

<p><b>Session P1A1.</b> <b>MEL: Elasticity Imaging: Simulations and Experimental Studies</b></p> <p><b>Chair: Brett Byram</b> Vanderbilt University</p>	<p><b>P1A1-8</b> Feasibility of micro-elastography for tissue surrounding phase-change microbubbles using bubble wavelet transform</p> <p><b>Runna Liu<sup>1</sup></b>, Rui Huo<sup>1</sup>, Hong Hu<sup>1</sup>, Shanshan Xu<sup>1</sup>, Supin Wang<sup>1</sup>, Mingxi Wan<sup>1</sup> <sup>1</sup>The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi, China, People's Republic of</p>	<p><b>P1A2-7</b> Controlled thermal-sensitive liposomes release on a disposable microfluidic device</p> <p><b>Long Meng<sup>1</sup></b>, Zhiting Deng<sup>1</sup>, Lili Niu<sup>1</sup>, Feiyan Cai<sup>1</sup>, Hairong Zheng<sup>1</sup> <sup>1</sup>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China, People's Republic of</p>	<p><b>P1A3-6</b> Assessment of the Potential of Beamforming for Needle Enhancement in Punctures</p> <p><b>Stefanie Dencks<sup>1</sup></b>, Georg Schmitz<sup>1</sup> <sup>1</sup>Chair for Medical Engineering, Ruhr-Universität Bochum, Germany</p>	<p><b>P1A4-4</b> Compressive Adaptive Beamforming in 2D and 3D Ultrafast Active Cavitation Imaging</p> <p><b>Chen Bai<sup>1</sup></b>, Shanshan Xu<sup>1</sup>, Bowen Jing<sup>1</sup>, Miao Yang<sup>1</sup>, Mingxi Wan<sup>1</sup> <sup>1</sup>The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi, China, People's Republic of</p>
<p><b>P1A1-1</b> RSNA QIBA Ultrasound Shear Wave Speed Phase II Phantom Study in Viscoelastic Media</p> <p><b>Mark Palmeri<sup>1</sup></b>, Shigao Chen<sup>2</sup>, Ted Lynch<sup>3</sup>, Kathryn Nightingale<sup>1</sup>, Ned Rouze<sup>1</sup>, Pengfei Song<sup>2</sup>, Matthew Urban<sup>2</sup>, Hua Xie<sup>4</sup>, Keith Wear<sup>5</sup>, Brian Garra<sup>6</sup>, Andy Milkowski<sup>6</sup>, Paul Carson<sup>7</sup>, Richard Barr<sup>8</sup>, Vijay Shamdassani<sup>9</sup>, Michael Macdonald<sup>10</sup>, Yasuo Miyajima<sup>11</sup>, Timothy Hall<sup>12</sup> <sup>1</sup>Biomedical Engineering, Duke University, Durham, NC, USA, <sup>2</sup>Mayo Clinic, USA, <sup>3</sup>CIRS, Inc., USA, <sup>4</sup>Philips Research, USA, <sup>5</sup>US Food and Drug Administration, USA, <sup>6</sup>Siemens Healthcare, USA, <sup>7</sup>University of Michigan Ann Arbor, USA, <sup>8</sup>Radiology Consultants, Inc., USA, <sup>9</sup>Philips Healthcare-Ultrasound, USA, <sup>10</sup>GE Healthcare, USA, <sup>11</sup>Toshiba Medical Research Institute USA, Inc., USA, <sup>12</sup>Medical Physics, University of Wisconsin Madison, Madison, WI, USA</p>	<p><b>Session P1A2.</b> <b>MBE: Bioeffects in Cells and Tissue</b></p> <p><b>Chair: Jonathan Mamou</b> Riverside Research</p>	<p><b>P1A2-8</b> The Contribution of Shear Wave Absorption to Ultrasound Heating in Bones: Coupled Elastic-Thermal Modeling Using the k-Wave Toolbox</p> <p><b>Bradley Treeby<sup>1</sup></b>, Teedah Saratoon<sup>1</sup> <sup>1</sup>Medical Physics and Biomedical Engineering, University College London, London, United Kingdom</p>	<p><b>P1A3-7</b> Pulse inversion based multi-subharmonic composite cavitation imaging</p> <p><b>Hui Zhong<sup>1</sup></b>, Mingxi Wan<sup>1</sup> <sup>1</sup>Xi'an Jiaotong University, Xi'an, Shaanxi Province, China, People's Republic of</p>	<p><b>P1A4-5</b> Compressed Sensing-Synthetic Focusing for High Frame Rate, High Resolution and High Contrast Ultrasound Imaging</p> <p><b>Jing Liu<sup>1</sup></b>, Qiong He<sup>1</sup>, Jianwen Luo<sup>1</sup> <sup>1</sup>Department of Biomedical Engineering, Tsinghua University, Beijing, China, People's Republic of</p>
<p><b>P1A1-2</b> Estimation of degree of anisotropy in transversely isotropic (TI) elastic materials from acoustic radiation force (ARF)-induced peak displacements (PD)</p> <p><b>Md Murad Hossain<sup>1</sup></b>, Caterina Gallippi<sup>1,2</sup> <sup>1</sup>Joint Department of Biomedical Engineering, University of North Carolina, Chapel Hill, North Carolina, USA, <sup>2</sup>Electrical and Computer Engineering, North Carolina State University, Raleigh, North Carolina, USA</p>	<p><b>P1A2-1</b> Study the Cell Death Induced by Subcellular Localized Sonodynamic Therapy</p> <p><b>Yongmin Huang<sup>1</sup></b>, Zhihai Qiu<sup>1</sup>, Yaoheng Yang<sup>1</sup>, Cheng Liu<sup>1</sup>, SUN Lei<sup>1</sup> <sup>1</sup>The Hong Kong Polytechnic University, Hong Kong</p>	<p><b>Session P1A3.</b> <b>MIM: Ultrasound Image Formation</b></p> <p><b>Chair: Gregg Trahey</b> Duke University</p>	<p><b>P1A3-8</b> Contrast-enhanced ultrasound tomography using the cumulative phase delay between second harmonic and fundamental component</p> <p><b>Libertario Demi<sup>1</sup></b>, Ruud J.G. van Sloun<sup>1</sup>, Hessel Wijkstra<sup>1,2</sup>, Massimo Mischi<sup>1</sup> <sup>1</sup>Biomedical Diagnostics Lab., Eindhoven University of Technology, Netherlands, <sup>2</sup>Academic Medical Center Amsterdam, Netherlands</p>	<p><b>P1A4-6</b> Plane-wave Ultrasound Imaging Based on Compressive Sensing with Low Memory Occupation</p> <p><b>Congzhi Wang<sup>1</sup></b>, Hairong Zheng<sup>1</sup> <sup>1</sup>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China, People's Republic of</p>
<p><b>P1A1-3</b> Experimental study on the effect of the cylindrical vessel geometry on arterial shear wave elastography</p> <p><b>Darya Shcherbakova<sup>1</sup></b>, Annette Caenen<sup>1</sup>, Simon Chatelin<sup>2</sup>, Clement Papadacci<sup>2</sup>, Mathieu Pernot<sup>2</sup>, Abigail Swillens<sup>1</sup>, Patrick Segers<sup>1</sup> <sup>1</sup>Minds Medical IT, IBiTech-bioMMeda, Ghent University, Ghent, Belgium, <sup>2</sup>Institut Langevin, ESPCI ParisTech, CNRS UMR7587, INSERM U979, Paris, France</p>	<p><b>P1A2-2</b> Impact of Microbubble-to-cell Parameters on Heterogeneous Sonoporation at the Single-Cell Level</p> <p><b>Peng Qin<sup>1</sup></b>, Yutong Lin<sup>1</sup>, lifang Jin<sup>2</sup>, Lianfang Du<sup>2</sup>, Alfred C H Yu<sup>3</sup> <sup>1</sup>Instrumentation Science and Engineering, Shanghai Jiao Tong University, Shanghai, China, People's Republic of, <sup>2</sup>Department of Ultrasound, Shanghai Jiaotong University Affiliated the First People's Hospital, Shanghai, China, People's Republic of, <sup>3</sup>Medical Engineering Program, The University of Hong Kong, Hong Kong</p>	<p><b>P1A3-1</b> 6-DOF Free-hand Navigation Interface for Volumetric 3-dimensional Ultrasound Imaging: Preliminary Results</p> <p><b>JongJun LEE<sup>1</sup></b>, Jeeun KANG<sup>1</sup>, Tai-kyong SONG<sup>1</sup> <sup>1</sup>Department of electronic engineering, Sogang university, Seoul, Korea, Republic of</p>	<p><b>P1A3-9</b> Microultrasound Capsule Endoscopy Inflammatory Imaging: Phantom Studies</p> <p><b>Benjamin F Cox<sup>1</sup></b>, Vipin Seetohul<sup>1</sup>, Holly Lay<sup>1</sup>, Sandy Cochran<sup>1</sup> <sup>1</sup>Imaging &amp; Technology, University of Dundee, Dundee, United Kingdom</p>	<p><b>P1A4-7</b> Fourier Beamformation of Multistatic Synthetic Aperture Ultrasound Imaging</p> <p><b>Elahe Moghimrad<sup>1</sup></b>, Carlos A. Villagomez Hoyos<sup>2</sup>, Ali Mahloojifar<sup>1</sup>, Babak Mohammadzadeh Asl<sup>1</sup>, Jørgen Arendt Jensen<sup>2</sup> <sup>1</sup>Dep. of Elec. and Comp. Eng., Tarbiat Modares University, Tehran, Iran, <sup>2</sup>Center for Fast Ultrasound Imaging, Dept. of Elec. Eng., Bldg. 349, Technical University of Denmark, Denmark</p>

