

8:00 am - 9:30 am

Oral --- Saturday, October 24, 2015

	Session 2H. MBB: Beamforming V <i>Chair: Herve Liebgott</i> <i>CREATIS</i>	Session 3H. MEL: Methods for Elasticity Imaging <i>Chair: Timothy Hall</i> <i>University of Wisconsin</i>	Session 4H. MTH: Ultrasound-Mediated Agent Delivery <i>Chair: Katherine Ferrara</i> <i>UC Davis</i>	Session 5H. Microfluidics <i>Chair: Pierre Khuri-Yakub</i> <i>Stanford University</i>	Session 1H. MSP: Medical Signal Processing <i>Chair: Svetoslav Nikolov</i> <i>BK Medical</i>	Session 8H. Transducer Applications <i>Chair: Scott Smith</i> <i>GE Global Research</i>
	VIP	201ABC	201DE	103	201F	102
8:00 am	<p>2H-1 High Frame Rate 3D Tissue Velocity Imaging Using Sub-Aperture Beam Forming</p> <p>Pedro Santos^{1,2}, Lasse Lovstakken^{2,3}, Eigil Samset^{2,4}, Jan D'hooge^{1,3} ¹Department of Cardiovascular Sciences, KU Leuven, Leuven, Belgium, ²GE Vingmed Ultrasound AS, Horten, Norway, ³Department of Circulation and Medical Imaging, NTNU, Trondheim, Norway, ⁴Center for Cardiological Innovation, Oslo, Norway</p>	<p>3H-1 Measurement of the frequency dependent phase velocity and attenuation from the Fourier description of shear wave propagation: addressing geometric spreading arising from spatially asymmetric Gaussian excitations</p> <p>Ned Rouze¹, Mark Palmeri¹, Kathryn Nightingale¹ ¹Biomedical Engineering, Duke University, Durham, North Carolina, USA</p>	<p>4H-1 Ultrasound-triggered and targeted gene delivery by using cationic microbubbles to enhance GDNF gene transfection in a rat Parkinson's disease model</p> <p>Ching-Hsiang Fan¹, Chien-Yu Ting¹, En-Ling Chang¹, Hao-Li Liu², Hong-Lin Chan³, You-Yin Chen⁴, Chih-Kuang Yeh¹ ¹Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Taiwan, ²Department of Electrical Engineering, Chang-Gung University, Taiwan, ³Department of Medical Science and Institute of Bioinformatics and Structural Biology, National Tsing Hua University, Taiwan, ⁴Department of Biomedical Engineering, National Yang Ming University, Taiwan</p>	<p>5H-1 SAW synthesis with inverse filter and IDT Arrays for microfluidic and biological applications: one ring to rule them all</p> <p>Michaël Baudoin¹, Antoine Riaud^{1,2}, Jean-Louis Thomas², Adrien Bussonière¹, Olivier Bou Matar¹ ¹IEMN, University of Lille, EC Lille, CNRS, France, ²INSP, CNRS, Paris, France</p>	<p>1H-1 Robust Sound Speed Estimation for Hepatic Steatosis Assessment</p> <p>Marion Imbault¹, Alex Faccinetto², Bruno-Félix Osmanski¹, Mathias Fink¹, Jean-Luc Gennisson¹, Valérie Vilgrain², Mickaël Tanter¹ ¹Institut Langevin, ESPCI ParisTech, PSL Research University, CNRS UMR 7587, INSERM U979, Paris, France, ²Department of Radiology, Beaujon Hospital, Paris, France</p>	<p>8H-1 Perpetual-operation Frequency Response and Equivalent Circuit Modelling of Piezoelectric Ultrasonic Atomizer Devices</p> <p>Xinyi Zhong¹, Sang Lam¹ ¹Department of Electrical & Electronic Engineering, Xi'an Jiaotong-Liverpool University, Suzhou, Jiangsu Province, China, People's Republic of</p>
8:15 am	<p>2H-2 A 50 MHz Phased Array Beamformer Using a Novel 'One Sample per Pixel' Variable Sampling Technique</p> <p>Christopher Samson¹, Jeff Leadbetter¹, Jeremy Brown¹ ¹Biomedical Engineering, Dalhousie University, Halifax, Nova Scotia, Canada</p>	<p>3H-2 Quantitative poroelastic property imaging combining shear wave and strain elastography</p> <p>Maria Theodorou^{1,2}, Jérémie Fromageau^{1,2}, Nandita deSouza^{2,3}, Jeffrey C. Bamber^{1,2} ¹Joint Department of Physics, Sutton, London, United Kingdom, ²Cancer Research UK Cancer Imaging Centre, Sutton, London, United Kingdom, ³Department of Diagnostic Radiology, Royal Marsden NHS Foundation Trust, Sutton, London, United Kingdom</p>	<p>4H-2 In situ Activation of Doxorubicin using Ultrasound-Triggered Release of Composite Droplets</p> <p>Marine Bezagu^{1,2}, Stelios Arseniyadis², Olivier Couture³, Fabrice Monti¹, Patrick Tabeling¹, Janine Cossy², Mickael Tanter², Jonathan Clarhaut^{1,3}, Sebastien Papot⁴ ¹MMN (ESPCI, CNRS, UPMC), Paris, France, ²LCO (ESPCI, CNRS, UPMC), Paris, France, ³Institut Langevin (ESPCI, CNRS, INSERM), Paris, France, ⁴IC2MP (Université de Poitiers, CNRS), Poitiers, France, ⁵CHU Poitiers, Poitiers, France</p>	<p>1H-2 Monitoring and Delivery of Transcranial Therapies Using Dual-mode Ultrasound Arrays</p> <p>Alyona Haritonova¹, Dalong Liu², Emad Ebbini² ¹Biomedical Engineering, University of Minnesota, Minneapolis, MN, USA, ²Electrical and Computer Engineering, University of Minnesota, USA</p>	<p>8H-2 Sol-Gel Composite Materials for Continuous Monitoring at 550°C</p> <p>YUSUKE INADA¹, Makiko Kobayashi¹, Hajime Nagata², Tadashi Takenaka² ¹Kumamoto University, Japan, ²Tokyo University of Science, Japan</p>	

