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Welcome Message from the General Chairs

Welcome to IEEE IUS 2022, Venice Conference Center on Lido Island

Whether you are attending IEEE IUS 2022 in person or virtually, we hope that this meeting, organized in the beautiful, bridge-spanned city of Venice, will allow you to build many bridges of productive exchange of your own. Whether that be with the leaders in the field of ultrasonics from industry and academia, or in sharing ideas among the generations, ranging from the most experienced emeriti to students starting out with a totally fresh perspective.

There are some interesting links between the IUS 2022 and the local history. For example, the most celebrated festival in Venice is the Festa del Redentore, taking place on the 3rd Sunday of July to celebrate the end of the plague in 1577. Here, nearly 450 years later we are celebrating widening opportunities to meet together again as the recent pandemic begins to wane. Meanwhile, the nearby University of Padova celebrates 800 years of freedom of thought this year, while at IUS we will celebrate the 150-year anniversary of the birth of Paul Langevin and his contributions to the foundations of the field of ultrasound in our Closing Session.

For those who will be able to attend in person, we hope that in addition to rich experiences at the conference, they will be marked by the beauty and history of this municipality in the Venice lagoon. An agent will be available in the exhibit area to help you organize your visit to the city. The social program aims to provide relaxed time to catch up with old friends and to make new connections. The reception mixer at the venue on Tuesday will be flavored with the celebrated arts of Venice. The gala dinner on Wednesday will be served with flair at the beautiful Excelsior Hotel.

Thank you to the IEEE UFFC-S for management and sponsorship of the IUS 2022. We are also very grateful to all the patrons and exhibitors who are supporting IUS 2022. Their financial contributions enrich technical and social events, while their availability at the meeting provides 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 FujiFilm VisualSonics and Verasonics as Platinum patrons, Vermon and Cephasonics Ultrasound as Gold patrons, and STMicroelectronics, us4us and Ferroperm Piezoceramics A/S as Silver patrons. Please see the full list of sponsors here: https://2022.ieee-ius.org/patrons-exhibitors/

If you visit the IUS 2022 website you can see the faces and names of all the members of the organizing committee who have worked with creativity and professionalism to pull together the countless elements behind a wonderful conference experience. We have been accompanied in this task by the outstanding members of the professional conference organizers: Conference Catalysts and, locally, The Office.

We very sincerely wish you an exciting and productive few days together both in Venice and from afar.

IUS General Co-Chair
S. Lori Bridal, CNRS and Sorbonne University
(France)

IUS General Co-Chair
Enrico Grisan, London South Bank University
(UK) and University of Padova (Italy)

IUS 2022 Organizing Committee

General Chairs
Lori Bridal
Enrico Grisan

Technical Program Chairs
Georg Schmitz
Mengxing Tang

Finance Chairs
Elsa Angelini
Daniel Stevens
Christine Demore

Award Chair
Jan Brown

Short Courses Chairs
Piero Tortoli
Roberto Lavarello

Challenge Chairs
Hervé Liebgott
Muyinatu Bell

Publications Chairs
Peter Lewin
Alfred Yu

Program Chair
Sevan Harput

Hybrid Chair
Libertario Demi

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Joel Harley
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Sheronica James
Sahil Sharma

WIE Chairs
Dana Weinstein
Meaghan O'Reilly

Local Arrangements Chairs
Giulia Matrone
Alessandro Stuart Savoia

User Experience Chair
Hoda Hashemi

IUS Guidance Committee Chair
Jan D'hooge

IEEE UFFC-S VP Symposia
Sandy Cochran

IEEE UFFC-S President
Mark Schafer

Welcome Message from the Technical Program Chairs

Dear members of the Ultrasonics community,

The technical program committee has created a dynamic IUS 2022. We sincerely hope that the on-demand content and the CONFlux platform will allow everyone to take even greater advantage of the wealth of scientific content offered over these three, fully-packed days.

On Monday, 15 short courses will be presented to attendees in Venice and in their home countries. In all, 1587 original abstracts were contributed and selected after peer review to compose up to 9 parallel sessions to provide a forum for 1174 contributing authors (720 posters and 501 oral presentations) spanning key fields in ultrasound. The symposium is highly international with authors from 42 countries around the world presenting their work during the 3-day technical program.

We are pleased to announce that on Tuesday, Sir John Pendry of Imperial College London will present an exciting, opening keynote presentation on *Waves in time dependent systems*. His talk will explain paradoxical phenomena of apparently acausal wave behavior, such as bending light to make an invisibility cloak, and promises to show some conceptual cross-over from nano-optics to acoustics. We will also take time to celebrate the many contributions made to the UFFC-S society over the year, with the presentation of the UFFC Awards.

Throughout the technical program, we have three clinical speakers and 20 invited talks. The Tuesday Student Paper Competition finalist's posters, will be completed by oral presentations of their work on Wednesday or Thursday. The Student Paper awards and the Ultrasonics awards will be given at the plenary session that closes the first day of the technical program.

Students can buff-up their CV writing and interview skills and network with professionals on Wednesday. They will also highlight oratorical skills at the Student Pitch Competition on Thursday. The biannual challenge event will be on Ultrasound Localisation and Tracking Algorithms for Super Resolution (Ultra-SR Challenge) this year. Sponsored by Verasonics, Bracco and Philips, it has a dedicated double-session on Wednesday and has attracted 26 participants from 12 countries. There are also many networking events such as the Women in Engineering lunch, the Young Professionals Panels I & II, Industry Mock Interviews, Industry Technical Roundtables and the Industry Workshops.

The Closing Session, featuring a celebration of the 150th Anniversary of the birth of Paul Langevin, the originator of modern ultrasound, will be presented by Francis Duck and Tom Szabo. It will be followed by the Ultra-SR Challenge award, conference highlights and a few words in closing.

IUS Technical Program Chair
Georg Schmitz, Ruhr-Universität Bochum
(Germany)

IUS Technical Program Chair
Mengxing Tang, Imperial College London (UK)

IUS 2022 Technical Program Committee

Group 1: Medical Ultrasonics

Group Chair: Hervé Liebgott, University of Lyon, CREATIS
Co-Chair: Helen Mulvana, University of Strathclyde

Mike Averkiou, University of Washington
Kenneth Bader, University of Chicago
Adrian Basarab, University of Lyon
Carolyn Bayer, Tulane University
Muyinatu Bell, Johns Hopkins University
Mark Borden, University of Colorado Boulder
Ayache Bouakaz, INSERM
Lori Bridal, CNRS at Sorbonne University
Matthew Bruce, University of Washington
Elisabeth Brusseau, CNRS
Ewen Carcreff, TPAC
Stefan Catheline, INSERM, LabTAU
Jean-Yves Chapelon, INSERM
Shigao Chen, Mayo Clinic
Hong Chen, Washington University in St. Louis
Parag Chitnis, George Mason University
Magnus Cinthio, Lund University
Guy Cloutier, University of Montreal
Olivier Couture, CNRS at Sorbonne University
Jan D'hooge, Catholic University of Leuven
Jeremy Dahl, Stanford University
Paul Dayton, University of North Carolina
Nico de Jong, Erasmus Medical Centre
Chris de Korte, Radboud University Medical Center
Libertario Demi, University of Trento
Marvin Doyley, University of Rochester
Emad Ebbini, University of Minnesota
Yonina Eldar, Weizmann Institute of Science
Stanislav Emelianov, Georgia Institute of Technology and Emory University School of Medicine
Mostafa Fatemi, Mayo Clinic
Kathy Ferrara, Stanford University
Stuart Foster, University of Toronto
Brian Fowlkes, University of Michigan
Steven Freear, University of Leeds
Caterina Gallippi, University of North Carolina
Damien Garcia, INSERM
James Greenleaf, Mayo Clinic
Aiguo Han, University of Illinois at Urbana-Champaign
Hideyuki Hasegawa, University of Toyama
Peter Hoskins, University of Edinburgh
John Hossack, University of Virginia
Chih-Chung Huang, National Cheng Kung University
Safeer Hyder, Sukkur IBA University
Jørgen Jensen, Technical University Denmark
Jonas Jensen, BK Medical
Hiroshi Kanai, Tohoku University

George Kapodistrias, Samsung Research America
Jeff Ketterling, Weill Cornell Medicine
Kang Kim, University of Pittsburgh
Michael Kolios, Ryerson University
Elisa Konofagou, Columbia University
Klazina Kooiman, Thoraxcenter, Erasmus MC
Denis Kouamé, U Paul Sabatier Toulouse
Nobuki Kudo, Hokkaido University
Arun Kumar Thittai, Indian Institute of Technology Madras
Cyril Lafon, INSERM, LabTAU
Roberto Lavarello, Pontificia Universidad Católica del Perú
Wei-Ning Lee, University of Hong Kong
Pai-Chi Li, National Taiwan University
Hervé Liebgott, University of Lyon
Richard Lopata, Eindhoven University of Technology
Thanasis Loupas, Philips Ultrasound
Lasse Lovstakken, Norwegian University of Science and Technology
Jian-yu Lu, University of Toledo
Geoff Luke, Dartmouth College
Jianwen Luo, Tsinghua University
João Machado, University of Rio de Janeiro
Jonathan Mamou, Weill Cornell Medicine
Giulia Matrone, University of Pavia
Mami Matsukawa, Doshisha University
Bob McGough, Michigan State U.
Mohammad Mehrmohammadi, Wayne State U
Karla Mercado-Shekhar, Indian Institute of Technology Gandhinagar
Massimo Mischi, Einhoven University of Technology
Larry Mo, Independent Consultant
Marie Muller, North Carolina State University
Helen Mulvana, University of Strathclyde
Kathy Nightingale, Duke University
Svetoslav Nikolov, BK Ultrasound
William O'Brien, University of Illinois
Michael Oelze, University of Illinois
Virginie Papadopoulou, University of North Carolina at Chapel Hill
Theo Pavan, University of Sao Paulo
Mathieu Pernot, ESPCI Paris
Gianmarco Pinton, U. North Carolina
Jean Provost, École Polytechnique de Montréal
Alessandro Ramalli, University of Florence
Yoshifumi Saijo, Tohoku University
Georg Schmitz, Ruhr-Universität Bochum
Ralf Seip, SonaCare Medical, LLC
Himanshu Shekhar, Indian Institute of Technology Gandhinagar
Pengfei Song, University of Illinois
Dean Ta, Fudan University

Mengxing Tang, Imperial College London
Mickael Tanter, INSERM
Kai Thomenius, Massachusetts General Hospital
Piero Tortoli, University of Florence
Juan Tu, Nanjing University
Matthew Urban, Mayo Clinic
Ton van der Steen, Erasmus Medical Centre
Tomy Varghese, U. Wisconsin
Francois Vignon, Philips Research North America
Mingxi Wan, Xi'an Jiaotong University
Xueding Wang, University of Michigan
Kendall Waters, Siemens Healthineers
Keith Wear, Food and Drug Administration
Wilko Wilkening, Siemens Healthineers

James Wiskin, QT Ultrasound Inc.
Tao Wu, ShanghaiTech University
Zhen Xu, University of Michigan
Tadashi Yamaguchi, Chiba University
Chih-Kuang Yeh, National Tsing Hua University
Shin Yoshizawa, Tohoku University
Alfred Yu, University of Waterloo
Roger Zemp, University of Alberta
Bajram Zeqiri, National Physical Laboratory
Xiaoming Zhang, Mayo Clinic
Yue Zhao, Harbin Institute of Technology
Hairong Zheng, Shenzhen Institutes of Advanced Technology
Yujin Zong, Xi'an Jiaotong University

Group 2: Sensors, NDE & Industrial Applications

Group Chair: Kui Yao, A*STAR, Singapore
Co-Chair: Erdal Oruklu, Illinois Institute of Technology

Robert C. Addison, Rockwell Science Center
Walter Arnold, Fraunhofer Institute for Nondestructive Testing
James Blackshire, Air Force Research Laboratory
Ramazan Demirli, Arable Labs
James Friend, UCSD
Anthony Gachagan, University of Strathclyde, Glasgow
David Greve, Carnegie Mellon University
Edward Haeggstrom, University of Helsinki
Joel Harley, University of Florida
Jacqueline Hines, Applied Sensor R&D Corporation
Patrick Johnston, NASA Langley Research Center
Lawrence W. Kessler, Sonoscan Inc.

Mario Kupnik, Technische Universität Darmstadt
Yufeng Lu, Bradley University
Roman Maev, University of Windsor
Donald McCann, Seadrill
Jennifer Michaels, Georgia Institute of Technology
Kentaro Nakamura, Tokyo Institute of Technology
Erdal Oruklu, Illinois Institute of Technology
Nishal Ramadas, Hy-Met Limited, UK
Jafar Saniie, Illinois Institute of Technology
Bernhard Tittmann, Pennsylvania State University
John F. Vetelino, University of Maine
Paul Wilcox, University of Bristol
William Wright, University College Cork
Kui Yao, A*STAR, Singapore
Donald E. Yuhas, Industrial Measurement Systems

Group 3: Physical Acoustics

Group Chair: Yook-Kong Yong, Rutgers University
Co-Chair: Dave Feld, Skyworks, Inc.

Anne Bernassau, Heriot Watt University
Jan Brown, JB Consulting
Charles Courtney, University of Bath
Dave Feld, Skyworks, Inc.
Agnes Huynh, Institut des NanoSciences de Paris
Brice Ivira, Broadcom Ltd
Yun Jing, Penn State University
Takefumi Kanda, Okayama University
Piotr Kiełczyński, Polish Academy of Sciences
Eun Sok Kim, University of Southern California
Kimmo Kokkonen, Qualcomm, Inc.
Minoru Kuribayashi Kurosawa, Tokyo Institute of Technology
Amit Lal, Cornell University

John Larson, Broadcom Ltd
Vincent Laude, FEMTO-ST / CNRS
Margaret Lucas, University of Glasgow
Teng Ma, SIAT
Andreas Mayer, HS Offenburg – Univ. of Applied Sciences, Gengenbach
Alex Maznev, MIT
Anthony Mulholland, University of Bristol
Mihir Patel, Skyworks, Inc.
Masaya Takasaki, Saitama University
Koen W.A. van Dongen, Delft University of Technology
István A. Veres, Qorvo Inc.
Jörg Wallaschek, Leibniz Universität Hannover
Ji Wang, Ningbo University
Takahiko Yanagitani, Waseda University
Yook-Kong Yong, Rutgers University
Likun Zhang, University of Mississippi

Group 4: Microacoustics – SAW, FBAR & MEMS

Group Chair: Amelie Hagelauer, University of Bayreuth
Co-Chair: Shuji Tanaka, Tohoku University
Ben Abbott, Skyworks Solutions, Inc.

Robert Aigner, Qorvo, Inc.
Ausrine Bartasyte, University of Franche-Comté
Sunil Bhave, Purdue University
Paul Bradley, Broadcom Ltd.
Marta Clement, Polytechnic University of Madrid (UPM)
Omar Elmazria, Université de Lorraine
Songbin Gong, University of Illinois at Urbana Champaign
Amelie Hagelauer, Technical University of Munich
Tao Han, Shanghai Jiao Tong University
Ken-ya Hashimoto, Chiba University
Shogo Inoue, Qorvo, Inc.
Michio Kadota, Tohoku University
Jyrki Kaitila
Jan Kuypers, Blickfeld GmbH
Ryo Nakagawa, Murata Manufacturing Co., Ltd.

Hiroyuki Nakamura, Skyworks Solutions, Inc.
Natalya Naumenko, National University of Science and Technology "MISIS"
Tuomas Pensala, VTT Technical Research Centre of Finland
Mauricio Pereira da Cunha, University of Maine
Maximilian Pitschi, Qualcomm / RF360 Europe GmbH
Matteo Rinaldi, Northeastern University
Rich Ruby, Broadcom Ltd.
Hagen Schmidt, Leibniz Institute for Solid State and Materials Research Dresden (IFW Dresden)
Marc Solal, Qorvo, Inc.
Shuji Tanaka, Tohoku University
Masanori Ueda, Taiyo Yuden Co., Ltd.
Karl Wagner, Qualcomm / RF360 Europe GmbH
Ventsislav Yantchev, Chalmers University of Technology
Sergei Zhgoon, National Research University "MPEI" (Moscow Power Engineering Institute)

Group 5: Transducers & Transducer Materials

Group Chair: Omer Oralkan, NC State University
Co-Chair: Alessandro Stuart Savoia, Roma Tre University

Jeremy Brown, Dalhousie University
Dominique Certon, François Rabelais University of Tours
David Cowell, University of Leeds
Christopher Daft, River Sonic Solutions
Loriann Davidsen, Philips Healthcare
Christine Démoré, University of Toronto
Charles Emery, Method Surgical AI
Arif Sanli Ergun, Orchard Ultrasound Innovation, LLC
Nicolas Felix, Vermon SA
Tomas Gomez, CSIC, Madrid
Anne-Christine Hladky, Institut Supérieur d'Electronique et du Numerique
Xiaoning Jiang, NC State University
Valsala Kurusingal, Thales Australia

Koko Lam, The Hong Kong Polytechnic University
Ho-yong Lee, Ceracomp Co., Ltd
Xiang Li, Acoustic Life Science Co., Ltd.
Franck Levassort, François Rabelais University of Tours
Richard O'Leary, University of Strathclyde
Omer Oralkan, NC State University
Weibao Qiu, Shenzhen Institutes of Advanced Technology
Wei Ren, Xi'an Jiaotong University
Yongrae Roh, Kyungpook National University
Stefan Rupitsch, Friedrich-Alexander University
Alessandro Stuart Savoia, Roma Tre University
Jessica Liu Strohmann, Qualcomm
Susan Trolier-McKinstry, Pennsylvania State University
Jian Yuan, ALS Shanghai
Shujun Zhang, University of Wollongong
Qifa Zhou, University of Southern California

General Information

Venue
The Conference Center
Venice Convention Center, Lido Island, Lungomare Guglielmo Marconi, 30, 30126 Venezia VE, Italy

Hotel Excelsior
Lungomare Guglielmo Marconi, 41

Registration Hours
Please visit the registration desk in Palazzo del Casinò to pick up your registration materials. You will only need to check-in once to pick up your badge.

CONFlux Virtual Platform
Login credentials will be sent out to all registrants a few days ahead of the conference.
https://ius2022.conflux.events/

Monday, October 10
7:45 - Short Course Badge Pick-Up
8:30 to 18:00 – Attendee Badge Pick-Up

Tuesday, October 11
7:30 to 18:30 – Registration Open

Wednesday, October 12
7:30 to 18:00 – Registration Open

Thursday, October 13
7:30 to 18:30 – Registration Open

Poster Sessions
The poster sessions will be held in Sala Laguna and Sala Adriatico on the 3rd floor of the Palazzo del Casino. To help you find the posters you are most interested in, a numbered layout map will be posted in these rooms and on the IUS 2022 web site.

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

Speaker-Ready Room
Sala Frau (Cinema 2.1)

ALL speakers with an oral presentation **MUST** bring their presentation slides (on a USB drive) to the speaker-ready **at least 3 hours** prior to their scheduled presentation time so that technicians there can upload the slides to their session-room computer. For those presenting in the first morning session, slides must be submitted in the speaker ready room between 15:00 and 18:00 of **the day BEFORE** the presentation.

It will NOT be possible to bring your presentation slides directly to the session room and presentations from personal laptops will NOT be possible.

The speaker ready room will be open on Monday from 18:00 – 20:00, Tuesday from 7:30 – 18:00, Wednesday from 7:30 – 18:00 and Thursday from 7:30 – 16:30.

The venue floorplans will be posted on the conference website.
https://2022.ieee-ius.org/

Exhibitor Layout

First Floor - Palazzo del Casinò

PERLA ROOM

B1 — VERASONICS

VERMON — B11

TFT — B2

ACERTARA — B3

B6 — US4US

SONIC CONCEPTS — B4

B7 — PHYSIK INSTRUMENTE

GAMPT — B5

B8 — FUJIFILM

PRECISION ACOUSTICS — B9

CATERING AREA

REGISTRATION AREA

SAL — B12

FUSE — B13

TELEMED — B14

FRAUNHOFER (2) — B15 B16

FERROPERM — B10

VOLPI ROOM
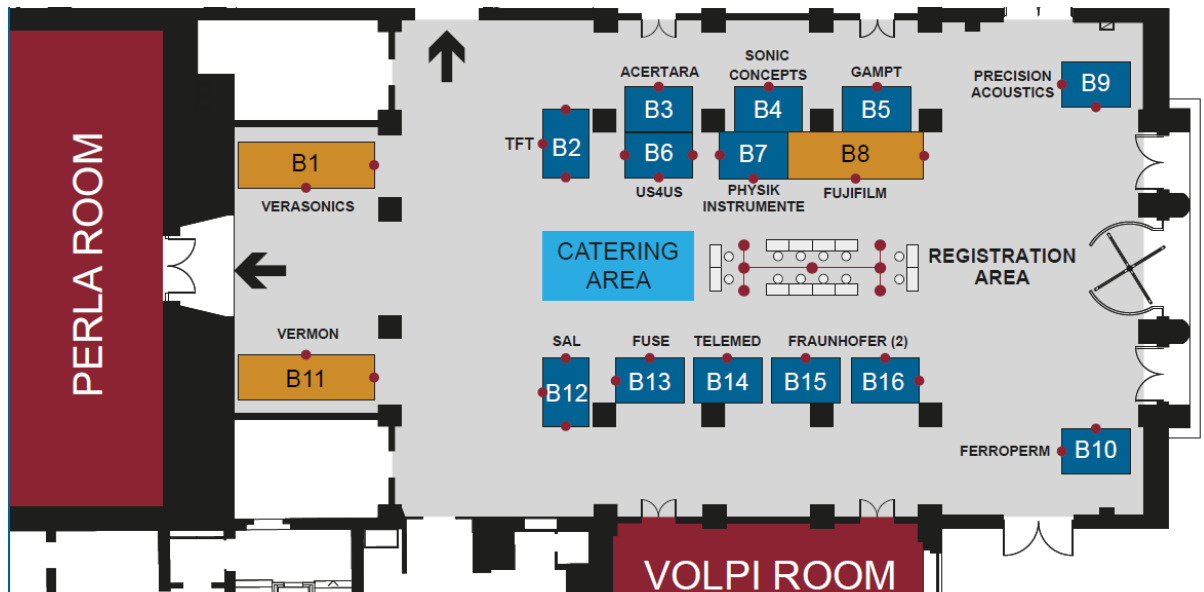
Ground Floor – Palazzo del Cinema

B18 — CEPHASONICS

CATERING AREA

POLYTEC — B19

B20 — STMICRO ELECTRONICS

B21 — TPAC

B22 — ONDA

DAXSONICS

IMASONIC — B26

B25 — DAXSONICS

E&I — B24

GEEGAH — B23

CATERING AREA

magazzino

LOCALE UPS LOCALE Q.E.

BAGNO ANTBAGNO BAGNO ANTBAGNO

PHOTOCALL

B27 — FUF   B28 — NOVOSOUND

BAM — B29

TOTEM AUTOPORTANTE

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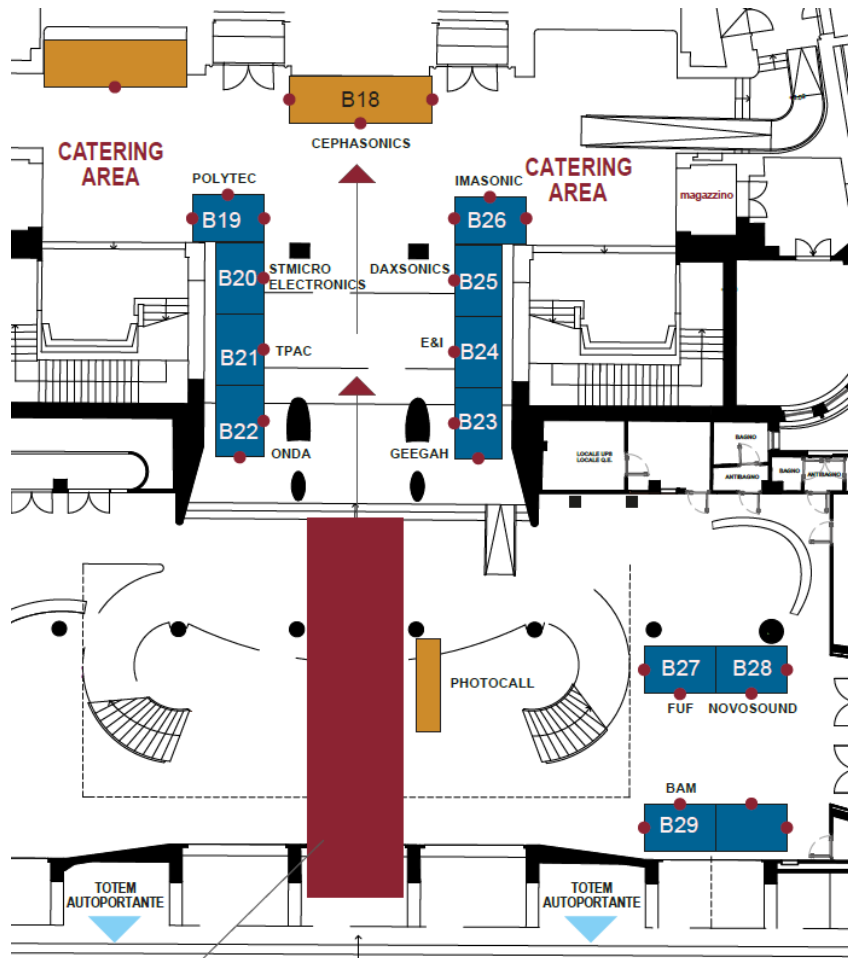
Company	Booth Assigned
Acertara Acoustic Laboratories	3
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Daxsonics Ultrasound Inc.	25
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TFT Corporation	2
The Phased Array Company	21
us4us Ltd.	6
Verasonics	1
Vermon	11

Plenary Speakers

Tuesday, October 11
14:00 – 15:00 CET
Room: Sala Grande (Cinema 1.2)

Waves in time dependent systems
Sir John Pendry, Imperial College London

Sir John Pendry is a paradigm-breaking researcher in nano-optics who has demonstrated how wave properties hold the key to making objects invisible.

Waves interacting with static structures have long been studied in many settings: ultrasonics, acoustics, optics, radar and ocean waves to name a few. More recently interest has turned to time dependent systems in which the system parameters vary on a time scale comparable to the period of the waves or even faster. Of particular interest are systems where the material components do not physically move but whose parameters are phased in time from point to point. Because of the absence of physical motion, disturbances can be created that move with any desired velocity. In the case of optics this can mean faster than light and it can create several paradoxical phenomena including apparently (but not truly) acausal behaviour of signals. I shall discuss recent results from my own background in electromagnetism and optics, but will also point out the general nature of our results, particularly in acoustics, where realisation of some of the theoretical concepts can more readily be achieved than in optics.

Closing Session

Thursday, October 13
18:00 – 19:00 CET
Room: Sala Grande (Cinema 1.2)

The Closing Session will feature a commemoration of Paul Langevin's 150th Anniversary, to be presented by Francis Duck, recently retired Professor of the University of Bath and Tom Szabo, Professor of Biomedical Engineering at Boston University and author of the well-known book, Diagnostic Ultrasound Imaging: Inside Out.

This presentation will feature many firsts including piezoelectric transducers, and pulse echo systems for sonar and imaging, and it will be followed by the challenge awards, conference highlights, and a few words in closing.

Speakers: Francis Duck & Thomas L. Szabo

Invited Speakers

Anton Hofmeister
STMicroelectronics
Tuesday, October 11 – 17:30 (A4L-01)

PMUT – AN ENABLING TECHNOLOGY FOR THE AGE OF "ULTRASOUND DEMOCRATIZATION"

Francesco Prada
Carlo Besta Neurological Institute
Wednesday, October 12 – 12:00 (B3L-07)

CLINICAL TALK: ULTRASOUND IN NEUROSURGERY: FROM IMAGING TO THERAPY

Giovanna Ferraioli

Medical School University of Pavia
Wednesday, October 12 – 11:00 AM (B3L-07)

CLINICAL TALK: SHEAR WAVE ELASTOGRAPHY IN DIFFUSE LIVER DISEASE: ADVANTAGES AND LIMITATIONS

Giovanni Di Salvo
University Hospital of Padua
Wednesday, October 12 – 11:30 (B3L-07)

CLINICAL TALK: MID- AND LONG-TERM ATRIO-VENTRICULAR MECHANICS IN CHILDREN AFTER RECOVERY FROM ASYMPTOMATIC OR MILDLY SYMPTOMATIC COVID-19

Hubert Krenner
WWU Münster
Tuesday, October 11 – 8:30 (A1L-03)

INTEGRATED QUANTUM DOT OPTOMECHANICS
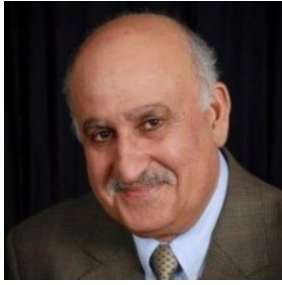
Jafar Saniie
Illinois Institute of Technology
Tuesday, October 11 – 8:30 (A1L-09)

MACHINE LEARNING AND MODELING OF ULTRASONIC SIGNALS FOR HIGH-FIDELITY DATA COMPRESSION

Johan Christensen
Universidad Carlos III de Madrid
Thursday, October 13 – 8:30 (C0L-03)

TOPOLOGICAL GALLERY OF NON-HERMITIAN WHISPERS

Jonathan Mamou
Weill Cornell Medicine
Thursday, October 13 – 11:00 AM (C2L-06)

EXPERIMENTAL AND COMPUTATIONAL METHODS FOR QUANTITATIVE ACOUSTIC MICROSCOPY AT ULTRA-FINE 2-MICROMETER RESOLUTION
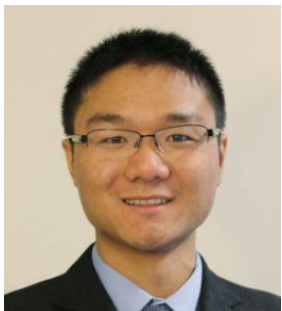
Kailiang Chen
3PEAK Shanghai
Tuesday, October 11 – 9:30 (A1L-01)

CIRCUIT DESIGN FOR PORTABLE ULTRASOUND PROBES
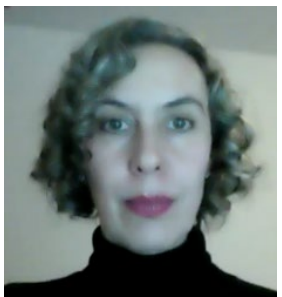
Karen Volke-Sepulveda
National Autonomous University of Mexico
Wednesday, October 12 – 17:30 (B6L-04)

A NEW LOOK TO AIRBORNE ACOUSTIC LEVITATION: TRAPPING AT THE PRESSURE ANTINODES

Massimo Mischi
Eindhoven University of Technology
Wednesday, October 12 – 14:00 (B5L-06)

QUANTITATIVE MULTIPARAMETRIC ULTRASOUND AND MACHINE LEARNING FOR PROSTATE CANCER LOCALIZATION

Matias Bargheer
Universität Potsdam
Wednesday, October 12 – 11:00 (B3L-03)

CONCEPTS FOR PICOSECOND ULTRASONICS WITH X-RAYS

Meaghan O'Reilly

University of Toronto
Wednesday, October 12 – 8:30 (B1L-06)

NON-INVASIVE ULTRASOUND THERAPY IN THE SPINAL CORD

Omar Elmazria
Université de Lorraine
Thursday, October 13 – 14:00 (C3L-03)

MAGNETIC SURFACE ACOUSTIC WAVE SENSORS (MSAW)

Paul D. Wilcox
University of Bristol
Wednesday, October 12 – 14:30 (B5L-04**)**

APPLICATIONS OF DATA SCIENCE AND MACHINE LEARNING TO ULTRASONIC NDE

Pengfei Song
Beckman Institute, University of Illinois Urbana-Champaign
Tuesday, October 11 – 11:00 (A3L-07)

TECHNIQUES FOR FAST SUPER-RESOLUTION ULTRASOUND MICROVASCULAR IMAGING

Sylvia Gebhardt
Fraunhofer-Institut für Keramische Technologien und Systeme IKTS
Thursday, October 13 – 12:00 (C2L-05)

ADVANCED TECHNOLOGIES FOR THE MANUFACTURE OF CUSTOMIZED ULTRASONIC TRANSDUCERS

Tyrone Porter
The University of Texas at Austin
Tuesday, October 11 – 8:30 (A1L-04)

TARGETED NONTHERMAL TREATMENT OF BRAIN CANCER WITH FOCUSED ULTRASOUND AND ACOUSTIC CAVITATION

Victor Plessky
Tuesday, October 11 – 11:00 (A3L-02)

XBAR

Yoshifumi Saijo
Tohoku University
Thursday, October 13 – 8:30 (C0L-02)

OPTICAL/PHOTOACOUSTIC HYBRID MICROSCOPY FOR VISUALIZING MORPHOLOGY AND COMPOSITION OF CELLS

Short Courses

Short courses will take place on Monday, October 11. You must register for these separately from the main conference.

Morning Courses (8:30 – 12:30)		Room
Ultrafast Ultrasound Imaging: Basic Principles and Applications	Mickael Tanter	Sala Volpi (Casinò 1.2)
Artificial Intelligence in Ultrasound Imaging	Yonina Eldar and Ruud van Sloun	Sala Perla (Casinò 1.1)
Essentials of Ultrasound Imaging: An Introduction	Tom Szabo and Peter Kaczkowski	Sala Mosaici 1 (Casinò 3.1)
Acoustic Wave Theory; from acoustic field equations to imaging and full-waveform inversion	Koen van Dongen	Sala Mosaici 2 (Casinò 3.2)
Fundamentals of Physical Acoustic Waves	Ji Wang	Sala Mangano (Casinò 2.1)
Acoustic waves in nonlinear elastic media: An introduction to basic principles and modelling	Andreas Mayer	Sala Rossi Drago (Casinò 2.2)
Piezoelectric Fundamentals: Materials and Transducers	Sandy Cochran and Susan Trolier-McKinstry	Sala Amici (Casinò 2.4)

Afternoon Courses (14:30 – 18:30)		Room
Super-resolution Ultrasound	Olivier Couture and Vincent Hingot	Sala Volpi (Casinò 1.2)
Ultrasound Signal Processing with GPUs — Introduction to Parallel Programming	Marcin Lewandowski and Billy Yiu	Sala Perla (Casinò 1.1)
Therapeutic applications of focused ultrasound: From biophysic to clinical application	Meaghan O'Reilly and David Melodelima	Sala Mosaici 1 (Casinò 3.1)
Machine Learning & Signal Analysis for Ultrasonic Imaging, Nondestructive Testing and Communication Applications	Jafar Saniie and Erdal Oruklu	Sala Mosaici 2 (Casinò 3.2)
Acoustic Tweezing	Charles Courtney	Sala Mangano (Casinò 2.1)
Finite Element Modelling of Acoustic Resonators	Yook-Kong Yong	Sala Rossi Drago (Casinò 2.2)
Resonant Actuators for Photonic and Quantum Systems	Sunil Bhave	Sala Amici (Casinò 2.4)
Medical Ultrasound Transducers	David Mills and Scott Smith	Sala Martinelli (Casinò 2.3)

Student Events

Student Social
Monday, October 10, 19:00-20:00 CET (Sala Specchi - Casinò 1.3)

Students attending IUS are invited to participate in the STUDENT SOCIAL! Meet other students in a casual setting and network with future colleagues.

*Student Job-Seeking Skills
Wednesday, October 12, 7:30-8:30 CET (Sala Specchi - Casinò 1.3)

Students attending IUS are invited to participate in the Student Job Seeking Skills-Join us to evaluate your CV and practice job interviews with professionals that will help you prepare for an actual interview.

*Student-Professional Networking & Meet Student Reps
Wednesday, October 12, 13:00-14:00 CET (Sala Specchi - Casinò 1.3)

Students attending IUS are invited to participate in the STUDENT-PROFESSIONAL NETWORKING event—connect with leaders in ultrasonics from academia and industry! You will also have an opportunity to meet the student reps – ask them anything you want to know about the society or their personal experience!

*Student Pitch Competition
Thursday, October 13, 13:00-14:00 CET (Sala Specchi - Casinò 1.3)

Students attending the IUS have the opportunity to participate in the STUDENT PITCH COMPETITION! Deliver a live 60-second pitch on your research, supplemented by a single slide, and win a cash prize!

*Women in Engineering Lunch

Tuesday, October 11, 12:30 – 14:00 CET (Sala Specchi - Casinò 1.3)

The 2022 Women in Engineering lunch is focused on mentoring and the role of mentorship at different career stages. In-person participants will have an opportunity to engage in a structured speed mentoring round. Virtual participants will be paired to perform the same exercise either synchronously with the in-person event or at another time that is more convenient for the timezone(s) of each pairing.

LAUS Panel

Ultrasound Research in Latin America: Global Opportunities and Scientific Challenges

Monday, October 10, 2022, 18:30-19:30 CET (Sala Perla - Casinò 1.1)

The aim of this panel is to present and discuss scientific and technological challenges in Latin America, while promoting emerging opportunities in connection with the international ultrasound community.

Moderator: Matthew Urban (Mayo Clinic, USA)
Panelists: Karen Volke Sepulveda (Universidad Nacional Autonoma de Mexico, Mexico), Miguel Bernal (Verasonics SAS, Medellin, Colombia), Theo Pavan (Universidade de Sao Paulo, Brazil)

***Requires advance registration**

*Ultrasound Localisation and TRacking Algorithms for Super Resolution (ULTRA-SR) Challenge

Super-resolution (SR) ultrasound imaging, particularly through localisation and tracking of microbubble contrast agents (also known as ultrasound localisation microscopy or ULM), is a new exciting area of research in biomedical ultrasound with potential impact in a wide range of biomedical applications. In recent years many different SR methodologies and algorithms have been proposed by different groups and their applications to biological systems, pre-clinical models and clinical patients are being explored.

The Challenge Session will take place on Wednesday, October 12 from 11:00 – 14:00 (Sala Mosaici 2 - Casinò 3.2).

Organizers

Mengxing Tang
Imperial College London

George Papageorgiou
Heriot-Watt University

Vassilis Sboros
Heriot-Watt University

Kai Riemer
Imperial College London

Marcelo Lerendegui
Imperial College London

Bingxue Wang
Imperial College London

Advisory Committee

Jørgen Arendt Jensen
Technical University of Denmark

Jianwen Luo
Tsinghua University

Georg Schmitz
Ruhr-University Bochum

Olivier Couture
Sorbonne University

Pengfei Song
UIUC

Massimo Mischi
Eindhoven University of Technology

Chris Dunsby
Imperial College of London

Paul Dayton
NC State University

Mickael Tanter
INSERM

Jean Provost
Polytechnique Montréal

Kirsten Christensen-Jeffries
King's College London

Stefanie Dencks
Ruhr-Universität Bochum

Sevan Harput
London South Bank University

Shigao Chen
Mayo Clinic

Ruud Van Sloun
Eindhoven University of Technology

Mingxi Wan
Xian Jiaotong University

Yonina Eldar
Weizmann institute

Meaghan O'Reilly
Sunnybrook Health Sciences Centre

***Requires advance registration**

Industry Events

Wednesday, October 12
8:30 – 10:00 CET (Sala Amici - Casinò 2.4)
Professional Headshots

15:30 - 16:30 CET (Sala Specchi - Casinò 1.3)
Industry Tech Roundtables

Thursday, October 13
14:00 – 15:30 CET (Sala Amici - Casinò 2.4)
Professional Headshots

15:30-16:30 CET (Sala Specchi - Casinò 1.3)
Virtual/Hybrid Industry Workshops

Young Professional's Panels

Tuesday, October 11, 2022
15:30-16:30 CET (Sala Specchi - Casinò 1.3)

Young Professionals Panel I: Research Proposal for Grant Application
Discussion on how to write successful research proposals from the perspectives of funding agencies' program managers

Moderator: Karla P. Mercado-Shekhar, Assistant Professor, Biological Engineering, Indian Institute of Technology Gandhinagar, India

Panelist:
Dr. Behrouz Shabestari, Director of the National Technology Centers Program and Acting Director of the Division of Health Informatics Technologies at National Institute of Biomedical Imaging and Bioengineering (NIBIB)

Thursday, October 13, 2022
12:30-14:00 CET (Sala Mosaici 2 - Casinò 3.2)

*Young Professionals Panel II: New Faculty Experience and Tips
A lunch meet-up event for tenured faculty members to share their experience and tips with new faculty

Moderator: Haichong Zhang, Assistant Professor, Robotics and Biomedical Engineering, Worcester Polytechnic Institute

Panelists:
Alfred Yu, Professor in Biomedical Engineering at the University of Waterloo, Canada
Ausrine Bartasyte, Professor at Institute FEMTO-ST at University of Franche-Comté, France
Yoshifumi Saijo, Professor of the Graduate School of Biomedical Engineering and the Graduate School of Medicine at Tohoku University, Japan

Requires advance registration

Program at a Glance

*Open to IEEE members only, must RSVP to UFFC-S Admin - uffc-admin@conferencecatalysts.com to attend.

