The 30th Symposium on Ultrasonic Electronics (USE 2009) Program

Wednesday, November 18

9:50 Opening Ceremony

10:00-10:45 Underwater Acoustics  Chair: Nobuyuki Endoh (Kanagawa University)

1J6-1* Buried Object Imaging with Synthetic Aperture SONAR
Teiichiro Ikeda1† Kentaro Kato2 Kunio Hashiba1 Ryusuke Imai2 Mitsuhiko Nanri2
(1Hitachi Ltd., Central Research Laboratory; 2Hitachi Ltd., Defense Systems Group)

1J6-2* Performance Evaluation of Chip-interleaving Method for Acoustic Communication
Tadashi Ebihara1 Koichi Mizutani Naoto Wakatsuki (Univ. Tsukuba)

1J6-3 Converging of phase-conjugate wave for length of array in underground
Toshiaki Kikuchi1† (National Defense Academy)

10:45-10:50 Break

10:50-11:50 High Power Ultrasonics, Sonochemistry  Chair: Kentaro Nakamura (Tokyo Institute of Technology)

1J4-1 The High-Precision Machining by Ultra Sonic Vibration Cutting Method with Using Lower-Young’s Tool
Toshiaki Furusawa1† Tsuneyoshi Suzuki1 Hirobumi Mugishima2 Masanori Ito1
(1School. Scie.&Eng., Teikyo Univ.; 2Suzuki Precion Ltd.)

1J4-2* Examination of Sandwich-type Multi-degree-of-freedom Spherical Ultrasonic Motor
Bo Lu1† Manabu Aoyagi1 Takehiro Takano1 Hideki Tamura3
(1Muroran Institute of Technology; 2Tohoku Institute of Technology; 3Yamagata Univ.)

1J4-3* Visualization of cavitation behavior and sonochemical efficiency of a rectangular sonochemical reactor
Genki Sugiyama1† Yoshihiro Kojima2 Yoshiyuki Asakura1 Shinobu Koda2
(1Nagoya Univ.; 2Nagoya Univ.; 3Honda Electronics)

1J4-4 Sonoluminescence of alkali-metal atoms in sulfuric acid: Comparison with water
Shin-ichi Hatanaka1† Shigeo Hayashi1 Pak-Kon Choi1 (1Univ. of Electro-Comm.; 2Meiji Univ.)

11:50-13:10 Lunch

13:10-14:00 Invited Talk 1  Chair: Kyuichi Yasui (AIST)

1I-1 Ultrasonic Atomization for Controlled Mist Generation and Ethanol Separation --Visual Analysis and Process Development--
Katsumi TSUCHIYA (Doshisha University)

14:00-16:00 Poster Session  Chair: Koichi Mizutani (University of Tsukuba)

1P2-1 Further Correction of Measurement and Inference Errors in Piezoelectric Equivalent Inductance Components
Michio Ohki† (Natl. Def. Acad.)

1P2-2 Evaluation of irradiation embrittlement in RPV steels by EMAR measurements
Yasuhiro Kamada1† Toshihiro Ohtani1 Hiroaki Kikuchi1 Satoru Kobayashi1
(1Iwate Univ.; 2Shonan Institute of Technology)

1P2-3* Reconsidering of the communication method for a wearable device using ultrasonic waves
Shin-nosuke Suzuki1† Manabu Ishiihara1 Yukio Kobayashi1 Nagaya Okada2 Kazuto Kobayashi2
(1Oyama N.C.T.; 2Honda Electronics)

1P2-4 Measurement on Ultrasonic Attenuation Coefficient of Tissue Mimicking Materials
Tomoji Yoshida† Toshio Kondo (Tokushima Bunri Univ.)
1P2-5  C-mode observation of nonlinearity parameter B/A by automatic measurement  
Shigemi Saito1† Jung-Ho Kim2 (Tokai Univ.; ‡GW Corp.)

1P2-6 Uncertainty factor of hydrophone active element diameter measurement for sensitivity calibration  
Masahiro Yoshioka1 (National Institute of Advanced Industrial Science and Technology(AIST))

1P2-7* Numerical Analysis of Piezoelectric Sensor for Simultaneous Measurement of Liquid  
Density and Viscosity  
Jun Takahada1† Naoto Wakatsuki1 Koichi Mizutani1 Ken Yamamoto2 (Univ. Tsukuba; ‡Kansai Univ.)

1P2-8 Calorimetric Method for Measuring High Ultrasonic Power by Using Distilled Water as  
the Heating Material -Effects of Waterbath Wall Material and Structure-  
Tsuneo Kikuchi1 Takeyoshi Uchida (NMJ/AIST)

1P2-9* Temperature Dependence of an Ultrasonic Hydrogen Sensor  
Masashi Sonoyama1† Hideaki Fujita1 Yoshimine Kato1 (Kyushu Univ.; ‡Orimec Corporation)

1P2-10 Measurement of Young's Modulus of Materials Using a Change in Motionable Capacitance of  
the Electrical Equivalent Circuit of Quartz-Crystal Tuning-Fork Tactile Sensors  
Hideaki Ito1 Naoki Hatakeyama (Shinshu Univ.)

1P2-11 Measurement of Mist Density Using Airborne Ultrasound  
Tomohiro Akiyama Naoto Wakatsuki1 Kojiro Nishimiyoi Koichi Mizutani1 (Univ. Tsukuba)

1P2-12 Feasibility Study on Temperature Profile Monitoring of Solidification Process Using Ultrasonic Method  
Manabu Takahashi1 Ikuo Iihara1 (Graduate Student of Nagaoka Univ. of Technology;  
Department of Mechanical Engineering, Nagaoka Univ. of Technology)

1P2-13 Ultrasonic Drain Flow Measurement Using Correlation Technique  
Ichiro Nishimura1† Akira Yamada2 Mitsutaka Uchida2 (Tokyo Denki Univ.; ‡Tokyo Univ. of Agriculture and Technology)

1P2-14 Group delay method for Evaluation of Layer Material Properties  
Junjie Chang1† Junichi Nakayama1 (Japan probe Co. Ltd.; ‡Kyoto Institute of Technology)

1P2-15* Reflection Point Search by Rectangular Sound Source with Different Dimensions for  
Transmitting and Receiving  
Hiroyuki Masuyama1 (Toba Natl. Coll. Mar. Tech.)

1P2-16* Analysis of Therapeutic Ultrasound Pressure Field with Schlieren Optical System  
Ryuouke Omura1 Shin-ichiro Umemura Shin Yoshizawa (Tohoku Univ.)

1P2-17* Accuracy verification of visceral fat area measurement using ultrasound tomography  
Koichiro Kawamoto1 Akira Yamada Masao Wada (Tokyo Univ. A&T)

1P2-18* Study of Transducer Arrangement and Reconstruction Technique of Acoustic Computerized Tomography  
Using Flexibly Arranged Transducers  
Ayumu Minamide1† Naoto Wakatsuki1 Koichi Mizutani1 (Univ. Tsukuba; ‡JSPS Research Fellow)

1P2-19 Lateral Detecting Limit of Underground Imaging Owing To Directivity of Sound Source  
Ryo TOH1 Daiki ANDO Seiichi MOTOOKA (Department of Electrical Electronics and Computer Engineering, Chiba Institute of Technology)

1P2-20 Development of high resolution photoelastic ultrasonic visualization system using pulse laser for the  
observation of sound field of 50 MHz phased array system  
Tsuyoshi Mihara1 Shou Washimori Takumi Hamashima Hatsuho Tashiro (Univ. of Toyama)

1P2-21* Magnetic imaging by ultrasonic techniques  
Hisato Yamada1 Keisuke Nakamoto Kenji Ikushima (Tokyo Univ. of Agri. and Tech.)

1P2-22* Imaging of GHz surface acoustic wave through the photoelastic effect  
Taiki Saito1 Osamu Matsuda Motonobu Tomoda Oliver B. Wright (Hokkaido Univ.)

1P2-23 Development of inspection equipment for bottom edges of rails with guided waves  
Junjie Chang1† Katsumi Ohira1 Tkahiro Hayasi1 Keita Kataoka1 (Japan probe Co. Ltd.;  
Nagoya Institute of Technology; ‡East Japan Railway Company)

1P2-24* An examination on CIP-ABC for Multi-Dimensional FDTD Acoustic Simulation  
Yoshifumi Harada1† Kan Okubo1 Norio Tagawa1 Takao Tsuchiya1 (Tokyo Metropolitan Univ.; ‡Doshisha Univ.)

1P2-25 Simulation of wave propagation in an inner head for bone-conducted ultrasound  
Yoh-ichi Fujisaka1† Atsuhi Sakaguchi1 Yoshiaki Watanabe1 Seiji Nakagawa1 (RION; ‡Doshisha Univ.; ‡AIST)

1P2-26 A 3-D sound field rendering with digital boundary condition using GPU  
Tsuchiya Takao1 (Doshisha Univ.)

1P2-27* Nonlinear ultrasonic imaging of closed cracks using subtraction of responses at different loads  
Makoto Hashimoto1 Yoshikazu Ohara Hiroaki Endo Yohei Shintaku Kazushi Yamanaka (Tohoku Univ.)

1P2-28* Harmonic generation in Lamb wave in a plate with contacting interfaces  
Masashi Eto1 Shiro Biwa Eiji Matsumoto (Kyoto Univ.)
1P2-29 Detection and Imaging of Inclusions in Continuously-Casted Steel Plates


1P2-30 Improvement of Ultrasonic CT images for wood by consideration of the anisotropic acoustic property and interpolation based on ML-EM

Honghui Fan1, Shuqiang Guo1, Hirotaoka1, Yanagida1, Yasutaka1, Tamura1 (Yamagata Univ. Graduate School of Science and Engineering)

1P2-31* Acoustical Defect Reconstruction in Square Billet

Hideki Mitsu1, Koichi Mizutani1, Naoto Wakatsuki1 (Univ. Tsukuba)

1P2-32* Development of Ball SAW Gas Chromatograph for Natural Gas Analysis

SHINGO AKAO1,2,4, Yutaro Yamamoto1,4, Hiroki Nagai1,4, Tsumo Ohgi1,4, Takayuki Yanagisawa1,4, Kazuko Okubata1,4, Hisaya Jige1,4, Takeshi Fukiura1,4, Norikata Nakaso1,4, Toshihiro Tsujii1,4, Kazushi Yamanaka1,4

('Tohoku Univ.; TOPPAN Printing; YAMATAKE; JST-CREST')

1P2-33* Distinguish the Buried Objects of Extremely Shallow Underground by Frequency Response Using Scanning Laser Doppler Vibrometer

Touma Abe1, Tsuneyoshi Sugimoto1 (Toin Univ.)

