

# The 42nd Symposium on Ultrasonic Electronics (USE 2021) Program

○ Speaker

\* Applying to Young Scientists Award

**Monday, October 25**

**8:45-9:00      OPENING**

**9:00-10:00      Ultrasonic properties of materials I**

**Chair: Akira Harata (Kyusyu Univ.)**

**1J1-1\***      **Design and measurement of topological elastic waveguide based on phononic crystal**  
[[[S3218]]]      ○Motoki Kataoka, Masaaki Misawa, Kenji Tsuruta (Okayama Univ.)

**1J1-2**      **Detection of nanoscale acoustic waves gated by transient spin-polarized electrons**  
[[[S3341]]]      ○Osamu Matsuda<sup>1</sup>, Chunyong Li<sup>2</sup>, Richard T. Harley<sup>2</sup>, Pavlos G. Lagoudakis<sup>2,3</sup>, Oliver B. Wright<sup>1</sup>  
(<sup>1</sup>Hokkaido Univ., <sup>2</sup>Univ. Southampton, <sup>3</sup>Skolkovo Inst. Sci. Tech.)

**1J1-3\***      **Development of non-contact and non-destructive method for estimating the thermal properties by using the laser heterodyne photothermal displacement method**  
[[[S3302]]]      ○Tomoki Harada<sup>1,2</sup>, Yuki Arata<sup>1</sup>, Kosuke Morita<sup>1</sup>, Tetsuo Ikari<sup>1</sup>, Atsuhiko Fukuyama<sup>1</sup>  
(<sup>1</sup>Univ. of Miyazaki, <sup>2</sup>JSPS Research Fellow)

**1J1-4\***      **Sol-gel composite Film Measurement by Scanning Nonlinear Dielectric Microscopy**  
[[[S3276]]]      ○Kohei Hirakawa<sup>1</sup>, Naoki Kambayashi<sup>1</sup>, Hiroyuki Odagawa<sup>2</sup>, Makiko Kobayashi<sup>1</sup> (<sup>1</sup>Kumamoto Univ., <sup>2</sup>Kumamoto NIT)

**10:15-11:00      High power ultrasound I**

**Chair: Subaru Kudo (Ishinomaki Senshu Univ.)**

**1J2-1\***      **Traveling wave excitation to a metal cylinder and application to object transport**  
[[[S3143]]]      ○Kaito Murai<sup>1</sup>, Deqing Kong<sup>1</sup>, Hideki Tamura<sup>2</sup>, Manabu Aoyagi<sup>1</sup> (<sup>1</sup>Muroran Inst. of Tech., <sup>2</sup>Tohoku Inst. of Tech.)

**1J2-2\***      **Robust Design Using Adaptive Multi-channel Control for Mid-air Acoustic Tweezers**  
[[[S3380]]]      ○Shota Kondo, Kan Okubo (Tokyo Met Univ.)

**1J2-3\***      **High-Power Ultrasound Introduction into Thin Tubular Waveguide of Tube-Type DPLUS**  
[[[S3332]]]      ○Kyohei Yamada<sup>1</sup>, Kang Chen<sup>1</sup>, Takasuke Irie<sup>2</sup>, Takashi Iijima<sup>3</sup>, Susumu Miyake<sup>1</sup>, Takeshi Morita<sup>1</sup>  
(<sup>1</sup>Univ. of Tokyo, <sup>2</sup>Microsonic Co, Ltd., <sup>3</sup>Tokyo Univ. of Sci.)

**11:15-12:00      Poster Session**

**Chair: Makiko Kobayashi (Kumamoto Univ.)**

**1Pa1-1\***      **Computing SAW velocities using the matrix method and the Sakurai-Sugiura method**  
[[[S3163]]]      ○Hibiki Yoshida, Koji Hasegawa (Muroran Inst. of Tech.)

**1Pa1-2**      **Effect of target material and structures on laser-generated aerial ultrasound**  
[[[S3167]]]      ○Koji Aizawa (Kanazawa Inst. of Tech.)

**1Pa1-3\***      **Experimental investigation of the dispersion relation of the Lamb wave propagating in a plate immersed one side surface in water on lower frequency region**  
[[[S3202]]]      ○Bunyu Tamura, Masashi Ishikawa, Hideo Nishino (Tokushima Univ.)

**1Pa1-4\***      **Ambience effect during poling of Pb(Zr,Ti)O<sub>3</sub>/Pb(Zr,Ti)O<sub>3</sub>**  
[[[S3206]]]      ○Ayaka Yamasaki, Makie Hidaka, Kei Nakatsuma, Makiko Kobayashi (Kumamoto Univ.)

**1Pa1-5\***      **Elastic constants of tungsten carbide single crystal studied by picosecond ultrasonics**  
[[[S3212]]]      ○Masato Kimoto, Akira Nagakubo, Hirotsugu Ogi (Osaka Univ.)

- 1Pa2-1\*** Quantitative evaluation of wall thinning of piping using deep neural network based on the frequency variation of the T(0,1) mode guided wave reflection coefficient  
 [[S3144]] ○Ryujin Katsuma<sup>1</sup>, Koki Hirano<sup>1</sup>, Motoki Goka<sup>2</sup>, Masashi Ishikawa<sup>1</sup>, Hideo Nishino<sup>1</sup> (<sup>1</sup>Tokushima Univ., <sup>2</sup>Mitsubishi Chemical)
- 1Pa2-2\*** Integrity assessment of large rotating machine components based on their resonance characteristics (1) — Measurement method and numerical simulation —  
 [[S3177]] ○Yuji Wada<sup>1</sup>, Kentaro Nakamura<sup>1</sup>, Kota Sadamoto<sup>2</sup>, Hiroshi Araki<sup>2</sup>, Wataru Tsujita<sup>2</sup> (<sup>1</sup>Tokyo Tech., <sup>2</sup>Mitsubishi Electric Corporation)
- 1Pa2-3\*** Integrity assessment of large rotating machine components based on their resonance characteristics (2) -- An algorithm for anomaly detection--  
 [[S3179]] ○Kota Sadamoto<sup>1</sup>, Hiroshi Araki<sup>1</sup>, Wataru Tsujita<sup>1</sup>, Yuji Wada<sup>2</sup>, Kentaro Nakamura<sup>2</sup> (<sup>1</sup>Mitsubishi Electric Corporation, <sup>2</sup>Tokyo Tech.)
- 1Pa2-4\*** Non-contact measurement of bolt axial force using crystal resonator and coil  
 [[S3178]] ○Kazuhiko Hasebe, Wada Yuji, Kentaro Nakamura (Tokyo Tech.)
- 1Pa2-5\*** Comparison of Longitudinal and Shear Waves in Detecting Defects in Metal by Transmission Method  
 [[S3307]] ○Takeru Doi, Ryusuke Miyamoto, Naoto Wakatsuki, Tadashi Ebihara, Koichi Mizutani (Univ. of Tsukuba)
- 1Pa2-6\*** Numerical simulation of nondestructive inspection for billet using multiple plane waves with transmission method  
 [[S3381]] ○Ryusuke Miyamoto, Takeru Doi, Naoto Wakatsuki, Tadashi Ebihara, Koichi Mizutani (Univ. of Tsukuba)
- 1Pa2-7\*** Proposal of Shear-Wave-Excited Evanescent Super-Resolution Imaging Method for the Detection of Micro Defects and Its Fundamental Study  
 [[S3311]] ○Yota Oyabu, Yoshikazu Ohara, Toshihiro Tsuji, Tsuyoshi Mihara (Tohoku Univ.)
- 1Pa3-1\*** Resonance Property of Shear-horizontal Surface Acoustic Wave on New Langasite-type Piezoelectric Single Crystal  
 [[S3148]] ○Ryoto Suzuki<sup>1</sup>, Masashi Suzuki<sup>1</sup>, Shoji Kakio<sup>1</sup>, Noritoshi Kimura<sup>2</sup> (<sup>1</sup>Univ. of Yamanashi, <sup>2</sup>Piezo Studio Inc.)
- 1Pa3-2\*** SAW Propagation Properties of (K,Na)NbO<sub>3</sub> Films Deposited by Hydrothermal Synthesis or RF Sputtering  
 [[S3154]] ○Kazuma Yoshizawa<sup>1</sup>, Masashi Suzuki<sup>1</sup>, Shoji Kakio<sup>1</sup>, Yoshiharu Ito<sup>2</sup>, Akinori Tateyama<sup>3</sup>, Hiroshi Funakubo<sup>3</sup>, Tsuyoshi Wakabayashi<sup>4</sup>, Kenji Shibata<sup>5</sup> (<sup>1</sup>Univ. of Yamanashi, <sup>2</sup>Nihon Univ., <sup>3</sup>Tokyo Tech., <sup>4</sup>Koike Co., Ltd., <sup>5</sup>SCIOCS Co., Ltd.)
- 1Pa3-3\*** Enhancement of coupling factor K<sup>2</sup> in higher-mode RSAW on polarity inverted ScAlN films/high velocity AlN or BN substrates  
 [[S3272]] ○Yusei Takano, Masashi Suzuki, Shoji Kakio (Univ. of Yamanashi)
- 1Pa3-4\*** Implementation of Auto-focus Function to Laser Probe for RF Acoustic Wave Devices for Its Long Time Continuous Operation  
 [[S3368]] ○Kazuki Kawai<sup>1</sup>, Hikaru Takahashi<sup>1</sup>, Tatsuya Omori<sup>1</sup>, Ken-ya Hashimoto<sup>2,1</sup> (<sup>1</sup>Chiba Univ., <sup>2</sup>Univ. of Electric Sci. and Tech.)
- 1Pa4-1** Basic study of HPA temperature and onset temperature in thermoacoustic prime mover by stability analysis  
 [[S3196]] ○Shin-ichi Sakamoto, Masaya Kumazaki (Univ. of Shiga Pref.)
- 1Pa4-2\*** Fundamental study on the position of CPA in a thermoacoustic prime mover using stability analysis.  
 [[S3244]] ○Takumi Matsumoto, Shin-ishi Sakamoto (Univ. of Shiga Pref.)
- 1Pa4-3** A Preliminary Study of Pitch Matching between 40-kHz Air-conducted Ultrasonic Wave and Air-conducted Audible Sound  
 [[S3325]] ○Yoshiki Nagatani<sup>1,2</sup>, Hiromu Ishikawa<sup>2</sup>, Takayuki Hoshi<sup>1</sup>, Seiji Nakagawa<sup>2</sup> (<sup>1</sup>Pixie Dust Technologies, <sup>2</sup>Chiba Univ.)
- 1Pa4-4\*** Effect of eigenmode in cavity on acoustic radiation force in near-field acoustic levitation  
 [[S3142]] ○Kohei Aono, Deqing Kong, Manabu Aoyagi (Muroran Inst. of Tech.)
- 1Pa4-5** Accelerating amyloid fibril formation by multi-channel ultrasonic chemical reactor  
 [[S3168]] ○Kentaro Noi, Kichitaro Nakajima, Keiichi Yamaguchi, Masatomo So, Kensuke Ikenaka, Hideki Mochizuki, Yuji Goto, Hirotsugu Ogi (Osaka Univ.)