**Registration is required.

Venice Time	Monday, October 10th		
7:30			
8:00		Registration *Palazzo del Casinò*	
8:30			
9:00		**Short Courses *Palazzo del Casinò*	
9:30			
10:00			
10:15	*UltraCom Meeting *Sala Specchi - Casinò 1.3*	Coffee Break *1st floor Casinò*	
10:30			
10:45		**Short Courses *Palazzo del Casinò*	
11:00			
11:30			
12:00			
12:30			
13:00			
13:30			
13:45			
14:00			
14:30			
15:00		**Short Courses *Palazzo del Casinò*	
15:30			
16:00	*AdCom Meeting *Sala Specchi - Casinò 1.3*		
16:15		Coffee Break *1st floor Casinò*	
16:30			
16:45		**Short Courses *Palazzo del Casinò*	
17:00			
17:30			
18:00			
18:30			
18:45	LAUS Panel *Sala Perla - Casinò 1.1*		
19:00			**Student Social *Sala Specchi - Casinò 1.3*
19:30			
20:00			

Venice Time	Tuesday, October 11th		
7:30			
8:00			
8:30	Oral Sessions		
9:00			
9:30			
10:00	Poster Sessions, Exhibits & Coffee Break *Sala Laguna - Palazzo del Casinò* *Palazzo del Cinema*		Fujifilm Seminar *Sala Mosaici 1 - Casinò 3.1*
10:15			
10:30			Verasonics Seminar *Sala Welles - Casinò Mez.1*
10:45			
11:00	Oral Sessions		
11:30			
12:00			
12:30	**WIE Lunch *Sala Specchi - Casinò 1.3*		
13:00			
13:30			
13:45			
14:00	Opening, Keynote & UFFC Awards *Sala Grande - Cinema 1.2*		
14:30			
15:00			
15:30	Poster Sessions, Exhbits & Coffee Break *Sala Laguna - Palazzo del Casinò* *Palazzo del Cinema*	Young Professionals Panel I *Sala Specchi - Casinò 1.3*	Cephasonics Seminar *Sala Welles - Casinò Mez.1*
16:00			
16:15			
16:30	Oral Sessions		
16:45			
17:00			
17:30			
18:00	Student Paper Awards/Utrasonics Awards *Sala Grande - Cinema 1.2*		
18:30			
18:45			
19:00			
19:30	Welcome Reception *Palazzo del Cinema*		
20:00			
21:00			
21:30			

Venice Time	Wednesday, October 12th		
7:30	**Student Job Seeking Skills & Industry Mock Interviews/Breakfast		
8:00	*Sala Specchi - Casinò 1.3*		
8:30			
9:00	Oral Sessions		
9:30			
10:00	Poster Sessions, Exhibits & Coffee Break		
10:15	*Sala Laguna - Palazzo del Casinò*		
10:30	*Palazzo del Cinema*		
10:45			
11:00	Oral Sessions (Including Clinical Session)	**Ultra-SR Challenge Session *Sala Mosaici 2 - Casinò 3.2*	
11:30			
12:00			
12:30			T-UFFC Editorial Board Retreat (Invitation Only) *Sala Amici - Casinò 2.4*
13:00	**Student Prof. Networking & Meet Reps/Lunch *Sala Specchi - Casinò 1.3*		
13:30			
13:45			
14:00	Oral Sessions		
14:30			
15:00			
15:30	Poster Sessions, Exhibits & Coffee Break *Sala Laguna – Palazzo del Casinò* *Palazzo del Cinema*		Industry Tech Roundtables *Sala Specchi – Casinò 1.3*
16:00			
16:15			
16:30	Oral Sessions		
16:45			
17:00			
17:30			
18:00			
18:30			
18:45			
19:00	Conference Dinner *Hotel Excelsior*		
19:30			
20:00			
21:00			
21:30			

Venice Time	Thursday, October 13th	
7:15	2023 Technical Program Committee Meeting (Invitation Only) *Sala Specchi – Casinò 1.3*	
7:30		
8:00		
8:15		
8:30	Oral Sessions	
9:00		
9:30		
10:00	Poster Sessions, Exhibits & Coffee Break *Sala Laguna - Palazzo del Casinò Palazzo del Cinema*	Fujifilm Seminar *Sala Mosaici 1 - Casinò 3.1*
10:15		
10:30		
10:45		
11:00	Oral Sessions	
11:30		
12:00		
12:30	**Student Pitch Competition/Lunch *Sala Specchi - Casinò 1.3*	**Young Professional's Panel II & Lunch *Sala Mosaici 2 - Casinò 3.2*
13:00		
13:30		
13:45		
14:00	Oral Sessions	
14:30		
15:00		
15:30	Poster Sessions, Exhibits & Coffee Break *Sala Laguna - Palazzo del Casinò Palazzo del Cinema*	Virtual/Hybrid Industry Workshops *Sala Specchi - Casinò 1.3*
16:00		
16:15		
16:30	Oral Sessions	
16:45		
17:00		
17:30		
18:00	Commemorating Paul Langevin's 150th Anniversary Challenge Awards, Closing & Highlights *Sala Grande - Cinema 1.2*	
18:30		
18:45		

Tuesday, October 11: Lecture Overview

Time	Tropicana 1/Excelsior 1.1	Tropicana 3/Excelsior 1.2	Volpi / Casinò 1.2	Mosaici 1 / Casinò 3.1	Mosaici 2 / Casinò 3.2	Darsena	Grande / Cinema 1.2	Perla / Casinò 1.1	Red Carpet / Excelsior 3.1
Tuesday Oct 11th, 2022 08:30-10:00	A1L-01 TIS - **Integrated Electronics for Ultrasound Imaging** Chr: Levent Degertekin, Enrico Boni	A1L-02 ASD - **SAW Devices I** Chr: Shogo Inoue, Karl Wagner	A1L-03 PGP - **General Physical Acoustics I** Chr: Andreas Mayer, Jan Brown	A1L-04 MTH - **Cavitation-based Therapy** Chr: Mathieu Pernot, Timothy Hall	A1L-05 MPA - **Photoacoustic Imaging I** Chr: Yoshifumi Saijo, Qian Cheng	A1L-06 MBB - **Advanced Beamforming I** Chr: Giulia Matrone	A1L-07 MEL - **Abdominal Elastography** Chr: Caterina Gallippi, Guy Cloutier	A1L-08 MIS - **Deep Learning for Image Segmentation** Chr: Jean Provost, Lasse Lovstakken	A1L-09 NSP – **Signal Processing** Chr: Jafar Saniie, Joel Harley
Tuesday Oct 11th, 2022 11:00-12:30	A3L-01 TTT - **Transducers for Neurostimulation and Drug Delivery** Chr: Christine Démoré, Sandy Cochran	A3L-02 ABD - **BAW Devices I** Chr: Amelie Hagelauer	A3L-03 PAT - **Acoustic Tweezers and Particle Manipulation I** Chr: Charles Courtney	A3L-04 MTN - **Theranostics** Chr: Helen Mulvana	A3L-05 MSD - **Transducers, Methods, and Circuits** Chr: David Cowell	A3L-06 MTC - Tissue **Characterization - Applications in the Abdomen I** Chr: Ivan Rosado-Mendez, Kibo Nam	A3L-07 MSR - **Super Resolution Ultrasound I** Chr: Mengxing Tang, Jørgen Jensen	A3L-08 MIS - **3D Image Reconstruction** Chr: Jean Luc Gennisson, Adrian Basarab	A3L-09 NPA – **Photoacoustics** Chr: Meng-Lin Li, Aoife Ivory
Tuesday Oct 11th, 2022 16:30-18:00	A4L-01 TMU - **PMUT** Chr: Susan Trolier-McKinstry, Alessandro Stuart Savoia	A4L-02 NTC – **Transducers and NEH – Energy Harvesting I** Chr: Kui Yao, Kentaro Nakamura	A4L-03 PNL - **Nonlinear Physical Acoustics I** Chr: Yook-Kong Yong, Mihir Patel	A4L-04 MBE - **Neuromodulation and Blood Brain Barrier** Opening Chr: Aiguo Han, Pauline Muleki Seya	A4L-05 MBF - **Blood Flow Imaging I** Chr: Damien Garcia	A4L-06 MBB - **3D Imaging** Chr: Hervé Liebgott, Mathieu Pernot	A4L-07 MEL - **Elastography in Oncology** Chr: Mark Palmeri, Elisabeth Brusseau	A4L-08 MIM - **Artificial Intelligence for Imaging I** Chr: Adrian Basarab, Libertario Demi	

Wednesday, October 12: Lecture Overview

Time	Tropicana 1/Excelsior 1.1	Tropicana 3/Excelsior 1.2	Volpi / Casinò 1.2	Mosaici 1 / Casinò 3.1	Mosaici 2 / Casinò 3.2	Darsena	Grande / Cinema 1.2	Perla / Casinò 1.1	Red Carpet / Excelsior 3.1
Wednesday Oct 12th, 2022 08:30-10:00	B1L-01 TMI - **Flexible Transducers and High Frequency Arrays** Chr: Franck Levassort, Sylvia Gebhardt	B1L-02 MBF - **Vector Flow Imaging I** Chr: Lasse Lovstakken, Solveig Fadnes	B1L-03 ABA - **BAW Applications** Chr: Amelie Hagelauer, Omar Elmazria	B1L-04 NAI - **Acoustic Imaging and Microscopy I** Chr: Edward Haeggstrom , Yoshikazu Ohara	B1L-05 MSR - **Super Resolution Ultrasound II** Chr: Mickael Tanter, Vassilis Sboros	B1L-06 MTH - **Drug Delivery and Bioeffects** Chr: Klazina Kooiman	B1L-07 MEL - **Muscle Elastography** Chr: Jean Luc Gennisson, Matthew Urban	B1L-08 MIS - **Image Enhancement I** Chr: Denis Kouamé, Brett Byram	B1L-09 MBB - **Advanced Beamforming II** Chr: Wei-Ning Lee
Wednesday Oct 12th, 2022 11:00-12:30	B3L-01 TMU - **CMUT** Chr: Omer Oralkan, Dominique Certon	B3L-02 MSD - **Systems and Devices** Chr: Ralf Seip, Jonathan Mamou	B3L-03 POA - **Opto-Acoustics** Chr: David Feld	B3L-04 NAI - **Acoustic Imaging and Microscopy II** Chr: David Weik, Christian Kupsch	B3L-05 **Ultra-SR Challenge Finalists** Chr: Vassilis Sboros, Mengxing Tang	B3L-06 MTC - **Tissue Characterization - Cardiovascular and Cardiopulmonary I** Chr: Emilie Franceschini, Guy Cloutier	B3L-07 **Clinical Session** Chr: Ton Van Der Steen, Damien Garcia	B3L-08 MPA - **Photoacoustic imaging II** Chr: Stuart Foster	B3L-09 MBB - **Imaging Methods and Quality Assessment** Chr: Barbara Nicolas
12:30 - 13:45									
Wednesday Oct 12th, 2022 14:00-15:30			B5L-03 PMI - **Modelling and Inversion I** Chr: Koen van Dongen, Anthony Mulholland	B5L-04 NDE – **General NDE Methods I** Chr: Paul Wilcox	B5L-05 MTH - **Blood-Brain-Barrier Opening** Chr: Kullervo Hynynen, Pauline Muleki Seya	B5L-06 MTC - **Ultrasound Methods for Characterizing Cancer and Monitoring Therapy I** Chr: Michael Kolios, Kenneth Hoyt	B5L-07 MIM - **Cardiovascular Imaging** Chr: Richard Lopata, Wei-Ning Lee	B5L-08 MIS - **Functional and Interventional** Chr: Brooks Lindsey, Stanislav Emelianov	
Wednesday Oct 12th, 2022 16:30-18:00			B6L-03 AMA - **Materials for Acoustic Wave Devices I** Chr: Ausrine Bartasyte, Marc Solal	B6L-04 NWP - **Wave Propagation and NDE - General NDE II** Chr: Oluwaseyi Balogun	B6L-05 MTN - **Image Guidance** Chr: Zhen Xu, Virginie Papadopolou	B6L-06 MBB - **Image Correction I** Chr: Jeremy Dahl, Svetoslav Nikolov	B6L-07 MSR - **Super Resolution Ultrasound III** Chr: Georg Schmitz	B6L-08 MCA - **Drug Delivery and Cavitation** Chr: Mike Averkiou, Ayache Bouakaz	

Thursday, October 13: Lecture Overview

Time	Tropicana 1/Excelsior 1.1	Tropicana 3/Excelsior 1.2	Volpi / Casinò 1.2	Mosaici 1 / Casinò 3.1	Mosaici 2 / Casinò 3.2	Darsena	Grande / Cinema 1.2	Perla / Casinò 1.1
Thursday Oct 13th, 2022 08:30-10:00	C0L-01 MCA - **Monodisperse Microbubbles, Targeted Microbubbles, and Bubble Imaging** Chr: Klazina Kooiman	C0L-02 MPA - **Photoacoustic Imaging and Cell Engineering** Chr: Geoffrey Luke, Parag Chitnis	C0L-03 PPN - **Phononics** Chr: Andreas Mayer, Jan Brown	C0L-04 NMC – **Material and Defect Characterization I** Chr: Walter Arnold, Erdal Oruklu	C0L-05 TMI - **Design and Fabrication of Large Arrays** Chr: Holly Lay	C0L-06 MBB - **Image Correction II** Chr: Brett Byram	C0L-07 MIM - **Brain Imaging** Chr: Gianmarco Pinton, Pieter Kruizinga	C0L-08 MTH - **Therapy Devices** Chr: Cyril Lafon, Kenneth Bader
Thursday Oct 13th, 2022 11:00-12:30	C2L-01 MBF - **Contrast-free Microvascular Imaging I** Chr: Pengfei Song, Brett Byram	C2L-02 MSR - **Super Resolution Ultrasound in the Brain** Chr: Olivier Couture, Kirsten Christensen-Jeffries	C2L-03 PTF - **Thin Films I** Chr: Mihir Patel, Andreas Mayer	C2L-04 NMC – **Material and Defect Characterization II and NPC – Process Control and Industrial** Chr: Bernie Tittmann Takaaki Asada	C2L-05 TPF - **Piezoelectric Transducer Materials and Fabrication** Chr: Stefan Rupitsch	C2L-06 MTC - **Ultrasound Tissue Characterization Measurement Techniques** Chr: Jeffrey Ketterling, Massimo Mischi	C2L-07 MEL - **New Applications and Methods in Elastography** Chr: Chih-Chung Huang, Stefan Catheline	C2L-08 MIS - **Imaging** Chr: Gregg Trahey, Nicholas Bottenus
Thursday Oct 13th, 2022 14:00-15:30	C3L-01 TMI - **Multiwave and Multimodal Transducers, and Novel Techniques** Chr: Xiaoning Jiang	C3L-02 NSH – **Structural Health Monitoring and NAS - Acoustic Sensors** Chr: David Greve, Makiko Kobayashi	C3L-03 AMS - **MEMS and Sensors** Chr: Sunil Bhave, Marta Clement	C3L-04 MTH - **Neuromodulation** Chr: Hairong Zheng, Thomas Deffieux	C3L-05 MSD - **High Frame Rate, Ultrafast, Imaging** Chr: Steven Freear, Piero Tortoli	C3L-06 MEL - **Cardiac Elastography** Chr: Annette Caenen, Richard Lopata	C3L-07 MIM - **New Imaging Modalities** Chr: Stanislav Emelianov, Jean Provost	C3L-08 MIS - **Motion and Flow Estimation** Chr: Olivier Couture, Chris De Korte
Thursday Oct 13th, 2022 16:30-18:00	C4L-01 TTT - **Theurapetic Transducers** Chr: Koko Lam	C4L-02 NAF - **Acoustic Microfluidics, NUA - Underwater Acoustics and NFM - Flow Measurement I** Chr: Nishal Ramadas, Heikki Nieminen	C4L-03 ASM - **SAW Modelling** Chr: Ventsislav Yantchev	C4L-04 MBE - **Therapy and Dosimetry** Chr: Alfred Yu	C4L-05 MCA - **Phase Change Agents and Microbubbles** Chr: Michael Kolios	C4L-06 MTC - **Ultrasound Estimation of Sound Speed and Attenuation** Chr: Tomy Varghese, James Wiskin	C4L-07 MEL - **Vascular Elastography** Chr: Chris De Korte, Hideyuki Hasegawa	C4L-08 MIM - **New Imaging Techniques I** Chr: Brooks Lindsey, Jeremy Dahl

Tuesday, October 11: Student Poster Competition

Students should present during the morning and afternoon poster sessions, from 10:00 AM – 11:00 AM and 3:30 PM – 4:30 PM Venice Time in Sala Laguna (Casinó Level 3). These posters will be available October 11 – 13. In addition to the poster presentation for the student paper competition, the papers are presented in lectures or posters in the regular program (see time slots below).

SPC1 **1340: Detecting the Buildup of Kidney Fibrosis Using H-Scan** Jihye Baek *A3L-06 - 10/11/2022 11:00*	**SPC2** **1629: Focused-Ultrasound blood-Brain Barrier Opening Promotes neuroprotective microglia** Alina Kline-Schoder *A4L-04 - 10/11/2022 16:30*	**SPC3** **2084: Whole-Brain Vascular Imaging for Minimally Invasive Neurosurgery** Anatole Jimenez *C2L-01 - 10/13/2022 11:45*
SPC4 **2054: Subspectrum Doppler Characteristics of the Functional Ultrasound (fUS)-Signal** Sadaf Soloukey *B5L-08 - 10/12/2022 14:45*	**SPC5** **2058: Miniaturized Gold nanochains enhanced Photoacoustic microscopy, and Optical Coherence Tomography Ocular Molecular Imaging** Van Phuc Nguyen *C0L-02 - 10/13/2022 9:00*	**SPC6** **2297: A Novel 3D Row Column Imaging Technique Demonstrated on a 20 MHz Electrostrictive Array** Nicholas Campbell *C3L-05 - 10/13/2022 14:00*
SPC7 **1451: Ultrasound Matrix Beamforming: Object Imaging in Strongly Scattering Media** Arthur Le Ber *A1L-09 - 10/11/2022 9:15*	**SPC8** **1684: Ultrathin, High Sensitivity Polymer-Based Capacitive Micromachined Transducers (PolyCMUTs) for Acoustic Emission Sensing in Fiber Reinforced Polymers** Jonas Welsch *C3L-02 - 10/13/2022 14:00*	**SPC9** **1245: Model Compression and FPGA Implementation of an Ultrasonic Flaw Detection Algorithm Based on Meta Learning** Yu Yuan *B5L-04 - 10/12/2022 14:15*
SPC10 **1083: Non-Reciprocity Within Piezoelectric Micromechanical Resonator Chains** Jianing Zhao *B2P-28 - W19.1 (Wednesday Poster)*	**SPC11** **1922: A Multifunctional Acoustic Tweezer for Structural Constructing Heterogenous Assembloids** Zeping Gao *A3L-03 - 10/11/2022 11:00*	**SPC12** **1900: Sputter Epitaxial (10-12) LiNbO3 Film / (1120) Azo / (10-12) Al2O3 Shear Mode Thin Film Resonators** Shinya Kudo *C2L-03 - 10/13/2022 11:00*
SPC13 **1350: Near-Spurious-Free Lithium Niobate Resonator for Piezoelectric Power Conversion with Q of 3500 and kt2 of 45%** Kristi Nguyen *B2P-32 - W23.2 (Wednesday Poster)*	**SPC14** **1064: Manipulation of SAW Slowness Shape Using Low-Cut LT/Quartz Structure for Transverse Resonance Suppression Without k2 Deterioration** Yiwen He *C4L-03 - 10/13/2022 17:15*	**SPC15** **2289: Examination of Phonon Dissipation in 33 GHz Overmoded Bulk Acoustic Resonators** Zachary Schaffer *B1L-03 - 10/12/2022 8:30*
SPC16 **1769: Fabrication and Characterization of FlexCMUT, a Flexible Polymer-Based Ultrasound Array for Conformal Imaging** Amirhossein Omidvar *B1L-01 - 10/12/2022 9:00*	**SPC17** **1640: Non-Invasive 2D array-Based Ultrasound Retinal Prosthesis and its frequency-Dependent Efficiency** Gengxi Lu *A3L-01 - 10/11/2022 11:00*	**SPC18** **1087: A Wireless Imaging System-on-a-Chip with Beamforming for Phased-Array Ultrasound** Ahmad Rezvanitabar *A1L-01 - 10/11/2022 8:30*

Tuesday, October 11: 8:30 AM – 10:00 AM (Lectures)

	Tropicana 1/Excelsior 1.1	Tropicana 3/Excelsior 1.2	Volpi / Casinò 1.2
	A1L-01: TIS - Integrated Electronics for Ultrasound Imaging **Chair(s):** Levent Degertekin (Georgia Institute of Technology), Enrico Boni (University of Florence)	**A1L-02: ASD - SAW Devices I** **Chair(s):** Shogo Inoue (Qorvo, Inc.), Karl Wagner (Qualcomm / RF360 Europe GmbH)	**A1L-03: PGP - General Physical Acoustics I** **Chair(s):** Andreas Mayer (HS Offenburg - University of Applied Sciences, Gengenbach), Jan Brown (Jan Brown Consulting)
8:30	**1087: A Wireless Imaging System-on-a-Chip with Beamforming for Phased-Array Ultrasound** Ahmad Rezvanitabar, et al. *Georgia Tech*	**1453: A Spurious Free SH-SAW Resonator Employing a Novel Multilayer Stack** Ventsislav Yantchev, et al. *Huawei*	**1015: (INVITED) Integrated Quantum Dot Optomechanics** Hubert Krenner *University of Münster*
8:45	**2447: Integrated System on a Chip for Guidewire IVUS** Xitie Zhang, et al. *Georgia Institute of Technology*	**1497: Quality Factor Degradation Due to the In-Plane Mis-Orientation in POI-SAW Resonators** Jinbo Wu, et al. *Shanghai Institute of Microsystem and Information Technology*	
9:00	**2300: Towards Integrated Microultrasound Systems** Bartas Abaravicius, et al. *The University of Glasgow*	**1884: Temperature Dependency of Rayleigh and Sezawa Modes for Novel ScAlN/Si SAW Resonators** Alexandra Nicoloiu, et al. *IMT-Bucharest*	**2379: Strain Imaging a Silicon Carbide A0 Mode Resonator with Spin Photoluminescence** Boyang Jiang, et al. *Purdue University*
9:15	**1824: A 4-Channel Fully Integrated Ultrasound Imaging Front-End Transceiver for 1-D PMUT Arrays** Alessandro Stuart Savoia, et al. *Roma Tre University*	**1269: Study of the LT/Quartz Bonded SAW Substrate for High Performance Filter Solution** Rei Goto, et al. *Skyworks Solutions, Inc.*	**1295: A High-Speed Observation System for Studies on the Mechanisms of Ultrasonic Atomization in a Drop-Chain Fountain** Nobuki Kudo, et al. *Hokkaido University*
9:30	**1003: (INVITED) Circuit Design for Portable Ultrasound Probes** Kailiang Chen *3PEAK*	**1359: Using Crossed IDTs to Suppress Transverse Modes in SAW Resonators Based on Poi Substrate** Yidan Yin, et al. *Hefei University of Technology*	**1346: Tailored Acoustic Holograms with Phased Arrays** Denys Iablonskyi, et al. *Electronics Research Lab., University of Helsinki*
9:45		**1933: Strain Engineering on Lithium Niobate Crystal Based SAW Resonators Through Ion Implantation** Liping Zhang, et al. *Shanghai Institute of Microsystem and Information Technology, Chinese Academy of Sciences*	**2193: Identification of Critical Angles in Shear Mode Conversion-Based Transcranial Ultrasound via Leaky Guided Wave Analysis** Matteo Mazzotti, et al. *University of Colorado Boulder*

Tuesday, October 11: 8:30 AM – 10:00 AM (Lectures)

	Mosaici 1 / Casinò 3.1	Mosaici 2 / Casinò 3.2	Darsena
	A1L-04: MTH - Cavitation-based therapy **Chair(s):** Mathieu Pernot (ESPCI Paris), Timothy Hall (University of Michigan)	**A1L-05: MPA - Photoacoustic imaging I** **Chair(s):** Yoshifumi Saijo (Tohoku University), Qian Cheng (Tongji University)	**A1L-06: MBB - Advanced Beamforming I** **Chair(s):** Giulia Matrone (University of Pavia)
8:30	**2593: (INVITED) Targeted Nonthermal Treatment of Brain Cancer with Focused Ultrasound and Acoustic Cavitation** Tyrone Porter *University of Texas at Austin*	**1689: Preclinical Monitoring of Kidney Ischemia-Reperfusion Injury Using Motion-Corrected Photoacoustic Imaging and its Implications in Transplants** Eno Hysi, et al. *St. Michael's Hospital*	**2075: The Effect of Retrospective Transmit Focusing on Minimum Variance Beamforming** Håvard Kjellmo Arnestad, et al. *University of Oslo*
8:45		**2336: Ratiometric Photoacoustic Imaging of pH-Responsive Polyaniline-Coated Needle for Targeted Cancer Biopsy** Ayoung Choe, et al. *Georgia Institute of Technology*	**2449: A Strategy for Synthetic Aperture Sequence Design Using Numerical Optimization** Jacob Spainhour, et al. *University of Colorado Boulder*
9:00	**2237: Enhancing the Antitumor Effects of a Standard of Care Neoadjuvant Chemotherapy Regimen with Mechanical Ablation in an Orthotopic Murine Breast Cancer Model** Sharshi Bulner, et al. *Sunnybrook Research Institute*	**1610: In Vivo Demonstration of Cardiac-Gated Photoacoustic Ablation-Induced Necrotic Lesion Mapping** Shang Gao, et al. *Worcester Polytechnic Institute*	**1879: A Novel Euclidian-Weighted Spatio-Temporal Non-Linear Beamforming for Sparse Synthetic Aperture Ultrasound Imaging: Initial Results** Anudeep Vayyeti, et al. *IIT Madras*
9:15	**2456: A Novel Catheter-Based Ultrasound Device for Vascular Occlusions** Jingjing Liu, et al. *Sunnybrook research institute*	**1594: A Dual-Frequency Ultrasound and Photoacoustic Rigid Catheter for Intravascular Imaging of Coronary Atherosclerosis** Antonio López-Marín, et al. *Erasmus Medical Center*	**1292: Developing Real-Time Implementations of Non-Linear Beamformers for Enhanced Optical Ultrasound Imaging** Fraser Watt, et al. *University College London*
9:30	**1375: In Vitro Evaluation of Catheter-Directed Versus Intravenous Infusion of Nanodroplets in Cavitation-Enhanced Sonothrombolysis** Jinwook Kim, et al. *The University of North Carolina at Chapel Hill*	**2512: Noninvasive Quantitation of EGFR-Targeted PAtrace with Photoacoustic Imaging to Assess Treatment Response in a Preclinical Model of Breast Cancer** Cayla Wood, et al. *MD Anderson Cancer Center*	**2296: Lagrangian Beamforming for High Contrast Echocardiography at High Frame Rate** Jonathan Porée, et al. *Polytechnique Montréal*
9:45	**1482: Histotripsy Monitoring by Combined Passive and Active Mapping of Cavitation Based on Double-Stage Delay Multiply and Sum Beamforming** Shukuan Lu, et al. *Xi'an Jiaotong University*	**1074: Deep Learning Assisted High-Resolution Photoacoustic Imaging of Chemical Components in Cancellous Bone** Wenyi Xu, et al. *Tongji University*	**2525: Frequency-Domain Beamforming Without Interpolation Using the Chirp Scaling Algorithm** Louise Zhuang, et al. *Stanford University*

Tuesday, October 11: 8:30 AM – 10:00 AM (Lectures)

	Grande / Cinema 1.2	Perla / Casinò 1.1	Red Carpet / Excelsior 3.1
	A1L-07: MEL - Abdominal Elastography **Chair(s):** Caterina Gallippi (University of North Carolina), Guy Cloutier (University of Montreal)	**A1L-08: MIS - Deep learning for Image Segmentation** **Chair(s):** Jean Provost (Polytechnique Montreal), Lasse Lovstakken (Norwegian University of Science and Technology)	**A1L-09: NSP – Signal Processing** **Chair(s):** Jafar Saniie (Illinois Institute of Technology, USA), Joel Harley (University of Florida, USA)
8:30	**2022: Multiparametric In Vivo Shear Wave Viscoelastography for Liver Cancer Assessment: Preliminary Results** Sathiyamoorthy Selladurai, et al. *University of Montreal Hospital*	**1968: Ultrasound and Deep Learning for Automated Maturation Prediction of Atlantic Salmon** Yasin Yari, et al. *Norwegian University of Science and Technology*	**2331: (INVITED) Machine Learning and Modeling of Ultrasonic Signals for High-Fidelity Data Compression** Jafar Saniie *Illinois Institute of Technology*
8:45	**1677: Multifrequency Liver Shear Wave Absolute Vibro-Elastography with an xMATRIX Array – 2D vs. 3D Comparison Study** Qi Zeng, et al. *The University of British Columbia*	**1992: An Automatic Ultrasonic Segmentation Method by Two-Stage Semi-Supervised Learning Strategy** Fei Dai, et al. *Fudan University*	
9:00	**2527: Quantitative Estimation of Shear Elastic Heterogeneity and Anisotropy in Excised Canine Kidney Using Double-Profile Intersection (DoPIo) Ultrasound** Keita Yokoyama, et al. *University of North Carolina at Chapel Hill and North Carolina State University*	**1039: Segmenting the Carotid-Artery Wall in Ultrasound Image Sequences with a Dual-Resolution U-Net** Nolann Lainé, et al. *CREATIS*	**1114: Towards Computational Super-Resolution Ultrasonic Array Imaging of Material Defects via Hierarchical Multi-Scale Deep Learning** Yongchao Yang, et al. *Michigan Technological University*
9:15	**1616: Renal Allograft Interstitial Inflammation Prediction Using Shear Wave Two-Dimensional Fourier Transform k-Space Trained Convolutional Neural Networks** Luiz Vasconcelos, et al. *Mayo Clinic*	**1540: Efficient Unet with Compound Loss Function for Breast Ultrasound Lesions Segmentation** Dan Xiao, et al. *Xi 'an Jiaotong University*	**1451: Ultrasound Matrix Beamforming: Object Imaging in Strongly Scattering Media** Arthur Le Ber, et al. *Institut Langevin, ESPCI Paris, PSL University, CNRS, Paris, France*
9:30	**1073: Phase Velocity Estimation in Renal Transplants Over Extended Frequency Band** Piotr Kijanka, et al. *AGH University of Science and Technology*	**2012: Exploiting Temporal Information in Echocardiography for Improved Image Segmentation** Jieyu Hu, et al. *Norwegian University of Science and Technology*	**1234: FPGA Based High Speed Through Tissue Ultrasound Communication Enabled High-Definition Video Streaming** Zhengchang Kou, et al. *University of Illinois Urbana-Champaign*
9:45	**2352: In Vivo VisR Measurements of Viscoelasticity and Viscoelastic Anisotropy in Human Allografted Kidneys Differentiate Interstitial Fibrosis and Graft Rejection** Keita Yokoyama, et al. *University of North Carolina at Chapel Hill and North Carolina State University*	**1091: Automatically Scoring Lung Ultrasound Videos of COVID-19 and Post-COVID-19 Patients** Federico Mento, et al. *Department of Information Engineering and Computer Science, University of Trento*	

Tuesday, October 11: 11:00 AM – 12:30 PM (Lectures)

	Tropicana 1/Excelsior 1.1	Tropicana 3/Excelsior 1.2	Volpi / Casinò 1.2
	A3L-01: TTT - Transducers for Neurostimulation and Drug Delivery **Chair(s):** Christine Démoré (University of Toronto), Sandy Cochran (University of Glasgow)	**A3L-02: ABD - BAW Devices I** **Chair(s):** Amelie Hagelauer (Fraunhofer EMFT, Technical University of Munich)	**A3L-03: PAT - Acoustic Tweezers and Particle Manipulation I** **Chair(s):** Charles Courtney (University of Bath, UK)
11:00	**1640: Non-Invasive 2D Array-Based Ultrasound Retinal Prosthesis and its Frequency-Dependent Efficiency** Gengxi Lu, et al. *University of Southern California*	**1004: (INVITED) XBAR** Victor Plessky *Retired Professor*	**1922: A Multifunctional Acoustic Tweezer for Structural Constructing Heterogenous Assembloids** Zeping Gao, et al. *Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*
11:15	**1305: Piezoelectric Ultrasound Energy–Harvesting Device for Deep Brain Stimulation and Analgesia Applications** Tao Zhang, et al. *Huazhong University of Science and Technology*		**2471: Acoustic Tweezing Cytometry for Directed Stem Cell Differentiation** Cheri Deng, et al. *University of Michigan*
11:30	**2227: Ultrasonocoverslip: Optimized Acoustic Coverslip Platform for Investigating Glia-Neuron Interaction Upon Ultrasound Stimulations** Keunhyung Lee, et al. *Sungkyunkwan University*	**1132: LiNbO3 Film Bulk Acoustic Resonator for n79 Band** Marie Bousquet, et al. *CEA-LETI*	**1207: Position and Orientation Control of Complex-Shaped Sample in Acoustic Levitator** Felix Sundblad, et al. *Electronics Research Lab., Dept. of Physics, University of Helsinki*
11:45	**1600: A Transducer Array System for Drug Delivery Using Short Pulses** Zheng Jiang, et al. *Imperial College London*	**2118: A Procedure to Correct for Anomalies in Estimating the Time Averaged Stored Energy of a BAW Resonator from its S11 Parameters** Renfeng Jin, et al. *Skyworks Inc*	**1832: In-Vivo Acoustic Manipulation of Genetically Engineered Bacterial Microswimmers** Ye Yang, et al. *Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences*
12:00	**2265: A Dual-Core Ultrasound Probe for Image-Guided Sonoporation: Application to Anti-Cancer Immunotherapy** Mathieu Legros, et al. *Vermon SA*	**1362: 2D Scalar Wave Model for Fast Analysis of Apodized BAW Devices** Ting Wu, et al. *UESTC*	**1692: Rotating Acoustic Drills by the Interference of Detuned Vortices** Noé Jiménez, et al. *Universitat Politècnica de València*
12:15	**2419: Intracorporeal Sonoporation-Induced Drug/Gene Delivery Using a Catheter Ultrasound Transducer** Mengyue Chen, et al. *North Carolina State University*	**2219: Analyzing the 2nd Harmonic Emissions of a BAW Resonator Undergoing Lateral Mode Excitation** David Molinero, et al. *Skyworks Inc*	**1263: Laser-Guided Acoustic Tweezers** Qing Wang, et al. *Fudan University, China*

Tuesday, October 11: 11:00 AM – 12:30 PM (Lectures)

	Mosaici 1 / Casinò 3.1	Mosaici 2 / Casinò 3.2	Darsena
	A3L-04: MTN - Theranostics **Chair(s):** Helen Mulvana (University of Strathclyde)	**A3L-05: MSD - Transducers, Methods, and Circuits** **Chair(s):** David Cowell (University of Leeds)	**A3L-06: MTC - Tissue Characterization - Applications in the Abdomen I** **Chair(s):** Ivan Rosado-Mendez (University of Wisconsin), Kibo Nam (Thomas Jefferson University)
11:00	**1264: Functional Ultrasound Imaging of Subanesthetic Ketamine in Awake Rats Reveals Opioid Receptor-Mediated Neural Activity** Tommaso Di Ianni, et al. *Stanford University*	**1235: Improved Localization and Identification of Radiological Clips Using Ultrasound Identification** Jenna Cario, et al. *University of Illinois Urbana-Champaign*	**1340: Detecting the Buildup of Kidney Fibrosis Using H-Scan** Jihye Baek, et al. *University of Rochester*
11:15	**2516: Enhancing Cancer Immunotherapy via Magnetic Delivery of Nanoparticle-Engineered T Cells and Trimodal Image Guidance** Kelsey Kubelick, et al. *Georgia Institute of Technology*	**1528: Frequency-Controlled Longitudinal and Flexural Modes in an Ultrasonic Needle for Biopsy** Yohann Le Bourlout, et al. *Aalto University*	**1351: Robust Principal Component Analysis with Wavelet-Based Sparsity Promotion to Mitigate Reverberation Clutters for Ultrasound Attenuation Estimation** U-Wai Lok, et al. *Mayo Clinic*
11:30	**1055: Miniaturised Dual-Modality All-Optical Laser Interstitial Thermal Therapy (LITT) and Ultrasound Imaging** Shaoyan Zhang, et al. *University College London*	**1650: An Adaptive Acoustic Output Selection Method Feasible for Implementation on Existing Clinical Systems** Matthew Huber, et al. *Duke University*	**1333: Burr Distribution Describes Ultrasound Speckle Statistics of Soft Biological Tissues** Sedigheh Poul, et al. *University of Rochester*
11:45	**2442: Development of a Pre-Clinical Sparse Hemispherical Array for Microbubble-Mediated Ultrasound Brain Therapy with Acoustic Monitoring and Control** Yi Lin, et al. *University of Toronto*	**1768: Low-Power Full-Duplex Transmit-Receive Circuits for Wearable Ultrasound Transducers** Abhishek Sahoo, et al. *University of Minnesota, Twin Cities*	**1710: Grading Diagnosis of Hepatic Inflammation, Steatosis, and Fibrosis Using Multiparametric Quantitative Ultrasound and Artificial Neural Networks** Yuanyuan Wang, et al. *Tsinghua University*
12:00	**1438: Dual-Frequency Focused Ultrasound Enhanced Theranostics with Multifunctional Perfluoropentane Nanoparticle** Junjie Chen, et al. *Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong Univ*	**1501: LIPUS Stimulation of the Knee Cartilage: In-Vitro-to-In-Vivo Translation** Paolo Cabras, et al. *'Image Guided Therapy' and 'ICube, Université de Strasbourg, CNRS, UMR 7357'*	**1767: Calibrated 2D Ultrasound Image Analysis for Staging Hepatic Steatosis with Liver Biopsy, Analyzed Qualitatively and Quantitatively, as Reference Standard** Gert Weijers, et al. *Radboudumc*
12:15	**1986: Phase-Changing Nanodroplets for Combination Immunotherapy and Chemotherapy** Catalina-Paula Spatarelu, et al. *Dartmouth College*	**1764: Acoustic Stack for Large Row-Column CMUT Arrays** Kasper Fløng Pedersen, et al. *Technical University of Denmark*	**2011: Ultrasonic Texture Analysis with Various Beamforming Sound Speeds in Characterization of Non-Alcoholic Fatty Liver Disease** Kibo Nam, et al. *Thomas Jefferson University*

Tuesday, October 11: 11:00 AM – 12:30 PM (Lectures)

	Grande / Cinema 1.2	Perla / Casinò 1.1	Red Carpet / Excelsior 3.1
	A3L-07: MSR - Super Resolution Ultrasound I **Chair(s):** Mengxing Tang (Imperial College London), Jørgen Jensen (Technical University Denmark)	**A3L-08: MIS - 3D Image Reconstruction** **Chair(s):** Jean Luc Gennisson (Universite Paris-Saclay), Adrian Basarab (University of Toulouse)	**A3L-09: NPA – Photoacoustics** **Chair(s):** Meng-Lin Li (National Tsing Hua University, Taiwan), Aoife Ivory (National Physical Laboratory, UK)
11:00	**1005: (INVITED) Techniques for Fast Super-Resolution Ultrasound Microvascular Imaging** Pengfei Song *University of Illinois Urbana-Champaign*	**2000: Insonification Angle-Based Ultrasound Volume Reconstruction for Spine Intervention** Baichuan Jiang, et al. *Johns Hopkins University*	**2276: Micro-Ultrasound Photoacoustic Imaging of Prostate Cancer: An In Vivo Demonstration** Nidhi Singh, et al. *Sunnybrook Health Sciences Center, University of Toronto*
11:15		**2299: 3-D Contrast Enhanced Ultrasound Imaging of an In Vivo Chicken Embryo with a Sparse Array and Deep Learning Based Adaptive Beamforming** Boudewine Ossenkoppele, et al. *Delft University of Technology*	**1072: Receive Characterization of Ultrasound Transducers for Photoacoustic Imaging Using a Broadband Laser Generated Ultrasound Source** Aoife Ivory, et al. *National Physical Laboratory*
11:30	**1998: Clinical Repeatability of Super-Resolution Ultrasound – A Preliminary Study** Megan Morris, et al. *Imperial College London*	**2115: Reconstructing Human Cerebral Vasculature in 3D with High Frame Rate, Freehand 2D Doppler Ultrasound Using Optical Tracking** Luuk Verhoef, et al. *Erasmus MC*	**1197: Compact Optical-Resolution Photoacoustic Microscopy Using Transparent Ultrasound Transducer** Riqiang Lin, et al. *The Hong Kong Polytechnic University*
11:45	**2081: Visualizing the Angiogenesis of Glioblastoma in Mice Using Fully Volumetric Ultrasound Localization Microscopy on a 1024-Channel Ultrasound System** Jacob McCall, et al. *UNC Chapel Hill*	**1959: 3D Geometry Assessment of Peripheral Arteries Using Multi-Perspective Freehand 2D Ultrasound** Milan Gillissen, et al. *University of Technology Eindhoven*	**1462: Directivity of Photoacoustically Generated Ultrasound from Thin Tube Embedded in Soft Phantom** Kun Wang, et al. *Tokyo Institute of Technology*
12:00	**1915: Endoscopic Ultrasound Localization Microscopy Imaging for Evaluation of the Colorectal Tumor Microvasculature** Shuang Lei, et al. *Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China*	**2035: 3D Functional Ultrasound Using a Continuously Moving Linear Stage** Bastian Generowicz, et al. *Department of Neuroscience, Erasmus MC*	**2009: Evaluation of Lateral and Axial Resolution of Pixel-Based Beamformers in Photoacoustic Tomography Using a Linear US Probe** Irene Pi-Martín, et al. *Universitat Politècnica de València (UPV)*
12:15	**1642: Passive Ultrasound Localization Microscopy of Radiation-Induced Nanodroplet Vaporization Events for Proton Range Verification** Sophie Heymans, et al. *KU Leuven campus KULAK*		**2416: Transparent 128×128 Tobe Arrays Based on Electrostrictive PMN-PT** Mohammad Rahim Sobhani, et al. *University of Alberta*