1P2-34* Validation of Applicability of Surface-wave Method Using Giant-magnetostrictive Vibrator as Seismic Source

Akihiro Kamohara1, Youhei Kawamura1, Yuya Nakahata1, Hirokazu Okawa1, Koichi Mizutani1 (Univ. Tsukuba; Akita Univ.)

1P2-35* Optimization for Ultra-violet Photothermal Image Measured with Reflection Objective

Noriyuki Fujii1, Akira Harata1 (Kyushu Univ.)

1P4-1 Modeling of parametric loudspeakers using the Gaussian-beam expansion technique

Chao Ye1, Ming Wu1, Shuaibin Wu1, Chenxi Huang1, Jun Yang1 (Institute of Acoustics, Chinese Academy of Sciences)

1P4-2 The effects of the non-ideal ultrasonic transducer on the performance of a parametric loudspeaker

Ming Wu1, Chao Ye1, Shuaibin Wu1, Chenxi Huang1, Jun Yang1 (Institute of Acoustics, Chinese Academy of Sciences)

1P4-3 The comparative study of difference frequency waves generated from dual-frequency sound beams

Dengyong Ma1, Jun Yang1 (Institute of Acoustics, Chinese Academy of Sciences)

1P4-4 Proposal of a loudspeaker for low frequency range by composite vibration type ultrasonic motor

Hiroki Saito1 (Chiba Institute of Technology)

1P4-5 Simulation of friction characteristics of ultrasonic motors lubricated with oil

Kentarou Nakamura1, Takaaki Ishii1 (Tokyo Institute of Technology; Yamashita Univ.)

1P4-6* Experimental evaluation of ultrasonic motors lubricated with oil

Takahiro Takeuchi1, Yusuke Nakamura1, Yuki Keimoto1, Takaaki Ishii1, Kentaro Nakamura1 (Univ. of Yamashita; Tokyo Institute of Technology)

1P4-7 Study on Double-Mode Miniature Cantilever-Type Ultrasonic Motor using Lead-free Multilayer piezoelectric Ceramics

Yutaka Doshida1, Hiroyuki Shimizu1, Taisei Irieda1, Hideki Tamura1, Yoshiro Tomikawa1, Seiji Hirose1 (Taiyo Yuden Co., Ltd.; Yamagata Univ.)

1P4-8 Generation of Rotary Motion Using Straight Moving Ultrasonic Motors

Junji Matsuda1, Tomoaki Watanabe1, Yoshitaka Kato1, Akira Nakano1, Mitsutaka Hikita1 (Kokagushin Univ.)

1P4-9* Configuration of an Ultrasonic Motor Comprising Bolt-clamped Langevin Transducers

Atsuyuki Suzuki1, Tomohiro Tanaka1, Jiromaru Tsujino1 (Tokuyama College of Technology; Kanagawa Univ.)

1P4-10* A Design and Characteristics of Mode-Coupling LiNbO3 Ultrasonic Motor Depended on Length to Width Ratio of the Stator Vibrator

Hideki Tamura1, Takanori Morooka1, Yasuhiro Yamayoshi1, Manabu Aoyagi1, Takeshi Fukiura1, Seiji Hirose1 (Yamagata Univ.; Muroran Inst. of Tech.; Tohoku Inst. of Tech.)

1P4-11 FEM Analysis of Sound Field Characteristics in Air Gaps of Noncontact Ultrasonic Motor with Flexural Standing Wave Vibration Disks

Yasuhiro Yamayoshi1, Jun Shina1, Hideki Tamura1, Seiji Hirose1 (Yamagata Univ.)

1P4-12* Miniaturization of traveling wave ultrasonic linear motor

Shuichi Kondo1, Daisuke Koyama1, Kentaro Nakamura1 (Tokyo Tech)

1P4-13* An emulsion generating device by an ultrasonic vibration and a microchannel

Takuya Harada1, Takefumi Kanda1, Koichi Suzumori1, Tsutomu Ono1, Satoru Iwabuchi1, Kazuyuki Ito1, Ken-ichi Ogawara1, Kazutaka Higaki1 (Okayama Univ.)

1P4-14 Study of an acoustic field in micro channel

Teryu Kozuka1, Shinich Hatanaka1, Kyuichi Yasui1, Toru Tuziuti1, Judy Lee1, Atsuya Towata1 (AIST; UEC)
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<td>Liquid Mixing using Streaming in Frequency-Modulated Ultrasonic Beams radiated from SAW Devices</td>
<td>Miyuki Maezawa¹, Rui Kamada², Takefumi Suda¹, Tomoo Kamakura³ (OLYMPUS; Sony Engineering; The Univ. of Electro-Communications)</td>
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<td>1P4-16</td>
<td>Finite element analysis of acoustic streaming in an ultrasonic air pump.</td>
<td>Yuji Wada¹, Daisuke Koyama¹, Kentaro Nakamura (Precision and Intelligence Laboratory, Tokyo Institute of Technology)</td>
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<td>A Study on Loop-tube Type Thermoacoustic Cooling System for Practical Use - Effect of Heat Pump Heat Exchanger Cross-Sectional Area on Sound Field and Cooling Capacity</td>
<td>Yu Oishi¹, Shin-ichi Sakamoto¹, Yuji Kitadan¹, Yoshiaki Watanabe¹ (Faculty of Engineering, Doshisha Univ.; Department of Electronic Systems Engineering, Univ. of Shiga Prefecture; Faculty of Life and Medical Sciences, Doshisha Univ.)</td>
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<td>1P4-18*</td>
<td>A study on sound field control in a thermoacoustic cooling system by applying a phase adjuster</td>
<td>Shintaro KOMIYA¹, Shin-ichi SAKAMOTO¹, Yuji KITADANI¹, Yoshiaki WATANABE¹ (Faculty of Engineering, Doshisha Univ.; Department of Electronic Systems Engineering, Univ. of Shiga Prefecture; Faculty of Life and Medical Sciences, Doshisha Univ.)</td>
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<td>1P4-26*</td>
<td>High-Speed Observation of Cavitation Burst Generated by Focused Ultrasound</td>
<td>Pak-Kon Choi¹, Tsuyoshi Furukawa (Meiji Univ.)</td>
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<td>On the influence of surface active solute on ultrasonic waveform distortion in liquid containing air bubbles</td>
<td>Toru Tuziuti¹, Kiyuchi Yasui¹, Judy Lee¹, Teruyuki Kozuka¹, Atsuya Towata¹, Yasuo Iida² (AIST)</td>
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<td>Investigation of cleaning effect by micro bubbles under ultrasonic irradiation</td>
<td>Yukio Tanimura¹, Kenji Yoshida¹, Yoshiaki Watanabe¹ (Facul. Eng., Doshisha Univ.; Life &amp; Medi. Sci., Doshisha Univ.)</td>
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<td>1P4-23</td>
<td>FEM Calculation of Piezoelectric Property on the Geometrical Configuration of a Sonochemical Reactor</td>
<td>Nagaya Okada¹, Yoshiyuki Asakura¹ (HONDA ELECTRONICS CO., LTD.)</td>
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<td>1P4-24</td>
<td>Consideration of output signal from cylindrical hollow type cavitation sensor - Investigation by dissolved oxygen level and sonochemical luminescence</td>
<td>Takeyoshi Uchida¹, Hidenobu Sato¹, Shinichi Takeuchi¹, Tsuneo Kikuchi¹ (NMD•AIST; Toin Univ. of Yokohama)</td>
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<td>1P4-25*</td>
<td>Effects of pressure and temperature on the sonochemical reaction in a flow-type sonochemical reactor</td>
<td>Tsuyoshi Morita¹, Yoshihiro Kojima¹, Shinobu Koda¹, Yoshiyuki Asakura² (Nagoya Univ.; Honda Electronics Co., Ltd.)</td>
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<td>1P4-26*</td>
<td>Sonochemical Reactions under Single and Dual Frequency in Different Geometry Sonoreactors</td>
<td>Younggyu Son¹, Myunghee Lim¹, Mingcan Cui¹, Jeehyeong Khim¹ (School of Civil, Environmental, and Architectural Engineering, Korea Univ.)</td>
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<td>1P4-27</td>
<td>Dispersion method using focused ultrasonic field</td>
<td>Misun Jo¹, Jungsoo Kim¹, Moojoon Kim¹, Kanghyeol Ha¹, Hyumin Park¹, Mincheol Chu³ (Pukyong National Univ.; Tongmyong Univ.; Korea Research Institute of Standard and Science)</td>
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<td>1P4-28</td>
<td>Uniform dispersion of solute clusters in liquid metal by ultrasound</td>
<td>Jeong IL Youn¹, Dae Gyun Ko¹, Geun Hong¹, You Young Jig Kim¹ (School of Advanced Materials and Engineering, Sungkyunkwan Univ.)</td>
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<td>1P4-29*</td>
<td>Effect of Ultrasound on Agglomeration and Redistribution of Microbubbles</td>
<td>Daitsuke Kobayashi¹, Yoshiyuki Hayashida¹, Koichi Terasaka¹ (Keio Univ.)</td>
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<td>1P4-30*</td>
<td>Analysis of Energy Consumption in Ultrasonic Soil Washing Processes for the Diesel-Contaminated Soil</td>
<td>Sang-Geon Nam¹, Younggyu Son¹, Sang-Hyun Cho¹, Jeehyeong Khim¹ (School of Civil, Environmental, and Architectural Engineering, Korea Univ.)</td>
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<td>1P4-31*</td>
<td>Ultrasound-assisted Soil washing with Surfactant for the removal of Diesel</td>
<td>Sang-Hyun Cho¹, Younggyu Son¹, Jeehyeong Khim¹ (School of Civil, Environmental, and Architectural Engineering, Korea Univ.)</td>
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<td>Enhanced soil-washing process by ultrasound for the diesel-contaminated soil.</td>
<td>Jeehyeong Khim¹, Younggyu Son¹, Sang-Hyun Cho¹, Jeehyeong Khim¹ (Department of Civil, Environmental, and Architectural Engineering, Korea Univ.)</td>
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<td>1P4-33*</td>
<td>The use of ultrasound irradiation for extracting bitumen from oil sand</td>
<td>Hirokazu Okawa¹, Tomonao Saito¹, Ryota Hosokawa¹, Takashi Nakamura¹, Youhei Kawamura² (Akita Univ.; Univ. of Tsukuba)</td>
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<td>1P6-1</td>
<td>Numerical analysis of propagated pulse waveform in Luzow-Holm Bay of Antarctic Ocean</td>
<td>Takenobu Tsuchiya¹, Sayuri Matsumoto¹, Ryuta Niikawa¹, Nobuyuki Endoh¹ (Kanagawa Univ.; PAR)</td>
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1P6-2 Influence on sound fields by propagation angle of internal wave.
Toshiaki Tsurugaya1, Toshiaki Kikuchi2, Koichi Mizutani1, Naoto Wakatsuki2
(1NEC Corp., Univ. of Tsukuba; 2NDA; 3Univ. of Tsukuba)
###