<p><b>P1A1-4 High line-density pulse wave imaging for local pulse wave velocity estimation using motion matching: A feasibility study on vessel phantoms</b></p> <p>Fubing Li<sup>1</sup>, <b>Qiong He<sup>1</sup></b>, Chengwu Huang<sup>1</sup>, Jianwen Luo<sup>1</sup>  <sup>1</sup>Department of Biomedical Engineering, Tsinghua University, Beijing, China, People's Republic of</p>	<p><b>P1A2-3 Effects of low-intensity pulsed ultrasound on nerve growth factor-induced neurite outgrowth and signaling in PC12 cells</b></p> <p><b>Lu Zhao<sup>1</sup></b>, Yi Feng<sup>1</sup>, Mingxi Wan<sup>1</sup>  <sup>1</sup>The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shanxi, China, People's Republic of</p>	<p><b>P1A3-2 Advanced Automated Gain Adjustments for In-Vivo Ultrasound Imaging</b></p> <p><b>Ramin Moshavegh<sup>1</sup></b>, Martin Christian Hemmens<sup>1</sup>, Bo Martins<sup>2</sup>, Andreas Hjelm Brandt<sup>3</sup>, Thor Bechsgaard<sup>3</sup>, Kristoffer Lindskov Hansen<sup>3</sup>, Caroline Ewertsen<sup>3</sup>, Michael Bachmann Nielsen<sup>3</sup>, Jørgen Arendt Jensen<sup>1</sup>  <sup>1</sup>Electrical engineering, Technical University of Denmark, Lyngby, Denmark, <sup>2</sup>BK Medical ApS, Herlev, Denmark, <sup>3</sup>Department of Radiology, Copenhagen University Hospital, Copenhagen, Denmark</p>	<p><b>Session P1A4.</b>  <b>MBB: Beamforming I</b></p> <p><i>Chair: Meng-Lin Li</i>  National Tsing Hua University</p>	<p><b>P1A4-8 Comparison of spatial and temporal averaging on Ultrafast Imaging in presence of quantization errors</b></p> <p>Asraf Mohamed Moubark<sup>1</sup>, Zainab Alomari<sup>1</sup>, Sevan Harput<sup>1</sup>, <b>Steven Freear<sup>1</sup></b>  <sup>1</sup>School of Electronic and Electrical Engineering, University of Leeds, Leeds, United Kingdom</p>
<p><b>P1A1-5 Viscoelastic tissue mimicking phantom validation study with shear wave elasticity imaging and viscoelastic spectroscopy</b></p> <p><b>Carolina Amador<sup>1</sup></b>, Randall Kinnick<sup>1</sup>, Matthew Urban<sup>1</sup>, Mostafa Fatemi<sup>1</sup>, James Greenleaf<sup>1</sup>  <sup>1</sup>Department of Physiology and Biomedical Engineering, Mayo Clinic College of Medicine, Rochester, Minnesota, USA</p>	<p><b>P1A2-4 Sonodynamic Therapy of Breast Tumor by Using of IR-780 Dye</b></p> <p><b>Fei Yan<sup>1</sup></b>, Yekuo Li<sup>2</sup>, Zhiting Deng<sup>1</sup>, Hairong Zheng<sup>1</sup>  <sup>1</sup>Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzhen Institutes of Advanced Technology, China, People's Republic of, <sup>2</sup>Guangzhou General Hospital, China, People's Republic of</p>	<p><b>P1A3-3 Quantifying the benefit of elevated acoustic output in harmonic imaging</b></p> <p><b>Yufeng Deng<sup>1</sup></b>, Mark Palmeri<sup>1</sup>, Ned Rouze<sup>1</sup>, Kathryn Nightingale<sup>1</sup>  <sup>1</sup>Duke University, Durham, North Carolina, USA</p>	<p><b>P1A4-1 Dual-Domain Compressed Beamforming for Medical Ultrasound Imaging</b></p> <p><b>Bo Zhang<sup>1</sup></b>, Jean-Luc Robert<sup>2</sup>, Guillaume David<sup>3</sup>  <sup>1</sup>Medisys, Philips Research France, Suresnes, France, <sup>2</sup>Philips Research North America, Briarcliff, USA, <sup>3</sup>Columbia University, New York, USA</p>	<p><b>P1A4-9 Single transmission plane wave compounding for ultrafast ultrasound imaging</b></p> <p>Natan Pages<sup>1</sup>, Barbara Nicolas<sup>1</sup>, <b>Herve Liebgott<sup>1</sup></b>  <sup>1</sup>CREATIS, France</p>
<p><b>P1A1-6 Comparison of techniques for estimating shear-wave velocity in arterial wall using shear-wave elastography - FEM and phantom study</b></p> <p><b>Jun-keun Jang<sup>1</sup></b>, Kengo Kondo<sup>1</sup>, Takeshi Namita<sup>1</sup>, Makoto Yamakawa<sup>1</sup>, Tsuyoshi Shiina<sup>1</sup>  <sup>1</sup>Graduate School of Medicine, Kyoto University, Kyoto, Japan</p>	<p><b>P1A2-5 DNA packing by low-intensity ultrasound</b></p> <p><b>Donghee Park<sup>1</sup></b>, Gillsong Song<sup>2</sup>, Hyunjin Park<sup>3</sup>, Hyunbeen Lee<sup>3</sup>, Ji-Young Jang<sup>1</sup>, Han-Sung Kim<sup>2</sup>, Chul-Woo Kim<sup>1</sup>, Jongbum Seo<sup>2</sup>  <sup>1</sup>Cancer Research Institute, Seoul National University College of Medicine, Seoul, Korea, Republic of, <sup>2</sup>Department of Biomedical Engineering, Yonsei University, Wonju, Korea, Republic of, <sup>3</sup>School of Electronic Electrical Engineering, Sungkyunkwan University, Suwon, Korea, Republic of</p>	<p><b>P1A3-4 3D Super-Resolution Ultrasound using Microbubbles</b></p> <p><b>Kirsten Christensen-Jeffries<sup>1</sup></b>, Meng-Xing Tang<sup>2</sup>, Joseph V Hajnal<sup>1</sup>, Paul Aljabar<sup>1</sup>, Christopher Dunsby<sup>3,4</sup>, Robert J Eckersley<sup>1</sup>  <sup>1</sup>Biomedical Engineering, Division of Imaging Sciences, Kings College London, London, United Kingdom, <sup>2</sup>Bioengineering, Imperial College London, London, United Kingdom, <sup>3</sup>Department of Physics, Imperial College London, London, United Kingdom, <sup>4</sup>Centre for Histopathology, Imperial College London, London, United Kingdom</p>	<p><b>P1A4-2 Efficiency of Multi-look compounding of MVDR and APES Beamformers under Strong Wave Aberration Conditions</b></p> <p><b>Teiichiro Ikeda<sup>1</sup></b>, Shinta Takano<sup>1</sup>, Hiroshi Masuzawa<sup>1</sup>  <sup>1</sup>Hitachi Ltd., Tokyo, Japan</p>	<p><b>P1A4-10 Increased frame rate for plane wave imaging without loss of image quality</b></p> <p><b>Jonas Jensen<sup>1</sup></b>, Matthias Bo Stuart<sup>1</sup>, Jørgen Arendt Jensen<sup>1</sup>  <sup>1</sup>Dept. of Elect. Eng, Technical University of Denmark, Kgs. Lyngby, Denmark</p>
