

9:00 a.m. – 10:30 a.m.

Monday, October 8, 2001, POSTER SESSIONS

Barrington (P1A–P1D), East Foyer (P2A–P2E), Jarrett (Student Competition)

<p><i>Session P1A</i>  <b>MEDICAL IMAGING</b>          Chair: L. Masotti          University of Firenze</p>	<p><b>P1A-8 A New K-Space Method for Coupled First-Order Acoustic Propagation Equations.</b> M. Tabei<sup>1</sup>, T. D. Mast<sup>2*</sup>, and R. C. Waag<sup>1</sup>, <sup>1</sup>Departments of Electrical Engineering and Radiology, University of Rochester, <sup>2</sup>Applied Research Laboratory, The Pennsylvania State University</p>	<p><b>P1B-4 A Method for Flow Speed Measurement using a Pair of Multiplexed Chirp Signals.</b> M. Yoshizawa<sup>*1</sup>, T. Moriya<sup>2</sup>, and Y. Tanahashi<sup>3</sup>, <sup>1</sup>Tokyo Metropolitan College of Technology, Tokyo, <sup>2</sup>Dept. of Electrical Engrg., Tokyo Metropolitan Univ., Tokyo, <sup>3</sup>Tohoku Kohsai Hospital, Sendai</p>	<p><b>P1C-4 Noninvasive, Noncontact Fluid Detection in Submerged Canisters Using Swept Frequency Ultrasonic Technique.</b> S. MacIntosh<sup>*</sup>, D. N. Sinha, and G. Kaduchak, Los Alamos National Labs</p>	<p><b>P1D-2 Modelling of a Wireless SAW Tire Pressure Monitoring System.</b> V. Kalinin<sup>*</sup>, Transense Technologies plc</p>
<p><b>P1A-1 Mapping High Frequency Ultrasonic Fields with Femtosecond Laser Generated Cavitation.</b> K.W. Hollman<sup>*</sup>, S.Y. Emelianov, G.J.R. Spooner, and M. O'Donnell, University of Michigan, Ann Arbor, MI</p>	<p><b>P1A-9 Elevation Beamforming Performance of a 1.75D Array.</b> P. Guo, S. Yan, and Q. Zhu, University of Connecticut</p>	<p><b>P1B-5 Velocity Estimation Using Synthetic Aperture Imaging.</b> S. Nikolov<sup>*</sup> and J. A. Jensen, Center for Fast Ultrasound Imaging, Oersted*DTU</p>	<p><b>P1C-5 Energy Method to Calculate the Density of Liquids Using Ultrasonic Reflection Techniques.</b> R. T. Higu<sup>1</sup>, F. R. Montero de Espinosa<sup>2</sup>, and J. C. Adamowski<sup>3*</sup>, <sup>1</sup>DEE - Fac. Eng. Ilha Solteira - Unesp, Brazil, <sup>2</sup>Instituto de Acustica - CSIC, Spain, <sup>3</sup>Dep. Eng. Mecatronica - EPUSP, Brazil</p>	<p><b>P1D-3 Experimental Study of Lamb Wave in Tubes With Defects by Means of Wavelet Transform.</b> D.-A. Ta<sup>*</sup> and Z.-Q. Liu, Institute of Acoustics, Tongji University, Shanghai, 200092, P.R. China</p>
<p><b>P1A-2 A Hand-Held, High Frequency Ultrasound Scanner.</b> S. Erickson<sup>*</sup>, D. Kruse, and K. Ferrara, University of California, Davis</p>	<p><b>P1A-10 Experimental Study of Second Harmonic Imaging With A Weighted Chirp Signal.</b> D.-Y. Kim<sup>*</sup>, J.-C. Lee, B.-H. Kim, and T.-K. Song, Sogang University, Seoul, South Korea</p>	<p><b>P1B-6 Quantitative Assessment of the Artery Dilation Measurements with an Arterial Phantom.</b> L. Germond<sup>*1</sup>, O. Bonnefous<sup>1</sup>, and T. Loupas<sup>2</sup>, <sup>1</sup>Laboratoires d'Electronique Philips, France, <sup>2</sup>ATL, Washington, USA</p>	<p><b>P1C-6 Determination of the Complex Shear Modulus of Viscoelastic Liquids Using Cylindrical Piezoceramic Resonators.</b> P. Kielczynski<sup>*</sup>, W. Pajewski, and M. Szalewski, Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw, Poland</p>	<p><b>P1D-4 Ultrasonic Methods for Characterization of Liquids and Slurries.</b> R. A. Pappas<sup>*</sup>, L. J. Bond, M. S. Greenwood, P. D. Panetta, and D. M. Pfund, Battelle, Pacific Northwest Division, Richland, WA/USA</p>
<p><b>P1A-3 A Low Voltage Portable System using a Modified Golay sequences.</b> Y. M. Yoo<sup>*1</sup>, W. Y. Lee<sup>2</sup>, and T. K. Song<sup>1</sup>, <sup>1</sup>Sogang Univesity, <sup>2</sup>Medison Corporate Research &amp; Development</p>		<p><b>P1B-7 Optimizing Focal Position in Measurement of Small Change in Arterial Wall Thickness.</b> M. Watanabe<sup>*</sup>, H. Hasegawa, and H. Kanai, Tohoku University Graduate School of Engineering</p>	<p><b>P1C-7 Detection of Organophosphorus Vapors GB and DMMP Using Polysiloxane Coated Love-Wave Sensors: Sensitivity and Interaction Mechanisms Analysis.</b> C. Zimmermann<sup>*1</sup>, D. Rebiere<sup>1</sup>, C. Dejos<sup>1</sup>, J. Pistre<sup>1</sup>, and R. Planade<sup>2</sup>, <sup>1</sup>Laboratoire IXL-UMR 5818 CNRS, ENSEIRB - Universite Bordeaux 1, <sup>2</sup>Centre d'Etudes du Bouchet (DCE/DGA)</p>	<p><b>P1D-5 Time Frequency and Wavelet Transform Applied to Ultrasonics NDE.</b> R. Drai, M. Khelil, and A. Benchaala, Research Center in NDT</p>

\*Author presenting paper.

<p><b>P1A-4 Integrated Circuit Implementation of a Matched-Cell Dynamic Focusing Architecture for a 5-Channel, 50-MHz, Planar Annular Array.</b> J.R. Talman<sup>*1,4</sup>, C.E. Morton<sup>2</sup>, S.L. Garverick<sup>3,4</sup>, and G.R. Lockwood<sup>1,2</sup>, <sup>1</sup>Cleveland Clinic Foundation, <sup>2</sup>Queens University, <sup>3</sup>Movaz Corporation, <sup>4</sup>Case Western Reserve University</p>	<p><b>Session P1B BLOOD FLOW</b> Chair: J. A. Jensen DTU, Denmark</p>	<p><b>Session P1C SENSORS IN FLUIDS</b> Chair: T. Sinclair University of Toronto</p>	<p><b>P1C-8 An Air-Coupled Ultrasonic Matching Layer Employing Half Wavelength Cavity Resonance.</b> S. P. Kelly<sup>*1</sup>, G. Hayward<sup>1</sup>, and T. E. Gomez<sup>2</sup>, <sup>1</sup>The Centre for Ultrasonic Engineering, University of Strathclyde, Glasgow, Scotland, <sup>2</sup>Instituto de Acustica, CSIC, C/ Serrano 144, 28002 Madrid</p>	<p><b>Session P2A PHYSICAL ACOUSTICS I</b> Chair: K. Liang Schlumberger-Doll Research</p>
<p><b>P1A-5 Histology and Ultrasound Fusion of Excised Prostate Tissue using Surface Registration.</b> B. C. Porter<sup>*3</sup>, L. Taylor<sup>3</sup>, R. Baggs<sup>2</sup>, A. di Sant'Agnese<sup>2</sup>, G. Nadasdy<sup>2</sup>, D. Pasternack<sup>2</sup>, D. J. Rubens<sup>1</sup>, and K. J. Parker<sup>1,3</sup>, <sup>1</sup>Radiology Department, Strong Memorial Hospital, <sup>2</sup>Pathology/Morphology/Imaging Core, Strong Memorial Hospital, <sup>3</sup>Electrical and Computer Engineering, University of Rochester, Rochester, NY</p>	<p><b>P1B-1 Joint Probability Discrimination between Stationary Tissue and Blood Velocity Signals.</b> M. Schlaikjer<sup>*</sup> and J.A. Jensen, Center for Fast Ultrasound Imaging, Oersted*DTU, Technical University of Denmark</p>	<p><b>P1C-1 An Efficient Method Combined the Douglas Operator Scheme to Split-Step Pade Approximation of Higher-Order Parabolic Equation.</b> T. Anada<sup>*1</sup>, T. Tsuchiya<sup>1</sup>, N. Endoh<sup>1</sup>, and T. Nakamura<sup>2</sup>, <sup>1</sup>Kanagawa University, <sup>2</sup>JAMSTEC</p>	<p><b>P1C-9 Novel Multi-Channel SAW Tool for the Analysis of Gas-Phase Adsorption.</b> I. V. Anisimkin<sup>1</sup>, F. S. Hickernell<sup>*2</sup>, and V. I. Anisimkin<sup>1</sup>, <sup>1</sup>RAS-Institute of Radioengineering and Electronics, Moscow, Russia, <sup>2</sup>Motorola Inc. and the University of Central Florida, Scottsdale, Arizona</p>	<p><b>P2A-1 A 2.4GHz VCO with an Integrated Acoustic Solidly Mounted Resonator.</b> Y. S. Park<sup>*</sup>, S. Pinkett, J. S. Kenney, and W. D. Hunt, Georgia Institute of Technology, Atlanta, GA</p>
<p><b>P1A-6 Optical Imaging of Absorbing Objects Hidden in Highly Scattering Medium by Use of Ultrasonic Echo Pulse Velocity Change Due to Light Illumination.</b> H. Horinaka<sup>*1</sup>, T. Matsunaka<sup>2</sup>, T. Kiuchi<sup>1</sup>, T. Kobayashi<sup>1</sup>, K. Wada<sup>1</sup>, S. Saimi<sup>2</sup>, and Y. Cho<sup>3</sup>, <sup>1</sup>Department of Engineering, Osaka Prefecture University, <sup>2</sup>Aloka Co., Ltd. Tokyo, <sup>3</sup>Okayama Prefecture University</p>	<p><b>P1B-2 Spectral Doppler Flow Velocity and Doppler Angle Estimations for Small Vessels by Large Sample Volume.</b> H. K. Chiang<sup>*1</sup>, B.-R. Lee<sup>1</sup>, T.-T. Pan<sup>1</sup>, and C.-D. Kuo<sup>2</sup>, <sup>1</sup>Institute of Biomedical Engineering, National Yang-Ming University, Taipei, Taiwan, <sup>2</sup>Department of Teaching and Clinical Research, Veteran General Hospital-Taipei, Taiwan</p>	<p><b>P1C-2 An Experimental Study of the Acoustic Emissions Generated by Cavitation.</b> B. Zeqiri<sup>*</sup>, P. N. Gelat, M. Hodnett, and N. D. Lee, National Physical Laboratory</p>	<p><b>Session P1D NDE SIGNAL PROCESSING</b> Chair: N. Bilgutay Drexel University</p>	<p><b>P2A-2 Solidly Mounted BAW Filters for the 6 to 8 GHz Range Based on AIN Thin Films.</b> R. Lanz, M.-A. Dubois, and P. Muralt<sup>*</sup>, Ceramics Laboratory, EPFL, Lausanne, Switzerland</p>
<p><b>P1A-7 Stepwise Logistic Regression Analysis of Tumor Contour Features for Breast Ultrasound Diagnosis.</b> H. K. Chiang<sup>*1</sup>, C.-M. Tiu<sup>2</sup>, G.-S. Hung<sup>1</sup>, S.-C. Wu<sup>3</sup>, T. Y. Chang<sup>4</sup>, and Y.-H. Chou<sup>2</sup>, <sup>1</sup>Institute of Biomedical Engineering, National Yang Ming University, Taipei, Taiwan, <sup>2</sup>Department of Radiology, Veterans General Hospital-Taipei, Taiwan, <sup>3</sup>Institute of Health and Welfare Policy, National Yang Ming University, Taipei, Taiwan, <sup>4</sup>Department of Human Biology, Stanford University, Palo Alto, CA</p>	<p><b>P1B-3 Experimental Investigation of Transverse Velocity Estimation Using Cross-Correlation.</b> R. T. Bjerggaard<sup>*</sup> and J. A. Jensen, Center for Fast Ultrasound Imaging, Oersted*DTU</p>	<p><b>P1C-3 Spatial Mapping of the Ultrasonic Back-Scattering Field and Sound Velocity Assessment in Low Acoustic Contrast Gel-Based Emulsions.</b> J.J. Ammann<sup>*</sup> and B.A. Galaz Donoso, Universidad de Santiago de Chile, Santiago, Chile</p>	<p><b>P1D-1 Mixed-Spectral Estimation for the Measurement of Multimode Lamb Waves' Phase Velocity.</b> X. Liu<sup>*</sup>, Z.-Q. Liu, and D.-A. Ta, Institute of Acoustics, Tongji University, Shanghai, 200092, P.R. China</p>	<p><b>P2A-3 Resonance Analysis of RF Film Bulk Acoustic Wave Resonator using Finite Element Method.</b> J.-H. Jung<sup>*1,2</sup> and H.-C. Choi<sup>2</sup>, <sup>1</sup>Electronic Telecommunication Research Institute, South Korea, <sup>2</sup>Kyungpook National University, South Korea</p>

<p><b>P2A-4 The Effect of Ultrasound on Radiation Damages in Implanted Silicon.</b> J. Olikh<sup>1</sup>, B. Romanjuk<sup>1</sup>, V. Mellnik<sup>1</sup>, and D. Kruger<sup>2</sup>, <sup>1</sup>Inst. of Semiconductor Physics of NASU, Kyiv, Ukraine, <sup>2</sup>IHP, Frankfurt(Oder), Germany</p>	<p><b>P2B-3 Exact Analysis of Dispersive SAW Devices on ZnO/Diamond/Si Layered Structures.</b> T. T. Wu and Y. Y. Chen*, Institute of Applied Mechanics, National Taiwan University, Taipei, Taiwan</p>	<p><i>Session P2C</i> <b>SAW SYSTEM APPLICATIONS</b> Chair: S. Jen Crystal Photonics, Inc.</p>	<p><i>Session P2D</i> <b>TRANSDUCER MODELING I</b> Chair: R. Tancrell Airmar Technology</p>	<p><i>Session P2E</i> <b>TRANSDUCER MODELING II</b> Chair: R. Tancrell Airmar Technology</p>
<p><b>P2A-5 Expression by Scalar and Vector Velocity Potentials of Thin Square Plate Contour Vibrations.</b> M. Sato*, Y. Takahata, M. Tahara, and I. Sakagami, Faculty of Engineering, Toyama University, Toyama, Japan</p>	<p><b>P2B-4 A SAW Basestation Filter on Langasite.</b> L. Solie* and J. Bracewell, Sawtek, Inc.</p>	<p><b>P2C-1 Balanced Front-End Hybrid SAW Modules For 146 - 174 MHz Handheld Transceivers.</b> S. A. Doberstein*, I. A. Kucherenko, and V. K. Razgonyaev, ONIIP, Omsk, Russia</p>	<p><b>P2D-1 (Invited) Virtual Prototyping for Rapid Production of Ultrasonic Devices.</b> P. Reynolds*, D. Powell, D. Vaughan, J. Mould, and G. Wojcik, Weidlinger Associates Inc., 4410 El Camino Real, Ste.110, Los Altos, CA</p>	<p><b>P2E-1 Versatile Analysis of Multilayer Piezoelectric Transducers Using a Matrix Approach.</b> T.F. Johansen* and B.A. Angelsen, Department of Physiology and Biomedical Engineering, Norwegian University of Science and Technology</p>
<p><b>P2A-6 Simulation of Generation of Bulk Acoustic Waves by Interdigital Transducers.</b> M. Deng*, Department of Physics, Logistics Engineering University, Chongqing 400016, P. R. China</p>	<p><b>P2B-5 Triple-Band RF SAW Filter for Mobile Phone using Surface Mount Plastic Package.</b> S. Yoshimoto*, Y. Yamamoto, Y. Takahashi, and E. Otsuka, NEC Corporation</p>	<p><b>P2C-2 High Isolation SAW Antenna Duplexer Modules.</b> N. Kamogawa*<sup>1</sup>, T. Shiba<sup>1</sup>, T. Ishizaki<sup>1</sup>, D. Okajima<sup>1</sup>, N. Hosaka<sup>1</sup>, M. Moteki<sup>1</sup>, S. Ogawa<sup>1</sup>, K. Oda<sup>1</sup>, and M. Hikita<sup>2</sup>, <sup>1</sup>Hitachi Media Electronics Ltd., <sup>2</sup>Central Research Laboratory, Hitachi Ltd.</p>		<p><b>P2E-2 Incorporation of Diffraction Effects in Simulations of Ultrasonic Systems using PSpice Models.</b> J. Johansson* and E. Martinsson, Lulea University of Technology, Lulea, Sweden</p>
<p><b>P2A-7 Ultrasonically Stimulated Diffusion of Impurities in Dislocation Free Silicon at Room Temperature.</b> I.V. Ostrovskii*, A.B. Nadtochij, L.P. Steblenko, and A.A. Podolyan, Kiev Shevchenko University, Kiev, Ukraine</p>	<p><b>P2B-6 Elastic Electrode Polarization in a Spatial Harmonic Field and the Natural Boundary Element Method.</b> S. V. Biryukov*<sup>1,2</sup> and M. Weihnacht<sup>1</sup>, <sup>1</sup>Institute of Solid State and Materials Research Dresden, Dresden, Germany, <sup>2</sup>Mints Radiotechnical Institute, Moscow, Russia</p>	<p><b>P2C-3 A Triple-Band Antenna Switch Duplexer comprising Unbalanced to Balanced SAW Filters on a LTCC Substrate.</b> T. Yamada*, K. Uriu, H. Nakamura, A. Namba, K. Onishi, and T. Ishizaki, Matsushita Electric Industrial Co., Ltd.</p>	<p><b>P2D-2 Domain Decomposition and Partitioned Analysis Techniques for the Finite Element Simulation of Ultrasonic Transducers.</b> E. Heikkola*, University of Jyvaskyla</p>	<p><b>P2E-3 Ultrasound Probe-Performance Variation with Coax Parameters.</b> J. M. Griffith*, E&amp;H Resources, Inc.</p>

<p><b>P2A-8 A Non-Directivity Accelerometer with Unique and Simple Structure.</b> H. Ishikawa<sup>1</sup>, K. Sawada<sup>2</sup>, H. Tanaka<sup>2</sup>, and A. Machida<sup>2</sup>, <sup>1</sup>Fujitsu Laboratories Ltd., <sup>2</sup>Fujitsu Media Devices Ltd.</p>	<p><b>P2B-7 Optimization of Slanted Finger Interdigital Transducer (SFIT).</b> B. Steiner*, Vectron International</p>	<p><b>P2C-4 Improved Noise Characteristics of a SAW Artificial Neural Network RF Signal Processor for Modulation Recognition.</b> D.A. Kavalov<sup>*1</sup> and V.A. Kalinin<sup>2</sup>, <sup>1</sup>Oxford Brookes University, Oxford, UK, <sup>2</sup>Transense Technologies plc., Bicester, UK</p>	<p><b>P2D-3 Application of Normal Mode Theory to Modeling of Cross-Coupling in 1D Piezocomposite Arrays.</b> J. Guyonvarch<sup>*1</sup>, D. Certon<sup>1</sup>, L. Ratsimandresy<sup>2</sup>, F. Patat<sup>1</sup>, and M. Lethiecq<sup>1</sup>, <sup>1</sup>GIP ULTRASONS/LUSSI, <sup>2</sup>VERMON SA</p>	<p><b>P2E-4 Optimization of High-Frequency Pulse Transmission in an Ultrasound Imaging System.</b> W. H. Chen, E. Maione, P. J. Cao, T. Ritter, and K. K. Shung, The Pennsylvania State University</p>
<p><b>Session P2B SFT SAW FILTERS AND TRANSDUCERS I</b> Chair: K. Bhattacharjee Clarisay</p>	<p><b>P2B-8 Application of Modified P-matrix Model to the Simulation of Radio Frequency LSAW Filters.</b> A. N. Rusakov<sup>1</sup>, V. S. Orlov<sup>*1</sup>, B. Chao<sup>2</sup>, and V. Lee<sup>2</sup>, <sup>1</sup>Moscow Radiocommunication Research Institute, <sup>2</sup>TAI SAW Technology Co Ltd</p>	<p><b>P2C-5 Programmable SAW Devices with Diode Bridge Coupled through Multi Strip Tapping Electrodes.</b> Y. Aoki*, S. Nagn, C. Kaneshiro, K. Koh, and K. Hohkawa, Advanced Technology Research Center, Kanagawa Institute of Technology</p>	<p><b>P2D-4 A Plane-Wave-Expansion Approach for Modelling Acoustic Propagation in 2D and 3D Piezoelectric Periodic Structures.</b> M. Wilm<sup>*1</sup>, V. Laude<sup>1</sup>, S. Ballandras<sup>1</sup>, G. Pierre<sup>2</sup>, and W. Steichen<sup>3</sup>, <sup>1</sup>Laboratoire de Physique et Metrologie des Oscillateurs, CNRS, Besancon, France, <sup>2</sup>Framatome ANP, Saint-Marcel, France, <sup>3</sup>Thales Microsonics, Sophia-Antipolis, France</p>	<p><b>P2E-5 The Transmission of Electric Energy through an Elastic Wall.</b> Y. T. Hu<sup>*1</sup> and Q. Jiang<sup>2</sup>, <sup>1</sup>Huanzhong University of Science and Technology, <sup>2</sup>University of California - Riverside</p>
<p><b>P2B-1 Complete Extraction of the COM Parameters for EWC SPUDT in a Simple Way with Periodic Green's Function Method.</b> J. Lin, N. Wang, H. Chen, and Y. Shui, Key Laboratory of Modern Acoustics, Institute of Acoustics, Nanjing University, Nanning, P. R. China</p>	<p><b>P2B-9 Calculation and Measurement of SAW Diffraction Pattern of Slanted Finger SAW Filters on YZ LiNbO3 and 128 YX LiNbO3.</b> H. Yatsuda<sup>*1</sup>, S. Kamiseki<sup>1</sup>, and T. Chiba<sup>2</sup>, <sup>1</sup>Japan Radio Co., Ltd., <sup>2</sup>Meisei University</p>	<p><b>P2C-6 Modeling and Characterization of GaAs/GaAlAs MQW Acousto-Electro-Optic Modulators.</b> J. Gazalet*, F. Sainte-Rose, J.E. Lefebvre, and T. Gryba, IEMN-DOAE, Universite</p>	<p><b>P2D-5 Characterization of Novel Flexensional Transducers Designed by Using Topology Optimization Method.</b> G. Nader, E. C. N. Silva, and J. C. Adamowski*, Escola Politecnica da Universidade de Sao Paulo</p>	<p><b>P2E-6 Noise in Electronically Focused Array Transducers.</b> A. Ronnekleiv*, Norwegian Institute of Science and Technology</p>
<p><b>P2B-2 Small Sized Low Loss IF SAW Filters for W-CDMA Based on RSPUDT Utilizing High SAW Reflectivity on Lithium Tetraborate.</b> T. Sato<sup>*1</sup>, S. Yang<sup>2</sup>, B. G. Han<sup>2</sup>, H. Y. Lee<sup>2</sup>, and J. H. Park<sup>2</sup>, <sup>1</sup>Samsung Yokohama Research Institute, <sup>2</sup>Samsung Electro-Mechanics CO., Ltd.</p>	<p><b>P2B-10 Experimental Study of SAW Resonators Operating at 7.5 GHz.</b> S. Lehtonen<sup>*1</sup>, M.T. Honkanen<sup>2</sup>, V.P. Plessky<sup>3</sup>, J. Turunen<sup>2</sup>, and M.M. Salomaa<sup>1</sup>, <sup>1</sup>Helsinki University of Technology, Espoo, Finland, <sup>2</sup>University of Joensuu, Joensuu, Finland, <sup>3</sup>Thales Microsonics SAW Design Bureau, Neuchatel, Switzerland</p>	<p><b>P2C-7 A Trial for Integrating Front End Circuits on a Substrate of SAW Device Employing ELO.</b> S. Nam*, Y. Aoki, C. Kaneshiro, K. Koh, and K. Hohkawa, Advanced Technology Research Center, Kanagawa Institute of Technology</p>	<p><b>P2D-6 Analytical Modeling of a Piezoelectric Actuator.</b> D. Vasic*, E. Sarraute, and F. Costa, LESIR ENS de Cachan</p>	

10:30 a.m. – 12:00 p.m.

