Through the Human Body Wall
John Cormack, Yu-Hsuan Chao, Hansol Lee, Jaideep Behari, Kang Kim
University of Pittsburgh, United States

2749: Quantitative Passive Elastography with Portable Digital Ultrasonic Probe
Stefan Catheline{1}, Bruno Giammarinaro{1}, Tony Matéo{2}, Damien Joguet{2}, Guillaume Férin{2}
{1}LabTAU, INSERM, Centre Léon Bérard, Université Claude Bernard Lyon 1, Université Lyon 1, France; {2}Vermon, France

2772: Application of a Sidelobe-Suppressed Focused Bessel-Gaussian Modulated Beam in Acoustic Radiation Force Excitation
Fan Feng, Siladitya Khan, Stephen McAleavey
University of Rochester, United States

2846: Optimized Virtual Source Design for Deep Shear-Wave Elasticity Imaging
Wongyu Lee{2}, Doyoung Jang{2}, Jae Hee Song{4}, Sua Bae{3}, Heechul Yoon{1}
{1}Dankook University, Korea; {2}Future Imaging Research Lab, Dankook University, Korea; {3}Sogang University, Korea; {4}University of Queensland, Australia

3481: Shear Wave Elastography of the Cornea Using Air-Coupled Acoustic Radiation Force
Salavat Aglyamov{1}, Andrew Lopez III{1}, Taye Mekonnen{2}, Christian Zevallos-Delgado{1}, Mohammad Dehshiri{1}, Maryam Hatami{1}, Chaitanya Duvvuri{1}, Alexander Schill{1}, Manmohan Singh{1}, Michael Twa{1}, Kirill Larin{1}
{1}University of Houston, United States; {2}University of Sydney, Australia

10:00 - 11:00
A1P-17: MEL: Simulation & Signal Processing in Elastography
Room: Transit Zone
Session Chair(s): Yang Zhang, Tsinghua University

2058: Multi-Directional Band-Pass Filter in Continuous Shear Wave Elastography for Steatotic Liver Assessment
Naoki Tano{3}, Hidekatsu Kuroda{4}, Tamami Abe{4}, Ren Koda{2}, Shunichiro Tanigawa{1}, Naohisa Kamiyama{1}, Yoshiki Yamakoshi{2}, Marie Tabaru{3}
{1}GE Healthcare, Japan; {2}Gunma University, Japan; {3}Institute of Science Tokyo, Japan; {4}Iwate Medical University, Japan

2471: Direct Displacement Field Estimation Using RF Signals
Charles-Étienne Tremblay, Maxime Bilodeau, Elijah Van Houten, Nicolas Quaegebeur
University of Sherbrooke, Canada

2504: Phase Velocity Dispersion Curve Estimation of In Vivo Human Common Carotid Arteries with the Fourier and Stockwell Transforms
Yuqi Wang{2}, Charles Capron{2}, Hyoung-Ki Lee{3}, Piotr Kijanka{1}, Matthew W. Urban{2}
{1}AGH University of Krakow, Poland; {2}Mayo Clinic, United States; {3}Philips, Inc., United States

2509: Modeling of Shear Wave Propagation Near Inflamed Lung with Fluid Accumulation
Marie Tabaru{2}, Naoki Tano{2}, Hayato Taniguchi{4}, Yasuyuki Shiraishi{3}, Ren Koda{1}, Yoshiki Yamakoshi{1}
{1}Gunma University, Japan; {2}Institute of Science Tokyo, Japan; {3}Tohoku University, Japan; {4}Yokohama City University Medical Center, Japan

2913: Local Phase Velocity Imaging with Wavenumber Filter Banks for Improved Low Frequency Shear Wave Elastography
Ramin Almasi{1}, Matthew W. Urban{2}, Piotr Kijanka{1}
{1}AGH University of Krakow, Poland; {2}Mayo Clinic, United States

3103: Block-Wise Mixed-Order Continuity Constraints for Displacement Estimation in Transcranial Ultrasound Shear Wave Elastography
Yiran Chen, Chaoyang Zhang, Hanbing Chu, Yichen Yan, Liyuan Jiang, Yueyuan Wang, Hongmei Zhang, Mingxi Wan
Xi'an Jiaotong University, China

3314: An Investigation of Inverse Elastography Reconstruction Performance from Ultrasound RF Data Obtained Using a Synthetic Aperture Scheme for Liver Imaging Application: Preliminary Results
Ernest Pontifex, Arun Kumar Thittai
Indian Institute of Technology Madras, India

3333: A Simulation Framework for Ultrasound Time Harmonic Elastography (THE)
Chaoran Han, Mohamed Aziz Boukraa, Sven Peter Näsholm, Andreas Austeng, Mahsa Sotoodeh Ziksari, Yücel Karabiyik
University of Oslo, Norway

3596: Power Doppler-Based Shear Wave Speed Estimation via Spatial Interference Patterns
Gabriel Ramirez, Eduardo Lujan, Stefano Romero
Pontifical Catholic University of Peru, Peru

3770: Supersonic Shear Tomography for Inclusion Detection: A Simulation Study on Reconstruction Strategies
Renxiang Guan, Wei-Ning Lee
University of Hong Kong, Hong Kong

10:00 - 11:00
A1P-18: MIS: Segmentation & Annotation
Room: Transit Zone
Session Chair(s): Adrian Basarab, University of Lyon

2507: Investigating Fatty Infiltration of Lumbar Multifidus Muscles Using 3D Ultrasound Image Texture Analysis and Machine Learning
Yiting Chen{2}, Yuchong Gao{2}, Chao Zhang{1}, Yi Mao{1}, Tianyi Liang{1}, Mingbo Zhang{1}, Rui Zheng{2}
{1}General Hospital of Chinese PLA, China; {2}ShanghaiTech University, China

2644: Multimodal Fusion of MRI-Text and Ultrasound Imaging for Enhanced Prostate Tumor Classification
Yuzhan Huang{2}, Shuai Fu{1}, Hengrong Lan{3}, Qiong He{2}, Jianwen Luo{2}
{1}Beijing University Third Hospital, China; {2}Tsinghua University, China; {3}University of Science and Technology of China, China

2713: SpeedSAM: A Lightweight and Fast SAM-Based Ultrasound Annotator
Xinyi Wang{2}, Zhen Song{2}, Hongyu Kang{2}, Yu Sun{2}, Zihao Huang{2}, Miaoqin Deng{2}, Wanrui Li{2}, Ziyao Yu{2}, Dawei Zhang{2}, Shuai Li{2}, Fangxian Li{1}, Wei Zhang{1}, Sai-Kit Lam{2}, Yongping Zheng{3}
{1}Beijing Tiantan Hospital, Capital Medical University, China; {2}Hong Kong Polytechnic University, Hong Kong; {3}Research Institute for Smart Ageing, Hong Kong Polytechnic University, Hong Kong

2754: Improving 3D Ultrasound Compounding Through Automated Fetal Brain Segmentation
Gaby van Iersel{3}, Sonja de Zwarte{3}, Inge van Ooijen{2}, Mireille Bekker{2}, Manon Benders{2}, Hilleke Hulshoff Pol{3}, Ruud J. G. van Sloun{1}
{1}Eindhoven University of Technology, Netherlands; {2}University Medical Center Utrecht, Netherlands; {3}Utrecht University, Netherlands

2965: Quantitative Lung Ultrasound Spectroscopy: First Comparison with Gold Standard CT Scan and Standard Lung Ultrasound for Diagnosis of Pneumonia vs. Cardiogenic Pulmonary Edema
Eleonora Balzani{3}, Mattia Perpenti{3}, Federico Mento{3}, Claudia Marinaro{1}, Giacomo Bellani{3}, Tiziano Perrone{2}, Libertario Demi{3}
{1}Humanitas Gavazzeni, Italy; {2}Medicina Interna e Medicina d'Urgenza, Humanitas Gavazzeni, Italy; {3}University of Trento, Italy

2982: An Approach for Automatic Estimation of Hepatorenal Index and Diagnosis of Fatty Liver Disease in Ultrasound Images
Changqi Lv, Wenkai Lu
Tsinghua University, China

3135: BM4D Based Denoising Framework for Contrast-Free Ultrasound Microvessel Imaging
Haotian Wang, Xiao Su, Yiran Chen, Hanbing Chu, Yujin Zong, Mingxi Wan
Xi'an Jiaotong University, China

10:00 - 11:00
A1P-19: MIS: Hardware, Software
Room: Transit Zone
Session Chair(s): François Varray, University of Lyon

2388: Towards Real-Time Computational Ultrasound Imaging Using Neural Networks
Georgios Pilikos{2}, Francesca De Carlo{3}, Geert Leus{1}, Pieter Kruizinga{2}
{1}Delft University of Technology, Netherlands; {2}Erasmus University Medical Center, Netherlands; {3}Oldelft Ultrasound, Netherlands

2430: UltraScatter: Ray-Based Simulation of Ultrasound Scattering
Felix Duelmer, Mohammad Farid Azampour, Nassir Navab
Technical University of Munich, Germany

2456: Multi-Plane Wave Signal Inpainting with CNNs: A Framework for Reducing RF Data Volume in Ultrafast Ultrasound
Roser Viñals Terres, Jean-Philippe Thiran
École Polytechnique Fédérale de Lausanne, Switzerland

2807: Data Augmentation for Deep Learning-Based Flexible Probe Shape Estimation Through RF Data Transformation from a Linear to a Curved Array
Takumi Noda, Kohji Masuda
Tokyo University of Agriculture and Technology, Japan

3058: FieldGPU: A GPU-Based Version of Field II with Python Bindings for Large Scale Simulations and Complex Transducer Configurations
Florence Klitzner, Rüdiger Göbl, Christoph Hennersperger, Stefan Wörz
LUMA Vision GmbH, Germany

3268: Orthogonal Frequency Division Multiplexing for Ultrafast Medical Ultrasound Imaging
Cornelius Kühnöl{2}, Edgar Manfred Gustav Dorausch{2}, Pascal Stöver{3}, Franz Richter{1}, Julian Kober{1}, Tönnis Trittler{1}, Paul-Henry Franz Koop{1}, Omid Chaghaneh{1}, Moritz Herzog{1}, Jochen Hampe{1}, Gerhard Fettweis{2}, Richard Nauber{2}
{1}Else Kröner Fresenius Center for Digital Health, Dresden University of Technology, Germany; {2}Vodafone Chair Mobile Communications Systems, Dresden University of Technology, Germany; {3}Vodafone Chair Mobile Communications Systems, Dresden University of Technology /EKFZ Digital Health, Germany

3674: Ultrafast Hadamard-Encoded Row-Column Ultrasonic Expansive Scanning (Uhercules) with Electrostrictive Row-Column Arrays
Darren Dahunsi{2}, Tyler Henry{2}, Randy Palamar{2}, Negar Majidi{2}, Mohammad Rahim Sobhani{1}, Joy Wang{1}, Afshin Kashani Ilkhechi{1}, Roger Zemp{1}
{1}CliniSonix / University of Alberta, Canada; {2}University of Alberta, Canada

3680: Development and Validation of Large High Resolution 3D Numerical Phantom of Human Lung Using Controlled Generative Adversarial Networks
Oleksii Ostras, Gianmarco Pinton
University of North Carolina at Chapel Hill / North Carolina State University, United States

3714: Learning-Based Design of Mismatched Filters via Unsupervised Deep Optimization for Coded Excitation Ultrasound
Sangheon Lee, Nizar Guezzi, Suyeong Choi, Dongku Jung, Myeongchan Kim, Sangwoo Nam, Seonghyeon Cho, Youngho Seo, Jaesok Yu
Daegu Gyeongbuk Institute of Science and Technology, Korea

10:00 - 11:00
A1P-20: MCA: Contrast Imaging Technology
Room: Transit Zone
Session Chair(s): Baptiste Heiles, Caltech

2217: Ultrasound Imaging of Perfluoropentane Nanodroplets After Microwave-Exposure
Maryam Dorvashi{2}, Hossam Sultan{2}, Owen James Harrison{1}, Yuang You{1}, Navid Ghavami{2}, Gianluigi Tiberi{2}, Enrico Grisan{2}, Maya Thanou{1}, Mohammad Ghavami{2}, Sevan Harput{2}
{1}King's College London, United Kingdom; {2}London South Bank University, United Kingdom

2631: Nonlinear Ultrasound Detection of Acoustic Biomolecules in Single Cells Using Chirps and Bessel-Coded Excitations
Rohit Nayak{1}, Mengtong Duan{1}, Trevor Fochtman{1}, Mikhail Shapiro{2}
{1}California Insitute of Technology, United States; {2}Howard Hughes Medical Institute, California Insitute of Technology, United States

2955: Hadamard-Encoded Pulses with Amplitude Modulation for Contrast-Enhanced Ultrasound Imaging of Acoustic Bacteria
Yueyuan Wang, Kangyi Feng, Haitao Wu, Chaonan Zhang, Zhibo Zhu, Yiran Chen, Mingxi Wan, Yujin Zong
Xi’an Jiaotong University, China

3206: Exploring the Generalizability of DeepNLCI in Out-of-Domain Scenarios
Thomas Lisson, Gaia Braccia, Mariam Fouad, Georg Schmitz
Ruhr University Bochum, Germany

3463: Biomarker Targeting Molecular Contrast Agents for Ultrasound Imaging
Sydney Turner{1}, Adree Bhattacharjee{1}, Siyuan Zhang{2}, Lu Diao{2}, Sangpil Yoon{1}
{1}University of Oklahoma, United States; {2}University of Texas Southwestern Medical Center & MD Anderson Cancer Center, United States

3492: Optimizing Ultrasound Imaging of Phase-Change Nanodroplets
Charles Dyall{3}, Dmitry Nevozhay{3}, Andrew Liu{1}, Trevor Mitcham{2}, George Lu{1}, Konstantin Sokolov{3}, Richard Bouchard{3}
{1}Rice University, United States; {2}University of Rochester, United States; {3}University of Texas MD Anderson Cancer Center, United States

3601: Submicron Ultrasound Contrast Agent Generation: Critical Process Steps for Mechanical Agitation Driven Bubble Self Assembly
Theresa Kosmides, Dana Dranka, Agata Exner
Case Western Reserve University, United States

10:00 - 11:00
A1P-21: General NDE Methods III
Room: Transit Zone
Session Chair(s): Frederic Cegla, Imperial College

2197: Evaluation of Beamforming Techniques for Pressurized Leak Localization Using Simulation
Anthony Schenck{2}, Walter Daems{1}, Jan Steckel{1}
{1}Cosys-Lab, University of Antwerp & Flanders Make Strategic Research Centre, Belgium; {2}University of Antwerp, Belgium

2212: Complete Elastic Characterization of Composite Samples with Ultrasounds Using Laser Interferometry Detection
Killian Toulgoat{1}, Grégoire Sapey{1}, Franck Augereau{1}, Didier Laux{1}, Olivier Arnould{2}, Eric Rosenkrantz{1}
{1}Institut d'Electronique et des Systèmes, Université de Montpellier, CNRS, France; {2}Laboratoire de Mécanique et Génie Civil, University of Montpellier, CNRS, France

2236: The Relationship Between the Diameter of Circular Cavity Defect and Defect Depth and Resonance Frequency in Concrete, Compared by the Results of Noncontact Acoustic Inspection and COMSOL Analysis
Kazuko Sugimoto, Tsuneyoshi Sugimoto
Toin University of Yokohama, Japan

2444: Spatially Encoded Ultrasonic Generation for Laser-Induced Phased Array Imaging
Geo Davis, Jakub Trybek, Peter Lukacs, Stephan Weiss, Theodosia Stratoudaki
University of Strathclyde, United Kingdom

2976: Real-Time Fully Focused Imaging with Geometry Estimation for In-Process Inspection and Manufacturing Control
James Macleod, Ewan Nicolson, David Lines, Gordon Dobie, Charles Norman Macleod
University of Strathclyde, United Kingdom

3813: A Study on the Key Factor Analysis for Securing High Reliability of Immersion Phased Array Ultrasonic Testing (PAUT) for PQ IN718 Alloy Using a Meta-Model Approach
Ilhyun Yoo{1}, Min-Hyeok Park{1}, Ik Keun Park{2}, Dongchan Kang{2}
{1}Seoul National University of Science and Technology, Korea; {2}Seoul National University of Science and Technology / Seoultech NDT Research Center, Korea

10:00 - 11:00
A1P-22: Acoustic Microfluidics & Material & Defect Characterization
Room: Transit Zone
Session Chair(s):

2209: High-Throughput Acoustic Separation of Micro- and Macro-Scale Particles via Programmable Multi-Frequency Ultrasound Standing Wave Platform
Chang-Lin Hu{1}, Jia-Ling Lin{2}, Chien-Ju Li{1}, Chih-Hsien Huang{2}
{1}Industrial Technology Research Institute, Taiwan; {2}National Cheng Kung University, Taiwan

3158: Optimization of SAW Devices for PCR Temperature Cycles
Clémence Biscara{1}, Cécile Floer{1}, Laurent Badie{3}, James Friend{2}, Omar Elmazria{1}
{1}Institut Jean Lamour, Université de Lorraine, France; {2}University of California, San Diego, United States; {3}University of Lorraine, CNRS, Institut Jean Lamour, France

3838: Advanced Imaging Methods Applied to Determining Hardening Depth
Ewen Carcreff, Nans Laroche, Hector Calas
TPAC / Phased Array Company, LLC., France

2094: Extraction of Metallic Material Microstructure Grain Size from Total Focusing Ultrasonic Images
Weixin Wang, Paul Wilcox, Jie Zhang
University of Bristol, United Kingdom

10:00 - 11:00
A1P-23: PAT: Acoustic Tweezers & Particle Manipulation III
Room: Transit Zone
Session Chair(s): Jae Hwang, Daegu Gyeongbuk Institute of Science & Technology

2321: Numerical Verification of Gross Restoring Force on Connected Multiple Particles Acoustically Levitated in Standing Wave Nodes
Takeru Momoki, Keisuke Hasegawa
Saitama University, Japan

2383: Position Feedback for Acoustic Levitation in Air
Vincent Bos{1}, Mohamed El Shenawy{1}, Jasper Wesselingh{2}, Peter Steeneken{1}, Gerard Verbiest{1}
{1}Delft University of Technology, Netherlands; {2}ITEC BV, Netherlands

2774: A Compact In-Air Ultrasound Assisted Heavy Mass Levitation System
Kaustav Roy, Amit Lal
Cornell University, United States

2784: Ultrasonic Levitation of Sub-Millimeter Droplet in Air at Over 100 Khz
Hanaka Hashimoto, Yuji Wada, Kentaro Nakamura
Institute of Science Tokyo, Japan

2920: Optical Characteristics of an Ultrasonic Tunable Liquid Crystal Neutral Density Filter
Ryoya Mizuno{1}, Zenong Wu{1}, Yuki Harada{3}, Akira Emoto{2}, Daisuke Koyama{1}
{1}Doshisha University, Japan; {2}Tokushima University, Japan; {3}University of Yamanashi, Japan

3033: Investigation of in Situ Culture Conditions for Endothelial Cells Retained Using Microbubbles Under Interferential Acoustic Field
Ayako Noguchi{3}, Yoshitaka Miyamoto{1}, Daiki Omata{2}, Ryo Suzuki{2}, Kohji Masuda{3}
{1}National Center for Child Health and Development, Japan; {2}Teikyo University, Japan; {3}Tokyo University of Agriculture and Technology, Japan

3035: Observation of the Resonant Vibration Modes of Droplets for the Measurement of Their Physical Properties
Takaya Hirayama, Daisuke Koyama
Doshisha University, Japan

10:00 - 11:00
A1P-24: ALN: Lithium Niobate Devices
Room: Transit Zone
Session Chair(s): Abhay Kochhar, Optorun

2078: Laterally Coupled XBAR Filter
Sho Nagatomo{1}, Katsuya Daimon{1}, Takeshi Nakao{1}, Sean McHugh{2}
{1}Murata Manufacturing Co., Ltd., Japan; {2}Resonant Inc. A Murata Company, United States

2136: S_2 Mode XBAR Filter for Improved Thermal Stability and Minimized Harmonic
Wenxuan Li{2}, Gaomi Wu{1}, Jinyi Ma{1}, Tao Han{2}
{1}CETC Chips Technology Inc, China; {2}Shanghai Jiao Tong University, China

2179: New Acoustic Wave Mode with SH and SV Components Excited by Grooved Al Electrodes in $LiNbO_3$
Michio Kadota, Fuyuko Yamashita, Shuji Tanaka
Tohoku University, Japan

2191: A 6.5-GHz S2-Mode Lamb Wave Resonator with Near-Zero TCF and High Electromechanical Coupling Coefficient of 20.4%
Meijuan Li, Kai Yang, Zhongbin Dai, Fuhong Lin, Jiming Fang, Jie Chen, Yiming Wang, Chengjie Zuo
University of Science and Technology of China, China

2530: Shear Horizontal Surface Acoustic Wave Resonators for 6G Centimeter Bands
Jinlong Xu{3}, Tiancheng Luo{1}, Chengkuo Lee{2}, Huajun Liu{1}
{1}Institute of Materials Research and Engineering, Agency for Science, Technology and Research, Singapore; {2}National University of Singapore, Singapore; {3}National University of Singapore / Institute of Materials Research and Engineering, ASTAR, Singapore

2185: Applicability of LiNbO3/SiO2/Sapphire Structure for S0-Like SAW Mode Resonators
Hao Liu{2}, Ting Wu{1}, Zijiang Yang{2}, Muxiang Su{2}, Wanli Zhang{2}, Jingfu Bao{2}, Ken-Ya Hashimoto{2}
{1}Chengdu University of Technology, China; {2}University of Electronic Science and Technology of China, Japan; {2}University of Electronic Science and Technology of China, China

2945: Lithium Niobate Solidly Mounted Resonator Utilizing Shear Horizontal Waves for n79 Filter Applications
Nan Xu{3}, Seniz Esra Küçük{1}, Naiqing Zhang{4}, Victor Plessky{5}, Luis Guillermo Villanueva{2}
{1}ANEMS Lab, École Polytechnique Fédérale de Lausanne / NanoRF Sàrl, Switzerland; {2}ANEMS Lab, STI-IGM-NEMS, École Polytechnique Fédérale de Lausanne , Switzerland; {3}École Polytechnique Fédérale de Lausanne, Switzerland; {4}Huawei Technologies Co., Ltd, China; {5}Huawei Technologies Oy (Finland) Co. Ltd, Switzerland

3046: TCF Reduction of Wideband SAW Device on LNOI Platform Using Multilayer IDT Electrodes
Zhibin Xu{3}, Zengtian Lu{3}, Sulei Fu{5}, Peisen Liu{4}, Boyuan Xiao{4}, Baichuan Li{3}, Liwen Han{1}, Feng Pan{4}, Weibiao Wang{2}, Hui Zhang{3}
{1}Jiangnan University, China; {2}SHOULDER Electronics Limited, China; {3}Southeast University, China; {4}Tsinghua University, China; {5}Tsinghua University / SHOULDER Electronics Limited, China

2146: Aperiodically Poled Piezoelectric Film (APPF) Stacks Enabling Generation of High-Order Harmonics and Suppression of Unwanted Modes
Natalya Naumenko
National University of Science and Technology, Russia

2274: The Research on Manufacturability and Reliability of XBAR Filters
Toru Yamaji
Murata Manufacturing Co., Ltd., Japan

2860: Analysis of Rayleigh-Type SAW Resonance Properties on 128°YX-LiNbO3/CTGS Bonded Structures
Yuya Kobayashi{2}, Masashi Suzuki{2}, Shoji Kakio{2}, Noritoshi Kimura{1}
{1}Piezo Studio, Inc., Japan; {2}University of Yamanashi, Japan

3159: Group Velocity Dispersion Analysis of LN/SiC-Based Acoustic Delay Lines
Kejin Dai{2}, Shuai Shao{3}, Dongchen Sui{1}, Shibin Zhang{1}, Tao Wu{2}, Xin Ou{1}
{1}Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China; {2}ShanghaiTech University, China; {3}XOI Technology Co., Ltd, China

3171: A Temperature-Compensated Dual-Band Bandpass Filter Based on Lithium Niobate Thin Films
Zhiwei Wen{2}, Wenjuan Liu{2}, Min Zeng{2}, Yao Cai{2}, Yan Liu{3}, Chengliang Sun{1}
{1}Institute of Technological Sciences, Wuhan University, China; {2}Wuhan University, China; {3}Wuhan University / Wuhan Textile University, China

10:00 - 11:00
A1P-25: TMS: Transducer & System Modeling
Room: Transit Zone
Session Chair(s): Martin Angerer, The University of British Columbia (UBC)

2070: Non-Uniform Element Design for Large-Aperture Ultrasound Phased Arrays: Balancing Main Lobe Resolution and Grating Lobe Suppression
Yujia Tang{1}, Yang Jiao{2}, Zhangjian Li{1}, Yaoyao Cui{2}
{1}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences, China; {2}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences / USTC, China

2551: xMasonV2: An Open-Source Model Extension for Cascaded Transducer Arrays
Gabriele Spisani, Philipp Mayer, Michele Magno, Luca Benini, Christoph Leitner
ETH Zürich, Switzerland

2741: Feasibility of an Intracranial Ultrasound Catheter for Real-Time Guidance
Dominik Duklas{2}, Sandy Cochran{2}, Mohamed Draz{1}
{1}NHS Scotland, United Kingdom; {2}University of Glasgow, United Kingdom

2855: MEMS-Based Design for Single-Pulse High-Pressure Ultrasound System via Acoustic Amplification Through Energy Storage and Release
Eshani Sarkar, Filipe Arroyo Cardoso, Tiago L. Costa
Delft University of Technology, Netherlands

2998: Influence of Prestress on the Dynamic Response of Integrated Photonic Ultrasound Transducers
Sabiju Valappil{1}, Peter Harmsma{2}, Maurits van der Heiden{2}, Martin Verweij{1}, Paul van Neer{2}
{1}Delft University of Technology, Netherlands; {2}Netherlands Organisation for Applied Scientific Research, Netherlands

3002: Interactive Tool for Exploring Ultrasonic Far Field Phased Arrays
Axel Jäger{1}, Sven Suppelt{2}, Christoph Haugwitz{2}, Jan Helge Dörsam{2}, Mario Kupnik{2}
{1}arculus GmbH, Germany; {2}Technical University of Darmstadt, Germany

3032: Modelling of 3D-Printed Air-Coupled PLA Ultrasonic Transducers
Nils Demuth{2}, Stephan Schaumann{2}, Sonja Wismath{2}, Bastian Latsch{2}, Sven Suppelt{2}, Sören Soennecken{2}, Christoph Haugwitz{2}, Matthias Rutsch{2}, Elena Wiemer{2}, Luise E. Jazdzewski{1}, Achim Bittner{1}, Mario Kupnik{2}
{1}Hahn-Schickard-Gesellschaft, Germany; {2}Technical University of Darmstadt, Germany

3447: Cardiac Ultrasound Simulations of the Intracardiac Echocardiography Probe
Annelies Severens{1}, Midas Meijs{2}, Vipul Pai Raikar{2}, Richard Lopata{1}
{1}Eindhoven University of Technology, Netherlands; {2}Philips Healthcare, United States; {2}Philips Healthcare, Netherlands

3681: KLM Model for Electrostrictive Relaxors: An Alternative Transducer Equivalent Circuit
Nathaniel Bly{2}, Mohammad Rahim Sobhani{1}, Shayan Khorassany{2}, Negar Majidi{2}, Roger Zemp{1}
{1}CliniSonix / University of Alberta, Canada; {2}University of Alberta, Canada

3836: A Unified AI Approach for Modeling the Ultrasonic Properties of MEMS Sensor
Amirhossein Moshrefi
Simon Fraser University, Canada

10:00 - 11:00
A1P-26: Student Poster Competition
Room: Transit Zone
Session Chair(s): Alfred Yu, University of Waterloo

2265: Intraoperative 4D Ultrasound Localization Microscopy of Deep Cerebral Perforating Arteries
Yichuang Han{1}, Yasmin Sadigh{1}, Luuk Verhoef{1}, Luxi Wei{1}, Sadaf Souloukey Tbalvandany{1}, Paul Xing{3}, Arber Demi{1}, Emma Gommers{1}, Peter de Smalen{1}, Arend Jan de Jong{2}, Francesca De Carlo{2}, Johan Bosch{1}, Pieter Kruizinga{1}, Victor Volovici{1}, Jason Voorneveld{1}
{1}Erasmus University Medical Center, Netherlands; {2}Oldelft Ultrasound, Netherlands; {3}Polytechnique Montréal, Canada

3531: Sonogenetics Induced Non-Invasive Retinal Prosthesis
Jie Ji{2}, Chen Gong{2}, Batabyal Subrata{1}, Mohanty Samarendra{1}, Qifa Zhou{2}
{1}Nanoscope Therapeutics, Inc., United States; {2}University of Southern California, United States

2897: Ultrasound Cerebral Angiography Reveals Functional Dynamics of the Circle of Willis
Nabil Haidour{3}, Alexandre Dizeux{3}, Joanna Loayza{1}, Lucas Bolliet{3}, Philippe Mateo{3}, Mathieu Pernot{3}, Mickaël Tanter{3}, Pierre Pouget{2}, Clément Papadacci{3}
{1}ICM Paris Brain Institute, Institut du Cerveau, Pitié Salpêtrière University Hospital, France; {2}ICM-Paris Brain Institute, CENIR, Inserm, CNRS, Sorbonne Université, UMRS, UPMC, AP-HP, France; {3}Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France

3645: Distributed Aberration Correction in Liver Imaging via Iterative Model-Based Sound Speed Estimation
Benjamin Frey{2}, Robin van Velzen{1}, Jihye Baek{2}, Hoda Sadat Hashemi{2}, Martin Schneider{2}, Sergio Sanabria{2}, Jeremy Dahl{2}
{1}Eindhoven University of Technology, Netherlands; {2}Stanford University, United States

3751: ACS-Net: A Deep Unfolded ADMM Framework for Ultrasound Attenuation Imaging
José Timaná{3}, Sebastian Merino{3}, Adrian Basarab{1}, Ruud J. G. van Sloun{2}, Roberto Lavarello{3}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm / TPAC NDT, France; {2}Eindhoven University of Technology, Netherlands; {3}Pontifical Catholic University of Peru, Peru

2587: Vascular Disruption: A Controllable Transient Vascular Tumor Reaction to Ultrasound Cavitation Treatments
Connor Krolak, Lance De Koninck, Sherry Gu, Jenifer Mendez Pacheco, Mike Averkiou
University of Washington, United States

2676: Real-Time Adaptive Gain Adjustment for High-Contrast Photoacoustic Microscopy of Heterogeneous Biological Tissues
Huijian Zhang{1}, Xuanxuan Ye{1}, Hengrong Lan{2}, Fei Gao{2}, Xianzeng Zhang{1}, Daohuai Jiang{1}
{1}Fujian Normal University, China; {2}University of Science and Technology of China, China

3807: High-Frequency Bulk Acoustic Wave Resonator with Ferromagnetic Electrodes for Magnetic Field Sensing
Chuang Man{2}, Hongsheng Zheng{2}, Zhiqiang Mu{1}, Yumeng Yang{2}
{1}Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China; {2}ShanghaiTech University, China

3363: Accelerating Total Focusing Method with pth Root Delay and Sum and nth Coherence Factor Weighted Delay and Sum Using Sparse Arrays: A Comparative Study
Abhinav Kumar Singh, Himanshu Shekhar
Indian Institute of Technology Gandhinagar, India

3776: Polarization-Inverted Sc0.4Al0.6N Double-Layer Smr
Nanami Suzuki, Wataru Shimoyama, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

3698: Low-Power Real-Time Holographic Acoustic Tweezers Using MEMS Ultrasound Arrays
Chenfang Yan{1}, Tong Jin{2}, Zijie Zhao{1}, Xiaokai Liu{3}, Yucheng Lin{1}, Wenchang Zhang{1}, Yang Zhao{1}, Ran Liu{3}, Chengjun Huang{1}, Hang Gao{1}
{1}Institute of Microelectronics, Chinese Academy of Sciences, China; {2}Institute of Microelectronics, Chinese Academy of Sciences / Tsinghua University, China; {3}Tsinghua University, China

2692: A Novel Miniature Piezoelectric Tube Actuator for Intravascular Optical Coherence Tomography
Hang Yu{2}, Xiao Wei{2}, Boquan Wang{1}, Kuiyuan Tao{3}, Dawei Wu{2}
{1}Guangzhou Panyu Polytechnic, China; {2}Nanjing University of Aeronautics and Astronautics, China; {3}Zhenjiang Denoxin Optoelectronic Technology Co., Ltd., ChinaTechnical Program: 16 September

2133: Transforming Spurious Into Bandwidth in cmWave Acoustic Resonators
Jiaxin Dong, Zhongbin Dai, Chengjie Zuo
University of Science and Technology of China, China

2556: Boost the Acoustic Wave Resonator to Handle Ultra-High Power Density Beyond 10 W/mm²
Fangsheng Qian, Shuhan Chen, Wei Wei, Kai Yang, Jiashuai Xu, Junyan Zheng, Xingyu Liu, Zijun Ren, Yansong Yang
Hong Kong University of Science and Technology, Hong Kong

2347: Bilayer X-Cut Lithium Niobate YBAR Resonator for Wideband, High-Frequency Applications
Florian Hartmann{3}, Seniz Esra Küçük{1}, Luis Guillermo Villanueva{2}
{1}ANEMS Lab, École Polytechnique Fédérale de Lausanne / NanoRF Sàrl, Switzerland; {2}ANEMS Lab, STI-IGM-NEMS, École Polytechnique Fédérale de Lausanne , Switzerland; {3}STI-IGM-NEMS, École Polytechnique Fédérale de Lausanne , Switzerland

2727: A Reconfigurable Transceiver ASIC for Wearable Ultrasound Applications
Imad Bellouki, Mingliang Tan, Jae-Sung An, Tim Hosman, Eunchul Kang, Zu-Yao Chang, Michiel Pertijs
Delft University of Technology, Netherlands

3358: A Side-Looking Endoscopic Histotripsy Array with Integrated 20 MHz Imaging for Non-Invasive Tongue-Base Debulking
Benjamin Seaman{1}, Jeremy Brown{1}, Matthew Mallay{2}
{1}Dalhousie University, Canada; {2}Sound Blade Medical, Canada

3560: Advanced Flow Imaging with a Handheld 128+128 Row-Column Addressed CMUT Array Probe: System Design and Phantom Validation
Eda Begum Erdogan{1}, Nairit Das{1}, Ali Onder Biliroglu{1}, Muhammetgeldi Annayev{1}, Geraldi Wahyulaksana{2}, Jeffrey A. Ketterling{2}, Feysel Yalcin Yamaner{1}, Ömer Oralkan{1}
{1}North Carolina State University, United States; {2}Weill Cornell Medicine / Cornell University, United States

11:00 - 12:30
A2L-01: MIM: Microscale Imaging & Therapy
Room: Kinepolis - Room 7
Session Chair(s): Clement Pappadacci, Inserm, ESPCI; Stefanie Dencks, Ruhr-University Bochum

11:00
3242: Contrast-Free High-Resolution Ultrasound Microvessel Imaging
Jingyi Yin, Lijie Huang, Jingke Zhang, U-Wai Lok, Ryan Deruiter, Kate Knoll, Kendra Petersen, Kathryn Robinson, Andrew Bentall, Chengwu Huang, Shigao Chen
Mayo Clinic, United States

11:15
2666: Enhancement of Deep Optical Microscopy Using Ultrasound-Induced Gas Bubbles Mediated Tunable Standing Wave in Scattering Medium
Jinwoo Kim, Juwon Kwon, Hyeongyu Park, Eunji Lee, Jin Ho Chang
Daegu Gyeongbuk Institute of Science and Technology, Korea

11:30
2053: Nonlinear Sound-Sheet Microscopy
David Maresca
Delft University of Technology, Netherlands

12:00
2169: Ultrasonic Imaging of Microstructural Modifications Induced by High Intensity Focused Ultrasound in Ex-Vivo and In-Vivo Liver Tissue
Adrien Rohfritsch{2}, Alexis Griffon{1}, Elorri Olhagaray{2}, Antoine Bienassis{1}, David Melodelima{2}
{1}LabTAU, INSERM, Centre Léon Bérard, Université Claude Bernard Lyon 1, France; {2}LabTAU, INSERM, Centre Léon Bérard, Université Claude Bernard Lyon 1, Université Lyon 1, Université , France

12:15
3738: Double-Difference Framework for Improved Localization of Cavitation Events in Passive Cavitation Imaging
Jun Hong Park{2}, Dongwoon Hyun{1}, Jeremy Dahl{2}
{1}Siemens Healthineers, United States; {2}Stanford University, United States

11:00 - 12:30
A2L-02: MCA: Contrast Agent Imaging of Cancer
Room: Kinepolis - Room 8
Session Chair(s): Guillaume Lajoinie, University of Twente; Ahmed El Kaffas, University of California, San Diego (UCSD)

11:00
2457: Evaluation of Responders Using Subharmonic-Aided Pressure Estimation and Shear Wave Elastography in Patients with Pancreatic Cancer Undergoing Chemotherapy with Adjuvant Sonoporation Treatment
Priscilla Machado{3}, Hailee Mayer{3}, Trang Vu{3}, John Eisenbrey{3}, Spiros Kotopoulis{2}, Babar Bashir{3}, Daniel Lin{3}, James Posey III{3}, Patrick Mille{3}, Atrayee Basu-Mallick{3}, Ingrid Nordaas{2}, Audun Trelsgard{2}, Georg Dimcevski{2}, Odd Helge Gilja{2}, Kirk Wallace{1}, Flemming Forsberg{3}
{1}GE HealthCare Technology and Innovation Center, United States; {2}Haukeland University Hospital, Norway; {3}Thomas Jefferson University, United States

11:15
3266: Early Prediction of Breast Cancer Neoadjuvant Chemotherapy Responses Using 3D-Contrast-Enhanced Ultrasound with Subharmonic-Aided Pressure Estimation (SHAPE)
Sung In Choi{2}, Basak Dogan{4}, Corinne Wessner{2}, Jessica Porembka{4}, Priscilla Machado{2}, Bersu Ozcan{4}, Nisha Unni{4}, Maysa Abu-Khalaf{3}, Kenneth Hoyt{1}, Flemming Forsberg{2}, Kibo Nam{2}
{1}Texas A&M University, United States; {2}Thomas Jefferson University, United States; {3}Thomas Jefferson University Hospital, United States; {4}University of Texas Southwestern Medical Center, United States

11:30
3587: EDB-FN Targeted Ultrasound Contrast Agents for Pancreatic Cancer Diagnosis
Theresa Kosmides, Pinunta Nittayacharn, Songqi Gao, Zheng-Rong Lu, Agata Exner
Case Western Reserve University, United States

11:45
2755: MBFormer: Spatio-Temporal Transformer Model for Targeted Microbubble Detection in Nondestructive Ultrasound Imaging
Jihye Baek, Jeong Hoon Lee, Hoda Sadat Hashemi, Arutselvan Natarajan, Farbod Tabesh, Ramasamy Paulmurugan, Jeremy Dahl
Stanford University, United States

12:00
3673: Combined Vascular and Cellular Tracking During Metastasis in the Whole Liver In Vivo
Baptiste Heiles{5}, Pierina Barturen-Larrea{2}, Mengtong Duan{1}, Claire Rabut{2}, David Maresca{3}, Mikhail Shapiro{4}
{1}California Insitute of Technology, United States; {2}California Institute of Technology, Pasadena, United States; {3}Delft University of Technology, Netherlands; {4}Howard Hughes Medical Institute, California Insitute of Technology, United States; {5}ShapiroLab - California Institute of Technology, United States

12:15
3833: Nonlinear Ultrasound Scanning Microscopy
Hugues Favre, Rick Waasdorp, Eleonora Munoz-Ibarra, David Maresca
Delft University of Technology, Netherlands

11:00 - 12:30
A2L-03: MBE: Mechanical Bioeffects
Room: Kinepolis - Room 9
Session Chair(s): Keith Wear, US Food and Drug Administration; Himanshu Shekhar, Indian Institute of Technology (IIT) Gandhinagar

11:00
2268: Acoustically Controlled Cell-Scale Porosity of Ultrasound-Enhanced Electrospun Fiber Matrices for Tissue Engineering
Johannes Schavikin{2}, Joni Mäkinen{1}, Antton Huusko{1}, Mamoru Hashimoto{3}, Nobuki Kudo{3}, Ivo Laidmäe{4}, Jyrki Heinämäki{4}, Edward Hæggström{1}, Ari Salmi{1}
{1}Electronics Research Laboratory, University of Helsinki, Finland; {2}Electronics Research Laboratory, University of Helsinki / Institute of Pharmacy, University of Tartu, Finland; {3}Hokkaido University, Japan; {4}Institute of Pharmacy, University of Tartu, Estonia

11:15
2280: Histotripsy Mechanical Ablation Releases Tumor Antigen from the Cancer Cell Membrane
Reliza McGinnis, Shengzhuang Tang, Zhengyi Cao, James Baker, Zhen Xu, Suhe Wang
University of Michigan, United States

11:30
3339: Predicting Histotripsy-Induced Damage with Acoustic Cavitation Emission Signals In-Vivo in a Porcine Model
Scott Haskell, Joseph Lynch, Ellen Yeats, James Messina, Mahmoud Komaiha, Zhen Xu, Jonathan Sukovich
University of Michigan, United States

11:45
3352: Combatting Orthopaedic Implant Infections with Therapeutic Ultrasound
Veerle Brans, Michael Gray, Sara Keller, Constantin Coussios, Robin Cleveland, Eleanor Stride
University of Oxford, United Kingdom

12:00
3366: Ultrasound-Assisted Mechanotherapy Targeting Tumor Extracellular Matrix Stiffness
Zi-Yuan Wang, Pai-Chi Li, Wei-Wen Liu
National Taiwan University, Taiwan

12:15
3623: Clinical Validation of Ultrasound and Microbubble Induced miRNA Release from Circulating Tumor Cells for Blood Biopsy Based Prostate Cancer Staging
Pradyumna Kedarisetti{2}, Joy Wang{1}, Ewan McAlister{2}, Samantha Leier{2}, Adam Kinnaird{2}, Frank Wuest{2}, Roger Zemp{1}
{1}CliniSonix / University of Alberta, Canada; {2}University of Alberta, Canada

11:00 - 12:30
A2L-04: MPA: Preclinical Applications of Photoacoustic Imaging
Room: Kinepolis - Room 11
Session Chair(s): Richard Bouchard, University of Texas MD Anderson Cancer Center; Stanislav Emelianov, Georgia Institute of Technology

11:00
2764: Photoacoustic Mapping of Tissue Oxygenation During Wound Healing
David Lemonnier, Parag Chitnis
George Mason University, United States

11:15
3335: In Vivo Integration of Magnetomotive Ultrasound and Photoacoustic Imaging
Ariane Sanches, João Henrique Uliana, José Eduardo Freire, Thiago Tibúrcio, Prabu Periyathambi, Nicholas Zufelato, Maria S. Brasseco, Theo Zeferino Pavan, Adilton Carneiro
University of São Paulo, Brazil

11:30
3668: Ph-Sensitive Polymersomes Targeting Trop-2 as Photoacoustic Nanosensors for ADC Monitoring
Ananthakrishnan Soundaram Jeevarathinam{2}, Claire Jones{2}, Jongyeong Jeon{1}, Mohammad Kawelah{1}, Alexander Marras{1}, Keith Johnston{1}, Konstantin Sokolov{2}, Richard Bouchard{2}
{1}University of Texas at Austin, United States; {2}University of Texas MD Anderson Cancer Center, United States

11:45
3506: Shortwave Photoacoustic Imaging of Lipid Pools Following Stroke
Russell Witte, Chris Salinas, Helena Morrison
University of Arizona, United States

12:00
2802: Visualization of Changes in Inflammatory Vascular Properties Using Photoacoustic Imaging
Riku Suzuki, I Gede Eka Sulistyawan, Takuro Ishii, Yoshifumi Saijo
Tohoku University, Japan

12:15
2776: Ultrasound-Guided Photoacoustic Monitoring of Mitochondrial Transplantation Therapies
Alex Chen{3}, Christian Hobeika{1}, Avinash Mukkala{5}, Katie Leung{2}, Heath Couture{2}, Kun Wang{4}, Francisco Calderon Novoa{4}, Sujani Ganesh{4}, Marcus Selzner{4}, Ori Rotstein{3}, Eno Hysi{3}
{1}Beaujon Hospital, France; {2}St. Michael's Hospital, Canada; {3}St. Michael's Hospital / University of Toronto, Canada; {4}University Health Network/University of Toronto, Canada; {5}University of California, San Diego, United States

11:00 - 12:30
A2L-05: MIS: Doppler & Dynamic Imaging
Room: Kinepolis - Room 12
Session Chair(s): Damien Garcia, INSERM Solveig Fadness, NTNU

11:00
3042: STUP-Net: Inferring High Pulse Repetition Frequency Signals in Plane Wave Doppler Ultrasound Under Practical Conditions
Hassan Nahas, Alfred Yu
University of Waterloo, Canada

11:15
2874: Fusion of Doppler and Pair-Wise Optical Flow with Motion Compensation for Ultrasound Velocity Field Estimation
Hailong Li, Yinran Chen
Xiamen University, China

11:30
2292: Deep Learning for Improved Clutter Filtering and Velocity Estimation in Color Flow Imaging
Erlend Løland Gundersen{2}, Tollef Struksnes Jahren{2}, Siri Ann Nyrnes{3}, Luc Mertens{1}, Lasse Løvstakken{2}
{1}Hospital for Sick Children, Canada; {2}Norwegian University of Science and Technology, Norway; {3}Norwegian University of Science and Technology and St. Olav's University Hospital, Norway

11:45
2926: High-Frame-Rate Ultrasound Imaging of Motor Unit Recruitment in Mouse Triceps Muscle
Salomé Vignat{2}, Sébastien Salles{3}, Lucas Duclos{2}, Guillaume Caron{1}, Véronique Marchand-Pauvert{2}, Quentin Grimal{2}
{1}Institut des Neurosciences Paris Saint-Pères, Université Paris-Cité, CNRS, France; {2}Laboratoire d'Imagerie Biomédicale, Sorbonne Université, INSERM, CNRS, France; {3}University of Bordeaux, CNRS, Centre de Resonance Magnetique, CRMSB, France

12:00
3056: Towards Non-Invasive Vocal Fold Vibration Assessment: Correlation Between M-Mode Ultrasound and Voice Recordings
Juliette Dindart{3}, Agnès Rouxel{5}, Muriel Lefort{2}, Trung-Kien Bui{3}, Claire Pillot-Loiseau{6}, Crystal Lin{4}, Christophe Tresallet{1}, Frédérique Frouin{3}
{1}Avicenne Hospital, AP-HP, Université Sorbonne, France; {2}Laboratoire d'Imagerie Biomédicale, Sorbonne Université, INSERM, CNRS, France; {3}LITO, Inserm, Institut Curie, Université Paris-Saclay, France; {4}Mindray France SARL, France, France; {5}Service de Médecine Nucléaire, AP-HP, Hôpital AVICENNE, Université Sorbonne Paris Nord, France; {6}Sorbonne Nouvelle University, LPP, CNRS, France

12:15
3297: deepPatella: A Tool for Automatic Tracking of Patella Tendon Insertions
Gerardo Kunstmann{2}, Romina Ledergerber{3}, Martin Keller{3}, Daniel Behr{2}, Luca Benini{1}, Oliver Faude{3}, Christoph Leitner{1}, Paul Ritsche{3}
{1}ETH Zürich, Switzerland; {2}University of Applied Sciences and Arts Northwestern Switzerland, Switzerland; {3}University of Basel, Switzerland

11:00 - 12:30
A2L-06: MEL: Shear Wave Methods I- Excitation, Tracking, & Reconstruction
Room: Kinepolis - Room 13
Session Chair(s): Xiaoming Zhang, Mayo Clinic; Stephen McAleavey, Rochester University

11:00
2930: MLS-Coded ARF Excitation for Noise-Resilient Shear Wave Elastography
Enrique González-Mateo{1}, Matthew W. Urban{3}, Noé Jiménez{2}
{1}Consejo Superior de Investigaciones Científicas, Spain; {2}Institute of Instrumentation for Molecular Imaging, Polytechnic University of Valencia-CSIC, Spain; {3}Mayo Clinic, United States

11:15
2478: Deep-DoPIo: Deep Learning for Shear Elasticity Prediction Using Double-Profile Intersection Ultrasound
Sabiq Muhtadi{1}, Caterina Gallippi{2}
{1}University of North Carolina at Chapel Hill, United States; {2}University of North Carolina at Chapel Hill / North Carolina State University, United States

11:30
3650: ShearTomoNet: Ultrasound Shear Wave Deep-Learning Tomography Framework
Seungyeop Lee, Jae Youn Hwang, Yongsoon Eun
Daegu Gyeongbuk Institute of Science and Technology, Korea

11:45
2710: Stiffness Reconstruction for Heterogeneous 3D In Vitro Models Using Reflected Shear-Wave Computed Tomography
Ting-Wei Chen, Pai-Chi Li
National Taiwan University, Taiwan

12:00
3495: Characterization of SH and SV Wave Modes in a Nonlinear Elastic Solid with Uniaxial Stretch Using 3D-Rotational SWE
Shruthi Srinivasan{1}, Annette Caenen{2}, Ned Rouze{1}, Kathryn Nightingale{1}
{1}Duke University, United States; {2}Katholieke Universiteit Leuven / Ghent University, United States

12:15
2704: Motion Artifact Correction Using Bone Echoes in Wearable Ultrasound Shear Wave Elastometry
Shane Steinberg, Yuu Ono, Sreeraman Rajan
Carleton University, Canada

11:00 - 12:30
A2L-07: Process Control & Industrial Ultrasound
Room: Progress (Supernova)
Session Chair(s): Qing Cheng, Tongji University

11:00
2188: Sparse Transducer Network for Monitoring of Fouling Removal in Pipelines
Petteri Salminen{1}, Denys Iablonskyi{1}, Julius Korsimaa{1}, Shayan Gharib{2}, Martin Weber{1}, Arto Klami{2}, Edward Hæggström{1}, Ari Salmi{1}
{1}Electronics Research Laboratory, University of Helsinki, Finland; {2}University of Helsinki, Finland

11:15
2205: Acoustic 3D Printing of High Melting Point Polymers
Mikko Koskenniemi, Joel Jääskeläinen, Martin Weber, Edward Hæggström, Ari Salmi
Electronics Research Laboratory, University of Helsinki, Finland

11:30
2317: Quality Control and Monitoring for Acoustic 3D Printing
Joel Jääskeläinen, Mikko Koskenniemi, Martin Weber, Dmitry Nikolaev, Edward Hæggström, Ari Salmi
Electronics Research Laboratory, University of Helsinki, Finland

11:45
2374: Ultrasonic Guided Wave Sensor Network Data Inversion for Resin Front Prediction in Carbon Fibre Composite Plastics Infusion Processes
Cristian Adrian Calistru{3}, Ehsan Mohseni{3}, Vedran Tunukovic{3}, Stephen Gareth Pierce{3}, Charles Norman Macleod{3}, David Lines{3}, Iain Bomphray{1}, Tobias Weis{1}, Gavin Munro{2}, Tom O'Hare{2}
{1}National Manufacturing Institute of Scotland, United Kingdom; {2}Spirit AeroSystems, United Kingdom; {3}University of Strathclyde, United Kingdom

12:00
3408: Ultrasonic Process Monitoring of Vacuum Assisted Resin Infusion Utilizing a Custom, Compact & Wireless Ultrasound System
Jonas Welsch{2}, Jinhao Lu{2}, Sergei Vostrikov{1}, Martin Angerer{2}, Robert Rohling{2}, Edmond Cretu{2}
{1}ETH Zürich, Switzerland; {2}University of British Columbia, Canada

12:15
3093: Exploring Ultrasound for Monitoring Phospholipid Content in Edible Oils
Safia Lemlikchi{1}, Johan Carlson{3}, Samir Hadjal{2}, Abdelkrim Kedadra{1}, Mohammed Asmani{4}, Hakim Djelouah{4}
{1}Center for Development of Advanced Technologies, Algeria; {2}Cevital, Algeria; {3}Luleå University of Technology, Sweden; {4}University of Science and Technology – Houari Boumediene, Algeria

11:00 - 12:30
A2L-08: PGP: General Physical Acoustics I
Room: Mission 1 (Supernova)
Session Chair(s): David Feld, Skyworks, Inc.; Laura Peralta Pereira, King's College London

11:00
3619: Quantitative Schlieren Imaging of Ultrasound Focal Fields
Milan Fritsche, Johannes Köppl, Florian Steinmeyer
Technische Hochschule Nürnberg Georg Simon Ohm, Germany

11:15
2105: Measuring and Modeling the Propagation of Nonlinear Surface Waves Up to Cubic Order in Incompressible Materials
David Espíndola, Belfor Antonio Galaz Donoso
University of Santiago, Chile, Chile

11:30
3594: Recent Discovery of a New Class of Surface Elastic Waves Enabling Breaking the Diffraction Limit, Superresolution and Sensors with Giant Mass Sensitivity
Piotr Kiełczyński
Institute of Fundamental Technological Research, Polish Academy of Sciences, Poland

11:45
3014: Using Acoustic Holograms to Increase the Focal Volume for Focused Ultrasound Treatment of Murine Brain Tumors
Rachel Burstow, Paul Cressey, Christopher Payne, Antonios Pouliopoulos, Amelia Claxton
King's College London, United Kingdom

12:00
2809: 3D Localization of Cavitation Bubbles Using a Chaotic Cavity as a Passive Detector
Gonzalo Garay{2}, Juan Barolin{2}, Yamil Abraham{2}, Mario Ibrahín Gutiérrez{1}, Carlos Negreira{2}, Nicolás Benech{2}
{1}SECIHTI - Instituto Nacional de Rehabilitación LGII, Mexico; {2}University of the Republic, Uruguay

12:15
2812: An Experimental Study of Focused Bessel Beams
Jian-Yu Lu
University of Toledo, United States

11:00 - 12:30
A2L-09: ANM: Novel Material Integration & Enabled Resonator Structures
Room: Mission 2 (Supernova)
Session Chair(s): Gianluca Piazza, CMU

11:00
3606: Advances and Challenges in Growth of LiNbO3-LiTaO3 Thin Films for Acoustic Devices
Ausrine Bartasyte{6}, Zoé Viéron-Lepoutre{5}, Nelly Scheibel{5}, Grégoire Larger{3}, Vincent Astié{1}, Nathaniel Findling{2}, Ludovic Largeau{2}, Christophe David{2}, Samuel Margueron{4}, Jean-Manuel Decams{1}
{1}Annealsys, France; {2}C2N, CNRS/Université Paris-Saclay, France; {3}Exail, France; {4}FEMTO-ST Institute / ENSMM, France; {5}FEMTO-ST Institute / Université Marie & Louis Pasteur, France; {6}FEMTO-ST Institute / Université Marie & Louis Pasteur / C2N / CNRS / Université Paris-Saclay, France

11:30
2977: A Vertical Electrode Bulk Acoustic Wave Resonator (VBAR)
Silvan Stettler{2}, Victor Plessky{3}, Luis Guillermo Villanueva{1}
{1}ANEMS Lab, STI-IGM-NEMS, École Polytechnique Fédérale de Lausanne , Switzerland; {2}École Polytechnique Fédérale de Lausanne, Switzerland; {3}Huawei Technologies Oy (Finland) Co. Ltd, Finland

11:45
3772: Polarity Controlled Sputtering Growth of AlN Films for Second-Order Mode Polarization Inverted Double Layer SMRs
Ayaka Hanai, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

12:00
3758: Fabrication of Piezoelectric Hetero-Substrates Using Micro-Transfer Printing (MTP) Technology
Dan Ling, Pengcheng Zheng, Shibin Zhang, Tiancheng Zhao, Xiaoli Fang, Mijing Sun, Dongchen Sui, Xin Ou
Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China

12:15
3786: SAW Resonator Based on Solid Flat Electrode and Periodically Polarization Inverted ScAlN Thin Films
Yuichiro Hidaka, Satoshi Matumura, Yohkoh Shimano, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

11:00 - 12:30
A2L-10: TMU: Multifrequency & Hybrid Transducers
Room: Polar
Session Chair(s): Omer Oralkan, NC State University; Brooks Lindsey, Georgia Institute of Technology

11:00
2490: A Multi-Frequency Sparse 2D PMUT Array for Combined 3D Imaging and Therapy
Alessandro Stuart Savoia{1}, Monica La Mura{1}, Domenico Giusti{2}, Carlo Luigi Prelini{2}, Muhammad Usman Khan{1}, Mohammad Mahdi Dehghan Pir{1}, Carla Maria Lazzari{2}, Enrico Boni{4}, Piero Tortoli{3}, Alessandro Ramalli{4}
{1}Roma Tre University, Italy; {2}STMicroelectronics, Italy; {3}University of Florence, Italy; {4}University of Florence / MSDLab, Italy

11:15
3722: Stacked PZT-CMUT Hybrid 1D Array for Acoustic Angiography: Preliminary Results
Ermek Belekov, Muhammetgeldi Annayev, Sipan Liu, Jing Wang, Xiaoning Jiang, Ömer Oralkan
North Carolina State University, United States

11:30
3321: Towards a Hybrid Ultrasonic Transducer Combining Piezo and CMUT in Coded Excitation for Blood Pressure Monitoring
Julian Kober{1}, Erik Kaiser{1}, Tobias Gohlke{1}, Tönnis Trittler{1}, Edgar Manfred Gustav Dorausch{5}, Marco Kircher{3}, Martin Oppermann{4}, Henning Heuer{2}, Paul-Henry Franz Koop{1}, Richard Nauber{5}, Jochen Hampe{1}, Moritz Herzog{1}
{1}Else Kröner Fresenius Center for Digital Health, Dresden University of Technology, Germany; {2}Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Germany; {3}Fraunhofer Institute for Photonic Microsystems IPMS, Germany; {4}Institute of Electronic Packaging Technology, Dresden University of Technology, Germany; {5}Vodafone Chair Mobile Communications Systems, Dresden University of Technology, Germany

11:45
3389: In Vitro Characterization of a 4 & 40 MHz Dual-Frequency Transducer for Rat Brain Imaging
Elvira Catalina Vazquez Avila{3}, Jianhua Yin{1}, Emmanuel Chérin{1}, Bojana Stefanovic{3}, Christine E.M. Demore{2}
{1}Sunnybrook Research Institute, Canada; {2}Sunnybrook Research Institute, University of Toronto, Canada; {3}University of Toronto, Canada

12:00
2143: Multi-Modes Micro Multi-Frequency Ultrasonic Transducer and Application in Spinal Screw Trajectory Imaging
Weiwei Shao{1}, Peiyang Li{2}, Xiangxin Li{1}, Zhangjian Li{1}, Yaoyao Cui{2}
{1}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences, China; {2}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences / USTC, China

12:15
3837: Smart Multi-Frequency Ultrasonic Flowmeter for Precise Multiphase Flow Rate Measurement
Amirhossein Moshrefi
Simon Fraser University, Canada

11:00 - 18:00
Xiver Demo
Room: Solar

11:00 - 18:00
Verasonics Demo
Room: Glow

11:00 - 18:00
Vermon Demo
Room: Beam

12:30 - 14:00
Lunch - *On Own*

12:30 - 14:00
Career and Leadership Development – Lunchtime Seminar
Room: Expedition

14:00 - 15:30
UFFC Reviewer Training Workshop
Room: Spark

14:00 - 15:30
A3L-01: MIM: High Frame Rate Ultrasound Imaging
Room: Kinepolis - Room 7
Session Chair(s): Billy Yiu, Technical University of Denmark ; Roger Zemp; University of Alberta

14:00
2635: Optimized Diverging Wave Transmission for Ultrafast Contrast Echocardiography, In Silico and In Vivo Demonstration
Biao Huang{2}, Qingyuan Tan{2}, Lasha Gvinianidze{3}, Jipeng Yan{1}, Reinette Hampson{3}, Matthieu Toulemonde{2}, Roxy Senior{3}, Meng-Xing Tang{2}
{1}Harbin Institute of Technology / Imperial College London, United Kingdom; {2}Imperial College London, United Kingdom; {3}Northwick Park & St Mark's Hospitals, United Kingdom

14:15
2619: 3D Comprehensive Ultrasound Imaging for Diagnosing and Monitoring Steatotic Liver Disease
Donghyun Lee, Jinseok Heo, Hyeonji Mun, Donghyeon Oh, Yongjoo Ahn, Chulhong Kim
Pohang University of Science and Technology, Korea

14:30
2595: High-Frequency Ultrafast Ultrasound Imaging for High-Resolution Elastography and Blood Flow Mapping
Chih-Chung Huang
National Cheng Kung University, Taiwan

15:00
2883: Experimental Validation of a Novel High Frame Rate Multi-Probe Vector Doppler Imaging Technique
Daniele Mazierli{2}, Claudio Giangrossi{1}, Elisa Caldini{1}, Marta Mencarelli{1}, Luca Puggelli{1}, Alessandro Ramalli{2}
{1}University of Florence, Italy; {2}University of Florence / MSDLab, Italy

15:15
2922: Myofascial 2D Motion Tracking by Multi-Scale Speckle Tracking with Kalman Filtering for Functional Assessment of Swallowing-Related Muscles
Sayaka Kawakami, Takuro Ishii, Yoshifumi Saijo
Tohoku University, Japan