- 1Pa4-6\*** **Simulation of non-contact heating of a material surface under high-intensity aerial ultrasonic irradiation**  
[[[S3189]]] ○Masashi Hishinuma, Ayumu Osumi, Youichi Ito (Nihon Univ.)
- 1Pa5-1** **Regularization for Medical Ultrasound**  
[[[S3151]]] ○Chikayoshi Sumi (Sophia Univ.)
- 1Pa5-2\*** **Investigation on effect of transmit condition on displacement estimation by phase-sensitive 2D motion estimators**  
[[[S3152]]] ○Tatsuya Yano, Michiya Mozumi, Masaaki Omura, Ryo Nagaoka, Hideyuki Hasegawa (Univ. of Toyama)
- 1Pa5-3** **Investigation on estimation of velocity vectors for blood flow measurements**  
[[[S3156]]] ○Hideyuki Hasegawa<sup>1</sup>, Michiya Mozumi<sup>1</sup>, Masaaki Omura<sup>1</sup>, Ryo Nagaoka<sup>1</sup>, Kozue Saito<sup>2</sup>  
(<sup>1</sup>Univ. of Toyama, <sup>2</sup>Nara Medical Univ.)
- 1Pa5-4\*** **Investigation on singular value decomposition filter for extraction of reflected signals from blood flow in veins**  
[[[S3165]]] ○Ryo Nagaoka, Masaaki Omura, Michiya Mozumi, Kunimasa Yagi, Hideyuki Hasegawa (Univ. of Toyama)
- 1Pa5-5\*** **Weakly nonlinear theory on ultrasound propagation in liquids containing microbubbles coated by a lipid shell**  
[[[S3174]]] ○Mitsuhiro Honda, Tetsuya Kanagawa, Yusei Kikuchi (Univ. of Tsukuba)
- 1Pa5-6** **Numerical Simulation of Piezoelectric Signal Generated in Cancellous Bone by Ultrasound Irradiation: Effect of Trabecular Orientation**  
[[[S3198]]] ○Atsushi Hosokawa (Natl. Inst. Tech., Akashi Coll.)
- 1Pa5-7\*** **Evaluation of Backscattering Properties in Skin Tissue by High-frequency Annular Array**  
[[[S3203]]] ○Wakana Saito<sup>1</sup>, Masaaki Omura<sup>1,2</sup>, Jeffrey A. Ketterling<sup>3</sup>, Shinnosuke Hirata<sup>1</sup>, Kenji Yoshida<sup>1</sup>, Tadashi Yamaguchi<sup>1</sup>  
(<sup>1</sup>Chiba Univ., <sup>2</sup>Univ. of Toyama, <sup>3</sup>Lizzi Center for Biomedical Eng.)
- 1Pa5-8** **Investigation on application conditions of the ultrasonic velocity change imaging method to living body**  
[[[S3204]]] ○Hana Sonoda<sup>1</sup>, Yuki Ito<sup>1</sup>, Yuki Minami<sup>1</sup>, Tetsuya Matsuyama<sup>1</sup>, Kenji Wada<sup>1</sup>, Koichi Okamoto<sup>1</sup>, Toshiyuki Matsunaka<sup>2</sup>  
(<sup>1</sup>Univ. of Osaka Pref., <sup>2</sup>TU Research Lab.)
- 1Pa5-9\*** **Basic study on separation of reflected components in pulse wave propagation using ultrafast ultrasound**  
[[[S3208]]] ○Michiya Mozumi, Masaaki Omura, Ryo Nagaoka, Hideyuki Hasegawa (Univ. of Toyama)
- 1Pa6-1** **Specification of sound scattering in target ranging used ICA (Independent Component Analysis)**  
[[[S3160]]] ○Yoshiaki Tsurugaya<sup>1</sup>, Toshiaki Kikuchi<sup>2</sup>, Koichi Mizutani<sup>3</sup> (<sup>1</sup>Sanyo PT, <sup>2</sup>Natl.Defense Academy, <sup>3</sup>Univ. of Tsukuba)
- 1Pa6-2\*** **The Performance of Underwater Frequency Diversity Communication Applying FFT-based Threshold Estimation**  
[[[S3199]]] ○Chaehui LEE, Hyunsoo JEONG, Kyu-Chil PARK, Jihyun PARK (Pukyong Natl. Univ.)
- 1Pa6-3** **Design of Hemispherical Compound Eye Acoustic Lens Consisting of Concave Meniscus**  
[[[S3205]]] ○Yuji Sato, Tadashi Ebihara, Koichi Mizutani, Naoto Wakatsuki (Univ. of Tsukuba)
- 1Pa6-4\*** **Effect of Doppler Modeling Error on Communication Quality in Underwater Acoustic Communication**  
[[[S3243]]] ○Yushi Tabata<sup>1</sup>, Tadashi Ebihara<sup>1</sup>, Hanako Ogasawara<sup>2</sup>, Naoto Wakatsuki<sup>1</sup>, Keiichi Zempo<sup>1</sup>, Koichi Mizutani<sup>1</sup>  
(<sup>1</sup>Univ. of Tsukuba, <sup>2</sup>Natl.Defense Academy)
- 12:15-13:00** **LUNCH TIME**
- 13:00-13:50** **Plenary Talk I** **Chair: Kentaro Nakamura (Tokyo Tech.)**
- 1PL** **Recent techniques on sound field simulation**  
[[[•••••]]] ○Takao Tsuchiya (Doshisha Univ.)
- 14:00-15:00** **Poster Session** **Chair: Yasuaki Watanabe (Tokyo Met Univ.)**
- 1Pb1-1\*** **Curie Temperature Estimation of Pb(Zr, Ti)O<sub>3</sub>-based Sol-gel Composites**  
[[[S3207]]] ○Makie Hidaka, Naoki Kambayashi, Makiko Kobayashi (Kumamoto Univ.)

- 1Pb1-2 Dielectric and Piezoelectric Properties of Pb Perovskite Relaxor type Single Crystals by AC poling**  
[[[S3220]]] ○Yohachi Yamashita<sup>1,2</sup>, Yiqin Sun<sup>1</sup>, Zhuangkai Wang<sup>1</sup>, Tomoaki Karaki<sup>1</sup>, Tadashi Fujii<sup>1</sup>  
(<sup>1</sup>Univ. of Toyama Pref., <sup>2</sup>North Carolina State Univ.)
- 1Pb1-3 Lattice thermal conductivity in isotope diamond asymmetric superlattices**  
[[[S3225]]] ○Hsu Kai Weng<sup>1</sup>, Akira Nagakubo<sup>1</sup>, Hideyuki Watanabe<sup>2</sup>, Hirotsugu Ogi<sup>1</sup> (<sup>1</sup>Osaka Univ., <sup>2</sup>AIST)
- 1Pb1-4 Synthesis and characterization of BNBT15-BNM lead- free piezoelectric ceramics**  
[[[S3230]]] ○Yutaka Doshida<sup>1</sup>, Kosuke Hayakawa<sup>1</sup>, Hideki Tamura<sup>2</sup>, Satoshi Tanaka<sup>3</sup>  
(<sup>1</sup>Ashikaga Univ., <sup>2</sup>Tohoku Inst. of Tech., <sup>3</sup>Nagaoka Univ. of Tech.)
- 1Pb1-5\* Dielectric and piezoelectric properties of Pb(Mg<sub>1/3</sub>Nb<sub>2/3</sub>)O<sub>3</sub>-PbTiO<sub>3</sub> single crystal ultrasonic transducers with AC low-temperature poling**  
[[[S3231]]] ○Yiqin Sun<sup>1</sup>, Tomoaki Karaki<sup>1</sup>, Fujii Tadashi<sup>1</sup>, Yohachi Yamashita<sup>1,2</sup> (<sup>1</sup>Univ. of Toyama Pref., <sup>2</sup>North Carolina State Univ.)
- 1Pb2-1\* Improvement of laser-pulse methods in piezoelectric device analyses using laser speckle interferences**  
[[[S3161]]] ○Kengo Hara, Yasuaki Watanabe, Ryosuke Nishihara (Tokyo Met Univ.)
- 1Pb2-2\* Dynamics of Polymer-coated Microparticles in Suspension Probed by Electrophoretic Dynamic Ultrasound Scattering Techniques**  
[[[S3336]]] ○Mao Yamada, Tomohisa Norisuye (Kyoto Inst. of Tech.)
- 1Pb2-3\* Development of nano-thin film biosensors using asynchronous picosecond ultrasound method**  
[[[S3214]]] ○Akihiro Tange, Akira Nagakubo, Hirotsugu Ogi (Osaka Univ.)
- 1Pb2-4\* Improvement of Spatial Resolution in Temperature Profiling inside Materials by Ultrasound**  
[[[S3316]]] ○Kamui Yoshida, Naoki Wadamori, Ikuo Ihara (Nagaoka Univ. of Tech.)
- 1Pb2-5 Development of Multi-parallel-path Clamp-on Ultrasonic Flowmeter**  
[[[S3372]]] ○Toshihiko Nakano, Masahiko Akiyama, Shinji Suzuki (TOKYO KEIKI INC.)
- 1Pb2-6\* Object Identification Based on Analysis of Broadband Acoustic Signals Using Multiple Frequency Air Ultrasonic Transducers**  
[[[S3374]]] ○Hideto Otsuka, Kan Okubo (Tokyo Met Univ.)
- 1Pb2-7 Investigation on Driving Signal of Sound Source Element in Reflection Point Search by Rectangular Sound Source**  
[[[S3376]]] ○Hiroyuki Masuyama (NIT, Toba College)
- 1Pb3-1\* Consideration on influence of reflected waves at junction boundary in double layered thickness-shear resonator using  $\alpha$ -quartz**  
[[[S3252]]] ○Taisei Noguchi<sup>1</sup>, Yuji Ohashi<sup>1</sup>, Masaya Omote<sup>2</sup>, Yuui Yokota<sup>1</sup>, Shunsuke Kurosawa<sup>1</sup>, Kei Kamada<sup>1</sup>, Hiroki Sato<sup>1</sup>, Satoshi Toyoda<sup>1</sup>, Masao Yoshino<sup>1</sup>, Akihiro Yamaji<sup>1</sup>, Akira Yoshikawa<sup>1</sup> (<sup>1</sup>Tohoku Univ., <sup>2</sup>XMAT Co.)
- 1Pb3-2 Development of Wireless Quartz Crystal Microbalance Sensor with Antenna-Embedded PDMS Microchannel**  
[[[S3313]]] ○Fumihito Kato<sup>1</sup>, Yu Qi<sup>1</sup>, Tomoya Aoki<sup>1</sup>, Noriyasu Masumoto<sup>1</sup>, Hiroyuki Noguchi<sup>1</sup>, Hirotsugu Ogi<sup>2</sup>, Dai Matsumoto<sup>3</sup>, Teruyoshi Matsumoto<sup>3</sup> (<sup>1</sup>Nippon Inst. of Tech., <sup>2</sup>Osaka Univ., <sup>3</sup>Pearl Optical Ind.)
- 1Pb3-3\* Fundamental study of 2-2 ceramic-air composite transducers for air-coupled ultrasonic measurement**  
[[[S3358]]] ○Hitoshi Kumagai, Toshihiro Tsuji, Yoshikazu Ohara, Tsuyoshi Mihara (Tohoku Univ.)
- 1Pb3-4\* Basic research on microfluidic systems integrating surface acoustic wave and localized surface plasmon resonance sensors**  
[[[S3219]]] ○Kohei Kasai, Jun Kondoh (Shizuoka Univ.)
- 1Pb4-1\* Effect of superimposed external sound wave on loop-tube type thermoacoustic system**  
[[[S3323]]] ○Koto Hiramatsu<sup>1</sup>, Shin-ichi Sakamoto<sup>2</sup>, Yoshiaki Watanabe<sup>1</sup> (<sup>1</sup>Doshisha Univ., <sup>2</sup>Univ. of Shiga Pref.)
- 1Pb4-2 Study on Efficiency of Transducers for Sonochemistry by Calorimetry**  
[[[S3201]]] ○Yoshiyuki Asakura<sup>1</sup>, Keiji Yasuda<sup>2</sup> (<sup>1</sup>Honda Electronics, <sup>2</sup>Nagoya Univ.)
- 1Pb4-3\* Acoustic underwater propulsion system using longitudinal vibrator**  
[[[S3266]]] ○Ryo Tanimura, Kong Deqing, Manabu Aoyagi (Muroran Inst. of Tech.)