Tuesday, October 11: 4:30 PM – 6:00 PM (Lectures)

	Tropicana 1/Excelsior 1.1	Tropicana 3/Excelsior 1.2	Volpi / Casinò 1.2
	A4L-01: TMU - PMUT **Chair(s):** Susan Trolier-McKinstry (Pennsylvania State University), Alessandro Stuart Savoia (Roma Tre University)	**A4L-02: NTC – Transducers and NEH – Energy Harvesting I** **Chair(s):** Kui Yao (IMRE, ASTAR, Singapore), Kentaro Nakamura (Tokyo Institute of technology, Japan)	**A4L-03: PNL - Nonlinear Physical Acoustics I** **Chair(s):** Yook-Kong Yong (Rutgers University, U.S.A), Mihir Patel (MACOM)
16:30	**1210: A 0.5 mm2 Pitch-Matched AIN PMUT-on-CMOS Ultrasound Imaging System** Eyglis Ledesma, et al. *Universitat Autónoma de Barcelona*	**1583: A Combination of Chirp Spread Spectrum and Frequency Hopping for Guided Waves-Based Digital Data Communication with Frequency Steerable Acoustic Transducers** Federica Zonzini, et al. *University of Bologna*	**1324: On the Importance of Local Nonlinear Interaction Between Two Cross-Propagating Plane-Waves** Agisilaos Matalliotakis, et al. *Department of Imaging Physics, Delft University of Technology*
16:45	**2557: Design and Fabrication of a PVDF - TrFE Based Piezoelectric Micromachined Ultrasonic Transducer with Acoustic Cavity** Alp Timucin Toymus, et al. *Koc University*	**1727: Ultrasonic Transducer Made of Flexible Piezoelectric PLLA Polymer for Shear Mode Ultrasonic Structural Health Monitoring** Yasmin Mohamed Yousry, et al. *Institute of Materials Research and Engineering, ASTAR*	**2049: Quantifying the Role of Transport by Acoustic Streaming in MHz Focused-Ultrasound-Based Surface Sampling** Tom Sillanpää, et al. *Electronics Research Lab., Dept. of Physics and Faculty of Pharmacy, University of Helsinki*
17:00	**2211: PMUT Phased Arrays for Neuromodulation** Pannawit Tipsawat, et al. *Pennsylvania State University*	**1353: Side-Shifted Dual PPM EMATs with Multiple Rows of Magnets and Reduced Lateral Gap by Flexible Printed Circuit Board Racetrack Coils** Lucas Martinho, et al. *PUC-Rio*	**1142: Experimental and Numerical Study of Rayleigh Streaming in Sessile Droplet** Qi Wang, et al. *Fudan University*
17:15	**2534: Sputtered PZT pMUT with Bias-Tunable Electromechanical Coupling Coefficient for Air-Coupled Ranging Applications** Jihang Liu, et al. *Institute of Microelectronics, Agency for Science, Technology and Research*	**1023: Ultrasound Energy Harvesting Through Contact Electrification Augmented by Ferroelectrics** Sunghoon Hur, et al. *Korea Institute of Science and Technology*	**2119: Intermodulation as a Tool for Characterization of Nonlinearity in SAW-Excited Mechanical Micro-Resonators** Maciej Baranski, et al. *CNRS/FEMTO-ST*
17:30	**2592: (INVITED) PMUT – An Enabling Technology for the Age of "Ultrasound Democratization"** Anton Hofmeister *STMicroelectronics*	**1792: Time-Efficient Low Power Time/Phase-Reversal Beamforming for the Tracking of Ultrasound Implantable Devices** Marta Saccher, et al. *Delft University of Technology*	**1289: Interaction of Surface Acoustic Wave and Localized Surface Plasmon Resonance for "Microlaboratory" Application** Kohei Kasai, et al. *Shizuoka University*
17:45			**1871: Theoretical and Numerical Investigation of the Luxembourg-Gorky Effect for Elastic Shear Horizontal Guided Waves** Mariusz Osika, et al. *AGH University of Science and Technology*

Tuesday, October 11: 4:30 PM – 6:00 PM (Lectures)

	Mosaici 1 / Casinò 3.1	Mosaici 2 / Casinò 3.2	Darsena
	A4L-04: MBE - Neuromodulation and Blood Brain Barrier Opening Chair(s): Aiguo Han (University of Illinois), Pauline Muleki Seya (CNRS)	**A4L-05: MBF - Blood flow imaging I** Chair(s): Damien Garcia (CREATIS Insa Lyon)	**A4L-06: MBB - 3D Imaging** Chair(s): Hervé Liebgott (CREATIS Insa Lyon), Mathieu Pernot (ESPCI Paris)
16:30	**1629: Focused-Ultrasound Blood-Brain Barrier Opening Promotes Neuroprotective Disease-Associated Microglia** Alina Kline-Schoder, et al. *Columbia University*	**1581: Local Pressure Estimation Using Elastography and Ultrasensitive Pulsed-Wave Doppler** Lenin Chinchilla, et al. *BioMaps*	**1803: Ultrasound Matrix Imaging: Compensation of Multiple Reflections and Axial Aberrations** Elsa Giraudat, et al. *Institut Langevin*
16:45	**1653: MR-Guided Focused Ultrasound-Mediated Blood-Brain Barrier Opening Is Not Affected by Magnetic Field** Sheng-Kai Wu, et al. *Sunnybrook Research Institute, Toronto, ON, Canada*	**2004: Automatic High Frame Rate Spectral Envelope Detection to Calculate Parameter Maps of Neonatal Brain Perfusion** Anna Jorinde Kortenbout, et al. *Erasmus MC*	**1814: Novel Row-Column Beamformer for Low Complexity Volumetric Imaging** Lasse Thurmann Jørgensen, et al. *Technical University of Denmark*
17:00	**2423: Evaluation of Imaging Parameters and Their Effect on Blood-Brain-Barrier Opening** Hanjoo Lee, et al. *University of North Carolina at Chapel Hill/NCSU*	**2016: Towards Real-Time Training of Physics-Informed Neural Networks for Doppler Ultrasound** Haotian Guan, et al. *The University of Hong Kong*	**1916: Automatic Probe Localization in Freehand Multi-Perspective Bistatic 3D Ultrasound Imaging** Hein de Hoop, et al. *Eindhoven University of Technology*
17:15	**1892: Piezo1 Mediates Ultrasonic Neuromodulation in Mouse Brain In Vivo** Jiejun Zhu, et al. *The Hong Kong Polytechnic University*	**2164: Alias-Free Color Doppler with Chirps** Pierre Ecarlat, et al. *CREATIS*	**2176: Specific Delay Multiply and Sum Beamforming for 2-D and 3-D Coherent Multi-Transducer Ultrasound Imaging** Laura Peralta, et al. *King's College London*
17:30	**1028: Nanoparticle-Enabled Ultrasonic Brain Stimulation in Freely Moving Mice** Xuandi Hou, et al. *The Hong Kong Polytechnic University*	**2261: Chirp-Based Velocity Estimation (ChiVE): A Novel Framework to Enhance Velocity Estimation Performance Using Wideband Transmissions** Rebekah Maffett, et al. *University of Waterloo*	**1409: Use of Adaptive Algorithms for 3D Passive Acoustic Mapping** Audrey Sivadon, et al. *LabTau, Univ Lyon, Inserm*
17:45	**2407: Calcium Signaling Spatiotemporal Dynamics Evoked by Focused Ultrasound (FUS) in an In-Vitro Human Neural Cell Model** Tom Aubier, et al. *LabTau, INSERM*	**2420: Concurrent ARFI Plaque Imaging and Wall Shear Stress Measurement in Human Carotid Artery, with Validation by Fluid Structure Interaction Models** Keerthi Anand, et al. *University of North Carolina, Chapel Hill and North Carolina State University*	

Tuesday, October 11: 4:30 PM – 6:00 PM (Lectures)

	Grande / Cinema 1.2	Perla / Casinò 1.1	
	A4L-07: MEL - Elastography in Oncology **Chair(s):** Mark Palmeri (Duke University), Elisabeth Brusseau (University Lyon, INSA-Lyon)	**A4L-08: MIM - Artificial Intelligence for Imaging I** **Chair(s):** Adrian Basarab (University of Toulouse), Libertario Demi (University of Trento)	
16:30	**1888: Preclinical Three-Dimensional Vibrational Shear Wave Ultrasound Elastography (3D-VSWE) for Non-Invasive Mapping of Tumour Biomechanical Properties In Vivo** Vaideesh Parasaram, et al. *The Institute of Cancer Research*	**1335: Breast Lesion Detection and Visualization Utilizing Artificial Intelligence and the H-Scan** Jihye Baek, et al. *University of Rochester*	
16:45	**1657: Surface Excitation of Focused Shear Wave Beams for Ultrasound Elastography of Soft Tissues** Yu-Hsuan Chao, et al. *Department of Bioengineering, Swanson School of Engineering, University of Pittsburgh*	**1601: AI-Based Fully Automatic Scanning-Guide Algorithm for the Diagnosis of Rotator Cuff Tear Using Ultrasound Imaging** Kyungsu Lee, et al. *DGIST*	
17:00	**1538: Shear Wave Elasticity Imaging Can Monitor Murine Colorectal Tumors' Response to Radiotherapy** Reem Mislati, et al. *University of Rochester*	**1308: Non-Invasive Quantification of Steatosis: A New Ultrasound Based Model to Predict Fatty Liver Content** Laura De Rosa, et al. *Department of Information Engineering and Computer Science,University of Trento, Italy*	
17:15	**1786: 3D Shear Wave Absolute Vibro-Elastography for Guided Prostate Biopsy: Phantom and In Vivo Liver Validation** Tajwar Abrar Aleef, et al. *University of British Columbia*	**1440: Tracking-Based Mitral Annular Plane Systolic Excursion (MAPSE) Measurement Using Deep Learning in B-Mode Ultrasound** Erik Smistad, et al. *Norwegian University of Science and Technology and SINTEF Medical Technology*	
17:30	**2226: Screening and Image-Guided Targeted Biopsy of Prostate Cancer Using 3D Acoustic Radiation Force Impulse (ARFI) Imaging** Derek Chan, et al. *Duke University*	**1828: Element Array Shape Estimation by Minimizing the Reconstructed Image Entropy: In Vivo Study** Takumi Noda, et al. *The University of Tokyo*	
17:45	**2386: Breast Lesion Diameter in VisR Imaging Differs Between Malignant and Benign Masses in Women** Anna Phillips, et al. *University of North Carolina at Chapel Hill*	**2486: Real-Time Reverberation Suppression in High BMI Subjects Using a 2D Permuted Convolutional Neural Network** Leandra Brickson, et al. *Stanford University*	

Tuesday, October 11: Posters (Casinó Level 3)

A2P-10: MBB - Beamforming I
Chair(s): Nicholas Bottenus (University of Colorado Boulder)

Tu1.1	Tu1.2	Tu1.3
1133: Adaptive Time-Channel Beamforming for Time-of-Flight Correction Avner Shultzman, et al. *The Weizmann Institute*	**1470: Synthetic Aperture High Quality B-Mode Imaging with a Row-Column Array Compared to Linear Array Imaging** Jørgen Arendt Jensen, et al. *Center for Fast Ultrasound Imaging, Technical University of Denmark*	**1484: A New Adaptive Imaging Technique Using Generalized Delay Multiply and Sum Factor** Mahsa Sotoodeh Ziksari, et al. *KU Leuven*
Tu1.4	Tu1.5	Tu1.6
1535: Windowed Radon Transform and Constrained Singular Value Decomposition for Adaptive Beamforming in Ultrasound B-Mode Imaging Samuel Beuret, et al. *École Polytechnique Fédérale de Lausanne, EPFL*	**1547: Improving the Quality of Monostatic Synthetic-Aperture Ultrasound Imaging Through Deep-Learning-Based Beamforming** Eleonora Toffali, et al. *University of Pavia*	**1587: Experimental Demonstration of the Coherent Use of Two Sparse Arrays for 3-D Imaging** Laura Peralta, et al. *King's College London*
Tu1.7	Tu1.8	Tu1.9
1687: Coherence from Refocus Compared to Retrospective Transmit Beamforming Ole Marius Hoel Rindal, et al. *University of Oslo*	**1950: Application of Seismic Techniques to Ultrasound B-Mode Imaging** Alessandro Ramalli, et al. *Department of Information Engineering, University of Florence*	**2117: Ultrasound Image Beamforming Optimization Using Generative Adversarial Networks** Silvia Seoni, et al. *Politecnico di Torino*
Tu1.10	Tu1.11	Tu1.12
2142: p-Das Extended to Baseband Domain for Doppler Imaging Pierre Ecarlat, et al. *CREATIS*	**1447: Comparison of Phase-Screen and Geometry-Based Aberration Correction Techniques for Transcranial Ultrasound Imaging** Moein Mozaffarzadeh, et al. *Delft University of Technology*	**1659: Field of View and Resolution Improvement in Coprime Sparse Synthetic Aperture Ultrasound Imaging** Vahid AminNili, et al. *Sharif University of Technology*

A2P-11: MBE - Therapy
Chair(s): Mingxi Wan (Xi'an Jiaotong University), Pauline Muleki Seya (CNRS)

Tu2.1	Tu2.2	Tu2.3
1056: Shorter Intracellular Calcium Fluctuations in Re-Sonoporation of the Sonoporated Cells Jianmin Shi, et al. *Shanghai Jiao Tong University*	**1066: Sonoporation Stimulates Short-Term Potentiation of Membrane Resealing in Neighboring Cells** Jianmin Shi, et al. *Shanghai Jiao Tong University*	**1506: Novel Tumor Synergetic Therapy Potentiates Anti-PD-L1 Treatment for High-Performance Immunotherapy via Tornado-Inspired Focused Acoustic Vortex** Pengying Wu, et al. *Xi'an Jiaotong University*
Tu2.4	Tu2.5	Tu2.6
1578: Histotripsy Treatment Parameters Affect Immune Infiltration to Treated and Distant Tumors Reliza McGinnis, et al. *University of Michigan*	**1590: Shockwave Evolutions During Histotripsy Treatment in Ex-Vivo Tissue** Scott Haskell, et al. *University of Michigan*	**1648: Evaluation of Bubble Nuclei in Polyacrylamide Hydrogels with Varying Elastic Moduli and Impurities** Ferdousi Sabera Rawnaque, et al. *The Pennsylvania State University*

Tuesday, October 11: Posters (Casinó Level 3)

Tu2.7	Tu2.8	Tu2.9
1978: Focused Ultrasound Stimulation of Primary Sensory Neurons Elena Brunet, et al. *Aix-Marseille univ., CNRS, Institut de Biologie du Développement de Marseille, UMR 7288, Turing Cent*	**2186: Low Intensity Pulsed Ultrasound and Piezoelectric Nanoparticles Boost Cartilage Regeneration** Andrea Cafarelli, et al. *Scuola Superiore Sant'Anna*	**2235: Bioeffects of Photo-Mediated Ultrasound Therapy on Release of Nitric Oxide and Prostacyclin from Chorioretinal Endothelial Cells** Madhumithra Subramanian Karthikesh, et al. *Univeristy of Kansas*
Tu2.10	Tu2.11	Tu2.12
2313: Effects of Histotripsy Parameters and Dose on Ex-Vivo Human Benign Prostatic Hyperplasia Tissue Yashwanth Nanda Kumar, et al. *University of Washington*	**2376: Impact of Cavitation Regime on HL-60 Leukemia Cell Survival Following Size-Controlled Microbubble-Mediated Sonoporation** Robyn Klassen, et al. *University of Waterloo*	**2495: Cross-Algorithm Analysis of Cavitation Dose Using a New Cavitation Metrology Platform** Yanyan Tran, et al. *University of Waterloo*

A2P-12: MEL - Cardiovascular Elastography		
Chair(s): Sevan Harput (London South Bank University, UK)		
Tu3.1	Tu3.2	Tu3.3
1107: Resonance of Shear Wave Propagation in Blood Clots In Vitro Guillaume Bosio, et al. *University of Montreal Hospital*	**1196: In Vivo Estimation of Shear Modulus of Human Carotid Arteries Using Arterial Dispersion Ultrasound Vibrometry** Tuhin Roy, et al. *North Carolina State University*	**1405: Changes in Early Myocardial Relaxation or Contraction Do Not Relate to Changes in Shear Wave Speed Induced by Valve Closure** Stéphanie Bézy, et al. *KU Leuven*
Tu3.4		Tu3.6
1408: Hemodynamic Loading and Intrinsic Cardiac Stiffness Affect Shear Wave Measurements: An In Silico Sensitivity Analysis Annette Caenen, et al. *Ghent University*		**2094: Cardiovascular Health Classification Using Arterial Dispersion Ultrasound Vibrometry** Hadiya Harrigan, et al. *Duke University*
Tu3.7	Tu3.8	Tu3.9
2150: Three-Dimensional Spatiotemporal Coding for Myocardial Motion Estimation Xiaochuan Wu, et al. *The University of Hong Kong*	**2231: Myocardial Elastography for Evaluating the Evolution of Shear Strain and Strain Rate in Canine Myocardium After Myocardial Infarction** Yik Tung Tracy Ling, et al. *Columbia University*	**2248: Robust Localized Stiffness Assessment by Combining Flow and Wall Motion in a 1-D Wave Propagation Model** Paul Kemper, et al. *Columbia University*
Tu3.10	Tu3.11	Tu3.12
2307: Impact of Ventricular Geometrical Characteristics on Myocardial Stiffness Assessment Using Shear Wave Elastography in Healthy Children and Young Adult Aimen Malik, et al. *SickKids, Translational Medicine*	**2508: Characterization of Nonlinear Elasticity of the Carotid Artery Using Pulse Wave Imaging: A Feasibility Study in Hypertensive and Carotid Artery Disease Patients In Vivo** Parth Gami, et al. *Columbia University*	**1579: Effect of Arterial Geometry on Wave-Based Stiffness Estimates** Charles Capron, et al. *Mayo Clinic*

Tuesday, October 11: Posters (Casinó Level 3)

| Tu3.13
2001: Multi-Perspective 4D Cardiac Strain Estimation
Marloes Sjoerdsma, et al.
Eindhoven University of Technology | Tu3.14
2492: A Theoretical Framework of Pulse Wave Imaging on Plaque Characterization
Cosima Liang, et al.
Columbia University | |

A2P-13: MIM - Artificial Intelligence for Imaging II **Chair(s):** Georg Schmitz (Ruhr-Universität Bochum), Mark Palmeri (Duke University)		
Tu4.1 **1063: Dual-Path Convolutional Neural Network for Chronic Kidney Disease Classification in Ultrasound Echography** Zhen-Yi Tang, et al. *National Taiwan University of Science and Technology*	Tu4.2 **1117: Deep Learning-Based Virtual Refocusing of Out-of-Plane Images for Ultrasound Computed Tomography** Zhaohui Liu, et al. *Huazhong University of Science and Technology*	Tu4.3 **1139: Knowledge Distillation for Mobile Quantitative Ultrasound Imaging** Seokhwan Oh, et al. *KAIST*
Tu4.4 **1436: Flexible Element Array Geometry Estimation from Radio-Frequency Data Using Deep Learning** Takumi Noda, et al. *The University of Tokyo*	Tu4.5 **1461: Autonomous Recognition of Carotid Plaque in Ultrasound Images Using Deep Learning** Juntao Chang, et al. *Xi'an Jiaotong University*	Tu4.6 **1711: Detection of Spontaneous Echo Contrast with Multi-Sequence CNN on Venous Ultrasound** Ouwen Huang, et al. *Duke University*
Tu4.7 **1990: Cardiac Event Detection in Echocardiography Using Deep Learning and Triplane Recordings** Benjamin Strandli Fermann, et al. *University of Oslo, GE Healthcare Vingmed Ultrasound*	Tu4.8 **2093: Cannula Localization Using Separate Plane Wave Ultrasound Measurements and a Deep Neural Network** Mariam Fouad, et al. *RUB*	Tu4.9 **1603: Vortical Spatial Attention-Based Deep Learning Model for 3D Ultrasound Image Classification and Segmentation** Kyungsu Lee, et al. *DGIST*
Tu4.10 **2339: Enhance Motion Estimation by Training a Deep Learning Optical Flow Algorithm on a Hybrid Dataset** Andrea Pulido, et al. *KU Leuven*	Tu4.11 **2482: Automatic Left Ventricle Segmentation in the Presence of Near Field Clutter Using Machine Learning and Contour Fitting** Min-Chieh Tsai, et al. *National Taiwan University*	

A2P-14: MIS - Image Formation **Chair(s):** Giulia Matrone (University of Pavia)		
	Tu5.2 **1011: Power Spectrum Equalized Passive Acoustic Mapping** Chunqi Li, et al. *School of Electronic and Electrical Engineering, University of Leeds*	Tu5.3 **1146: Increasing the Frame Rate of Echocardiography Images Based on a Novel Interpolation Technique** Sajjad Afrakhteh, et al. *University of Trento*

Tu5.4 **1459: Real-Time Echocardiography Guidance for Optimized Apical Standard Views** David Pasdeloup, et al. *Norwegian University of Science and Technology*	**Tu5.5** **1475: Scatterer Generation in 3D for Efficient 2D Multi-Slice Simulations in Ultrasound Imaging** François Gaits, et al. *IRIT UMR 5505, CNRS*	**Tu5.6** **2032: Coded Excitation with Unfocused Plane Waves for 3D Imaging Using a 2D Row Column Addressed Array** Nizar Guezzi, et al. *Daegu Gyeongbuk Institute of Science and Technology*
Tu5.7 **2418: Binary and Random Inputs to Rapidly Identify Overfitting in Ultrasound Beamforming with Deep Learning** Jiaxin Zhang, et al. *Johns Hopkins University*	**Tu5.8** **2514: Single Plane Wave High-Resolution Ultrasound Imaging with Deep Unfolded Neural Network** Peng Liu, et al. *School of Instrumentation and Optoelectronics Engineering, Beihang University*	**Tu5.9** **2549: Rhombic Grids Reduce the Number of Voxels in Fast Pulse-Echo Ultrasound Imaging** Martin Schiffner, et al. *Ruhr-University Bochum*
Tu5.10 **1402: Data Reduction Technique Using Sub-Nyquist Sampling of Band-Limited RF Signal and Row-Column Addressed Arrays for Ultrafast 3-D Ultrasound Imaging Applications** Hyojin Seong, et al. *DGIST*	**Tu5.11** **1761: A Novel Three-Dimensional Reconstruction Algorithm with Deep Learning Segmentation Approach for Breast Lesion Detection from Ultrasound Radial Scanning Imaging** Chun-Hui Lin, et al. *National Cheng Kung University*	**Tu5.12** **2301: Correlation-Based Ultrasound Imaging for Extended Field-of-View and Local Impedance Estimation** Tamara Krpic, et al. *Université de Sherbrooke*
Tu5.13 **2457: Quantitative Analysis of Array Dropouts in 3D Ultrasound Tomography/Volography** James Wiskin, et al. *QT Imaging Inc*	**Tu5.14** **2374: Coupling Fast Superresolution CNN with Fast Plane-Wave Fourier-Domain Beamforming** Farid Anjidani, et al. *University of Victoria*	**Tu5.15** **2499: A Robust Deep Neural Network Approach for Ultrafast Ultrasound Imaging Using Single Angle Plane Wave** Mohammad Wasih, et al. *The Pennsylvania State University, University Park*

A2P-15: MIS - Vascular Imaging **Chair(s):** Piero Tortoli (University of Florence)		
Tu6.1 **1624: Ultrafast Doppler Diverging Wave Imaging of Coronary Flow Under Rapid Tissue Motion – Phantom Experiments** Yizhou Huang, et al. *Eindhoven University of Technology*	**Tu6.2** **1138: A Fast and Robust Clutter Filter for Mapping Blood Flow Dynamics in Ultrafast Echocardiography** Yue Xu, et al. *The University of Hong Kong*	**Tu6.3** **1355: Spatiotemporal Tracking of Ultrasound Nanobubble Dynamics** Dana Wegierak, et al. *Case Western Reserve Universtiy*
Tu6.4 **1466: An Attention-Based Convolutional Neural Network for Differentiating Benign from Malignant Focal Liver Lesions in Wash-In and Wash-Out Contrast-Enhanced Ultrasonography** Thodsawit Tiyarattanachai, et al. *Faculty of Medicine, Chulalongkorn University*	**Tu6.5** **1873: Modified Residual Dense Network Based Super-Resolution Localization Method** Haiyang Yu, et al. *School of Life Science and Technology, Xi'an Jiaotong University*	**Tu6.6** **2214: Quantitative Viscoelastic Response (QVisR) Domain Adaption with Fine Tuning** Joseph Richardson, et al. *North Carolina State University*

Tu6.7	Tu6.8	
2240: Feasibility of Deep Convolutional Neural Networks for Cancer Detection in Acoustic Angiography Thomas Kierski, et al. *The University of North Carolina at Chapel Hill*	**2389: End-to-End Deep Learning for Tuning-Free Non-Contrast Ultrasound Microvessel Imaging** Ahmed Tahseen Minhaz, et al. *Case Western Reserve University*	

A2P-16: MSR - Super Resolution Ultrasound IV
Chair(s): Matthew Bruce (University of Washington), Stefanie Dencks (Ruhr-Universität Bochum)

Tu7.1	Tu7.2	Tu7.3
1420: Improved Background Noise Suppression and Microbubbles Localization for Ultrasound Localization Microscopy Using Acoustic Sub-Aperture Processing Lijie Huang, et al. *Tsinghua University*	**1452: Compensation for Velocity Underestimation in 2D Super-Resolution Ultrasound** Iman Taghavi, et al. *Technical University of Denmark (DTU)*	**1529: Real-Time Super-Resolution Ultrasound Imaging Using GPU Acceleration** Sebastian Præsius, et al. *Technical University of Denmark*
Tu7.4	Tu7.5	Tu7.6
2038: Comparison of Deep Learning-Based and Traditional Localization Methods for PFP Nanodroplets in Super-Resolution Ultrasound Imaging Haiyang Yu, et al. *School of Life Science and Technology, Xi'an Jiaotong University*	**2061: Deep-Learning Based Localization-Free Super-Resolution Microbubble Velocimetry Using a Long Short-Term Memory Neural Network** Xi Chen, et al. *University of Illinois Urbana-Champaign*	**2144: Retrieving Pulsatility from Microbubble Trajectories in Ultrasound Localization Microscopy** Myrthe Wiersma, et al. *Department of Imaging Physics, Delft University of Technology, Delft, The Netherlands*
Tu7.7	Tu7.8	Tu7.9
2178: A Machine Learning Approach to Cancer Detection and Localization Using Super Resolution Ultrasound Imaging Georgios Papageorgiou, et al. *Heriot-Watt University*	**2203: A Physically Realistic Simulation Framework for Ultrasound Localization Microscopy** Alina Kuliesh, et al. *Delft University of Technology*	**2443: Focused Super-Resolution Ultrasound Imaging In-Vivo** Francisco Santibanez, et al. *University of North Carolina at Chapel Hill*
Tu7.10	Tu7.11	Tu7.12
2480: Ultrasound Localization Microscopy with Time-Resolved Equivalent Time Active Cavitation Imaging (ETACI) Samuel Desmarais, et al. *Polytechnique Montréal*	**2513: SparseNeST-ULM: Sparse Tensor Neural Network for ND-Ultrasound Localization Microscopy** Brice Rauby, et al. *Polytechnique Montréal*	**1847: Simultaneous Plane Wave Acoustic and High-Speed Optical Characterisation of Vaporization and Cavitation of Octafluoropropane Low Boiling Point Nanodroplets** Kai Riemer, et al. *Imperial College London*

A2P-17: MSR - 3D Super Resolution Ultrasound
Chair(s): Meagan O'Reilly (University of Toronto)

Tu8.1	Tu8.2	Tu8.3
1541: 3D Super Resolution Using Row Column Specific Frame Multiple - In Vivo and In Vitro Demonstration Joseph Hansen-Shearer, et al. *Imperial College London*	**1641: Comparison of Localization Methods for 3D Super-Resolution Ultrasound Imaging** Bingxue Wang, et al. *Imperial College London*	**1725: Deep Learning-Based 3D Beamforming on a 2D Row Column Addressing (RCA) Array for 3D Super-Resolution Ultrasound Localization Microscopy** Jihun Kim, et al. *University of Illinois Urbana Champaign(previous) / Kangnam University(Current)*

Tu8.4	**Tu8.5**	**Tu8.6**
1918: In Vivo Whole Eye Microvasculature Imaging with Ultrasound Localization Microscopy	**2131: 3D Acoustic Wave Sparsely Activated Localization Microscopy In Vivo with a Row-Column-Addressed Array Using Phase Change Nanodroplet – A Feasibility Study**	**2585: Achievable Localization Precision of Clinical 3D Ultrasound Localization Microscopy (ULM)**
Shuang Lei, et al.	Qingyuan Tan, et al.	Stefanie Dencks, et al.
Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China	*Imperial College London*	*Ruhr-Universität Bochum*

A2P-18: MTC - Ultrasound Tissue Characterization Methods and Applications I		
Chair(s): Jonathan Mamou (Riverside Research)		
Tu9.1	**Tu9.2**	**Tu9.3**
1045: Assessing the Acoustic Properties of Engineered Tissues Using High-Frequency Ultrasound	**1163: In Vivo Visualization of Human Hand Tendon Mechanical Anisotropy by Using High-Frequency Ultrafast Ultrasound Imaging**	**1393: Effects of Polydispersity and High Scatterer Concentration on Quantitative Ultrasound Estimates**
Joseph Sebastian, et al.	Guo-Xuan Xu, et al.	Olivier Lombard, et al.
University of Toronto	*National Cheng Kung University*	*Université d'Avignon*
Tu9.4	**Tu9.5**	**Tu9.6**
1823: Investigation Into the Acoustic Transparency of Reconstituted Mucus	**2239: Effect of Plastination on Ultrasound Transmission Through Human Skulls**	**2410: Nonlinear Parameter B/A Estimation Using a Second Order Volterra Filter**
Mihnea Turcanu, et al.	Soline Bernard, et al.	Nayef Alshamlan, et al.
KU Leuven	*Université de Sherbrooke*	*University of Minnesota, Twin Cities*
Tu9.7		
2511: Adaptive Weighting Strategy in Regularized Quantitative Ultrasound		
Noushin Jafarpisheh, et al.		
Concordia University		

A2P-19: MTC - Ultrasound Methods for Characterizing Cancer and Monitoring Therapy II		
Chair(s): Roberto Lavarello (Pontificia Universidad Católica del Perú)		
Tu10.1	**Tu10.2**	**Tu10.3**
1255: Preclinical Comparison of H-Scan Ultrasound and Diffusion-Weighted Magnetic Resonance Imaging for Monitoring Treatment Responses in Breast Cancer	**1591: H-Scan Ultrasound Imaging for the Classification of Thyroid Tumors**	**2078: Deep Meta-Learning for the Selection of Accurate Breast Mass Ultrasound Classifier**
Haowei Tai, et al.	Mawia Khairalseed, et al.	Michal Byra, et al.
University of Texas at Dallas	*University of Texas at Dallas*	*Insitute of Fundamental Technological Research, Polish Academy of Sciences*
Tu10.4	**Tu10.5**	**Tu10.6**
2143: Dielectric, Mechanical and Acoustic Characterization of Multi-Modal Tissue-Mimicking Breast Phantoms	**2310: Changes in Quantitative Ultrasound Imaging as the Predictors of Response to Neoadjuvant Chemotherapy in Patients with Breast Cancer**	**2413: Comparative Characterization of Fluid and Solid Breast Masses with Fundamental and Harmonic Amplitude- and Coherence-Based Ultrasound Beamforming**
Alessia Cannatà, et al.	Hanna Piotrzkowska-Wróblewska, et al.	Arunima Sharma, et al.
University of Pavia, Pavia	*Institute of Fundamental Technological Research, Polish Academy of Sciences*	*Johns Hopkins University*

Tu10.7	Tu10.8	Tu10.9
2556: Simulations of Acoustic Wave Propagation in the Breast with Tumors Using a Modified VICTRE Phantom Anna Pawlowska, et al. *Institute of Fundamental Technological Research, Polish Academy of Sciences*	**1384: Malignancy Assessment of Breast Masses by Machine Learning of Ultrasonic Spectral Statistics** Qizhen Sun, et al. *Beihang University*	**1739: First-in-Human H-Scan Ultrasound Imaging of Breast Cancer** Luca Forte, et al. *University of Texas at Dallas*

A2P-20: MTH - Therapy I		
Chair(s): Meagan O'Reilly (University of Toronto)		
Tu11.1	Tu11.2	Tu11.3
1051: Multi-Target Ultrasound Neuromodulation in the Treatment of Freely Moving Depression Mice Yiyue Zhu, et al. *Guangdong University of Technology*	**1244: The Focused Ultrasound Stimulation of Infralimbic Cortex Attenuates Reinstatement of Methamphetamine-Induced Conditioned Place Preference** Chia-Wei Lin, et al. *National Tsing Hua University*	**1400: Behavioral Alterations Induced by Ultrasound Neuromodulation Are Not Related to Auditory Pathway** Wen Meng, et al. *Shenzhen College of Advanced Technology, University of Chinese Academy of Sciences*
Tu11.4	Tu11.5	Tu11.6
1572: Noninvasive Ultrasound Stimulation Attenuates Lipopolysaccharide-Induced Depressive-Like Behaviors in Mice Shasha Yi, et al. *Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology*	**1698: Neural Network-Based Acoustic Hologram Generation for Fast and Precise Neuromodulation** Moon Hwan Lee, et al. *DGIST*	**2330: Focused Ultrasound-Mediated Intranasal Delivery for AAV Delivery to Targeted Brain Regions with Minimal Systemic Exposure** Dezhuang Ye, et al. *Washington University in st louis*
Tu11.7	Tu11.8	Tu11.9
1270: Effect of Microvasculature Diameter on FUS-Mediated BBB Opening Sharon Katz, et al. *Tel Aviv University*	**1326: Intravital Imaging of Ultrasound-Induced Blood Brain Barrier Opening Using Transgenic Mice with Two-Photon Microscopy** Mengni Hu, et al. *Shenzhen University*	**1385: First Metabolomic Signature of Blood-Brain Barrier Opening Induced by Microbubble-Assisted Ultrasound** Antoine Presset, et al. *UMR 1253, iBrain, Université de Tours, Inserm*
Tu11.10	Tu11.11	Tu11.12
1450: Ultrafast Intrapulse Feedback Control of FUS-Induced BBB Disruption Corentin Cornu, et al. *NeuroSpin/ Institut des sciences de la vie Frédéric Joliot / Direction de la recherche Fondamentale*	**1493: Design and Holographic Field Reconstruction of Ultrasonic Lenses for Drug Delivery in Non-Human Primates** Diana Andrés, et al. *Consejo Superior de Investigaciones Científicas (CSIC)*	**1621: Transcranial Histotripsy Induces Blood Brain Barrier Opening** Sarah Duclos, et al. *Department of Biomedical Engineering, University of Michigan*
Tu11.13		
2322: Assessment of Safety and Microglia Response to Short-Pulse Theranostic Ultrasound-Mediated Blood-Brain Barrier Opening Alec Batts, et al. *Columbia University*		

Tuesday, October 11: Posters (Casinó Level 3)

A2P-21: NSP – Signal Processing I
Chair(s): Joel Harley (University of Florida, USA), Johan Carlson (Lulea University of Technology, Sweden)

Tu12.1	Tu12.2	Tu12.3
1021: Accurate Location of Key Features in Ultrasonic-Based Spot Weld Inspection Aryaz Baradarani, et al. *Institute for Diagnostic Imaging Research*	**1377: Position Estimation of Slowly Moving Obstacles Using Ultrasonic Sensor Array** Asuka Tsujii, et al. *NGK SPARK PLUG CO., LTD.*	**1551: Orthogonal Matching Pursuit Based Sparse Dispersive Radon Transform for Ultrasonic Guided Mode Extraction** Shuhang Zheng, et al. *Fudan University*
Tu12.4 **1663: Deep Learning for Modeling of Sound Pressure Fields of Real-World Ultrasound Transducers** Payal Gupta, et al. *Luleå University of Technology*	Tu12.5 **1668: Fast Imaging of Crack Defects in Pipes Using Fourier-Domain Migration** Fatemeh Mazinani, et al. *University of Victoria*	Tu12.6 **1752: Reinforcement Learning Based Neural Architecture Search for Flaw Detection in Intelligent Ultrasonic Imaging NDE System** Xin Zhang, et al. *Illinois Institute of Technology*
Tu12.7 **1773: Ultrasound Communication Through Thin Plates: Understanding and Estimating the Channel** Asra Ashraf, et al. *Luleå University of Technologt*		

A2P-22: NSP – Signal Processing II
Chair(s): Jafar Saniie (Illinois Institute of Technology, USA), Paul Wilcox (University of Bristol, UK)

Tu12.8	Tu12.9	Tu12.10
1825: Improving Sonar Surveying of Subsea Cables and Pipelines with Adaptive Beamforming Gabor Geréb, et al. *University of Oslo*	**1830: Detachable Ultrasonic Data Communication Through the Metal Plate with NFC Technology** Javad Abbaszadeh, et al. *Silicon Austria Labs GmbH*	**1979: Ultrasonic Video Transmission Through Solid Metallic Channel** Xin Huang, et al. *Illinois Institute of Technology*
Tu12.11 **2130: Super-Resolution of Deep Slots in Thick Materials by Ultrasonic Image Deconvolution** Nans Laroche, et al. *The Phased Array Company*	Tu12.12 **2309: Steel Material Microstructure Characterization Using Knowledge Distillation Based Transformer Neural Networks for Data-Efficient Ultrasonic NDE System** Xin Zhang, et al. *Illinois Institute of Technology*	Tu12.13 **2366: An Open, Modular Ultrasound Digital Signal Processing Specification** Harry Clegg, et al. *University of Leeds*

A2P-23: NTC – Transducers and NEH – Energy Harvesting II
Chair(s): Kui Yao (IMRE, ASTAR, Singapore), John Greenhall (Los Alamos National Laboratory, USA)

Tu13.1	Tu13.2	Tu13.3
1198: Topology Optimization of Large Ultrasonic Tools for Uniform Vibration Distribution Yuji Wada, et al. *Tokyo Institute of Technology*	**1261: Capacitive Micromachined Transducer Array for Non-Contact Air-Coupled Lamb Wave Detection of Plate Structure** Shaojie Li, et al. *State Key Laboratory of Precision Measurement Technology and Instrument, Tianjin University*	**1492: High Resolution Measurement of Coatings Inside Thick, Hot, Steel Pipes** Claire Thring, et al. *Novosound*

Tu13.4	Tu13.5	Tu13.6
1577: Air Coupled Probe Integrity Test Using Same Type Probe on Parabolic Mirror	**1602: Enabling Spatial Multiplexing in Guided Waves-Based Communication: The Case of Quadrature Amplitude Modulation Realized via Discrete Frequency Steerable Acoustic Transducers**	**1839: Modelling the Beam Pattern of Piezopolymer Interdigital Transducers (IDT) for Optimizing the Offaxis Response**
Linas Svilainis, et al.	Masoud Mohammadgholiha, et al.	Luca Bergamaschi, et al.
Kaunas University of Technology	*University of Bologna*	*Università degli Studi di Firenze*
Tu13.7	**Tu13.8**	**Tu13.9**
1906: Direct-Write Piezoelectric Sensors for Generation and Detection of Zero-Group Velocity Lamb Waves for Nondestructive Evaluation	**2138: A Compact Acoustic Waveguide for Air-Coupled Ultrasonic Phased Arrays at 40 kHz**	**2153: Mechanical Stress Measurement Using Phased Array Ultrasonic System**
Shuai Cao, et al.	Matthias Rutsch, et al.	Yashar Javadi, et al.
Institute of High Performance Computing(IHPC)-ASTAR	*Technische Universität Darmstadt*	*University of Strathclyde*
Tu13.10	**Tu13.11**	
2181: Pipeline Structural Health Monitoring Using Frequency Steerable Acoustic Transducers	**2017: Ultrasound Transducer Optimization for Wireless Battery Charging in Subcutaneous Implantable Device**	
Masoud Mohammadgholiha, et al.	Thien Hoang, et al.	
University of Bologna	*Vermon SA*	

