

10:30 am - 12:00 pm								
Oral --- Thursday, October 22, 2015								
	Session 1A. MEL: Carotid Elasticity Measurement Techniques <i>Chair: Ton van der Steen</i> <i>Erasmus Medical Centre</i>	Session 2A. MCA: Molecular Imaging <i>Chair: Helen Mulvana</i> <i>University of Glasgow</i>	Session 3A. MBF: Advances in Flow Imaging Methods <i>Chair: Piero Tortoli</i> <i>Università di Firenze</i>	Session 4A. MBB: Beamforming I <i>Chair: Jesse Yen</i> <i>University of Southern California</i>	Session 5A. Ultrasonics in Water and Air <i>Chair: Jiromaru Tsujino</i> <i>Kanagawa University</i>	Session 6A. Acoustic Tweezers and Particle Manipulation <i>Chair: Amit Lal</i> <i>Cornell University</i>	Session 7A. MEMS and FBAR Oscillators and Innovative Applications <i>Chair: Shuji Tanaka</i> <i>Tohoku University</i>	Session 8A. Medical Applications of Transducers <i>Chair: Mark Schafer</i> <i>PhotoSonix Medical, Inc.</i>
Plenary Hall		VIP	201BC	201DE	103	201F	201A	102
10:30 am	1A-1 Elasticity measurement of carotid artery atherosclerotic plaque Chris de Korte¹ <i>¹Medical UltraSound Imaging Center (MUSIC), Department of Radiology and Nuclear Medicine, Radboud University Medical Center, Nijmegen, Netherlands</i>	2A-1 The use of acoustic radiation force decorrelation weighted pulse inversion (ADW-PI) in enhancing microbubble contrast Elizabeth Herbst¹ , Sunil Unnikrishnan¹ , Shiying Wang¹ , Alexander Klibanov¹ , Will Mauldin¹ , John Hossack¹ <i>¹Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA</i>	3A-1 Adaptive Spectral Estimation Methods in Color Flow Imaging Yücel Karabiyik¹ , Ingvald Kinn Ekroll^{1,2} , Jørgen Avdal¹ , Hans Torp¹ , Lasse Løvstakken¹ <i>¹Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway, ²St. Olavs Hospital, Trondheim, Norway</i>	4A-1 Coherence Beamforming Applied to Velocity Estimation and Partially Coherent Signals Jeremy Dahl¹ , You Li² , Dongwoon Hyun² <i>¹Radiology, Stanford University, Palo Alto, CA, USA, ²Biomedical Engineering, Duke University, Durham, NC, USA</i>	5A-1 Shear wave generation in soft tissues using electrolysis-induced bubbling Sandra Montalescot¹ , Stefan Catheline² , Ali Zorgani³ , Benedicte Roger¹ , Rémi Souchon¹ <i>¹INSERM, University of Lyon, France, ²INSERM, University of Lyon, Lyon, France, ³University of Lyon, France</i>	6A-1 Dynamic Acoustic Field for Tuneable and Scalable Particle Sorting George Skotis¹ , David Cumming¹ , Jemma Roberts¹ , Mathis Riehle¹ , Anne Bernassau² <i>¹University of Glasgow, United Kingdom, ²Heriot-Watt University, United Kingdom</i>	7A-1 GaN MEMS Resonators and Oscillators D. Weinstein¹ <i>¹MIT, Cambridge, MA, USA</i>	8A-1 In-vivo navigation of neurosurgical biopsy needles using microultrasound transducers with M-mode imaging Rachael McPhillips¹ , Yun Jiang² , Zhen Qiu¹ , Syed Osama Mahboob¹ , Han Wang¹ , Carl Meggs² , Giuseppe Schiavone³ , Daniel Rodriguez-Sanmartin⁴ , Sam Eljamel¹ , Marc P. Y. Desmulliez³ , Christine E.M. Démore¹ , Tim Button² , Sandy Cochran¹
10:45 am		2A-2 Quantification of the binding kinetics of targeted ultrasound contrast agent for molecular imaging of cancer angiogenesis Simona Turco¹ , Peter J. A. Frinking² , Hessel Wijkstra^{1,3} , Massimo Mischì¹ <i>¹Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands, ²Bracco Suisse S.A., Geneva, Switzerland, ³Urology, Academic Medical Center, University of Amsterdam, Amsterdam, Netherlands</i>	3A-2 Robust Estimator Design for High Frame Rate Flow Vectorgraphy: The Least-Squares Vector Doppler Technique Billy Y. S. Yiu¹ , Alfred C. H. Yu¹ <i>¹Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong</i>	4A-2 Acoustic clutter suppression with weighted phase-difference coherence factor Zijian Guo¹ , Ting-Lan Ji² , Albert Gee¹ , Dave Napolitano¹ , Ching-Hua Chou¹ , Yuling Chen¹ , D-L Donald Liu² , Glen McLaughlin¹ <i>¹Zonare Medical Systems, Mountain View, CA, USA, ²Mindray North America, Mountain View, CA, USA</i>	5A-2 Measurement of human body surface displacement by breathing using airborne ultrasound Shinnosuke Hirata¹ , Hiroyuki Hachiya¹ <i>¹Dept. of Mechanical and Control