14:00 - 15:30
A3L-02: MBB: Beamforming for Medical Applications
Room: Kinepolis - Room 8
Session Chair(s): Michael Oelze, University of Illinois-Urbana Champaign; Peralta, King's College, London

14:00
2296: Contrast-Free Super-Resolution Color Flow Microvessel Imaging Using a Novel Beamforming Technique: Phase Subtraction Imaging
Zhengchang Kou{1}, Junhang Zhang{2}, Qifa Zhou{2}, Michael Oelze{1}
{1}University of Illinois Urbana-Champaign, United States; {2}University of Southern California, United States

14:15
2952: In Vitro and In Vivo Validation of a Dual-Steering Non-Invasive Ultrasound Device for Deep Vein Thrombosis Treatment
Oumou Traore{3}, Lina Khider{2}, Daniel Suarez Escudero{1}, Guillaume Goudot{2}, Emmanuel Messas{2}, Mathieu Pernot{3}
{1}Cardiawave, France; {2}Hôpital Européen Georges-Pompidou, Assistance Publique-Hôpitaux de Paris, France; {3}Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France

14:30
3049: Diverging Waves Transcranial Super-Resolution Ultrasound Imaging Using Chirp and Spatial-Angular Generalized Coherence Factors Beamforming
Hao Wang, Jinxuan Ma, Jiacheng Liu, Meiling Liang, Mingxi Wan
Xi'an Jiaotong University, China

14:45
2103: Enhanced Transcranial Plane-Wave Imaging Through REFoCUS Reconstruction with Fast Marching Phase Aberration Correction
Yuming Yang, Shounong Mo, Fu-Feng Lee, Wangfang Liu, Naizhang Feng, Jianwu Zhu
SonoScape Medical Corp., China

15:00
2158: High Frame Rate Imaging Using Multi-Line Transmission for Ring-Array Ultrasound Systems
Zhengfeng Lan{3}, Chao Rong{2}, Yiming Lei{2}, Hu Peng{1}, Hongxiang Lin{2}
{1}Hefei University of Technology, China; {2}Zhejiang Lab, China; {3}Zhejiang Lab / Hefei University of Technology, China

15:15
3351: Scalable Multi-GPU 2D and 3D Beamformer for Computationally Demanding Ultrasound Applications
Jaime Parra Raad{1}, Leong Fan Fung{2}, Paul Dryburgh{1}, Laura Peralta Pereira{1}, Kirsten Christensen-Jeffries{1}
{1}King's College London, United Kingdom; {2}University of Edinburgh, United Kingdom

14:00 - 15:30
A3L-03: MBF: Vector Doppler
Room: Kinepolis - Room 9
Session Chair(s): Alessandro Ramalli, University of Florence; Damien Garcia, INSERM

14:00
2071: Improved Quantification of Fast Flows Using Kalman Filter-Based Echo-Particle Tracking Velocimetry
Yichuang Han, Johan Bosch, Jason Voorneveld
Erasmus University Medical Center, Netherlands

14:15
2630: Wearable Ultrasound for Continuous Monitoring of Vector Flow in the Carotid Artery
Jiaxing Peng, Xiao Wei, Dawei Wu
Nanjing University of Aeronautics and Astronautics, China

14:30
2718: Multi-Layered Morphology-Constrained Doppler-Projected Vector Flow Imaging (MMDP-VFI) for Ultrasound Microvascular Imaging
Zetao Fei, Yinran Chen
Xiamen University, China

14:45
3202: Quantification of Heart Failure in a Knockout Murine Model Using Ultrasound Vector Doppler Imaging
Geraldi Wahyulaksana{3}, Colin K.L. Phoon{2}, Ashmit Pal{1}, Glenn I. Fishman{2}, Jeffrey A. Ketterling{3}
{1}New York University, United States; {2}NYU Langone Health, United States; {3}Weill Cornell Medicine / Cornell University, United States

15:00
3204: Evaluation of Vector Complexity Using Velocity Vector Imaging in Patients with Symptomatic Carotid Artery Stenosis
Janna Ruisch{2}, Hilde Wetzels{2}, Suzanne Holewijn{3}, Michel Reijnen{4}, Chris de Korte{1}, Anne Saris{1}
{1}Radboud University Medical Center, Netherlands; {2}Radboud University Medical Center & Rijnstate Hospital, Netherlands; {3}Rijnstate Hospital, Netherlands; {4}University of Twente & Rijnstate Hospital Arnhem, Netherlands

15:15
3064: Contrast-Free High-Frequency Ultrasound Speckle Tracking for Left Ventricular Flow and Wall Shear Stress Mapping in Mice Model
Pang-Hao Chou, Hsin Huang, Chih-Chung Huang
National Cheng Kung University, Taiwan

14:00 - 15:30
A3L-04: MPA: Novel Photoacoustic Imaging System Development
Room: Kinepolis - Room 11
Session Chair(s): Parag Chitnis, George Mason University; Geoffrey Luke, Dartmouth College

14:00
2299: Non-Contact Optical Ultrasound Based Microscopic Acoustic Property Measurement
Kazuki Tamura, Shinpei Okawa
Hamamatsu University School of Medicine, Japan

14:15
2095: Three-Dimensional Photoacoustic Imaging with a Row-Column Array Based on 3D Gaussian Splatting
Yihang Lian, Pengcheng Wan, Yi Zeng, Hui Zhu, Xiran Cai
ShanghaiTech University, China

14:30
3479: Semiconductor-Based Photoacoustics with Coded Excitation
Richard Nauber{3}, Antonia Longo{2}, Braden Eliason{2}, Guillaume Zahnd{2}, Cornelius Kühnöl{3}, Edgar Manfred Gustav Dorausch{3}, Pascal Stöver{4}, Julian Kober{1}, Paul-Henry Franz Koop{1}, Jochen Hampe{1}, Gerhard Fettweis{3}, Patrick Leisching{2}, Moritz Herzog{1}
{1}Else Kröner Fresenius Center for Digital Health, Dresden University of Technology, Germany; {2}iThera Medical GmbH, Germany; {3}Vodafone Chair Mobile Communications Systems, Dresden University of Technology, Germany; {4}Vodafone Chair Mobile Communications Systems, Dresden University of Technology /EKFZ Digital Health, Germany

14:45
3334: Development and Characterization of a Multi-Scale Photoacoustics Platform for Next-Generation Imaging Applications
Gayathri Malamal{2}, Valeria Grasso{4}, Irene Locatelli{3}, Chiara Venegoni{3}, Massimo Alfano{3}, Jithin Jose{1}
{1}FUJIFILM VisualSonics Inc., Netherlands; {2}FUJIFILM VisualSonics Inc. / Indian Institute of Technology Palakkad, Netherlands; {3}Scientific Institute San Raffaele, Italy; {4}University of California, San Francisco, United States

15:00
2584: Commercial-Scanner-Based Real-Time Spectroscopic Photoacoustic/Ultrasound (Paus) Imaging with Fluence Compensation and Clutter Removal
Ruibo Shang{3}, Peter Lorraine{2}, Lowell Smith{2}, Heather Chan{1}, Timothy Fiorillo{2}, Vattanary Tevy{3}, Wayne Monsky{3}, Ivan Pelivanov{3}, Matthew O'Donnell{3}
{1}GE HealthCare Technology and Innovation Center, United States; {2}General Electric, United States; {3}University of Washington, United States

15:15
2900: Laser Diode Scanning Photoacoustic Microscopy with Extended Field-of-View Using Calibration-Based Algorithms
Javier Ángel Navarro-Calvo, Juan José García-Garrigós, Adrián Arándiga, Alejandro Cebrecos
Instituto de Instrumentación para Imagen Molecular, Universitat Politècnica de València-CSIC, Spain

14:00 - 15:30
A3L-05: MIS: Microvascular Imaging
Room: Kinepolis - Room 12
Session Chair(s): Mengxing Tang, Imperial College, London; Ge Zhang, ESPCI

14:00
3168: Contrast-Free Super-Resolution Power Doppler Using U-MambaIR for Microvasculature Imaging
Liyuan Jiang, Yang Liu, Hanbing Chu, Xiao Su, Yichen Yan, Chaoyang Zhang, Yujin Zong, Mingxi Wan
Xi'an Jiaotong University, China

14:15
2395: Signal-Domain Self-Supervised Deep Denoising for Ultrasound Microvascular Imaging
Lijie Huang, U-Wai Lok, Jingyi Yin, Jingke Zhang, Ryan Deruiter, Jieyang Jin, Xiangyang Zhu, James Krier, Lilach Lerman, Shigao Chen, Chengwu Huang
Mayo Clinic, United States

14:30
3409: Dynamically Mapping Microvascular: A Constrained Sparse Deconvolution Approach with 3D Spatiotemporal Regularization
Hanbing Chu, Yichen Yan, Xiao Su, Liyuan Jiang, Jiacheng Liu, Yiran Chen, Yujin Zong, Mingxi Wan
Xi'an Jiaotong University, China

14:45
2569: Real-Time SVD Clutter Filtering Using Preconditioning
Sebastian Kazmarek Præsius{2}, Kees Joost Batenburg{1}, Jørgen Arendt Jensen{2}
{1}Leiden Institute of Advanced Computer Science, Leiden University, Netherlands; {2}Technical University of Denmark, Denmark

15:00
3144: A Novel Clutter Filtering Method Based on Sparse Bayesian Learning for Ultrafast Power Doppler Imaging and Functional Ultrasound Imaging
Wenjie Liang, Wenyue Huang, Yu Qiang, Le Gao, Xingying Wang, Zhiqiang Zhang, Yue Pan, Weibao Qiu
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

15:15
3208: A Dual-Phase Deep Learning Approach for Motion Correction in Carotid Artery Ultrasound Localization Microscopy
Haoxuan Yao{2}, Clara Rodrigo Gonzalez{2}, Su Yan{2}, Biao Huang{2}, Jipeng Yan{1}, Joseph Hansen-Shearer{2}, Rifkat Zaydullin{2}, Qingyuan Tan{2}, Cameron A.B. Smith{2}, Mengjie Shi{2}, Thomas Else{2}, Meng-Xing Tang{2}
{1}Harbin Institute of Technology / Imperial College London, China; {2}Imperial College London, United Kingdom

14:00 - 15:30
A3L-06: MEL: Shear Wave Methods II- Speed Estimation
Room: Kinepolis - Room 13
Session Chair(s): Matthew Urban, Mayo Clinic; Richard Bouchard, University of Texas MD Anderson Cancer Center

14:00
2222: ShearMoFit: A Dual-Plane Ultrasound Shear Wave Motion Cleaning Technique
Md Jahin Alam, Md Ashikuzzaman, Muyinatu A. Lediju Bell
Johns Hopkins University, United States

14:15
3496: Increasing Shear Wave Phase Velocity Trajectory Interrogation Using Curved Shear Wave Geometries for Ultrasound Shear Wave Elasticity Imaging
Wren Wightman, Shruthi Srinivasan, Ned Rouze, Kathryn Nightingale
Duke University, United States

14:30
3344: Comparison of the Statistics of Slowness and Velocity-Based Time-of-Flight Shear Wave Speed Estimation Algorithms
Wren Wightman, Ned Rouze, Mark Palmeri, Kaden Bock, Kathryn Nightingale
Duke University, United States

14:45
2640: Multifrequency Full-Waveform Inversion in Ultrasound Time-Harmonic Shear-Wave Elastography
Mohamed Aziz Boukraa, Yücel Karabiyik, Andreas Austeng, Sven Peter Näsholm
University of Oslo, Norway

15:00
2873: Frequency-Weighting Local Phase Velocity Imaging for Enhanced Shear Wave Elastography
Weicheng Hsiao{1}, Siswoyo Prasetyo{1}, Chia-Lun Yeh{2}, Bao-Yu Hsieh{1}
{1}Chang Gung University, Indonesia; {1}Chang Gung University, Taiwan; {2}National Taiwan University, Taiwan

15:15
2664: Shear Wave Speed Reconstruction via Directional Filtering and Rotational Analysis
Jinping Dong{1}, Youjun Liu{1}, Wei-Ning Lee{2}
{1}Beijing University of Technology, China; {2}University of Hong Kong, China

14:00 - 15:30
A3L-07: Acoustic Sensors I
Room: Progress (Supernova)
Session Chair(s): Aryaz Baradarani, Tessonics

14:00
2216: Extreme-Environment Sensor Systems for Industrial Applications
Mauricio Pereira Da Cunha
University of Maine, United States

14:30
2808: Anti-Matching Layer Structure for Ultrasound Suppression and Transducer Enhancement
Yue Yang, Lijun Xu, Jianguo Ma
Beihang University, China

14:45
3784: Liquid Sensor Application Using Acoustic Energy Confinement of 30-Layer Polarization Inversion Resonator
Yuki Imai, Motoshi Suzuki, Yohkoh Shimano, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

15:00
2096: Metamaterial Plates for Acoustic Wave Focusing Across an Ultra-Broad Frequency Bandwidth in MHz-Range NDT Applications
Feng Qin, Jie Zhang, Bruce Drinkwater
University of Bristol, United Kingdom

15:15
2199: Frequency and Directional Response of a Reflection Type Optical Hydrophone: A Simulation Study
Martin Weber, Joni Mäkinen, Edward Hæggström, Ari Salmi
Electronics Research Laboratory, University of Helsinki, Finland

14:00 - 15:30
A3L-08: PGP: General Physical Acoustics II
Room: Mission 1 (Supernova)
Session Chair(s): Javier Brum, Instituto de Física, Facultad de Ciencias, UdelaR; Andreas Mayer, HS Offenburg - Univ. of Applied Sciences, Gengenbach

14:00
3613: Seeing Sound: Real-Time Schlieren Imaging of Ultrasound Wavefields
Milan Fritsche, Adrian Dittmaier, Maximilian Jahrsdörfer, Florian Steinmeyer
Technische Hochschule Nürnberg Georg Simon Ohm, Germany

14:15
3397: Microspeaker Based on PMN-PT Bimorph Suspended by Corrugated Parylene
Yicheng Zhang, Anik Sengupta, Kianoush Sadeghian Esfahani, Akash Roy, Eun Kim
University of Southern California, United States

14:30
2106: Stoneley Waves in Incompressible Soft-Solids with Slip and Nonslip Boundary Conditions
David Espíndola, Ignacio Pozo, Belfor Antonio Galaz Donoso
University of Santiago, Chile, Chile

14:45
3009: Effects of Rarefied Atmosphere on Acoustic Signals Recorded in Stratospheric Balloon-Borne Detection Systems
Guanwen Sun, Xinxin Jin, Yuxin Zhang, Huijie Yang, Hanyin Cui
Institute of Acoustics, Chinese Academy of Sciences, China

15:00
3327: Pyramidal Ultrasonic Absorbers Using FFF 3D Printing Technology
Volodymyr Rohovets, Georg Schmitz
Ruhr University Bochum, Germany

15:15
2362: Deep Learning–Based, Physics-Informed Transcranial Acoustic Hologram Generator: A Fast, Flexible Strategy for Ultrasonic Neuromodulation
Moon Hwan Lee, Jae Youn Hwang
Daegu Gyeongbuk Institute of Science and Technology, Korea

14:00 - 15:30
A3L-09: AAD: Acoustic Devices Beyond 10 GHz
Room: Mission 2 (Supernova)
Session Chair(s): Matteo Rinaldi, Northeastern Univ

14:00
2314: $Sc_{0.3}Al_{0.7}N$ FBAR Resonator and Filter for n257 5G mmWave Band Using Sub-50 nm Thin Film Technology
Ying Zhang, Xinghua Wang, You Qian, Chen Liu
Institute of Microelectronics, Agency for Science, Technology and Research, Singapore

14:15
3691: Cryogenic Q Enhancement in 50 GHz Solidly Mounted Acoustic Resonators
Joshua Campbell, Jack Kramer, Tzu-Hsuan Hsu, Ruochen Lu
University of Texas at Austin, United States

14:30
3564: 18 GHz Filters Based on Cross-Sectional Lamé Mode Resonators (CLMRs)
Luca Spagnuolo, Kapil Saha, Pietro Simeoni, Luca Colombo, Matteo Rinaldi
Northeastern University, United States

14:45
2683: Enhanced Performance of 16.8 GHz BAW Resonators Using Polarity-Inverted Piezoelectric Film Stack Architecture
Wentong Dou, Zhiqiang Mu, Xuanqi Huang
Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China

15:00
2653: 14 GHz Polarity-Inverted AlN Smr-Baw Resonators with Improved Frequency Temperature Coefficient
Ruidong Qin, Chongyang Huo, Chen Li, Wentong Dou, Bozuo Jing, Xuanqi Huang, Zhiqiang Mu, Wenjie Yu
Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China

15:15
2275: Frequency Scaling Capabilities of Single Layer LiNbO3 Film Bulk Acoustic Resonators
Alexandre Reinhardt, Grégory Enyedi, Pierre Perreau, Laurence Andreutti, Rachid Hida, Marie Bousquet
CEA-Leti, France

14:00 - 15:30
A3L-10: TMU: Piezoelectric Micromachined Ultrasonic Transducers for Sensing Applications
Room: Polar
Session Chair(s): Enrico Boni, University of Florence; Yipeng Lu, Peking University

14:00
2489: Wearable Eye Tracking with High-Frequency PMUT Arrays: An Experimental Study
Alessandro Stuart Savoia{1}, Monica La Mura{1}, Mohammad Mahdi Dehghan Pir{1}, Davide Ugo Ghisu{2}, Domenico Giusti{2}, Marco Ferrera{2}
{1}Roma Tre University, Italy; {2}STMicroelectronics, Italy

14:15
3642: A Single Crystalline PMN-PZT Thin Film-Based Piezoelectric Micromachined Ultrasonic Transducer (PMUT) for Fingerprint and Fingertip Vein Co-Recognition
Jin Soo Park{2}, Soo Young Jung{2}, Seung-Hyub Baek{2}, Byung Chul Lee{1}
{1}Bionics Research Center, Korea Institute of Science and Technology, Korea; {2}Korea Institute of Science and Technology, Korea

14:30
2816: Lithium-Ion Battery State of Charge and Health Monitoring with Ultrasonic Guided Waves Using High-Directivity and High-Sound-Pressure PMUTs
Jiao Xia, Junhao Wang, Chong Yang, Yufeng Gao, Bowen Sheng, Yipeng Lu
Peking University, China

14:45
3282: Piezoelectric Micromachined Ultrasonic Transducers for Accurate Heart Rate Monitoring in Smart Rings
Andrea Constantinescu{2}, Alessandro Colombo{1}, Marco Travagliati{1}, Leonardo Baldasarre{1}
{1}TDK Americas R&D, Italy; {2}TDK Americas R&D / Politecnico di Milano, Italy

15:00
2919: Towards a Modular 256-Element pMUT Array for Steerable High Pressure Focus in Air
Daniel Schmitt, Anette Jakob, Frank Tiefensee, Marc Fournelle, Steffen Tretbar
Fraunhofer Institute for Biomedical Engineering IBMT, Germany

15:15
2863: High-Q in PMUTs: A Surprising Discovery
Kaustav Roy
Cornell University, United States

15:30 - 16:30
Coffee Break
Room: Transit Zone

15:30 - 16:30
A4P-11: MIM: Imaging Systems
Room: Transit Zone
Session Chair(s): Amir Gholampour, Eindhoven University of Technology

2528: High-Frequency Ultrasonic Combined with Superb Microvascular Imaging Technology in the Evaluation of Hypertrophic Scars: A Preliminary Study
Xiaoyi Chen{2}, Yi Zhang{1}, Xinping Bai{1}, Yixuan Zhang{1}, Jianxin Liu{1}
{1}Central Hospital of Wuhan, China; {2}Central Hospital of Wuhan, Tongji Medical College, Huazhong University, China

3324: Ultra-High Frequency Intravascular Ultrasound; a Novel Approach for Diagnosing Neonates with Hirschsprung Disease?
Maria Evertsson, Christina Graneli, Pernilla Stenström
Lund University, Sweden

3374: Experimental Validation of Continuous Emission Ultrafast Ultrasound Imaging
Mohamed Tamraoui{1}, Axel Adam{1}, Adrian Basarab{2}, Barbara Nicolas{1}, Hervé Liebgott{3}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {2}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm / TPAC NDT, France; {3}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm / UJMSaint-Et, France

3566: X-Ray Transparent Sapphire-Backed Electrostrictive Row-Column Ultrasound Arrays for Multi-Modal Imaging
Nathaniel Bly{2}, Mohammad Rahim Sobhani{1}, Darren Dahunsi{2}, Tyler Henry{2}, Atiyah Yahya{2}, Roger Zemp{1}
{1}CliniSonix / University of Alberta, Canada; {2}University of Alberta, Canada

3616: Multimodal Transvaginal Imaging Device Integrating Ultrasound, Photoacoustics, and Elastography: Initial Human Studies
Yan Yan{2}, Nikhila Nyayapathi{1}, Enpei Yao{1}, Amy Scheible{2}, Stefanie Hollenbach{2}, Mohammad Mehrmohammadi{2}
{1}University of Rochester, United States; {2}University of Rochester Medical Center, United States

3622: Advancements in Intravascular Ultrasound Imaging of Large Vessels Using Broadband Chirp Excitation and Multi-Band Frequency Processing
Leili Salehi, Stephanie Grainger
Infraredx Inc., United States

3747: Reflector-Integrated Ultrasound Guided Needle Access for Percutaneous Nephrolithotomy with Automatic Needle Tracking
Vishali Baker, Emerson Shatouhy, Ethan Zhong, Yichuan Tang, Haichong Zhang
Worcester Polytechnic Institute, United States

15:30 - 16:30
A4P-12: MSD: Ultrasound Platforms & System Integration
Room: Transit Zone
Session Chair(s): Christian Coviello, Verasonics

2836: Accelerating Portable Ultrasound on a System-on-Chip: A Co-Processing Approach with Data Reordering
Daehyun Park, Yangmo Yoo
Sogang University, Korea

3079: High-Speed Data Transfer Architecture in Modular Ultrasound Systems for 3D High Frame Rate Imaging
Alessandra Vignoli{1}, Paolo Verdi{1}, Francesco Lagonigro{1}, Valentino Meacci{1}, Claudio Giangrossi{1}, Daniele Mazierli{2}, Alessandro Ramalli{2}, Enrico Boni{2}
{1}University of Florence, Italy; {2}University of Florence / MSDLab, Italy

3503: Programmable Platform with 200Vpp Arbitrary Waveform Generator for Advanced Ultrasound Research
Xiaochen Xu{1}, Junseob Shin{1}, Chris Turner{1}, John Tauch{2}, Mitch Kaplan{1}, Bill Randle{1}, Dav Watola{1}, Shabbir Amjhera Wala{3}, Savyan Kanisserry{3}, Marcus Julian{1}, Jie Yin{1}
{1}Accupluse Medical, China; {1}Accupluse Medical, United States; {2}Accupulse Medical, United States; {3}Texas Instruments, India

3712: Volumetric Vascular Access Guidance System with Sub-Millimeter Accuracy in Variable Ultrasound Orientations
Jintan Zhang{1}, Keshuai Xu{1}, Laeben Lester{3}, Emad Boctor{1}, Jeeun Kang{2}
{1}Johns Hopkins University, United States; {2}Johns Hopkins University / SOM Ane Cardiac Anesthesiology, United States; {3}SOM Ane Cardiac Anesthesiology, United States

2643: Ula-Pop: An Ultrasound, Advanced, Portable, Open Platform for Research
Valentino Meacci{1}, Giulio Bonciani{1}, Piero Tortoli{1}, Lorenzo Castrignano{1}, Paolo Verdi{1}, Enrico Boni{2}, Alessandro Ramalli{2}
{1}University of Florence, Italy; {2}University of Florence / MSDLab, Italy

3724: Improved Imaging Interfaces on a Co-Registered Ultrasound and Optical Microscopy Multiscale System
Jonathan Hale, Kevin Eliceiri, Ivan Rosado-Mendez
University of Wisconsin–Madison, United States

15:30 - 16:30
A4P-13: MSD: Emerging Technologies for Ultrasound Imaging
Room: Transit Zone
Session Chair(s): Marcus Ingram, KU Leuven

2211: ViGiL: Software for the Generation of Realistic In Silico Ultrasound Phantoms
Lachlan Arthur, Georgios Papageorgiou, Steven McDougall, Vassilis Sboros
Heriot-Watt University, United Kingdom

2954: Accelerating Ultrasound Computer Tomography Data Acquisition Using a Deep Convolutional Neural Network
Ziemowit Klimonda{2}, Piotr Jarosik{2}, Piotr Karwat{2}, Michał Byra{1}, Marcin Lewandowski{2}
{1}Institute of Fundamental Technological Research, Polish Academy of Sciences, Poland; {2}us4us Ltd., Poland

3169: Linear Projection for Transducer Position Calibration and Crosstalk Detection in Low SNR USCT Systems
Michael Zapf{2}, Yousef Riyazifar{2}, Simon Kraft{2}, Koen van Dongen{1}, Nicole Ruiter{2}
{1}Delft University of Technology, Netherlands; {2}Karlsruhe Institute of Technology, Germany

3213: Diagnostic Tool for 3D Ultrasound Computed Tomography on System-Level
Simon Kraft, Michael Zapf, Yousef Riyazifar
Karlsruhe Institute of Technology, Germany

3442: Electronics-Free Deep-Tissue Sensing via Passive Ultrasonic Backscatter
Emine Bardakci, Alp Timucin Toymus, Levent Beker
Koc University, Turkey

3686: 3D Us/PA Spectral Unmixing Imaging System for Real-Time Hemodynamics Monitoring: A Feasibility Study
Sangwoo Nam, Suyeong Choi, Myeongchan Kim, Nizar Guezzi, Youngho Seo, Seonghyeon Cho, Sangheon Lee, Jaesok Yu
Daegu Gyeongbuk Institute of Science and Technology, Tunisia; Daegu Gyeongbuk Institute of Science and Technology, Korea

2940: A GPU-Accelerated Pipeline for Real-Time Power Doppler Imaging Using Compounded Barker Code Excitation
Christopher Khan, Abbie Weeks, Emelina Vienneau, Brett Byram
Vanderbilt University, United States

15:30 - 16:30
A4P-14: MTN: Brain & Cancer Theranostics
Room: Transit Zone
Session Chair(s): Antonis Pouliopoulos, King's College London; Mark Borden, University of Colorado, Boulder

2089: 3D Magnetomotive Ultrasound Using a Matrix Transducer to Visualize the Distribution of Magnetic Nanoparticles
Christian Marinus Huber{4}, Sarah Therre-Mohr{3}, Lars Hageroth{5}, Christian Heim{1}, Stefan J. Rupitsch{1}, Helmut Ermert{6}, Marc Fournelle{2}, Steffen Tretbar{2}, Stefan Lyer{6}
{1}Albert Ludwig University of Freiburg, Germany; {2}Fraunhofer Institute for Biomedical Engineering IBMT, Germany; {3}Fraunhofer Institute for Biomedical Engineering IBMT / Saarland University, Germany; {4}Friedrich-Alexander-Universität / Universitätsklinikum Erlangen, Germany; {5}Friedrich-Alexander-Universitäts Erlangen Nürnberg, Germany; {6}Universitätsklinikum Erlangen, Germany

2121: 3D Transcranial Monitoring of Microbubble Cavitation Activity with Row-Column Arrays: A Simulation Study
Hui Zhu, Yi Zeng, Xiran Cai
ShanghaiTech University, China

2452: An MR-Guided Transmit/Receive Hemispherical Phased Array System for Microbubble-Mediated Ultrasound Brain Therapy
Ryan Jones, Dallan McMahon, Rohan Ramdoyal, Wai-Meng Kan, Samuel Gunaseelan, Harry Clegg, Thomas Lin, Belinda Kusuma, Kullervo Hynynen
Sunnybrook Research Institute, Canada

2821: Needle Tip Histotripsy Enables Rapid, LAMP-Based, Point-of-Care Cancer Diagnostics
Ewan McAlister{2}, Joy Wang{1}, Pradyumna Kedarisetti{2}, Frank Wuest{2}, Roger Zemp{1}
{1}CliniSonix / University of Alberta, Canada; {2}University of Alberta, Canada

2935: Dual-Frequency HIFU-Activated Nanoplatform for Enhanced Tumor Therapy and Immune Activation
Zhezhu Nan, Yi Feng
Xi'an Jiaotong University, China

3421: Enhancing Passive Cavitation Imaging Using nth Coherence Factor Weighted Delay Sum Integrate: A Comparative Study
Abhinav Kumar Singh{1}, Muskan Singh{2}, Kevin Zhao{2}, Erik Saucedo{2}, Kenneth B. Bader{2}, Himanshu Shekhar{1}
{1}Indian Institute of Technology Gandhinagar, India; {2}University of Chicago, United States

3663: A Piezo-CMUT Hybrid Hemispherical Transmit Array for Passive Acoustic Mapping of Microbubble Activity
Sait Kilinc, Hohyun Lee, Yann Ferry, Bryant Ingram, Pradosh Pritam Dash, Benjamin Skowronski, Reza Pakdaman Zangabad, Costas Arvanitis, Levent Degertekin
Georgia Institute of Technology, United States

3723: Imaging-Therapy System for Blood-Brain Barrier Research and Intervention (ITS-BRaIn)
Oleksandra Gulenko{3}, Stephen A. Lee{3}, Gerardo Ramos-Palacios{2}, Jonathan Porée{3}, Vladimir Rymar{1}, Louis Caron{3}, Abbas Sadikot{2}, Jean Provost{4}
{1}McGill University, Canada; {2}Montreal Neurological Institute and Hospital McGill University, Canada; {3}Polytechnique Montréal, Canada; {4}Polytechnique Montréal, Montreal Heart Institute, Canada

15:30 - 16:30
A4P-15: MSR: Quantifying the Unseen
Room: Transit Zone
Session Chair(s): Jonathan Poree, Polytechnique Montreal

2235: Fast Large-Scale, Non-Rigid Motion Estimation for Ultrasound Localization Microscopy
Nico Oblisz, Thomas Lisson, Stefanie Dencks, Georg Schmitz
Ruhr University Bochum, Germany

2238: Detection of Pulsatile Oscillations via Ultrasound Localization Microscopy
Luca Giaccone, Giulia Tuccio, Libertario Demi
University of Trento, Italy

2503: In Vivo Comparison of Contrast-Free Super-Resolution Ultrasound Imaging and Ultra-Micro Vascular Imaging on a Clinical Ultrasound Scanner
Yigang Du, Maodong Sang, Lanxi Xiang, Yongqiang Dong, Yi Wu, Longfei Cong, Muqing Lin
Shenzhen Mindray Bio-Medical Electronics Co., Ltd., China

2882: Validation of Vessel Width in Super-Resolution Ultrasound Imaging Using Micro-CT
Lauge Naur Hansen{1}, Andre Ráth{1}, Amy McDermott{2}, Charlotte Mehlin Sørensen{2}, Carsten Gundlach{1}, Anders Bjorholm Dahl{1}, Jørgen Arendt Jensen{1}
{1}Technical University of Denmark, Denmark; {2}University of Copenhagen, Denmark

2886: Cross-Modality Registration of 2D Super-Resolution Ultrasound to 3D Micro-CT
Lauge Naur Hansen{1}, Andre Ráth{1}, Amy McDermott{2}, Charlotte Mehlin Sørensen{2}, Carsten Gundlach{1}, Anders Bjorholm Dahl{1}, Jørgen Arendt Jensen{1}
{1}Technical University of Denmark, Denmark; {2}University of Copenhagen, Denmark

3081: A Novel Silicone Microvascular Phantom Capable of Synchronous Optical and Acoustic Imaging
Minghao Li, Xiao Deng, Zhaoyang Guo, Qiquan Ruan, Kangyi Feng, Mingxi Wan, Yujin Zong
Xi'an Jiaotong University, China

3225: Evaluation of Image-Based Motion Correction Methods for Ultrasound Localization Microscopy
Clara Rodrigo Gonzalez, Biao Huang, Su Yan, Rifkat Zaydullin, Cameron A.B. Smith, Matthieu Toulemonde, Marcelo Lerendegui, Oscar Bates, Fu Siong Ng, Meng-Xing Tang
Imperial College London, United Kingdom

15:30 - 16:30
A4P-16: MEL: Machine & Deep Learning
Room: Transit Zone
Session Chair(s): Hassan Rivaz, Concordia University

2100: Autonomous Selection of Energy-Based Ultrasound Speckle Tracking Parameters Using Deep Learning
Md Ashikuzzaman, Ahmed El-Desoky, Muyinatu A. Lediju Bell
Johns Hopkins University, United States

2176: A Deep Learning-Based Quality Control Method of Elastogram for Assessing Liver Fibrosis Using Ultrasound Transient Elastography
Miaoqin Deng{2}, Zihao Huang{2}, Yihao Zhou{2}, Buyun Liu{3}, Liyou Lian{1}, Wei Bao{3}, Minghua Zheng{1}, Yongping Zheng{4}
{1}First Affiliated Hospital of Wenzhou Medical University, China; {2}Hong Kong Polytechnic University, Hong Kong; {3}Institute of Public Health Sciences, University of Science and Technology of China, China; {4}Research Institute for Smart Ageing, Hong Kong Polytechnic University, Hong Kong

2472: Automatic Delineation of Human Carotid Plaque Components by Supervised Learning in ARFI Variance of Acceleration Imaging, In Vivo
Shureed Qazi{1}, Keerthi Anand{1}, Caterina Gallippi{2}
{1}University of North Carolina at Chapel Hill, United States; {2}University of North Carolina at Chapel Hill / North Carolina State University, United States

2799: Virtual Shear Wave Elastography for Liver Fibrosis Assessment via Conditional Generative Adversarial Network on Standard B-Mode Ultrasound
Chun Hao Lu, Po-Hsiang Tsui
Chang Gung University, Taiwan

2870: Virtual Generation of Shear Wave Elastography Based on Diffusion Model
Sijie Chen{2}, Xinwei Deng{2}, Xinyi Wen{2}, Minhua Lu{2}, Xin Chen{2}, Weibao Qiu{1}, Yanyan Yu{2}
{1}Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China; {2}Shenzhen University, China

3133: Shear Wave Denoising via a Conditional Diffusion Probabilistic Model
Xi Zhang, Wei-Ning Lee
University of Hong Kong, Hong Kong

3558: Particle Velocity Tracking in Shear Wave Elastography Using a Mamba-Based Spatiotemporal Network
Ali Kafaei Zad Tehrani{1}, Scott Schoen Jr{3}, Ion Candel{3}, Guangyi Zhang{3}, Peng Guo{3}, Michael Wang{2}, Rimon Tadross{2}, Mike Washburn{2}, Hassan Rivaz{1}, Anthony E. Samir{3}
{1}Concordia University, Canada; {2}GE Healthcare, United States; {3}Massachusetts General Hospital, United States

3591: Neural Network Viscoelastic Moduli Estimation from Multi-Push Displacement Profile Parameterizations
Joseph Richardson{1}, Caterina Gallippi{2}
{1}University of North Carolina at Chapel Hill, United States; {2}University of North Carolina at Chapel Hill / North Carolina State University, United States

3626: A Physics-Informed Neural Network Approach for Determining Arterial Compliance and Pressure Using Ultrasound Imaging: Feasibility Study with In Vivo Human Subjects
Tuhin Roy, Parth Gami, Paul Kemper, Elisa E. Konofagou
Columbia University, United States

15:30 - 16:30
A4P-17: MEL: Viscoelasticity in Cancer
Room: Transit Zone
Session Chair(s): Ivan Pelivanov, University of Washington

2441: Harmonic Motion Imaging for Non-Invasive Breast Cancer Neoadjuvant Chemotherapy Response Prediction
Yangpei Liu, Shiqi Hu, Elisa E. Konofagou
Columbia University, United States

2696: High-Frequency Microelastography System for Viscoelastic Characterization of Tumor Spheroids and Their Microenvironment
Jose Manuel Cortes Cortes{2}, Inas H. Faris{2}, Jorge Torres{1}, Antonio Callejas{2}, Guillermo Rus{2}
{1}INSERM, Labtau, France; {2}University of Granada, Spain

2970: Identification of Local Nonlinear Shear-Wave Dynamics in Prostate Cancer Using Volterra Kernels
Xueting Li{2}, Simona Turco{2}, Marije Zwart{1}, Hessel Wijkstra{2}, Massimo Mischi{2}
{1}Angiogenesis Analytics, Netherlands; {2}Eindhoven University of Technology, Netherlands

3178: Four-Dimensional Surface Acoustic Wave Optical Coherence Elastography (SAW-OCE) for Assessment of Cutaneous Leishmaniasis Lesions and Treatment Response in a Murine Model
Yilong Zhang{1}, Tianyu Zhang{2}, Katrien Van Bocxlaer{2}, Zhengshuyi Feng{2}, Chunhui Li{1}, Zhihong Huang{2}
{1}University of Dundee, United Kingdom; {2}University of York, United Kingdom

3207: Development of a Tumor Bonding Model Based on Adhesive Properties for Improving Breast Tumor Classification Using Rotation Elastogram
Belfor Antonio Galaz Donoso{2}, Claudio Pozo{2}, Miguel Trejo{1}, David Espíndola{2}
{1}University of Buenos Aires, Argentina; {2}University of Santiago, Chile, Chile

3446: Exploring the Viscoelastic Properties of Copolymer-in-Oil Phantoms for Shear Wave Elastography
Mariah Prado{2}, David Burbano{2}, João Uliana{2}, Javier Brum{3}, Matthew W. Urban{1}, Adilton Carneiro{2}, Theo Zeferino Pavan{2}
{1}Mayo Clinic, United States; {2}University of São Paulo, Brazil; {3}University of the Republic, Uruguay

15:30 - 16:30
A4P-18: MIS: Signal Processing & Beamforming
Room: Transit Zone
Session Chair(s): Brett Byram, Vanderbilt University

2316: Shear Wave Dispersion Estimation Using Deep Learning with a Multi-Frequency Approach
Anusua Das{2}, Phidakordor Sahshong{2}, Akash Chandra{1}, Karla Mercado Shekhar{1}, Manish Bhatt{2}
{1}Indian Institute of Technology Gandhinagar, India; {2}Indian Institute of Technology Guwahati, India

2355: Optimization of Compound Weights in Ultrafast Ultrasound Imaging: An Experimental Study
Zahraa Alzein, Daniele D. Caviglia
University of Genova, Italy

2451: Addressing Domain Shifts Across Sparse Array Strategies for Deep Learning Inpainting in Ultrafast Ultrasound Imaging
Roser Viñals Terres, Jean-Philippe Thiran
École Polytechnique Fédérale de Lausanne, Switzerland

2814: Traveltime Detection Based Compensation Strategy for Incomplete Data in Time-Domain Full Waveform Inversion with Source Encoding
Nuomin Zhang{2}, Zhiyuan Li{1}, Yang Xiao{3}, Xudong Yang{2}, Yi Shen{2}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {2}Harbin Institute of Technology, China; {3}Zhejiang Lab, China

3104: Ultrafast Ultrasound Imaging as an Inverse Problem: Reconstruction with the R2D2 Deep Neural Network Series Paradigm
Ayoub Tajja{1}, Roser Viñals Terres{1}, Samuel Beuret{1}, Yves Wiaux{2}, Jean-Philippe Thiran{1}
{1}École Polytechnique Fédérale de Lausanne, Switzerland; {2}Heriot-Watt University, United Kingdom

3477: Analysis of Synthetic Focusing Ultrasound Imaging Based on the Position of Virtual Transmission Sources
Jaebum Park{3}, Doyoung Jang{2}, Heechul Yoon{1}, Tai-Kyong Song{3}
{1}Dankook University, Korea; {2}Future Imaging Research Lab, Dankook University, Korea; {3}Sogang University, Korea

3537: Spectral Filtering of Ultrasonic Radio Frequency Data for Quantitative Ultrasound
Yannick Fuchs{1}, Paul-Henry Franz Koop{1}, Omid Chaghaneh{1}, Tina Gabriel{1}, Johanna Pfeifer{1}, Tobias Seibel{2}, Antje Naas{1}, Richard Nauber{3}, Tönnis Trittler{1}, Jochen Hampe{1}, Moritz Herzog{1}
{1}Else Kröner Fresenius Center for Digital Health, Dresden University of Technology, Germany; {2}University Hospital RWTH Aachen, Germany; {3}Vodafone Chair Mobile Communications Systems, Dresden University of Technology, Germany

3769: Beamformer-Integrated Sound Speed Estimation Network (BISoN): A Deep Learning-Based Inversion for Transabdominal Ultrasound
Masashi Sode{2}, Louise Zhuang{1}, Oleksii Ostras{2}, Francisco Santibanez{2}, Jeremy Dahl{1}, Gianmarco Pinton{2}
{1}Stanford University, United States; {2}University of North Carolina at Chapel Hill / North Carolina State University, United States

15:30 - 16:30
A4P-19: MCA: Clinical Applications of Contrast Imaging
Room: Transit Zone
Session Chair(s): Amin Jafari Sojahrood, University of Toronto and Toronto Metropolitan University

2365: Transcranial Volumetric Contrast-Enhanced Ultrasound (CEUS) in Ischemic Stroke Patients
Louise Denis{3}, Georges Chabouh{3}, Jean-Baptiste Deloges{3}, Elena Mesegue{1}, Augustin Gaudemer{1}, Léo Gury{3}, Sylvain Bodard{2}, Basile Pradier{1}, Eric Vicaut{1}, Pierre Amarenco{1}, Olivier Couture{3}
{1}Hôpital Européen Georges-Pompidou, Assistance Publique-Hôpitaux de Paris, France; {2}Hôpitaux de Paris (AP-HP), France; {3}Laboratoire d'Imagerie Biomédicale, Sorbonne Université, INSERM, CNRS, France

2493: Using Subharmonic-Aided Pressure Estimation (SHAPE) to Evaluate Portal Hypertension with Two Ultrasound Contrast Agents: A Preliminary Comparison
Hailee Mayer{2}, Trang Vu{2}, Priscilla Machado{2}, Elton Dajti{3}, Antonina Antonenko{3}, Annalisa Berzigotti{3}, Jaime Bosch{3}, Michael Soulen{4}, Susan Schultz{4}, Kirk Wallace{1}, Flemming Forsberg{2}
{1}GE HealthCare Technology and Innovation Center, United States; {2}Thomas Jefferson University, United States; {3}University of Bern, Switzerland; {4}University of Pennsylvania, United States

3504: Low Mi Pulse Inversion Subharmonic Imaging Implemented on a Clinical Scanner
Lance De Koninck{3}, Gautam Babu{3}, Hanna Michaelis{3}, Jeffry Powers{2}, Nico de Jong{1}, Mike Averkiou{3}
{1}Erasmus University Medical Center, Netherlands; {2}Philips Ultrasound, United States; {3}University of Washington, United States

15:30 - 16:30
A4P-20: MIM: AI & Image Quality Assessment
Room: Transit Zone
Session Chair(s): Claudio Giangrossi, University of Florence

2134: A Multi-Feature Fusion Deep Network Model for Classification of Pulmonary Edema
Xiaoming Zhang, Ngoc.Thang Bui, Charles Luoma
Mayo Clinic, United States

2137: No-Reference Image Quality Analysis Using Tomographic Uncertainty
Oscar Bates, Aparna Harindranath, Lluis Guasch, Oscar Calderon Agudo
Imperial College London, United Kingdom

2329: Exploring Global Clinical Translation: Cross-Validation of Institutional-Specific AI Models for Lung Ultrasound Diagnosis
Xi Han{4}, Mario Muñoz{2}, Jorge Camacho{2}, Tiziano Perrone{3}, Andrea Smargiassi{5}, Riccardo Inchingolo{5}, Yale Tung Chen{1}, Libertario Demi{4}
{1}Hospital Universitario La Paz, Spain; {2}Institute of Physical and Information Technologies, Spanish National Research Council, Spain; {3}Medicina Interna e Medicina d'Urgenza, Humanitas Gavazzeni, Italy; {4}University of Trento, Italy; {5}UOC Pneumologia, Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Italy

2786: Thyroid Ultrasound Diagnostic Report Generation Method Using Large Language Models
Siqi Zhou, Yue Zhao, Dandan Li
Harbin Institute of Technology, China

2861: Multi-Device Ultrasound Image Synthesis with Domain Transfer for Data Augmentation and Generalization
Eunji Lee, Suntae Hwang, Jinwoo Kim, Jin Ho Chang
Daegu Gyeongbuk Institute of Science and Technology, Korea

3031: SAUNet: Split-Attention ResUNet for Tongue Ultrasound Video Segmentation and Classification of Flat and Retroflex Sounds
Xinyi Wen{2}, Bole Li{3}, Sijie Chen{2}, Minhua Lu{2}, Xin Chen{2}, Weibao Qiu{1}, Yanyan Yu{2}
{1}Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China; {2}Shenzhen University, China; {3}Shenzhen University Medical School, China

3473: Ultrasound Speckle Reduction Using Frequency Compounding with Variational Autoencoder
Piotr Jarosik{2}, Marcin Lewandowski{2}, Ziemowit Klimonda{2}, Piotr Karwat{2}, Michal Byra{1}
{1}Institute of Fundamental Technological Research, Polish Academy of Sciences, Poland; {2}us4us Ltd., Poland

15:30 - 16:30
A4P-21: MTH: Therapeutic Devices & Systems
Room: Transit Zone
Session Chair(s): Jonathan Mamou, Weill Cornell Medical College

2144: A Semi-Flexible Wearable Ultrasound Probe for Enhanced Catheter-Directed Thrombolysis
Chengxi Li{2}, Xiao Han{2}, Peiyang Li{1}, Yaoyao Cui{1}
{1}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences / USTC, China; {2}University of Science and Technology of China, China

2232: A Fast MRI-Based HIFU Beam Refocusing Method for Optimized Acoustic Energy Deposition in Several Locations
Fanny Dabrin{3}, Pierre Bour{1}, Manon Desclides{2}, Stéphane Chemouny{1}, Bruno Quesson{2}
{1}Certis Therapeutics, France; {2}University of Bordeaux, CNRS, CRMSB, IHU Liryc, France; {3}University of Bordeaux, CNRS, CRMSB, IHU Liryc - Certis Therapeutics, France

2327: A Wearable Ultrasound Therapy System for Promoting Wound Healing
Shuai Wu{2}, Yiheng Li{2}, Yang Jiao{1}, Yaoyao Cui{1}
{1}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences / USTC, China; {2}University of Science and Technology of China, China

2567: Schlieren Imaging for IVL and Short-Pressure-Pulse Applications
Samuel Howard, Claudio Zanelli, Petrie Yam, Lawrence Yip
Onda Corporation, United States

2923: A Cross Beam Ultrasound Neurostimulation Setup Based on Two 128-Element Sparse Matrix Arrays
Marc Fournelle, Wolfgang Bost, Christian Degel, Peter Weber, Steffen Tretbar
Fraunhofer Institute for Biomedical Engineering IBMT, Germany

3420: Ultrasonically Actuated Medical Needle Can Generate Histotripsy
Jussi Kiviluoto{1}, Chrit W. Moonen{2}, Clemens Bos{2}, Roel Deckers{2}, Yohann Le Bourlout{1}, Heikki J. Nieminen{1}
{1}Aalto University, Finland; {2}University Medical Center Utrecht, Netherlands

3516: Standing Wave Formation in In Vitro Cell Culture System: Insights from Experiments and Simulations
Farshad Moradi Kashkooli, Anshuman Jakhmola, Graham A. Ferrier, Jahangir Tavakkoli, Michael Kolios
Toronto Metropolitan University, Canada

3598: MR-Compatible Ultrasound Through Transmission for Focused Ultrasound Thermal Therapy
Davi Cavinatto, Taylor Webb, Sarang Joshi, Douglas Christensen, Allison Payne
University of Utah, United States

3667: Real-Time Monitoring of Lesion Changes Using US-Guided High Intensity Focused Ultrasound System
Taehyun Hwang, Jieun Kim, Hyunsup Park, Hyunsook Lee, Sun Kim
Godius Inc., Korea

2324: Enhancing HIFU Ablation Volumes with a Toroidal Transducer: Preclinical Evaluation in Human Breast Tissue Following Attenuation Measurements
Antoine Bienassis{2}, Nicolas Chopin{1}, Mellie Heinemann{1}, Elorri Olhagaray{3}, Adrien Rohfritsch{3}, Caroline Huguel{2}, Agnès Coulon{1}, David Melodelima{3}
{1}Centre Léon Bérard, France; {2}LabTAU, INSERM, Centre Léon Bérard, Université Claude Bernard Lyon 1, France; {3}LabTAU, INSERM, Centre Léon Bérard, Université Claude Bernard Lyon 1, Université Lyon 1, Université , France

15:30 - 16:30
A4P-22: Wave Propagation
Room: Transit Zone
Session Chair(s): Howuk Kim, Inha University

2107: Four-Dimensional Wave Propagation Measurements with Optical Coherence Elastography for Human Facial Acne Applications
Zhengshuyi Feng{2}, Tianyu Zhang{2}, Jinpeng Liao{2}, Yilong Zhang{2}, Weiyi Jiang{2}, Chunhui Li{1}, Zhihong Huang{2}
{1}University of Dundee, United Kingdom; {2}University of York, United Kingdom

2108: Deep-Learning-Based Velocity Prediction Model for Fast Optical Coherence Elastography Processing
Zhengshuyi Feng{2}, Jinpeng Liao{2}, Guangyu Zhang{2}, Tianyu Zhang{2}, Yilong Zhang{2}, Chunhui Li{1}, Zhihong Huang{2}
{1}University of Dundee, United Kingdom; {2}University of York, United Kingdom

2110: Sparse Multi-Time Wavenumber Analysis Method Based on Incomplete Guided Wavefield Data
Zenghua Liu, Xiaoyu Liu
Beijing University of Technology, China

3070: pMUT-Based Ultrasonic Speaker for High Sound Directivity
Alvaro Rosa Julian, Humberto Campanella, Javad Abbaszadeh
Silicon Austria Labs GmbH, Austria

3227: Age Dependence of Carotid Pulse Waveforms Measured by a Portable Piezoelectric Sensor
Tomoya Ikeda{1}, Koki Akiyoshi{1}, Kozue Saito{2}, Hiroshi Yamagami{3}, Miho Ohsaki{1}, Kimiaki Shirahama{1}, Mami Matsukawa{1}
{1}Doshisha University, Japan; {2}Nara Medical University, Japan; {3}Tsukuba University, Japan

3251: Simulation Study on Backscattered Wave from Equine Cortical Bone with Different Porosity Distribution
Takamitsu Maeda{1}, Taiga Wada{1}, Shouta Kitajima{2}, Norihisa Tamura{3}, Hiroshi Mita{3}, Koh Chiba{4}, Mami Matsukawa{1}
{1}Doshisha University, Japan; {2}Doushisha University, Japan; {3}JRA Equine Research Institute, Japan; {4}Nagasaki University, Japan

3706: Effective Frequency Band for Mode Filtering of Lamb Waves by a Surface Resonator
Yuka Kanno, Kyogo Sato, Toshihiko Sugiura
Keio University, Japan

15:30 - 16:30
A4P-23: Acoustic Sensors II
Room: Transit Zone
Session Chair(s):

2303: Development of a Wireless-Electrodeless QCM System with Dark-Field Microscopy for Simultaneous Monitoring of Mechanical Properties and Morphology of Living Cells
Motoyuki Hamana, Natsumi Fujiwara, Hirotsugu Ogi
University of Osaka, Japan

2320: Small-Size High-Resolution Ambient Temperature Sensing Based on iTOF Piezoelectric Micromachined Ultrasound Transducers
Jinyang Li, Xu Zhang, Menglun Zhang
Tianjin University, China

2542: All-Optical Ultrasound System for Pulse-Echo Imaging via Silicon-Photonics
Ron Moisseev, Amir Rosenthal
Technion - Israel Institute of Technology, Israel

3112: Pentacene Based Solidly Mounted Resonators for Toluene Detection: Influence of Operating Frequency and Readout Parameters
Antonio Rodríguez-Alhambra, Teona Mirea, Ricardo Hervás-García, Eva Jaldo, Rubén Fortín, Jimena Olivares, Marta Clement
Technical University of Madrid - CEMDATIC, Spain

3328: Challenges of Thermal Expansion Mismatch Between Microwave Acoustic Strain Sensors and Metallic Parts Up to 400°C
Shane Winters, Mauricio Pereira Da Cunha
University of Maine, United States

2077: Towards In-Air Ultrasonic QR Codes: Deep Learning for Classification of Passive Reflector Constellations
Wouter Jansen{1}, Jan Steckel{2}
{1}Cosys-Lab, University of Antwerp, Belgium; {2}Cosys-Lab, University of Antwerp & Flanders Make Strategic Research Centre, Belgium

2250: ConamArray: A 32-Element Broadband MEMS Ultrasound Transducer Array
Dennis Laurijssen{1}, Walter Daems{2}, Jan Steckel{2}
{1}Cosys-Lab, University of Antwerp, Belgium; {2}Cosys-Lab, University of Antwerp & Flanders Make Strategic Research Centre, Belgium

2661: Highly Sensitive Hydrogen-Gas Sensor Using PD and Wireless Quartz Resonator Enhanced by Sub nm Au on Pd Surface
Akira Nagakubo{1}, Tokiya Matsukura{2}, Hirotsugu Ogi{2}
{1}Tohoku University, Japan; {2}University of Osaka, Japan

3155: Sensitivity Investigation of New Fiber Optic Read-Out System for Guided Waves Based on π-Shifted Fibre Bragg Gratings and Mode Locked Lasers
Alvaro Gonzalez Jimenez, Benoit Quesson, Lorenzo Scherino, Marie Zandi, Daniele Piras, Wim de Jong, Lun Cheng, Rob Jansen, Paul van Neer
Netherlands Organisation for Applied Scientific Research, Netherlands

15:30 - 16:30
A4P-24: Ultrasonic Motors & Actuators & Thin Films (PUM & PTF)
Room: Transit Zone
Session Chair(s): Tingzhong Xu, Silicon Austria Labs GmbH

2721: Aerial Ultrasonic Focusing via Multipoint Excitation of Rectangular Plate Covered with an Amplitude Mask
Yoshitsugu Tada, Masaya Takasaki, Keisuke Hasegawa
Saitama University, Japan

3312: A Hollow Type Transducer for Small Valve at Cryogenic Temperatures
Takefumi Kanda, Sota Mimura, Kazuki Kubo, Daisuke Yamaguchi, Shuichi Wakimoto
Okayama University, Japan

2308: Ultrasound Hemispherical Gel Lens Using Acoustic Radiation Force
Fumiko Taniguchi, Haruto Miki, Mami Matsukawa, Daisuke Koyama
Doshisha University, Japan

2389: Uncertainty of High Precision In-Situ Data of Packaged CTGS SAW Resonator for Harsh Environments
Thomas Windisch, Hagen Schmidt
Leibniz Institute for Solid State and Materials Research Dresden, Germany

2876: Robust Transducer-Reflector Distance Control in Acoustic Levitation
Jan Helge Dörsam, Sven Suppelt, Alexander Anton Altmann, Jun Liu, Chuanchao Xu, Luca Foese, Christoph Haugwitz, Tomislav Maric, Dieter Bothe, Mario Kupnik
Technical University of Darmstadt, Germany

3569: Power Handling Modeling of Micro- and Nanoacoustic Resonators
Luca Spagnuolo{1}, Filippo Perli{2}, Alberto Corigliano{2}, Luca Colombo{1}, Matteo Rinaldi{1}
{1}Northeastern University, United States; {2}Polytechnic University of Milan, Italy

3580: AI-Powered Ultrasonic Thermometry for HIFU Therapy in Deep Organ
Shunyao Luan{1}, Wei Wei{1}, Ziyu Wang{2}, Yong Liu{2}, Rui Xiong{2}, Benpeng Zhu{1}
{1}Huazhong University of Science and Technology, China; {2}Wuhan University, China

3809: Investigation of Liquid Loading Characteristics of ZnO Film/ Silica Glass Pipe Structure Using Circumferential Shear-Horizontal-Mode Acoustic Waves
Sodai Yamaguchi{1}, Shinji Takayanagi{1}, Takahiko Yanagitani{2}
{1}Doshisha University, Japan; {2}Waseda University, ZAIKEN, Japan

15:30 - 16:30
A4P-25: TMU: Capacitive Micromachined Ultrasonic Transducers: Fabrication & Characterization
Room: Transit Zone
Session Chair(s): Omer Oralkan, NC State University

2244: Compact CMUT-Based Ultrasonic Gas Sensors
Yilihamu Abudujiasuer{1}, Etienne Lemaire{4}, Fabrice Mathieu{2}, Flavien Barcella{4}, Isabelle Dufour{3}, Dominique Certon{4}
{1}GREMAN - University of Tours / INSA Centre Val de Loire, France; {2}LAAS-CNRS, France; {3}University of Bordeaux, France; {4}University of Tours, France

2246: CMUT-Based Airborne Pitch-Catch Measurement Modeling
Yilihamu Abudujiasuer{1}, Etienne Lemaire{4}, Fabrice Mathieu{2}, Flavien Barcella{4}, Isabelle Dufour{3}, Dominique Certon{4}
{1}GREMAN - University of Tours / INSA Centre Val de Loire, France; {2}LAAS-CNRS, France; {3}University of Bordeaux, France; {4}University of Tours, France

2366: Thermocompression Bonding Process Module Compatible with Large-Scale CMUT Array Fabrication
Rune Sixten Grass, Silje Kløverpris Munch, Laura Lund Pontoppidan, Thor August Schimmell Weis, Erik Vilain Thomsen
Technical University of Denmark, Denmark

2397: Fusion-Bonded Linear CMUT Arrays Based on Low Resistivity Thermally Stable Titanium Silicide Electrodes
Peter Dalsgaard Nicolaisen{1}, Kitty Steenberg{1}, Rune Sixten Grass{1}, Erik Vilain Thomsen{2}
{1}Technical University of Denmark, Denmark; {2}Technical University of Denmark / DTU Health Tech, Denmark

2400: Anodic Bonding of CMUTs with Inverted Voltage-Temperature Sequence for Enhanced Bond Integrity
Sebastian Stangegaard, Kitty Steenberg, Rune Sixten Grass, Erik Vilain Thomsen
Technical University of Denmark, Denmark

2431: The Role of Field Direction in the Formation of Vertical Shorts in Anodically Bonded CMUTs
Kitty Steenberg{1}, Mikkel Ravn-Feld{1}, Lucas Christopher Dybendal Maack{1}, Christoffer Rykind-Blarke{1}, Sebastian Stangegaard{1}, Erik Vilain Thomsen{2}
{1}Technical University of Denmark, Denmark; {2}Technical University of Denmark / DTU Health Tech, Denmark

2601: CMUT Surface Temperature Profiling in Resonance and Non-Resonance Mode Using a Micro-Fractal Patterned Resistance Temperature Detectors (M-FRTd)
Joo Young Pyun{2}, Jungmin Lee{3}, Butrus T Khuri-Yakub{4}, Byung Chul Lee{1}
{1}Bionics Research Center, Korea Institute of Science and Technology, Korea; {2}Korea Institute of Science and Technology, Korea; {3}Purdue University, United States; {4}Stanford University, United States

3320: Application of Synchronized Swept-Sine Technique in CMUT Characterization Using Laser-Doppler Vibrometry
Tönnis Trittler{1}, Sören Köble{3}, Julian Kober{1}, Marco Kircher{3}, Cornelius Kühnöl{4}, Paul-Henry Franz Koop{1}, Richard Nauber{4}, Henning Heuer{2}, Moritz Herzog{1}
{1}Else Kröner Fresenius Center for Digital Health, Dresden University of Technology, Germany; {2}Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Germany; {3}Fraunhofer Institute for Photonic Microsystems IPMS, Germany; {4}Vodafone Chair Mobile Communications Systems, Dresden University of Technology, Germany

3364: Improved Evaluation of CMUT Collapse and Snapback Voltages via Charge Control Using Fast Dynamic Current Excitation
Monica La Mura{2}, Muhammad Usman Khan{2}, Marta Saccher{1}, Rob van Schaijk{3}, Alessandro Stuart Savoia{2}
{1}Delft University of Technology, Netherlands; {2}Roma Tre University, Italy; {3}Xiver MEMS Foundry B.V., Netherlands

15:30 - 16:30
A4P-26: TPM: Transducer Materials and Fabrication Techniques
Room: Transit Zone
Session Chair(s): Dominique Certon, Francois Rabelais University of Tours

2126: Structured Porous Silicon for High Acoustic Attenuated Backing: Application for High Frequency Transducer
Thomas Defforge{2}, Samuel Callé{1}, François Van der Meulen{1}, Gaël Gautier{2}, Franck Levassort{1}
{1}GREMAN - University of Tours, France; {2}GREMAN - University of Tours / INSA Centre Val de Loire, France

2602: Self-Healing Photoacoustic Patch for Biomedical Applications
Tao Zhang{1}, Wei Wei{1}, Ziyu Wang{2}, Yong Liu{2}, Rui Xiong{2}, Benpeng Zhu{1}
{1}Huazhong University of Science and Technology, China; {2}Wuhan University, China

2901: Diverging Polymer Lenses for 3D USCT
Patrick Pfistner, Michael Zapf, Mike Zander, Nicole Ruiter
Karlsruhe Institute of Technology, Germany

