10:30 am - 12:00 pm — Oral --- Thursday, October 22, 2015

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

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

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

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	Session 1B. ***MPA: Photoacoustic Systems*** *Chair:* **Stanislav Emelianov** *Georgia Institute of Technology*	***Session 2B.*** ***MEL: New Shear Wave Imaging Techniques*** *Chair:* **Mickael Tanter** *INSERM*	***Session 3B.*** ***MTH: Treatment Monitoring*** *Chair:* **Ayache Bouakaz** *Inserm*	***Session 4B.*** ***MIM: Advances in Vascular Imaging*** *Chair:* **Ton van der Steen** *Erasmus Medical Centre*	***Session 5B.*** ***Arrays*** *Chair:* **Robert Addison** *Rockwell Science Center*	***Session 6B.*** ***Phononics*** *Chair:* **Tsung-Tsong Wu** *National Taiwan University*	***Session 7B.*** ***Microacoustic Modeling*** *Chair:* **Ken-ya Hashimoto** *Chiba University*	***Session 8B.*** ***CMUT Design*** *Chair:* **Levent Degertekin** *Georgia Institute of Technology*
	Plenary Hall	**VIP**	**201BC**	**201DE**	**103**	**201F**	**201A**	**102**
1:00 pm	***1B-1*** **Optimization of the laser irradiation pattern in a high frame rate integrated photoacoustic / ultrasound (PAUS) imaging system** **Soon Joon Yoon**[1], Bao-Yu Hsieh[1], Chen-wei Wei[1], Thu-Mai Nguyen[1], Bastien Arnal[1], Ivan Pelivanov[1,2], Matthew O'Donnell[1] *[1]Department of Bioengineering, University of Washington, Seattle, Washington, USA, [2]International Laser Center, Moscow State University, Russian Federation*	***2B-1*** **Shear wave elastography with fast single-push multi-angle compounding** **Heechul Yoon**[1], Salavat Aglyamov[1], R. Andrew Fowler[1], Stanislav Emelianov[1] *[1]Biomedical Engineering, The University of Texas at Austin, Austin, Texas, USA*	***3B-1*** **10 MHz Catheter-based Annular Array for Thermal Strain Guided Intramural Cardiac Ablations** **Douglas Stephens**[1], Josquin Foiret[1], Steven Lucero[1], Katherine W. Ferrara[1], Kalyanam Shivkumar[2], Pierre Khuri-Yakub[3] *[1]Biomedical Engineering, University of California, Davis, California, USA,[2]University of California, Los Angeles, USA,[3]Stanford University, USA*	***4B-1*** **Coherent RF-data processing to enhance the Intima-Lumen interface** **Alfonso Rodriguez-Molares**[1], Lasse Lovstakken[1], Julio Martin-Herrero[2], Tore Gruner Bjastad[3], Hans Torp[1] *[1]Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway, [2]Signal Theory and Communications, University of Vigo, Vigo, Spain, [3]GE Vingmed Ultrasound, Horten, Norway*	***5B-1*** **Quantitative Phased Array Modeling and Imaging** **Lester Schmerr**[1] *[1]Center for NDE, Iowa State University, Woodward, Iowa, USA*	***6B-1*** **Phonon Dynamics in Electromechanical Resonators G3 topic: Phononics (PPN)** **Imran Mahboob**[1], Hirsohi Yamaguchi[1] *[1]NTT Basic Research Laboratories, Japan*	***7B-1*** **Efficient and Accurate WLP SMT SAW Duplexer EM Simulation in Module Integration** **Hao Dong**[1], Kevin Gamble[2], Jean Briot[2], Thor Thorvaldsson[2] *[1]Qorvo, Apopka, Florida, USA,[2]Qorvo, USA*	***8B-1*** **Experimental Study of Mutual Acoustic Coupling in CMUTs with Substrate-Embedded Springs** **Byung Chul Lee**[1], Amin Nikoozadeh[1], Butrus T. Khuri-Yakub[1] *[1]Stanford University, USA*
.	***1B-2*** **Optimizing a Single-Sided Reflection Mode Photoacoustic Setup for Clinical Imaging** **Martin F Beckmann**[1], Hans-Martin Schwab[1], Georg Schmitz[1] *[1]Chair for Medical Engineering, Ruhr-Universität Bochum, Bochum, Germany*	***2B-2*** **Magnetic Resonance-guided transient shear wave imaging using constructive multi-pulse transmission** **Yu Liu**[1], Brett Fite[1], Josquin Foiret[1], Erik Dumont[2], Katherine Ferrara[1] *[1]Biomedical Engineering, UC Davis, Davis, California, USA,[2]Image Guided Therapy, Pessac, France*	***3B-2*** **Real-Time Feedback System for High-Intensity Focused Ultrasound Treatment Using Decorrelation Maps of RF Echoes with Plane -Wave Transmission** **Ryo Takagi**[1], Hayato Jinbo[2], Ryosuke Iwasaki[1], Shin Yoshizawa[2], Shin-ichiro Umemura[1] *[1]Biomedical Engineering, Tohoku University, Japan,[2]Communications Engineering, Tohoku University, Japan*	***4B-2*** **Estimation of arterial wall motion using ultrafast imaging with transverse oscillations: in-vivo study** **Sebastien Salles**[1], Damien Garcia[2], Alfred Yu[3], Didier Vray[1], Hervé Liebgott[1] *[1]Creatis, France,[2]RUBIC, Canada, [3]EEE Department The University of Hong Kong, Hong Kong*			***7B-2*** **Study on Generation Mechanisms of Third-Order Non-Linearity in SAW Devices** **Ryo Nakagawa**[1,2], Takanao Suzuki[1], Hiroshi Shimizu[1], Haruki Kyoya[1], Katsuhiro Nako[1], Ken-ya Hashimoto[2] *[1]Murata Manufacturing Co., Ltd, Japan,[2]Graduate School of Engineering, Chiba University, Japan*	***8B-2*** **Fabrication of Capacitive Micromachined Ultrasonic Transducers with Through-Glass-Via Interconnects** **Xiao Zhang**[1], F. Yalcin Yamaner[2], Omer Oralkan[1] *[1]Department of Electrical and Computer Engineering, NCSU, Raleigh, North Carolina, USA, [2]Department of Electrical and Electronics Engineering, Istanbul Medipol University, Istanbul, Turkey*