A2P-24: NPA - Photoacoustics and NPC -Process control and Industrial Ultrasound		
Chair(s): Edward Haeggstrom (University of Helsinki, Finland), Francisco Camarena (Universitat Politecnica de Valencia, Spain)		
Tu14.1	**Tu14.2**	**Tu14.3**
1036: Fully Planar Laser-Generated Focused Ultrasound Transmitter	**1685: Short-Wave Photoacoustic Lipid Imaging (SW-PALI) for Detection of Early-Onset Alzheimer's Disease**	**2005: Stretchable Double-Layered Photoacoustic Transmitter for Two-Dimensional Strain Measurement**
Yujie Chen, et al.	Christopher Salinas, et al.	Kyu Kwan Park, et al.
School of Optical and Electronic information, Huazhong University of Science and Technology	*University of Arizona*	*Sungkyunkwan University*
Tu14.4	**Tu14.5**	**Tu14.6**
2518: Hilbert-Huang Transform Based Photoacoustic Signal Analysis for Bone Assessment	**2573: Laser Scanning for Single-Shot Frequency Diverse Photoacoustic Excitation**	**1189: Measurement of Ultrasonic Radiation from Consumer Electronics Devices**
Jieshu Li, et al.	William Meng, et al.	Mari Ueda, et al.
Nanjing University of Science and Technology	*Stanford University*	*Kanagawa Institute of Technology*
Tu14.7	**Tu14.8**	
1277: Coupling Power Ultrasound Into Industrial Pipe Walls	**1524: Scaling-Up the Ultrasound Enhanced Electrospinning Device**	
Kasper Peterzéns, et al.	Henri Österberg, et al.	
Altum Technologies, Helsinki and Electronics Research Laboratory, University of Helsinki, Helsinki	*Electronics Research Lab., Dept. of Physics, Univ. of Helsinki*	

Tuesday, October 11: Posters (Casinó Level 3)

A2P-25: PGP - General Physical Acoustics II
Chair(s): Mihir Patel (MACOM)

Tu15.1 **1206: Spatiotemporal Characterization of the Water-Air Interface Deformation Induced by a Transient Acoustic Radiation Pressure** Félix Sisombat, et al. *GREMAN, UMR 7347, Université de Tours, INSA Centre-Val de Loire*	**Tu15.2** **1231: Influence of Humidity on Elastic Constants of Biomineralized Calcite and Aragonite Structures by Ultrasonic BAW Technique** Andrei Sotnikov, et al. *Leibniz IFW Dresden*	**Tu15.3** **1313: Rayleigh Wave Interaction with a Spherical Ball in Contact with a Plane Surface** Aziz Bouzzit, et al. *Laboratory SATIE UMR CNRS 8029 CY Cergy-Paris Université*
Tu15.4 **1896: Phononic Crystal Based Translation of Microparticles Using Standing Lamb Waves** Laixin Huang, et al. *Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*	**Tu15.5** **1904: Precise Observation of Ultrasonic Pulse Wave by a Simple Plasmon Resonance Sensor** Shuto Nakatsuji, et al. *Doshisha university*	**Tu15.6** **1984: An Explanatory Model for Sound Radiation from Subsonic Surface Vibrations** Erlend Magnus Viggen, et al. *Norwegian University of Science and Technology*
Tu15.7 **2208: Acoustic Holograms Design Using Differentiable Acoustic Simulation** Antonio Stanziola, et al. *University College London*	**Tu15.8** **2267: New Shear Horizontal (SH) Surface Acoustic Waves Propagating at the Interface Between Two Elastic Half-Spaces** Piotr Kiełczyński, et al. *Institute of Fundamental Technological Research*	**Tu15.9** **2350: PDMS and HFE-7500 Binary Structures Based Acoustic Phase-Only Holography** Rujun Zhang, et al. *Shenzhen Institute of Advanced Technology, Chinese Academy of Sciences*
Tu15.10 **2388: Active and Reactive Power Flow in Ultrasonic Love Wave Waveguides** Piotr Kiełczyński, et al. *Institute of Fundamental Technological Research*		

A2P-26: PNL - Nonlinear Physical Acoustics II
Chair(s): Mihir Patel (MACOM)

Tu16.1 **1092: Dual-Mode Second-Harmonic (DMSH) Generation on a Guided Medium** Krishnadas Kanakambaran, et al. *Indian Institute of Technology Madras*	**Tu16.2** **1280: Holding Force Characteristics of Levitation by Jet from Small Hole of a Levitated Object** Kohei Aono, et al. *Muroran Institute of Technology*	**Tu16.3** **1498: Optimal Command of the Nonlinear Elastic Wave Spectroscopy Method (NWMS)** Nesrine Houhat, et al. *research center in industrial technologies crti*
Tu16.4 **1520: Nonlinear Simulation of Amplitude Modulation Pulse Sequencing for Contrast-Enhanced Ultrasound (CEUS) Imaging** Shuangyi Cheng, et al. *Fudan University*	**Tu16.5** **1712: A Nonlinear Analysis of Surface Acoustic Waves in ST-Cut Quartz Crystals** Haoxiang Wu, et al. *Ningbo University*	**Tu16.6** **1155: Machining of Aluminium with MHz High-Intensity Focused Ultrasound** Topi Pudas, et al. *Electronics Research Lab., Dept. of Physics, University of Helsinki*

Tu16.7 **1161: Focused-Ultrasound-Induced Cavitation Removes Material in a Controlled Fashion** Jere Hyvönen, et al. *Electronics Research Lab., Dept. of Physics, University of Helsinki*	**Tu16.8** **1439: Preventing Formation of Metal Dendrites During Electroplating Using External Ultrasonic Actuators** Julius Korsimaa, et al. *Electronics Research Lab., Dept. of Physics, University of Helsinki*	

A2P-27: PAT - Acoustic Tweezers and Particle Manipulation II **Chair(s):** Charles Courtney (University of Bath, UK)		
Tu17.1 **1016: 3D Manipulation and Assembly of Microstructures Using Robotic Acoustic Streaming Tweezers** Xianjie Shi, et al. *State Key Laboratory of Precision Measuring Technology & Instruments, Tianjin University*	**Tu17.2** **1044: Ultrasound Multi-Layered Liquid Crystal Lens** Yuma Kuroda, et al. *Doshisha University*	**Tu17.3** **1115: Vibration Mode Tuning of Acoustic Pillar Array Chip for Precise Microscale Manipulations** Shiyu Li, et al. *Tianjin University*
Tu17.4 **1171: Study on Size-Effect of Silicon-Based Acoustic Micropillar Chip for High-Efficiency Particle Trapping** Yujie Wei, et al. *Tianjin University*	**Tu17.5** **1267: MEMS Bessel Beam Acoustic Transducer (MEMS-BBAT) with Air-Cavity Lens Based on Spiral Diffraction Grating for Particle Trapping** Yuyu Jia, et al. *ShanghaiTech University*	**Tu17.6** **1356: Manipulation and Deformation of Leukemia Cells by High Frequency Acoustic Tweezer** Yushun Zeng, et al. *University of Southern California*
Tu17.7 **1476: Near-Field Acoustic Levitation in Liquid Environment** Mostafa Atalla, et al. *TU Delft*	**Tu17.8** **1618: Simultaneous Orientation Locking and Translation of Samples with Phased Arrays** Mikko Korhonen, et al. *University of Helsinki*	**Tu17.9** **1856: Contactless Ultrasound Droplet Manipulation System for Mixing Chemical Reagents** Yu-Chun Chu, et al. *National Cheng-Kung University*
Tu17.10 **1988: Contactless Positioning of Objects on Acoustically Reflective Surfaces by Means of Ultrasonic Forces** Marc Röthlisberger, et al. *ETH Zurich*	**Tu17.11** **2120: Generation of Acoustic Lattices in Air Using Polygonal Active Diffraction Gratings** Darby Paez Amaya, et al. *Universidad Autónoma de México-UNAM*	**Tu17.12** **2146: Acoustic Pressure Measurement Using the Microparticles and Acoustic Tweezers** Jinhee Yoo, et al. *Pohang University of Science and Technology*
Tu17.13 **2147: Rotation Characteristics of Acoustically Actuated Thin-Film Rotors in Air and Water** Shichao Jia, et al. *Paul Scherrer Institut & University of Basel*		

Tuesday, October 11: Posters (Casinó Level 3)

A2P-28: ASD - SAW Devices II
Chair(s): Shogo Inoue (Qorvo, Inc.)

Tu18.1 **1040: Enlarging Rayleigh Elimination Window Through Modulating Substrate and LiNbO3 Cut Angle for Fabricating LNOI-Based Spurious-Free Wideband SAW Filters** Huiping Xu, et al. *Tsinghua University*	**Tu18.2** **1104: COM-based Modeling of SAW Scattering at Reflector Outer Edges in I.H.P. SAW Resonator** Zhaohui Wu, et al. *University of Electronic Science and Technology of China*	**Tu18.3** **1403: A Simple Technique to Evaluate Lateral Leakage and Transverse Mode Behaviors of Reflectors in SH-Type SAW Resonator** Xue-Qian Wu, et al. *University of Electronic Science and Technology of China*
Tu18.4 **1445: Analysis of Longitudinal Leaky SAWs on Bonded Structures Consisting of Similar and Dissimilar Materials** Yudai Fujii, et al. *University of Yamanashi*	**Tu18.5** **1556: Spurious-Free SH-SAW Resonators Using 36° YX-LiTaO3/SiO2/Si Substrate** Shuxian Wu, et al. *Fudan University*	**Tu18.6** **1721: Study of Electrode Configuration for Low-Velocity SAW Resonator Using Low-Cut Lithium Niobate** Bin Shi, et al. *UESTC*
Tu18.7 **1875: Exploring Surface Acoustic Wave Transversal Filters on Heterogeneous Substrates for 5G N77 Band** Mijing Sun, et al. *Shanghai Institute of Microsystem and Information Technology*	**Tu18.8** **2124: Synthesis Approach to Ladder-DMS Mixed Structures** Lluís Acosta, et al. *Universitat Autònoma de Barcelona*	**Tu18.9** **2190: 2-State Switchable SAW Resonators on LiNbO3 Using the Electrical Bragg Band-Gap** Ricardo Alcorta Galván, et al. *CNRS - IEMN*
Tu18.10 **2247: Microscale Confinement of Surface Acoustic Waves in a Coupled Resonator Phononic Cavity** Jules Chatellier, et al. *FEMTO-ST*	**Tu18.11** **2380: Shear Horizontal Surface Acoustic Wave FIR Filters in Lithium Niobate on Insulator** Jack Guida, et al. *Northeastern University*	

A2P-29: ABD - BAW Devices II
Chair(s): Amelie Hagelauer (Fraunhofer EMFT, Technical University of Munich)

Tu21.1 **1071: Optimization Method for Single-Mode Performance of Laterally Excited BAW Resonators (XBARs)** Natalya Naumenko, et al. *National University of Science and Technology MISIS*	**Tu21.2** **1862: Investigation of the BAW-Like Coupled Bulk Acoustic Resonators (CBAR) and Method to Further Improve the Coupling Coefficient** Chen Liu, et al. *Institute of Microelectrics, ASTR*	**Tu21.3** **2167: Control of Miniaturization Degree in BAW CRF** Rafael Perea-Robles, et al. *Universitat Politècnica de Catalunya (UPC)*
Tu21.4 **2302: Fast Modeling of Lateral Modes in BAW Resonators with Arbitrary In-Plane Geometry** Carlos Udaondo, et al. *Universitat Politècnica de Catalunya*	**Tu21.5** **2465: Transversal Type BAW Filter Based on Polarization-Inverted ScAIN Multilayers** Saneyuki Shibata, et al. *Waseda University, ZAIKEN*	**Tu21.6** **2483: Power Durability Evaluation of Higher-Order Mode Polarization-Inverted ScAIN Thin Film Resonators** Saneyuki Shibata, et al. *Waseda University, ZAIKEN*

Tu21.7 **2509: Experimental and Numerical Study on the Second Order Harmonic and Third Order Intermodulation Distortion Response of Scandium Aluminum Nitride Based FBAR Devices with Different Scandium Doping Levels** Ying Zhang, et al. *IME*	**Tu21.8** **2548: Polarization Inverted Two Layer ScAlN Thin Film Resonator Fabricated by Applying External Electric Field** Naoki Ishii, et al. *Waseda University, ZAIKEN*	

A2P-30: TMS - Transducer Modeling and Electronics
Chair(s): Alessandro Stuart Savoia (Roma Tre University)

Tu19.1 **1009: Acoustic Field of Strongly Focused HIFU Transducer Operating at 20 MHz - Comparison of Public Domain Numerical Simulators with Experimental Observations** Tomasz Zawada, et al. *TOOsonix A/S*	**Tu19.2** **1223: Highly Sensitive Small Hydrophone with Built-In Stealth Preamplifier** Shin-Ichiro Umemura, et al. *Tohoku University*	**Tu19.3** **1352: Affordable and Wireless Transducer Network to Detect Fouling in Pipes** Petteri Salminen, et al. *Electronics Research Lab., Dept. of Physics, University of Helsinki*
Tu19.4 **1568: Miniature Air Coupled Ultrasound Data Acquisition System for Field Application of Resonance Spectroscopy** Arturas Aleksandrovas, et al. *Kaunas University of Technology*	**Tu19.5** **1674: Reaction-Diffusion Algorithm for Element Shaping in 2-D Sparse Array Beam Pattern Optimization** Emmanuel Roux, et al. *CREATIS, Université Claude Bernard Lyon 1*	**Tu19.6** **1678: A Low-Cost Multi-Channel Driving System for Therapeutic Ultrasound Arrays** Betul Ilbilgi Yildiz, et al. *Imperial College London*
Tu19.7 **1936: Safe and Deep Brain Stimulation with a Minimal Two Single-Element Transducer Configuration: An In Silico Study** Patrícia Andrade, et al. *University of Tor Vergata*	**Tu19.8** **1952: MEMS Microphone Array for Ultrasonic 3D Tracking** Martin Krueger, et al. *Infineon Technologies AG*	**Tu19.9** **2070: Effect of Tapered Angle on BAW Transducer Performance for Ultrasonic Wavefront Computing** Zaifeng Yang, et al. *Institute of High Performance Computing, A-STAR*
Tu19.10 **2076: Numerical Characterization of Laser-Generated Focused Ultrasound-Induced Micro-Cavitation for Precision Treatment** Min Gyu Joo, et al. *Sungkyunkwan university*	**Tu19.11** **2113: Dual-Axis MEMS Micro-Mirror Based on 36°Y Lithium Niobate Thin-Film** Yaoqing Lu, et al. *ShanghaiTech University*	**Tu19.12** **2184: Simulation of Acoustic Losses in Waveguides for Air-Coupled Ultrasonic Phased Arrays** Matthias Rutsch, et al. *Technische Universität Darmstadt*
Tu19.13 **2519: Bimorph Piezoelectric MEMS Microphone with Tractive Structure** Chaoxiang Yang, et al. *Wuhan University*	**Tu19.14** **2542: Synthetic Phase Alternating Row-Column (SPARC) Arrays** Roger Zemp, et al. *University of Alberta*	**Tu19.15** **2278: Modelling the d36 Mode of Vibration** Hannah Rose, et al. *Thales UK & University of Glasgow*

Tuesday, October 11: Posters (Casinó Level 3)

A2P-31: TMU - Micromachined Ultrasonic Transducers I
Chair(s): Dominique Certon (François Rabelais University of Tours)

Tu20.1 **1026: An Extension of Double-Stage DMAS for PMUT Array Imaging** Haining Li, et al. *Institute of Chemical Materials, China Academy of Engineering Physics*	**Tu20.2** **1136: A CSM/TFM Imaging Scheme for Silicon-on-Nothing ScAlN PMUT Arrays** Mantalena Sarafianou, et al. *IME*	**Tu20.3** **1222: Highly Sensitive CMUT with Built-In Low-Voltage FET** Yoshitaka Tadaki, et al. *Mems Core*
Tu20.4 **1282: Characterization of Low-Voltage Row-Column Addressed CMUTs for 3D Imaging Applications** Tony Merrien, et al. *GREMAN UMR7347*	**Tu20.5** **1731: An Equivalent Circuit Model of PMUTs with Clamped and Simply-Supported Plates** Ira Wygant, et al. *Swift Sensing*	**Tu20.6** **1805: Multi-Level Design and Characterization of Piezoelectric Micromachined Ultrasonic Transducer Array for Intracardiac Echocardiography** Yun Zhang, et al. *Institute of Microelectronics of the Chinese Academy*
Tu20.7 **1809: Incorporation of Partially Clamped Boundary Conditions in a Finite Difference cMUT Model** Cyril Meynier, et al. *VERMON*	**Tu20.8** **1811: A Large-Signal Nonlinear Equivalent Circuit Model for CMUTs Operating in Collapse and Non-Collapse Modes** Alessandro Stuart Savoia, et al. *Roma Tre University*	**Tu20.9** **1854: Investigation of the Beam Pattern of an Integrated 2D CMUT Spiral Array Element** Monica La Mura, et al. *University of Salerno*
Tu20.10 **1942: Three-Dimensional Vascular Reconstruction and Doppler Flow Measurement Using PMUT Transducers** Jinchang Li, et al. *State Key Laboratory of Precision Measuring Technology and Instruments of Tianjin University*	**Tu20.11** **2185: Accurate Radiation Impedance Approximations for CMUT Design** Stine Løvholt Grue Pedersen, et al. *Technical University of Denmark*	**Tu20.12** **2317: An Efficient Electrode Optimization Method Based on the In-Vacuo Strain Mode Shapes for Multi-Frequency Fluid-Coupled PMUTs** Amirfereydoon Mansoori, et al. *University of South-Eastern Norway*

Wednesday, October 12: 8:30 AM – 10:00 AM (Lectures)

	Tropicana 1/Excelsior 1.1	Tropicana 3/Excelsior 1.2	Volpi / Casinò 1.2
	B1L-01: TMI - Flexible Transducers and High Frequency Arrays **Chair(s):** Franck Levassort (François Rabelais University of Tours), Sylvia Gebhardt (Fraunhofer IKTS)	**B1L-02: MBF - Vector Flow Imaging I** **Chair(s):** Lasse Lovstakken (Norwegian University of Science and Technology), Solveig Fadnes (Norwegian University of Science and Technology)	**B1L-03: ABA - BAW Applications** **Chair(s):** Amelie Hagelauer (Fraunhofer EMFT, Technical University of Munich), Omar Elmazria (Université de Lorraine)
8:30	**1713: Development of a Wearable Ultrasound Transducer for Sensing Muscle Activities in Assistive Robotics Applications: In Vivo Study** Xiangming Xue, et al. *North Carolina State University*	**2072: Towards Multi-Probe High Frame Rate Volumetric Vector Doppler Imaging: A Feasibility Study** Daniele Mazierli, et al. *University of Florence*	**2289: Examination of Phonon Dissipation in 33 GHz Overmoded Bulk Acoustic Resonators** Zachary Schaffer, et al. *Carnegie Mellon University*
8:45	**2249: Low Temperature Flexible Thick-Film Piezoelectric Transducer for Catheter Applications** Lee Bradley, et al. *Georgia Institute of Technology School of Electrical and Computer Engineering*	**1818: Row-Column Tensor Velocity Imaging on Phantom Measurements** Lasse Thurmann Jørgensen, et al. *Technical University of Denmark*	**2274: Next Generation of BAW: The New Benchmark for RF Acoustic Technologies** Andreas Tag, et al. *Qorvo*
9:00	**1769: Fabrication and Characterization of FlexCMUT, a Flexible Polymer-Based Ultrasound Array for Conformal Imaging** Amirhossein Omidvar, et al. *University of British Columbia*	**1122: 3-D Intraventricular Vector Flow Mapping with Color Doppler: Feasibility in Patients** Florian Vixège, et al. *CREATIS, Lyon*	**1559: A 4 GHz Surface Excitation Solidly Mounted Microacoustic Resonator with 20% Coupling** Marc Solal, et al. *Qorvo*
9:15	**1696: High Frequency 2D Ultrasound Array Fabrication with Pitch-Shifting 3D Printed Interposer** Yizhe Sun, et al. *University of southern california*	**1987: Improving EchoPIV Accuracy in High Velocity Gradient Flows with Dynamic Anisotropic Kernel Windows** Yichuang Han, et al. *Erasmus MC, University Medical Center*	**1274: 9.5 GHz Solidly Mounted Bulk Acoustic Wave Resonator Using Third Overtone of Thickness Extension Mode in LiNbO3** Michio Kadota, et al. *Tohoku university*
9:30	**2575: Development of a 50 MHz Linear Array for Endoscopic Imaging** Carlos Felipe Roa, et al. *University of Toronto*	**2312: Blood Velocity Estimation Techniques in Cortical Bone** Sébastien Salles, et al. *Sorbonne university*	**1102: FBAR Oscillator and MEMS Tunable VCSEL to Generate the Probe Lasers for Microfabricated Atomic Clock** Motoaki Hara, et al. *National Institute of Information and Communications Technology*
9:45	**1389: Development of a High Frequency Forward-Looking Phased-Array Transducer in Guiding Interventional Procedures** Jiabing Lv, et al. *University of Science and Technology of China*	**2348: Design of a Dual-Modality Tortuous Flow Phantom for Ultrasound and Optical Flow Mapping** Chris Kallweit, et al. *University of Waterloo*	**2363: Standalone Oscillator Implementation Using 2.5 GHz Mirror-Encapsulated BAW Resonator to Achieve ±20 PPM Overall Stability** Ernest T.-T. Yen, et al. *Texas Instruments*

Wednesday, October 12: 8:30 AM – 10:00 AM (Lectures)

	Mosaici 1 / Casinò 3.1	Mosaici 2 / Casinò 3.2	Darsena
	B1L-04: NAI - Acoustic Imaging and Microscopy I **Chair(s):** Edward Haeggstrom (University of Helsinki, Finland), Yoshikazu Ohara (Tohoku University, Japan)	**B1L-05: MSR - Super Resolution Ultrasound II** **Chair(s):** Mickael Tanter (INSERM), Vassilis Sboros (HWU)	**B1L-06: MTH - Drug delivery and bioeffects** **Chair(s):** Klazina Kooiman (Thoraxcenter, Erasmus MC), Pai-Chi Li (National Taiwan University)
8:30	**2539: Nematode Species Differentiation Using GHz Ultrasonic Micro Imager** Anuj Baskota, et al. *Geegah Inc*	**2450: Ultrafast Harmonic Imaging for Myocardial Ultrasound Localization Angiography: A Phantom Study** Michael Mougharbel, et al. *Polytechnique Montreal*	**1037: (INVITED) Non-Invasive Ultrasound Therapy in the Spinal Cord** Meaghan O'Reilly *University of Toronto*
8:45	**2444: High-Resolution 3D Ultrasonic Phased-Array Imaging Using Piezoelectric and Laser Ultrasonic System (PLUS) for Nondestructive Evaluation** Yoshikazu Ohara, et al. *Tohoku University*	**2066: Assessment of Microvascular Flows in the Arterial Wall of Takayasu's Patients Using Ultrasound Localization Microscopy** Anatole Jimenez, et al. *Physics for Medicine Paris, INSERM U1273, ESPCI, CNRS, PSL University*	
9:00	**1790: 3D Object Reconstruction from Outdoor Ultrasonic Image Using Variational Autoencoder** Ryotaro Ohara, et al. *Kobe University*	**1479: In-Vivo Monitoring of Liver Regeneration by Ultrasound Localization Microscopy: A Feasibility Study** Rui Wang, et al. *Tsinghua University*	**1609: Cerebral Infarct Reduction and Neuron Protection After Ischemic Stroke-Reperfusion by Acousto-Mechanical Oxygen Delivery** Yi-Ju Ho, et al. *National Yang Ming Chiao Tung University*
9:15	**2033: Ultrasound Tracking of Gas Bubbles Through a Multi-Mode Waveguide in Hot Melts** Zehua Dou, et al. *Technische Universität Dresden*	**1791: Multiscale Ultrasound Localization Microscopy in the Kidney** Louise Denis, et al. *Sorbonne Université, CNRS, INSERM Laboratoire d'Imagerie Biomédicale*	**1552: Piezo Mechanosensitive Ion Channels Modulate Motor Response In Vivo During Transcranial Focused Ultrasound Stimulation (tFUS) of the Cerebral Motor Cortex** Tianqi Xu, et al. *Department of Biomedical Engineering, Xi'an Jiaotong University*
9:30	**2140: Grating Lobe Suppression Through Novel, Sparse Laser Induced Phased Array Design** Peter Lukacs, et al. *University of Strathclyde*	**1949: In Vivo 3D Ultrasound Localization Microscopy of the Rat Coronary Microvasculature** Oscar Demeulenaere, et al. *Physics for Medicine, Inserm ESPCI Paris, PSL University, CNRS*	**1627: A Cobalt-Based Drug Delivered with Rapid Short Pulses In Vivo Reduces Amyloid Beta Burden in Alzheimer's Disease Mice** Sophie Morse, et al. *Imperial College London*
9:45	**2530: Difference-Frequency-Based Ultrasonic Contrast Imaging of Material Elasticities** Dong Hun Kim, et al. *Bionics Research Center, Korea Institute of Science and Technology (KIST)*	**1407: In Vivo Super Resolution Ultrasound Imaging Using the Erythrocytes - SURE** Jørgen Arendt Jensen, et al. *Center for Fast Ultrasound Imaging, Technical University of Denmark*	**2400: Ultrasound Retina Stimulation Can Cause Visual Behavior Response in Rats** Chen Gong, et al. *USC Roski Eye Institute, University of Southern California*

Wednesday, October 12: 8:30 AM – 10:00 AM (Lectures)

	Grande / Cinema 1.2	Perla / Casinò 1.1	Red Carpet / Excelsior 3.1
	B1L-07: MEL - Muscle Elastography **Chair(s):** Jean Luc Gennisson (Universite Paris-Saclay), Matthew Urban (Mayo Clinic)	**B1L-08: MIS - Image Enhancement I** **Chair(s):** Denis Kouamé (University Paul Sabatier Toulouse IRIT), Brett Byram (Vanderbilt University)	**B1L-09: MBB - Advanced Beamforming II** **Chair(s):** Wei-Ning Lee (Hong Kong University)
8:30	**2474: Modeling Shear Wave Propagation in an Incompressible, Transversely Isotropic Material Using Physics-Informed Neural Networks** Felix Jin, et al. *Duke University*	**2079: Inverted Pulse Estimation in Pulse Inversion Harmonic Imaging Using Deep Learning** Mariam Fouad, et al. *RUB*	**2491: Improvements in Virtually Compounded Fourier Imaging with Row-Column Addressed Arrays** Shang-Ching Lin, et al. *National Taiwan University*
8:45	**2280: On the Correlation Between Knee Flexion and 3D Shear Wave Speed and Amplitude in In Vivo Vastus Lateralis** Courtney Trutna Paley, et al. *Duke University*	**1872: In-Vivo Speed-of-Sound Imaging Using the Temporal Focused Reflection Matrix** Flavien Bureau, et al. *ESPCI, Institut Langevin*	**2179: A New Transmission Scheme to Approach Azimuth-Elevation Isoplanar Resolution in a 1024-Element Matrix Probe Configuration** Xiaochuan Wu, et al. *The University of Hong Kong*
9:00	**1293: Dynamic Stiffness Changes in Skeletal Muscle During Contraction and Relaxation Quantified by Time-Harmonic Elastography** Yang Yang, et al. *Charité – Universitätsmedizin Berlin*	**1960: Motion Correction Using Deep Learning Neural Networks – Effects of Data Representation** Rifkat Zaydullin, et al. *Imperial College London*	**1272: A Switchable Deep Beamformer for Passive Acoustic Mapping** Yi Zeng, et al. *ShanghaiTech University*
9:15	**2165: Characterization of Muscle Transverse Isotropic Properties Using a T-Shaped Array Transducer** Chien Chen, et al. *National Cheng Kung University*	**1938: Neural Maximum-a-Posteriori Beamforming Through Deep Unfolding** Ben Luijten, et al. *Eindhoven University of Technology*	**1195: Deep Learning Improves Dataset Recovery for High Frame Rate Synthetic Transmit Aperture Imaging** Jingke Zhang, et al. *Tsinghua University*
9:30	**2111: 3D SWEI Improves Precision Over 2D SWEI Both Along and Across Fibers in Healthy In Vivo Skeletal Muscle Measurements** Courtney Trutna Paley, et al. *Duke University*	**1119: Adaptive Contrast Enhancement of Cardiac Ultrasound Images Using a Deep Unfolded Many-Body Quantum Algorithm** Sayantan Dutta, et al. *IRIT, Université de Toulouse, CNRS, Toulouse INP, UT3, Toulouse*	**2566: A Novel Adaptive Imaging Technique Using Point Spread Function Reshaping** Wei-Hsiang Shen, et al. *National Tsing Hua University*
9:45	**1530: In-Vivo 3D Passive Elastography Using Row-Columns Arrays: Proof of Concept** Miguel Bernal, et al. *Verasonics SAS, Medellín, Colombia*	**1850: Experimental Validation of CNN-Based Ultrafast Ultrasound Imaging** Dimitris Perdios, et al. *École polytechnique fédérale de Lausanne (EPFL)*	**1747: A New Bi-Directional Pixel Based Focusing Method with a Virtual Ellipse** Youngray Kim, et al. *Sogang University*

Wednesday, October 12: 11:00 AM – 12:30 PM (Lectures)

	Tropicana 1/Excelsior 1.1	Tropicana 3/Excelsior 1.2	Volpi / Casinò 1.2
	B3L-01: TMU - CMUT **Chair(s):** Omer Oralkan (NC State University), Dominique Certon (François Rabelais University of Tours)	**B3L-02: MSD - Systems and Devices** **Chair(s):** Ralf Seip (SonaCare Medical, LLC), Jonathan Mamou (Riverside Research)	**B3L-03: POA - Opto-Acoustics** **Chair(s):** David Feld (Skyworks, Inc.)
11:00	**2535: Giant Pressure Output Efficiency of Capacitive Micromachined Ultrasonic Transducers Using Nano-Silicon-Springs** Haeyoun Kim, et al. *Korea Institute of Science Technology*	**1183: Noncontact Laser Ultrasound (NCLUS) – Path to Operational Medical System** Robert W Haupt, et al. *MIT Lincoln Laboratory*	**2591: (INVITED) Concepts for Picosecond Ultrasonics with X-Rays** Matias Bargheer *Univaersity of Potsdam*
11:15	**2541: Performance Assessment of an Ultra-Wideband and Dual-Mode 1D CMUT Array for Acoustic Angiography** Ermek Belekov, et al. *North Carolina State University*	**1817: Automated Bladder Volume Measurement System Using a T-Shaped Cross-Array Ultrasound Probe** Daehyun Park, et al. *Sogang University*	
11:30	**2536: A Pre-Charged CMUT Structure with a Built-In Charge Storage Capacitor** Muhammetgeldi Annayev, et al. *North Carolina State University*	**1213: A 3D Transcranial Submillimetric Ultrasound Tracking Solution for Biomedical Microdevice** Pierre Zarader, et al. *Robeauté, ISIR (Sorbonne Universite, CNRS, INSERM), LIB (Sorbonne Universite, CNRS, INSERM)*	**1907: Estimation of the Elastic Tensor of Lithium Niobate from Brillouin Light Backscattering Measurements with a Single Wafer** Fehima Ugarak, et al. *Université de Bourgogne Franche-Comté*
11:45	**2128: Ultra-Low-Voltage CMUTs with Increased Output Pressure Due to Piston-Structured Plates** Fabian Merbeler, et al. *Technische Universität Darmstadt*	**1325: Tunable Focused Ultrasound Device for High Precision Drug Delivery to the Mouse Brain** Zhongtao Hu, et al. *Washington University in St. Louis*	**1361: Acoustic Vortex as Optical Waveguides to Improve Light Penetration** Hsiu-Hui Tu, et al. *National Tsing Hua University*
12:00	**1480: Comparative Analysis of Capacitive Micromachined Ultrasonic Transducers and Piezoelectric Transducers for Coded Excitation** Mudabbir Tufail Bhatti, et al. *Technical University of Denmark*	**1224: Forward-Viewing, Robotically-Steered Guidewire Imaging with Automated Segmentation for Peripheral Revascularization** Graham Collins, et al. *Georgia Institute of Technology and Emory University*	**1345: Artifact Removal Factor for Circular-View Photoacoustic Tomography** Soheil Hakakzadeh, et al. *Sharif Univ. of Tech.*
12:15	**1672: Optimized Transmission Electrical Broadband Impedance Matching for PolyCMUT** Gabriel Guerreiro, et al. *UBC*	**2264: Development and Evaluation of Pulsed Magnetic Field Generators for Magnetomotive Ultrasound Imaging Systems** Ernesto Edgar Mazón Valadez, et al. *Universidade de Sao Paulo*	**1948: Estimation of Landau-Placzek Ratio in Liquid by Rayleigh and Brillouin Scatterings** Shuto Inamoto, et al. *Doshisha University*

Wednesday, October 12: 11:00 AM – 12:30 PM (Lectures)

	Mosaici 1 / Casinò 3.1	Darsena	Grande / Cinema 1.2
	B3L-04: NAI - Acoustic Imaging and Microscopy II **Chair(s):** David Weik (TU Dresden), Christian Kupsch (TU Bergakademie Freiberg, Germany)	**B3L-06: MTC - Tissue Characterization - Cardiovascular and Cardiopulmonary I** **Chair(s):** Emilie Franceschini (CNRS at Aix-Marseille University), Guy Cloutier (University of Montreal)	**B3L-07: Clinical session** **Chair(s):** Ton Van Der Steen (Erasmus Medical Centre), Damien Garcia (CREATIS Insa Lyon)
11:00	**1722: Epitaxial PbTiO3 Ultrasonic Transducer for Higher Resolution of Fingerprint Imaging Using GHz Reflectometry of Back Side of Substrate** Yuna Koike, et al. *Waseda University, ZAIKEN*	**1647: Quantitative Ultrasound Assessment of Red Blood Cell Aggregation Alongside Photoacoustic-Based Oxygen Saturation in the Human Radial Artery** Taehoon Bok, et al. *Ryerson University*	**1002: (INVITED) Shear Wave Elastography in Diffuse Liver Disease: Advantages and Limitations** Giovanna Ferraioli *University of Pavia*
11:15	**1771: Inspection of Multilayered Electronic Devices via Scanning Acoustic Microscopy Using Synthetic Aperture Focusing Technique** Mario Wolf, et al. *TU Bergakademie Freiberg*	**2116: In Vivo Local Assessment of Abdominal Aorta Distensibility from Freehand 2D Ultrasound Imaging** Larissa Jansen, et al. *Photoacoustics and Ultrasound Laboratory Eindhoven*	
11:30	**1706: A Circular Total Focusing Method for Tube's Immersion Ultrasonic Endoscopy** Ze Xi, et al. *Tsinghua University*	**1162: Dynamic High-Spatiotemporal Wall Shear Stress Imaging of Murine Heart Through High Frequency Vector Doppler Imaging** Chi-Hung Yang, et al. *National Cheng Kung University*	**1834: (INVITED) Mid- and Long-Term Atrio-Ventricular Mechanics in Children After Recovery from Asymptomatic or Mildly Symptomatic COVID-19** Giovanni Di Salvo *University Hospital of Padua*
11:45	**1448: In Vivo 3D Super-Resolution Ultrasound Imaging of a Rat Kidney Using a Row Column Array** Iman Taghavi, et al. *Technical University of Denmark (DTU)*	**1835: Patient-Specific Characterization of Abdominal Aortic Aneurysms Using 4D Ultrasound and a Modified Virtual Fields Method** Mirunalini Thirugnanasambandam, et al. *Eindhoven University of Technology*	
12:00	**1413: Analogue Cancellation of Unwanted Reflections for Enhanced Ultrasound Microscopy** Martin Weber, et al. *Electronics Research Lab., Dept. of Physics, University of Helsinki*	**1975: Random Matrix Theory to Quantify Pulmonary Fibrosis Severity in Rodent Lungs, In Vivo** Azadeh Cole, et al. *NC State University*	**2596: (INVITED) Ultrasound in Neurosurgery: from Image Guidance to Therapy** Francesco Prada *IRCCS Istituto Neurologico Carlo Besta*
12:15	**1205: 4D Scanning Acoustic Microscopy** Felix Sundblad, et al. *Electronics Research Lab., Dept. of Physics, University of Helsinki*	**2451: Surface Oscillation Acoustic Rheometry to Measure Viscoelasticity of Soft Biomaterials** Eric Hobson, et al. *University of Michigan*	

Wednesday, October 12: 11:00 AM – 12:30 PM (Lectures)

	Perla / Casinò 1.1	Red Carpet / Excelsior 3.1	Mosaici 2 / Casinò 3.2
	B3L-08: MPA - Photoacoustic imaging II **Chair(s):** Stuart Foster (University of Toronto)	**B3L-09: MBB - Imaging Methods and Quality Assessment** **Chair(s):** Barbara Nicolas (CREATIS)	**B3L-05: Ultra-SR Challenge Finalists** **Chair(s):** Vassilis Sboros (Heriot-Watt University), Mengxing Tang (Imperial College London)
11:00	**2316: In Vivo Estimation of Murine Myocardial Oxygenation with Physiological Signal Gating and Motion Compensation** Rashid Al Mukaddim, et al. *University of Wisconsin - Madison*	**1673: Phocospace: An Open-Source Simulation Package to Implement Photoacoustic Spatial Coherence Theory** Michelle Graham, et al. *Johns Hopkins University*	**Organisation team**: Marcelo Lerendegui, Georgios Papageorgiou, Kai Riemer, Bingxue Wang, Lachlan Arthur Super-resolution (SR) ultrasound imaging, particularly through localisation and tracking of microbubble contrast agents (also known as ultrasound localisation microscopy or ULM), is a new exciting area of research in biomedical ultrasound with potential impact in a wide range of biomedical applications. In recent years many different SR methodologies and algorithms have been proposed by different groups and their applications to biological systems, pre-clinical models and clinical patients are being explored. Firstly an introduction to the challenge will be given by the organisers, followed by talks from 9 finalists to describe their SR methods and results. The finalists will be announced before the conference begins and can be found at https://ultra-sr.com/.
11:15	**1175: Multispectral Photoacoustic Fluctuation Imaging for Full Visibility SO2 Imaging** Guillaume Godefroy, et al. *Univ. Grenoble Alpes, CNRS, LiPhy*	**2207: Linear Decomposition of Backscatter Spatial Covariance Using Generalized Least Squares** Rifat Ahmed, et al. *Duke University*	
11:30	**1688: Respiratory-Corrected, In-Vivo Photoacoustic Imaging of Oxygenation and Collagen in the Mouse Kidney and Liver** Eno Hysi, et al. *St. Michael's Hospital*	**2112: Spatial Coherence and Image Quality of Large Aperture Hepatic Imaging** Rifat Ahmed, et al. *Duke University*	
11:45	**1521: Photoacoustic Spectral Analysis for In Vivo Detection of Collagen Content in Cancers** Jiayan Li, et al. *Tongji University*	**1033: Flexible Ultrasound Array Shape Estimation Using Phase Coherence** Marcus Ingram, et al. *KU Leuven*	
12:00	**2469: A Flexible Array Transducer for Photoacoustic-Guided Surgery** Jiaxin Zhang, et al. *Johns Hopkins University*	**1840: Ultrasound Imaging Using Orthogonal Coded Sequences with Separate Transmitters-Receivers** Frank Nicolet, et al. *Creatis/TPAC*	
12:15	**1065: Integrated Photoacoustic Pen for Breast Cancer Sentinel Lymph Node Detection** Daohuai Jiang, et al. *ShanghaiTech University*	**1883: Issues with Histogram Matching for Fair Evaluation of Image Quality Metrics** Andreas Austeng, et al. *University of Oslo*	

Wednesday, October 12: 2:00 PM – 3:30 PM (Lectures)