Engineering, Tokyo Institute of Technology, Meguro-ku, Japan</i>	6A-2 Traveling Standing Waves: a Feasibility Study Paul van Neer¹ , Ludwig Rasmijn² , Armin Rasidovic³ , Arno Volker¹ <i>¹Process and Instrumentation Development, TNO, Delft, Zuid-Holland, Netherlands, ²TNO, Netherlands, ³Applus RTD, Netherlands</i>		8A-2 3/15 MHz Dual-layer Co-Linear Array for Transrectal Acoustic Angiography Sibo Li¹ , Jinwook Kim¹ , Sandeep Kasoji² , Paul Dayton³ , Xiaoning Jiang¹ <i>¹Mechanical and Aerospace Engineering, North Carolina State University, Raleigh, North Carolina, USA, ²Joint Department of Biomedical Engineering, University of North Carolina and North Carolina State University, Chapel Hill, North Carolina, USA</i>

11:00 am	<p>1A-2 Shear wave elastography for lipid content detection in transverse arterial cross-sections</p> <p>Hendrik Hansen¹, Mathieu Pernot², Simon Chatelin², Mickael Tanter², Chris de Korte¹ ¹Medical UltraSound Imaging Center (MUSIC), Department of Radiology and Nuclear Medicine, Radboud university medical center, Nijmegen, Netherlands, ²Institut Langevin, École Supérieure de Physique et de Chimie Industrielles, Paris, France</p>	<p>2A-3 Molecular acoustic angiography: Demonstration of in vivo feasibility for high resolution superharmonic ultrasound molecular imaging</p> <p>Brooks Lindsey¹, Sarah Shelton¹, James Tsuruta², F. Stuart Foster³, Paul Dayton^{1,4} ¹Joint Department of Biomedical Engineering, University of North Carolina-Chapel Hill and NC State University, Chapel Hill, NC, USA, ²Department of Pediatrics, University of North Carolina-Chapel Hill and NC State University, Chapel Hill, NC, USA, ³Sunnybrook Research Institute, Toronto, ON, Canada, ⁴Biomedical Research Imaging Center, University of North Carolina-Chapel Hill, Chapel Hill, NC, USA</p>	<p>3A-3 Unaliased vector Doppler imaging from unsteered plane waves</p> <p>Damien Garcia¹, Shahrokh Shahriari², Daniel Posada², Julia Faurie² ¹Department of radiology, University of Montreal, Canada, ²University of Montreal, Canada</p>	<p>4A-3 Adaptive Imaging with Multi-Phase Apodization with Cross-correlation: Phantom and In-vivo Results</p> <p>Junseob Shin¹, Jesse Yen² ¹Earth and Environmental Sciences, Los Alamos National Laboratory, Los Alamos, NM, USA, ²Biomedical Engineering, University of Southern California, Los Angeles, CA, USA</p>	<p>5A-3 Phased array transducer for emitting 40-kHz air-coupled ultrasound without grating lobes</p> <p>Eric Konetzke¹, Matthias Rutsch², Maik Hoffmann¹, Alexander Unger², Rene Golinske¹, Dirk Killat¹, Sivaram Nishal Ramadas^{3,4}, Steve Dixon³, Mario Kupnik² ¹BTU Cottbus-Senftenberg, Germany, ²Technische Universität Darmstadt, Germany, ³University of Warwick, Coventry, United Kingdom, ⁴Elster-Instromet, Belgium</p>	<p>6A-3 Phononic crystal guided parallel particles transport</p> <p>Fei Li^{1,2}, Feiyan Cai¹, Chen Wang¹, Long Meng¹, Chaowei Xu¹, Liufeng Geng¹, Chengxiang Zhang¹, Hairong Zheng¹ ¹Paul C. Lauterbur Research Centre for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, Shenzhen, Guangdong, China, People's Republic of, ²Shenzhen Key Laboratory of Nanobiomechanics, Shenzhen Institutes of Advanced Technology, Shenzhen, Guangdong, China, People's Republic of</p>	<p>7A-2 Oven Controlled FBAR Oscillator</p> <p>Rich Ruby¹, Kannan Sankaragomathi², Suresh Sridaran³, Reed Parker³ ¹avago technologies, Menlo Park, Ca, USA, ²GoogleX, Google, CA, USA, ³avago technologies, USA</p>	<p>8A-3 Fabrication and Characterization of 15 MHz Concave Array Transducers for Ophthalmic Imaging</p> <p>Jung Hyui Cha¹, Byungwoo Kang², Jihun Jang², Jin Ho Chang^{1,2} ¹Interdisciplinary Program of Integrated Biotechnology, Sogang University, Seoul, Korea, Republic of, ²Department of Electronic Engineering, Sogang University, Seoul, Korea, Republic of</p>