3536: Towards Additive Manufacturing of Broadband Metamaterial Matching Layers Using Two-Photon Polymerization Lithography
Tönnis Trittler{1}, Susan Walter{2}, Severin Schweiger{3}, Robert Kirchner{4}, Sören Köble{3}, Julian Kober{1}, Paul-Henry Franz Koop{1}, Richard Nauber{5}, Henning Heuer{2}, Moritz Herzog{1}
{1}Else Kröner Fresenius Center for Digital Health, Dresden University of Technology, Germany; {2}Fraunhofer Institute for Ceramic Technologies and Systems IKTS, Germany; {3}Fraunhofer Institute for Photonic Microsystems IPMS, Germany; {4}HETEROMERGE GmbH, Germany; {5}Vodafone Chair Mobile Communications Systems, Dresden University of Technology, Germany

3548: Lattice Structures Enable Tailoring of the Vibrational Response of Langevin Transducers
Weihuan Kong{2}, Luke Carter{1}, Sophie Cox{1}, Andrew Feeney{2}, Margaret Lucas{2}
{1}University of Birmingham, United Kingdom; {2}University of Glasgow, United Kingdom

16:30 - 18:00
A6L-01: MIS: Interventional Ultrasound
Room: Kinepolis - Room 7
Session Chair(s): Elisa Konofagou, Columbia University; Matilda Larsson, KTH

16:30
3234: Non-Invasive 3D Electromechanical Rotor Mapping for Atrial Fibrillation Detection
Cagla Ozsoy{1}, Melina Tourni{1}, Youssef Elnabawi{1}, Rosalía Minyety{1}, Yaffa Wolicki{2}, Christina Proestaki{1}, Elisa E. Konofagou{1}
{1}Columbia University, United States; {2}Columbia University Medical Center, United States

16:45
3556: Intraoperative Electromechanical Wave Imaging for Characterization of Supraventricular Tachycardias
Christina Proestaki{1}, Melina Tourni{1}, Yaffa Wolicki{3}, Eric Silver{3}, Leonardo Liberman{2}, Elisa E. Konofagou{1}
{1}Columbia University, United States; {2}Columbia University Irving Medical Center, United States; {3}Columbia University Medical Center, United States

17:00
2272: Intraoperative Cerebral Perfusion Monitoring with Ultrafast Power Doppler Imaging
Yizhou Huang{1}, Hamid Reza Niknejad{2}, Massimo Mischi{1}
{1}Eindhoven University of Technology, Netherlands; {2}University Medical Center Utrecht, Netherlands

17:15
3378: Detection of Calcified Plaques in Ex-Vivo Porcine Heart Arteries Using a Scalable, Eco-Friendly Zinc Oxide-Based Intravascular Ultrasound Array with Real-Time Coded Excitation
Elmergue Germano{3}, Giulia Core{1}, Joseph Kinney{2}, David Russel{2}, Ehsan Mohseni{3}, David Lines{3}, Kwok-Ho Lam{2}, Dave Allan Hughes{1}, Heather Trodden{1}, Anthony Gachagan{3}
{1}Novosound, United Kingdom; {2}University of Glasgow, United Kingdom; {3}University of Strathclyde, United Kingdom

17:30
2175: Enhanced Needle Visualization Using Ultrasonic Synthetic Aperture Imaging with Specular CNN Model
Liang-Chun Tung, Che-Chou Shen
National Taiwan University of Science and Technology, Taiwan

17:45
2171: AI-Enabled Ultrasound Image Guidance for Lumbar Punctures
Jaime Stanton, Kathryn Ozgun, Adam Dixon, Will Mauldin, Paul Sheeran
Rivanna Medical, Inc., United States

16:30 - 18:00
A6L-02: MBB: Frequency Domain & Plane Wave Beamforming
Room: Kinepolis - Room 8
Session Chair(s): Richard Lopata, Eindhoven University of Technology; Wei-Ning Lee, University of Hong Kong

16:30
2959: Multi-Frequency Cross-Spectral Matrix Fitting
Celestine Lachambre{3}, Bruno Gilles{4}, Jean-Christophe Béra{4}, Barbara Nicolas{1}, François Varray{1}, Adrian Basarab{2}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {2}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm / TPAC NDT, France; {3}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, Labtau, France; {4}LabTAU, INSERM, Centre Léon Bérard, Université Claude Bernard Lyon 1, France

16:45
2944: Ultrahigh Resolution Plane Wave Compounding Imaging Technique with Low Speckle Distortion and Low Computational Complexity
Chun-Hsien Chiang, Meng-Lin Li
National Tsing Hua University, Taiwan

17:00
3756: Memory Efficient Beamforming of Common Offset Gathers in Frequency Domain
Marko Jakovljevic{2}, Louise Zhuang{3}, Skylar Li{1}, Ion Candel{2}, Xiaohong Wang{2}, Anthony E. Samir{2}, Kai Thomenius{2}
{1}Kent Place School in New Jersey, United States; {2}Massachusetts General Hospital, United States; {3}Stanford University, United States

17:15
2735: Efficient Ultrasound Imaging by Integrating ReFocus with Fourier Beamforming
Sufayan Ikabal Mulani, Mahsa Sotoodeh Ziksari, Andreas Austeng, Sven Peter Näsholm
University of Oslo, Norway

17:30
3578: Plane-Wave Imaging with Highly Under-Sampled Apertures by K-Space Unwrapping
Hans-Martin Schwab, Richard Lopata
Eindhoven University of Technology, Netherlands

17:45
3173: Motion-Guided Channel Resampling for Grating Lobe Suppression in Plane-Wave Ultrasound Imaging
Seongwoo Koo{2}, Doyoung Jang{2}, Heechul Yoon{1}
{1}Dankook University, Korea; {2}Future Imaging Research Lab, Dankook University, Korea

16:30 - 18:00
A6L-03: MBF: 3D Blood Flow Imaging
Room: Kinepolis - Room 9
Session Chair(s): Lasse Lovstakken, NTNU; Jørgen Jensen, DTU

16:30
2396: XDoppler Velocity Estimation Using Row-Column Arrays
Henri Leroy{2}, Adrien Bertolo{1}, Mickaël Tanter{2}, Thomas Deffieux{2}, Mathieu Pernot{2}
{1}Iconeus, France; {2}Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France

16:45
3034: Empowering Multiplexed 3D Ultrasound for Flow Applications via Motion-Compensated Beamforming
Hassan Nahas, Christopher Kallweit, Di Xiao, Alfred Yu
University of Waterloo, Canada

17:00
3088: Three-Dimensional Functional Ultrasound Imaging of the Preterm and Term Neonatal Brain with a Clinically Compliant Ultrafast Scanner and Micro-Motorized Probe
Julie Uchitel{2}, Flora Faure{1}, Alexandre Houdouin{4}, Jérome Baranger{4}, Lauren Saade{5}, Gesnik Marc{3}, Bruno Osmanski{3}, Alice Frerot{5}, Valérie Biran{5}, Charlie Demené{2}
{1}DOT-HUB / ESPCI Paris, Inserm, PSL University, CNRS / University College London, France; {2}ESPCI Paris, Inserm, PSL University, CNRS, France; {3}Iconeus, France; {4}Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France; {5}Service de Pédiatrie et Réanimation Néonatales, University Hospital Robert-Debré, INSERM U1141, APHP, France

17:15
3101: Experimentally Evaluating the Impact of Microbeamforming in 3-D High Frame Rate Color Flow Mapping
Lorenzo Castrignano{2}, Daniele Mazierli{3}, Martina Pasquinelli{2}, Piero Tortoli{2}, Francesco Guidi{2}, Marco Crocco{1}, Alessandro Ramalli{3}
{1}Esaote S.p.A., Italy; {2}University of Florence, Italy; {3}University of Florence / MSDLab, Italy

17:30
3589: Simultaneous Volume Flow of the Carotid Vessels Using 3D Diverging Wave Ultrasound
Theresa Gu, Hassan Nahas, Alfred Yu
University of Waterloo, Canada

17:45
3617: Physics-Informed Tensor Velocity Imaging Using Row-Column Addressed Arrays
Lasse Thurmann Jørgensen{1}, Rikke Bannebjerg Baarts{2}, Jørgen Arendt Jensen{1}
{1}Technical University of Denmark, Denmark; {2}University of Copenhagen, Denmark

16:30 - 18:00
A6L-04: MPA: Photoacoustic Signal Processing & Image Reconstruction
Room: Kinepolis - Room 11
Session Chair(s): Kristen Meiburger, Politecnico di Torino; Meng-Lin Li, National Tsing Hua University

16:30
2041: Mitigating Limited-View Artifacts in Freehand Photoacoustic Computed Tomography
Yuchen Sun{1}, Enxiang Shen{1}, Yun Shi{2}, Zhendong Yao{3}, Yuxin Wang{1}, Jie Yuan{1}
{1}Nanjing University, China; {2}Yixing Maternity and Child Health Care Hospital, China; {3}Yixing People's Hospital, China

16:45
2716: Super-Resolution Photoacoustic Imaging by Modulation of Point Spread Function
Reza Rahpeima{1}, Chi-Wei Huang{1}, Jian-Yu Lu{2}, Pai-Chi Li{1}
{1}National Taiwan University, Taiwan; {2}University of Toledo, United States

17:00
2879: SynthNet: A Real-Time RF Signal Synthesis for Sparse and Bandlimited Photoacoustic Tomography Using Sine-Activated UNET Without Anatomical Prior
I Gede Eka Sulistyawan, Riku Suzuki, Takuro Ishii, Yoshifumi Saijo
Tohoku University, Japan

17:15
2884: Co-Registered and 3D ULM and Multispectral Photoacoustic Imaging with an Ultrasound Matrix: Validation with Blood Vessel Mimicking Phantoms
Lea Davenet, Jacques Battaglia, Olivier Couture, Sharon Lori Bridal, Jerome Gateau
Laboratoire d'Imagerie Biomédicale, Sorbonne Université, INSERM, CNRS, France

17:30
3646: Unsupervised Skeleton-Guided Diffusion Reconstruction for High-Fidelity Photoacoustic Imaging from Sparse Views
Ying Zhang, Yuanyuan Wang, Danni Ai, Jingfan Fan, Hong Song, Tianyv Fu, Deqiang Xiao, Jian Yang
Beijing Institute Of Technology, China

17:45
3525: Model-Based Reconstruction with Deep Image Prior for High-Speed Undersampling Photoacoustic Microscopy
Yu-Ting Lo{2}, Tri Vu{1}, Junjie Yao{1}, Meng-Lin Li{2}
{1}Duke University, United States; {2}National Tsing Hua University, Taiwan

16:30 - 18:00
A6L-05: MIM: Segmentation
Room: Kinepolis - Room 12
Session Chair(s): Guy Cloutier, University of Montreal; Kang Kim, University of Pittsburgh

16:30
2243: A Generalizability Investigation of Label Efficient Ultrasound Foundation Segmentation Model
Tao Jiang, Dean Ta
Fudan University, China

16:45
2172: View Specific AI-Assisted Bone Enhancement for 3D Ultrasound Fracture Diagnosis
Jaime Stanton, Adam Dixon, Will Mauldin, Paul Sheeran
Rivanna Medical, Inc., United States

17:00
2334: A Novel Approach to Breast Lesion Classification by Peritumoral Quantitative Perfusion Analysis
Florian Delberghe{1}, Zimei Lin{2}, Simona Turco{1}, Pintong Huang{2}, Massimo Mischi{1}
{1}Eindhoven University of Technology, Netherlands; {2}Second Affiliated Hospital Zhejiang University School of Medicine, China

17:15
2282: Federated Learning for Lung Ultrasound Classification Across Age-Diverse Patient Populations
Xi Han{4}, Umair Khan{4}, Andrea Smargiassi{5}, Riccardo Inchingolo{5}, Elena Torri{1}, Tiziano Perrone{3}, Emanuela Zannin{2}, Camilla Rigotti{2}, Federico Cattaneo{2}, Giulia Dognini{2}, Maria Luisa Ventura{2}, Giovanni Iacca{4}, Libertario Demi{4}
{1}BresciaMEd, Italy; {2}Fondazione IRCCS San Gerardo Dei Tintori Monza, Italy; {3}Medicina Interna e Medicina d'Urgenza, Humanitas Gavazzeni, Italy; {4}University of Trento, Italy; {5}UOC Pneumologia, Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Italy

17:30
2270: Generative Augmentations for Improved Cardiac Ultrasound Segmentation Using Diffusion Models
Gilles van de Vyver, Aksel Try Lenz, Erik Smistad, Sindre Hellum Olaise, Bjørnar Grenne, Espen Holte, Lasse Løvstakken
Norwegian University of Science and Technology, Norway

17:45
3717: Early Spatial Perfusion Assessment Using 3D CEUS Parametric Maps to Predict Treatment Response in Liver Metastases
Wei Chen Lo{2}, Aman Khurana{2}, Krister Barkovich{2}, Jian Hua Zhou{1}, David Spector{2}, Ahmed Ei Kaffas{2}
{1}Sun-Yat Sen University Cancer Center, China; {2}University of California, San Diego, United States

16:30 - 18:00
A6L-06: MEL: Novel Approaches to Tissue Mechanics & Anisotropy
Room: Kinepolis - Room 13
Session Chair(s): Kathy Nightingale, Duke University; Geng-Shi Jeng, National Yang Ming Chiao Tung University

16:30
2684: Focused Shear Wave Elastography in MASLD Patients with Obesity
John Cormack, Yu-Hsuan Chao, Hansol Lee, Jaideep Behari, Kang Kim
University of Pittsburgh, United States

16:45
3570: Growing Indenter Anisotropy Imaging (GIAnI): Rotation-Free 2D Imaging of Mechanical Anisotropy Using a Linear Array
Sabiq Muhtadi{1}, Caterina Gallippi{2}
{1}University of North Carolina at Chapel Hill, United States; {2}University of North Carolina at Chapel Hill / North Carolina State University, United States

17:00
2591: 3D Transrectal Ultrasound Shear Wave Elastography for Rectal Cancer Using a Customized Rotational Transrectal Array Transducer: Phantom Study
Chien Chen{1}, Yi-Hsiang Chuang{1}, Po-Chuan Chen{2}, Chih-Chung Huang{1}
{1}National Cheng Kung University, Taiwan; {2}National Cheng Kung University Hospital, Taiwan

17:15
3729: Fabrication of Artery-Mimicking Phantoms with Spiral Anisotropy
Shiqi Yang, Yuchen Tang, Baiqian Qi, Wei-Ning Lee
University of Hong Kong, Hong Kong

17:30
2433: Angle-Resolved Shear Wave Elastography Reveals Local Tensile Elasticity and Anisotropy in Human Peripheral Nerves
Ricardo Andrade{2}, Mar Hernandez-Secorun{2}, Nicolas Etaix{3}, Antoine Nordez{2}, Jean-Luc Gennisson{1}
{1}BIOMAPS / Université Paris Saclay, CNRS, CEA, Inserm, France; {2}Laboratoire MIP - Nantes Université, France; {3}Supersonic Imagine, France

17:45
3091: Correlating Intracranial Pressure with Brain Stiffness Using Point-of-Care Time Harmonic Elastography in Children and Young Adults
Tom Meyer, Corona Metz, Valentina Pennacchietti, Matthias Anders, Ulrich W. Thomale, Simon Veldhoen, Ingolf Sack
Charité - Universitätsmedizin Berlin, Germany

16:30 - 18:00
A6L-07: Acoustic Sensors III & Wave Propagation
Room: Progress (Supernova)
Session Chair(s): Mario Kupnik, Technische Universität Darmstadt

16:30
2626: Adaptive Wearable Ultrasonic Transducer Based on 3D Printing
Bo Wang, Xiao Wei, Jiaxing Peng, Yirui Li, Jianzhong Chen, Dawei Wu
Nanjing University of Aeronautics and Astronautics, China

16:45
3274: Micro Speech Recognition System Based on Piezoelectric Microphones
Zhiwei You, Dongcheng Wang, Yufeng Gao, Bowen Sheng, Yipeng Lu
Peking University, China

17:00
2015: Piezo-Triboelectric Acoustic Sensor Inspired by Tympanic and Basilar Membrane
Behrouz Aghajanloo, Mohsen Asadnia, Christopher Pastras
Macquarie University, Australia

17:15
2484: In-Liquid LSAW Resonant Sensors with Enhanced Sensitivity
Felicia Björklund{2}, Ventsislav Yantchev{1}, Petter Barreng{2}
{1}Technical University of Sofia, Bulgaria; {2}VIDEM AB, Sweden

17:30
2670: Guided Wave Propagation in Poroelastic Media with Arbitrary Cross Section Based on the SAFE Method and Biot Theory
Hongyan Zhang, Linfeng Wang, Jian Li, Shili Chen, Zhoumo Zeng, Yang Liu
State Key Laboratory of Precision Measuring Technology and Instruments, Tianjin University, China

17:45
2847: Experimental Investigations of Dispersion of Acoustic Waves in Fine Weave Pierced Carbon/Carbon Composites
Yuxin Zhang{1}, Guanwen Sun{1}, Xinxin Jin{1}, Hanyin Cui{1}, Chang Su{2}
{1}Institute of Acoustics, Chinese Academy of Sciences, China; {2}State Key Laboratory of Acoustics, Institute of Acoustics, Chinese Academy of Sciences, China

16:30 - 18:00
A6L-08: PNC: Nonlinear Acoustics
Room: Mission 1 (Supernova)
Session Chair(s): David Feld, Skyworks, Inc.; Mihir Patel, Skyworks, Inc.

16:30
2737: Cross Amplitude Modulation Versus Compound Amplitude Modulation: A Phantom-Flow Study for Nanobubble-Enhanced Nonlinear Ultrasound Imaging
Yu Weng{3}, Luke Coulter{4}, Muhammad Khan{3}, Eno Hysi{2}, Agata Exner{1}, Michael Kolios{3}
{1}Case Western Reserve University, United States; {2}St. Michael's Hospital / University of Toronto, Canada; {3}Toronto Metropolitan University, Canada; {4}University of Waterloo, Canada

16:45
2177: Acoustic Ejection of a Dual-Liquid Layer
Antton Huusko{1}, Joni Mäkinen{1}, Henri Österberg{1}, Johannes Schavikin{2}, Dmitry Nikolaev{1}, Ivo Laidmäe{3}, Jyrki Heinämäki{3}, Edward Hæggström{1}, Ari Salmi{1}
{1}Electronics Research Laboratory, University of Helsinki, Finland; {2}Electronics Research Laboratory, University of Helsinki / Institute of Pharmacy, University of Tartu, Estonia; {3}Institute of Pharmacy, University of Tartu, Estonia

17:00
3060: Open-Source Simulation of Harmonic Ultrasound Fields
David Ribalta Heredia{2}, Gabriel Bernardino{2}, Damien Garcia{1}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {2}Pompeu Fabra University, Spain

17:15
2149: Modeling of Acoustic Deformations in Three-Fluid-Layer Systems
Joni Mäkinen, Antton Huusko, Henri Österberg, Patrick Grahn, Dmitry Nikolaev, Edward Hæggström, Ari Salmi
Electronics Research Laboratory, University of Helsinki, Finland

17:30
2707: Characterization of Airborne Acoustic Streaming Induced by Phased Array Transducers
Christopher Stone{1}, Yusuke Koroyasu{2}, Yoichi Ochiai{2}, Akiko Kaneko{2}, Bruce Drinkwater{1}, Tatsuki Fushimi{2}
{1}University of Bristol, United Kingdom; {2}University of Tsukuba, Japan

17:45
3098: Nonlinear Ultrasound Imaging for Low-Velocity Microbubbles: A Simulation Study
Shuangyi Cheng, Pulan Tan, Kailiang Xu
Fudan University, China

16:30 - 18:00
A6L-09: AMP: Metrology & Property Extraction for Acoustic Resonators
Room: Mission 2 (Supernova)
Session Chair(s): Yansong Yang, HKUST; Yao Zhu, IME

16:30
2445: Temperature Dependence of Elastic Properties of AlScN Films Determined by Laser Ultrasonics
Elena Mayer{1}, Pavel Pupyrev{1}, Olga Rogall{1}, Oliver Ambacher{2}, Andreas Mayer{1}
{1}Offenburg University of Applied Sciences, Germany; {2}University of Freiburg, Germany

16:45
2515: Visualization of Energy Trapping and Loss in 2.6 GHz FBARs with Novel Core-Embedded Frame
Zhaoliang Peng{2}, Jiaqi Ding{3}, Junfeng Zhou{2}, Xingyu Wei{2}, Yan Liu{4}, Chengliang Sun{1}, Wenming Zhang{2}, Lei Shao{2}
{1}Institute of Technological Sciences, Wuhan University, China; {2}Shanghai Jiao Tong University, China; {3}Wuhan University, China; {4}Wuhan University / Wuhan Textile University, China

17:00
3771: A New Method for Evaluating Intrinsic Mechanical Quality Factor Qm of Bulk Materials Using Input Impedance Modulated GHz Pulse-Echo Technique
Cocono Mita, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

17:15
3778: New Method for Directly Estimating Temperature Coefficient of Velocity (TCV) of Material Alone Using Pulse-Echo Technique
Shimazaki Nana, Yanagitani Takahiko
Waseda University, ZAIKEN, Japan

17:30
3797: Correlation Between Qm, TCV, and FT-IR Spectra of Sputter-Deposited SiO2 Films Evaluated by GHz Pulse-Echo Technique
Nana Shimazaki, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

17:45
3794: Relationship Between Intrinsic Mechanical Quality Factor and Crystalline Orientation and Grain Structure Investigated Using GHz Pulse-Echo Technique
Cocono Mita, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

16:30 - 18:00
A6L-10: TMI: High Frequency Transducers
Room: Polar
Session Chair(s): Chang Peng, ShanghaiTech University; Jianguo Ma, Beihang University

16:30
2624: Novel High-Frequency Transducer and System for High-Resolution Ultrasound Imaging
Weibao Qiu
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

17:00
2367: Forward-Viewing Intravascular Ultrasound 2D Array for Physiological Guidance of Coronary Artery Stenting and Follow-Up
Stephan Strassle Rojas{1}, Travis Singh{2}, Brooks Lindsey{2}
{1}Georgia Institute of Technology, United States; {2}Georgia Institute of Technology and Emory University, United States

17:15
2125: Development of an Ultrasound Scanner for Intraoral Imaging and Exploration of Periodontal Tissues
Franck Levassort{2}, Samuel Callé{2}, Matthieu Renaud{3}, Jean-Marc Grégoire{4}, Francois Van Der Meulen{2}, Frédéric Denis{3}, Louis Leffray{1}, Stéphanie Chevalliot{1}, Arnaud Capri{1}
{1}Carestream Dental, France; {2}GREMAN - University of Tours, France; {3}Tours Hospital, France; {4}University of Tours, France

17:30
3224: A Dual-Frequency (60/90 MHz) Transducer Enabling Comprehensive Structural and Functional IVUS Imaging
Jiehan Hong, Xiaoyang Chen, Hairong Zheng, Teng Ma
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

17:45
3045: A High-Frequency Broadband Three-Dimensional Capsule-Shaped Piezoelectric Micromachined Ultrasonic Transducer Array
Shen Cao{2}, Xiaofan Hu{2}, Yuewu Gong{3}, Yong Quan Ma{2}, Wei Pang{2}, Zhuochen Wang{1}, Peng Fei Niu{2}
{1}Beijing University of Chemical Technology, China; {2}State Key Laboratory of Precision Measuring Technology and Instruments, Tianjin University, China; {3}Sun Yat-sen University Nanchang Research Institute, China

Technical Program: 16 September

18:00 - 19:00
Ultrasonics Awards
Room: Polar

19:15 - 21:00
Welcome Reception & Student Poster Competition
Room: Speys

8:00 - 8:30
Wednesday Registration
Room: Polar Voorhall

8:30 - 10:00
B1L-01: MCA: Contrast Agent Imaging
Room: Kinepolis - Room 7
Session Chair(s): Massimo Mischi, Einhoven University of Technology; Priscilla Machado, Thomas Jefferson University

8:30
3278: Super Spatiotemporal Resolution Non-Localization Reconstruction of Microvascular Structures and Perfusion Curves: From Non-Transcranial to Transcranial Imaging
Hanbing Chu, Yichen Yan, Liyuan Jiang, Xiao Su, Jiacheng Liu, Yiran Chen, Yujin Zong, Mingxi Wan
Xi'an Jiaotong University, China

8:45
2480: Ocular Subharmonic Aided Pressure Estimation for Assessment and Monitoring of Intracranial Pressures
Amr Mohammed{2}, Stephanie Lee{2}, Priscilla Machado{2}, M. Reid Gooch{2}, John Chen{1}, Tobias Kummer{1}, Zaiyang Long{1}, John Schmitz{1}, Kate Knoll{1}, Kendra Petersen{1}, Joseph Arant{1}, Jose Pulido{4}, Robert Sergott{3}, Jaydev Dave{1}, Flemming Forsberg{2}
{1}Mayo Clinic, United States; {2}Thomas Jefferson University, United States; {3}Will Eye Hospital, United States; {4}Wills Eye Hospital, United States

9:00
2463: Improving Contrast Enhanced Ultrasound Sensitivity for Active Hemorrhage in a High-Fidelity Phantom
Ion Candel{1}, Jay Gupta{2}, Scott Schoen Jr{1}, Saaid Arshad{2}, Mark Ottensmeyer{1}, Theodore Pierce{1}, Brian Telfer{2}, Anthony E. Samir{1}
{1}Massachusetts General Hospital, United States; {2}MIT Lincoln Laboratory, United States

9:15
3707: Dynamic Response-Based Optimization of Burst Imaging for Enhanced Contrast and Segmentation of Gas Vesicles
Diana Barr{3}, Paula Aguilera{1}, George Lu{2}, Richard Bouchard{4}
{1}MD Anderson, United States; {2}Rice University, United States; {3}Rice University/MD Anderson, United States; {4}University of Texas MD Anderson Cancer Center, United States

9:30
2206: Contrast-Enhanced Ultrasound for Women's Health
Kibo Nam
Thomas Jefferson University, United States

8:30 - 10:00
B1L-02: MBB: Novel Beamforming Strategies
Room: Kinepolis - Room 8
Session Chair(s): Herve Liebgott, University of Lyon; Mengxing Tang, Imperial College, London

8:30
2289: Extended Field of View Imaging by Deconvolution with an Experimental Database
Tamara Krpic{2}, Maxime Bilodeau{2}, Meaghan O'Reilly{1}, Patrice Masson{2}, Nicolas Quaegebeur{2}
{1}Sunnybrook Research Institute, Canada; {2}University of Sherbrooke, Canada

8:45
2578: Receive Is Enough: A Transmit-Agnostic Beamformer for Robust Speed-of-Sound Estimation and Flexible Array Imaging
Pat De la Torre, Di Xiao, Alfred Yu
University of Waterloo, Canada

9:00
3427: Adaptive Spatio-Temporal Phase Retrieval for Ultra-Short Pulse Wavefront Shaping
Oz Shaul, Tali Ilovitsh
Tel Aviv University, Israel

9:15
3515: Encoded Versus Wide-Beam Acquisitions for 4D Ultrasound Imaging of Moving Targets
Luuk Verhoef, Pieter Kruizinga, Jason Voorneveld
Erasmus University Medical Center, Netherlands

9:30
3557: An Aperture Phase-Encoded Transmission Strategy for Ultrafast 3D Imaging
Qingyuan Tan{2}, Joseph Hansen-Shearer{2}, Jipeng Yan{1}, Matthieu Toulemonde{2}, Su Yan{2}, Meng-Xing Tang{2}
{1}Harbin Institute of Technology / Imperial College London, United Kingdom; {2}Imperial College London, United Kingdom

9:45
2916: Coherent Multi-Probe Pulse Inversion Harmonic Imaging
Paul Dryburgh, Joseph V Hajnal, Laura Peralta Pereira
King's College London, United Kingdom

8:30 - 10:00
B1L-03: MTC: Novel Methods for Ultrasound Tissue Characterization I
Room: Kinepolis - Room 9
Session Chair(s): Hideyuki Hasegawa, University of Toyama; Kenneth Hoyt, Texas A&M University

8:30
3751: ACS-Net: A Deep Unfolded ADMM Framework for Ultrasound Attenuation Imaging
José Timaná{3}, Sebastian Merino{3}, Adrian Basarab{1}, Ruud J. G. van Sloun{2}, Roberto Lavarello{3}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm / TPAC NDT, France; {2}Eindhoven University of Technology, Netherlands; {3}Pontifical Catholic University of Peru, Peru

8:45
2300: Dual-Frequency Spectral Assessment of Backscatter from Blood for Flow Mediated Dilation
Masaaki Omura{3}, Kunimasa Yagi{2}, Kenji Yoshida{1}, Ryo Nagaoka{3}, Tadashi Yamaguchi{1}, Hideyuki Hasegawa{3}
{1}Center for Frontier Medical Engineering, Chiba University, Japan; {2}Kanazawa Medical University, Japan; {3}University of Toyama, Japan

9:00
2419: Accuracy of Speed-of-Sound Estimation with Autofocusing and its Dependence on the Fresnel Number
Ilaria Orsi, Gabrielle Laloy-Borgna, Guillaume Renaud
Delft University of Technology, Netherlands

9:15
3500: Improved Reference Frequency Method for Attenuation Imaging Using Multi-Frequency Coupling
Edmundo Miranda{2}, Christian Soto{2}, Marcela Quispe{1}, Gustavo Salinas{1}, Roberto Lavarello{2}
{1}Clínica Avendaño, Peru; {2}Pontifical Catholic University of Peru, Peru

9:30
3411: First Exploration of H-Scan Ultrasound Imaging in Diabetic Foot: A Feasibility Study
Emilio Ochoa Alva{2}, Gilmer Flores Barrera{2}, Cristina Orihuela{1}, Itamar Salazar-Reque{1}, Stefano Romero{1}, Roozbeh Naemi{3}, Kevin Parker{2}, Benjamin Castaneda{2}
{1}Pontifical Catholic University of Peru, Peru; {2}University of Rochester, United States; {3}University of Salford, United Kingdom

9:45
3780: Nonlinearity Parameter Imaging Using a Multi-View Joint Inverse Problem Formulation
Esteban Avilés, Roberto Lavarello, Andres Coila
Pontifical Catholic University of Peru, Peru

8:30 - 10:00
B1L-04: MIS: Quantitative Ultrasound
Room: Kinepolis - Room 11
Session Chair(s): Michael Kolios, Toronto Metropolitan University; Eno Hysi, University of Toronto

8:30
3491: Ultrasound Molecular Imaging: A Quantitative Metric for Vascular-Independent Targeted Microbubble Binding
Hoda Sadat Hashemi, Jihye Baek, Nathan Nguyen, Arutselvan Natarajan, Farbod Tabesh, Ramasamy Paulmurugan, Jeremy Dahl
Stanford University, United States

8:45
2401: Fusion Approach for Coherence Analysis in Ultrasound Fiber Mapping
Mahshid Dodel{1}, Adrian Basarab{2}, François Varray{1}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {2}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm / TPAC NDT, France

9:00
3003: Performance Analysis of Structure Factor Model-Based Scatterer Estimation Using the Cramér-Rao Bound
Lorena Leon{1}, Adrian Basarab{2}, Jonathan Mamou{3}, Pauline Muleki-Seya{1}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {2}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm / TPAC NDT, France; {3}Weill Cornell Medicine / Cornell University, France

9:15
3563: Predicting Three-Year Survival in Locally Advanced Breast Cancer Patients Using Machine Learning and Quantitative Ultrasound Imaging
Omar Falou{3}, Lakshmanan Sannachi{1}, Gregory Czarnota{2}, Michael Kolios{3}
{1}Sunnybrook Health Sciences Centre, Canada; {2}Sunnybrook Health Sciences Centre / Sunnybrook Research Institute, Canada; {3}Toronto Metropolitan University, Canada

9:30
3249: Quantitative Ultrasound for Hip Joint Prostheses Osteointegration Monitoring
Jan Lützelberger{3}, Jonas Petzsche{2}, Maik Stiehler{1}, Moritz Herzog{2}, Klaus Stefan Drese{3}
{1}Center for Orthopaedics, Trauma & Plastic Surgery, TU Dresden University Hospital Carl Gustav Carus, Germany; {2}Else Kröner Fresenius Center for Digital Health, Dresden University of Technology, Germany; {3}ISAT - Institute of Sensor and Actuator Technology, Coburg University of Applied Sciences and Arts, Germany

9:45
3828: Quantification of Uterine Contractions by 3D Transvaginal Ultrasound Strain Imaging
Anyi Cheng{2}, Yizhou Huang{2}, Lin Xu{4}, Connie Rees{3}, Dick Schoot{1}, Massimo Mischi{2}
{1}Catharina Hospital Eindhoven, Netherlands; {2}Eindhoven University of Technology, Netherlands; {3}Ghent University Hospital, Belgium; {4}ShanghaiTech University, China

8:30 - 10:00
B1L-05: MIM: Novel Imaging Modalities & Systems
Room: Kinepolis - Room 12
Session Chair(s): Maria Evertsson, Lund University; Chih-Chung Huang, National Cheng Kung University

8:30
2482: Experimental Validation of Multichannel Acoustoelectric Imaging of Current Source Density Using Scalar Potential Reconstruction
Yeonjoon Cheong{3}, Jinbum Kang{1}, Teodoro Trujillo{2}, Russell Witte{2}, Matthew O'Donnell{3}, Leonid Kunyansky{2}
{1}Catholic University of Korea, Korea; {2}University of Arizona, United States; {3}University of Washington, United States

8:45
2227: Signal Enhancement in Acoustoelectric Imaging Using Cascaded Dual-Polarity Waves
Yuchen Tang, Wei Yi Oon, Baiqian Qi, Wei-Ning Lee
University of Hong Kong, Hong Kong

9:00
2003: Synthetic Aperture for High Spatial Resolution Acoustoelectric Imaging
Wei Yi Oon, Baiqian Qi, Yuchen Tang, Wei-Ning Lee
University of Hong Kong, Hong Kong

9:15
2020: Experimental Demonstration of Linear Frequency Modulated Excitation in MAET with Magnetic Field Measurements
Mehmet Soner Gözü{1}, Nevzat Güneri Gençer{2}
{1}ASELSAN Inc., Turkey; {2}Middle East Technical University, Turkey

9:30
2833: Binary Pulser-Driven Differential Tissue Harmonic Imaging: A Practical Approach on Low-Cost Systems
Donghun Han{1}, Doyoung Jang{2}, Hwijin Kim{2}, Heechul Yoon{1}
{1}Dankook University, Korea; {2}Future Imaging Research Lab, Dankook University, Korea

9:45
2629: Dual-Frequency Endoscopic Ultrasound Imaging Method Based on Anti-Distortion Feature Fusion
Xinze Li{2}, Jiaqi Li{1}, Yang Jiao{2}, Zhile Han{1}, Xinle Zhu{1}, Yaoyao Cui{2}
{1}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences, China; {2}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences / USTC, China

8:30 - 10:00
B1L-06: MTH: Neuromodulation
Room: Kinepolis - Room 13
Session Chair(s): Hong Chen, Washington University in St. Louis; Chih-Kuang Yeh, National Tsing Hua University

8:30
2113: Focused Ultrasound Enhances Neurogenesis and Modulates Functional Connectivity in Kainic Acid-Induced Epilepsy Models
Po-Chun Chu, Chen-Syuan Huang, Wei-Hong Ruan, Jyh-Horng Chen, Hao-Li Liu
National Taiwan University, Taiwan

8:45
2359: Focused Ultrasound-Mediated Neuromodulation Reduces Neuropathic Pain in Diabetic Rats: Preclinical Evidence
Cong Pu{2}, Ben Fu{1}, Xin Guan{3}, Huixiong Xu{3}, Chang Peng{2}
{1}Darmouth University, United States; {2}ShanghaiTech University, China; {3}Zhongshan Hospital, Fudan University, China

9:00
2437: Focused Ultrasound Neuromodulation of the Sciatic Nerve for Inflammatory Pain Reduction in Mice
Erica McCune, Talia Sachs, Gillian Ciaccio, Elisa E. Konofagou
Columbia University, United States

9:15
2669: 40 Hz Gamma Ultrasound Stimulation Improves Cognitive Function of Alzheimer's Disease Mice
Shasha Yi, Zhengrong Lin, Lili Niu, Hairong Zheng
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

9:30
2673: Evaluating the Efficacy of Scalp-EEG Feedback Focused Ultraosund Stimulation for Epilepsy Treatment
Wei-Hong Ruan, Po-Chun Chu, You-Cheng Wang, Jyh-Horng Chen, Hao-Li Liu
National Taiwan University, Taiwan

9:45
3390: Fully Noninvasive and Flexible Sonogenetic Neuromodulation in the Rodent Brain
Chinwendu Chukwu, Leqi Yang, Kevin Xu, Jinyun Yuan, Yimei Yue, Yaoheng Yang, Hong Chen
Washington University in St. Louis, United States

8:30 - 10:00
B1L-07: Transducers: NDE & Industrial I
Room: Progress (Supernova)
Session Chair(s): Mauricio Pereira da Cunha, University of Maine

8:30
2506: Non-Contact Measurement of Nonlinear Three-Wave Interaction by Combining Point-Focusing EMATs and Laser Doppler Interferometry
Takashi Takishita{1}, Hirotsugu Ogi{2}
{1}Kobe Steel, Ltd., Japan; {2}University of Osaka, Japan

8:45
2353: Reconfigurable Time-Reversing Transducer for Guided Wave Inspection of Pipes
Masoud Mohammadgholiha{2}, Stefano Mariani{2}, Luca De Marchi{1}
{1}ARCES - University of Bologna, Italy; {2}University of Bologna, Italy

9:00
2047: New Ultrasound Transducer Concepts: Pushing the Boundaries in Sensitivity, Form Factor and Applications
Paul van Neer
Netherlands Organisation for Applied Scientific Research, Netherlands

9:30
2254: Tunable Spatial Resolution for Mid-Air Haptic Feedback via Energy-Based Focal Control
Wooseong Kwak, Janghyun Jin, Howuk Kim
Inha University, Korea

9:45
2981: Thermoacoustic Wave Focusing Using a Fresnel Zone Plate for Ultrasonic Non-Destructive Evaluation
Dongsu Lee{1}, Chan Wook Park{1}, Myung-Gil Kim{2}, Wonjae Choi{1}
{1}Non-Destructive Metrology Group, Korea Research Institute of Standards and Science, Korea; {2}Sungkyunkwan University, Korea

8:30 - 10:00
B1L-08: Structural Health Monitoring & Acoustic Microfluidics
Room: Mission 1 (Supernova)
Session Chair(s): Kui Yao, Institute of Materials Research and Engineering

8:30
2024: Long-Range SAW Sensor Interrogation Using Electromagnetic Surface Waves
David Greve{1}, Richard Pingree{2}, Ruishu Wright{2}
{1}Carnegie Mellon University, United States; {2}National Energy Technology Laboratory, United States

8:45
2166: Mapping of Pipe Wall Thinning with a Wireless Sensor Network
Julius Korsimaa{1}, Denys Iablonskyi{1}, Petteri Salminen{1}, Shayan Gharib{2}, Martin Weber{1}, Arto Klami{2}, Edward Hæggström{1}, Ari Salmi{1}
{1}Electronics Research Laboratory, University of Helsinki, Finland; {2}University of Helsinki, Finland

9:00
2403: Temperature Compensation in Ultrasonic Monitoring of Lithium-Ion Batteries for Accurate State of Charge and Ageing Assessment
Mac Geoffrey Ajaereh, Charles Courtney, Christopher Vagg
University of Bath, United Kingdom

9:15
2612: Adaptive Music Beamforming Damage Localization Method Under Variable Temperature Environment
Chengguang Fan{2}, Xiaozhen Zhang{1}, Jingsong Yang{1}, Haotian Huang{2}
{1}Central South University, China; {2}National University of Defense Technology, China

9:30
3072: Ultrasonic Quantification of Cell Mechanical Properties
Wei Zhou, Yingyin Li, Yifan Liu, Hao Quan, Pengqi Li, Lili Niu, Long Meng
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

9:45
2007: Acoustic Attenuation Measurement of Polydimethylsiloxane (PDMS) in Microfluidics
Mathis Martin{2}, Pascal Dargent{1}, Wladimir Urbach{2}, Nicolas Taulier{1}, Alireza Ashofteh{2}
{1}Laboratoire d'Imagerie Biomédicale, Sorbonne Université, INSERM, CNRS, France; {2}Laboratoire de Physique de l'Ecole Normale Supérieure, CNRS, France

8:30 - 10:00
B1L-09: ALC: Large Coupling & Bandwidth Resonators & Filters
Room: Mission 2 (Supernova)
Session Chair(s): Sid Ghosh, Northeastern Univ; Ming-Huang Li, National Tsing Hua University

8:30
2069: XBAR Filter Technologies for Wi-Fi Applications
Tetsuya Kimura{2}, Patrick Turner{2}, Toru Yamaji{1}, Sunao Yamazaki{1}
{1}Murata Manufacturing Co., Ltd., Japan; {2}Resonant Inc. A Murata Company, United States

9:00
2099: Tri-Layered XBAR with SiO2 Middle Layer
Victor Plessky{4}, Naiqing Zhang{3}, Seniz Esra Küçük{1}, Luis Guillermo Villanueva{2}
{1}ANEMS Lab, École Polytechnique Fédérale de Lausanne / NanoRF Sàrl, Switzerland; {2}ANEMS Lab, STI-IGM-NEMS, École Polytechnique Fédérale de Lausanne , Switzerland; {3}Huawei Technologies Co., Ltd, China; {4}Huawei Technologies Oy (Finland) Co. Ltd, Switzerland

9:15
2488: 400 600 µm Drop Isolation Fsr = 5 MHz Guided Sezawa Mode Phononic Racetrack Resonators in Scandium Aluminum Nitride on Silicon Carbide
Jack Guida, Siddhartha Ghosh
Northeastern University, United States

9:30
2543: High Bandwidth LiNbO3 BAW Filters with (W/SiO2) Bragg Mirror
Marie Bousquet, Alexandre Reinhardt, Elisa Soulat, Pierre Perreau, Julien Delprato, Grégory Enyedi, Edouard Jouin, Gabriel Lima, Laurence Andreutti, Alain Campo, Jean Guerrero, Cyril Le Bohec, Aude Lefevre, Rachid Hida, Gaël Castellan, Jean-Marie Quemper, Jennifer Guillaume
CEA-Leti, France

9:45
2800: X-Cut LiTaO3 on SiC Hetero-Substrate for High-Performance Longitudinal Leaky SAW Devices
Liping Zhang{2}, Shibin Zhang{1}, Mijing Sun{1}, Xiaoli Fang{1}, Hulin Yao{1}, Juxing He{1}, Jinbo Wu{2}, Pengcheng Zheng{1}, Xin Ou{1}
{1}Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China; {2}XOI Technology Co., Ltd / Shanghai Xin Ou Integration Technology Co., Ltd., China

8:30 - 10:00
B1L-10: TMI: Wearable Transducers & Systems
Room: Polar
Session Chair(s): Xiaoning Jiang, NC State University; Chelsea Munding, Flosonics Medical

8:30
2727: A Reconfigurable Transceiver ASIC for Wearable Ultrasound Applications
Imad Bellouki, Mingliang Tan, Jae-Sung An, Tim Hosman, Eunchul Kang, Zu-Yao Chang, Michiel Pertijs
Delft University of Technology, Netherlands

8:45
3514: Wearable 64x48 2.5MHz TOBE Arrays for Cardiac Applications
Mohammad Rahim Sobhani{1}, Martin Kupsta{2}, Mahyar Ghavami{2}, Negar Majidi{2}, Shayan Khorassany{2}, Randy Palamar{2}, Darren Dahunsi{2}, Nathaniel Bly{2}, Tyler Henry{2}, Roger Zemp{1}
{1}CliniSonix / University of Alberta, Canada; {2}University of Alberta, Canada

9:00
2838: Wearable Ultrasonic Patch with Piezopolymer on Active Pixel Circuitry
Jessica Liu Strohmann, Sumit Agrawal, Hrishikesh Panchawagh, Kostadin Djordjev
Qualcomm Technologies, Inc., United States

9:15
3524: Wearable Ultrasound Sensing for Muscle Intent Interpretation in Exoskeleton-Assisted Walking
Xiangming Xue, Krysten Lambeth, Sunho Moon, Nitin Sharma, Xiaoning Jiang
North Carolina State University, United States

9:30
2341: DUS: Dynamic Ultrasound Imaging for Real-Time Articular Kinematics Tracking During Motion
Yiheng Li{3}, Yang Jiao{2}, Zhengxin Yang{1}, Lihao Liu{3}, Yaoyao Cui{2}
{1}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences, China; {2}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences / USTC, China; {3}University of Science and Technology of China, China

9:45
2370: Bionic Venus Flytrap Wearable Ultrasound Transducer Capable of Dual-Section Imaging
Zhe Zhang, Xinyi Li, Yirui Li, Dawei Yiran Wu, Yaoyang Zhang, Jia Cao, Dawei Wu
Nanjing University of Aeronautics and Astronautics, China

8:30 - 18:00
Xiver Demo
Room: Solar

8:30 - 18:00
Verasonics Demo
Room: Glow

8:30 - 18:00
Vermon Demo
Room: Beam

10:00 - 11:00
Coffee Break
Room: Transit Zone

10:15 - 11:15
Verasonics Seminar
Room: Spark

10:00 - 11:00
B2P-11: MTC: Novel Methods for Ultrasound Tissue Characterization II
Room: Transit Zone
Session Chair(s): Pauline Muleki-Seya, CREATIS, Université de Lyon

2571: Accounting for Ultrasonic Focal Properties to Reduce System-Dependence of First-Order Speckle Statistics
Alexandra Christensen{2}, Timothy Hall{2}, Helen Feltovich{1}, Ivan Rosado-Mendez{2}
{1}North Memorial Health System, United States; {2}University of Wisconsin–Madison, United States

2580: Wavelength-Matched Convolutional Filtering for Improved H-Scan Ultrasound Imaging
Swapnil Dolui, Ashlyn Melichar, Kenneth Hoyt
Texas A&M University, United States

2712: System-Independent Ultrasound Attenuation Coefficient Estimation Using Spectral Normalization
Swapnil Dolui, Kenneth Hoyt
Texas A&M University, United States

3080: Imaging of Nonlinear Tissue Response Using Pressure-Dependent Nonlinearity Index
Andrzej Nowicki{1}, Piotr Karwat{2}, Jurij Tasinkiewicz{1}, Ihor Trots{1}, Norbert Żołek{1}, Ryszard Tymkiewicz{1}
{1}Institute of Fundamental Technological Research, Polish Academy of Sciences, Poland; {2}us4us Ltd., Poland

3783: Optimization of Regularization Coefficients for Improved Backscatter Coefficient Estimation in the Presence of Abdominal Wall Acoustic Effects
Hayley Whitson, Ivan Rosado-Mendez, Timothy Hall
University of Wisconsin–Madison, United States

2905: Development of Ultrasound-Based Microfluidic Flow-Cytometer for Microparticle Measurement
Masako Akiyama{3}, Kazuyo Ito{3}, Takanobu Takenouchi{3}, Soshi Yoshida{3}, Kazuki Tamura{1}, Takashi Ikuta{2}, Daisuke Yoshino{3}
{1}Hamamatsu University School of Medicine, Japan; {2}Keio University, Japan; {3}Tokyo University of Agriculture and Technology, Japan

3669: Moment-Based Double Nakagami Distribution Method for Quantitative Ultrasound Applications
Ladan Yazdani{4}, Cameron Hoerig{3}, Tadashi Yamaguchi{1}, Kazuki Tamura{2}, Jonathan Mamou{3}, Jeffrey A. Ketterling{3}
{1}Center for Frontier Medical Engineering, Chiba University, Japan; {2}Hamamatsu University School of Medicine, Japan; {3}Weill Cornell Medicine / Cornell University, United States; {4}Weill Cornell Medicine / Cornell University / University of Montreal Hospital, United States

3805: Evaluation of the Effect of Clutter Reduction in Attenuation Coefficient Estimation
Adriana Romero{1}, Christopher Khan{2}, Sebastian Merino{1}, Brett Byram{2}, Roberto Lavarello{1}
{1}Pontifical Catholic University of Peru, Peru; {2}Vanderbilt University, United States

10:00 - 11:00
B2P-12: MSD: Wearable & Implantable Ultrasound Technologies
Room: Transit Zone
Session Chair(s): Richard Nauber, TU Dresden

2937: Ultrasound Charging and Datatransfer for Longterm Neurostimulation Implants
Daniel Speicher, Timo Koch, Andreas Schneider- Ickert, Marc Fournelle
Fraunhofer Institute for Biomedical Engineering IBMT, Germany

3074: A MCU Based Wearable Multi-Channel Ultrasound System Matching High-Frequency PMUT Arrays for Superficial Arterial Monitoring
Yuan Wang{2}, Hui Min Li{2}, Yong Quan Ma{2}, Yuewu Gong{3}, Zhuochen Wang{1}, Wei Pang{2}, Peng Fei Niu{2}
{1}Beijing University of Chemical Technology, China; {2}State Key Laboratory of Precision Measuring Technology and Instruments, Tianjin University, China; {3}Sun Yat-sen University Nanchang Research Institute, China

3721: Continuous Intrapartum Fetal Monitoring During Labor Using a Wearable Ultrasound and Photoacoustic Device: Proof-of-Concept Study In Vivo
Keshuai Xu{1}, Ananya Tandri{1}, Mahban Gholijafari{1}, Yunpu Zhang{1}, Zeng-Jin Yang{1}, Larraine Lage{1}, Ernest Graham{1}, Raymond Koehler{1}, Emad Boctor{1}, Jeeun Kang{2}
{1}Johns Hopkins University, United States; {2}Johns Hopkins University / SOM Ane Cardiac Anesthesiology, United States

2311: High Frame Rate Arterial Monitoring via Wi-Fi 6 on a 32-Channel Wearable Ultrasound Probe
Cedric Hirschi, Sergei Vostrikov, Andrea Cossettini, Luca Benini
ETH Zürich, Switzerland

3637: Novel Ultrasound-Based Longitudinal Monitoring of Cerebrospinal Fluid Infection in Shunt-Implanted Hydrocephalus Patients
Ananya Tandri{1}, Yiyang You{1}, Joseph Dardick{1}, John Theodore{1}, Dipankar Biswas{1}, Mark Luciano{1}, Jeeun Kang{2}
{1}Johns Hopkins University, United States; {2}Johns Hopkins University / SOM Ane Cardiac Anesthesiology, United States

10:00 - 11:00
B2P-13: MBB: Diverging Wave Beamforming & Acoustic Holograms
Room: Transit Zone
Session Chair(s): Stefanie Dencks, Ruhr-University Bochum

2398: Frequency Domain Reconstruction for Diverging Wave Imaging with Row-Column Arrays
Paul Hagemeyer{1}, Thomas Lisson{2}, Stefanie Dencks{2}, Georg Schmitz{2}
{1}Ruhr Uni-ver-si-ty Bo-chum, Germany; {2}Ruhr University Bochum, Germany

2465: Experimental Validation of Compound Mask for Enhanced Diverging Wave Ultrasound Imaging
Zahraa Alzein{3}, Hervé Liebgott{1}, Marco Crocco{2}, Daniele D. Caviglia{3}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm / UJMSaint-Et, France; {2}Esaote S.p.A., Italy; {3}University of Genova, Italy

2698: Can We Design Transcranial Acoustic Holograms Without Ionizing Radiation?
Alba Eroles-Simó{2}, Víctor Vegas-Luque{2}, Alicia Carrión{3}, José A. Pineda-Pardo{1}, Francisco Camarena{2}, Noé Jiménez{2}
{1}Centro Integral de Neurociencias HM Cinac, Hospital Universitario HM Puerta del Sur, Spain; {2}Institute of Instrumentation for Molecular Imaging, Polytechnic University of Valencia-CSIC, Spain; {3}Instituto de Instrumentación para Imagen Molecular, Universitat Politècnica de València-CSIC, Spain

2747: Enhanced Diverging-Wave Iterative Adaptive Approach Beamforming Using Spatial Subspace Filtering
Mahsa Sotoodeh Ziksari, Andreas Austeng, Sven Peter Näsholm, Are Charles Jensen
University of Oslo, Norway

2844: Diverging Wave Null Subtraction Imaging (DWNSI) for Deep Tissue Imaging
Bingze Dai{1}, Zhengchang Kou{2}, Michael Oelze{2}, Wei-Ning Lee{1}
{1}University of Hong Kong, Hong Kong; {2}University of Illinois Urbana-Champaign, United States

3027: A Library of Acoustic Holograms for Precise Targeting of Arbitrary Murine Brain Structures
Rachel Burstow, Paul Cressey, Christopher Payne, Antonios Pouliopoulos
King's College London, United Kingdom

10:00 - 11:00
B2P-14: MBB: Matrix Array & Novel Beamforming Approaches
Room: Transit Zone
Session Chair(s): Damien Garcia, INSERM

2196: Optimum Aperture Selection via Singular Value Decomposition (SVD)
Hideyuki Hasegawa{2}, Masaaki Omura{2}, Ryo Nagaoka{2}, Kozue Saito{1}
{1}Nara Medical University, Japan; {2}University of Toyama, Japan

2687: Spatially Disjoint Dual Apodization with Cross-Correlation on a 2-D Matrix Array for Improved 3-D Ultrasound Imaging
Hwijin Kim{2}, Doyoung Jang{2}, Seongwoo Koo{2}, Heechul Yoon{1}
{1}Dankook University, Korea; {2}Future Imaging Research Lab, Dankook University, Korea

2778: Reduced Element Count for 2D Ultrasound Matrix Arrays
Mick Gardner, Rita Miller, Michael Oelze
University of Illinois Urbana-Champaign, United States

2934: 3-D Filtered Delay Multiply and Sum Beamforming with 2-D Probes Embedding a Microbeamformer: Experimental Validation
Lorenzo Castrignano{1}, Piero Tortoli{1}, Valentino Meacci{1}, Giulia Matrone{3}, Enrico Boni{2}, Alessandro Ramalli{2}
{1}University of Florence, Italy; {2}University of Florence / MSDLab, Italy; {3}University of Pavia, Italy

3549: Bridging the Simulation-to-In Vivo Gap Better with Curriculum Learning
Ying-Chun Pan{1}, Christopher Khan{1}, Susan Eagle{2}, Brett Byram{1}
{1}Vanderbilt University, United States; {2}Vanderbilt University Medical Center, United States

3653: Shape Estimation of Flexible Matrix Arrays
Damien Garcia
CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France

10:00 - 11:00
B2P-15: MBB: Receive & Doppler Beamforming
Room: Transit Zone
Session Chair(s): Jianwen Luo, Tsinghua University

2088: Coherence Factor Weighted Third Degree Delay Multiply and Sum Passive Cavitation Mapping for Magnetic Nanoparticle Visualization
Christian Marinus Huber{1}, Nicole Dorsch{2}, Helmut Ermert{3}, Martin Vossiek{2}, Ingrid Ullmann{2}, Stefan Lyer{3}
{1}Friedrich-Alexander-Universität / Universitätsklinikum Erlangen, Germany; {2}Friedrich-Alexander-Universitäts Erlangen Nürnberg, Germany; {3}Universitätsklinikum Erlangen, Germany

2505: High-Quality and High-Resolution 3D Ultrafast Power Doppler Imaging Using Null Subtraction Imaging and Coherence Factor
Zhiqiang Li, Xingyue Wei, Jingyan Xiong, Qiong He, Jianwen Luo
Tsinghua University, China

3196: Integrating the Multistencil Fast Marching Method in Passive Cavitation Mapping for Tissue with Heterogeneous Speed of Sound Distribution
Christian Marinus Huber{1}, Ingrid Ullmann{2}, Stefan Lyer{3}
{1}Friedrich-Alexander-Universität / Universitätsklinikum Erlangen, Germany; {2}Friedrich-Alexander-Universitäts Erlangen Nürnberg, Germany; {3}Universitätsklinikum Erlangen, Germany

3367: Bayesian Filtering and Policy-Gradient Active Sensing in Fetal Doppler Ultrasound
Beatrice Federici, Ruud J. G. van Sloun, Massimo Mischi
Eindhoven University of Technology, Netherlands

3484: High Intensity Focused Ultrasound Focal Spot Estimation Using Passive Beamforming
Jaebum Park{3}, Doyoung Jang{2}, Heechul Yoon{1}, Tai-Kyong Song{3}
{1}Dankook University, Korea; {2}Future Imaging Research Lab, Dankook University, Korea; {3}Sogang University, Korea

3526: Realtime GPU-Based Cross-Plane (u)FORCES Imaging for 3D Navigation
Randy Palamar{2}, Darren Dahunsi{2}, Tyler Henry{2}, Mohammad Rahim Sobhani{1}, Roger Zemp{1}
{1}CliniSonix / University of Alberta, Canada; {2}University of Alberta, Canada

10:00 - 11:00
B2P-16: MBF: Vector Flow Imaging & Advanced Velocity Estimation
Room: Transit Zone
Session Chair(s): Billy Yiu, Technical University of Denmark

2029: Blood Flow Velocity Measurement with Ultrasound Speckle Decorrelation Analysis
Yongchao Wang, Jianbo Tang
Southern University of Science and Technology, China

2301: Performance of Refraction-Corrected Delay-and-Sum for Vector Flow Imaging in Bone Models with Plane Wave Ultrasound and Photoacoustic Imaging
Caitlin Smith{2}, Guillaume Renaud{1}, Kasper van Wijk{2}, Jami Shepherd{2}
{1}Delft University of Technology, Netherlands; {2}University of Auckland, New Zealand

2332: A Robust 3D Blood Flow Measurement Method Based on Wearable Orthogonal Transducer Arrays
Yuan Yao{3}, Chang Su{3}, Hanyin Cui{1}, Hang Gao{2}, Weijun Lin{3}
{1}Institute of Acoustics, Chinese Academy of Sciences, China; {2}Institute of Microelectronics, Chinese Academy of Sciences, China; {3}State Key Laboratory of Acoustics, Institute of Acoustics, Chinese Academy of Sciences, China

2798: Archimedean-Spiral Wave Vector Flow Imaging Using a Curvilinear Array Transducer
Kaya Takakusagi, Takuro Ishii, Kei Mitsui, Yoshifumi Saijo
Tohoku University, Japan

2984: Accuracy of Flow Velocity Estimations Over Regions Including Great Depths: An Experimental Study
Francesco Lagonigro{2}, Piero Tortoli{2}, Alfred Yu{4}, Billy Yiu{1}, Alessandro Ramalli{3}
{1}Technical University of Denmark, Denmark; {2}University of Florence, Italy; {3}University of Florence / MSDLab, Italy; {4}University of Waterloo, Canada

3652: A New Vector Doppler Technique for Cost-Effective Hemodynamic Monitoring
Junsang Yoo, Seunghun Han, Seongjun Park, Ilseob Song, Hyunwoo Cho, Yangmo Yoo
Sogang University, Korea

3773: RAFT-VFI: Fully Learned Ultrasound Ultrafast Vector Flow Imaging
Ching-Yao Lu, Hsiang-Chung Cheng, Geng-Shi Jeng
National Yang Ming Chiao Tung University, Taiwan

10:00 - 11:00
B2P-17: SPECIAL: AI Driven Handheld Ultrasound II
Room: Transit Zone
Session Chair(s): Chris de Korte, Radboudumc University Medical Center

3170: AI-Driven Detection of Developmental Dysplasia of the Hip at the Child Health Care Center: Evaluating the Added Value of Dynamic Ultrasound Data
Thomas van Den Heuvel{3}, Hermen van Westen{1}, Maartje Verhoeven{1}, Mendy Huisman{2}, Elsbeth van Koppen{2}, Lucy Smit{2}, Chris de Korte{3}
{1}Ardim, Netherlands; {2}Jeugdgezondheidszorg Kennemerland, Netherlands; {3}Radboud University Medical Center, Netherlands

3231: Estimation of Limberg Scores from Handheld Device Raw Ultrasound Signals by Deep Learning
Paul-Henry Koop{3}, Tobias Seibel{3}, Jonas Petzsche{1}, Omid Chaghaneh{1}, Katharina Elsässer{1}, Tönnis Trittler{1}, Richard Nauber{4}, Kai Markus Schneider{2}, Jochen Hampe{1}, Gerhard Fettweis{4}, Carolin Victoria Schneider{3}, Moritz Herzog{1}
{1}Else Kröner Fresenius Center for Digital Health, Dresden University of Technology, Germany; {2}University Hospital Carl Gustav Carus Dresden, Technical University Dresden, Germany; {3}University Hospital RWTH Aachen, Germany; {4}Vodafone Chair Mobile Communications Systems, Dresden University of Technology, Germany

3350: EB-NET: A Deep Learning Approach for Enhanced Beamforming in Ultrasound Imaging
Midhila Madhusoodanan{2}, Mahesh R. Panicker{1}, Abhilash Rakkunedeth Hareendranathan{2}
{1}Singapore Institute of Technology / Indian Institute of Technology Palakkad, Singapore; {2}University of Alberta, Canada

3360: Enhanced Musculoskeletal Ultrasound Imaging Through PatchGAN Adaptation of Raw Channel Data
Midhila Madhusoodanan{2}, Mahesh R. Panicker{1}, Abhilash Rakkunedeth Hareendranathan{2}
{1}Singapore Institute of Technology / Indian Institute of Technology Palakkad, Singapore; {2}University of Alberta, Canada

3419: Standardizing Obstetric Ultrasound Segmentation Using Unpaired Domain Translation Techniques
Emilio Ochoa Alva{2}, Arthur Masiukiewicz{2}, Cristina Orihuela{1}, Maria Helguera{2}, Benjamin Castaneda{2}
{1}Pontifical Catholic University of Peru, Peru; {2}University of Rochester, United States

10:00 - 11:00
B2P-18: MIM: Tomography & Aberration
Room: Transit Zone
Session Chair(s): Richard Lopata, Eindhoven University of Technology