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

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

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	Session 1C. MCA: High Temporal and Spatial Resolution Contrast Imaging Chair: Ayache Bouakaz, Inserm	Session 2C. MBF: New Vascular Mapping Tools Chair: Damien Garcia, University of Montreal	Session 3C. MTH: Brain Chair: Kullervo Hynynen, Univ. of Toronto	Session 4C. MBB: Beamforming II Chair: Jeremy Dahl, Stanford University	Session 5C. NDE Chair: Lawrence Kessler, Sonoscan Inc.	Session 6C. Nonlinear Acoustics Chair: Koen W.A. Van Dongen, Delft University of Technology	Session 7C. RF Frontend Devices Chair: Jidong Dai, Murata Electronics, Inc.	Session 8C. Transducer Design, Fabrication and Applications Chair: Sandy Cochran, University of Dundee
	Plenary Hall	**VIP**	**201BC**	**201DE**	**103**	**201F**	**201A**	**102**
3:30 pm	**1C-1 High Frame Rate Contrast-Enhanced Flow Vectorgraphy with Wide Velocity Estimation Dynamic Range Based on Multi-Band Processing** **Alfred C. H. Yu**[1], Billy Y. S. Yiu[1] [1]*Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong*	**2C-1 Functional connectivity of the mouse brain using transcranial functional ultrasound (fUS)** **Elodie Tiran**[1], Jérémy Ferrier[2], Bruno-Félix Osmanski[1], Thomas Deffieux[1], Sophie Pezet[2], Zsolt Lenkei[2], Mickaël Tanter[1] [1]*Institut Langevin, ESPCI-ParisTech, PSL University, INSERM U979, CNRS UMR7587, France,* [2]*Laboratoire de Neurobiologie, ESPCI-ParisTech, PSL University, CNRS UMR8249, France*	**3C-1 Pupil dilation and motor response elicitation by ultrasound neurostimulation** **Hermes Kamimura**[1,2], Shutao Wang[1], Hong Chen[1], Qi Wang[1], Christian Aurup[1], Camilo Acosta[1], Antonio Carneiro[2], Elisa Konofagou[1] [1]*Columbia University, New York, NY, USA,* [2]*University of Sao Paulo, Brazil*	**4C-1 Synthetic aperture imaging using a semi-analytic model for the transmit beams** **Svetoslav Ivanov Nikolov**[1], Jens Munk Hansen[1] [1]*BK Ultrasound, Herlev, Denmark*	**5C-1 Measurement of the Clamping Force Applied by Load-Bearing Bolts Using a Combination of Compression and Shear Ultrasonic Waves** **Johan E. Carlson**[1], Peter Lundin[2] [1]*Div. of Signals and Systems, Lulea University of Technology, Lulea, Sweden,* [2]*Swerea KIMAB, Kista, Sweden*	**6C-1 Nonlinear Acoustic Pulse Evolution at the Edge of a Silicon Crystal** Alexey M. Lomonosov[1,2], Pavel D. Pupyrev[1,3], Peter Hess[2],**Andreas P. Mayer**[3] [1]*General Physics Institute, Moscow, Russian Federation,* [2]*University of Heidelberg, Heidelberg, Germany,* [3]*HS Offenburg - University of Applied Sciences, Gengenbach, Germany*	**7C-1 Current developments and future trends in mobile terminal frontend architectures** **Harald Pretl**[1] [1]*DMCE GmbH & Co KG, Austria*	**8C-1 Piezoelectric Micromachined Ultrasonic Transducers with Increased Coupling Coefficient via Series Transduction** Yipeng Lu[1], **Qi Wang**[1], David Horsley[1] [1]*University of California, Davis, Davis, CA, USA*