<p><b>P1A1-7 Viscoelasticity and shear wave velocity of liver tissue evaluated by dynamic mechanical analysis</b></p> <p><b>Kenoh Murakami<sup>1</sup></b>, Kenji Yoshida<sup>2</sup>, Kazuya Kawamura<sup>2</sup>, Mariko Tsukune<sup>3</sup>, Yo Kobayash<sup>4</sup>, Masakatsu Fujie<sup>5</sup>, Riwa Kishimoto<sup>6</sup>, Takayuki Obata<sup>6</sup>, Tadashi Yamaguchi<sup>2</sup>  <sup>1</sup>Graduate School of Engineering, Chiba University, Chiba, Japan, <sup>2</sup>Center for Frontier Medical Engineering, Chiba University, Chiba, Japan, <sup>3</sup>Graduate School of Science and Engineering and Institute of Advanced Active Aging Research, Waseda University, Tokyo, Japan, <sup>4</sup>Research Institute for Science and Engineering, Waseda University, Tokyo, Japan, <sup>5</sup>Faculty of Science and Engineering, Waseda University, Tokyo, Japan, <sup>6</sup>Research center for charged particle therapy, National Institute of Radiological Science, Chiba, Japan</p>	<p><b>P1A2-6 On the thermal effect in biological tissues exposed to ultrasound of longer pulse duration after administration of contrast agents</b></p> <p><b>Kazuki Akai<sup>1</sup></b>, Yasunao Ishiguro<sup>2</sup>, Naotaka Nitta<sup>3</sup>, Hideki Sasanuma<sup>2</sup>, Nobuyuki Taniguchi<sup>4</sup>, Iwaki Akiyama<sup>1</sup>  <sup>1</sup>Faculty of Life and Medical Sciences, Doshisha University, Kyotanabe, Kyoto, Japan, <sup>2</sup>Department of Surgery, Jichi Medical University, Shimotsuke, Tochigi, Japan, <sup>3</sup>Human Technology Research Institute, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, Japan, <sup>4</sup>Department of Clinical Laboratory Medicine, Jichi Medical University, Shimotsuke, Tochigi, Japan</p>	<p><b>P1A3-5 A Study for B-Mode Imaging using 100-MHz-Range Ultrasound through a Fused Quartz Fiber</b></p> <p><b>Takasuke Irie<sup>1,2</sup></b>, Masasumi Yoshizawa<sup>3</sup>, Norio Tagawa<sup>1</sup>, Tadashi Moriya<sup>4</sup>  <sup>1</sup>Graduate School of System Design, Tokyo Metropolitan University, Tokyo, Japan, <sup>2</sup>Microsonic Co., Ltd., Japan, <sup>3</sup>Metropolitan College of Industrial Technology, Japan, <sup>4</sup>Tokyo Metropolitan University, Tokyo, Japan</p>	<p><b>P1A4-3 Hadamard-Encoded Synthetic Transmit Aperture Imaging with a Reduced Number of Receiving Channels</b></p> <p><b>Ying Li<sup>1</sup></b>, Ping Gong<sup>1</sup>, Michael C. Kolios<sup>1</sup>, Yuan Xu<sup>1</sup>  <sup>1</sup>Biomedical Physics, Ryerson University, Toronto, ON, Canada</p>	<p><b>P1A4-11 Motion-Corrected Coherent Compounding for Improved Beamforming in Ultrafast Imaging</b></p> <p><b>Jean Provost<sup>1</sup></b>, Mafalda Correia<sup>1</sup>, Mickael Tanter<sup>1</sup>, Mathieu Pernot<sup>1</sup>  <sup>1</sup>Institut Langevin, ESPCI, Paristech, INSERM, France</p>

<p><b>Session P1A5.</b> <b>MTH: Therapeutic Methods</b></p> <p><i>Chair: Helen Mulvana</i> University of Glasgow</p>	<p><b>P1A5-8</b> New discovery of thin catheter movement under acoustical field of focused transducer</p> <p><b>Takashi Mochizuki<sup>1</sup></b>, Nobuhiro Tsurui<sup>1</sup>, Naoto Hosaka<sup>1</sup>, Kohji Masuda<sup>1</sup> <sup>1</sup>Tokyo University of Agriculture and Technology, Tokyo, Japan</p>	<p><b>ession P1A6.</b> <b>MSP: Medical Signal Processing</b></p> <p><i>Chair: Martin Hemmsen</i> Technical University of Denmark</p>	<p><b>P1A6-8</b> A Multiparametric Approach Integrating Vessel Diameter, Wall Shear Rate and Physiologic Signals for Optimized Flow Mediated Dilatation Studies</p> <p><b>Alessandro Ramalli<sup>1</sup></b>, Michal Byra<sup>2</sup>, Alessandro Dallai<sup>1</sup>, Carlo Palombo<sup>3</sup>, Kunihiro Aizawa<sup>4</sup>, Piero Tortoli<sup>1</sup> <sup>1</sup>Information Engineering Department, University of Florence, Firenze, Italy, <sup>2</sup>Department of Ultrasound, Institute of Fundamental Technological Research PAS, Warsaw, Poland, <sup>3</sup>Department of Surgical, Medical, Molecular, and Critical Area Pathology, University of Pisa, Pisa, Italy, <sup>4</sup>Diabetes and Vascular Medicine Research Centre, NIHR Exeter Clinical Research Facility, University of Exeter Medical School, Exeter, United Kingdom</p>	<p><b>P1A7-5</b> Thin-Walled Carotid Bifurcation Phantom Systems for Vascular Strain-Flow Imaging Investigations</p> <p><b>Adrian J. Y. Chee<sup>1</sup></b>, Billy Y. S. Yiu<sup>1</sup>, Alfred C. H. Yu<sup>1</sup> <sup>1</sup>Medical Engineering Program, The University of Hong Kong, Hong Kong</p>
<p><b>P1A5-1</b> New cancer treatment method utilizing intratumoral drug distribution control with mechanical effects of cavitation</p> <p><b>Ken-ichi Kawabata<sup>1</sup></b>, Takashi Maruoka<sup>1</sup>, Rei Asami<sup>1</sup>, Hideki Yoshikawa<sup>1</sup>, Reiko Ashida<sup>2</sup> <sup>1</sup>Hitachi, Ltd., Tokyo, Japan, <sup>2</sup>Osaka Medical Center for Cancer and Cardiovascular Diseases, Osaka, Japan</p>	<p><b>P1A5-9</b> Features of acoustic radiation function on thin catheter as a tube</p> <p><b>Takashi Mochizuki<sup>1</sup></b>, Nobuhiro Tsurui<sup>1</sup>, Kohji Masuda<sup>1</sup> <sup>1</sup>Graduate school of Bio-Application &amp; System Engineering, Tokyo University of Agriculture and Technology, Tokyo, Japan</p>	<p><b>P1A6-1</b> Sub-sampled Doppler ultrasound reconstruction using block sparse Bayesian learning</p> <p><b>Oana Lorintiu<sup>1</sup></b>, Hervé Liebgott<sup>1</sup>, Olivier Bernard<sup>1</sup>, Denis Friboulet<sup>1</sup> <sup>1</sup>Université de Lyon, CREATIS ; CNRS UMR5220 ; Inserm U1044 ; INSA-Lyon ; Université Lyon 1, Lyon, France</p>	<p><b>P1A6-9</b> A Novel Side Lobe Estimation Method in Medical Ultrasound Imaging Systems</p> <p><b>Mok Kun Jeong<sup>1</sup></b>, Sung Jae Kwon<sup>1</sup> <sup>1</sup>Electric, Electronic and communication engineering, Daejin University, Pocheon, Kyeonggi, Korea, Republic of</p>	<p><b>P1A7-6</b> Receiver Operating Characteristics Analysis of Eigen-Based Clutter Filters for Ultrasound Color Flow Imaging</p> <p><b>Adrian J. Y. Chee<sup>1</sup></b>, Alfred C. H. Yu<sup>1</sup> <sup>1</sup>Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong</p>