1P6-3 Construction and release of the ocean acoustics calculation Web site
Toshio Tsujiya1 (JAMSTEC / TUMSAT)
###

1P6-4 Acoustic monitoring of water atomosphere in Lake Biwa
Takaharu KITAMURA1, Yoshiaki WATANABE (Department of Life and medical sciences, Doshisha Univ.)
###

1P6-5 Influence of the Sediment Properties on the Range-Frequency Interference in Shallow Water
Jooyoung Hahn1 (Korea Ocean Research & Development Institute)
###

1P6-6* A case study of sound propagations in consideration of ocean fluctuations
Hanako Ogasawara1, Kazuyoshi Mori1, Toshiaki Nakamura (National Defense Academy)
###

1P6-7* Preliminary Result of Biological Transient Noise Observation Using 2 Sets of 4-Element Hydrophone Array
Hanuki Kada1, Kazuyoshi Mori1, Hanako Ogasawara1, Toshiaki Nakamura1, Takenobu Tsujiya1, Nobuyuki Endoh2
(1National Defense Academy; 2Kanagawa Univ.)
###

1P6-8* Acoustic Characteristics of Pure Snapping Shrimp Sound Observerd under Laboratory Conditions
Byoung-Nam Kim1, Jooyoung Han, Bokyong Choi, Bong-Chae Kim1 (Korea Ocean Research and Development Institute)
###

1P6-9* Measurements of Breaking wave noise in the sea-cliff zone.
Sungho Cho1, Jae Woong Cho1 (Hanyang Univ.)
###

1P6-10 A study on reduction of flow-induced noise in water using open-cell foam
Seongwook LEE1 (Korea Ocean Research & Development Institute)
###

1P6-11* A study of noncontact ultrasonic thickness gauging for steel structures in ports
Natsuki Yoshizumi1, Sayuri MATSUMOTO1, Kaye Yoshiki Kataura1, Takashi Matsumoto2, Harumi Fukuda2, Hideki Kume2
(1Port and Airport Research Institute; 2Ministry of Land, Infrastructure, Transport and Tourism Japan)
###

1P6-12* Acoustic Properties of Sediment in SONAR Frequency Range
Shinta Takano1, Teiichiro Iked1, Ryuuseke Imai1, Ken Nishihira1, Hiroshi Nozawa1, Masahiko Takano1, Kunio Hashiba1, Mitsuhiko Nanri2
(1Hitachi, Ltd., Central Research Laboratory; 2Hitachi, Ltd., Defense Systems Group; 3Hitachi Information & Communication Engineering, Ltd.)
###

1P6-13* Basic Study on Long Range Acoustic Positioning for Cruising AUV
Yoshitaka Watanabe1, Hiroshi Ochi1, Takuya Shimura1, Taketo Hattori1, Shinya Tsuchiya1, Kazunari Sako1
(1Japan Agency for Marine-earth Science and Technology; 2Nippon Marine Enterprises)
###

1P6-14 Numerical Analysis of Time Reversal Process for Target Range Estimation on Ambient Noise Imaging using Acoustic Lens
Kazuyoshi Mori1, Hanako Ogasawara1, Toshiaki Nakamura1, Takenobu Tsujiya1, Nobuyuki Endoh2
(1National Defense Academy; 2Kanagawa Univ.)
###

1P6-15* Design for Off-Axis Aplanatic Acoustic Mirror
Yuji Sato1, Koichi Mizutani1, Naoto Wakatsuki1, Toshiaki Nakamura2, Noriyoshi TAKEYAMA2, Takenobu TSUCHIYA1, Nobuyuki ENDOH2
(1Univ. Tsukuba; 2National Defense Academy)
###

1P6-16 Study on Geometric Evaluation Method of Underwater Acoustic Lens
Sayuri MATSUMOTO1, Norhide TAKEYAMA2, Takenobu TSUCHIYA1, Nobuyuki ENDOH2
(1PARI; 2GENESIA; 3Kanagawa Univ.)
###

16:00-16:45 Measurement techniques, Imaging, Nondestructive evaluation 1 Chair: Masahiro Ohno (Chiba Institute of Technology)

1J2-1 Non-contact type viscometry using the displacement and phase of specimen liquid excited by aerial sound.
Youhei Kawasaki1, Hidekazu Tais Tsutomu Kobayashi (Nihon Univ.)
###

1J2-2* Field Monitoring of Soil Moist State and Groundwater Level using Ultrasonic Waves
Kazuhiko Hirai1, Takefumi Suda1, Nobutaka Hiraoka1, Katsuhiko Tanaka1, Kazunari Sako1, Ryoichi Fukagawa1, Makoto Shimamura1, Asako Togari1
(1Ritsumeikan Univ.; 2East Japan Railway Company)
###

1J2-3* Imaging of Acoustic Scattering Object Using Time Reversal Wave Interpolated Between Microphones
Kazuki Tsuguma1, Hideto Mitsui, Naoto Wakatsuki, Koichi Mizutani (Univ. Tsukuba)
###

16:45-16:50 Break
16:50-17:35 Measurement techniques, Imaging, Nondestructive evaluation II Chair: Ken Yamada (Tohoku Gakuin Univ.)

1J2-4 Evaluation of Elastic Inhomogeneity in ZnO Crystal by Means of the Micro-LFB Ultrasonic Material Characterization System
Sho Yoshida† Yuji Ohashi Mototaka Arakawa Jun-ichi Kushibiki Noboru Sakagami
(Graduate School of Engineering, Tohoku Univ.)

1J2-5* Evaluation of oxygen precipitates in Si wafer by resonance ultrasound microscopy
Hiroki Yoshida† Hirotsugu Ogi Masahiko Hiroa Kazuhiro Matsukawa† Hirofumi Harada†
(Graduate school of engineering science, Osaka Univ.; †Renesas Technology Corporation; ‡Siltronic Japan Corporation)

1J2-6 Efficient nondestructive evaluation of pipes by multireflecting guided wave energy trapping method
Hideo Nishino† Keiji Ogura Kenichi Yoshida (Tokushima Univ.)

Thursday, November 19

9:10-9:55 Oral Session in English I Chair: Tatsuro Matsuoka (Nagoya University)

2E4-1 Enhanced Drainage Capability Installed in Soft Clays due to Vibration Energy of PVDF (polyvinylidene fluoride) Film
Young Uk Kim† (Myongji Univ.)

2E4-2* Downsizing of the loop-tube-type cooling system—Effect of the installation position of heat pump and working gas in the tube—
Kohei Hotta† Shin-ichi Sakamoto† Daichi Tsukamoto† Yoshiaki Watanabe†
(†Faculty of Engineering, Doshisha Univ.; ‡Department of Electronic Systems Engineering, Univ. of Shiga Prefecture; †Faculty of Life and Medical Sciences, Doshisha Univ.)

2E4-3 Numerical simulations of destruction of encapsulated microbubbles with bubble-bubble interaction
Kyuichi Yasui† Judy Lee Toru Tuziuti Teruyuki Kozuka Atsuya Towata (AIST)

9:55-11:55 Poster Session Chair: Mami Matsukawa (Doshisha University)

2P1-1* Evaluation of ultrasonic attenuation in oxide thin films using Brillouin oscillations exited by wavelength-tunable picosecond ultrasound
Kei Morita† Hirotsugu Ogi Nobutomo Nakamura Masahiko Hiroa
(Graduate School of Engineering, Science, Osaka Univ.)

2P1-2 Elastic property of Fe/Pt superlattice studied by picosecond ultrasounds.
Atsuyoshi Uranishi Nobutomo Nakamura Hirotsugu Ogi Masahiko Hiroa
(Graduate School of Engineering, Science, Osaka Univ.)

2P1-3 Destructive inspection of Weld Defect and its Nondestructive Evaluation by Photoacoustic Microscopy
Haruo Endoh Ryosuke Kato Daijirou Shiraiishi† Tsutomu Hoshimiya (Tohoku Gakuin Univ.)

2P1-4* Vibrations of nanostructures probed by ultrashort optical pulses
Hirotaoka Sakuma† Motonobu Tomoda Osamu B. Wright (Grad. Sch. Eng., Hokkaido Univ.)

2P1-5 Amplitude and phase of photo thermal signal in leaf of a plant " schefflera arboricola " measured by PVDF sensor
Tokuanga Yoshiaki Masatoshi Yoshimura† Koji Aizawa Junji Hirama (Kanazawa institute of technology)

2P1-6* Characterization of Defects in LiNbO3 Using PPE Method and IR Thermal Imaging Camera
Kunyong Lee† Hisashi Miyazaki† Yoichi Okamoto† Jun Morimoto† Kohji Toda†
(†Dept. of MSE, NDA; ‡Dept. of MSE, Tokyo City Univ.)

2P1-7 Evaluation of RGB-LD generated photoacoustic images
Tomoaki Takatsu† Haruo Endoh Tsutomu Hoshimiya
(Graduate School of Engineering, Tohoku Gakuin Univ.)

2P1-8 Active thermographic imaging with a moving line-focus laser beam
Tomoaki Takatsu Nana Doi† Haruo Endoh Tsutomu Hoshimiya
(Graduate School of Engineering, Tohoku Gakuin Univ.)

2P1-9 Estimation of Thermal Diffusivities of High Polymer Transparent Films by Laser Induced Thermal Wave
Akiyuki Minamide† Hiroyuki Kobayashi† Masatoshi Yoshimura† Koji Aizawa† Yoshiaki Tokunaga†
(†Kanazawa Tech. College; ‡Kanazawa Inst. of Tech.)

2P1-10* Direct measurement of surface displacement in picosecond laser ultrasonics
Atsushi Ohno† Osamu Matsuda Motonobu Tomoda Oliver B. Wright (Hokkaido Univ.)
A study of the recombination process at the $p$-$n$ junction interface by the photoexcited-carrier-concentration controlled piezoelectric photothermal method.

Hitoshi Tamura$^{11}$, Toshihiro Iki$^1$, Tatsuya Miyamoto$^1$, Kentarou Sakai$^1$, Atsuhiko Fukuyama$^1$, Tetsuo Ikari$^1$

(Faculty of Engineering, Univ. of Miyazaki; Cooperative Research Center, Univ. of Miyazaki)

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2P2-1 Study of Accuracy Improvement for Ultrasonic Positioning Method Installed in Sensor Network

Tomoaki Watanabe$^1$, Akira Nakano$^1$, Junji Matsuda$^1$, Yoshitaka Hikita$^1$

(Kogakuin Univ.)