<p>8:30 am</p>	<p>2H-3 Busting the ghost in coherent plane-wave imaging</p> <p>Alfonso Rodriguez-Molares¹, Lasse Lovstakken¹, Bastien Denarie², Hans Torp¹ ¹<i>Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway;</i> ²<i>GE Healthcare, Norway</i></p>	<p>3H-3 3D Elastic Tensor Imaging (ETI): characterization of soft tissues elastic anisotropy</p> <p>Mafalda Correia¹, Jean Provost¹, Clément Papadacci¹, Thomas Defieux¹, Jean-Luc Gennisson¹, Mickaël Tanter¹, Mathieu Pernot¹ ¹<i>Institut Langevin, ESPCI ParisTech, CNRS UMR 7587, INSERM U979, Université Paris 7, Paris, France</i></p>	<p>4H-3 Red Blood Cells as Therapeutic Ultrasound Agents</p> <p>Johnny Chen¹, Ali Dhanaliwala¹, Justin Farry¹, John Hossack^{1,2}, Alexander Klibanov^{1,2} ¹<i>Department of Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA;</i> ²<i>Robert M. Berne Cardiovascular Research Center, Charlottesville, Virginia, USA</i></p>	<p>5H-2 Ultrasound Image-based Absolute Concentration Measurement Technique for Materials with Low Scatterer Concentration</p> <p>John H. Lee¹, Javier Jimenez², Xiang Zhang¹, Duane S. Boning¹, Brian W. Anthony¹ ¹<i>Massachusetts Institute of Technology, Cambridge, MA, USA;</i> ²<i>Madrid-MIT M+Vision Consortium, Massachusetts Institute of Technology, Cambridge, MA, USA</i></p>	<p>1H-3 Automatic Mouse Embryo Brain Ventricle Segmentation, Gestation Stage Estimation, and Mutant Detection from 3D 40-MHz Ultrasound Data</p> <p>Jen-wei Kuo¹, Yao Wang¹, Orlando Aristizabal^{2,3}, Daniel H. Turnbull¹, Jeffrey A. Ketterling², Jonathan Mamou² ¹<i>Electronics and Computer Engineering, Polytechnic School of Engineering, New York University, Brooklyn, USA;</i> ²<i>F. L. Lizzi Center for Biomedical Engineering, Riverside Research, New York, USA;</i> ³<i>Skirball Institute of Biomolecular Medicine, New York University School of Medicine, New York, USA</i></p>	<p>8H-3 Ultrasonic biopsy needle based on the class IV flextensional configuration</p> <p>Andrew Mathieson¹, Andrew Tweedie², Andrew Feeney¹, Margaret Lucas¹ ¹<i>School of Engineering, University of Glasgow, United Kingdom;</i> ²<i>Weidlinger Assoc. Ltd., Glasgow, United Kingdom</i></p>
<p>8:45 am</p>	<p>2H-4 Coded excitation for crosstalk suppression during multi-line transmit beamforming: a simulation study</p> <p>Ling Tong^{1,2}, Alejandra Ortega², Jianwen Luo¹, Jan D'hooge² ¹<i>Department of Biomedical Engineering, Tsinghua University, Beijing, Beijing, China, People's Republic of;</i> ²<i>Department of Cardiovascular Sciences, KU Leuven, Leuven, Belgium</i></p>	<p>3H-4 Vibro-Elastography: Absolute Elasticity from Motorized 3D Ultrasound Measurements of Harmonic Motion Vectors</p> <p>Jeffrey Abeysekera¹, Robert Rohling^{1,2}, Septimiu Salcudean² ¹<i>Mechanical Engineering, University of British Columbia, Vancouver, British Columbia, Canada;</i> ²<i>Electrical and Computer Engineering, University of British Columbia, Vancouver, British Columbia, Canada</i></p>	<p>4H-4 Combining the antiangiogenic drug Sorafenib with the antivascular action of microbubbles for the treatment of hepatocellular carcinoma</p> <p>Niroo Sivapalan¹, Ben Leung¹, David Goertz^{1,2} ¹<i>Sunnybrook Research Institute, Toronto, Ontario, Canada;</i> ²<i>Medical Biophysics, University of Toronto, Canada</i></p>	<p>5H-3 Particle separation using bulk acoustic waves in a tilted angle microfluidic channel</p> <p>Erin Dauson¹, David Greve², Kelvin Gregory¹, Irving Oppenheim¹, Gregory Healy¹ ¹<i>Civil and Environmental Engineering, Carnegie Mellon University, Pittsburgh, PA, USA;</i> ²<i>Department of Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, PA, USA</i></p>	<p>1H-4 Use of B-splines in fast dynamic ultrasound RF simulations</p> <p>Sigurd Storve¹, Hans Torp¹ ¹<i>Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway</i></p>	<p>8H-4 Development of Air-Coupled Low Frequency Ultrasonic Transducers and Arrays with PMN-32%PT Piezoelectric Crystals</p> <p>Rymantas Jonas Kazys¹, Reimondas Sliteris¹, Justina Sestoke¹ ¹<i>Ultrasound Institute of Kaunas University of Technology, Lithuania</i></p>
<p>9:00 am</p>	<p>2H-5 Filtered Spatial Compounding (FSC) in Synthetic Transmit Aperture Imaging</p> <p>Ping Gong¹, Michael C. Kolios¹, Yuan Xu¹ ¹<i>Biomedical Physics, Ryerson University, Toronto, Canada</i></p>	<p>3H-5 Three-Dimensional Shear Wave Imaging Based on Full-Field Optical-Sectioned Laser Speckle Contrast Imaging</p> <p>Pei-Yu Chao¹, Pai-Chi Li² ¹<i>Biomedical Electronics and Bioinformatics, National Taiwan University, Taipei, Taiwan;</i> ²<i>Electrical Engineering, National Taiwan University, Taipei, Taipei, Taiwan, Taiwan</i></p>	<p>4H-5 Focused ultrasound facilitated adenoviral delivery for optogenetic stimulation</p> <p>Shutao Wang¹, Amanda Buch¹, Camilo Acosta¹, Oluymei Olumolade¹, Elisa Konofagou^{1,2} ¹<i>Biomedical Engineering, Columbia University, New York, New York, USA;</i> ²<i>Radiology, Columbia University, New York, New York, USA</i></p>	<p>5H-4 On-chip ultrasonic manipulation of micro-particles using flexural vibration of a glass substrate</p> <p>Ryota Yamamoto^{1,2}, Daisuke Koyama^{2,3}, Mami Matsukawa^{2,3} ¹<i>Faculty of Life and Medical Sciences, Doshisha University, Japan;</i> ²<i>Wave Electronics Research Center, Doshisha University, Japan;</i> ³<i>Faculty of Science and Engineering, Doshisha University, Japan</i></p>	<p>1H-5 Evaluation of a Huffman Sequence Based Mismatched Filter for the Bandwidth Limited 3D USCT system</p> <p>Shreyank Gupta^{1,2}, Michael Zapf¹, Herbert Krauß², Nicole V. Ruiter¹ ¹<i>Institute of Data Processing and Electronics, Karlsruhe Institute of Technology, Germany;</i> ²<i>Electrical Engineering and Information Technology, University of Applied Sciences Darmstadt, Germany</i></p>	<p>8H-5 Red blood cell manipulation using ultrasound microbeam</p> <p>Kwok Ho Lam¹, Ying Li², Qifa Zhou², Kirk K Shung² ¹<i>Department of Electrical Engineering, The Hong Kong Polytechnic University, Hong Kong;</i> ²<i>NIH Transducer Resource Center and Department of Biomedical Engineering, University of Southern California, USA</i></p>
<p>9:15 am</p>	<p>2H-6 Improving lateral resolution in ultrasonic imaging by utilizing nulls in the beam pattern</p> <p>Jonathan Reeg¹, Michael L. Oelze¹ ¹<i>Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, USA</i></p>	<p>3H-6 A High Frame-rate and Low-cost Elastography System by Generating Shear Waves through Continuous Vibration of the Ultrasound Transducer</p> <p>Daniel C. Mellema¹, Pengfei Song¹, Armando Manduca¹, Matthew W. Urban¹, Randall R. Kinnick¹, James F. Greenleaf¹, Shigao Chen¹ ¹<i>Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, MN, USA</i></p>	<p>4H-6 Local and targeted delivery of a therapeutic monoclonal antibody in a colorectal cancer model: in-vivo proof of concept</p> <p>Thomas Barré¹, Emilie Dalloneau², Thierry Lecomte^{3,4}, Valérie Gouilleux-Gruart^{5,3,5}, Nathalie Heuzé-Vourc'h², Ayache Bouakaz¹ ¹<i>UMR Inserm U930, Université François-Rabelais, TOURS, France;</i> ²<i>Inserm, Centre d'Etude des Pathologies Respiratoires, UMR 1100, Université François Rabelais, TOURS, France;</i> ³<i>CNRS, GICC UMR 7292, Université François Rabelais, France;</i> ⁴<i>Service Hépatogastro-Entérologie – CHRU, Tours, France;</i> ⁵<i>CHRU de TOURS, laboratoire d'immunologie, TOURS, France</i></p>	<p>5H-5 Splitting Drops using Surface Acoustic Waves</p> <p>Sean Collingon¹, James Friend¹ ¹<i>Department of Mechanical and Aerospace Engineering, University of California, San Diego, La Jolla, CA, USA</i></p>	<p>1H-6 Towards Sub-Nyquist Doppler Ultrasound Imaging Using Non-Uniformly Spaced Stream of Pulses</p> <p>Avinoam Bar-Zion¹, Martino Alessandrini², Jan D'hooge², Dan Adam¹, Yonina Eldar³ ¹<i>Department of Biomedical Engineering, Technion - Israel Institute of Technology, Haifa, Israel;</i> ²<i>Cardiovascular Imaging & Dynamics, Department of Cardiovascular Sciences, KU Leuven, Leuven, Belgium;</i> ³<i>Department of Electrical Engineering, Technion - Israel Institute of Technology, Haifa, Israel</i></p>	<p>8H-6 Design of High-Efficiency, Miniaturized Ultrasonic Receivers for Powering Medical Implants with Reconfigurable Power Levels</p> <p>Ting Chia Chang¹, Marcus Weber¹, Jayant Charhad¹, Amin Nikoozadeh¹, Butrus T. Khuri-Yakub¹, Amin Arbabian¹ ¹<i>Electrical Engineering, Stanford University, Stanford, CA, USA</i></p>