<p><b>P1A5-2</b> High resolution coagulation size estimation with multiple modulation frequencies for localized motion imaging</p> <p><b>Takashi Azuma<sup>1</sup></b>, Ryusuke Sugiyama<sup>1</sup>, Chen Optatovsky<sup>1</sup>, Mika Seki<sup>1</sup>, Hideki Takeuchi<sup>1</sup>, Keisuke Fujiwara<sup>2</sup>, Kazunori Itani<sup>2</sup>, Kiyoshi Yoshinaka<sup>3</sup>, Shu Takagi<sup>1</sup>, Yoichiro Matsumoto<sup>1</sup> <sup>1</sup>The University of Tokyo, Japan, <sup>2</sup>Hitachi Aloka Medical, Japan, <sup>3</sup>National Institute of Advanced Industrial Science and Technology, Japan</p>	<p><b>P1A5-10</b> Ultrasound image-based dynamic fusion modeling for estimating the impact of organ motion on HIFU therapies and evaluating motion compensation strategies</p> <p><b>W. Apoutou N'DJIN<sup>1</sup></b>, Jean-Yves CHAPELON<sup>1</sup>, David MELODELIMA<sup>1</sup> <sup>1</sup>LabTau, Inserm, U1032; Université de Lyon, Lyon, France</p>	<p><b>P1A6-2</b> B-field energy dependent phase lag dispersion in Magnetomotive ultrasound imaging</p> <p><b>Roger Andersson<sup>1</sup></b>, Magnus Cinthio<sup>1</sup>, Maria Evertsson<sup>1</sup>, Hanna Toftvall<sup>2</sup>, Anders Wahlström<sup>3</sup>, Sarah Fredriksson<sup>4</sup>, Göran Nybom<sup>5</sup>, Tomas Jansson<sup>6,7</sup> <sup>1</sup>Biomedical Engineering, Lund University, Lund, Sweden, <sup>2</sup>Geccodots AB, Lund, Sweden, <sup>3</sup>Lundinova AB, Lund, Sweden, <sup>4</sup>Genovis AB, Lund, Sweden, <sup>5</sup>JOIN Business &amp; Technology AB, Lund, Sweden, <sup>6</sup>Clinical Sciences Lund, Biomedical Engineering, Lund University, Sweden, <sup>7</sup>Medical Services, Skåne University Hospital, Lund, Sweden</p>	<p><b>P1A6-10</b> Estimation of Arteriovenous Fistula Stenosis by Quantitative Doppler Ultrasound Using Adaptive Gray Relation Method</p> <p><b>Jian-Xing Wu<sup>1</sup></b>, Tainsong Chen<sup>2</sup> <sup>1</sup>National Synchrotron Radiation Research Center, Hsinchu, Taiwan, <sup>2</sup>Department of Biomedical Engineering, National Cheng Kung University, Tainan, Taiwan</p>	<p><b>P1A7-7</b> Wall Shear Rate Method Validation Through Multi-physics Simulations</p> <p><b>Stefano Ricci<sup>1</sup></b>, Abigail Swillens<sup>2</sup>, Alessandro Ramalli<sup>1</sup>, Patrick Segers<sup>2</sup>, Piero Tortoli<sup>1</sup> <sup>1</sup>Information Engineering Dept., Università di Firenze, Firenze, Italy, <sup>2</sup>IBiTech-bioMMeda, iMinds Medical IT, Gent University, Belgium</p>
<p><b>P1A5-3</b> Temperature distribution analysis for High Intensity Focused Ultrasound Breast Cancer Treatment by Numerical Simulation</p> <p><b>Mingzhen ZHANG<sup>1</sup></b>, Takashi AZUMA<sup>1</sup>, Kohei OKITA<sup>2</sup>, Xiaolei QU<sup>1</sup>, Ryuta NARUMI<sup>1</sup>, Hidemi FURUSAWA<sup>3</sup>, Junichi SHIDOOKA<sup>3</sup>, Shu TAKAGI<sup>1</sup>, Yoichiro MATSUMOTO<sup>1</sup> <sup>1</sup>Graduate School of Engineering, The University of Tokyo, Japan, <sup>2</sup>College of Industrial Technology, Nihon University, Japan, <sup>3</sup>Breastopia Medical Corporation, Breastopia Namba Hospital, Japan</p>	<p><b>P1A5-11</b> Enhanced spatio-temporal control of acoustic cavitation during flow using a novel short-pulse ultrasonic pulse sequence and passive acoustic mapping</p> <p><b>Antonios Pouliopoulos<sup>1</sup></b>, Marc Tinguely<sup>2</sup>, Caiqin Li<sup>1</sup>, Mengxing Tang<sup>1</sup>, Valeria Garbin<sup>2</sup>, James Choi<sup>1</sup> <sup>1</sup>Bioengineering, Imperial College London, United Kingdom, <sup>2</sup>Chemical Engineering, Imperial College London, United Kingdom</p>	<p><b>P1A6-3</b> Discover layered structure in ultrasound images with a joint sparse representation model</p> <p><b>Junbo Duan<sup>1</sup></b>, Hui Zhong<sup>1</sup>, Bowen Jing<sup>1</sup>, Siyuan Zhang<sup>1</sup>, Mingxi Wan<sup>1</sup> <sup>1</sup>The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, Xi'an, Shaanxi, China, People's Republic of</p>	<p><b>Session P1A7.</b> <b>MBF: Performance Investigations and Phantom Design</b></p> <p><i>Chair: Lasse Løvstakken</i> NTNU</p>	<p><b>P1A7-8</b> Investigation of Twinkling Artifact by Controlling Oscillating Disturbance</p> <p><b>Yu Naito<sup>1</sup></b>, Masayuki Tanabe<sup>1</sup>, Masahiko Nishimoto<sup>1</sup>, Hiroshi Hashimoto<sup>2</sup>, Takao Jibiki<sup>2</sup>, Tadashi Shimazaki<sup>2</sup> <sup>1</sup>Graduate School of Science and Technology, Kumamoto University, Kumamoto,</p>

<p><b>P1A5-4</b> Generation of calibration curve with pulse compression technique for ultrasound-based temperature estimation</p> <p>Su A Lee<sup>1</sup>, Jong Seob Jeong<sup>1</sup>  <sup>1</sup>Medical Biotechnology, Dongguk University, Gyeonggi-do, Korea, Republic of</p>	<p><b>P1A5-12</b> The dynamic excitation of a chain of pre-stressed spheres for biomedical ultrasound applications: contact mechanics finite element analysis and validation</p> <p>Pierre Gelat<sup>1</sup>, Nader Saffari<sup>1</sup>, David Hutchins<sup>2</sup>, Jia Yang<sup>2</sup>, Omololu Akanji<sup>2</sup>, Peter Thomas<sup>2</sup>, Lee Davis<sup>3</sup>, Steven Freear<sup>3</sup>, Sevan Harput<sup>3</sup>  <sup>1</sup>UCL Mechanical Engineering, University College London, United Kingdom, <sup>2</sup>School of Engineering, University of Warwick, United Kingdom, <sup>3</sup>School of Electronic and Electrical Engineering, University of Leeds, United Kingdom</p>	<p><b>P1A6-4</b> A Sub-Nyquist Sampling Analog Front-End with Mixer-Based Subarray Beamforming for B-Mode Ultrasound Imaging</p> <p>Jonathon Spaulding<sup>1</sup>, Boris Murmann<sup>1</sup>  <sup>1</sup>Stanford University, Stanford, California, USA</p>	<p><b>P1A7-1</b> In vivo Investigation for Accuracy Estimation of Vector Flow Mapping</p> <p>Tomohiko Tanaka<sup>1</sup>, Takashi Okada<sup>2</sup>, Tomohide Nishiyama<sup>2</sup>, Yoshinori Seki<sup>2</sup>, Ken-ichi Kawabata<sup>1</sup>  <sup>1</sup>Hitachi, Ltd., Japan, <sup>2</sup>Hitachi Aloka Medical, Ltd., Japan</p>	<p><b>Session P2A1.</b>  <b>Ultrasonics in Air and Water</b></p> <p>Chair: Jiomaru Tsujino  Kanagawa University</p>
<p><b>P1A5-5</b> Visualization of the intensity field of a high intensity focused ultrasound (HIFU) source in situ</p> <p>Trong Nguyen<sup>1</sup>, Minh Do<sup>1</sup>, Michael L. Oelze<sup>1</sup>  <sup>1</sup>Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, USA</p>	<p><b>P1A5-13</b> Extracorporeal Acute Cardiac Pacing by High Intensity Focused Ultrasound in Practice and Theory</p> <p>Amit Livneh<sup>1</sup>, Eitan Kimmel<sup>1</sup>, Dan Adam<sup>1</sup>  <sup>1</sup>Biomedical Engineering, Technion-Israel Institute of Technology, Haifa, Israel</p>	<p><b>P1A6-5</b> Combined use of edge-detection and tissue Doppler for robust left ventricle segmentation</p> <p>Sigurd Storve<sup>1</sup>, Fredrik Orderud<sup>2</sup>, Hans Torp<sup>1</sup>  <sup>1</sup>Department of Circulation and Medical Imaging, Norwegian University of Science and Technology, Norway, <sup>2</sup>GE Vingmed Ultrasound, Norway</p>	<p><b>P1A7-2</b> Validation of a novel vector method for blood peak detection in an anthropomorphic phantom</p> <p>Riccardo Matera<sup>1</sup>, Stefano Ricci<sup>1</sup>, Alfred C.H. Yu<sup>2</sup>, Billy Y.S. Yiu<sup>2</sup>, Piero Tortoli<sup>1</sup>  <sup>1</sup>Information Engineering Dept., Università di Firenze, Florence, Italy, <sup>2</sup>Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong</p>	<p><b>P2A1-1</b> Ultrasonic transducer characterization in air based on an indirect acoustic radiation pressure measurement</p> <p>Anastasia Guseva<sup>1</sup>, Maik Hoffmann<sup>1</sup>, Alexander Unger<sup>2</sup>, Silvia Zulk<sup>3</sup>, Mohamed Balla El Amien<sup>1</sup>, Ennes Sarraj<sup>1</sup>, Mario Kupnik<sup>2</sup>  <sup>1</sup>BTU Cottbus-Senftenberg, Germany, <sup>2</sup>Technische Universität Darmstadt, Germany, <sup>3</sup>Leibniz Universität Hannover, Germany, <sup>4</sup>University of Sharjah, United Arab Emirates</p>