- 1Pb4-4 Creep Induced Nonlinear Acoustics in a Ti-Al Alloy**  
 [[S3185]] ○Toshihiro Ohtani<sup>1</sup>, Yutaka Ishii<sup>1</sup>, Noritake Hiyoshi<sup>2</sup>, Yasuhiro Yamazaki<sup>3</sup>, Yutaro Ohta<sup>4</sup>  
 (<sup>1</sup>Shonan Inst. of Tech., <sup>2</sup>Fukui Univ., <sup>3</sup>Chiba Univ., <sup>4</sup>IHI)
- 1Pb4-5 Influence of Microphone Characteristics on Measurement of Near-field of Parametric Acoustic Array**  
 [[S3169]] ○Hideyuki Nomura, Hiroki Sato (Univ. of Electro-Comm.)
- 1Pb4-6\* The effect of the rotor elastic anisotropy on the friction drive of the ultrasonic motors**  
 [[S3137]] ○Tatsuki Sasamura<sup>1</sup>, Abdullah Mustafa<sup>1</sup>, Susumu Miyake<sup>1</sup>, Norio Sashida<sup>2</sup>, Takeshi Morita<sup>1</sup>  
 (<sup>1</sup>Univ. of Tokyo, <sup>2</sup>SHINSEI CORPORATION)
- 1Pb5-1\* Motion analysis of liver blood vessel using multi-resolution registration**  
 [[S3209]] ○Taichi Shimizu, Takumi Nakazawa, Kosuke Watanabe, Kohji Masuda (Tokyo Univ. of A&T)
- 1Pb5-2\* Tempo-spatial analysis of ultrasound volumes to estimate tip position of thin catheter in blood vessel**  
 [[S3224]] ○Masaki Takei, Taichi Shimizu, Yutaro Kobayashi, Kohji Masuda (Tokyo Univ. of A&T)
- 1Pb5-3\* Improvement of performance of minimum variance beamformer by Nakagami shape parameter**  
 [[S3227]] ○Takumi Akamatsu, Michiya Mozumi, Masaaki Omura, Ryo Nagaoka, Hideyuki Hasegawa (Univ. of Toyama)
- 1Pb5-4 Ultrasound Complementary Subset Transmit for Coherence-Based Multi-Angle Plane-Wave Power Doppler Detection**  
 [[S3232]] ○Che-Chou Shen, Yen-Chen Chu (Dept. Elec. Eng., NTUST)
- 1Pb5-5 Examination of Amplitude Modulated Wave Irradiation for Bubble Cavitation Position Control**  
 [[S3233]] ○Ren Koda, Taichi Mukai (Gunma Univ.)
- 1Pb5-6\* Effect of Number Concentration of Contrast Agent Microbubbles in a Microchamber on Shell Disruption**  
 [[S3235]] ○Junsyou kanashima, Naohiro Sugita, Tadahiko Shinshi (Tokyo Tech.)
- 1Pb5-7 Carotid Artery HITS measurement system using the Paste-able Soft Ultrasonic Probe and its clinical application**  
 [[S3239]] ○Jun Kubota<sup>1</sup>, Masatoshi Hashimoto<sup>1</sup>, Akihisa Narai<sup>1</sup>, Hidetaka Mitsumura<sup>2</sup>, Kazuhiko Hanzawa<sup>3</sup>  
 (<sup>1</sup>Hashimoto Electronic Industry, <sup>2</sup>Jikei Univ. School of Med., <sup>3</sup>Niigata Univ.)
- 1Pb5-8\* FDTD verification of influence of layered structure on shear wave velocity**  
 [[S3240]] ○Kodai Osato<sup>1</sup>, Wakana Saito<sup>1</sup>, Takuma Oguri<sup>1,2</sup>, Naohisa Kamiyama<sup>2</sup>, Shinnosuke Hirata<sup>1</sup>, Kenji Yoshida<sup>1</sup>,  
 Tadashi Yamaguchi<sup>1</sup> (<sup>1</sup>Chiba Univ., <sup>2</sup>GE Healthcare)
- 1Pb5-9\* Three-dimensional evaluation of the relationship between speed of sound and scattering characteristics of lymph nodes in tumor-bearing mice**  
 [[S3242]] ○Kazuma Noguchi<sup>1</sup>, Masaaki Omura<sup>1,2</sup>, Takashi Ohnishi<sup>3</sup>, Matsumoto Daiki<sup>1</sup>, Tetsuya Kodama<sup>4</sup>, Hideaki Haneishi<sup>1</sup>,  
 Tadashi Yamaguchi<sup>1</sup> (<sup>1</sup>Chiba Univ., <sup>2</sup>Univ. of Toyama, <sup>3</sup>Memorial Sloan Kettering Cancer Center, <sup>4</sup>Tohoku Univ.)
- 1Pb5-10\* Simulation of interfered acoustic field for bending thin catheter in arbitrary direction**  
 [[S3248]] ○Ryota Akutsu, Yuki Ichikawa, Yutaro Kobayashi, Shinnosuke Araki, Kohji Masuda (Tokyo Univ. of A&T)
- 1Pb5-11\* Directly assessing the reactivity of rat-derived microglia with scanning acoustic microscope**  
 [[S3250]] ○Christine Lee Li Mei<sup>1</sup>, Kiyoshi Umemura<sup>1</sup>, Mai Murakami<sup>1</sup>, Thomas Tiong Kwong Soon<sup>1</sup>, Kazuto Kobayashi<sup>2</sup>,  
 Naohiro Hozumi<sup>1</sup>, Sachiko Yoshida<sup>1</sup> (<sup>1</sup>Toyohashi Univ. of Tech., <sup>2</sup>Honda Electronics)
- 1Pb5-12 Noise Suppression Technique Using Deep Learning for Ultrasound Images During Ultrasound-guided High Intensity Focused Ultrasound Treatment**  
 [[S3251]] ○Ryo Takagi, Yoshihiko Koseki (AIST)
- 1Pb5-13\* Behavior simulation of bubble-surrounded cells in flow under exposure of traveling wave**  
 [[S3254]] ○Shinnosuke Araki<sup>1</sup>, Ryota Akutsu<sup>1</sup>, Takumi Chikarashi<sup>1</sup>, Daiki Omata<sup>2</sup>, Ryo Suzuki<sup>2</sup>, Kohji Masuda<sup>1</sup>  
 (<sup>1</sup>Tokyo Univ. of A&T, <sup>2</sup>Teikyo Univ.)
- 1Pb5-14\* Development of automatic focus control system for HIFU devices**  
 [[S3258]] ○Gaku Shinbo, Hiroataka Yanagida (Yamagata Univ.)

15:15-16:15 Biomedical ultrasound I

Chair: Kenji Yoshida (Chiba Univ.)

**1J3-1\*** **Reduction of Low-Frequency Noise in Cross Sectional Ultra-sound Property Micro Imaging by Frequency-Resolved Spatial Averaging.**  
[[[S3139]]]  
○Mai Murakami<sup>1</sup>, Edo Bagus Prastika<sup>1</sup>, Yuto Isobe<sup>1</sup>, Tomohiro Kawashima<sup>1</sup>, Yoshinobu Murakami<sup>1</sup>, Naohiro Hozumi<sup>1</sup>, Kazuto Kobayashi<sup>2</sup> (<sup>1</sup>Toyohashi Univ. of Tech., <sup>2</sup>Honda Electronics)

**1J3-2** **High-speed Photoacoustic Microscopy Using MEMS Mirror with a Correction Method for Distortion Caused by the Mirror Scanning**  
[[[S3352]]]  
○Ryo Shintate<sup>1</sup>, Chulhong Kim<sup>2</sup>, Yoshifumi Saijo<sup>1</sup> (<sup>1</sup>Tohoku Univ., <sup>2</sup>Pohang Univ.)

**1J3-3\*** **Study on photoacoustic properties of bovine cortical bone**  
[[[S3385]]]  
○Yoshihiko Maekawa, Keita Yano, Taishi Hattori, Mami Matsukawa (Doshisha Univ.)

**1J3-4\*** **Anisotropy of Acoustically Induced Electric Polarization in Biological Tissues**  
[[[S3186]]]  
○Yamato Anzai<sup>1</sup>, Kenji Ikushima<sup>1</sup>, Mami Matsukawa<sup>2</sup> (<sup>1</sup>Tokyo Univ. of A&T, <sup>2</sup>Doshisha Univ.)

**16:30-17:30 Measurement techniques I**

**Chair: Hideyuki Nomura (Univ. of Electro-Comm.)**

**1J4-1\*** **Nanoparticle Sizing by High-Frequency Dynamic Ultrasound Scattering Techniques**  
[[[S3334]]]  
○Kana Kitao, Tomohisa Norisuye (Kyoto Inst. of Tech.)

**1J4-2\*** **Ultrasound-spectroscopy imaging on human iPS cells for mechanobiology study**  
[[[S3200]]]  
○Natsumi Fujiwara, Takaki Matsumoto, Akira Nagakubo, Masahiro Kino-oka, Hirotsugu Ogi (Osaka Univ.)

**1J4-3\*** **Development of surface-enhanced Raman scattering substrate using ultrasonic resonance method**  
[[[S3170]]]  
○Karin Hattori<sup>1</sup>, Nozomi Watanabe<sup>1</sup>, Keishi Suga<sup>2</sup>, Ryuichi Tarumi<sup>1</sup>, Nobutomo Nakamura<sup>1</sup> (<sup>1</sup>Osaka Univ., <sup>2</sup>Tohoku Univ.)

**1J4-4\*** **Cross sectional acoustic impedance imaging of multi layered coating by wide-band ultrasound**  
[[[S3140]]]  
○Yuto Isobe<sup>1</sup>, Edo Bagus Prastika<sup>1</sup>, Mai Murakami<sup>1</sup>, Tomohiro Kawashima<sup>1</sup>, Yoshinobu Murakami<sup>1</sup>, Naohiro Hozumi<sup>1</sup>, Kazuto Kobayashi<sup>2</sup> (<sup>1</sup>Toyohashi Univ. of Tech., <sup>2</sup>Honda Electronics)

**17:45-19:00 Organizing Committee Meeting**

**Tuesday, October 26**

**9:10-10:00 Plenary Talk II** **Chair: Shoji Kakiko (Univ. of Yamanashi)**

**2PL** **Light and Sound: Integrating Photonics with Ultrasonics**  
[[[•••••]]]  
○Prof. Matthew O'Donnell (Univ of Washington)

**10:15-11:00 Piezoelectric devices I** **Chair: Hiroyuki Odagawa (Kumamoto NIT)**

**2E1-1\*** **Use of Heavy Dielectric Material in Solidly Mounted A1 Mode Resonator Based on Lithium Niobate**  
[[[S3136]]]  
○Zhaohui Wu<sup>1</sup>, Yawei Li<sup>1</sup>, Keyuan Gong<sup>1</sup>, Qi Liang<sup>1</sup>, Yu-Po Wong<sup>2</sup>, Jingfu Bao<sup>1</sup>, Ken-ya Hashimoto<sup>2,1</sup> (<sup>1</sup>Univ. of Electronic Sci. and Tech. of China, <sup>2</sup>Chiba Univ.)

**2E1-2\*** **GHz reflectometry fingerprint imaging using epitaxial PbTiO<sub>3</sub> ultrasonic transducers**  
[[[S3407]]]  
○Yusuke Sato<sup>1,2</sup>, Takahiko Yanagitani<sup>1,2,3</sup> (<sup>1</sup>Waseda Univ., <sup>2</sup>ZAIKEN, <sup>3</sup>JST-CREST)

**2E1-3** **Theoretical analysis of Rayleigh SAW propagation characteristics on YbAlN films/ high velocity substrates**  
[[[S3304]]]  
○Masashi Suzuki, Shoji Kakio (Univ. of Yamanashi)

**11:15-12:00 Poster Session** **Chair: Yasuaki Watanabe (Tokyo Met Univ.)**

**2Pa1-1\*** **Comparison of High Temperature Characteristics of Bi<sub>4</sub>Ti<sub>3</sub>O<sub>12</sub>-based, Lead-Free Ultrasonic Transducers**  
[[[S3245]]]  
○Hiroaki Akatsuka, Naoki Kambayashi, Enya Ogata, Kei Nakatsuma, Makiko Kobayashi (Kumamoto Univ.)

- 2Pa1-2** **Anelastic properties of gallium nitride studied by resonant ultrasound spectroscopy at elevated temperatures**  
[[[S3249]]]  
○Hiroki Fukuda, Akira Nagakubo, Masayuki Imanishi, Yusuke Mori, Hirotsugu Ogi (Osaka Univ.)
- 2Pa1-3\*** **Band Structure Design for a Two-Dimensional Phononic Crystal using Various Optimization Methods**  
[[[S3273]]]  
○Kazuki Akae, Masaaki Misawa, Kenji Tsuruta (Okayama Univ.)
- 2Pa1-4** **Gigahertz optomechanical photon-phonon transduction between nanolines**  
[[[S3293]]]  
○Oliver. B Wright<sup>1</sup>, Yuta Imade<sup>1</sup>, Vitaliy E. Gusev<sup>2</sup>, Osamu Matsuda<sup>1</sup>, Motonobu Tomoda<sup>1</sup>, Paul H. Otsuka<sup>1</sup>  
(<sup>1</sup>Hokkaido Univ., <sup>2</sup>Le Mans Univ.)
- 2Pa1-5** **Real and complex asymmetric parameters of Fano resonance in a simple classical harmonic oscillator system**  
[[[S3296]]]  
Seiji Mizuno (Hokkaido Univ.)
- 2Pa2-1** **Experimental method to locate the nodal points of the high power ultrasonic transducer**  
[[[S3213]]]  
○Moojoon Kim<sup>1</sup>, Jungsoon Kim<sup>2</sup> (<sup>1</sup>Pukyong Natl. Univ., <sup>2</sup>Tongmyong Univ.)
- 2Pa2-2** **Development of an optical interferometer for optical-based mechanical property microscope**  
[[[S3210]]]  
○Kazuki Tamura<sup>1</sup>, Ken-ya Hashimoto<sup>2</sup>, Seiji Yamamoto<sup>1</sup>  
(<sup>1</sup>Hamamatsu Univ. School of Med., <sup>2</sup>Univ. of Electronic Sci. and Tech. of China)
- 2Pa2-3\*** **Evaluation of reflected waveform from obstacles on the road surface**  
[[[S3357]]]  
○Yuki Tan<sup>1</sup>, Shinnosuke Hirata<sup>2</sup>, Hiroyuki Hachiya<sup>1</sup> (<sup>1</sup>Tokyo Tech., <sup>2</sup>Chiba Univ.)
- 2Pa2-4** **Study on measurement technique of ultrasonic power for low frequency by radiation force balance method**  
[[[S3197]]]  
○Takeyoshi Uchida (AIST)
- 2Pa2-5** **Oscillation frequencies and Q value of QCM generator by Internet of Things**  
[[[S3157]]]  
○Yasuaki Watanabe, Yuuta Aoki, Yingbo Sun, Yuuki Okamoto (Tokyo Met Univ.)
- 2Pa2-6\*** **Defocus correction in Scanning Acoustic Microscopy**  
[[[S3194]]]  
○Prakhar Kumar<sup>1</sup>, Nitin Yadav<sup>2</sup>, Aditya Jethliya<sup>1</sup>, Azeem Ahmad<sup>3</sup>, Frank Melandsø<sup>3</sup>, Anwarul Habib<sup>3</sup>  
(<sup>1</sup>Indian Inst. of Tech. Dhanbad, <sup>2</sup>Indian Inst. of Tech. Delhi, <sup>3</sup>UiT The Arctic Univ. of Norway)
- 2Pa2-7\*** **Finite element modeling of acoustic transmission and reflection loss in ultrasound transducer**  
[[[S3175]]]  
○Kaushik Shukla<sup>1</sup>, Azeem Ahmad<sup>2</sup>, Balpreet Singh Ahluwalia<sup>2</sup>, Frank Melandsø<sup>2</sup>, Anwarul Habib<sup>2</sup>  
(<sup>1</sup>Indian Inst. of Tech. Dhanbad, <sup>2</sup>UiT The Arctic Univ. of Norway)
- 2Pa3-1\*** **Lateral Energy Confinement of Multi-layered SAW Resonator Employing Low-cut Lithium Tantalate**  
[[[S3155]]]  
○Yiwen He<sup>1</sup>, Yu-Po Wong<sup>2</sup>, Qi Liang<sup>1</sup>, Ting Wu<sup>1</sup>, Jingfu Bao<sup>1</sup>, Ken-ya Hashimoto<sup>1,2</sup>  
(<sup>1</sup>Univ. of Electronic Sci. and Tech. of China, <sup>2</sup>Chiba Univ.)
- 2Pa3-2** **Influence of Phase Shifter Location to Piston Mode Operation of TC-SAW Using SiO<sub>2</sub>/LN Structure**  
[[[S3395]]]  
○Keyuan Gong<sup>1</sup>, Zhaohui Wu<sup>1</sup>, Yu-Po Wong<sup>2</sup>, Yawei Li<sup>1</sup>, Qi Liang<sup>1</sup>, Jingfu Bao<sup>1</sup>, Ken-ya Hashimoto<sup>1,2</sup>  
(<sup>1</sup>Univ. of Electronic Sci. and Tech. of China, <sup>2</sup>Chiba Univ.)
- 2Pa3-3** **Comparative Study of Piston Mode Designs for Temperature-Compensated Surface Acoustic Wave Resonators Using SiO<sub>2</sub>/LiNbO<sub>3</sub> Structure**  
[[[S3393]]]  
○Yawei Li<sup>1</sup>, Keyuan Gong<sup>1</sup>, Yu-Po Wong<sup>2</sup>, Pingjing Chen<sup>1</sup>, Zhaohui Wu<sup>1</sup>, Qi Liang<sup>1</sup>, Jing-fu Bao<sup>1</sup>, Ken-ya Hashimoto<sup>1,2</sup>  
(<sup>1</sup>Univ. of Electronic Sci. and Tech. of China, <sup>2</sup>Chiba Univ.)
- 2Pa4-1** **Effect of Ultrafine Bubbles on Enrichment of Amino Acid in Aqueous Solution by Ultrasonic Atomization**  
[[[S3221]]]  
○Keiji Yasuda<sup>1</sup>, Koji Hamada<sup>1</sup>, Yoshiyuki Asakura<sup>2</sup> (<sup>1</sup>Nagoya Univ., <sup>2</sup>Honda Electronics)
- 2Pa4-2\*** **Separation and Desulfurization of Bitumen from Oil sand Using n-Pentane and Ultrasound**  
[[[S3314]]]  
○Yoshitaka Wakisaka, Hirokazu Okawa, Kumi Saigo, Takahiro Kato, Katsuyasu Sugawara (Akita Univ.)
- 2Pa4-3** **CO<sub>2</sub> desorption from tertiary amine solutions using ultrasound irradiation at low temperature**  
[[[S3330]]]  
○Hirokazu Okawa, Tomoka Fujita, Takahiro Kato, Katsuyasu Sugawara (Akita Univ.)
- 2Pa4-4\*** **Evaluation of SNR for alternate transmission of different coded ultrasounds to extend the limit of measurable distance in the pulse-echo method**  
[[[S3317]]]  
○Khanistha Leetang<sup>1</sup>, Shinnosuke Hirata<sup>2</sup>, Hiroyuki Hachiya<sup>1</sup> (<sup>1</sup>Tokyo Tech., <sup>2</sup>Chiba Univ.)