11:15 am	<p>1A-3 Carotid artery wall dynamics captured with multi-plane high-frame-rate imaging</p> <p>Pieter Kruizinga¹, Frits Mastik¹, Johannes G Bosch¹, Antonius FW van der Steen^{1,2}, Nico de Jong^{1,2} ¹Thorax Center - Biomedical Engineering, Erasmus Medical Center, Rotterdam, Netherlands, ²Faculty of Applied Sciences - Acoustical Wavefield Imaging, Delft University of Technology, Delft, Netherlands</p>	<p>2A-4 Ultrasound Molecular Imaging with Modulated Acoustic Radiation Force-based Beam Sequence in Mouse Abdominal Aorta: A Feasibility Study</p> <p>Shiying Wang¹, Sunil Unnikrishnan¹, Alexander L. Klibanov^{1,2}, F William Mauldin Jr¹, John A Hossack¹ ¹Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA, ²Division of Cardiovascular Medicine, University of Virginia, Charlottesville, Virginia, USA</p>	<p>3A-4 Time-resolved Doppler vortography in the left ventricle</p> <p>Julia Faurie¹, Daniel Posada¹, Amir Hodzic², François Tournoux², Damien Garcia³ ¹University of Montreal, Canada, ²Department of echocardiography, University of Montreal Hospital, Canada, ³Department of radiology, University of Montreal, Canada</p>	<p>4A-4 A comparison of analytical and numerical approaches for CT-based aberration correction in transcranial ultrasound: application to passive acoustic imaging</p> <p>Ryan Jones^{1,2}, Kullervo Hynynen^{1,2} ¹Medical Biophysics, University of Toronto, Canada, ²Physical Sciences Platform, Sunnybrook Research Institute, Canada</p>	<p>5A-4 Laser-ultrasound imaging of material porosity with a kHz rate fiber-optic pump-probe system</p> <p>Ivan Pelivanov^{1,2}, Matthew O'Donnell¹ ¹Bioengineering, University of Washington, Seattle, Washington, USA, ²Physics Faculty, Moscow State University, Moscow, Russian Federation</p>	<p>6A-4 Self-acoustophoresis of metallic microparticles in ultrasonic standing waves: new tricks with old hats</p> <p>Wei Wang¹ ¹School of Materials Science and Engineering, Harbin Institute of Technology, Shenzhen Graduate School, Shenzhen, Guangdong, China, People's Republic of</p>	<p>7A-3 Towards a CMOS Compatible Acoustic Delay Line Memory</p> <p>Justin Kuo¹, Jason Hoople¹, Amit Lal¹ ¹School of Electrical and Computer Engineering, Cornell University, Ithaca, New York, USA</p>	<p>8A-4 Programmable delivery of macromolecules using high frequency ultrasound</p> <p>Sangpil Yoon¹, Min Gon Kim¹, Yingxiao Wang², K. Kirk Shung¹ ¹Department of Biomedical Engineering, University of Southern California, Los Angeles, California, USA, ²Department of Bioengineering & Institute of Engineering in Medicine, University of California, San Diego, USA</p>

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<p>11:30 am</p>	<p>1A-4 Comparison of Different Pulse Waveforms for Local Pulse Wave Velocity Measurement in Healthy and Hypertensive Common Carotid Arteries In Vivo</p> <p>Chengwu Huang¹, Yuan Su², Hong Zhang³, Lin-Xue Qian², Jianwen Luo¹ ¹Department of Biomedical Engineering, Tsinghua University, Beijing, China, People's Republic of, ²Department of Ultrasound, Beijing Friendship Hospital, Capital Medical University, Beijing, China, People's Republic of</p>	<p>2A-5 A Theoretical Model for the Interaction of an Ultrasound-Activated Contrast Microbubble with a Wall at Arbitrary Separation Distances</p> <p>Alexander Doinikov¹, Ayache Bouakaz¹ ¹Inserm U930, Université François-Rabelais, Tours, France</p>	<p>3A-5 Improved Vector Velocity Estimation using Directional Transverse Oscillation for a Convex Array</p> <p>Jørgen Arendt Jensen¹ ¹Dept. of Elect. Eng., Center for Fast Ultrasound Imaging, Technical University of Denmark, Lyngby, Denmark</p>	<p>4A-5 Adaptive Beamformer Incorporating with Element Directivity</p> <p>Hideyuki Hasegawa¹, Hiroshi Kanai² ¹Graduate School of Science and Engineering for Research, University of Toyama, Toyama, Japan, ²Graduate School of Engineering, Tohoku University, Sendai, Japan</p>	<p>5A-5 Investigation of Lamb Waves in Solid-Liquid Layers</p> <p>Detlef Pape¹, Miklos Lenner¹, Tobias Kaufmann¹ ¹Corporate Research, ABB Switzerland Ltd., Baden-Daetwil, Switzerland</p>	<p>6A-5 Recent advances in developing biomedical applications of single beam acoustic tweezers</p> <p>Ying Li^{1,2}, Changyang Lee^{1,2}, Ruimin Chen^{1,2}, Hae Lim^{1,2}, Ming-Yi Lin³, Kwok Ho Lam⁴, Kirk Shung^{1,2} ¹Biomedical Engineering, University of Southern California, Los