10:30 am - 12:00 pm

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	Session 2I. <i>MIM: Advances in Vascular and Flow Imaging</i> <i>Chair: Lasse Løvstakken</i> <i>NTNU</i>	Session 3I. <i>MEL: Towards Clinical Application of Elasticity Imaging</i> <i>Chair: Mark Palmeri</i> <i>Duke University</i>	Session 4I. <i>MTH: Histotripsy, Shockwaves and Liquefaction</i> <i>Chair: Jean-Yves Chapelon</i> <i>INSERM</i>	Session 5I. <i>MBE: Bioeffects and Dosimetry</i> <i>Chair: Jeff Ketterling</i> <i>Riverside Research</i>	Session 1I. <i>MTC: Tissue Characterization</i> <i>Chair: Pascal Laugier</i> <i>Université Pierre et Marie Curie</i>	Session 8I. <i>CMUTs and Signal Processing</i> <i>Chair: Jian Yuan</i> <i>Philips Shanghai Apex</i>
	VIP	201ABC	201DE	103	201F	102
10:30 am	2I-1 Ultrafast vector flow imaging Damien Garcia ¹ ¹ University of Montreal, Canada	3I-1 Sonic Estimation of Elasticity via Resonance (SEER): Initial Results from a New Method of Assessing Hemostasis William Walker ¹ , F. Scott Corey ² ¹ HemoSonics, Charlottesville, Virginia, USA, ² Key Technologies, Inc., Baltimore, Maryland, USA	4I-1 Histotripsy Cardiac Therapy for Non Invasive Chordal Cutting Olivier Villemain ¹ , Wojciech Kwiecinski ¹ , Justine Robin ¹ , Bastien Arnal ¹ , Alain Bel ² , Mickael Tanter ¹ , Emmanuel Messas ² , Mathieu Pernot ¹ ¹ Institut Langevin, France, ² Hopital Européen Georges Pompidou, France	5I-1 Local cavitation induced vessel wall injury of artery and its potential application in animal model of atherosclerosis Yujin Zong ¹ , Rongrong Wang ¹ , Xinru Zou ¹ , Lei Zhang ¹ , Yi Feng ¹ , Gang Liu ¹ , Mingxi Wan ¹ ¹ The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Xi'an Jiaotong University, Xi'an, Shaanxi, People's Republic of China	1I-1 In vivo biopsy by photoacoustic based tissue characterization Xueding Wang ¹ , Guan Xu ² , Zhuo-xian Meng ² , Jian-Die Lin ² , Cheri Deng ² , Paul Carson ² , Brian Fowlkes ² ¹ Biomedical Engineering, University of Michigan, Ann Arbor, Michigan, USA, ² University of Michigan, USA	8I-1 Phase Modulated Pulse Sequences for Nonlinear Imaging with CMUTs Sarp Satir ¹ , Levent Degertekin ¹ ¹ Georgia Institute of Technology, USA
10:45 am		3I-2 Myocardial stiffness assessment in children using Shear Wave Imaging: an in-vitro and in-silico study Annette Caenen ¹ , Darya Shcherbakova ¹ , Clément Papadacci ² , Mathieu Pernot ² , Patrick Segers ¹ , Abigail Swillens ¹ ¹ IBITech-bioMMeda, Ghent University, Ghent, Belgium, ² Institut Langevin, ESPCI ParisTech, Paris, France	4I-2 Non-invasive Thrombolysis using Histotripsy beyond the "Intrinsic" Threshold (Microtripsy) Xi Zhang ¹ , Cabe Owens ² , Hitinder Gurm ³ , Yu Ding ¹ , Charles Cain ¹ , Zhen Xu ¹ ¹ Department of Biomedical Engineering, University of Michigan, Ann Arbor, Ann Arbor, USA, ² Department of Pediatrics and Communicable Diseases, University of Michigan, Ann Arbor, Ann Arbor, USA, ³ Department of Internal Medicine, University of Michigan, Ann Arbor, Ann Arbor, USA	5I-2 Understanding the Biophysical Origin of Protrusive Blisters in Sonoporation Cells: Actin Network Disruption and Membrane Blebbing Ruen Shan Leow ¹ , Jennifer M. F. Wan ² , Alfred C. H. Yu ¹ ¹ Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong, ² School of Biological Sciences, University of Hong Kong, Pokfulam, Hong Kong	1I-2 In-Plane Anisotropy Method for the Characterization of the Elastic Properties of Anisotropic Materials Sara Aristizabal ¹ , Ivan Z. Nenadic ¹ , Bo Qiang ¹ , Carolina Amador ¹ , James F. Greenleaf ¹ , Matthew W. Urban ¹ ¹ Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, MN, USA	8I-2 Second-Harmonic Reduction in CMUTs Using Unipolar Pulsers Alessandro Stuart Savoia ¹ , Giuseppe Scaglione ¹ , Marco Sautto ² , Andrea Mazzanti ² , Fabio Quaglia ³ , Giosuè Caliano ¹ ¹ Dipartimento di Ingegneria, Università degli Studi Roma Tre, Roma, Italy; ² Dipartimento di Ingegneria Industriale e dell'Informazione, Università degli Studi di Pavia, Pavia, Italy; ³ STMicroelectronics, Cornaredo, Italy
11:00 am	2I-2 In-vivo Ultrafast Doppler Volumetric Imaging using Undersampled 2D Array Martin Flesch ^{1,2} , Thomas Deffieux ¹ , Jean Provost ¹ , Guillaume Ferin ² , An Nguyen-Dinh ² , Mathieu Pernot ¹ , Mickael Tanter ¹ ¹ Institut Langevin, ESPCI ParisTech, PSL Reaserch University, CNRS UMR7587, INSERM U979, Paris VII, Paris, France, ² Vermon, Tours, France	3I-3 3-D ultrasound elastography of the breast: first steps towards ABVS implementation Gijs A.G.M. Hendriks ¹ , Branislav Holländer ¹ , Jan J.M. Menses ¹ , Hendrik H.G. Hansen ¹ , Chris L. de Korte ¹ ¹ Medical UltraSound Imaging Center (MUSIC), Department of Radiology and Nuclear Medicine, Radboud university medical center, Nijmegen, Netherlands	4I-3 Transcranial aberration correction using histotripsy pulse backscatter from the bubble clouds they create Jonathan Sukovich ¹ , Timothy Hall ¹ , Zhen Xu ¹ , Charles Cain ¹ ¹ Biomedical Engineering, University of Michigan, Ann Arbor, MI, USA	5I-3 Drug Delivery Is Promoted by Low-Intensity Ultrasound Due to an Increase in Clathrin-Mediated Endocytosis. Sophie Tardoski ¹ , Evelyne Gineyts ² , Jacqueline Ngo ¹ , Anthony Kocot ¹ , Philippe Clézardin ² , David Melodelima ¹ ¹ INSERM UMR 1032, France, ² INSERM UMR 1033, France	1I-3 Measurements of the Shear wave Velocity and Attenuation of the Pancreas in Volunteers Ivan Nenadic ¹ , Benjamin Wood ¹ , Carolina Amador Carrascal ¹ , James Greenleaf ¹ , Matthew Urban ¹ ¹ Mayo Clinic, USA	8I-3 Revised amplitude modulation for contrast-enhanced ultrasound imaging with a cMUT array. Damien Fouan ^{1,2} , Ayache Bouakaz ^{1,2} ¹ Inserm U930, Imagerie et Cerveau, Tours, France, ² Université François Rabelais de Tours, France