2310: A Dual-Encoder Framework for Speed-of-Sound Estimation from Ultrasound RF Data and B-Mode Images
Seongkyu Park, Siyeoul Lee, Minkyung Seo, Dongeon Lee, Eonseung Seong, Imrus Salehin, Minwoo Kim
Pusan National University, Bangladesh; Pusan National University, Korea

3174: High-Resolution Bone Ultrasound Tomography via Multi-Angle Plane-Wave Full Waveform Inversion
Peilin Li{1}, Yifang Li{2}
{1}Center of Biomedical Engineering, Fudan University, China; {2}Fudan University, China

3454: Influence of Initial Model in Full Waveform Inversion for Ultrasound Tomography Performance
Lucas Murilo Da Costa, Nilton Assugeni Neto, Theo Zeferino Pavan, Antonio Adilton Oliveira Carneiro
University of São Paulo, Brazil

3486: A Refraction-Aware Pulse-Echo Speed-of-Sound Imaging Method for Convex Transducers
Samuel Beuret, Adrien Besson, Baptiste Hériard-Dubreuil, Claude Cohen-Bacrie
E-Scopics, France

3732: Attenuation Estimation from Posterior Echoes in RingEcho Ultrasound Tomography
Tianhan Tang, Takashi Azuma, Shin-Ichiro Umemura
Lily MedTech Inc., Japan

3744: Physics-Based Speed of Sound Estimation in Ultrasound Tomography Guided by Differentiable Physics
Mohammad Wasih, Mohamed Almekkawy
Pennsylvania State University, United States

2204: Enhanced Multifocus Imaging for Simultaneous Measurement of the Thickness and the Effective Speed of Sound of Bone Mimicking Materials
Jean-Pierre Remenieras{3}, Damien Fouan{3}, Marie Girona{1}, Marc Goueygou{1}, Olivier Bou Matar-Lacaze{2}
{1}University of Lille, CNRS, Centrale Lille, Université Polytechnique Hauts-de- France, UMR 8520-IEMN, France; {2}University of Lille, CNRS, Polytechnic University of Hauts-de-France, Centrale Lille, IEMN, France; {3}University of Tours, INSERM, Imaging Brain & Neuropsychiatry iBraiN, France

10:00 - 11:00
B2P-19: MCA: Therapeutic & Drug Delivery Strategies
Room: Transit Zone
Session Chair(s): Connor Krolak, University of Washington

2086: Investigation of the Ability of Gas-Filled Nanobubbles to Deliver Drug-Mimics to the Brain via Disruption of the Blood Brain Barrier
Julie McNairn{3}, Patrizia Nadia Hanieh{1}, Federica Rinaldi{2}, Carlotta Marianecci{2}, Maria Carafa{2}, Megan Holmes{3}, Carmel Moran{3}
{1}Nanofaber Srl, Italy; {2}Sapienza University of Rome, Italy; {3}University of Edinburgh, Italy; {3}University of Edinburgh, United Kingdom

2832: Visualization of Fluid Viscosity Using Contrast-Enhanced Ultrasound with Burst-Wave-Induced Acoustic Radiation Force
Kenji Yoshida{1}, Masaaki Omura{2}, Shinnosuke Hirata{1}, Tadashi Yamaguchi{1}
{1}Center for Frontier Medical Engineering, Chiba University, Japan; {2}University of Toyama, Japan

3456: Quantification of Kidney Inflammation Using Nanobubble Contrast-Enhanced Ultrasound Decorrelation Time Mapping
Niloufar Rostam Shirazi{3}, Xiaolin He{4}, Dana Dranka{3}, Eno Hysi{2}, Agata Exner{1}, Darren Yuen{2}, Michael Kolios{3}
{1}Case Western Reserve University, United States; {2}St. Michael's Hospital / University of Toronto, Canada; {3}Toronto Metropolitan University, Canada; {4}Unity Health Toronto, Canada

3533: Ultrasound Imaging of Sonazoid-Labeled Macrophages in Solid Tumors
Yann Ferry, Chulyong Kim, Pranav Premdas, Costas Arvanitis
Georgia Institute of Technology, United States

10:00 - 11:00
B2P-20: MTC: AI for Ultrasound Tissue Characterization
Room: Transit Zone
Session Chair(s): Po-Hsiang Tsui, Chang Gung University

2288: Detection of Liver Nodules Using Ultrasound Radiofrequency Images and Variational Autoencoders
Vianna Pedro{1}, Arnaud Héroux{1}, Audrey Fohlen{1}, Bich Nguyen{1}, An Tang{1}, Guy Cloutier{2}
{1}University of Montreal Hospital, Canada; {2}University of Montreal Hospital / University of Montreal Hospital Research Center, Canada

2989: Evaluation of Factors-of-Interest in Osteoporosis Models by Pattern Recognition Algorithms Applied to Broadband Ultrasonic Signals
Alexey Tatarinov, Aleksandrs Sisojevs
Institute of Electronics and Computer Science, Latvia

3012: A Multiscale Entropy-Based Machine Learning Approach for Predicting Speech Recovery After Total Laryngopharyngectomy
Ya-Wen Chuang{1}, Yi-An Lu{2}, Tuan-Jen Fang{2}, Po-Hsiang Tsui{1}
{1}Chang Gung University, Taiwan; {2}Linkou Chang Gung Memorial Hospital, Taiwan

3123: Whole Heart Atrial Kick Wave Speed Estimation on Deep Learning-Based Ultrasound Imaging
Corentin Alix{6}, Jingfeng Lu{5}, Fabien Millioz{1}, Jonathan Porée{3}, Jean Provost{4}, Denis Friboulet{2}, Sébastien Salles{6}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {2}CREATIS, University of Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {3}Polytechnique Montréal, Canada; {4}Polytechnique Montréal, Montreal Heart Institute, Canada; {5}Sichuan University, China; {6}University of Bordeaux, CNRS, Centre de Resonance Magnetique, CRMSB, France

3483: In Vivo Detection of Systemic Scleroderma Using Ai-Augmented Quantitative Ultrasound Imaging and a Novel, Point-of-Care, High-Frequency Ultrasound Instrument
Elmira Ghahramani{2}, Kimberly Lakin{1}, Shangke Liu{2}, Cameron Hoerig{2}, Mia Diaz{1}, Jessica Gordon{1}, Jonathan Mamou{2}
{1}Hospital for Special Surgery, United States; {2}Weill Cornell Medicine / Cornell University, United States

3676: RawNet: Deep Learning for Axial Transmission Raw Signals Based on CNNs Trained and Evaluated on Differentiated Datasets
Daniel Díaz, Jean-Gabriel Minonzio
University of Valparaíso, Chile

2734: Supporting Thyroid Nodule Assessment in Contrast-Enhanced Ultrasound with Implicit Neural Representations
Michal Byra{1}, Piotr Karwat{1}, Agnieszka Żyłka{2}, Katarzyna Dobruch-Sobczak{2}, Marek Dedecjus{2}, Jerzy Litniewski{1}
{1}Institute of Fundamental Technological Research, Polish Academy of Sciences, Poland; {2}Maria Sklodowska-Curie National Research Institute of Oncology, Poland

10:00 - 11:00
B2P-21: MTH: Novel Therapeutic Applications
Room: Transit Zone
Session Chair(s): Julianna Simon, The Pennsylvania State University

2009: Metabolomic Profile of Cerebral Tissue After Acoustically Mediated Blood-Brain Barrier Opening in a Healthy Rat Model: A Focus on the Contralateral Side
Antoine Presset{2}, Sylvie Bodard{2}, Antoine Lefèvre{1}, Anaïs Millet{2}, Camille Dupuy{2}, Ayache Bouakaz{3}, Patrick Emond{2}, Lydie Nadal-Desbarats{2}, Jean-Michel Escoffre{3}
{1}Inserm, iBraiN, France; {2}Inserm, iBraiN, Université de Tours, France; {3}University of Tours, INSERM, iBraiN, France

2261: Influence of Instantaneous Cavitation Dose on Blood-Brain Barrier Opening Under the Same Total Cavitation Dose
Chunjie Tan, Chengxiang Liu, Ruchuan Shi, Peng Qin
Shanghai Jiao Tong University, China

2535: Multiplying Irradiation Intensity by the Number of Irradiations Revealed Optimal Exposure Conditions of Low-Intensity Pulsed Ultrasound for Activating Endothelial Nitric Oxide Synthase
Hiroshi Kanai{2}, Shohei Mori{2}, Tomohiko Shindo{2}, Hiroaki Shimokawa{1}, Satoshi Yasuda{2}, Mototaka Arakawa{2}
{1}International University of Health and Welfare, Japan; {2}Tohoku University, Japan

2572: Parametric Characterization of Transcranial Focused Ultrasound-Induced Neural Activation Using In Vivo Fiber Photometry
Zahraa Jishi{2}, Mohamad Nasseredine{1}, Jamal Charara{1}, Arnaud Tanti{2}, Bruno Brizard{2}, Alexandre Surget{2}, Ayache Bouakaz{3}
{1}Lebanese University, Lebanon; {2}University of Tours, France; {3}University of Tours, INSERM, iBraiN, France

2592: Use of the Fept-Nanoparticles as the Sonosensitizer for Sonodynamic Therapy of Breast Tumor in Mouse Model
Zi-Ci Lin, Ling-Hsuan Yang, Tzu-Yu Lin, Ping-Ching Wu, Chih-Chung Huang
National Cheng Kung University, Taiwan

2782: Ultrasound-Induced Modulation of Rheological Properties in Emulsion-Loaded, Chitosan-Coated Alginate Hydrogels
Ziba Ghareh Nazi Fam{1}, Viren Soni{1}, Gagan Kaushal{1}, Mario L. Fabiilli{2}, Flemming Forsberg{1}, Lauren J. Delaney{1}
{1}Thomas Jefferson University, United States; {2}University of Michigan, United States

3076: Acoustic Radiation and Hydrodynamic Forces Involved in Ultrasonic Stimulation of Dorsal Root Ganglion Neurons
Corentin Gourc{3}, Elena Brunet{3}, Eric Debieu{2}, Régine Guillermin{2}, Olivier Macherey{2}, Aziz Moqrich{4}, Diego Baresch{5}, Emilie Franceschini{1}
{1}Aix-Marseille University, CNRS, Centrale Med, Laboratory of Mechanics and Acoustics, France; {2}Aix-Marseille University, CNRS, Centrale Med, LMA, France; {3}Aix-Marseille University, CNRS, Centrale Med, LMA, Turing Center for Living Systems, France; {4}Aix-Marseille University, CNRS, IBDM, France; {5}University of Bordeaux, CNRS, I2M UMR 5295, France

3214: Investigating the Effects of Shear and Compressional Stimulation on Artificial Platelets with Varying Concentrations of Cross-Linking
Aniket Vilas Beldar{2}, Safae Oukrich{1}, Sanika Pandit{2}, Julia Sanger{2}, Mansoor Haider{2}, Ashley Brown{2}, Kirby Lattwein{1}, Klazina Kooiman{1}, Marie Muller{2}
{1}Erasmus University Medical Center, Netherlands; {2}North Carolina State University, United States

3383: Ultrasound Enhances Anticancer Drug Delivery in Oral Squamous Cell Carcinoma
Qiao-Zhen Chang, Tzu-Yun Huang, Bor-Shiunn Lee, Wei-Wen Liu
National Taiwan University, Taiwan

10:00 - 11:00
B2P-22: General NDE Methods IV
Room: Transit Zone
Session Chair(s): Mate Gaal, BAM

2131: High-Resolution Pulse-Echo Detection by Means of Wideband Airborne Ultrasonic Signals
Jorge Mario Monsalve Guaracao, Sandro G. Koch, Marcel Jongmanns, Sergiu Langa, Andreas Mrosk, Michael Stolz
Fraunhofer Institute for Photonic Microsystems IPMS, Germany

2266: Matrix Probe Offset Calibration for Robotic Arm Scanning
Guillermo Cosarinsky, Jorge Cruza, Jorge Camacho
Institute of Physical and Information Technologies, Spanish National Research Council, Spain

2381: Temperature Dependency of Electromagnetic Acoustic Resonance for Thickness Gauging
Alexander Siegl{1}, Andreas Hochedlinger{1}, Bernhard Schweighofer{1}, Andre Hochfellner{2}, Gerald Klösch{2}, Hannes Wegleiter{1}
{1}Graz University of Technology, Austria; {2}Voestalpine Stahl Donawitz GmbH, Austria

2706: Ideal Couplant for In-Situ Ultrasonic Testing on Components with Complex Surface
Youlong Hua, Mengru Zhang, Jian Chen
Zhejiang University, China

2738: Non-Contact Ultrasonic Monitoring of Vinyl Ester Resin Pre-Cure Maturation for Sheet Moulding Compound Manufacturing
Lola Fariñas{2}, Georgios Xypolias{1}, Iñigo Sanchez-Marcos{2}, Marta Camacho{1}, Beatriz Achiaga-Menor{2}, Rafael Garcia-Etxabe{1}
{1}GAIKER Technology Centre, Spain; {2}University of Deusto, Spain

3322: On Ultrasonic Guided Wave Tomography Using a Decoder Architecture for Sparse Sensor Array Data
Ioannis Matthaiou{3}, Katy Tant{2}, Gordon Dobie{3}, Matthew McInnes{1}, Cameron Dick{1}, Praveen Ashok{1}, Dave Allan Hughes{1}
{1}Novosound, United Kingdom; {2}University of Glasgow, United Kingdom; {3}University of Strathclyde, United Kingdom

2487: Robust Speed-of-Sound Estimation for Inspection of Single-Layered Media Using Parsimonious Transmits
Derrell D'Souza, Carlos Da Costa Filho, Reza Zahiri, Graham Manders
DarkVision Technologies, Canada

2610: Intelligent Ultrasonic Nondestructive Testing Method for Diffusion-Welded Interface Defects of Coarse Crystal Materials Based on Deep Neural Network
Yuxuan Zhou, Zhenggan Zhou, Jingtao Yu, Tiantian Zhu, Wenbin Zhou
Beihang University, China

10:00 - 11:00
B2P-23: PAT: Acoustic Tweezers & Particle Manipulation IV
Room: Transit Zone
Session Chair(s): Enrique Gonzalez-Mateo, Universitat Politecnica de Valencia

2104: Plateau-Rayleigh Instability by Acoustic Radiation Force
David Espíndola, Belfor Antonio Galaz Donoso
University of Santiago, Chile, Chile

2193: Dynamics of Microscale Particles in Single-Point Acoustic Traps
Marika Sirkka, Dmitry Nikolaev, Denys Iablonskyi, Edward Hæggström, Ari Salmi
Electronics Research Laboratory, University of Helsinki, Finland

2613: Manipulation of Marine Phytoplankton Motility Analysis Using Acoustic Tweezers
Daehun Kim, Jin Hyeong Park, Hae Gyun Lim
Pukyong National University, Korea

2689: Addressing Thermal Challenges in Phased Array Acoustic Levitation: Investigating the Heating Behavior of the Murata MA40S4S Transducer
Sebastian Zehnter{1}, Kevin Endres{1}, Marco Aurélio Brizzotti Andrade{2}, Christoph Ament{1}
{1}University of Augsburg, Germany; {2}University of São Paulo, Brazil

2993: Optimizing Acoustic Tweezer Manipulation via Circular Array Configurations
Yuhan Meng{1}, Jie Zhang{2}, Zhenyu Hong{1}, Bruce Drinkwater{2}
{1}Northwestern Polytechnical University, China; {2}University of Bristol, United Kingdom

3165: Holographic Acoustic Tweezers - Fused Spatial Omics: Decoding Metabolic Mechanisms of Combination Therapy
Zeping Gao{3}, Shuo Wang{1}, Chao Zhao{2}, Jialong Li{2}, Xiaoyang Chen{2}, Yongchuan Li{2}, Qian Luo{2}, Teng Ma{2}, Hairong Zheng{2}
{1}Chinese University of Hong Kong / Shenzhen Institute of Advanced Technology, Chinese Academy of Scie, China; {2}Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China; {3}Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences/Harbin Institute of Technolog, China

3254: Spatiotemporal Hybridization of Focused and Vortex Acoustic Fields for Stable Cellular Concentration in Bioprinting
Rujun Zhang, Xinghai Xu, Yuan Yu, Weibao Qiu, Hairong Zheng, Zhiqiang Zhang, Feiyan Cai
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

3275: Imaging Acoustic Radiation Force-Induced Particle and Cell Patterning
Rick van Bergen, Daniëlle Duffhues, Bart Groenen, Jurgen Bulsink, Vito Conte, Richard Lopata, Hans-Martin Schwab, Carlijn Bouten
Eindhoven University of Technology, Netherlands

3633: Acoustic Vortex–Enabled Trapping and Manipulation of MSCs for Stem Cell Applications
Sin-Pei Huang, Jie-Wu Lin, Chih-Kuang Yeh
National Tsing Hua University, Taiwan

10:00 - 11:00
B2P-24: AAR: AlN Resonators & Filters
Room: Transit Zone
Session Chair(s): Yansong Yang, HKUST

2010: Thin Film AlScN Solidly Mounted Lamé Mode Resonator with High Electromechanical Coupling
Vladimir Pashchenko, Tamara Terzic, Dmytro Solonenko
Silicon Austria Labs GmbH, Austria

2654: A Facile FBAR Design for Air Gap Replacement
Chen Li, Zhiqiang Mu, Xuanqi Huang
Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China

3812: A 8.8 GHz Aluminum Nitride S1 Lamb Mode Resonator
Lihui Jin{1}, Jiawei Li{1}, Daozheng Luo{1}, Yitao Liao{2}, Tao Wu{1}
{1}ShanghaiTech University, China; {2}Xuzhou Liyu Advanced Technology Co. Ltd, China

2073: Wide-Temperature Characterization of Surface Acoustic Wave Devices with AlN/Sapphire Structure
Yang Li{2}, Wenchao Zhang{2}, Zhen Li{2}, Guofang Yu{1}, Xudong Cai{2}, Runli Liu{2}, Jun Fu{2}, Tianling Ren{2}
{1}National University of Defense Technology, China; {2}Tsinghua University, China

2075: Enhanced Laterally Excited Bulk Acoustic Wave Resonator with SiO2 Layer for Spurious Suppression and Temperature Compensation
Tiancheng Luo{1}, Qibin Zeng{1}, Zhi Shiuh Lim{1}, Weifan Cai{1}, Shengwei Zeng{1}, Samantha Solco{1}, Celine Sim{2}, Baichen Lin{2}, Huajun Liu{1}
{1}Institute of Materials Research and Engineering, Agency for Science, Technology and Research, Singapore; {2}Nanyang Technological University, Singapore

2607: Strip Bulk Acoustic Wave Resonators (Sbar) for Boosting Quality Factor
Chen Liu, Ying Zhang, Xinghua Wang, You Qian, Huamao Lin, Qingxin Zhang, Yao Zhu
Institute of Microelectronics, Agency for Science, Technology and Research, Singapore

2785: FBAR Oscillator with Wide-Frequency Tuning Employing Single Sideband Mixer for Ultraminiaturized Atomic Clock
Masahiro Fukuoka{2}, Motoaki Hara{2}, Hiroyuki Ito{1}
{1}Institute of Science Tokyo, Japan; {2}National Institute of Information and Communications Technology, Japan

3643: Comparative Study on the Impact of Substrate in 30% Scandium Aluminum Nitride HBAR Performance
Marco Galli, Siddhartha Ghosh
Northeastern University, United States

10:00 - 11:00
B2P-25: TMU: Capacitive Micromachined Ultrasonic Transducers: Applications
Room: Transit Zone
Session Chair(s): Levent Degertekin, Georgia Institute of Technology

2267: Compact Custom-Designed Polymer CMUT Arrays for Imaging the Rat Spinal Cord
Martin Angerer, Jinhao Lu, Jonas Welsch, Edmond Cretu, Robert Rohling
University of British Columbia, Canada

3000: Experimental Validation of Lateral Pattern Interference Radiation Force Using a Dual-Focus CMUT for Microparticle Manipulation
Young Jin Cho, Min Chul Kim, Hyun Su Kim, Hyeong Geun Jo, Kwan Kyu Park
Hanyang University, Korea

3021: Hybrid Piezoelectric-Capacitive Transducer Design for Air-Coupled Ultrasound
Nils Demuth{2}, Stephan Schaumann{2}, Sonja Wismath{2}, Boris Sosnov{2}, Sven Suppelt{2}, Bastian Latsch{2}, Felix Herbst{2}, Sören Soennecken{2}, Christoph Haugwitz{2}, Matthias Rutsch{2}, Luise E. Jazdzewski{1}, Achim Bittner{1}, Mario Kupnik{2}
{1}Hahn-Schickard-Gesellschaft, Germany; {2}Technical University of Darmstadt, Germany

3077: Air-Coupled CMUTs Beyond 2 MHz
Sören Köble{2}, Tönnis Trittler{1}, Sandro G. Koch{2}, Mario Kupnik{3}
{1}Else Kröner Fresenius Center for Digital Health, Dresden University of Technology, Germany; {2}Fraunhofer Institute for Photonic Microsystems IPMS, Germany; {3}Technical University of Darmstadt, Germany

3547: Implantable PDMS-Based Capacitive Micromachined Ultrasound Transducers (CMUTs) for Seamless Integration Onto Complex Surfaces for Enhanced Ultrasound Transmission
Eshani Sarkar, Tiago L. Costa
Delft University of Technology, Netherlands

3595: Design and Fabrication of a Flexible CMUT Array Through Selective Dry Etching
Saeb Mousavi, Jack Drummond, Anthony Burkitt, David Grayden, Sam John
University of Melbourne, Australia

3697: Wireless Ultrasonic Power Transfer Using a Pre-Charged CMUT Interfaced with a Custom Integrated Circuit
Muhammetgeldi Annayev{1}, Linran Zhao{2}, Yaoyao Jia{2}, Feysel Yalcin Yamaner{1}, Ömer Oralkan{1}
{1}North Carolina State University, United States; {2}University of Texas at Austin, United States

3803: A Highly Sensitive CMUT for Underwater Sensing Application
Chi Zhang{2}, Wenle Ye{3}, Hui Zhang{3}, Peng Fei Niu{2}, Zhuochen Wang{1}
{1}Beijing University of Chemical Technology, China; {2}State Key Laboratory of Precision Measuring Technology and Instruments, Tianjin University, China; {3}Tianjin University, China

10:00 - 11:00
B2P-26: TFT: Thin and Thick Piezoelectric Films
Room: Transit Zone
Session Chair(s): Franck Levassort, Francois Rabelais University of Tours

2422: Evaluation and Standardization of Mechanical Quality Factor Qm for Piezocrystals
Harold Robinson{1}, Zuo-Guang Ye{2}, David Ponte{1}
{1}Naval Undersea Warfare Center, United States; {2}Simon Fraser University, Canada

3262: Full Set of Piezoelectric Properties Using Single Sample Electrical Impedance
Julien Vasseur{2}, Rémi Rouffaud{2}, Isabelle Monot-Laffez{2}, Franck Levassort{1}
{1}GREMAN - University of Tours, France; {2}University of Tours, France

3759: The Investigation of Piezoresponse Force Microscopy Method for Ultra-Thin AlN Piezoelectric Film Characterization
Chongyang Huo, Xuanqi Huang, Zhiqiang Mu
Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China

3799: A Piezoelectric Micromachined Ultrasonic Transducer Based on 40% ScAlN Thick Films Without MEMS Technology
Yuki Imai, Itsuki Endo, Ayaka Katsumata, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

11:00 - 12:30
B3L-01: SPECIAL: AI Driven Handheld Ultrasound I
Room: Kinepolis - Room 7
Session Chair(s): Chris de Korte, Radboudumc University Medical Center

11:00
3840: How Can AI-Driven Handheld Ultrasound Revolutionize Healthcare for Everyone
Emmanuel Vidal
PRAESENS, Belgium

11:30
2117: Multiparametric Imaging of Metabolic Dysfunction-Associated Steatotic Liver Disease Using Handheld Point-of-Care Ultrasound
Layan Al-Huneidi, Leroy Arthur, Joshua Hanson, Xinlei Gu, Xiaoxiao Wang, Xiaojing Li, Honggui Li, Chaodong Wu, Kenneth Hoyt
Texas A&M University, United States

11:45
3432: Deep-Learning-Based Region of Interest Positioning in Quantitative Ultrasound
Adrien Besson{1}, Baptiste Hériard-Dubreuil{1}, Twan Gouwerok{1}, Cyrielle Caussy{2}, Claude Cohen-Bacrie{1}
{1}E-Scopics, France; {2}Université Hospital of Lyon, France

12:00
3087: Ultrasound Operator Guidance via Deep Latent Space Action Planning
Noortje Schueler, Ruud J. G. van Sloun
Eindhoven University of Technology, Netherlands

12:15
3755: EdgeSRIE: A Hybrid Deep Learning Framework for Real-Time Speckle Reduction and Image Enhancement on Portable Ultrasound Systems
Hyunwoo Cho{2}, Jongsoo Lee{3}, Jinbum Kang{1}, Yangmo Yoo{2}
{1}Catholic University of Korea, Korea; {2}Sogang University, Korea; {3}Yonsei University, Korea

11:00 - 12:30
B3L-02: MBB: Row Column, Multi Probe & Transmit Beamforming
Room: Kinepolis - Room 8
Session Chair(s): Alessandro Ramalli, University of Florence; Massimo Mischi, Einhoven University of Technology

11:00
3186: Envelope Subtraction Beamforming Method for Enhanced Row-Column Array Based 3D Ultrasound Imaging
Qiandong Sun{1}, Rui He{1}, Shilin Hou{2}, Yapeng Fu{3}, Jiyan Dai{2}, Kailiang Xu{1}
{1}Fudan University, China; {2}Hong Kong Polytechnic University, China; {3}Poda Medical Technology Co., Ltd., China

11:15
3748: Orthogonal Plane-Wave Transmit-Receive Isotropic-Focusing Micro-Ultrasound (OPTIMUS) with Electrostrictive Row-Column Arrays
Darren Dahunsi{3}, Randy Palamar{3}, Tyler Henry{3}, Negar Majidi{3}, Mohammad Rahim Sobhani{1}, Joy Wang{1}, Afshin Kashani Ilkhechi{1}, Roger Zemp{1}, Jeremy Brown{2}
{1}CliniSonix / University of Alberta, Canada; {2}Dalhousie University, Canada; {3}University of Alberta, Canada

11:30
2740: Iterative Reconstruction for Motion-Corrected 3D Imaging with Row-Column Arrays
Sebastian Kazmarek Præsius{2}, Kees Joost Batenburg{1}, Jørgen Arendt Jensen{2}
{1}Leiden Institute of Advanced Computer Science, Leiden University, Netherlands; {2}Technical University of Denmark, Denmark

11:45
3754: Hyper-Beam Row-Column-Addressed Array Imaging
Guan-Ting Chen, Chun-Hsien Chiang, Meng-Lin Li
National Tsing Hua University, Taiwan

12:00
3285: Adaptive Apodization for Coherent Multi-Probe Ultrasound Imaging
Paul Dryburgh, Joseph V Hajnal, Laura Peralta Pereira
King's College London, United Kingdom

12:15
2090: Task-Based Transmit Beamforming for Efficient Cardiac Ultrasound Segmentation
Oisín Nolan, Louis van Harten, Wessel L. van Nierop, Tristan S.W. Stevens, Ruud J. G. van Sloun
Eindhoven University of Technology, Netherlands

11:00 - 12:30
B3L-03: MTC: Ultrasonic Tissue Characterization of Hard Tissues
Room: Kinepolis - Room 9
Session Chair(s): Kibo Nam, Thomas Jefferson University

11:00
2340: Assessing Bone Tissue Quality and Anatomy Using Ultrasound: Wave Speed Anisotropy Measurements and B-Mode Images
Gabrielle Laloy-Borgna{3}, Nastassia Navasiolava{1}, Hervé Locrelle{2}, Léonard Feasson{2}, Hubert Marotte{2}, Louis Delente{2}, Marc-Antoine Custaud{1}, Laurence Vico{4}, Guillaume Renaud{3}
{1}Centre de Recherche Clinique, Centre Hospitalier Universitaire d'Angers, France; {2}Centre Hospitalier Universitaire de Saint-Étienne, France; {3}Delft University of Technology, Netherlands; {4}INSERM, Université Jean Monnet, Mines Saint-Étienne, France

11:15
2753: Measurement of Surface Specularity for the Evaluation of Cortical Bone Remodeling Imbalance
Amadou Sall Dia{2}, Salomé Vignat{2}, Guillaume Renaud{1}, Quentin Grimal{2}
{1}Delft University of Technology, Netherlands; {2}Laboratoire d'Imagerie Biomédicale, Sorbonne Université, INSERM, CNRS, France

11:30
2498: A Portable Ultrasonic Bone Densitometer for Speed of Sound Measurement
Hongchao Li, Xiandi Jin, Kun Jiang, Jie Xu, Xiaohua Jian
Nanjing University, China

11:45
3658: Skull Acoustic System Modeling for Optimizing Transcranial Ultrasound Focusing
Yifan Wang{1}, Ya Gao{3}, Yiming Chen{1}, Qian Cheng{2}
{1}Institute of Acoustics, School of Physics Science and Engineering, Tongji University, China; {2}Tongji University, China; {3}Tongji University / Institute for Biomedical Engineering, ETH Zürich, China

12:00
2352: Ultrasound-Based Tooth Aging Assessment Through Dentin Evaluation Using Artificial Intelligence
Taeyang Kwon, Maaz Salman, Yeongho Sung, Hae Gyun Lim
Pukyong National University, Korea

12:15
3543: Volumetric Attenuation Estimation Using a Matrix Array with Spatially Weighted Fidelity and Regularization
Sebastian Merino{2}, Valentin Mazellier{1}, Pauline Muleki-Seya{1}, Roberto Lavarello{2}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {2}Pontifical Catholic University of Peru, Peru

11:00 - 12:30
B3L-04: MIS: Emerging Applications
Room: Kinepolis - Room 11
Session Chair(s): Marie Muller, NCSU Herve Liebgott, University of Lyon

11:00
2387: RgeoJSD: Robust Geometric Jensen-Shannon Divergence Noise-Tolerant Loss for Cerebral Emboli Classification
Mathilde Dupouy{2}, Yamil Vindas Yassine{4}, Thibaut Dambry{1}, Blaise Kévin Guépié{5}, Philippe Delachartre{3}
{1}Atys Medical, France; {2}CREATIS - INSA Lyon, France; {3}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {4}Geneva University, Switzerland; {5}LIST3N, University of Technology of Troyes, France

11:15
2023: Non-Convex Stochastic Voting Framework for Precise Boundary Detection in Transcranial Ultrasound
Aryaz Baradarani{3}, Kiyanoosh Shapoori{1}, Juri Gelovani{1}, Roman Gr. Maev{2}
{1}Tessonics Medical Systems, United States; {2}University of Windsor, Canada; {3}University of Windsor / Tessonics Inc, Canada

11:30
2686: Automated Diagnosis of Parkinson's Disease Using Transcranial Sonography: Integration of Clinical Attributes, Radiomics and Deep Learning Features
Hongyu Kang{2}, Xinyi Wang{2}, Yu Sun{2}, Shuai Li{2}, Chao Hou{1}, Xin Sun{1}, Fangxian Li{1}, Sai-Kit Lam{2}, Wei Zhang{1}, Yongping Zheng{3}
{1}Beijing Tiantan Hospital, Capital Medical University, China; {2}Hong Kong Polytechnic University, Hong Kong; {3}Research Institute for Smart Ageing, Hong Kong Polytechnic University, Hong Kong

11:45
2415: Mapping of Physiological Activity from Passive Biosensors Using Plane Wave Ultrasound Imaging
Anam Bhatti{2}, Hugo Guillot{1}, Mohammed Irar{3}, Clement Hebert{1}, Maxime Lafond{2}
{1}Grenoble Institut des Neurosciences / INSERM, France; {2}LabTAU, INSERM, Centre Léon Bérard, Université Claude Bernard Lyon 1, France; {3}University Grenoble Alpes, France

12:00
3365: Validation of a New Workflow for In-Bore MRI-Compatible Transrectal Ultrasound and Photoacoustic Imaging: Sweeping Method Evaluation
Yang Wang, Ryo Murakami, Shang Gao, Yichuan Tang, Gregory Fischer, Haichong Zhang
Worcester Polytechnic Institute, United States

12:15
2625: Generating Real-Time Sonogram of Diaphragm from Multiple Views Using Thorax Deformation Simulation and Diffusion Network
Zhen Song{1}, Yihao Zhou{1}, Yongping Zheng{2}
{1}Hong Kong Polytechnic University, Hong Kong; {2}Research Institute for Smart Ageing, Hong Kong Polytechnic University, Hong Kong

11:00 - 12:30
B3L-05: MIM: Neuro & Brain Imaging
Room: Kinepolis - Room 12
Session Chair(s): Kristen Meiburger, Politecnico di Torino; Deep Bera, GE Healthcare

11:00
2662: Deep Learning-Based Skull Sound Speed Reconstruction for Phase Correction in Transcranial Ultrasound Localization Microscopy
Jing Yang, Yue Pan, Yu Qiang, Weibao Qiu
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

11:15
2416: Volumetric Transcranial Focused Ultrasound Imaging for Large Field of View Human Imaging Using a Custom Density-Tapered Spiral Sparse Array
Hatim Belgharbi{1}, Francisco Santibanez{2}, Paul A. Dayton{2}, Gianmarco Pinton{2}
{1}University of North Carolina at Chapel Hill, United States; {2}University of North Carolina at Chapel Hill / North Carolina State University, United States

11:30
2514: Energy Shift Phenomena and Correction in Transcranial Ultrasound Imaging
Junyi Wang, Gaobo Zhang, Tianhua Zhou, Boqian Zhou, Xuan Ren, Qiuchen Zhu, Xin Liu, Dean Ta
Fudan University, China

11:45
3255: 4D Functional Ultrasound Imaging of the Human Brain
Luuk Verhoef{1}, Sadaf Souloukey Tbalvandany{1}, Geert Springeling{1}, Adriaan Flikweert{2}, Boris Lippe{2}, Arend Jan de Jong{2}, Nikola Radeljic-Jakic{2}, Michiel Baas{2}, Jason Voorneveld{1}, Arnaud Vincent{1}, Pieter Kruizinga{1}
{1}Erasmus University Medical Center, Netherlands; {2}Oldelft Ultrasound, Netherlands

12:00
3649: A 3-D Intracavitary Ultrasound System for Intracerebral Hemorrhage Measurement
Xuan Xiao{2}, Zhaochen Lin{2}, Xinben Hu{2}, Wei Gao{2}, Keji Yang{1}, Yongjian Zhu{2}, Haoran Jin{1}
{1}State Key Laboratory of Fluid Power and Mechatronic Systems, Zhejiang University, China; {2}Zhejiang University, China

12:15
2384: Freehand 3D Ultrasound Imaging of Optic Nerve
Kai Riemer{1}, Nora Zarranz Bozal{1}, Giovanni Vinetti{1}, Hendrik Mugele{2}, Giacomo Strapazzon{1}, Justin S. Lawley{2}
{1}Eurac Research, Italy; {2}University of Innsbruck, Austria

11:00 - 12:30
B3L-06: MTN: Brain Therapy & Image Guidance
Room: Kinepolis - Room 13
Session Chair(s): Antonis Pouliopoulos, King's College London; Mark Borden, University of Colorado, Boulder

11:00
3494: Theranostic Ultrasound-Mediated Gene Delivery to the Brain of Non-Human Primates Through Intravenous and Intrathecal Administration of Adeno-Associated Viruses
Fotios Tsitsos{1}, Alec Batts{1}, Craig Macsemchuk{1}, Daniella Amanda Jimenez{1}, Gillian Ciaccio{1}, Anna-Aster de Ruiter{2}, Levi Buil{2}, Nina Yoh{1}, Alexander Ramos{1}, Barbara Sanders{2}, Elisa E. Konofagou{1}
{1}Columbia University, United States; {2}VectorY Therapeutics, Netherlands

11:15
2087: Noninvasive Biomarker Discovery via Sonobiopsy and Proteomics After BBB Opening in a Glioblastoma Model
Roni Gattegno, Divsha Sher, Dinorah Friedmann-Morvinski, Tali Ilovitsh
Tel Aviv University, Israel

11:30
3583: Ultrasound-Based Detection of Clot Engagement & Intake in Aspiration Thrombectomy
Li Gong, Alex Wright, Kevin Kiezun, Kullervo Hynynen, David Goertz
Sunnybrook Research Institute, Canada

11:45
2420: In Vivo Bimodal PET/US Imaging to Quantify Molecular and Hemodynamic Changes in Rat Brain: A Preclinical Pharmacological Study
Lim Anna Sieu{2}, Sebastien Goutal{2}, Caroline Denis{1}, Maud Goislard{2}, Sophie Amargier{1}, Laurene Jourdain{2}, Anthony Novell{2}, Nicolas Tournier{2}, Jean-Luc Gennisson{2}
{1}BIOMAPS, France; {2}BIOMAPS / Université Paris Saclay, CNRS, CEA, Inserm, France

12:00
2758: Transcranial Ultrasound Localization Microscopy for Monitoring Blood-Brain Barrier Opening in Mice
Georges Chabouh, Seongyeon Kim, Fotis Tsitos, Alec Batts, Sergio Jiminez Gambin, Daniella Amanda Jimenez, Elisa E. Konofagou
Columbia University, United States

12:15
3037: Precise Localization of HIFU Focus Using Local Phase Velocity Imaging of Shear Waves Induced by Short-Pulse Acoustic Radiation Force
Weicheng Hsiao{1}, Hsien-Jung Chan{1}, Chia-Lun Yeh{2}, Bao-Yu Hsieh{1}
{1}Chang Gung University, Taiwan; {2}National Taiwan University, Taiwan

11:00 - 12:30
B3L-07: Transducers: NDE & Industrial II
Room: Progress (Supernova)
Session Chair(s): David Greve, Carnegie Mellon

11:00
2907: Negative Corona Poling of PZT/PZT Under High Humidity for On-Site Fabrication
Mako Nakamura, Kei Nakatsuma, Makiko Kobayashi
Kumamoto University, Japan

11:15
3319: Flexible Ultrasonic Arrays with Phase Calibration for Nondestructive Evaluation
He Sun{1}, Linfeng Wang{1}, Yansong Liang{2}, Yang Liu{1}
{1}State Key Laboratory of Precision Measuring Technology and Instruments, Tianjin University, China; {2}Tianjin University, China

11:30
2159: Thermal and Acoustic Viability of High Temperature Bonding Methods for Lithium Niobate Ultrasonic Transducers on Stainless Steel
Josh Hoi Yi Siu{3}, Lisette Hernandez Gonzalez{3}, Martijn Egbert Frijlink{1}, Lars Hoff{3}, Ali Fatemi{2}
{1}InPhase Solutions AS / University of South-Eastern Norway, Norway; {2}Sensorlink AS, Norway; {3}University of South-Eastern Norway, Norway

11:45
3071: Surface Touch and State Detection with Ultrasonic Guided Waves Based on PMUTs
Junhao Wang, Jiao Xia, Chong Yang, Bowen Sheng, Wei Wang, Yipeng Lu
Peking University, China

12:00
2835: Blood Pressure Monitoring Using Multifunctional Ultrasonic Sensor for Mobile and Wearable Devices
Jessica Liu Strohmann, Soon Joon Yoon, Bernard Herrera Soukup, Changting Xu, Hrishikesh Panchawagh, Reed Meng, Jae Seo, Kostadin Djordjev
Qualcomm Technologies, Inc., China; Qualcomm Technologies, Inc., United States

12:15
3048: An Ultrasonic Transducer Array with Integrated Miniature Electronics for NDT Applications
Clara Borges{1}, Tony Matéo{2}, Jean-François Saillant{1}, Damien Joguet{2}, Emmanuel Montauban{2}, Guillaume Férin{2}
{1}Framatome, Chalon-sur-Saône, France; {2}Vermon, France

11:00 - 12:30
B3L-08: Structural Health Monitoring
Room: Mission 1 (Supernova)
Session Chair(s): Lorenzo Capineri, University of Florence

11:00
3703: Dual-Stage Fourier Neural Operator: Mitigating Spectral Bias for Enhanced Ultrasonic Guided Wave Corrosion Imaging
Yizhe Gao, Linfeng Wang, Yitian Yan, Jian Li, Yang Liu
State Key Laboratory of Precision Measuring Technology and Instruments, Tianjin University, China

11:15
3147: Ultrasound Enabled by High-Speed Photostriction in Nano-Structured Lead-Free Ferroelectric Ceramic
Jie Yin, Chao Jiang, David Boon Kiang Lim, Kui Yao
Institute of Materials Research and Engineering, Agency for Science, Technology and Research, Singapore

11:30
2633: Feasibility of an All-Optical Scalable Network Architecture for Non-Destructive Testing of Composite Plates
Benoit Quesson, Alvaro Gonzalez Jimenez, Lorenzo Scherino, Marie Zandi, Daniele Piras, Wim de Jong, Lun Cheng, Rob Jansen, Paul van Neer
Netherlands Organisation for Applied Scientific Research, Netherlands

11:45
2252: State-of-Charge Estimation for Lithium-Ion Batteries Using Guided Ultrasonic Waves and Bidirectional Recurrent Neural Networks
Hyunjun Kim, Jaewon Lee, Howuk Kim
Inha University, Korea

12:00
3078: Demonstration of Single Channel Beamforming with Frequency Steerable Acoustic Transducers Using Low-Cost Hardware
Valerio Coppola{2}, Giacomo Donati{2}, Stefano Taccetti{1}, Federica Zonzini{2}, Masoud Mohammadgholiha{2}, Luca De Marchi{1}
{1}ARCES - University of Bologna, Italy; {2}University of Bologna, Italy

12:15
2153: Ultrasonic Monitoring of High-Cycle Thermal Fatigue (HCTF)
Laurence Clarkson, Frederic Cegla
Imperial College London, United Kingdom

11:00 - 12:30
B3L-09: ASS: Spurious Suppression Techniques
Room: Mission 2 (Supernova)
Session Chair(s): Alexandre Reinhardt, CEA-LETI; Chengjie Zuo, Univ of Science and Technology China

11:00
3687: Trapezoidal Mode: High Q Guided SAW with Full Transverse Mode Suppression
Shogo Inoue, Mark Gallagher, Marc Solal
Qorvo, Inc., United States

11:15
2351: High Q Multilayer SAW Resonators with Split-Electrode Dummy Fingers Topology
Ventsislav Yantchev{2}, Yuancheng Ji{1}, Farshad Farahi-Bolamiri{1}
{1}Huawei Technologies Oy (Finland) Co. Ltd, Finland; {2}Technical University of Sofia, Bulgaria

11:30
2133: Transforming Spurious Into Bandwidth in cmWave Acoustic Resonators
Jiaxin Dong, Zhongbin Dai, Chengjie Zuo
University of Science and Technology of China, China

11:45
2074: Spurious-Free New Plate Wave Resonator with Bandwidth of 18% Using X-113°Y-LiNbO3
Yong Guo, Shuji Tanaka
Tohoku University, Japan

12:00
2512: Spurious Modes Suppression in Lithium Niobate Lamb Mode Resonators by SiO_2-Embedded Electrode Design
Xiaomin Chen, Dongyang Wu, Changjian Zhou
South China University of Technology, China

12:15
3731: Extended Dummy Electrodes for Low-Loss and Spurious Modes Suppressed SAW Resonators
Jinbo Wu{2}, Shibin Zhang{1}, Xiaoli Fang{1}, Hulin Yao{1}, Xinjian Ke{1}, Liping Zhang{2}, Pengcheng Zheng{1}, Juxing He{1}, Mijing Sun{1}, Xuedi Tian{1}, Xin Ou{1}
{1}Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China; {2}XOI Technology Co., Ltd / Shanghai Xin Ou Integration Technology Co., Ltd., China

11:00 - 12:30
B3L-10: TTT: Therapeutic Transducers & Systems
Room: Polar
Session Chair(s): Weibao Qiu, Shenzhen Institutes of Advanced Technology; Holly Lay, Acoustiic Inc

11:00
3692: Rotational Thrombolysis Transducer with Wedged Matching for IVUS Clot Detection
Huaiyu Wu{1}, Benjamin C. Kreager{1}, Zhen Xu{2}, Paul A. Dayton{3}, Qifa Zhou{4}, Xiaoning Jiang{1}
{1}North Carolina State University, United States; {2}University of Michigan, United States; {3}University of North Carolina at Chapel Hill / North Carolina State University, United States; {4}University of Southern California, United States

11:15
3358: A Side-Looking Endoscopic Histotripsy Array with Integrated 20 MHz Imaging for Non-Invasive Tongue-Base Debulking
Benjamin Seaman{1}, Jeremy Brown{1}, Matthew Mallay{2}
{1}Dalhousie University, Canada; {2}Sound Blade Medical, Canada

11:30
2278: Histotripsy Instrumentation for Non-Invasive Cancer Treatment
Zhen Xu
University of Michigan, United States

12:00
3356: The Vanishing Act: Rapid, In-Vivo Decalcification of the Skull for Transcranial Imaging and Histotripsy
Alyssa Forbes, Thomas Landry, Jeremy Brown
Dalhousie University, Canada

12:15
3695: Quarter Wavelength Active Layer Design for Therapeutic Ultrasound Transducers
Mengyue Chen{2}, Huaiyu Wu{2}, Zhiyu Sheng{3}, Ran Wei{3}, Kang Kim{3}, Xuecang Geng{1}, Xiaoning Jiang{2}
{1}Blatek Inc., United States; {2}North Carolina State University, United States; {3}University of Pittsburgh, United States

12:30 - 14:00
Lunch - *On Own*

12:30 - 14:00
Student Career Networking
Room: Expedition

14:00 - 15:30
B4L-01: MBF: In Vivo Applications of Blood Flow Imaging
Room: Kinepolis - Room 7
Session Chair(s): Brett Byram, Vanderbilt Universiy; Matthew Bruce, University of Washington

14:00
2897: Ultrasound Cerebral Angiography Reveals Functional Dynamics of the Circle of Willis
Nabil Haidour{3}, Alexandre Dizeux{3}, Joanna Loayza{1}, Lucas Bolliet{3}, Philippe Mateo{3}, Mathieu Pernot{3}, Mickaël Tanter{3}, Pierre Pouget{2}, Clément Papadacci{3}
{1}ICM Paris Brain Institute, Institut du Cerveau, Pitié Salpêtrière University Hospital, France; {2}ICM-Paris Brain Institute, CENIR, Inserm, CNRS, Sorbonne Université, UMRS, UPMC, AP-HP, France; {3}Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France

14:15
3688: Normalized Cross-Correlation Filtering for Transcranial Power Doppler Ultrasound in Adult Humans
Abbie Weeks, Emelina Vienneau, Brett Byram
Vanderbilt University, United States

15:00
2006: High-Speed Imaging of Intraventricular Flow Patterns for Murine Cardiovascular Studies
Jeffrey A. Ketterling
Weill Cornell Medicine / Cornell University, United States

15:30
3189: How Accurate Is Regurgitant Jet Quantification Using Diverging Wave Color Flow Imaging?
Christopher Kallweit, Hassan Nahas, Sean Peterson, Alfred Yu
University of Waterloo, Canada

15:45
3499: Quantitative Microvessel Orientation Biomarkers for Breast Cancer Classification
Padeep Chaudhary, Nicholas B. Larson, Azra Alizad, Mostafa Fatemi
Mayo Clinic College of Medicine and Science, United States

14:00 - 15:30
B4L-02: MTH: Cavitation
Room: Kinepolis - Room 8
Session Chair(s): Zhen Xu, University of Michigan; Mathieu Pernot, ESPCI

14:00
2241: Evaluating the Interaction Between Vascular Constriction, Dilation and Permeability Triggered by Ultrasound-Stimulated Nanobubble Cavitation
Yi-Der Tsai, Yi-Ju Ho
National Yang Ming Chiao Tung University, Taiwan

14:15
2326: Generation of Microbubble Mediated Ultrasonic Cavitation in the Pancreas: Proof of Concept on Perfused Anatomical Models (SimLife Experiment)
Adrien Rohfritsch{4}, Birane Beye{1}, Jessica Gannon{6}, Andrew Drainville{3}, Marine Simonneau{3}, Maxime Lafond{3}, Giovanna Bibaki{5}, Gilles Renault{5}, Eli Vlaisavljevich{6}, Frederic Prat{2}, Cyril Lafon{3}
{1}Cochin Institute, ART/mRNA of the LI2RSO in Orléans and the University hospital of Orléans, France., France; {2}DMU Digest, GHU AP-HP Nord, Université Paris-Cité, Hôpital Beaujon, France; {3}LabTAU, INSERM, Centre Léon Bérard, Université Claude Bernard Lyon 1, France; {4}LabTAU, INSERM, Centre Léon Bérard, Université Claude Bernard Lyon 1, Université Lyon 1, Université , France; {5}Paris Cité University, CNRS, Inserm, Institut Cochin, France; {6}Virginia Polytechnic Institute and State University, United States

14:30
2344: Enhancing CAR-T Therapy with Nanobubble-Mediated Ultrasound in Solid Tumors
Ariel Werblowsky{1}, Mike Bismuth{1}, Galit Horn{2}, Anat Globerson Levin{2}, Tali Ilovitsh{1}
{1}Tel Aviv University, Israel; {2}Tel-Aviv Sourasky Medical Center, Israel

14:45
2502: A Novel Catheter-Based Histotripsy Approach for Enhancing the Performance of Aspiration Mechanical Thrombectomy Procedures
Li Gong, Alex Wright, Kullervo Hynynen, David Goertz
Sunnybrook Research Institute, Canada

15:00
2818: Assessment of Focused Ultrasound-Induced Collagenous Tissue Fractionation with High Frame-Rate Doppler Ultrasound
Jacob Elliott, Julianna Simon
Pennsylvania State University, United States

15:15
3222: Impact of Histotripsy Dose on Tumor Cellular Damage, Change in Tumor Stiffness, and Treatment Outcomes
Tejaswi Worlikar, Menggang Yu, Hanna Kim, Timothy Hall, Zhen Xu, Man Zhang
University of Michigan, United States

14:00 - 15:30
B4L-03: MTC: Ultrasonic Tissue Characterization of Soft Tissues
Room: Kinepolis - Room 9
Session Chair(s): Jonathan Mamou, Weill Cornell Medical College; Emilie Franceschini, CNRS

14:00
2525: Multimodal SWE-UMA Fusion: Combining Quantitative Biomechanical and Microvascular Parameters to Classify Breast Tumor Malignancy
Jianjun Yu{2}, Dan Ran{2}, Xiaoxiao Zhang{1}, Muqing Lin{2}
{1}Shanghai Jiao Tong University, Ruijin Hospital, China; {2}Shenzhen Mindray Bio-Medical Electronics Co., Ltd., China

14:15
2780: Quantitative Ultrasound Is Sensitive to Cancer-Induced Microstructural Changes in White Adipose Tissue
Cameron Hoerig{2}, Kemi Babagbemi{2}, Michele Drotman{2}, Kristy Brown{1}, Jonathan Mamou{2}
{1}University of Kansas Medical Center, United States; {2}Weill Cornell Medicine / Cornell University, United States

14:30
2215: Deep Learning-Driven High Spatial Resolution Attenuation Imaging for Ultrasound Tomography
Mingrui Liu{3}, Zhengchang Kou{3}, James Wiskin{1}, Gregory Czarnota{2}, Michael Oelze{3}
{1}QT Imaging Holdings Inc., United States; {2}Sunnybrook Health Sciences Centre / Sunnybrook Research Institute, Canada; {3}University of Illinois Urbana-Champaign, United States

14:45
3777: Integrating Deep Learning Into PnP-ADMM for Ultrasound Attenuation Coefficient Estimation
Edu Marin, Itamar Salazar-Reque, Roberto Lavarello
Pontifical Catholic University of Peru, Peru

15:00
2823: Enhancing Breast Nonlinearity Parameter Imaging Using Full Angular Spatial Compounding
Erik Miranda, Roberto Lavarello, Andres Coila
Pontifical Catholic University of Peru, Peru

15:15
3449: Estimating Acoustic Properties of Viable and Dead MCF-7 Breast Cancer Cells by Ultrasonic Backscattering
Antoine Weber{2}, Lou Olive{2}, Régine Guillermin{2}, Eric Debieu{2}, Emilie Franceschini{1}
{1}Aix-Marseille University, CNRS, Centrale Med, Laboratory of Mechanics and Acoustics, France; {2}Aix-Marseille University, CNRS, Centrale Med, LMA, France

14:00 - 15:30
B4L-04: MSD: Clinical Devices, Applications, & Methods
Room: Kinepolis - Room 11
Session Chair(s): Brooks Lindsey, Georgia Institute of Technology and Emory University; Philippe Joos, TPAC ultrasound

14:00
2616: Development and Clinical Validation of a Zipper Array-Based 3D Needle Navigation System
Cheng-Yuan Hsieh{2}, Han-Po Yang{1}, Ju-Hsuan Huang{1}, Ruey-Feng Chang{1}, Pai-Chi Li{1}
{1}National Taiwan University, Taiwan; {2}National Taiwan University Hospital, Taiwan

14:15
2032: Development of a Wireless Ultrasonic Vibration Charging System for Near-Infrared Fluorescence Capsule Endoscopy
Wenchin Tsai, Jian-Xing Wu
National Sun Yat-sen University, Taiwan

14:30
2348: A Wearable Flexible Ultrasound Device for Real-Time Blood Pressure Monitoring
Jiaqi Li{3}, Ninghao Wang{2}, Weiwei Shao{1}, Zhile Han{1}, Yaoyao Cui{2}
{1}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences, China; {2}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences / USTC, China; {3}University of Science and Technology of China, China

14:45
3749: Evaluating the Robustness of Sonomyography Using a Miniaturized Wearable Ultrasound System
Zahra Taghizadeh, Afsana Hossein Rima, Ahmed Bashatah, Abhishek Sanjay Aher, Brian Monroe, Siddhartha Sikdar
George Mason University, United States

15:00
2811: A Deep Learning-Assisted Ultrasound Imaging Workflow for Patient-Specific Carotid Artery Modeling and Phantom Fabrication
Baiqian Qi, Jiajing Zhang, Wei-Ning Lee
University of Hong Kong, Hong Kong

15:15
2031: Wireless Ultrasonic Implant with Deep CNN for Tailored Chronic Pain Therapy
Jyun Ying Lin{1}, Che-Hsin Lin{1}, Hsiao-Chuan Liu{2}, Jian-Xing Wu{1}
{1}National Sun Yat-sen University, Taiwan; {2}University of Southern California, United States

14:00 - 15:30
B4L-05: MIM: Image Reconstruction & Tomography
Room: Kinepolis - Room 12
Session Chair(s): Jeremy Dahl, Stanford University; Hans Martin Schwab, Eindhoven University of Technology

14:00
3381: SA-NeRF: Scattering-Aware Neural Radiance Fields for Robust 3D Ultrasound Imaging
Yueyu Huang{3}, Jiayu Da{4}, Fei Ouyang{1}, Lu Qiang{1}, Yongzhi Deng{5}, Xiaojun Song{3}, Yifang Li{2}, Dean Ta{2}
{1}First People's Hospital of Chenzhou, China; {2}Fudan University, China; {3}Shanghai University of Electric Power, China; {4}ShanghaiTech University, China; {5}Shenzhen Third People's Hospital, China

14:15
2343: Full-Wave Inversion for Speed-of-Sound Imaging in Ultrasound Tomography via Self-Supervised Learning
Shilong Cui, Xuanyu Tian, Yiming Huang, Jingyi Yu, Yuyao Zhang, Xiran Cai
ShanghaiTech University, China

14:30
3443: Ultrasound Tomography Imaging of an Ex Vivo Human Head
Trevor Mitcham, Rehman Ali, Sarah McConnell, Melanie Singh, Israel Owolabi, Victoria Nketia, Matthew Bender, Nebojsa Duric
University of Rochester, United States

14:45
2165: Image Based Motion Tracking for 3D Ultrasound Tomography
Nicole Ruiter, Torsten Hopp, Patrick Pfistner
Karlsruhe Institute of Technology, Germany

15:00
2168: Coherence Based Sound Speed Aberration Correction — with Clinical Validation in Fetal Ultrasound
Anders Emil Vrålstad{2}, Peter Fosodeder{1}, Karin Ulrike Deibele{4}, Siri Ann Nyrnes{3}, Ole Marius Hoel Rindal{5}, Vibeke Skoura-Torvik{4}, Martin Mienkina{1}, Svein-Erik Måsøy{2}
{1}GE Healthcare Womens Health, Austria; {2}Norwegian University of Science and Technology, Norway; {3}Norwegian University of Science and Technology and St. Olav's University Hospital, Norway; {4}St. Olavs Hospital Trondheim University Hospital, Norway; {5}University of Oslo, Norway

15:15
2813: Adaptive Ultrasound Image Reconstruction Based on Local Motion Detection Using an Ultrasound Research Platform System
Juvenal Ormachea, Miguel Bernal, Christian Coviello, Ron Daigle
Verasonics Inc, United States

14:00 - 15:30
B4L-06: MSR: Cerebrovascular Symphony
Room: Kinepolis - Room 13
Session Chair(s): Pengfei Song, Duke; Jean Provost, Polytechnique de Montreal

14:00
3128: Functional Ultrasound Localization Microscopy (fULM) in Freely-Moving Rats
Yike Wang{1}, Bing-Ze Lin{3}, Matthew R. Lowerison{1}, Zhe Huang{1}, Yirang Shin{2}, Pengfei Song{1}
{1}Duke University, United States; {2}Duke University / University of Illinois Urbana-Champaign, United States; {3}University of Illinois Urbana-Champaign / Duke University, United States

14:15
2164: Preliminary Investigation of the Impact of Diabetes Mellitus and Alzheimer's Disease on Cerebral Microvasculature Using Super-Resolution Ultrasound
Xuan Ren, Gaobo Zhang, Boqian Zhou, Wenting Gu, Qiuchen Zhu, Xin Liu
Fudan University, China

14:30
3567: Longitudinal Non-Invasive Volumetric Ultrasound Localization Microscopy Detects Microvascular Differences Across Different Disease Stages in Mice with and Without Alzheimer's Disease
Rebecca Jones{2}, Ryan Deruiter{1}, Paul A. Dayton{2}, Gianmarco Pinton{2}
{1}Mayo Clinic, United States; {2}University of North Carolina at Chapel Hill / North Carolina State University, United States

14:45
2379: 3D Functional Ultrasound Localization Microscopy Reveals Global and Complex Regulation of Cerebrovascular Function During Task-Evoked Activity
Dimitris Perdios{2}, Nicolas Zucker{2}, Solène Ruinet{2}, Alexandre Dizeux{2}, Adrien Bertolo{1}, Viktor Skultéty{3}, Nathalie Ialy-Radio{2}, Sophie Pezet{2}, Dimitri Van De Ville{3}, Thomas Deffieux{2}, Mickaël Tanter{2}
{1}Iconeus, France; {2}Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France; {3}Neuro-X Institute, École Polytechnique Fédérale de Lausanne and University of Geneva, Switzerland

15:00
2499: Volumetric Functional Ultrasound Localization Microscopy Using a Matrix Array
Zhiqiang Li, Jingyan Xiong, Jianwen Luo
Tsinghua University, China

15:15
3630: Cerebral Microvascular Pulse Wave Velocity Estimation in Atherosclerotic Mice Using Transcranial Dynamic Ultrasound Localization Microscopy
Alice Wu{3}, Stephen A. Lee{3}, Jonathan Porée{3}, Louis Caron{3}, Nin Ghigo{3}, Alexis Leconte{3}, Géraldine Miquel{2}, Mélanie Lambert{5}, Eric Thorin{6}, Michaël Chassé{1}, Jean Provost{4}
{1}Centre de Recherche du Centre Hospitalier de l'Université de Montréal, Université de Montréal, Canada; {2}Montreal Heart Institute, Canada; {3}Polytechnique Montréal, Canada; {4}Polytechnique Montréal, Montreal Heart Institute, Canada; {5}University of Montreal, Canada; {6}University of Montreal, Montreal Heart Institute, Canada

14:00 - 15:30
B4L-07: Transducers: NDE & Industrial & Material & Defect Characterization
Room: Progress (Supernova)
Session Chair(s): Makiko KOBAYASHI, Kumamoto University

14:00
3039: Air-Coupled Ultrasonic Transmission Using Thermoacoustic Transmitters and Optical Microphones
Mate Gaal, Majid Ahmadzadeh, Matthias Weise
Bundesanstalt für Materialforschung und -prüfung BAM, Germany

14:15
3317: Triangular Shaped Interdigital Ultrasonic Guided Wave Transducers with Improved Large Beam Divergence and Bandwidth
Andrea Bulletti, Lorenzo Capineri, Lorenzo Taddei
University of Florence, Italy

14:30
2865: PMUT-Based Non-Contact Ultrasonic Characterization of Li-Ion Battery Separators
Vicente Genovés{1}, Tingzhong Xu{2}, Rodrigo Tumolin Rocha{2}, Tomás Gómez Alvarez-Arenas{1}
{1}Consejo Superior de Investigaciones Científicas, Spain; {2}Silicon Austria Labs GmbH, Austria

14:45
2461: Contactless and Efficient Viscoelastic Characterization of Soft Biomaterials
Cheri Deng, Weiping Li, Kiera Downey, Jan Stegemann, Timothy Hall
University of Michigan, United States