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2P2-2 Characterization of Hydride Orientation in Zircaloy Cladding Tubes with a Laser Ultrasound Technique

Cheng-Hung Yeh$^1$, Che-Hua Yang$^1$

(National Taipei Univ. of Technology)

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2P2-3 Characterization of Layered Material Properties in Solid Oxide Fuel Cells using a Laser Ultrasound Technique

Tsung-Mao Kao$^1$, Che-Hua Yang$^1$

(National Taipei Univ. of Technology)

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2P2-4 Propagation Behaviors of ASF modes Propagating Along Wedge Tips with Defects

Yu-Hong Chen$^1$, Che-Hua Yang$^1$

(National Taipei Univ. of Technology)

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2P2-5 Characterizing hydride rims on Zircaloy tubes with laser ultrasound technique

I-Hung Liu$^1$, Che-Hua Yang$^1$

(National Taipei Univ. of Technology)

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2P2-6* Estimation of Acoustic reflection characteristics of human target

Ryosuke Fukushima$^1$, Jun-ya Takayama$^1$, Hiroyuki Hachiya$^1$

(Tokyo Institute of Technology)

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2P2-7 Transverse Velocity Measurement of Particle Flow Passing across an Ultrasonic Beam

Juei Igarashi$^{12}$, Koichi Mizutani$^1$, Naoto Wakatsuki$^1$

(Univ. Tsukuba; Schlumberger K.K.)

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2P2-8 On the Use of Trapped-Energy Mode of Backward-Wave-Type Thickness Vibration for Liquid-Level Sensing

Shuichi Seto$^1$, Shuei Horichi$^1$, Ken Yamada$^1$

(Tohoku Gakuin Univ.)

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2P2-9 Mode Visualization System for Piezoelectric Resonators in High Temperature Environment

Tomoyuki Ishii$^1$, Yasuaki Watanabe$^1$, Yuichiro Yano$^1$, Shigeyoshi Goka$^1$

Takayuki Sato$^1$, Hitoshi Sekimoto$^1$

(T. M. U.)

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2P2-10* Estimation of Sound Velocity Distribution Using Global Heuristic Search

Takeshi Oohuchi$^{11}$, Tadashi Ebihara$^1$, Koichi Mizutani$^1$, Naoto Wakatsuki$^1$, Hiroyuki Masuyama$^2$

(Univ. Tsukuba; Toba Natl. Coll. Mar. Tech.)

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2P2-11* Parallel Simultaneous Transmission Air Flow Tomography Using Code Modulation Signal

Shougo Takata$^1$, Akira Yamada$^1$, Haiyue Li$^1$

(Graduate School Of Bio-Application And System Engineering, Tokyo Univ. A & T)

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2P2-12* A Novel Scheme for Numerical Simulation of Acoustic Wave Propagation Using Generalized CIP($m,n$) Method

Naoki Kawada$^{11}$, Kan Okubo$^1$, Norio Tagawa$^3$, Takao Tsujiya$^3$

(Faculty of System Design, Tokyo Metropolitan Univ.; Graduate School of System Design, Tokyo Metropolitan Univ.; Doshisha Univ.)

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2P2-13 Analyses of the Insulators' Radiation Noises for Error Detection

Kyu Chil Park$^1$, JongRak Yoon$^2$

(Pukyong Nat'l Univ.)

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2P2-14* Observation of closed crack distribution by steering intense ultrasound and with shoe to house transmitter and receiver

YOHEI SHINTAKU$^1$, YOSHIKAZU OHARA$^1$, HIROIKO ENDO$^1$, MAKOTO HASHIMOTO$^2$, KAZUSHI YAMANAKA$^1$

(Tohoku Univ.)

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2P2-15* Second Harmonic Components Detection for Fastening Bolts Using Double-Layered Piezoelectric Transducer

Makoto Fukuda$^1$, Kazuhiro Yoshida$^1$, Kazuhiko Imano$^1$

(Faculty of Engineering and Resource Science, Akita Univ.)

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2P2-16* Nonlinear propagation of amplitude-modulated wave in C/C composite

Kazuyoshi Nagea$^1$, Shiro Biwa$^1$, Eiji Matsumoto$^1$

(Kyoto.Univ.)

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2P2-17 FBG-based vibration measurement of rotating structure using optical fiber rotatory joint

Satoshi Tanaka$^1$, Atsushi Wada$^1$, Nobuaki Takahashi$^1$

(National Defense Academy)

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2P2-18 Anemometer Using Long Baseline Acoustic Probe with Precise Wireless Trigger

Naoto Wakatsuki$^1$, Shin Kinjo$^1$, Jun Takarada$^1$, Koichi Mizutani$^1$

(University of Tsukuba)

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2P2-19 Measurement of acoustic chararistics in underground with groundwater

Hiroyuki Hachiya$^1$, Takeshi Nishiya$^1$, Hiromichi Miyazaki$^1$, Takahiro Kondoh$^2$, Michio Matsumoto$^1$

(Tokyo Institute of Technology; Taisei Corporation)

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2P2-20 Application of photoacoustic technique for characterization of thermal diffusivities of nanostructured TiO2 films

Tomohiro Nin$^1$, Qing Shen$^1$, Taro Toyoda$^1$

(Department of Applied Physics and Chemistry, The Univ. of Electro-Communication)
2P3-1* Development of Forward Flush Method for Ball SAW Gas Chromatograph  
Yutaro Yamamoto, Shingo Akao, Toshihiro Sakamoto, Kazushi Yamanaka  
(Tohoku univ.; TOPPAN PRINTING; JST, CREST)  
2P3-2* Development of methanol sensor using SH-SAW for direct methanol fuel cell  
Satoru Mikuni, Jun Kondoh, Tomoaki Morikawa, Naomi Sawada, Tohru Ohta  
(Shizuoka Univ.; Suzuki Motor Corporation)  
2P3-3* Measurements of liquid using reflected type SH-SAW sensor  
Masaya Ogura, Jun Kondoh, Mitsuo Aratono, Shinji Murata  
(Shizuoka Univ.; Alps Electric Co., LTD.)  
2P3-4 Contour-mode AlN Resonator with High Coupling Factor  
Atsushi Isobe, Kengo Asai  
(Hitachi Ltd., Central Research Laboratory)  
2P3-5 Multilayer scanning of RF BAW device for focus adjustment by laser probe system  
Nan Wu, Ken-ya Hashimoto, Tatsuya Omori, Masatsune Yamaguchi  
(Graduate School of Engineering, Chiba Univ.)  
2P3-6* Quantitative Analysis of Power Leakage in a FBAR Device at the Anti-Resonance Frequency  
Florian Thalmayr, Ken-ya Hashimoto, Masanori Ueda, Tatsuya Omori, Masatsune Yamaguchi  
(Chiba Univ.; Fujitsu Laboratories)  
2P3-7* A Basic Study on AlGaN/GaN SAW resonator  
Satoshi Oshiyama, Keishin Koh, Kohji Hohkawa  
(Kanagawa Institute of Technology)  
2P3-8* A Basic Study on Mode Coupling SAW Devices with Face to Face Bonding  
Hiroyuki Okitsu, Keishin Koh, Kohji Hohkawa  
(Kanagawa Institute of Technology)  
2P3-9 Phase Linear Flat Wide Band Low Loss Filters Using New Configuration of Unidirectional Up-Chirp and Down-Chirp Dispersive Inter Digital Transducers  
Yusuke Satoh, Kazuhiro Yamanouchi (Tohoku Institute of Technology)  
2P3-10 Characteristics of ZnO thin film surface acoustic wave devices fabricated using aluminum oxide film on silicon substrates  
Wen-Ching Shih, Tzyy-Long Wang, Ming-Hsien Chu, Mu-Shiang Wu  
(Tatung Univ.)  
2P3-11* A Consideration for Developing Tunable Ladder-type Acoustic Filters  
Tomoya Komatsu, Ken-ya Hashimoto, Tatsuya Omori, Masatsune Yamaguchi  
(Chiba Univ.)  
2P4-2* Effect of surface finish on mechanical properties of PCB joints bonded using ultrasonic energy  
Jong Bum Lee, Jong Gun Lee, Seung Boo Jung  
(Sungkyunkwan Univ.)  
2P4-3* Evaluation of high ductile ENIG plated electrodes bonded with transverse ultrasonic  
Jong Gun Lee, Jong Bum Lee, Jeong Hoon Moon, Seung Boo Jung  
(Sungkyunkwan Univ.; Suwon Science College)  
2P4-4* Characteristics of longitudinal vibration to cut a circle shape by ultrasonic vibration  
Takuya Asami, Hikaru Miura  
(College of Science and Technology, Nihon Univ.)  
2P4-5* Examination on a high power Aerial Ultrasonic Generator using a Cross type Direction Changer for Longitudinal Vibration  
Youichi Ito, Tatsuro Kaneda  
(Nihon Univ.)  
2P4-6* Removal of the liquid in a small hole opened at both ends by high intensity aerial ultrasonic waves  
Youichi Ito, Eri Takamura  
(Nihon Univ.)  
2P4-7 Effect of initial concentration and frequency on sonochemical degradation of phenol  
Lam Hoang Pham, Younggyu Son, Myunghye Lim, Mingcan Cui, Jeeyheong Kim  
(Korea Univ.; Korea Univ.; Korea Univ.; Korea Univ.; Korea Univ.)  
2P4-8 Direct US/O3 combination treatment of hormone in aqueous solutions  
Cui ming can, Sun young gu, Lim myung hee, Kim jee hyeong  
(Korea University; Korea university; Korea university; Korea university)  
2P4-9* Sonochemical degradation of phenol and aniline in aqueous solution  
Kenta Ishikawa, Ben Nanzai, Kenji Okitsu, Norimichi Takenaka, Hiroshi Bandow  
( Osaka Prefecture Univ.; Kanagawa Univ.)  
2P4-10* Effect of Ultrasonic Frequency on Chlorinated Compounds Degradation  
Myunghye Lim, Younggyu Son, Mingcan Cui, Jeeyheong Kim  
(Korea Univ.)  
2P4-11 Sonophotocatalysis for the degradation of azo dye(C.I. Reactive Black 5)  
Eunjoo Cho, Younggyu Son, Hyunjung Lim, Myunghye Lim, Jeeyheong Kim  
(Korea Univ.)  
2P4-12* Sonophotochemical Degradation of Phenol with Solid Catalysts  
Hyunjung Kim, Younggyu Son, Hyunjung Lim, Eunjoo Cho, Myunghye Lim, Jeeyheong Kim  
(Korea Univ.)  
2P4-13 Ultrasonic Polymerization of N-isopropylacrylamide at Soluble and Insoluble Temperatures  
Hirotaka Yanagida, Erika Umeki, Tatsuhisa Takahashi  
(Yamagata Univ.; CANON CHEMICALS; Ashikawa Medical College)  
2P4-14 Synergistic effect of sonolysis combined with photocatalysis for the reaction of carbon chain elongation  
Yukio Naruke, Mika Goto, Hisashi Tanaka, Hisashi Harada  
(Graduate School of Meisei Univ.)
2P4-15 Reduction of MnO₂ and formation of MnO₂ nanoparticles in an ultrasonic field: the effects of organic additives
Kenji Okitsu, Masaki Iwatai, Rokuro Nishimura (Osaka Pref. Univ.)