<p>11:15 am</p>	<p>2I-3 Super-Resolution Velocity Estimation in Microvessels using Multiple Hypothesis Tracking</p> <p>Dimitri Ackermann¹, Georg Schmitz¹ ¹Chair for Medical Engineering, Ruhr-Universität Bochum, Bochum, Germany</p>	<p>3I-4 In vivo liver shear wave motion detection and shear wave speed comparison between fundamental and harmonic imaging</p> <p>Carolina Amador¹, Pengfei Song¹, Duane Meixner², Shigao Chen¹, Matthew Urban¹ ¹Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, Minnesota, USA, ²Department of Radiology, Mayo Clinic College of Medicine, Rochester, Minnesota, USA</p>	<p>4I-4 Transcranial Histotripsy Therapy to Treat Hemorrhagic Stroke</p> <p>Jonathan Sukovich¹, Yohan Kim¹, Aditya Pandey², Timothy Hall¹, Charles Cain¹, Zhen Xu¹ ¹Biomedical Engineering, University of Michigan, Ann Arbor, MI, USA, ²Neurological Surgery, University of Michigan, Ann Arbor, MI, USA</p>	<p>5I-4 Silicon Horn Transducer Based Ultrasonically Enhanced Nerve Firing</p> <p>Tiffany St. Bernard¹, Po-Cheng Chen², Jason Hoople², Bruce Johnson¹, Amit Lal² ¹Biomedical Engineering, Cornell University, Ithaca, NY, USA, ²Electrical and Computer Engineering, Cornell University, Ithaca, NY, USA, ³Neurobiology and Behavior, Cornell University, Ithaca, NY, USA</p>	<p>1I-4 Attenuation Measuring Ultrasound Shearwave Elastography (AMUSE) for Measuring Shear Wave Velocity and Attenuation: Application in 15 Post-Transplant Liver Patients and Comparison with Biopsy Findings</p> <p>Ivan Nenadic¹, Matthew Urban¹, William Sanchez¹, James Greenleaf¹, Shigao Chen¹ ¹Mayo Clinic, USA</p>	<p>8I-4 Feasibility of Interlaced Multi-Band CMUTs for Photoacoustic Imaging</p> <p>Ryan Chee¹, Roger Zemp¹ ¹University of Alberta, Canada</p>
<p>11:30 am</p>	<p>2I-4 Cerebral monitoring of neuroprotective ultrafast cooling post cardiac arrest via multiparametric ultrafast ultrasound imaging</p> <p>Charlie Demené¹, David Maresca¹, Matthias Kohlhauer², Fanny Lidouren², Bijan Ghaleh², Renaud Tissier², Mathieu Pernot¹, Mickaël Tanter¹ ¹Institut Langevin, ESPCI ParisTech, CNRS UMR7587, Inserm U979, Paris, France, ²Inserm U955 Equipe 03, Université Paris Est Créteil et Ecole Nationale Vétérinaire d'Alfort, Maison Alfort, France</p>	<p>3I-5 Validation of Electromechanical Wave Imaging in canine left ventricles against electrography</p> <p>Julien Grondin¹, Alexandre Costet¹, Ethan Bunting¹, Alok Gambhir², Elaine Wan², Elisa E Konofagou^{1,3} ¹Department of Biomedical Engineering, Columbia University, New York, NY, USA, ²Department of Medicine, Columbia University, New York, NY, USA, ³Department of Radiology, Columbia University, New York, NY, USA</p>	<p>4I-5 Rapid HIFU-aided liquefaction for fine-needle aspiration of large extravascular hematomas: feasibility study</p> <p>Tatiana Khokhlova¹, Wayne Monsky², Yasser Haider³, Yak-Nam Wang⁴, Thomas Matula⁴ ¹Medicine, University of Washington, Seattle, WA, USA, ²Radiology, University of Washington, Seattle, WA, USA, ³Urology, University of Washington, Seattle, WA, USA, ⁴Applied Physics Lab, University of Washington, Seattle, WA, USA</p>	<p>5I-5 Quantitative Measurement of Pulsed Ultrasound Pressure Field Using Optical Phase Contrast</p> <p>Seiji Oyama¹, Mohd Syahid¹, Jun Yasuda¹, Shin Yoshizawa¹, Shin-ichiro Umemura² ¹Communication Engineering, Tohoku University, Sendai, Japan, ²Biomedical Engineering, Tohoku University, Sendai, Japan</p>	<p>1I-5 Ultrasonic guided waves to predict fracture risk in post-menopausal women: Clinical findings</p> <p>Jean-Gabriel Minonzo¹, Quentin Vallet¹, Nicolas Bochud¹, Adrien Etchet², Sami Kolta², Christian Roux², Pascal laugier¹ ¹Laboratoire d'Imagerie Biomedicale, Sorbonne Universités, UPMC Univ Paris 06, INSERM, CNRS, Paris, France, ²Service de Rhumatologie Centre d'Evaluation des Maladies Osseuses Hôpital Cochin, Paris, France</p>	<p>8I-5 Multi-frequency imaging with collapse-mode CMUT</p> <p>Martin Pekar^{1,2}, Wendy Dittmer¹, Nenad Mihajlovic¹ ¹In-Body Systems, Philips Research, Eindhoven, Netherlands, ²Department of Biomedical Engineering, Thorax Center, Erasmus MC, Rotterdam, Netherlands</p>
<p>11:45 am</p>	<p>2I-5 Cardiac Motion Estimation based on Transverse Oscillation and Ultrafast Circular Wave Imaging</p> <p>Philippe JOOS¹, Sebastien Salles¹, Didier Vray¹, Barbara Nicolas¹, Hervé Liebgott¹ ¹CREATIS, Villeurbanne, Rhône, France</p>	<p>3I-6 Viscoelastic Response (VisR) Assessment of Longitudinal Dystrophic Degeneration in Clinical Duchenne Muscular Dystrophy</p> <p>Christopher Moore¹, Mallory Selzo², Melissa Caughey³, James Howard, Jr⁴, Caterina Gallippi^{1,2} ¹Department of Electrical and Computer Engineering, North Carolina State University, Chapel-Hill, NC, USA, ²Joint Department of Biomedical Engineering, University of North Carolina and North Carolina State University, Chapel Hill, NC, USA, ³Department of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA, ⁴Department of Neurology, University of North Carolina at Chapel Hill, Chapel Hill, NC, USA</p>	<p>4I-6 Preclinical evaluation of an MR-guided thermal HIFU ablation strategy using shockwaves and millisecond boiling in an in-vivo porcine liver model</p> <p>Pascal Ramaekers¹, Martijn de Greef¹, Johanna van Breugel¹, Chrit Moonen¹, Mario Ries¹ ¹Imaging Division, UMC Utrecht, Utrecht, Netherlands</p>	<p>5I-6 Rapid spatial mapping of the acoustic pressure in high intensity focused ultrasound fields at clinical intensities using a novel planar Fabry-Perot interferometer</p> <p>Elly Martin¹, Edward Zhang¹, Paul Beard¹, Bradley Treeby¹ ¹Medical Physics and Biomedical Engineering, University College London, London, United Kingdom</p>	<p>1I-6 Estimation of bone quality on scoliotic subjects using ultrasound reflection imaging method – a preliminary study</p> <p>Rui Zheng¹, Lawrence H Le², Doug Hill^{1,3}, Edmond Lou^{1,3} ¹Department of Surgery, University of Alberta, Edmonton, Alberta, Canada, ²Department of Radiology and Diagnostic Imaging, University of Alberta, Canada, ³Glenrose Rehabilitation Hospital, Alberta Health Services, Canada</p>	<p>8I-6 Practical S-Sequence Aperture Coding Schemes for Volumetric Imaging with Top Orthogonal to Bottom Electrode (TOBE) Arrays</p> <p>Roger Zemp¹, Tyler Harrison¹ ¹Electrical & Computer Engineering, University of Alberta, Edmonton, Alberta, Canada</p>