Monday, October 8, 2001

Omni Hotel, Atlanta, GA

	<b>Session 1A CARDIAC IMAGING</b> Chair: T. van der Steen Erasmus University	<b>Session 2A MICROSENSORS AND MICROACTUATORS</b> Chair: D. Cheeke Concordia University	<b>Session 3A PHYSICAL ACOUSTICS</b> Chair: J. Brown JB Consulting	<b>Session 4A MICROWAVE ACOUSTIC DEVICES AND TRENDS</b> Chair: R. Weigel University of Linz	<b>Session 5A NDE SIGNAL PROCESSING</b> Chair: E. Furgason Purdue University
	Rutherford	Mimosa	Glenmar	Knollwood	Liberty
10:30 a.m.	<b>1A-1 Two-Dimensional Myocardial Strain Rate Estimation Using "Snakes".</b> J. D'hooge <sup>1</sup> , B. Bijnens <sup>2</sup> , M. Kowalski <sup>2</sup> , L. Barrios <sup>3</sup> , J. Thoen <sup>4</sup> , F. Van de Werf <sup>2</sup> , G.R. Sutherland <sup>2</sup> , and P. Suetens <sup>1</sup> , <sup>1</sup> Medical Image Computing, Dept. of Electrical Engineering, Catholic Univ. Leuven, Leuven, Belgium, <sup>2</sup> Dept. of cardiology, Catholic Univ. Leuven, Leuven, Belgium, <sup>3</sup> Dept. of cardiology, Universidad Nacional de Asuncion, Asuncion, Paraguay, <sup>4</sup> Dept. of physics, Catholic Univ. Leuven, Leuven, Belgium	<b>2A-1 Resonance Frequency and Q factor Images of Subsurface Defects in Ultrasonic Atomic Force Microscopy.</b> K. Yamanaka <sup>1</sup> , H. Irihama <sup>1</sup> , T. Tsuji <sup>1</sup> , and K. Nakamoto <sup>2</sup> , <sup>1</sup> Department of Materials Processing, Tohoku University, <sup>2</sup> JEOL Ltd.	<b>3A-1 (Invited) Use of Complex Frequencies to Characterize Lossy Materials.</b> A. Ballato <sup>*</sup> and R. A. Pastore, Jr., US Army Communications-Electronics Command	<b>4A-1 An RF Filter Design Using LTCC And Thin Film Baw Technology.</b> D. Penunuri <sup>*1</sup> and K. M. Lakin <sup>2</sup> , <sup>1</sup> Motorola Labs, Tempe, AZ, USA, <sup>2</sup> TFR Technologies, Bend, OR, USA	<b>5A-1 Data Compression and Noise Suppression of Ultrasonic NDE Signals Using Wavelets.</b> G. Cardoso <sup>*</sup> and J. Saniie, Department of Electrical and Computer Engineering, Illinois Institute of Technology, Chicago, IL
10:45 a.m.	<b>1A-2 Detection of Rapid Velocity Components in Myocardium.</b> H. Kanai <sup>*</sup> and Y. Koiwa, Tohoku University	<b>2A-2 Micromachined High-Frequency Cantilevers for Ultrasonic Atomic Force Microscopy.</b> T. Hesjedal <sup>*</sup> , G.G. Yaralioglu, R.J. Grow, S.C. Minne, and C.F. Quate, Stanford University, Stanford, California		<b>4A-2 Using SPUDT Structure to Design High Selective W-CDMA Base Station Filters.</b> A. Pyman <sup>1</sup> , J. Deacon <sup>*1</sup> , W. Gibson <sup>1</sup> , R. Bain <sup>1</sup> , J. Galipeau <sup>3</sup> , T. Lindemayer <sup>2</sup> , and F. Bi <sup>3</sup> , <sup>1</sup> Micro Networks, Unit 5, Dorcan Business Village, Dorcan, Swindon, UK, <sup>2</sup> Micro Networks, Bloomfield, CT, USA, <sup>3</sup> Micro Networks, Worcester, MA, USA	<b>5A-2 Pattern Recognition of Wavelets Decomposition using ART2 Networks for Echoes Analysis.</b> M. Solis <sup>1</sup> , E. Rubio <sup>1</sup> , H. Benitez-Perez <sup>1</sup> , E. Moreno-Hernandez <sup>2</sup> , and L. Medina-Gomez <sup>*1</sup> , <sup>1</sup> DISCA-IIMAS-UNAM, <sup>2</sup> Ultrasonic Center, Institute of Cybernetic Mathematics and Physics, La Habana Cuba

\*Author presenting paper.

11:00 a.m.	<b>1A-3 Subject Age at Time of Infarction Differentially Affects the Remodeling Responses in Viable Cardiac Tissue in Young vs. Old Rats.</b> F. Ngo <sup>*2</sup> , S. Handley <sup>1</sup> , C. Hall <sup>2</sup> , J. Allen <sup>2</sup> , M. McLean <sup>2</sup> , G. Lanza <sup>2</sup> , J. Miller <sup>1</sup> , and S. Wickline <sup>2</sup> , <sup>1</sup> Department of Physics, Washington University, <sup>2</sup> Washington University School of Medicine	<b>2A-3 Micro-Fluidic Channels with Integrated Ultrasonic Transducers.</b> H. Jagannathan <sup>*1</sup> , G. G. Yaralioglu <sup>1</sup> , A. S. Ergun <sup>1</sup> , F. L. Degertekin <sup>2</sup> , and B. T. Khuri-Yakub <sup>1</sup> , <sup>1</sup> Stanford University, Stanford, CA, <sup>2</sup> Georgia Institute of Technology, Atlanta, GA	<b>3A-2 Polarization and Nonlinearity in Lithium Niobate.</b> M. McPherson <sup>*</sup> and M. A. Breazeale, National Center for Physical Acoustics	<b>4A-3 (Invited) Recent Advances on SAW Packaging.</b> R. Gruenwald, P. Selmeier <sup>*</sup> , H. Krueger, G. Feiertag, and C. Ruppel, EPCOS AG, Munich, Germany	<b>5A-3 Vortex Imaging Using Two-Dimensional Ultrasonic Speckle Correlation.</b> J. Carlson <sup>*1</sup> , R. K. Ing <sup>2</sup> , J. Bercoff <sup>2</sup> , and M. Tanter <sup>2</sup> , <sup>1</sup> EISLAB, Sensor Systems, Lulea University of Technology, SE-971 87 Lulea, Sweden, <sup>2</sup> Laboratoire Ondes et Acoustique, 10 rue Vauquelin, FR-75231, Paris Cedex 5, France
11:15 a.m.	<b>1A-4 Evaluation of Transmural Myocardial Deformation and Reflectivity Characteristics.</b> J. D'hooge <sup>1</sup> , J. Schlegel <sup>2</sup> , P. Claus <sup>3</sup> , B. Bijnens <sup>3</sup> , J. Thoen <sup>4</sup> , F. Van de Werf <sup>5</sup> , G. R. Sutherland <sup>3</sup> , and P. Suetens <sup>1</sup> , <sup>1</sup> Medical Image Computing, Dept. of Electrical Engineering, Catholic Univ. Leuven, Leuven, Belgium, <sup>2</sup> Toshiba Medical Systems Europe, Zoetermeer, The Netherlands, <sup>3</sup> Dept. of cardiology, Catholic Univ. Leuven, Leuven, Belgium, <sup>4</sup> Dept. of Physics, Catholic Univ. Leuven, Leuven, Belgium	<b>2A-4 Characterization of Micromachined Silicon Nitride Membranes Using Resonant Ultrasound Spectroscopy.</b> H. Guo <sup>*</sup> and A. Lal, SonicMEMS Laboratory, University of Wisconsin-Madison	<b>3A-3 Radial Profiling of Formation Shear Velocity from Borehole Flexural Dispersions.</b> B. Sinha <sup>*1</sup> and R. Burrige <sup>2</sup> , <sup>1</sup> Schlumberger-Doll Research, <sup>2</sup> Boston University		<b>5A-4 Artificial Neural Networks Application on Interface Evaluation in IC Packaging by C-SAM.</b> X.M. Jian, N.Q. Guo, Jaleel Abdul, and H.C. Yeo, Nanyang Technological University, MPE
11:30 a.m.	<b>1A-5 Real Time 3D Intracardiac Echo for Guidance of Cardiac Ablation.</b> S.W. Smith <sup>*</sup> , E.D. Light, S.F. Idriss, W. Lee, E. Dixon-Tulloch, and P.D. Wolf, Duke University, Durham, NC	<b>2A-5 Silicon Ultrasonic Horns for Thin Film Accelerated Stress Testing.</b> C.-H. Lee <sup>*</sup> and A. Lal, SonicMEMS Laboratory, University of Wisconsin-Madison	<b>3A-4 Low Frequency Emission by Means of Nonlinear Interaction of Phase Conjugate Ultrasound Waves in Wat.</b> Y. P. Nov <sup>1</sup> , P. Pernod <sup>*2</sup> , and V. Preobrazhensky <sup>3</sup> , <sup>1</sup> Moscow Institute of Radio engineering Electronics and Automation, Moscow, Russia, <sup>2</sup> Intitut d Electronique et de Microelectronique du Nord IEMN, Villeneuve d Ascq cedex, France, <sup>3</sup> IEMN, Villeneuve d Ascq, France, and Wave Research Center, GPI RAS, Moscow, Russia	<b>4A-4 Distortion Cancellation Performance of Miniature Delay Filters for Feed-Forward Linear Power Amplifiers.</b> M. Roy <sup>*</sup> , Motorola	<b>5A-5 Computer Simulation of Forward Wave Propagation in Non-linear, Heterogeneous, Absorbing Tissue.</b> T. Varslot <sup>*1</sup> , G. Taraldsen <sup>2</sup> , T. Johansen <sup>2</sup> , and B. Angelsen <sup>2</sup> , <sup>1</sup> NTNU - Dept. of Mathematical Sciences, Trondheim, Norway, <sup>2</sup> NTNU - Dept. of Physiology and Biomedical Engineering, Trondheim, Norway, <sup>3</sup> SINTEF Telecom and Informatics - Acoustics, Trondheim, Norway
11:45 a.m.	<b>1A-6 Identification of Reperfused Infarcted Myocardium from High-Frequency Intracardiac Ultrasound Images Using Homodyne K Distribution.</b> X. Hao <sup>*</sup> , C. Bruce, C. Pislaru, and J. Greenleaf, Mayo Clinic	<b>2A-6 Microacoustic Viscosity Sensor for Automotive Applications.</b> B. Jakoby <sup>1</sup> , M. Scherer <sup>1</sup> , M. Buskies <sup>1</sup> , and H. Eisenschmid <sup>2</sup> , <sup>1</sup> Robert Bosch GmbH, Automotive Equipment Division K8, <sup>2</sup> Robert Bosch GmbH, Corporate Research	<b>3A-5 Bleustein-Gulyaev Surface Waves in Superconductors.</b> Yu.V. Gulyaev, N.I. Polzikova <sup>*</sup> , and A.O. Raevskii, Institute of Radioengineering & Electronics RAS, Moscow, Russia	<b>4A-5 Characterization of Acoustomigration with On-Wafer Measurement System.</b> G. Raml <sup>*1</sup> , W. Ruile <sup>2</sup> , R. Weigel <sup>1</sup> , and A. Springer <sup>1</sup> , <sup>1</sup> Johannes Kepler University Linz, Austria, <sup>2</sup> EPCOS AG, Munich, Germany	<b>5A-6 Ultrasonic Characterization of Imperfect Interface in IC Packaging, Theory and Experiment.</b> X. Jian <sup>*</sup> , J. Abdul, H. C. Yeo, and N. Q. Guo, Nanyang Technological University, MPE

2:00 p.m. – 3:30 p.m.

Monday, October 8, 2001

Omni Hotel, Atlanta, GA

	<b>Session 1B VASCULAR</b> Chair: J. Miller Washington University	<b>Session 2B WCU INVITED SESSION, HIGH POWER ULTRASONICS</b> Chair: L. Crum University of Washington	<b>Session 3B BULK WAVE EFFECTS</b> Chair: S. Zeroug Schlumberger-Doll Research	<b>Session 4B SAW FILTERS</b> Chair: K. Hashimoto Chiba University	<b>Session 5B ARRAY TRANSDUCERS I</b> Chair: H. Kunkel Philips Medical Systems/ATL
	<b>Rutherford</b>	<b>Mimosa</b>	<b>Glenmar</b>	<b>Knollwood</b>	<b>Liberty</b>
2:00 p.m.	<b>1B-1 Sensitivity and Specificity of IVUS Elastography to Detect the Vulnerable Plaque.</b> J. A. Schaar <sup>1</sup> , C. L. de Korte <sup>*1</sup> , F. Mastik <sup>1</sup> , C. Strijder <sup>2,3</sup> , G. Pasterkamp <sup>2</sup> , and A. F. W. van der Steen <sup>1,3</sup> . <sup>1</sup> Exp. Echo, Thoraxcenter, Erasmus University Rotterdam, <sup>2</sup> Exp. Cardiology Lab, University Medical Center Utrecht, <sup>3</sup> Interuniversity Cardiology Institute of the Netherlands	<b>2B-1 (Invited) Development of Industrial Models of High-power Stepped-plate Sonic and Ultrasonic Transducers for Use in Fluids.</b> J.A. Gallego-Juarez <sup>*</sup> , G. Rodriguez-Corral, E. Riera-Franco de S., F. Vazquez-Martinez, V. M. Acosta-Aparicio, and C. Campos-Pozuelo, Instituto de Acustica, Madrid, Spain	<b>3B-1 Rheological Constraints of the Analysis of Industrial Oils with the Droplet Quartz Crystal Microbalance (QCM).</b> D. C. Ash <sup>*1</sup> , M. J. Joyce <sup>1</sup> , G. Garnham <sup>2</sup> , C. Barnes <sup>3</sup> , and A. C. Jefferies <sup>4</sup> , <sup>1</sup> University of Lancaster, Lancaster, Lancashire, UK, <sup>2</sup> BNFL plc., Preston, Lancashire, UK, <sup>3</sup> Bangor Scientific Consultants, Bangor, Gwynedd, UK, <sup>4</sup> Castrol Consumer, Reading, Berkshire, UK	<b>4B-1 Transversal SAW Filters Using a BDT and a SPUDT.</b> A. Jaffer <sup>1</sup> , B. Steiner <sup>2</sup> , J. Renger <sup>2</sup> , D.-P. Chen <sup>3</sup> , and C. S. Lam <sup>3</sup> , <sup>1</sup> Verctron International - Technology Centre, Milton Keynes, UK, <sup>2</sup> Verctron International - Telefilter, Teltow, Germany, <sup>3</sup> Verctron International - Hudson, New Hampshire, USA	<b>5B-1 Finite Element Analysis of Phased Plano-Concave Multi-Layer Transducers.</b> J. A. Hossack <sup>*1</sup> , S. Zhou <sup>1</sup> , and D. J. Powell <sup>2</sup> , <sup>1</sup> University of Virginia, <sup>2</sup> Weidlinger Associates Inc.
2:15 p.m.	<b>1B-2 In vivo Validation of Intravascular Elastography: An Atherosclerotic Yucatan Study.</b> C. L. de Korte <sup>*1</sup> , M. Sierevogel <sup>2</sup> , F. Mastik <sup>1</sup> , C. Strijder <sup>2,3</sup> , and A. F. W. van der Steen <sup>1,2</sup> . <sup>1</sup> Exp. Echo, Thoraxcenter, Erasmus University Rotterdam, <sup>2</sup> Exp. Cardiology Lab, University Medical Center Utrecht, <sup>3</sup> Interuniversity Cardiology Institute of the Netherlands		<b>3B-2 Wave Propagation in Inhomogeneous Media, Phenomena and Potential Applications.</b> J. Vollmann <sup>*</sup> , D. Profunser, and J. Dual, ETH Zurich, Switzerland	<b>4B-2 Acoustic-Field Distribution within a Fan-Shaped SAW Filter.</b> P. Dufillie <sup>*1</sup> , L. Kopp <sup>2</sup> , J. V. Knuutila <sup>3</sup> , J. Saarinen <sup>3</sup> , J. Vartiainen <sup>3</sup> , and M. M. Salomaa <sup>3</sup> , <sup>1</sup> Thales Components, Vernon, Connecticut, USA, <sup>2</sup> Thales Microsonics, 06904 Sophia-Antipolis Cedex, France, <sup>3</sup> Materials Physics Laboratory, Helsinki University of Technology, FIN-02015 HUT, Finland	<b>5B-2 Experimental Investigation of Phased Array Using Tapered Matching Layers.</b> S. Sato <sup>*</sup> , H. Katsura, and K. Kobayashi, Research Laboratory, Aloka Co., Ltd.

\*Author presenting paper.

2:30 p.m.	<b>1B-3 Classification of Atherosclerotic Plaque Composition by Spectral Analysis of Intravascular Ultrasound Data.</b> A. Nair <sup>1,2</sup> , B. Kuban <sup>1</sup> , N. Obuchowski <sup>1</sup> , and D. Vince <sup>1</sup> , <sup>1</sup> The Cleveland Clinic Foundation, Cleveland, Ohio, USA, <sup>2</sup> Case Western Reserve University, Cleveland, Ohio, USA	<b>2B-2 (Invited) Recent Development of Ultrasonic Actuators.</b> S. Ueha*, Tokyo Institute of Technology	<b>3B-3 Temperature Characteristics of Acoustic Waves Propagating in Thin Piezoelectric Plates.</b> I.E. Kuznetsova <sup>1</sup> , B.D. Zaitsev <sup>1</sup> , and S.G. Joshi <sup>2</sup> , <sup>1</sup> Saratov Department of Institute of Radio Engineering and Electronics of RAS, Saratov, Russia, <sup>2</sup> Marquette University, Milwaukee, WI/USA	<b>4B-3 SAW Filters Including One-Focus Slanted Finger Interdigital Transducers.</b> G. Martin* <sup>1</sup> and B. Steiner <sup>2</sup> , <sup>1</sup> Institute for Solid State and Materials Research, Dresden, Germany, <sup>2</sup> Vectron International-Telefilter, Teltow, Germany	<b>5B-3 Resonance Frequency Tuning of Two-Dimensional PZT array Using Laser Trimming.</b> J. Ochoco*, O. J. Sigurdsson, and A. Lal, SonicMEMS Laboratory, University of Wisconsin-Madison
2:45 p.m.	<b>1B-4 Forward-looking Ring-annular Array for Intravascular Ultrasound Imaging.</b> Y. Wang*, D. N. Stephens <sup>2</sup> , and M. O'Donnell <sup>1</sup> , <sup>1</sup> University of Michigan, Ann Arbor MI, <sup>2</sup> Jomed Inc., Rancho Cordova, CA		<b>3B-4 Ultrasonic Spectroscopy Characterization of Silicate Glasses in the VHF Range.</b> J. Kushibiki, M. Arakawa*, and R. Okabe, Tohoku University, Sendai, Japan	<b>4B-4 Combined Polarity/Capacity Weighting of IDTs with Constant Length of Electrodes for Broadband SAW Filters.</b> E.V. Bausk*, Institute of Semiconductor Physics of Russian Academy of Sciences, Novosibirsk, Russia	<b>5B-4 Real-time Curvilinear and Improved Rectilinear Volumetric Imaging.</b> J. T. Yen* and S. W. Smith, Duke University
3:00 p.m.	<b>1B-5 Optimal Waveform Design for the Measurement of Diameter and Wall Thickness of Blood Vessels.</b> Y. Ai* and J. S. Jaffe, Marine Physical Lab, Scripps Institution of Oceanography, University of California, San Diego	<b>2B-3 (Invited) Chemical Consequences of Cavitation.</b> S. Suslick*, University of Illinois at Urbana-Champaign	<b>3B-5 Acoustic HBAR Spectroscopy of Metal (W, Ti, Mo, Al) Thin Films.</b> G. D. Mansfeld*, S. G. Alekseev, and I. M. Kotelyansky, Institute of Radioengineering and Electronics RAS, Moscow, Russia	<b>4B-5 Study of Novel Love Wave Surface Acoustic Wave Filters.</b> K. Kalantar-zadeh <sup>1,2</sup> , W. Wlodarski <sup>1,2</sup> , A. Trinci <sup>1,2</sup> , and K. Galtsis <sup>1,2</sup> , <sup>1</sup> RMIT University, School of Electrical and Computer System Eng., <sup>2</sup> CRC for Microtechnology, Australia	<b>5B-5 High Bandwidth, High Density Arrays for Advanced Ultrasound Imaging.</b> N. Felix*, L. Ratsimandresy, and R. Dufait, VERMON
3:15 p.m.	<b>1B-6 In Vitro Characterization of Carotid Plaque using a Clinical Ultrasound Imaging System.</b> K. R. Waters <sup>1</sup> , C. Cohen-Bacrie <sup>2</sup> , C. Levrier <sup>2</sup> , P. Fornes <sup>3</sup> , J. Pergrale <sup>2</sup> , P. Laugier <sup>1</sup> , and S. L. Bridal <sup>1</sup> , <sup>1</sup> Universite Paris VI, Paris, France, <sup>2</sup> Laboratoires d'Electronique Philips, Limell-Brevannes, France, and <sup>3</sup> Hopital European Georges Pompidou, Paris, France		<b>3B-6 Maxwell-Wagner Piezoelectric Relaxation in Ferroelectric Heterostructures.</b> D. Damjanovic*, M. Demartin-Maeder, P. Duran Martin, C. Voisard, and N. Setter, Swiss Federal Institute of Technology - EPFL, Lausanne, Switzerland	<b>4B-6 Optimal Design of Wideband Slant-Finger SAW Filter by an Equivalent Circuit Model.</b> H. L. Li* and S. T. He, Institute of Acoustics, The Chinese Academy of Sciences	<b>5B-6 An Invasive Ultrasound Probe Using Non-coax Cabling.</b> C. Oakley* <sup>1</sup> , J. Mueller <sup>2</sup> , D. Dietz <sup>1</sup> , and M. LaBree <sup>1</sup> , <sup>1</sup> Tetrad Corporation, <sup>2</sup> W. L. Gore & Associates GmbH
3:30 p.m.			<b>3B-7 Glass Capillary/PZT Transverse Wave Actuator for Microfluidic Radiation Force Assay.</b> C. H. Lee* and A. Lal, SonicMEMS Laboratory, University of Wisconsin-Madison		



4:00 p.m. – 5:30 p.m.