- 2Pa4-5\*** Evaluation of (Bi,Na,Ba)(Ti,Mn)O<sub>3</sub> and (Sr,Ca)<sub>2</sub>NaNb<sub>5</sub>O<sub>15</sub> Piezoelectric Ceramics for underwater propulsion systems  
[[[S3392]]]  
○Yuan Qian<sup>1</sup>, Takumi Hirata<sup>2</sup>, Deqing Kong<sup>2</sup>, Yutaka Doshida<sup>3</sup>, Manabu Aoyagi<sup>2</sup>, Minoru Kuribayashi Kurosawa<sup>1</sup> (1Tokyo Tech., 2Muroran Inst. of Tech., 3Ashikaga Univ.)
- 2Pa4-6** Non-contact acoustic manipulation in air using several sound sources  
[[[S3318]]]  
○Teruyuki Kozuka<sup>1</sup>, Takuya Yoshimoto<sup>1</sup>, Masahiro Toyoda<sup>2</sup>, Shin-ichi Hatanaka<sup>3</sup> (1Aichi Inst. of Tech., 2Honda Electronics, 3Univ. of Electro-Comm.)
- 2Pa4-7** High-power characteristic evaluation for piezoelectric 31 effect and 33 effect using 5th order elastic constant  
[[[S3238]]]  
○Susumu Miyake, Takeshi Morita (Univ. of Tokyo)
- 2Pa5-1\*** Image Quality Assessment of 3D Ultrasound Images Based on SSIM  
[[[S3260]]]  
○Hiroki Yamaya, Yuki Mimura, Haruto Yamazaki, Hirotaka Yanagida (Yamagata Univ.)
- 2Pa5-2\*** Ultrasound imaging with L1 norm minimization  
[[[S3265]]]  
○Masahiro Araki, Hirotaka Yanagida (Yamagata Univ.)
- 2Pa5-3\*** Basic perceptual characteristics of distantly-presented bone-conducted sounds: Threshold and frequency- and temporal resolutions in the audible-frequency range  
[[[S3270]]]  
○Hiromu Ishikawa, Sho Otsuka, Seiji Nakagawa (Chiba Univ.)
- 2Pa5-4** Deep learning for ultrasound echo speckle reduction and superresolution  
[[[S3278]]]  
○Mengfei Zhang, Yiran Li, Chikayoshi Sumi (Sophia Univ.)
- 2Pa5-5** Superresolution using TecoGAN and DDSRCNN for ultrasound echo image  
[[[S3279]]]  
○Yiran Li, Mengfei Zhang, Chikayoshi Sumi (Sophia Univ.)
- 2Pa5-6\*** Quantitative analysis of bubble-surrounded cells retained on vessel wall by acoustic radiation force  
[[[S3280]]]  
○Takumi Chikarashi<sup>1</sup>, Shunya Watanabe<sup>1</sup>, Yoshitaka Miyamoto<sup>2</sup>, Daiki Omata<sup>3</sup>, Kazuo Maruyama<sup>3</sup>, Ryo Suzuki<sup>3</sup>, Kohji Masuda<sup>1</sup> (1Tokyo Univ. of A&T, 2National Center for Child Health and Development, 3Teikyo Univ.)
- 2Pa5-7\*** 3D Ultrasound Imaging by Synthetic Transmit Aperture Beamforming Obtained with a Spherically Curved Array Transducer  
[[[S3283]]]  
○Eiki Hayashi<sup>1</sup>, Naoya Kanno<sup>1</sup>, Ryo Shintate<sup>1</sup>, Takuro Ishii<sup>1</sup>, Ryo Nagaoka<sup>2</sup>, Yoshifumi Saijo<sup>1</sup> (1Tohoku Univ., 2Univ. of Toyama)
- 2Pa5-8\*** Numerical Estimation of the Intraventricular Pressure Gradients Based on Echo-Dynamography and Bernoulli's Principle  
[[[S3284]]]  
○Shiho furudate, Takuro Ishii, Naoya Kanno, Yasuyuki Shiraishi, Yoshifumi Saijo (Tohoku Univ.)
- 2Pa5-9\*** Development of efficient method of generating cavitation bubble clouds by scanning ultrasound focus  
[[[S3286]]]  
○Shotaro Miyake<sup>1</sup>, Shin Yoshizawa<sup>1,2</sup> (1Tohoku Univ., 2SONIRE Therapeutics)
- 2Pa5-10\*** Quantitative Uncertainty Assessment of Lumen Detection in Intravascular Ultrasound Images Using Deep Ensembles  
[[[S3287]]]  
○Naoya Kanno<sup>1</sup>, Takashi Orihara<sup>1</sup>, Hiroyuki Yagami<sup>2</sup>, Masanori Kawasaki<sup>3</sup>, Munenori Okubo<sup>3</sup>, Takuro Ishii<sup>1</sup>, Hitoshi Matsuo<sup>3</sup>, Yoshifumi Saijo<sup>1</sup> (1Tohoku Univ., 2Terumo Corporation, 3Gifu Heart Center)
- 2Pa6-1** Results comparison of spatial diversity techniques in horizontally and vertically arranged multiple array sensors in underwater acoustic communication  
[[[S3253]]]  
○Kyu-Chil Park, Hyunsoo Jeong, Chaehui Lee, Jihyun Park (Pukyong Natl. Univ.)
- 2Pa6-2** Algorithm to improve underwater object recognition using ROV  
[[[S3255]]]  
○YOSEOP HWANG<sup>1</sup>, Jongwoo AN<sup>1</sup>, Gyedo PARK<sup>2</sup>, Jihyun PARK<sup>3</sup> (1CILAB. Pte., Korea, 2Pusna National Univ., 3Oceanplan Co., Korea)
- 2Pa6-3** Preliminary 3D FDTD Analysis of Sound Field Converged by Convex Acoustic Lens with Solid-Liquid Compound Structure  
[[[S3261]]]  
○Kazuyoshi Mori, Hanako Ogasawara (Natl.Defense Academy)

**12:15-13:00 LUNCH TIME**

**13:00-14:00 Biomedical ultrasound II**

**Chair: Naotaka Nitta (AIST)**



- 2E2-1** Evaluation of Golay pulse compression in contrast enhancement ultrasound with Sonazoid  
[[[S3319]]] ○Shinnosuke Hirata<sup>1</sup>, Yuki Hagihara<sup>1</sup>, Kenji Yoshida<sup>1</sup>, Tadashi Yamaguchi<sup>1</sup>, Matthieu E.G. Toulemonde<sup>2</sup>, Meng-Xing Tang<sup>2</sup> (<sup>1</sup>Chiba Univ., <sup>2</sup>Imperial College London)
- 2E2-2\*** High-frequency Quantitative Ultrasound-based Assessment of Microstructural Change in Myopic Guinea Pig Sclera  
[[[S3234]]] ○Kazuyo Ito<sup>1</sup>, Jonathan Mamou<sup>2</sup>, Kazuki Tamura<sup>3</sup>, Cameron Hoerig<sup>2</sup>, Sally A. McFadden<sup>4</sup>, Quan V. Hoang<sup>1,5,6</sup> (<sup>1</sup>Singapore Eye Research Institute, <sup>2</sup>Riverside Research, <sup>3</sup>Hamamatsu Univ., <sup>4</sup>Univ. of Newcastle, <sup>5</sup>National Univ. of Singapore, <sup>6</sup>Columbia Univ.)
- 2E2-3\*** Generation and Control of Ultrasonic Cavitation on Soft Material by Dual-frequency Acoustic Resonances  
[[[S3150]]] ○Naohiro Sugita, Taichi Oshino, Tadahiko Shinshi (Tokyo Tech.)
- 2E2-4\*** Ultrasonic tablet disintegration for controlled digestion  
[[[S3229]]] ○Craig S. Carlson<sup>1</sup>, Nicole Anderton<sup>2</sup>, Antje Pohl<sup>3</sup>, Andrew J. Smith<sup>4</sup>, Nobuki Kudo<sup>5</sup>, Michiel Postema<sup>1,2</sup> (<sup>1</sup>Univ. of Witwatersrand, <sup>2</sup>Tampere Univ., <sup>3</sup>Ruhr-Univ. Bochum, <sup>4</sup>Univ. of Hull, <sup>5</sup>Hokkaido Univ.)
- 14:30-15:30 Poster Session** **Chair: Hirokazu Okawa (Akita Univ.)**
- 2Pb1-1\*** Fabrication of LiNbO<sub>3</sub>-based Sol-Gel Composite at Low-Temperature  
[[[S3246]]] ○Naoki Kambayashi, Hiroaki Akatsuka, Kohei Hirakawa, Kei Nakatsuma, Makiko Kobayashi (Kumamoto Univ.)
- 2Pb1-2\*** Interaction between ultrasound and magnetization in ferromagnetic thin film studied by picosecond ultrasonics  
[[[S3281]]] ○Kakeru Tojo, Akira Nagakubo, Hirotsugu Ogi (Osaka Univ.)
- 2Pb1-3** Remote sensing of temperature dependence of viscosity below the freezing point by electromagnetically spinning system  
[[[S3322]]] ○Taichi Hirano<sup>1</sup>, Shujiro Mitani<sup>2</sup>, Keiji Sakai<sup>2</sup> (<sup>1</sup>Meiji Univ., <sup>2</sup>Univ. of Tokyo)
- 2Pb1-4\*** Measurement of acoustic characteristics of mouthpiece type ultrasonic transducer for oral treatment  
[[[S3329]]] ○Shohei Fukuda<sup>1</sup>, Marie Tabaru<sup>1</sup>, Kentaro Nakamura<sup>1</sup>, Mutsuo Ishikawa<sup>2</sup>, Kazuki Satomi<sup>3</sup>, Kazuaki Nishimura<sup>3</sup> (<sup>1</sup>Tokyo Tech., <sup>2</sup>Toin Univ. of Yokohama, <sup>3</sup>Tohoku Univ.)
- 2Pb1-5** Fabrication of Polymer Particles via Emulsion Template and its Elasticity of Particle in Liquid Determined by Ultrasound Scattering Techniques  
[[[S3333]]] ○Kazuto Tsuji, Tomohisa Norisuye (Kyoto Inst. of Tech.)
- 2Pb2-1\*** Ultrasonic signal denoising using hybrid filter for image reconstruction  
[[[S3263]]] ○Shubham Kumar Gupta<sup>1</sup>, Azeem Ahmad<sup>2</sup>, Balpreet Singh Ahluwalia<sup>2</sup>, Frank Melandsø<sup>2</sup>, Anowarul Habib<sup>2</sup> (<sup>1</sup>Indian Inst. of Tech. Guwahati, <sup>2</sup>UiT The Arctic Univ. of Norway)
- 2Pb2-2\*** Multiple damage detection in piezoelectric ceramic sensor using scanning point contact excitation and detection method  
[[[S3193]]] ○Sayantani Bhattacharya<sup>1</sup>, Prakhar Kumar<sup>1</sup>, Nitin Yadav<sup>2</sup>, Azeem Ahmad<sup>3</sup>, Frank Melandsø<sup>3</sup>, Anowarul Habib<sup>3</sup> (<sup>1</sup>Indian Inst. of Tech. Dhanbad, <sup>2</sup>Indian Inst. of Tech. Delhi, <sup>3</sup>UiT The Arctic Univ. of Norway)
- 2Pb2-3\*** Photoacoustic Response of Soft Tube Embedded in Phantom  
[[[S3172]]] ○Shili Qu, Kentaro Nakamura (Tokyo Tech.)
- 2Pb2-4** Measurement of rheology in reaction chamber by immersion type EMS system  
[[[S3182]]] ○Maiko Hosoda<sup>1</sup>, Yoshikazu Yamakawa<sup>2</sup>, Keiji Sakai<sup>3</sup> (<sup>1</sup>Tokyo Denki Univ., <sup>2</sup>Triple Eye Co. LTD., <sup>3</sup>Univ. of Tokyo)
- 2Pb2-5\*** Subband Compound with Harmonics in Plane Wave Beamforming  
[[[S3386]]] ○Jie Zheng<sup>1</sup>, Norio Tagawa<sup>1</sup>, Masasumi Yoshizawa<sup>2</sup>, Takasuke Irie<sup>1,3</sup> (<sup>1</sup>Tokyo Met Univ., <sup>2</sup>Tokyo Met. Coll. of Industrial Tech., <sup>3</sup>Microsonic Co, Ltd.)
- 2Pb2-6** 3D Ultrasonic Phased-Array Imaging of Fatigue Cracks Using a Piezoelectric and Laser System (PLUS)  
[[[S3158]]] ○Yoshikazu Ohara<sup>1</sup>, Marcel C. Remillieux<sup>2</sup>, T. J. Ulrich<sup>2</sup>, Serina Ozawa<sup>1</sup>, Kosuke Tsunoda<sup>1</sup>, Toshihiro Tsuji<sup>1</sup>, Tsuyoshi Mihara<sup>1</sup> (<sup>1</sup>Tohoku Univ., <sup>2</sup>Los Alamos National Laboratory)
- 2Pb2-7** Defect detection of composite material using resonance frequency identification by spatial spectral entropy for non-contact acoustic inspection  
[[[S3377]]] ○Kazuko Sugimoto, Tsuneyoshi Sugimoto (Toin Univ. of Yokohama)