1:00 pm - 2:30 pm

Oral --- Saturday, October 24, 2015

	Session 2J. MPA: Photoacoustic Imaging and Reconstruction <i>Chair: Michael Kolios</i> <i>Ryerson University</i>	Session 3J. MTC: Cardiovascular Tissue Characterization <i>Chair: James G. Miller</i> <i>Washington University</i>	Session 4J. MTH: Taming Cancer, Tumors, and Bacteria <i>Chair: Tom Matula</i> <i>University of Washington</i>	Session 5J. Sensors and Sensing <i>Chair: James Friend</i> <i>University of California, San Diego</i>	Session 1J. MBF: 3D Imaging and Flow Simulations <i>Chair: Alfred C. H. Yu</i> <i>University of Hong Kong</i>	Session 8J. Materials Fabrication and Characterization <i>Chair: Wei Ren</i> <i>Xi'an Jiaotong University</i>
	VIP	201ABC	201DE	103	201F	102
1:00 pm	2J-1 Photoacoustic Clutter Reduction using Plane Wave Ultrasound and a Linear Scatter Estimation Approach Hans-Martin Schwab¹ , Martin F. Beckmann ¹ , Georg Schmitz ¹ ¹ <i>Chair for Medical Engineering, Ruhr-Universität Bochum, Bochum, NRW, Germany</i>	3J-1 3D Ultrasound Backscatter Tensor Imaging (BTI) in vivo: assessment of the myocardial fiber orientation dynamic Clement Papadacci¹ , Jean Provost ¹ , Olivier Villemain ¹ , Jean Luc Gennisson ¹ , Mickael Tanter ¹ , Mathias Fink ¹ , Mathieu Pernot ¹ ¹ <i>Institut Langevin, CNRS, INSERM, ESPCI, Paris 7, Paris, France</i>	4J-1 Intra-operative toroidal HIFU transducer for the treatment of colorectal liver metastases: Results of a Phase I-II clinical study in 20 patients David Melodelima¹ , Aurelien Dupre ^{1,2} , Yao Chen ² , Jeremy Vincenot ¹ , David Perol ² , Jean-Yves Chapelon ¹ , Michel Rivoire ^{1,2} ¹ <i>LabTAU - U1032, INSERM, France</i> , ² <i>Centre Leon Berard, France</i>	5J-1 Assessment of the nucleus to cytoplasmic ratio for tumor cell identification using high-frequency ultrasound and photoacoustics. Michael Moore ¹ , Eric Strohm ¹ , Michael Kolios¹ ¹ <i>Ryerson University, Canada</i>	1J-1 Patient-specific flow simulation of the left ventricle from 4D echocardiography – feasibility and robustness evaluation David Larsson¹ , Jeannette H Spühler ² , Tim Nordenfur ¹ , Johan Hoffman ² , Massimiliano Colarieti-Tosti ¹ , Hang Gao ³ , Matilda Larsson ¹ ¹ <i>Medical Engineering, KTH Royal Institute of Technology, Stockholm, Sweden</i> , ² <i>Computational Technology Laboratory, High Performance Computing and Visualization, KTH Royal Institute of Technology, Stockholm, Sweden</i> , ³ <i>Lab on Cardiovascular Imaging and Dynamics, KU Leuven - University of Leuven, Leuven, Belgium</i>	8J-1 Current Status and Future Prospects of High Performance Piezoelectric Single Crystals: Bridgman Method vs. Solid-state Single Crystal Growth (SSCG) Method Ho-yong Lee¹ ¹ <i>Ceracomp Co. Ltd, Cheonan, Chungnam, Republic of Korea</i>
1:15 pm	2J-2 Volumetric optoacoustic and pulse echo imaging by elaborating a weighed synthetic aperture technique Mohammad Azizian Kalkhoran¹ , François Varray ¹ , Didier VRAY ¹ ¹ <i>Université de Lyon, CREATIS ; CNRS UMR5220 ; Inserm U1044 ; INSA-Lyon ; Université Lyon 1, France., Villeurbanne, France</i>	3J-2 Scatter size estimation using time domain phase of ultrasound radio frequency data Tobias Erlöv¹ , Tomas Jansson ^{2,3} , Hans W Persson ¹ , Magnus Cinthio ¹ ¹ <i>Department of Biomedical Engineering, Lund University, Sweden</i> , ² <i>Department of Clinical Sciences Lund, Biomedical Engineering, Lund University, Sweden</i> , ³ <i>Medical Services, Skåne University Hospital, Sweden</i>	4J-2 Coincident light/ultrasound therapy to treat bacterial biofilms Mark Schafer¹ , Tessie McNeely ¹ ¹ <i>PhotoSonic Medical, Inc., Ambler, Pennsylvania, USA</i>	5J-2 Multiparametric Ultrasonic Monitoring of Composition and Physical Properties of Liquids Aba Prieval¹ , Slava Boktov ² , Lev Ostrovsky ³ ¹ <i>Biochemistry and Molecular Biology, Hebrew University, Jerusalem, Israel</i> , ² <i>NDT Ultrasonics Ltd., Jerusalem, Israel</i> , ³ <i>Zel Technologies, University of Colorado, Boulder, Colorado, USA</i>	1J-2 Three-dimensional intracardiac flow estimation using multi-planar echo particle image velocimetry: A feasibility study Hang Gao¹ , Qiong He ² , Jianwen Luo ² , Jan D'hooge ¹ ¹ <i>Lab. on Cardiovascular Imaging & Dynamics, Dept. of Cardiovascular Sciences, KU Leuven, Belgium</i> , ² <i>Center for Bio-Medical Imaging Research, Dept. of Biomedical Engineering, Tsinghua University, China, People's Republic of</i>	
1:30 pm	2J-3 Differential phase photoacoustic imaging for high-resolution position sensing Sophinese Iskander-Rizk¹ , Pieter Kruizinga ¹ , Antonius FW Van der Steen ^{1,2} , Gijs Van Soest ¹ ¹ <i>Thorax center, Erasmus MC, Rotterdam, Netherlands</i> , ² <i>Delft University of Technology, Delft, Netherlands</i>	3J-3 Noninvasive assessment of age-related arterial changes using the carotid stress-strain relationship in vivo Spyretta Golemati¹ , Marianna Tzortzi ¹ , Ronny Li ² , Cesare Russo ³ , Elisa Konofagou ^{2,4} ¹ <i>Medical School, National Kapodistrian University of Athens, Athens, Greece</i> , ² <i>Biomedical Engineering, Columbia University, New York, NY, USA</i> , ³ <i>Medicine, Columbia University, New York, NY, USA</i> , ⁴ <i>Radiology, Columbia University, New York, NY, USA</i>	4J-3 Improvement of Drug Penetration in Solid Tumors by Vascular Disruption with Acoustic Nanodroplet Vaporization Yi Ju Ho¹ , Chih Kuang Yeh ¹ ¹ <i>Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, Hsinchu, Taiwan</i>	5J-3 Ultrasonic Viscometer with Integrated Depth Measurement Po-Cheng Chen¹ , Amit Lal ¹ ¹ <i>SonicMEMS, School of Electrical and Computer Engineering, Cornell University, USA</i>	1J-3 An in-vitro and numerical study of ultrafast vector flow imaging in the neonatal heart. Joris Van Cauwenberge¹ , Solveig Fadnes ² , Ingvild Kinn Ekroll ^{2,3} , Lasse Løvstakken ¹ , Jan Vierendeels ¹ , Patrick Segers ¹ , Abigail Swillens ¹ ¹ <i>iBiTech - bioMMeda, Ghent University, Ghent, Belgium</i> , ² <i>Minds Medical IT, Ghent, Belgium</i> , ³ <i>Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway</i> , ⁴ <i>St Olav's University Hospital, Trondheim, Norway</i> , ⁵ <i>Department of Flow, heat and combustion mechanics, Ghent University, Ghent, Belgium</i>	8J-2 Functional Characterization of Piezocrystals Monitored under High Power Driving Conditions Xiaochun Liao^{1,2} , Tingyi Jiang ¹ , Muhammad Sadiq ² , Zhihong Huang ¹ , Sandy Cochran ¹ ¹ <i>School of Engineering, Physics and Mathematics, University of Dundee, Dundee, Scotland, United Kingdom</i> , ² <i>Institute for Medical Science and Technology (IMSaT), University of Dundee, Dundee, Scotland, United Kingdom</i>