Angeles, USA, ²NIH Resource Center on Medical Ultrasonic Transducer Technology, University of Southern California, USA, ³Zilkha Neurogenetic Institute, University of Southern California, USA, ⁴Department of Electrical Engineering, Hong Kong Polytechnic University, Hong Kong</p>	<p>7A-4 Chipscale GHz Ultrasonic Channels for Fingerprint Scanning</p> <p>Jason Hoople¹, Justin Kuo¹, Mohamed Abdel-moneum², Amit Lal¹ ¹Electrical and Computer Engineering, Cornell University, USA, ²Intel Corporation, USA</p>	<p>8A-5 Wearable ultrasound applicators for wound healing and noninvasive drug delivery</p> <p>Peter A. Lewin¹, Youhan Sunny¹, Christopher Bawiec¹, Leonid Zubkov¹, Michael Neidrauer¹, Michael S. Weingarten¹, David J. Margolis² ¹Drexel University, USA, ²University of Pennsylvania, USA</p>
<p>11:45 am</p>	<p>1A-5 In Vivo Carotid Plaque Stiffness Measurements with ARFI Ultrasound in Endarterectomy Patients</p> <p>Tomasz Czernuszewicz¹, Jonathon Homeister², Melissa Caughey³, Mark Farber⁴, Joseph Fulton⁴, Peter Ford⁴, William Marston⁴, Raghuvveer Vallabhaneni⁴, Timothy Nichols^{2,3}, Caterina Gallippi^{1,5} ¹Joint Department of Biomedical Engineering, University of North Carolina and North Carolina State University, Chapel Hill, NC, USA, ²Department of Pathology and Laboratory Medicine, University of North Carolina, Chapel Hill, NC, USA, ³Department of Medicine, University of North Carolina, Chapel Hill, NC, USA, ⁴Department of Surgery, University of North Carolina, Chapel Hill, NC, USA, ⁵Department of Electrical and Computer Engineering, North Carolina State University, Raleigh, NC, USA</p>	<p>2A-6 Modelling of ultrasound contrast agent oscillations in vessels based on an infinite mirror image method</p> <p>Martin Ward^{1,2}, Yesna Yildiz², Virginie Papadopolou², Robert Eckersley³, Meng-Xing Tang² ¹Department of Mathematics, Imperial College London, London, United Kingdom, ²Department of Bioengineering, Imperial College London, London, United Kingdom, ³Biomedical Engineering Department, Division of Imaging Sciences, King's College London, United Kingdom</p>	<p>3A-6 Small-diameter Vasculture Detection with Coherent Flow Power Doppler Imaging</p> <p>You Li¹, Jeremy Dahl² ¹Department of Biomedical Engineering, Duke University, Durham, North Carolina, USA, ²Department of Radiology, School of Medicine, Stanford University, Stanford, California, USA</p>	<p>4A-6 Model-based clutter suppression in the presence of phase-aberration from in vivo data and simulations</p> <p>Kazuyuki Dei¹, Brett Byram¹ ¹Biomedical Engineering, Vanderbilt University, TN, USA</p>	<p>5A-6 Transducer beam diffraction effects in sound transmission near leaky Lamb modes in elastic plates at normal incidence</p> <p>Magne Aanes^{1,2}, Kjetil Daae Lohne², Per Lunde^{1,2}, Magne Vestheim¹ ¹Department of Physics and Technology, University of Bergen, Bergen, Norway, ²Christian Michelsen Research AS, Bergen, Norway</p>	<p>6A-6 Cell deformation by acoustic trapping with a single-element high-frequency ultrasound transducer: Potential to determine invasiveness of breast cancer cells</p> <p>Jae Youn Hwang¹, Jinman Park¹, Chi Woo Yoon², Hae Gyun Lim², Jungwoo Lee³, K. Kirk Shung² ¹Daegu Gyeongbuk Institute of Science & Technology (DGIST), Daegu, Korea, Republic of, ²Biomedical Engineering, University of Southern California, USA, ³Electronic Engineering, Kwangwoon University, Korea, Republic of</p>	<p>7A-5 Pt-Ni / Pt-Zr Electrodes for Stable SAW Resonator Operation During Repeated Temperature Cycling up to 1000[deg]C</p> <p>Mauricio Pereira da Cunha¹, Anin Maskay¹, Robert Lad¹, David Frankel¹, Scott Moulzolf¹, Michael Call¹, George Bernhardt¹ ¹Laboratory for Surface Science and Technology, University of Maine, Orono, ME, USA</p>	