Monday, October 8, 2001

Omni Hotel, Atlanta, GA

	<i>Session 1C</i> <b>VASCULAR ELASTICITY</b> Chair: S. Foster University of Toronto	<i>Session 2C</i> <b>BONE</b> Chair: G. Berger CNRS	<i>Session 3C</i> <b>BULK WAVE ANALYSIS AND DESIGN</b> Chair: K. Lakin TFR Technologies, Inc.	<i>Session 4C</i> <b>LIQUID SENSORS</b> Chair: M. J. Vellekoop Delft University of Technology	<i>Session 5C</i> <b>ARRAY TRANSDUCERS II</b> Chair: R. Lerch University of Erlangen
	Rutherford	Mimosa	Glenmar	Knollwood	Liberty
4:00 p.m.	<b>1C-1 3 Dimensional Intravascular Palpography: Feasibility in Phantoms and in vivo.</b> C.L. de Korte <sup>1</sup> , F. Mastik <sup>1</sup> , J.A. Schaar <sup>1</sup> , M.M. Doyley <sup>1</sup> , and A.F.W. van der Steen <sup>1,2</sup> , <sup>1</sup> Exp. Echo, Thoraxcenter, Erasmus University Rotterdam, <sup>2</sup> Interuniversity Cardiology Institute of the Netherlands	<b>2C-1 Prediction of Ultrasound Attenuation in Cancellous Bones using Poroelasticity and Scattering Theories.</b> F. Padilla and P. Laugier*, LIP CNRS Univ Paris 6/Paris/France	<b>3C-1 (Invited) Analysis of Periodic Structures for BAW and SAW Resonators.</b> Y.-K. Yong*, Rutgers University, Piscataway, NJ, USA	<b>4C-1 Rayleigh Waves on Love-wave Substrates for Touch-Sensitive Panels.</b> J. Kent <sup>1</sup> , M. Takeuchi <sup>2</sup> , K. Oishi <sup>2</sup> , and R. Adler <sup>3</sup> , <sup>1</sup> Elo TouchSystems, Inc., <sup>2</sup> Tamagawa University, <sup>3</sup> Consultant	<b>5C-1 Finite Element Modeling of Arrays of Single Crystal Longitudinal Vibrator Transducers.</b> H.C. Robinson <sup>1</sup> , J.M. Powers <sup>1</sup> , F. Nussbaum <sup>1</sup> , S. Hassan <sup>1</sup> , and M.B. Moffett <sup>2</sup> , <sup>1</sup> NAVSEA Undersea Warfare Center Division Newport, 1176 Howell Street, Newport RI, <sup>2</sup> Georgia Tech Research Institute, Atlanta, GA
4:15 p.m.	<b>1C-2 Vascular Compliance Using Elasticity Imaging.</b> J.J. Mai <sup>1</sup> , C. Pellot-Barakat <sup>1</sup> , W.J. Hornof <sup>2</sup> , Ch. Kargel <sup>1</sup> , and M.F. Insana <sup>1</sup> , <sup>1</sup> Department of Biomedical Engineering, University of California Davis, <sup>2</sup> Surgical & Radiological Sciences, University of California Davis	<b>2C-2 Characterization of Bony Tissues from Ultrasonic Backscattering Using Statistical Models.</b> S.-H. Wang <sup>1</sup> , F.-C. Tsai <sup>1</sup> , and Y.-L. Hung <sup>2</sup> , <sup>1</sup> Chung Yuan Christian University, Chung Li, TaoYuan, Taiwan, ROC, <sup>2</sup> Min-Sheng Hospital, Ta Yuan, TaoYuan, Taiwan, ROC		<b>4C-2 Simple Analytical Method to Estimate the Influence of Liquids Viscosity on Love Wave Chemical Sensors.</b> O. Tamarin*, C. Dejous, D. Rebiere, and J. Pistre, Laboratoire IXL - CNRS UMR 5818 - ENSEIRB, Talence, France	<b>5C-2 Finite Element Modeling of Single Crystal Relaxor Ferroelectrics for Medical Imaging Arrays.</b> M. Zipparo*, C. Oakley, and M. Shepard, Tetrad Corporation, Englewood, CO

\*Author presenting paper.

4:30 p.m.	<b>1C-3 RF Signal Local Compression Estimation for Imaging Strains within a Vessel Mimicking Cryogel Phantom and a Carotid Artery.</b> E. Brusseau*, P. Delachartre, and D. Vray, CREATIS UMR CNRS 5515, affiliated to INSERM, Lyon, France	<b>2C-3 New Deal and Prospects in Long Bones Ultrasonic Imaging.</b> P. Lasaygues* <sup>1</sup> , E. Ouedraogo <sup>2</sup> , J.P. Lefebvre <sup>1</sup> , M. Talmant <sup>2</sup> , M. Gindre <sup>2</sup> , and P. Laugier <sup>2</sup> , <sup>1</sup> Laboratoire de Mécanique et d'Acoustique - CNRS UPR 7051 - Marseille, <sup>2</sup> Laboratoire d'Imagerie Paramétrique - Université Paris VI - CNRS UMR 7623 - Paris	<b>3C-2 Three-Dimensional Finite Elements and their Relationships to Mindlin Higher Order Plate Theory in Quartz Crystal Plate Resonators.</b> Y.-K. Yong* <sup>1</sup> , M. Tanaka <sup>2</sup> , and T. Imai <sup>2</sup> , <sup>1</sup> Rutgers University, Piscataway, NJ, USA, <sup>2</sup> Seiko Epson Corporation, Suwa-City, Nagano, Japan	<b>4C-3 Mode Interference Study of Bulk Acoustic Wave Liquid Sensors.</b> C. Zhang and J. F. Vetelino*, Laboratory for Surface Science and Technology, University of Maine, Orono, ME	<b>5C-3 An Applied PZNT Single Crystal Transducer to the Harmonic Imaging.</b> T. Takeuchi* <sup>1</sup> , Y. Mine <sup>1</sup> , Y. Muranaka <sup>1</sup> , K. Harada <sup>2</sup> , Y. Hosono <sup>2</sup> , and Y. Yamashita <sup>2</sup> , <sup>1</sup> Medical Systems R&D Center, Toshiba Corporation, Medical Systems Company, <sup>2</sup> Materials and Devices Research Laboratories, R&D Center, Toshiba Corporation
4:45 p.m.	<b>1C-4 A Modified Synthetic Aperture Focusing Technique for the Correction of Geometric Artefacts in Intravascular Ultrasound Elastography.</b> C. Perrey*, W. Wilkening, B. Brendel, and H. Ermert, Ruhr University Bochum, Germany	<b>2C-4 Ultrasound Characterization of Cancellous Bone: Theoretical and Experimental analysis.</b> L. Cardoso*, F. Teboul, A. Meunier, and C. Oddou, CNRS UPRES-A 7052 Universités Paris 7 et 12	<b>3C-3 Fast-MoM: Rigorous 3D Modeling of BAW-Devices.</b> A. Baghai-Wadji* <sup>1</sup> and D. Penunuri <sup>2</sup> , <sup>1</sup> Vienna University of Technology, <sup>2</sup> Motorola, Inc	<b>4C-4 A Novel Love Mode SAW Sensor with ZnO Layer Operating in Gas and Liquid Media.</b> K. Kalantar-zadeh* <sup>1,2</sup> , W. Wlodarski <sup>1,2</sup> , Y. Y. Chen <sup>3,2</sup> , B. Fry <sup>3,2</sup> , and A. Trinchi <sup>1,2</sup> , <sup>1</sup> RMIT University, School of Electrical and Computer Eng., <sup>2</sup> CRC for Microtechnology, Australia, <sup>3</sup> RMIT University, Biotechnology and Environmental Biology	<b>5C-4 Determination of Piezoelectric Material Parameters Using a Combined Measurement and Simulation Technique.</b> M. Kaltenbacher* <sup>1</sup> , R. Simkovic <sup>1</sup> , B. Kaltenbacher <sup>2</sup> , and R. Lerch <sup>1</sup> , <sup>1</sup> Department of Sensor Technology, University of Erlangen, Germany, <sup>2</sup> Industrial Mathematics Institute, University of Linz, Austria
5:00 p.m.	<b>1C-5 Assessment of Regional Myocardial Strain using Cardiac Elastography: Distinguishing Infarcted from Non-Infarcted Myocardium.</b> E. Konofagou* <sup>1</sup> , T. Harrigan <sup>2</sup> , and S. Solomon <sup>2</sup> , <sup>1</sup> Dept. of Radiology, Brigham and Women's Hospital, Harvard Medical School, <sup>2</sup> Exponent, Failure Analysis Associates, Inc., <sup>3</sup> Cardiovascular Diseases, Brigham and Women's Hospital, Harvard Medical School	<b>2C-5 A Model to Predict Dispersion in Cancellous Bone.</b> K. A. Wear*, U.S. Food and Drug Administration	<b>3C-4 Thickness Vibrations of a Rotating AT-Cut Quartz Plate.</b> J. A. Kosinski* <sup>1</sup> , R. A. Pastore <sup>1</sup> , H. Fang <sup>2</sup> , and J. Yang <sup>3</sup> , <sup>1</sup> US Army CECOM, <sup>2</sup> CTS Wireless Components, <sup>3</sup> University of Nebraska, Lincoln	<b>4C-5 Vapor Phase SAW Immunoassay Sensors.</b> D.D. Stubbs <sup>1</sup> , W.D. Hunt* <sup>2</sup> , S.H. Lee <sup>2</sup> , and D.F. Doyle <sup>1</sup> , <sup>1</sup> School of Chemistry and Biochemistry, Georgia Tech, <sup>2</sup> School of Electrical and Computer Eng, Georgia Tech	<b>5C-5 Modeling of Piezoceramic Composite Transducer Structures Generating Strong Sound Pulses in Therapy.</b> T. Dreyer* and R. Riedlinger, Universität Karlsruhe, Karlsruhe, Germany
5:15 p.m.	<b>1C-6 Ultrasound-Based Strain Rate Estimation of Moving, Fully-Developed Speckle.</b> J. Jackson* and L. Thomas, Acuson, a Siemens Company	<b>2C-6 55 MHz Ultrasound Evaluation of the Effects of Anti-Inflammatory Drugs on Arthritic Cartilage.</b> B. Jaffre* <sup>1</sup> , A. Watrin <sup>2</sup> , D. Loeuille <sup>2</sup> , P. Gillet <sup>2</sup> , P. Netter <sup>2</sup> , P. Laugier <sup>1</sup> , and A. Saied <sup>1</sup> , <sup>1</sup> Laboratoire d'Imagerie Paramétrique CNRS-Paris VI UMR 7623 Paris France, <sup>2</sup> Laboratoire de Pharmacologie CNRS-UHP UMR 7561 Nancy France	<b>3C-5 Flexural Plate Wave Excitation Using Bulk Modes.</b> H. Guo* and A. Lal, SonicMEMS Laboratory, University of Wisconsin-Madison	<b>4C-6 Degassing a Liquid Stream using an Ultrasonic Whistle.</b> A. Clark* <sup>1</sup> , R. Dewhurst <sup>1</sup> , C. Ellwood <sup>2</sup> , and P. A. Payne <sup>1</sup> , <sup>1</sup> UMIST, <sup>2</sup> Capenhurst.tech	<b>5C-6 Analysis and Reduction of the Cross Talk in Ultrasonic Transducers.</b> K. J. Kang <sup>1</sup> , Y. S. Kim <sup>1</sup> , S. S. Lee <sup>1</sup> , Y. R. Roh* <sup>1</sup> , and B. T. Khuri-Yakub <sup>2</sup> , <sup>1</sup> Kyungpook National University, Taegu, Korea, <sup>2</sup> Stanford University, Stanford, CA, USA

8:00 a.m. – 9:30 a.m.

Tuesday, October 9, 2001

Omni Hotel, Atlanta, GA

	<i>Session 1D</i> <b>CONTRAST AGENT - CHARACTERIZATION</b> Chair: K. Ferrara University of California, Davis	<i>Session 2D</i> <b>PHASE ABERRATION</b> Chair: D. Liu Siemens Ultrasound	<i>Session 3D</i> <b>OPTICAL INTERACTIONS</b> Chair: D. Hecht Palo Alto Research Center/XEROX	<i>Session 4D</i> <b>NDE AND MATERIALS CHARACTERIZATION</b> Chair: G. Alers NIST	<i>Session 5D</i> <b>HIGH FREQUENCY TRANSDUCERS</b> Chair: K. Shung Pennsylvania State University
	<b>Rutherford</b>	<b>Mimosa</b>	<b>Glenmar</b>	<b>Knollwood</b>	<b>Liberty</b>
8:00 a.m.	<b>1D-1 Ultrasound-Based Pressure Measurement Using Bubble Decay.</b> G. Tickner <sup>1</sup> , J. Jackson <sup>2</sup> , and R. Short <sup>3</sup> , <sup>1</sup> Microsome, San Carlos, CA, <sup>2</sup> Acuson, a Siemens Company; Mountain View, CA, <sup>3</sup> Point Biomedical, San Carlos, CA	<b>2D-1 Statistically Significant Differences in the Spatial Coherence of Backscatter for Fundamental and Harmonic Portions of a Clinical Beam.</b> R. J. Fedewa <sup>1</sup> , K. D. Wallace <sup>1</sup> , M. R. Holland <sup>1</sup> , J. R. Jago <sup>2</sup> , G. C. Ng <sup>2</sup> , M. R. Rielly <sup>2</sup> , B. S. Robinson <sup>2</sup> , and J. G. Miller <sup>1</sup> , <sup>1</sup> Washington University, St. Louis, MO, <sup>2</sup> ATL Ultrasound, Bothell, WA	<b>3D-1 Acousto-Optical Monochromator for the Planetary Imaging and the Red Shift.</b> V.Ya. Molchanov <sup>*</sup> , Acousto-optical Research Center, Moscow Steel and Alloys Institute	<b>4D-1 Accurate Localization of Rectangular Cracks Using Gaussian Acoustic Beams.</b> J. Vandeputte <sup>1</sup> , G. Shkerdin <sup>2</sup> , and O. Leroy <sup>3</sup> , <sup>1</sup> KULAK, Kortrijk, Belgium, <sup>2</sup> Russian Academy of Sciences, Moscow, Russia, <sup>3</sup> KULAK, Kortrijk, Belgium	<b>5D-1 (Invited) Development of High Frequency Medical Ultrasound Arrays.</b> T.A. Ritter <sup>1</sup> , T.R. Shrout <sup>2</sup> , and K.K. Shung <sup>1</sup> , <sup>1</sup> Department of Bioengineering, Penn State University, <sup>2</sup> Materials Research Laboratory, Penn State University
8:15 a.m.	<b>1D-2 Fractal Modelling of Microbubble Destruction-Reperfusion in Unresolved Vessels.</b> R. Kharchakdjian <sup>*</sup> and P. N. Burns, Sunnybrook Health Science Centre, Toronto, Canada	<b>2D-2 Comparison of Time Delay Estimators in Medical Ultrasound.</b> F. Viola <sup>*</sup> and W. F. Walker, University of Virginia, Charlottesville, VA	<b>3D-2 Compact Thermostable Acoustooptic Tunable Filter with Super Narrow Optical Linewidth and Low Sidelobe Level.</b> A. Tsarev <sup>*</sup> , Institute of Semiconductor Physics, Novosibirsk, Russia	<b>4D-2 Ultrasonic Energy Flux Deviation and Off-Diagonal Elastic Constants.</b> V. Bucur <sup>1</sup> and H. Berndt <sup>2</sup> , <sup>1</sup> Centre National de Recherches Forestiere de Nancy, <sup>2</sup> scEye Research and Development	

\*Author presenting paper.

8:30 a.m.	<b>1D-3 Comparison of Ultrasound Scattering Properties of Optison® with a Liquid Perfluorocarbon Nanoparticle Contrast Agent.</b> M. S. Hughes*, J. N. Marsh, F. C. Ngo, R. W. Fuhrhop, L. K. Chinen, G. M. Lanza, and S. A. Wickline, Washington University School of Medicine, Cardiovascular Division	<b>2D-3 Aberration Measurement and Correction with a High Resolution 1.75D Array.</b> A. T. Fernandez*, J. J. Dahl, and G. E. Trahey, Duke University	<b>3D-3 (Invited) Control of Optical Radiation by Means of Collinear and Non-Collinear Acousto-Optic Devices.</b> V.B. Voloshinov*, Department of Physics, Moscow State University	<b>4D-3 Air-coupled Ultrasonic Evaluation of High Acoustic Impedance Materials.</b> E. Blomme*, D. Bulcaen, and F. Declercq, KATHO, Kortrijk, Belgium	<b>5D-2 Design of a 40 MHz Annular Array.</b> C. E. Morton* and G. R. Lockwood, Queen's University, Kingston, Canada
8:45 a.m.	<b>1D-4 Real-time Optical Imaging of Individual Microbubbles in an Ultrasonic Field.</b> M. Postema*, A. Bouakaz, C. T. Chin, and N. de Jong, Dept. of Experimental Echocardiography, Thoraxcenter, Erasmus University Rotterdam, The Netherlands	<b>2D-4 Evaluation of Backpropagation Methods for Transmit Focus Compensation.</b> J.C. Lacefield* and R.C. Waag, University of Rochester, Rochester, NY		<b>4D-4 Ultrasonic Transducer Design and Communications for Intelligent Monitoring of Structures.</b> G. Benny* <sup>1</sup> , G. Hayward <sup>1</sup> , R. Farlow <sup>1</sup> , B. Hailu <sup>1</sup> , D. Girma <sup>2</sup> , and J. Hendry <sup>3</sup> , <sup>1</sup> The Centre for Ultrasonic Engineering, <sup>2</sup> Communications Division, <sup>3</sup> CASM, University of Strathclyde, Glasgow, Scotland	<b>5D-3 20 MHz Ultrasound Array for Medical Imaging: From Design to Image Evaluation.</b> E. Lacaze*, P. Mauchamp, and S. Michau, VERMON
9:00 a.m.	<b>1D-5 A Light-Scattering Technique for Investigating Ultrasound Contrast Agents.</b> W. Chen and T. Matula*, University of Washington, Seattle, WA USA	<b>2D-5 Pulse Echo Imaging through a Human Skull: in vitro Experiments.</b> J. F. Aubry*, M. Tanter, J. L. Thomas, and M. Fink, Laboratoire Ondes et Acoustique	<b>3D-4 Characterization of Z-cut LiTaO<sub>3</sub> with Domain-Inverted Layers Formed by Proton Exchange and Heat Treatment Using the Line-Focus-Beam Ultrasonic Material Characterization System.</b> M. Miyashita* and J. Kushibiki, Tohoku University, Sendai, Japan	<b>4D-5 Determination of Material Properties of Thin Layers Using Angle Beam Ultrasonic Spectroscopy.</b> L. Adler* <sup>1,2</sup> , S. Rokhlin <sup>2</sup> , and A. Baltazar <sup>1</sup> , <sup>1</sup> Adler Consultants Inc. Columbus, Ohio, <sup>2</sup> Ohio State University Columbus, Ohio	<b>5D-4 A High Frequency Ultrasound Array Element Using Thermoelastic Expansion in PDMS.</b> T. Buma*, M. Spisar, and M. O'Donnell, University of Michigan, Ann Arbor MI
9:15 a.m.		<b>2D-6 Investigation of Ultrasound Phase Shifts Caused by the Skull Bone using Low-Frequency Reflection Data.</b> J. Aarnio <sup>2</sup> , G.T. Clement* <sup>1</sup> , and K. Hynynen <sup>1</sup> , <sup>1</sup> Department of Radiology, Harvard Medical School, Brigham & Women's Hospital, <sup>2</sup> Department of Applied Physics, University of Kuopio, Kuopio, Finland	<b>3D-5 Photoacoustic Study of Nonradiative Relaxation Processes in YAG:Cr<sup>3+</sup> Crystals.</b> A. Sliwinski <sup>1</sup> , M. Grinberg <sup>1</sup> , and A. Sikorska <sup>1</sup> , <sup>1</sup> Institute of Experimental Physics, University of Gdansk	<b>4D-6 Application of Theoretical Models of Nonlinear Boundaries to the Investigation of Adhesive Bonding Conditions.</b> B. E. O'Neill, F. Severin, and R. Gr. Maev, Centre for Imaging Research and Advanced Materials Characterization, University of Windsor, Canada	<b>5D-5 New Optoacoustic Miniaturized Devices for High Frequency Ultrasonic Generation and Detection for Virtual Biopsy Application.</b> L. Masotti, E. Biagi*, A. Acquafresca, and D Menichelli, Engineering Faculty of Firenze

9:30 a.m. – 11:00 a.m.

Tuesday, October 9, 2001, POSTER SESSIONS

Barrington (P1E–P1I), East Foyer (P2F–P2K), Jarrett (Student Competition)

<p><b>Session P1E</b> <b>BONE</b> Chair: K. Wear FDA CDRH</p>	<p><b>P1E-8 Axial Transmission of 1 MHz Ultrasonic Waves on Thin Cortical Bone Plates: A Simulation Study.</b> E. Bossy*, M. Talmant, and P. Laugier, Laboratoire d'Imagerie Parametrique, CNRS UMR 7623-Universite Paris VI</p>	<p><b>Session P1G</b> <b>ELASTOGRAPHY</b> Chair: M. Fink University Denis Diderot, Paris</p>	<p><b>P1H-4 Determination of the Influence of the Annealing Temperature on Velocity of Laser Ultrasound for Nanophase Ceramic Films.</b> X. R. Zhang*, G. H. Li, and L. D. Zhang, Institute of Acoustics, Nanjing University, Institute of Solid State Physics, Chinese Academy of Sciences</p>	<p><b>P1I-6 Air-coupled Ultrasonic Scanner for Braille.</b> T.E. Gomez* and F. Montero, Instituto de Acustica</p>
<p><b>P1E-1 Segmentation of QUS Images of the Calcaneus Using Elastic Deformation of Flexible Fourier Contour.</b> P. Laugier<sup>1</sup>, F. Lefebvre<sup>1</sup>, C. Roux<sup>2</sup>, and G. Berger<sup>1</sup>, <sup>1</sup>LIP Universite Paris 6-CNRS UMR 7623, <sup>2</sup>CEMO, Universite Paris 5 - Hopital Cochin</p>	<p><b>P1E-9 Unexpected Anisotropic Behavior of Ultrasound Attenuation after Collagen Crosslinking in Porcine Tendons.</b> S. Takiuchi*, J.N. Marsh, C.S. Hall, and S.A. Wickline, Washington University School of Medicine, St. Louis, MO, USA</p>	<p><b>P1G-1 Uncertainty Relation in Elastography: New Approach to Explain for Errors of <i>in vivo</i> Elastography.</b> K. M. Hiltawsky* and H. Ermert, Department of Electrical Engineering, Bochum, Germany</p>	<p><b>P1H-5 Characterization of Formation Damage using Ultrasonic Techniques.</b> M. A. Khan*, H. Menouar, A. A. Al-Majed, and A. H. Mohammed, King Fahd University of Petroleum &amp; Minerals</p>	<p><b>P1I-7 Modelling of Lamb Wave Generation for Application in Health Monitoring of Composite Plates.</b> G. Sebastien<sup>1</sup>, P. Christophe<sup>2</sup>, D. Christophe<sup>1</sup>, A. Jamal<sup>1</sup>, and L. Klas<sup>2</sup>, <sup>1</sup>IEMN, UMR CNRS 8520, <sup>2</sup>Aeronautics Division, FFA</p>
<p><b>P1E-2 Monte Carlo Simulation of Ultrasound Backscattering by Aggregating Red Blood Cells.</b> D. Savery* and G. Cloutier, Institut de Recherches Cliniques de Montreal, Montreal, QC, Canada.</p>	<p><b>Session P1F</b> <b>CONTRAST</b> Chair: O. Basset INSA, Lyon</p>	<p><b>P1G-2 Application of Vibroacoustography in Bone Elasticity Imaging.</b> S. Calle<sup>1</sup>, J.P. Remenieras<sup>1</sup>, O. Bou Matar<sup>1</sup>, M. Defontaine<sup>1,2</sup>, M.A. Gomez<sup>1,3</sup>, and F. Patat<sup>1,2</sup>, <sup>1</sup>LUSSI/GIP ULTRASONS - EA 2102 (Tours, France), <sup>2</sup>University Hospital - Bretonneau (Tours, France), <sup>3</sup>Radiology Department - Trousseau Hospital (Tours, France)</p>	<p><b>Session P1I</b> <b>GENERAL NDE METHODS</b> Chair: M. Pappalardo University of Roma TRE</p>	<p><b>P1I-8 QNDT of Surface-subsurface Complicated Defect using Photoacoustic Microscope.</b> H. Endoh*, Y. Hiwatashi, K. Miyamoto, and T. Hoshimiya, Tohoku Gakuin University</p>
<p><b>P1E-3 Characterization of Vibration Propagation from Intima to Adventitia of Arterial Wall.</b> K. Sunagawa<sup>1</sup>, H. Kanai<sup>1</sup>, Y. Koiwa<sup>2</sup>, and M. Tanaka<sup>3</sup>, <sup>1</sup>Dept. of Electrical Engineering, Tohoku University, Sendai, Japan, <sup>2</sup>Dept. of Internal Medicine, Tohoku University, Sendai, Japan, <sup>3</sup>Miyagi-Branch of Japan Anti-Tuberculosis Association, Sendai, Japan</p>	<p><b>P1F-1 Experimental Validation of a Theoretical Framework to Predict Radiation Force Displacement of Contrast Agents.</b> P. Dayton*, J. Allen, D. Kruse, and K. Ferrara, University of California, Davis</p>	<p><b>P1G-3 Quantitative Assessment of the Phase Tracking Method for Measurement of the Elastic Characteristics of Arterial Wall.</b> T. Suginochi<sup>1</sup>, M. Kato<sup>1</sup>, M. Hashimoto<sup>1</sup>, Y. Tanaka<sup>2</sup>, and H. Kanai<sup>3</sup>, <sup>1</sup>Matsushita Electric Industrial Co., Ltd., <sup>2</sup>Matsushita Communication Industrial Co., Ltd., <sup>3</sup>Graduate School of Engineering, Tohoku University</p>	<p><b>P1I-1 Experimental and Numerical Study of the Insert-Substitution Method: Application to the Measurement of the Nonlinear Parameter B/A of Solids.</b> O. Bou Matar*, M. Vila, F. Vander Meulen, C. Rossignol, and M. Lethiecq, GIP ULTRASONS/LUSSI-EIVL</p>	

\*Author presenting paper.