3:45 pm	**1C-2 Visualizing tumour perfusion with plane-wave contrast-enhanced Doppler: concepts and trade-offs** **Charles Tremblay-Darveau**[1], Ross Williams[2], Paul S. Sheeran[1,2], Laurent Milot[2,3], Matthew Bruce[4], Peter N. Burns[1,2] [1]*Medical Biophysics, University of Toronto, Toronto, Canada,* [2]*Sunnybrook Research Institute, Toronto, Canada,* [3]*Department of Medical Imaging, University of Toronto, Toronto, Canada,* [4]*Supersonic Imagine, Aix-en-Provence, France*	**2C-2 Investigating functional ultrasound imaging for in vivo dissection of the visual pathway using light stimulations.** **Marc Gesnik**[1], Laura Zamfirov[2], Paul-Henri Prevot[2], Laëtitia Duhamel[2], Serge Picaud[2], José-Alain Sahel[2], Mathias Fink[1], Thomas Deffieux[1], Jean-Luc Gennisson[1], Mickaël Tanter[1] [1]*Institut Langevin, Paris, France,* [2]*Institut de la Vision, Paris, France*	**3C-2 Linearity of the Targeting Parameters and Gray-to-White-Matter Ratio Dependence on the Focused-Ultrasound Induced Blood-Brain Barrier Opening Volume across Non-Human Primates** **Maria Eleni (Marilena) Karakatsani**[1], Gesthimani Samiotaki[1], Matthew Downs[1], Vincent Ferrera[2], Elisa Konofagou[1,3] [1]*Biomedical Engineering, Columbia University, New York, NY, USA,* [2]*Neuroscience, Columbia University, New York, NY, USA,* [3]*Radiology, Columbia University, New York, NY, USA*	**4C-2 Increasing the Robustness and Convergence Rate of the Kaczmarz Method in Reconstructing the Speed of Sound (SoS) in Solid Materials using Analytical Signals** **Leili Salehi**[1], Georg Schmitz[2] [1]*Department of Medical Engineering, Ruhr Universität Bochum, Bochum, Germany,* [2]*Department of Medical Engineering, Ruhr Universität Bochum, Germany*	**5C-2 Development and Application of Guided Wave Technology for Buried Piping Examination in Nuclear Power Plant** **Kuang-Chih Pei**[1], Hung-Fa Shyu[1], Bing-Hung Lee[2], Jean-Chung Toung[3] [1]*Nondestructive Testing Lab., NFMD, Institute of Nuclear Energy Research, Taoyuan City, Taiwan,* [2]*Taiwan Metal Quality Control CO., Taiwan,* [3]*Taiwan Power Company, Taiwan*	**6C-2 Application of electrode stress for improving frequency-temperature behavior of UHF quartz resonators** **Yook-Kong Yong**[1], Jianfeng Chen[1], Randall Kubena[2], Deborah Kirby[2], David Chang[2] [1]*Rutgers University, Piscataway, NJ, USA,* [2]*HRL Laboratories, Malibu, CA, USA*		**8C-2 Micro-replication using Photoresist Moulds for Wafer-scale Fabrication of Fine-scale Piezocomposites** **Yun Jiang**[1], Hana Hughes[2,3], Tanikan Thongchai[1], Carl Meggs[1,3], Tim Button[1,2] [1]*School of Metallurgy and Materials, University of Birmingham, Birmingham, United Kingdom,* [2]*Central European Institute of Technology, Brno, Czech Republic,* [3]*Applied Functional Materials Ltd, Birmingham, United Kingdom*