2P4-16 Effect of Ultrasound Irradiation on Enzymatic Saccharification of Cellulose
Keiji Yasuda, Daiki Kato, Makiko Sakka, Kazuo Sakka (Faculty of Engineering, Nagoya Univ.; Faculty of Bioresources, Meib University)

2P4-17 The application of sonication for purifying soil contaminated with microorganisms
Takashi Nakamura, Hirokazu Okawa, Youhei Kawamura, Katsuyasu Sugawara (Aki University; Univ. of Tsukuba)

2P4-18 Effect of ultrasound on phenol adsorption on granulated activated carbon
Jung hyun Lim, Yong guy Son, Eun ju Cho, Hyun jun Kim, Ming can Cui, Jeeyoeng Khim (Korea Univ.; Korea Univ.; Korea Univ.; Korea Univ.; Korea Univ.)

2P5-1* An orientation-controlled KNO₃ thick film transducer for high resolution ultrasonic imaging
Mutsuo Ishikawa, Hiro Einishi, Tomohito Hasegawa, Takeshi Morita, Yoshiyumi Saito, Minoru Kurosawa, Hiroshi Funakubo (Tokyo Inst. Tech.; The Univ. of Tokyo; Tohoku Univ.)

2P5-2 Development of Sensing Capsule with Impedance Transforming Window for Puncture Needle-Type Ultrasonography
Masasumi Yoshizawa, Takasuke Irie, Kouichi Itoh, Tadashi Moriya (Tokyo Metropolitan College of Industrial Technology; Micorosonic Co., Ltd.; Hitachi-Omiya Saiseikai Hospital; Professor Emeritus of Tokyo Metropolitan Univ.)

2P5-3 Small Ultrasonic Linear-Array Probe to Support Endoscopic Surgery
Katsuhiko Tanaka, Yuusuke Tanaka, Yoshimasa Kurumi, Tohru Tani, Yutaka Nishitani, Masaki Takehashi (Ritumeikan Univ.; Shiga Univ. of Medical Science; Krautkramer Japan; Japan Probe)

2P5-4* Ultrasonic Circular Probe with Through Hole for Medical Applications
Yuusuke Tanaka, Katsuhiko Tanaka, Susumu Sugiyama, Yoshimasa Kurumi, Tohru Tani (Ritsumeikan Univ.; Shiga Univ. Medical Sci.)

2P5-5 Development of Wide-Band Ultrasonic Transducer for Imaging of Inside Bone
Kouhei Koumoto, Takasuke Irie, Masayuki Tanabe, Norio Tagawa, Kan Okubo, Kouichi Itoh (Tokyo Metropolitan Univ.; Micorosonic Co., Ltd.; Hitachi-Omiya Saiseikai Hospital)

2P5-6 Fabrication of Hydrophone using Titanium Membrane Acoustic Receiving Surface and Hydrothermally Synthesized PZT Film for High Intensity Ultrasonography
Kazuhiko Yoshimura, Norimichi Kawashima, Takeyoshi Uchida, Tsuneo Kikuchi, Minoru Kurosawa, Shinichi Takeuchi (Toin Univ. of Yokohama; NMIJ•AIST; Tokyo Inst. of Tech)

2P5-7* Staircase Voltage MOSFET Driver Circuit for Therapeutic Ultrasound
Kosuke Moro, Shin Yoshizawa, Shin-ichiro Umemura (Tohoku Univ.)

2P5-8* Vibration Analysis of Therapeutic Ultrasonic Transducer by FEM
Kenji Otsu, Shin Yoshizawa, Shin-ichiro Umemura (Tohoku Univ.)

2P5-9* Ultrasound beam analysis affected by vibration mode on PZT single plate transducer
Takashi Azuma, Shin-ichiro Umemura (Hitachi Ltd., Central Research Laboratory; Tohoku Univ., School of Engineering)

2P5-10* High Order Two-Dimensional Delta-Sigma Modulator for Ultrasonic Transducer Array
Tomoki Hatakeyama, Yasutaka Tamura, Hiroaki Yanagida, tatsuhiisa takahashi (Yamagata Univ.; Asahikawa Medical College)

2P5-11* Multi-resonance transducer for ultrasonic imaging
Natsuki Yoshizumi, Kentaro Nakamura, Shigemi Saito, Katsumi Ohira, Osamu Takahashi, Iwaki Akiyama (Shonan Institute of Technology; Tokyo Institute of Technology; Tokai Univ.; Japan Probe)

2P5-12* A method of liver fibrosis estimation based on combination of Rayleigh distributions
Yu Igarashi, Hiroshi Eduka, Tadashi Yamaguchi, Hiroyuki Hachiy (Tokyo Institute of Technology; Chiba Univ.)

2P5-13* Effect of blood vessel viscoelasticity on the pulse waveform
Masashi Saito, Yuya Yamamoto, Mami Matsukawa, Yoshiaki Watanabe, Mio Furuya, Takaaki Asada (Doshisha Univ.; Murata Manufacturing Co., Ltd.)

2P5-14 Improvement of Elastogram by Insertion of Damper Layer
Takayuki Sato, Yasuaki Watanabe, Shizuka Sato, Hitoshi Sekimoto (Graduate School of Science and Engineering, Tokyo Metropolitan Univ.)

2P5-15 Tissue Characterization Using Optically Assisted Ultrasonic Velocity-Change Imaging Method
Hiromichi Horinaka, Satoshi Ishibashi, Daikai Sakurai, Hajime Sano, Tetsuya Matsuyama, Kenji Wada, Toshiyuki Matsunaka (Osaka Prefecture Univ.)

2P5-16 Evaluation for Tissue Boundary Imaging Based on Motion Vector
Masui Hironari, Azuma Takashi, Sasaki Kazuaki (Hitachi; Tokyo Univ. of A&T)

2P5-17 New echo imaging and displacement measurement using a virtual source
Chikayoshi Sumi, Kunio Shimizu, Norihiko Matsui (Dept Info & Commun, Faculty of Sci & Tech, Sophia Univ.)
2P5-18 Displacement measurement lateral modulation and beamforming with a steered angle  
Chikayoshi Sumi1 Kunio Shimizu Norihiko Matusi  
(Dept Info & Commun Sci, Faculty of Sci & Tech, Sophia Univ.)

2P5-19 Preliminary Study on Microscale Tissue Characterization with in situ Inducible Microbubbles  
Rei Asami1 Takashi Azuma1 Teiichiro Ikeda1 Shinichiro Umemura1 Kenichi Kawabata1  
(CRL, Hitachi Ltd.; 'Tohoku Univ.)

2P6-1 Experimental study of radiation impedance with the effect of reflected wave from sonar-dome  
Jungsoon Kim1 Moojoon Kim2 Kanglyeol Ha2 Heeseon Seo2 Cheeyeong Joh3  
('Tongmyong Univ.; 'Pukyong National Univ.; 'Agency for Defense Development)

2P6-2 Wideband Tonpilz transducer with a void head mass  
Saosometh Chhith1 Yongrae Roh (Kyungpook National Univ.)

2P6-3 Measurement of Absorption Loss Coefficients for 80 kHz Band in the Sea Water at the Dpeth of 1,000 m.  
Hiroshi Ochi1 Yoshitaka Watanabe1 Takuya Shimura1 Takehito Hattori1  
('JAMSTEC; 'NME)

2P6-4 Experimental verification of bit error rate in fading underwater acoustic communication channel  
Jihyun Park1 Jong Woo Bae1 Jong-So Park11 Jong Rak Yoon1  
('Pukyong Nat'l Univ.; 'Agency for Defense Development)

2P6-5 Reducing intercarrier interference for OFDM systems  
Chundan Lin1 Jong Rak Yoon21 (‘China Univ. of Petroleum, Beijing, China;  
2Pukyong National Univ., Pusan, Korea)

2P6-6 Experiment of time-reversal communication at the range of 300 km  
Takuya Shimura1 Hiroshi Ochi1 Yoshitaka Watanabe1 Takehito Hattori1  
('JAMSTEC; 'NME)

2P6-7* Inter Symbol Interference with Impulse Response and its Effect for Acoustic Communication  
Tadashi Ebihara1 Keiichi Mizutani1 Takeshi Ohbuchi1 Naoto Wakatsuki1 Koichi Mizutani1  
(‘Univ. Tsukuba; ‘Tokyo Tech.)

2P6-8 Examination on Remote Control of CMOS sensor using ultrasonic communication in the shallow sea  
Yoshikazu Koike1 Hiroaki Arai1 Takahiro Yomoda1 Takyoshi Sekiguchi1 Harumasa Hojoh2  
(‘Shibaura Institute of Technology; ‘Tokyo Univ. of Marine Science and Technology)

11:55-13:10 Lunch

13:10-14:00 Invited Talk 2  
Chair: Ken-ya Hashimoto (Chiba University)

2I-1 Clues From Digital Radio---applied to Biomolecular Recognition  
William D. Hunt (Georgia Institute of Technology)

14:00-14:05 Break

14:05-15:05 Oral Session in English II  
Chair: Hirotsugu Ogi (Osaka University)

2E2-1 High temperature broadband ultrasonic transducers for structural health monitoring and non-destructive testing  
Makiko Kobayashi1 Cheng-Kuei Jen (IMI, NRCC)

2E2-2* Experimental study of thickness distribution imaging using laser source scanning  
Nor Salim Muhammad1 Hayashi Takahiro Murase Morimasa Ito Toshihiro Kamiya Shoji  
(Nagoya Institute of Technology)

2E2-3 Dispersion Behaviors of Wedge Wave Propagating in Wedges with Hygroscopic Film in Various Moisture.  
Po-Shien Tung1 Che-Hua Yang Sheng-Wei Tang (National Taipri Univ. of Technolohy)

2E2-4 Analysis of guide wave which propagates along pipes filled with fluid  
Harumichi Sato1 (AIST)

15:05-15:10 Break
15:10-16:10 Oral Session in English III  
Chair: Iwaki Akiyama (Shonan Institute of Technology)

2E5-1* Metastases Detection in Dissected Human Lymph Nodes Using Three-dimensional High-frequency Ultrasound  
Jonathan Mamou1, Alain Coron2,3, Masaki Hata4, Junji Machi4, Eugene Yanagihara4, Pascal Laugier2,3, Tadashi Yamaguchi1, Ernest J. Feleppa1 (F. L. Lizzi Center for Biomedical Engineering, Riverside Research Institute, New York, NY; 2UPMC Univ Paris 06, UMR 7623, LIP, Paris, F-75005 France; 3CNRS, UMR7623 Laboratoire d'Imagerie Parametrique, Paris, F-75006 France; 4Univ. of Hawaii and Kuakini Medical Center, Honolulu, HI; 5CFME, Chiba Univ., Chiba, Japan)