- 2Pb2-8** **Diagnosis of Fire Damage inside Mortar Using Aerial Ultrasound Wave Source Scanning Method**  
[[[S3355]]] ○Ayumu Osumi, Tomohide Iketani, Youichi Ito (Nihon Univ.)
- 2Pb3-1\*** **Wideband Double-Mode Bulk Acoustic Wave Resonator Filters On Lithium Niobate Using Periodically Slotted Electrodes**  
[[[S3153]]] ○Ting Wu<sup>1</sup>, Yu-Po Wong<sup>2</sup>, Yi-wen He<sup>1</sup>, Jing-fu Bao<sup>1</sup>, Ken-ya Hashimoto<sup>1,2</sup>  
(<sup>1</sup>Univ. of Electronic Sci. and Tech. of China, <sup>2</sup>Chiba Univ.)
- 2Pb3-2** **Systematic Design of Layered Structures for Wideband and High Frequency SAW Resonators**  
[[[S3394]]] ○Qi Liang<sup>1</sup>, Zhaohui Wu<sup>1</sup>, Keyuan Gong<sup>1</sup>, Bin Shi<sup>1</sup>, Yawei Li<sup>1</sup>, Jingfu Bao<sup>1</sup>, Ken-ya Hashimoto<sup>1,2</sup>  
(<sup>1</sup>Univ. of Electronic Sci. and Tech. of China, <sup>2</sup>Chiba Univ.)
- 2Pb3-3\*** **Analysis of Longitudinal Leaky SAW on Quartz Thin Plate Bonded to Similar-material Substrate**  
[[[S3176]]] ○Yudai Fujii, Takumi Fujimaki, Masashi Suzuki, Shoji Kakio (Univ. of Yamanashi)
- 2Pb4-1** **Effects of liquid height/volume and dissolved gas on sonochemical oxidation activity**  
[[[S3274]]] ○Seongeun Lee, Iseul Na, Younggyu Son (Kumoh Natl. Inst. of Tech.)
- 2Pb4-2\*** **Effect of Dissolved Gas on Sonochemical Oxidation**  
[[[S3275]]] ○Jongbok Choi, Dukyoung Lee, Younggyu Son (Kumoh Natl. Inst. of Tech.)
- 2Pb4-3** **Effect of Liquid Height and Flowrate on Sonochemical Activity in 28kHz Sonoreactor**  
[[[S3277]]] ○Iseul Na, Seongeun Lee, Younggyu Son (Kumoh Natl. Inst. of Tech.)
- 2Pb4-4\*** **Study on mixing and heating of microdroplets by surface acoustic waves**  
[[[S3340]]] ○Shosei Iwashita, Jun Kondoh (Shizuoka Univ.)
- 2Pb4-5\*** **Vibration Characteristics of Ultrasonic Complex Vibration Source Using Transmission Rod with Different Cross-Sectional Area**  
[[[S3228]]] ○Yoshihiro Miyata, Takuya Asami, Hikaru Miura (Nihon Univ.)
- 2Pb4-6\*** **Examination of Arrangement of facing ultrasonic transducer arrays for design of omnidirectional loudspeaker**  
[[[S3384]]] ○Kyoka Okamoto, Kan Okubo (Tokyo Met Univ.)
- 2Pb4-7\*** **Effect of the liquid crystal layer thickness on the optical characteristics of an ultrasound liquid crystal lens**  
[[[S3271]]] ○Takahiro Iwase, Jessica Onaka, Daisuke Koyama, Mami Matsukawa (Doshisha Univ.)
- 2Pb5-1\*** **Investigation on improvement of spatial resolution of ultrasound images by considering propagation delay time of transmitted wave**  
[[[S3290]]] ○Kotaro Sugioka, Michiya Mozumi, Masaaki Omura, Ryo Nagaoka, Hideyuki Hasegawa (Univ. of Toyama)
- 2Pb5-2** **Characteristics of speech perception by distantly presented bone-conducted ultrasound**  
[[[S3291]]] ○Seiji Nakagawa, Koichiro Doi, Sho Otsuka (Chiba Univ.)
- 2Pb5-3\*** **Acoustic characterization of lipid bubbles with different shell property**  
[[[S3292]]] ○Chiaki Kaneko<sup>1</sup>, Yiting Zhang<sup>2</sup>, Taro Toyota<sup>2</sup>, Hideki Hayashi<sup>1</sup>, Shinnosuke Hirata<sup>1</sup>, Tadashi Yamaguchi<sup>1</sup>, Kenji Yoshida<sup>1</sup> (<sup>1</sup>Chiba Univ., <sup>2</sup>Univ. of Tokyo)
- 2Pb5-4\*** **Evaluation of elastic change during mitotic phase of murine breast cancer cells using scanning acoustic microscope**  
[[[S3295]]] ○Thomas Tiong Kwong Soon<sup>1</sup>, Ruka Sasaki<sup>1</sup>, Edo Bagus Prastika<sup>1</sup>, Yuki Kawaguchi<sup>2</sup>, Kazuto Kobayashi<sup>2</sup>, Naohiro Hozumi<sup>1</sup>, Sachiko Yoshida<sup>1</sup> (<sup>1</sup>Toyohashi Univ. of Tech., <sup>2</sup>Honda Electronics)
- 2Pb5-5** **Blood flow imaging of thyroid and carotid artery using singular value decomposition filter**  
[[[S3299]]] ○Hayato Ikeda, Takuro Ishii, Yoshifumi Saijo (Tohoku Univ.)
- 2Pb5-6** **Improved classification accuracy of liver tumors by ultrasound image deep learning model with hepatitis virus infection information**  
[[[S3300]]] ○Daisuke Hatamoto<sup>1,2</sup>, Makoto Yamakawa<sup>2</sup>, Tsuyoshi Shiina<sup>2</sup>, Naoshi Nishida<sup>3</sup>, Masatoshi Kudo<sup>3</sup>  
(<sup>1</sup>Shizuoka collage of medicalcare science, <sup>2</sup>Kyoto Univ., <sup>3</sup>Kindai Univ.)
- 2Pb5-7** **Evaluation of collagen release from cultured human fibroblasts via ultrasonic microscope**  
[[[S3301]]] ○Shigehisa Satake<sup>1</sup>, Taichi Shintani<sup>1</sup>, Shizuka Nakada<sup>1</sup>, Thomas Tiong Kwong Soon<sup>1</sup>, Edo Bagus Prastika<sup>1</sup>, Kazuto Kobayashi<sup>2</sup>, Naohiro Hozumi<sup>1</sup>, Sachiko Yoshida<sup>1</sup> (<sup>1</sup>Toyohashi Univ. of Tech., <sup>2</sup>Honda Electronics)

- 2Pb5-8\*** Optimization of Window Length in Velocity Estimation in Heart Wall Using Ultrasound Phase Difference for Measurement of Local Change in Myocardial Layer Thickness  
[[[S3305]]]  
○Yu Obara<sup>1</sup>, Shohei Mori<sup>1</sup>, Masumi Iwai-Takano<sup>1,2</sup>, Mototaka Arakawa<sup>1</sup>, Hiroshi Kanai<sup>1</sup>  
(<sup>1</sup>Tohoku Univ., <sup>2</sup>Fukushima Med. Univ.)
- 2Pb5-9** Study on Applying Deep Learning to Reverberation Artifacts in Ultrasound Diagnosis  
[[[S3310]]]  
○Yu Terada<sup>1</sup>, Yos hiki Watanebe<sup>1</sup>, Tatsuki Koike<sup>1</sup>, Takashi Azuma<sup>2</sup>, Shu Takagi<sup>1</sup> (<sup>1</sup>Univ. of Tokyo, <sup>2</sup>Lily MedTech Inc.)
- 2Pb5-10\*** Elasticity measurement of radial artery wall considering the change in cross-sectional shape of vessel caused by pushing pressure from ultrasound probe  
[[[S3315]]]  
○Yuto Shoji<sup>1</sup>, Shohei Mori<sup>1</sup>, Mototaka Arakawa<sup>1</sup>, Shigeo Ohba<sup>1</sup>, Kazuto Kobayashi<sup>2</sup>, Hiroshi Kanai<sup>1</sup>  
(<sup>1</sup>Tohoku Univ., <sup>2</sup>Honda Electronics)
- 2Pb5-11** A basic study on ultrasound noninvasive measurement of temperature elevation inside biological tissue cauterized by radiofrequency catheter ablation  
[[[S3320]]]  
○Michio Takeuchi<sup>1</sup>, Toshihiko Sakai<sup>1</sup>, Yusuke Oshima<sup>2</sup>, Yasuhiro Kojima<sup>2</sup>, Kenji Mori<sup>2</sup>, Masaaki Omura<sup>3</sup>, Ryo Nagaoka<sup>3</sup>, Hideyuki Hasegawa<sup>3</sup> (<sup>1</sup>Tateyama Kagaku Co., Ltd., <sup>2</sup>Japan Lifeline Co., Ltd., <sup>3</sup>Univ. of Toyama)
- 2Pb5-12** Ultrasonic velocity change imaging of blood vessels in the forearm of living body  
[[[S3324]]]  
○Yuki Minami<sup>1</sup>, Yuki Ito<sup>1</sup>, Hana Sonoda<sup>1</sup>, Tetsuya Matsuyama<sup>1</sup>, Kenji Wada<sup>1</sup>, Koichi Okamoto<sup>1</sup>, Toshiyuki Matsunaka<sup>2</sup>  
(<sup>1</sup>Univ. of Osaka Pref., <sup>2</sup>TU Research Lab.)
- 2Pb5-13\*** Examination of validity of sample preparation method for speed of sound evaluation in ultra-high frequency band  
[[[S3342]]]  
○Suguru Seto<sup>1</sup>, Kazuma Noguchi<sup>1</sup>, Kazuki Tamura<sup>2</sup>, Shinnosuke Hirata<sup>1</sup>, Kenji Yoshida<sup>1</sup>, Tadashi Yamaguchi<sup>1</sup>  
(<sup>1</sup>Chiba Univ., <sup>2</sup>Hamamatsu Univ. School of Med.)