<p><b>P1E-4 Young's Modulus Measurements of Human Liver and Correlation with Pathological Findings.</b> W.-C. Yeh*, Y.-M. Jeng, H.-C. Hsu, P.-L. Kuo, M.-L. Li, P.-M. Yang, P. H. Lee, and P.-C. Li, National Taiwan University Hospital</p>	<p><b>P1F-2 Microbubble Destruction: a Doppler Point of View.</b> P. Tortoli*, F. Guidi, and M. Corsi, University of Florence-Dept. Electronics &amp; Telecomm.</p>	<p style="text-align: center;"><i>Session P1H</i> <b>MATERIAL AND DEFECT CHARACTERIZATION</b> Chair: R. Addison Rockwell</p>	<p><b>P1I-2 A Theoretical and Experimental Study of Ultrasonic Attenuation in Inhomogeneous Media: Application to the Evaluation of Grain Size and Volume Fraction.</b> F. Vander Meulen*, G. Feuillard, O. Bou Matar, and M. Lethiecq, LUSSEI - EIVL</p>	<p style="text-align: center;"><i>Session P2F</i> <b>SAW MATERIALS AND PROPAGATION</b> Chair: B. Abbott Sawtek</p>
<p><b>P1E-5 Calculation of Radiation Force on Cylinders Based on Diffraction and Ray Approximation.</b> G. Silva*, M. Zeraati, and M. Fatemi, Mayo Foundation, Rochester, MN, USA</p>	<p><b>P1F-3 Effect of Monolayer Thickness and Gas Type on Stability of Lipid-Coated, Gas-Filled Microspheres.</b> M. Borden* and M. Longo, University of California, Davis</p>	<p><b>P1H-1 Thermal Sensitivity of SH Plate Modes in Quartz.</b> I. V. Anisimkin<sup>1</sup>, V. I. Anisimkin<sup>1</sup>, Yu. V. Gulyaev<sup>1</sup>, and E. Verona<sup>2</sup>, <sup>1</sup>RAS-Institute of Radioengineering and Electronics, <sup>2</sup>CNR-Istituto di Acustica</p>	<p><b>P1I-3 Simulation of Nonlinear Rayleigh Wave Propagation through Minute Surface Crack.</b> R. Omote*, K. Kawashima, and T. Ito, Nagoya Institute of Technology, Japan</p>	<p><b>P2F-1 Surface Acoustic Wave Propagation Properties of the Relaxor Ferroelectric PMN-PT Single Crystal.</b> K. H. Choi<sup>1</sup>, J. H. Oh<sup>1</sup>, J. Y. Kim<sup>1</sup>, H. J. Kim<sup>1</sup>, S. G. Lee<sup>2</sup>, and S. M. Rhim<sup>2</sup>, <sup>1</sup>Seoul National University, Seoul, Korea, <sup>2</sup>Ibule Photonics Co. Ltd., Siheung-si, Kyonggi-do, Korea</p>
<p><b>P1E-6 Ultrasound Skin Characterization: An In Vivo Study of Intra and Inter-individual Variations.</b> M. Lebertre<sup>1</sup>, F. Ossant<sup>1,2</sup>, J. Bouyer<sup>1</sup>, L. Vaillant<sup>1,2</sup>, S. Diridollou<sup>3</sup>, and F. Patat<sup>1,2</sup>, <sup>1</sup>LUSSEI/GIP Ultrasons, EA 2102, Faculte de Medecine, Tours, France, <sup>2</sup>University Hospital, Tours, France, <sup>3</sup>Institut de Recherche Pierre Fabre, CJLA, Toulouse, France</p>	<p><b>P1F-4 Behavior of Several-micron Microbubbles Exposed to Ultrasound and Its Mechanical Effects on a Cell.</b> N. Kudo<sup>1</sup>, T. Miyaoka<sup>1</sup>, J. Furuya<sup>1</sup>, M. Natori<sup>2</sup>, F. Moriyasu<sup>3</sup>, and K. Yamamoto<sup>1</sup>, <sup>1</sup>Hokkaido University, <sup>2</sup>National Okura Hospital, <sup>3</sup>Tokyo Medical University</p>	<p><b>P1H-2 Temperature Distribution in HgCdTe Solid Solutions at Ultrasonic Loading.</b> R.K. Savkina* and A.B. Smirnov, Institute of Semiconductor Physics NASU, Kiev, Ukraine</p>	<p><b>P1I-4 Surface Roughness of Semiconductor Materials and Effect on Surface Acoustic Wave Propagation.</b> C.M. Flannery* and H. von Kiedrowski, Paul-Drude-Institut for Solid State Electronics, Berlin, Germany</p>	<p><b>P2F-2 Analysis of SAW Grating Waveguides using 2-D Coupling-of-Modes equations.</b> K. Hirota<sup>1</sup> and K. Nakamura<sup>2</sup>, <sup>1</sup>TOYO Communication Equipment Co., Ltd., Kanagawa, Japan, <sup>2</sup>Graduate School of Engineering, Tohoku University, Sendai, Japan</p>
<p><b>P1E-7 The Magnitude of Transmural Heterogeneity as a Dominant Factor for LVEDP Elevation in HCM Patients.</b> Y. Koiwa<sup>1</sup>, H. Kamada<sup>1</sup>, J. Ikeda<sup>1</sup>, K. Shirato<sup>1</sup>, H. Honda<sup>2</sup>, H. Kanai<sup>3</sup>, H. Hasegawa<sup>3</sup>, and Y. Saitoh<sup>1</sup>, <sup>1</sup>Graduate School of Medicine, Tohoku University, <sup>2</sup>Department of Rehabilitation, Tohoku Bunka Gakuen University, <sup>3</sup>Graduate School of Engineering, Tohoku University</p>	<p><b>P1F-5 Experimental Investigation of Contrast Microbubble Destruction.</b> W. T. Shi<sup>1</sup>, F. Forsberg<sup>1</sup>, A. Tornes<sup>2</sup>, J. Ostensen<sup>2</sup>, and B. B. Goldberg<sup>1</sup>, <sup>1</sup>Department of Radiology, Thomas Jefferson University, Philadelphia, USA, <sup>2</sup>Department of Exploratory Research, Nycomed Imaging AS, Oslo, Norway</p>	<p><b>P1H-3 Ultrasound Influence on Structural Defects of the Initial and Radiation Origin of GaP Light Diodes.</b> V. Khivrich<sup>1</sup>, O. Gontaruk<sup>2</sup>, J. A. Oliikh<sup>1,2</sup>, M. Pinkovska<sup>1</sup>, and V. Tartachnyk<sup>1</sup>, <sup>1</sup>Scientific Center Institute for Nuclear Research, NASU, Kyiv, Ukraine, <sup>2</sup>Inst. of Semiconductor Physics of NASU, Kyiv, Ukraine</p>	<p><b>P1I-5 Study of Time Reversal in Anisotropy.</b> B. Zhang* and C. Wang, Institute of Acoustics, The Chinese Academy of Sciences</p>	<p><b>P2F-3 Leaky Surface Acoustic Waves on Langasite with Thin Dielectric Films.</b> S. Kakio*, T. Yamaguchi, and Y. Nakagawa, Faculty of Engineering, Yamanashi University, Japan</p>

<p><b>P2F-4 Shear Elasticity Decrease in Thin Metallic Films and its Influence on SAW Devices Characteristics.</b> S. Souchkov*, Saratov State University</p>	<p><b>P2G-4 Dual Track Filters with Response Folding.</b> S.A. Zhgoon*, Moscow Power Engineering Institute</p>	<p><b>P2H-4 Effect of Geometry and Characteristics of Materials on the Performance of Ring-Type Traveling Wave Ultrasonic Motor using Finite Element Method.</b> G. Juping*, H. Minqiang, M. Yuping, S. Bin, and J. Long, Department of Electrical Engineering, Southeast University</p>	<p><b>P2I-4 Syntactic Foam for Air-Equivalent Solid Backing by Natural Origin Shirasu-Microballoon.</b> Y. Takeuchi*, Kagoshima University</p>	<p><b>P2J-4 Radiated Fields of Rectangular Air-Coupled Micromachined Transducers.</b> T.J. Robertson<sup>1</sup>, D.A. Hutchins<sup>1</sup>, J.S. McIntosh<sup>1</sup>, D.R. Billson<sup>1</sup>, R.A. Noble<sup>2</sup>, and A.R.D. Jones<sup>2</sup>, <sup>1</sup>University of Warwick UK, <sup>2</sup>DERA (Malvern) UK</p>
<p><b>P2F-5 A Numerical Investigation of HVPSAW in LiTaO<sub>3</sub> with Gold Uniform Film and Periodic Grating.</b> N. F. Naumenko*, Moscow Steel and Alloys Institute</p>	<p><b>P2G-5 Small-Sized Resonator IF Filter Using Shear Horizontal Wave on Quartz Substrate.</b> M. Kadota*, T. Yoneda, K. Fujimoto, T. Nakao, and E. Takada, Murata Mfg. Co., Ltd., Kyoto, Japan</p>	<p><b>P2H-5 Surface Acoustic Wave Motor using an Energy Circulation Driving Method.</b> K. Asai<sup>*1</sup> and M. K. Kurosawa<sup>2</sup>, <sup>1</sup>Matsushita Electric Industrial Co., Ltd., Kyoto, Japan, <sup>2</sup>Tokyo Institute of Technology, Yokohama, Japan</p>	<p><b>P2I-5 Highly Integrated Mechanism based Multiplan/3D Ultrasonic Imaging Probe.</b> A. NguyenDinh*, P. Mauchamp, N. Felix, A. Flesh, and R. Dufait, VERMON</p>	<p><b>P2J-5 An Extension of the Electromechanical Coupling Coefficient to cMUT.</b> N. Lamberti<sup>*1</sup>, A. Caronti<sup>2</sup>, G. Caliano<sup>2</sup>, A. Iula<sup>2</sup>, R. Carotenuto<sup>2</sup>, and M. Pappalardo<sup>2</sup>, <sup>1</sup>D.I.I.M.A. - University of Salerno - Italy, <sup>2</sup>Dip. di Ing. Elettronica - University Roma Tre - Italy</p>
<p><b>P2F-6 The Experimental SAW Propagation Characteristics of an Ion Assisted Deposited Boron Nitride Film on ST Quartz.</b> F. Hickernell*, Motorola Inc. (retired) and the University of Central Florida</p>	<p><b>P2G-6 A Novel IF SAW Filter Design for R-SPUDT Filter Incorporating DWSF-SPUDT Structure.</b> H. Nakamura<sup>*1</sup>, T. Yamada<sup>1</sup>, T. Ishizaki<sup>1</sup>, K. Matsunami<sup>2</sup>, and K. Nishimura<sup>2</sup>, <sup>1</sup>Matsushita Electric Industrial Co., Ltd., <sup>2</sup>Matsushita Electronic Components Co., Ltd.</p>	<p><b>P2H-6 Evaluation of Surface Acoustic Wave Motor Stepping Motion.</b> T. Shigematsu<sup>*1</sup>, M. Kurosawa<sup>1</sup>, and K. Asai<sup>2</sup>, <sup>1</sup>Tokyo Institute of Technology, <sup>2</sup>Matsushita Electric Industrial Co., Ltd.</p>	<p><b>P2I-6 A Novel Optical Hydrophone Based on Quadrature Detection of Interference Signal.</b> Y. Lu<sup>1,2</sup>, D.-Y. Jeong<sup>1</sup>, Z.-Y. Cheng<sup>1</sup>, and Q. Zhang<sup>*1,2</sup>, <sup>1</sup>Materials Research Laboratory, <sup>2</sup>Electrical Engineering Department, The Pennsylvania State University, University Park, PA, USA</p>	<p><i>Session P2K</i>  <b>MEDICAL TRANSDUCERS</b>          Chair: Y. Takeuchi          Kagoshima University</p>
<p><b>P2F-7 SAW Properties of the Single Crystals in YCOB System.</b> T. Nishida<sup>*1</sup>, H. Nakao<sup>2</sup>, M. Nishida<sup>2</sup>, H. Mizutani<sup>2</sup>, T. Amano<sup>1</sup>, and T. Shiosaki<sup>1</sup>, <sup>1</sup>Nara Inst. of Sci. and Tech (NAIST), <sup>2</sup>SAKAI Chemical Ind. Co. Ltd.</p>	<p><b>P2G-7 Wideband SAW Filters Using Cascaded Unidirectional Transducers.</b> T. Shiba<sup>*</sup>, Y. Fujita, S. Kondo, J. Hamasaki, M. Ide, S. Ogawa, and K. Oda, Hitachi Media Electronics Ltd.</p>		<p><i>Session P2J</i>  <b>MICROMACHINED TRANSDUCERS</b>          Chair: L. Smith          GE Corporate R&amp;D</p>	<p><b>P2K-1 Development of Ultrasound Transducer with Double Peak Type Frequency Characteristics for Harmonic Imaging Ultrasound Diagnostic Equipment.</b> S. Takeuchi*, T. Sato, and N. Kawashima, Toin University of Yokohama, Faculty of Engineering, Dept. of Biomedical engineering, BME Center</p>

\*Author presenting paper.

<p><i>Session P2G</i>  <b>SFT SAW FILTERS AND TRANSDUCERS II</b>            Chair: B. Potter            Vectron International</p>	<p><i>Session P2H</i>  <b>ULTRASONIC MOTORS</b>            Chair: S. Ueha            Tokyo Institute of Technology</p>	<p><i>Session P2I</i>  <b>MEDICAL TRANSDUCER TECHNOLOGY</b>            Chair: S. Smith            Duke University</p>	<p><b>P2J-1 (Invited) Capacitive Micromachined Ultrasonic Transducers with Integrated Optoelectronic Readout.</b> F.L. Degertekin*, N.A. Hall, and W. Lee, G.W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA</p>	<p><b>P2K-2 A 35 MHz Linear Array for Medical Imaging.</b> J. Cannata*, T. Ritter, and K. Shung, Penn State University Bioengineering</p>
<p><b>P2G-1 Extraction of COM Parameters on Langasite Substrates and the Application to the Design of a SAW Filter.</b> S. N. Kondratiev<sup>1</sup>, T. Thorvaldsson<sup>2</sup>, S.A. Sakharov<sup>3</sup>, O.A. Buzanov<sup>3</sup>, and A.V. Medvedev<sup>3</sup>, <sup>1</sup>Temex-SAW, Neuchatel, Switzerland, <sup>2</sup>Thoronics, Bevaix, Switzerland, <sup>3</sup>Fomos-Technology, Moscow,</p>	<p><b>P2H-1 Design and Experimental Characterization of a Novel Standing Wave Type Ultrasonic Bi-Directional Linear Motor.</b> K. J. Kang*, S. S. Lee, J. H. Kwon, and Y. R. Roh, Kyungpook National University, Taegu, Korea</p>	<p><b>P2I-1 Periodic Arrays of Transducers Built using Sand Blasting and Ultrasonic Micromachining Techniques for the Fabrication of Piezocomposite Materials.</b> S. Ballandras<sup>1</sup>, M. Wilm<sup>*1</sup>, M. Gijis<sup>2</sup>, A. Sayah<sup>2</sup>, V. Laude<sup>1</sup>, and E. Andrey<sup>3</sup>, <sup>1</sup>LPMO/CNRS, Besancon, France, <sup>2</sup>EPFL, Lausanne, Swiss, <sup>3</sup>LCEP, Besancon, France</p>		<p><b>P2K-3 Design of a High Frequency Annular Array for Medical Ultrasound.</b> . A. Snook*, T. A. Ritter, T. R. Shrout, and K. K. Shung, Pennsylvania State University</p>
<p><b>P2G-2 Integration of SAW RF Filters on GaAs Substrate.</b> T. Gryba<sup>*1</sup>, A. Haddou<sup>1</sup>, V. Sadaune<sup>1</sup>, V. Zhang<sup>1</sup>, J.E. Lefebvre<sup>1</sup>, E. Dogheche<sup>2</sup>, E. Cattan<sup>2</sup>, and D. Remiens<sup>2</sup>, <sup>1</sup>IEMN-DOAE, Universite de Valenciennes, <sup>2</sup>MIMM LAMAC, Maubeuge</p>	<p><b>P2H-2 Design of the Stator of the Ring-type Traveling Wave Ultrasonic Motor.</b> B. Shi<sup>*1</sup>, M. Hu<sup>1</sup>, J. Gu<sup>1</sup>, Y. Mo<sup>1</sup>, L. Jin<sup>1</sup>, and C. K.T.<sup>2</sup>, <sup>1</sup>Dept. Electrical Engineering, Southeast University, P. R. China, <sup>2</sup>Dept. Electrical and Electronic Engineering, Hongkong University, Hongkong</p>	<p><b>P2I-2 Functional Grading of a Piezoelectric 1-3 Composite for Ultrasound Transducers with Enhanced Axial and Lateral Resolution.</b> K. Yamada, A. Ohkubo*, and K. Nakamura, University of Tohoku</p>	<p><b>P2J-2 Scanning Laser Interferometric Evaluation of Individual Elements and an Entire Micro-Electro-Mechanical Ultrasonic Array Transducer.</b> J. Blackshire* and S. Sathish, University of Dayton, Dayton, Ohio</p>	<p><b>P2K-4 Generation of Very High Pressure Pulses at the Surface of Piezo-Composite Materials using Electrical Pre-Stress.</b> A. Birer, M. Ghohestani, J.P. Sferruzza, and D. Cathignol*, INSERM Unite 556, Lyon, France</p>
<p><b>P2G-3 Miniaturized IF CDMA SAW Filters Based on Three-Channel Structures.</b> V. B. Chvets, V. S. Orlov*, and E. I. Feodorov, Moscow Radiocommunication Research Institute</p>	<p><b>P2H-3 Efficiency Improvement of the Friction Drive in the Ultrasonic Motor Using Lubricant.</b> T. Ishii*, S. Maeno, K. Nakamura, and S. Ueha, Precision and Intelligence Laboratory, Tokyo Institute of Technology, Yokohama 226-8203, Japan</p>	<p><b>P2I-3 High Performance Piezoceramic Films on Substrates for High Frequency Imaging.</b> F. Levassort<sup>*1</sup>, P. Tran-Huu-Hue<sup>1</sup>, J. Holc<sup>2</sup>, T. Bove<sup>3</sup>, M. Kosec<sup>2</sup>, and M. Lethiecq<sup>1</sup>, <sup>1</sup>LUSSI/GIP Ultrasons, EIVL, Blois, France, <sup>2</sup>Jozef Stefan Institute, Ljubljana, Slovenia, <sup>3</sup>Ferroperm Piezoceramics A/S, Kvistgaard, Denmark</p>	<p><b>P2J-3 Micromachined Direction-Sensitive Biomimetic Diaphragm for Ultrasonic Transducers.</b> K. Yoo<sup>*1</sup> and N. Tien<sup>2</sup>, <sup>1</sup>Cornell University, <sup>2</sup>University of California, Davis</p>	<p><b>P2K-5 Design and Testing of an MRI Compatible Therapeutic Transducer.</b> J. R. Brosch<sup>*1</sup>, T. Wilson<sup>2</sup>, T. M. Talavage<sup>3</sup>, and G. A. Morris<sup>4</sup>, <sup>1</sup>Etalon division of Piezotech LLC., <sup>2</sup>Exogen division of Smith and Nephew Inc., <sup>3</sup>Electrical/Biomedical Engineering Dept, Purdue University, <sup>4</sup>Piezotech LLC.</p>



11:00 a.m. – 12:30 p.m.

Tuesday, October 9, 2001

Omni Hotel, Atlanta, GA

		<i>Session 1E</i> <b>CONTRAST AGENT APPLICATIONS</b> Chair: L. Thomas Acuson/Seimens Ultrasound	<i>Session 2E</i> <b>QUANTITATIVE IMAGING</b> Chair: K. Nightingale Duke University	<i>Session 3E</i> <b>BULK WAVE THIN FILM DEVICES</b> Chair: Y. Yong Rutgers University	<i>Session 4E</i> <b>IMAGING APPLICATIONS</b> Chair: R. Maev University of Windsor	<i>Session 5E</i> <b>MICROMACHINED TRANSDUCERS</b> Chair: G. Lockwood Queens University
		<b>Rutherford</b>	<b>Mimosa</b>	<b>Glenmar</b>	<b>Knollwood</b>	<b>Liberty</b>
54	11:00 a.m.	<b>1E-1 (Invited) Targeted Microbubble Contrast Agents: Diagnostic and Therapeutic Potential.</b> J.D. Lindner*, University of Virginia	<b>2E-1 Analysis of Ultrasound Backscatter from Ensembles of Cells and Isolated Nuclei.</b> M.C. Kolios <sup>*1,2</sup> , G.J. Czarnota <sup>1,2</sup> , M. Hussain <sup>2</sup> , J.W. Hunt <sup>2,3</sup> , F.S. Foster <sup>2,4</sup> , and M.D. Sherar <sup>2,3</sup> , <sup>1</sup> Ryerson University, <sup>2</sup> University of Toronto, <sup>3</sup> Ontario Cancer Institute / Princess Margaret Hospital, <sup>4</sup> Sunnybrook Health Sciences Center	<b>3E-1 ZnO Based Thin Film Bulk Acoustic Wave Filters for EGSM Band.</b> J. Kaitila <sup>*1</sup> , M. Ylilammi <sup>1</sup> , J. Molarius <sup>1</sup> , J. Ella <sup>2</sup> , and T. Makkonen <sup>3</sup> , <sup>1</sup> VTT Electronics, <sup>2</sup> Nokia Mobile Phones Ltd., <sup>3</sup> Materials Physics Laboratory, Helsinki University of Technology	<b>4E-1 Local Phase Measurements with Focused Acoustic Transducer.</b> S. Sathish <sup>*2</sup> , R. Martin <sup>2</sup> , R. Reibel <sup>2</sup> , M. Ruddell <sup>2</sup> , and T. Moran <sup>1</sup> , <sup>2</sup> University of Dayton Research Institute, <sup>1</sup> AFRL/MLLP, Wright Patterson AFB	<b>5E-1 PMUTS Design Optimization for Medical Probes Applications.</b> J.L. Vernet <sup>*2</sup> , R. Lardat <sup>1</sup> , O. Garcia <sup>1</sup> , and J.F. Gelly <sup>1</sup> , <sup>1</sup> Thales Microsonics, <sup>2</sup> Consultant
	11:15 a.m.		<b>2E-2 B-mode Images of Spontaneous Rat Mammary Tumors Enhanced by Estimated Scatterer Parameters.</b> M. L. Oelze*, J. F. Zachary, and W. D. O'Brien Jr., Bioacoustic Research Laboratory, University of Illinois at Urbana-Champaign	<b>3E-2 Piezoelectric Materials for Bulk Acoustic Wave (BAW) Resonators and Filters.</b> H.P. Loeb <sup>*1</sup> , M. Klee <sup>1</sup> , C. Metzmacher <sup>1</sup> , W. Brand <sup>1</sup> , R. Milsom <sup>2</sup> , and P. Lok <sup>3</sup> , <sup>1</sup> Philips Research Laboratories Aachen, <sup>2</sup> Philips Research Laboratories Redhill, <sup>3</sup> Philips Semiconductors Nijmegen	<b>4E-2 High Power Acoustic Insult to Cells as Studied by Acoustic Microscopy.</b> R. Halter, C. Miyasaka, B. Tittmann*, W. Hymer, and N. Nicholas, Penn State University, University Park, PA, USA	<b>5E-2 Piezoelectrically Actuated Flexensional MUTs.</b> G. Percin <sup>*1</sup> and B. T. Khuri-Yakub <sup>2</sup> , <sup>1</sup> ADEPTIENT, <sup>2</sup> Edward L. Ginzton Laboratory, Stanford University

\*Author presenting paper.