2E5-2* Sonochemical and Biological Outcomes of Changing Acoustic Modulation and Their Implication in Therapeutic Ultrasound  
Mariame A. Hassan1,2, Mikhail A. Buldakov3, Ryohei Ogawa1, Qing-Li Zhao1, Yukihiro Furusawa1, Takashi Kondo1 (1Department of Radiology, Graduate School of Medicine and Pharmaceutical Sciences, Univ. Toyama, Japan; 2Department of Pharmaceutics and Industrial Pharmacy, Facult. Pharmacy, Cairo Univ., Egypt.; 3Cancer Research Institute of Tomsk Scientific Center, Russia)

16:10-16:15 Break

16:15-17:15 Oral Session in English IV  
Chair: Akira Harata (Kyushu University)  
Chair: Mitsudaka Hikita (Kogakuin University)

2E1-1* Liquid Jet Breakup by High Frequency Pressure Fluctuations  
Atsushi Takeuchi1, Keiji Sakai1 (Inst. Indust. Sci., Univ. of Tokyo)

2E1-2 Acoustic Microrheology: Shear Moduli of Soft Materials Determined from Single Bubble Oscillations  
Anatoliy Strybulevych1,2, Valentin Leroy1, John H. Page1, Martin G. Scanlon3 (1Dept. of Physics & Astronomy, Univ. of Manitoba; 2Laboratoire Matiere et Systmes Complexes, Universit Paris Diderot; 3Dept. of Food Science, Univ. of Manitoba)

2E3-1 Analysis of Anisimkin's (Quasilongitudinal) Modes in Piezoelectric Plates  
Morio Onoe1, Shigetaka Kaga2 (1Professor Emeritus, Univ. of Tokyo; 2Nihon Dempa Kogyo Co., Ltd.)

2E3-2 Dispersion of guided waves propagating in a piezoelectric solid and dielectric fluid bi-layer system  
Chia-Han Wu, Che-Hua Yang (National Taipei Univ. of Technology)

17:15-17:35 Awards Ceremony

17:35- Banquet

Friday, November 20

9:10-10:25 Medical Acoustics  
Chair: Tsuyoshi Shiina (Kyoto University)

3J5-1 Fast Ultrasonic Imaging of the Heart  
Hideyuki Hasegawa1, Hiroshi Kanai2,3 (1Graduate School of Biomedical Engineering, Tohoku Univ.; 2Graduate School of Engineering, Tohoku Univ.)

3J5-2* Vibration Analysis of High Intensity Focused Ultrasound Source using Time Reversal: Effect of Lamb Waves  
Yasuhiro Kaneshima1, Shin Yoshizawa Shin-ichiro Umemura (Tohoku Univ.)
3J5-3* Evaluation of Liver Fibrosis Diagnosing Method by Scatterer Distribution Estimation
Hiroshi Ezuka†, Tadashi Yamaguchi†, Yu Igarashi†, Naohisa Kamiyama†, Hiroyuki Hachiya†
(1Graduate school of Advanced Integration Science, Chiba Univ.; 2Research Center for Frontier Medical Engineering, Chiba Univ.; 3Graduate School of Sci. and Eng., Tokyo Institute of Technology; 4Toshiba Medical Systems Co.)

3J5-4 Evaluation of sonoporation using NIPA gel flow channel
Yoshiki Yamakoshi†, Takashi Miwa, Nobuyuki Yoshizawa, Hiroki Inoguchi, Yuji Takahashi, Dongyu Zhang
(Gunma Univ.)

3J5-5 Efficient cavitation induction with phase change nano droplet
Ken-ichi Kawabata†, Rei Asami†, Takashi Azuma†, Waleed Khalil†, Kazuaki Sasaki†, Shin-ichiro Umemura†
(1Central Research Laboratory, Hitachi; 2Tokyo Univ. of Agriculture and Technology; 3Suez Canal Univ.; 4Tohoku Univ.)

10:25-10:45 Break

10:45-11:45 Physical Acoustics, Acousto -Optics Chair: Jun Morimoto (National Defense Academy)

3J1-2* Elastic-Constant Measurement in thin films at low temperatures using pico-second laser ultrasound spectroscopy
Kenichi Tanigaki†, Tatsuya Kusumoto, Hirotsugu Ogi†, Nobutomo Nakamura†, Masahiko Hirao† (Osaka Univ.)

3J1-3 Evaluation of 4H-SiC Single Crystals Using the Ultrasonic Microspectroscopy Technology
Jun-ichi Kushibiki†, Yuji Ohashi†, Mototaka Arakawa†, Yuusuke Kourai†, Tomohisa Kato†, Hajime Okumura†
(1Tohoku Univ.; 2AIST)

3J1-4* Time-resolved imaging of surface acoustic waves on two-dimensional phononic crystal waveguides
Keisuke Nanri†, Osamu Matsuda†, Motonobu Tomoda†, Oliver B. Wright†, Dieter Profunser†, Abdelkrim Khelif†, Vincent Laude†, Sarah Benchabane†
(1Grad. Sch. Eng., Hokkaido Univ.; 2EMTO-ST, Besancon, France)

3J1-5 Measurement of in-plane electric properties in a wide band-gap semiconductor by Brillouin scattering method
Takahiko Yanagitani†, Hiroyuki Sano†, Mami Matsukawa†
(1NIT; 2Doshisha Univ.)

11:45-13:10 Lunch

13:10-14:00 Invited Talk 3 Chair: Keiji Sakai (University of Tokyo)

3I-1 Gigahertz Acoustic Spectroscopy by Micro-Brillouin Scattering
Seiji Kojima (PAS, Univ. Tsukuba)

14:00-16:00 Poster Session Chair: Yasuaki Watanabe (Tokyo Metropolitan University)

3P1-1 Ultrasonic Light diffraction in liquid crystal in isotropic phase
Tatsuro Matsuka†, Junki Miyashita, Shinobu Koda (Nagoya Univ.)

3P1-2* Perfectly Matched Layers in the Cylindrical and Spherical Coordinates for Elastic Waves in Solids
Tao Sha†, Chao Hasegawa (Munoran Institute of Tech.)

3P1-3 Ultrasone Attenuation of a High Damping Alloy with Electromagnetic Acoustic Resonance
Toshihiro OHTANI†, Fuxing YIN* (1Shonan Institute of Technology; 2National Institute for Materials Science)

3P1-4 Analysis of Nanomechanical Antenna Structure Resonator Using Transfer Matrix Method and Examination of Its Frequency Gap
Hideaki Itoh†, Hiroyoshi Tatebe (Shinshu Univ.)

3P1-5 Recognition of Optical Layered BPSK Labels Using Acoustooptic Processor for Hierarchical Photonic Routing
Nobuo Goto†, Yasumitsu Miyazaki† (1The Univ. of Tokushima; 2Aichi Univ. of Tech.)

3P1-6* High Temperature Brillouin Scattering of Potassium Borate Glasses
Mitsuhiro Kawashima†, Yu Matsuda†, Syunsuke Aramomi†, Seiji Kojima (Univ. Tsukuba, PAS.)

3P1-7* Characterizations of C_{60} film by measuring internal friction
Syota Shimizu†, Takeru Miyamoto†, Kenta Kirimoto†, Yong Sun† (1Kyushu Institute of Technology; 2Kitakyushu National College of Technology)
3P1-8 Elastic Properties of Lithium Germanate Glasses Studied by Brillouin Scattering
Kazuhiro Kaneda1 Yu Matsuda Seiji Kojima (Tsukuba Univ.)

3P1-9* Brillouin Scattering of Lysozyme Crystals in Aqueous Lower Alcohol Solutions
Hitoshi Kanazawa1 Takahiro Ishii Seiji Kojima (Tsukuba Univ.)

3P1-10* Numerical Simulation of Ultrasound Propagation in Inhomogeneous Medium Including Randomly Moving Scatters
Hideyuki Nomura1 Tomoo Kamakura (Univ. of Electro-Communications)

3P1-11 Distributed-Parameter Based Treatment of Interaction Process between Elastic and Dielectric Energy in Piezoelectric Transducer: Part II
Michio Ohki1 (Natl. Def. Acad.)

3P1-12* Characterization of broadband dispersion behaviors of wedge waves with different boundary conditions by laser ultrasound technique
Che Hua Yang1 Wen Chih Wang1† (National Taipei Univ. of Technology (NTUT); 2National Taipei Univ. of Technology (NTUT))

3P1-13* Equivalent Circuit Model of Electric Contact Phenomena with Elastic and Plastic Deformation
Takaharu Kudo1 Noboru Wakatsuki Takatsu Nobuo (Ishinomaki Senshu Univ)

3P1-14 Plate Waves in Locally Resonant Sonic Materials
Jin-Chen Hsu1† Tsung-Tsong Wu1† (Department of Mechanical Engineering, National Yulin Univ. of Science & Technology, Yulin 640, Taiwan; 2Institute of Applied Mechanics, National Taiwan Univ., Taipei 106, Taiwan)

3P1-15 Rheology Measurement of protein solution by EMS system
Maiko Hosoda1† Nami Kurauchi2 Miki Nakamura1 Hiroyasu Nomura1 Keiji Sakai3 (1School of Science and Engineering, Tokyo Denki Univ.; 2Kyoto Electronics Manufacturing Co., Ltd.; 3Institute of Industrial Science, Univ. of Tokyo)

3P1-16* SAW Propagation Characteristics of Buried Type Optical-waveguides on LiNbO3 Substrates
Kei Kasahara1† Takehiko Uno1 Satoru Noge2 (Kanagawa Inst. of Tech.; 2Numazu National College of Technology)

3P1-17* Nanoscale mechanical contacts probed with picosecond acoustic phonons and ultrafast electron diffusion
Yohei Iwasaki1† Thomas Deboux Olivier Bernard Wright Osamu Matsuda Motonobu Tomoda (Hokkaido Univ.)

3P1-18 Time-resolved imaging of confined Rayleigh and Lamb waves in micrometer size cavities and wedges
Motonobu Tomoda1 Shinnosuke Matsuda Oliver B. Wright (Grad. Sch. Eng., Hokkaido Univ.)

3P1-19 Observation of microsecond wetting by microdroplets
Tatsuya Yamada1† Takehiko Uno1 Satoru Noge2 (Kanagawa Inst. of Tech.; 2Numazu National College of Technology)

3P1-20* Observation of Bragg and hybridization gaps in 2D phononic crystals
Eric J.S. Lee1 John H. Page (Univ. of Manitoba)

3P1-21 Read out of Spectrum in Hole-Burning on Piezoelectric Resonators
Fujio Tsuruoka1† (Department of Physics, Kurume Univ.)