<p><b>P1A5-6</b> Inducing antivasular effects in tumors with ultrasound stimulated micron sized bubbles</p> <p>Naomi Matsuura<sup>1</sup>, Minseok Seo<sup>2</sup>, Niroo Sivapalan<sup>2</sup>, Siqi Zhu<sup>2</sup>, Ben Leung<sup>2</sup>, David Goertz<sup>3,4</sup>  <sup>1</sup>Medical Imaging, University of Toronto, Canada, <sup>2</sup>Sunnybrook Research Institute, Canada, <sup>3</sup>Sunnybrook Research Institute, Toronto, ON, Canada, <sup>4</sup>Medical Biophysics, University of Toronto, Canada</p>	<p><b>P1A5-14</b> HIFU real-time feedback control using localized motion imaging with dynamic cross correlation window</p> <p>Xiaolei Qu<sup>1</sup>, Takashi Azuma<sup>1</sup>, Ryusuke Sugiyama<sup>1</sup>, Kengo Kanazawa<sup>1</sup>, Mika Seki<sup>1</sup>, Akira Sasaki<sup>1</sup>, Hideki Takeuchi<sup>1</sup>, Keisuke Fujiwara<sup>2</sup>, Kazunori Itani<sup>2</sup>, Satoshi Tamano<sup>3</sup>, Shu Takagi<sup>1</sup>, Ichiro Sakuma<sup>1</sup>, Yoichiro Matsumoto<sup>1</sup>  <sup>1</sup>The University of Tokyo, Japan, <sup>2</sup>Hitachi Aloka Medical, Ltd., Japan, <sup>3</sup>Tohoku University, Japan</p>	<p><b>P1A6-6</b> Streak artifact reduction for blind deconvolution of multibeam image</p> <p>Kangwon Jeon<sup>1</sup>, Hyuntaek Lee<sup>1</sup>, Munkyeong Hwang<sup>1</sup>, Yongsup Park<sup>1</sup>  <sup>1</sup>Digital Media &amp; Communications R&amp;D Center, Samsung Electronics, Suwon, Gyeonggi, Korea, Republic of</p>	<p><b>P1A7-3</b> Novel Design of Patient-Specific Cerebral Aneurysm Phantoms for Intraoperative Ultrasound Investigations</p> <p>C. K. Ho<sup>1</sup>, Adrian J. Y. Chee<sup>1</sup>, Billy Y. S. Yiu<sup>1</sup>, Anderson C. O. Tsang<sup>2</sup>, K. W. Chow<sup>3</sup>, Alfred C. H. Yu<sup>1</sup>  <sup>1</sup>Medical Engineering Program, University of Hong Kong, Pokfulam, Hong Kong, <sup>2</sup>Department of Surgery, University of Hong Kong, Pokfulam, Hong Kong, <sup>3</sup>Department of Mechanical Engineering, University of Hong Kong, Pokfulam, Hong Kong</p>	<p><b>P2A1-2</b> Side Lobe Suppression for Air-Coupled Ultrasonic Transducers with Parabolic Horn</p> <p>Koji Ibata<sup>1</sup>, Rokuzo Hara<sup>1</sup>, Tomonori Kimura<sup>1</sup>, Toru Fukasawa<sup>1</sup>, Hiroaki Miyashita<sup>1</sup>, Satoru Inoue<sup>1</sup>  <sup>1</sup>Mitsubishi Electric Corporation, Japan</p>
<p><b>P1A5-7</b> Enhanced Cavitation Activities from Axial Split Foci Using Second/Third-Harmonic Superimposition for Focused Ultrasound Surgery</p> <p>Mingzhu Lu<sup>1</sup>, Yubo Guan<sup>1</sup>, Yujiao Li<sup>1</sup>, Mingxi Wan<sup>1</sup>  <sup>1</sup>Department of Biomedical Engineering, School of Life Science and Technology, Xi'an Jiaotong University, The Key Laboratory of Biomedical Information Engineering of Ministry of Education, Xi'an, Shaanxi, China, People's Republic of</p>	<p><b>P1A5-15</b> Pulse Inversion Technique for HIFU Treatment Monitoring in Real Time</p> <p>Byungwoo Kang<sup>1</sup>, Hyuncheol Kim<sup>2,3</sup>, Jin Ho Chang<sup>1,3</sup>  <sup>1</sup>Electronic Engineering, Sogang University, Korea, Republic of, <sup>2</sup>Chemical and Biomolecular Engineering, Sogang University, Korea, Republic of, <sup>3</sup>Interdisciplinary Program of Integrated Biotechnology, Sogang University, Korea, Republic of</p>	<p><b>P1A6-7</b> Dynamic Baseband Pulse Compression for Coded Excitation Imaging</p> <p>Yeajin Kim<sup>1</sup>, Jinbum Kang<sup>1</sup>, Yangmo Yoo<sup>1,2</sup>  <sup>1</sup>Electronic Engineering, Sogang University, Seoul, Korea, Republic of, <sup>2</sup>Interdisciplinary Program of Integrated Biotechnology, Sogang University, Korea, Democratic People's Republic of</p>	<p><b>P1A7-4</b> Implementation and evaluation of slow-time Golay decoding for pre-clinical high-frequency color Doppler imaging in mice</p> <p>Che-Chou Shen<sup>1</sup>, Jyun-Gong Yu<sup>1</sup>, Gency Jeng<sup>2</sup>  <sup>1</sup>Electrical Engineering, National Taiwan University of Science and Technology, Taipei, Taiwan, <sup>2</sup>S-Sharp Corporation, Taiwan</p>	<p><b>P2A1-3</b> Calibration of ultrasonic hydrophones based on spherically focused self-reciprocity technique</p> <p>Guangzhen Xing<sup>1</sup>, Ping Yang<sup>2</sup>, Pengcheng Hu<sup>1</sup>  <sup>1</sup>Institute of Ultra-precision Optoelectronic Instrument Engineering, Harbin Institute of Technology, Harbin, Heilongjiang, China, People's Republic of, <sup>2</sup>Division of Mechanics and Acoustics, National Institute of Metrology, Beijing, Beijing, China, People's Republic of</p>

<p><b>Session P2A2.</b> <b>SHM in Concrete</b></p> <p><i>Chair: Joel Harley</i> <i>University of Utah</i></p>	<p><b>P2A3-3</b> Optimal Lamb wave mode and frequency selection for assessment of creep damage in titanium alloy plates</p> <p>Yanxun Xiang<sup>1</sup>, Fu-Zhen Xuan<sup>2</sup> <sup>1</sup>East China University of Science and Technology, Shanghai, Shanghai, China, People's Republic of, <sup>2</sup>East China University of Science and Technology, China, People's Republic of</p>	<p><b>P3A1-3</b> "Ultrasonic studies of physicochemical parameters of biofuels in a broad range of pressures and temperatures"</p> <p>Piotr Kielczynski<sup>1</sup>, Marek Szalewski<sup>1</sup>, Andrzej Balcerzak<sup>1</sup>, Krzysztof Wieja<sup>1</sup>, Aleksander Rostocki<sup>2</sup>, Ryszard Siegoczyński<sup>2</sup>, Stanislaw Ptasznik<sup>3</sup> <sup>1</sup>Polish Academy of Sciences, Poland, <sup>2</sup>Warsaw University of Technology, Poland, <sup>3</sup>Institute of Agricultural and Food Biotechnology, Poland</p>	<p><b>Session P4A1.</b> <b>Sensors &amp; Applications I</b></p> <p><i>Chair: Mauricio Pereira da Cunha</i> <i>University of Maine</i></p>	<p><b>P4A2-1</b> Optimized Response of AIN Stack For Chipscale GHz Ultrasonics</p> <p>Jason Hoople<sup>1</sup>, Justin Kuo<sup>1</sup>, Jeffrey Soon Bo Woon<sup>2</sup>, Navab Singh<sup>2</sup>, Amit Lal<sup>1</sup> <sup>1</sup>Electrical and Computer Engineering, Cornell University, USA, <sup>2</sup>Institute of Microelectronics, Singapore</p>