15:00
2768: Nonparametric Acoustic Attenuation Measurement of Liquids in Pitch-Catch Systems
Di Xiao{2}, Liam Cain{2}, Pat De la Torre{2}, Yuyang Zhang{1}, Alfred Yu{2}
{1}University of British Columbia, Canada; {2}University of Waterloo, Canada

15:15
2248: Real-Time Imaging of Material Recrystallisation Using Laser Ultrasonics
Rikesh Patel, Carolina Guerra, Arthur Ford, Rafael Fuentes-Dominguez, Wenqi Li, Matt Clark, Richard J. Smith
University of Nottingham, United Kingdom

14:00 - 15:30
B4L-08: PAT: Acoustic Tweezers & Particle Manipulation II
Room: Mission 1 (Supernova)
Session Chair(s): Ahmed El Kaffas, University of California, San Diego (UCSD); Keisuke Hasegawa, Saitama University, Japan

14:00
3842: IDTs-Based Active Holograms: From Selective 2D and 3D Manipulation to Complex Pattern Formation
Michael Baudoin
IEMN, Université de Lille, France

14:30
2192: Ultrasound-Induced Surface Deformation for Non-Contact Particle Manipulation at Liquid-Gas Interfaces
Dominique Grahn{1}, Dmitry Nikolaev{1}, Joni Mäkinen{1}, Antton Huusko{1}, Henri Österberg{1}, Thibaut Devaux{2}, Edward Hæggström{1}, Ari Salmi{1}
{1}Electronics Research Laboratory, University of Helsinki, Finland; {2}GREMAN - University of Tours / INSA Centre Val de Loire, France

14:45
2759: Ultrasonic Standing Waves to Tailor the Mechanical Properties of Composite Oleogels
Dmitry Nikolaev{1}, Joel Jääskeläinen{1}, Antton Huusko{1}, Petri Lassila{1}, Martin Weber{1}, Edward Hæggström{1}, Ari Salmi{1}, Fabio Valoppi{2}
{1}Electronics Research Laboratory, University of Helsinki, Finland; {2}Perfat Technologies Oy, Finland

15:00
2483: BAW Acoustophoresis in Microfluidic Polymeric Chips Driven by Simultaneous Tilted Twin Ultrasonic Actuators
Elena De Los Reyes{1}, Luis Diez{2}, Alberto Pinto{2}, Maciej Skolimowski{3}, Álvaro Conde{3}, Chayan Bishayee{3}, Itziar González{2}
{1}Consejo Superior de Investigaciones Científicas, Spain; {2}ITEFI CSIC, Spain; {3}Micronit B.V., Netherlands

15:15
2869: Particle Stability in Acoustic Levitation Under Non-Parallel Transducer–Reflector Configurations
Jan Helge Dörsam{4}, Daniel Schmitt{4}, Sven Suppelt{4}, Sonja Wismath{4}, Alexander Anton Altmann{4}, Sören Soennecken{4}, Christoph Haugwitz{4}, Julian Rasch{2}, Moritz Woitelle{4}, Jan Coccejus{1}, Yannick Bendel{3}, Mario Kupnik{4}
{1}Bertrandt, Germany; {2}Ludwig-Maximilians-Universität München, Germany; {3}Schmoll Maschinen GmbH, Germany; {4}Technical University of Darmstadt, Germany

14:00 - 15:30
B4L-09: TFT: Thin & Thick Piezoelectric Films
Room: Mission 2 (Supernova)
Session Chair(s): Koko Lam, University of Glasgow; Jiyan Dai, The Hong Kong Polytechnic University

14:00
2223: Material Properties of $Sc_{0.3}Al_{0.7}N$ Thin Films Derived from Electrical Measurements: A Study on Thickness and Temperature Dependence
You Qian, Xinghua Wang, Ying Zhang
Institute of Microelectronics, Agency for Science, Technology and Research, Singapore

14:15
3061: Improving Piezoelectric Performance and Minimizing Residual Stress in $Al_{1-x}Sc_xN$ ($0.27 \leq x \leq 0.47$) Thin Films
Shashidhara Acharya{1}, Mingsheng Zhang{1}, Jianwei Chai{1}, Qinwen Xu{2}, Chengliang Sun{2}, Kui Yao{1}
{1}Institute of Materials Research and Engineering, Agency for Science, Technology and Research, Singapore; {2}Institute of Technological Sciences, Wuhan University, China

14:30
3018: Effect of Polarity Switching on the Piezoelectric Coefficient of $Sc_{0.3}Al_{0.7}N$ Bilayer
Huamao Lin{2}, Subhranu Samanta{2}, Shashidhara Acharya{1}, Daniel Ssu-Han Chen{2}, Chen Liu{2}, Qingxin Zhang{2}, Peter Hyun Kee Chang{2}, Kui Yao{1}, Yao Zhu{2}
{1}Institute of Materials Research and Engineering, Agency for Science, Technology and Research, Singapore; {2}Institute of Microelectronics, Agency for Science, Technology and Research, Singapore

14:45
2895: Minimizing Sc0.3Al0.7N Cantilever Deflection Through RF Power-Tuned PVD
Yong Shun Teo, You Qian, Daniel Ssu-Han Chen
Institute of Microelectronics, Agency for Science, Technology and Research, Singapore

15:00
2988: Up to 2 µm Thick Crack-Free PZT-PVP Sol-Gel Process Optimization, and Wafer-Level d33,f-e31,f Characterization for Piezo-MEMS
Sanjog Vilas Joshi, Sina Sadeghpour, Michael Kraft
Katholieke Universiteit Leuven, Belgium

15:15
3726: Fabrication and Characterization of a Flexible Piezo-Polymer Material for Guidewire IVUS
Reza Pakdaman Zangabad, Trent R. Berrien, Lee W. Bradley, Drue C. Whitson, Connor J. Soncrant, Levent Degertekin
Georgia Institute of Technology, United States

14:00 - 15:30
B4L-10: TMU: Capacitive Micromachined Ultrasonic Transducers
Room: Polar
Session Chair(s): Alessandro Stuart Savoia, Roma Tre University; Rob van Schaijk, Xiver

14:00
3655: CMUT-Only Transmit-Receive Ultrasound Array for Blood-Brain Barrier Opening in Small Animal Models
Sait Kilinc, Reza Pakdaman Zangabad, Costas Arvanitis, Levent Degertekin
Georgia Institute of Technology, United States

14:15
2425: Characterization of a CMUT and PZT Array Integrated on a Common ASIC Design
Nuriel Rozsa{1}, Djalma Simoes Dos Santos{1}, Peter Timmermans{4}, Emile Noothout{1}, Zu-Yao Chang{1}, Vincent Henneken{3}, Rob van Schaijk{4}, Jason Voorneveld{2}, Nico De Jong{1}, Hendrik Vos{1}, Johan Bosch{2}, Martin Verweij{1}, Michiel Pertijs{1}
{1}Delft University of Technology, Netherlands; {2}Erasmus University Medical Center, Netherlands; {3}Philips Innovation and Strategy, Netherlands; {4}Xiver MEMS Foundry B.V., Netherlands

14:30
3671: Fabrication of Dual-Frequency Duplex CMUTs in a Vertically Stacked Topology for Acoustic Angiography
Utku Ozgen Karagenc, Muhammetgeldi Annayev, Remzi Erkan Kemal, Nairit Das, Feysel Yalcin Yamaner, Ömer Oralkan
North Carolina State University, United States

14:45
2454: 15 MHz 128+128 Element λ/2 Pitch Row Column Addressed CMUT Array Integrated Into a Modular Prototype Probe
Kitty Steenberg{1}, Kasper Floeng Pedersen{1}, Rune Sixten Grass{1}, Lasse Thurmann Jørgensen{1}, Borislav Gueorguiev Tomov{1}, Jørgen Arendt Jensen{1}, Erik Vilain Thomsen{2}
{1}Technical University of Denmark, Denmark; {2}Technical University of Denmark / DTU Health Tech, Denmark

15:00
3233: Multiphysics-Optimized CMUT Integrating Top/Sidewall Microchannels for Broadband Air-Coupled Ultrasound Transduction
Jiehe Wang, Jintao Ni, Bo Ma, Ye Jiang, Xu Guo
Huazhong University of Science and Technology, China

15:15
2318: Capacitive Micromachined Ultrasonic Transducer with a Force Plate (CMUT-FP)
Cem Bülbül, Abdullah Atalar
Bilkent University, Turkey

15:30 - 16:30
Coffee Break
Room: Transit Zone

15:30 - 16:30
B5P-11: MTC: Ultrasonic Tissue Characterization of Liver II
Room: Transit Zone
Session Chair(s): Ivan Rosado-Mendez, University of Wisconsin-Madison

2118: Quantitative Ultrasound Analysis Using a Nakagami-Gaussian Mixture Model for Automated Detection of Steatosis and Inflammation in Mice with Chronic Liver Disease
Layan Al-Huneidi, Leroy Arthur, Joshua Hanson, Xinlei Gu, Xiaoxiao Wang, Xiaojing Li, Honggui Li, Chaodong Wu, Kenneth Hoyt
Texas A&M University, United States

2375: Modified Nakagami Parametric Imaging for Liver Tissue Characterization by Removing High-Intensity Non-Speckle Signals
Shohei Mori{4}, Shin Yoshizawa{4}, Po-Hsiang Tsui{2}, Tadashi Yamaguchi{1}, Hiroyuki Hachiya{3}
{1}Center for Frontier Medical Engineering, Chiba University, Japan; {2}Chang Gung University, Taiwan; {3}Institute of Science Tokyo, Japan; {4}Tohoku University, Japan

3458: Quantitative Ultrasound Spectroscopy in Metabolic Dysfunction-Associated Steatosis Liver Disease (MASLD): Preliminary Results
Iman Rafati{4}, Jenny Vo-Phamhi{1}, Neha Antil{2}, David Spector{3}, Nolan Premack{3}, Ada Lin{3}, Luyao Shen{2}, Aya Kamaya{2}, Ahmed El Kaffas{3}
{1}Columbia University, United States; {2}Stanford University, United States; {3}University of California, San Diego, United States; {4}University of Montreal / University of Montreal Hospital / University of California, San Diego, Canada

3644: Development of Three-Dimensional Quantitative Ultrasound Tissue Characterization Using a Matrix Probe for Liver Lesion Evaluation: Feasibility Assessment
Iman Rafati{3}, David Spector{2}, Wei Chen Lo{2}, Aya Kamaya{1}, Ahmed El Kaffas{2}
{1}Stanford University, United States; {2}University of California, San Diego, United States; {3}University of Montreal / University of Montreal Hospital / University of California, San Diego, Canada

3782: Spatial Analysis of Quantitative Ultrasound for Metabolic Dysfunction-Associated Steatosis Liver Detection
David Spector{3}, Jenny Vo-Phamhi{1}, Nolan Premack{3}, Ada Lin{3}, Neha Antil{2}, Luyao Shen{2}, Aya Kamaya{2}, Ahmed El Kaffas{3}
{1}Columbia University, United States; {2}Stanford University, United States; {3}University of California, San Diego, United States

2789: Ultrasonic and Electrical Properties of Fat Droplets in Liver
Miyu Nagaoka{3}, Koichi Ito{3}, Jonathan Mamou{4}, Cameron Hoerig{4}, Emilie Franceschini{1}, Tadashi Yamaguchi{2}
{1}Aix-Marseille University, CNRS, Centrale Med, Laboratory of Mechanics and Acoustics, France; {2}Center for Frontier Medical Engineering, Chiba University, Japan; {3}Chiba University, Japan; {4}Weill Cornell Medicine / Cornell University, United States

15:30 - 16:30
B5P-12: MBB: Beamforming for Artifact Reduction
Room: Transit Zone
Session Chair(s): Alexandre Aubry, Université Denis Diderot

2413: A Phase-Time Splitting Approach to Avoid Cycle Skipping: Application to Aberration Correction and Speed of Sound Estimation
Baptiste Heriard-Dubreuil{2}, Adrien Besson{1}, Alexandre Aubry{2}
{1}E-Scopics, France; {2}ESPCI Paris / Institut Langevin, France

2726: Reduced Rank Capon Beamforming for High Resolution Ultrasound Imaging
Florian Nowicki{2}, Karim Abed-Meraim{1}, Rodolphe Weber{1}, David Savéry{2}, Guillaume Bloino{2}
{1}University of Orléans, France; {2}Vermon, France

2731: Artifact Suppression and Contrast Enhancement in Reflection Ultrasound Computed Tomography
Soheil Hakakzadeh{1}, Zahra Kavehvash{1}, Mohammad Mehrmohammadi{2}
{1}Sharif University of Technology, Iran; {2}University of Rochester Medical Center, United States

3118: Sound of Speed with B-Mode Image Alignment Using Steered Focused Transmits
Can Deniz Bezek, Paul Koudelka, Roman Denkin, Orcun Goksel
Uppsala University, Sweden

3709: Grating Lobe Suppression Using Synthetic Optically Tracked Sparse Aperture Focusing for Non-Contact Ultrasound Imaging
Hyunwoo Song{1}, Emad Boctor{1}, Jeeun Kang{2}
{1}Johns Hopkins University, United States; {2}Johns Hopkins University / SOM Ane Cardiac Anesthesiology, United States

15:30 - 16:30
B5P-13: MTN: Theranostic Treatment Monitoring
Room: Transit Zone
Session Chair(s): Xiran Cai, ShanghaiTech University, China

2181: Quantitative Ultrasound Imaging with Coded Excitation for Simultaneous Monitoring of High-Intensity Focused Ultrasound (HIFU) Therapy
Liang Lee, Che-Chou Shen
National Taiwan University of Science and Technology, Taiwan

2805: A Time-Reversal Approach for Precise Localization of HIFU Focus Point
Hsien-Jung Chan, Weicheng Hsiao, Po-Hsiang Tsui, Bao-Yu Hsieh
Chang Gung University, Taiwan

2864: Deep Learning-Localized Target of MRgFUS in Essential Tremor
Qing-Cheng Long{3}, Hsu-Hsia Peng{3}, Wei-Chieh Chang{2}, Kun-Hong Li{2}, Chia-Yen Lee{1}, Chih-Kuang Yeh{3}
{1}Institute of Biomedical Engineering, National Yang Ming Chiao Tung University, Taiwan; {2}MR-Guided Focused Ultrasound Center, Chang Bing Show Chwan Memorial Hospital, Taiwan; {3}National Tsing Hua University, Taiwan

2963: Design and Implementation of 32-Element Monitoring Transducers for 3D Cavitation Monitoring of Ultrasound Therapy
Sarah Therre-Mohr{2}, Christian Degel{1}, Andreas Melzer{3}, Steffen Tretbar{1}, Marc Fournelle{1}
{1}Fraunhofer Institute for Biomedical Engineering IBMT, Germany; {2}Fraunhofer Institute for Biomedical Engineering IBMT / Saarland University, Germany; {3}University of Leipzig, Germany

3205: Ultrafast Tracking of Histotripsy Bubble Clouds Combined with Modeling to Predict Treatment Outcomes
Michael Gomez{2}, Muskan Singh{2}, Himanshu Shekhar{1}, Kenneth B. Bader{2}
{1}Indian Institute of Technology Gandhinagar, India; {2}University of Chicago, United States

3359: Assessing Lesions on the Ciliary Body of the Eye Using Acoustic Radiation Force (ARF) After an Ultrasound Cyclo-Plasty (UCP) Treatment Using High Intensity Focused Ultrasound (HIFU)
Georgina Jesuthasan{2}, Stefan Catheline{3}, Victor Delattre{2}, Sophie Cambronero{1}, Maxime Lafond{2}, Laurent Farcy{1}, Dietrich Wolf{1}, Cyril Lafon{2}
{1}EYE TECH CARE, France; {2}LabTAU, INSERM, Centre Léon Bérard, Université Claude Bernard Lyon 1, France; {3}LabTAU, INSERM, Centre Léon Bérard, Université Claude Bernard Lyon 1, Université Lyon 1, France

3460: MnO_2-Coated ZIF-8 for Efficient MRI-Guided Chemo-Sonodynamic Cancer Therapy
Linrong Shi, Yi Feng
Xi'an Jiaotong University, China

3767: Histotripsy Cavitation Localization and Monitoring Through Human Rib Phantom
Mahmoud Komaiha, Ellen Yeats, Zhen Xu, Timothy Hall, Jonathan Sukovich
University of Michigan, United States

2448: Intraoperative HIFU for the Treatment of Locally Advanced Pancreatic Tumors Using a Toroidal Transducer with Real-Time Vascular Safety Monitoring: A Phase I-II Clinical Trial
David Melodelima{3}, Elorri Olhagaray{3}, Celia Cilleros{2}, Aurelien Dupre{1}
{1}Centre Léon Bérard, France; {2}EDAP TMS SA, France; {3}LabTAU, INSERM, Centre Léon Bérard, Université Claude Bernard Lyon 1, Université Lyon 1, Université , France

3625: Feasibility of Transcranial Displacement Imaging: Ex Vivo Parametric Study
Seongyeon Kim, Samuel Blackman, Erica McCune, Elisa E. Konofagou
Columbia University, United States

15:30 - 16:30
B5P-14: MSR: Micrometric Horizons
Room: Transit Zone
Session Chair(s): Gianmarco Pinton, UNC

2051: Stability of a Bi-Disperse Microbubble Population for Advanced Ultrasound Localization Microscopy
Giulia Tuccio{2}, Lisa Te Winkel{1}, Corinne Bruggeman{1}, Wim Van Hoeve{1}, Libertario Demi{2}
{1}Solstice, Netherlands; {2}University of Trento, Italy

2207: Physics-Informed Channel Modeling with Ultrasound Localization Microscopy: Reconstructing Geometry and Flow Field from Sparse Velocity Measurements
Luca Giaccone, Giulia Tuccio, Libertario Demi
University of Trento, Italy

2529: UCA Separation Using Virtual Images Generated by Steering Phase-Patterned Waves
Junseok An, Naohiro Sugita, Tadahiko Shinshi
Institute of Science Tokyo, Korea; Institute of Science Tokyo, Japan

2703: High-Concentration Ultrafast Ultrasound Super-Resolution Imaging Based on Mean-Shift Shrinkage Localization
Hao Wang, Jinxuan Ma, Meiling Liang, Jiacheng Liu, Mingxi Wan
Xi’an Jiaotong University, China

2837: Structured Illumination and Plane-Wave Compounding: A Synergistic Approach to Super-Resolution Ultrasound
Vahid Amin Nili{1}, Zahra Kavehvash{1}, Mohammad Mehrmohammadi{2}
{1}Sharif University of Technology, Iran; {2}University of Rochester Medical Center, United States

3005: Robust Multi-Rate Clutter Filtering for Ultrafast Localization Microscopy Using Hierarchical Spatio-Temporal Oriented Gradient Filter
Youngho Seo{1}, Zahra Hosseini{2}, Kang Kim{2}, Hyojin Seong{1}, Sangwoo Nam{1}, Nizar Guezzi{1}, Jaesok Yu{1}
{1}Daegu Gyeongbuk Institute of Science and Technology, Turkey; {1}Daegu Gyeongbuk Institute of Science and Technology, Korea; {2}University of Pittsburgh, United States

3273: Real-Time Processing of 2D and 3D Ultrasound Localisation Microscopy: From Radiofrequency to Super-Resolution
Jaime Parra Raad{2}, Beatriz Laureano{2}, Leong Fan Fung{3}, Daniel Lock{2}, Kumar Ramnarine{1}, Kirsten Christensen-Jeffries{2}
{1}Guy's and St Thomas' NHS Foundation Trust, United Kingdom; {2}King's College London, United Kingdom; {3}University of Edinburgh, United Kingdom

3468: An Automatic Eigen-Image Based Super-Resolution Imaging for Enhanced Ultrasound Signal Extraction
Adree Bhattacharjee{1}, Sydney Turner{1}, Lu Diao{2}, Siyuan Zhang{2}, Sangpil Yoon{1}
{1}University of Oklahoma, United States; {2}University of Texas Southwestern Medical Center & MD Anderson Cancer Center, United States

3607: Fast and Parameter Insensitive Ultrasound Localization Microscopy with Hyper-Beam Coherent Plane Wave Compounding: In Vivo Study
Xin-Shun Wang, Chun-Hsien Chiang, Meng-Lin Li
National Tsing Hua University, Taiwan

3660: 3D Ultrasound Localization Microscopy (3D-ULM) Based on a High-Density 2D Matrix Array with Microbeamforming
Yue Xu{1}, Yirang Shin{2}, Bing-Ze Lin{3}, Matthew R. Lowerison{1}, Pengfei Song{1}
{1}Duke University, United States; {2}Duke University / University of Illinois Urbana-Champaign, United States; {3}University of Illinois Urbana-Champaign / Duke University, United States

15:30 - 16:30
B5P-15: MPA: Machine Learning & Quantitative Methods for Photoacoustic Imaging
Room: Transit Zone
Session Chair(s): Geoffrey Luke, Dartmouth College

2064: Limited-View Compensation in Photoacoustic Computed Tomography Using a Generative Mode
Youwei Yang{2}, Yuqing Chen{2}, Honshen Chen{2}, Mian Chen{2}, Zhourui Xu{2}, Siping Chen{2}, Xiangwei Lin{1}, Xin Chen{2}
{1}Shenzhen Institute of Advanced Technology, China; {2}Shenzhen University, China

2190: Global Information-Driven Unfolding Network for Photoacoustic Imaging
Ying Zhao{1}, Baohai Gao{1}, Hong Qi{1}, Fei Gao{2}, Hengrong Lan{2}, Zhongqi Li{2}
{1}Harbin Institute of Technology, China; {2}University of Science and Technology of China, China

2330: Real-Time Histogram-Based Automated Signal Exposure Correction on FPGA for Optoacoustic Imaging
Viturin Schuhmacher{1}, Federico Villani{1}, Giusy Spacone{1}, Xiang Liu{2}, Andrea Cossettini{1}, Daniel Razansky{3}, Luca Benini{1}
{1}ETH Zürich, Switzerland; {2}ETH Zürich, University of Zurich, Switzerland; {3}Institute for Biomedical Engineering, University of Zurich, ETH Zürich, Switzerland

2562: Non-Contact Laser Ultrasound Volumetric Imaging: Image Formation and Analysis
Marko Jakovljevic{1}, Ion Candel{1}, Rajan Gurjar{2}, Tanwin Chang{2}, Chakameh Jafari{2}, Samuel Kesner{2}, Anthony E. Samir{1}, Robert Haupt{2}, Kai Thomenius{1}
{1}Massachusetts General Hospital, United States; {2}MIT Lincoln Laboratory, United States

2803: Quantitative Assessment of Tissue Elasticity by Using Photoacoustic Spectral Analysis Method
Hongyu Liu, Ting Feng, Dean Ta
Fudan University, China

3096: Iterative Reconstruction of the Optical Absorption Coefficient in Photoacoustic Tomography with Large Scale Simulations: Numerical Experiments with Digimouse
William Vale{3}, Jeffrey Bamber{1}, Hasan Koruk{2}, Gustavo Carneiro{3}, Lucia Florescu{3}
{1}Institute of Cancer Research and Royal Marsden NHS Foundation Trust, United Kingdom; {2}National Physical Laboratory, United Kingdom; {3}University of Surrey, United Kingdom

3245: Multiscale Photoacoustic Simulation Framework for Thrombus Microstructure Analysis
Hamed Ghodsi, Sophinese Iskander-Rizk, Behrooz Fereidoonnezhad
Delft University of Technology, Netherlands

3294: Coherent Factor Augmented Filtered Delay Euclidian Weighted Beamformer for PLD-Based Reflection Mode Photoacoustic Imaging System: Initial Experimental Results
Anwar Tesfaye Beshir, Arun Kumar Thittai
Indian Institute of Technology Madras, India

3302: Label-Free Photoacoustic Characterization of Chronic Liver Disease with an AI Driven Advanced Spectral Unmixing Framework
Gayathri Malamal{2}, Chris Albanese{3}, Olga Rodriguez{3}, Jithin Jose{1}
{1}FUJIFILM VisualSonics Inc., Netherlands; {2}FUJIFILM VisualSonics Inc. / Indian Institute of Technology Palakkad, Netherlands; {3}Georgetown University Medical Center, United States

3450: Deep Fusion Network for Low-Frame Averaged LED-Based Photoacoustic Imaging
Surja Sarker{2}, Yozlem Ramadan{2}, Kalloor Joseph Francis{1}, Navchetan Awasthi{2}
{1}Erasmus University Medical Center, Netherlands; {2}University of Amsterdam, Netherlands

15:30 - 16:30
B5P-16: MBF: Clutter Filtering, Denoising, & Signal Processing
Room: Transit Zone
Session Chair(s): Matthew Lowerison, Duke

2555: Unsupervised Unfolded rPCA (U2-rPCA): Deep Interpretable Ultrasound Microvascular Clutter Filtering
Huaying Li, Yinran Chen
Xiamen University, China

2697: Adaptive Spectral Estimation Improves Preeclampsia Prediction When Using Short Pulsed Wave Doppler Acquisition Duration
Jingyi Zhu{2}, Claudia Tawil{1}, Nadav Schwartz{1}, Brett Byram{2}
{1}Hospital of the University of Pennsylvania, United States; {2}Vanderbilt University, United States

3111: 3D Total Variation Regularized RPCA for Enhanced Clutter Filtering and Noise Suppression in Contrast-Free Ultrasound Microvascular Imaging
Xiao Su, Haotian Wang, Hanbing Chu, Liyuan Jiang, Yujin Zong, Mingxi Wan
Xi'an Jiaotong University, China

3318: EasyPISA: Automated Real Time Assessment of Mitral Regurgitation from Color Flow Imaging
Sigurd Vangen Wifstad, Henrik Agerup Kildahl, Espen Holte, Erik Andreas Rye Berg, Bjørnar Grenne, Øyvind Salvesen, Håvard Dalen, Lasse Løvstakken
Norwegian University of Science and Technology, Norway

3565: Deep-Learning-Based Inter-Frame Motion Correction Improves Thyroid Nodule Classification Using Ultrasound Microvessel Images
Manali Saini, Nicholas B. Larson, Mostafa Fatemi, Azra Alizad
Mayo Clinic College of Medicine and Science, United States

3604: Impact of Coded Excitation Transmits on Singular Value Decomposition for Power Doppler Filtering
Abbie Weeks, Brett Byram
Vanderbilt University, United States

15:30 - 16:30
B5P-17: MBF: Microvascular & Cerebrovascular Imaging
Room: Transit Zone
Session Chair(s): Kailiang Xu, Fudan University

2220: MICROBEAD: A Novel Doppler Detectable Device with Suspended Microparticles for Use as a Biopsy Marker
Benjamin G. Wood, Charles Capron, Christine U. Lee, Matthew W. Urban
Mayo Clinic, United States

2646: A Novel Approach for Wall Shear Rate Estimation Based on Bi-Plane Imaging and Sparse Arrays
Claudio Giangrossi{2}, Milan Pit{1}, Richard Lopata{1}, Enrico Boni{3}, Alessandro Ramalli{3}
{1}Eindhoven University of Technology, Netherlands; {2}University of Florence, Italy; {3}University of Florence / MSDLab, Italy

2804: Spatially Enhanced Functional Ultrasound Imaging via Null Subtraction Imaging
Gonzalo Garay{2}, Juan Barolin{2}, Victoria Sorriba{2}, Mariana Martínez{1}, Juan Pablo Damián{2}, Carlos Negreira{2}, Alejandra Kun{2}, Javier Brum{2}
{1}Instituto de Investigaciones Biológicas Clemente Estable / Universidad de la República, Uruguay; {2}University of the Republic, Uruguay

2889: Null Subtraction Imaging of Ocular Vasculature in Alzheimer's Disease Mice
Junhang Zhang{2}, Zhengchang Kou{1}, Zihan Yang{2}, Chen Gong{2}, Jie Ji{2}, Yuanpu Chiu{2}, Zhen Zhao{2}, Michael Oelze{1}, Mark Humayun{2}, Qifa Zhou{2}
{1}University of Illinois Urbana-Champaign, United States; {2}University of Southern California, United States

3053: Dose-Dependent Changes in Cerebral Blood Volume Induced by Isoflurane Assessed Using Ultrasound Ultrafast Doppler
Shun Yu Chen{1}, Yu-Chieh Kao{2}, Yi-Ping Chao{1}, Bao-Yu Hsieh{1}
{1}Chang Gung University, Taiwan; {2}National Yang Ming Chiao Tung University, Taiwan

3305: Wide Field of View 3D Ultrafast Doppler Imaging on the Human Carotid In Vivo Using a Random Large Aperture Multi-Lens Array Probe
Hannah Plath{1}, Nabil Haidour{2}, Mathieu Pernot{2}, Mickaël Tanter{2}, Clément Papadacci{2}
{1}Institut Physique pour la Médecine, Inserm, ESPCI PSL Paris, CNRS, France; {2}Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France

3404: Tiny Vessels, Big Insights: Non Invasive Ultrafast Doppler Imaging of the Kidney Microcirculation
Finn Timmermans{3}, Katerina Stripling{3}, Sofiane Décombas-Deschamps{1}, Anatole Jimenez{2}, Marit Koopman{3}, Jérémy Thalgott{3}, Angela Koudijs{3}, Roel Bijkerk{3}, Mickaël Tanter{2}, Ton Rabelink{3}, Thomas Deffieux{2}, Franck Lebrin{3}
{1}ESPCI Paris, France; {2}Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France; {3}Leiden University Medical Center, Netherlands

3555: Ultrahigh-Resolution Ultrasound Flow Separation Imaging Empowered by Hyper-Beamformation
Zi-Yao Hung, Chun-Hsien Chiang, Meng-Lin Li
National Tsing Hua University, Taiwan

15:30 - 16:30
B5P-18: MIM: Novel Imaging Modalities
Room: Transit Zone
Session Chair(s): Daniele Mazierli, University of Florence

2030: MAE-CT-Net: Deep Learning for Robust Sparse-View Conductivity Boundary Imaging
Bin Huang, Mengmeng Yu, Tong Sun, Dingqian Deng, Mian Chen, Siping Chen, Haoming Lin, Xin Chen
Shenzhen University, China

2251: Mask-Guided Magneto-Acousto-Electrical Tomography (MAET) for Electrical Conductivity Reconstruction
Dingqian Deng, Chenpeng Liu, Yuchao Wu, Shanshan Zhao, Siping Chen, Xin Chen
Shenzhen University, China

2368: Dual-Frequency Endoscopic Ultrasound Probe with Continual Test-Time Adaptation for Deep, High-Resolution Imaging
Moon Hwan Lee{2}, Jae Seong Kim{1}, Jae Youn Hwang{2}
{1}Alpinion Medical Systems, Korea; {2}Daegu Gyeongbuk Institute of Science and Technology, Korea

2852: Increased Optical Penetration Depth by Stepwise Gas Bubble Generation Through Laser Focus Shifting
Juwon Kwon, Jinwoo Kim, Jin Ho Chang
Daegu Gyeongbuk Institute of Science and Technology, Korea

3355: Neuronavigated Transcranial Acoustoelectric Imaging of Weak Neuronal Currents in a Human Head Model
Nadia Abu Farha{1}, Teodoro Trujillo{1}, Margaret Allard{1}, Parker Harris{1}, Leonid Kunyansky{1}, Martin Weinand{1}, Yeonjoon Cheong{2}, Matthew O'Donnell{2}, Russell Witte{1}
{1}University of Arizona, United States; {2}University of Washington, United States

3719: Ultrasound Beam Optimization for Transcranial Acoustoelectric Brain Imaging with Neuronavigation
Margaret Allard{1}, Nadia Abu Farha{1}, Matthew O'Donnell{2}, Russell Witte{1}
{1}University of Arizona, United States; {2}University of Washington, United States

3765: CMUS with a Clinical Us System for Detection of Radiation-Induced Differential Expression of P-Selectin in SC Tumors
David Spector{2}, Ada Lin{2}, Stavros Melemenidis{1}, Dimitre Hristov{1}, Ahmed El Kaffas{2}
{1}Stanford University, United States; {2}University of California, San Diego, United States

15:30 - 16:30
B5P-19: MIM: In Vivo Imaging
Room: Transit Zone
Session Chair(s): Min Wu, Eindhoven University of Technology

2426: Semi-Automated Score-Guided Optic Nerve Sheath Diameter Assessment
Nora Zarranz Bozal{1}, Karen M. Martí Antón{2}, Thomas Robins{2}, Giovanni Vinetti{1}, Nicola Borasio{1}, Hannes Gatterer{1}, Giacomo Strapazzon{1}, Hendrik Mugele{3}, Justin S. Lawley{3}, Kai Riemer{1}
{1}Eurac Research, Italy; {2}Independent researcher, United Kingdom; {2}Independent researcher, Germany; {3}University of Innsbruck, Austria

2460: Can Erectile Dysfunction Be Evaluated Using Ultrasound Imaging Without an Intracavernosal Injection of a Vasoactive Agent? an In Vivo Study
Priscilla Machado, Ji-Bin Liu, Aaron Hochberg, Saatvik Kambhampati, Paul Chung, Flemming Forsberg
Thomas Jefferson University, United States

2839: Spatio-Temporal Interpolation of Liver Vessel 3D Ultrasound Images Using VoxelMorph
Kaori Shinoda{3}, Shinya Onogi{1}, Koki Tanaka{3}, Kaho Takahashi{3}, Yukino Takahashi{3}, Yoshihiro Edamoto{2}, Kohji Masuda{3}
{1}Institute of Science Tokyo, Japan; {2}Secomedic Hospital, Japan; {3}Tokyo University of Agriculture and Technology, Japan

3153: RF Signal-Guided Residual Diffusion Model for Breast Ultrasound Computed Tomography Reflection Imaging Using Sparse Receivers
Lei He, Zhaohui Liu, Qiude Zhang, Liang Zhou, Mingyue Ding, Ming Yuchi, Wu Qiu
Huazhong University of Science and Technology, China

3417: Image-Based Guidance for Intracranial Pressure Measurement via Ultrasound Interrogated Microfluidic Sensor
Adeoye Olomodosi{2}, Alessandra Luna{1}, David Myers{1}, Brooks Lindsey{3}
{1}Emory University, United States; {2}Georgia Institute of Technology, United States; {3}Georgia Institute of Technology and Emory University, United States

3766: DeepTAI: Deep Learning-Based Twinkling Artifact Imaging for Microcalcification Detection in Breast Ultrasound
Jaeseok Lee, Hyunwoo Cho, Seoungjun Park, Yangmo Yoo
Sogang University, Korea

15:30 - 16:30
B5P-20: MTC: Speed of Sound Estimation - Methods & Applications
Room: Transit Zone
Session Chair(s): Iman Rafati, University of Montreal

2315: Measurement System of Speed of Sound in Tissues by Opposed Planar Transducer and Matrix Array Probe
Mizuki Hashimoto{2}, Kenji Yoshida{1}, Tadashi Yamaguchi{1}, Shinnosuke Hirata{1}
{1}Center for Frontier Medical Engineering, Chiba University, Japan; {2}Chiba University, Japan

2751: Sound Speed Contribution to Quantitative Ultrasound for Improving Liver Fat Assessment
Jihye Baek{1}, Ben Frey{1}, Leobardo Guardado{2}, Jeremy Dahl{1}
{1}Stanford University, United States; {2}University of Wisconsin–Madison, United States

3122: Windowed Sound Speed Estimation Extending Beamforming-Based Global Estimators
Can Deniz Bezek, Orcun Goksel
Uppsala University, Sweden

3702: Local Speed-of-Sound Measurement of Cartilage Tissue Based on Pseudo Point Scattered Waves from Cartilage Boundaries
Naotaka Nitta, Keigo Hikishima
National Institute of Advanced Industrial Science and Technology, Japan

15:30 - 16:30
B5P-21: Energy Harvesting & Flow Measurement
Room: Transit Zone
Session Chair(s): Frederic Cegla, Imperial College

2446: Unlocking Directional Ultrasonic Wireless Power Transfer: Frequency Tuning and Energy Transfer Enhancement with Frequency Steerable Acoustic Transducers
Stefano Taccetti{1}, Matteo Zauli{2}, Aldo Romani{1}, Luca De Marchi{1}
{1}ARCES - University of Bologna, Italy; {2}ARCES/CIRI ICT-University of Bologna, Italy

2621: Piezoelectric Ultrasound Energy Harvester with an Acoustic Matching Layer for Enhanced Wireless Power Charging Efficiency
Sungwoo Kang, Juhwan Kim, Jinwoo Kim, Eunji Lee, Jin Ho Chang
Daegu Gyeongbuk Institute of Science and Technology, Korea

2850: Dynamic Beam Shaping Based on Acoustic Holography for Maximized Ultrasound Power Transfer Using a 2D Phased Array
Ilhee Kim, Jinwoo Kim, Sungwoo Kang, Eunji Lee, Jin Ho Chang
Daegu Gyeongbuk Institute of Science and Technology, Korea

2577: Design and Parameter Optimization of an Ultrasonic Gas Flow Meter Using Simulation-Assisted Full Factorial Design
Adel Gani, Richard O'Leary, Walter Galbraith
Strathclyde University, United Kingdom

2966: In-Situ Flow Rate Measurement in Microchannels Using Wireless Quartz Resonator
Zhenyu Ji{1}, Fumihito Kato{1}, Hirotsugu Ogi{2}
{1}Nippon Institute of Technology, China; {1}Nippon Institute of Technology, Japan; {2}University of Osaka, Japan

3038: Design and Development of Ultra-Wideband Polymer-Integrated Piezoelectric Micromachined Ultrasonic Transducer Array for Gas Flowmeters
Javad Abbaszadeh, Alvaro Rosa Julian, Humberto Campanella
Silicon Austria Labs GmbH, Austria

2356: Investigation of the Mechanism Governing Linearity in Guided Wave Ultrasonic Flow Meters
Jack Massaad, Jeroen van Klooster, Arie Huijzer
KROHNE New Technologies, Netherlands

15:30 - 16:30
B5P-22: Transducers: NDE & Industrial & Process Control & Industrial Ultrasound
Room: Transit Zone
Session Chair(s): Mauricio Pereira da Cunha, University of Maine

2072: A Novel Dry Sliding Couplant for Ultrasonic Testing
Akiko Hirao
Corporate Research & Development Center, Toshiba Corporation, Japan

2249: Thin-Film Flexural Ultrasonic Transducers for Air-Coupled Measurement
Sam Adams{1}, Michael McKinlay{1}, Carlos Garcia Nunez{1}, Desmond Gibson{3}, Mahshid Hafezi{1}, Lei Kang{2}, Steve Dixon{4}, Andrew Feeney{1}
{1}University of Glasgow, United Kingdom; {2}University of Portsmouth, United Kingdom; {3}University of the West of Scotland, United Kingdom; {4}University of Warwick, United Kingdom

2769: 3D-Printed Air-Coupled Ultrasonic Transducer Based on Conductive Filament
Stephan Schaumann{2}, Nils Demuth{2}, Sven Suppelt{2}, Tom Middendorf{2}, Omar Ben Dali{2}, Luise E. Jazdzewski{1}, Christoph Haugwitz{2}, Bastian Latsch{2}, Achim Bittner{1}, Mario Kupnik{2}
{1}Hahn-Schickard-Gesellschaft, Germany; {2}Technical University of Darmstadt, Germany

3004: Metal Powder Manipulation Using Air-Coupled Ultrasound
Christoph Haugwitz, Felix Besser, David Zentgraf, Sören Soennecken, Jan Helge Dörsam, Sonja Wismath, Nils Demuth, Stephan Schaumann, Felix Herbst, Matthias Weigold, Mario Kupnik
Technical University of Darmstadt, Germany

3129: Investigating Amplitude Modulation Effects on Wide Bandwidth & High SPL SC0.3AL0.7N MEMS Ultrasonic Speakers
David Sze Wai Choong{1}, Yu Feng Thien{1}, Prakasha Ramegowda Chigahalli{1}, Duan Jian Goh{1}, Shyam Trivedi{1}, Jihang Liu{1}, Yong Shun Teo{1}, Hong Yan{1}, Daniel Ssu-Han Chen{1}, Yul Koh{1}, Alberto Leotti{2}, Silvia Adorno{2}, Chang Kwan Teo{2}
{1}Institute of Microelectronics, Agency for Science, Technology and Research, Singapore;
{2}STMicroelectronics, Singapore

3143: Zero-Power ScAIN PiezoMEMS Receiver Arrays for Voice and Broadband Acoustic Wakeup Sensing
Prakasha Chigahalli Ramegowda{1}, David Sze Wai Choong{1}, Shyam Trivedi{1}, Sagnik Ghosh{1}, Duan Jian Goh{1}, Yu Feng Thien{1}, Liu Jihang{1}, Daniel Ssu-Han Chen{1}, Teo Yong Shun{1}, Hong Yan{1}, Domenico Giusti{2}, Fabrizio Cerini{2}, Giao Teh Poh{2}, Yul Koh{1}
{1}Institute of Microelectronics, Agency for Science, Technology and Research, Singapore;
{2}STMicroelectronics, Singapore; {2}STMicroelectronics, Italy

3179: Sub-Millimeter Cups Monitoring Using Permanently Installed Thin Film Ultrasound Sparse Array
Matthew McInnes, Cameron Dick, Praveen Ashok, Dave Allan Hughes
Novosound, United Kingdom

3362: Investigation of a Planar Active Focusing Air-Coupled Ultrasonic Transducer with Multiple Concentric Ring Electrode Patterns
Qiao Wu, Jian Li, Xu Zhang
Hubei University of Technology, China

3635: Optimizing Ultrasonic Parameters for Liquid-Phase Exfoliation of Graphene
Lucas Mendes Santos{2}, Gutemberg Silva Cardoso{2}, Theo Zeferino Pavan{2}, Nicholas Zufelato{2}, José Henrique Lopes{1}, Adilton Carneiro{2}
{1}Federal University of Alagoas, Brazil; {2}University of São Paulo, Brazil

2868: Non-Contact Ultrasonic Inspection of Filtration Membranes Using Air-Coupled PMUT
Vicente Genovés{1}, Tingzhong Xu{2}, Rodrigo Tumolin Rocha{2}, Tomás Gómez Alvarez-Arenas{1}
{1}Consejo Superior de Investigaciones Científicas, Spain; {2}Silicon Austria Labs GmbH, Austria

15:30 - 16:30
B5P-23: PGP: General Physical Acoustics III
Room: Transit Zone
Session Chair(s): Mihir Patel, Skyworks, Inc.

2302: Ultrasonic Cavitation Enhances Selective Detection of α-Synuclein Amyloid Fibrils from a Crowded Environment
Tomoki Ota, Kichitaro Nakajima, Keiichi Yamaguchi, Yuji Goto, Hirotsugu Ogi
University of Osaka, Japan

2739: A Phase-Matching Approach for Ultrasound Hologram Generation
Víctor Vegas-Luque{1}, Diana Andrés{2}, Alba Eroles-Simó{1}, Juan José Rodríguez-García{2}, Francisco Camarena{1}, Noé Jiménez{1}
{1}Institute of Instrumentation for Molecular Imaging, Polytechnic University of Valencia-CSIC, Spain; {2}Polytechnic University of Valencia / CSIC, Spain

2826: Numerical Simulation of Acoustic Airy-Vortex Beam for Optical Waveguide
Yu-Cheng Hsu, Meng-Chen Keng, Chia-Wen Hu, Zong-Han Hsieh, Chih-Kuang Yeh
National Tsing Hua University, Taiwan

2958: Liquid Crystal Detection of Complex Acoustic Fields from a Multi-Thousand Element, High-Intensity, 1MHz Matrix Array
Mary Dysko{2}, Iain Sutherland{2}, Maryam Basij{1}, Martha Turvey{3}, Oksana Trushkevych{3}, Holly Lay{1}, Paul Reynolds{1}, Rachel Edwards{3}, Sandy Cochran{2}
{1}Acoustiic Inc., United States; {2}University of Glasgow, United Kingdom; {3}University of Warwick, United Kingdom

3094: Acoustic Meta-Surfaces: Effects of Tilt and Distance on Sound Field
Sören Köble{1}, Jan Helge Dörsam{2}, Severin Schweiger{1}, Anton Melnikov{1}, Matthias Wambold{1}, Sandro G. Koch{1}, Mario Kupnik{2}
{1}Fraunhofer Institute for Photonic Microsystems IPMS, Germany; {2}Technical University of Darmstadt, Germany

3377: Accelerated Estimation of the Shear Wave Speed and the Shear Viscosity with an Approximate Viscoelastic Time-Domain Method
Nikko Bannon{2}, Matthew W. Urban{1}, Robert McGough{2}
{1}Mayo Clinic, United States; {2}Michigan State University, United States

3382: Deriving Acoustic Boundary Conditions for Circular and Rectangular Transducers in Transient Ultrasound with Simulations by Extending the Spatial Impulse Response
Jacob Honer, Robert McGough
Michigan State University, United States

3597: Characterization of Agar and Glycerin Phantoms for Generation of Stoneley Waves
Claudio Pozo, David Espíndola, Belfor Antonio Galaz Donoso
University of Santiago, Chile, Chile

3044: Inverse Design of Phononic Crystals: A Benchmarking of Traditional and Sequence-Based Machine Learning Methods
Mohamed Belkaid, Costanza Ferrari, Marco Ricci, Andrea Tagarelli, Stefano Laureti
University of Calabria, Italy

3059: Wide-Area Topological Corner Modes in Heterostructured Kagome Phononic Crystals
Yusuke Hata, Yuri Fukaya, Kenji Tsuruta
Okayama University, Japan

15:30 - 16:30
B5P-24: AAF: Acoustic Filter Modeling & Synthesis
Room: Transit Zone
Session Chair(s): Laure ROLLAND DU ROSCOAT, SOITEC

2083: Generalized Synthesis of Double-Mode SAW Filters: A Systematic and Automated Approach
Ángel Romero Espinola, Ricardo Pampliega, Jordi Verdú, Pedro de Paco
Autonomous University of Barcelona, Spain

2160: Synthesis and Design of a Wideband Acoustic Wave Bridge-T Filter
Santi Cano{1}, Carlos Caballero{1}, Mario Faura{1}, Eloi Guerrero{2}, Lluis Acosta{2}, Yazid Yusuf{2}, Alfred Giménez{2}, Jordi Verdú{1}, Pedro de Paco{1}
{1}Autonomous University of Barcelona, Spain; {2}Qorvo, Inc., United States; {2}Qorvo, Inc., Spain

2167: Fast Method for Simulating Lateral Modes in Apodized BAW Resonators Including Border Ring
Ana Valenzuela-Pérez, Carlos Collado, Jordi Mateu
Polytechnic University of Catalonia, Spain

2259: Enabling Feasible Acoustic Wave Multiplexers Through Reduced Chebyshev Responses on Multiport Device Synthesis
Mario Faura, Santi Cano, Carlos Caballero, Jordi Verdú, Pedro de Paco
Autonomous University of Barcelona, Spain

2262: Design of High-Order Acoustic Wave Manifold Multiplexers Through Synthesis Methodology
Mario Faura, Santi Cano, Jordi Verdú, Pedro de Paco
Autonomous University of Barcelona, Spain

2358: Perturbation Approach for a Laterally Excited Acoustic Plate Resonator
Olga Lytvynova-Eriksen, Ulrik Hanke, Einar Halvorsen, Hamed Salmani, Anna Pachol
University of South-Eastern Norway, Norway

2260: On Exploration of Acoustic Wave Herringbone Multiplexers Through Synthesis Methodology
Mario Faura, Guillem Reixach, Jordi Verdú, Pedro de Paco
Autonomous University of Barcelona, Spain

2120: Nonlinear Signal Generation in Spurious Free TC-SAW Resonators
Zijiang Yang{1}, Qiuhao Wang{1}, Yiming Liu{2}, Jingfu Bao{1}, Ken-Ya Hashimoto{1}
{1}University of Electronic Science and Technology of China, China; {2}University of Electronic Science and Technology of China/Tohoku University, China

2701: Novel Material Parameter Extraction Method for AlScN Based on Deep Neural Networks and SAW Resonators
Jiming Fang, Kai Yang, Han Qiu, Jie Chen, Haoran Tao, Meijuan Li, Fuhong Lin, Zhongbin Dai, Chengjie Zuo
University of Science and Technology of China, China

3067: Accurate Synthesis of Wideband Acoustic Ladder Filters Breaking Down the Rule of Thumb for Bandwidth Limitations by Managing Complex Reflection Zeros
Ricardo Pampliega, Santi Cano, Carlos Caballero, Jordi Verdú, Pedro de Paco
Autonomous University of Barcelona, Spain

2111: Experimental Studies on DC Bias Voltage Dependence of Nonlinear Products on TC-SAW Resonators
Wanli Cai{1}, Yuanyuan Liu{1}, Qiuhao Wang{1}, Yiming Liu{2}, Jingfu Bao{1}, Ken-Ya Hashimoto{1}
{1}University of Electronic Science and Technology of China, China; {2}University of Electronic Science and Technology of China/Tohoku University, China

3163: Local Observation of the 2nd-Order Harmonics Generated in RF-SAW Devices
Yasuhiro Kawaguchi, Tatsuya Omori
Chiba University, Japan

15:30 - 16:30
B5P-25: TMI: Wearable & Flexible Transducers
Room: Transit Zone
Session Chair(s): Xiaoning Jiang, NC State University

2062: A Highly Stretchable Multilayer Circuit for Flexible Ultrasound Transducer
Fankai Kong, Hu Tang, Peng Liu, Rongfei Ruan, Mengjun Liu, Jue Peng
Shenzhen University, Chile; Shenzhen University, China

2862: Fabrication of a Polyimide-Based Flexible Substrate for 2D Ultrasound Transducer in Hybrid Imaging Endoscopy
Chan Young Kim{3}, Keun Young Huh{2}, Muhammad Waqar Khan{3}, Byung Chul Lee{1}, Jung Yeol Yeom{3}
{1}Bionics Research Center, Korea Institute of Science and Technology, Korea; {2}Bionics Research Center, Korea Institute of Science and Technology (KIST), Seoul, Republic of Korea, Korea; {3}Korea University, Korea; {3}Korea University, Pakistan

2911: A High Performance Linear Array Transducer for Wearable Ultrasound Application
Min Su, Rong Liu, Peitian Mu, Weichang Wu, Zhiqiang Zhang, Fei Li, Weibao Qiu
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

3201: Flexible Transparent Ultrasound Transducer for Wearable Carotid Artery Monitoring
Xiaoyang Chen, Yongchuan Li, Teng Ma, Hairong Zheng
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

15:30 - 16:30
B5P-26: TTT: Therapeutic Transducers
Room: Transit Zone
Session Chair(s): Holly Lay, Acoustiic Inc

2345: Wearable Ultrasound Patch for Autonomous Transdermal Insulin Delivery
Yiheng Li{2}, Shuai Wu{2}, Yang Jiao{1}, Yaoyao Cui{1}
{1}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences / USTC, China; {2}University of Science and Technology of China, China

2467: Optimizing Langevin-Type Ultrasonic Transducers for Enhanced Transdermal Drug Delivery
Gutemberg Silva Cardoso{2}, José Henrique Lopes{1}, Renata Fonseca Vianna Lopez{2}, Antonio Adilton Oliveira Carneiro{2}, Theo Zeferino Pavan{2}
{1}Federal University of Alagoas, Brazil; {2}University of São Paulo, Brazil

2604: Enhancing Small-Molecule Drug Permeability Utilizing a Compact Low-Frequency Ultrasonic Transducer
Shinya Yamamoto, Naohiro Sugita, Tadahiko Shinshi
Institute of Science Tokyo, Japan

16:30 - 18:00
B6L-01: MBB: Aberration Correction & Sound Speed Estimation
Room: Kinepolis - Room 7
Session Chair(s): Hideyuki Hasegawa, University of Toyama; Jeremy Dahl, Stanford University

16:30
2597: Distributed Aberration Correction in Pulse-Echo Ultrasound via Sound-Speed-Adapting Beamformers
Jeremy Dahl
Stanford University, United States

17:00
3261: Large-Scale Validation of Aberration Correction Algorithms in Clinical Fetal Ultrasound Scans
Xufei Chen{1}, Sophie Dassen{2}, Cybèle Ciofolo-Veit{3}, Loes Monen{2}, Judith van Laar{2}, Laurence Rouet{3}, Ruud J. G. van Sloun{1}, Jean-Luc Robert{3}
{1}Eindhoven University of Technology, Netherlands; {2}Maxima Medical Center, Netherlands; {3}Philips Research, United States; {3}Philips Research, France

17:15
2411: Differentiable Matrix Imaging for Joint Aberration Correction and Speed of Sound Estimation
Baptiste Heriard-Dubreuil, Alexandre Aubry
ESPCI Paris / Institut Langevin, France

17:30
3645: Distributed Aberration Correction in Liver Imaging via Iterative Model-Based Sound Speed Estimation
Benjamin Frey{2}, Robin van Velzen{1}, Jihye Baek{2}, Hoda Sadat Hashemi{2}, Martin Schneider{2}, Sergio Sanabria{2}, Jeremy Dahl{2}
{1}Eindhoven University of Technology, Netherlands; {2}Stanford University, United States

17:45
2409: Ultrasound Matrix Imaging: Multi-Conjugate Aberration Correction and Local Sound Speed Estimation
Thibaud Vernier{2}, William Lambert{5}, Nicolas Etaix{4}, Mathias Fink{1}, Foucauld Chamming'S{3}, Alexandre Aubry{1}
{1}ESPCI Paris / Institut Langevin, France; {2}ESPCI Paris / Institut Langevin / Supersonic Imagine, France; {3}Institut Bergonié, France; {4}Supersonic Imagine, France; {5}Supersonic Imagine / BIOMAPS, France

16:30 - 18:00
B6L-02: MTH: Therapeutic Devices
Room: Kinepolis - Room 8
Session Chair(s): Cyril Lafon, INSERM; Tali Ilovitsh, Tel Aviv University

16:30
2079: Design of Aberrating Lenses for Effective Unfocused Controls in Transcranial Ultrasound Neuromodulation
Andrea Boscutti, Valeria Grasso, Julian Brown, Andrew Krystal, Leo Sugrue, Tommaso Di Ianni
University of California, San Francisco, United States

16:45
3063: Anti-Foci to Suppress Bone Heating During Focused Ultrasound Ablation in the Abdomen
Moslem Sadeghi-Goughari, Ryan Jones, Sobhan Goudarzi, Kullervo Hynynen
Sunnybrook Research Institute, Canada

17:00
3585: Surface-Conformal Acoustic Holography for Enhanced Transcranial Therapeutic Ultrasound
Mihir Pewekar{2}, Ceren Cengiz{2}, Jason Raymond{1}, Wynn Legon{1}, Adam Maxwell{2}, Eli Vlaisavljevich{2}, Shima Shahab{2}
{1}Fralin Biomedical Research Institute at VTC, United States; {2}Virginia Polytechnic Institute and State University, United States

17:15
2730: Optimization-Derived Distortion Correction in Transcranial Focused Ultrasound for Grating Lobe Suppression
Fei Shen, Fan Fan, Fengji Li, Yue Wang, Haijun Niu
Beihang University, China

17:30
3075: Anatomically Conforming Magnetic-Resonance Guided Focused Ultrasound (MRgFUS) Targeting of the Subthalamic Nucleus
Maxime Daniel{4}, Elodie Hainque{5}, Mélanie Didier{3}, Mathieu Santin{2}, Pierre Pouget{1}, Nadya Pyatigorskaya{2}, Jean-François Aubry{4}
{1}ICM-Paris Brain Institute, CENIR, Inserm, CNRS, Sorbonne Université, UMRS, UPMC, AP-HP, France; {2}ICM-Paris Brain Institute, Centre de NeuroImagerie de Recherche-CENIR, Inserm, CNRS, France; {3}ICM-Paris Brain Institute, Sorbonne University, CNRS, Inserm, CENIR, France; {4}Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France; {5}Pitié-Salpêtrière University Hospital, Sorbonne Université, AP-HP, Paris Brain Institute, CNRS, Ins, France

17:45
2665: A Miniaturized 2D Phased Array Ultrasound Transmitter Enabling High-Resolution 3D Beam Steering with 1.93 MPa Peak Pressure and 0.11 mm³ Focal Volume
Hassan Rivandi, Gandhika Wardhana, Eshani Sarkar, Tiago L. Costa
Delft University of Technology, Netherlands

16:30 - 18:00
B6L-03: MTC: Ultrasonic Tissue Characterization of Liver I
Room: Kinepolis - Room 9
Session Chair(s): Tadashi Yamaguchi, Chiba University; Moritz Herzog, Universitätsklinikum Carl Gustav Carus

16:30
3493: Improved B-Mode-Based Attenuation Coefficient Estimation Using Spectral Normalization with Segmentation-Guided Spectral Averaging: Clinical Study
Yi-Hsien Lin{2}, Wei-Hsiang Shen{2}, Chiao Yin Wang{1}, Po-Hsiang Tsui{1}, Meng-Lin Li{2}
{1}Chang Gung University, Taiwan; {2}National Tsing Hua University, Taiwan

16:45
2286: Comparison of Four Attenuation-Compensated Backscatter Coefficient (BSC) Methods for Focal Liver Lesions Characterization
Arnaud Héroux{2}, Iman Rafati{1}, François Destrempes{2}, Maxime Barat{2}, Elige Karam{2}, Audrey Fohlen{2}, Bich Nguyen{2}, Hélène Castel{2}, An Tang{2}, Guy Cloutier{3}
{1}University of Montreal / University of Montreal Hospital / University of California, San Diego, Canada; {2}University of Montreal Hospital, Canada; {3}University of Montreal Hospital / University of Montreal Hospital Research Center, Canada

17:00
3102: Non-Invasive Detection of Metabolic Dysfunction-Associated Steatohepatitis Using Local Attenuation Coefficient Slope and Shear Wave Attenuation
Iman Rafati{1}, Ladan Yazdani{4}, Arnaud Héroux{2}, Casey Bourdeau Caporuscio{2}, Audrey Fohlen{2}, Bich Nguyen{2}, Hélène Castel{2}, Guy Cloutier{3}, An Tang{2}
{1}University of Montreal / University of Montreal Hospital / University of California, San Diego, Canada; {2}University of Montreal Hospital, Canada; {3}University of Montreal Hospital / University of Montreal Hospital Research Center, Canada; {4}Weill Cornell Medicine / Cornell University / University of Montreal Hospital, Canada

17:15
2642: Logistic Regression-Based Differentiation of Hemangioma and Metastasis Using Healthy Liver Tissue Normalized Bsc Features
Omid Chaghaneh{1}, Johanna Pfeifer{1}, Paul-Henry Franz Koop{1}, Tobias Seibel{2}, Yannick Fuchs{1}, Tina Gabriel{1}, Antje Naas{1}, Richard Nauber{3}, Tönnis Trittler{1}, Jochen Hampe{1}, Gerhard Fettweis{3}, Moritz Herzog{1}
{1}Else Kröner Fresenius Center for Digital Health, Dresden University of Technology, Germany; {2}University Hospital RWTH Aachen, Germany; {3}Vodafone Chair Mobile Communications Systems, Dresden University of Technology, Germany

17:30
2999: Ultrasound Scatteromics Incorporating Lesion and Parenchymal Features for Liver Tumor Detection
Yen Heng Lai, Po-Hsiang Tsui
Chang Gung University, Taiwan

17:45
3801: Reducing the Effect of the Abdominal Wall for In-Vivo Backscatter Estimation Through Regularization
Hayley Whitson, Amber Possell, Timothy Hall
University of Wisconsin–Madison, United States

16:30 - 18:00
B6L-04: MBF: Functional Ultrasound & Novel Flow Processing Techniques
Room: Kinepolis - Room 11
Session Chair(s): Tommaso Di Ianni, UCSF; Charlie Demené, ESPCI Paris

16:30
2788: Transcranial FUS-Evoked Functional Imaging in Non-Human Primates
Saachi Munot, Samuel Blackman, Fotios Tsitsos, Elisa E. Konofagou
Columbia University, United States

16:45
3029: Neuroimaging Combining Functional Ultrasound and High Density Diffuse Optical Tomography for Whole Brain Connectivity Imaging in the Neonate
Flora Faure{2}, Julie Uchitel{4}, Andrea Edwards{1}, Kelly Pammenter{1}, Katharine Lee{6}, Samuel Powell{5}, Greg Smith{5}, Robert Cooper{3}, Charlie Demené{4}
{1}Cambridge University Hospitals NHS Foundation Trust, Rosie Hospital / NeoLAB, United Kingdom; {2}DOT-HUB / ESPCI Paris, Inserm, PSL University, CNRS / University College London, United Kingdom; {3}DOT-HUB / University College of London, United Kingdom; {4}ESPCI Paris, Inserm, PSL University, CNRS, France; {5}Gowerlabs Ltd., London, United Kingdom; {6}University of Cambridge, United Kingdom

17:00
3097: Individual Singular Mode Functional Ultrasound for Somatosensory Conduction Detection of Spinal Cord
Junjin Yu, Linxuan Zhou, Dean Ta, Kailiang Xu
Fudan University, China

17:15
3121: High-Resolution Functional Ultrasound Based on Local Radial Gradient Fluctuations
Yang Cai, Long Xu, Kailiang Xu
Fudan University, China

17:30
3332: Blood Vessel Detection by Power Doppler Localization
Corentin Alix{4}, Margaux Feraudet-Girod{4}, Jonathan Porée{2}, Jean Provost{3}, Olivier Couture{1}, Sébastien Salles{4}
{1}Laboratoire d'Imagerie Biomédicale, Sorbonne Université, INSERM, CNRS, France; {2}Polytechnique Montréal, Canada; {3}Polytechnique Montréal, Montreal Heart Institute, Canada; {4}University of Bordeaux, CNRS, Centre de Resonance Magnetique, CRMSB, France