11:30 a.m.	<b>1E-2 Detection of Ultrasound Generated Contrast Bubbles in a Refluxing Canine Model.</b> E. Y. Hwang <sup>*1</sup> , J. B. Fowlkes <sup>1</sup> , P. L. Carson <sup>1</sup> , J. M. Rubin <sup>1</sup> , and D. A. Bloom <sup>2</sup> , <sup>1</sup> University of Michigan, Department of Radiology, <sup>2</sup> University of Michigan, Department of Surgery-Urology	<b>2E-3 Ultrasonic Multifeature Tissue Characterization for the Early Detection of Prostate Cancer.</b> U. Scheipers <sup>*1</sup> , H. Ermer <sup>1</sup> , A. Lorenz <sup>1,2</sup> , A. Pesavento <sup>1,2</sup> , H.-J. Sommerfeld <sup>3</sup> , M. Garcia-Schuermann <sup>3</sup> , K. Kuehne <sup>3</sup> , T. Senge <sup>3</sup> , and S. Philippou <sup>4</sup> , <sup>1</sup> Institut fuer Hochfrequenztechnik, <sup>2</sup> Ingenieurbuero Lorenz & Pesavento, <sup>3</sup> Urologische Universitaetsklinik der RUB, <sup>4</sup> Institut fuer Pathologie, Augusta-Krankenanstalt	<b>3E-3 (Invited) Thin Film Bulk Wave Acoustic Resonators for Wireless Applications.</b> R. C. Ruby <sup>*1</sup> , J.D. Larson <sup>2</sup> , P.D. Bradley <sup>1</sup> , and Y. Oshmyansky <sup>1</sup> , <sup>1</sup> Wireless Semiconductor Division, <sup>2</sup> Agilent Laboratories	<b>4E-3 Investigation of Spatial Sampling Resolution of the Real-time Ultrasound Pulse-Echo BAI-Mode imaging Technique.</b> X. Yin <sup>*1</sup> , S. A. Morris <sup>2</sup> , and W. D. O'Brien, Jr. <sup>1</sup> , <sup>1</sup> Dept. of Electrical & Computer Engineering, Univ. of Illinois at Urbana-Champaign, <sup>2</sup> Dept. of Food Science & Human Nutrition, Univ. of Illinois at Urbana-Champaign	<b>5E-3 Study of PZT Coated Membrane Structures for Micromachined Ultrasonic Transducers.</b> P. Muralt <sup>*1</sup> , D. Schmitt <sup>2</sup> , N. Ledermann <sup>1</sup> , J. Baborowski <sup>1</sup> , P.K. Weber <sup>2</sup> , W. Steichen <sup>3</sup> , and Ph. Gaucher <sup>4</sup> , <sup>1</sup> Ceramics Laboratory, EPFL, Lausanne, Switzerland, <sup>2</sup> Fraunhofer IBMT, St. Ingbert, Germany, <sup>3</sup> Thales-Microsonics, Sophia-Antipolis, France, <sup>4</sup> Thales Central Research Laboratory, Orsay, France
11:45 a.m.	<b>1E-3 Contrast Agent-induced Cardiac Arrhythmias in Rats.</b> J. F. Zachary <sup>*1</sup> , S. A. Hartleben, L. A. Frizzell, and W. D. O'Brien, Jr., University of Illinois, Urbana, IL	<b>2E-4 Application of Spectrum Analysis and Neural-network Classification to Imaging for Targeting and Monitoring Treatment of Prostate Cancer.</b> E. J. Feleppa <sup>*1</sup> , A. Kalisz <sup>1</sup> , J. Ketterling <sup>1</sup> , S. Urban <sup>1</sup> , P. B. Schiff <sup>2</sup> , R. D. Ennis <sup>2</sup> , C. S. Wu <sup>2</sup> , C. R. Porter <sup>3</sup> , and W. R. Fair <sup>4</sup> , <sup>1</sup> Riverside Research Institute, <sup>2</sup> Columbia Presbyterian Medical Center, <sup>3</sup> D. C. Veterans Affairs Medical Center, <sup>4</sup> Haelth		<b>4E-4 Evaluation of the V(x) Temperature Stability in Time-Resolved Ultrasonic Measurements.</b> S.A. Titov <sup>*1</sup> , R.G. Maev <sup>1</sup> , and A.N. Bogatchenkov <sup>2</sup> , <sup>1</sup> University of Windsor, Windsor, Canada, <sup>2</sup> Institute for Biochemical Physics of Russian Academy of Science, Moscow, Russia	<b>5E-4 Micromachined Unimorphs and Bimorphs.</b> R. Farlow <sup>*1</sup> , W. Galbraith, S. P. Kelly, and G. Hayward, The Centre for Ultrasonic Engineering, University of Strathclyde, Glasgow, Scotland
12:00 noon	<b>1E-4 Subharmonic Phase Inversion for Tumor Perfusion Estimation.</b> J. E. Chomas <sup>*1</sup> , R. E. Pollard, E. R. Wisner, and K. W. Ferrara, University of California, Davis	<b>2E-5 Contrast-Transfer Efficiency for Continuously Varying Tissue Moduli: Simulation and Phantom Validation.</b> F. Kallel <sup>*1</sup> , C.D. Prihoda, and J. Ophir, Radiology Department, The University of Texas at Houston	<b>3E-4 Temperature Characteristics of ZnO-Based Thin Film Bulk Acoustic Wave Resonators.</b> S.L. Pinkett <sup>*1</sup> and W.D. Hunt, School of ECE, Georgia Institute of Technology, Atlanta, GA	<b>4E-5 (Invited) Ultrasonic Imaging Systems for Personal Identification.</b> J.K. Schneider <sup>*1</sup> and S.M. Gojevic, Ultra-Scan Corporation, Amherst, NY	<b>5E-5 High Performance Micromachined Unimorph Transducer Based on Electrostrictive P(VDF-TrFE) Polymer.</b> T.-B. Xu <sup>*1</sup> , Z.-Y. Cheng, W. Chen, K. Uchino, and Q. M. Zhang, Materials Research Laboratory, The Pennsylvania State University, University Park, PA
12:15 p.m.	<b>1E-5 Submicron Contrast Agents for the Detection and Localization of at Risk Lymph Nodes.</b> D. Patel, P. Dayton, R. Zemp, E. Wisner, and K. Ferrara, University of California, Davis	<b>2E-6 Modeling 2D Speckle Images Accounting for 3D Strain Effects.</b> J. A. Hossack <sup>*1</sup> and J. S. Ha, University of Virginia	<b>3E-5 Improved Bulk Wave Resonator Coupling Coefficient For Wide Bandwidth Filters.</b> Ken Lakin <sup>*1</sup> and John Belsick, TFR Technologies, Inc.		<b>5E-6 Micromachined Piezoelectrically Actuated Flexensional Transducers for High Resolution Printing and Imaging.</b> G. Percin <sup>*1</sup> and B. T. Khuri-Yakub <sup>2</sup> , <sup>1</sup> ADEPTIENT, <sup>2</sup> Edward L. Ginzton Laboratory, Stanford University
12:30 p.m.			<b>3E-6 High Performance Stacked Crystal Filters for GPS and Wide Bandwidth Applications.</b> K. M. Lakin <sup>*1</sup> , J. Belsick, J. F. McDonald, and K. T. McCarron, TFR Technologies, Inc.		

2:00 p.m. – 3:30 p.m.

Tuesday, October 9, 2001

Omni Hotel, Atlanta, GA

	<i>Session 1F</i> <b>CONTRAST AGENTS - NONLINEAR EFFECTS</b> Chair: N. de Jong Erasmus University of Rotterdam	<i>Session 2F</i> <b>ELASTOGRAPHY I</b> Chair: H. Kanai Tohoku University	<i>Session 3F</i> <b>PROCESS MONITORING</b> Chair: D. Yuhas Industrial Measurement Systems	<i>Session 4F</i> <b>SAW ANALYSIS AND MODELING</b> Chair: V. Plessky Thales Microsonics	<i>Session 5F</i> <b>CMUT PROCESSING AND APPLICATIONS</b> Chair: L. Smith GE Corporate R&D
	Rutherford	Mimosa	Glenmar	Knollwood	Liberty
2:00 p.m.	<b>1F-1 Design and Acoustic Characterization of a Multi-Frequency Harmonic Array for Nonlinear Contrast Imaging.</b> F. Forsberg <sup>*1</sup> , W. T. Shi <sup>1</sup> , B. Jadidian <sup>2</sup> , and A. A. Winder <sup>3</sup> , <sup>1</sup> Dept. of Radiology, Thomas Jefferson University, Philadelphia, PA, <sup>2</sup> Layered Manufacturing Inc, Piscataway, NJ, <sup>3</sup> Acoustic Sciences Associates, Westport, CT	<b>2F-1 (Invited) Ultrasound Stimulated Vibroacoustography.</b> J. Greenleaf <sup>*</sup> and M. Fatemi, Mayo Clinic	<b>3F-1 Ultrasonic Density Sensor - Higher Accuracy by Minimizing Error Influences.</b> N. Hoppe <sup>*1</sup> , G. Schoenfelder <sup>1</sup> , A. Puettmer <sup>2</sup> , and P. Hauptmann <sup>1</sup> , <sup>1</sup> Otto-von-Guericke University Magdeburg Germany, <sup>2</sup> Siemens AG Karlsruhe Germany	<b>4F-1 Analysis of SAW Interdigital Transducers as Waveguides with N Acoustic Regions.</b> M. Jungwirth <sup>*</sup> and R. Weigel, Institute for Communications and Information Engineering	<b>5F-1 Capacitive Micromachined Ultrasonic Transducers with Asymmetric Membranes for Microfluidic Applications.</b> J. McLean <sup>*</sup> and F. L. Degertekin, Georgia Institute of Technology, Atlanta, GA
2:15 p.m.	<b>1F-2 Reduction of Nonlinear Contrast Agent Scattering due to Nonlinear Wave Propagation.</b> R. Hansen <sup>*</sup> , B.A.J. Angelsen, and T.F. Johansen, Dept. of Physiology and Biomedical Engineering, Norwegian University of Science and Technology		<b>3F-2 Ultrasonic Monitoring of Materials during Extrusion Manufacture.</b> W. N. Cobb <sup>*1</sup> and J. Johnson <sup>2</sup> , <sup>1</sup> University of Denver Research Institute, Denver, Colorado, <sup>2</sup> Naval Sea System Command, Indian Head, Maryland	<b>4F-2 Modelling of Shear-Horizontal-Type Surface Acoustic Waves and Its Application to COM-Based Device Simulation.</b> K.-Y. Hashimoto <sup>*</sup> , T. Omori, and M. Yamaguchi, Faculty of Engineering, Chiba University	<b>5F-2 Micromachined Capacitive Transducer Arrays for Imaging in Air.</b> J.S. McIntosh <sup>*1</sup> , D.A. Hutchins <sup>1</sup> , T.J. Robertson <sup>1</sup> , A. Nield <sup>1</sup> , D.R. Billson <sup>1</sup> , R.A. Noble <sup>2</sup> , and A.R.D. Jones <sup>2</sup> , <sup>1</sup> University of Warwick UK, <sup>2</sup> DERA (Malvern) UK

\*Author presenting paper.

2:30 p.m.	<b>1F-3 Nonlinear Coded Excitation Methods for Contrast Imaging.</b> J. Borsboom*, C. T. Chin, A. Bouakaz, and N. de Jong, Erasmus University, Rotterdam, The Netherlands	<b>2F-2 Ultrafast Imaging with 2D Displacement Vector Measurements: Application to Transient Elastography and Color Flow Mapping.</b> J. Bercoff, M. Tanter*, L. Sandrin, and M. Fink, Laboratoire Ondes et Acoustique, Paris	<b>3F-3 Monitoring Interfacial Biological Processes with use of TSM Piezoelectric Sensors: Case Study-Deposition of Collagen on Gold Surface.</b> V. Devaraju <sup>1</sup> , A. Fertala <sup>2</sup> , and R. Lec* <sup>1</sup> , <sup>1</sup> Drexel University, <sup>2</sup> Thomas Jefferson Medical University	<b>4F-3 An Accurate Modelling Tool for the Design of RF SAW Filters.</b> S. Chamaly*, X. Perios, M. Doisy, and M. Solal, Thales Microsonics	<b>5F-3 (Invited) Capacitive Micromachined Ultrasonic Transducers and their Application.</b> J. Binder*, A. Buhrdorf, and O. Ahrens, University of Bremen, Bremen, Germany
2:45 p.m.	<b>1F-4 Optimized Receive Filters and Phase-Coded Pulse Sequences for Contrast Agent and Non-linear Imaging.</b> W. G. Wilkening <sup>1</sup> , B. Brendel <sup>1</sup> , H. Jiang <sup>2</sup> , J. Lazenby <sup>2</sup> , and H. Ermer <sup>1</sup> , <sup>1</sup> Inst. of High Frequency Eng., Dept. of Electrical Engineering, Ruhr-University Bochum, Germany, <sup>2</sup> Siemens Medical Systems, Inc., Ultrasound Group, Issaquah, WA	<b>2F-3 Imaging Viscoelastic Properties of the Vitreous.</b> F. Viola*, L. A. Negron, and W. F. Walker, University of Virginia, Charlottesville, VA	<b>3F-4 Optimization of Buffer Rod Geometry using MATLAB.</b> N. Hoppe* <sup>1</sup> , A. Puettm <sup>2</sup> , and P. Hauptmann <sup>1</sup> , <sup>1</sup> Otto-von-Guericke University, Magdeburg, Germany, <sup>2</sup> Siemens AG, Karlsruhe, Germany	<b>4F-4 Full Wave Analysis of RF SAW Filter Packaging.</b> C. Finch* <sup>1,2</sup> , X. Yang <sup>1</sup> , T. Wu <sup>1</sup> , and B. Abbott <sup>2</sup> , <sup>1</sup> University of Central Florida, Orlando, FL, <sup>2</sup> Sawtek Inc., Orlando, FL	
3:00 p.m.	<b>1F-5 Contrast Pulse Sequences (CPS): Imaging Nonlinear Microbubbles.</b> P.J. Phillips*, Acuson, A Siemens Company, Mountain View, CA, USA	<b>2F-4 Evaluation of Skeletal Muscle Mechanical Properties under Tension using Remote Palpation Imaging.</b> G.E. Trahey*, R.W. Nightingale, and K.R. Nightingale, Department of Biomedical Engineering, Duke University	<b>3F-5 (Invited) Ultrasonic Sensors for Process Applications.</b> P. Hauptmann* <sup>1</sup> , N. Hoppe <sup>1</sup> , and A. Puettm <sup>2</sup> , <sup>1</sup> Otto-von-Guericke University Magdeburg, Germany, <sup>2</sup> Siemens AG Karlsruhe, Germany	<b>4F-5 Reflective Array Method for Analysis and Design of Weighted DART Transducers and Filters.</b> D. P. Morgan*, Impulse Consulting	<b>5F-4 A Cost-effective and Manufacturable Route to the Fabrication of High-Density 2D Micromachined Ultrasonic Transducer Arrays and (CMOS) Signal Conditioning Electronics on the Same Silicon Substrate.</b> R. A. Noble* <sup>1</sup> , R. R. Davies <sup>1</sup> , L. Koker <sup>1</sup> , K. M. Brunson <sup>1</sup> , A.R.D. Jones <sup>1</sup> , T. J. Robertson <sup>2</sup> , D. A. Hutchins <sup>2</sup> , J. T. McIntosh <sup>2</sup> , and D. R. Billson <sup>2</sup> , <sup>1</sup> Defence and Evaluation Research Agency (DERA), <sup>2</sup> University of Warwick
3:15 p.m.	<b>1F-6 Non-linear Scattering Properties of Contrast Agents Between 14-50MHz.</b> D. E. Goertz*, S. W. S. Wong, C. T. Chin, E. Cherin, P. N. Burns, and F. S. Foster, University of Toronto	<b>2F-5 In Vivo Demonstration of Remote Palpation Imaging in the Thyroid, Abdomen, and Skeletal Muscle.</b> K.R. Nightingale*, R.W. Nightingale, and G.E. Trahey, Department of Biomedical Engineering, Duke University		<b>4F-6 Optimal Design of SPUDT Filters Based on the Differential Model of Transducer.</b> S. Shishkin*, Sawtek, Inc.	<b>5F-5 Micromachined Ultrasonic Si/PZT Transducer for Underwater Communications.</b> E. Siwapornsathain* and A. Lal, SonicMEMS Laboratory, University of Wisconsin-Madison

4:00 p.m. – 5:30 p.m.

Tuesday, October 9, 2001

Omni hotel, Atlanta, GA

	<i>Session 1G</i> <b>BLOOD CHARACTERIZATION</b> Chair: K. Thomenius GE CRD	<i>Session 2G</i> <b>ELASTOGRAPHY II</b> Chair: J. Hossack University of Virginia	<i>Session 3G</i> <b>LASER ULTRASOUND</b> Chair: R. Addison, Jr. Rockwell Scientific Co.	<i>Session 4G</i> <b>SAW MATERIALS AND ACOUSTO-ELECTRIC EFFECTS</b> Chair: B. Potter Vectron International	<i>Session 5G</i> <b>CMUT PERFORMANCE</b> Chair: J.-F. Gelly Thomson Microsonics
	Rutherford	Mimosa	Glenmar	Knollwood	Liberty
4:00 p.m.	<b>1G-1 Estimation of Hematocrit by Means of Attenuation Measurement of Ultrasonic Wave In Human Blood.</b> W. Secomski <sup>1</sup> , A. Nowicki <sup>1</sup> , and P. Tortoli <sup>2</sup> , <sup>1</sup> Institute of Fundamental Technological Research, Polish Academy of Sciences, Warsaw, Poland, <sup>2</sup> Electronics and Telecommunications Department, University of Florence, Italy	<b>2G-1 Viscoelastic Effects in Sonoelastography: Impact on Tumor Detectability.</b> L. S. Taylor <sup>1</sup> , M. S. Richards <sup>2</sup> , A. J. Moskowitz <sup>2</sup> , A. L. Lerner <sup>2</sup> , D. J. Rubens <sup>3</sup> , and K. J. Parker <sup>1</sup> , <sup>1</sup> University of Rochester, ECE Dept., <sup>2</sup> University of Rochester, Biomedical Eng. Dept., <sup>3</sup> University of Rochester, Dept. of Radiology	<b>3G-1 (Invited) Imaging Laser Ultrasonics Measurement of the Elastodynamic Properties of Paper.</b> K. L. Telschow* and V. A. Deason, Idaho National Engineering & Environmental Laboratory	<b>4G-1 Experimental Characterization of Al/SiO<sub>2</sub>/45°X-Z Li<sub>2</sub>B<sub>4</sub>O<sub>7</sub> SAW Device Parameters.</b> S. Jen* and R. Bobkowsky, RF Monolithics, Inc., Dallas, TX, USA	<b>5G-1 Influence of the Electrode Size and Location on the Performance of a CMUT.</b> B. Bayram*, G.G. Yaralioglu, and B.T. Khuri-Yakub, Stanford University
4:15 p.m.	<b>1G-2 Radial Distribution of the Doppler Power from Porcine Blood Over a Pulsatile Flow Cycle.</b> D.-G. Paeng* and K. K. Shung, Pennsylvania State University, University Park, PA	<b>2G-2 Strain Magnitude Estimation Based on Adaptive Incompressibility Processing.</b> X. Chen <sup>1</sup> , K. Kaluzynski <sup>2</sup> , S.Y. Emelianov <sup>1</sup> , A.R. Skovoroda <sup>3</sup> , and M. O'Donnell <sup>1</sup> , <sup>1</sup> Department of Biomedical Eng., University of Michigan, Ann Arbor, MI, <sup>2</sup> Institute for Precision and Biomedical Engineering, Warsaw University of Technology, Poland, <sup>3</sup> Institute of Mathematical Problems of Biology, Russian Academy of Sciences, Russia		<b>4G-2 High Temperature Stable High Electro-mechanical Coupling Surface Acoustic Wave Substrates and Application for SAW Devices.</b> K. Yamanouchi* and T. Ishii, Tohoku Institute of Technology	<b>5G-2 Residual Stress and Young's Modulus Measurement of Capacitive Micromachined Ultrasonic Transducer Membranes.</b> G. G. Yaralioglu*, A. S. Ergun, B. Bayram, and B. T. Khuri-Yakub, Stanford University, Stanford, CA

\*Author presenting paper.