	Volpi / Casinò 1.2	Mosaici 1 / Casinò 3.1	Mosaici 2 / Casinò 3.2
	B5L-03: PMI - Modelling and Inversion I **Chair(s):** Koen van Dongen (Delft University of Technology), Anthony Mulholland (University of Bristol)	**B5L-04: NDE – General NDE Methods I** **Chair(s):** Paul Wilcox (University of Bristol, UK)	**B5L-05: MTH - Blood-Brain-Barrier Opening** **Chair(s):** Kullervo Hynynen (University of Toronto), Pauline Muleki Seya (CNRS)
14:00	**1165: The Role of Acoustic Streaming in Ultrasound-Enhanced Electrospinning – A FEM Simulation Study** Joni Mäkinen, et al. *Electronics Research Lab., Dept. of Physics, University of Helsinki*	**1157: Matrix Array Inspections in NDT: 3D Imaging with the Virtual Array Method** Guillermo Cosarinsky, et al. *ITEFI*	**1249: Focused Ultrasound Immunomodulation on the Myeloid Compartment of the Brain in Treating GBM and Alzheimer's Disease** Tao Sun, et al. *Brigham and Women's Hospital, Harvard Medical School*
14:15	**2563: Deep-Learning Acoustoelastic to Acoustic Signal Processing for Quantitative Imaging of Bone Using Full-Waveform Inversion** Thomas Robins, et al. *Imperial College London*	**1245: Model Compression and FPGA Implementation of an Ultrasonic Flaw Detection Algorithm Based on Meta Learning** Yu Yuan, et al. *Illinois Institute of Technology*	**1227: Role of Calcium Ions in In-Vitro Acoustically-Mediated Blood-Brain Barrier Opening** Jifan Chen, et al. *Inserm UMR 1253, iBrain, Université de Tours, Inserm, Tours, France.*
14:30	**1131: Nonlinear Waveform Inversion for Quantitative Ultrasound** Avner Shultzman, et al. *The Weizmann Institute*	**2594: (INVITED) Applications of Data Science and Machine Learning to Ultrasonic NDE** Paul Wilcox *University of Bristol*	**1869: Changes in P-Glycoprotein and Breast Cancer Resistance Protein Expressions Induced by Focused Ultrasound -Mediated Blood-Brain Barrier Disruption** Allegra Conti, et al. *University of Rome Tor Vergata*
14:45	**1328: Time Versus Frequency Domain Full-Waveform Inversion for Ultrasound Imaging** Ana Ramírez, et al. *Universidad Industrial de Santander*		**2067: Evaluation of Subharmonic Emissions During Ultrasound-Mediated Blood-Brain Barrier Disruption in Glioblastoma Patients** Nathan McDannold, et al. *Brigham and Women's Hospital*
15:00	**1639: Joint Inversion of Acoustic and Electromagnetic Wave Fields** Eva Scherders, et al. *Delft University of Technology*	**1251: Non-Contact Laser-Ultrasound Measurement of Both Young's Modulus and Poisson's Ratio in Metals Using Surface Propagating Acoustic Waves** Ryan Canfield, et al. *University of Washington*	**2371: Blood Volume Reduction in Ultrasound Localization Microscopy After Blood-Brain Barrier Opening** Sua Bae, et al. *Columbia University*
15:15	**1560: Open-Source Modelling of Non-Linear Ultrasound and Microbubble Physics in Complex Media** Carlos Cueto, et al. *Imperial College London*	**1390: Improvement of Internal Defect Detection Accuracy Using Correlation Processing with the Emission Waveform for Noncontact Acoustic Inspection Method** Tsuneyoshi Sugimoto, et al. *Toin Univ. of Yokohama*	**2349: Focused Ultrasound-Induced Blood-Brain Barrier Opening Decelerates the Rate of Pathology Accumulation in a Triple Transgenic 3xTg Mouse Model of Alzheimer's Disease** Rebecca Noel, et al. *Columbia University*

Wednesday, October 12: 2:00 PM – 3:30 PM (Lectures)

	Darsena	Grande / Cinema 1.2	Perla / Casinò 1.1
	B5L-06: MTC - Ultrasound Methods for Characterizing Cancer and Monitoring Therapy I **Chair(s):** Michael Kolios (Ryerson University), Kenneth Hoyt (UT Dallas)	**B5L-07: MIM - Cardiovascular Imaging** **Chair(s):** Richard Lopata (Eindhoven University), Wei-Ning Lee (Hong Kong University)	**B5L-08: MIS - Functional and Interventional** **Chair(s):** Brooks Lindsey (Georgia Institute of Technology), Stanislav Emelianov (Georgia Institute of Technology and Emory University School of Medicine)
14:00	**1130: (INVITED) Towards Prostate Cancer Diagnostics by Ultrasound: from Microvascular Characterization to AI** Massimo Mischi *Eindhoven University of Technology*	**1889: Three-Dimensional Velocity Estimation of Natural Mechanical Waves in the Myocardium** Mohammad Mohajery, et al. *NTNU*	**2441: SPAU-Net: Voxelwise Spectral Unmixing and Oxygen Saturation Estimation Using Deep Autoencoders** Sarkis Ter Martirosyan, et al. *Georgia Institute of Technology*
14:15		**1851: High Frame Rate and Clinical Contrast Echocardiography for Imaging Myocardial Perfusion – An Initial Comparison** Matthieu Toulemonde, et al. *Imperial College London*	**1970: Real-Time Optical Ultrasound Imaging of Needle Insertions with Artefact Suppression** Efthymios Maneas, et al. *University College London*
14:30	**2320: Predicting Response to Neoadjuvant Chemotherapy in Patients with Breast Cancer Using Harmonic Motion Imaging** Niloufar Saharkhiz, et al. *Columbia University*	**1962: Microcirculation Characterization of a Heart Transplant Graft Using Ultrasound Localization Microscopy** Oscar Demeulenaere, et al. *Physics for Medicine, Inserm ESPCI Paris, PSL University, CNRS*	**2343: A Deep Learning Approach to Predict Focused Ultrasound-Induced Blood-Brain Barrier Opening** Keyu Liu, et al. *Columbia University*
14:45	**1911: 3D Ultrasound-Based Multiparametric Imaging for the Monitoring of Structural and Functional Characteristics of Growing Breast Tumors in a MMTV-PyVT Murine Model** Jean-Baptiste Guillaumin, et al. *Physics for Medicine Paris, Inserm, CNRS, ESPCI Paris, PSL University*	**2199: Electromechanical Cycle Length Mapping for Atrial Arrhythmia Detection and Treatment Success Assessment** Melina Tourni, et al. *Columbia University*	**2054: Subspectrum Doppler Characteristics of the Functional Ultrasound (fUS)-Signal** Sadaf Soloukey, et al. *Dept. of Neuroscience and Neurosurgery, Erasmus MC*
15:00	**1502: In-Vivo Classification of Metastatic Lymph Nodes Using Quantitative Ultrasound at Clinical Frequencies** Cameron Hoerig, et al. *Weill Cornell Medicine*	**1383: Development of Implicit Representation Method for Freehand 3D Ultrasound Image Reconstruction of Carotid Vessel** Sheng Song, et al. *ShanghaiTech University/School of Information Science and Technology*	**1794: Fusion of Multi-Frequency Ultrasound Imaging Based on Wavelet Transform for Guided Screw Insertion** Xiangxin Li, et al. *University of Science and Technology of China*
15:15	**2201: Combined B-Mode and Nakagami Images for Improved Discrimination of Breast Masses Using Deep Learning** Sabiq Muhtadi, et al. *University of North Carolina at Chapel Hill*	**1955: Time Resolved High Frame Rate Multi Volume 3D Ultrasound Imaging of Abdominal Aortic Aneurysm Phantoms** Larissa Jansen, et al. *Photoacoustics and Ultrasound Laboratory Eindhoven*	**1775: A Novel Dual-Element Catheter for Improving Non-Uniform Rotation Distortion in Intravascular Ultrasound** Baoqiang Liu, et al. *Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institute of Advanced Technology,*

Wednesday, October 12: 4:30 PM – 6:00 PM (Lectures)

	Volpi / Casinò 1.2	Mosaici 1 / Casinò 3.1	Mosaici 2 / Casinò 3.2
	B6L-03: AMA - Materials for Acoustic Wave Devices I **Chair(s):** Ausrine Bartasyte (University of Franche-Comté), Marc Solal (Qorvo, Inc.)	**B6L-04: NWP - Wave propagation and NDE - General NDE II** **Chair(s):** Oluwaseyi Balogun (Northwestern University, USA)	**B6L-05: MTN - Image Guidance** **Chair(s):** Zhen Xu (University of Michigan), Virginie Papadopolou (University of North Carolina)
16:30	**1736: High-Order Mode Film Bulk Acoustic Wave Resonators Consisting of Polarity Inverted Multilayered GeAlN/AlN Films** Jun Sekimoto, et al. *University of Yamanashi*	**1291: Ultrasonic Beam Transmission in the Backward- and Forward-Wave Frequency-Wavenumber Bands of a Fluid-Embedded Steel Plate** Mathias Sæther, et al. *University of Bergen*	**1957: Platform for US-Guided Real-Time Closed-Loop Control of Magnetic Microbots** Richard Nauber, et al. *IFW Dresden*
16:45	**2562: SMR-Type Piezoelectric Transformer Based on C-Axis Zig-Zag Polarization Inverted ScAlN Multilayer** Kazutaka Shiraiwa, et al. *Waseda university, ZAIKEN*	**1701: Physics-Informed Neural Networks with Resampling Technique to Model Ultrasound Wave Propagation of a Multi-Element Transducer** Shaikhah Alkhadhr, et al. *The Pennsylvania State University*	**2003: Individualized Closed-Loop Feedback Control of Focused Ultrasound for Blood-Brain Barrier Opening in a Porcine Model** Chih-Yen Chien, et al. *Washington University in St. Louis*
17:00	**2196: Influence of Piezoelectric Losses on the Quality Factor of BAW Resonators** Istvan Attila Veres, et al. *Qorvo*	**2458: Precise Observation, Separation and Synthesis of Shear Waves Using Ultrasonic Vectoral Doppler Measurement and Spatio-Temporal Multidimensional Spectral Processing** Chikayoshi Sumi, et al. *Sophia University*	**1801: Estimation of Stiffness Change by High Intensity Focused Ultrasound Using Pulse-Inversion Shear Wave Elastography – Phantom Study** Wei-Cheng Hsiao, et al. *Chang Gung University*
17:15	**2463: Fabrication of Epitaxial Piezoelectric Layer on Acoustic Bragg Reflector Using Epitaxial Sacrificial Layer** Satoshi Tokai, et al. *Waseda University, ZAIKEN, JST-CREST, JST-FOREST*	**1156: Fast and Automatic Array Tilt Compensation for 1.5D Array Transducers** Guillermo Cosarinsky, et al. *ITEFI*	**2271: High-Rate Implicit Cavitation Localization During Histotripsy via Backwards Transmit-Delay Acoustic Cavitation Emission (backTRACE) Methods** Jonathan Sukovich, et al. *University of Michigan*
17:30	**1276: A Comparative Study of Acoustic Loss in Piezoelectric on Insulator (POI) Substrates** Pengcheng Zheng, et al. *Shanghai Institute of Microsystem and Information Technology*	**2595: (INVITED) A New Look to Airborne Acoustic Levitation: Trapping at the Pressure Antinodes** Karen Volke-Sepulveda *National Autonomous University of Mexico*	**2373: Real-Time Lesion Monitoring During HIFU Treatment Using Interleaved Harmonic Motion Imaging Guided FUS (Interleaved-HMIgFUS) Ex Vivo, Mouse In Vivo, and Human In Vivo** Xiaoyue Li, et al. *Columbia University*
17:45	**2579: A Method for Evaluating Sole Mechanical Properties of Acoustic Bragg Reflector by Pulse Echo Technique in the GHz Range** Naoki Ishii, et al. *Waseda University, ZAIKEN*		**2455: Functional Ultrasound Quantification of Hemodynamic Changes in Response to Focused Ultrasound Neuromodulation in the Murine Brain In Vivo** Christian Aurup, et al. *Columbia University*

Wednesday, October 12: 4:30 PM – 6:00 PM (Lectures)

	Darsena / Cinema 1.1	Grande / Cinema 1.2	Perla / Casino 1.1
	B6L-06: MBB - Image Correction I **Chair(s):** Jeremy Dahl (Stanford University), Svetoslav Nikolov (BK Ultrasound)	**B6L-07: MSR - Super Resolution Ultrasound III** **Chair(s):** Georg Schmitz (Ruhr-Universität Bochum)	**B6L-08: MCA - Drug delivery and cavitation** **Chair(s):** Mike Averkiou (University of Washington), Ayache Bouakaz (University of Tours)
16:30	**2531: High-Resolution Beamforming in Inhomogeneous Media Based on Layer-Wise Speed of Sound Estimation and Refraction Compensation** Pat De la Torre, et al. *University of Waterloo*	**2326: Assessment of the Transient Blood Flow Changes After Acute Kidney Injury Using Super-Resolution Ultrasound Imaging** Qiyang Chen, et al. *University of Pittsburgh*	**1728: Rapid Cell Pairing and Fusion Based on Stable Cavitating Bubbles** Xiufang Liu, et al. *Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*
16:45	**1841: Effect of Geometric and Transmit Corrections on Global Speed of Sound Estimation** Hannah Strohm, et al. *Fraunhofer Institute for Digital Medicine, MEVIS, mediri GmbH*	**2222: "Aliasing" in Ultrasound Localization Microscopy-Derived Blood Flow Velocity Estimates** Jonah Harmon, et al. *University of Washington*	**1209: Single Endothelial Cell-Microbubble Interactions Elucidated Using Monodisperse Microbubbles** Yuchen Wang, et al. *Erasmus MC*
17:00	**2168: Optimal Abdominal Imaging with Bulk Speed of Sound Beamforming** Scott Schoen Jr, et al. *Harvard Medical School and Massachusetts General Hospital*	**2028: 3D Spatial-Temporal Non-Local Mean Filter for Improved Super-Resolution Ultrasound** Clotilde Vié, et al. *Imperial College London*	**1981: Investigating Microbubble-Mediated Vascular Permeability in a Vessel-on-a-Chip Model** Bram Meijlink, et al. *Erasmus MC*
17:15	**2572: Speed of Sound Estimation from Multi-Angle Common Midpoint Gathers of Non-Beamformed, Full-Synthetic Aperture Data** Thurston Brevett, et al. *Stanford University*	**1826: Improved Bubble Isolation in 3D Super-Resolution Imaging by Channel-Variance-Based Beamforming** Jipeng Yan, et al. *Imperial College London*	**2353: In Vivo Photoacoustic Monitoring of Stem Cell Viability with a Caspase3-Responsive Nanosensor** Anamik Jhunjhunwala, et al. *Georgia Institute of Technology*
17:30	**2488: Phase Gradient Tensor Operator for Aberration Correction in Ultrasound Localization Microscopy** Paul Xing, et al. *Polytechnique Montreal*	**1638: Volumetric Image Projection Super-Resolution (VIP-SR) Ultrasound with a 1D Array Probe – Experimental Demonstration** Bingxue Wang, et al. *Imperial College London*	**1514: Treatment of Hypertrophic Cardiomyopathy by Ultrasound-Mediated Delivery of miR-1** Davindra Singh, et al. *Concordia Uniiversity*
17:45	**1192: Grating Lobe Reduction with Null Subtraction Imaging** Zhengchang Kou, et al. *University of Illinois Urbana-Champagin*	**1471: Microbubble Detection with Adaptive Beamforming in Ultrasound Localisation Microscopy** Alexandre Corazza, et al. *Creatis*	**2232: In Vivo Validation of Modulated Acoustic Radiation Force (mARF) Based Imaging in Murine Models of Abdominal Aortic Aneurysm (AAA) Using VEGFR-2 Targeted Microbubbles** Yi Huang, et al. *University of Virginia*

B2P-10: MBB - Beamforming II
Chair(s): Alessandro Ramalli (University of Florence)

W1.1	W1.2	W1.3
1258: Amplitude Modulation and Baseband Delay-Multiply-and-Sum Beamforming for Improved Vessel Visualization with Volumetric Contrast-Enhanced Ultrasound Imaging Megan Yociss, et al. *University of Texas at Dallas*	**1342: Adaptive Beamforming for Wireless Powering of a Network of Ultrasonic Implants** Max Wang, et al. *Stanford University*	**1877: Sound Speed Correction for Virtual Source Retrospective Transmit Beamforming** Anders Emil Vrålstad, et al. *NTNU*
W1.4	W1.5	W1.6
2229: Evaluation of Aperture and Apodization in a Delay-Multiply-and-Sum Reconstruction Algorithm for Synthetic Aperture Imaging Philip Holmes, et al. *Mayo Clinic Graduate School of Biomedical Sciences*	**2354: Accurate Prediction of Refraction Through Lensed Row-Column Addressed Arrays** Sigrid Husebø Øygard, et al. *Technical University of Denmark*	**2370: K-Space Domain Spatial Filtering for Retrospective Transmit Beam Focusing/Shaping and Per-Element Data Estimation from Arrays with Microbeamforming** Junseob Shin, et al. *Philips Research North America*
W1.7	W1.8	W1.9
2479: 3D Synthetic Aperture Imaging with Aperiodic Sparse Arrays and Aperiodic Orthogonal Codes Tarek Kaddoura, et al. *University of Alberta*	**2538: Mixed Imaging Sequences for Enhanced Spatiotemporal Resolution** Blake Herrema, et al. *University of Colorado Boulder*	**2555: Cross-Plane Scanline Imaging with 2D Sparse Costas Arrays** Mohammad Hadi Masoumi, et al. *University of Alberta*
W1.10	W1.11	W1.12
2574: Learnable Regularization via Padé Activation Units for Flexible Model-Based Beamforming Christopher Khan, et al. *Vanderbilt University*	**2580: Computational Speed and Efficiency of Ultrasound Beamformers in Frequency Domain** Marko Jakovljevic, et al. *Stanford University*	**2197: Broadband Multiple-Focus Synthesis Using Orthogonal Frequency Division Multiplexing** Collin Smith, et al. *University of Minnesota*

B2P-11: MBF - Contrast-free microvascular imaging II
Chair(s): Thomas Deffieux (Physics for medicine - Paris)

W2.1	W2.2	W2.3
1112: Coronary Microvascular Perfusion Patterns Assessed by Ultrafast Power Doppler Are Dependent on Congenital Heart Disease and Impacted by Cardiac Surgery Minh Nguyen, et al. *Hospital for Sick Children, University of Toronto*	**2050: Hemodynamic Change Monitoring and Lesion Size Prediction Following Stroke by Ultrafast Doppler Imaging** Shih-Ya Huang, et al. *Department of Biomedical Imaging and Radiological Science, China Medical University, Taichung*	**2127: Brain-Wide Vascular Resistivity Mapping via Ultrafast Doppler in the First Weeks of Life in Human Neonates Differentiates the Effects of Vessels Diameter and Region** Flora Faure, et al. *Physics for medecine, INSERM, ESPCI Paris, CNRS, PSL University, ,*
W2.4	W2.5	W2.6
2347: Multiparametric Microvascular Ultrasound to Classify Tumor Sensitivity to Anti-Angiogenic Treatment: Application to Multiple Cell Lines Mahsa Bataghva, et al. *Western University*	**2367: Evaluation of Treatment Response in Chorioallantoic Membrane Patient Derived Tumor Model Using Micro Ultrasound and Speckle Variance** Sara Mar, et al. *University of Toronto*	**2475: Visualizing Perfusion Throughout the Cardiac Cycle Using Advanced Power Doppler Acquisition and Filtering Methods** Abbie Weeks, et al. *Vanderbilt University*

W2.7 **2476: Correlation Between Ultrafast Power Doppler Imaging and Rheumatoid Arthritis Disease Severity** Kuo-Lung Lai, et al. *National Taiwan University*	W2.8 **2550: Microvessel Network Mimicking Phantoms for Evaluation of Microvasculature Imaging Techniques** Shaheeda Adusei, et al. *Mayo Clinic College of Medicine and Science*	

B2P-12: MCA - Contrast agents, drug delivery and cavitation
Chair(s): Helen Mulvana (University of Strathclyde), Alfred Yu (University of Waterloo)

W3.1 **1059: Ultrafast Feedback Control of Stable Cavitation Induced by Rapid Short-Pulse Ultrasound** Chunjie Tan, et al. *Shanghai Jiao Tong University*	W3.2 **1061: Improving Temporal Distribution of Stable Cavitation Intensity Using a Controller Based on Real-Time Intensity Detection** Pengcheng Wang, et al. *Shanghai Jiao Tong University*	W3.3 **1080: Nanobubbles Are Non-Echogenic for Fundamental-Mode Contrast-Enhanced Ultrasound Imaging** John Myers, et al. *University of Colorado*
W3.4 **1510: Ring Array Passive Acoustic Mapping Using Hybrid Heterogeneous Angular Spectrum Method** Hui Zhu, et al. *ShanghaiTech University*	W3.5 **1619: The Effect of Fluid Flow Conditions on Ultrasound-Assisted Endothelial Cell Membrane Permeabilization** Elahe Memari, et al. *Concordia University*	W3.6 **1973: Cross-Scale Transcranial Nonlinear Contrast-Enhanced Power Doppler Plane Wave Imaging with High Contrast-to-Tissue Ratio and Sensitivity** Hanbing Chu, et al. *Xi'an Jiaotong University*
W3.7 **2169: 3D Subharmonic Aided Pressure Estimation for Characterizing Indeterminate Breast Mass** Mehnoosh Torkzaban, et al. *Thomas Jefferson University*	W3.8 **2284: Monodispersity Increases the Adhesion Efficiency and Specificity of Cloaked Ligand RGD-Microbubbles** Jair Castillo, et al. *University of Colorado Boulder*	W3.9 **1913: Microbubbles for Blood-Brain Barrier Opening: from In Vitro to In Vivo** Ambre Dauba, et al. *Université Paris-Saclay*
W3.10 **2107: Pro-Angiogenic Stimulation by microRNA-126-Conjugated Microbubbles** Stephanie He, et al. *Concordia University*		

B2P-13: MEL - Elastography Applications - Eye, Brain, and Muscle
Chair(s): Javier Brum (Universidad de la Republica), Mostafa Fatemi (Mayo Clinic)

W4.1 **1081: Anisotropic Imaging for Evaluating Human Musculoskeletal Properties via Dual-Directions Shear Wave Imaging** Guo-Xuan Xu, et al. *National Cheng Kung University*	W4.2 **1111: Anisotropic Nonlinear Shear Elasticity Quantification in Ex Vivo Muscles** Ha Hien Phuong Ngo, et al. *BioMaps*	W4.3 **1219: The Viscoelasticity and Fluidity of the Brain Tumors for Ultrasound Assessment Using the Unidirectional Transcranial Shear Waves at the Variable Low Frequencies** Jianjun Yu, et al. *Xi'an Jiaotong University*

W4.4	W4.5	W4.6
1310: Quantification of In Vivo Muscle Elastic Anisotropy Factor by Steered Push Beams Ha Hien Phuong Ngo, et al. *BioMaps*	**2188: A Simulation Based Approach for Shear Wave Attenuation Quantification in Transverse Isotropic Tissues: Preliminary Results** Eliana Budelli, et al. *Instituto de Ingeniería Química. Facultad de Ingeniería. UdelaR*	**2221: Surface Wave Dispersion Approach for Estimating the Viscoelastic Properties of the Crystalline Lens** Hongqiu Zhang, et al. *University of Houston*
W4.7	W4.8	W4.9
2257: In Vivo Assessment of Mouse Brain Mechanical Properties Using Single Transducer – Harmonic Motion Imaging with Multi-Frequency Excitation Pulse Md Murad Hossain, et al. *Columbia University*	**2342: Factors Affecting SV Mode Shear Wave Propagation in Elastic, Incompressible, Transversely Isotropic Materials in Both 2D and 3D Using Ultrasonic Rotational 3D SWEI** Anna Knight, et al. *Duke University*	**2361: Simultaneous Assessment of Whole Eye Biomechanics Using Ultrasonic Elastography** Runze Li, et al. *University of Southern California*
W4.10	W4.11	W4.12
2571: Quantitative Ultrasound Bladder Vibrometry for Detrusor Pressure Estimation: Preliminary Results for In Vivo Human Bladders David Rosen, et al. *Mayo Clinic College of Medicine and Science*	**1204: Measurement of Crystalline Lens Elasticity by Shear Wave Elastography for the Monitoring of Presbyopia Ultrasonic Cavitation Treatment** Alice Ganeau, et al. *LabTAU, INSERM*	**1730: Quantitative Assessment of Median Nerve Transverse Mobility Using Ultrasound Strain Imaging During Decomposed Hand Gestures at Functional and Compressional Wrist Angles** Yuchen Tang, et al. *The University of Hong Kong*
W4.13		
2008: Development of a Non-Invasive Ultrasonic Method to Measure the Mechanical Properties of Skin Zülal Kizilaslan, et al. *Eindhoven University of Technology*		

B2P-14: MEL - Viscoelasticity and Shear Wave Propagation
Chair(s): Piotr Kijanka (AGH University of Science and Technology)

W5.1	W5.2	W5.3
1054: Shear Wave Viscoelastography with Single-Track Location Maximum a-Posteriori Probability (STL-MAP) Spectroscopy Siladitya Khan, et al. *University of Rochester*	**1095: In Vivo Shear Wave Attenuation Measurements with an Improved Frequency-Shift Method: Duck Liver Experiments** Ladan Yazdani, et al. *University of Montreal Hospital*	**1562: Between-Visit Reproducibility of Shear Wave Viscoelastography for Diffuse Liver Disease Imaging** Sathiyamoorthy Selladurai, et al. *University of Montreal Hospital*
W5.4	W5.5	W5.6
1614: Parametric Study of Renal Allograft Biopsy-Based Shear Wave Motion Simulations Luiz Vasconcelos, et al. *Mayo Clinic*	**2273: Nonlinear Least-Squares Estimation of Shear Wave Speeds in Viscoelastic Media** Nicholas Bannon, et al. *Michigan State University*	**2424: Propagation of Shear Wave in Elastography Using Physics-Informed Neural Network** Yanjun Xie, et al. *University of Virginia*
W5.7	W5.8	W5.9
2460: An Open-Source Radon-Transform Shear Wave Speed Estimator with Masking Functionality to Isolate Different Shear-Wave Modes Felix Jin, et al. *Duke University*	**2268: Fractional Calculus Models for Shear Wave Parameter Estimation** Robert McGough, et al. *Michigan State University*	**2384: Ultrasound Shear Wave Elastography and Shear Wave Dispersion Imaging for the Diagnosis and Staging of Hepatic Fibrosis** Mehnoosh Torkzaban, et al. *Thomas Jefferson University*

Wednesday, October 12: Posters (Casinó Level 3)

B2P-15: MIM - New Imaging Techniques II
Chair(s): Tai-kyong Song (Sogang University), Xiaoming Zhang (Mayo Clinic)

W6.1 **1300: Real Time Implementation of Sound Speed Estimation for Portable Ultrasound System** Yewon Lee, et al. *Sogang University*	**W6.2** **1671: Current Source Density Reconstruction of Acoustoelectric Images by Regularized Inverse Filtering** Jinbum Kang, et al. *University of Washington*	**W6.3** **1691: Clinical Validation of Manually Registered Ultrasound Volumes of the Shoulder** Ahmed Sewify, et al. *QUT*
W6.4 **1695: Ultrasound Pulse Waveform Modulation with Gauss Window for Acoustoelectric Imaging** Haipeng Yuan, et al. *Tianjin University*	**W6.5** **1745: Portable Cavitation Monitoring System with Real-Time Imaging of PAM-Mode Image Superimposed on B-Mode Image** Hyae Eun Lee, et al. *Sogang University*	**W6.6** **1865: PDMS Composites with Photostable NIR Dyes for B-Mode Ultrasound Imaging** India Lewis-Thompson, et al. *University College London*
W6.7 **2398: Transcranial Acoustoelectric Imaging of Spatially and Temporally Varying Electrical Currents to Better Understand Neuronal Dysfunction** Teodoro Trujillo, et al. *University of Arizona*	**W6.8** **1410: Detection of the Cardiac Mechanical Activation Sequence Using High Frame Rate Speckle Tracking Echocardiography** Konstantina Papangelopoulou, et al. *Katholieke Universiteit Leuven*	**W6.9** **1411: High Frame Rate Speckle Tracking Algorithm Towards a Real-Time Implementation** Marta Orlowska, et al. *KU Leuven*
W6.10 **2212: Using 3D Printed Structures to Evaluate the Potential Causes of the Color Doppler Twinkling Signature** Benjamin Wood, et al. *Mayo Clinic*	**W6.11** **2445: Subharmobnic Scattering of Sonazoid Microbubbles for Evaluating Tumor Interstitial Fluid Pressure in Mice** Yun Wang, et al. *Shenzhen Institutes of Advanced Technology*	**W6.12** **2504: Improving Strain Imaging Accuracy by Employing a Displacement Point-Tracking Quality Metric** Jad El Harake, et al. *Columbia University Department of Biomedical Engineering*

B2P-16: MIS - Segmentation and Classification
Chair(s): Massimo Mischi (Einhoven University of Technology)

W7.1 **1236: Calibrating Acquisition-Related Data Mismatches by Using Transfer Functions** Ufuk Soylu, et al. *University of Illinois Urbana-Champaign*	**W7.2** **1024: Detection of Hematoma Boundaries in Transcranial Ultrasound Brain Imaging via Envelope Reconstruction on Resonance-Based Signal Decomposition** Aryaz Baradarani, et al. *Tessonics Medical Systems*	**W7.3** **1237: Deep Learning Based Segmentation for Assessment of Fractional Limb Volume in 3D Fetal Ultrasound Imaging** Rohit Pardasani, et al. *GE Healthcare*
W7.4 **1399: The Response of Prefrontal and Parietal Lobes to Acoustoelectric Signal** Peishan Huang, et al. *Tianjin University*	**W7.5** **1517: Detection of Spine Curve and Vertebral Level on Ultrasound Images Using DETR** Yiwen Tang, et al. *ShanghaiTech University/School of Information Science and Technology*	**W7.6** **2109: Deep Reinforcement Learning of Kelvin-Voigt Fractional Derivative Parameters for Viscoelastic Imaging** Yan Zhou, et al. *Xi'an Jiaotong University*

W7.7 **2245: Cervix Ultrasound Texture Analysis to Differentiate Between Term and Preterm Birth Pregnancy: A Machine Learning Approach** David Bustamante, et al. *Wayne State University*	**W7.8** **1008: Triaging Subjects with Palpable Breast Masses for Biopsy, Follow-Up or Treatment Using AI Applied to Breast Ultrasound in a Low-Resource Setting - A Feasibility Study** Jhimli Mitra, et al. *GE Research*	**W7.9** **1421: 3D GaN-Generated Synthetic Paired Ultrasound and Label Data: A 3D Segmentation Application Case** Cristiana Tiago, et al. *GE Vingmed Ultrasound AS*
W7.10 **2390: Machine Learning for Liver and Tumor Segmentation in Ultrasound Based on Labeled CT and MRI Images** Laurent Man, et al. *University of Massachusetts*		

B2P-17: MIS - Image Enhancement II **Chair(s):** Marie Muller (North Carolina State University), Ewen Carcreff (DB-SAS / TPAC)		
W8.1 **2034: Motion Tracking of the Left Ventricle in High-Frame-Rate Echocardiography for Ejection Fraction Estimation Based on Unsupervised Deep Learning: An In Vitro and In Vivo Feasibility Study** Zhikai Ruan, et al. *Xi'an Jiaotong University*	**W8.2** **1018: Unsupervised Deep Learning Based Speckle Reduction Technique: Preliminary Study** Dongkyu Jung, et al. *DGIST*	**W8.3** **1386: Interpretable Singular Value Decomposition Clutter Filtering in High Frame-Rate Ultrasound Imaging** Andong Wang, et al. *The University of Hong Kong*
W8.4 **1822: Zero-Shot Learning for Real-Time Ultrasound Image Enhancement** Yuxuan Li, et al. *Tsinghua University*	**W8.5** **2025: Enhanced Wiener and Kuan Filters Applied with Adaptive Beamformers for Improved Contrast and Resolution in Ultrafast Ultrasound Images** Larissa Comar Neves, et al. *Federal University of Technology*	**W8.6** **2360: Adaptive Spatiotemporal SVD Clutter Filtering in Cardiac Blood Flow Imaging with Diverging Waves** Ehsan Jafarzadeh, et al. *Sunnybrook Research Institute*
W8.7 **2561: ROI-Free Assessment of In-Vivo Clutter with Feature Extraction and the Earth Mover's Distance** Ying-Chun Pan, et al. *Vanderbilt University*	**W8.8** **2547: Blind Phase-Aberrated Baseband Point Spread Function Estimator Using Complex-Valued Convolutional Neural Network** Yu-An Lin, et al. *National Tsing Hua University*	**W8.9** **1868: CNN-Based Tightening of Speckle Patterns in Ultrasound Imaging: A Feasibility Study** Dimitris Perdios, et al. *École polytechnique fédérale de Lausanne (EPFL)*

B2P-18: MPA - Photoacoustic Signal and Image Processing **Chair(s):** Michael Kolios (Ryerson University), Stanislav Emelianov (Georgia Institute of Technology and Emory University School of Medicine)		
W9.1 **1049: A Photoacoustic Spectrum Feature Extraction Method to Characterize the Hydroxyapatite Degradation Process in Cortical Bone** Boyi Li, et al. *Fudan University*	**W9.2** **1283: Deep Learning Assisted Photoacoustic Image Enhancement Using In Vivo Ground Truths Based on Photoacoustic Fluctuation Imaging** Ivana Falco, et al. *Univ. Grenoble Alpes, CNRS, LIPhy*	**W9.3** **1358: Photoacoustic Image Analysis of Sub-Resolution Changes in Collagen Fiber Bundle Thickness During the Progression of Pelvic Organ Prolapse** Andrew Markel, et al. *Tulane University*

W9.4	W9.5	W9.6
1575: Experimental Evaluation of a 3-D Fully Convolutional Network for Learning Blood Oxygenation Saturation Using Photoacoustic Imaging Jiaqi Zhu, et al. *University College London*	**1976: An Effective Blind Unmixing Approach for Plaque Decomposition Based on Multispectral Photoacoustic Imaging** Camilo Cano, et al. *Eindhoven University of Technology*	**1983: Analysis of Abdominal Aortic Aneurysm Thrombus Using Multispectral Photoacoustic Imaging** Rick van Bergen, et al. *Eindhoven University of Technology*
W9.7 **2305: Adaptive Photoacoustic Beamforming Algorithms for Blood Oxygen Saturation Estimation** Rashid Al Mukaddim, et al. *University of Wisconsin - Madison*	W9.8 **2341: Numerical Investigation of Multiple Scattering Caused by Temporal Bone in Transcranial Photoacoustic Imaging** Fatemeh Hosseini, et al. *Tarbiat Modares University*	W9.9 **2409: Automatic Search for Photoacoustic Marker Using Transrectal Ultrasound Actuator** Hamid Moradi, et al. *University of British Columbia*
W9.10 **2501: Spectral System Denoising in Spectroscopic Photoacoustic Neuroimaging** Jeeun Kang, et al. *Johns Hopkins University*	W9.11 **1058: Accelerating Model-Based Photoacoustic Image Reconstruction In Vivo Based on s-Wave** Yuting Shen, et al. *ShanghaiTech University*	W9.12 **1116: PAFormer: Photoacoustic Reconstruction via Transformer with Mask Mechanism** Juze Zhang, et al. *ShanghaiTech University*
W9.13 **1644: Deep Learning Based Approach for Multi-Perspective Photoacoustic Imaging** Navchetan Awasthi, et al. *Eindhoven University of Technology*	W9.14 **1670: Multi-Perspective Approach for Photoacoustic Imaging Based on Multiple Spatially Separated CMUTs on an Array** Amir Gholampour, et al. *Eindhoven University of Technology*	W9.15 **2524: Beyond SAF: Deconvolution-Based Elevation Resolution Enhancement for Linear Array-Based Three-Dimensional Photoacoustic Imaging** Yichuan Tang, et al. *Worcester Polytechnic Institute*

B2P-19: MSD - Ultrasound Devices, Systems and Methods II
Chair(s): Holly Lay (Fujifilm Visualsonics), Pengfei Song (University of Illinois)

W10.1	W10.2	W10.3
1565: A Robust Backscatter Modulation Scheme for Continuous Ultrasound Data Transfer from Deep Implants Lukas Holzapfel, et al. *Fraunhofer Institute for Reliability and Microintegration IZM*	**1881: A Novel Two-Element Scanner for High-Frequency Ultrasound Imaging** Anudeep Vayyeti, et al. *IIT Madras*	**1972: WULPUS: A Wearable Ultra Low-Power Ultrasound Probe for Multi-Day Monitoring of Carotid Artery and Muscle Activity** Sebastian Frey, et al. *ETH Zurich*
W10.4 **1982: Diverging Polymer Lens Design and Fabrication for Row-Column Array Transducers (1998)** Melanie Audoin, et al. *DTU Health Tech*	W10.5 **2063: An Autonomous Electronics System for Ultrasound Energy Transfer and Passive Acoustic Communication** Marc Fournelle, et al. *Fraunhofer IBMT*	W10.6 **2080: Vessel Navigation for Single Beam Ultrasound Doppler Using Transparent Transducer and Optics** Hwanseung Yu, et al. *Sungkyunkwan University*
W10.7 **2177: Morphometrics of Samples Obtained with Ultrasound-Enhanced Fine-Needle Aspiration Biopsy** Ona Westerlund, et al. *Medical Ultrasonics Laboratory (MEDUSA), Aalto University*	W10.8 **2399: A Photoacoustic Framework for Predictions of Generalized Contrast-to-Noise Ratios in Frame-Averaged Images** Mardava Gubbi, et al. *Johns Hopkins University*	W10.9 **2452: Combined Ultrasound, Photoacoustic, and Elasticity Imaging on the Vevo F2 Imaging System** Xinyue Huang, et al. *Georgia Institute of Technology*

W10.10	W10.11	
1927: 2D Shear Wave Elastography Implementation on a Portable Research Ultrasound System – Initial Results	**2453: Design of a Transimpedance Amplifier for a Dual Mode CMUT Based Transcranial Ultrasound System**	
Damian Cacko, et al.	Reza Pakdaman Zangabad, et al.	
us4us sp. z o.o.	*Georgia Institute of Technology*	

B2P-20: MSR - Super Resolution Ultrasound V
Chair(s): Gianmarco Pinton (University of North Carolina)

W11.1	W11.2	W11.3
1252: Automated Parameter Selection for Super-Resolution Image Processing Using Statistics of Fast and Slow Time Sampling	**1257: Ultrasound Super-Resolution Imaging for the Differentiation of Thyroid Nodules: A Feasibility Study**	**1456: Super Resolution Ultrasound Using Recursive Imaging of Highly Dense Scatterers**
Katherine Brown, et al.	Ge Zhang, et al.	Mostafa Amin Naji, et al.
University of Texas at Dallas	*China Resources & Wisco General Hospital*	*Center for Fast Ultrasound Imaging, Technical University of Denmark*
W11.4	W11.5	W11.6
1532: Chirp-Coded Excitation for Ultrasound Localization Microscopy: A Phantom Study	**2024: Replacing the SVD Filter with a Correlation-Based Approach for Real-Time In Vivo ULM**	**2149: Microvasculature Imaging of Mice Brain Through High-Frequency Ultrasound Micro-Doppler Imaging with Background Noise Reduction and Vessel Enhancement Processing**
Baptiste Pialot, et al.	Ryan DeRuiter, et al.	Hung-Jui Chen, et al.
CREATIS, CNRS UMR 5220 – INSERM U1294 – Université Lyon 1 – INSA Lyon	*University of North Carolina at Chapel Hill/NCSU*	*National Cheng Kung University*

B2P-21: MTC - Tissue Characterization - Cardiovascular and Cardiopulmonary II
Chair(s): Michael Oelze (University of Illinois)

W12.1	W12.2	W12.3
1311: Estimation of Size of Red Blood Cell Aggregates Using Reference Power Spectra	**1368: Ultrasonic Backscatter Coefficient Analysis with Clutter Filter for Ultrafast Blood Characterization**	**1534: Investigating Pulmonary Fibrosis and Edema in Rats Using Quantifying Ultrasound Multiple Scattering in Lung**
Mototaka Arakawa, et al.	Masaaki Omura, et al.	Roshan Roshankhah, et al.
Tohoku University	*University of Toyama*	*North Carolina State University*
W12.4	W12.5	W12.6
1557: In Vivo, Quantitative Ultrasound Assessment of Pulmonary Fibrosis in Rats by Separate Analysis of Single Scattering and Multiple Scattering Components	**1802: Local Measurement of Instantaneous Change in Myocardial Thickness in Swine Heart During Acute Myocardial Ischemia**	**1920: Effects of Aging on Carotid Pulse Waveforms Measured by Piezoelectric Sensor**
Theresa Lye, et al.	Yu Obara, et al.	Kazumasa Matsubara, et al.
Weill Cornell Medicine	*Tohoku University*	*Doshisha University*
W12.7	W12.8	W12.9
1954: Multi-Perspective Puls/e Wave Velocity Imaging of Abdominal Aortic Aneurysm Phantoms	**2157: Natural Shear Wave Estimation of Murine Hearts by Using High Frequency Micro-Elastography**	**2397: Integrated Backscatter Versus Spectral Parameters for In Vivo Estimation of Human Carotid Plaque Composition**
Anouk van Heesch, et al.	Hsin Huang, et al.	Sheronica James, et al.
Photoacoustics and Ultrasound Laboratory Eindhoven	*National Cheng Kung University*	*Cleveland Clinic*

W12.10 **2498: Propagation of Pulse Wave in an Idealized Stenotic Vessel with Heterogeneous Plaque in Simulated and Experimental Vessel Phantoms** Nima Mobadersany, et al. *Columbia University*	**W12.11** **1454: Coronary Plaque Classification of Intravascular Ultrasound Images Based on a Multi-Stage Deep Classifier Cascades** Xinze Li, et al. *Suzhou Institute of Biomedical Engineering and Technology, Chinese Academy of Sciences*	**W12.12** **1511: Myocardial Attenuation Quantification for Diagnosis of Ischemic Heart Disease** Young-Min Kim, et al. *KAIST*
W12.13 **1623: Transmural Fiber Orientation and Tissue Strain Measurement with Ultrasound Imaging in Excised Myocardium Under Biaxial Tension** John Cormack, et al. *Department of Medicine, School of Medicine, University of Pittsburgh*		