17:45
2405: Ultrasound Imaging of Intra-Tibial Blood Flow and its Modulation by an Arterial Occlusion
Gabrielle Laloy-Borgna{2}, Nastassia Navasiolava{1}, Andréa Bertona{1}, Rick Waasdorp{2}, Sébastien Salles{5}, Amadou Sall Dia{4}, Quentin Grimal{4}, Olivier Lucidarme{4}, Alice Mazzolini{4}, Anthony Auge{4}, Laurence Vico{3}, Jacques-Olivier Fortrat{1}, Marc-Antoine Custaud{1}, Guillaume Renaud{2}
{1}Centre de Recherche Clinique, Centre Hospitalier Universitaire d'Angers, France; {2}Delft University of Technology, Netherlands; {3}INSERM, Université Jean Monnet, Mines Saint-Étienne, France; {4}Laboratoire d'Imagerie Biomédicale, Sorbonne Université, INSERM, CNRS, France; {5}University of Bordeaux, CNRS, Centre de Resonance Magnetique, CRMSB, France

16:30 - 18:00
B6L-05: MIM: Cardiovascular Imaging
Room: Kinepolis - Room 12
Session Chair(s): Magnus Cinthio, Lund University; Richard Lopata, Eindhoven University of Technology

16:30
2408: Assessment of Carotid Plaque Neovascularization in Patients Using 3D Ultrasound Localization Microscopy with a Row-Column Array
Henri Leroy{4}, Benjamin Le Fustec{1}, Anatole Jimenez{4}, Louise Wang{3}, Nassim Mohamedi{3}, Jonas Sitruk{3}, Pierre Julia{3}, Salma El Batti{3}, Jean-Marc Alsac{3}, Patrick Bruneval{2}, Emmanuel Messas{3}, Alexandre Dizeux{4}, Clément Papadacci{4}, Mickaël Tanter{4}, Tristan Mirault{3}, Guillaume Goudot{3}, Mathieu Pernot{4}
{1}ESPCI Paris, France; {2}Georges Pompidou European Hospital, APHP, France; {3}Hôpital Européen Georges-Pompidou, Assistance Publique-Hôpitaux de Paris, France; {4}Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France

16:45
3138: Low Voltage Driven Wearable Ultrasound Phased Array Imaging of Carotid Artery with Highly-Sensitive Curved PMUT Array
Yongquan Ma{2}, Xiaofan Hu{2}, Yuewu Gong{3}, Xingli Xu{2}, Wei Pang{2}, Pengfei Niu{2}, Zhuochen Wang{1}
{1}Beijing University of Chemical Technology, China; {2}State Key Laboratory of Precision Measuring Technology and Instruments, Tianjin University, China; {3}Sun Yat-sen University Nanchang Research Institute, China

17:00
3065: Ultrasound-Based Fluid Structure Modelling of Healthy and Diseased Carotid Arteries
Lotte Piek{2}, Joerik de Ruijter{2}, Marc van Sambeek{1}, Richard Lopata{2}
{1}Catharina Hospital, Netherlands; {2}Eindhoven University of Technology, Netherlands

17:15
3166: Dual-Frequency Intravascular Imaging: Clinical Applications and Evaluation
Jiehan Hong, Xiaoyang Chen, Hairong Zheng, Teng Ma
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

17:30
3741: Cardiac Ultrasound Localization Microscopy Co-Localized with Strain Estimation for the Simultaneous Assessment of Coronary Perfusion and Myocardial Strain
Hannah Schleifer{1}, Georges Chabouh{1}, Sarah Mia Shen-Lee Liu{1}, Cagla Ozsoy{1}, Yaffa Wolicki{2}, Isao Anzai{1}, Youssef Elnabawi{1}, Melina Tourni{1}, Christina Proestaki{1}, Rosalía Minyety{1}, Elisa E. Konofagou{1}
{1}Columbia University, United States; {2}Columbia University Medical Center, United States

17:45
3815: End-to-End Deep Learning Framework for Ejection Fraction Estimation from 2D Echocardiography Images
Somayeh Akbari, Bart Jacobs, Jan D'Hooge
Katholieke Universiteit Leuven, Belgium

16:30 - 18:00
B6L-06: MSR: Whispers of Resolution
Room: Kinepolis - Room 13
Session Chair(s): Ruud J.G. Van Sloan, Eindhoven University of Technology; Stefanie Dencks, Ruhr-University Bochum

16:30
2585: High Volume-Rate Nonlinear Imaging Enables Robust 3D Ultrasound Localization Microscopy
Yirang Shin{2}, Bing-Ze Lin{4}, Matthew R. Lowerison{1}, Qi You{3}, Pengfei Song{1}
{1}Duke University, United States; {2}Duke University / University of Illinois Urbana-Champaign, United States; {3}University of Illinois Urbana-Champaign, United States; {4}University of Illinois Urbana-Champaign / Duke University, United States

16:45
3342: Contrast-Free Ultrasound Super-Resolution Imaging with Flow-Direction Estimation Using Hankel Singular Value Decomposition
Andre Ráth{2}, Natalia Pérez Jiménez{2}, Lauge Naur Hansen{2}, Emma Bengtsson{1}, Amy McDermott{3}, Charlotte Mehlin Sørensen{3}, Jørgen Arendt Jensen{2}
{1}Rigshospitalet, Denmark; {2}Technical University of Denmark, Denmark; {3}University of Copenhagen, Denmark

17:00
2541: Fusion of the Hungarian and Kalman Tracking Methods for Ultrasound Localization Microscopy
Mostafa Amin Naji{1}, Iman Taghavi{1}, Lauge Naur Hansen{1}, Amy McDermott{2}, Borislav Gueorguiev Tomov{1}, Charlotte Mehlin Sørensen{2}, Jørgen Arendt Jensen{1}
{1}Technical University of Denmark, Denmark; {2}University of Copenhagen, Denmark

17:15
3422: Volumetric Blood Flow Rate Estimation Using 3D Ultrasound Localization Microscopy
Matthew Lowerison{1}, Yirang Shin{2}, Bing-Ze Lin{4}, Yike Wang{3}, Pengfei Song{1}
{1}Duke University, United States; {2}Duke University / University of Illinois Urbana-Champaign, United States; {3}University of Illinois Urbana-Champaign, United States; {4}University of Illinois Urbana-Champaign / Duke University, United States

17:30
2162: Intracellular Ultrasound Localization Microscopy Using Blinking Nanodroplets
Saar Gotshal, Tiran Bercovici, Tali Ilovitsh
Tel Aviv University, Israel

17:45
2915: Optical Flow–Based 3D Motion Correction for Ex Vivo Beating Rat Heart in Ultrasound Localization Microscopy
Benoît Rideau, Oscar Demeulenaere, Philippe Mateo, Clément Papadacci, Mathieu Pernot
Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France

16:30 - 18:00
B6L-07: Photoacoustics
Room: Progress (Supernova)
Session Chair(s): Walter Arnold, Saarland University

16:30
3259: A Side-Fire Elongated Illuminator for Intraluminal Photoacoustic Imaging
Nidhi Singh{2}, Felipe Roa{2}, Emmanuel Chérin{1}, Lothar Lilge{3}, Christine E.M. Demore{2}
{1}Sunnybrook Research Institute, Canada; {2}Sunnybrook Research Institute, University of Toronto, Canada; {3}University Health Network, University of Toronto, Canada

16:45
2967: Wearable Transparent Linear Array for Dual-Mode Photoacoustic/Ultrasound Imaging
Li Ning{3}, Haoyang Chen{1}, Xingying Wang{2}, Zhiqiang Zhang{2}, Chengbo Liu{2}, Weibao Qiu{2}, Fei Li{4}
{1}National Innovation Center for Advanced Medical Devices, China; {2}Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China; {3}Shenzhen Key Laboratory of Ultrasound Imaging and Therapy, State Key Lab of Biomedical Imaging, China; {4}Xi'an Jiaotong University, China

17:00
3264: High-Frame-Rate Deep-Tissue Photoacoustic Vascular Imaging with Portable Laser Diode
Anjali Thomas, Mervenur Akkus, Gijs van Soest, Kalloor Joseph Francis
Erasmus University Medical Center, Netherlands

17:15
3602: 3D Volumetric Photoacoustic (PA) Imaging of Multimodal Porphysome Nanoparticles
Nidhi Singh{2}, Yohannes Soenjaya{1}, Emmanuel Chérin{1}, Gang Zheng{3}, Brian Wilson{3}, Stuart Foster{2}, Christine E.M. Demore{2}
{1}Sunnybrook Research Institute, Canada; {2}Sunnybrook Research Institute, University of Toronto, Canada; {3}University Health Network, University of Toronto, Canada

17:30
3219: Fiber Optic with Machined Tip to Integrate a microPhotoacoustic System to Image Mouse Colon Tumor
Rodrigo Pereira de Oliveira{1}, Nidhi Singh{3}, Aaron Boyes{2}, Yohannes Soenjaya{2}, F. Stuart Foster{2}, João C. Machado{1}, Christine E.M. Demore{3}
{1}Federal University of Rio de Janeiro, Brazil; {2}Sunnybrook Research Institute, Canada; {3}Sunnybrook Research Institute, University of Toronto, Canada

17:45
2479: Compact Photoacoustic Imaging Module for Wearable Health Monitoring Devices
Hrishikesh Panchawagh, Sumit Agrawal, Bernard Herrera Soukup, Kostadin Djordjev
Qualcomm Technologies, Inc., United States

16:30 - 18:00
B6L-08: Thin Films & High Power & Temperature Effects (PTF & PTE)
Room: Mission 1 (Supernova)
Session Chair(s): John Larson, Broadcom Ltd

16:30
3776: Polarization-Inverted Sc0.4Al0.6N Double-Layer Smr
Nanami Suzuki, Wataru Shimoyama, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

16:45
3795: Improvement of kt^2 of (K, Na)NbO3 Epitaxial Thin Films by Applying DC Bias
Yuichiro Hidaka, Zhang Chuangsheng, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

17:00
3775: Estimation of Shear Wave Mechanical Qm Factor in AlN and ScAlN Films Using Pulse-Echo Method
Momoka Matsumura, Cocono Mita, Yohkoh Shimano, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

17:15
3788: Quasi-Shear Mode c-Axis Tilted Epitaxial PbTiO3 FBAR Fabricated Using Off-Angle MgO Sacrifice Substrate
Nanami Suzuki, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

17:30
2208: Material Removal by Single-Transducer Dual-Frequency Ultrasonic Cavitation
Milan Rintala, Topi Pudas, Axi Holmström, Jere Hyvönen, Martin Weber, Tom Sillanpää, Tapio Kotiaho, Edward Hæggström, Ari Salmi
Electronics Research Laboratory, University of Helsinki, Finland

17:45
2189: Utilizing Third-Order Harmonic for Material Removal by HIFU
Tom Sillanpää, Miska Saralahti, Topi Pudas, Jere Hyvönen, Joni Mäkinen, Axi Holmström, Edward Hæggström, Tapio Kotiaho, Ari Salmi
Electronics Research Laboratory, University of Helsinki, Finland

16:30 - 18:00
B6L-09: TPF: Applications of Piezoelectrics & Ferroelectrics
Room: Mission 2 (Supernova)
Session Chair(s): Jessica Liu Strohmann, Qualcomm Inc.; David Cowell, University of Leeds

16:30
2547: Nonlinear Dynamics of Piezoelectric MEMS Microphones and Microspeakers
Rodrigo Tumolin Rocha, Humberto Campanella
Silicon Austria Labs GmbH, Austria

16:45
2990: High-Fidelity and Real-Time Acoustic Holography Using Physics-Guided Hybrid Neural Architectures
Haseeb Khan, Jinwook Kim
Kyungpook National University, Korea

17:00
2050: Metal-Free Flat Horn for Ultrasonic Surgical Devices
Xuan Li{2}, Yifei Wang{1}, Kwok-Ho Lam{1}
{1}University of Glasgow, United Kingdom; {2}University of Southampton, United Kingdom

17:15
Break

17:30
2949: Reduction in Tactile Threshold Using Axially Aligned Focused Ultrasound Stimulation Based on Capacitive Micromachined Ultrasound Transducer(CMUT)
Min Chul Kim, Young Jin Cho, Hyun Su Kim, Kwan Kyu Park
Hanyang University, Korea

17:45
2035: Novel Adhesive-Free Class Iv Flextensional Transducers
Xuan Li{2}, Yifei Wang{1}, Kwok-Ho Lam{1}
{1}University of Glasgow, United Kingdom; {2}University of Southampton, United Kingdom

16:30 - 18:00
B6L-10: TMU: Piezoelectric Micromachined Ultrasonic Transducers: Novel Materials & Structures
Room: Polar
Session Chair(s): Dominique Certon, Francois Rabelais University of Tours; Jinwook Kim, Kyungpook National University

16:30
2650: Efficient Electrode Configuration for High-Sensitivity Performance with Minimal Analog Front-End Complexity
Tingzhong Xu{3}, Zhou Da{3}, Jeremy Streque{3}, Zdenek Havranek{1}, Jiapeng Xu{3}, Rodrigo Tumolin Rocha{3}, Alessandro Stuart Savoia{2}
{1}Brno University of Technology, Czech Rep.; {2}Roma Tre University, Italy; {3}Silicon Austria Labs GmbH, Austria

16:45
2674: Sealed Silicon Cavities (SSC) Equips Piezoelectric Micromachined Ultrasonic Transducer Arrays with an Ultra-High Fill Factor of 95.5%
Jiashuai Xu{1}, Xiaoya Duan{1}, Yufeng Gao{2}, Xinyue Zhang{2}, Junyan Zheng{1}, Zijun Ren{1}, Zhichen Yan{1}, Kai Yang{1}, Chengjie Zuo{3}, Yipeng Lu{2}, Yansong Yang{1}
{1}Hong Kong University of Science and Technology, Hong Kong; {2}Peking University, China; {3}University of Science and Technology of China, China

17:00
3552: Bimorph Lithium Niobate Piezoelectric Micromachined Ultrasonic Transducer
Ziqian Yao, Vakhtang Chulukhadze, Zihuan Liu, Xiaoyu Niu, Tzu-Hsuan Hsu, Byeongjin Kim, Neal Hall, Ruochen Lu
University of Texas at Austin, United States

17:15
2932: Tri-Electrode Sc0.3Al0.7N Piezoelectric Micromachined Ultrasound Transducer (PMUT) with Alternating Mode Operation for Simultaneous Multi-Resonant Functionality at Higher-Order Resonant Frequencies
Sean Jun Zhong Wong{2}, Chen Liu{1}, Yao Zhu{1}
{1}Institute of Microelectronics, Agency for Science, Technology and Research, Singapore; {2}National University of Singapore / Agency for Science, Technology and Research, Singapore

17:30
2475: Optimal Orientations of Lithium Niobate for Lateral- and Thickness-Field-Excitation PMUTs
Xiaoxi Zhao, Michiel Pertijs, Tomás Manzaneque
Delft University of Technology, Netherlands

17:45
3490: Thick Polymer-AlScN Integrated PMUTs with Optimized Transceiver Design by DOE Approach
Mohammadsadegh Namnabat{2}, Rodrigo Tumolin Rocha{2}, Annalisa De Pastina{2}, Luis Guillermo Villanueva{1}
{1}ANEMS Lab, STI-IGM-NEMS, École Polytechnique Fédérale de Lausanne , Switzerland; {2}Silicon Austria Labs GmbH, Austria

19:30 - 21:30
Banquet Dinner
Room: Train Museum

8:00 - 8:30
Registration
Room: Polar Voorhall

8:30 - 10:00
C1L-01: MTN: Advanced Technologies for Cancer Theranostics
Room: Kinepolis - Room 7
Session Chair(s): Xiran Cai, ShanghaiTech University, China; Tali Ilovitsh, Tel Aviv University

8:30
3675: A Clinical Harmonic Motion Imaging-Guided Focused Ultrasound System (HMIgFUS) for Breast Tumor Ablation and Real-Time Monitoring
Shiqi Hu, Xiaoyue Li, Yangpei Liu, Bret Taback, Elisa E. Konofagou
Columbia University, United States

8:45
2135: Ultrasound-Activated Drug-Loaded Nanodroplets for Targeted Tumor Therapy
Tiran Bercovici, Mike Bismuth, Meir Goldsmith, Dan Peer, Tali Ilovitsh
Tel Aviv University, Israel

9:00
2639: Microwave Thermal Ablation Monitoring Using Echo Decorrelation Imaging in Patients with Hepatocellular Carcinoma
Mohamed A. Abbass{2}, Sherif Hussein{2}, Mohamed Elwarraky{1}, T. Douglas Mast{3}
{1}Menoufia University, Egypt; {2}Military Technical College, Egypt; {3}University of Cincinnati, United States

9:15
3648: Cavitation Signals Can Be Received with the Therapy Array to Detect Transducer Elements Blocked by Ribs and Reduce Heating During Transcostal Histotripsy
Ellen Yeats, Mahmoud Komaiha, Jonathan Sukovich, Zhen Xu, Timothy Hall
University of Michigan, United States

9:30
3531: Sonogenetics Induced Non-Invasive Retinal Prosthesis
Jie Ji{2}, Chen Gong{2}, Batabyal Subrata{1}, Mohanty Samarendra{1}, Qifa Zhou{2}
{1}Nanoscope Therapeutics, Inc., United States; {2}University of Southern California, United States

9:45
2994: A 24fr Femoral Introducer Sheath Featured by an Advanced Forward-Looking Matrix Transducer for Enhanced 2D Imaging and 3D Guidance
Tony Matéo{4}, Benjamin Guérif{4}, Agnès Lejeune{4}, Maxime Cheppe{4}, Julia Faure{2}, Mathieu Pernot{2}, Mickaël Tanter{2}, Philippe Mabo{3}, Alexandre Boisgard{1}, Aurélien Lechat{1}, Guillaume Férin{4}
{1}Cairdac, France; {2}Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France; {3}Rennes University Hospital, France; {4}Vermon, France

8:30 - 10:00
C1L-02: MSR: Micro-Echoes of the Mind
Room: Kinepolis - Room 8
Session Chair(s): Kailiang Xu, Fudan University; Cameron Smith, Imperial

8:30
3545: Consistent and Robust Estimation of Lens-Delay & Speed-of-Sound for Transcranial Ultrasound Localization Microscopy (CREST-ULM)
Louis Caron{2}, Gerardo Ramos-Palacios{1}, Alexis Leconte{2}, Nin Ghigo{2}, Stephen A. Lee{2}, Paul Xing{2}, Jonathan Porée{2}, Abbas Sadikot{1}, Jean Provost{3}
{1}Montreal Neurological Institute and Hospital McGill University, Canada; {2}Polytechnique Montréal, Canada; {3}Polytechnique Montréal, Montreal Heart Institute, Canada

8:45
3218: Differentiable Beamforming for In Vivo Automatic Local Aberration Correction in Transcranial Ultrasound Localization Microscopy of the Brain
Paul Xing{1}, Antoine Malescot{3}, Eric Martineau{3}, Ravi Rungta{3}, Jean Provost{2}
{1}Polytechnique Montréal, Canada; {2}Polytechnique Montréal, Montreal Heart Institute, Canada; {3}University of Montreal, Canada

9:00
3670: Classification and Graph Inference of Brain Microvasculature via Single Capillary Reporters
Stephen A. Lee{1}, Alice Wu{1}, Jean Provost{2}
{1}Polytechnique Montréal, Canada; {2}Polytechnique Montréal, Montreal Heart Institute, Canada

9:15
2589: Microbubble Backscattering Intensity Improves the Sensitivity of Three-Dimensional (3D) Functional Ultrasound Localization Microscopy (Fulm)
Yirang Shin{2}, Qi You{3}, Yike Wang{3}, Matthew R. Lowerison{1}, Bing-Ze Lin{4}, Pengfei Song{1}
{1}Duke University, United States; {2}Duke University / University of Illinois Urbana-Champaign, United States; {3}University of Illinois Urbana-Champaign, United States; {4}University of Illinois Urbana-Champaign / Duke University, United States

9:30
2672: On-Chip Versatile Vasculatures for Ultrasound Localization Microscopy Analyses
Renxian Wang{2}, Qi Liu{1}, Xin Zhao{1}, Wei-Ning Lee{2}
{1}Hong Kong Polytechnic University, Hong Kong; {2}University of Hong Kong, Hong Kong

9:45
2582: Transcranial Ultrasound Localization Microscopy Shared Dataset (tULMShare)
Nin Ghigo{2}, Gerardo Ramos-Palacios{1}, Louis Caron{2}, Alexis Leconte{2}, Brice Rauby{2}, Alice Wu{2}, Oleksandra Gulenko{2}, Paul Xing{2}, Stephen A. Lee{2}, Jonathan Porée{2}, Ravi Rungta{4}, Abbas Sadikot{1}, Jean Provost{3}
{1}Montreal Neurological Institute and Hospital McGill University, Canada; {2}Polytechnique Montréal, Canada; {3}Polytechnique Montréal, Montreal Heart Institute, Canada; {4}University of Montreal, Canada

8:30 - 10:00
C1L-03: MTC: Ultrasonic Tissue Characterization Related to Fiber Orientation
Room: Kinepolis - Room 9
Session Chair(s): Yoshifumi Saijo, Tohoku University; Michal Byra, Institute of Fudamental Technological Research

8:30
2829: High-Frequency Quantitative Ultrasound Measurements of the Anterior Sclera In-Vivo Correlate with Myopia Progression
Cameron Hoerig{2}, Quan Hoang{1}, Jonathan Mamou{2}
{1}National University of Singapore, Duke-NUS and Columbia University, Singapore; {2}Weill Cornell Medicine / Cornell University, United States

8:45
2899: Differentiating Benign and Malignant Ocular Choroidal Tumors Using Nakagami and Burr Envelope Statistics
Jagruti Patil{1}, Abhishek Dharvia{1}, Vishal Raval{2}, Karla Patricia Mercado-Shekhar{1}
{1}Indian Institute of Technology Gandhinagar, India; {2}L.V. Prasad Eye Institute, India

9:00
2061: Quantitative Ultrasound Analysis of Surgical Sites in Cardiac Surgery Using Intracardiac Echocardiography
Hyunhee Kim, Eunwoo Park, Joongho Ahn, Wonseok Choi, Chulhong Kim
Pohang University of Science and Technology, Korea

9:15
2570: Investigating Microstructural Anisotropy Through First-Order Speckle Statistics
Alexandra Christensen{2}, Timothy Hall{2}, Helen Feltovich{1}, Ivan Rosado-Mendez{2}
{1}North Memorial Health System, United States; {2}University of Wisconsin–Madison, United States

9:30
3226: Assessment of Myocardial Tissue Structure in a Heart Failure Murine Model Using Ultrafast Quantitative Ultrasound Imaging
Geraldi Wahyulaksana{2}, Cameron Hoerig{2}, Colin K.L. Phoon{1}, Glenn I. Fishman{1}, Jonathan Mamou{2}, Jeffrey A. Ketterling{2}
{1}NYU Langone Health, United States; {2}Weill Cornell Medicine / Cornell University, United States

9:45
2394: Estimating Local Tissue Anisotropy with 3D Plane Wave Imaging
Valentin Mazellier, Pauline Muleki-Seya, François Varray
CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France

8:30 - 10:00
C1L-04: MSD: Ultrasound Imaging Systems & Applications
Room: Kinepolis - Room 11
Session Chair(s): Piero Tortoli, University of Florence; Steven Freear, University of Leeds

8:30
2060: Noncontact Laser Ultrasound (NCLUS) GEN-3 Medical Imaging Prototype
R. Haupt{2}, R. Gurjar{2}, T. Chang{2}, S. Kesner{2}, M. Jakovljevic{1}, I. Candel{1}, A. Samir{1}
Robert Haupt{2}, Rajan Gurjar{2}, Tanwin Chang{2}, Samuel Kesner{2}, Marko Jakovljevic{1}, Ion Candel{1}, Anthony Samir{1}

8:45
2025: Automated Skull Thickness Mapping for Transcranial Ultrasound Imaging Systems
Aryaz Baradarani{4}, Bailey Chittle{1}, Kiyanoosh Shapoori{2}, Eugene Malyarenko{2}, Juri Gelovani{2}, Roman Gr. Maev{3}
{1}Tessonics Inc, Canada; {2}Tessonics Medical Systems, United States; {3}University of Windsor, Canada; {4}University of Windsor / Tessonics Inc, Canada

9:00
3451: Optimized Design of Emerging CMUT Array Geometries for Low-Resource Volumetric Imaging
Maria Jose Almario Escorcia{1}, Amir Gholampour{1}, Rob van Schaijk{3}, Willem-Jan de Wijs{2}, Richard Lopata{1}, Hans-Martin Schwab{1}
{1}Eindhoven University of Technology, Netherlands; {2}Philips Innovation Services, Netherlands; {3}Xiver MEMS Foundry B.V., Netherlands

9:15
2667: Magnetic Ultrasound Catheter with Forward- and Side-Looking Imaging Modes
Zhengxin Yang{1}, Lihao Liu{3}, Zhangjian Li{1}, Haili Yu{1}, Ninghao Wang{1}, Yaoyao Cui{2}, Yang Jiao{2}
{1}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences, China; {2}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences / USTC, China; {3}University of Science and Technology of China, China

9:30
2594: Development of a High-Speed Rotational Transducer for 3D Ultrafast Ultrasound Endorectal Imaging
Yi-Hsiang Chuang{1}, Po-Chuan Chen{2}, Chih-Chung Huang{1}
{1}National Cheng Kung University, Taiwan; {2}National Cheng Kung University Hospital, Taiwan

9:45
2723: Maximizing the Accuracy of Ultrasound Imaging with Augmented Reality
Junhao Zhang, Muyinatu A. Lediju Bell
Johns Hopkins University, United States

8:30 - 10:00
C1L-05: MIS: Advanced Ultrasound Imaging Techniques
Room: Kinepolis - Room 12
Session Chair(s): Muyinatu Bell, Johns Hopkins University

8:30
2790: Real-Time Treatment Monitoring Using Deep Learning-Assisted HIFU Transducers
Yujeong Shin, Cheolu Park, Jin Ho Chang
Daegu Gyeongbuk Institute of Science and Technology, Korea

8:45
2902: Continuous Emission Ultrasound for M-Mode Imaging Based on an Inverse Problem Approach
Axel Adam{1}, Mohamed Tamraoui{1}, Adrian Basarab{2}, Barbara Nicolas{1}, Hervé Liebgott{3}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {2}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm / TPAC NDT, France; {3}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm / UJMSaint-Et, France

9:00
2848: Ultrasound Image-Based Pose Adjustment for Robotic Scanning
Eunbin Choi, Sothea Phann, Suhyun Park
Ewha Womans University, Korea

9:15
3705: DeepStitch: A Self-Supervised Deep Neural Network for Seamless Image Reconstruction of Robot-Assisted Ultrasound System
Euijoong Kim, Hyunwoo Cho, Yangmo Yoo
Sogang University, Korea

9:30
3291: Feasibility of Electromechanical Mapping in a Clinical, Portable Ultrasound System for Fast Arrhythmia Localization
Melina Tourni{1}, Yaffa Wolicki{3}, Rosalía Minyety{1}, Christina Proestaki{1}, Cagla Ozsoy{1}, Youssef Elnabawi{1}, Hannah Schleifer{1}, Isao Anzai{1}, Leonardo Liberman{2}, Elisa E. Konofagou{1}
{1}Columbia University, United States; {2}Columbia University Irving Medical Center, United States; {3}Columbia University Medical Center, United States

9:45
3108: Non-Negative Matrix Factorization of Wearable Ultrasound Signals During Highly Dynamic Physical Activity
Erica King, Morgan Lamarre, Abhishek Sanjay Aher, Ahmed Bashatah, Margaret Jones, Siddhartha Sikdar, Parag Chitnis
George Mason University, United States

8:30 - 10:00
C1L-06: MEL: Cardiac Shear Wave & Strain Imaging
Room: Kinepolis - Room 13
Session Chair(s): Wei-Ning Lee, University of Hong Kong; Hendrik Vos, ErasmusMC

8:30
3083: 3D Shear Wave Elastography and Backscatter Tensor Imaging in Healthy Volunteers and Amyloidosis Patients Hearts
Toûka Meki{2}, Clément Papadacci{2}, Alexandre Dizeux{2}, Emmanuel Messas{1}, Mathieu Pernot{2}
{1}Hôpital Européen Georges-Pompidou, Assistance Publique-Hôpitaux de Paris, France; {2}Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France

8:45
2157: Ultrasound-Based Cardiac Time-Harmonic Elastography for Amyloidosis Diagnosis: Validation In Silico and In Vivo
Stefan Klemmer Chandía{1}, Hossein S. Aghamiry{1}, Chiara Manini{2}, Anja Hennemuth{2}, Marcel Bauer{2}, Matthias Ivantsits{2}, Lars Walczak{2}, Heiko Tzschätzsch{1}, Ingolf Sack{1}, Tom Meyer{1}
{1}Charité - Universitätsmedizin Berlin, Germany; {2}Deutsches Herzzentrum Der Charité, Germany

9:00
2700: Hybrid 3-D Ultrasound Strain Imaging with Speckle Tracking and Deep Learning Optical Flow
Ching-Yao Lu, Min-Yen Hsieh, Geng-Shi Jeng
National Yang Ming Chiao Tung University, Taiwan

9:15
3532: Identifying Predictors of Shear Wave Speed in Cardiac Shear Wave Elastography Using Multivariate Analysis
Andressa Araujo Andrade Sousa{1}, Ahmed S. Youssef{1}, Laurine Wouters{1}, Annette Caenen{2}, Stephanie Bezy{1}, Jan D'Hooge{1}, Jens-Uwe Voigt{1}
{1}Katholieke Universiteit Leuven, Belgium; {2}Katholieke Universiteit Leuven / Ghent University, Belgium

9:30
3086: Early Detection of Myocardial Stiffening in Patients with Hereditary Amyloidosis Using Cardiac Time Harmonic Elastography
Tom Meyer{1}, Brunhilde Wellge{2}, Gina Barzen{1}, Stefan Klemmer Chandía{1}, Hossein S. Aghamiry{1}, Katrin Hahn{1}, Sebastian Spethmann{1}, Ingolf Sack{1}
{1}Charité - Universitätsmedizin Berlin, Germany; {2}Universitätsklinikum Schleswig-Holstein, Germany

9:45
3069: Utilizing CNNs on Shear Wave M-Mode Data to Differentiate Cardiac Patients from Healthy Volunteers
Kobe Bamps{1}, Laurine Wouters{1}, Annette Caenen{2}, Ahmed S. Youssef{1}, Jens-Uwe Voigt{1}, Jan D'Hooge{1}
{1}Katholieke Universiteit Leuven, Belgium; {2}Katholieke Universiteit Leuven / Ghent University, Belgium

8:30 - 10:00
C1L-07: General NDE Methods I
Room: Progress (Supernova)
Session Chair(s): Adarsh Ravi, Cornell University

8:30
3281: Synchronous Multipoint Laser Doppler Vibrometer Measurements in Surface Crack Localization and SAFT Imaging
Mengzhi Fan, Teng Zhang, Jingyi Zhang, Lijun Xu, Jianguo Ma
Beihang University, China

8:45
2097: Application of Laser Diffuse Ultrasonic Phased Arrays for Imaging Volumetric Defects
Jun Li, Paul Wilcox, Jie Zhang
University of Bristol, United Kingdom

9:00
2486: High-Resolution Multi-Mode Ultrasonic Imaging of Pipes Using an Ultrafast Tool
Carlos Da Costa Filho, Derrell D'Souza, Reza Zahiri, Graham Manders
DarkVision Technologies, Canada

9:15
3175: Ultrafast Real-Time Wavenumber Domain Ultrasonic Plane Wave Imaging Using Heterogeneous Computation Platform
Zhixuan Chang, Xintao Xu, Shiwei Wu, Keji Yang, Haoran Jin
State Key Laboratory of Fluid Power and Mechatronic Systems, Zhejiang University, China

9:30
2294: Single-Bit Hardware Acquisition System for Full Matrix Capture and Lightweight Ultrasonic Images Using Vector Coherence Factor
Tony Rasolonirina{1}, Guillaume Painchaud-April{2}, Alain Le Duff{2}, Pierre Bélanger{1}
{1}École de technologie supérieure, Canada; {2}Evident Scientific, Canada

9:45
2532: Utilization of Ultrasonic Testing for the Evaluation of Multilayered SPF/DB Components in the Aerospace Industry
Chao Zhang, Li-Yang Yao, Jun-Ting Yang, Xin Fu, Kai-Wen Xie, Pei-Wen Guo, Xin-Yan Wang, Bing-Yang Wang
AVIC Manufacturing Technology Institute, China

8:30 - 10:00
C1L-08: PAT: Acoustic Tweezers & Particle Manipulation I
Room: Mission 1 (Supernova)
Session Chair(s): Bingbing Cheng, ShanghaiTech University; Jae Hwang, Daegu Gyeongbuk Institute of Science & Technology

8:30
3698: Low-Power Real-Time Holographic Acoustic Tweezers Using MEMS Ultrasound Arrays
Chenfang Yan{1}, Tong Jin{2}, Zijie Zhao{1}, Xiaokai Liu{3}, Yucheng Lin{1}, Wenchang Zhang{1}, Yang Zhao{1}, Ran Liu{3}, Chengjun Huang{1}, Hang Gao{1}
{1}Institute of Microelectronics, Chinese Academy of Sciences, China; {2}Institute of Microelectronics, Chinese Academy of Sciences / Tsinghua University, China; {3}Tsinghua University, China

8:45
3209: Acoustic Pseudo-Vortices with Zero Orbital Angular Momentum
Denys Iablonskyi{1}, Marika Sirkka{1}, Dmitry Nikolaev{1}, Edward Hæggström{1}, Arto Klami{2}, Ari Salmi{1}
{1}Electronics Research Laboratory, University of Helsinki, Finland; {2}University of Helsinki, Finland

9:00
2180: Non-Contact Measurement of Bulk Modulus of Microscale Biomolecular Colloids Through Acoustic Trapping
Kichitaro Nakajima
University of Osaka, Japan

9:15
2974: Three-Dimensional Mapping of Streaming Induced by Acoustic Vortex Tweezer
Ning-Hsuan Chen, Chung-Han Huang, Chih-Kuang Yeh
National Tsing Hua University, Taiwan

9:30
2995: Construction of a Metastasis Model for Liver Cancer Spheroids to Hepatobiliary Organoids Facilitated by Holographic Acoustic Tweezers
Jialong Li{3}, Dingyuan Liu{3}, Zeping Gao{4}, Mengting Sun{5}, Shuo Wang{1}, Ye Tian{2}, Teng Ma{3}
{1}Chinese University of Hong Kong / Shenzhen Institute of Advanced Technology, Chinese Academy of Scie, China; {2}National Key R&D Program of China, China; {3}Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China; {4}Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences/Harbin Institute of Technolog, China; {5}Shenzhen Institutes of Advanced Technology Chinese Academy of Sciences, China

9:45
2297: Non-Invasive Motile Cells Manipulation Using Single-Beam Acoustic Tweezers
Yeongho Sung{1}, Jinhee Yoo{2}, Daehun Kim{1}, Hae Gyun Lim{1}
{1}Pukyong National University, Korea; {2}Sungkyunkwan University, Korea

8:30 - 10:00
C1L-09: ASM: SWaP Improvement for Microacoustic Devices
Room: Mission 2 (Supernova)
Session Chair(s): Amelie Hagelauer, Fraunhofer Institute for Electronic Microsystems and Solid State Technologies EMFT; Shuji Tanaka, Tohoku University

8:30
2556: Boost the Acoustic Wave Resonator to Handle Ultra-High Power Density Beyond 10 W/mm²
Fangsheng Qian, Shuhan Chen, Wei Wei, Kai Yang, Jiashuai Xu, Junyan Zheng, Xingyu Liu, Zijun Ren, Yansong Yang
Hong Kong University of Science and Technology, Hong Kong

8:45
2600: Precision Engineering of SiO2/Air Periodic Nanocavity Wafers for Integrated Optoelectronic Systems
Jingfu Bao{2}, Mi Jia{1}, Tang Panliang{1}, Yang Zijiang{2}, Li Hualin{1}, Liu Yiming{2}, Hashimoto Kenya{2}
{1}CETC No. 26 Research Institute, China; {2}University of Electronic Science and Technology of China, China

9:00
3839: Gas Cluster Beam: High-Precision Trimming for RF Filter Devices in High-Volume Manufacturing
Henry Yue, Frank Lai
US Tel Inc, United States

9:30
2979: Pop-Down FBAR Structure for Thermal Stability Without Sacrificing Coupling
Zijun Ren{1}, Jiashuai Xu{1}, Fangsheng Qian{1}, Junyan Zheng{1}, Xiaoya Duan{1}, Xingyu Liu{1}, Kai Yang{1}, Chengjie Zuo{2}, Haiding Sun{2}, Yansong Yang{1}
{1}Hong Kong University of Science and Technology, Hong Kong; {2}University of Science and Technology of China, China

9:45
2325: Ultra-Compact/Low-Loss DPX with Reflector-Less SAW Resonator
Tomio Kanazawa, Tatsuya Sugimori, Yusuke Ishikawa, Tsuyoshi Nakai
KYOCERA Corporation, Japan

8:30 - 10:00
C1L-10: TMI: Multiwave & Multimodal Transducers & Systems
Room: Polar
Session Chair(s): Levent Degertekin, Georgia Institute of Technology; Paul van Neer, TNO

8:30
2968: Functionalised Obliquely-Emitting Miniaturised Fibre-Optic Ultrasound Transducers
Semyon Bodian{1}, Shaoyan Zhang{1}, Efthymios Maneas{1}, Edward Zhang{1}, Paul Beard{1}, Richard Colchester{1}, Adrien Desjardins{2}, Erwin Alles{1}
{1}University College London, United Kingdom; {2}University College London / University of British Columbia, Canada

8:45
3211: Large-Bandwidth Piezoelectric Micromachined Ultrasonic Transducer (pMUT) Array for Photoacoustic Imaging
Zijie Zhao{1}, Tong Jin{2}, Chenfang Yan{1}, Chengjun Huang{1}, Hang Gao{1}
{1}Institute of Microelectronics, Chinese Academy of Sciences, China; {2}Institute of Microelectronics, Chinese Academy of Sciences / Tsinghua University, China

9:00
3528: Surface Electromyography Integrated with Acoustic Radiation Force Impulse Imaging for Multimodal Muscle Force Assessment
Sunho Moon{1}, Xiangming Xue{1}, Shureed Qazi{2}, Sabiq Muhtadi{2}, Keita Yokoyama{2}, Caterina Gallippi{3}, Xiaoning Jiang{1}
{1}North Carolina State University, United States; {2}University of North Carolina at Chapel Hill, United States; {3}University of North Carolina at Chapel Hill / North Carolina State University, United States

9:15
3720: Localized Continuous and Non-Invasive Ultrasound Neuromodulation Based on Wearable PMUTs Array
Chenfang Yan{2}, Ruoshui Xu{4}, Yifei Wang{1}, Tong Jin{3}, Zijie Zhao{2}, Chengjun Huang{2}, Zhen Wang{4}, Hang Gao{2}
{1}CAS Center for Excellence in Brain Science and Intelligence Technology , China; {2}Institute of Microelectronics, Chinese Academy of Sciences, China; {3}Institute of Microelectronics, Chinese Academy of Sciences / Tsinghua University, China; {4}Shanghai Mental Health Center, Shanghai Jiao Tong University School of Medicine, China

9:30
2423: (Invited) - the silicon-Photonics Acoustic Detector (SPADE): Advancing Wideband Ultrasound Technology
Amir Rosenthal
Technion - Israel Institute of Technology, Israel

10:00 - 11:00
Coffee Break
Room: Transit Zone

10:00 - 11:00
C2P-11: MTC: Emerging Applications of Quantitative Ultrasound
Room: Transit Zone
Session Chair(s): Emilie Franceschini, CNRS

2579: Acoustic Attenuation and Speed-of-Sound of Human Urine as Potential Disease Biomarkers
Liam Cain{2}, Di Xiao{2}, Yuyang Zhang{1}, Pat De la Torre{2}, Alfred Yu{2}
{1}University of British Columbia, Canada; {2}University of Waterloo, Canada

2702: Microstructure of Red Blood Cell Suspensions Probed by Ultrasound
Lou Olive{2}, Antoine Weber{2}, Marie Poulain Zarcos{2}, Francisco Rojas{4}, Laurence Bergougnoux{3}, Simon Mendez{4}, Emilie Franceschini{1}
{1}Aix-Marseille University, CNRS, Centrale Med, Laboratory of Mechanics and Acoustics, France; {2}Aix-Marseille University, CNRS, Centrale Med, LMA, France; {3}Aix-Marseille University, CNRS, IUSTI, France; {4}Institut Montpelliérain Alexander Grothendieck IMAG, France

3331: Quantitative Ultrasound-Based Characterization of Placental Microstructure During Preeclampsia
Andrew Markel{1}, Cameron Hoerig{2}, Allan de Alencar{1}, Kenneth Swan{1}, Alexander Gleed{2}, Lili Shi{1}, Gabriella Pridjian{1}, Jonathan Mamou{2}, Carolyn Bayer{1}
{1}Tulane University, United States; {2}Weill Cornell Medicine / Cornell University, United States

3380: Analysis of Statistical Texture Features from Gray-Level Co-Occurrence Matrices for Diagnosis of Hirschsprung's Disease
Maria Evertsson, Christoffer Papamoustos Palmér, Tobias Erlöv, Tomas Jansson, Christina Graneli, Pernilla Stenström, Magnus Cinthio
Lund university, Sweden

3553: Staging of Inflammatory Bowel Disease Based on Spectral Analysis of Handheld Ultrasound
Tina Gabriel{2}, Paul-Henry Franz Koop{2}, Johanna Pfeifer{2}, Jonas Petzsche{2}, Yannick Fuchs{2}, Tobias Seibel{3}, Antje Naas{2}, Omid Chaghaneh{2}, Tönnis Trittler{2}, Jakob Schäfer{2}, Richard Nauber{4}, Malte Lehmann{1}, Britta Siegmund{1}, Gerhard Fettweis{4}, Jochen Hampe{2}, Moritz Herzog{2}
{1}Charité - Universitätsmedizin Berlin, Germany; {2}Else Kröner Fresenius Center for Digital Health, Dresden University of Technology, Germany; {3}University Hospital RWTH Aachen, Germany; {4}Vodafone Chair Mobile Communications Systems, Dresden University of Technology, Germany

2824: Acoustic and Structural Changes in Soft Tissue After High-Intensity Focused Ultrasound Exposure
Ryo Takagi{2}, Kazuki Tamura{1}, Kazuyo Ito{3}, Katsutoshi Miura{1}
{1}Hamamatsu University School of Medicine, Japan; {2}National Institute of Advanced Industrial Science and Technology, Japan; {3}Tokyo University of Agriculture and Technology, Japan

2659: Evaluation of Transcranial Focused Ultrasound Planning Accuracy: A Measurement Validation Study
Han Li{2}, Zhihong Huang{2}, Tyler Halliwell{1}
{1}University of Dundee, United Kingdom; {2}University of York, United Kingdom

3357: A Novel Fingertip Liveness Detection Method Based on A-Scan Ultrasound
Amirfereydoon Mansoori{2}, Marco Marien Voormolen{1}, Stephen Bart{3}, Leonardo Baldasarre{3}
{1}InPhase Solutions AS, Norway; {2}InPhase Solutions AS / University of South-Eastern Norway, Norway; {3}TDK Americas R&D, United States; {3}TDK Americas R&D, Italy

10:00 - 11:00
C2P-12: MSD: Towards Clinical Ultrasound Applications
Room: Transit Zone
Session Chair(s): Safeer Hyder, Siemens Healthineers; Paolo Mattesini, University of Florence

2295: Anthropomorphic Head Phantom for Characterization of Marker-Free Robot-Assisted Focused Ultrasound Therapy in the Brain
Zhanchong Ou{2}, Antonios Pouliopoulos{1}, Lukas Lindenroth{2}
{1}King's College London, United Kingdom; {2}King's College Lonodn, United Kingdom

2719: Amplitude-Aware Deep Learning Tool Tip Localization Using Raw Photoacoustic Channel Data
Nethra Venkatayogi, Muyinatu A. Lediju Bell
Johns Hopkins University, United States

2766: 3D Anal Fistula Imaging Through a Customized Design Transrectal Ultrasound Transducer
Po-Hua Chen{1}, Chien Chen{1}, Yi-Hsiang Chuang{1}, Po-Chuan Chen{2}, Chih-Chung Huang{1}
{1}National Cheng Kung University, Taiwan; {2}National Cheng Kung University Hospital, Taiwan

2880: EEG-Based Feedback-Controlled Focused Ultrasound System Using Machine Learning for Real-Time Seizure Onset Prediction
You-Cheng Wang, Wei-Hong Ruan, Po-Chun Chu, Hao-Li Liu
National Taiwan University, Taiwan

3395: Improvement of Ultrasound-Enhanced Fine-Needle Biopsy Yield with Needle Gauge and Sonication Parameters
Yohann Le Bourlout, Heikki J. Nieminen
Aalto University, Finland

3418: Ultrasound-Enhanced Fine-Needle Biopsy Improves Yield in Human Thyroid
Yohann Le Bourlout{1}, Heikki J. Nieminen{1}, Katri Aro{2}, Roberto Blanco Sequeiros{3}
{1}Aalto University, Finland; {2}Helsinki University Hospital, Finland; {3}Turku University Hospital, Finland

10:00 - 11:00
C2P-13: MPA: Photoacoustic System & Transducer Development
Room: Transit Zone
Session Chair(s): Parag Chitnis, George Mason University

2044: Research on Efficiency Optimization and Circuit Protection for LED-Based Photoacoustic Computed Tomography Systems
Xing Wang{3}, Xinyu Lu{1}, Enxiang Shen{1}, Zhendong Yao{3}, Xiao Yin{3}, Hao Luo{2}, Yuxin Wang{1}, Jie Yuan{1}
{1}Nanjing University, China; {2}Ningbo No.2 Hospital, China; {3}Yixing People's Hospital, China

2357: Enhanced Photoacoustic Imaging Using Verasonics Vantage NXT® System
Sowmiya Chandramoorthi{2}, Bryan Cunitz{2}, Ron Daigle{2}, Kalloor Joseph Francis{1}, Gijs van Soest{1}
{1}Erasmus University Medical Center, Netherlands; {2}Verasonics Inc, United States

2440: A New Single Detector 3D PAT: Preliminary Results
Irene Pi-Martín{2}, Alejandro Cebrecos{2}, Víctor Company-Rubio{2}, Juan José García-Garrigós{2}, Noé Jiménez{1}
{1}Institute of Instrumentation for Molecular Imaging, Polytechnic University of Valencia-CSIC, Spain; {2}Instituto de Instrumentación para Imagen Molecular, Universitat Politècnica de València-CSIC, Spain

2773: An Ultraviolet-Transparent Ultrasound Transducer for Label-Free High-Resolution Photoacoustic Histological Imaging
Donggyu Kim{2}, Eunwoo Park{2}, Jeongwoo Park{2}, Sora Jeon{1}, Joongho Ahn{2}, Mingyu Ha{2}, Hyung Ham Kim{2}, Jin Young Kim{2}, Chan Kwon Jung{1}, Chulhong Kim{2}
{1}Catholic University of Korea, Korea; {2}Pohang University of Science and Technology, Korea

2820: Simulating Low-Cost Photoacoustic System Performance for Deep-Tissue Imaging
Mridul Verma{1}, Mahaan Mitra{2}, Sri-Rajasekhar Kothapalli{2}, Renu John{1}
{1}Indian Institute of Technology Hyderabad, India; {2}Pennsylvania State University, United States

2929: 2D Spiral Array with Defocusing Lenses for 3D Optoacoustics
Marc Fournelle, Christian Degel, Wolfgang Bost, Steffen Tretbar
Fraunhofer Institute for Biomedical Engineering IBMT, Germany

10:00 - 11:00
C2P-14: MSR: Unveiling Organs & Diseases
Room: Transit Zone
Session Chair(s): Matthieu Toulemonde, Imperial

2234: Super-Resolution Ultrasound Localization Microscopy via Brownian Bridge Diffusion Model for Liver Fibrosis Assessment
Yue Zhang, Zilong Wang, Xinli Kong, Yinghong Luo, Xuanhe Zhang, Mian Chen, Siping Chen, Yuanyuan Shen, Haoming Lin, Xin Chen
Shenzhen University, China

2524: Inguinal Human Lymph Node Microvascular Imaging Using a Fast Contrast-Free Super-Resolution Ultrasound Technique
Mostafa Amin Naji{2}, Nathalie Sarup Pandu{3}, Seyed Mohammad Mahdi Tabatabaei Majd{2}, Borislav Gueorguiev Tomov{2}, Michael Bachmann Nielsen{1}, Charlotte Mehlin Sørensen{3}, Jørgen Arendt Jensen{2}
{1}Rigshospitalet / University of Copenhagen, Denmark; {2}Technical University of Denmark, Denmark; {3}University of Copenhagen, Denmark

2746: In-Vivo Visualization of the Human Uterine Microvasculature by Low-Frame-Rate Ultrasound Localization Microscopy
Ferenc Kandi{2}, Ana Saraiva{2}, Catarina Dinis Fernandes{2}, Eva De Bock{1}, Lynda Juffermans{1}, Nicole Burger{1}, Simona Turco{2}, Judith Huirne{1}, Massimo Mischi{2}
{1}Amsterdam University Medical Center, Netherlands; {2}Eindhoven University of Technology, Netherlands

2896: Contrast Free Human Mole Microvascular Imaging
Ali Salari{4}, Rikke Baarts{1}, Mostafa Amin Naji{3}, Michael Bachmann Nielsen{2}, Jørgen Arendt Jensen{3}
{1}Rigshospitalet, Denmark; {2}Rigshospitalet / University of Copenhagen, Denmark; {3}Technical University of Denmark, Denmark; {4}Technical University of Denmark / DTU Health Tech, Denmark

3137: Localising Single Cells Acoustically with Deactivation Super Resolution
Cameron Smith{4}, Mengtong Duan{1}, Jipeng Yan{2}, Laura Taylor{4}, Mikhail Shapiro{3}, Meng-Xing Tang{4}
{1}California Insitute of Technology, United States; {2}Harbin Institute of Technology / Imperial College London, United Kingdom; {3}Howard Hughes Medical Institute, California Insitute of Technology, United States; {4}Imperial College London, United Kingdom

3154: Microvascular Features of the Prostate Using Super-Resolution Ultrasound
Mairead Butler{1}, George Papageorgiou{1}, Kevin Gallagher{5}, Julian Keanie{2}, Lachlan Arthur{1}, Raluca Grigorescu{3}, Marie O'Donnell{3}, Daniel Good{4}, Nicholas Leslie{1}, Alan McNeill{3}, Weiping Lu{1}, Vassilis Sboros{1}
{1}Heriot-Watt University, United Kingdom; {2}NHS Lothain, United Kingdom; {3}NHS Lothian, United Kingdom; {4}NHS Scotland, United Kingdom; {5}University of Edinburgh, United Kingdom

3176: Transcutaneous Renal and Hepatic Microvascular Velocity Measurement Using a Dropped-Frame Contrast-Free Super-Resolution Ultrasound Method
Mostafa Amin Naji{1}, Iman Taghavi{1}, Amy McDermott{2}, Borislav Gueorguiev Tomov{1}, Charlotte Mehlin Sørensen{2}, Jørgen Arendt Jensen{1}
{1}Technical University of Denmark, Denmark; {2}University of Copenhagen, Denmark

3241: Volumetric Ultrasound Localization Microscopy of Native Murine Kidneys in Situ
Lea Davenet{2}, Jacques Battaglia{2}, Thomas Viel{3}, Jean-Baptiste Deloges{2}, Bertrand Tavitian{3}, Charlotte Lussey-Lepoutre{1}, Sharon Lori Bridal{2}, Olivier Couture{2}, Jerome Gateau{2}
{1}Centre de Recherche des Cordeliers (INSERM, Sorbonne Université, Université Paris Cité), France; {2}Laboratoire d'Imagerie Biomédicale, Sorbonne Université, INSERM, CNRS, France; {3}Paris Cardiovascular Research Center, INSERM, Université Paris Cité, France

3308: Full Kidney Microvascular Structure and Velocity Comparison of SURE vs. ULM
Mostafa Amin Naji{1}, Lauge Naur Hansen{1}, Iman Taghavi{1}, Amy McDermott{2}, Borislav Gueorguiev Tomov{1}, Charlotte Mehlin Sørensen{2}, Jørgen Arendt Jensen{1}
{1}Technical University of Denmark, Denmark; {2}University of Copenhagen, Denmark

3640: Endoscopic Ultrasound Localization Microscopy (E-ULM) for In Vivo Microvascular Differentiation of Pancreatic Tumors
De-Quan Chen{1}, Meng-Ying Lin{2}, Shyh-Hau Wang{1}, Chih-Chung Huang{1}
{1}National Cheng Kung University, Taiwan; {2}National Cheng Kung University Hospital, Taiwan

10:00 - 11:00
C2P-15: MSR: The Beating Brain & Thinking Heart
Room: Transit Zone
Session Chair(s): Baptiste Heiles, Caltech

2203: Low-Frequency Ultrafast Ultrasound Localization Microscopy to Detect Pentylenetetrazol-Induced Epileptic Seisure Onset
Yung Han Lee, Hsiao Lun Chen, Hao-Li Liu
National Taiwan University, Taiwan

2219: Self-Supervised Localization of Microbubbles for Super-Resolution Ultrasound
Rutwik Palaskar, Kenneth Hoyt
Texas A&M University, United States

2378: Physical Parameter-Guided Deep Learning Framework Based on Diffusion Model for Ultrasound Localization Microscopy
Yu Qiang{2}, Jing Yang{2}, Wenjie Liang{2}, Wenyue Huang{2}, Yue Pan{2}, Zhiqiang Zhang{2}, Lei Sun{1}, Weibao Qiu{2}
{1}Hong Kong Polytechnic University / Shenzhen Institute of Advanced Technology, CAS, Hong Kong; {2}Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

2668: The Theoretical Link Between the fUS Signal and Ultrasound Localization Microscopy Parameters in Neuroimaging
Alec Reygrobellet{1}, Nicolas Zucker{3}, Noémi Renaudin{1}, Charlie Demené{2}, Thomas Deffieux{3}, Mickaël Tanter{3}
{1}ESPCI Paris, France; {2}ESPCI Paris, Inserm, PSL University, CNRS, France; {3}Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France

2859: Density and Context Aware Deep Learning Method for Ultrasound Localization Microscopy
Tianli Wang{2}, Yu Qiang{1}, Minhua Lu{2}, Xin Chen{2}, Weibao Qiu{1}, Yanyan Yu{2}
{1}Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China; {2}Shenzhen University, China

2917: Human Tendon Microvascular Flow Imaging Using a Fast Contrast-Free Ultrasound Technique
Seyed Mohammad Mahdi Tabatabaei Majd{2}, Mostafa Amin Naji{2}, Rene Brüggebusch Svensson{1}, Borislav Gueorguiev Tomov{2}, Michael Kjær{1}, Jørgen Arendt Jensen{2}
{1}Copenhagen University Hospital - Bispebjerg and Frederiksberg, Denmark; {2}Technical University of Denmark, Denmark

2953: Dynamic Matrix Imaging Applied to Transcranial Ultrasound
Yichen Sun{2}, Elsa Giraudat{1}, Flavien Bureau{1}, Louise Denis{3}, Antoine Coudert{3}, Mathias Fink{1}, Olivier Couture{3}, Alexandre Aubry{1}
{1}ESPCI Paris / Institut Langevin, France; {2}Institut Langevin, ESPCI Paris - PSL, France; {3}Laboratoire d'Imagerie Biomédicale, Sorbonne Université, INSERM, CNRS, France

3099: Principal Component Analysis Method for High Resolution Coronary Artery Angiography in Mice Heart
Kuan-Han Lu, Deng-Yan Zhuang, Chih-Chung Huang
National Cheng Kung University, Taiwan

3685: Pseudo-Labels and Input Perturbation Improves In Vivo Applications of Deep-Learning Ultrasound Localization Microscopy
Brice Rauby{1}, Alexis Leconte{1}, Jonathan Porée{1}, Maxime Gasse{1}, Jean Provost{2}
{1}Polytechnique Montréal, Canada; {2}Polytechnique Montréal, Montreal Heart Institute, Canada

10:00 - 11:00
C2P-16: MBF: Doppler Imaging Innovations & Enhancements
Room: Transit Zone
Session Chair(s): JérÃ´me Baranger, ESPCI Paris

2178: Ultrafast Power Doppler Imaging Using Subarray Adaptive Temporal Multiply-and-Sum (SA-TMAS) Algorithm with Phase Compensation for Blood Flow Preservation
Han-Wen Hsu, Che-Chou Shen
National Taiwan University of Science and Technology, Taiwan

2198: An Anti-Aliasing Approach for the Phase-Sensitive Motion Estimator
Hideyuki Hasegawa{2}, Masaaki Omura{2}, Ryo Nagaoka{2}, Kozue Saito{1}
{1}Nara Medical University, Japan; {2}University of Toyama, Japan

2201: Novel Ultrasound Dual Array Method for Precise Blood Flow Measurement
Paolo Mattesini{2}, Marco Travagliati{1}, Federica Confalonieri{1}, Leonardo Baldasarre{1}, Alessandro Ramalli{3}
{1}TDK Americas R&D, Italy; {2}University of Florence, Italy; {3}University of Florence / MSDLab, Italy

2910: Evaluation of Mitral Regurgitation Using Ultrafast Ultrasound: In Vitro Validation in a Pulsatile Flow Phantom
Eric Buffle{2}, Henri Leroy{2}, Alexandre Houdouin{2}, Guillaume Esclozas{2}, Iris Baron{2}, Rahma Ait Ouaret{2}, Michael Stucki{3}, Clément Papadacci{2}, Emmanuel Messas{1}, Nicole Karam{1}, Nadia Aissaoui{1}, Elie Mousseaux{1}, Gilles Soulat{1}, Mathieu Pernot{2}
{1}Hôpital Européen Georges-Pompidou, Assistance Publique-Hôpitaux de Paris, France; {2}Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France; {3}University Hospital Bern, Switzerland

3040: Real-Time High Frame Rate Color Doppler Imaging with Staggered Pulse Repetition Frequency
Giulio Bonciani{2}, Francesco Guidi{2}, Claudio Giangrossi{2}, François Varray{1}, Damien Garcia{1}, Enrico Boni{3}, Alessandro Ramalli{3}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {2}University of Florence, Italy; {3}University of Florence / MSDLab, Italy

3052: Breaking Packet Size Limits in Cardiac Color Doppler
Julia Puig{1}, Denis Friboulet{2}, Jonathan Porée{3}, Jean Provost{4}, Damien Garcia{1}, Fabien Millioz{1}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {2}CREATIS, University of Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {3}Polytechnique Montréal, Canada; {4}Polytechnique Montréal, Montreal Heart Institute, Canada

3624: Ultrahigh Resolution Color Doppler Imaging Using Phase Sensitive Hyper-Beam Plane Wave Compounding
Shih-En Hsu, Chun-Hsien Chiang, Zi-Yao Hung, Meng-Lin Li
National Tsing Hua University, Taiwan

10:00 - 11:00
C2P-17: MIS: Deep Learning in Ultrasound Image Analysis
Room: Transit Zone
Session Chair(s): Kristen Meiburger, Politecnico di Torino

2421: Latent-Space Separation in Auto-Encoders for Interpretable Anomaly Classification Using Speckle
Nicolas Moyne, Pauline Muleki-Seya, Michaël Sdika, Valentine Wargnier-Dauchelle
CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France

2450: Lightweight Image Segmentation for Echocardiography
Anders Kjelsrud, Lasse Løvstakken, Erik Smistad, Håvard Dalen, Gilles van de Vyver
Norwegian University of Science and Technology, Norway

2875: AI-Guided Real-Time TCCD Scanning for Brain Vessel Detection by Attention-Augmented YOLO
Zhang Wenxuan{1}, Shuai Li{1}, Xinyi Wang{1}, Yu Sun{1}, Yongping Zheng{2}, Sai-Kit Lam{1}
{1}Hong Kong Polytechnic University, Hong Kong; {2}Research Institute for Smart Ageing, Hong Kong Polytechnic University, Hong Kong

2943: Detection of Vocal Fold Paralysis in Dynamic Translaryngeal Ultrasound Using a Deep-Learning Approach
Trung-Kien Bui{4}, Muriel Lefort{3}, Agnès Rouxel{5}, Juliette Dindart{4}, Christophe Nioche{4}, Hervé Guillemet{1}, Christophe Tresallet{2}, Frédérique Frouin{4}
{1}Apteryx, Gif-sur-Yvette, France; {2}Avicenne Hospital, AP-HP, Université Sorbonne, France; {3}Laboratoire d'Imagerie Biomédicale, Sorbonne Université, INSERM, CNRS, France; {4}LITO, Inserm, Institut Curie, Université Paris-Saclay, France; {5}Service de Médecine Nucléaire, AP-HP, Hôpital AVICENNE, Université Sorbonne Paris Nord, France

3047: Few-Shot Learning for Rectus Femoris Muscle Segmentation on Ultrasound Image Toward Sarcopenia Assessment
Dawei Zhang{1}, Xinyi Wang{1}, Sai-Kit Lam{1}, Justina Yat Wa Liu{1}, Yu Sun{1}, Jackie Yeung{1}, Yongping Zheng{2}
{1}Hong Kong Polytechnic University, Hong Kong; {2}Research Institute for Smart Ageing, Hong Kong Polytechnic University, Hong Kong