4:30 p.m.	<p><b>1G-3 On the Variance of Mean Integrated Backscatter from Moving Blood.</b> Z. Cakareski<sup>1,2</sup> and P.C. Pedersen<sup>2</sup>, <sup>1</sup>Department of Electrical and Computer Engineering, Rice University, <sup>2</sup>Department of Electrical and Computer Engineering, Worcester Polytechnic Institute</p>	<p><b>2G-3 (Invited) Real Time Strain Imaging and in-vivo Applications in Prostate Cancer.</b> A. Pesavento<sup>1</sup>, A. Lorenz<sup>1</sup>, U. Scheipers<sup>2</sup>, S. Siebers<sup>2</sup>, H. Ermert<sup>2</sup>, H. Sommerfeld<sup>3</sup>, M. Garcia-Schuermann<sup>3</sup>, K. Kuehne<sup>3</sup>, T. Senge<sup>3</sup>, and S. Philippou<sup>4</sup>, <sup>1</sup>Lorenz &amp; Pesavento IT, <sup>2</sup>Department of Electrical Engineering, Ruhr-University Bochum, <sup>3</sup>Department of Urology, Ruhr-University Bochum, <sup>4</sup>Department of Pathology, Ruhr-University Bochum.</p>	<p><b>3G-2 Noncontact Determination of the Bending Stiffness of Paper Using Laser Ultrasonics and Wavelet Analysis—Effect of Moisture Content and Temperature.</b> D. Griggs<sup>1</sup>, Y. Berthelot<sup>1</sup>, M. Corwell<sup>1</sup>, and C. Habeger<sup>2</sup>, <sup>1</sup>Georgia Institute of Technology, Atlanta, GA, USA, <sup>2</sup>Institute of Paper Science and Technology, Atlanta, GA, USA</p>	<p><b>4G-3 SAW Resonators with Second Harmonic Reflectors on 128° LiNbO<sub>3</sub>.</b> S. Lehtonen<sup>1</sup>, V.P. Plessky<sup>2</sup>, J. Koskela<sup>1</sup>, and M.M. Salomaa<sup>1</sup>, <sup>1</sup>Helsinki University of Technology, Espoo, Finland, <sup>2</sup>Thales Microsonics SAW Design Bureau, Neuchatel, Switzerland</p>	<p><b>5G-3 Capacitive Micromachined Ultrasonic Transducer Arrays For Medical Imaging: Experimental Results.</b> U. Demirci<sup>*</sup>, Oralkan, J. Johnson, A. S. Ergun, M. Karaman, and B. T. Khuri-Yakub, Stanford University, Stanford, CA</p>
4:45 p.m.	<p><b>1G-4 Ultrasonic Measurement of Backscatter from Embryonic Mouse Red Blood Cells in Vivo.</b> J. Le Floch<sup>h1</sup>, E. Cherin<sup>2</sup>, M. Zhang<sup>2</sup>, C. Kolb<sup>2</sup>, S.L. Adamson<sup>2</sup>, D. Vray<sup>1</sup>, and F.S. Foster<sup>2</sup>, <sup>1</sup>INSA de Lyon, France, <sup>2</sup>U of Toronto, Canada</p>		<p><b>3G-3 Quantitative Subsurface Defects Detection in Composite Materials Using a Non-Contact Ultrasonic System.</b> D. Cerniglia<sup>1</sup>, B. B. Djordjevic<sup>2</sup>, and V. Nigrelli<sup>3</sup>, <sup>1</sup>University of Palermo, Palermo, Italy, <sup>2</sup>Johns Hopkins University, Baltimore, MD, <sup>3</sup>University of Cassino, Cassino, Italy</p>	<p><b>4G-4 Nonlinear Acoustoelectric and Acoustooptic Effects in Semiconductor Layered Systems.</b> H.-J. Kutschera<sup>1</sup>, A. Wixforth<sup>1</sup>, A.V. Kalameitsev<sup>2</sup>, and A.O. Govorov<sup>2</sup>, <sup>1</sup>Center for NanoScience (CeNS), University of Munich, D-80539 Munich, Germany, <sup>2</sup>Institute of Semiconductor Physics, RAS, 630090 Novosibirsk, Russia</p>	<p><b>5G-4 Capacitive Micromachined Ultrasound Transducers with Improved Frequency Response.</b> P.-C. Eccardt<sup>*</sup>, Siemens AG</p>
5:00 p.m.	<p><b>1G-5 High Frequency Backscatter and Attenuation Measurements of Porcine Erythrocyte Suspensions Between 30-90 MHz.</b> S. Maruvada<sup>1</sup>, K.K. Shung<sup>2</sup>, and S.-H. Wang<sup>2</sup>, <sup>1</sup>Brigham and Women's Hospital, Dept. of Radiology, <sup>2</sup>The Pennsylvania State University, Bioengineering Program</p>	<p><b>2G-4 In vivo Results of Real-Time Freehand Elasticity Imaging.</b> T.J. Hall<sup>1</sup>, Y. Zhu, C.S. Spalding, and L.T. Cook, University of Kansas Medical Center</p>	<p><b>3G-4 Measurement on the Dispersion Relations of Leaky Lamb Waves with a Laser-Generation/LFB Detection Hybrid Technique.</b> C. H. Yang<sup>*</sup> and M. F. Huang, Chang Gung University</p>	<p><b>4G-5 Fabrication of SAW Devices on Balls with Extremely High Sensitivity.</b> Y. Tsukahara<sup>1</sup>, N. Nakaso<sup>1</sup>, H. Cho<sup>2</sup>, and K. Yamanaka<sup>2</sup>, <sup>1</sup>Toppan Printing Company, <sup>2</sup>Tohoku University</p>	<p><b>5G-5 Experimental Characterization of a 5 MHz CMUT Array Element in Air and Water.</b> A. Caronti<sup>1</sup>, H. Majjad<sup>2</sup>, S. Ballandras<sup>2</sup>, G. Caliano<sup>1</sup>, R. Carotenuto<sup>1</sup>, A. Iula<sup>1</sup>, V. Foglietti<sup>3</sup>, and M. Pappalardo<sup>1</sup>, <sup>1</sup>Universita Roma Tre, Roma (Italy), <sup>2</sup>LPMO/CNRS, Besancon (France), <sup>3</sup>IESS-CNR, Roma (Italy)</p>
5:15 p.m.	<p><b>1G-6 Color Doppler Imaging of Acoustic Streaming for Hematoma Diagnosis.</b> X. Shi<sup>*</sup>, R. W. Martin, S. Vaezy, and P. Kaczowski, University of Washington, Seattle, WA</p>	<p><b>2G-5 Ultrasonic Imaging is a Sensitive Indicator of Spatially Varying Elastic Anisotropy.</b> Ch. Kargel<sup>*</sup>, B. Trummer, G. Plevnik, C. Pellot-Barakat, J.J. Mai, and M.F. Insana, Department of Biomedical Engineering, University of California Davis</p>	<p><b>3G-5 Evaluation of Defects in Bearing Balls using Floating Resonance Method.</b> H. Cho<sup>*</sup>, S. Ishikawa, and K. Yamanaka, Department of Materials Processing, Tohoku University</p>	<p><b>4G-6 Green's Function Induced Wavelets and Wavelet-like Orthogonal Systems.</b> A. Baghai-Wadji<sup>1</sup> and G. Walter<sup>2</sup>, <sup>1</sup>Vienna University of Technology, <sup>2</sup>University of Wisconsin</p>	<p><b>5G-6 Improved Modeling and Design of Microphones Using Radio Frequency Detection with Capacitive Micromachined Ultrasonic Transducers.</b> S.T. Hansen<sup>*</sup>, A.S. Ergun, and B.T. Khuri-Yakub, Stanford University</p>

8:00 a.m. – 9:30 a.m.

Wednesday, October 10, 2001

Omni Hotel, Atlanta, GA

	<b>Session 1H</b> <b>FLOW AND TISSUE MOTION—</b> <b>NEW METHODS</b> Chair: P. Tortoli University of Florence	<b>Session 2H</b> <b>THERAPY: BIOEFFECTS</b> Chair: J. Greenleaf Mayo Clinic	<b>Session 3H</b> <b>ULTRASONIC MOTORS</b> Chair: A. Lal University of Wisconsin-Madison	<b>Session 4H</b> <b>SAW SYSTEMS AND OSCILLATORS</b> Chair: D. Hauden LPMO-CNRS	<b>Session 5H</b> <b>TRANSDUCER MATERIALS</b> Chair: L. Brown South Dakota State University
	Rutherford	Mimosa	Glenmar	Knollwood	Liberty
8:00 a.m.	<b>1H-1 High Frame Rate Tissue Doppler Imaging.</b> S. Bjaerum <sup>1</sup> , H. Torp <sup>2</sup> , and K. Kristoffersen <sup>1</sup> , <sup>1</sup> GE Vingmed Ultrasound, <sup>2</sup> Norwegian University of Science and Technology	<b>2H-1 Enhancement of Ultrasonic Absorption by Microbubbles for Therapeutic Application.</b> S. Umemura <sup>*</sup> , K. Kawabata, and K. Hashiba, Central Research Laboratory, Hitachi Ltd.	<b>3H-1 A High Power Ultrasonic Linear Motor with a Longitudinal-Bending Hybrid Transducer for High-Speed and Precise Drive of a Heavy Stage.</b> C-H. Yun <sup>*1</sup> , T. Ishii <sup>1</sup> , K. Nakamura <sup>1</sup> , S. Ueha <sup>1</sup> , and K. Akashi <sup>2</sup> , <sup>1</sup> Precision and Intelligence Laboratory, Tokyo Institute of Technology, <sup>2</sup> Corporate Fine Ceramics Division, Kyocera Corporation	<b>4H-1 (Invited) Passive Integration with SAW Filter.</b> H. Mandai <sup>*</sup> , Murata Mfg. Co., Ltd	<b>5H-1 Temperature Dependencies of Dielectric and Piezoelectric Properties of Pb(Zn<sub>1/2</sub>Nb<sub>2/3</sub>)O<sub>3</sub>-PbTiO<sub>3</sub> Single Crystals.</b> Y. Hosono <sup>*</sup> , K. Harada, T. Kobayashi, M. Izumi, and Y. Yamashita, Power Supply Materials & Devices Laboratory, Research & Development Center, Toshiba Corporation, Japan
8:15 a.m.	<b>1H-2 Dynamic Color Doppler Extended Field of View Imaging.</b> M. Bakircioglu <sup>*1</sup> , T. Sumanaweera <sup>1</sup> , C. Bradley <sup>1</sup> , L. Pang <sup>2</sup> , and J. Hossack <sup>3</sup> , <sup>1</sup> Acuson, A Siemens Company, Mtn. View, CA, <sup>2</sup> Numerical Technologies, Inc., San Jose, CA, <sup>3</sup> University of Virginia, Charlottesville, VA	<b>2H-2 Effect of High Intensity Focused Ultrasound Induced Cavitation on Platelet Aggregation.</b> S. L. Poliachik <sup>*1</sup> , W. L. Chandler <sup>2</sup> , R. J. Ollos <sup>1</sup> , and L. A. Crum <sup>1</sup> , <sup>1</sup> Center for Industrial and Medical Ultrasound, Applied Physics Laboratory, University of Washington, <sup>2</sup> Department of Laboratory Medicine, University of Washington	<b>3H-2 Optimization of a Bulk-driven Surface Micromachined Ultrasonic Micromotor.</b> V. Kaajakari <sup>*</sup> and A. Lal, SonicMEMS Laboratory, University of Wisconsin-Madison		<b>5H-2 Performances of PMNT Single Crystals Grown by Bridgman Technique.</b> H. Luo <sup>*</sup> , B. Fang, Y. Guo, H. Cao, P. Wang, H. Xu, T. He, S. Zhang, and Z. Zhiwen, Shanghai Institute of Ceramics, Chinese Academy of Sciences

\*Author presenting paper.

8:30 a.m.	<b>1H-3 Validation of a Theoretical Approach for Estimation of Velocity Error of a Vector Doppler System.</b> R. Steel <sup>1</sup> , K. V. Ramnarine <sup>2</sup> , P. J. Fish <sup>1</sup> , and P. R. Hoskins <sup>2*</sup> , <sup>1</sup> University of Wales Bangor, Bangor, United Kingdom, <sup>2</sup> University of Edinburgh, Edinburgh, United Kingdom	<b>2H-3 (Invited) Acoustic Hemostasis.</b> L. Crum <sup>*</sup> , Center for Industrial and Medical Ultrasound, Applied Physics Laboratory, University of Washington	<b>3H-3 Load Characteristics of Ultrasonic Motor with a Longitudinal-Torsional Converter and Various Nonlinear Springs for Inducing Static Pressure.</b> J. Tsujino <sup>*</sup> and Atsuyuki Suzuki, Kanagawa University	<b>4H-2 Wideband Programmable SAW Filters.</b> T. Kenny <sup>*1</sup> , Y.C. Park <sup>1</sup> , W.D. Hunt <sup>1</sup> , J.S. Kenney <sup>1</sup> , J. Kosinski <sup>2</sup> , and R. Pastore <sup>2</sup> , <sup>1</sup> Georgia Institute of Technology, Atlanta, GA, <sup>2</sup> US Army CECOM, Fort Monmouth, NJ	<b>5H-3 Non-Destructive Evaluation of Compositional and Property Distributions in Large-sized Relaxor Single Crystal Wafers.</b> L.C. Lim <sup>*1,2</sup> , F.J. Kumar <sup>2</sup> , R.S. Lewandowski <sup>2</sup> , D.M. Mills <sup>2</sup> , L.S. Smith <sup>3</sup> , and V. Venkataraman <sup>2</sup> , <sup>1</sup> National University of Singapore, <sup>2</sup> Microfine Materials Technologies Pte Ltd, <sup>3</sup> GE Corporate Research and Development
8:45 a.m.	<b>1H-4 A New Maximum Likelihood Blood Velocity Estimator Incorporating Spatial and Temporal Correlation.</b> M. Schlaikjer <sup>*</sup> and J.A. Jensen, Center for Fast Ultrasound Imaging, Oersted*DTU, Technical University of Denmark		<b>3H-4 An Acoustic Fiber Based Piezoelectric Motor.</b> R. Carotenuto <sup>*1</sup> , A. Iula <sup>1</sup> , G. Calliano <sup>1</sup> , N. Lamberti <sup>2</sup> , and M. Pappalardo <sup>1</sup> , <sup>1</sup> ACULAB, Dept. Ingegneria Elettronica, University Roma Tre, <sup>2</sup> Dept. Ingegneria dell'Informazione ed Ingegneria Elettrica, University of Salerno	<b>4H-3 SAW Antenna Duplexer and Required Characteristics for Direct-Conversion Multi-Band Cellular Phones.</b> M. Hikita <sup>*1</sup> , N. Matsuura <sup>2</sup> , K. Yokoyama <sup>2</sup> , N. Shibagaki <sup>1</sup> , and K. Sakiyama <sup>2</sup> , <sup>1</sup> Central Research Laboratory, Hitachi Ltd., <sup>2</sup> Hitachi Media Electronics Ltd.	<b>5H-4 Vibration Velocity Limitation of Transducer using Hydrothermal PZT Film.</b> Y. Kobayashi <sup>*1</sup> , T. Kanda <sup>2</sup> , M. Kuribayashi Kurosawa <sup>1</sup> , and T. Higuchi <sup>2</sup> , <sup>1</sup> Tokyo Institute of Technology, <sup>2</sup> The University of Tokyo
9:00 a.m.	<b>1H-5 Visualization of Blood Flow in Small Blood Vessels by High Frame Rate Ultrasound Imaging.</b> H. Torp <sup>*1</sup> and S. Bjaerum <sup>2</sup> , <sup>1</sup> Norwegian University of Science and Technology, Trondheim, Norway, <sup>2</sup> GE Vingmed Ultrasound, Horten, Norway	<b>2H-4 Age-dependent Threshold and Superthreshold Behavior of Ultrasound-induced Lung Hemorrhage in Pigs.</b> W. D. O'Brien, Jr. <sup>*1</sup> , D. G. Simpson <sup>2</sup> , L. A. Frizzell <sup>1</sup> , and J. F. Zachary <sup>3</sup> , <sup>1</sup> BRL, Dept. of ECE, University of Illinois, Urbana, IL, <sup>2</sup> Dept. of Statistics, University of Illinois, Urbana, IL, <sup>3</sup> Dept. of Veterinary Pathobiology, University of Illinois, Urbana, IL	<b>3H-5 Improvement of Operation Time, Torque and Out-gassing Performance of UHV Compatible Rotary Feedthrough Utilizing Ultrasonic Motor.</b> S. Takahashi <sup>*1</sup> , T. Morita <sup>2</sup> , and T. Niino <sup>1,2</sup> , <sup>1</sup> University of Tokyo, <sup>2</sup> RIKEN	<b>4H-4 Flip-Chip STW Filters and Frequency Trimming Method.</b> H. Yatsuda <sup>*</sup> , H. Iijima, K. Yabe, H. Tsukuda, and S.-I. Shinohara, Japan Radio Co., Ltd.	<b>5H-5 Novel Piezoelectric Ceramics and Composites for Sensor and Actuator Applications.</b> A. Safari <sup>*1</sup> , M. Allahverdi <sup>1</sup> , F. Mohammadi <sup>2</sup> , and R. Panada <sup>3</sup> , <sup>1</sup> Rutgers University, <sup>2</sup> Advanced Cerametrics, Inc., <sup>3</sup> Agilent Technologies
9:15 a.m.	<b>1H-6 A New High Resolution Color Flow Imaging System Using an Eigensubspace-based Adaptive Filter for Clutter Rejection.</b> D. E. Kruse <sup>*</sup> and K. W. Ferrara, University of California, Davis, CA	<b>2H-5 Relationships Between Scattered Signals from Ultrasonically Activated Contrast Agents and Cell Membrane Damage in Vitro.</b> A. Amararene <sup>*</sup> , J. B. Fowlkes, and D. L. Miller, University of Michigan, Department of Radiology, Ann Arbor, MI, USA	<b>3H-6 Study on the Linear Ultrasonic Motor Based on the Vibration in Plane of the Thin Rectangular Plate.</b> C. Zhao <sup>1</sup> , J. Liu <sup>*1</sup> , and M. Sheplak <sup>2</sup> , <sup>1</sup> Research Center of Ultrasonic Motors at Nanjing Univ. of Aero. & Astro., Nanjing, P.R.China, <sup>2</sup> Interdisciplinary Microsystems Group at University of Florida, Gainesville, Florida	<b>4H-5 Analysis and Suppression of Spurious Responses for Wide-Band High-Q Grating-Mode-Type SAW Resonators Used in High Performance VCOs.</b> A. Isobe <sup>1</sup> , M. Hikita <sup>*1</sup> , A. Asai <sup>1</sup> , T. Kachi <sup>1</sup> , and A. Sumioka <sup>2</sup> , <sup>1</sup> Central Research Lab. Hitachi Ltd., <sup>2</sup> Hitachi Denshi Ltd.	<b>5H-6 Materials for Acoustic Matching in Ultrasound Transducers.</b> S. Rhee <sup>*1</sup> , T.A. Ritter <sup>1</sup> , K.K. Shung <sup>1</sup> , H. Wang <sup>2</sup> , and W. Cao <sup>2</sup> , <sup>1</sup> NIH Transducer Resource Center, The Pennsylvania State University, <sup>2</sup> Materials Research Institute, The Pennsylvania State University



9:30 a.m. – 11:00 a.m.

Wednesday, October 10, 2001, POSTER SESSIONS

Barrington (P1J–P1M), East Foyer (P2L–P2R), Jarrett (Student Competition)

<p align="center"><i>Session P1J</i> <b>THERAPY AND BIOEFFECTS</b> Chair: E. Konofagou Brigham and Women's Hospital</p>	<p align="center"><i>Session P1K</i> <b>MEDICAL BEAMFORMING</b> Chair: S. Ueha Tokyo Institute of Technology</p>	<p><b>P1K-8 Beamforming using the Synthetic Sinc Wave for ultrasonic imaging system.</b> M. K. Jeong<sup>*1</sup>, K. J. Lee<sup>1</sup>, M. H. Bae<sup>2</sup>, S. Y. Chang<sup>2</sup>, and S. B. Gye<sup>2</sup>, <sup>1</sup>Dept. of EE, Daejin University, <sup>2</sup>Medison Co. Seoul, Korea</p>	<p><b>P1L-7 Analysis of the Internal-loss-heating of Ultrasonic Vibrators by Infrared Ray Imaging.</b> M. Zhang<sup>*</sup>, Y. Niu, and J. Ren, Shaanxi Normal University, Xi'an, P.R. China</p>	<p><b>P1M-7 Determination of the Transient Response of an Anisotropic Layer to an Impulsive Line Source by the Generalized-Ray Method.</b> O. Poncelet<sup>*1</sup>, M. Deschamps<sup>1</sup>, and A. G. Every<sup>2</sup>. <sup>1</sup>University of Bordeaux, Talence, France, <sup>2</sup>University of the Witwatersrand, Johannesburg, South Africa</p>
<p><b>P1J-1 An Optical Interferometer for Characterising the High Acoustic Amplitude Pulses Generated by Shock-Wave Lithotripters.</b> C. J. Bickley<sup>*</sup>, R. C. Preston, and D. R. Bacon, National Physical Laboratory</p>	<p><b>P1K-1 Advanced Beamforming Using Matched Filter Processing Based on Spatial Impulse Responses.</b> J. A. Jensen<sup>*</sup> and P. Gori, Center for Fast Ultrasound Imaging, Oersted*DTU, Technical University of Denmark</p>	<p align="center"><i>Session P1L</i> <b>INDUSTRIAL APPLICATIONS</b> Chair: J. Kushibiki University of Tohoku</p>	<p align="center"><i>Session P1M</i> <b>WAVE GENERATION AND PROPAGATION</b> Chair: E. Furgason Purdue University</p>	<p align="center"><i>Session P2L</i> <b>PHYSICAL ACOUSTICS II</b> Chair: M. Levy ML Consulting</p>
<p><b>P1J-2 Development and Characterization of an Innovative Synthetic Tissue-mimicking Material for High Intensity Focused Ultrasound (HIFU) Exposures.</b> C. Lafon<sup>*1</sup>, P. J. Kaczkowski<sup>1</sup>, S. Vaezy<sup>1</sup>, O. A. Sapozhnikov<sup>2</sup>, and M. Noble<sup>1</sup>, <sup>1</sup>Applied Physics Laboratory, Seattle, WA, <sup>2</sup>Moscow State University, Moscow, Russia</p>	<p><b>P1K-2 Real-time Synthetic Aperture Beamforming: Practical Issues for Hardware Implementation.</b> C.R. Hazard<sup>*1,2</sup> and G.R. Lockwood<sup>1,2,3</sup>, <sup>1</sup>The Cleveland Clinic Foundation, Cleveland, Ohio, <sup>2</sup>The Ohio State University, Columbus, Ohio, <sup>3</sup>Queen's University, Kingston, Ontario</p>	<p><b>P1L-1 Examining the Possibilities of a LiNbO<sub>3</sub> Langevin Resonator without Bolting.</b> T. Okuda<sup>*</sup> and N. Wakatsuki, Ishinomaki Senshu University, Japan</p>	<p><b>P1M-1 Calculation of Ultrasound Excited by a Pulsed Thermal Source Distributed Along the Depth Direction.</b> J. He<sup>1</sup>, X. R. Zhang<sup>*2</sup>, Y. Y. Huang<sup>3</sup>, and D. C. Xian, <sup>1</sup>Institute of Acoustics, Nanjing University, <sup>2</sup>Institute of Acoustics, Nanjing University, <sup>3</sup>Institute of High Energy Physics, Chinese Academy of Sciences</p>	<p><b>P2L-1 Surface Modification of Diamond Powders by Sonochemical Reaction.</b> T. Uchida<sup>*</sup>, T. Satou, S. Takeuchi, N. Kuramochi, and N. Kawashima, Toin University of Yokohama, BME Center</p>
<p><b>P1J-3 Basic Study on the Effect of Ultrasound Exposure upon Suppression of Cancer Cell Proliferation.</b> S. Takeuchi<sup>*1</sup>, T. Watanabe<sup>2</sup>, T. Sato<sup>1</sup>, H. Nishimura<sup>1</sup>, and N. Kawashima<sup>1</sup>, <sup>1</sup>Toin University of Yokohama, Faculty of Engineering, Dept. of Biomedical Engineering, BME Center, <sup>2</sup>Techno Medica Co., Ltd.</p>	<p><b>P1K-3 Simultaneous Multizone Focusing Method with Orthogonal Chirp Signals.</b> Y. K. Jeong<sup>*</sup> and T.-K. Song, Sogang University, Seoul, South Korea</p>	<p><b>P1L-2 Low-Power Acoustic Harvesting of Aerosol Particles.</b> G. Kaduchak<sup>*</sup> and D. N. Sinha, Los Alamos National Laboratory</p>	<p><b>P1M-2 Frequency Measurement of a Piezoelectric Resonator Using a Laser Light.</b> S. Noge<sup>*</sup> and T. Uno, Kanagawa Institute of Technology</p>	<p><b>P2L-2 Evolution of Cavitation Field Excited by Periodic Sequence of Tone Bursts.</b> V. G. Andreev<sup>*</sup>, V. L. Aleynikov, and M. A. Burnin, Acoustics Dept., Physics Faculty, MSU</p>

\*Author presenting paper.