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	Session 1B. MPA: Photoacoustic Systems <i>Chair: Stanislav Emelianov</i> Georgia Institute of Technology	Session 2B. MEL: New Shear Wave Imaging Techniques <i>Chair: Mickael Tanter</i> INSERM	Session 3B. MTH: Treatment Monitoring <i>Chair: Ayache Bouakaz</i> Inserm	Session 4B. MIM: Advances in Vascular Imaging <i>Chair: Ton van der Steen</i> Erasmus Medical Centre	Session 5B. Arrays <i>Chair: Robert Addison</i> Rockwell Science Center	Session 6B. Phononics <i>Chair: Tsung-Tsong Wu</i> National Taiwan University	Session 7B. Microacoustic Modeling <i>Chair: Ken-ya Hashimoto</i> Chiba University	Session 8B. CMUT Design <i>Chair: Levent Degertekin</i> 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 , Katsuhiko 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	<p>1B-3 Handheld Photoacoustic Imaging with Integrated Diode Lasers</p> <p>Georg Schmitz¹, Hans-Martin Schwab¹, Martin Beckmann¹ ¹<i>Chair for Medical Engineering, Ruhr-Universität Bochum, Bochum, Germany</i></p>	<p>2B-3 Moving beam shear wave reconstruction for both ultrasound and optical coherence tomography applications</p> <p>Bao-Yu Hsieh¹, Shaozhen Song¹, Thu-Mai Nguyen¹, Soon Joon Yoon¹, Tueng Shen², Ruikang Wang^{1,2}, Matthew O'Donnell¹ ¹<i>Department of Bioengineering, University of Washington, Seattle, Washington, USA;</i>²<i>Department of Ophthalmology, University of Washington, Seattle, Washington, USA</i></p>	<p>3B-3 Visualization of 3D temperature distribution caused by exposure of HIFU with thermo-chromic liquid crystal phantom</p> <p>Toshihide Iwahashi¹, Kazuhiro Matsui¹, Tang Tianhan¹, Keisuke Fujiwara², Kazunori Itani², Takashi Azuma¹, Kiyoshi Yoshinaka³, Akira Sasaki¹, Shu Takagi¹, Yoichiro Matsumoto¹, Ichiro Sakuma¹ ¹<i>The University of Tokyo, Japan;</i>²<i>Hitachi-Aloka Medical, Japan;</i>³<i>National Institute of Advanced Industrial Science and Technology, Japan</i></p>	<p>4B-3 Intra-plaque stiffness mapping in carotid stenosis patients in vivo using high-frame rate Pulse Wave Imaging</p> <p>Ronny Li¹, Iason Apostolakis², Edward Connolly³, Elisa Konofagou^{2,4} ¹<i>Department of Biomedical Engineering, Columbia University, USA;</i>²<i>Biomedical Engineering, Columbia University, USA;</i>³<i>Neurological Surgery, Columbia University, USA;</i>⁴<i>Radiology, Columbia University, USA</i></p>	<p>5B-2 Imaging Beyond Aliasing</p> <p>Paul van Neer¹, Arno Volker¹ ¹<i>Process and Instrumentation Development, TNO, Delft, Zuid-Holland, Netherlands</i></p>	<p>6B-2 The generation of impulses from narrow bandwidth signals using resonant spherical chains</p> <p>David Hutchins¹, Jia Yang¹, Omololu Akanji¹, Peter Thomas¹, Lee Davis³, Steven Freear², Sevan Harput², Nader Saffari³, Pierre Gelat³ ¹<i>School of Engineering, University of Warwick, Coventry, United Kingdom;</i>²<i>School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom;</i>³<i>Department of Mechanical Engineering, University College London, London, United Kingdom</i></p>	<p>7B-3 Effective nonlinear constants for SAW devices from FEM calculations</p> <p>Andreas Mayer¹, Elena Mayer¹, Markus Mayer², Philipp Jaeger², Werner Ruile², Ingo Bleyl², Karl Wagner² ¹<i>Hochschule Offenburg, Germany;</i>²<i>TDK corporation, Munich, Germany</i></p>	<p>8B-3 Highly Reliable CMUT Cell Structure with Reduced Dielectric Charging Effect</p> <p>Shuntaro Machida¹, Taiichi Takezaki¹, Takashi Kobayashi¹, Hiroki Tanaka¹, Tatsuya Nagata² ¹<i>Hitachi, Ltd., Tokyo, Japan;</i>²<i>Hitachi Aloka Medical, Ltd., Tokyo, Japan</i></p>
1:45 pm		<p>2B-4 Eliminating Speckle Noise with Three-dimensional Single-Track-Location Shear Wave Elasticity Imaging (STL-SWEI)</p> <p>Peter Hollender¹, Samantha Lipman¹, Gregg Trahey^{1,2} ¹<i>Biomedical Engineering, Duke University, Durham, North Carolina, USA;</i>²<i>Radiology, Duke University Medical Center, Durham, North Carolina, USA</i></p>	<p>3B-4 Monitoring of Radiofrequency Ablation with Shear Wave Delay Mapping</p> <p>William Shi¹, Ajay Anand¹, Shriram Sethuraman¹, Sheng-Wen Huang², Hua Xie¹, Gary Ng² ¹<i>Philips Research North America, Briarcliff Manor, NY, USA;</i>²<i>Philips Ultrasound, Bothell, WA, USA</i></p>	<p>4B-4 Dual-frequency intravascular ultrasound imaging of vasa vasorum: Ex vivo and in vivo demonstration</p> <p>Brooks Lindsey¹, K. Heath Martin¹, Jianguo Ma^{1,2}, Zhuochen Wang^{1,2}, Xiaoning Jiang^{1,2}, Paul Dayton^{1,3} ¹<i>Joint Department of Biomedical