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

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4:45 pm	***1C-5*** **Parametric Perfusion Imaging with Single-pixel Resolution and High Signal to Clutter Ratio** **Diya Wang**[1], Xuan Yang[1], Hong Hu[1], Hui Zhong[1], Lei Zhang[1], Mingxi Wan[1] *[1]The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Department of Biomedical Engineering, School of Life Science and Technology, Xi`an Jiaotong University, Xi`an, Shaanxi, China, People's Republic of*	***2C-6*** **Intraoperative vector flow imaging of the ascending aorta: Is systolic backflow and atherosclerosis related?** **Kristoffer Lindskov Hansen**[1], Hasse Møller-Sørensen[2], Jesper Kjaergaard[3], Maiken Jensen[2], Jens Lund[4], Jørgen Arendt Jensen[5], Michael Bachmann Nielsen[1] *[1]Department of Radiology, Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark, [2]Department of Cardiothoracic Anesthesiology, Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark, [3]Department of Cardiology, Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark, [4]Department of Cardiothoracic Surgery, Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark, [5]DTU Elektro, Center for Fast Ultrasound Imaging, Technical University of Denmark, Lyngby, Denmark*	***3C-6*** **Optimization of ultrasound-microbubble mediated drug transport in a new and realistic model of the human blood-brain barrier in vitro** **Charles SENNOGA**[1], Aya Zeghimi[1], Kayathiri Ganeshamoorthy[2], Pierre-Olivier Couraud[2], Ignacio Romero[2], Babette Weksler[2], Ayache Bouakaz[1] *[1]Inserm U930, Université François-Rabelais de Tours, France, [2]Inserm 1016, Institut Cochin, Paris, France*	***4C-6*** **Linear Array Beamformation Using Virtual Sub-wavelength Receiving Elements** **Shao-Yu Peng**[1], Meng-Lin Li[1,2] *[1]Dept. of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan,[2]Institute of Photonics Technologies, National Tsing Hua University, Taiwan*	***5C-6*** **A novel split inductively coupled piezoelectric transducer for flaw detection in pipes** **David Greve**[1], Peng Gong[2], Irving Oppenheim[2] *[1]Department of Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, USA,[2]Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA, USA*	***6C-6*** **Experimental results on the Pressure Dependence of the Minnaert Resonance Frequency for three different Gases in Water** **Jarle Andre Johansen**[1], Bern Inge Hansen[1] *[1]Department of engineering and safety, UiT The Arctic University of Norway, TROMSO, Norway*	***7C-5*** **A zero TCF band 13 SAW duplexer** **Yiliu Wang**[1], Marc Solal[1], Taeho Kook[1], Jean Briot[1], Ben Abbott[1], Alan Chen[1], Timothy Daniel[1], Svetlana Malocha[1], Keqi Qin[1], Kurt Steiner[1], William Wu[1] *[1]Qorvo Inc., USA*	***8C-6*** **Design and fabrication of relaxor-ferroelectric single crystal PIMNT/epoxy 2-2 composite based array transducer** **Qingwen Yue**[1] *[1]Shanghai Institute of Ceramics,Chinese Academy of Science, China, People's Republic of*