<p><b>P2A2-1</b> Low Frequency Coded Waveform for the Inspection of Concrete Structure</p> <p>M.N.I.B. Mohamed<sup>1</sup>, S. Laureti<sup>1,2</sup>, M. Ricci<sup>2</sup>, L.A.J. Davis<sup>1</sup>, P. Burrascano<sup>2</sup>, D.A. Hutchins<sup>1</sup> <sup>1</sup>School of Engineering, University of Warwick, Coventry, United Kingdom, <sup>2</sup>Polo Scientifico Didattico di Terni, Università degli Studi di Perugia, Terni, Italy</p>	<p><b>P2A3-4</b> Detection of Low-frequency Components in Ultrasonic Waves Transmitted through Contact Solids</p> <p>Yuji Kato<sup>1</sup>, Hirokata Tanaka<sup>1</sup>, Toshihiko Sugiura<sup>1</sup> <sup>1</sup>Keio University, Japan</p>	<p><b>P3A1-4</b> Experimental Investigation on the Jet-like Acoustic Streaming in front of an Oscillating Circular Piston</p> <p>Arturo Santillan<sup>1</sup> <sup>1</sup>Department of Technology and Innovation, University of Southern Denmark, Odense M, Fyn, Denmark</p>	<p><b>P4A1-1</b> Investigation of langasite surface acoustic wave pressure sensors with a structure of reinforcing its pressure sensitivity</p> <p>Honglang Li<sup>1</sup>, Yabing Ke<sup>1</sup>, Yiyu Zhao<sup>1</sup>, Lina Cheng<sup>1</sup>, Shitang He<sup>1</sup> <sup>1</sup>Institute of acoustics, China, People's Republic of</p>	<p><b>P4A2-2</b> Low Loss and Wide Band Filters Using New Dispersive Interdigital Transducers with Floating Electrodes</p> <p>Kazuhiko Yamanouchi<sup>1</sup> <sup>1</sup>Acoustic Wave Labo., Ltd, Japan</p>
<p><b>P2A2-2</b> Reverse Time Migration Based Ultrasonic Imaging of Rebars Embedded in Concrete</p> <p>Surendra Beniwal<sup>1</sup>, Abhijit Ganguli<sup>1</sup> <sup>1</sup>Civil Engineering, Indian Institute of Technology Delhi, Delhi, India</p>	<p><b>P2A3-5</b> Reconfigurable and Programmable System-on-Chip Hardware Platform for Real-time Ultrasonic Testing Applications</p> <p>Pramod Govindan<sup>1</sup>, Boyang Wang<sup>1</sup>, Pingping Wu<sup>1</sup>, Ivan Palkov<sup>1</sup>, Vidya Vasudevan<sup>1</sup>, Jafar Saniee<sup>1</sup> <sup>1</sup>Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, Illinois, USA</p>	<p><b>P3A1-5</b> Dyadic Universal Functions and Simultaneous Near-field/Far-field Regularization of Elasto-dynamic Dyadic Green's Functions for 3D Mass-loading Analysis in Micro-acoustic Devices</p> <p>Alireza Baghai-Wadji<sup>1</sup> <sup>1</sup>Electrical Engineering, University of Cape Town, Cape Town, South Africa</p>	<p><b>P4A1-2</b> Development of SAW current sensor based on the magnetomechanics effect</p> <p>Yana Jia<sup>1</sup>, Wen Wang<sup>1</sup>, Xinlu Liu<sup>1</sup>, Shitang He<sup>1</sup> <sup>1</sup>Chinese Academy of Sciences, Institute of Acoustics, Beijing, China, People's Republic of</p>	<p><b>P4A2-3</b> Acoustic Micro-resonator Utilizing Hemispherical Air Cavity for Sensitivity Enhancement</p> <p>Anton Shkel<sup>1</sup>, Eun Sok Kim<sup>1</sup> <sup>1</sup>Electrical Engineering, University of Southern California, Los Angeles, CA, USA</p>
<p><b>P2A2-3</b> Study on Non-Contact Acoustic Imaging Method for Concrete Structures - The 2nd Construction Method using a Strong Ultrasonic Sound Source-</p> <p>Tsuneyoshi Sugimoto<sup>1</sup>, Kazuko Sugimoto<sup>2</sup>, Noriyuki Utagawa<sup>3</sup>, Kageyoshi Katakura<sup>4</sup> <sup>1</sup>Graduate School of Engineering, Toin University of Yokohama, Yokohama, Japan, <sup>2</sup>Graduate School of Engineering, Toin University of Yokohama, Japan, <sup>3</sup>SatoKogyo Co., Ltd., Japan, <sup>4</sup>Meitoku Engineering, Japan</p>	<p><b>P2A3-6</b> Model-based parameter estimation for defect characterization in ultrasonic NDE applications</p> <p>Yufeng Lu<sup>1</sup>, Jafar Saniee<sup>2</sup> <sup>1</sup>Electrical and Computer Engineering, Bradley University, Peoria, Illinois, USA, <sup>2</sup>Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, Illinois, USA</p>	<p><b>P3A1-6</b> Ultrasonic batch processing of ultra heavy crude oil for viscosity reduction on the industrial scale</p> <p>Delong Xu<sup>1</sup>, Jingjun Deng<sup>1</sup>, Weijun Lin<sup>1</sup>, Chao Li<sup>1</sup>, Lixin Bai<sup>1</sup> <sup>1</sup>Institute of Acoustics, Chinese Academy of Sciences, Beijing, China, People's Republic of</p>	<p><b>P4A1-3</b> Development of practical ball surface acoustic wave trace moisture analyzer by undersampling</p> <p>Toshihiro Tsuji<sup>1</sup>, Toru Oizumi<sup>1</sup>, Nobuo Takeda<sup>1</sup>, Singo Akao<sup>1</sup>, Yusuke Tsukahara<sup>1</sup>, Kazushi Yamanaka<sup>1</sup> <sup>1</sup>Tohoku University, Sendai, Japan</p>	<p><b>P4A2-4</b> High-Q piezoelectric Lamb wave resonators based on AIN plates with chamfered corners</p> <p>Chih-Ming Lin<sup>1</sup>, Jie Zou<sup>1</sup>, Yung-Yu Chen<sup>2</sup>, Albert Pisano<sup>3</sup> <sup>1</sup>Mechanical Engineering, University of California, Berkeley, CA, USA, <sup>2</sup>Mechanical Engineering, Tatung University, Taipei, Taiwan, <sup>3</sup>Mechanical and Aerospace Engineering, University of California, San Diego, CA, USA</p>

<p><b>P2A2-4</b> Detection of Delamination in Concrete Medium Using Rayleigh Waves</p> <p>Debdutta Ghosh<sup>1</sup>, Surendra Beniwal<sup>1</sup>, Abhijit Ganguli<sup>1</sup>  <sup>1</sup>Civil Engineering, Indian Institute of Technology Delhi, Delhi, India</p>	<p><b>P2A3-7</b> Instrument for Rock Bolt Inspection by Means of Ultrasound</p> <p>Tadeusz Stepinski<sup>1</sup>, Karl-Johan Mattsson<sup>2</sup>  <sup>1</sup>WIMR, AGH Univ. of Science and Technology, Krakow, Poland, <sup>2</sup>Geosigma AB, Sweden</p>	<p><b>P3A1-7</b> A basic study of technique for stirring of liquid in non-contact way using high-intensity aerial ultrasonic waves</p> <p>Taichi Urakami<sup>1</sup>, Ayumu Osumi<sup>1</sup>, Youich Itoh<sup>1</sup>  <sup>1</sup>Nihon University, Japan</p>	<p><b>P4A1-4</b> Stabilization of SAW atomizer for a wearable olfactory display</p> <p>Kazuki Hashimoto<sup>1</sup>, Takamichi Nakamoto<sup>1</sup>  <sup>1</sup>Tokyo Institute of Technology, Kanagawa-Ken, Japan</p>	<p><b>P4A2-5</b> HBAR AS HIGH FREQUENCY HIGH STRESS GENERATOR</p> <p>Tanay Gosavi<sup>1</sup>, Evan MacQuarrie<sup>1</sup>, Gregory Fuchs<sup>1</sup>, Sunil Bhawe<sup>2</sup>  <sup>1</sup>Cornell University, NY, USA, <sup>2</sup>Analog Devices Inc, Woburn, MA, USA</p>