<p>1:45 pm</p>	<p>2J-4 Photoacoustic properties of plasmonic-nanoparticle coated microbubbles</p> <p>Adam Dixon¹, Song Hu¹, Alexander Klibanov¹, John Hossack¹ ¹Biomedical Engineering, University of Virginia, Charlottesville, Virginia, USA</p>	<p>3J-4 Imaging the Ultrasonic Coefficient of Nonlinearity</p> <p>Ruud van Sloun¹, Libertario Demi¹, Caifeng Shan², Massimo Mischi¹ ¹Electrical Engineering, Eindhoven University of Technology, Eindhoven, Netherlands, ²Philips Research, Netherlands</p>	<p>4J-4 Achieving a durable response by combining chemotherapy with focused ultrasound in mouse models of cancer</p> <p>Andrew Wong¹, Azadeh Kheiriloomoo¹, Yu Liu¹, Josquin Foiret¹, Brett Fite¹, Elizabeth Ingham¹, Katherine Ferrara¹ ¹Biomedical Engineering, UC Davis, Davis, CA, USA</p>	<p>5J-4 Design and Performance of an Active Acoustic Back Cover Based on Piezoelectric Elements</p> <p>Nicola Lamberti¹, Monica La Mura¹, Giosuè Caliano², Alessandro Stuart Savoia² ¹DIIn, University of Salerno, Fisciano, Italy, ²Dept. of Engineering, University Roma Tre, Rome, Italy</p>	<p>1J-4 Reconstruction of 3D vector flow fields from sparse measurements using B-spline regularization</p> <p>Solveig Fadnes¹, Alberto Gomez², Morten S Wigen¹, Jakob Høgenes¹, Joris van Cauwenberge³, Patrick Segers³, Abigail Swillens³, Lasse Lovstakken¹ ¹Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, TRONDHEIM, Norway, ²Department of Biomedical Engineering, King's College London, United Kingdom, ³Ghent University, Belgium</p>	<p>8J-3 Characterization of Elastic Properties of Ca₃TaGa₃Si₂O₁₄ at High Temperatures by Antenna Transmission Acoustic Resonance</p> <p>Hongfei Zu¹, Huiyan Wu¹, Quanming Lin², Yanqing Zheng², Qing-Ming Wang¹ ¹University of Pittsburgh, USA, ²Shanghai Institute of Ceramics, China, People's Republic of</p>
<p>2:00 pm</p>	<p>2J-5 Ratiometric Photoacoustic Imaging of Acidic pH</p> <p>Richard Bouchard¹, Samit Guha², Trevor Mitcham¹, Gillian Shaw², Bradley Smith² ¹Imaging Physics, University of Texas MD Anderson Cancer Center, USA, ²Department of Chemistry and Biochemistry, University of Notre Dame, USA</p>	<p>3J-5 Determining carotid plaque vulnerability using the average phase derivative of ultrasound radio frequency data – first ex vivo and in vivo results</p> <p>Tobias Erlöv¹, Isabel Goncalves^{2,3}, Andreas Edsfieldt², Simon Segstedt¹, Nuno Dias¹, Jan Nilsson², Magnus Cinthio¹ ¹Department of Biomedical Engineering, Faculty of Engineering LTH, Lund University, Sweden, ²Department of Clinical Sciences Malmö, Lund University, Sweden, ³Department of Cardiology, Skåne University Hospital, Sweden, ⁴Vascular Center, Skåne University Hospital, Sweden</p>	<p>4J-5 Low-Intensity Ultrasound Promotes Antitumoral Effect of Bisphosphonates in Breast Cancer Xenografts and Bone Metastasis</p> <p>Sophie Tardoski¹, Jacqueline Ngo², Evelyne Gineyts³, Jean-Paul Roux³, Philippe Clézardin³, David Melodelima² ¹INSERM UMR 1032, Lyon, France, ²INSERM UMR 1032, France, ³INSERM UMR 1033, France</p>	<p>5J-5 Experimental evaluation of ultrasonic oscillating temperature sensors (UOTS) under cyclically changing temperatures</p> <p>Anas Hashmi¹, Alexander Kalashnikov¹, Roger Light¹ ¹Department of Electrical and Electronic Engineering, The University of Nottingham, United Kingdom</p>	<p>1J-5 In vivo 3-D Vector Flow Estimation with Continuous Data</p> <p>Simon Holbek¹, Michael Johannes Pihl¹, Caroline Ewertsen², Michael Bachmann Nielsen², Jørgen Arendt Jensen¹ ¹Department of Electrical Engineering, Technical University of Denmark, Lyngby, Denmark, ²Department of Radiology, Copenhagen University Hospital, Copenhagen, Denmark</p>	<p>8J-4 Characterization of lead-free alkali niobate piezoceramics by the Inverse Method</p> <p>Kenji Ogo¹, Manuel Weiß², Stefan Rupitsch², Reinhard Lerch², Ken-ichi Kakimoto¹ ¹Department of Materials science and Engineering, Nagoya Institute of Technology, Nagoya, Japan, ²Chair of Sensor Technology, Friedrich-Alexander University Erlangen-Nürnberg, Erlangen, Germany</p>
<p>2:15 pm</p>	<p>2J-6 Broadband detection of dynamic acoustic emission process induced by 6 MV therapeutic X-ray beam from a clinical linear accelerator</p> <p>Xianfen Diao¹, Jing Zhu¹, Weihao Li², Nan Deng¹, Chien Ting Chin¹, Xinyu Zhang¹, Xin Chen¹, Xianming Li², Yu Kuang³ ¹Shenzhen University, China, People's Republic of, ²Shenzhen People's Hospital, China, People's Republic of, ³Dept. of Medical Physics, University of Nevada, Las Vegas, Las Vegas, USA</p>	<p>3J-6 Diffraction independent estimation of the ultrasound attenuation coefficient</p> <p>Natalia Ilyina^{1,2}, Jeroen Hermans³, Emiliano D'Agostino³, Koen Van Den Abeele⁴, Jan D'hooge¹ ¹Dept. of Cardiovascular Sciences, KU Leuven, Belgium, ²Belgian Nuclear Research Centre, SCK•CEN, Belgium, ³DoseVue NV, Belgium, ⁴Dept. Of Physics, KU Leuven Kulak, Belgium</p>	<p>4J-6 Thermal Ablation of a Confluent Lesion in the Porcine Kidney with Magnetic Resonance guided High Intensity Focused Ultrasound</p> <p>Johanna MM van Breugel¹, Martijn de Greef¹, Joost W Wijlemans², Gerald Schubert³, Chrit TW Moonen¹, Maurice AAJ van den Bosch¹, Mario G Ries¹ ¹Center for Image Sciences, University Medical Center Utrecht, Utrecht, Netherlands, ²University Medical Center Utrecht, Utrecht, Netherlands, ³Philips Healthcare, Netherlands</p>	<p>5J-6 Smart Autonomous wireless acoustic sensors for aeronautical SHM applications</p> <p>Guillaume Ferin¹, Yuvashankar Muralidharan¹, Naoufal Mesbah¹, Claire Bantignies¹, Hung Le Khanh¹, Pascal Chatain¹, Etienne Flesch¹, An Nguyen-Dinh¹ ¹Advanced Research Dpt., VERMON, France</p>	<p>1J-6 Improved quality of freehand 3-D ultrasound color flow imaging by multi-angle compounding</p> <p>Daniel Høyer Iversen^{1,2}, Frank Lindseth^{3,4}, Geirmund Unsgaard⁵, Hans Torp¹, Lasse Lovstakken¹ ¹Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Trondheim, Norway, ²St.Olavs University Hospital, Trondheim, Norway, ³Department of Computer and Information Science, Norwegian University of Science and Technology, Trondheim, Norway, ⁴Department of Medical Technology, Sintef, Trondheim, Norway, ⁵Department of Neurosurgery, St.Olavs University Hospital, Trondheim, Norway</p>	<p>8J-5 Development of PZT-Based Single Crystals as High-T and High-Performance Piezoelectric Materials</p> <p>Zuo-Guang Ye^{1,2}, Bixia Wang¹, Yujuan Xie¹, Xiaoping Wu², Wei Ren² ¹Simon Fraser University, Burnaby, BC, Canada, ²Xi'an Jiaotong University, China, People's Republic of</p>