B2P-22: MTH - Therapy II **Chair(s):** Mathieu Pernot (ESPCI Paris), William Apoutou N'Djin (INSERM)		
W13.1 **1032: Gene Expression Changes in Human Chronic Wound Tissue Treated with Low-Frequency (20 kHz), Low-Intensity (100 mW/cm2, SPTP) Ultrasound** Olivia Ngo Boerman, et al. *Bucknell University*	**W13.2** **1247: Influence of Echogenic Liposomes on Histotripsy Bubble Dynamics** Aarushi Bhargava, et al. *University of Chicago*	**W13.3** **1250: In Vivo Evaluation of Ultrasound-Triggered Release from Novel Polymeric Spinal Device** Lauren Delaney, et al. *Thomas Jefferson University*
W13.4 **1625: Measuring Drug Release Induced by Thermal and Non-Thermal Effects of Ultrasound in a Nanodrug Delivery System** Tyler Hornsby, et al. *Ryerson University*	**W13.5** **1707: Sonobiopsy for Sensitive Detection of Glioblastoma-Derived Circulating Tumor DNA** Jinyun Yuan, et al. *Washington University in St Louis*	**W13.6** **2030: Non-Invasive Generation of Hydrogel Microporosity Using Acoustic Droplet Vaporization** Mitra Aliabouzar, et al. *University of Michigan*
W13.7 **2045: Ultrafast Dynamics of Ultrasound-Induced Vaporization and Payload Release of Phase-Shift Emulsions** Mitra Aliabouzar, et al. *University of Michigan*	**W13.8** **2136: Optimization of Focused Ultrasound Parameters for Modulating the Pancreatic Tumor Microenvironment** Jordan Joiner, et al. *University of North Carolina at Chapel Hill*	**W13.9** **2270: Therapeutic Efficacy of PSMA-Targeted Nanobubble Cavitation Evaluated in a Rabbit Orthotopic Prostate Cancer Model** Eric Abenojar, et al. *Case Western Reserve University*

B2P-23: MTN - Image Guidance & Treatment Optimisation **Chair(s):** Virginie Papadopolou (University of North Carolina)		
W14.1 **1343: Improved Treatment of Head and Neck Cancer Using 3-D Focused Ultrasound-Medicated Cetuximab** Ryan Margolis, et al. *University of Texas at Dallas*	**W14.2** **1449: Heterogeneous Angular Spectrum Method for Trans-Skull Focused Ultrasound Simulation** Tian-Yi Chao, et al. *National Taiwan University*	**W14.3** **1666: Method for Aligning a HIFU Probe with a High-Resolution Imaging Plane to Increase Treatment Precision. Evaluation in an In Vivo Primate Model** Sophie Cambronero, et al. *LabTAU, INSERM*

W14.4	W14.5	W14.6
1750: A GPU-Based HIFU Interference Canceling for Real-Time Imaging-Guided Therapy Junseong Kim, et al. *Sogang University*	**1940: Development of a Neuronavigation-Guided Sonobiopsy Device for Glioblastoma Patients** Lu Xu, et al. *Washington University in St. Louis, McKelvey School of Engineering*	**2325: Characterization of the Imaging and Therapy Performance of a Dual-Mode Pulsed-HIFU Probe** Randall Williams, et al. *University of Washington, Center for Industrial and Medical Ultrasound*
W14.7	W14.8	W14.9
2332: Theranostic Blood-Brain Barrier Opening in Non-Human Primates Using a 500kHz Linear Array Robin Ji, et al. *Columbia University*	**1878: 3D Localization of Cavitation Bubbles with a Two-Array Angular Spectrum Method Implementation** Sarah Therre, et al. *Fraunhofer IBMT*	**2071: Co-Sparse Registration of Photoacoustic and MRI for Compensating Brain Shift in Neurosurgery** Parastoo Farnia, et al. *Tehran University of Medical Sciences*

B2P-24: NAI - Acoustic Imaging and Microscopy and NWP - Wave propagation Chair(s): Meng-Lin Li (National Tsing Hua University, Taiwan)		
W15.1	W15.2	W15.3
1105: Lamb Wave Propagation Analysis by Using Laser Doppler Vibrometer Weiyi Zuo, et al. *Institute Of Acoustics, Chinese Academy Of Sciences*	**2114: Lamb Wave Reflection and Transmission in Bent Steel Sheets** Christoph Haugwitz, et al. *Technische Universität Darmstadt*	**1944: Evaluation of Epoxy Coating Quality Inside the Pipe Using High-Resolution Ultrasound Imaging and Scattering Analysis** Honghyeon Ha, et al. *SonicLab*
W15.4	W15.5	
2294: Ultrasound Wrist Vein Pattern for Biometric Recognition Monica Micucci, et al. *University of Basilicata*	**2581: Resolution Improved Amplitude Steered Array Imaging with Time-Domain Delay Multiply and Sum Technique** Cheng-Chih Hsiao, et al. *National Tsing Hua University*	

B2P-25: NDE – General NDE Methods II Chair(s): Luca De Marchi (University of Bologna, Italy)		
W16.1	W16.2	W16.3
1041: Vibroacoustography Spectroscopy: Estimation of Porosity in Materials João Uliana, et al. *University of São Paulo*	**1166: Localizing Fouling in Water-Filled Pipe with Laser-Induced Non-Axisymmetric Guided Waves** Joonas Mustonen, et al. *Electronics Research Lab., Dept. of Physics, University of Helsinki*	**1419: Delamination Detection of CFRP Plates with Lamb Waves by an Elliptic Filter in Wavenumber-Domain** Hui Zhang, et al. *State Key Laboratory of Precision Measurement Technology and Instrument, Tianjin University*
W16.4	W16.5	W16.6
1425: Wideband Dispersion Reversal Based Corrosion Inspection Using Fundamental Antisymmetric Lamb Waves Feiyao Ling, et al. *Fudan University*	**1676: Noninvasive Pressure Measurements Using Acoustic Resonance Spectroscopy** John Greenhall, et al. *Los Alamos National Laboratory*	**1697: Numerical Investigation of Unidirectional Generation of Circumferential SH Waves Applied to Defect Detection in Pipe** Lucas Martinho, et al. *PUC-Rio*

W16.7 **1709: Debonding Quantification for Honeycomb Sandwich Structure Based on Hexagonal Units Reconstruction Using Air-Coupled Ultrasonic C-Scan** Hui Zhang, et al. *State Key Laboratory of Precision Measurement Technology and Instrument, Tianjin University, Tianjin*	**W16.8** **1743: PPM-EMAT Design Configurations for Ultrasonic Communication Through Metallic Channel** Xin Huang, et al. *Illinois Institute of Technology*	

B2P-26: NDE – General NDE Methods III **Chair(s):** Paul Wilcox (University of Bristol, UK), Enrico Boni (University of Florence, Italy)		
W17.1 **1779: Identification of Delamination in Composite Structure by Local Defect Resonance Technique** Changyu Zhang, et al. *Xiamen University*	**W17.2** **1827: Detection and Visualization of Internal Defects in Shotcrete Specimens Using SSE Analysis Considering Local Noise for Noncontact Acoustic Inspection** Kazuko Sugimoto, et al. *Toin University of Yokohama*	**W17.3** **1923: Investigation of Guided Wave Dispersion Curves of Lithium-Ion Batteries at Different State of Charge Levels** Patrick Swaschnig, et al. *Graz University of Technology*
W17.4 **2083: Investigation of Machine Learning-Based Acoustic 2D Gas Pyrometer** Fu-Sung Lin, et al. *National Cheng Kung University*	**W17.5** **2123: Simulation of Lamb Waves Excited by an Air-Coupled Ultrasonic Phased Array for Non-Destructive Testing** Jan Hinrichs, et al. *Technische Universität Darmstadt*	**W17.6** **2194: Assessment of the State of Health of Second-Life Lithium-Ion Batteries Using Quantitative Ultrasound Spectroscopy** Simon Montoya-Bedoya, et al. *Verasonics SAS, Medellín-Colombia*
W17.7 **2269: Operando State of Charge Tracking of Second-Life Lithium-Ion Batteries Using Quantitative Ultrasound Spectroscopy** Simon Montoya-Bedoya, et al. *Verasonics SAS, Medellín-Colombia*	**W17.8** **2315: Adaptive Ultrasound Imaging Applied to Laser Brazed Joints** Andrew Ouellette, et al. *Institute for Diagnostic Imaging Research, University of Windsor*	

B2P-27: PMI - Modelling and Inversion II **Chair(s):** Koen van Dongen (Delft University of Technology)		
	W18.2 **1164: FEM-Simulations of Tailored 3D Pressure Fields for Us-Assisted Oleogel Crystallization** Oskari Tommiska, et al. *Electronics Research Lab., Dept. of Physics, University of Helsinki*	**W18.3** **1176: BEM-FEM Simulation of Acoustic Levitation Dynamics with Phased Arrays** Marika Sirkka, et al. *Electronics Research Lab., Dept. of Physics, University of Helsinki*
W18.4 **1177: FEM Simulations of the Effects of Fouling Deposits on Laser-Generated Lamb Waves** Joonas Suorsa, et al. *Electronics Research Lab., Dept. of Physics, University of Helsinki*	**W18.5** **1347: Reconstruction of Fouling Distribution from Aggregate Observations** Denys Iablonskyi, et al. *Electronics Research Lab., University of Helsinki*	**W18.6** **1860: Ultrasound Full-Waveform Inversion for In-Vivo Whole-Body Slice Imaging of a Mouse** Ines Elisa Ulrich, et al. *ETH Zurich*

W18.7 **1909: Dependency of Apparent Anisotropic Thermal Diffusivity on Elastic Anisotropy in Cubic Single Crystals from Transient Grating Spectroscopy** Jakub Kušnír, et al. *Institute of Thermomechanics of the CAS, v. v. i.*	W18.8 **1912: Generalized Inverse Problems in Resonant Ultrasound Spectroscopy** Juraj Olejňák, et al. *Institute of Thermomechanics of the CAS, v. v. i.*	W18.9 **2013: A Fast Simulation Method for Lamb Wave Propagation in Coupled Non-Parallel Plates** Håvard Kjellmo Arnestad, et al. *University of Oslo*
W18.10 **2044: Automating Regularization Parameter Selection of the Inverse Problem in Ultrasound Tomography** Anita Carević, et al. *University of Split*	W18.11 **2148: Using Uncertainty to Estimate Imaging Errors Induced by Approximate Reconstruction Physics** Oscar Bates, et al. *Imperial College London*	W18.12 **2266: Numerical Spatial Impulse Response Calculations for a Circular Piston Radiating in a Lossy Medium** Drew Murray, et al. *Michigan State University*
W18.13 **2335: Multimodal Exponentially-Modified Gaussian Oscillators** Christopher Hahne, et al. *University of Bern*	W18.14 **2417: Acoustical and Optical Compensation for Spectral Unmixing of Sulfates Using Ultrasound and Photoacoustic Tomography: In Silico and In Vitro Results** Alexander Pattyn, et al. *Wayne State University*	

B2P-28: POA/PNR - Opto-Acoustics and Non-Reciprocal Acoustics
Chair(s): Vincent Laude (FEMTO-ST / CNRS)

W19.1 **1083: Non-Reciprocity Within Piezoelectric Micromechanical Resonator Chains** Jianing Zhao, et al. *University of Illinois at Urbana-Champaign*	W19.2 **1338: Schlieren Visualization of Anisotropic Dual Slanted Plate Mesoscale Lens Action for Ultrasound** Eetu Lampsijärvi, et al. *Electronics Research Lab., Dept. of Physics, University of Helsinki*	W19.3 **1785: Unipolar Back-Projection Algorithm for Photoacoustic Tomography** Soheil Hakakzadeh, et al. *Sharif Univ. of Tech.*
W19.4 **1991: Brillouin Spectroscopy Characterization of Unfiled Tetragonal Tungsten-Bronze Ferroelectrics in a Wide Temperature Range** David Mareš, et al. *Institute of Thermomechanics of the Czech Academy of Science*		

B2P-29: PTF - Thin Films II
Chair(s): Vincent Laude (FEMTO-ST / CNRS)

W20.1 **2351: Quasi-Shear Mode Electromechanical Coupling Coefficient of c-Axis Tilted MgZnO Thin Films** Yohkoh Shimano, et al. *Waseda University, ZAIKEN*	W20.2 **2559: Improvement of Electromechanical Coupling Coefficient of Piezoelectric LiNbO3 by Doping Praseodymium** Kae Nakamura, et al. *Waseda University*	W20.3 **2583: Weighted Electrodes Configuration for Electromechanical Coupling Enhancement of S0 Mode Resonator Based on Y36 Cut LiNbO3 Thin Film** Yushuai Liu, et al. *Shanghaitech University*

Wednesday, October 12: Posters (Casinó Level 3)

B2P-30: PUM - Ultrasonic Motors and Actuators
Chair(s): Vincent Laude (FEMTO-ST / CNRS)

W21.1	W21.2	W21.3
1268: Frequency Modulated, Air-Coupled Ultrasound Generated by Fluidic Oscillators Christoph Strangfeld, et al. *BAM*	**1273: Investigation of Acoustic Underwater Propulsion with 36° Y-Cut Lithium Niobate Transducer** Takumi Hirata, et al. *Muroran Institute of Technology*	**2145: Evaluation of Preload Mechanism for Micro Cryogenic Actuator Without Bolt-Clamping** Takefumi Kanda, et al. *Okayama University*
W21.4 **2478: Sensitivity Enhanced High Frequency pMUT with 3rd Order Flexural Mode Using LN Thin Film** Kangfu Liu, et al. *Shanghaitech University*		

B2P-31: ASE - Sensors
Chair(s): Ausrine Bartasyte (University of Franche-Comté)

W22.1	W22.2	W22.3
1303: Innovative NiAl Electrodes for Long Term, High Temperature SAW Sensing Applications Based on Lithium Niobate Jordan Maufay, et al. *LMOPS*	**1323: Temperature and Dynamic Strain Measurements Using a Single SAWR Sensor** David Leff, et al. *University of Maine*	**1951: Decoupling of Humidity and Temperature Effects with a Single Solidly Mounted Resonator Sensor** Jose Manuel Carmona-Cejas, et al. *GMME-CEMDATIC-ETSI de Telecomunicación. Universidad Politécnica de Madrid*
W22.4 **2334: Optimization of a Material Stack for High-Temperature SAW Sensor: Towards 2.45GHz Wireless Devices** Arthur De Sousa Lopes Moreira, et al. *ENSMM/Femto-St Institute*		

B2P-32: AMS - MEMS
Chair(s): Ausrine Bartasyte (University of Franche-Comté)

W23.1	W23.2	W23.3
1124: Differential LGS Grooved Resonators with Linear Temperature-Frequency Relation Qingchuan Shan, et al. *Shanghai Jiao Tong University*	**1350: Near-Spurious-Free Lithium Niobate Resonator for Piezoelectric Power Conversion with Q of 3500 and kt² of 45%** Kristi Nguyen, et al. *The University of Texas at Austin*	**1467: Four-Leaf Clover Shaped Phononic Crystals for Quality Factor Improvement of AlN Contour Mode Resonator** Ping-Jing Chen, et al. *UESTC*
W23.4 **1505: 5 GHz Lamb Wave Wi-Fi Channel Filters** Alexandre Reinhardt, et al. *Univ. Grenoble Alpes, CEA, LETI*	**W23.5** **1634: Spurious Modes Metric Definition for Machine Learning Aided MEMS Design** Luca Colombo, et al. *Northeastern University*	**W23.6** **1740: First-Order Shear Horizontal Mode Resonators Design of High kt² Based on LiNbO3 Thin Film** Yushuai Liu, et al. *Shanghaitech University*

W23.7	W23.8	W23.9
1842: High-Q A0 Mode Plate Wave Resonator on X-Cut LiNbO3 Film with Dummy Electrode Arrays Qinwen Xu, et al. *Wuhan University*	**2023: Compact Footprint μs Spiral Delay Lines Using GaN-on-SiC Phononic Integrated Circuits** Mahmut Bicer, et al. *University of Bristol*	**2097: Surface Cavity Wave Structures for Ultra-Compact Radio Frequency Filters** Eric Michoulier, et al. *frecnsys a Soitec company*
W23.10 **2500: Gigahertz Metamaterial Ultrasonic Lens Characterization Using GHz CMOS Integrated Ultrasonic Micro Imager** Juneho Hwang, et al. *Cornell University*		

B2P-33: TMI - Medical Imaging and Therapeutic Transducers		
Chair(s): Christine Démoré (University of Toronto)		
W24.1 **1509: Performance Comparison Between Single Layer and Several Configurations of Bilayer P(VDF-TrFE) Transducers in Pulse-Echo Measurements** Sean Toffessi Siewe, et al. *GREMAN, UMR 7347, University of Tours, CNRS, INSA CVL, Tours*	**W24.2** **1733: Comparison of Waveform Modulation Methods Used in Pattern Interference Radiation Force Neuromodulator** Young Hun Kim, et al. *Hanyang University*	**W24.3** **1961: Development of a Dual-Mode Imaging Catheter for Peripheral Intravascular Imaging** Weicen Chen, et al. *Shenzhen Institutes of Advanced Technology*
W24.4 **2057: Fabrication and Characterization of Flexible Ultrasonic Array Transducers Based on Sol-Gel Composite Spraying Technique** Masayuki Tanabe, et al. *Kumamoto University*	**W24.5** **2311: Evaluation of PZT-5A, PZT-5H, Pz39, Pz54 and PMN-38 Piezoelectric Ceramics for Use in Miniature Histotripsy Transducers** Matthew Mallay, et al. *Dalhousie University*	**W24.6** **2408: Inter-Element Variation in Acoustic Performance for a 256-Element Open-Source Ultrasound Tomography System** Morgan Roberts, et al. *Biomedical Ultrasound Group, University College London*
W24.7 **2415: A Dual-Frequency Intravascular Ultrasound Transducer for Amplified Nanodroplet Vaporization Effects in Cavitation-Enhanced Sonothrombolysis** Sunho Moon, et al. *North Carolina State University*	**W24.8** **2429: Millisecond-Level Transient Temperature Monitoring Using an Ultra-Fast Response Thermocouple for Ultrasound-Induced Thermal Strain Imaging** Mengyue Chen, et al. *North Carolina State University*	**W24.9** **2570: Boundary Array Transducer with Elongated Elements** Jesse Yen, et al. *University of Southern California*
W24.10 **1226: Automated Characterization of Matrix Transducer Arrays Using the Verasonics Imaging System** Djalma Simões Dos Santos, et al. *Delft University of Technology*		

B2P-34: TMU - Micromachined Ultrasonic Transducers II
Chair(s): Erik Vilain Thomsen (DTU)

W25.1 **1027: A Time-of-Flight (ToF) Estimation Algorithm for Ranging Using Silicon-on-Nothing pMUTs** Mantalena Sarafianou, et al. *Institute of Microelectronics*	**W25.2** **1159: Combined Use of Fresnel Lens and Holey-Structured Metamaterial to Obtain Beam Focus Far from Ultrasound Source** Francesc Torres, et al. *Universitat Autònoma de Barcelona*	**W25.3** **1327: PMUT Structure Design with a Scar Free "MIS" Process on (111) Silicon Wafer** Sheng Wu, et al. *Shanghai Institution of Microsystem and Information Technology*
W25.4 **1477: CMUT-Based Gas Sensor with Inkjet-Printed Functionalization Layer** Dovydas Barauskas, et al. *Kaunas University of Technology*	**W25.5** **1522: Air-Coupled Capacitive Micromachined Ultrasonic Transducer for Temperature Field Reconstruction** Yongshuai Ma, et al. *State Key Laboratory of Precision Measurement Technology and Instruments,Tianjin University*	**W25.6** **1630: Resonance-Enhanced Fluid Density Sensing by Piezoelectric Micromachined Ultrasonic Transducers: Proof of Concept** Lixiang Wu, et al. *Silicon Austria Labs*
W25.7 **1649: Matching-Network Boosting Enabling Reconfigurable pMUTs for IoT Sensor Node Applications** Gabriel Giribaldi, et al. *Northeastern University*	**W25.8** **1682: An Electrical-Feedback Based Bandwidth Extension Technique of Piezoelectric Micromachined Ultrasonic Transducers for Airborne Application** Tingzhong Xu, et al. *Silicon Austria Labs GmbH*	**W25.9** **1829: Extreme Value Analysis of the Impact of the Effective Gap Tolerance on the Acoustic Transmit and Receive Performance of Reverse-CMUT Arrays** Monica La Mura, et al. *University of Salerno*
W25.10 **1837: Modeling, Identification and Operation of Air-Coupled PMUTs in Non-Linear Regime** Marco Passoni, et al. *STMicroelectronics*	**W25.11** **1885: Ultrasound Transmission Through the Back Cavities of Piezoelectric Micromachined Ultrasonic Transducer (PMUT) Arrays** Alessandro Stuart Savoia, et al. *Roma Tre University*	**W25.12** **1995: Passive Temperature Compensation of Piezoelectric Micromachined Ultrasonic Transducers (PMUTs)** Cyril Baby Karuthedath, et al. *VTT Technical Research Centre of Finland*
W25.13 **2532: Correlation of Wafer-Scale Film Stress Effects on ScAlN pMUT Parameters** David Sze Wai Choong, et al. *Institute of Microelectronics, Agency for Science, Technology and Research*		

B4P-10: Ultra-SR Challenge (E-Posters Only) – THESE WILL NOT BE DISPLAYED IN THE POSTER HALL.
Chair(s): Vassilis Sboros (HWU)

2599: Ultra-SR Challenge: Pengfei Song Research Laboratory at University of Illinois Urbana-Champaign Matthew R. Lowerison, et al. *University of Illinois Urbana-Champaign*	**2600: Generative Adversarial Nets for Ultrafast Ultrasound Localization Microscopy Reconstruction** Yihui Sui, et al. *Academy for Engineering and Technology, Fudan University*	**2601: Super Resolution Ultrasound Imaging Using Deep Learning Based Micro-Bubble Localization** Feixiao Long, et al. *eSonic Image*
2602: Microbubble Detection with Neyman-Pearson Criterion in Ultrasound Localization Microscopy Alexandre Corazza, et al. *creatis*	**2603: Robust Super-Resolution Ultrasound Microbubble Tracking with Optical Flow Guided Kalman Filter** Su-lan Pu, et al. *Southeast University*	**2605: Ultrasound Super-Resolution Microvascular Imaging via Gradient Depression Weighted Localization and Dynamically Constrained Generalized Label Multiple Bernoulli Tracking Methods** Jiacheng Liu, et al. *School of Life Science and Technology, Xi'an Jiaotong University*
2607: Transformer-Based Microbubble Localization Sepideh Khakzadgharamaleki, et al. *Concordia University*	**2609: A Hybrid Deep Learning Pipeline for Improved Ultrasound Localization Microscopy** Tristan Stevens, et al. *Eindhoven University of Technology*	**2610: Analytic Optimization-Based Microbubble Tracking in Ultrasound Super-Resolution Microscopy** Md Ashikuzzaman, et al. *Concordia University*
2611: ULM with Window TV-L1 Denoising and Various Interpolation Method Bingze Dai, et al. *University of Illinois Urbana-Champaign*	**2612: Modified Residual Dense Network Based Super-Resolution Localization Method for High Concentration Microbubbles** Shizhe An, et al. *School of Life Science and Technology,Xi'an Jiaotong University*	**2613: Optical Flow Assisted Super-Resolution Ultrasound Localization Microscopy Using Deep Learning** Hyeon-Jik Lee, et al. *KAIST*
2614: Detection Performance in Ultrasound Super-Resolution Imaging Iman Taghavi, et al. *Technical University of Denmark (DTU)*	**2615: Super-Resolution Imaging Framework: Sparsity-Based Deconvolution and Multi-Feature Tracking** Jipeng Yan, et al. *Imperial College London*	**2616: Super-Resolution Ultrasound Microbubble Tracking via a Color Histogram Based Particle Filter** Fengling Meng, et al. *Xiamen University*
2617: A General Deep Learning Model for Ultrasound Localization Microscopy Renxian Wang, et al. *The University of Hong Kong*	**2618: Transformer for Ultrafast Ultrasound Localization Microscopy** Gaobo Zhang, et al. *Fudan University*	**2619: MR for ULTRA-SR: Improved Localization with Morphological Image Processing** Scott Schoen Jr, et al. *Harvard Medical School and Massachusetts General Hospital*
2621: Localization with Interpolation & Tracking with Hungarian Method Pablo Dumenil, et al. *Laboratoire d'Imagerie Biomédicale INSERM*	**2622: Evaluation of a Processing Pipeline for Motion-Model Ultrasound Localization Microscopy** Thomas Lisson, et al. *Ruhr-Universität Bochum*	**2623: Super-Resolution Ultrasound Imaging: A Comparison Between Localization Methods** Aline Xavier, et al. *Universidad de O'Higgins*
2624: Ultrasound Super Resolution Using Vision Transformer with Convolution Projection Operation Xilun Liu, et al. *The Pennsylvania State University*	**2625: GAN-Based Ultrasound Localization Microscopy** Wenting Gu, et al. *Shanghai University*	**2626: SRUSTHI - Super Local Bubble Tracking Inspired by Machine Vision** Siva Saket Sripada, et al. *University of Texas at Austin*

Thursday, October 13: 8:30 AM – 10:00 AM (Lectures)

	Tropicana 1/Excelsior 1.1	Tropicana 3/Excelsior 1.2	Volpi / Casinò 1.2
	C0L-01: MCA - Monodisperse microbubbles, targeted microbubbles, and bubble imaging **Chair(s):** Klazina Kooiman (Thoraxcenter, Erasmus MC)	**C0L-02: MPA - Photoacoustic imaging and cell enginnering** **Chair(s):** Geoffrey Luke (Dartmouth), Parag Chitnis (George Mason University)	**C0L-03: PPN - Phononics** **Chair(s):** Andreas Mayer (HS Offenburg - University of Applied Sciences, Gengenbach), Jan Brown (Jan Brown Consulting)
8:30	**2510: Dynamic Ultrasound Localisation Microscopy Achieves Quantitative Pulsatility Measurements in the Whole Brain Using Kalman Filtering** Chloé Bourquin, et al. *Polytechnique Montréal*	**1010: (INVITED) Optical/Photoacoustic Hybrid Microscopy for Visualizing Morphology and Composition of Cells** Yoshifumi Saijo *Tohoku University*	**2590: (INVITED) Topological Gallery of Non-Hermitian Whispers** Johan Christensen *Universidad Carlos III de Madrid*
8:45	**1910: Acoustic Sizing Method of Vibrating Single Microbubbles Using Phase Demodulation** Sander Spiekhout, et al. *Erasmus MC*		
9:00	**1612: Spatiotemporal Analysis of Contrast-Enhanced Ultrasound for Breast Cancer Diagnostics** Chuan Chen, et al. *Eindhoven University of Technology*	**2058: Miniaturized Gold Nanochains Enhanced Photoacoustic Microscopy and Optical Coherence Tomography Ocular Molecular Imaging** Van Phuc Nguyen, et al. *University of Michigan*	**1958: Glide-Reflection Symmetric Topological Phononic Crystal Waveguide** Julio Andrés Iglesias Martínez, et al. *Femto-st*
9:15	**1852: Contrast Imaging Scheme in the Presence of Motion and Nonlinear Propagation of Ultrasound** Geraldi Wahyulaksana, et al. *Erasmus MC*	**2502: Engineering Membraneless Organelles as Genetically-Encoded Photoacoustic Reporters** Kelsey Kubelick, et al. *Georgia Institute of Technology and Emory University School of Medicine*	**2200: Phononic Frequency Comb Generation in a CMUT Operating in Air and Liquid Environments** Sushruta Surappa, et al. *Georgia Institute of Technology*
9:30	**2394: Novel Design of Fibrin-Targeted Perfluorocarbon Microbubbles for Thrombosis Investigations** Hanyue Shangguan, et al. *University of Waterloo*	**1140: Benign and Malignant Classification of Human Colorectal Tissue by Acoustic-Resolution Photoacoustic Microscopy** Peng Ge, et al. *ShanghaiTech University*	**2259: Surface Acoustic Wave Driving of Micromechanical Resonators in the Linear and Nonlinear Regimes** Sarah Benchabane, et al. *CNRS/FEMTO-ST*
9:45	**1173: Freeze-Dried Monodisperse Microbubbles: Next Generation UCAs** Ugur Soysal, et al. *ESPCI*	**1079: Photoacoustic Detection of DNA-Containing Water Droplets** Taehoon Bok, et al. *Ryerson University*	**2287: Focusing of Flexural Elastic Waves in a Plate with a Metasurface Made of Elliptical Shape Pillars** Laurent Carpentier, et al. *IEMN, University of Lille*

Thursday, October 13: 8:30 AM – 10:00 AM (Lectures)

	Mosaici 1 / Casinò 3.1	Mosaici 2 / Casinò 3.2	Darsena
	C0L-04: NMC – Material and Defect Characterization I **Chair(s):** Walter Arnold (Fraunhofer Institute for NDT, Germany), Erdal Oruklu (Illinois Institute of Technology, USA)	**C0L-05: TMI - Design and Fabrication of Large Arrays** **Chair(s):** Holly Lay (Fujifilm Visualsonics)	**C0L-06: MBB - Image Correction II** **Chair(s):** Brett Byram (Vanderbilt University)
8:30	**1006: Non-Contact Ultrasonic Exploration of Ancient Paintings** Victor Takahashi, et al. *Tours University - GREMAN*	**2411: Fabrication Process for Large-Area Electrostrictive TOBE Arrays** Mohammad Rahim Sobhani, et al. *University of Alberta*	**1229: Aberration Corrected Bistatic Multiperspective Ultrasound Imaging of the Abdomen** Vera van Hal, et al. *Eindhoven University of Technology*
8:45	**2069: Scanning Acoustic Microscopy for Detecting the Inner Defects in Cold Sprayed Coatings** Martin Koller, et al. *Institute of Thermomechanics, Czech Academy of Sciences*	**2401: Row-Multiplexed 1,024 Element Large Aperture Array for Electronic Scanning in Elevation** Robert Wodnicki, et al. *University of Southern California*	**1318: Aberration Correction in the Echo Lab - A Clinical Pilot** Svein-Erik Måsøy, et al. *Norwegian University of Science and Technology*
9:00	**1533: Application of Laser-Ultrasound in the GHz-Range for Characterization of Micro-Acoustic Devices and Their Constituent Materials** Clemens Grünsteidl, et al. *Research Center for Non Destructive Testing GmbH*	**2135: Large Matrix Array Aperture for 3D Vascular Imaging Capture** Quorentin Colas, et al. *Vermon S.A.*	**2046: Global Speed-of-Sound Prediction Using Transmission Geometry** Can Deniz Bezek, et al. *Uppsala University*
9:15	**2290: Ultrasonically Determined Elastic Constants of Additively Manufactured 316L Stainless Steel** Mason Hayward, et al. *University of Louisiana at Lafayette*	**1632: High Performance Large-Area Polymeric PMUT Phased Arrays in Air** Christopher Chare, et al. *imec*	**1460: Joint GAN Based Beamformer and Breast Lesion Classifier for Enhanced Ultrasound Imaging** Ariel Amar, et al. *Weizmann Institute of Science, Rehovot, Israel*
9:30	**2433: Development of 1024-Element 2D Matrix Array Transducer Based on Numerical Simulation and Experimental Scattering Analyses for NDE Applications** Yoshikazu Ohara, et al. *Tohoku University*	**1939: Design and Process Development for Large-Scale Row-Column CMUT Arrays** Kitty Steenberg, et al. *Technical University of Denmark*	**1147: Increasing Frame Rate of Focused Ultrasound Imaging Based on Tensor Completion** Sajjad Afrakhteh, et al. *University of Trento*
9:45	**1620: Automated and Real-Time Interpretation of Ultrasonic B-Scans Toward Industry/NDE 4.0** Ryan Scott, et al. *Institute for Diagnostic Imaging Research*	**1457: A General Equivalent Circuit Model for PMUTs Array Working in Multi-Vibration Modes** Tingzhong Xu, et al. *Silicon Austria Labs GmbH*	**1113: Accelerated Real-Time Refraction-Corrected Transcranial Ultrasound Imaging with a Single Array Transducer** Moein Mozaffarzadeh, et al. *Delft University of Technology*

Thursday, October 13: 8:30 AM – 10:00 AM (Lectures)

	Grande / Cinema 1.2	Perla / Casinò 1.1	
	C0L-07: MIM - Brain Imaging **Chair(s):** Gianmarco Pinton (University of North Carolina), Pieter Kruizinga (Erasmus MC)	**C0L-08: MTH - Therapy devices** **Chair(s):** Cyril Lafon (INSERM, LabTAU), Kenneth Bader (University of Chicago)	
8:30	**1645: Elastic Full-Waveform Inversion for Transcranial Ultrasound Computed Tomography Using Optimal Transport** Patrick Marty, et al. *ETH Zürich*	**1665: Development of a Toroidal HIFU Transducer for Treating the Hepato-Caval Confluence. In Vivo Results on a Porcine Model** Sophie Cambronero, et al. *LabTAU, INSERM, Centre Léon Bérard, Université Lyon 1, Univ Lyon, F-69003, LYON, France*	
8:45	**2236: 1024-Channel 1.5 MHz Sparse Array for Fully Volumetric Human Transcranial Imaging** Jacob McCall, et al. *UNC Chapel Hill*	**1943: Characterization and In-Vitro Validation of a Dual-Mode CMUT Probe for Ultrasound-Guided HIFU Ablations** Guillaume Vanstaevel, et al. *LabTAU, INSERM, Centre Léon Bérard, Université de Lyon*	
9:00	**1606: Functional Ultrasound Imaging Reveals Sub-Millimeter Activation Within the Primary Visual Cortex of Ferrets** Wentao Hu, et al. *Department of Electrical and Computer Engineering, University of Rochester*	**2383: Control of Heat-Triggered CAR T Cell Transgene Expression by Dual Mode Ultrasound Image-Guided Focused Ultrasound System** Jeungyoon Lee, et al. *Georgia Institute of Technology*	
9:15	**2086: First In-Human Confirmation of Spatial Overlap Between High-Resolution Functional Ultrasound (fUS)- and fMRI-Based Functional Maps** Sadaf Soloukey, et al. *Dept. of Neuroscience and Neurosurgery, Erasmus MC*	**2588: HIFU Monitoring in Prostate Cancer Based on B-Mode Images** Thomas Payen, et al. *LabTau, INSERM U1032*	
9:30	**2039: Skull-Aberration Correction for High Contrast Transcranial Doppler Neuroimaging** Rick Waasdorp, et al. *Delft University of Technology*	**1628: Formulas for Maximum Appropriate Hydrophone Sensitive Element Size and Hydrophone Spatial Averaging Correction Factors for Therapeutic Ultrasound System Characterization** Keith Wear, et al. *Food and Drug Administration*	
9:45	**1332: Design of a Custom Flexible Ultrasound Transducer as an Implantable Sensor for Long-Term Post-Operative Brain Monitoring** Kelley Kempski, et al. *Johns Hopkins University*	**1057: Does Wave Mode Conversion at Large Incidence Angles Improve Transcranial Ultrasound Transmission? It Depends on the Porosity** Bowen Jing, et al. *Georgia Institute of Technology*	

Thursday, October 13: 11:00 AM – 12:30 PM (Lectures)

	Tropicana 1/Excelsior 1.1	Tropicana 3/Excelsior 1.2	Volpi / Casinò 1.2
	C2L-01: MBF - Contrast-free microvascular imaging I Chair(s): Pengfei Song (University of Illinois), Brett Byram (Vanderbilt University)	**C2L-02: MSR - Super Resolution Ultrasound in the Brain** Chair(s): Olivier Couture (CNRS at Sorbonne University), Kirsten Christensen-Jeffries (King's College Longon)	**C2L-03: PTF - Thin Films I** Chair(s): Mihir Patel (MACOM), Andreas Mayer (HS Offenburg - University of Applied Sciences, Gengenbach)
11:00	**1211: Combining Multispectral Photoacoustic Fluctuation Imaging and Ultrasound Doppler for 3D Full Vascular Characterization Using a Sparse Array** Guillaume Godefroy, et al. *Univ. Grenoble Alpes, CNRS, LiPhy*	**1585: Ultrasound Localization Microscopy Cerebrovascular Mapping in a Mouse Model of Alzheimer's Disease** Matthew R. Lowerison, et al. *University of Illinois Urbana-Champaign*	**1900: Sputter Epitaxial (10-12) LiNbO3 Film / (1120) Azo / (10-12) Al2O3 Shear Mode Thin Film Resonators** Shinya Kudo, et al. *Waseda University, ZAIKEN*
11:15	**1182: Longitudinal Brain Perfusion Quantification by Ultrafast Power Doppler Using Freehand Scanning on Human Neonates** Nikan Fakhari, et al. *University of Toronto/SickKids hospital*	**1703: Super-Resolution Imaging of Cerebral Vasculature in Transgenic Alzheimer's Disease Mice with Ultrasound Localization Microscopy** Yingtao Liao, et al. *Shenzhen University*	**2048: Experimental and Theoretical Investigation of Enhanced Electromechanical Properties in YbAlN and YbGaN Films** Song Li, et al. *Waseda University, ZAIKEN*
11:30	**2059: Ultrafast Power Doppler Imaging of Human Newborn with Medullary Vein Infarction: A Pilot Study** Lijie Huang, et al. *Tsinghua University*	**2314: Transcranial 3D Ultrasound Localization Microscopy Using a Multi-Lens Diffracting Layer** Hugues Favre, et al. *Physics for Medecine Paris, ESPCI Paris, Inserm U1273, CNRS UMR 8063, France*	**2434: Fabrication of High kt² and k´35² Sc0.4Al0.6N Thin Films by RF Magnetron Sputtering** Yuki Shimizu, et al. *Waseda University, ZAIKEN*
11:45	**2084: Whole-Brain Vascular Imaging for Minimally Invasive Neurosurgery** Anatole Jimenez, et al. *Physics for Medicine Paris, INSERM U1273, ESPCI, CNRS, PSL University*	**1870: Transcranial 3D ULM in Sheep** Antoine Coudert, et al. *LIB (Sorbonne Universite, CNRS, INSERM)*	**2327: IBAD c-Axis Parallel ZnO Piezoelectric Film Stack for Gyroscope Applications** Shinya Kudo, et al. *Waseda University, ZAIKEN*
12:00	**2375: Vascular Changes Due to Ageing Using Ultrafast Ultrasound Doppler Combined with Scanning Laser Confocal Microscopy** Maximiliano Anzíbar Fialho, et al. *Facultad de Ciencias, Universidad de la República*	**1945: In Vivo Whole Brain Microvascular Imaging in Mice Using Transcranial 3D Ultrasound Localization Microscopy with a Fully Populated Matrix Array** Adrien Bertolo, et al. *Physics for Medicine Paris, Inserm U1273, ESPCI Paris, PSL University, CNRS UMR 8063*	**2340: Grow of O-Polar and Zn Polar Ferroelectric MgZnO Thin Films Controlled by Sputtering Geometry** Yohkoh Shimano, et al. *Waseda University, ZAIKEN*
12:15	**1999: 4D Superficial Microvascular Imaging of the Human Finger with a Low Channel cMUT RCA Sensor** Cyprien Blanquart, et al. *Physics for Medicine, Inserm U1273, ESPCI Paris, PSL University, CNRS UMR 8063*	**1137: Ultrasound Localization Microscopy for Compression-Induced Spinal Cord Injury Evaluation** Junjin Yu, et al. *Fudan University*	**1966: Calculation of the Dispersion of Elastic Waves in Lithium Niobate-on-Sapphire Substrates** Léa La Spina, et al. *FEMTO-ST Institute*

Thursday, October 13: 11:00 AM – 12:30 PM (Lectures)