Engineering, University of North Carolina-Chapel Hill and NC State University, Chapel Hill, NC, USA;</i>²<i>Department of Mechanical & Aerospace Engineering, North Carolina State University, Raleigh, NC, USA;</i>³<i>Biomedical Research Imaging Center, University of North Carolina-Chapel Hill, Chapel Hill, NC, USA</i></p>	<p>5B-3 Flexural Transducer Arrays for Industrial Non-Contact Applications</p> <p>Tobias Eriksson¹, Sivaram Ramadas^{1,2}, Alexander Unger², Maik Hoffmann⁴, Mario Kupnik³, Steve Dixon¹ ¹<i>University of Warwick, United Kingdom;</i>²<i>Elster-Instromet, Belgium;</i>³<i>Technische Universität Darmstadt, Germany;</i>⁴<i>BTU, Cottbus-Senftenberg, Germany</i></p>	<p>6B-3 Tunable Bragg band gaps in piezocomposite phononic crystals</p> <p>Charles CROËNNE¹, Marie-Fraise PONGE¹, Franck LEVASSORT², Lionel HAUMESSER², Mai PHAM THI³, Anne-Christine HLADKY¹ ¹<i>IEMN, UMR 8520 CNRS, ISEN Department, Lille, France;</i>²<i>François-Rabelais University, GREMAN UMR 7347 CNRS, Tours, France;</i>³<i>Thales Research and Technology, Palaiseau, France</i></p>	<p>7B-4 Thermal Modeling of WLP-BAW Filters – Power Handling and Miniaturization</p> <p>Michael Fattinger¹, Paul Stokes¹, Gernot Fattinger¹ ¹<i>BAW R&D, Qorvo, Apopka, Florida, USA</i></p>	<p>8B-4 Fabrication of polymer bonded capacitive micromachined ultrasonic transducers (CMUTs)</p> <p>Zhenhao Li¹, Albert I. H. Chen¹, Shuai Na¹, Lawrence Wong¹, John T. W. Yeow^{1,2} ¹<i>Systems Design Engineering, University of Waterloo, Waterloo, Ontario, Canada;</i>²<i>Waterloo Institute of Nanotechnology, University of Waterloo, Waterloo, Ontario, Canada</i></p>

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2:00 pm	1B-4 In vitro and in vivo dynamic blood volume assessment using photoacoustics H.M. Heres¹ , 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 Song¹ , 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 Foiret¹ , 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 Camacho¹ , Jorge F. Cruza¹ 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 Apte¹ , Amin Nikoozadeh¹ , 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 Ferrari¹ , Jessica Farland ¹ , Takashi Buma¹ 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 Iwasaki¹ , 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 Ma¹ , 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 Chi¹ , Zhaohui Li ² ¹ Department of Electronics, Peking University, Beijing, China, People's Republic of, ² Department of Electronics, Peking University, China, People's Republic of	6B-5 Phononic crystal based liquid sensor governed by localized defect resonances Aleksandr Oseev¹ , 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 Turner¹ , 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 Zhao¹ , 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, 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 Tzong 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	<p>1C-3 Super-resolution imaging of microbubble contrast agents</p> <p>Robert Eckersley</p>	<p>2C-3 Non-invasive Estimation of Intravascular Pressure Changes using Ultrasound</p> <p>Jacob Bjerring Olesen¹, Carlos Armando Villagómez-Hoyos¹, Marie Sand Traber¹, Carsten Erik Thomsen², Jørgen Arendt Jensen¹ ¹Center for Fast Ultrasound Imaging, Dept. of Elec. Eng. DTU, Kgs. Lyngby, Denmark; ²Dept. of Radiology, Copenhagen University Hospital, Copenhagen, Denmark</p>	<p>3C-3 Enhanced intranasal brain drug delivery by focused ultrasound-activated microbubbles</p> <p>Hong Chen¹, Camilo Acosta¹, Carlos Sierra Sánchez¹, Marilena Karakatsani¹, Elisa Konofagou¹ ¹Columbia University, New York, NY, USA</p>	<p>4C-3 Phantom and <i>in vivo</i> demonstration of swept synthetic aperture imaging</p> <p>Nick Bottenus¹, Will Long¹, David Bradway¹, Gregg Trahey^{1,2} ¹Biomedical Engineering, Duke University, Durham, North Carolina, USA; ²Radiology, Duke University, Durham, North Carolina, USA</p>	<p>5C-3 Attenuation and Phase Compensation for Guided Wave Based Inspection Using a Filter Approach</p> <p>Christian Kexel¹, Joel Harley², Jochen Moll¹ ¹Department of Physics, Goethe