<p><b>P1J-4 High Speed Imaging of Acoustic Vaporization of Single Droplets.</b> O. D. Kripfgans*, J. B. Fowlkes, and P. L. Carson, University of Michigan</p>	<p><b>P1K-4 Dynamic Focus Control for Imaging with 2D Arrays.</b> P.-C. Li* and J.-J. Huang, Department of Electrical Engineering, National Taiwan University</p>	<p><b>P1L-3 Sensitive Imaging of Defects in Tile/Concrete Structure by the Laser Impact Method.</b> T. Watanabe*, K. Aizu, H. Cho, S. Ishikawa, and K. Yamanaka, Tohoku University</p>	<p><b>P1M-3 Vibratory Gyroscopes Using Trapped-Energy Vibrators of Rotated Y-cut LiTaO<sub>3</sub>.</b> K. Nakamura and T. Abe*, Graduate School of Engineering, Tohoku University</p>	<p><b>P2L-3 Simultaneous Reconstruction of Flow and Temperature Cross-Sections in Gas Jets using Air-Coupled Ultrasonic Tomography.</b> T.H. Gan, D.A. Hutchins*, P.W. Carpenter, and D.R. Billson, University of Warwick</p>
<p><b>P1J-5 A Polyacrylamide Gel Acoustic Coupling Medium for Therapy Applications of High Intensity Focused Ultrasound.</b> A. Prokop*, S. Vaezy, M. Noble, P. Kaczkowski, and R. Martin, University of Washington, Seattle, Washington</p>	<p><b>P1K-5 A New Synthetic Aperture Focusing Method Using Nonspherical Wave Fronts.</b> J.-H. Chang*, J.-W. Park, and T.-K. Song, Sogang University, Seoul, South Korea</p>	<p><b>P1L-4 Presuming the Strength of Concrete Cold Joint by Ultrasound.</b> E. Ohdaira* and N. Masuzawa, Musashi Institute of Technology</p>	<p><b>P1M-4 Propagation of Acoustic Waves along the Surface of a Sphere.</b> S. Ishikawa*, H. Cho<sup>1</sup>, Y. Tsukahara<sup>2</sup>, N. Nakaso<sup>2</sup>, and K. Yamanaka<sup>1</sup>, <sup>1</sup>Department of Materials Processing, Tohoku University, <sup>2</sup>Toppan Printing Co., Ltd.</p>	<p><i>Session P2M</i>  <b>PHYSICAL ACOUSTICS III</b>          Chair: B. Sinha          Schlumberger-Doll Research</p>
<p><b>P1J-6 A Practical Use of Low Frequency Ultrasound For A Rapid and Reproducible Transdermal Delivery of Insulin.</b> A. Boucaud<sup>1</sup>, L. Machet<sup>1,2</sup>, M. A. Garrigue<sup>3</sup>, L. Vaillant<sup>1,2</sup>, and F. Patat<sup>1</sup>, <sup>1</sup>LUSSI/GIP Ultrasons, University F. Rabelais, Tours, <sup>2</sup>Dermatology Department, Tours Hospital, <sup>3</sup>Biochemical Laboratory, Tours Hospital, France</p>	<p><b>P1K-6 A New Architecture for a Single-Chip Multi-Channel Beam-Former Based on a Standard FPGA.</b> B. G. Tomov* and J. A. Jensen, Center for Fast Ultrasound Imaging</p>	<p><b>P1L-5 Non Destructive Evaluation of Degraded Concrete Skin Using High-Frequency Ultrasound.</b> M. Goueygou<sup>1</sup>, S. Ould Naffa<sup>1</sup>, B. Piwakowski<sup>1</sup>, and F. Buyle-Bodin<sup>2</sup>, <sup>1</sup>Institut d'Electronique et de Microelectronique du Nord - DOAE UMR CNRS 8520, <sup>2</sup>Laboratoire de Mecanique de Lille - EUDIL URA CNRS 1441</p>	<p><b>P1M-5 Acoustic Modes in Cylindrically Orthotropic Hollow Cylinders.</b> J.E. Lefebvre*, V. Zhang, A. Haddou, J. Gazalet, and T. Gryba, IEMN DOAE UMR CNRS 8520 Valenciennes France</p>	<p><b>P2M-1 Generation of Finite-Amplitude Lamb Modes in a Layered Planar Structure.</b> M. Deng<sup>1</sup>, D. Price<sup>2</sup>, A. Scott<sup>2</sup>, and Z. Liu<sup>3</sup>, <sup>1</sup>Department of Physics, Logistics Engineering University, Chongqing, P. R. China, <sup>2</sup>CSIRO Telecommunication and Industrial Physics, Lindfield, Australia, <sup>3</sup>Institute of Acoustics, Tongji University, Shanghai, P. R. China</p>
<p><b>P1J-7 A High Frequency Ultrasonic Bistoury Designed to Reduce Friction Trauma in Cystectomy Operations.</b> A. Iula<sup>1</sup>, S. Pallini<sup>1</sup>, R. Carotenuto<sup>1</sup>, N. Lamberti<sup>2</sup>, and M. Pappalardo<sup>1</sup>, <sup>1</sup>University Roma Tre, Italy, <sup>2</sup>University of Salerno, Italy</p>	<p><b>P1K-7 A Novel Pulse Compression Technique Using Inverse Filtering in Frequency Domain.</b> G. S. Jeng*, S. Huang, P.-C. Li, and J. Tsao, Dept. of Electrical Engineering, National Taiwan University</p>	<p><b>P1L-6 Experimental Study of Ultrasonic Atomization Process for Manufacturing Metallic Powder.</b> S.-J. Wu*, Z.-G. Wang, J.-L. Ren, and C.-R. Liu, Applied Acoustics Institute, Shaanxi Normal University, Xian, Shaanxi, 710062, P.R. China</p>	<p><b>P1M-6 Sonic-Crystal Wave-Guides by Acrylic Cylinders in Air —Experimental Observations Based on Numerical Analyses.</b> T. Miyashita* and C. Inoue, Ryukoku University, Ohtsu Japan</p>	<p><b>P2M-2 Steering Efficiency of Acoustic-Beam for Additional and Multiplicative Acoustic Logging Transmission Networks.</b> L. Fa<sup>1</sup>, J. P. Castagna<sup>2</sup>, D. Dong<sup>3</sup>, and J. Zhang<sup>4</sup>, <sup>1</sup>Xi'an Petroleum Exploration Instrument Complex, <sup>2</sup>Oklahoma University, <sup>3</sup>Northwest Polytechnic University, <sup>4</sup>Xi'an Petroleum Institute</p>

<p><b>P2M-3 2-D Unstructured Numerical Simulation of Acoustic Lamb and Scholte-Stonney Waves Propagation. Influence of Defects in Plat.</b> L. Derbesse<sup>1</sup>, P. Voinovich<sup>2</sup>, A. Merlen<sup>3</sup>, and P. Pernod<sup>4</sup>, <sup>1</sup>Institut d Electronique et de microelectronique du Nord IEMN, Villeneuve d'Ascq, France, <sup>2</sup>Soft-Impact Ltd., St. Petersburg, Russia, <sup>3</sup>Laboratoire de Mecanique de Lille, Villeneuve d'Ascq, France</p>	<p><b>P2N-3 Non-linear Magnetoacoustic Wave Instability in the Range of Resonance Magnetoacoustic Interaction.</b> A.S. Bugaev and V.B. Gorsky, Moscow Institute of Physics and Technology</p>	<p><b>P2O-3 Effect of Alignment of Phases in a 2-2 Based Dual Layer High Bandwidth Transducer.</b> J. A. Hossack<sup>*1</sup> and L. Ratsimandresy<sup>2</sup>, <sup>1</sup>University of Virginia, <sup>2</sup>Vermon SA, France</p>	<p><b>P2P-4 Calculation of d33 Dependence on Crystal Orientation in Tetragonal Phases of BaTiO3 and Pb(Zr,Ti)O3 Single Crystals.</b> D. Damjanovic<sup>*</sup>, F. Brem, and N. Setter, Swiss Federal Institute of Technology - EPFL, Lausanne, Switzerland</p>	<p><i>Session P2R</i>  <b>SAW THIN FILMS AND DEVICES</b>            Chair: S. Biryukov            Institute of S &amp; M Research</p>
<p><b>P2M-4 Analytical Properties of SAW Phase Velocity Function from Algebraic and Thermodynamic Points of View.</b> V.V. Barkaline<sup>*</sup>, Belarussian State Polytechnic Academy</p>	<p><b>P2N-4 Magnetoelastic Waves in Magnetic Films and Multilayers.</b> Y. Bespyatykh, I. Dikshtein, and V. Mal'tsev, Institute of Radioengineering and Electronics, RAS</p>	<p><b>P2O-4 Characterization of Transducer Arrays by Laser Interferometry: Influence of Acousto-Optic Interactions on Displacement Measurements in Water.</b> D. Certon<sup>*1</sup>, O. Bou Matar<sup>1</sup>, J. Guyonvarch<sup>1</sup>, N. Felix<sup>2</sup>, and F. Patat<sup>1</sup>, <sup>1</sup>GIP ULTRASONS/LUSSI, <sup>2</sup>VERMON SA</p>	<p><i>Session P2Q</i>  <b>SAW PROPAGATION</b>            Chair: M. Pereira da Cunha            University of Maine</p>	<p><b>P2R-1 Investigation of Dopant Dependent Wave Velocity in GaN Thin Film SAW Filter.</b> H.-H. Jeong<sup>*1</sup>, S.-K. Kim<sup>1</sup>, J.-S. Lee<sup>2</sup>, H.-C. Choi<sup>1</sup>, J.-H. Lee<sup>1</sup>, and Y.-H. Lee<sup>1</sup>, <sup>1</sup>Kyungpook National University, South Korea, <sup>2</sup>Uiduk University, South Korea</p>
<p><b>P2M-5 Low-losses Materials for High Frequencies Acoustic Devices.</b> S.N. Ivanov<sup>*</sup>, Institute of Radioengineering and Electronics Russian Academy of Sciences</p>	<p><b>P2N-5 Efficient Hypersonic Wave Magnetostrictive Excitation Method.</b> A.S. Bugaev<sup>*</sup> and V.B. Gorsky, Moscow Institute of Physics and Technology</p>	<p><b>P2O-5 Characterization of High-frequency Transducers Using Hewlett-Packard Membrane Hydrophone.</b> B. Huang<sup>*</sup>, K. Snook, and K. K. Shung, The Pennsylvania State University</p>	<p><b>P2Q-1 BAW Radiation from LSAW Resonators on Lithium Tantalate.</b> J. V. Knuuttila<sup>*1</sup>, J. Koskela<sup>1</sup>, J. Vartiainen<sup>1</sup>, C. S. Hartmann<sup>2</sup>, V. P. Plessky<sup>3</sup>, and M. M. Salomaa<sup>1</sup>, <sup>1</sup>Materials Physics Laboratory, FIN-02015 HUT, Finland, <sup>2</sup>RF SAW Components, Dallas, TX, USA, <sup>3</sup>Thales Microsonics, CH-2000 Neuchatel, Switzerland</p>	<p><b>P2R-2 Temperature Compensation of SAW in ZnO/SiO<sub>2</sub>/Si and ZnO/SiO<sub>2</sub>/Diamond/Si Structures.</b> P. Wu, N. W. Emanetoglu, X. Tong, and Y. Lu, Rutgers University</p>
<p><b>P2M-6 Structural-Property Correlation of Lead Cadmium Borate Glasses by Ultrasonic and Spectroscopic Techniques.</b> A. Khanna and S.S. Bhatti<sup>*</sup>, Guru Nanak Dev University</p>	<p><b>P2N-6 Analysis of Piezoelectric Transformer by Using FEM and Equivalent-Circuit Considering Load Variation.</b> H.-W. Joo<sup>*</sup>, C.-H. Lee, and H.-K. Jung, School of Electrical Engineering, College of Engineering, Seoul National University</p>	<p><b>P2O-6 Phase Matched Air Ultrasonic Transducers using Corrugated PVDF Film with Half Wavelength Depth.</b> M. Toda<sup>*</sup>, Measurement Specialty, Inc</p>	<p><b>P2Q-2 Characterization and Prediction of Transverse Plate Resonators Built using Mixed Strip and Groove Gratings.</b> S. Ballandras, T. Pastureaud<sup>*</sup>, V. Laude, A. Soufyane, and W. Daniau, LPMO/CNRS, Besancon, France</p>	<p><b>P2R-3 Investigation of SAW-induced Acoustomigration Effects in Cu- and Al-based Metallizations.</b> H. Schmidt<sup>*1</sup>, S. Menzel<sup>2</sup>, and M. Weihnacht<sup>2</sup>, <sup>1</sup>Vectron International-Telefilter, Teltow, Germany, <sup>2</sup>Institute for Solid State and Materials Research, Dresden, Germany</p>

<p><b>P2M-7 Observation of Anisotropic Thermal Diffusivities in yz LiNbO<sub>3</sub> Using Transient Heat Pulse Diffusion Measurement.</b> K. Kobayashi<sup>1</sup>, T. Koike<sup>*2</sup>, Y. Imai<sup>2</sup>, and H. Obara<sup>3</sup>, <sup>1</sup>Dept. of Mech. Eng., <sup>2</sup>Dept. of Electronic Eng., <sup>3</sup>Dept. of Inf. and Comm. Eng., Tamagawa University, Machida, Tokyo 194-8610, Japan</p>	<p><b>P2N-7 The Peculiarity of Propagation of Ultrasonic Waves in Cd<sub>1-x</sub>Hg<sub>x</sub>Te under Ultrasonic Loading.</b> I. Lysiuk<sup>*</sup>, Institute of Semiconductor Physics of NAS Ukraine</p>	<p><i>Session P2P</i>  <b>TRANSDUCER MATERIAL CHARACTERIZATION</b>            Chair: W. Smith            Office of Naval Research</p>	<p><b>P2Q-3 Resonant Properties of Fast Leaky Surface Acoustic Waves on Lithium Niobate.</b> V.I. Grigorievski<sup>*</sup>, IRE RAS, Fryazino, Moscow Region, Russia</p>	<p><b>P2R-4 Low Loss Diamond SAW Devices by Small Grain Size Poly-Crystalline Diamond.</b> T. Uemura<sup>*</sup>, S. Fujii, H. Kitabayashi, K. Itakura, A. Hachigo, H. Nakahata, S. Shikata, K. Ishibashi, and T. Imai, Sumitomo Electric Industries, Ltd., Hyogo, Japan</p>
<p><i>Session P2N</i>  <b>PHYSICAL ACOUSTICS IV</b>            Chair: M. Levy            ML Consulting</p>	<p><i>Session P2O</i>  <b>TRANSDUCER CHARACTERIZATION</b>            Chair: M. Schafer            Perceptron, Inc.</p>	<p><b>P2P-1 Characterizing the Thickness Shear Mode Properties of the Piezoelectric Thin Films Deposited on Substrates.</b> M.-C. Chao<sup>*</sup>, B. Wu, Z. Wang, and C.-L. Wang, TXC Corporation</p>	<p><b>P2Q-4 Two Branches of Normal Surface Acoustic Modes on Rotated Cuts of KNbO<sub>3</sub>.</b> V. G. Mozhaev<sup>1</sup> and M. Weihnacht<sup>*2</sup>, <sup>1</sup>Moscow State University, Russia, <sup>2</sup>Institute for Solid State and Material Research, Dresden, Germany</p>	<p><b>P2R-5 Growth of Piezoelectric Aluminum Nitride for Layered SAW Devices.</b> M. B. Assouar<sup>*</sup>, O. Elmazria, L. Le Brizoual, and P. Alnot, LPMIA CNRS-Universite Nancy I, France</p>
<p><b>P2N-1 Analysis of a Ceramic Thickness-shear Piezoelectric Transformer.</b> J. S. Yang<sup>1</sup>, X. Zhang<sup>*1</sup>, and W. Zhang<sup>2</sup>, <sup>1</sup>University of Nebraska-Lincoln, Lincoln, NE, <sup>2</sup>CTS Wireless Components, Bloomingdale, IL</p>	<p><b>P2O-1 An Experience of PNN-PT-PZ High-k Piezoelectric Ceramics Aiming for Medical Imaging Transducers.</b> Y. Takeuchi<sup>*1</sup>, M. Kondo<sup>2</sup>, and K. Kurihara<sup>2</sup>, <sup>1</sup>Kagoshima University, <sup>2</sup>Fujitsu Laboratories Ltd.</p>	<p><b>P2P-2 Low-impedance and Low-loss Customized Materials for Air-coupled Piezoelectric Transducers.</b> T.E. Gomez<sup>*1</sup>, F. Montero<sup>1</sup>, E. Molins<sup>2</sup>, and J. R. Rodriguez<sup>3</sup>, <sup>1</sup>Instituto de Acustica C.S.I.C., <sup>2</sup>Instituto de Ciencia de Materiales, C.S.I.C., <sup>3</sup>Fisica Aplicada y Tecnologia Avanzada. Universidad Nacional Autonoma de Mexico</p>	<p><b>P2Q-5 Laserprobe Measurements of SAW at 3 GHz on Free Surface of Rotated Y-Cut Quartz.</b> S. Rooth<sup>*</sup>, S. Bardal, T. Viken, O. Johansen, and E. Halvorsen, Alcatel Space Norway AS</p>	<p><b>P2R-6 Propagation Characteristics of the SH-SAW on (110)ZnO/(012)LiTaO<sub>3</sub>.</b> T. Shoji, K. Nakamura, and D. Yamazaki<sup>*</sup>, Graduate School of Engineering, Tohoku University</p>
<p><b>P2N-2 Acoustic Pressure Measurement by an Acousto-Optic Tomography Method.</b> J. P. Remenieras<sup>*</sup>, O. Bou Matar, S. Calle, and F. Patat, LUSSE/GIP Ultrasons, University of F. Rabelais, Tours, France</p>	<p><b>P2O-2 Performance Characteristics of Multi-layer Actuators Fabricated from PZN-PT Single Crystals.</b> L.C. Lim<sup>*1,2</sup>, F.J. Kumar<sup>2</sup>, D. Liufu<sup>3</sup>, D.F. Waechter<sup>3</sup>, and S.E. Prasad<sup>3</sup>, <sup>1</sup>Department of Mechanical Engineering, National University of Singapore, <sup>2</sup>Microfine Materials Technologies Pte Ltd., <sup>3</sup>Sensor Technology Limited</p>	<p><b>P2P-3 Approaches for Determining the Properties of Materials by FEM.</b> J. Lan<sup>*</sup>, R. H. Tancrell, and S. G. Boucher, Airmar Technology Corporation, Milford, NH/USA</p>		<p><b>P2R-7 Transfer and Bonding Process of Semiconductor Coupled SAW Device Suited for Mass-Production.</b> C. Kaneshiro<sup>*</sup>, T. Nakajima, Y. Aoki, K. Koh, and K. Hohkawa, Electric &amp; Electrical Engineering, Kanagawa Institute of Technology</p>

11:00 a.m. – 12:30 p.m.

Wednesday, October 10, 2001

Omni Hotel, Atlanta, GA

	<i>Session 11</i> <b>DOPPLER APPLICATIONS</b> Chair: H. Routh Philips Medical Systems/ATL Ultrasound	<i>Session 21</i> <b>THERAPY - TECHNIQUES</b> Chair: B. Fowlks University of Michigan	<i>Session 31</i> <b>MICROSCALE PHYSICAL ACOUSTICS</b> Chair: S. Schneider Marquette University	<i>Session 41</i> <b>SAW MATERIALS</b> Chair: C. Ruppel EPCOS AG	<i>Session 51</i> <b>NDE - MATERIAL CHARACTERIZATION</b> Chair: J. Saniie Illinois Institute of Technology
	<b>Rutherford</b>	<b>Mimosa</b>	<b>Glenmar</b>	<b>Knollwood</b>	<b>Liberty</b>
11:00 a.m.	<b>11-1 (Invited) High Resolution Flow Estimation for Medicine and Space Technology.</b> L. Pourcelot*, GIP Ultrasons University of Tours, France	<b>21-1 Multi-Frequency Interstitial Ultrasound Applicator for Conformal Thermal Therapy.</b> R. Chopra*, C. Luginbuhl, J. A. Weymouth, F. S. Foster, and M. J. Bronskill, Sunnybrook and Women's College Health Sciences Centre, Toronto, Canada	<b>31-1 (Invited) Acoustic Ink Printing: An Application Of Ultrasonics For Photographic Quality Printing.</b> B. Hadimioglu*, S. Elrod, and R. Sprague, Xerox Palo Alto Research Center, Palo Alto, CA	<b>41-1 New Ordered Langasite Structure Compounds - Crystal Growth and Preliminary Investigation of the Material Properties.</b> M.M.C. Chou*, S. Jen, and B.H.T. Chai, Crystal Photonics, Inc., Sanford, FL, USA	<b>51-1 Effects of Microstructure Elongation on Ultrasonic Backscattering and Attenuation.</b> R. B. Thompson <sup>*1</sup> , F. J. Margetan <sup>1</sup> , P. D. Panetta <sup>1,2</sup> , Y. Guo <sup>1</sup> , and P. Haldipur <sup>1</sup> , <sup>1</sup> Iowa State University, Ames, Iowa, USA, and <sup>2</sup> Pacific Northwest Laboratories, Richland, Washington, USA
11:15 a.m.		<b>21-2 Conformal Heating Using Scanned 1-D Phased Array for External Ultrasound Hyperthermia.</b> K.-C. Ju <sup>*1</sup> , Y.-Y. Chen <sup>1</sup> , W.-L. Lin <sup>2</sup> , and T.-S. Kuo <sup>1</sup> , <sup>1</sup> Department of Electrical Engineering, National Taiwan University, Taipei, Taiwan, <sup>2</sup> Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan		<b>41-2 Chemical Composition Dependences of the Acoustical Physical Constants of LiNbO<sub>3</sub> and LiTaO<sub>3</sub> Crystals.</b> J. Kushibiki*, I. Takanaga, S. Komatsuzaki, and T. Ujije, Tohoku University, Sendai, Japan	<b>51-2 Ultrasonic Nondestructive Evaluation of Wave Velocity and Thickness of Stratified Media.</b> A. Sousa <sup>1</sup> , W. Pereira <sup>2</sup> , and J. Machado <sup>*2</sup> , <sup>1</sup> Brazilian Navy Research Institute, <sup>2</sup> Biomedical Engineering Program-COPPE-UFRJ

\*Author presenting paper.