3:30 pm - 5:00 pm

Oral --- Saturday, October 24, 2015

	Session 2K <i>MIM: Medical Imaging II</i> <i>Chair: Matthew O'Donnell</i> <i>University of Washington</i>	Session 3K <i>MEL: Fundamental Elastography Studies</i> <i>Chair: Emad Ebbini</i> <i>Univ. of Minnesota</i>	Session 4K <i>MCA: Contrast Perfusion Imaging</i> <i>Chair: Massimo Mischi</i> <i>Eindhoven University of Technology</i>	Session 5K <i>Flow Measurement</i> <i>Chair: Walter Arnold</i> <i>Saarland University</i>	Session 1K <i>MSD: Novel High-Frequency Systems</i> <i>Chair: Alfred C. H. Yu</i> <i>University of Hong Kong</i>	Session 8K <i>More Medical Transducer Applications</i> <i>Chair: Xiaoning Jiang</i> <i>North Carolina State University</i>
	VIP	201ABC	201DE	103	201F	102
3:30 pm	<p>2K-1 High Speed Imaging and Measurement of Laryngeal Vibration during Phonation Using Ultrafast Ultrasonography: a Preliminary Study</p> <p>Bowen Jing¹, Shanshan Tang¹, Liang Wu¹, Supin Wang¹, 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, People's Republic of China</p>	<p>3K-1 The effect of tissue anisotropy on ultrasound strain imaging (USI): a preliminary study</p> <p>He Li¹, Wei-Ning Lee¹ ¹The University of Hong Kong, Hong Kong</p>	<p>4K-1 Fractal dimension of tumor microvasculature by dynamic contrast-enhanced ultrasound</p> <p>Massimo Mischi¹, Carola Heneweer², Julian von Broich-Oppert², Tamerlan Saidov¹, Hessel Wijkstra^{1,3} ¹Eindhoven University of Technology, Netherlands, ²University Hospital Schleswig-Holstein, Germany, ³Academic Medical Center University of Amsterdam, Netherlands</p>	<p>5K-1 Effect of transducer port cavities in invasive ultrasonic transit-time gas flow meters</p> <p>Maik Hoffmann¹, Alexander Unger², Axel Jäger², Mario Kupnik² ¹BTU Cottbus-Senftenberg, Germany, ²Technische Universität Darmstadt, Germany</p>	<p>1K-1 Real-time ophthalmic imaging with a hand-held, 20-MHz annular array</p> <p>Jeffrey A. Ketterling¹, Daniel Gross¹, Ronald H. Silverman^{1,2} ¹Lizzi Center for Biomedical Engineering, Riverside Research, New York, NY, USA, ²Department of Ophthalmology, Columbia University Medical Center, New York, NY, USA</p>	<p>8K-1 Cost-effective linear arrays for medical imaging fabricated using PZT thick film technology</p> <p>Louise M. Borregaard¹, Tomasz Zawada¹, Michele Guizzetti¹, Ruichao Xu¹, Erling Ringgaard¹, Jan P. Bagge², Lars N. Moesner³ ¹Meggitt Sensing Systems, Kvistgaard, Denmark, ²BK Medical, Herlev, Denmark</p>
3:45 pm	<p>2K-2 High spatial-resolution cavitation imaging of laser-triggered PFP droplets</p> <p>Jaesok Yu^{1,2}, Nguyen Man¹, Kang Kim^{1,2} ¹Center for Ultrasound Molecular Imaging and Therapeutics, University of Pittsburgh School of Medicine and University of Pittsburgh Medical Center, Pittsburgh, PA, USA, ²Department of Bioengineering, University of Pittsburgh School of Engineering, Pittsburgh, PA, USA</p>	<p>3K-2 Speckle Bias as a 3D Stationary Offset of the Tracking Location for Shear Wave Imaging</p> <p>Peter Hollender¹, Gregg Trahey^{1,2} ¹Biomedical Engineering, Duke University, Durham, North Carolina, USA, ²Radiology, Duke University Medical Center, Durham, North Carolina, USA</p>	<p>4K-2 Estimation of Local Perfusion Parameters from Non-uniform Contrast-Enhanced Ultrasound Temporal Samples</p> <p>Avinoam Bar-Zion¹, Melissa Yin², Elizabeth Kuczynski^{3,4}, Robert S. Kerbel^{3,4}, Dan Adam¹, F. Stuart Foster^{2,4} ¹Department of Biomedical Engineering, Technion - Israel Institute of Technology, Haifa, Israel, ²Physical Sciences, Sunnybrook Research Institute, Toronto, Ontario, Canada, ³Biological Sciences, Sunnybrook Research Institute, Toronto, Ontario, Canada, ⁴Department of Medical Biophysics, University of Toronto, Toronto, Ontario, Canada</p>	<p>5K-2 Embedded System for In-line Ultrasound Velocity Profile Detection</p> <p>Stefano Ricci¹, Valentino Meacci¹, Beat Birkhofer², Johan Wiklund³ ¹Information Engineering Dept., Università di Firenze, Florence, Italy, ²Sika Services AG, Zurich, Switzerland, ³SP Technical Research Institute of Sweden, Gothenburg, Sweden</p>	<p>1K-2 Ultrahigh Frame Rate High-Frequency Array Imaging System for Time-Resolved Monitoring of Cardiac Dynamics in Spontaneous Hypertensive Rats</p> <p>Billy Y. S. Yiu¹, Aung Moe Zaw², Erwan Filoux³, Adrian J. Y. Chee¹, Leo T. O. Lee², Alfred C. H. Yu¹ ¹Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong, ²School of Biological Sciences, University of Hong Kong, Pokfulam, Hong Kong, ³Vernon SA, Tours, France</p>	<p>8K-2 Heartbeat Interval Monitoring by PZT/PZT Flexible Piezoelectric Film Sensor</p> <p>Makiko Kobayashi¹, Takahiko Ikari¹, Shugo Kurose¹, Tomohiko Igasaki¹ ¹Kumamoto University, Japan</p>