#### 15:45-16:45 Measurement techniques II

Chair: Hirotosugu Ogi (Osaka Univ.)

- 2E3-1** Noncontact measurement of liquid viscosity in a soft container using free vibration after acoustic irradiation  
[[[S3350]]]  
○Tsuneyoshi Sugimoto, Shigeya Kawai, Yutaka Nakagawa (Toin Univ. of Yokohama)
- 2E3-2** Realization of 3D Imaging with a Single Element with an Irregular Aberration Lens  
[[[S3396]]]  
○Mohd Syaryadhi, Norio Tagawa (Tokyo Met Univ.)
- 2E3-3\*** A deep autoencoder for ultrasonic image denoising in point contact excitation and detection method  
[[[S3226]]]  
○Himanshu Singh<sup>1</sup>, Anowarul Habib<sup>2</sup>, Frank Melandsø<sup>2</sup>, Balpreet Singh Ahluwalia<sup>2</sup>, Sk Arif Ahmad<sup>2</sup>  
(<sup>1</sup>Indian Inst. of Tech. Guwahati, <sup>2</sup>UiT The Arctic Univ. of Norway)
- 2E3-4** Underwater Acoustic Positioning Using Time-of-flight Signal Blocks  
[[[S3192]]]  
Tohru Yoshihara<sup>1</sup>, ○Tadashi Ebihara<sup>2</sup>, Koichi Mizutani<sup>2</sup>, Yuma Sato<sup>1</sup> (<sup>1</sup>Aomi Construction, <sup>2</sup>Univ. of Tsukuba)

#### 17:00-18:00 High power ultrasound II

Chair: Kyuichi Yasui (AIST)

- 2E4-1\*** Design of polymer wedge for exciting high intensity surface acoustic waves on glass plate  
[[[S3166]]]  
○Soraki Fuchiwaki, Yuji Wada, Kentaro Nakamura (Tokyo Tech.)
- 2E4-2\*** Model-free Reinforcement Learning for Speed Control of Ultrasonic Motors  
[[[S3356]]]  
○Abdullah Mustafa<sup>1</sup>, Tatsuki Sasamura<sup>1</sup>, Tokuo Sashida<sup>2</sup>, Susumu Miyake<sup>1</sup>, Takeshi Morita<sup>1</sup>  
(<sup>1</sup>Univ. of Tokyo, <sup>2</sup>Shinsei Corp.)
- 2E4-3\*** Thermoacoustic Streaming  
[[[S3391]]]  
○Wei Qiu<sup>1</sup>, Jonas H. Joergensen<sup>2</sup>, Enrico Corato<sup>1</sup>, Henrik Bruus<sup>2</sup>, Per Augustsson<sup>1</sup>  
(<sup>1</sup>Lund Univ., <sup>2</sup>Tech. Univ. of Denmark)
- 2E4-4\*** Sonic shrinking of Pickering-stabilised ultrasound contrast agent at a low acoustic amplitude  
[[[S3141]]]  
○Nicole Anderton<sup>1</sup>, Craig S. Carlson<sup>2</sup>, Ryunosuke Matsumoto<sup>3</sup>, Ri-ichiro Shimizu<sup>3</sup>, Albert T. Poortinga<sup>4</sup>, Nobuki Kudo<sup>3</sup>, Michiel Postema<sup>1,2</sup> (<sup>1</sup>Tampere Univ., <sup>2</sup>Univ. of Witwatersrand, <sup>3</sup>Hokkaido Univ., <sup>4</sup>Eindhoven Univ. of Tech.)

#### 18:15-19:00 Ultrasonic properties of materials II

Chair: Oliver B. Wright (Hokkaido Univ.)

- 2E5-1\*** **Impact of interface damping in high-frequency surface-wave resonances on nanostrip-attached substrates**  
[[[S3147]]] ○Wenlou Yuan, Nagakubo Akira, Hirotsugu Ogi (Osaka Univ.)
- 2E5-2** **Shear horizontal surface vibration stimulates dual-shifted peaks of localized surface plasmon under air and liquid environment**  
[[[S3181]]] ○Teguh Firmansyah<sup>1,2</sup>, Gunawan Wibisono<sup>2</sup>, Eko Tjipto Rahardjo<sup>2</sup>, Jun Kondoh<sup>1</sup> (<sup>1</sup>Shizuoka Univ., <sup>2</sup>Univ. of Indonesia)
- 2E5-3\*** **Effect of electric field on elastic properties of BaTiO<sub>3</sub> single crystals: A micro-Brillouin scattering study**  
[[[S3145]]] ○M. A. Helal<sup>1,2</sup>, S. Kojima<sup>1</sup> (<sup>1</sup>Univ. of Tsukuba, <sup>2</sup>Begum Rokeya Univ.)

## Wednesday, October 27

### 9:00-10:00 Biomedical ultrasound III Chair: Hideyuki Hasegawa (Univ. of Toyama)

- 3J1-1\*** **Measurement and calculation of acoustic pressure on the effect of transdermal penetration by sonophoresis**  
[[[S3188]]] ○Yuta Kurashina, Risa Asano, Makoto Matsui, Takahiro Nomoto, Kentaro Nakamura, Nobuhiro Nishiyama, Yoshitaka Kitamoto (Tokyo Tech.)
- 3J1-2\*** **Effect of Ultrasonic Focal Scanning Sequence on Cavitation Generation in Cavitation-enhanced Ultrasonic Heating**  
[[[S3236]]] ○Kohei Ueda<sup>1</sup>, Shin-ichiro Umemura<sup>1,2</sup>, Shin Yoshizawa<sup>1,2</sup> (<sup>1</sup>Tohoku Univ., <sup>2</sup>SONIRE Therapeutics)
- 3J1-3\*** **Validation of damage on vascular endothelial cells under ultrasound exposure according to adhered density of bubbles**  
[[[S3297]]] ○Yoshiki Ito<sup>1</sup>, Tatsuya Saito<sup>1</sup>, Naoya Kajita<sup>1</sup>, Yoshitaka Miyamoto<sup>2</sup>, Ryo Suzuki<sup>3</sup>, Kazuo Maruyama<sup>3</sup>, Daiki Omata<sup>3</sup>, Kohji Masuda<sup>1</sup> (<sup>1</sup>Tokyo Univ. of A&T, <sup>2</sup>National Center for Child Health and Development, <sup>3</sup>Teikyo Univ.)
- 3J1-4** **Relationship between size and translational velocity of bubbles driven by acoustic radiation force**  
[[[S3346]]] ○Kenji Yoshida<sup>1</sup>, Masaaki Omura<sup>1,2</sup>, Shinnosuke Hirata<sup>1</sup>, Tadashi Yamaguchi<sup>1</sup> (<sup>1</sup>Chiba Univ., <sup>2</sup>Univ. of Toyama)

### 10:15-11:00 Piezoelectric devices II

#### Chair: Shoji Kakio (Univ. of Yamanashi)

- 3J2-1** **3.4 GHz Strip-Type TS mode Solidly-Mounted BAW Resonator Using X LT**  
[[[S3184]]] ○Michio Kadota, Yoshimi Ishii, Shuji Tanaka (Tohoku Univ.)
- 3J2-2** **Vibration Analysis of the Complex Bar Resonator with Longitudinal-torsional Vibration Converter**  
[[[S3247]]] ○Subaru Kudo (Ishinomaki Senshu Univ.)
- 3J2-3** **Shortening interval of burst waveform undersampling measurement of ball SAW sensor for characterizing metal surface morphology**  
[[[S3298]]] ○Toshihiro Tsuji<sup>1</sup>, Hideyuki Fukushi<sup>2</sup>, Toru Oizumi<sup>2</sup>, Nobuo Takeda<sup>2</sup>, Takamitsu Iwaya<sup>2</sup>, Shingo Akao<sup>2</sup>, Yusuke Tsukahara<sup>2</sup>, Kazushi Yamanaka<sup>2</sup>, Yoshikazu Ohara<sup>1</sup>, Tsuyoshi Mihara<sup>1</sup> (<sup>1</sup>Tohoku Univ., <sup>2</sup>Ball Wave Inc.)

### 11:15-12:00 Poster Session

#### Chair: Shinnosuke Hirata (Chiba Univ.)

- 3Pa1-1\*** **Influence of Atmosphere on the Polarization of PbTiO<sub>3</sub>/Pb(Zr, Ti)O<sub>3</sub>**  
[[[S3294]]] ○Yuki Matsuda, Kohei Hirakawa, Makiko Kobayashi (Kumamoto Univ.)
- 3Pa1-2** **Novel system for fabrication of pico-liter droplets with high viscosity**  
[[[S3328]]] ○Shujiro Mitani, Keiji Sakai (Univ. of Tokyo)
- 3Pa1-3\*** **Numerical analysis of ultrasonic wave propagating through a thin plate stacked structure**  
[[[S3348]]] ○Takaaki Fukuchi, Naoki Mori, Takahiro Hayashi (Osaka Univ.)
- 3Pa1-4** **Ultrafast imaging and simulation of cavity modes in a phononic crystal**  
[[[S3354]]] ○Paul H. Otsuka<sup>1</sup>, Ryota Chinbe<sup>1</sup>, Motonobu Tomoda<sup>1</sup>, Osamu Matsuda<sup>1</sup>, Yukihiro Tanaka<sup>1</sup>, Dieter M. Profunser<sup>1</sup>, Sihan Kim<sup>2</sup>, Heonsu Jeon<sup>2</sup>, Istvan A. Veres<sup>3</sup>, Alex A Maznev<sup>4</sup>, Oliver B. Wright<sup>1</sup> (<sup>1</sup>Hokkaido Univ., <sup>2</sup>Seoul National Univ., <sup>3</sup>Research Center for Nondestructive Testing, <sup>4</sup>Massachusetts Inst. Tech.)

- 3Pa1-5\*** **Fabrication of LiNbO<sub>3</sub>/Al<sub>2</sub>O<sub>3</sub> Ultrasonic Transducer**  
[[[S3321]]] ○Naoki Zaito, Hiroaki Akatsuka, Naoki Kambayashi, Makiko Kobayashi (Kumamoto Univ.)
- 3Pa2-1\*** **Formation process of alloy nanoparticles synthesized by sputtering: noncontact monitoring using resonant ultrasound spectroscopy**  
[[[S3171]]] ○Koji Matsuura, Nobutomo Nakamura, Ryuichi Tarumi, Hirotsugu Ogi (Osaka Univ.)
- 3Pa2-2\*** **Development of 30-GHz phonon biosensor using graphite thin-film resonator**  
[[[S3256]]] ○Takuya Haraguchi<sup>1</sup>, Akira Nagakubo<sup>1</sup>, Kensuke Murashima<sup>2</sup>, Mutsuaki Murakami<sup>2</sup>, Hirotsugu Ogi<sup>1</sup>  
(<sup>1</sup>Osaka Univ., <sup>2</sup>KANEKA Corporation)
- 3Pa2-3** **Detection of micro-defects by acoustic waves propagating in topographic waveguide**  
[[[S3303]]] ○Harumichi Sato, Hisato Ogiso (AIST)
- 3Pa2-4\*** **Investigation of sound pressure waveforms observed using surface plasmon resonance sensors**  
[[[S3370]]] ○Shuto Nakatsuji, Shinji Ito, Hayato Ichihashi, Mami Matsukawa (Doshisha Univ.)
- 3Pa2-5** **Measurement of shear viscosity of liquids up to GHz region using electrodeless quartz crystal transducer**  
[[[S3138]]] ○Tsuyoshi Yamaguchi, Tatsuro Matsuoka (Nagoya Univ.)
- 3Pa2-6\*** **QCM method using 100MHz SC-cut crystal units- examination of viscoelastic loads -**  
[[[S3164]]] ○Yingbo Sun, Yasuaki Watanabe, Yuta Aoki (Tokyo Met Univ.)
- 3Pa2-7\*** **Estimation of the phase velocities of the shear waves of water and aqueous solution of glycerol at normal temperature and pressure by attenuation measurement of the leaky T(0,1) mode guided wave**  
[[[S3183]]] ○Tatsuya Nanba, Masashi Ishikawa, Hideo Nishino (Tokushima Univ.)
- 3Pa2-8** **Measurement of mechanical properties of liquid by observation of droplet oscillation on substrate**  
[[[S3187]]] ○Satoshi Ishida<sup>1</sup>, Mika Iga<sup>1</sup>, Shujiro Mitani<sup>2</sup>, Keiji Sakai<sup>2</sup> (<sup>1</sup>Nippon Paint Holdings, <sup>2</sup>Univ. of Tokyo)
- 3Pa3-1\*** **Deposition and Evaluation of Ta<sub>2</sub>O<sub>5</sub> Piezoelectric Thin Film on Pt Crystal Film**  
[[[S3149]]] ○Keisuke Matsuura<sup>1</sup>, Masashi Suzuki<sup>1</sup>, Shoji Kakio<sup>1</sup>, Masanori Kodera<sup>2</sup>, Hiroshi Funakubo<sup>2</sup>  
(<sup>1</sup>Univ. of Yamanashi, <sup>2</sup>Tokyo Tech.)
- 3Pa3-2\*** **Growth of polarity inverted SiAlN/AlN multilayered films and applications to high-order mode BAW resonators**  
[[[S3241]]] ○Jun Sekimoto, Masashi Suzuki, Shoji Kakio (Univ. of Yamanashi)
- 3Pa3-3\*** **c-Axis tilted ScAlN films grown on silicon substrates for surface acoustic wave devices**  
[[[S3360]]] ○Takumi Tominaga<sup>1</sup>, Shinji Takayanagi<sup>1</sup>, Takahiko Yanagitani<sup>2</sup> (<sup>1</sup>Doshisha Univ., <sup>2</sup>Waseda Univ.)
- 3Pa4-1\*** **Laser Diffraction Caused by Shockwaves from Acoustic Cavitation Bubbles**  
[[[S3389]]] ○Fumitaka Yokoyama<sup>1</sup>, Takanobu Kuroyama<sup>2</sup>, Naoto Wakatsuki<sup>1</sup>, Tadashi Ebihara<sup>1</sup>, Koichi Mizutani<sup>1</sup>  
(<sup>1</sup>Univ. of Tsukuba, <sup>2</sup>NIT, Gifu College)
- 3Pa4-2** **Threshold pressure of focused ultrasound at 1 MHz in sonochemiluminescence**  
[[[S3398]]] ○Pak-Kon Choi<sup>1</sup>, Takumi Akiu<sup>1</sup>, Shogo Minowa<sup>1</sup>, Jungsoon Kim<sup>2</sup>, Moojoon Kim<sup>3</sup>  
(<sup>1</sup>Meiji Univ., <sup>2</sup>Tongmyong Univ., <sup>3</sup>Pukyong Natl. Univ.)
- 3Pa4-3** **Remediation of Polychlorinated Biphenyls (PCBs) contaminated soils using ultrasonic washing process**  
[[[S3269]]] ○Dukyong Lee, Jongbok Choi, Younggyu Son (Kumoh Natl. Inst. of Tech.)
- 3Pa4-4\*** **Temperature Compensation of Ultrasonic Transducer Using Dynamic Resonant Frequency Control**  
[[[S3223]]] ○Fangyi Wang, Satoru Hachisuka, Susumu Miyake, Takeshi Morita (Univ. of Tokyo)
- 3Pa4-5\*** **Vibration Characteristics of Ultrasonic Complex Vibration Source for Welding Using Elongated Uniform Rod**  
[[[S3261]]] ○Hayao Ando, Takuya Asami, Hikaru Miura (Nihon Univ.)
- 3Pa4-6\*** **Sound field between an object and an ultrasonic non-contact sensor using radiation impedance**  
[[[S3397]]] ○Natsumi Nakaoka, Daisuke Koyama (Doshisha Univ.)
- 3Pa4-7** **Study of longitudinal-torsional vibration source using stepped horn with hollow part**  
[[[S3190]]] ○Takuya Asami, Hikaru Miura (Nihon Univ.)