	Mosaici 1 / Casinò 3.1	Mosaici 2 / Casinò 3.2	Darsena
	C2L-04: NMC – Material and Defect Characterization II and NPC – Process Control and Industrial **Chair(s):** Bernie Tittmann (Pennsylvania State University, USA), Takaaki Asada, (Murata Manufacturing, Japan)	**C2L-05: TPF - Piezoelectric Transducer Materials and Fabrication** **Chair(s):** Stefan Rupitsch (Friedrich-Alexander University)	**C2L-06: MTC - Ultrasound Tissue Characterization Measurement Techniques** **Chair(s):** Jeffrey Ketterling (Riverside Research), Massimo Mischi (Einhoven University of Technology)
11:00	**1758: Correlation Between Quantitative Ultrasound Parameters and Quality of Selective Laser Melting Components Manufactured by Different Energy Density** Chun-Hui Lin, et al. *National Cheng Kung University*	**1636: Bone Cutting Performance of Ultrasonic Surgical Tools Incorporating PZT Piezoceramic and Mn:PIN-PMN-PT Piezocrystal** Xuan Li, et al. *University of Glasgow*	**1319: (INVITED) Experimental and Computational Methods for Quantitative Acoustic Microscopy at Ultra-Fine 2-µm Resolution** Jonathan Mamou *Weill Cornell Medicine*
11:15	**2056: A 3D Grain Flow Direction Estimation in Titanium Alloys Samples Based on the Ultrasonic Reflection Matrix Analysis** Cécile Brütt, et al. *Safran Tech*	**1681: Single-PZT-Fiber Transducers for 3D Ultrasound Computed Tomography: Characterization and Modeling** Martin Angerer, et al. *Karlsruhe Institute of Technology*	
11:30	**1031: Onboarding Simple Sonar System with Thermophone for Autonomous Flying Drone** Yasufumi Yamada, et al. *Hiroshima University*	**2306: Y-36 Lithium Niobate Films Support f-Q of 5.5·1013 Hz in the 1-10 GHz Range** Zachary Schaffer, et al. *Carnegie Mellon University*	**2175: Application of the Cylindrical-Gaussian Form Factor for Collagen Fiber Characteristics Assessment in Myopic Eye Sclera with High-Frequency Quantitative Ultrasound** Kazuyo Ito, et al. *Tokyo University of Agriculture and Technology*
11:45	**1151: Identifying Regions-of-Interest and Extracting Gold from PCBs Using MHz HIFU** Axi Holmström, et al. *Electronics Research Lab., Dept. of Physics, University of Helsinki*	**1418: High Temperature Performance Over 700°C of LiNbO3-Based Ultrasonic Transducer** Naoki Zaito, et al. *Kumamoto University*	**1380: Evaluation of Ultrasound Scattering Models Adapted for Two Types of Scatterers to Extract Coherent Scatterer Parameters from Cell-Pellet Biophantoms** Pauline Muleki-Seya, et al. *CREATIS*
12:00	**1169: Ultrasonic Standing Wave-Crystallized Oleogels Characterized via Oscillatory Rheology** Petri Lassila, et al. *Electronics Research Lab., Dept. of Physics, University of Helsinki*	**1199: (INVITED) Advanced Technologies for the Manufacture of Customized Ultrasonic Transducers** Sylvia Gebhardt *Fraunhofer IKTS, Fraunhofer Institute for Ceramic Technologies and Systems, Dresden*	**1675: Combined Ultrasound & Light Backscattering Spectroscopy for Cancer Characterization: A Proof of Concept** Cyril Malinet, et al. *CREATIS CNRS*
12:15	**1646: Transportation of Granular Materials with Ultrasonic Augers** Xuan Li, et al. *University of Glasgow*		**1977: Synthetic Ultrasound Mastoid Imaging Based on Deep Learning of a Finite Signal Set for the Diagnosis of Middle Ear Effusion** Yen Heng Lai, et al. *Chang Gung University*

Thursday, October 13: 11:00 AM – 12:30 PM (Lectures)

		Grande / Cinema 1.2	Perla / Casinò 1.1	
		C2L-07: MEL - New Applications and Methods in Elastography **Chair(s):** Chih-Chung Huang (National Cheng Kung University)	**C2L-08: MIS - Imaging** **Chair(s):** Gregg Trahey (Duke University), Nicholas Bottenus (University of Colorado Boulder)	
11:00		**1110: Validation of Nonlinear Shear Modulus Quantification by Using 3 Different Methods: Ultrasound Shear Wave Elastography, Magnetic Resonance Elastography and Numerical Simulation** Marion Bied, et al. *BioMaps*	**2403: Enabling High Frame Rate Ultrasound Imaging at Low Data Rates: Receiver Channel Recovery Using Branched Convolutional Neural Networks** William Pitman, et al. *University of Waterloo*	
11:15		**1069: Imaging of Cell Viscoelasticity Using the Optical Micro-Elastography and Subzone Non-Linear Inversion Techniques** Guillaume Flé, et al. *University of Montreal Hospital*	**1504: Compressive Imaging with Spatial Coding Masks on Low Number of Elements: An Emulation Study** Yuyang Hu, et al. *Erasmus Medical Center*	
11:30		**1126: Acoustic Force Elastography Microscopy: A New Modality to Evaluate Mechanical Properties of Transparent Scaffolds for Tissue Engineering** Hsiao-Chuan Liu, et al. *Mayo Clinic*	**1174: Breaking and Fixing gCNR and Histogram Matching** Siegfried Schlunk, et al. *Vanderbilt University*	
11:45		**2155: Quantitative Assessment of the Viscoelastic Properties for Skin Scar Using High-Frequency Ultrasonic Elastography with Lamb Wave Model** Yu-Chen Wu, et al. *National Cheng Kung University*	**1741: A Physics-Based Neural Network (PNN) Approach to Solve the Heterogeneous Nonlinear Full-Wave Equation** You Li, et al. *Stanford University*	
12:00		**2396: Observation of Super-Resolved Shear Shock Waves in the Human Head Phantom Using High Frame-Rate Ultrasound Imaging** Sandhya Chandrasekaran, et al. *North Carolina State University*	**1548: Generation of Realistic Simulated B-Mode Image Texture with a GAN** Nolann Lainé, et al. *CREATIS*	
12:15		**2404: In Vivo Ultrasound Imaging of Traumatic Brain Injury Biomechanics and Imaging of Functional Response to Injury** Sandhya Chandrasekaran, et al. *North Carolina State University*	**2422: Acoustoelectric Imaging Using Hadamard Encoded Transmissions** Chet Preston, et al. *University of Arizona*	

Thursday, October 13: 2:00 PM – 3:30 PM (Lectures)

	Tropicana 1/Excelsior 1.1	Tropicana 3/Excelsior 1.2	Volpi / Casinò 1.2
	C3L-01: TMI - Multiwave and Multimodal Transducers, and Novel Techniques **Chair(s):** Xiaoning Jiang (NC State University)	**C3L-02: NSH – Structural Health Monitoring and NAS - Acoustic Sensors** **Chair(s):** David Greve (Carnegie Mellon University, USA), Makiko Kobayashi (Kumamoto University, Japan)	**C3L-03: AMS - MEMS and Sensors** **Chair(s):** Sunil Bhave (Purdue University), Marta Clement (Polytechnic University of Madrid)
14:00	**1290: Fabrication of an Array of Eccentric Sources for Freehand Optical Ultrasound Imaging** Fraser Watt, et al. *University College London*	**1684: Ultrathin, High Sensitivity Polymer-Based Capacitive Micromachined Transducers (polyCMUTs) for Acoustic Emission Sensing in Fiber Reinforced Polymers** Jonas Welsch, et al. *University of British Columbia*	**1490: (INVITED) Magnetic Surface Acoustic Wave Sensors (MSAW) : State of the Art, Trends and Potential Applications** Omar Elmazria *Université de Lorraine – CNRS*
14:15	**1766: Transparent Ultrasonic Transducers for Multimodal Biomedical Imaging** Chaorui Qiu, et al. *Xi'an Jiaotong University*	**1708: Direct-Write Piezoelectric Transducers on a Composite T-Joint Structure for Lamb Waves-Based Monitoring** Marilyne Philibert, et al. *Institute of Materials Research and Engineering, Agency for Science, Technology and Research*	
14:30	**2275: Dual Frequency Transparent CMUT Arrays for Photoacoustic Imaging** Mahyar Ghavami, et al. *University of Alberta*	**1597: Microfabrication of Fibre Optic Ultrasound Sensors with Free-Standing Parylene-C Membranes** Richard Caulfield, et al. *University College London*	**2496: A Lithium Niobate MEMS-Coupled Matching Network for BFSK Modulated Signal Amplification in Spectrum Monitoring Applications** Luca Colombo, et al. *Northeastern University*
14:45	**2406: A Multi-Directional Array Transducer for Muscle Shear Wave Anisotropy Estimation** Huaiyu Wu, et al. *Department of Mechanical and Aerospace Engineering, North Carolina State University*	**2139: Fibre-Optic Hydrophones for High Intensity Ultrasound Fields- Modelling and Measurement Study** Esra Aytac Kipergil, et al. *University College London*	**1546: Y-Cut Lithium Niobate A1 Mode Film Bulk Acoustic Resonators for Wideband Filter Applications** Soumya Yandrapalli, et al. *EPFL*
15:00	**2020: Development of a Miniaturized Dual-Element Catheter for Intravascular Ultrasonic Elastography** Zhengjie Wu, et al. *Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*	**2180: Optimization of Thin Film Protection for Waveguided Ultrasonic Phased Arrays** Matthias Rutsch, et al. *Technische Universität Darmstadt*	**1398: Theoretical Investigation of Wideband Longitudinally Coupled Resonator Filter Using Lithium Niobate Thin Plates** Wu-Ping Li, et al. *UESTC*
15:15	**1555: 3D Localization of Scatterers with a Spiral-Shaped Acoustic Lens** Luzhen Nie, et al. *University of Leeds*	**2505: Characterization of Temperature Heterogeneity in Utility-Scale Power Plant Boilers by Spatially Distributed Ultrasonic Measurements** Kenneth Walton, et al. *University of Utah*	**2099: Optimization of Etched Areas for Improved Anti-Resonance Quality Factor in Lithium Niobate SH0 Resonators** Silvan Stettler, et al. *EPFL*

Thursday, October 13: 2:00 PM – 3:30 PM (Lectures)

	Mosaici 1 / Casinò 3.1	Mosaici 2 / Casinò 3.2	Darsena
	C3L-04: MTH - Neuromodulation **Chair(s):** Hairong Zheng (Shenzhen Institutes of Advanced Technology), Thomas Deffieux (Physics for medicine - Paris)	**C3L-05: MSD - High Frame Rate, Ultrafast, Imaging** **Chair(s):** Steven Freear (University of Leeds), Piero Tortoli (University of Florence)	**C3L-06: MEL - Cardiac Elastography** **Chair(s):** Annette Caenen (Ghent University), Richard Lopata (Eindhoven University)
14:00	**2344: Sonogenetics for Locomotor Behavior Modulation in Freely Moving Mice** Kevin Xu, et al. *Washington University in St. Louis*	**2297: A Novel 3D Row Column Imaging Technique Demonstrated on a 20 MHz Electrostrictive Array** Nicholas Campbell, et al. *Dalhousie University*	**1738: Cardiac Shear Wave Speed Estimation in 3D: An In Silico and In Vivo Study** Ekaterina Seliverstova, et al. *KU Leuven*
14:15	**1422: Real-Time Closed-Loop Ultrasound Vagus Nerve Stimulation for Inhibition of Epileptic Seizures in Rats** Houminji Chen, et al. *Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*	**2345: AI-Powered Ultrasound Imaging with Edge Computing: Real-Time Realization of Aliasing Resistant Color Doppler Mapping** Hassan Nahas, et al. *University of Waterloo*	**2158: Dynamic High-Spatiotemporal Myocardial Strain Imaging for Adult Zebrafish Through Highfrequency Vector Doppler Imaging** Hsin Huang, et al. *National Cheng Kung University*
14:30	**1746: Focused Ultrasound Increases Dorsal Root Ganglion Excitability Filtering** Stephen Lee, et al. *Columbia University*	**1843: Development and Clinical Validation of a High-Framerate Transrectal Urodynamic Vector Flow Imaging System** Takuro Ishii, et al. *Tohoku University*	**2055: Continuous Mechanical Wave Imaging: Towards Automated Cardiac Stiffness Imaging** Sébastien Salles, et al. *LIB*
14:45	**1971: Evidence of Acoustic Radiation Force as a Driving Mechanism in FUS Neurostimulation: Impact on Neural Response Success Rate and Temporal Density** Ivan Suarez-Castellanos, et al. *LabTAU - INSERM*	**1193: Towards Continuous Ultrafast Ultrasound Imaging with an FPGA-Based Ultrafast Beamformer** Zhengchang Kou, et al. *University of Illinois Urbana-Champagin*	**1654: Myocardial Stiffness Assessment by Ultrasound in Humans: Comparison Between Shear Wave Elastography, Natural Mechanical Waves, and Myocardial Stretch Induced by Atrial Kick** Jose Carlos Villalobos, et al. *The Hospital for Sick Children*
15:00	**2105: Modulation of Somatosensory Evoked Potentials via Focused Ultrasound Median Nerve Stimulation** Erica McCune, et al. *Columbia University*	**1901: New Ring Architecture for Real-Time High-Frame-Rate Imaging on the ULA-OP 256 Scanner** Claudio Giangrossi, et al. *Department of Information Engineering, University of Florence*	**2198: Quantitative Characterization of Cardiac Transplant Grafts Using Shear Wave Elastography** Olivier Pedreira, et al. *Physics for Medicine, ESPCI, INSERM U1273, CNRS UMR 8063, PSL University, Paris, France*
15:15	**1395: Holographic Ultrasound Stimulation Improves Non-Motor Function in Parkinson's Disease Mice** Hui Zhou, et al. *Shenzhen Institutes of Advanced Technology*	**1185: Noncontact, Non-Invasive Transcranial Ultrasound System for Brain Imaging** Robert W Haupt, et al. *MIT Lincoln Laboratory*	**1582: Feasibility of Cardiac Time Harmonic Elastography for the Detection of Diastolic Dysfunction** Tom Meyer, et al. *Charité - Universitätsmedizin Berlin*

Thursday, October 13: 2:00 PM – 3:30 PM (Lectures)

	Grande / Cinema 1.2	Perla / Casinò 1.1	
	C3L-07: MIM - New Imaging Modalities **Chair(s):** Stanislav Emelianov (Georgia Institute of Technology and Emory University School of Medicine), Jean Provost (Polytechnique Montreal)	**C3L-08: MIS - Motion and Flow Estimation** **Chair(s):** Olivier Couture (CNRS at Sorbonne University), Chris De Korte (Radboud University Medical Center)	
14:00	**2356: MRI Guided Transcranial Acoustoelectric Images for Safe and Accurate Electrical Brain Mapping** Margaret Allard, et al. *University of Arizona*	**2364: Methods for Micro Ultrasound Flow Imaging of the Chorioallantoic Membrane (CAM) Patient Derived Tumor Model** Sara Mar, et al. *University of Toronto*	
14:15	**2485: A Complementary Ultrasound and Photoacoustic Thermal Imaging Technique Without Prior Knowledge of Tissue Composition** Jeungyoon Lee, et al. *Georgia Institute of Technology*	**2065: Tracking Heart Valve Motion from Transthoracic Echocardiography Using Deep Learning** Sigurd Vangen Wifstad, et al. *NTNU*	
14:30	**1919: Integrated US-OCT-NIRF Tri-Modality Endoscope for Ulcerative Colitis-Associated Colorectal Cancer Imaging** Ruiming Kong, et al. *Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*	**1799: Dealiasing of Color Doppler Echocardiography Using Deep Learning** Hang Jung Ling, et al. *CREATIS, CNRS UMR5220, Inserm U1294, University of Lyon*	
14:45	**1431: 3D Ultrasound Parametric Modeling Imaging for Spine Deformity – A Preliminary Study** Yuchong Gao, et al. *ShanghaiTech University*	**1965: Deep Unfolding RPCA for High Resolution Flow Estimation** Vassili Pustovalov, et al. *IRIT Laboratory*	
15:00	**1301: Increased Displacement in Magnetomotive Ultrasound Imaging by Adding a Homogeneous Magnetic Field** Jules Reniaud, et al. *Lund University*	**1686: Automated Venous Gas Emboli Classification in Post-Dive Doppler Ultrasound Audio Using Deep-Learning and Synthetic Data Augmentation** Arian Azarang, et al. *University of North Carolina - Chapel Hill*	
15:15	**2578: Single Element 2D Ultrasound Imaging Through an Ergodic Relay** Olivier Caron-Grenier, et al. *Polytechnique Montréal*	**1503: Robust Automatic Estimation of Muscle Thickness in Ultrasound Image Sequences: A Novel Entropy-Based Contour Tracking Method** Hongtao Liang, et al. *School of Physics and Information Technology, Shaanxi Normal University*	

Thursday, October 13: 4:30 PM – 6:00 PM (Lectures)

	Tropicana 1/Excelsior 1.1	Tropicana 3/Excelsior 1.2	Volpi / Casinò 1.2
	C4L-01: TTT - Theurapetic Transducers **Chair(s):** Koko Lam (The Hong Kong Polytechnic University)	**C4L-02: NAF - Acoustic Microfluidics, NUA - Underwater Acoustics and NFM - Flow Measurement I** **Chair(s):** Nishal Ramadas (Hy-Met Limited, UK), Heikki Nieminen (Aalto university, Finland)	**C4L-03: ASM - SAW Modelling** **Chair(s):** Ventsislav Yantchev (Q-Arts Consulting Ltd.)
16:30	**1571: Integration of Forward-Viewing and Side-Viewing Ultrasound Transducers in an Intravascular Sonothrombolysis Catheter** Bohua Zhang, et al. *North Carolina State University*	**1756: Trapping of Microbead Spheroids by pMUTs in Microfluidic Channels Embedded with an Acoustic Reflector** Yul Koh, et al. *Institute of Microelectronics*	**1022: COM-Based Perturbation Analysis of Nonlinear Signal Generation in I.H.P. SAW Resonators** Ken-Ya Hashimoto, et al. *University of Electronic Science and Technology of China*
16:45	**1788: Electronically Steerable MR-Guided Small Animal Histotripsy Array for Orthotopic Tumor Ablations** Ryan Hubbard, et al. *University of Michigan*	**1518: Core Needle Biopsy Gun Generates Cavitation Activity** Jussi Kiviluoto, et al. *Aalto University*	**1168: Layer Stack Dependencies of Self-Generated Nonlinear Signals in Layered SAW Resonators** Thomas Forster, et al. *Technical University of Munich (TUM)*
17:00	**1378: Acoustic Hologram Lens Made of Nanoparticle-Epoxy Composite Molding for Directing Predefined Therapeutic Ultrasound Beams** Jinwook Kim, et al. *The University of North Carolina at Chapel Hill*	**1588: Echo-PIV of Flow in 3D-Printed Flexible Semi-Circle Tubes: A Cross Validation Study** Ashkan Ghanbarzadeh-Dagheyan, et al. *University of Twente*	**1643: The COM Model Includes a Bulk Wave Scattering in the IDT/Reflector Interface in SAW Resonators** Aleh Loseu, et al. *SOLLO LLC*
17:15	**1297: Additively Manufactured FUS Transducer Miniaturization with a Fresnel Lens** Jack Stevenson, et al. *University Of Glasgow*	**2108: Ultrasound Localization Microscopy by Nonlinear Adaptive Beamforming – A Case Study for Super-Resolved Flow Fields in Liquid Metal Experiments** David Weik, et al. *Laboratory of Measurement and Sensor System Techniques, TU Dresden, 01062 Dresden*	**1064: Manipulation of SAW Slowness Shape Using Low-Cut LT/Quartz Structure for Transverse Resonance Suppression Without k2 Deterioration** Yiwen He, et al. *University of Electronic Science and Technology of China*
17:30	**1443: Development of a Completely Non-Invasive Cross-Shaped Toroidal HIFU Transducer for Increasing the Treated Volume in Liver Tissues Using Shifted Focalization** Sophie Cambronero, et al. *LabTAU, INSERM, Centre Léon Bérard, Université Lyon 1, Univ Lyon, F-69003, LYON, France*	**2195: 3D Flow Velocity Estimation of Influx from Fractures in Borehole Wall and Estimation of Fracture Area Using Pulsed-Wave Doppler Ultrasound for Logging-While-Drilling** Shivanandan Indimath, et al. *Norwegian University of Science and Technology*	**2122: The Dependence of Mechanical Properties of the Electrode Material on the Effective Coupling Coefficients of SAW Resonators with a Heterogenous Substrate** Xiaoli Fang, et al. *Shanghai Institute of Microsystem and Information Technology*
17:45	**2515: Inducing Cavitation Within Hollow Cylindrical Transducers for Use in Intravascular Thrombolysis** Li Gong, et al. *University of Toronto*		**1284: Dual-Band Acoustic Wave Filter Based on the Conventional Standalone Ladder Topology** Lluís Acosta, et al. *Universitat Autònoma de Barcelona*

Thursday, October 13: 4:30 PM – 6:00 PM (Lectures)

	Mosaici 1 / Casinò 3.1	Mosaici 2 / Casinò 3.2	Darsena
	C4L-04: MBE - Therapy and Dosimetry **Chair(s):** Alfred Yu (University of Waterloo)	**C4L-05: MCA - Phase change agents and microbubbles** **Chair(s):** Michael Kolios (Ryerson University	**C4L-06: MTC - Ultrasound Estimation of Sound Speed and Attenuation** **Chair(s):** Tomy Varghese (University of Wisconsin–Madison), James Wiskin (QT Ultrasound Inc.)
16:30	**1626: Effects of Focused Ultrasound and Dry Needling in an In Vivo Murine Tendinopathy Model** Molly Smallcomb, et al. *The Pennsylvania State University*	**1637: Acoustic Modulation of Superheated Nanodroplets for Direct Proton Range Verification at Body Temperature** Sophie Heymans, et al. *KU Leuven campus KULAK*	**2359: Attenuation Coefficient Imaging Using Regularization by Denoising** Anthony Carrera, et al. *Pontificia Universidad Católica del Perú*
16:45	**1078: The Protective Effects of Low-Intensity Low-Frequency Pulse Ultrasound in Preventing Er Stress-Induced Motor Neuron Apoptosis** Thi-Thuyet Truong, et al. *National Cheng Kung University*	**1857: Combining Two Ultra-High-Speed Cameras to Investigate Ultrasound-Activated Microbubble Oscillation and Acoustic Droplet Vaporization** Hongchen Li, et al. *Erasmus University Medical Center Rotterdam*	**1364: Speed-of-Sound Estimation for Muscle Tissue Characterization with Pulse-Echo Ultrasound via Steered Unfocused Transmissions** Di Xiao, et al. *University of Waterloo*
17:00	**1633: Hydrophone Spatial Averaging Correction for High-Frequency Arrays** Keith Wear, et al. *Food and Drug Administration*	**1084: On the Physical Mechanisms of the High Echogenicity of Lipid Coated Nanobubbles** Amin Jafarisojahrood, et al. *Sunnybrook Health Sciences Center*	**2470: Speed of Sound Imaging with Curvilinear Probes from Full-Synthetic Aperture Data** Sergio Sanabria, et al. *Stanford University*
17:15	**1782: Relationship Between Dynamics of Bubbles Phagocytosed by Dendritic Cells and Intracellular Ca2+ Concentration Change Under Exposure to Pulsed Ultrasound** Naoyuki Otake, et al. *Graduate School of Information Science and Technology, Hokkaido University*	**1783: 3D Nonlinear Sound-Sheet Imaging of Biomolecular and Synthetic Contrast Agents** Baptiste Heiles, et al. *Department of Imaging Physics, Delft University of Technology*	**1793: Feasibility of Attenuation Coefficient and Envelope Signal-to-Noise Ratio for Tissue Characterization of Liver Steatosis** José Timaná, et al. *Laboratorio de Imagenes Médicas, Pontificia Universidad Católica del Perú, Lima, Perú*
17:30	**2291: Ultrasound with Microbubbles Accelerates Glymphatic Transportation** Dezhuang Ye, et al. *Washington University in st louis*	**1605: Molecular Imaging of PSMA-Targeted Nanobubbles by Modeling the Second-Wave Phenomenon** Chuan Chen, et al. *Eindhoven University of Technology*	**1068: Quantitative Ultrasound Imaging Using a Regularized Phantom-Free Reconstruction of Local Attenuation Coefficient Slopes in Heterogeneous Tissues** Iman Rafati, et al. *University of Montreal Hospital*
17:45	**2260: Viability Preserving Detection of Circulating Tumor Cells in Liquid Biopsies Using High Intensity Focused Ultrasound Induced microRNA Release** Pradyumna Kedarisetti, et al. *University of Alberta*	**1607: Nanobubble Contrast-Enhanced Ultrasound Imaging for Assessing Tumoral Vascular Permeability and Nanoparticle Extravasation** Michaela Cooley, et al. *Case Western Reserve University*	**1178: Robust Ultrasound Attenuation Coefficient Estimation with Vessel Detection and Removal** Ping Gong, et al. *Mayo Clinic College of Medicine and Science*

Thursday, October 13: 4:30 PM – 6:00 PM (Lectures)

	Grande / Cinema 1.2	Perla / Casinò 1.1	
	C4L-07: MEL - Vascular Elastography **Chair(s):** Chris De Korte (Radboud University Medical Center), Hideyuki Hasegawa (University of Toyama)	**C4L-08: MIM - New Imaging Techniques I** **Chair(s):** Brooks Lindsey (Georgia Institute of Technology), Jeremy Dahl (Stanford University)	
16:30	**1312: Measurement of Wave Propagation Through a Tube Using Two Orthogonally Oriented Transducers** Hyoung-Ki Lee, et al. *Mayo clinic*	**1076: Global Image Coherence (GIC) – An In-Vivo Image Quality Metric** Ole Marius Hoel Rindal, et al. *University of Oslo*	
16:45	**1715: Elasticity Measurement of Radial Arterial Wall Considering Vessel Shape Change Caused by Pushing Pressure Applied by Ultrasonic Probe** Mototaka Arakawa, et al. *Tohoku University*	**1542: Clinical Utility of Adaptive Frequency Selection for Optimizing Target Detectability** James Long, et al. *Duke University*	
17:00	**1705: Comparison of Arterial Mechanical Properties Measured with Arterial Dispersion Ultrasound Vibrometry and Clinical Arterial Stiffness Metrics** Matthew Urban, et al. *Mayo Clinic*	**2026: Universal Synthetic Aperture Sequences for Anatomic and Functional Imaging** Jørgen Arendt Jensen, et al. *Center for Fast Ultrasound Imaging, Technical University of Denmark*	
17:15	**2526: Towards Clinical Adoption of Ultrasound-Based Pulse Wave Velocity Estimation: A Systematic Investigation on the Influence of Systemic Blood Pressure** Jason Hsu, et al. *University of Waterlo*	**2121: Pulse-Echo Speed-of-Sound Imaging of the Liver Using Convex Probes** Michael Jaeger, et al. *University of Bern*	
17:30	**1070: Local Arterial Stiffness Assessment on Humans: Comparison Between the Use of the Bramwell-Hill Equation and the Direct Pulse Wave Velocity Assessed by Ultrafast Ultrasound Imaging** Rahna Rasouli, et al. *The Hospital for Sick Children*	**2432: Direct Speed of Sound Reconstruction from Full-Synthetic Aperture Data with Dual Regularization** Sergio Sanabria, et al. *Stanford University*	
17:45	**2132: Imaging of the Viscoelasticity and Fluidity of the Carotid Plaque by Fractional-Derivative Kelvin-Voigt Modeling** Yang Li, et al. *Xi'an Jiaotong University*	**1241: Ultrasonic Interrogation of Intracranial Pressure Using an Implantable Pressure Sensor for Quantitative Monitoring of Ventricular Shunt Failure** Saeyoung Kim, et al. *Mechanical Engineering, BioEngineering Graduate Program, Georgia Institute of Technology*	

Thursday, October 13: Posters (Casinó Level 3)

C1P-10: MBB - Beamforming III
Chair(s): Muyinatu A. Lediju Bell (Johns Hopkins University)

Th1.1	Th1.2	Th1.3
1060: Passive Cavitation Mapping Using Delay-Multiply-and-Sum Beamforming with Virtually Augmented Aperture You-An Chen, et al. *National Taiwan University of Science and Technology*	**1090: Transmit Delay and Standard Deviation Beamforming to Enhance Specular Reflections in Synthetic Transmit Aperture Imaging** Cheng-Hao Lin, et al. *National Taiwan University of Science and Technology*	**1123: Wide Field-of-View Plane Wave Ultrasound Imaging Based on Array Sub-Apertures and Adaptive Weighting Technique** Yadan Wang, et al. *Hefei University of Technology*
Th1.4	Th1.5	Th1.6
1302: Fourier-Domain Beamforming and Sub-Nyquist Sampling for Coherent Pixel-Based Ultrasound Imaging Hao Guo, et al. *Southeast University*	**1314: A Study of Bandwidth Extension in Delay Multiply and Sum Beamforming Applied to Ultrasound Imaging** Hui-Wen Xie, et al. *Southeast University*	**1481: Adaptive Quantization for Low-Cost Ultrafast Ultrasound Imaging Systems** Doyoung Jang, et al. *School of Electronics and Electrical Engineering at Dankook University*
Th1.7	Th1.8	
1574: A Feasibility Study of 3D Motion Compensation in 3D Diverging Wave Compounding Yinran Chen, et al. *Xiamen University*	**2053: RxNet: Learning for Receive Element Reduction in Synthetic Transmit Aperture Imaging** Yinran Chen, et al. *Xiamen University*	

C1P-11: MBB - Beamforming IV
Chair(s): Tomas Jansson (Lund University)

Th2.1	Th2.2	Th2.3
1085: Delay-Multiply-and-Sum Beamforming with Transmit Minimum-Variance Estimation in Multi-Angle Plane-Wave Imaging Gin-Lin Huang, et al. *National Taiwan University of Science and Technology*	**1200: Improved Resolution and Background Noise Suppression for Ultrasound Contrast Microbubbles Reconstruction Using a Joint Enhanced Mean-to-Standard-Deviation Factor and Minimum Variance Beamformer** Yadan Wang, et al. *Hefei University of Technology*	**1394: A Beamformer Based on Sub-Nyquist Sampling and Post-Filtering for Efficient High-Frequency Ultrasound Imaging Systems** Hayeon Bong, et al. *Inje University*
Th2.4	Th2.5	Th2.6
2163: Adaptive Diagonal Reducing and Adaptive Weighting Approach to Covariance Matrix-Based Statistical Beamforming for Ultrasound Imaging Yuanguo Wang, et al. *Department of Biomedical Engineering, Hefei University of Technology*	**2228: Adaptive Spatial Smoothing-Based Minimum Variance Beamforming Using Signal Coherence to Improve Image Quality** Jingwen Pan, et al. *Hefei University of Technology*	**2454: Residual CNN Based Angular Compounding for High-Quality Plane Wave Imaging** Hyunwoo Cho, et al. *Sogang University*
Th2.7		
2484: DeNet: Optimizing of Transmit Delays for High Frame Rate Synthetic Transmit Aperture Imaging Xinze Lan, et al. *Tsinghua University*		

C1P-12: MBF - Blood flow imaging II
Chair(s): Matthieu Toulemonde (Imperial College London, UK)

Th3.1	Th3.2	Th3.3
1427: Pulse Wave Velocity Doppler Measurement of Ulnar Artery Using a High-Frequency Probe Maxime Benchemoul, et al. *Vermon SA, INL Lab*	**1441: Validation of Intravascular Pressure Gradients using Ultrasound and Micro-tip Catheters** Lars Emil Haslund, et al. *Center for Fast Ultrasound Imaging*	**1537: An Ultrasound Arthroscopic Probe Driven by Chirp Excitation for Meniscal Surgery** Baptiste Pialot, et al. *CREATIS, CNRS UMR 5220 – INSERM U1294 – Université Lyon 1 – INSA Lyon*
Th3.4	Th3.5	Th3.6
1566: Blood-Flow Volume Estimation with Bi-Plane Imaging Claudio Giangrossi, et al. *Department of Information Engineering, University of Florence*	**1680: Early Detection of Heterotopic Ossification Using the Color Doppler Ultrasound Twinkling Artifact** Lucas Ruge-Jones, et al. *Penn State University*	**2387: Ultrafast 3D Hadamard-Encoded X-Power Doppler Using Electrostrictive Row-Column Transducer Arrays and 3D FFT Based Reconstruction** Darren Dahunsi, et al. *University of Alberta*
Th3.7	Th3.8	
2521: Coded Excitation for Increased Sensitivity in Transcranial Power Doppler Imaging Emelina Vienneau, et al. *Vanderbilt University*	**1615: The Effect of Surface Tension on the Color Doppler Twinkling Artifact in Pure Crystals** Eric Rokni, et al. *The Pennsylvania State University*	

C1P-13: MBF - Vector Flow Imaging II
Chair(s): Jason Voorneveld (Erasmus MC)

Th4.1	Th4.2	Th4.3
1047: Measurement of Lateral and Axial Blood Flow Velocity Components of the Mouse Spinal Cord Microvasculature Using High Frequency Ultrafast Imaging Bowen Jing, et al. *Georgia Institute of Technology*	**1208: Ultrafast Ultrasound Vector Doppler Velocimetry for Brain Vasculature Imaging** Shaoyuan Yan, et al. *Fudan University*	**1589: Vector Flow Imaging Using Speckle-Tracking-Based Correlation-Weighted Least Squares** Geng-Shi Jeng, et al. *Institute of Electronics, National Yang Ming Chiao Tung University*
Th4.4	Th4.5	Th4.6
1704: Effects of Beam Steering Angle in Vector Doppler Method with Plane Wave Imaging Hideyuki Hasegawa, et al. *University of Toyama*	**1882: Sub-Volume 3D Velocity Vector Imaging in a Carotid Artery Phantom with a 1024-Matrix Array** Anne Saris, et al. *Radboudumc*	**2015: Velocity Vector Imaging Using Cascaded Dual-Polarity Waves Under Low SNR Conditions** Joosje de Bakker, et al. *Radboud University Medical Center*
Th4.7	Th4.8	
2414: 4D Cardiac Gated Vector Flow Imaging Accurately Measures WSS in a Pressurized Closed-Loop System Keerthi Anand, et al. *University of North Carolina, Chapel Hill and North Carolina State University*	**1279: Simultaneous Measurements of Vascular Strain and Wall Shear Stress in the Carotid Artery Based on Vector Flow Imaging and Vessel Wall Tracking in Duplex Mode** Wenlong Xu, et al. *Shenzhen Mindray Bio-Medical Electronics Co., Ltd.*	

Thursday, October 13: Posters (Casinó Level 3)

C1P-14: MCA - Imaging and therapy monitoring
Chair(s): Matthieu Toulemonde (Imperial College London, UK)

Th5.1 **1181: Pre-Clinical Development of Contrast-Enhanced Magneto-Motive Ultrasound Imaging of LNs** Marion Bacou, et al. *University of Edinburgh*	**Th5.2** **1184: Contrast-Enhanced Ultrasound Evaluation of the Effect of an Exercise Program on Rotator Cuff Disorder** Priscilla Machado, et al. *Thomas Jefferson University*	**Th5.3** **1253: Improved Contrast-Enhanced Ultrasound Imaging for the Preclinical Assessment of Liver Cancer Treatment with Transarterial Chemoembolization** Katherine Brown, et al. *University of Texas at Dallas*
Th5.4 **1488: In-Vitro Investigation of the Impact of Monodispersed Microbubble Size on Contrast-Enhanced Ultrasound Super-Localization Imaging** Peiran Chen, et al. *Eindhoven University of Technology*	**Th5.5** **2187: Plane Wave Approaches with Dual-Frequency Arrays for Superharmonic Contrast Imaging** Jing Yang, et al. *University of Toronto*	**Th5.6** **2213: Characterization of Hepatocellular Carcinoma Perfusion Metrics with Quantitative Contrast-Enhanced Ultrasound** Connor Krolak, et al. *University of Washington*
Th5.7 **2472: Quantitative Contrast-Enhanced Harmonic Endoscopic Ultrasound for Differential Diagnosis of Pancreatic Tumors** Kuan-Chih Chen, et al. *National Taiwan University*	**Th5.8** **2473: Contrast-Enhanced Ultrasound for Assessing Blood Flow Modulation of Hepatocellular Carcinoma by Hydralazine** Laith Sultan, et al. *University Of Pennsylvania*	**Th5.9** **1494: Dynamic Simulations of Ultrasound Contrast Agent Microbubble Transport Through a Mimicked Microvascular Architecture** Peiran Chen, et al. *Eindhoven University of Technology*
Th5.10 **2223: Effects of Microbubble Size and Volume Dose on In Vivo Pharmacokinetics** Jose Angel Navarro-Becerra, et al. *University of Colorado Boulder*		

C1P-15: MEL - Motion Estimation and Signal Processing for Elastography
Chair(s):

Th6.1 **1243: Thoracolumbar Fascia Shear Strain Analysis Using the Lagrangian Speckle Model Estimator: Clinical Evaluation in Patients with Lower Back Pain** Norio Tomita, et al. *University of Montreal Hospital*	**Th6.2** **1316: A New Fast Imaging Method for Motion Detection: Comb Detection** Hyoung-Ki Lee, et al. *Mayo clinic*	**Th6.3** **1468: Unsupervised Deep Learning Network for Motion Estimation in Ultrasound Elastography** Xingyue Wei, et al. *Tsinghua University*
Th6.4 **1486: Axial-Velocity Estimation and Enhancement Using a Convolutional Neural Network for Shear Wave Elastography** Xufei Chen, et al. *Eindhoven University of Technology*	**Th6.5** **1807: Virtual Fields Based-Method for Reconstructing the Elastic Modulus in Quasi-Static Ultrasound Elastography** Anne-Lise Duroy, et al. *CREATIS*	**Th6.6** **1985: Fast and Flexible Finite Element Regularization of Displacement Estimations** Jan-Willem Muller, et al. *Eindhoven University of Technology*
Th6.7 **2468: Displacement-Based Reconstruction of Elasticity Distributions with Deep Neural Networks** Xiao Zhang, et al. *Southwest Petroleum University*	**Th6.8** **2087: Toward a More Efficient and Robust Harmonic Motion Imaging (HMI) Sequence by Electronic Steering and Widely Focused Imaging** Yangpei Liu, et al. *Columbia University*	

C1P-16: MEL - Advances in Elastography		
Chair(s): James Greenleaf (Mayo Clinic), Murad Hossain (Columbia University)		
Th7.1 **1109: Transient Elastography at Very High Ultrasound Frequencies** Steve Beuve, et al. *BioMaps*	**Th7.2** **1349: Intracellular Shear Wave Elastography Imaging of Macrophages** Sajad Ghazavi, et al. *University of Montreal Hospital*	**Th7.3** **1513: Quasi-Omnidirectional Shear Wave Generation Using Acoustic Vortices for Elastography** Enrique González-Mateo, et al. *Universitat Politècnica de València*
Th7.4 **1580: Improving Estimates of Stress-Strain Relationships in Inclusions with Local Phase Velocity-Based Imaging** Yuqi Wang, et al. *Mayo Clinic*	**Th7.5** **1596: Functional Time Harmonic Elastography of the Liver: Stiffness Pulsatility as a Novel Marker of Tissue Compliance** Tom Meyer, et al. *Charité - Universitätsmedizin Berlin*	**Th7.6** **1690: Spatial Resolution in Dynamic Optical Coherence Elastography in Bounded Media** Mitchell A. Kirby, et al. *University of Washington*
Th7.7 **2464: 3D Shear Wave Computed Tomography with Regularization** Geng-Shi Jeng, et al. *National Yang Ming Chiao Tung University*		

C1P-17: MIM - New Imaging Techniques III		
Chair(s):		
Th8.1 **1019: Concave 2D Ring Array Transducer for Ultrasound Visual Stimulation of the Brain** Jian-Yu Lu, et al. *The University of Toledo*	**Th8.2** **1905: Volumetric Contrast Pulsing Sequence Imaging with a Sparse Spiral Array** Luxi Wei, et al. *Erasmus university medical center*	**Th8.3** **2068: Validation of a Delay-Multiply-and-Sum Reconstruction Algorithm for the Detection of Osteochondritis Dissecans** Philip Holmes, et al. *Mayo Clinic Graduate School of Biomedical Sciences*
Th8.4 **2459: Radial Synthetic Aperture Focusing to Regulate Scanning Angle Disorientation in a Low-Cost 3D Transrectal Ultrasound Imaging** Hyunwoo Song, et al. *Johns Hopkins University*	**Th8.5** **2553: Improving Lumbar Spine Imaging with a Large Aperture Array** Josquin Foiret, et al. *Stanford University*	**Th8.6** **2567: Spatiotemporal Matrix Image Formation with a High Frequency Row-Column Array** Alice Wu, et al. *Polytechnique Montreal*
Th8.7 **1897: 3D Ultrasound Localization Method for Accurate Tracking of Vertebral Levels in Static Postures** Laura Meszaros-Beller, et al. *Queensland University of Technology*	**Th8.8** **1500: A Feasibility Study of Low-Frequency Ultrasound Tomography for Human Thorax** Tong Zhang, et al. *Tsinghua University*	**Th8.9** **2137: Towards Attenuation Imaging with Computed Ultrasound Tomography in Echo Mode (CUTE)** Naiara Korta Martiartu, et al. *University of Bern*
Th8.10 **2338: Differential Diagnosis of Intracranial Hematoma Subtypes in Ex-Vivo Sheep Head Model Using Transcranial Ultrasound Brain Imaging System** Kiyanoosh Shapoori, et al. *Tessonics Medical Systems, Inc*	**Th8.11** **2554: 3D Ultrasound Tomography Timing Validation for Clinical Deployment** James Wiskin, et al. *QT Imaging, Inc*	

Thursday, October 13: Posters (Casinó Level 3)