<p><b>Session P2A3.</b>  <b>Flaw Detection</b></p> <p><i>Chair: Erdal Oruklu</i>  <i>Illinois Institute of Technology</i></p>	<p><b>Session P3A1.</b>  <b>General Physical Acoustics</b></p> <p><i>Chair: Yook-Kong Yong</i>  <i>Rutgers University</i></p>	<p><b>P3A1-8</b> Composite Lateral Electric Field Excited Piezoelectric Resonator</p> <p>Boris Zaitsev<sup>1</sup>, Alexander Shikhabudinov<sup>1</sup>, Andrey Teplykh<sup>1</sup>, Irina Borodina<sup>1</sup>, Iren Kuznetsova<sup>2</sup>  <sup>1</sup>Saratov Branch, Kotel'nikov's Institute of Radio Engineering and Electronics of RAS, Russian Federation, <sup>2</sup>Kotel'nikov's Institute of Radio Engineering and Electronics of RAS, Russian Federation</p>	<p><b>P4A1-5</b> Conductivity measurement of liquid by SH-SAW sensor consisting of IDT/(11-20) oriented ZnO film/silica glass substrate</p> <p>Shoko Hiyama<sup>1</sup>, Takahiko Yanagitani<sup>2</sup>, Shinji Takayanagi<sup>1</sup>, Mami Matsukawa<sup>1</sup>  <sup>1</sup>Wave electronics research center, Laboratory of Ultrasonic Electronics, Doshisha university, Kyoto, Japan, <sup>2</sup>Waseda University, Tokyo, Japan</p>	<p><b>Session P4A3.</b>  <b>Materials &amp; Propagation</b></p> <p><i>Chair: Sergei Zhgoon</i>  <i>National Research University Moscow Power Engineering Institute</i></p>
<p><b>P2A3-1</b> Nonlinear Rayleigh Surface Acoustic Waves for Determining Yielding of Alloys</p> <p>Kui Yao<sup>1</sup>, Shifeng Guo<sup>1</sup>, Lei Zhang<sup>1</sup>, Shuting Chen<sup>1</sup>, Yi Fan Chen<sup>1</sup>, Meysam Sharifzadeh Mirshekarloo<sup>1</sup>, Huajun Liu<sup>1</sup>, Zhiyuan Shen<sup>1</sup>  <sup>1</sup>Institute of Materials Research and Engineering, A*STAR(Agency for Science, Technology and Research), Singapore</p>	<p><b>P3A1-1</b> Lateral Electric Field Excited Resonator Based On Pzt Ceramics</p> <p>Andrey Teplykh<sup>1</sup>, Boris Zaitsev<sup>1</sup>, Iren Kuznetsova<sup>2</sup>  <sup>1</sup>Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Saratov Branch, Saratov, Russian Federation, <sup>2</sup>Kotel'nikov Institute of Radio Engineering and Electronics of RAS, Moscow, Russian Federation</p>	<p><b>P3A1-9</b> Influence of Liquid on Properties of Backward Acoustic Waves in Piezoelectric Plates</p> <p>Iren Kuznetsova<sup>1</sup>, Boris Zaitsev<sup>2</sup>, Ilya Nedospasov<sup>1</sup>, Anastasia Kuznetsova<sup>2</sup>  <sup>1</sup>Moscow Department, Kotel'nikov Institute of RadioEngineering and Electronics of RAS, Moscow, Russian Federation, <sup>2</sup>Saratov Department, Kotel'nikov Institute of RadioEngineering and Electronics of RAS, Saratov, Russian Federation</p>	<p><b>P4A1-6</b> Comparative analysis of the experience obtained from the use of SAW and BAW wireless resonator temperature sensors for surgery</p> <p>Ivan Ancev<sup>1</sup>, Sergei Bogoslovsky<sup>1</sup>, Gennadiy Sapozhnikov<sup>1</sup>, Sergei Zhgoon<sup>2</sup>, Alexander Shvetsov<sup>2</sup>  <sup>1</sup>Joint Stock Company "NPP "Radar mms", St Petersburg, Russian Federation, <sup>2</sup>MPEI, Moscow, Russian Federation</p>	<p><b>P4A3-1</b> Investigation on Surface Acoustic Wave propagation for a non-planar piezoelectric thin film device</p> <p>Mohanraj Soundara pandian<sup>1</sup>, Eloi Marigo Ferrer<sup>1</sup>, Muniandy Shummugam<sup>1</sup>, Rubiyatulniza Binti Hussain<sup>1</sup>, Charlie Tay Wee Song<sup>1</sup>, Jazril Bin Jamil Din<sup>1</sup>, Chan Buan Fei<sup>1</sup>, Venkatesh Madhavan<sup>1</sup>, Arjun Kumar Kantimahanti<sup>1</sup>, Aamir Farooq Malik<sup>2</sup>, Varun Jeoti<sup>2</sup>  <sup>1</sup>SiTerra Malaysia Sdn Bhd, Kulim, Kedah, Malaysia, <sup>2</sup>Universiti Teknologi PETRONAS, Malaysia</p>
<p><b>P2A3-2</b> Combination of direct, half-skip and full-skip TFM to characterize multi-faceted crack in weld</p> <p>Xiaohi Han<sup>1</sup>, Wentao Wu<sup>1,2</sup>, Ping Li<sup>1</sup>, Jing Lin<sup>2</sup>  <sup>1</sup>Institute of Acoustics, Chinese Academy of Sciences, China, People's Republic of, <sup>2</sup>State Key Laboratory for Manufacturing System Engineering, Xi'an Jiaotong University, Sha'nx, China, People's Republic of</p>	<p><b>P3A1-2</b> "Inverse method for evaluation of elastic parameters in functionally graded materials using ultrasonic Love waves"</p> <p>Piotr Kielczynski<sup>1</sup>, Marek Szalewski<sup>1</sup>, Andrzej Balcerzak<sup>1</sup>, Krzysztof Wieja<sup>1</sup>  <sup>1</sup>Polish Academy of Sciences, Poland</p>	<p><b>P3A1-10</b> A Conservative Edge-free and Corner-free Finite Difference Method Formulation for Analysing Mass-loading Problems in Three Dimensions</p> <p>Ireka Ikenna<sup>1</sup>, Mebratu Fenta<sup>1</sup>, alireza baghai-wadji<sup>2</sup>  <sup>1</sup>Department of Mathematics and Applied Mathematics Mathematics, University of Cape Town, Cape Town, South Africa, <sup>2</sup>Electrical Engineering, University of Cape Town, Cape Town, South Africa</p>	<p><b>Session P4A2.</b>  <b>Microacoustic Resonators</b></p> <p><i>Chair: Maximilian Pitschi</i>  <i>TDK Corporation</i></p>	<p><b>P4A3-2</b> Effect of Sintering temperature on the Dielectric and Piezoelectric Properties of (Na0.525K0.443Li0.037)(Nb0.883Sb0.08Ta0.037)O3 Ceramics for piezoelectric Actuators</p> <p>Gwang Min Lee<sup>1</sup>, Ju Hyun Yoo<sup>1,2</sup>, Yeong Ho Jeong<sup>3</sup>, Lark Hoon Hwang<sup>1</sup>  <sup>1</sup>Semyung University, Republic of Korea, <sup>2</sup>Electrical Engineering, Semyung University, Jecheon, Chungbuk, Republic of Korea, <sup>3</sup>Korea National University of Transportation, Republic of Korea</p>



8:00 am - 5:00 pm

Poster --- Thursday, October 22, 2015

4th floor

<p><b>P4A3-3 Plate Modes in Langanite</b></p> <p>Natalya Naumenko<sup>1</sup>  <sup>1</sup>Acousto-optical Research Center, National University of Science and Technology, Moscow, Russian Federation</p>	<p><b>Session P5A2. Thick and Thin Films</b></p> <p><b>Chair: Yasuhito Takeuchi</b>  Asahikawa Medical University</p>	<p><b>P5A2-8 Characterization of a MEMS 3D Piezoelectric Ultrasound Transducer for Portable Imaging Systems</b></p> <p>Corina Nistorica<sup>1</sup>, Dimitre Latev<sup>1</sup>, Deane Gardner<sup>1</sup>, Darren Imai<sup>1</sup>, Chris Daft<sup>2</sup>  <sup>1</sup>FUJIFILM Dimatix, Inc, USA, <sup>2</sup>River Sonic Solutions, USA</p>		
<p><b>P4A3-4 Measurements of Acoustical Physical Constants for Ca<sub>3</sub>Nb(Ga<sub>0.75</sub>Al<sub>0.25</sub>)<sub>3</sub>Si<sub>2</sub>O<sub>14</sub> Single Crystal Using the Ultrasonic Microspectroscopy System</b></p> <p>Yuji Ohashi<sup>1</sup>, Yuui Yokota<sup>1</sup>, Tetsuo Kudo<sup>1</sup>, Shunsuke Kurosawa<sup>1</sup>, Kei Kamada<sup>1,2</sup>, Akira Yoshikawa<sup>1,2</sup>  <sup>1</sup>Tohoku University, Japan, <sup>2</sup>C&amp;A Co., Japan</p>	<p><b>P5A2-1 (100)-Textured Lead-free KNN-based Thick Film for IVUSE<sup>®</sup>&gt;50MHz@Imaging</b></p> <p>Benpeng Zhu<sup>1</sup>, Teng Ma<sup>2</sup>, Yongxiang Li<sup>3</sup>, Xiaofei Yang<sup>1</sup>, K.kirk Shung<sup>2</sup>, Qifa Zhou<sup>2</sup>  <sup>1</sup>Huazhong University of Science and Technology, China, People's Republic of,<sup>2</sup>Department of Biomedical Engineering, NIH Transducer Resource Center, University of Southern California, USA,<sup>3</sup>Key Laboratory of Inorganic Functional Materials and Devices, Chinese Academy of Sciences, China, People's Republic of</p>	<p><b>Session P5A3. Transducer Design and Modeling</b></p> <p><b>Chair: Yasuhito Takeuchi</b>  Asahikawa Medical University</p>		