**3Pa5-1\*** A method for estimating size of red blood cell aggregates using power spectrum measured from a point scatterer  
[[[S3344]]]  
○Kyohei Higashiyama<sup>1</sup>, Shohei Mori<sup>1</sup>, Mototaka Arakawa<sup>1</sup>, Satoshi Yashiro<sup>2</sup>, Yasushi Ishigaki<sup>2</sup>, Hiroshi Kanai<sup>1</sup>  
(<sup>1</sup>Tohoku Univ., <sup>2</sup>Iwate Medical Univ.)

**3Pa5-2\*** Evaluation of relationship between liver structure and frequency dependency of speed of sound and attenuation  
[[[S3345]]]  
○Mai Ino<sup>1</sup>, Kazuma Noguchi<sup>1</sup>, Suguru Seto<sup>1</sup>, Masaaki Omura<sup>1,2</sup>, Kazuki Tamura<sup>3</sup>, Shinnosuke Hirata<sup>1</sup>, Kenji Yoshida<sup>1</sup>, Tadashi Yamaguchi<sup>1</sup> (<sup>1</sup>Chiba Univ., <sup>2</sup>Univ. of Toyama, <sup>3</sup>Hamamatsu Univ. School of Med.)

**3Pa5-3\*** Design of robust broadband filter based on truncated singular value decomposition for ultrasound received signal matrix  
[[[S3349]]]  
○Kenta Kawamata, Shohei Mori, Mototaka Arakawa, Hiroshi Kanai (Tohoku Univ.)

**3Pa5-4\*** Transmission condition for stable depiction of thoracic spine based on differences in reflection and scattering characteristics of medical ultrasound  
[[[S3353]]]  
○Taiga Bando<sup>1</sup>, Shohei Mori<sup>1</sup>, Hiroshi Kanai<sup>1</sup>, Eiko Onishi<sup>2</sup>, Masanori Yamauchi<sup>2</sup>, Mototaka Arakawa<sup>1</sup>  
(<sup>1</sup>Tohoku Univ., <sup>2</sup>Tohoku Univ. Hosp.)

**3Pa5-5\*** Evaluation of reliability in measured local displacement inside carotid plaque to improve elasticity measurement accuracy  
[[[S3361]]]  
○Yuta Haji<sup>1</sup>, Shohei Mori<sup>1</sup>, Mototaka Arakawa<sup>1</sup>, Toshio Yamagishi<sup>2</sup>, Hiroshi Kanai<sup>1</sup>  
(<sup>1</sup>Tohoku Univ., <sup>2</sup>Tohoku Kosai Hosp.)

**3Pa5-6\*** On the investigation of separation between reflection and backscattering components by plane wave imaging for estimation of surface roughness  
[[[S3363]]]  
○Kazuhiro Tochigi<sup>1</sup>, Ryo Nagaoka<sup>1</sup>, Jens E. Wilhjelms<sup>2</sup>, Hideyuki Hasegawa<sup>1</sup>  
(<sup>1</sup>Univ. of Toyama, <sup>2</sup>Tech. Univ. of Denmark)

**3Pa5-7\*** Improvement in Spatial Resolution of a Two-Dimensional Sparse Array Probe by Mechanical Scanning  
[[[S3364]]]  
○Kazuki Nishida, Masayuki Ishii, Masayuki Tanabe (Kumamoto Univ.)

**3Pa5-8\*** Development of Real-Time Detection System for Ultrasound Images of the Descending Colon Region Using Deep Learning  
[[[S3365]]]  
○Ryota Kabata<sup>1</sup>, Jun Orihara<sup>1</sup>, Junko Yotsuya<sup>2</sup>, Masayuki Tanabe<sup>1</sup> (<sup>1</sup>Kumamoto Univ., <sup>2</sup>Fukui Univ.)

**3Pa6-1** Analysis of the relationship between frequency offset and Doppler effect of phase modulation method for wireless communication of underwater vehicles  
[[[S3264]]]  
○Jihyun PARK<sup>1</sup>, Chaehui LEE<sup>1</sup>, Yoseop HWANG<sup>2</sup>, Kyu-Chil PARK<sup>1</sup> (<sup>1</sup>Pukyong Natl. Univ., <sup>2</sup>CILAB Co., Korea)

**3Pa6-2\*** Performance of Improving Image Quality using DAE Algorithm in Underwater Fading Channel  
[[[S3267]]]  
○Hyunsoo JEONG, Chaehui LEE, Jihyun PARK, Jee-Youl RYU, Kyu-Chil PARK (Pukyong Natl. Univ.)

**3Pa6-3\*** Improvement of Communication Quality by a Parabolic Acoustic Receiver Pointing at a Transmitter  
[[[S3306]]]  
○Ryotaro Chinone, Tadashi Ebihara, Yuji Sato, Naoto Wakatsuki, Yuka Maeda, Koichi Mizutani (Univ. of Tsukuba)

**3Pa6-4\*** The source identification using multiple linear chirp signals for a multisource continuous active sonar  
[[[S3339]]]  
○Shota Urakawa, Hanako Ogasawara, Eri Sato, Kazuyoshi Mori (Natl. Defense Academy)

**12:15-13:00 LUNCH TIME**

**13:00-13:50 Plenary Talk III Chair: Tadashi Yamaguchi (Chiba Univ.)**

**3PL ●●●●●**  
[[[●●●●●]]] ○Shin-ichiro Umemura (Tohoku Univ.)

**14:00-15:00 Poster Session Chair: Kazuyoshi Mori (Natl. Defense Academy)**

**3Pb1-1\*** Fabrication of Pb(Zr, Ti)O<sub>3</sub>-based Bi-Material Sol-Gel Phase Ultrasonic Transducer  
[[[S3338]]]  
○Enya Ogata, Hiroaki Akatsuka, Naoki Kambayashi, Makiko Kobayashi (Kumamoto Univ.)

**3Pb1-2\*** Design of topological phononic structure for multi mode propagation  
[[[S3362]]]  
○Hiroaki Takeshita, Masaaki Misawa, Kenji Tsuruta (Okayama Univ.)

- 3Pb1-3\*** Longitudinal wave velocity in bones of streptozotocin induced diabetic rat  
[[[S3382]]] ○Keita Yano, Yoshihiko Maekawa, Yuhi Haneda, Koki Shirai, Masaya Ikegawa, Mami Matsukawa (Doshisha Univ.)
- 3Pb1-4\*** Bayesian Filtering for Parameter Estimation of Mechanical Properties of Isotropic Material  
[[[S3408]]] ○Nur M. M. Kalimullah<sup>1</sup>, Amit Shelke<sup>1</sup>, Anowarul Habib<sup>2</sup>  
(<sup>1</sup>Indian Inst. of Tech. Guwahati, <sup>2</sup>UiT The Arctic Univ. of Norway)
- 3Pb2-1** Research on improvement of defect detection accuracy by resonance judgment for noncontact acoustic inspection method  
[[[S3351]]] ○Yutaka Nakagawa, Tsuneyoshi Sugimoto, Kazuko Sugimoto, Itsuki Uechi (Toin Univ. of Yokohama)
- 3Pb2-2** Basic Study on Vibration Measurement Using Digital Image Correlation Method with Projected Light Pattern  
[[[S3195]]] ○Dai Chimura (KUMAGAI GUMI CO., LTD.)
- 3Pb2-3** Odorant analysis of sake using a palm sized ball SAW gas chromatograph  
[[[S3390]]] ○Shingo Akao<sup>1</sup>, Takamitsu Iwaya<sup>1</sup>, Tatsuhiko Okano<sup>1</sup>, Nobuo Takeda<sup>1</sup>, Yusuke, Tsukahara<sup>1</sup>, Toru Oizumi<sup>1</sup>, Hideyuki Fukushi<sup>1</sup>, Tomoki Tanaka<sup>1</sup>, Maki Sugawara<sup>1</sup>, Toshihiro Tsuji<sup>2,1</sup>, Akinobu Takeda<sup>1</sup>, Kenichi Suzuki<sup>1</sup>, Shigeo Miyagawa<sup>1</sup>, Kazushi Yamanaka<sup>1,2</sup> (<sup>1</sup>Ball Wave Inc., <sup>2</sup>Tohoku Univ.)
- 3Pb2-4** 3-D FDTD simulation of moving sound source and receiver  
[[[S3135]]] ○Takao Tsuchiya, Yu Teshima, Shizuko Hiryu (Doshisha Univ.)
- 3Pb2-5** Internal vibration of active faults and lateral pulse generation mechanism  
[[[S3159]]] ○Toshiaki Kikuchi<sup>1</sup>, Koichi Mizutani<sup>2</sup> (<sup>1</sup>Natl. Defense Academy, <sup>2</sup>Univ. of Tsukuba)
- 3Pb2-6\*** Indoor Self-Localization of Moving Vehicle Using Acoustic Multipath Arrival Time  
[[[S3343]]] ○Atsushi Tsuchiya, Naoto Wakatsuki, Tadashi Ebihara, Keiichi Zempo, Koichi Mizutani (Univ. of Tsukuba)
- 3Pb2-7\*** Ranging of Moving Object Using Digital Acoustic Communication and Basis Expansion model  
[[[S3309]]] ○Kohei Wada, Tadashi Ebihara, Naoto Wakatsuki, Keiichi Zempo, Koichi Mizutani (Univ. of Tsukuba)
- 3Pb2-8\*** Characteristic Measurement of Loudspeaker Using Large Area Radiation Panel for Generating Inclined Sound Field  
[[[S3405]]] ○Shotaro Daito, Naoto Wakatsuki, Tadashi Ebihara, Keiichi Zempo, Koichi Mizutani (Univ. of Tsukuba)
- 3Pb3-1\*** Examination of identification method of passive SAW sensor using mass load effect  
[[[S3216]]] ○Naoki Horikawa, Jun Kondoh, Shinji Baba (Shizuoka Univ.)
- 3Pb3-2\*** Damage evaluation of fixed beams at both ends for bridge health monitoring using surface acoustic wave device  
[[[S3217]]] ○Shinji Baba, Jun Kondoh, Naoki Horikawa (Shizuoka Univ.)
- 3Pb4-1** Synthesis of porous  $\gamma$ -Fe<sub>2</sub>O<sub>3</sub> from scorodite synthesized using ultrasound irradiation and evaluation of its battery performance  
[[[S3237]]] ○Yuya Kitamura<sup>1</sup>, Hirokazu Okawa<sup>1</sup>, Kozo Shinoda<sup>2</sup>, Takahiro Kato<sup>1</sup>, Katsuyasu Sugawara<sup>1</sup>  
(<sup>1</sup>Akita Univ., <sup>2</sup>Tohoku Univ.)
- 3Pb4-2** Initial Growth and Subsequent Unstable Oscillation of Single Bubble  
[[[S3268]]] ○Takanobu Kuroyama (NIT, Gifu College)
- 3Pb4-2** Experimental Verification of Nonlinear Attenuation of Airborne Ultrasound  
[[[S3308]]] ○Takayuki Hoshi, Yoshiki Ooka (Pixie Dust Technologies)
- 3Pb4-3** Specific effect of ultrasonic irradiation on amyloid-fibril formation reaction  
[[[S3359]]] ○Kichitaro Nakajima, Hajime Toda, Keiichi Yamaguchi, Hirotsugu Ogi, Yuji Goto (Osaka Univ.)
- 3Pb4-4\*** Analysis for Piezoelectric Non-linear Effect on Langevin Transducer Model with Transfer Matrix Method  
[[[S3259]]] ○Kota Yokoyama<sup>1,2</sup>, Takashi Kasashima<sup>2</sup>, Susumu Miyake<sup>1</sup>, Takeshi Morita<sup>1</sup>  
(<sup>1</sup>Univ. of Tokyo, <sup>2</sup>NGK SPARK PLUG Co., Ltd.)
- 3Pb4-6\*** Agglomeration experiment using enlarged volume by two ultrasonic sound sources using cylinder type vibrating plate  
[[[S3191]]] ○Yusuke Hoda, Takuya Asami, Hikaru Miura (<sup>1</sup>Nihon Univ.)