C1P-18: MIS - Lung Ultrasound		
Chair(s): Marie Muller (North Carolina State University)		
Th9.1 **1595: Automatic Scoring of COVID-19 LUS Videos Using Cross-Correlation-Based Features Aggregated from Frame-Level Confidence Levels Obtained by a Pre-Trained Deep Neural Network** Sajjad Afrakhteh, et al. *University of Trento*	**Th9.2** **1088: Iterative Deconvolution Approach for Automatic Segmentation of Lung Ultrasound Vertical Artifacts** Federico Mento, et al. *Department of Information Engineering and Computer Science, University of Trento*	**Th9.3** **1158: Assisted Diagnosis Algorithm for Lung Ultrasound in COVID-19 Patients** Mario Muñoz, et al. *Institute for Physical and Information Technologies, Spanish National Research Council*
Th9.4 **1287: Multi-Frequency Approach to Estimate the Roughness of Lung Surface, In Silico Study** Federico Mento, et al. *Department of Information Engineering and Computer Science, University of Trento*	**Th9.5** **1348: COVID-19 Feature Detection with Deep Neural Networks Trained on Simulated Lung Ultrasound B-Mode Images** Lingyi Zhao, et al. *Johns Hopkins University*	**Th9.6** **1487: A Feasibility Study of Quantitative Measure of the State of the Lung by Evaluation of Injury Depth from Lung Ultrasound** Quanlong Ma, et al. *Xi'an Jiaotong University*
Th9.7 **1363: Identification of B-Lines In Vivo Lung Ultrasound by the Evaluation of Characteristic Parameters Using Raw RF Data** Haoyu Zhang, et al. *Xi'an Jiaotong University*		

C1P-19: MIS - Speed of Sound		
Chair(s): Sebastien Salles (Norwegian University of Science and Technology)		
Th10.1 **1667: Human Observer Sensitivity to Temporal Noise in Ultrasound Imaging** Matthew Huber, et al. *Duke University*	**Th10.2** **1306: AI-Powered Measurement of Ultrasonic Axial-Transmission Velocity for Pediatric Skeletal Development Evaluation** Qing Li, et al. *Fudan University*	**Th10.3** **1720: A New Sound Speed Reconstruction Algorithm for Breast Tissue in Ultrasound Computed Tomography** Yue Zhao, et al. *Harbin Institute of Technology*
Th10.4 **1760: A Method for Estimation of the Average Speed of Sound for Delay-and-Sum Beamforming Using the Variance of Phases of Element Signals** Ryo Nagaoka, et al. *University of Toyama*	**Th10.5** **2216: SoundAI: Improved Imaging with Learned Sound Speed Maps** James Young, et al. *Harvard University*	**Th10.6** **2242: Experimental Study on Bone Phantom Imaging Using Ultrasound Velocity Inversion and Reverse Time Migration** Ying Li, et al. *Fudan University*
Th10.7 **2263: Singular Value Decomposition in Windowed Radon Domain for Aberration Phase Estimation in Pulse-Echo Speed-of-Sound Imaging** Samuel Beuret, et al. *École Polytechnique Fédérale de Lausanne, EPFL*		

Thursday, October 13: Posters (Casinó Level 3)

C1P-20: MIS - Cardiovascular Image Segmentation
Chair(s): Hans Bosch (Erasmus Medical Center)

Th11.1 **1435: Segmentation of Parasternal Long Axis Views in Echocardiography Using Deep Learning** Erik Smistad, et al. *Norwegian University of Science and Technology and SINTEF Medical Technology*	**Th11.2** **1225: CLA-U-Net: Convolutional Long-Short-Term-Memory Attention-Gated U-Net for Automatic Segmentation of the Left Ventricle in 2-D Echocardiograms** Zihan Lin, et al. *Beijing University of Technology*	**Th11.3** **1307: A Lightweight Structure Detector on Cardiac Ultrasound Images of Multiple Views with Tailored NMS Algorithm** Hongjian Jiang, et al. *GE Healthcare*
Th11.4 **1426: Reaching Intra-Observer Variability in 2-D Echocardiographic Image Segmentation with a Simple U-Net Architecture** Hang Jung Ling, et al. *CREATIS, CNRS UMR5220, Inserm U1294, University of Lyon*	**Th11.5** **1693: Automatic Heart Chamber Identification in Post-Dive Echocardiograms Using Faster R-CNN** David Le, et al. *University of North Carolina - Chapel Hill*	**Th11.6** **1893: A CT-Derived Intravascular Ultrasound Simulation Framework for Deep Learning-Based Image Segmentation of the Abdominal Aortic Aneurysm** Daniek van Aarle, et al. *Eindhoven University of Technology*
Th11.7 **1898: Echocardiography Segmentation Based on Cross-Modal Data Augmentation Method** Songbai Jin, et al. *Tsinghua University*	**Th11.8** **2101: Automatic Strain-Based Myocardial Scar Detection Using a Convolutional Neural Network Trained with a Virtual Patient Cohort** Müjde Akdeniz, et al. *GE Vingmed Ultrasound, University of Oslo*	**Th11.9** **2102: Automatic Segmentation of the Myocardium in High-Frame Rate Contrast-Echocardiography and Clinical Contrast-Echocardiography Images** Stephanie Sze, et al. *Imperial College London*
Th11.10 **2141: Multi-Task Learning Framework for Echocardiography Segmentation** Patrice Monkam, et al. *Tsinghua University*	**Th11.11** **2277: A Disentanglement and Fusion Data Augmentation Approach for Echocardiography Segmentation** Patrice Monkam, et al. *Tsinghua University*	**Th11.12** **2544: Left Ventricle Wall Segmentation in Echocardiography Using B-Mode Image and Radio Frequency Signal Jointly** Guil Jung, et al. *KAIST*
Th11.13 **1508: Segmentation of 2D Cardiac Ultrasound with Deep Learning: Simpler Models for a Simple Task** Artem Chernyshov, et al. *Norwegian University of Science and Technology*		

C1P-21: MPA - Photoacoustic Imaging and Instrumentation
Chair(s): Stanislav Emelianov (Georgia Institute of Technology and Emory University School of Medicine), Michael Kolios (Ryerson University)

	Th12.2 **1075: Hand-Held 3D Photoacoustic Imaging System with GPS** Daohuai Jiang, et al. *ShanghaiTech University*	**Th12.3** **1150: Fibre Optic All-Optical Ultrasound and Photoacoustic M-Mode Imaging** Richard Colchester, et al. *University College London*

Th12.4	Th12.5	Th12.6
1499: LED-Based Photoacoustic Imaging of the Lymphatic Vessels in Patients with Secondary Lymphedema	**1554: Multiview, Volumetric and Simultaneous Photoacoustic and Ultrasound Imaging with a Conventional Linear Array**	**1608: Miniaturized Catheter-Integrated Photoacoustic Ablation Monitoring System: A Feasibility Study**
Saskia van Heumen, et al.	Clément Linger, et al.	Shang Gao, et al.
Erasmus MC	*Sorbonne Universite*	*Worcester Polytechnic Institute*
Th12.7	**Th12.8**	**Th12.9**
1635: Transparent Gellan Gum as an Efficient Coupling Media for Photoacoustic Imaging Applications	**2002: Mixture of Intact RBC and Free Hemoglobin Under a Low Cost, Low Power Photoacoustic System with Application in Hemolysis**	**2244: Wideband Photoacoustic Imaging In Vivo with Complementary Frequency Conventional Ultrasound Transducers**
Eric Reichel, et al.	Soumyodeep Banerjee, et al.	Sowmiya Chandramoorthi, et al.
University of Arizona	*The University of Burdwan*	*Erasmus Medical Center*
Th12.10	**Th12.11**	**Th12.12**
2323: Impact of Skin Pigmentation on Photoacoustic Imaging Using Linear Array Transducer: A Pilot In Vivo Study	**2357: Laser Diode Beam Shaping and Homogenization with a Multimode Fiber Applied to Optical Resolution Photoacoustic Microscopy Based on Linear Phased Array Ultrasound Probe**	**2503: Ultrasound and Photoacoustic Guided Tissue Temperature Mapping During Ablation Therapies**
Guilherme S. Pilotto Fernandes, et al.	Juan José García-Garrigós, et al.	Samuel John, et al.
University of Sao Paulo	*i3M, Consejo Superior de Investigaciones Científicas, Universitat Politècnica de València*	*Wayne State University*
Th12.13	**Th12.14**	**Th12.15**
1652: Spectroscopic Photoacoustic Imaging of Osteoarthritis	**1778: Surgical Navigation System for Spinal Surgery with Photoacoustic Endoscopy**	**1844: In Vivo High-Resolution 3D LED-Based Photoacoustic Imaging of Superficial Vascular Anatomy and Function**
Min Wu, et al.	Luyao Zhu, et al.	Mithun Kuniyil Ajith Singh, et al.
Eindhoven University of Technology	*ShanghaiTech University*	*CYBERDYNE, INC.*
Th12.16	**Th12.17**	**Th12.18**
1867: Deep-Tissue Imaging with Fully Integrated Laser-Diode Based Handheld Photoacoustic and Ultrasound Probe	**2210: Feasibility of Using Low-Energy Pulsed Laser Diode on Clinical Ultrasound Platforms for Photoacoustic and Transrectal Ultrasound Guided Laparoscopic Prostatectomy**	**2506: Hyper-Beam Photoacoustic Array Imaging**
Michael Jaeger, et al.	Yixuan Wu, et al.	Chun-Hsien Chiang, et al.
University of Bern	*Johns Hopkins University*	*National Tsing Hua University*

C1P-22: MSD - Ultrasound Devices, Systems and Methods I
Chair(s): Roger Zemp (University of Alberta), Alessandro Ramalli (University of Florence)

Th13.1	Th13.2	Th13.3
1082: An FPGA-Based 15-Level Arbitrary Waveform Generator System with Phase/Frequency Modulation for Ultrasound Coded Excitation Using Pulse-Amplitude Modulation (PAM)	**1089: Electronic Phantom for Arterial Wall Movement and Blood Flow**	**1148: Transceiver ASIC Design for High-Frame-Rate 3D Intracardiac Echocardiography**
Amauri Amorin Assef, et al.	Stefano Ricci, et al.	Yannick Hopf, et al.
Federal University of Technology-Paraná (UTFPR)	*University of Florence*	*TU Delft*

Th13.4 **1240: Imaging Blood Flow Velocity and Estimating Wall Shear Stress in an Individual-Specific Left Coronary Artery Using High-Frequency, Forward-Viewing Ultrasound: A Phantom Study** Saeyoung Kim, et al. *Mechanical Engineering, BioEngineering Graduate Program, Georgia Institute of Technology*	**Th13.5** **1242: Deep Learning Image Enhancement for Handheld Point-of-Care Ultrasound** Ouwen Huang, et al. *Duke University*	**Th13.6** **1428: A Real-Time Color Doppler Ultrasound Imaging System on a Single System-on-Chip Solution with Single Instruction Multiple Data Optimization** Seongjun Park, et al. *Sogang University*
Th13.7 **1434: An Integrated High Power Arbitrary Waveform Generator and Modulator** Stefano Passi, et al. *STMicroelectronics*	**Th13.9** **1864: Ultrasound Research Platform for 3D Ultrafast Diverging Waves Imaging** Marcin Lewandowski, et al. *us4us Ltd.*	**Th13.10** **1941: Integrating Ultrasound Research System with NVIDIA GPU Processing Using GPUDirect RDMA** Marcin Lewandowski, et al. *us4us Ltd.*

C1P-23: MTC - Tissue Characterization - Applications in the Abdomen II **Chair(s):** Aiguo Han (University of Illinois)		
Th14.1 **1336: Measurements of Backscattering Coefficients of Ex-Vivo Human Liver Samples: Analysing the Backscattering to Monitor HIFU Procedure with Ultrasound** Adrien Rohfritsch, et al. *LabTAU*	**Th14.2** **1366: Composite Tissue-Mimicking Phantom Fabrication by 3D-Printing of Hydrogels for Ultrasound Shear Wave Imaging** Jinping Dong, et al. *The University of Hong Kong*	**Th14.3** **1371: Single Track Location Placental Elastography Reveal Viscoelastic Signatures Ex-Vivo** Siladitya Khan, et al. *University of Rochester*
Th14.4 **1724: Machine Learning Improves Early Detection of Liver Fibrosis by Quantitative Ultrasound Radiomics** Maryam Al-Hasani, et al. *University Of Pennsylvania*	**Th14.5** **1735: Multifrequency Ultrasound Tissue Characterization for the Detection of Liver Steatosis** Mawia Khairalseed, et al. *University of Texas at Dallas*	**Th14.6** **1853: Refraction-Based Speed of Sound Estimation in Layered Media: Proof of Concept** Baptiste Hériard-Dubreuil, et al. *E-Scopics / LTS5, EPFL*
Th14.7 **2064: Deep Learning to Assess Hepatic Steatosis Severity Using Ultrasound B-Mode Images** Pedro Vianna, et al. *University of Montreal Hospital*	**Th14.8** **2279: Comparative Performance of 1D and 2D Regularized Quantitative Ultrasound for Curvilinear Transducers in the Presence of Aberration Induced Clutter** Hayley Whitson, et al. *University of Wisconsin - Madison*	**Th14.9** **1141: Ultrasonic Evaluation of Liver Fibrosis Using Radiomics of Homodyned-K Parametric Imaging** Anna Gao, et al. *Beijing University of Technology*
Th14.10 **1593: Prior Based Cascading of Attention Unets for Segmentation to Estimate Fat and Lean Mass from 3D Fetal Ultrasound Imaging** Rohit Pardasani, et al. *GE Healthcare*		

Thursday, October 13: Posters (Casinó Level 3)

C1P-24: MTC - Ultrasound Tissue Characterization Methods and Applications II
Chair(s): Kenneth Hoyt (UT Dallas)

Th15.1	Th15.2	Th15.3
1125: Ultrasonic Characterization of Rat Vagus Nerves Using 25 MHz Pulse Reflectometry Landon Ivy, et al. *Cornell University*	**1212: Stability of Methods to Evaluate Global Speed of Sound Using Conventional Clinical Ultrasound Scanner Under Multiple Different Transmission/Reception Conditions** Takuma Oguri, et al. *Ultrasound General Imaging, GE Healthcare*	**1239: Age-Related Changes in Collagen Properties Detected by High-Resolution Acoustic Microscopy and Atomic Force Microscopy** Anna Maeva, et al. *UCL*
Th15.4	**Th15.5**	**Th15.6**
1296: A Numerical-Model-Based Optimization Strategy for Design and Fabrication of Transversely Isotropic Tissue-Mimicking Phantoms Jinping Dong, et al. *The University of Hong Kong*	**1561: Single Shot Pulse-Echo Based Attenuation Coefficient Estimation for Ultrasound Contrast Agents** Jasleen Birdi, et al. *KU Leuven*	**1734: Basic Study of Adaptive Smoothing Filters for Calculating High-Accurate Attenuation Maps** Jun Yasuda, et al. *FUJIFILM Healthcare Corporation*
Th15.7	**Th15.8**	
1887: Ultrasonic Screening of Equine Leg Bone with Weak Periostitis Taisei Tsubata, et al. *Doshisha University*	**1934: Longitudinal Wave Velocity in the Skull of Streptozotocin-Induced Diabetic Rat** Yuhi Haneda, et al. *Doshisha University*	

C1P-25: MTC - Tissue Characterization - Bone and other Tissues
Chair(s): Kay Raum (Charite)

Th16.1	Th16.2	Th16.3
1203: Acoustically Induced Electric Polarization in Bone and its Anisotropy Yuki Sakakura, et al. *Tokyo University of Agriculture and Technology*	**1458: Preparation Conditions of Frozen Thin Section Specimens to Ensure Accuracy of Sound Velocity Evaluation in Ultrasonic Microscopy** Suguru Seto, et al. *Chiba University*	**1669: Estimation of Thickness and Wave Speed in Cortical Bone Using Ultrasound Imaging: An Ex Vivo Study** Amadou Sall Dia, et al. *Sorbonne Université, Laboratoire d'Imagerie Biomedicale*
Th16.4	**Th16.5**	**Th16.6**
2183: Classification of Cortical Bone Thicknesses Based on RF Signal Spectral Analysis Hossam Sultan, et al. *London South Bank University*	**2224: Estimation of Cortical Bone Strength Using CNN-Based Regression Model** Hossam Sultan, et al. *London South Bank University*	**2520: Quantitative Measurement of Viscoelastic Properties of Pre-Strained Thin-Walled Membranes Based on the Optical Coherence Elastography (OCE) Technique** Ziwei Wang, et al. *Northwestern University*

C1P-26: MTH - Therapy III
Chair(s): Emad Ebbini (University of Minnesota)

Th17.1	Th17.2	Th17.3
1106: Extraction of Acoustic Cavitation Region in Ultrasound Image Using Fundamental and Nonlinear Echo Components Obtained by Triplet-Pulse Sequence Shin Yoshizawa, et al. *Tohoku University*	**1370: Angle Monitoring of Directional Energy Deposition for Catheter-Based Ultrasound Thermal Therapy Using Fitted Changes in Ultrasound Backscatter Energy Imaging: Ex Vivo Investigation** Chengzhi Yang, et al. *Xi'an JiaoTong University*	**1631: Intraoperative HIFU Treatment of the Pancreas Using a Toroidal Transducer Under Doppler Guidance for Locally Advanced Pancreatic Adenocarcinoma. In Vivo Results in a Pig Model** David Melodelima, et al. *LabTAU - INSERM*

Thursday, October 13: Posters (Casinó Level 3)

Th17.4	Th17.5	Th17.6
1662: Patient-Specific Treatment Planning for Clinical Interstitial Ultrasound Thermal Ablation of Focal Prostate Cancer	**2100: Soft Tissue Aberration Correction for Histotripsy Using Acoustic Emissions from Cavitation Cloud Collapses**	**2391: Ultrasound-Guided Boiling Histotripsy Ablation System for Abdominal Targets: Acute and Chronic Studies in Porcine Liver and Kidney**
Pragya Gupta, et al.	Ellen Yeats, et al.	Tatiana Khokhlova, et al.
University of California San Francisco	*University of Michigan*	*University of Washington*

C1P-27: MTH - Therapy IV
Chair(s): Mathieu Pernot (ESPCI Paris), David Melodelima (INSERM)

Th18.1	Th18.2	Th18.3
1464: An Analysis of Ultrasonic Stimulation Effects on C. Elegans Organisms Motility	**1474: Low Frequency Nanobubbles-Enhanced Ultrasound Histotripsy of Breast Cancer Tumors**	**1599: Tissue Engineering Acoustophoretic (TEA) Set-Up Enhances Osteogenic Potential of Mesenchymal Stromal Cells in Anisotropic 3-D Constructs**
Andrea Francovich, et al.	Mike Bismuth, et al.	Hui Zhang, et al.
University of Pavia	*Tel Aviv University*	*BIH Center for Regenerative Therapies, Charite*
Th18.4	Th18.5	Th18.6
1613: Electronic Steering Capabilities of Aberration Correction for Transcranial Histotripsy	**1903: Enhancement of Ultrasound-Mediated Blood-Brain Barrier Opening by Aggregating Microbubbles via an Acoustic Vortex**	**2014: Ultrasound Neuronal Activation in Mice: A Parametric Study**
Ning Lu, et al.	Shifang Guo, et al.	Hanaa Malloul, et al.
University of Michigan	*Xi'an Jiaotong University*	*inserm, iBrain*
Th18.7	Th18.8	
2170: Model Dependent Modulation of Radiotherapeutic Efficacy with Lipid-Shelled Oxygen Microbubbles	**2540: Adaptive Intraprocedural MRI-Based Planning of tFUS for Neuromodulation in Human Subjects**	
Phillip Durham, et al.	Richard Bouchard, et al.	
University of North Carolina at Chapel Hill	*University of Texas MD Anderson Cancer Center*	

C1P-28: MTN - Treatment Monitoring
Chair(s): Himanshu Shekhar (IIT Gandhinagar)

Th19.1	Th19.2	Th19.3
1012: The Dynamic F-Number and Shading Weights Determined by Element Directivity for Passive Acoustic Mapping	**1489: Hemispherical-Array Passive Acoustic Mapping Using Sparse Matrix-Based Delay Multiply and Sum Beamforming**	**1806: Deep Learning Based Super-Resolved Mapping for High Concentration Phase-Change Nanodroplets in Tissue-Mimicking Phantoms**
Chunqi Li, et al.	Shukuan Lu, et al.	Anqi Huang, et al.
School of Electronic and Electrical Engineering, University of Leeds	*Xi'an Jiaotong University*	*School of Life Science and Technology, Xi'an Jiaotong University*
Th19.4	Th19.5	Th19.6
2060: Contrast-Enhanced Imaging of Histotripsy Bubble Clouds Using Chirp Coded Excitation and Volterra Filtering	**2152: Confocal Ultrasound Doppler for Investigating Neurovascular Responses to Ultrasound Deep Brain Stimulations**	**2202: Methods for Passive Acoustic Mapping of Focal Cavitation Through Prefocal Interference in the Human Spine: A Simulation Study**
Vishwas Trivedi, et al.	Taehyung Kim, et al.	Andrew Frizado, et al.
Indian Institute of Technology Gandhinagar	*Sungkyunkwan University*	*University of Toronto*

Th19.7 **2372: Monitoring of Radiofrequency Ablation Using Echo Decorrelation Imaging in Ex Vivo Hepatocellular Carcinoma** Mohamed Abbass, et al. *Military Technical College*	**Th19.8** **1414: Intravital Imaging of Ultrasound-Mediated Macromolecule Delivery Through the Blood Tumor Barrier in a Murine Glioma Model with Two-Photon Microscopy** Weifeng Huang, et al. *Shenzhen University*	**Th19.9** **2369: Characterization of Acoustic Emissions in Subharmonic Frequency Domain for Detection and Monitoring of Therapeutic Microbubble-Mediated Treatments** Ishan Ramaiah, et al. *Applaud Medical*

C1P-29: NAF - Acoustic Microfluidics, NUA - Underwater Acoustics and NFM - Flow Measurement II **Chair(s):** Nishal Ramadas (Hy-Met Limited, UK), Stefano Ricci (University of Florence, Italy)		
Th20.1 **1369: Study of Acoustofluidics and Microparticle Motion Based on Nonhomogeneous Acoustic Field Induced by SAW** Chuanjun Zhang, et al. *South China University of Technology*	**Th20.2** **1622: Thermal Characteristics During Ultrasonic Atomization of Single Droplets** Balasubramanian Nallannan, et al. *University of Eastern Finland*	
Th20.4 **1748: Low-Cost Underwater Ultrasonic Phased Array Research Platform** Tejus Rao, et al. *Harvey Mudd College*	**Th20.5** **1874: Development of Ultrasonic Shrimp Monitoring System Based on Machine Learning Approaches** Fu-Sung Lin, et al. *National Cheng Kung University*	**Th20.6** **2308: Underwater Object Detection Using a Directional Collimated Low Frequency Ultrasonic Beam (DCUB)** Eric Davis, et al. *LANL*
Th20.7 **2324: Ultrasonic Fluid Velocity Estimation System with Self-Optimising Switched Mode Transmit Scheme** Harry Clegg, et al. *University of Leeds*		

C1P-30: NAS - Acoustic Sensors **Chair(s):** Kentaro Nakamura (Tokyo Institute of technology, Japan), David Greve (Carnegie Mellon University, USA)		
Th21.1 **1042: Evaluation of the Ultrasonic Micro-Displacement Measurement System with Thermophone for Non-Contact Cardiac Pulse Monitoring** Takaaki Asada, et al. *Murata Manufacturing Co., Ltd.*	**Th21.2** **1043: Ultrasound Non-Contact Sensor Using Flexural Vibration** Natsumi Nakaoka, et al. *Doshisha University*	**Th21.3** **1053: Development of an Ultrasonic Probe for Measurements of the Wind Incidence Angle** Guy Feuillard, et al. *Insa Centre Val de Loire*
Th21.4 **1202: Through-Wall Acoustically Linked Temperature Sensor** Vladimir Pashchenko, et al. *Silicon Austria Labs GmbH*	**Th21.5** **1360: GHz Phonon Biosensor Using Free-Standing SiN Nanofilm with Real-Time Monitoring by Asynchronous Optical Sampling Picosecond Ultrasonics** Akira Nagakubo, et al. *Osaka University*	**Th21.6** **1430: Broadband Stack-Layer 3 MHz - 11 MHz Dual-Frequency Ultrasound Transducers for Photoacoustic Imaging** Yiqi Cai, et al. *Beihang University*

Th21.7	Th21.8	Th21.9
1523: Wearable Water-Filled Soft Transparent Pressure Sensor Based on Acoustic Guided Waves Yuan Lin, et al. *School of Mechanical Engineering, Shanghai Jiao Tong University*	**1723: A Piezoelectric Gyroscope with Tilted C-Axis ScAIN Thin-Films** Yuna Koike, et al. *Waseda University*	**2151: Long-Distance SAW Sensor Interrogation** David Greve, et al. *Carnegie Mellon University*

C1P-31: NSH – Structural Health Monitoring
Chair(s): Bernie Tittmann (Pennsylvania State University, USA), Luca De Marchi (University of Bologna, Italy)

Th22.1	Th22.2	Th22.3
1191: Research on Impact Localization of Discontinuous Structures with Holes Based on Ultrasonic Guided Waves Xiaobo Rui, et al. *Tianjin University*	**1194: Unsupervised Wave Physics-Informed Representation Learning for Ultrasonic Guided Wavefield Reconstruction** Harsha Tetali, et al. *University of Florida*	**1321: Leveraging Temporal Correlation to Denoise Ultrasonic Guided Waves in Long-Term Structural Health Monitoring** Kang Yang, et al. *University of Florida*
Th22.4 **1491: Direct Wave Propagation Analysis for Ice Accretion Assessment on a Composite Plate Using Ultrasonic Guided Waves** Faisal Mehmood Shah, et al. *Goethe-Universität Frankfurt am Main*	**Th22.5** **2126: Embedded Sensors for Damage Detection and Location in Carbon-Fibre-Reinforced Composites** Morgan Rogers, et al. *University of Bath*	

C1P-32: NMC – Material & Defect Characterization
Chair(s): Walter Arnold (Fraunhofer Institute for NDT, Germany), Matthew Spencer (Harvey Mudd College, USA)

Th23.1	Th23.2	Th23.3
1152: Linking Ultrasound Data to Manufacturing Parameters of 3D-Printed Polymers Using Supervised Learning Shafaq Zia, et al. *Luleå University of Technology, Sweden*	**1309: Comparison of More or Less Noisy Quartz Crystal Resonators by X-Rays Scattering** Alok Pokharel, et al. *FEMTO-ST Institut*	**1495: On Estimation of Sound Velocity and Attenuation in Common 3D-Printing Filaments** Shafaq Zia, et al. *Luleå University of Technology, Sweden*
Th23.4 **2036: Ultrasonic Measurement of Orthotropic Elastic Constant of 3D-Printed Photopolymer Materials** Josep Rodríguez-Sendra, et al. *Universitat Politècnica de València- Consejo Superior de Investigaciones Científicas.*	**Th23.5** **2037: The "PICUS" System in the Detection of Defects on Panel Paintings and Wooden Boards** Giosue Caliano, et al. *University Roma Tre*	**Th23.6** **2189: Damage Identification via Laplacian Filtering of Full Wavefield Acquisitions** Michelangelo Maria Malatesta, et al. *University of Bologna*
Th23.7 **2253: Influence of 3D Printing Parameters on Acoustic Properties of Metamaterials** Mahdi Derayatifar, et al. *Concordia University*	**Th23.8** **2255: Ultrasound-Driven Mapping of Interactions Between a Droplet and a Solid Surface** Muhammad Junaid, et al. *Aalto University*	

Thursday, October 13: Posters (Casinó Level 3)

C1P-33: AMA - Materials for Acoustic Wave Devices II
Chair(s): Sunil Bhave (Purdue University)

Th24.1 **1187: Large Signal Temperature Coefficient of Frequency** Denny Limanto, et al. *Qorvo*	**Th24.2** **1446: Deposition and Evaluation of Highly Crystallized Ta_2O_5 Piezoelectric Thin Film on Pt Crystal Film** Keisuke Matsuura, et al. *University of Yamanashi*	**Th24.3** **1611: Stress Anisotropy in a-plane Al0.7Sc0.3N(11-20)/Al2O3(1-102) Thin Films Prepared by Magnetron Sputter Epitaxy** Akash Nair, et al. *Fraunhofer IAF*
Th24.4 **1729: Hybrid FEM & Fresnel Diffraction Simulation of 3D GHz Acoustic Metalens** Xing Haw Marvin Tan, et al. *Institute of High Performance Computing, A-STAR*	**Th24.5** **1744: Oxidation of Sputtered AlScN Films Exposed to the Atmosphere** Minghua Li, et al. *Institute of Microelectronics*	**Th24.6** **1765: A Study of Bonding Materials for GHz Ultrasonic Wavefront Computing** Daniel Ssu-Han Chen, et al. *Institute of Microelectronics*
Th24.7 **1846: Material Parameter Extraction Method for Al1-xScxN Thin Films Using Multiple Linear Regression and Wafer-Level Uniformity Analysis** Chen Liu, et al. *Institute of Microelectrics, ASTAR*	**Th24.8** **2254: Sub-100nm Al0.7Sc0.3N Thin Films for Next Generation Bulk Acoustic Wave Resonators and Filters** Chen Liu, et al. *Institute of Microelectrics, ASTAR*	**Th24.9** **2439: Evaluation of Mechanical Q_m Factor of Sputter-Grown $Pb(Zr_xTi_{1-x})O_3$ Epitaxial Films Without Removing Substrate** Yuki Shimizu, et al. *Waseda University, ZAIKEN*
Th24.10 **2545: Extracting Q Factor of the Piezoelectric Thin Films from Film/High-Q Substrate HBAR Structure** Motoshi Suzuki, et al. *Waseda University, ZAIKEN*	**Th24.11** **2569: Sub-6dB Aluminum Scandium Nitride Acoustic Delay Lines** Shuai Shao, et al. *Shanghaitech University*	**Th24.12** **2577: GHz Electromechanical Coupling Hysteresis Curves for Ferroelectric ScAlN and Epitaxial MgZnO Films** Naoki Ishii, et al. *Waseda University, ZAIKEN*

C1P-34: AMD - Modeling and Analysis of Acoustic Devices
Chair(s): Sunil Bhave (Purdue University)

Th25.1 **1299: Acceleration of Hierarchical Cascading Technique for Surface Acoustic Wave Device Simulations** Dongchen Sui, et al. *Shanghai Institute of Microsystem and Information Technology*	**Th25.2** **1412: Comparative Study of Vector Measurement of Nonlinearity in SAW Devices Using Cross Domain Analyzer and Nonlinear Vector Network Analyzer** Ryo Nakagawa, et al. *Murata Manufacturing Co., Ltd.*	**Th25.3** **1442: Non-Standard Functions Enabling Feasible Microwave-Acoustic Ladder Filters** Carlos Caballero, et al. *Universitat Autònoma de Barcelona*
Th25.4 **1550: Acoustic Wave Multiplexer Modules: A Completely Analytical Synthesis Method** Eloi Guerrero, et al. *Universitat Autònoma de Barcelona*	**Th25.5** **2133: Simulation of In-Band Third Order Nonlinearities in SAW Resonators and Filters** Marta González-Rodríguez, et al. *Universitat Politècnica de Catalunya (UPC)*	

Thursday, October 13: Posters (Casinó Level 3)

C1P-35: TPM - Piezoelectric Transducer Materials and Applications
Chair(s): Xiaoning Jiang (NC State University)

Th26.1 **1038: Development of Silicon Photonic Immersion Opto-Mechanical Ultrasound Sensor Array with Ultra-Thin Membrane: Preliminary Study** Sangwoo Nam, et al. *DGIST*	**Th26.2** **1093: Metallurgical AuSn Bonding of Piezoelectric Layers** Per Kristian Bolstad, et al. *University of South-Eastern Norway*	**Th26.3** **1406: Bioinspired Transducer and Second-Generation Voltage Conveyor for a Sonar System** Gianluca Barile, et al. *University of L'Aquila*
Th26.4 **1655: Enhanced Resolution Phase Transformations in a Nitinol Cymbal Ultrasonic Device** Struan Smith, et al. *University of Glasgow*	**Th26.5** **1838: Incorporating Stainless Steel and Titanium Back Masses in Twice Planar Folded Ultrasonic Scalpels for Robotic Surgery** Abdul Hadi Chibli, et al. *University of Glasgow*	**Th26.6** **1997: Parameter Extraction of Thin-Film Scandium-Doped Aluminum Nitride in Piezoelectric Over Silicon-on-Nothing Platform** Sagnik Ghosh, et al. *Institute of Microelectronics, A-STAR*
Th26.7 **2027: High-Quality Single-Crystal Piezoelectric Aluminum Nitride Grown on Gallium Nitride Transition Layer on Sapphire Substrate** Binghui Lin, et al. *The Institute of Technological Sciences, Wuhan University*	**Th26.8** **2098: Calibration of Air-Coupled Ultrasonic Phased Arrays. Is It Worth It?** Gianni Allevato, et al. *Technische Universität Darmstadt*	**Th26.9** **2162: Maximization of Transmitted Acoustic Intensity from Silicon Integrated Piezoelectric Ultrasound Transducers** Gandhika Wardhana, et al. *TU Delft*
Th26.10 **2262: A New Technique for Electrodeless Testing Piezoelectric Plates Applied to LiNbO3 Transducers** Yuliia Kominko, et al. *Taras Shevchenko National University of Kyiv*	**Th26.11** **2286: Wearable Electrostrictive Row-Column Arrays** Mahyar Ghavami, et al. *University of Alberta*	**Th26.12** **2405: High-Attenuation Backing Layer for Intracardiac Echocardiography Catheter** Heesoo Kim, et al. *Pohang University of Science and Technology*
Th26.13 **2438: Properties of a Fully Printed Ultrasound Transducer on Flexible Substrate** Christoph Leitner, et al. *Graz University of Technology*	**Th26.14** **1953: Development of Flexible Ultrasound Transducers with Optical Shape Sensing Fiber for Medical Imaging** Weicen Chen, et al. *Shenzhen Institutes of Advanced Technology*	

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FUJIFILM VisualSonics

Tuesday, October 11
10:00 – 10:30 CET
Sala Mosaici 1 - Casinò 3.1

Vevo F2 Transcending Barriers: Ultra-high to low frequency imaging in one open research platform
by Melissa Yin, Product Manager
Stephen Buttars, Product Manager

Thursday, October 13
10:00 – 10:30 CET
Sala Mosaici 1 - Casinò 3.1

Vevo F2 Transcending Barriers: Ultra-high to low frequency imaging in one open research platform
by Melissa Yin, Product Manager
Stephen Buttars, Product Manager

Verasonics

Tuesday, October 11
10:30 – 11:30 CET
Sala Welles - Casinò Mez.1

Cephasonics Ultrasound

Tuesday, October 11
15:30 – 16:30 CET
Sala Welles - Casinò Mez.1

Moving From Eyeballs to Algorithms
New system architectures to support algorithms
by Richard Tobias, CTO

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Verasonics designs and markets leading-edge Vantage™ Research Ultrasound Systems for academic and commercial investigators. These real-time, software-based, programmable ultrasound systems accelerate research by providing unsurpassed speed and control to simplify the data collection and analysis process. Researchers in more than 35 countries routinely use the unparalleled flexibility of the Vantage platform to advance the art and science of ultrasound through their own research efforts. In addition, every Vantage System can be upgraded to any configuration - protecting capital equipment investments and expanding research options. Verasonics' Vantage 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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Vermon is leading the development and industrialization of state-of-the-art ultrasound solutions for medical and industrial applications.
Vermon's commitment is to innovate, design and manufacture advanced transducers and arrays with cutting-edge technology to support its customers' innovative ultrasound applications while strengthening their long-term market position with superior ultrasound imaging performances.

Ferroperm Piezoceramics A/S has been an industry-defining supplier of piezoelectric ceramics for nearly 70 years. Our expertly crafted components are widely used in the fields of medical ultrasound, underwater acoustics and non-destructive testing and can be found in vibration sensors and flowmeters across the globe as well. With our in-house product development and manufacturing steeped in proud tradition, we remain dedicated in producing ceramics of the highest quality with minimal batch-to-batch variation, tailored to our customers' exact specification requirements.

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us4us Ltd. delivers advanced ultrasound research systems and OEM components optimized for software-defined ultrasound applications and GPU processing. Our solutions feature raw RF acquisition and high-speed PCIe data streaming, enabling the end user to implement their own real-time CPU/GPU processing algorithms. An open SDK provides flexibility and easy integration with C/C++/Python/Matlab.

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us4R — an advanced 2D/3D-ready ultrasound research system featuring 256TX/256RX channels and an extremely high data transfer rate (up to 24GB/s). The system is intended for real-time implementation of advanced/complex ultrasound processing algorithms on GPUs.
us4OEM — a credit-card sized ultrasound front-end module with 128TX/32RX channels for integration in the end-user system/solution.

Furthermore, we offer consulting and development services in the area of ultrasound methods, systems, and product development.

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ultrasound

We provide technical expertise and engineering support for emerging applications in advanced ultrasound technologies. Daxsonics offers services to help companies develop ultrasound products. We work in at all stages of the life cycle providing a range of services including R&D, acoustic stack design, transducer design, electronics, software design, firmware design, and system integration. Our team of industry leading experts consistently come up with creative solutions to help develop market-disrupting products. We specialize in:

- High-frequency (>30MHz) ultrasound transducer and beamformer design
- Transducers and electronics for high-intensity focused ultrasound for thermal ablation and histotripsy
- Transducer design for small packaging and high-volume, low-cost manufacturing
- Advanced signal and image processing
- Artificial intelligence and computer vision programming applied to ultrasound imaging

E&I
Pure Power

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With its structure, starting with theoretical observations in application-specific simulations, transducer development and modular ultrasound systems including innovative software solutions, right up to signal processing, the department Ultrasound of the Fraunhofer IBMT covers the whole range of competences for system solutions in medical, biotechnological and technical applications. With more than 40 members of staff in three business areas, and three highly specialized working groups, it is the largest ultrasound research unit in Europe.

The EPSRC Centre for Doctoral Training in Future Ultrasonic Engineering (FUSE CDT) is a partnership between the Centre for Medical and Industrial Ultrasonics (C-MIU), at the University of Glasgow, and the Centre for Ultrasonic Engineering (CUE), at the University of Strathclyde. This partnership brings together two world-leading Centres of Excellence and creates the largest academic ultrasonic engineering unit in the world.

FUSE has been created to:
- Train Doctoral researchers with a focus on cohort-based learning experiences and skills training
- Build a skilled workforce to support the ultrasonic technology engineering community
- Help solve real-world challenges
- Advance the adoption of ultrasonic methods and applications in new areas
- Develop the ultrasound ecosystem by providing a platform for cross-sectoral and value-chain Knowledge Exchange

We look forward to seeing many of our community at IUS and to meeting new contacts wishing to find out more about FUSE and how we can collaborate.

PI Ceramic in Brief
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Polytec's innovative, non-contact optical metrology enables the systematic testing of dynamic mechanical response of ultrasonic transducers, devices and components. The applications range from the development of MEMS-based transducers, over micro-acoustic resonators, filters and sensors to ultrasonic tools for medical and industrial applications. Benefits are the ease of use, fast measurements with resolution in the sub-picometer range and frequency bandwidth up to the GHz regime. In addition our high-resolution 3D surface metrology option reveals all important details of the (micro) topography of your sample.

Silicon Austria Labs (SAL) is a top research center for Electronic Based Systems (EBS). At three locations (Graz, Villach, Linz), SAL is conducting research along the entire EBS value chain in the areas of sensor systems, power electronics, intelligent wireless systems and embedded systems to develop future-oriented solutions for industrial production, health, energy, mobility, safety and more. SAL brings together key players from industry, science and research and thus valuable expertise and know-how and conducts cooperative, application-oriented research along the value chain. Cooperative projects are co-financed by SAL and enable a fast and unbureaucratic project start.

Sonic Concepts™ is a global leader in designing and delivering innovative therapeutic and focused ultrasound solutions, including the HIFUPlex™ and NeuroFUS™ systems. Every day, researchers and organizations around the world use our best-in-class customizable products and turnkey ultrasonic therapy and imaging solutions to make medical breakthroughs and solve complex problems.

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TFT Corporation is a leading supplier of piezoelectric ceramics and single crystals PMN-PT / PIN-PMN-PT, which are manufactured by our group companies, Tayca Corporation in Japan and TRS technologies, Inc in the U.S. Our group also develops piezoelectric composite products achieving superior characteristics by combining resin and piezoelectric material. Our products are used in a variety of industries such as medical imaging, non-destructive testing, ultrasound sensor worldwide. We are also doing research for next-generation single crystal.

Telemed designs and manufactures clinical-grade portable ultrasound imaging systems and ultrasound beamformers for OEMs. options for researchers includes real-time channel data transfer, beamformed data, advanced triggering module and set of MATLAB, Python and LabView libraries and examples of use. Telemed's software development kit (SDK) offers an easy and fast way to develop customised user interface for stand-alone imaging systems and application-specific devices. The SDK is a set of C++ libraries providing user access to most system parameters.

Headquartered in Vilnius, Lithuania, Telemed has been designing and manufacturing ultrasound components and complete scanners since 1992. Production quality is confirmed by an ISO/EN 13485 quality system and US FDA 510k-cleared products.

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