11:30 a.m.	<b>11-2 In vivo Lateral Flow Estimation with Spatial Quadrature.</b> M. E. Anderson*, University of Rochester	<b>21-3 Comparison of Split-Beam Transducer Geometries and Excitation Configurations for Transrectal Prostate HIFU Treatments.</b> R. Seip <sup>1</sup> , N. Sanghvi <sup>1</sup> , T. Uchida <sup>2</sup> , and S. Umemura <sup>3</sup> , <sup>1</sup> Focus Surgery, Inc., Indianapolis, IN, <sup>2</sup> Kitasato University School of Medicine, Sagami-hara, Japan, <sup>3</sup> Hitachi Ltd., Kokubunji, Tokyo, Japan	<b>31-2 High Frequency Silicon-Based Ultrasonic Nozzle*.</b> S. Tsai <sup>1</sup> *, T. K. Tseng <sup>2</sup> , Y. F. Chou <sup>3</sup> , H. Y. Tsai <sup>3</sup> , J. H. Yoo <sup>4</sup> , and C. Tsai <sup>2,4</sup> , <sup>1</sup> California State University, Long Beach, CA, <sup>2</sup> Institute for Applied Science and Engineering Research, Academia Sinica, Nankang, Taipei, Taiwan, <sup>3</sup> National Taiwan University, Taipei, Taiwan, <sup>4</sup> University of California, Irvine, CA	<b>41-3 (Invited) Elastic, Thermoelastic and Piezoelectric Properties of La<sub>3</sub>Ga<sub>5</sub>SiO<sub>14</sub> and Structurally Related Crystals - An Application of Resonant Ultrasound Spectroscopy.</b> J. Schreuer*, Laboratory of Crystallography, ETH, Zurich, Switzerland	<b>51-3 Stress Measurements Using A Point-Source/Point-Receiver Surface Wave Transducer.</b> Y.-C. Lee* and S. H. Kuo, Department of Mechanical Engineering, National Cheng Kung University, Tainan, Taiwan
11:45 a.m.	<b>11-3 Lateral Blood Velocity Measurement in the Carotid Artery via Speckle Tracking.</b> C.M. Gallippi <sup>1</sup> *, L.N. Bohs <sup>1</sup> , M.E. Anderson <sup>2</sup> , A.N. Congdon <sup>1</sup> , and G.E. Trahey <sup>1</sup> , <sup>1</sup> Duke University, Durham, NC, <sup>2</sup> University of Rochester, Rochester, NY	<b>21-4 Ultrasound Guided Localized Detection of Cavitation during Lithotripsy in Pig Kidney In Vivo.</b> O. A. Sapozhnikov <sup>1</sup> *, M. R. Bailey <sup>2</sup> , N. A. Miller <sup>2</sup> , Y. A. Pishchalnikov <sup>1</sup> , I. V. Pishchalnikova <sup>1</sup> , J. A. McAteer <sup>3</sup> , P. M. Blomgren <sup>3</sup> , B. A. Connors <sup>3</sup> , and A. P. Evan <sup>3</sup> , <sup>1</sup> Moscow State University, Moscow, Russia, <sup>2</sup> University Washington, Seattle, WA USA, <sup>3</sup> Indiana Medical School, Indianapolis, USA	<b>31-3 Programmable Acoustic Streaming on a 2D PZT Pixel Array.</b> J. Ochoco* and A. Lal, SonicMEMS Laboratory, University of Wisconsin-Madison		<b>51-4 Ultrasonic Nondestructive Evaluation of Explosive Welds.</b> Y. Fan* and A. N. Sinclair, University of Toronto, Toronto, ON, Canada
12:00 noon	<b>11-4 Dynamic Noise Suppression in Blood during Measurement of Transverse Blood Flow along an Intravascular Array Catheter.</b> F. A. Lupotti, F. Mastik, C. L. de Korte, and A. F. W. van der Steen*, Erasmus University Rotterdam, Thoraxcentre	<b>21-5 Lesion Formation and Visualization Using Dual-Mode Ultrasound Phased Arrays.</b> E. S. Ebbini*, J. Bischoff, and J. Coad, University of Minnesota Twin Cities	<b>31-4 An Acoustic Vortex Generator for Microfluidic Particle Entrapment.</b> A. Sathaye* and A. Lal, SonicMEMS Laboratory, University of Wisconsin-Madison	<b>41-4 Investigation of Langanite and Langatate Materials for Use in SAW Device Applications.</b> D.C. Malocha <sup>1</sup> and M. Pereira da Cunha <sup>2</sup> , <sup>1</sup> School of Electrical Eng. and Computer Science, University of Central Florida, <sup>2</sup> Dept. of Electrical and Computer Eng., University of Maine	<b>51-5 Ultrasonic Nondestructive Testing of Ferrocement.</b> E. Moreno* and M. Castillo, Ultrasonic Center, ICIMAF, La Habana, Cuba
12:15 p.m.	<b>11-5 On the Presence of Secondary Flow Components in the Common Carotid Artery.</b> P. Tortoli <sup>1</sup> *, G. Bambi <sup>1</sup> , F. Guidi <sup>1</sup> , A. Della Valle <sup>1</sup> , S. Ricci <sup>1</sup> , and V. Michelassi <sup>2</sup> , <sup>1</sup> University of Florence, <sup>2</sup> University of Roma III	<b>21-6 Ultrasonic Sensing of Induced Motion for Monitoring Thermal and Mechanical Lesions Induced by Therapeutic Ultrasound.</b> F.L. Lizzi*, R. Muratore, C.X. Deng, S. Mikaelian, J. Ketterling, and S.K. Alam, Riverside Research Institute, New York, NY	<b>31-5 Actuation of Atomic Force Microscope Cantilevers by Acoustic Radiation Pressure.</b> A.G. Onaran <sup>1</sup> , F.L. Degertekin <sup>1</sup> , B. Hadimioglu, T.A. Sulchek <sup>2</sup> , and C.F. Quate <sup>2</sup> , <sup>1</sup> G.W. Woodruff School of Mechanical Engineering, Georgia Institute of Technology, Atlanta, GA, <sup>2</sup> E.L. Ginzton Laboratory, Stanford University, CA	<b>41-5 SAW Propagation in LiNbO<sub>3</sub> Damaged by E-beam.</b> R.G. Kryshal and A.V. Medved*, Institute of Radioengineering and Electronics of Russian Academy of Sciences	<b>51-6 Ultrasonic Frequency Difference Generation to Characterize Fluids in Saturated Berea Sandstone.</b> C.S. Kwiatkowski* and D.N. Sinha, Los Alamos National Laboratory
12:30 p.m.			<b>31-6 Critical Properties of Nanoporous Aerogel Thin Films from Surface Acoustic Wave Spectroscopy.</b> C.M. Flannery <sup>1</sup> *, C. Murray <sup>2</sup> , I. Streiter <sup>2</sup> , and S.E. Schulz <sup>2</sup> , <sup>1</sup> Paul-Drude-Institut fuer Festkoerperelektronik, Berlin, Germany, <sup>2</sup> TU Chemnitz, Chemnitz, Germany		

2:00 p.m. – 3:30 p.m.

Wednesday, October 10, 2001

Omni Hotel, Atlanta, GA

	<b>Session 1J</b> <b>MEDICAL IMAGING</b> Chair: H. Ermert Ruhr-University Bochum	<b>Session 2J</b> <b>THERAPY - DEVICES</b> Chair: E. Ebbini University of Minnesota	<b>Session 3J</b> <b>WAVE PROPAGATION MODELING</b> Chair: K. Batra Naval Research Laboratory	<b>Session 4J</b> <b>SAW PROPAGATION</b> Chair: P. Smith McMaster University	<b>Session 5J</b> <b>MATERIALS CHARACTERIZATION</b> Chair: Q. Zhang Pennsylvania State University
	<b>Rutherford</b>	<b>Mimosa</b>	<b>Glenmar</b>	<b>Knollwood</b>	<b>Liberty</b>
2:00 p.m.	<b>1J-1 (Invited) A Hybrid Breast Biopsy System Combining Ultrasound and MRI.</b> D. B. Plewes <sup>*1,2</sup> , C. Piron <sup>1</sup> , C. Luginbuhl <sup>1</sup> , P. Causer <sup>2</sup> , and R. Shumak <sup>2</sup> , Departments of Medical Biophysics <sup>1</sup> and Medical Imaging <sup>2</sup> , Sunnybrook and Women's College Health Science Center, University of Toronto, Canada	<b>2J-1 Ultrasound Applicator for Destruction of Oesophagus Tumours: First Animals Trials.</b> D. Melo de Lima <sup>*1</sup> , Y. Theillere <sup>1</sup> , F. Prat <sup>2</sup> , A. Arefiev <sup>1</sup> , and D. Cathignol <sup>1</sup> , <sup>1</sup> INSERM unit 556, <sup>2</sup> Dept of hepatogastroenterology, Bicetre Hospital	<b>3J-1 Approximate Analysis of Surface Wave Generation in Layered Elastic Media.</b> V. V. Krylov <sup>*</sup> , Loughborough University	<b>4J-1 Leaky SAW in an Isotropic Substrate with Thick Electrodes.</b> V. Plessky <sup>*1</sup> , T. Makkonen <sup>2</sup> , Y. Fusero <sup>3</sup> , and M. M. Salomaa <sup>2</sup> , <sup>1</sup> Thales Microsonics, SAW Design Bureau, Neuchatel, Switzerland, <sup>2</sup> Materials Physics Laboratory, Helsinki University of Technology, Helsinki, Finland, <sup>3</sup> Thales Microsonics, Sophia Antipolis Cedex, France	<b>5J-1 PMN-PT Piezoceramics: High Field Measurements at Resonance.</b> M. Pham-Thi <sup>1</sup> , P. Gaucher <sup>*1</sup> , O. Lacour <sup>2</sup> , and G. Van Der Brock <sup>2</sup> , <sup>1</sup> Thales Central Research Laboratory, Orsay, France, <sup>2</sup> Thomson Marconi Sonars, Sophia Antipolis, France
2:15 p.m.		<b>2J-2 A Laparoscopic HIFU Probe for Kidney Ablation Prior to Partial Nephrectomy.</b> J. Tavakkoli <sup>*1</sup> , R. Seip <sup>1</sup> , V. V. Rao <sup>1</sup> , R. F. Paterson <sup>2</sup> , A. P. Evan <sup>2</sup> , A. L. Shalhav <sup>2</sup> , and N. Sanghvi <sup>1</sup> , <sup>1</sup> Focus Surgery Inc., Indianapolis, IN, <sup>2</sup> Indiana University School of Medicine, Indianapolis, IN	<b>3J-2 Numerical Simulation of Nonlinear Effects in High Power Ultrasound Applications.</b> J. Hoffelner <sup>*1,2</sup> , H. Landes <sup>3</sup> , and R. Lerch <sup>1,3</sup> , <sup>1</sup> Christian Doppler Laboratory for Electromechanical Sensors and Actuators, Linz, Austria, <sup>2</sup> Institute of Electrical Measurement Technology, Linz, Austria, <sup>3</sup> Institute of Sensor Technology, Erlangen, Germany	<b>4J-2 Hybrid Surface-Bulk Mode in Periodic Gratings.</b> N. Naumenko <sup>*1</sup> and B. Abbott <sup>2</sup> , <sup>1</sup> Moscow Steel and Alloys Institute, <sup>2</sup> Sawtek Inc.	<b>5J-2 Piezoelectric Properties and Phase Transitions of &lt;001&gt; Oriented Pb(Zn<sub>1-x</sub>Nb<sub>2x</sub>)O<sub>3</sub>-PbTiO<sub>3</sub> Single Crystals.</b> W. Ren, S.-F. Liu, and B. Mukherjee <sup>*</sup> , Royal Military College of Canada

\*Author presenting paper.

2:30 p.m.	<p><b>1J-2 Three-dimensional High-frequency Ultrasound for Planning and Long-term Monitoring of Ocular Tumor Therapy using Radiotherapy and Intense Ultrasound.</b> F.L. Lizzi<sup>1</sup>, R. Muratore<sup>1</sup>, A. Kalisz<sup>1</sup>, S. Ramachandran<sup>1</sup>, D.J. Coleman<sup>2</sup>, and R.H. Silverman<sup>2</sup>, <sup>1</sup>Riverside Research Institute, New York, NY, <sup>2</sup>Weill Medical College of Cornell University, New York, NY</p>	<p><b>2J-3 Integrated Pressure and Flow Sensor in Silicon-Based Ultrasonic Surgical Actuator.</b> X. Chen* and A. Lal, SonicMEMS Laboratory, University of Wisconsin-Madison</p>	<p><b>3J-3 CAD-Based Simulation of Ultrasonic NDT in Complex Configurations with Phased-Arrays.</b> P. Calmon, N. Gengembre*, S. Mahaut, and S. Chatillon, CEA Saclay - Gif-sur-Yvette - France</p>	<p><b>4J-3 Mode Analysis of Longitudinal Multi Mode SAW Resonator Filter.</b> S. Ichikawa*, H. Kanasaki, N. Akahori, M. Koshino, and Y. Ebata, Toshiba Corporation DDC-Company, Yokohama, Japan</p>	<p><b>5J-3 Characterization of Transducers and Resonators under High Drive Levels.</b> S. Sherrit*, D.A. Sigel, M.J. Gradziel, X. Bao, S.A. Askins, B.P. Dolgin, and Y. Bar-Cohen, Jet Propulsion Laboratory, California Institute of Technology</p>
2:45 p.m.	<p><b>1J-3 Novel Ultrasonic Methods for Visualizing Prostate Brachytherapy Seeds.</b> E. J. Feleppa<sup>1</sup>, S. Ramachandran<sup>1</sup>, S. K. Alam<sup>1</sup>, R. D. Ennis<sup>2</sup>, C. S. Wu<sup>2</sup>, and P. B. Schiff<sup>2</sup>, <sup>1</sup>Riverside Research Institute, <sup>2</sup>Columbia Presbyterian Medical Center</p>	<p><b>2J-4 Experimental Validation of Finite Differences Simulations of the Ultrasonic Wave Propagation through Skull.</b> M. Pernot, J.-F. Aubry*, M. Tanter, J.-L. Thomas, and M. Fink, Laboratoire Ondes et Acoustique</p>	<p><b>3J-4 Directivity of Integrated Piezoelectric Lamb Wave Sources.</b> E. Moulin*, N. Bourasseau, J. Assaad, and C. Delebarre, IEMN-DOAE, Valenciennes, France</p>	<p><b>4J-4 Experimental Observation of Higher Order Surface Acoustic Modes in High Aspect Ratio Electroplated Nickel Electrodes on Y+128 Lithium Niobate.</b> V. Laude<sup>1</sup>, L. Robert<sup>1</sup>, A. Khelif<sup>2</sup>, T. Pastureau<sup>2</sup>, M. Wilm<sup>1</sup>, S. Basour<sup>1</sup>, W. Daniau<sup>1</sup>, and S. Ballandras<sup>1</sup>, <sup>1</sup>Laboratoire de Physique et Metrologie des Oscillateurs, CNRS, Besancon, France, <sup>2</sup>Laboratoire de Physique du Solide, Namur, Belgium</p>	<p><b>5J-4 Experimental Characterisation of Passive Materials Employed in Piezoelectric Composite Transducers.</b> R. L. O'Leary*, G. Hayward, A. C. S. Parr, and G. Smillie, The Centre for Ultrasonic Engineering, University of Strathclyde, Glasgow, Scotland</p>
3:00 p.m.	<p><b>1J-4 A System for Ultrasound-Based Intraoperative Navigation in Spine-Surgery.</b> P. K. Weber*, L. Peter<sup>1</sup>, G. Voss<sup>2</sup>, J. C. Schlegel<sup>3</sup>, and U. Harland<sup>4</sup>, <sup>1</sup>IBMT, <sup>2</sup>IGD, <sup>3</sup>Toshiba Medical Systems Europe, <sup>4</sup>Klinikum Saarbruecken</p>	<p><b>2J-5 Novel Impedance Matching Layer for High Efficiency Continuous Wave Transducers.</b> M. Toda*, Measurement Specialty Inc.</p>	<p><b>3J-5 Numerical Modeling of Finite Amplitude Sound Beams Radiated From Non Axisymmetric Plane Transducers.</b> T. Nouri-Baranger<sup>1,2</sup>, E. Closset<sup>1,2</sup>, and D. Cathignol<sup>2</sup>, <sup>1</sup>Universite Claude Bernard Lyon1, Villeurbanne, France, <sup>2</sup>INSERM Research Unit U556, Lyon, France</p>	<p><b>4J-5 Imaging of Surface Acoustic Waves.</b> C. Boedefeld<sup>1</sup>, H.-J. Kutschera<sup>1</sup>, F. Beil<sup>1</sup>, A. Wixforth<sup>1</sup>, J. Toivonen<sup>2</sup>, M. Sopanen<sup>2</sup>, and H. Lipsanen<sup>2</sup>, <sup>1</sup>Physics Dep., Ludwig-Maximilian-University, Geschwister-Scholl-Platz 1, D-80539 Munich, Germany, <sup>2</sup>Optoelectronics Laboratory, Helsinki University of Technology, Otakaari 7A, FIN-02150 Espoo, Finland</p>	<p><b>5J-5 Advanced Piezoelectric Materials for Medical Ultrasound Applications.</b> W. S. Hackenberger*, P. W. Rehrig<sup>1</sup>, J. Connata<sup>2</sup>, and T. A. Ritter<sup>1</sup>, <sup>1</sup>TRS Ceramics, Inc., <sup>2</sup>NIH Resource Center for Medical Ultrasound Transducer Technology, The Pennsylvania State University</p>
3:15 p.m.	<p><b>1J-5 A Novel Aperture Design Method for Improved Depth of Field in Ultrasound Imaging.</b> K. Ranganathan* and W. F. Walker, University of Virginia</p>	<p><b>2J-6 Experimental Temperature Monitoring and Coagulation Detection using Ultrasound-Stimulated Acoustic Emission.</b> E. Konofagou*, J. Thierman, and K. Hynynen, Department of Radiology - MRI research, Brigham and Women's Hospital, Harvard Medical School</p>	<p><b>3J-6 Measurement and Finite Element Analysis for Wedge Waves Propagating along Piezoelectric Wedges.</b> C.H. Yang* and K.Y. Tsai, Chang Gung University</p>	<p><b>4J-6 High-Resolution Imaging of Surface Acoustic Wave Scattering.</b> G. Behme<sup>1,2</sup> and T. Hesjedal<sup>1</sup>, <sup>1</sup>Stanford University, Stanford, CA, <sup>2</sup>Paul Drude Institute, Berlin, Germany</p>	<p><b>5J-6 Measurement of Large Ultrasonic Displacements with a Heterodyne Probe.</b> C. Barriere* and D. Royer, Laboratoire Ondes et Acoustique, Paris, France</p>



4:00 p.m. – 5:30 p.m.

Wednesday, October 10, 2001

Omni Hotel, Atlanta, GA

	<i>Session 1K</i> <b>NOVEL IMAGING</b> Chair: R. Chiao GE Medical Systems	<i>Session 2K</i> <b>THERAPY: SURGERY</b> Chair: S. Umemura Hitachi Research Laboratory	<i>Session 3K</i> <b>HIGH POWER ULTRASONIC PROCESSING</b> Chair: M. Pappalardo University D. Roma	<i>Session 4K</i> <b>SAW THIN FILMS AND DEVICES</b> Chair: W. Hunt Georgia Tech	
	Rutherford	Mimosa	Glenmar	Knollwood	Liberty
4:00 p.m.	<b>1K-1 Performance of Reflex Transmission Imaging (RTI) Using a Linear Array.</b> L.A.S. Baker* and J.C. Bamber, Institute of Cancer Research	<b>2K-1 MR Guided Focused Ultrasound Surgery for the Treatment of Breast Cancer.</b> J. W. Jenne* <sup>1</sup> , R. Rastert <sup>1</sup> , I. Simiantonakis <sup>1</sup> , J. Debus <sup>1,2</sup> , and P. E. Huber <sup>1,2</sup> , <sup>1</sup> German Cancer Research Center, <sup>2</sup> University of Heidelberg	<b>3K-1 (Invited) Ultrasonic Separation of Suspended Particles.</b> E. Benes*, M. Groeschl, F. Trampler, Ch. Delouvroy, H. Boehm, L. Gherardini, S. Radel, and H. Nowotny, Vienna University of Technology, Wiedner Hauptstr. 8/134, A-1040 Vienna, Austria	<b>4K-1 A New Piezoelectric Material: Mg<sub>2</sub>Zn<sub>1-x</sub>O.</b> N.W. Emanetoglu*, S. Muthukumar, R. Wittstruck, S. Feng, and Y. Lu, School of Engineering, Rutgers University, Piscataway, NJ	
4:15 p.m.	<b>1K-2 Evaluation of Translating Apertures Based Angular Scatter Imaging on a Clinical Imaging System.</b> M. J. McAllister* <sup>1</sup> , K. W. Rigby <sup>2</sup> , and W. F. Walker <sup>1</sup> , <sup>1</sup> Univ. of Virginia, <sup>2</sup> GE Corp. R&D, Schenectady, NY	<b>2K-2 Unblocking Cerebral Spinal Fluid Shunts Using Low Frequency Ultrasonic Cavitation.</b> H. Ginsberg* <sup>1,2</sup> , J. Drake <sup>1,2</sup> , and R. Cobbold <sup>2</sup> , <sup>1</sup> Division of Neurosurgery, Hospital for Sick Children, University of Toronto, Toronto, Canada, <sup>2</sup> Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, Canada		<b>4K-2 Investigation of Characteristics of SAW Filter Using Undoped GaN Epitaxial Layer Grown by MOCVD on Sapphire Substrate.</b> S.K. Kim*, M.J. Park, C.Y. Jang, J.H. Lee, H.C. Choi, J.H. Lee, and Y.H. Lee, School of Electronic and Electrical Engineering, Kyungpook National University	

\*Author presenting paper.

4:30 p.m.	<b>1K-3 A Pulse-Echo Beamformer with High Lateral and Temporal Resolution and Depth-Independent Lateral Response.</b> K. Ustuner*, C. Bradley, and L. Thomas, Siemens Ultrasound	<b>2K-3 High-Intensity Focused Ultrasound Induced Hemostasis Leading to Venous Occlusion and Obliteration: Potential Implications for the Treatment of Esophageal and Gastric Varices.</b> J.H. Hwang*, M.B. Kimmey, R.W. Martin, M. Noble, and S. Vaezy, University of Washington, Seattle, WA	<b>3K-2 Development of a Bolt-Clamped Langevin-Type Transducer for Operation at a High Frequency of 80kHz.</b> K. Adachi* and H. Hasegawa, Yamagata University	<b>4K-3 SAW Characteristics in Layered ZnO/GaAs Structure for Design of Integrated SAW Filters.</b> V. Y. Zhang*, J. E. Lefebvre, and T. Gryba, IEMN/CNRS, 59652 Villeneuve d'Ascq, France	
4:45 p.m.	<b>1K-4 Sidelobe Reduction of Images with Coded Limited Diffraction Beams.</b> J.-Y. Lu*, J. Cheng, and H. Peng, The University of Toledo	<b>2K-4 Acoustic Fragmentation of Therapeutic Contrast Agents and Localized Drug Delivery.</b> D.J. May, J.S. Allen*, J.E. Chomas, and K.W. Ferrara, Biomedical Engineering, University of California at Davis	<b>3K-3 The Ultrasonic Hammer Transducer.</b> M. Prokic*, J. Tapson <sup>2</sup> , and B. Mortimer <sup>3</sup> , <sup>1</sup> MP Interconsulting Switzerland, <sup>2</sup> University of Cape Town, <sup>3</sup> Centre for Instrumentation Research, Cape Technikon	<b>4K-4 Growth Process and Surface Acoustic Wave (SAW) Characteristics of (LiNbO<sub>3</sub> / Diamond / Silicon) and (ZnO / Diamond / Silicon) Multilayered Structures.</b> E. Dogheche*, S. Chauvin <sup>1</sup> , D. Remiens <sup>1</sup> , V. Sadaune <sup>2</sup> , and T. Gryba <sup>2</sup> , <sup>1</sup> Universite de Valenciennes, Dept Materiaux Integration Microelectronique Microsystemes, <sup>2</sup> Institut Electronique et Microelectronique du Nord, Dept OAE	
5:00 p.m.	<b>1K-5 Simulations and Measurements of Harmonic Pressure Field Generated by Medical Phased Array Transducers.</b> A. Bouakaz* <sup>1,2</sup> , C. T. Lance <sup>1</sup> , and N. de Jong <sup>1,2</sup> , <sup>1</sup> Department of Cardiology, Erasmus University Rotterdam, The Netherlands, <sup>2</sup> Interuniversity Cardiology Institute Netherlands (ICIN), Utrecht, The Netherlands	<b>2K-5 The Effects of Microbubbles on Single Pulse Duration in Non-Invasive Ultrasound Surgery.</b> B. C. Tran*, J. B. Seo, J. B. Fowlkes, and C. A. Cain, University of Michigan, Ann Arbor, MI	<b>3K-4 Ultrasonic Complex Vibration Welding Systems of 100 kHz to 200 kHz with Large Welding Tip Area for Packaging in Microelectronics.</b> J. Tsujino* and Y. Harada, Kanagawa University	<b>4K-5 Theoretical Studies on LiNbO<sub>3</sub>/Sapphire Layered Structures with SiO<sub>2</sub> Over-Layer for Zero TCD SAW Device Applications.</b> M. Tomar*, V. Gupta, and K. Sreenivas, Department of Physics and Astrophysics, University of Delhi, Delhi-110007, India	
5:15 p.m.	<b>1K-6 Performance of Sparse Arrays in a Nonlinear Medium.</b> S. Holm* <sup>1</sup> , H. Fjellestad <sup>2</sup> , A. Austeng <sup>1</sup> , and K. Thomenius <sup>3</sup> , <sup>1</sup> Department of Informatics, University of Oslo, <sup>2</sup> Petroleum Geo-Services, PGS Seres, <sup>3</sup> GE Corporate R & D	<b>2K-6 Acoustic Output of a Harmonic Scalpel: Airborne Ultrasound and Derived Acoustic Power in Water.</b> C. Koch*, M. Borys <sup>1</sup> , T. Fedtke <sup>1</sup> , U. Richter <sup>1</sup> , and B. Poehl <sup>2</sup> , <sup>1</sup> Physikalisch-Technische Bundesanstalt, Braunschweig, Germany, <sup>2</sup> Ethicon Endo-Surgery GmbH, Norderstedt, Germany	<b>3K-5 Welding Characteristics of Various Metal Plates Using Ultrasonic Seam and Spot Welding Systems Using a Complex Vibration Welding Tip.</b> J. Tsujino* and T. Ueoka, Kanagawa University	<b>4K-6 SAW and AO Propagation Characteristics of KNbO<sub>3</sub>/Spinel Thin Film Layered Structure.</b> R. Nayak*, V. Gupta, and K. Sreenivas, Dept. of Physics, University of Delhi, Delhi, India	