3P1-22* Optical Visualization of Focused Ultrasound using Negative Refraction in Phononic Crystal
Koiji Nishimiya1† Koichi Mizutani2 Naoto Wakatsuki Ken Yamamoto2† (Univ. Tsukuba; 2Kansai Univ.)

3P1-23* Measurement of wave velocity distribution in a trabecula by micro-Brillouin scattering
Masahiko KAWABE1† Mami MATSUKAWA1 Norikazu OHTORI1† (Doshisha Univ.; 2Niigata Univ.)

3P1-24 Time-resolved imaging of surface acoustic waves on GaAs
Shogo Kaneko1 osamu Matsuda Motonobu Tomoda Oliver B. Wright (Grad. Sch. Eng., Hokkaido Univ.)

3P1-25* Vibrational modes in wire-type phononic crystals with square- and circular- cross sections
Yushi Nakamura1 Seiji Mizuno (Hokkaido Univ.)

3P1-26* Fabrication and Evaluation of Highly Oriented Ta2O5 Piezoelectric Thin Films Prepared by RF-Magnetron Sputtering
Takeshi Mitsui1† Akinori Tsuchiya Shoji Kakio Yasuhiko Nakagawa (Univ. Yamanashi)

3P1-27* Cementation effect evaluation by ultrasonic waves in granular materials
Yong-Hun Eom2† Hung Q. Truong1 Yong-Hoon Byun1 Soon-Hyuck Jung1 Jong-Sub Lee2† (1Dept. of Tunnel Engineering, Dongmyeong Engineering; 2School of Civil, Environmental and Architectural Engineering, Korea Univ.)

3P3-1 SHF band Filters Configured with Air-Gap Type Thin Film Bulk Acoustic Resonators
Motoaki Haraguchi Tsuyoshi Yokoyama Takeshi Sakashita Shintaro Taniguchi Masafumi Iwaki Tokihiro Nishihara Masanori Ueda Yoshihisa Saito (FUJITSU LIMITED)

3P3-2 Crystallographic characteristics of (11-20) textured ZnO piezoelectric films fabricated by magnetron sputtering with linear erosion
Takahiro Yanagimata2† Mami Matsukawa1 Yoshiaki Watanabe1 Yoshikazu Mori1† Syo Sasaki1 Masatoshi Oba1† (1Doshisha Univ.; 2Nagoya Inst. Tech.; 3OMRON)
3P3-3* Piezoelectric properties of c-axis highly tilted AlN films
Masashi Suzuki† Takahiko Yanagitani (NIT)  

3P3-4 High efficient optical mode converter using Lamb wave
Koki Saito† Yasuhiro Nakagawa Shoji Kakio
(Interdisciplinary Graduate School of Med.Eng., Univ. of Yamanashi)  

3P3-5 Simple Simultaneous Modulation for Red, Green and Blue Laser Lights Using Surface-Acoustic-Wave-Driven Acoustooptic Modulator
Shoji Kakio Susumu Shinkai† Yasuhiro Nakagawa (Univ. Yamanashi)  

3P3-6 Analysis of SAW Resonator on SiO₂/Al/LiNbO₃ structure by using FEM/SDA
Hiroyuki Nakamura† Hidekazu Nakanishi† Rei Goto† Ken-ya Hashimoto† Masatsune Yamaguchi†
(‘Panasonic Electronic Devices; †Chiba Univ.)  

3P3-7* Development of High Coupling Coefficient SAW Resonator on Ta₂O₅/Al/LiNbO₃, Structure
Hidekazu Nakanishi† Hiroyuki Nakamura Rei Goto (Panasonic Electronic Devices)  

3P3-8 Acoustic Wave Devices composed of Periodical Poled Z-cut LiTaO₃, Plate
Michio Kadota† Takashi Ogami† Kanshu Yamamoto† Yasuo Cho†
(‘Murata Mfg. Co., Ltd.; †Research Institute of Electrical Communication, Tohoku Univ.)  

3P3-9 Electromechanical Coupling Coefficient of Lamb Waves in Multilayered Piezoelectric Plates with Distinct Electrode Arrangements
Yung-Yu Chen† (Tatung Univ.)  

3P3-10 Ultra Wide Band Resonator Composed of Grooved Cu-Electrode and its Application
Michio Kadota† Tetsuya Kimura Yasuyuki Ida (Murata Mfg. Co., Ltd.)  

3P3-11* Theoretical Analysis of Leaky SAW Properties on Reverse-Proton-Exchanged Substrate
Hidenori Shimizu† Shoji Kakio Yasuhiro Nakagawa (Univ. Yamanashi)  

3P3-12 Thickness Effect of Gold Film on Dynamics of Second Harmonic in Nonlinear Surface Acoustic Wave
Koji Aizawa† Yukihiro Ishimaru† Aikeyuki Minamide† Yoshiaki Tokunaga†
(Graduate School, Kanazawa Inst. of Tech.; †Kanazawa Tech. College)  

3P3-13* Multilayer shear mode resonator consisting of c-axis tilted ZnO films.
Noki Morisato† Shinji Takayanagi† Takahiko Yanagitani† Mami Matsukawa† Yoshiaki Watanabe†
(‘Life & Medi. Sci., Doshisha Univ.; †Facul. Eng, Doshisha Univ.; †Facul. Eng, Nitech Univ.)  

3P3-14 Equivalent circuit analysis of efficiency improvement in multilayered polyurea ultrasonic transducers
Takahiro Aoyagi† Daisuke Koyama† Kentaro Nakamura† Marie Tabaru†
(‘Tokyo Tech; †CRL, Hitachi Ltd.)  

3P3-15 Optimal design of an ultrasonic planar array transducer
Wonseok Lee Yongrae Roh† (Kyungpook National Univ.)  

3P3-16 Analysis of the backlashes in an ultrasonic transducer for volumetric imaging
Eunhee Shin† Yongrae Roh (Kyungpook National Univ.)  

3P3-17* Development of 170-MHz Wireless-Electrodeless Quartz Crystal Microbalance Biosensor
Hironao Nagai† Yuki Fujunishi† Hirotsubu Ogi† Masahiko Hirao† Masayoshi Nishiyama†
(Graduate School of Engineering Science, Osaka Univ.; †Life Phenomena and Measurement Analysis,
JST PRESTO; †Renovation Center of Instruments for Science Education and Technology, Osaka Univ.)  

3P3-18* High Temperature Sensor Using β-Phase Quartz
Hiroyuki Tashiro† Takehiko Uno† Satoru Noge† (Kanagawa Institute of Technology; †Numazu National College of Technology)  

3P3-19* Systematic research on the dependence of the aggregation behavior of Aβ peptides on the amyloid nuclei using multichannel wireless-electrodeless QCM
Yuki Fujunishi† Hironao Nagai† Hirotsubu Ogi† Masahiko Hirao† Masayoshi Nishiyama†
(Graduate School of Engineering Science, Osaka Univ.; †Life Phenomena and Measurement Analysis,
JST PRESTO; †Renovation Center of Instruments for Science Education and Technology, Osaka Univ.)  

3P3-20 Study of a Crystal Sensor with Two Pairs of Electrodes
Shigenori Watanabe† Shunichi Wakiyama Mitsuaki Koyama (Nihon Dempo Kogyo Co., Ltd.)  

3P3-21 Wideband speaker using exponentially tapered piezoelectric bimorph actuators
Hsiuk Lee† Jungsun Kim‡ Moojoon Kim† Kangleyeol Ha†
(‘Pukyong National Univ.; †Tongmyong Univ.)  

3P3-22 A Study of Vibratory Tactile Sensor Using a Horn Type Longitudinal Bar Resonator
subaru kudo† (Ishinomaki Senshu Univ.)  

3P3-23 Experimental Study of Frequency-Change-Type Acceleration Sensor
Sumio Sugawara Yu Kajiwara† (Ishinomaki Senshu Univ.)  

3P3-24 Development of power generation in piezoelectric energy harvesting with array configurations
Daisuke Koyama† Kentaro Nakamura (Precision and Intelligence Laboratory, Tokyo Tech.)  

3P5-1* Measurement of Elastic Properties of Tissues with Shear Wave Propagation by the Acoustic Radiation Force (I)
Marie Tabaru† Takashi Azuma Kunio Hashiba (Central Research Laboratory, Hitachi, Ltd.)
3P5-2* Ultrasonic Fields Designed for Effective Actuation of Soft Tissue Using Line Focus Array Transducers. 
Tomotaka Sawada"1 Hideyuki Hasegawa"1,2 Hiroshi Kanai"1,2 (1Department of Biomedical Engineering, Graduate School of Biomedical Engineering, Tohoku Univ.; 2Department of Electronic Engineering, Graduate School of Engineering, Tohoku Univ.)

3P5-3 Production of local acoustic radiation force to constrain microcapsules from diffusing in vivo 
Kohji Masuda"1 Nobuyuki Watarai"1 Ken Kodah"1 Yusuke Nakamoto"1 Yusuke Muramatsu"1 (1Tokyo Univ. of A&T; 2Chiba Univ.)

3P5-4* Pulse Compression Imaging Based on Split-and-Merge Strategy 
TAKUYA YAMAMURA"1† MASAYUKI TANABE"1 Kan Okubo"2 Norio Tagawa"2 (1Faculty of System Design, Tokyo Metropolitan Univ.; 2Graduate School of System Design, Tokyo Metropolitan Univ.)

3P5-5* Synthetic Aperture Ultrasound Imaging using Coded-excitation and Harmonics Signal 
Masato Hiyoshi"1† Hirotaka Yanagida"1 Yasutaka Tamura"1 Tatsuhisa Takahashi"1 (1Yamagata Univ.; 2Asahikawa Medical College)

3P5-6 Precise Vascular Visualization in Power Doppler Imaging with Motion Compensation 
Hideki Yoshikawa"1† Takashi Azuma"1 Kazuaki Sasaki"1 (1Hitachi, Ltd., Central Research Laboratory; 2Tokyo Univ. of Agriculture and Technology)

3P5-7* Ultrasound Imaging Using Super Resolution FM-Chirp Correlation Method 
Masaki Fujimara"1 Kan Okubo"2 Norio Tagawa"1 (Graduate School of System Design, Tokyo Metropolitan Univ.)

3P5-8* Experimental Study of Small Calculus Detection for Medical Acoustic Imaging Using Correlation between Echo Signals 
Hirofumi Yaki"1† Takuya Sakamoto"1 Makoto Yamakawa"1 Tsuyoshi Shina"1 Toru Sato"1 (1Graduate School of Informatics, Kyoto Univ.; 2Advanced Biomedical Engineering Research Unit, Kyoto Univ.; 3Graduate School of Medicine, Kyoto Univ.)