University of Frankfurt, Germany; ²Department of Electrical and Computer Engineering, University of Utah, Salt Lake City, UT, USA</p>	<p>6C-3 Temperature control of a droplet on disposable type microfluidic system based on a surface acoustic wave device for blood coagulation monitoring</p> <p>Noriyuki Ohashi¹, Jun Kondoh¹ ¹Shizuoka University, Hamamatsu-shi, Japan</p>	<p>7C-2 Full band 41 filter with high Wi-Fi rejection – design and manufacturing challenges</p> <p>Susanne Kreuzer¹, Alexandre Volatier¹, Gernot Fattinger¹, Fabien Dumont¹ ¹BAW R&D, Qorvo, Apopka, Florida, USA</p>	<p>8C-3 Gas Coupled Polymeric Capacitive Transducers via Pad Printing</p> <p>Richard O'Leary¹ ¹University of Strathclyde, United Kingdom</p>
4:15 pm		<p>2C-4 Ultrafast Doppler imaging of intramyocardial coronary arteries</p> <p>David Maresca¹, Mafalda Correia¹, Olivier Villemain¹, Bijan Ghaleb², Mickael Tanter¹, Mathieu Pernot¹ ¹Institut Langevin, ESPCI ParisTech, CNRS UMR 7587, INSERM U979, Paris, France; ²INSERM U955 Equipe 03, Université Paris Est Créteil et Ecole Nationale Vétérinaire d'Alfort, Maisons-Alfort, France</p>	<p>3C-4 Dopaminergic neuron regeneration after Neurturin delivery through the FUS-induced BBB opening in a Parkinsonian model</p> <p>Gesthimani Samiotaki¹, Camilo Acosta², Maria Eleni Karakatsani², Shutao Wang¹, Elisa Konofagou¹ ¹Columbia University, New York, NY, USA; ²Columbia University, USA</p>	<p>4C-4 Real-time Channel Data Compression for Improved Software Beamforming Using Micro-beamforming with Error Compensation</p> <p>U-Wai Lok¹, Huai-Shun Shih¹, Pai-Chi Li² ¹Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan; ²Electrical Engineering, National Taiwan University, Taipei, Taipei, Taiwan, Taiwan</p>	<p>5C-4 Numerical simulations of ultrasonic flexural waves in cased wellbores and evaluations of the cement bond quality</p> <p>Xiao He¹, Hao Chen¹, Xiuming Wang¹ ¹State Key Laboratory of Acoustics, Institute of Acoustics, Chinese Academy of Sciences, Beijing, China, People's Republic of</p>	<p>6C-4 Numerical simulation of nonlinear attenuation in bubbly mediums</p> <p>Amin Jafarisojahrood¹, Raffi Karshafian², Michael C. Kolios² ¹Physics, Ryerson University, Canada; ²Ryerson University, Toronto, Canada</p>	<p>7C-3 Study of power durability measurement of RF SAW devices for IEC standardization</p> <p>Tatsuya Omori¹, Shunsuke Ohara¹, Chang-Jun Ahn¹, Ken-ya Hashimoto¹ ¹Electrical & Electronics Engineering, Chiba University, Chiba, Chiba, Japan</p>	<p>8C-4 Extending the receive performance of phased micromachined ultrasonic transducer arrays in air down to 40 kHz and below</p> <p>Matthias Rutsch¹, Eric Konetzke², Alexander Unger¹, Maik Hoffmann², Sivaram Nishal Ramadas^{3,4}, Steve Dixon³, Mario Kupnik¹ ¹Technische Universität Darmstadt, Germany; ²BTU Cottbus-Senftenberg, Germany; ³University of Warwick, Coventry, United Kingdom; ⁴Elster-Instrument, Belgium</p>
4:30 pm	<p>1C-4 Ultrafast ultrasound localization microscopy of the living brain vasculature at the capillary scale</p> <p>Claudia Errico¹, Juliette Pierre¹, Sophie Pezet², Yann Desailly¹, Zsolt Lenkei², Mickael Tanter¹, Olivier Couture¹ ¹Institut Langevin, (ESPCI-ParisTech, CNRS UMR7587, INSERM ERL U979), Paris, France; ²Brain Plasticity Unit (ESPCI-ParisTech, CNRS UMR 8249), Paris, France</p>	<p>2C-5 Velocity measurement of the main portal vein with Transverse Oscillation</p> <p>Andreas Hjelm Brandt¹, Kristoffer Lindskov Hansen¹, Michael Bachmann Nielsen¹, Jørgen Arendt Jensen² ¹Dept. of Radiology, Copenhagen University Hospital, Rigshospitalet, Denmark; ²Center for Fast Ultrasound Imaging, Technical University of Denmark, Denmark</p>	<p>3C-5 Improving targeting of ultrasound-mediated blood-brain barrier opening using chirp and random-based modulations</p> <p>Hermes Kamimura^{1,2}, Shutao Wang¹, Shih-Ying Wu¹, Marilena Karakatsani¹, Camilo Acosta¹, Antonio Carneiro², Elisa Konofagou¹ ¹Columbia University, New York, NY, USA; ²University of Sao Paulo, Brazil</p>	<p>4C-5 Real-Time High-Framerate In Vivo Cardiac SLSC Imaging on a GPU-Based Beamformer</p> <p>Dongwoon