<p><b>P4A3-5 Loss Reduction of Leaky Surface Acoustic Wave by Loading with High-Velocity Thin Film</b></p> <p>Shoji Kakio<sup>1</sup>, Keiko Hosaka<sup>1</sup>  <sup>1</sup>Interdisciplinary Graduate School of Medicine and Engineering, University of Yamanashi, Japan</p>	<p><b>P5A2-2 Domain Engineering in Epitaxial Ferroelectric Thin Films</b></p> <p>Mahamudu Mtebwa<sup>1</sup>, Nava Setter<sup>1</sup>  <sup>1</sup>Ceramics Laboratory, EPFL, Lausanne, Switzerland</p>	<p><b>P5A3-1 Design of a bullet beam pattern of an ultrasound transducer by use of a multifocal lens and a shaded electrode</b></p> <p>Euna Choi<sup>1</sup>, Yongrae Roh<sup>1</sup>  <sup>1</sup>School of Mechanical Engineering, Kyungpook National University, Daegu, Korea, Republic of</p>		
<p><b>Session P5A1. Transducer Materials</b></p> <p><b>Chair: Yasuhito Takeuchi</b>  Asahikawa Medical University</p>	<p><b>P5A2-3 High power piezoelectric characteristics of KNbO<sub>3</sub> thick films by hydrothermal method.</b></p> <p>Mutsuo Ishikawa<sup>1</sup>, Yousuke Uchida<sup>1</sup>, Motoko Shibuya<sup>1</sup>, Nobuaki Kosuge<sup>1</sup>, Minoru Kurosawa<sup>2</sup>, Hiroshi Funakubo<sup>2</sup>  <sup>1</sup>Toin Univ. of Yokohama, Japan,<sup>2</sup>Tokyo Inst. of Tech., Japan</p>	<p><b>P5A3-2 Impedance Conversion of Matching Layer for Air Ultrasonic Transducers</b></p> <p>Minoru Toda<sup>1</sup>, Minoru Toda<sup>2</sup>  <sup>1</sup>Sensor Solution, TE Connectivity, USA, <sup>2</sup>TE Connectivity, USA</p>		

<p><b>P5A1-1 Novel Spring-Mass Matching Layer Fabrication for Ultrasound Transducers</b></p> <p>Mikel Gorostiaga<sup>1</sup>, Matthias C. Wapler<sup>1</sup>, Ulrike Wallrabe<sup>1</sup>  <sup>1</sup>Department of Microsystemengineering, Laboratory for Microactuators, IMTEK - University of Freiburg, Freiburg im Breisgau, Germany</p>	<p><b>P5A2-4 Fundamental Study on the Miniature Coiled Stator-UltraSound Motor with hydrothermally synthesized lead zirconate titanate poly-crystalline film transducer for medical applications</b></p> <p>Seiya Ozeki<sup>1</sup>, Toshinobu Abe<sup>1</sup>, Tadashi Moriya<sup>2</sup>, Takasuke Irie<sup>3</sup>, Minoru Kurosawa<sup>4</sup>, Shinichi Takeuchi<sup>1</sup>  <sup>1</sup>Clinical Engineering, Toin University of YOKOHAMA, Yokohama, kanagawa, Japan, <sup>2</sup>Tokyo Metropolitan University, Hino, Tokyo, Japan, <sup>3</sup>Microsonic Co., Ltd., Kokubunji, Tokyo, Japan, <sup>4</sup>Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology, Yokohama, Kanagawa, Japan</p>	<p><b>P5A3-3 Diffraction loss calculation based on boundary element method for an air-coupled phased array</b></p> <p>Rene Golinske<sup>1</sup>, Maik Hoffmann<sup>1</sup>, Eric Konetzke<sup>1</sup>, Alexander Unger<sup>2</sup>, Matthias Rutsch<sup>2</sup>, Mario Kupnik<sup>2</sup>  <sup>1</sup>BTU Cottbus-Senftenberg, Germany, <sup>2</sup>Technische Universität Darmstadt, Germany</p>		
<p><b>P5A1-2 Additive manufacture of impedance matching layers for air-coupled ultrasonic transducers</b></p> <p>Sivaram Nishal Ramadas<sup>1,2</sup>, Michael Hunter<sup>1</sup>, John Thornby<sup>3</sup>, Chris Purssell<sup>4</sup>, Simon Leigh<sup>4</sup>, Steven Dixon<sup>1</sup>  <sup>1</sup>Physics, University of Warwick, United Kingdom, <sup>2</sup>Elster Instronet, Belgium, <sup>3</sup>WMG, University of Warwick, United Kingdom, <sup>4</sup>School of Engineering, University of Warwick, United Kingdom</p>	<p><b>P5A2-5 Electrical and Acoustic Characterization of Scandium Aluminum Nitride (ScAlN) Piezoelectric Micromachined Ultrasonic Transducers (PMUT)</b></p> <p>Panu Koppinen<sup>1</sup>, Sergey Gorelick<sup>1</sup>, Feng Gao<sup>1</sup>, James Dekker<sup>1</sup>, Tommi Riekkinen<sup>1</sup>, Alessandro Caspani<sup>2</sup>  <sup>1</sup>Knowledge Intensive Products and Services, VTT Technical Research Centre of Finland Ltd, Espoo, Finland, <sup>2</sup>Dipartimento di Elettronica, Informazione e Bioingegneria, Politecnico di Milano, Milano, Italy</p>	<p><b>P5A3-4 Optimization of the Structure of 1-3 Piezocomposite Materials to Maximize the Performance of an Underwater Transducer</b></p> <p>Yongrae Roh<sup>1</sup>, Haejune Park<sup>1</sup>  <sup>1</sup>School of Mechanical Engineering, Kyungpook National University, Daegu, Korea, Republic of</p>		
<p><b>P5A1-3 1-3 piezocomposites based on super-cell structuring for transducer applications</b></p> <p>Remi Rouffaud<sup>1</sup>, Franck Levassort<sup>1</sup>, Mai PhanThi<sup>2</sup>, Claire Bantignies<sup>3</sup>, Marc Lethiecq<sup>1</sup>, Anne-Christine Hladky-Hennion<sup>1</sup>  <sup>1</sup>GREMAN UMR 7347 CNRS, François-Rabelais University, Tours, France, <sup>2</sup>Thales Research &amp; Technology, Palaiseau, France, <sup>3</sup>VERMON SA, Tours, France, <sup>4</sup>ISEN, IEMN UMR 8520 CNRS, Lille, France</p>	<p><b>P5A2-6 Development of anti-cavitation hydrophone with hydrothermal PZT film - Estimation of durability-</b></p> <p>Michihisa Shiiba<sup>1,2</sup>, Nagaya Okada<sup>3</sup>, Minoru Kurosawa<sup>4</sup>, Shinichi Takeuchi<sup>1</sup>  <sup>1</sup>Toin University of Yokohama, Japan, <sup>2</sup>Research Fellow of Japan Society for the Promotion of Science, Japan, <sup>3</sup>Honda Electronics Co., Ltd., Japan, <sup>4</sup>Tokyo Institute of Technology, Japan</p>	<p><b>P5A3-5 A feasibility study of angled backing structure using FEM Simulation for lightweight ultrasound transducer</b></p> <p>Seon Mi Ji<sup>1</sup>, Sung Min Kim<sup>1</sup>, Jong Seob Jeong<sup>1</sup>  <sup>1</sup>Medical Biotechnology, Dongguk University, Gyeonggi-do, Korea, Republic of</p>		
<p><b>P5A1-4 Design and Fabrication of Lead-free BNT Film High Frequency Ultrasound Transducers</b></p> <p>Wei Ren<sup>1</sup>  <sup>1</sup>Electronic Materials Research Laboratory, Key Laboratory of the Ministry of Education, Xi'an Jiaotong University, China, People's Republic of</p>	<p><b>P5A2-7 Influence of Tough Hydrophone Shapes with Titanium Front Plate and Hydrothermal PZT Thick Film on Distribution of Acoustic Bubbles around Focal Point of HIFU Transducer</b></p> <p>Nagaya Okada<sup>1</sup>, Michihisa Shiiba<sup>2</sup>, Minoru K. Kurosawa<sup>3</sup>, Shinichi Takeuchi<sup>2</sup>  <sup>1</sup>Research and Development Div., HONDA ELECTRONICS CO., LTD., Japan, <sup>2</sup>Department of Clinical Engineering, Faculty of Biomedical Engineering, Toin University of Yokohama, Japan, <sup>3</sup>Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology, Japan</p>			