3P5-9 Optical scattering measurement of microbubble cloud dynamics in ultrasound 
Takashi Miwa"1† Yoshiki Yamakoshi"1 Tomoharu Mashiyama"1 (Gunma Univ.)

3P5-10 Study on life time of microbubble generated from phase change nano droplet 
Ken-ichi Kawabata"1† Rei Asami"1 Takashi Azuma"1 Shin-ichiro Umemura"2* (1Central Research Lab., Hitachi, Ltd.; 2Tokohu Univ.)

3P5-12* Evaluation of trapping performance of fluid microcapsules to the parameter variation in acoustic radiation 
Ryusuke Nakamoto"1† Hayato Yamauchi"1 Yusuke Muramatsu"1 Kohji Masuda"1 Yoshitaka Miyamoto"1 Toshio Chiba"1 (1Graduate School of Science and Engineering, Tohoku Univ.; 2School of Medicine, Nagoya Univ.; 3Department of Clinical Research Development, National Center for Child Health and Development)

3P5-13* Blood flow measurement by Counter-Crossed Beam Contrast Echo method 
Taishi Eura"1† Kenji Yoshida"1 Yoshiaki Watanabe"1 Iwaki Akiyama"1 (1Faculty of Engineering, Doshisha Univ.; 2Faculty of Life and Medical Sciences, Doshisha Univ.; 3Shonan Institute of Technology, Department of Electric and Electronic Engineering)

3P5-14* Influenes of low frequency ultrasound to cells cultured on gel: Mechanical effects of bubble vibrations 
Kazuya Obata"1† Kenji Yoshida"1 Akira Tsukamoto"1 Takashi Ushida"1 Yoshiaki Watanabe"1 (1Faculty of Life and Medical Science, Doshisha Univ.; 2Center for Disease Biology and Integrative Medicine, Faculty of Medicine, The Univ. of Tokyo)

3P5-15 Fundamental Study on Activation Mechanism of Titanium Dioxide Composite Irradiated by Low-Intensity Focused Ultrasound 
Naotaka Nitta"1† Akio Kaya"1 Takashi Yamane"1 Masahiro Okada"1 Tsutomu Furuizono"2 (1AIST; 2NCVC)

3P5-16* Numerical Examination of Bio Heating Using Transducer Array 
Koichi Morikawa"1† Uiri Hamanaka"1 Naoto Wakatsuki"1 Koichi Mizutani"1 Yoshihiro Ohmi"2 (1Univ. Tsukuba; 2Ohmi Clinic)

3P5-17* Enhancement of Localized Heating by Ultrasonically Induced Cavitation for High Intensity Focused Ultrasound Therapy 
Ryo Takagi"1 (Tohoku Univ.)

3P5-18* A Large Region of Coagulation with Multi-Cavitation for HIFU Therapy 
Yuta Inaba"1 Shin Yoshizawa"1 Shin-ichiro Umemura"1 (Tohoku Univ.)

3P5-19* Verification of cavitations and thermal effects of Ultrasonically activated scalpel 
Masaru Oya"1† Tadashi Yamaguchi"1 Hideki Hayashi"1 Hiroiuyok Hachiya"1 (1Graduate school of Advanced Integration Science, Chiba Univ.; 2Research Center for Frontier Medical Engineering, Chiba Univ.; 3Graduate School of Science and Engineering, Tokyo Institute of Technology.)

3P5-20* Acoustic Impedance Evaluation of Thermally-induced Lesion in Biological Tissue using Ultrasone Microscopy 
Takashi Shishitani"1 Shin Yoshizawa"1 Shin-ichiro Umemura"1 (Tohoku Univ.)
3P5-21* Transdermal delivery of hydrophilic dye by low-frequency ultrasound: relationship between cavitation and introduction effect

Kenji Yoshida1, Kazuya Obata1, Akira Tsukamoto2, Takashi Ushida3, Yoshiaki Watanabe1
(1Faculty of Life and Medical Sciences, Doshisha Univ.; 2Center for Disease Biology and Integrative Medicine, Faculty of Medicine, The Univ. of Tokyo)

3P5-22 Tissue Equivalent Materials and Their Applications to Phantoms

Tomoji Yoshida1, Toshio Kondo1, Kazuhiro Yasukawa2, Kaoru Tsuta1, Yasuo Shikinami2
(1Tokushima Bunri Univ.; 2Takiron Co., Ltd.)

3P5-23* Myocardial Strain Imaging System with a High-Performance Adaptive Dynamic Grid Interpolation Method

Shuhui Bu1, Makoto Yamakawa2, Tsuyoshi Shiina1 (Human Health Science, Graduate School of Medicine, Kyoto Univ.; 2Advanced Biomedical Engineering Research Unit, Kyoto Univ.)

3P5-24* Physical Considerations on Bernoulli’s Law for Mitral Valve Regurgitation

Tomohiko Tanaka1 (Central Research Lab., Hitachi Ltd.)

3P5-25* Simple analysis of a pulse wave to estimate the viscoelastic properties of blood vessel wall - Effect of age on the averaged blood flow velocity -

Masashi Saito1, Yuya Yamamoto1, Mami Matsukawa1, Yoshiaki Watanabe1, Mio Furuya2, Takaaki Asada2
(1Doshisha Univ.; 2Murata Manufacturing Co., Ltd.)

3P5-26* Measurement of Two-dimensional Heart Wall Motion for Evaluation of Myocardial Contraction and Relaxation at High Temporal and Spatial Resolution

Yasunori Honjo1, Hideyuki Hasegawa1,2, Hiroshi Kana11 (Department of Biomedical Electronic Engineering, Graduate School, Toho Univ.; 2Department of Electronic Engineering, Graduate School, Toho Univ.)

3P5-27* Transient Change in Viscoelasticity of Radial Artery due to Flow-Mediated Dilation Measured by Accurate Detection of Arterial Wall Boundaries

Kazuki Ikeshit1, Hideyuki Hasegawa1,2, Hiroshi Kana11 (Department of Biomedical Engineering, Graduate School of Biomedical Engineering, Toho Univ.; 2Department of Electronic Engineering, Graduate School of Engineering, Toho Univ.)

3P5-28 Measurement of the lateral distribution of ultrasonic fields transmitted through bovine bones by the hydrophone scanning method

Masahiro Ohno1, Nami Ikeda1, Kaori Ohira1, Yukari Ogawa1 (Chiba Institute of Technology)

3P5-29* Longitudinal wave properties in swine cortical bone.

Takaaki Koizumi1, Kazufumi Yamamoto2, Tomohiro Nakatsuji1, Keisuke Yamashita1, Mami Matsukawa1 (1Doshisha Univ.; 2Hamamatsu Univ. Sch. Med.)

3P5-30 Determination of bovine bone anisotropic stiffness using ultrasonic data in two orthogonal planes

Quentin Grimal1, Kazufumi Yamamoto1, Tomohiro Nakatsuji1, Mami Matsukawa1, Pascal Laugier1,2
(1UPMC Univ Paris 06, UMR 7623, LIP, F-75005, Paris, France; 2CNRS, UMR 7623, Laboratoire d’Imagerie Paramétrique, F-75005, Paris, France; 3Laboratory of Ultrasonic Electronic Doshisha Univ., Kyoto, Japan)

3P5-31* The effect of three dimensional trabecular frame structure on the fast wave velocity in bovine cancellous bone

Hiroki Somiya1, Katsunori Mizuno1, Tomohiro Kubo1, Mami Matsukawa1, Takahiko Otani1, Yoshihi Nagatani2
(1Doshisha Univ.; 2Kobe City Coll. Tech.)

3P5-32* Wavelet transform analysis of ultrasonic wave propagation in cancellous bone

Sho Hasegawa1, Yoshihi Nagatani1, Mizuno Katsunori1, Mami Matsukawa1
(1Kobe City College of Technology; 2Doshisha Univ.)

3P5-33 Ultrasound Propagation Paths in Cancellous Bone with An Oblique Trabecular Orientation

Atsushi Hosokawa1 (Akashi Nat. Coll. Tech.)

3P5-34 Study for Imaging of Inside Bone using Ultrasonic Characteristic Parameters

Takasue Irie1,2, Kouhei Koomoto1, Masayuki Tanabe1, Norio Tagawa1, Kan Okubo1, Kouichi Itob1
(1Tokyo Metropolitan Univ.; 2Microsonic Co., Ltd.; 3Hitachi-Omiya Saiseikai Hospital)

3P5-35 900-MHz acoustic microscopy: nanostructural characteristics of cortical bone determines elasticity at the micron scale

Mathilde Mouchet1, Aurelien Gourrier2,3, Fabienne Rupin1, Kay Raum1, Francois Peyrin3,6, Amena Saied1, Pascal Laugier1,2 (1Univ. Pierre et Marie Curie, Paris, France; 2Univ. Paris-Sud, France; 3Universitätsmedizin Berlin, Germany; 4ESRF, Grenoble, France; 5CNRS, 6INSERM)

3P5-36 Perception mechanisms of bone-conducted ultrasound assessed by acoustic characteristics in the external auditory meatus.

Kazuhiro Ito1, Seiji Nakagawa (AIST)
16:00-17:15 Piezoelectric Devices
Chair: Masao Takeuchi (Tamagawa University)

3J3-1 Liquid-Phase Shear Horizontal Surface Acoustic Wave Immunosensor
Takashi Kogai† Naoyuki Yoshimura Toshimasa Mori Hiromi Yatsuda (Japan Radio Co.,Ltd.)

3J3-2 Improvement of Ball Surface Acoustic Wave Device with Orientation and Thickness Optimization of Interdigital Electrode.
Takayuki Yanagisawa1,2,3† Tsuneo Ohgi1,3 Shingo Akao1,2,3 Noritaka Nakaso1,2,3 Yoshikazu Ohara1,2,3 Kazushi Yamanaka1,3 (TOPPAN PRINTING; 1Tohoku Univ.; 2JST,CREST)

3J3-3* Piezoelectric Boundary Acoustic Wave in Cu Electrode/Rotated YX-LiNbO3 Substrate Structure with Partially Covered SiO2 Layer
Yiliu Wang† Ken-ya Hashimoto Tatsuya Omori Masatsune Yamaguchi (Graduate School of Engineering, Chiba Univ.)

3J3-4* The improvement of temperature characteristics for highly coupled ZnO/Quartz structure
Takaki Murata1,2,3 Michio Kadota1 Kenji Matsuda1 Kenya Hashimoto1 (Murata Mfg. Co., Ltd.; 1Chiba Univ.)

3J3-5 Nonlinear Distortion of Acoustic Devices for Radio-Frequency Front-End Applications and Suppression of Nonlinearity
Masanori Ueda† Masafumi Iwaki1 Tokihiro Nishihara1 Yoshio Satoh1 Ken-ya Hashimoto1 (FUJITSU LABORATORIES LTD; 1Graduate School of Engineering, Chiba Univ.)

17:15 Closing Session