Hyun¹, Gregg Trahey¹, Jeremy Dahl² ¹Biomedical Engineering, Duke University, Durham, NC, USA; ²Radiology, Stanford University, Stanford, CA, USA</p>	<p>5C-5 Laser ultrasound imaging of defects in curved structures with a flexible ultrasonic transducer</p> <p>Makiko Kobayashi¹, Chin-Chi Chen², Tai-Chieh Wu², Po-Hsieh Tung², Che-Hua Yang² ¹Graduate School of Science and Technology, Kumamoto University, Japan; ²College of Mechanical and Electrical Engineering, National Taipei University of Technology, Taiwan</p>	<p>6C-5 Dynamic behaviour of laser nucleated bubbles in a focused ultrasound field</p> <p>Lian Sheng Wang¹, Gianluca Memoli¹, Mark Hodnett¹, Bajram Zeqiri¹ ¹National Physical Laboratory, Teddington, United Kingdom</p>	<p>7C-4 Design Considerations for High Power BAW Duplexers for Base Station Applications</p> <p>Jeff Galipeau¹, Rodolfo Chang¹ ¹QORVO, Apopka, Florida, USA</p>	<p>8C-5 Spiral array inspired multi-depth cost function for 2D sparse array optimization</p> <p>Emmanuel Roux^{1,2}, Alessandro Ramalli², Marc Robini¹, Hervé Liebgott¹, Christian Cachard¹, Piero Tortoli² ¹CREATIS, Université de Lyon, CNRS UMR 5220, INSERM U1044, Université Claude Bernard Lyon 1, INSA-Lyon, Villeurbanne, France; ²Ingenieria dell'informazione, Università degli studi di Firenze, Firenze, Italy</p>

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<p>4:45 pm</p>	<p>1C-5 Parametric Perfusion Imaging with Single-pixel Resolution and High Signal to Clutter Ratio</p> <p>Diya Wang¹, Xuan Yang¹, Hong Hu¹, Hui Zhong¹, Lei Zhang¹, Mingxi Wan¹ ¹The 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</p>	<p>2C-6 Intraoperative vector flow imaging of the ascending aorta: Is systolic backflow and atherosclerosis related?</p> <p>Kristoffer Lindskov Hansen¹, Hasse Möller-Sørensen², Jesper Kjaergaard³, Maiken Jensen², Jens Lund⁴, Jørgen Arendt Jensen⁵, Michael Bachmann Nielsen¹ ¹Department of Radiology, Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark, ²Department of Cardiothoracic Anesthesiology, Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark, ³Department of Cardiology, Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark, ⁴Department of Cardiothoracic Surgery, Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark, ⁵DTU Elektro, Center for Fast Ultrasound Imaging, Technical University of Denmark, Lyngby, Denmark</p>	<p>3C-6 Optimization of ultrasound-microbubble mediated drug transport in a new and realistic model of the human blood-brain barrier in vitro</p> <p>Charles SENNOGA¹, Aya Zeghimi¹, Kayathiri Ganeshamoorthy², Pierre-Olivier Couraud², Ignacio Romero², Babette Weksler², Ayache Bouakaz¹ ¹Inserm U930, Université François-Rabelais de Tours, France, ²Inserm 1016, Institut Cochin, Paris, France</p>	<p>4C-6 Linear Array Beamformation Using Virtual Sub-wavelength Receiving Elements</p> <p>Shao-Yu Peng¹, Meng-Lin Li^{1,2} ¹Dept. of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan, ²Institute of Photonics Technologies, National Tsing Hua University, Taiwan</p>	<p>5C-6 A novel split inductively coupled piezoelectric transducer for flaw detection in pipes</p> <p>David Greve¹, Peng Gong², Irving Oppenheim² ¹Department of Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, USA, ²Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA, USA</p>	<p>6C-6 Experimental results on the Pressure Dependence of the Minnaert Resonance Frequency for three different Gases in Water</p> <p>Jarle Andre Jobansen¹, Bern Inge Hansen¹ ¹Department of engineering and safety, UiT The Arctic University of Norway, TROMSØ, Norway</p>	<p>7C-5 A zero TCF band 13 SAW duplexer</p> <p>Yiliu Wang¹, Marc Solal¹, Taeho Kook¹, Jean Briot¹, Ben Abbott¹, Alan Chen¹, Timothy Daniel¹, Svetlana Malocha¹, Keqi Qin¹, Kurt Steiner¹, William Wu¹ ¹Qorvo Inc., USA</p>	<p>8C-6 Design and fabrication of relaxor-ferroelectric single crystal PIMNT/epoxy 2-2 composite based array transducer</p> <p>Qingwen Yue¹ ¹Shanghai Institute of Ceramics, Chinese Academy of Science, China, People's Republic of</p>
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