3745: Deep Learning-Based Clutter Suppression for Single-Shot Ultrasound Flow Imaging
Nizar Guezzi, Sangheon Lee, Sangwoo Nam, Muhammad Noman, Jaesok Yu
Daegu Gyeongbuk Institute of Science and Technology, Korea

3834: Advanced Transformer Model for Enhanced Ultrasonic Breast Cancer Detection
Amirhossein Moshrefi
Simon Fraser University, Canada

10:00 - 11:00
C2P-18: MCA: Bubble Dynamics
Room: Transit Zone
Session Chair(s): Sophie Heymans, KU Leuven

2255: Microbubble Aggregation Causes Temporal Decay of Stable Cavitation Dose Under Rapid Short-Pulse Excitation
Qizheng Zhou, Chunjie Tan, Ruchuan Shi, Peng Qin
Shanghai Jiao Tong University, China

2304: The Effect of Different PEG Chain Conformations on the Stability and Shell Elasticity of Monodisperse Microbubbles
Hongyi Zhang, Chang Lu, Ruchuan Shi, Peng Qin
Shanghai Jiao Tong University, China

2331: Controllable Initial Surface Tension of Monodisperse Microbubbles Through Tuning Multi-Gas-Component Core
Sihan Chen, Chang Lu, Ruchuan Shi, Peng Qin
Shanghai Jiao Tong University, China

2885: Characterization of Highly Concentrated Ultrasound Contrast Agents Samples Through Acoustical Impedance Measurements
Damien Fouan{2}, Fabrice Micaletti{2}, Jean-Yves Tartu{2}, Jean-Michel Escoffre{1}, Ayache Bouakaz{1}
{1}University of Tours, INSERM, iBraiN, France; {2}University of Tours, INSERM, Imaging Brain & Neuropsychiatry iBraiN, France

3116: Focused Ultrasound-Induced Oscillations of Microbubbles: Influence of Key Parameters on Cavitation Dose
Katarzyna Sendek, Ryszard Tymkiewicz, Łukasz Fura
Institute of Fundamental Technological Research, Polish Academy of Sciences, Poland

3677: Pressure-Dependent Superharmonic Resonance of Lipid-Coated Bubbles Provides Key Insights Into the Echogenicity of Submicron Agents
Amin Jafari Sojahrood
University of Toronto, Canada

10:00 - 11:00
C2P-19: MIS: Clinical & Disease-Specific Applications
Room: Transit Zone
Session Chair(s): Michal Byra, Institute of Fudamental Technological Research

2545: Towards Fully Wearable Muscle Fatigue Assessment with A-Mode Ultrasound
Giusy Spacone, Sebastian Frey, Christoph Leitner, Luca Benini, Andrea Cossettini
ETH Zürich, Switzerland

2725: Wearable Ultrasound Patch-Based M-Mode Signal Analysis for Sleep Apnea Detection Using Deep Learning ResNet Models
Chinghan Huang{1}, Youjyun Liu{1}, Chihching Lee{1}, Fuwei Su{2}, Kunta Chou{2}, Huihua Chiang{1}
{1}National Yang Ming Chiao Tung University, Taiwan; {2}Taipei Veterans General Hospital, Taiwan

3105: Improved System Identification in Contrast Ultrasound Dispersion Imaging for Cancer Diagnostics
Ashish Sivadas{2}, Simona Turco{2}, Harrie Beerlage{1}, Hessel Wijkstra{2}, Massimo Mischi{2}
{1}Amsterdam University Medical Center, Netherlands; {2}Eindhoven University of Technology, Netherlands

3151: Identifying Motor Unit Activity Using a Commercial Ultrasound Scanner – A Pilot Study
Simone Ruiter, Robin Rohlén, Christer Grönlund
Umeå University, Sweden

3277: Virtual Patient Models for Carotid Ultrasound Using Microstructure-Based Scattering
Daniek van Aarle, Richard Lopata, Hans-Martin Schwab
Eindhoven University of Technology, Netherlands

3413: A Novel Deep Learning Framework for Automated Bladder Wall Segmentation in Ultrasound Bladder Vibrometry
Manali Saini, Yifei Jiang, Azra Alizad, Mostafa Fatemi
Mayo Clinic College of Medicine and Science, United States

3501: Empirical Selection of Tumor Regions Based on Diagnostic Performance Supports Inclusion of Vasculature Beyond the Apparent Tumor Boundary
Ryan Deruiter, U-Wai Lok, Ping Gong, Jingke Zhang, Lydia Bardwell Speltz, Jingyi Yin, Lijie Huang, Jieyang Jin, Kendra Petersen, Kate Knoll, Chengwu Huang, Robert Fazzio, Shigao Chen
Mayo Clinic, United States

3568: Non-Invasive Detection of Nanobubble Uptake in Cancer Cells via RF Ultrasound and Machine Learning
Omar Falou{3}, Abel Thomas{3}, Mohamadou Bah{3}, Eric Strohm{3}, Elizabeth Berndl{3}, Gregory Czarnota{2}, Agata Exner{1}, Michael Kolios{3}
{1}Case Western Reserve University, United States; {2}Sunnybrook Health Sciences Centre / Sunnybrook Research Institute, Canada; {3}Toronto Metropolitan University, Canada

3821: Machine Learning Prediction of Adverse Left Ventricular Remodeling Using Strain Curves and Clinical Patient Data
Andrea Pulido{1}, Somayeh Akbari{1}, Konstantina Papangelopoulou{1}, Sandro Queirós{2}, Piet Claus{1}, Jan D'Hooge{1}
{1}Katholieke Universiteit Leuven, Belgium; {2}University of Minho, Portugal

10:00 - 11:00
C2P-20: MTC: Musculoskeletal Tissue Characterization
Room: Transit Zone
Session Chair(s): Zhengchang Kou, University of Illinois Urbana-Champaign

2410: Muscle Response Analysis Due to Nerve Electrostimulation Using Ultrasound Ultrafast Imaging
Arthur Prieur de la Comble, Guillaume Bacle, Jean-Pierre Remenieras
University of Tours, INSERM, Imaging Brain & Neuropsychiatry iBraiN, France

2428: Muscle Fat Fraction Quantification and Validation by Using Fusion of Ultrafast Ultrasound and MRI Approaches: An Ex Vivo Pilot Study
Maxime Leriche{1}, William Lambert{2}, Angeline Nemeth{1}, Jean-Luc Gennisson{1}
{1}BIOMAPS / Université Paris Saclay, CNRS, CEA, Inserm, France; {2}Supersonic Imagine / BIOMAPS, France

2779: High-Frequency Quantitative Ultrasound to Assess Microstructural Properties of the Patellar Tendon
Cameron Hoerig{2}, Hirotaka Iura{1}, Yuki Suzuki{1}, Matthew Covello{1}, Krishna Pedaprolu{1}, Sam Green{1}, Chia-Hung Hung{1}, Daniel Markowitz{1}, Hugo Stern{1}, Camila Carballo{1}, Scott Rodeo{1}, Claire Eliasberg{1}, Jonathan Mamou{2}
{1}Hospital for Special Surgery, United States; {2}Weill Cornell Medicine / Cornell University, United States

3119: A 3D Visualization Method for Quantitative Evaluation of Knee Cartilage Lesions Based on High-Frequency Ultrasound
Kehao Zhang{4}, Zhangjian Li{2}, Xinyu Zhang{4}, Eryu Ning{1}, Jing Xie{2}, Xinze Li{3}, Jiaqi Li{4}, Weiwei Shao{2}, Yaoyao Cui{3}
{1}Affiliated Suzhou Hospital of Nanjing Medical University, China; {2}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences, China; {3}Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences / USTC, China; {4}University of Science and Technology of China, China

3230: Ultrasonic Wave Velocity and Bone Mineral Density of Mouse Bone in Post-Senescence Period
Taiga Wada{1}, Takamitsu Maeda{1}, Yoshifumi Tsuchiya{2}, Mami Matsukawa{1}
{1}Doshisha University, Japan; {2}National Institute of Advanced Industrial Science and Technology, Japan

2043: Precise Volume Assessment for Gastrocnemius Muscles Based on 3D Ultrasound Imaging
Yunye Cai{1}, Enxiang Shen{1}, Zhendong Yao{3}, Xiao Yin{3}, Junjie Lu{3}, Hao Luo{2}, Jie Yuan{1}
{1}Nanjing University, China; {2}Ningbo No.2 Hospital, China; {3}Yixing People's Hospital, China

10:00 - 11:00
C2P-21: Photoacoustics & Acoustic Imaging & Microscopy
Room: Transit Zone
Session Chair(s): Howuk Kim, Inha University

2390: Chirp-Like Excitation for Pulse Compression in LED-Based Photoacoustic Imaging
Zewei Lu, Meiqi Shao, Birgit Burger, Sijia Liu, Christoph Klahn, Nicole Ruiter
karlsruhe institute of technology, Germany

2628: Anisakis Detection in Fish Fillets by Multiple-Wavelength Analysis of Photoacoustic Images
Tsuyoshi Shiina, Takeshi Namita, Misaki Nishiyama, Makoto Yamakawa
Shibaura Institute of Technology, Japan

3025: Application of Flexible Piezoelectric Micromachined Ultrasonic Transducer Array for Object Detection
Javad Abbaszadeh, Alvaro Rosa Julian, Dominik Holzmann, Alexander Shatalov, Humberto Campanella
Silicon Austria Labs GmbH, Austria

3132: Visualization of Intranuclei Structure Points Out Malignancy of Cultured Cells
Yuki Kawaguchi{1}, Ryo Nagaoka{4}, Kazuto Kobayashi{1}, Naohiro Hozumi{2}, Sachiko Yoshida{3}
{1}Honda Electronics Co., Ltd., Japan; {2}Hozumi Measurement Lab., Japan; {3}Toyohashi University of Technology, Japan; {4}University of Toyama, Japan

3256: Optically Transparent Multichannel Capacitive Micromachined Ultrasound Transducer for Handheld Photoacoustic Probes
Meghana Vishwanatha{2}, Karman Selvam{1}, Nooshin Saeidi{1}, Maik Wiemer{1}, Harald Kuhn{1}
{1}Fraunhofer Institute for Electronic Nano Systems ENAS, Germany; {2}Fraunhofer Institute for Electronic Nano Systems ENAS / Chemnitz University of Technology, Germany

3425: nRTIS: Low-Cost Real-Time 3D Sonar System with MVDR Beamforming for Industrial Applications
Rens Baeyens{3}, Dennis Laurijssen{1}, Walter Daems{2}, Jan Steckel{2}
{1}Cosys-Lab, University of Antwerp, Belgium; {2}Cosys-Lab, University of Antwerp & Flanders Make Strategic Research Centre, Belgium; {3}University of Antwerp, Belgium

3760: Characterization of Botrytis Cinerea Growth via GHz Ultrasound Imaging of Agar Depletion
Daria Shkel, Justine Vanden Heuvel, Kerik Cox, Kirstin Petersen, Amit Lal
Cornell University, United States

3157: Combined Ultrasound and Photoacoustic Imaging of Peripheral Arteries
Anjali Thomas{1}, Sowmiya Chandramoorthi{2}, Gijs van Soest{1}, Kalloor Joseph Francis{1}
{1}Erasmus University Medical Center, Netherlands; {2}Verasonics Inc, United States

10:00 - 11:00
C2P-22: Material & Defect Characterization II
Room: Transit Zone
Session Chair(s): Mate Gaal, BAM

2093: Permanently Swollen Segmented Polyurethane Gel as a Robust Tissue-Mimicking Material for Ultrasound Diagnostic Phantoms
Kazuishi Sato{2}, Toshio Kondo{2}, Kosuke Isono{2}, Yoshitaro Ueta{2}, Fumitaka Seo{2}, Akari Gotow{2}, Masahiko Taniguchi{1}, Kohei Hamachi{3}, Takuya Kubo{3}
{1}Taniguchi Laboratory for General Research, Japan; {2}Tokushima Bunri University, Japan; {3}Yasojima Proceed Co., Ltd., Japan

2736: Air-Coupled Ultrasonic Evaluation of Moisture Effects in 3D-Printed Short Carbon Fiber-Reinforced Nylon Samples with Different Infill Patterns
Lola Fariñas, Iñigo Sanchez-Marcos, Beatriz Achiaga-Menor
University of Deusto, Spain

3267: Evaluation of Bone Surface by an Infrared Laser Ultrasound Technique
Shoma Ozawa, Tomoya Ikeda, Kosuke Dake, Mami Matsukawa
Doshisha University, Japan

3402: Ultrasonic Air-Coupled Generation and Detection of Lamb Waves in Solar Cells
Erik Perez, Tomás Gómez Alvarez-Arenas
Consejo Superior de Investigaciones Científicas, Spain

2195: A Method for Advanced Testing of Bone Implant Materials with Acoustic Emission (AE)
Kianusch Pour Rahimi{1}, Ute Urban{1}, Fabian Müller{1}, Patrik Müller{2}, Roland Lachmayer{2}, Ulrich P. Froriep{1}
{1}Fraunhofer Institute for Toxicology and Experimental Medicine ITEM, Germany; {2}Institute for Product Development / Leibniz Universität Hannover, Germany

10:00 - 11:00
C2P-23: General Physical Acoustics & NonlinearAcoustics
Room: Transit Zone
Session Chair(s): Ji Wang, Ningbo University

2418: Acoustic and Dielectric Properties of Biominerals After Exposure to Water and Thermal Annealing
Andrei Sotnikov, Hagen Schmidt
Leibniz Institute for Solid State and Materials Research Dresden, Germany

2614: Phononic Frequency Combs of Tuning Forks
Yook-Kong Yong{1}, Sarah Bedair{2}
{1}Rutgers University, United States; {2}U.S. Army Research Lab, United States

2819: Investigation of Ultrasound Center Frequency Shift in the Liver Induced by Acoustic Attenuation: An Ex-Vivo Animal Experiment
Wanrui Li{1}, Shuai Li{1}, Xiaoshu Qin{1}, Zihao Huang{1}, Chonglin Wu{1}, Yu Sun{1}, Yongping Zheng{2}
{1}Hong Kong Polytechnic University, Hong Kong; {2}Research Institute for Smart Ageing, Hong Kong Polytechnic University, Hong Kong

3194: Designated-Point Sound Delivery Based on Nonlinear Effect at Ultrasonic Focus
Guanjun Yin, Yanna Tang, Yifan Tang, Jianzhong Guo
Shaanxi Normal University, China

3631: An Exact Analytical Three-Dimensional Time-Domain Green's Function for Frequency-Independent Shear Wave Attenuation
Robert McGough
Michigan State University, United States

3693: Preliminary Evaluation of the Correspondence Between Ion-Acoustic Signals and Luminescence from the Absorption of Pulsed Proton Beams in a Liquid Scintillator
Maria Maxouti{1}, Peter Hobson{4}, Oliver Jeremy{1}, Cox Ben{5}, Dover Nicholas{1}, Sonja Gerlach{3}, Julie Lascaud{3}, Richard Amos{5}, Catherine Burne{6}, Colin Whyte{7}, Jörg Schreiber{3}, Katia Parodi{3}, Kenneth Long{1}, Jeffrey Bamber{2}
{1}Imperial College London, United Kingdom; {2}Institute of Cancer Research and Royal Marsden NHS Foundation Trust, United Kingdom; {3}Ludwig-Maximilians-Universität München, Germany; {4}Queen Mary University of London, United Kingdom; {5}University College London, United Kingdom; {6}University of Birmingham, United Kingdom; {7}University of Strathclyde, United Kingdom

3810: A Voltage-Controlled Acoustic Switch on PZT PMUT with Nonlinearity Phase-Matching Geometry Design
Yiwei Wang, Xuankai Xu, Ruihong Xiong, Tao Wu
ShanghaiTech University, China

2553: Deep Learning Framework for Musculoskeletal Photoacoustic Image Generation and Enhancement
Yuewen Pan
Fudan University, China

2939: Estimating Pressure Gradients in Acoustic Levitation Fields Using Schlieren Imaging
Frederike Wörtche, Fabian Maucher, Martijn Mooiweer, Gerard Verbiest, Peter Steeneken
Delft University of Technology, Netherlands

3636: Conformal Piezo-Polymer Film FBG-Based Acousto-Optic RF Field Sensors
Lee W. Bradley, Yusuf Yaras, Levent Degertekin
Georgia Institute of Technology, United States

10:00 - 11:00
C2P-24: ATD: Thin Film LiTaO3 Devices
Room: Transit Zone
Session Chair(s): Tao Han, Shanghai Jiao Tong University

2033: Impact of Piston Design on Lateral Leakage Suppression in I.H.P. SAW Resonator
Yiming Liu{3}, Ting Wu{1}, Zijiang Yang{2}, Wanli Cai{2}, Jingfu Bao{2}, Ken-Ya Hashimoto{2}
{1}Chengdu University of Technology, China; {2}University of Electronic Science and Technology of China, China; {3}University of Electronic Science and Technology of China/Tohoku University, China

2046: IDT / Dummy Finger Gap Optimization for Q-Enhancement and Transverse-Mode Reduction in SH-SAW Resonators on SiC Substrate
Yang Feng{1}, Zonglin Wu{1}, Jiang Liu{1}, Hangyu Qian{1}, Shijia Li{1}, Feihong Bao{3}, Qiaozhen Zhang{2}, Xiongchuan Huang{1}
{1}Fudan University, China; {2}Shanghai Normal University, China; {3}Yangtze Delta Region Institute (Huzhou) / University of Electronic Science and Technology of China, China

2142: Study on I.H.P.SAW Devices with Expanded Bandwidth
Katsuya Daimon, Yasuhiro Shimizu, Akira Michigami, Sunao Yamazaki, Takeshi Nakao
Murata Manufacturing Co., Ltd., Japan

2350: High Sensitivity Defect Inspection of LiTaO3 and POI Engineered Substrates for SAW Devices Applications
Enrica Cela{2}, Isaure Dekernier{1}, Mathieu Foucaud{2}, Nicolas Deniau{2}, Parikshit Sharma{1}
{1}KLA Foundation, France; {1}KLA Foundation, Italy; {2}Soitec, France

2536: Intelligent Prediction of EM Responses in mmWave Acoustic Resonators via Prompt-to-Structure Large Language Model and Regression Models
Xingyu Liu, Junyan Zheng, Shuhan Chen, Wei Wei, Fangsheng Qian, Zijun Ren, Kai Yang, Yansong Yang
Hong Kong University of Science and Technology, Hong Kong

3036: Analysis of Leaky SAW Harmonic Resonance Properties on Piezoelectric Substrates with Periodic Voids
Shumpei Kobayashi, Masashi Suzuki, Shoji Kakio
University of Yamanashi, Japan

2148: Suppression Method of Higher Order Mode Spurious Responses in Laterally Excited Shear Mode Bulk Acoustic Wave Resonators
Masakazu Mimura
Murata Manufacturing Co., Ltd., Japan

2986: Surface Acoustic Wave–Driven Directional Splashing for Artificial Pollination of Strawberry
Kosuke Wakayama, Shun Koda, Sakura Takahashi, Yuta Kurashina
Tokyo University of Agriculture and Technology, Japan

10:00 - 11:00
C2P-25: TMU: Piezoelectric Micromachined Ultrasonic Transducers I
Room: Transit Zone
Session Chair(s): Monica La Mura, Roma Tre University

2333: A Low-Power PMUT-on-CMOS System for Future Medical Ultrasound Applications
Eyglis Ledesma, Iván Zamora, Zeyuan Hui, Arantxa Uranga, Francesc Torres, Núria Barniol
Autonomous University of Barcelona, Spain

2491: Substrate Vibration Damping for Bandwidth Increase and Crosstalk Reduction in High-Frequency Air-Coupled PMUT Arrays
Alessandro Stuart Savoia{1}, Monica La Mura{1}, Mohammad Mahdi Dehghan Pir{1}, Muhammad Usman Khan{1}, Davide Ugo Ghisu{2}, Marco Ferrera{2}, Domenico Giusti{2}
{1}Roma Tre University, Italy; {2}STMicroelectronics, Italy

2817: Quasi-Monopolar Pulse Emission Based on a Wide-Bandwidth and High-Directionality Piezoelectric Micromachined Ultrasonic Transducer
Xinyue Zhang, Junhao Wang, Jiao Xia, Aocheng Bao, Chong Yang, Bowen Sheng, Wei Wang, Yipeng Lu
Peking University, China

3107: A Convex PMUT Array for High-Speed Wide-FoV Airborne Object Sensing
Duan Jian Goh{1}, Mantalena Sarafianou{1}, David Sze Wai Choong{1}, Jihang Liu{1}, Daniel Ssu-Han Chen{1}, Alberto Leotti{2}, Fabrizio Cerini{2}, Riccardo Gianola{2}, Yul Koh{1}
{1}Institute of Microelectronics, Agency for Science, Technology and Research, Singapore; {2}STMicroelectronics, Singapore; {2}STMicroelectronics, Italy

3290: Experimental Quantification of Crosstalk Between ScAlN Piezoelectric Micromachined Ultrasound Transducers (PMUTs) in Water
Sagnik Ghosh{1}, Duan Jian Goh{1}, David Sze Wai Choong{1}, Yu Feng Thien{1}, Alberto Leotti{2}, Silvia Adorno{2}, Yee Lung Lee{2}, Yao Zhu{1}, Yul Koh{1}
{1}Institute of Microelectronics, Agency for Science, Technology and Research, Singapore; {2}STMicroelectronics, Italy; {2}STMicroelectronics, Singapore

10:00 - 11:00
C2P-26: TES: Transducer Interface Electronics & Systems
Room: Transit Zone
Session Chair(s): Chao Chen, Sonosilicon Co.

2056: Development of an Ultrasonic Atomization System Used for Active Sweat-Releasing Suits
Jia-Ling Lin, Han-Wei Lien, En-Hsiang Chang, Qin-Wei Shi, Po-Han Chen, Guan-Ting Chen, Hsiao-Ching Lin, Wan-Tzu Tu, Chih-Hsien Huang
National Cheng Kung University, Taiwan

2182: Ultrasonic Transducer for a Button-Click Simulation
Mondher Ouari{2}, Frederic Giraud{2}, Jean-Luc Bruyelle{2}, Christophe Giraud-Audine{1}
{1}École Nationale Supérieure d'Arts et Métiers, France; {2}University of Lille, France

2969: Impedance Matching Preamplifier System Based on Miniature Photoacoustic System
Kai Yang, Dongcheng Wang, Yexing Fang, Yipeng Lu
Peking University, China

2996: Adaptive Pulse Skipping for Power Optimized On-Chip Phased Array Driving for Ultrasound (US) Neuromodulation
Masoumeh Aqamolaei, Tiago L. Costa
Delft University of Technology, Netherlands

3113: Pseudo-Random Time-Division Multiplexing Channel Shuffling for Compressive Multiplexing of Ultrasound Echoes in Ultrasound Imaging Integrated Circuits
Diogo Dias{2}, Samuel Desmarais{3}, João Goes{1}, Tiago L. Costa{3}
{1}CTS-UNINOVA, NOVA University of Lisbon, Portugal; {2}CTS-UNINOVA, NOVA University of Lisbon / Delft University of Technology, Portugal; {3}Delft University of Technology, Netherlands

3347: Dual Mode Quality Factor Control of 2D Phased Array Us Transducers for Imaging and Neuromodulation
Anand Alur Radhakrishnan, Masoumeh Aqamolaei, Tiago L. Costa
Delft University of Technology, Netherlands

3431: High-Density MIMO Localization Using a 32×62 Ultrasonic Transducer-Microphone Array with Real-Time Data Streaming
Rens Baeyens{3}, Dennis Laurijssen{1}, Walter Daems{2}, Jan Steckel{2}
{1}Cosys-Lab, University of Antwerp, Belgium; {2}Cosys-Lab, University of Antwerp & Flanders Make Strategic Research Centre, Belgium; {3}University of Antwerp, Belgium

2972: Portable Hardware to Enable Continuous Blood Pressure Monitoring Utilising High-Resolution Flexible Ultrasound Arrays
Manuel Pelayo Garcia, Struan Smith, Tanvi Kapil, Daniel Irving, Dave Allan Hughes
Novosound, United Kingdom

11:00 - 12:30
C3L-01: Clinical Session
Room: Kinepolis - Room 7
Session Chair(s): Ton van der Steen, Erasmus MC; Jan D'hooge, KU Leuven

11:00
3841: What Has Driven Innovation in Cardiovascular Ultrasound – Inspiration, Serendipity, Collaboration, Technology, Commerce, or Clinical Need?
Alan Fraser
University Hospital of Wales, United Kingdom

11:30
2115: Ultrafast Ultrasound Imaging of Brain Tumors: Clinical Opportunities In- and Outside of the Neurosurgical Operating Room
Sadaf Souloukey Tbalvandany, Luuk Verhoef, Frits Mastik, Chris de Zeeuw, Arnaud Vincent, Pieter Kruizinga
Erasmus University Medical Center, Netherlands

12:00
3843: Ultrasound Vascular Flow Imaging: Pushing Boundaries, Shaping the Future
Michel Reijnen
University of Twente & Rijnstate Hospital Arnhem, Netherlands

11:00 - 12:30
C3L-02: MSR: Beneath the Neck
Room: Kinepolis - Room 8
Session Chair(s): Mengxing Tang, Imperial College, London; Georg Schmitz, Ruhr-Universität Bochum

11:00
3659: Quantifying Motion and Clutter Effects in Myocardial Ultrasound Localization Angiography
Alexis Leconte{3}, Jonathan Porée{3}, Stephen A. Lee{3}, Pierre-Olivier Bouchard{3}, Mathieu Glorion{1}, Ahmed Menaouar{1}, Nicolas Noiseux{1}, Pierre-Emmanuel Noly{2}, Jean-Claude Tardif{2}, Jean Provost{4}
{1}Centre de recherche du CHUM, Canada; {2}Institut de Cardiologie de Montréal, Canada; {3}Polytechnique Montréal, Canada; {4}Polytechnique Montréal, Montreal Heart Institute, Canada

11:15
3349: 3D Transcotal Ultrasound Localization Microscopy Benchmarking by Modeling Human Cardiac Hemodynamics
Juliette Reydet, Alexandre Dizeux, Nabil Haidour, Hugues Favre, Mathieu Pernot, Mickaël Tanter, Clément Papadacci
Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France

11:30
2230: ULM for Predicting and Monitoring Therapy Response in Breast Cancer
Stefanie Dencks{1}, Céline Porte{2}, Matthias Kohlen{2}, Thomas Lisson{1}, Elmar Stickeler{2}, Fabian Kiessling{2}, Georg Schmitz{1}
{1}Ruhr University Bochum, Germany; {2}RWTH Aachen University, Germany

11:45
3502: Spatially Compounded Volumetric Ultrasound Localization Microscopy for Glomerular Imaging Validated by Light Sheet Microscopy
Tyler Gildemeister{1}, Hatim Belgharbi{1}, Rachel Walmer{1}, Jacob McCall{1}, Kennita Johnson{1}, Gianmarco Pinton{2}, Paul A. Dayton{2}
{1}University of North Carolina at Chapel Hill, United States; {2}University of North Carolina at Chapel Hill / North Carolina State University, United States

12:00
3124: Reliability of Resolution Measurements in Ultrasound Localization Microscopy
Julia Sobolewski{1}, Stefanie Dencks{1}, Anne Rix{2}, Christoph Sproll{3}, Fabian Kiessling{2}, Georg Schmitz{1}
{1}Ruhr University Bochum, Germany; {2}RWTH Aachen University, Germany; {3}University Hospital Düsseldorf, Germany

12:15
2946: Non-Invasive Biopsy Based on Ultrasound Localization Microscopy for Kidney Graft Assessment in Machine-Perfused Porcine Kidneys
Anatole Jimenez{1}, Marleen Jacobs{2}, Finn Timmermans{2}, Annemarie de Graaf{2}, Katrien Vandereydt{2}, Mickaël Tanter{1}, Marten Engelse{2}, Franck Lebrin{2}, Thomas Deffieux{1}
{1}Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France; {2}Leiden University Medical Center, Netherlands

11:00 - 12:30
C3L-03: MIS: Image Formation
Room: Kinepolis - Room 9
Session Chair(s): Jørgen Jensen, DTU; Nick Bottenus, University of Colorado Boulder

11:00
3017: Sidelobes-Free Wavelet-Based Chirp Compression for Ultrasound Imaging
Mohamed Tamraoui{2}, Ralph Abirizk{1}, Ewen Carcreff{4}, Barbara Nicolas{2}, Hervé Liebgott{3}
{1}CREATIS / TPAC / Phased Array Company, LLC., France; {2}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {3}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm / UJMSaint-Et, France; {4}TPAC / Phased Array Company, LLC., France

11:18
2651: Frequency-Domain Imaging for Outward-Looking Ring Arrays via Polar Coordinate Transformation
Zihan Huang, Xiao Wei, Dawei Wu
Nanjing University of Aeronautics and Astronautics, China

11:36
2627: Qfwi: Joint Inversion of Velocity and Attenuation in Breast Imaging
Jin Li, Jiahao Ren, Zhaohui Han, Yang Liu
State Key Laboratory of Precision Measuring Technology and Instruments, Tianjin University, China

11:54
2021: Clutter Suppression in 3D In-Vivo Medical Ultrasound Using In-Face Extended Frank-Wolfe Method
Shujaat Khan{2}, Jaeyoung Huh{4}, Lamia Al Saikhan{1}, Jong Chul Ye{3}
{1}Imam Abdulrahman Bin Faisal University, Saudi Arabia; {2}King Fahd University of Petroleum and Minerals, Saudi Arabia; {3}Korea Advanced Institute of Science and Technology, Korea; {4}Siemens Healthineers, United States

12:12
3764: A New Compounding Method Using Spatiotemporal Features for Twinkling Artifact Imaging
Eonho Lee, Seongjun Park, Hyunwoo Cho, Yangmo Yoo
Sogang University, Korea

11:00 - 12:30
C3L-04: MIS: Non-Linear Imaging & Speed of Sound
Room: Kinepolis - Room 11
Session Chair(s): Orcun Goksel, Uppsala University; Di Xiao, University of Waterloo

11:00
2762: Ultrafast Nonlinear Contrast Imaging in Mouse Kidneys Using Nanobubble-Mediated Dual-Amplitude Pulse Subtraction
Yu Weng{3}, Niloufar Rostam Shirazi{3}, Steven Tran{3}, Eno Hysi{2}, Agata Exner{1}, Michael Kolios{3}
{1}Case Western Reserve University, United States; {2}St. Michael's Hospital / University of Toronto, Canada; {3}Toronto Metropolitan University, Canada

11:15
3740: Sensitivity-Boosted Magnetomotive Ultrasound Imaging via Electromagnetic-Coded Excitation
Han Zheng, Wenhao Zhong, Yaning Gu, Haoming Lin, Mian Chen, Gaixia Xu, Xin Chen
Shenzhen University, China

11:30
3820: Pressure Estimation with Spectral Features from Multi-Frequency Nonlinear Imaging
Katherine Brown{1}, Lana Musmar{1}, Shariq Ali{2}, Jacques Lux{2}, Caroline de Gracia Lux{2}
{1}University of Texas at Dallas, United States; {2}University of Texas Southwestern Medical Center, United States

11:45
2187: Nonlinear Ultrasound Imaging with Multiplane Wave Transmission: Comparison of Coding Matrix and Image Quality
Han-Wen Hsu, Ching-Che Chiu, Che-Chou Shen
National Taiwan University of Science and Technology, Taiwan

12:00
3298: Fast, Transmit-Agnostic Estimation of Global Speed-of-Sound
Di Xiao{2}, Pat De la Torre{2}, Kansas Mackay{1}, Alfred Yu{2}
{1}McMaster University, Canada; {2}University of Waterloo, Canada

12:15
3746: Adaptively Learning Speed of Sound for Improving Single Plane Wave Ultrasound Imaging
Mohammad Wasih, Mohamed Almekkawy
Pennsylvania State University, United States

11:00 - 12:30
C3L-05: MCA: Therapy & Drug Delivery
Room: Kinepolis - Room 12
Session Chair(s): Klazina Kooiman, Erasmus MC; Yi-Ju Ho, National Yang Ming Chiao Tung University

11:00
3540: Monodisperse Microbubble Size Affects Vascular Drug Delivery Outcome
Yuchen Wang{1}, Hongchen Li{1}, Bram Meijlink{1}, Robert Beurskens{1}, Benjamin Johnson{2}, Klazina Kooiman{1}
{1}Erasmus University Medical Center, Netherlands; {2}University of Leeds, United Kingdom

11:15
3739: Acoustic Cavitation of Monodisperse Microbubbles Leads to Pore-Dependent Increase in Membrane Lipid Disorder
Robyn Klassen{2}, Martin van Den Broek{1}, Tim Segers{1}, Alfred Yu{2}
{1}University of Twente, Netherlands; {2}University of Waterloo, Canada

11:30
3716: Enhanced Sonoporation Efficiency with Magnetically Responsive Nanoparticle Functionalized Microbubbles
Euan Gardner, Robyn Klassen, Richard Shangguan, Yanyan Tran, Alfred Yu
University of Waterloo, Canada

11:45
2470: Focused-Ultrasound and Microbubbles Induce a Time-Dependent Transcriptomic Response in Human CD4⁺ T Cells
Ana Baez, Brian Baxter, Davindra Singh, Mehri Hajiaghayi, Fatemeh Gholizadeh, Peter Darlington, Brandon Helfield
Concordia University, Canada

12:00
3280: Microbubble-Mediated Focused Ultrasound Delivery of Cas9 Ribonucleoprotein to Human Induced Pluripotent Stem Cells
Kyle Hazel, Davindra Singh, Setareh Eftekhari, Zakary Guertin, Stephanie He, Brandon Helfield
Concordia University, Canada

12:15
2587: Vascular Disruption: A Controllable Transient Vascular Tumor Reaction to Ultrasound Cavitation Treatments
Connor Krolak, Lance De Koninck, Sherry Gu, Jenifer Mendez Pacheco, Mike Averkiou
University of Washington, United States

11:00 - 12:30
C3L-06: MEL: Muscle Shear Wave Elastography
Room: Kinepolis - Room 13
Session Chair(s): Caterina Gallippi, University of North Carolina; Jean-Luc Gennisson, Universite Paris Saclay

11:00
3288: Shear Anisotropy Changes of Levator Ani Muscle Phantoms Assessed by Rotational Shear Wave Elastography
Estelle Pitti{2}, Auxane Valembois{2}, Emilia Rotstein{1}, Lotta Herling{1}, Xiaogai Li{2}, Gunilla Ajne{1}, Matilda Larsson{2}
{1}Karolinska Institute, Sweden; {2}Karolinska Institutet, KTH Royal Institute of Technology, Sweden

11:15
3733: Volumetric Mechanical Characterization of In Vivo Skeletal Muscle Assessed with 3D-Rotational Shear Wave Elasticity Imaging (3D-RSWEI)
Shruthi Srinivasan{2}, Wren Wightman{2}, Kaden Bock{2}, David Bradway{2}, Ned Rouze{2}, Mark Palmeri{2}, Lisa Hobson Webb{1}, Kathryn Nightingale{2}
{1}Duke Health, Duke University, United States; {2}Duke University, United States

11:30
3085: Viscoelasticity Imaging of Muscle-Mimicking Phantoms and Ex Vivo Goat Muscle Using Automated Fiber Pennation Angle Estimation with Angle-Adaptive Shear Wave Directional Filters
Akash Chandra, Karla Patricia Mercado-Shekhar
Indian Institute of Technology Gandhinagar, India

11:45
2412: Ultrasound Shear Wave Elastography for the Assessment of Inspiratory Muscle Work in Humans
Axel Nierding{1}, Eloise Chamalet{3}, Damien Bachasson{3}, Jean-Luc Gennisson{2}
{1}BIOMAPS, France; {2}BIOMAPS / Université Paris Saclay, CNRS, CEA, Inserm, France; {3}UMRS1158, France

12:00
3471: Using VisR Ultrasound to Indicate Muscle Fatigue During Functional Electrical Stimulation
John Aidan Armstrong{2}, Krysten Lambeth{1}, Nitin Sharma{1}, Caterina Gallippi{2}
{1}North Carolina State University, United States; {2}University of North Carolina at Chapel Hill / North Carolina State University, United States

12:15
3164: Muscle Activation Assessment Using Ultrasound Time-Harmonic Elastography and Tonic Vibration Reflex
Hossein S. Aghamiry, Tom Meyer, Stefan Klemmer Chandía, Yanglei Wu, Steffen Görner, Heiko Tzschätzsch, Ingolf Sack
Charité - Universitätsmedizin Berlin, Germany

11:00 - 12:30
C3L-07: General NDE Methods II
Room: Progress (Supernova)
Session Chair(s): Paul Wilcox, University of Bristol

11:00
2550: Real-Time Analysis of Melting Pool Dynamics Using Ultrasonic Surface Waves for Enhanced Manufacturing Process Control
Fuzhen Wen, Zuyao Chen, Fan Shi
Hong Kong University of Science and Technology, Hong Kong

11:18
2225: Study on Improvement of Detection Performance of Internal Defects in Concrete by a Moving Cart Equipped with LDVs and a Sound Source
Tsuneyoshi Sugimoto{3}, Yutaka Nakagawa{3}, Kazuko Sugimoto{3}, Itsuki Uechi{3}, Noriyuki Utagawa{2}, Yasukazu Nihei{1}
{1}FUJIFILM Corp, Japan; {2}SatoKogyo Co., Ltd, Japan; {3}Toin University of Yokohama, Japan

11:36
3605: Single Transmission Phase- and Frequency-Modulated Signals for Enhanced Inspection of Thick Complex Industrial Components Using a Flexible Eco-Friendly Ultrasonic Array
Elmergue Germano{4}, Ehsan Mohseni{4}, David Lines{4}, Morteza Tabatabaeipour{2}, Kwok-Ho Lam{3}, Dave Allan Hughes{1}, Heather Trodden{1}, Anthony Gachagan{4}
{1}Novosound, United Kingdom; {2}Ulster University, United Kingdom; {3}University of Glasgow, United Kingdom; {4}University of Strathclyde, United Kingdom

11:54
3348: Borehole Integrity Acoustic Tool for Harsh Conditions
Cristian Pantea, Eric Davis, John Greenhall
Los Alamos National Laboratory, United States

12:12
3127: Wafer Bonding Defect Detection with Coded Ultrasound Array Imaging and Fourier Domain Analysis
Bingze Dai, Wei-Ning Lee
University of Hong Kong, Hong Kong

11:00 - 12:30
C3L-08: Signal Processing
Room: Mission 1 (Supernova)
Session Chair(s): Jafar Saniie, Illinois Institute of Technology

11:00
2052: Ultrasound Spot Weld Profiling with Sparse Feature Recovery from Low-Fidelity A-Scans
Aryaz Baradarani{2}, Roman Gr. Maev{1}
{1}University of Windsor, Canada; {2}University of Windsor / Tessonics Inc, Canada

11:15
3434: Ultrasound-LiDAR Hybrid SLAM for Robust Navigation in Transparent Indoor Environments
Tsung-Hung Chien, Kang-Lun Fong, Bi-Cheng Shih, Jia-Zhang Li, Yu-Yang Tang, Geng-Shi Jeng
National Yang Ming Chiao Tung University, Taiwan

11:30
2049: Ultrasound-Enhanced Multi-Modal Fusion for Real-Time Obstacle Detection and Navigation in Autonomous Vehicles
Ali Jameel Hashim{1}, Aryaz Baradarani{3}, Mohammad Ali Balafar{1}, Roman Gr. Maev{2}
{1}Tessonics Inc, Canada; {2}University of Windsor, Canada; {3}University of Windsor / Tessonics Inc, Canada

11:45
3817: A Novel Approach for Residual Stress Estimation via Coda Wave Interferometry Using Time Shift and Stretch Analysis
Marcel Ruetz{1}, Mohsen Rezai{1}, Thomas Antretter{2}, Hans-Peter Gänser{1}
{1}Materials Center Leoben Forschung GmbH, Austria; {2}Montanuniversität Leoben, Austria

12:00
3057: Improving Damage Localization Through Gaussian Process Regression and Enhanced Acoustic Emissions Time of Arrival Estimation
Benedetta Baldini{2}, Federica Zonzini{2}, Luca De Marchi{1}
{1}ARCES - University of Bologna, Italy; {2}University of Bologna, Italy

12:15
3203: High-Precision Airborne Rangefinding with PMUTs Based on Signal Spatial Coherence
Mantalena Sarafianou{1}, Yu Feng Thien{1}, David Sze Wai Choong{1}, Duan Jian Goh{1}, Jihang Liu{1}, Yul Koh{1}, Alberto Leotti{2}, Fabrizio Cerini{2}, Annachiara Esposito{2}
{1}Institute of Microelectronics, Agency for Science, Technology and Research, Singapore; {2}STMicroelectronics, Singapore; {2}STMicroelectronics, Italy

11:00 - 12:30
C3L-09: AMN: Modeling & Nonlinearity of Microacoustic Devices
Room: Mission 2 (Supernova)
Session Chair(s): Natalya Naumenko, National University of Science and Technology; Kenya Hashimoto, Chiba Univ/UESTC

11:00
2013: Frequency and Power Dependence of Nonlinear Products in TC-SAW Resonators Exhibiting Anomalous Power Law
Viateur Iragire, Jingfu Bao, Ken-Ya Hashimoto
University of Electronic Science and Technology of China, China

11:15
2098: Study of Second-Order Nonlinearity Induced by Transversal Effects in Thin-Film SAW Devices
Vikrant Chauhan, Markus Mayer, Thomas Ebner, Karl Wagner, Thomas Telgmann
RF360 Europe GmbH, Germany

11:30
2174: Effect of Cu Content in Al IDT Electrode on Nonlinearity of SAW Devices
Yoshikazu Kihara, Changmin Lee, Kijung Lee, Takahiro Sato
Wisol co. ltd., Japan; Wisol co. ltd., Korea

11:45
2599: Wave Apodization to Suppress Transverse Modes and Third-Order Intermodulation Distortion in POI-SAW Resonators
Guangyao Lv{1}, Qiaozhen Zhang{1}, Baichuan Li{2}, Sulei Fu{3}, Ziyou Chen{1}, Feihong Bao{4}
{1}Shanghai Normal University, China; {2}SHOULDER Electronics Limited, China; {3}Tsinghua University / SHOULDER Electronics Limited, China; {4}Yangtze Delta Region Institute (Huzhou) / University of Electronic Science and Technology of China, China

12:00
2810: Time Domain Analysis of Nonlinear Harmonic Response Generated in RF-SAW Resonator
Tatsuya Omori, Tenma Doi
Chiba University, Japan

12:15
2161: Enhanced Modeling of Wideband Acoustic Wave Ladder Filters
Santi Cano{1}, Carlos Caballero{1}, Mario Faura{1}, Omar Barrera{2}, Ruochen Lu{2}, Jordi Verdú{1}, Pedro de Paco{1}
{1}Autonomous University of Barcelona, Spain; {2}University of Texas at Austin, United States

11:00 - 12:30
C3L-10: TMI: 2D Arrays
Room: Polar
Session Chair(s): Michiel Pertijs, Delft University of Technology; Erik Vilain Thomsen, Technical University of Denmark

11:00
3573: Volumetric 3D Ultrasound Imaging Based on 4096-Element Large-Aperture 2D Array
Baoqiang Liu{2}, Robert Wodnicki{2}, Josquin Foiret{1}, Xin Sun{2}, Ning Lu{1}, Qifa Zhou{2}, Katherine Ferrara{1}
{1}Stanford University, United States; {2}University of Southern California, United States

11:15
3560: Advanced Flow Imaging with a Handheld 128+128 Row-Column Addressed CMUT Array Probe: System Design and Phantom Validation
Eda Begum Erdogan{1}, Nairit Das{1}, Ali Onder Biliroglu{1}, Muhammetgeldi Annayev{1}, Geraldi Wahyulaksana{2}, Jeffrey A. Ketterling{2}, Feysel Yalcin Yamaner{1}, Ömer Oralkan{1}
{1}North Carolina State University, United States; {2}Weill Cornell Medicine / Cornell University, United States

11:30
3826: A Compact 2D Matrix Array Comprised of Hexagonal Transducer Elements for Fast Volumetric Ultrasound Imaging
Hugues Favre, Merijn Berendsen, Rick Waasdorp, David Maresca
Delft University of Technology, Netherlands

11:45
3762: Quad-TOBE Arrays for Ultrafast Volumetric Imaging
Mohammad Rahim Sobhani{1}, Shayan Khorassany{2}, Negar Majidi{2}, Tyler Henry{2}, Darren Dahunsi{2}, Randy Palamar{2}, Afshin Kashani Ilkhechi{1}, Roger Zemp{1}
{1}CliniSonix / University of Alberta, Canada; {2}University of Alberta, Canada

12:00
3020: Low-Frequency Ultrasound Imaging with PMUT Array on a Conventional Silicon Wafer
Sanjog Vilas Joshi, Sina Sadeghpour, Rui Esteves, Michael Kraft
Katholieke Universiteit Leuven, Belgium

12:15
3572: Front-Side Water-Bag Coupling for Massive Electrostrictive Row-Column Arrays
Negar Majidi{2}, Mohammad Rahim Sobhani{1}, Darren Dahunsi{2}, Randy Palamar{2}, Afshin Kashani Ilkhechi{1}, Joy Wang{1}, Roger Zemp{1}
{1}CliniSonix / University of Alberta, Canada; {2}University of Alberta, Canada

12:30 – 14:00
Lunch - *On Own*

12:30 - 14:00
Student Pitch Competition
Room: Spark

14:00 - 15:30
C4L-01: MEL: Shear Wave Methods III- Beyond Conventional Estimates
Room: Kinepolis - Room 7
Session Chair(s): Chris de Korte, Radboudumc University Medical Center; Ben Castaneda, Rochester University

14:00
3844: Double Vision: Advancing Quantitative On-Axis Modulus Estimation with DoPIo Ultrasound
Caterina Gallippi
University of North Carolina at Chapel Hill / North Carolina State University, United States

14:36
2878: Shear Wave Attenuation Calculation Using Modified Stockwell-Transform-Based Method
Piotr Kijanka, Ramin Almasi
AGH University of Krakow, Poland

14:54
3618: Mapping the Viscoelastic Properties of Soft Media Using Vectorial Magnetomotive Ultrasound
David Alejandro Collazos Burbano, José Eduardo Freire, Nicholas Zufelato, Joao Uliana, Antonio Adilton Oliveira Carneiro, Theo Zeferino Pavan
University of São Paulo, Brazil

15:12
2432: Ultrasound Elastography-Based Reconstruction of Nonlinear Stress–Strain Behavior
Judith Guigon{2}, Pauline Lecomte Grosbras{1}, Annie Morch{1}, Jean-François Witz{1}, Phillipe Pernod{2}, Olivier Bou Matar-Lacaze{2}
{1}University of Lille, CNRS, Centrale Lille, LaMcube laboratory, France; {2}University of Lille, CNRS, Polytechnic University of Hauts-de-France, Centrale Lille, IEMN, France

15:30
3433: Noninvasive Estimation of Central Venous Pressure Using Ultrasound-Guided Dual-Mode Elasticity Imaging
Xinyue Huang, Stanislav Emelianov
Georgia Institute of Technology and Emory University School of Medicine, United States

14:00 - 15:30
C4L-02: MIM: Multimodal Imaging
Room: Kinepolis - Room 8
Session Chair(s): Tomas Jannson, University of Lund; Matthew Bruce, University of Washington

14:00
2309: Free-Hand Photoacoustic and Ultrasound Imaging for Enhanced 3D Vascular Reconstruction Using Deep Learning
Siyeoul Lee, Seongkyu Park, Minkyung Seo, Seonho Kim, Eonseung Seong, Imrus Salehin, Dongeon Lee, Minwoo Kim
Pusan National University, Bangladesh; Pusan National University, Korea

14:15
2682: Rotational Ultrasound and Photoacoustic Tomography of Human Body
Yang Zhang{2}, Shuai Na{1}, Jonathan J. Russin{3}, Karteekeya Sastry{1}, Li Lin{1}, Junfu Zheng{1}, Yilin Luo{1}, Xin Tong{1}, Yujin An{1}, Peng Hu{1}, Konstantin Maslov{1}, Tze-Woei Tan{3}, Charles Y. Liu{3}, Lihong V. Wang{1}
{1}California Insitute of Technology, United States; {2}California Insitute of Technology / Tsinghua University, United States; {3}University of Southern California, United States

14:30
3529: Predicting Post-Implantation Skin Breakdown Using US/PA/SWE Imaging to Mitigate Craniofacial Implant Complications
Anthony Yu{2}, Samuel M.A. Morais{1}, Xinyue Huang{3}, Jeong Hun Park{2}, Adam Verga{2}, David Zopf{4}, Scott Hollister{2}, Stanislav Emelianov{3}
{1}Georgia Institute of Technology, United States; {2}Georgia Institute of Technology and Emory University, United States; {3}Georgia Institute of Technology and Emory University School of Medicine, United States; {4}University of Wisconsin–Madison, United States

14:45
2957: Detection of Prostate Cancer Using Multiparametric Ultrasound and Deep Learning
Xueting Li{3}, Florian Delberghe{3}, Daniël van Den Kroonenberg{1}, Wim Zwart{2}, Simona Turco{3}, Jorg Oddens{1}, Massimo Mischi{3}
{1}Amsterdam University Medical Center, Netherlands; {2}Angiogenesis Analytics, Netherlands; {3}Eindhoven University of Technology, Netherlands

15:00
3006: Integrated Ultrasound, Functional Ultrasound, and Photoacoustic Tomography for Multimodal Human Imaging
Haoyang Chen{1}, Shirui Dong{2}, Wenkai Li{2}, Jiaye He{1}, Chengbo Liu{2}
{1}National Innovation Center for Advanced Medical Devices, China; {2}Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

15:15
3185: Simultaneous Functional Ultrasound Imaging and Electrophysiological Recordings of the Human Brain
Emma Gommers, Marit Verboom, Luxi Wei, Jason Voorneveld, Yichuang Han, Sadaf Souloukey Tbalvandany, Arnaud Vincent, Robert van Den Berg, Pieter Kruizinga
Erasmus University Medical Center, Netherlands

14:00 - 15:30
C4L-03: MTH: Ultrasound Therapy
Room: Kinepolis - Room 9
Session Chair(s): Mohammad Mehrmohammadi, University of Rochester; Maxime Lafond, INSERM

14:00
2722: Investigating the Roles of Sonoluminescence, Sonoporation and Sonochemistry in Sonodynamic Therapy
Eleanor Stride
University of Oxford, United Kingdom

14:15
2709: Focused Ultrasound-Activated MoS_2-Microbubbles for Non-Invasive Neuromodulation in Epilepsy Treatment
Min-Hwa Chou{2}, Ching-Hsiang Fan{1}, Chih-Kuang Yeh{2}
{1}National Cheng Kung University, Taiwan; {2}National Tsing Hua University, Taiwan

14:30
2714: Optical Fiber-Based Photoacoustic Droplet Vaporization for Enhancing Ocular Drug Delivery Efficiency
Zhe-Wei Gu, Pai-Chi Li
National Taiwan University, Taiwan

14:45
2271: Quantitative Assessment of Essential Tremor Before, During and After MR-Guided Focused Ultrasound in the Thalamus with MR-Compatible Accelerometers
Thomas Bancel{5}, Mohammed Bashaiweth{5}, Benoît Béranger{8}, Maxime Daniel{6}, Thomas Manuel{5}, Cécile Galléa{8}, Mathieu Santin{3}, Mélanie Didier{4}, Eric Bardinet{8}, David Attali{5}, Pierre Pouget{2}, Mickaël Tanter{6}, Stéphane Lehéricy{7}, Marie Vidailhet{7}, David Grabli{7}, Nadya Pyatigorskaya{3}, Carine Karachi{1}, Elodie Hainque{9}, Jean-François Aubry{6}
{1}Hôpital Pitié-Salpêtrière & Sorbonne Université, Paris Brain Institute, France; {2}ICM-Paris Brain Institute, CENIR, Inserm, CNRS, Sorbonne Université, UMRS, UPMC, AP-HP, France; {3}ICM-Paris Brain Institute, Centre de NeuroImagerie de Recherche-CENIR, Inserm, CNRS, France; {4}ICM-Paris Brain Institute, Sorbonne University, CNRS, Inserm, CENIR, France; {5}INSERM, Physics for Medicine Paris, ESPCI, Paris Science Lettres University, France; {6}Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France; {7}Paris Brain Institute, Sorbonne University, CNRS, Inserm, France; {8}Paris Brain Institute, Sorbonne University, CNRS, Inserm, CENIR, France; {9}Pitié-Salpêtrière University Hospital, Sorbonne Université, AP-HP, Paris Brain Institute, CNRS, Ins, France

15:00
2775: Recent Advances in Developing Precise, Intelligent, and Flexible Focused Ultrasound Blood-Brain Barrier Opening Techniques
Bingbing Cheng, Wenjing Li, Zhouyang Xu, Haixin Dai, Xinya Yao, Xiangkun Piao, Jia-Ji Pan
ShanghaiTech University, China

15:15
3330: Optimization of Low Intensity Pulsed Ultrasound Parameters for Effective Wound Healing
Andrea Cafarelli, Bianca Cioni, Francesco Iacoponi, Leonardo Ricotti
Sant'Anna School of Advanced Studies, Italy

14:00 - 15:30
C4L-04: MSD: Systems, Algorithms, & Research Platforms
Room: Kinepolis - Room 11
Session Chair(s): Valentino Meacci, University of Florence; Jason Voorneveld, Erasmus MC

14:00
2253: Coded Excitation for Portable, Miniature Ultrasonics
Connor Challinor, Frederic Cegla
Imperial College London, United Kingdom

14:15
3571: Compact Low-Cost Wireless Ultrasonic System for Non-Destructive Testing and Wearables
Jinhao Lu{2}, Sergei Vostrikov{1}, Jonas Welsch{2}, Martin Angerer{2}, Luca Benini{1}, Robert Rohling{2}, Edmond Cretu{2}
{1}ETH Zürich, Switzerland; {2}University of British Columbia, Canada

14:30
3220: Contrast-Enhanced PMUT-Based Weighted Frequency Image Compounding
Mantalena Sarafianou{1}, Yu Feng Thien{1}, David Sze Wai Choong{1}, Jihang Liu{1}, Yul Koh{1}, Alberto Leotti{2}, Fabrizio Cerini{2}, Young Jik Hur{2}
{1}Institute of Microelectronics, Agency for Science, Technology and Research, Singapore; {2}STMicroelectronics, Italy; {2}STMicroelectronics, Singapore

14:45
3276: Modularity Matters: ModulUS - A Sandbox for High-Resolution Wearable Ultrasound Development
Christoph Leitner, Marco Giordano, Martin Tanner, Federico Villani, Michele Magno, Luca Benini
ETH Zürich, Switzerland

15:00
3162: A Modular and Scalable System for the Control of Large or Multiple Ultrasound Arrays
Francesco Lagonigro{1}, Paolo Verdi{1}, Alessandra Vignoli{1}, Valentino Meacci{1}, Alessandro Ramalli{2}, Piero Tortoli{1}, Enrico Boni{2}
{1}University of Florence, Italy; {2}University of Florence / MSDLab, Italy

15:15
2898: Advanced Research Platform with Full Control of a 3072-Element 2-D Probe
Lorenzo Castrignano{2}, Piero Tortoli{2}, Valentino Meacci{2}, Alessandro Dallai{2}, Marco Crocco{1}, Enrico Boni{3}, Alessandro Ramalli{3}
{1}Esaote S.p.A., Italy; {2}University of Florence, Italy; {3}University of Florence / MSDLab, Italy

14:00 - 15:30
C4L-05: MIS: Deep Learning for Image Reconstruction
Room: Kinepolis - Room 12
Session Chair(s): Ruud Van Sloun, Eindhoven University of Technology; Adrien Besson, E-Scopics

14:00
2729: UltraTTT: Self-Supervised Test-Time Training for Synthetic Aperture Ultrasound Image Denoising
Jiajing Zhang, Bingze Dai, Wei-Ning Lee
University of Hong Kong, Hong Kong

14:15
2245: Real-Time Cognitive Ultrasound by Accelerated Diffusion Posterior Sampling
Wessel L. van Nierop, Oisín Nolan, Tristan S.W. Stevens, Ruud J. G. van Sloun
Eindhoven University of Technology, Netherlands

14:30
3405: Generalizable Ultrasound Despeckling via Image Restoration Diffusion Method
Shuoqi Chen{2}, Geoffrey Luke{1}
{1}Dartmouth College, United States; {2}Intuitive Surgical, Inc., United States

14:45
2636: Single-Transmission Golay-Coded Excitation Ultrasound Imaging Based on 1D CNN-Based Estimation of Complementary Codes
Suntae Hwang, Jinwoo Kim, Eunji Lee, Jin Ho Chang
Daegu Gyeongbuk Institute of Science and Technology, Korea

15:00
2287: High Volume Rate 3D Ultrasound Reconstruction with Diffusion Models
Tristan S.W. Stevens{1}, Oisín Nolan{1}, Oudom Somphone{2}, Jean-Luc Robert{2}, Ruud J. G. van Sloun{1}
{1}Eindhoven University of Technology, Netherlands; {2}Philips Research, France; {2}Philips Research, United States

15:15
3641: A Lightweight Dual-Axis Channel Recovery Network (DCRNet) for Sparse-Channel RF Data Reconstruction in Ultrasound Imaging
Jiayi Wang{1}, Zhiyu Sheng{2}, Kang Kim{2}
{1}Carnegie Mellon University, United States; {2}University of Pittsburgh, United States

14:00 - 15:30
C4L-06: MSR: Vision of the Brain
Room: Kinepolis - Room 13
Session Chair(s): Matthew Lowerison, Dukr; Olivier Couture, Sorbonne Universite

14:00
3191: Transcranial Deep-Brain Ultrasound Microvascular Imaging in Cynomolgus Macaques Through Microbubble Intensity Compensation
Yuanyang Guo, Qiandong Sun, Dean Ta, Kailiang Xu
Fudan University, China

14:15
3130: Super-Resolved Human Brain Tumor Vasculature Imaging
Luxi Wei{1}, Luuk Verhoef{1}, Paul Xing{2}, Emma Gommers{1}, Sadaf Souloukey Tbalvandany{1}, Marion Smits{1}, Wouter van Den Bossche{1}, Victor Volovici{1}, Clemens Dirven{1}, Joost Schouten{1}, Eelke Bos{1}, Anne Kleijn{1}, Peter de Smalen{1}, Arnaud Vincent{1}, Pieter Kruizinga{1}
{1}Erasmus University Medical Center, Netherlands; {2}Polytechnique Montréal, Canada

14:30
2265: Intraoperative 4D Ultrasound Localization Microscopy of Deep Cerebral Perforating Arteries
Yichuang Han{1}, Yasmin Sadigh{1}, Luuk Verhoef{1}, Luxi Wei{1}, Sadaf Souloukey Tbalvandany{1}, Paul Xing{3}, Arber Demi{1}, Emma Gommers{1}, Peter de Smalen{1}, Arend Jan de Jong{2}, Francesca De Carlo{2}, Johan Bosch{1}, Pieter Kruizinga{1}, Victor Volovici{1}, Jason Voorneveld{1}
{1}Erasmus University Medical Center, Netherlands; {2}Oldelft Ultrasound, Netherlands; {3}Polytechnique Montréal, Canada

14:45
3338: Realistic Human Brain Hemodynamics for Transcranial 3D Ultrasound Localization Microscopy Benchmarking
Juliette Reydet, Alexandre Dizeux, Nabil Haidour, Hugues Favre, Mathieu Pernot, Mickaël Tanter, Clément Papadacci
Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France

15:00
3199: 3D Ultrasound Super-Resolution Imaging for Visualization of Posterior Ocular Microvessels Using a Matrix Array with a 256-Channel System
U-Wai Lok{1}, Junhang Zhang{2}, Jingke Zhang{1}, Ryan Deruiter{1}, Lijie Huang{1}, Jingyi Yin{1}, Chengwu Huang{1}, Qifa Zhou{2}, Shigao Chen{1}
{1}Mayo Clinic, United States; {2}University of Southern California, United States

15:15
2132: Ultrasound Localization Microscopy for Robust Glaucoma Biomarkers Discovery
Peinan Liu{2}, Jie Guo{1}, Yuan Zong{1}, Xuejun Qian{2}
{1}Eye & ENT Hospital of Fudan University, China; {2}ShanghaiTech University, China

14:00 - 15:30
C4L-07: Acoustic Imaging & Microscopy & Photoacoustics
Room: Progress (Supernova)
Session Chair(s): Cristian Pantea, Los Alamos National Laboratory

14:00
2680: Scanning X-Acoustic Microscopy: Detection of Multi-Physical Properties at nm-µm Scale
Qian Cheng{2}, Di Zhang{1}, Menglu Qian{2}
{1}Institute of Acoustics, Chinese Academy of Sciences, China; {2}Tongji University, China

14:15
2258: Photo-Acoustic Subsurface Atomic Force Microscopy – Making the Invisible Visible –
Ruben Guis{2}, Zili Zhou{1}, Umit Arabul{1}, Gerard Verbiest{2}
{1}ASML, Netherlands; {2}Delft University of Technology, Netherlands

15:00
2336: Volumetric Photoacoustic Imaging with a Rotational Row-Column-Addressed Array Based on Inverse Radon Transform
Pengcheng Wan, Yihang Lian, Yi Zeng, Xiran Cai
ShanghaiTech University, China