- 3Pb4-7\* Design of High-efficiency Sound Absorption and Energy Harvesting Devices Using Acoustic Metasurfaces**  
[[[S3367]]] ○Ryota Takami , Masaaki Misawa , Kenji Tsuruta (Okayama Univ.)
- 3Pb5-1\* Fabrication of Two-Dimensional Sparse Array Probe Based on Sol-gel Composite Spray Technique**  
[[[S3366]]] ○Masayuki Ishii, Masayuki Tanabe, Makiko Kobayashi (Kumamoto Univ.)
- 3Pb5-2\* Visualization of subcutaneous flow tract using SVD filtering of ultrafast high frequency ultrasound imaging**  
[[[S3369]]] ○Anam Bhatti , Naoya Kanno , Hayato Ikeda , Takuro Ishii , Yoshifumi Saijo (Tohoku Univ.)
- 3Pb5-3\* A Study on Lateral Resolution Improvement of a Wide Pitch Probe by Compressed Sensing**  
[[[S3371]]] ○Shota Yoshisue, Masayuki Tanabe (Kumamoto Univ.)
- 3Pb5-4\* Effect of temporal bone structure on Transcranial Doppler measurements**  
[[[S3377]]] ○Hidehisa Suzuyama<sup>1</sup>, Kazuki Miyashita<sup>1</sup>, Yasuyo Kobayashi<sup>2</sup>, Kozue Saito<sup>2</sup>, Mami Matsukawa<sup>1</sup>  
(<sup>1</sup>Doshisha Univ., <sup>2</sup>Nara Medical Univ.)
- 3Pb5-5\* Evaluation of cerebral artery occlusion by simple measurement of pulse wave at carotid artery**  
[[[S3379]]] ○Takuma Shimada<sup>1</sup>, Mami Matsukawa<sup>1</sup>, Miho Ohsaki<sup>1</sup>, Yasuyo Kobayashi<sup>2</sup>, Kozue Saito<sup>2</sup>, Hiroshi Yamagami<sup>3</sup>  
(<sup>1</sup>Doshisha Univ., <sup>2</sup>Nara Medical Univ., <sup>3</sup>Osaka National Hosp.)
- 3Pb5-6\* Effect of Point Spread Function in Ultrasound Imaging on Estimated Heat Source of High-Intensity Focused Ultrasound in Thermal Strain Imaging**  
[[[S3383]]] ○Nozomi Obara, Shin ichiro Umemura , Shin Yoshizawa (Tohoku Univ. )
- 3Pb5-7\* Axial Transmission technique for evaluation of bone with mild periostitis.**  
[[[S3387]]] ○Kazuki Miyashita<sup>1</sup>, Hidehisa Suzuyama<sup>1</sup>, Ko Chiba<sup>2</sup>, Hiroshi Mita<sup>3</sup>, Norihisa Tamura<sup>3</sup>, Mami Matsukawa<sup>1</sup>  
(<sup>1</sup>Doshisha Univ., <sup>2</sup>Nagasaki Univ. , <sup>3</sup>JRA Equine Research Institute)
- 3Pb5-8 Prediction of otoacoustic emission caused by bone conduction actuator using piezo-electric device**  
[[[S3388]]] ○Akiko Fujise, Naoto Wakatsuki, Koichi Mizutani (Univ. of Tsukuba)
- 3Pb5-9\* Analysis of acoustic radiation force to estimate behavior of thin catheter in acoustic field**  
[[[S3399]]] ○Yuki Ichikawa, Ryota Akutsu, Yutaro Kobayashi, Junya Takano, Kohji Masuda (Tokyo Univ. of A&T)
- 3Pb5-10 Effect of difference in shear modulus of phantom on displacement distribution induced by acoustic radiation force of focused ultrasound**  
[[[S3400]]] ○Erika Numahata<sup>1</sup>, Shin-ichiro Umemura<sup>1</sup>, Shin Yoshizawa<sup>1,2</sup> (<sup>1</sup>Tohoku Univ., <sup>2</sup>SONIRE Therapeutics)
- 3Pb5-11\* Effect of amplitude-envelope statistics of each region of interest on CNN classification of liver fibrosis stages of ultrasonic B-mode images**  
[[[S3410]]] ○Akiho Isshiki<sup>1</sup>, Yuki Ujihara<sup>1</sup>, Dar-In Tai<sup>2</sup>, Po-Hsiang Tsui<sup>2</sup>, Kenji Yoshida<sup>1</sup>, Tadashi Yamaguchi<sup>1</sup>, Shinnosuke Hirata<sup>1</sup>  
(<sup>1</sup>Chiba Univ., <sup>2</sup>Chang Gung Univ.)
- 3Pb5-12\* Structure extension of 3D liver blood vessel with multiple ultrasound volumes and comparison with MRI**  
[[[S3404]]] ○Hiromi Iwazaki<sup>1</sup>, Kansai Okadome<sup>1</sup>, Kosuke Watanabe<sup>1</sup>, Kohji Masuda<sup>1</sup>, Yoshihiro Edamoto<sup>2</sup>  
(<sup>1</sup>Tokyo Univ. of A&T, <sup>2</sup>Secomedic Hosp.)
- 3Pb5-13\* Adaptive Compound of Angle and Frequency with a Single Plane Wave Transmission**  
[[[S3406]]] ○Yuta Saito, Norio Tagawa (Tokyo Met Univ.)
- 3Pb5-14\* Controlled release of particles included in giant cluster vesicles by exposure of ultrasound**  
[[[S3409]]] ○Kota Seo<sup>1</sup>, Yiting Zhang<sup>1,2</sup>, Taro Toyota<sup>2</sup>, Hideki Hayashi<sup>1</sup>, Shinnosuke Hirata<sup>1</sup>, Tadashi Yamaguchi<sup>1</sup>, Kenji Yoshida<sup>1</sup>  
(<sup>1</sup>Chiba Univ., <sup>2</sup>Univ. of Tokyo)
- 3Pb5-15\* High-Resolution Ultrasound Imaging by Adaptive Compounding Using Deep Learning**  
[[[S3402]]] ○Emi Aiura, Norio Tagawa (Tokyo Met Univ.)

### 15:15-16:15 Measurement techniques III

Chair: Tsuyoshi Mihara (Tohoku Univ.)

- 3J3-1 Continuous Mode Tracking Method of Guided Wave in Water-filled Pipe Using Finite Element Analysis**  
[[[S3180]]] Taizo Maruyama, ○Kazuyuki Nakahata (Ehime Univ.)



**3J3-2\*** **Development of a Portable Ball SAW Gas Chromatograph Using Three-layered Metal MEMS Columns**  
[[[S3162]]]  
○Takamitsu Iwaya<sup>1</sup>, Shingo Akao<sup>1</sup>, Kazushi Yamanaka<sup>1</sup>, Tatsuhiro Okano<sup>1</sup>, Nobuo Takeda<sup>1</sup>, Yusuke Tsukahara<sup>1</sup>,  
Toru Oizumi<sup>1</sup>, Hideyuki Fukushi<sup>1</sup>, Maki Sugawara<sup>1</sup>, Toshihiro Tsuji<sup>1</sup>, Tomoki Tanaka<sup>1</sup>, Akinobu Takeda<sup>1</sup>, Asuka Shima<sup>2</sup>,  
Satoshi Matsumoto<sup>2</sup>, Haruna Sugahara<sup>2</sup>, Takeshi Hoshino<sup>2</sup>, Tetsuya Sakashita<sup>2</sup> (<sup>1</sup>Ball Wave Inc., <sup>2</sup>JAXA)

**3J3-3\*** **Implementation of Self-Bending Airborne Ultrasonic Beam with a Reflector for Phase-Coded Modulation**  
[[[S3288]]]  
○Nagisa Yamamoto, Hideyuki Nomura (Univ. of Electro-Comm.)

**3J3-4\*** **Visualization of defects in thin metal plate using scanning airborne ultrasound source technique and dual frequency guided wave propagation**  
[[[S3373]]]  
○Kiyosuke Shimizu, Ayumu Osumi, Youichi Ito (Nihon Univ.)

#### **16:30-17:30 Biomedical ultrasound IV**

**Chair: Kohji Masuda (Tokyo Univ. of A&T)**

**3J4-1\*** **Verification of Amplitude Envelope Analysis Model for NASH Liver Evaluation**  
[[[S3257]]]  
○Yuki Ujihara<sup>1</sup>, Kazuki Tamura<sup>2</sup>, Shohei Mori<sup>3</sup>, Dar-In Tai<sup>4</sup>, Po-Hsiang Tsui<sup>5</sup>, Shinnosuke Hirata<sup>1</sup>, Kenji Yoshida<sup>1</sup>,  
Tadashi Yamaguchi<sup>1</sup>  
(<sup>1</sup>Chiba Univ., <sup>2</sup>Hamamatsu Univ. School of Med., <sup>3</sup>Tohoku Univ., <sup>4</sup>Chang Gung Memorial Hosp., <sup>5</sup>Chang Gung Univ.)

**3J4-2\*** **Effect of Coherence Factor Weighting for Improving the Image Quality of an Annular Array Photoacoustic Microscope**  
[[[S3282]]]  
○Riku Suzuki, Ryo Shintate, Takuro Ishii, Yoshifumi Saijo (Tohoku Univ.)

**3J4-3\*** **Comparison of tracking methods of particle distribution in ultrafast ultrasound imaging**  
[[[S3173]]]  
○Masaaki Omura<sup>1</sup>, Ryo Nagaoka<sup>1</sup>, Kunimasa Yagi<sup>1</sup>, Kenji Yoshida<sup>2</sup>, Tadashi Yamaguchi<sup>2</sup>, Hideyuki Hasegawa<sup>1</sup>  
(<sup>1</sup>Univ. of Toyama, <sup>2</sup>Chiba Univ.)

**3J4-4** **Basic investigation on identification of tissue composition based on propagation speeds of longitudinal and shear waves**  
[[[S3262]]]  
○Naotaka Nitta<sup>1</sup>, Toshikatsu Washio<sup>1</sup>, Tomokazu Numano<sup>2</sup> (<sup>1</sup>AIST, <sup>2</sup>Tokyo Met Univ.)

#### **17:45-18:45 Ocean acoustics**

**Chair: Takenobu Tsuchiya (Kanagawa Univ.)**

**3J5-1** **Estimation of charges of a sonoluminescing bubble under electric field**  
[[[S3222]]]  
○Hyang-Bok Lee<sup>1</sup>, Pak-Kon Choi<sup>2</sup>, Kageyama Yuya<sup>2</sup> (<sup>1</sup>Japan Women's Univ., <sup>2</sup>Meiji Univ.)

**3J5-2\*** **A Simplified Physico-Mathematical Model toward Tumor Ablation Therapy by Microbubble Enhanced HIFU**  
[[[S3211]]]  
○Shunsuke Kagami, Tetsuya Kanagawa (Univ. of Tsukuba)

**3J5-3** **An at-sea experiment of Time-Reversal MIMO communication off the coast of Fukushima**  
[[[S3378]]]  
○Yukihiro Kida, Mitsuyasu Deguchi, Takuya Shimura (JAMSTEC)

**3J5-4\*** **Variability characteristics of reflected sound waves from sea surface using effective roughness of sea surface**  
[[[S3375]]]  
○Tomoya Tsukui<sup>1</sup>, Shinnosuke Hirata<sup>2</sup>, Hiroyuki Hachiya<sup>3</sup> (<sup>1</sup>IHI, <sup>2</sup>Chiba Univ., <sup>3</sup>Tokyo Tech.)

#### **18:45-19:00 CLOSING**