<p>4:00 pm</p>	<p>2K-3 In vivo magnetomotive ultrasound imaging of rat lymph nodes – a pilot study</p> <p>Maria Evertsson¹, Magnus Cinthio¹, Pontus Kjellman^{2,3}, Sarah Fredriksson², Roger Andersson¹, Hanna Toftvall², Hans W Persson¹, Tomas Jansson^{4,5}</p> <p>¹Biomedical Engineering, Faculty of Engineering, LTH, Lund University, Lund, Sweden, ²Genovis AB, Sweden, ³Medical Radiation Physics, Clinical Sciences Lund, Lund University, Lund, Sweden, ⁴Biomedical Engineering, Clinical Sciences Lund, Lund University, Lund, Sweden, ⁵Medical Services, Skåne University Hospital, Lund, Sweden</p>	<p>3K-3 Towards Low-push ARFI imaging: Overcoming limitations in Displacement SNR with a Bayesian Estimator</p> <p>Douglas Dumont¹, Brett Byram¹</p> <p>¹Biomedical Engineering, Vanderbilt University, Nashville, TN, USA</p>	<p>4K-3 Ultrasound Microbubble Capture Using Biorthogonal in Coupling: An In Vivo Validation</p> <p>Melissa Yin¹, Aimen Zlitni², Judy Yan¹, John Valliant², F. Stuart Foster^{1,3}</p> <p>¹Sunnybrook Research Institute, Toronto, Ontario, Canada, ²Chemistry and Chemical Biology, McMaster University, Hamilton, Ontario, Canada, ³Medical Biophysics, University of Toronto, Toronto, Ontario, Canada</p>	<p>5K-3 In-Situ Monitoring of Particle Velocities and Solids Concentration Variations in wet Low-Intensity Magnetic Separators</p> <p>Johan E. Carlson¹, Jan F. Stener¹, Anders Sand¹, Bertil I. Pålsson¹</p> <p>¹Lulea University of Technology, Lulea, Sweden</p>	<p>1K-3 Very high frequency ultrasound beamformer for biomedical applications and non-destructive testing</p> <p>Christoph Risser¹, Hans Joachim Welsch¹, Heinrich Fonfara¹, Holger Hewener¹, Steffen Weber¹, Steffen Tretbar¹</p> <p>¹Ultrasound, Fraunhofer IBMT, Sankt Ingbert, Germany</p>	<p>8K-3 An ultrasonically assisted sagittal saw for large bone surgeries</p> <p>Daniel Richards¹, Andrew Mathieson¹, Margaret Lucas¹</p> <p>¹School of Engineering, University of Glasgow, United Kingdom</p>
<p>4:15 pm</p>	<p>2K-4 Ultrafast Pulsed Magnetomotive Ultrasound Imaging of Sentinel Lymph Nodes: Small Animal Study</p> <p>Yu-Chun Huang¹, Jieh-Yuan Hong¹, Yi-Da Kang², San-Yuan Chen², Meng-Lin Li^{1,3}</p> <p>¹Dept. of Electrical Engineering, National Tsing Hua University, Hsinchu, Taiwan, ²Dept. of Materials Science and Engineering, National Chiao Tung University, Taiwan, ³Institute of Photonics Technologies, National Tsing Hua University, Taiwan</p>	<p>3K-4 Spatial Resolution in Passive Elastography</p> <p>Ali Zorngani¹, Rémi Souchon¹, Stefan Catheline¹</p> <p>¹LabTau, UMR1032 INSERM, Lyon, France</p>	<p>4K-4 Contrast-Enhanced Ultrasound Imaging with High CTR and Improved Resolution by Bubble-Echo based Deconvolution</p> <p>Hong Hu¹, Runna Liu¹, Diya Wang¹, Hui Zhong¹, Supin Wang¹, Mingxi Wan¹</p> <p>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, People's Republic of China</p>	<p>5K-4 Modular Research Platform for Adaptive Flow Mapping in Liquid Metals</p> <p>Richard Nauber¹, Hannes Beyer¹, Kevin Maeder¹, Arne Klass¹, Norman Thieme¹, Lars Buettner¹, Juergen Czarske¹</p> <p>¹MST, TU Dresden, Dresden, Saxony, Germany</p>	<p>1K-4 An All-Digital Transmit-Beamforming ASIC for High-Frequency and Portable Ultrasound Imaging Systems</p> <p>Duo Sheng¹, Chih-Chung Huang², Zong-Ru Yang¹, Yi-Shang Wang¹</p> <p>¹Department of Electrical Engineering, Fu Jen Catholic University, New Taipei City, Taiwan, ²Department of Biomedical Engineering, National Cheng Kung University, Tainan City, Taiwan</p>	<p>8K-4 Arbitrary Waveform Generation based on Phase and Amplitude Synthesis for Switched Mode Excitation of Ultrasound Imaging Arrays</p> <p>David Cowell¹, Sevan Harput¹, Steven Freear¹</p> <p>¹School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom</p>
<p>4:30 pm</p>	<p>2K-5 Sonographic Detection of Magnetic Nanoparticles in Weak Echogenic Tissue</p> <p>Michael Fink¹, Helmut Erment¹, Moritz Nüßlein¹, Stefan Lye², Christoph Alexiou²</p> <p>¹Chair of Sensor Technology, Friedrich-Alexander-University Erlangen-Nuremberg, Germany, ²Section for Experimental Oncology and Nanomedicine (SEON), University Hospital Erlangen, Germany</p>	<p>3K-5 System dependent sources of error in time-of-flight shear wave speed measurements</p> <p>Yufeng Deng¹, Ned Rouze¹, Mark Palmeri¹, Kathryn Nightingale¹</p> <p>¹Duke University, Durham, North Carolina, USA</p>	<p>4K-5 In Vivo Transcranial Imaging of Blood Perfusion in Rat Brain Using Contrast-enhanced Ultrasound</p> <p>JUAN DU¹, Dalong Liu¹, Emad Ebbini¹</p> <p>¹Electrical and Computer Engineering, University of Minnesota, Minneapolis, MN, USA</p>	<p>5K-5 Ultrasound flow mapping for the investigation of crystal growth</p> <p>Norman Thieme¹, Richard Nauber¹, Hannes Beyer¹, Hannes Radner¹, Lars Büttner¹, Paul Bönsch², Kaspars Dadzis², Lamine Sylla², Dagmar Meier³, Olf Pätzold³, Jürgen Czarske¹</p> <p>¹Laboratory for Measurement and Sensor System Techniques, Dresden University of Technology, Dresden, Germany, ²SolarWorld Innovations GmbH, Freiberg, Germany, ³Institut für Nichteisen-Metallurgie und Reinstoffe, Technische Universität Bergakademie, Freiberg, Germany</p>	<p>1K-5 Distortion Reduction for a Dental HFUS Microscanning Device</p> <p>Thorsten Vollborn¹, Christoph Schorn¹, Daniel Habor¹, Fabrice Chuembou Pekam¹, Klaus Radermacher¹</p> <p>¹Chair of Medical Engineering, RWTH Aachen, Germany</p>	<p>8K-5 A Discrete Source Model for Simulating Bowl-Shaped Focused Ultrasound Transducers on Regular Grids: Design and Experimental Validation</p> <p>Yan To Ling¹, Elly Martin¹, Bradley Treeby¹</p> <p>¹Medical Physics and Biomedical Engineering, University College London, London, United Kingdom</p>
<p>4:45 pm</p>	<p>2K-6 Non-Contact Thermoacoustic Imaging of Tissue with Airborne Ultrasound Detection</p> <p>Kevin C. Boyle¹, Hao Nan¹, Nikhil Apte^{2,3}, Maaad S. Aliroth¹, Anshuman Bhuyan¹, Amin Nikoozadeh^{1,2}, Butrus T. Khuri-Yakub^{1,2}, Amin Arbabian¹</p> <p>¹Electrical Engineering, Stanford University, Stanford, CA, USA, ²Edward L. Ginzton Lab, Stanford University, Stanford, CA, USA, ³Mechanical Engineering, Stanford University, Stanford, CA, USA</p>	<p>3K-6 Performance comparison of rigid and affine models for motion estimation using ultrasound radio-frequency signals</p> <p>Xiaochang Pan¹, Lingyun Huang², Jing Bai¹, Jianwen Luo¹</p> <p>¹Department of Biomedical Engineering, Tsinghua University, Beijing, China, People's Republic of, ²Philips Research China, Shanghai, China, People's Republic of</p>	<p>4K-6 Flow Phantom for Contrast Enhanced Ultrasound Research, Device Validation, and Clinical Training</p> <p>John Kuczewicz¹, Barbrina Dunmire¹, Vijay Shamdasani², Jeffrey Powers², Thomas Matula¹</p> <p>¹University of Washington, Seattle, WA, USA, ²Philips Ultrasound, Bothell, WA, USA</p>		<p>1K-6 A Graphic Processing Unit based Intravascular Ultrasound (IVUS)</p> <p>Yongjia Xiang¹, Tiejun Lv¹, Zhile Han¹, Jie Xu¹, Tianming Gu¹, Yaoyao Cui¹</p> <p>¹Suzhou Institute of Bio-medical Engineering and Technology, CAS, China, People's Republic of</p>	<p>8K-6 Graphene Oxide Nanofabricated Ultrasonic Transducers (GO-NUTS)</p> <p>Ka Hing Cheng¹, Ching-Hsiang Cheng¹, Dennis Kwong Chun Lo¹</p> <p>¹Department of Industrial and Systems Engineering, The Hong Kong Polytechnic University, Hong Kong</p>