15:15
2214: Numerically Optimizing Transcranial 3D Photoacoustic Imaging of Murine Brain Vasculature for Real-Time Monitoring of Focused Ultrasound Therapy
Tieming Liu, Antonios Pouliopoulos, Wenfeng Xia
King's College London, United Kingdom

16:00
2546: A Signal-Domain Speed-of-Sound Correction Method for Ring-Array-Based Photoacoustic Tomography
Daohuai Jiang{1}, Xuanxuan Ye{1}, Hengrong Lan{2}, Xianzeng Zhang{1}, Fei Gao{2}
{1}Fujian Normal University, China; {2}University of Science and Technology of China, China

14:00 - 15:30
C4L-08: PMI: Modelling & Inversion I
Room: Mission 1 (Supernova)
Session Chair(s): Yuan Xu, Toronto Metropolitan University

14:00
2677: Enhanced Acoustic Field Amplitude Modulation Through Physics-Informed Artificial Intelligence
Hao Quan, Xinjia Li, Wei Zhou, Long Meng
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

14:15
2382: A System Response Model to Retrieve 2D Directional Acoustic Scattering Information from Clinical Pulse-Echo Ultrasound Data
Lukas Imanuel Scheel-Platz{2}, Guillaume Zahnd{3}, Maximilian Bader{1}, Torsten Enßlin{4}, Vasilis Ntziachristos{1}, Dominik Jüstel{1}
{1}Helmholtz Munich, Germany; {2}Helmholtz Munich, Helmholtz Zentrum München GmbH, Germany; {3}iThera Medical GmbH, France; {4}Max Planck Institute for Astrophysics, Germany

14:30
2114: Three-Dimensional Model for Predicting Targeted Micro and Nanobubble Dynamics at Low Frequencies for Theranostic Applications
Ilia Mezdrokhin, Tali Ilovitsh
Tel Aviv University, Israel

14:45
2202: Simulation of Angular Spectrum Filtering Utilizing an Attenuating Layered Structure with an Emitting Piezoceramic Transducer
Petri Lassila, Dmitry Nikolaev, Joni Mäkinen, Fabio Valoppi, Edward Hæggström, Ari Salmi
Electronics Research Laboratory, University of Helsinki, Finland

15:00
2622: Quaternion-Based Analytic Solutions for Pressure Fields in Heterogeneous Media
Matthijs Hogendoorn, Fenna Bookelmann, Leo Hoogerbrugge, Eric Verschuur, Koen van Dongen
Delft University of Technology, Netherlands

15:15
2194: Ultrasonic Travel-Time Tomography for Approximating the Local Elastic Tensor in Complex Media
James Ludlam{4}, Katy Tant{3}, Andrew Curtis{2}, Victorita Dolean-Maini{1}
{1}Eindhoven University of Technology, Netherlands; {2}University of Edinburgh, United Kingdom; {3}University of Glasgow, United Kingdom; {4}University of Strathclyde, United Kingdom

14:00 - 15:30
C4L-09: APE: Performance Enhancement Techniques for Acoustic Devices
Room: Mission 2 (Supernova)
Session Chair(s): Rich Ruby, Broadcom; Songbin Gong, UIUC

14:00
2147: Partial Deposition of Si3N4 for Q Enhancement Without Gap Mode Generation in I.H.P. SAW Resonators
Ting Wu{1}, Yiming Liu{3}, Yi-Wen He{2}, Zijiang Yang{2}, Jingfu Bao{2}, Ken-Ya Hashimoto{2}
{1}Chengdu University of Technology, China; {2}University of Electronic Science and Technology of China, Japan; {2}University of Electronic Science and Technology of China, China; {3}University of Electronic Science and Technology of China/Tohoku University, China

14:15
3142: A Novel Fin-XBAR Structure for Capacitance Density Enhancement
Kejin Dai{2}, Dongchen Sui{1}, Shuai Shao{3}, Shibin Zhang{1}, Tao Wu{2}, Xin Ou{1}
{1}Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China; {2}ShanghaiTech University, China; {3}XOI Technology Co., Ltd, China

14:30
2347: Bilayer X-Cut Lithium Niobate YBAR Resonator for Wideband, High-Frequency Applications
Florian Hartmann{3}, Seniz Esra Küçük{1}, Luis Guillermo Villanueva{2}
{1}ANEMS Lab, École Polytechnique Fédérale de Lausanne / NanoRF Sàrl, Switzerland; {2}ANEMS Lab, STI-IGM-NEMS, École Polytechnique Fédérale de Lausanne , Switzerland; {3}STI-IGM-NEMS, École Polytechnique Fédérale de Lausanne , Switzerland

14:45
2688: Reconfigurable AlScN FBAR Resonators Enabled by Ferroelectric Switching
Wenzheng Jiang{1}, Xuanqi Huang{2}, Zhiqiang Mu{2}
{1}Shanghai Institute of IC Materials Co., Ltd., China; {2}Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences, China

15:00
2983: Enhancing Mechanical Stability of MEMS Resonator at Cryogenic Temperature Using Periodically Poled Thin Film
Junyan Zheng, Xingyu Liu, Zijun Ren, Kai Yang, Fangsheng Qian, Jiashuai Xu, Yansong Yang
Hong Kong University of Science and Technology, Hong Kong

15:15
3190: 18 GHz Y36 Lithium Niobate Ferroelectric Tunable Bulk Acoustic Wave Resonator
Juhun Baek, Luis Hurtado, John Duncan, Gianluca Piazza
Carnegie Mellon University, United States

14:00 - 15:30
C4L-10: TMI: Flexible Transducers
Room: Polar
Session Chair(s): Monica La Mura, Roma Tre University; Martin Angerer, The University of British Columbia (UBC)

14:00
2840: Flexible Under-Display Ultrasonic Fingerprint Sensor for Enhanced Mobile Security and User Experience
Jessica Liu Strohmann, Jae Seo, Hrishikesh Panchawagh, Kostadin Djordjev
Qualcomm Technologies, Inc., United States

14:15
3212: Development and Evaluation of CMUT-Based Curvilinear Flexible Transducer Array
Aubry Jacquenod{3}, Etienne Lemaire{1}, Nicolas Sénégond{2}, Cyril Meynier{2}, Dominique Gross{2}, Jacques Heller{2}, Flavien Barcella{1}, Quorentin Colas{2}, Claire Bantignies{2}, Dominique Certon{1}
{1}University of Tours, France; {2}Vermon, France; {3}Vermon, University of Tours, France

14:30
3287: Flexible AlScN Based PMUT Arrays for Conformal and Wearable Ultrasound
Epimitheas Georgitzikis{1}, Pieter Gijsenbergh{1}, Jeremy Segers{1}, Robert Ukropec{1}, Milind Pandit{2}, Grim Keulemans{1}, Dominika Wysocka{1}, Denis Van Lancker{1}, Zhiyuan Shen{1}, Gianluca Massimino{1}, Paresh Limaye{1}, Erwin Hijzen{1}
{1}imec, Belgium; {2}Pulsify Medical, Belgium

14:45
2371: A Wearable Doppler Ultrasound Patch for Continuous Blood Flow Monitoring
Yuanlong Li, Ziqi Li, Zhengyue Zhou, Chang Peng
ShanghaiTech University, China

15:00
2285: Printable and Wearable Ultrasound Transducers Based on Piezopolymer Composites
Shirin Movaghgharnezhad, Ehsan Ansari, Clayton Baker, Dulcce Valenzuela, Spencer Hagen, Ahmed Bashatah, Pilgyu Kang, Parag Chitnis
George Mason University, United States

15:15
3647: Conformable Ultrasound Array Using Low-Cost Additive Manufacturing
Clayton Baker{2}, Shirin Movaghgharnezhad{2}, Ehsan Ansari{2}, Richard Tobias{1}, Bob Uvacek{1}, Parag Chitnis{2}
{1}Cephasonics Ultrasound , United States; {2}George Mason University, United States

15:30 - 16:00
Coffee Break
Room: Transit Zone

15:30 - 16:30
C5P-11: MTH: Ultrasound Assisted Drug Delivery
Room: Transit Zone
Session Chair(s): Karla Mercado-Shekhar, Indian Institute of Technology Gandhinagar

2221: Development of Focused Ultrasound-Responsive T Cells
Ana Baez, Anastasia Gherghi, Elena Kuzmin, Brandon Helfield
Concordia University, Canada

2242: An In Vitro Tumor Vessel Model for Investigating Endothelial Rearrangement During Oxygen-Loaded Microbubble-Induced Vascular Normalization
Yu-Hsin Lai, Yi-Ju Ho
National Yang Ming Chiao Tung University, Taiwan

2468: Poly(Lactic Acid) Film Pockets for Ultrasound-Controlled Drug Delivery Against Spinal Infections: In Vitro and In Vivo Evaluations
Selin Isguven Billmyer, Priscilla Machado, Ryan Tomlinson, Lauren J. Delaney, Ji-Bin Liu, Noreen J. Hickok, Flemming Forsberg
Thomas Jefferson University, United States

2517: Ultrasound-Responsive Hydrogel for Spatiotemporal Bioadhesion and Synergistic Sonodynamic Therapy in Deep-Tissue Infections
Chenhui He, Yi Feng
Xi'an Jiaotong University, China

2794: Ultrasound-Triggered Vancomycin Release from Alginate and Fibrin-Based Hydrogels Incorporating Emulsion Droplets for Localized Drug Delivery
Ziba Ghareh Nazi Fam{1}, Asia Winslow{1}, Mario L. Fabiilli{2}, Sam Varghese{2}, Brian E. Oeffinger{1}, Flemming Forsberg{1}, Noreen J. Hickok{1}, Lauren J. Delaney{1}
{1}Thomas Jefferson University, United States; {2}University of Michigan, United States

3373: Programmable Bacterial Architects Crafting Sonosensitizers for Tumor-Specific Sonodynamic Immunotherapy
Zuo Yang, Zhiping Jiao, Zhongliang Wang
Xidian University, China

3444: Ultrasound-Responsive Microdroplets for Multi-Drug Delivery Applications
Alessandra Coviello, Sofia Sirolli, Leonardo Ricotti, Andrea Cafarelli
Sant'Anna School of Advanced Studies, Italy

3704: Ultrasound-Stimulated Microbubble Modulation of Endothelial Immunogenicity Enhances Immune Marker Expression
Wei Chen Lo{2}, Arutselvan Natarajan{1}, Farbod Tabesh{1}, Ramasamy Paulmurugan{1}, Ahmed Ei Kaffas{2}
{1}Stanford University, United States; {2}University of California, San Diego, United States

3284: Cross-Corneal Riboflavin Drug Delivery Enhanced and Regulated by pLIFU Cavitation for Keratoconus Treatment: Ex Vivo Study
Qiao Wang, Youjia Sun, Yaojie Wu, Diya Wang
Xi'an Jiaotong University, China

15:30 - 16:30
C5P-12: MPA: Photoacoustic Imaging Applications I
Room: Transit Zone
Session Chair(s): Kang Kim, University of Pittsburgh

2011: Prognosticating Axillary Lymph Node Metastasis in Breast Cancer Through Integrated Photoacoustic Imaging, Ultrasound, and Clinical Parameters
Zhibin Huang{1}, Sijie Mo{2}, Shuzhen Tang{2}, Mengna Shao{2}, Xiaohan Zou{2}, Fajin Dong{2}
{1}Second Clinical Medical College of Jinan University, Shenzhen People's Hospital, China; {2}Shenzhen People's Hospital, China

2647: Nakagami-Based Photoacoustic Parametric Imaging for Label-Free Evaluation of Chemotherapeutic Response in Bone Tumors
Ying Fan, Ting Feng, Abudula Aaji, Libo Jiang, Dean Ta
Fudan University, China

3286: In-Bore MRI-Compatible Transrectal Ultrasound and Photoacoustic Imaging: In Vivo Mouse Tumor Model Validation
Yichuan Tang, Ryo Murakami, Yang Wang, John Obayemi, Haichong Zhang
Worcester Polytechnic Institute, United States

3323: Stable and Photoacoustically Characterized Solutions to Mimic Whole Blood (Absorbance and Grüneisen Coefficient) at Various Oxygen Levels
Arthur Billon, Lea Davenet, Nadir Souffou, Jacques Battaglia, Sharon Lori Bridal, Jerome Gateau
Laboratoire d'Imagerie Biomédicale, Sorbonne Université, INSERM, CNRS, France

3399: A Comparison of PACT and Linear Array PA Systems for Detection of Systemic Inflammation Using Indocyanine Green J-Aggregates
Filip Bodera{3}, Mark McVey{2}, Parag Chitnis{1}, Remi Veneziano{1}, Michael Kolios{3}
{1}George Mason University, United States; {2}SickKids Hospital, Canada; {3}Toronto Metropolitan University, Canada

3498: Optimizing LED-Based Photoacoustic Imaging for Real-Time Visualization of Cervical Vasculature
Mithun Kuniyil Ajith Singh{1}, Anjali Thomas{2}, Naoto Sato{1}, Francis Kalloor Joseph{2}
{1}Cyberdyne Inc., Japan; {1}Cyberdyne Inc., Netherlands; {2}Erasmus University Medical Center, Netherlands

3611: Quantitative Ultrasound and Photoacoustic Spectroscopy for Monitoring of in Vivo nanobubble Enhanced Tumor Radiation Treatment
Idris Oussalah{4}, Elizabeth Berndl{4}, Anoja Giles{3}, Pinunta Nittayacharn{1}, Agata Exner{1}, Gregory Czarnota{2}, Michael Kolios{4}
{1}Case Western Reserve University, United States; {2}Sunnybrook Health Sciences Centre / Sunnybrook Research Institute, Canada; {3}Sunnybrook Research Institute, Canada; {4}Toronto Metropolitan University, Canada

15:30 - 16:30
C5P-13: MPA: Photoacoustic Imaging Applications II
Room: Transit Zone
Session Chair(s): Eno Hysi, University of Toronto

2054: Towards Interventional Demonstration of Endobronchial Optical Ultrasound Imaging
Shaoyan Zhang{1}, Semyon Bodian{1}, Efthymios Maneas{1}, Edward Zhang{1}, Paul Beard{1}, Richard Colchester{1}, Adrien Desjardins{2}, Erwin Alles{1}
{1}University College London, United Kingdom; {2}University College London / University of British Columbia, United Kingdom

2699: Blood Presence Density Mapping via Photoacoustics: A New Quantitative Method for Lower Limb Varicose Vein Assessment
Moemi Urano{1}, Kenichi Nagae{2}, Masahiro Jinzaki{1}
{1}Keio University School of Medicine, Japan; {2}Luxonus Inc., Japan

2752: Realistic Photoacoustic Simulations of Articular Cartilage
Yuexin Qi{1}, Roby Weeteling{1}, René van Donkelaar{1}, Rob Janssen{2}, Keita Ito{1}, Richard Lopata{1}, Min Wu{1}
{1}Eindhoven University of Technology, Netherlands; {2}Orthopaedics Center, Maxima Medical Center, Netherlands

2950: Endarterectomy Plaque Characterization Using Multimodal Ultrasound and Photoacoustic Imaging
Camilo Cano{2}, Eline Veldhuijzen{2}, Marc van Sambeek{1}, Richard Lopata{2}, Min Wu{2}
{1}Catharina Hospital, Netherlands; {2}Eindhoven University of Technology, Netherlands

3474: Amplified Photoacoustic Imaging Using Paired Dye-Contact Quencher Contrast Agents
Nikhila Nyayapathi{4}, Hossein Raeis{4}, Nisha Gheng{3}, Emily Mahoney{1}, Elaina Stafford{2}, Anna Rooney{2}, Hans Schmitthenner{2}, Mohammad Mehrmohammadi{5}
{1}Northwestern University, United States; {2}Rochester Institute of Technology, United States; {3}State University of New York at Buffalo, United States; {4}University of Rochester, United States; {5}University of Rochester Medical Center, United States

3829: A Multispectral Photoacoustic Imaging Approach to Detect Nerve Injury During Surgery
Manik Kakkar, Mohammed Shahid, Shri Prabha Shivram, Will Padovano, Rachana Suresh, Sami Tuffaha, Muyinatu A. Lediju Bell
Johns Hopkins University, United States

3832: Multimodal PA/US Imaging in Rheumatoid Arthritis: Enhanced Correlation with Clinical Scores
Zhibin Huang{1}, Sijie Mo{2}, Shuzhen Tang{2}, Mengna Shao{2}, Xiaohan Zou{2}
{1}Second Clinical Medical College of Jinan University, Shenzhen People's Hospital, China; {2}Shenzhen People's Hospital, China

15:30 - 16:30
C5P-14: MEL: Tissue Anisotropy, Dispersion, Pressure-Dependence, & Speed of Sound
Room: Transit Zone
Session Chair(s): Jinping Dong, Beijing University of Technology

2290: Comparison of Ultrasound Compression and Shear Wave Parameters for Liver Steatosis Assessment
Iman Rafati{1}, Ladan Yazdani{4}, Arnaud Héroux{2}, Casey Bourdeau Caporuscio{2}, Audrey Fohlen{2}, Bich Nguyen{2}, Hélène Castel{2}, An Tang{2}, Guy Cloutier{3}
{1}University of Montreal / University of Montreal Hospital / University of California, San Diego, Canada; {2}University of Montreal Hospital, Canada; {3}University of Montreal Hospital / University of Montreal Hospital Research Center, Canada; {4}Weill Cornell Medicine / Cornell University / University of Montreal Hospital, Canada

2442: Unravelling Anisotropic Nonlinear Shear Elasticity in Human Skeletal Muscle In Vivo
Ricardo Andrade{2}, Juliette Lancelot{2}, Antoine Nordez{2}, Jean-Luc Gennisson{1}
{1}BIOMAPS / Université Paris Saclay, CNRS, CEA, Inserm, France; {2}Laboratoire MIP - Nantes Université, France

2918: Pleural Elastography Using High-Resolution Continuous Shear Wave Thin-Layer Analysis
Ren Koda{1}, Hayato Taniguchi{4}, Yasuyuki Shiraishi{3}, Naoki Tano{2}, Marie Tabaru{2}, Yoshiki Yamakoshi{1}
{1}Gunma University, Japan; {2}Institute of Science Tokyo, Japan; {3}Tohoku University, Japan; {4}Yokohama City University Medical Center, Japan

3026: Shear Vertical Mode Detection for Characterization of Anisotropic Tissues Using Shear Wave Elastography: A Comparison of Single and Dual Probe Setups
Lorena Claeys, Estelle Pitti, Auxane Valembois, Matilda Larsson
Karolinska Institutet, KTH Royal Institute of Technology, Sweden

3247: A Pilot Study on the Effect of Intratendinous Pressure on Shear Wave Elastography in the Achilles Tendon
Ariana Cihan{2}, Clara Ketele{2}, Lauren Pringels{3}, Luc Vanden Bossche{3}, Hendrik J Vos{1}, Patrick Segers{2}, Annette Caenen{4}
{1}Erasmus University Medical Center, Delft University, Belgium; {2}Ghent University, Belgium; {3}Ghent University, Ghent University Hospital, Belgium; {4}Katholieke Universiteit Leuven / Ghent University, Belgium

3258: Ultrasound Time-Harmonic Elastography in Adult Zebrafish
Mareike Wolff, Jakob Jordan, Julia Köppke, Anja Heeren-Hagemann, Ingolf Sack, Tom Meyer
Charité - Universitätsmedizin Berlin, Germany

3445: Reconstructing Shear Wave Dispersion Curves Using Time-Frequency Analysis and Limited Field-of-View Data
Wiktor Jachym, Piotr Kijanka
AGH University of Krakow, Poland

3835: High Frame Rate Speckle Tracking Echocardiography to Assess Left Ventricular Repolarization and Factors Determining Left Ventricular Mechanical Dispersion
Konstantina Papangelopoulou{1}, Laurine Wouters{1}, Marta Orlowska{1}, Annette Caenen{2}, Joris Ector{1}, Jens-Uwe Voigt{1}, Jan D'Hooge{1}
{1}Katholieke Universiteit Leuven, Belgium; {2}Katholieke Universiteit Leuven / Ghent University, Belgium

3462: Evaluation of the Acute Effects of Aerobic Exercise on Carotid Artery Mechanics Using Pulse Wave Imaging in Active Subjects In Vivo
Parth Gami{1}, Rosalía Minyety{1}, Yaffa Wolicki{2}, Kellie Hoehing{1}, Alexander Chui{1}, Ariana Olivares{1}, Adriana Dipple{1}, Rochelle Goldsmith{1}, Michael Lipton{1}, Elisa E. Konofagou{1}
{1}Columbia University, United States; {2}Columbia University Medical Center, United States

15:30 - 16:30
C5P-15: MEL: Wave Speed & Viscoelasticity
Room: Transit Zone
Session Chair(s): Bao-Yu Hsieh, Chang Gung University

2414: Determinants of Group Velocity Flow Sensitivity in Vascular Elastography
Charles Capron, Matthew W. Urban
Mayo Clinic, United States

2544: Improving Quantitative Viscoelastic Response (QVisR) Ultrasound with Spatial Information
Lucas Gillette{1}, Joseph Richardson{1}, Caterina Gallippi{2}
{1}University of North Carolina at Chapel Hill, United States; {2}University of North Carolina at Chapel Hill / North Carolina State University, United States

3376: Group Velocity Estimate of Human Common Carotid Artery in Patients with Spontaneous Coronary Artery Dissection (Scad)
Yuqi Wang, Marysia Tweet, Sarah Baker, Matthew W. Urban
Mayo Clinic, United States

3586: Comparison of Reverberant Shear Wave Speed Estimators in Non-Ideal Fields
Gilmer Flores Barrera{2}, Edmundo Zarate{1}, Stefano Romero{1}, Benjamin Castaneda{2}, Kevin Parker{2}
{1}Pontifical Catholic University of Peru, Peru; {2}University of Rochester, United States

3638: Multi-Plane Shear Wave Elastography: Towards 3D Imaging of Tissue Viscoelasticity
Ryan Pitsinger, Abdelrahman Elmeliegy, Murthy Guddati
North Carolina State University, United States

15:30 - 16:30
C5P-16: MIS: Motion Estimation & Compensation
Room: Transit Zone
Session Chair(s): Barbara Nicolas, University of Lyon

2522: Pulse Wave Velocity Estimation in the Brachial Artery by Ultra-Fast Ultrasound: In-Silico Study
Agata Barbagini{1}, Simona Turco{1}, Roksolana Shevchenko{1}, Jens Muehlsteff{2}, Massimo Mischi{1}
{1}Eindhoven University of Technology, Netherlands; {2}Philips Research, Netherlands

2549: Towards Whole Hand and Wrist Kinematic Tracking with a Wearable A-Mode Ultrasound Probe
Giusy Spacone, Luca Benini, Andrea Cossettini
ETH Zürich, Switzerland

2645: A Cross-Domain Framework for Motion Estimation in Ultrasound Imaging
Yang Leng, Wei-Ning Lee
University of Hong Kong, Hong Kong

2857: Deep Complex Network for Vascular Wall Motion Tracking in Ultrasound Imaging
Anika Tabassum Sejuty, Ngoc Cuc Phuong Nguyen, Suhyun Park
Ewha Womans University, Korea

3424: Automated Analysis of Fetal Heart Rate from VSI-Based Ultrasound Using Segmentation-Guided Optical Flow
Emilio Ochoa Alva{3}, Luis Revilla Dominguez{2}, Stefano Romero{2}, Thomas Marini{4}, Marika Toscano{1}, Maria Helguera{3}, Benjamin Castaneda{3}
{1}Johns Hopkins University, United States; {2}Pontifical Catholic University of Peru, Peru; {3}University of Rochester, United States; {4}University of Rochester Medical Center, United States

3487: Estimated Motion-Compensated Compounding (EMC2) with Recursive Aperture Decoded Imaging (READI) Using Top Orthogonal to Bottom Electrode (TOBE) Arrays
Tyler Henry{2}, Darren Dahunsi{2}, Negar Majidi{2}, Mohammad Rahim Sobhani{1}, Afshin Kashani Ilkhechi{1}, Roger Zemp{1}
{1}CliniSonix / University of Alberta, Canada; {2}University of Alberta, Canada

3824: 3D Echocardiography with High Spatiotemporal Resolution via Motion Compensation and Clutter Filtering
Xiaoke Zhang, Xipeng Chen, Pengfei Xu, Tongyu Wang, Chaoyu Wang, Diya Wang
Xi'an Jiaotong University, China

3825: Unsupervised Deep Learning for Displacement Estimation of Echocardiograms Using Both B-Mode and Radiofrequency Data
Sarah Mia Shen-Lee Liu, Hannah Schleifer, Elisa E. Konofagou
Columbia University, United States

15:30 - 16:30
C5P-17: MIS: Image Reconstruction & Correction
Room: Transit Zone
Session Chair(s): Kai Riemer, Imperial College London

2443: An Adversarial-Learning Framework to Recover IQ Signals from Random Sparse-Aperture Transmissions in Synthetic Aperture Ultrasound
Jiajing Zhang, Wei-Ning Lee
University of Hong Kong, Hong Kong

2537: Wavelet Fourier Convolution-Based Deep Learning to Reconstruct from Radio Frequency to B-Mode Image
Hyunsu Jeong{2}, Chiho Yoon{2}, Minsik Sung{2}, Kiduk Kim{3}, Dougho Park{1}, Chulhong Kim{2}
{1}Pohang Stroke and Spine Hospital, Korea; {2}Pohang University of Science and Technology, Korea; {3}University of Ulsan College of Medicine, Korea

2831: Multi-Task Learning-Driven Speed-of-Sound (SoS) Estimation and Real-Time SoS Correction
Minkyu Lee{2}, Gihun Park{1}, Youngeun Choi{1}, Doyoung Jang{2}, Hyejin Kim{3}, Heechul Yoon{1}
{1}Dankook University, Korea; {2}Future Imaging Research Lab, Dankook University, Korea; {3}Samsung Research, Samsung Electronics Co., Korea

2947: Inverse Problem for Joint Deconvolution, Despeckling, and Source Separation in B-Mode Ultrasound
Samuel Beuret, Adrien Besson, Baptiste Hériard-Dubreuil, Claude Cohen-Bacrie
E-Scopics, France

3117: Dynamic Range-Invariant GAN Reconstruction via Optimized Target Training in Medical Ultrasound Imaging
Silvia Seoni{1}, Massimo Salvi{1}, Giulia Matrone{2}, Kristen Meiburger{1}
{1}Polytechnic University of Turin, Italy; {2}University of Pavia, Italy

3236: UltraAttPix: Attention-Enhanced Generative Adversarial Network for High-Quality 3D Ultrafast Diverging Wave Ultrasound Imaging
Tongyu Wang, Xipeng Chen, Pengfei Xu, Xiaoke Zhang, Chaoyu Wang, Diya Wang
Xi’an Jiaotong University, China

3239: SC-NeRF: Structure-Constrained Neural Radiance Field for Enhanced Bone Ultrasound 3D Reconstruction
Yifang Li{2}, Yueyu Huang{3}, Jiayu Da{4}, Fei Ouyang{1}, Lu Qiang{1}, Yongzhi Deng{5}, Xiaojun Song{3}, Dean Ta{2}
{1}First People's Hospital of Chenzhou, China; {2}Fudan University, China; {3}Shanghai University of Electric Power, China; {4}ShanghaiTech University, China; {5}Shenzhen Third People's Hospital, China

3354: Ultrasound Image Restoration via Diffusion in the Fourier Space Decomposition
Vassili Pustovalov, Anes Ghouli, Duong-Hung Pham, Denis Kouamé
IRIT Laboratory, France

3465: Reducing Switching Noise in Radiofrequency Ultrasound Signals Using Deep Neural Networks
Edoardo Bosco{2}, Alessandro Ramalli{1}, Giulia Matrone{2}
{1}University of Florence / MSDLab, Italy; {2}University of Pavia, Italy

15:30 - 16:30
C5P-18: MIM: Functional Imaging
Room: Transit Zone
Session Chair(s): Maria Evertsson, Lund University

2028: Adaptive Singular Value Decomposition-Based Fascia Suppression for Diagnostic Power Doppler Ultrasound Image Processing
Yongchao Wang{2}, Yang Liu{1}, Xingzhao Liu{2}, Jianbo Tang{2}
{1}City University of Hong Kong, China; {2}Southern University of Science and Technology, China

2608: Unsupervised Semantic Consistent Reconstruction Framework for Ultrafast Plane-Wave Imaging
Jingfeng Lu, Wenzhuo Liang, Yi Zhang
Sichuan University, China

3192: Optimization of Automatic Transcranial Hemodynamic Response Function Assessment in the Mouse Brain for Neurovascular Coupling Alterations Measurements
Elias Boulebnane{1}, Finn Timmermans{2}, Chelsey Linnenbank{2}, Jérémy Thalgott{2}, Mickaël Tanter{1}, Franck Lebrin{2}, Thomas Deffieux{1}
{1}Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, France; {2}Leiden University Medical Center, Netherlands

3340: Improvement in Phase Velocity Map Reconstruction Using Attention Based Deep Denoising of Shear Wave Velocity Fields
Phidakordor Sahshong{2}, Akash Chandra{1}, Karla P Mercado Shekhar{1}, Manish Bhatt{2}
{1}Indian Institute of Technology Gandhinagar, India; {2}Indian Institute of Technology Guwahati, India

3672: Knowledge Distillation-Based Clutter Filtering for Ultrasound Microvascular Imaging
Seonho Kim, Chunsu Park, Yubin Cho, Siyeoul Lee, Dongeon Lee, Minwoo Kim
Pusan National University, Korea

15:30 - 16:30
C5P-19: MIM: Cardiovascular Imaging
Room: Transit Zone
Session Chair(s): Kai Riemer, Imperial College London

3050: PDFNet: A Flow Matching Network for PSF Deconvolution in Echocardiography
Sang-Yun Kim{2}, Seok-Hwan Oh{2}, Myeong-Gee Kim{1}, Young-Min Kim{2}, Guil Jung{2}, Hyeonjik Lee{2}, Jungjae Son{2}, Hyuksool Kwon{3}, Hyeon-Min Bae{2}
{1}Barreleye, Korea; {2}Korea Advanced Institute of Science and Technology, Korea; {3}Seoul National University Bundang Hospital, Korea

3131: Generation of Realistic Cardiac Ultrasound Sequences with Ground Truth Motion and Speckle Decorrelation
Thierry Judge{1}, Nicolas Duchateau{1}, Pierre-Marc Jodoin{2}, Olivier Bernard{1}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {2}University of Sherbrooke, Canada

3435: Analysis of the Performance of Mixed-Data CNNs for Echocardiographic Decision Support
Paulo Tostes{1}, Ahmed S. Beela{2}, Somayeh Akbari{1}, Helena Williams{1}, Joost Lumens{2}, Jan D'Hooge{1}
{1}Katholieke Universiteit Leuven, Belgium; {2}Maastricht University, Netherlands

3441: Deep-Learning to Predict Outcome of Crt Based on Pulsed-Wave Doppler, Clinical Biomarkers and Pacemaker Settings
Paulo Tostes{1}, Ahmed S. Beela{2}, Somayeh Akbari{1}, Helena Williams{1}, Joost Lumens{2}, Jan D'Hooge{1}
{1}Katholieke Universiteit Leuven, Belgium; {2}Maastricht University, Netherlands

3530: Fast and Automated Artery-Vein Classification in Neonates Using Ultrafast Doppler and Convolutional Neural Network
Nikan Fakhari{2}, Alison Howell{2}, Luc Mertens{2}, Axel Nael{1}, Olivier Villemain{1}, Jerome Baranger{3}
{1}Bordeaux University Hospital, Canada; {1}Bordeaux University Hospital, France; {2}Hospital for Sick Children, Canada; {3}Institute Physics for Medicine Paris, Inserm, ESPCI Paris, PSL University, CNRS, Canada

15:30 - 16:30
C5P-20: MTC: Cancer Tissue Characterization
Room: Transit Zone
Session Chair(s): Cameron Hoerig, Weill Cornell Medicine

2279: Multiparametric Ultrasound Imaging for Monitoring Early Cancer Response to Transarterial Chemoembolization in Liver - Initial Clinical Results
Wenjuan Zhou{1}, Corinne Wessner{2}, Carin Gonsalves{2}, David Eschelman{2}, Robert Adamo{2}, John Eisenbrey{2}, Kenneth Hoyt{1}
{1}Texas A&M University, United States; {2}Thomas Jefferson University, United States

2372: Calcifications and Margins as Biomarkers in Differentiating Thyroid Cancer Subtypes
Hanna Piotrzkowska-Wróblewska{1}, Agnieszka Żyłka{2}, Katarzyna Dobruch-Sobczak{2}, Piotr Karwat{1}, Marek Dedecjus{2}, Jerzy Litniewski{1}
{1}Institute of Fundamental Technological Research, Polish Academy of Sciences, Poland; {2}Maria Sklodowska-Curie National Research Institute of Oncology, Poland

3269: Limitations of Random Matrix Theory to Quantify the Vasculature of Weakly Scattering Cancer Tissue
Parniyan Norouzzadeh{1}, François Legrand{1}, Paul A. Dayton{2}, Marie Muller{1}
{1}North Carolina State University, United States; {2}University of North Carolina at Chapel Hill / North Carolina State University, United States

3393: In Vivo Classification of Lymph Node Metastasis Using Quantitative Ultrasound Imaging at Clinical Frequencies
Elmira Ghahramani{4}, Cameron Hoerig{4}, Kristie Huda{1}, Heather Chan{2}, Maoxin Wu{3}, Kirk Wallace{2}, Jonathan Mamou{4}
{1}GE HealthCare Technology & Innovation Center, United States; {2}GE HealthCare Technology and Innovation Center, United States; {3}Stony Brook Medicine, United States; {4}Weill Cornell Medicine / Cornell University, United States

15:30 - 16:30
C5P-21: Acoustic Imaging & Microscopy
Room: Transit Zone
Session Chair(s): Martin Angerer, The University of British Columbia (UBC)

2658: Development of Focusing Acoustic Microscopy for Noninvasive Mechanical Stimulation and Viscoelasticity Measurement on Live-Cell Nucleus
Natsumi Fujiwara, Hiroki Okita, Mee-Hae Kim, Masahiro Kino-Oka, Hirotsugu Ogi
University of Osaka, Japan

3517: The Use of Ultrasonics in the Frequency Range of 50MHz Up to 175MHz for Cultural Heritage Objects' 3D µtomography
Georgios Karagiannis{2}, Theodoros Karagiannis{1}, Emmanouil Karagiannis{1}
{1}Diagnosis Multisystems, Greece; {2}ORMYLIA Foundation / Art Diagnosis Center, Greece

3656: Point Spread Function in Synthetic Transmit Aperture Ultrasound Imaging
Shivani Sharma, Na Zhao, Yuan Xu
Toronto Metropolitan University, Canada

15:30 - 16:30
C5P-22: Signal Processing & Underwater Acoustics
Room: Transit Zone
Session Chair(s): Martin Angerer, The University of British Columbia (UBC)

2477: Open-Sourced Vessel Extraction Algorithm Using Structural Dissimilarity Mapping
Tianyu Zhang{2}, Jinpeng Liao{2}, Zhengshuyi Feng{2}, Chunhui Li{1}, Zhihong Huang{2}
{1}University of Dundee, United Kingdom; {2}University of York, United Kingdom

2744: Nanobubble Flow Characterization in Nonlinear Contrast Imaging
Yu Weng{3}, Luke Coulter{4}, Muhammad Khan{3}, Agata Exner{1}, Eno Hysi{2}, Michael Kolios{3}
{1}Case Western Reserve University, United States; {2}St. Michael's Hospital / University of Toronto, Canada; {3}Toronto Metropolitan University, Canada; {4}University of Waterloo, Canada

2914: Human Location Estimation in Bathrooms Using the Doppler Effect of 25-kHz Spatial Ultrasound
Natsuki Nishio, M. Shahrul Amir Kamarulzaman, Shintaro Izumi, Hiroshi Kawaguchi
Kobe University, Japan

2845: Underwater Vital Monitoring Using 315kHz Ultrasound Doppler Sensor with DSSS
Sota Ito, Hisashi Togo, Shintaro Izumi, Hiroshi Kawaguchi
Kobe University, Japan

2576: Cross-Platform Performance Evaluation and Optimization of Chirplet Signal Decomposition Algorithm for Ultrasonic Signal Analysis
Tianyang Fang, Austin Fite, Jafar Saniie
Illinois Institute of Technology, United States

2872: Resolution Enhancement and Speckle Reduction in Hyper-Beamforming-Based ASAI Imaging
To Lee, Che-Chou Shen
National Taiwan University of Science and Technology, Taiwan

2890: Acoustically Transparent and Programmable Metamaterial for Reconfigurable Acoustic Hologram
Mengru Zhang, Youlong Hua, Jian Chen
Zhejiang University, China

2354: Alcohol Detection via Ultrasound Signal Classification Using a Convolutional Neural Network
Jin Hyeong Park, Maaz Salman, Hae Gyun Lim
Pukyong National University, Korea

15:30 - 16:30
C5P-23: PMI: Modelling & Inversion II
Room: Transit Zone
Session Chair(s): Tingzhong Xu, Silicon Austria Labs GmbH

2057: Leveraging Raytracing Hardware for In-Air Ultrasonic Simulation in Large and Dynamic Scenes
Wouter Jansen{1}, Nico J. Steyl{3}, Jan Steckel{2}
{1}Cosys-Lab, University of Antwerp, Belgium; {2}Cosys-Lab, University of Antwerp & Flanders Make Strategic Research Centre, Belgium; {3}Digital Direct SA, South Africa

2276: Transcranial Focused Ultrasound Modeling of an Ex-Vivo Human Skull Using the Spectral-Element Method
Isha Lohan{4}, Patrick Marty{4}, Ya Gao{5}, Beat Werner{1}, Beatrice Lauber{6}, Giovanni Colacicco{6}, Daniel Razansky{3}, Héctor Estrada{2}, Andreas Fichtner{4}
{1}Center for Magnetic Resonance (MR) Research, University Children's Hospital Zurich, Switzerland; {2}Institute for Biomedical Engineering, ETH Zürich, University of Zurich, Switzerland; {3}Institute for Biomedical Engineering, University of Zurich, ETH Zürich, Switzerland; {4}Institute of Geophysics, ETH Zürich, Switzerland; {5}Tongji University / Institute for Biomedical Engineering, ETH Zürich, Switzerland; {6}University of Zurich, Switzerland

2319: Ultrasonic Guided Wave Beam Solutions in Anisotropic Composite Plates
Sumika Yamada{2}, Taizo Maruyama{2}, Akira Furukawa{1}
{1}Hokkaido University, Japan; {2}Institute of Science Tokyo, Japan

2941: Self-Consistent Approach to Homogenization of Concrete for Wave Propagation
Taizo Maruyama
Institute of Science Tokyo, Japan

2956: A Ray Tracing-Based Simulator for 3D Acoustic Fields in Inhomogeneous Media
Øyvind Krøvel-Velle Standal{1}, Amirfereydoon Mansoori{2}, Marco Marien Voormolen{1}, Martijn Egbert Frijlink{2}
{1}InPhase Solutions AS, Norway; {2}InPhase Solutions AS / University of South-Eastern Norway, Norway; {2}InPhase Solutions AS / University of South-Eastern Norway, Netherlands

15:30 - 16:30
C5P-24: ANI: Acoustic Devices Based on Novel Materials & Integration
Room: Transit Zone
Session Chair(s): Henry Yue, TEL

2313: Low Loss Mid/High Band Filter Integration in Single Die Using a Multi-Layered SAW Device on a Direct Mount Type Package
Shinji Takeuchi, Takahiro Hasegawa, Ryohei Komiyama, Takayuki Suzuki
TAIYO YUDEN Mobile Technology Co., Ltd, Japan

3415: Vertical Microfabrication of Quartz Crystal Without Forming Damaged Layer via Gas-Phase Catalyst Etching
Ko-Hei Sano{2}, Yoshitaka Ono{1}, Keishi Tsukiyama{1}, Sho Nagai{1}, Yasuo Hayashi{1}, Takahiko Yanagitani{3}
{1}AGC Inc., Japan; {2}Waseda University / AGC Inc., Japan; {3}Waseda University, ZAIKEN, Japan

3785: GHz BAW Resonators Using Depletion Layers of GaN and SiC Semiconductor Single Crystals
Ayaka Hanai, Nana Shimazaki, Takahiko Yanagitani
Waseda University, ZAIKEN, Japan

2080: Polarization Inverted SiAlN/ScAlN Multilayer Film BAW Resonators Operating in High Overtone Mode Resonances
Masashi Suzuki, Kei Fukunaga, Shoji Kakio
University of Yamanashi, Japan

15:30 - 16:30
C5P-25: TMU: Piezoelectric Micromachined Ultrasonic Transducers II
Room: Transit Zone
Session Chair(s): Yipeng Lu, Peking University

2328: Boosting Output Pressure in Multi-Frequency CMOS-Compatible PMUTs Through Differential Biasing
Eyglis Ledesma, Ahsan Shabeer, Arantxa Uranga, Francesc Torres, Núria Barniol
Autonomous University of Barcelona, Spain

2559: Experimental Validation of an Improved PMUT Model Based on Elastic Supports
Amirfereydoon Mansoori{1}, Lars Hoff{2}, Einar Halvorsen{2}
{1}InPhase Solutions AS / University of South-Eastern Norway, Norway; {2}University of South-Eastern Norway, Norway

3016: Flip-Chip Packaging Impact on Flexible Piezoelectric Micromachined Ultrasonic Transducer
Javad Abbaszadeh, Muhammad Hasan Malik, Annalisa De Pastina, Humberto Campanella
Silicon Austria Labs GmbH, Austria

3830: High-Order Piezoelectric Micromachined Ultrasonic Transducer with Enhanced Transmit Performance via Electrode Optimization
Jiahao Yuan, Yi Ping, Junxiang Cai, Tao Wu
ShanghaiTech University, China

15:30 - 16:30
C5P-26: TMI: Biomedical Transducers
Room: Transit Zone
Session Chair(s): Brooks Lindsey, Georgia Institute of Technology

2273: Influence of Array Configuration for 3D Imaging
Maxime Bilodeau, Nicolas Quaegebeur
University of Sherbrooke, Canada

2473: Miniaturized Acoustic Concentrators for Local Generation of Ultrasonic Waves
Ibrahima Toure, Maxime Bilodeau, Nicolas Quaegebeur
University of Sherbrooke, Canada

2497: Research on Piezoelectric Composite with Double-Helix Structure for High-Frequency Transducer
Hongchao Li, Wenwu Cao, Jie Xu, Xiaohua Jian
Nanjing University, China

2964: Experimental Comparison of a Large Divergent Elements Sparse Array and Row-Column Array for 3D Ultrasound Imaging
Jean-Baptiste Jacquet{1}, Khuram Faraz{1}, Mohamed Tamraoui{1}, Barbara Nicolas{1}, Etienne Coffy{3}, Pierre Kauffmann{3}, Hervé Liebgott{2}, Jean-Luc Guey{3}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {2}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm / UJMSaint-Et, France; {3}IMASONIC, France

3240: HD Contrast and Harmonic Imaging Based on a Dual-Frequency Linear Array Transducer with Co-Focusing Structure
Weichang Wu, Zhiqiang Zhang, Min Su, Weibao Qiu
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

3559: 2D Ultrasound Transducer Sub-Array Misalignment Correction Using Chirp Transmission and Matched Filtering
Thomas Carpenter, Elliott Smith, Hao Guo, Luzhen Nie, David Cowell, Steven Freear
University of Leeds, United Kingdom

3682: Hybrid Phased Array Transducer for Transcranial Ultrasound Imaging and Guidance of Leaky Lamb Waves to Characterize Intracerebral Hemorrhage
Amaar Qureshi{1}, Sai Kuchibhatla{1}, Stephan Strassle Rojas{1}, Alper Erturk{1}, Brooks Lindsey{2}
{1}Georgia Institute of Technology, United States; {2}Georgia Institute of Technology and Emory University, United States

16:30 - 17:30
C6L-01: MEL: Natural Waves in the Circulatory System & Motion Tracking
Room: Kinepolis - Room 7
Session Chair(s): Jean Provost, Polytechnique de Montreal; Hans Martin Schwab, Eindhoven University of Technology

16:30
2455: Precise Isotropic Displacement Tracking with Coherent Multi-Transducer Ultrasound Allows Full Normal/Shear Strain Estimation in 2D Elastography
Jack Pearce, Paul Dryburgh, Joseph V Hajnal, Laura Peralta Pereira
King's College London, United Kingdom

16:45
2603: High-Frame-Rate Ultrasound Analysis of Carotid Wave Reflections for Cerebrovascular Resistance Assessment
Jason Hsu, Hassan Nahas, Alfred Yu
University of Waterloo, Canada

17:00
3184: 3D Mechanical Path Reconstruction: Toward Tissue Anisotropy Quantification
Sébastien Salles{5}, Torvald Espeland{4}, Jack Sauvage{3}, Annette Caenen{2}, Corentin Alix{5}, François Varray{1}, Hans Torp{4}, Lasse Løvstakken{4}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {2}Katholieke Universiteit Leuven / Ghent University, Belgium; {3}Laboratoire d'Imagerie Biomédicale, Sorbonne Université, INSERM, CNRS, France; {4}Norwegian University of Science and Technology, Norway; {5}University of Bordeaux, CNRS, Centre de Resonance Magnetique, CRMSB, France

17:15
3386: Longitudinal Monitoring of Early-Stage Atherosclerosis Using Pulse Wave Imaging: A Preliminary Study in Swine Model
Haokang Shi, Pengcheng Liang, Parth Gami, Tuhin Roy, Nancy Kwon, Rosalía Minyety, Elisa E. Konofagou
Columbia University, United States

16:30 - 17:30
C6L-02: MCA: Droplet & Microbubble Technology
Room: Kinepolis - Room 8
Session Chair(s): Tim Segers, University of Twente; Avinoam Bar-Zion, Technion

16:30
2757: Sensitization of Nanodroplets to Protons at 37°C Through Wide-Field Volumetric Acoustic Modulation
Sophie Heymans{3}, Bram Carlier{3}, Marcus Ingram{3}, Kenneth Poels{4}, Marc Desmaret{2}, Nicolas Gerard{2}, Alessandro Ramalli{5}, Marc Fournelle{1}, Edmond Sterpin{3}, Jan D'Hooge{3}, Koen Van Den Abeele{3}
{1}Fraunhofer Institute for Biomedical Engineering IBMT, Germany; {2}Ion Beam Applications, Belgium; {3}Katholieke Universiteit Leuven, Belgium; {4}University Hospitals Leuven, Belgium; {5}University of Florence / MSDLab, Italy

16:45
2129: Vaporization of Acoustic Microdroplets in Hydrogels for Porous Scaffold Formation in Tissue Engineering
Hen Shenhav, Bar Glickstein, Tiran Bercovici, Tali Ilovitsh
Tel Aviv University, Israel

17:00
3452: Ultrasound-Stimulated Microbubbles Affect Extracellular Matrix Topography and 3D Cultured Cell Function
Zoe Katz, Ana Baez, Kyle Hazel, Elahe Memari, Brandon Helfield
Concordia University, Canada

17:15
2257: Tuning Initial Surface Tension and Buckling Pressure of Monodisperse Microbubbles by Changing Agitation Time
Chang Lu, Hongyi Zhang, Ruchuan Shi, Peng Qin
Shanghai Jiao Tong University, China

16:30 - 17:30
C6L-03: MBE: Brain & Neurological I
Room: Kinepolis - Room 9
Session Chair(s): Elly Martin, University College London; Costas Arvanitis, Georgia Tech University

16:30
2277: High-Resolution Imaging of Vessel Displacement Induced by Acoustic Radiation Force in the Mouse Brain
Yitong Li{1}, Lukas Glandorf{1}, Paul Wrede{1}, Daniel Razansky{3}, Hector Estrada{2}
{1}Institute for Biomedical Engineering, ETH Zürich, Switzerland; {2}Institute for Biomedical Engineering, ETH Zürich, University of Zurich, Switzerland; {3}Institute for Biomedical Engineering, University of Zurich, ETH Zürich, Switzerland

16:45
2386: Selective Sub-Nucleus Ultrasound Stimulation Induces Synaptic Potentiation in the Mouse Hippocampus
Zhengrong Lin, Wei Zhou, Lili Niu, Long Meng, Hairong Zheng
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

17:00
3237: PULSAR: Predictive Ultrasound Localization and Skull Aberration Reference for Preclinical Treatments
Marco Micali, Marta Grossi, Antonio Canichella, Nicola Toschi, Allegra Conti
University of Rome tor Vergata, Italy

17:15
3590: Focused Ultrasound Interventions Increase Neurogenesis and Reduce Anxiety in Wild-Type Mice
Daniella Amanda Jimenez, Moshe Willner, Seongyeon Kim, Craig Macsemchuk, Gillian Ciaccio, Rashell Ramirez, Fotios Tsitsos, Elisa E. Konofagou
Columbia University, United States

16:30 - 17:30
C6L-04: MIM: Computational Imaging
Room: Kinepolis - Room 11
Session Chair(s): Pauline Muleki-Seya, CREATIS, University of Lyon; Russell Witte, University of Arizona

16:30
2991: A GPU-Accelerated Ultrasound RF Data Simulator Based on Field II for Fast Dataset Generation
Mohamed Tamraoui{1}, Jean-Baptiste Jacquet{1}, François Varray{1}, Hervé Liebgott{2}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {2}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm / UJMSaint-Et, France

16:45
2609: Advanced Deep Learning Reconstruction Models for Compressive Functional Ultrasound Imaging
Edouard Koehn, Valeria Grasso, Tommaso Di Ianni
University of California, San Francisco, United States

17:00
3690: GPU-Based Acceleration for Real-Time Speed-of-Sound Imaging
Haotian Chen{1}, Jingyi Zuo{2}, Yuanbin Zhu{2}, Md Rizwanul Kabir{2}, Aiguo Han{2}
{1}University of Illinois Urbana-Champaign, United States; {2}Virginia Polytechnic Institute and State University, United States

17:15
3337: Enhancing Ultrasound Training with AI-Driven Real-Time Feedback
Abdoul Aziz Amadou{1}, Vivek Singh{2}, Young-Ho Kim{2}, Puneet Sharma{2}, Alistair Young{1}, Kawal Rhode{1}
{1}King's College London, United Kingdom; {2}Siemens Healthineers, United States

16:30 - 17:30
C6L-05: MPA: Clinical Photoacoustic Imaging
Room: Kinepolis - Room 12
Session Chair(s): Michael Kolios, Toronto Metropolitan University; Muyinatu Bell, Johns Hopkins University

16:30
2154: VCSEL Pulse Length Optimization for Clinical Photoacoustic Imaging
Marie Claye, Antonia Longo, Braden Eliason, Christoph Dehner, Patrick Leisching, Guillaume Zahnd
iThera Medical GmbH, Germany

16:45
2481: Miniaturized Photoacoustic Wrist Sensor with Beamforming for Radial Artery Imaging and Vascular Dynamics Study
Sumit Agrawal, Hrishikesh Panchawagh, Kostadin Djordjev
Qualcomm Technologies, Inc., United States

17:00
2767: Interplay Between Acoustic Frequency and Optical Wavelength for Predicting Outcomes of Kidney Transplants Using Ultrasound-Guided Photoacoustics
Hisham Assi{1}, Sarah Dykstra{6}, Jihye Baek{4}, Xiaolin He{3}, Michael Kolios{5}, Kevin Parker{7}, Darren Yuen{2}, Eno Hysi{2}
{1}St. Michael's Hospital, Canada; {2}St. Michael's Hospital / University of Toronto, Canada; {3}St. Michael's Hosptial, Canada; {4}Stanford University, United States; {5}Toronto Metropolitan University, Canada; {6}University of Michigan, United States; {7}University of Rochester, United States

17:15
3090: Center Frequency Spectrum Analysis in Photoacoustic Imaging Enables Detection of Basal Cell Carcinoma and Malignant Melanoma
Azin Khodaverdi, Tobias Erlöv, Magne Stridh, Marcus Tegnér, John Albinsson, Malin Malmsjö, Magnus Cinthio
Lund University, Sweden

16:30 - 17:30
C6L-06: MBB: Deep Learning & 3D Beamforming
Room: Kinepolis - Room 13
Session Chair(s): Ruud J.G. Van Sloan, Eindhoven University of Technology; Adrian Basarab, University of Lyon

16:30
3082: Adaptive Transmit Design of RCA Ultrasound Imaging for Needle Tracking Using Reinforcement Learning
Tristan S.W. Stevens{1}, Wessel L. van Nierop{1}, Piotr Jarosik{2}, Ruud J. G. van Sloun{1}
{1}Eindhoven University of Technology, Netherlands; {2}us4us Ltd., Poland

16:45
3488: Beamformer Fusion Using Deep Learning for 3D Ultrasound Imaging with Sparse Arrays
Edoardo Bosco{4}, Mohamed Tamraoui{1}, Jean-Baptiste Jacquet{1}, Hervé Liebgott{3}, Adrian Basarab{2}, Giulia Matrone{4}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {2}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm / TPAC NDT, France; {3}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm / UJMSaint-Et, France; {4}University of Pavia, Italy

17:00
3217: Reinforcement Learning-Augmented Ultrasound Beamforming for Precision Needle Tracking
Gayathri Malamal{1}, Mahesh R. Panicker{2}
{1}FUJIFILM VisualSonics Inc. / Indian Institute of Technology Palakkad, India; {2}Singapore Institute of Technology / Indian Institute of Technology Palakkad, Singapore

17:15
2938: Inverse Problem-Based Method for 3D Ultrasound Beamforming with Fully Populated and Sparse Arrays
Zhiyuan Li{1}, Jean-Baptiste Jacquet{1}, Mohamed Tamraoui{1}, Yue Zhao{3}, Hervé Liebgott{2}, François Varray{1}
{1}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm, France; {2}CREATIS, Université de Lyon, INSA-Lyon, Université Claude Bernard Lyon 1, CNRS, Inserm / UJMSaint-Et, France; {3}Harbin Institute of Technology, China

16:30 - 17:30
C6L-07: Material & Defect Characterization I
Room: Progress (Supernova)
Session Chair(s): Frederic Cegla, Imperial College

16:30
3007: Imaging the Microstructure and Determining the Elasticity of Meteorites Using Spatially Resolved Acoustic Spectroscopy
Wenqi Li, Matt Clark, Richard J. Smith
University of Nottingham, United Kingdom

16:45
2894: Semi-Supervised Delamination Imaging Method Based on Guided Wavefield Anomaly Recognition
Yitian Yan{1}, Kang Yang{2}, Yizhe Gao{1}, Zhifeng Tang{3}, Fuzai Lv{3}, Yang Liu{1}
{1}State Key Laboratory of Precision Measuring Technology and Instruments, Tianjin University, China; {2}University of Florida, United States; {3}Zhejiang University, China

17:00
2298: Resonant Ultrasound Spectroscopy for Piezoelectric Relaxation by Hopping Conduction in Fe-Doped GaN: Accurate Determination of Piezoelectric Coefficients
Kanta Adachi, Hirotsugu Ogi, Nobutomo Nakamura
University of Osaka, Japan

17:15
3228: Air-Coupled Ultrasound Spectroscopy for Electrolyte Fill Level Detection in Lithium-Ion Pouch Cell Batteries
Daniel Herring{2}, John Thornby{1}, Sabrina Kombrink{3}, Tony Samuel{5}, Wuttichai Somyanonthanakun{4}, Alexander Roberts{4}, Nishal Ramadas{1}
{1}Hy-Met Ltd., United Kingdom; {2}University of Birmingham, United Kingdom; {3}University of Bremen, Germany; {4}University of Coventry, United Kingdom; {5}University of Exeter, United Kingdom

16:30 - 17:30
C6L-08: Phononics & Opto-Acoustics
Room: Mission 1 (Supernova)
Session Chair(s): Andreas Mayer, HS Offenburg - Univ. of Applied Sciences, Gengenbach

16:30
2404: Reflector-Free Acoustic Shear-Horizontal Surface Phononic Crystal Resonator for Biosensing
Jessica Monaldi, Mourad Oudich, Frédéric Sarry, Francis Kosior, Laurent Badie
University of Lorraine, CNRS, Institut Jean Lamour, France

16:45
2641: Oscillating Microbubble Array-Based Metamaterials (Omams) for Tunable Ultra-Deep Subwavelength Acoustic Field Control
Xinjia Li, Hao Quan, Wei Zhou, Long Meng
Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences, China

17:00
2908: Resonance Tuning of Circular Ultrasonic Arrays Using Air-Coupled Waveguides
Sören Soennecken{2}, Sonja Wismath{2}, Jan Helge Dörsam{2}, Anton Herzog{3}, Christoph Haugwitz{2}, Nils Demuth{2}, Hanna Malang{1}, Christoph Heyl{1}, Mario Kupnik{2}
{1}Deutsches Elektronen-Synchrotron DESY, Germany; {2}Technical University of Darmstadt, Germany; {3}Technical University of Munich, Germany

17:15
2973: Generation of Photoacoustic Holograms Using Binary Light Fields
Yang Shang{1}, Ya Gao{2}, Haohan Sun{1}, Xingliang Tao{1}, Yuxuan Cheng{1}, Qian Cheng{1}
{1}Tongji University, China; {2}Tongji University / Institute for Biomedical Engineering, ETH Zürich, China

16:30 - 17:30
C6L-09: AMD: Microacoustic Sensors, Delays, & Power Conversion
Room: Mission 2 (Supernova)
Session Chair(s): Omar Elmazria, Université de Lorraine; Ausrine Bartasyte, FEMTO-ST

16:30
3439: Integrated Infrared Detectors in Lithium Niobate Acoustic Resonators
Ian Anderson, Zarko Sakotic, Jack Kramer, Vakhtang Chulukhadze, Yinan Wang, Noah Mansfield, Daniel Wasserman, Ruochen Lu
University of Texas at Austin, United States

16:45
3461: Revolutionize Bulk Acoustic Wave Gyroscopes Through the Exploitation of Topological Interface States
Onurcan Kaya, Tommaso Maggioli, Marco Galli, Kapil Saha, Siddhartha Ghosh, Marco Colangelo, Matteo Rinaldi, Cristian Cassella
Northeastern University, United States

17:00
3752: Periodically Poled Piezoelectric Lithium Niobate Resonator for Piezoelectric Power Conversion
Ziqian Yao{3}, Clarissa Daniel{1}, Lezli Matto{2}, Heather Chang{1}, Vakhtang Chulukhadze{3}, Eric Stolt{1}, Michael Liao{2}, Mark Goorsky{2}, Juan Rivas-Davila{1}, Ruochen Lu{3}
{1}Stanford University, United States; {2}University of California, Los Angeles, United States; {3}University of Texas at Austin, United States

17:15
3221: A Low-Loss Lithium Niobate on Sapphire SH-SAW Delay Line with Rayleigh Mode Mitigation via Multistrip Couplers
Sung-Yuan Huang, Zhi-Qiang Lee, Ya-Ching Yu, Yu-Sian Lin, Ming-Huang Li
National Tsing Hua University, Taiwan

16:30 - 17:30
C6L-10: TMU: Piezoelectric Micromachined Ultrasonic Transducers for Biomedical Applications
Room: Polar
Session Chair(s): Alessandro Stuart Savoia, Roma Tre University; Tingzhong Xu, Silicon Austria Labs GmbH

16:30
3711: A Low-Voltage Driven Large Bandwidth pMUT Array for Continuous Hemodynamic Imaging in the Carotid Artery: An In-Vitro and In-Vivo Study
Tong Jin{3}, Chenfang Yan{2}, Zijie Zhao{2}, Qiong He{5}, Xinchao Lu{2}, Jiahan Yu{2}, Chang Su{4}, Hanyin Cui{1}, Chengjun Huang{2}, Hang Gao{2}
{1}Institute of Acoustics, Chinese Academy of Sciences, China; {2}Institute of Microelectronics, Chinese Academy of Sciences, China; {3}Institute of Microelectronics, Chinese Academy of Sciences / Tsinghua University, China; {4}State Key Laboratory of Acoustics, Institute of Acoustics, Chinese Academy of Sciences, China; {5}Tsinghua University, China

16:45
2693: Pulsed-Wave Doppler Measurement Based on a PMUT Array
Yinjie Ma, Hanzhang Liu, Chenzhi You, Zhengyu Li, Feng Yin
Southeast University, China

17:00
3051: Electrical Impedance Matching to Curved PMUTs Enabling 1V Low Voltage Ultrasound Radial Artery Monitoring
Xiaofan Hu{2}, Yongquan Ma{2}, Yuewu Gong{3}, Zhuochen Wang{1}, Wei Pang{2}, Peng Fei Niu{2}
{1}Beijing University of Chemical Technology, China; {2}State Key Laboratory of Precision Measuring Technology and Instruments, Tianjin University, China; {3}Sun Yat-sen University Nanchang Research Institute, China

17:15
2434: Ultrasound Imaging Using Stitched PMUTs in Third Vibration Mode for Enhanced Resolution
Sina Sadeghpour{2}, Rui Amendoeira Esteves{2}, Goh Duan Jian{1}, Koh Yul{1}, Zhu Yao{1}, Michael Kraft{2}
{1}Institute of Microelectronics, Agency for Science, Technology and Research, Singapore; {2}Katholieke Universiteit Leuven, Belgium

17:30 - 17:45
Closing and Beer
Room: Flame Foyer

17:45 - 19:00
Closing Ceremony
Room: Polar

19:00 - 20:30
Student Social
Room: Speys