

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
○Motoki Kataoka, Masaaki Misawa, Kenji Tsuruta (Okayama Univ.)
- 1J1-2** Detection of nanoscale acoustic waves gated by transient spin-polarized electrons
○Osamu Matsuda¹, Chunyong Li², Richard T. Harley², Pavlos G. Lagoudakis^{2,3}, Oliver B. Wright¹
(¹Hokkaido Univ., ²Univ. Southampton, ³Skolkovo 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
○Tomoki Harada^{1,2}, Yuki Arata¹, Kosuke Morita¹, Tetsuo Ikari¹, Atsuhiko Fukuyama¹
(¹Univ. of Miyazaki, ²JSPS Research Fellow)
- 1J1-4*** Sol-gel composite Film Measurement by Scanning Nonlinear Dielectric Microscopy
○Kohei Hirakawa¹, Naoki Kambayashi¹, Hiroyuki Odagawa², Makiko Kobayashi¹ (¹Kumamoto Univ., ²Kumamoto 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
○Kaito Murai¹, Deqing Kong¹, Hideki Tamura², Manabu Aoyagi¹ (¹Muroran Inst. of Tech., ²Tohoku Inst. of Tech.)
- 1J2-2*** Robust Design Using Adaptive Multi-channel Control for Mid-air Acoustic Tweezers
○Shota Kondo, Kan Okubo (Tokyo Met Univ.)
- 1J2-3*** High-Power Ultrasound Introduction into Thin Tubular Waveguide of Tube-Type DPLUS
○Kyohei Yamada¹, Kang Chen¹, Takasuke Irie², Takashi Iijima³, Susumu Miyake¹, Takeshi Morita¹
(¹Univ. of Tokyo, ²Microsonic Co, Ltd., ³Tokyo Univ. of Sci.)

11:15-12:15 Poster Session

Chair: Makiko Kobayashi (Kumamoto Univ.)

- 1Pa1-1*** Computing SAW velocities using the matrix method and the Sakurai-Sugiura method
○Hibiki Yoshida, Koji Hasegawa (Muroran Inst. of Tech.)
- 1Pa1-2** Effect of target material and structures on laser-generated aerial ultrasound
○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
○Bunyu Tamura, Masashi Ishikawa, Hideo Nishino (Tokushima Univ.)
- 1Pa1-4*** Ambience effect during poling of Pb(Zr,Ti)O₃/Pb(Zr,Ti)O₃
○Ayaka Yamasaki, Makie Hidaka, Kei Nakatsuma, Makiko Kobayashi (Kumamoto Univ.)
- 1Pa1-5*** Elastic constants of tungsten carbide single crystal studied by picosecond ultrasonics
○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**
 ○Ryujin Katsuma¹, Koki Hirano¹, Motoki Goka², Masashi Ishikawa¹, Hideo Nishino¹
 (¹Tokushima Univ., ²Mitsubishi Chemical)
- 1Pa2-2* Integrity assessment of large rotating machine components based on their resonance characteristics (1) — Measurement method and numerical simulation —**
 ○Yuji Wada¹, Kentaro Nakamura¹, Kota Sadamoto², Hiroshi Araki², Wataru Tsujita²
 (¹Tokyo Tech., ²Mitsubishi Electric Corporation)
- 1Pa2-3* Integrity assessment of large rotating machine components based on their resonance characteristics (2) -- An algorithm for anomaly detection--**
 ○Kota Sadamoto¹, Hiroshi Araki¹, Wataru Tsujita¹, Yuji Wada², Kentaro Nakamura²
 (¹Mitsubishi Electric Corporation, ²Tokyo Tech.)
- 1Pa2-4* Non-contact measurement of bolt axial force using crystal resonator and coil**
 ○Kazuhiko Hasebe, Wada Yuji, Kentaro Nakamura (Tokyo Tech.)
- 1Pa2-5* Comparison of Longitudinal and Shear Waves in Detecting Defects in Metal by Transmission Method**
 ○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**
 ○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**
 ○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**
 ○Ryoto Suzuki¹, Masashi Suzuki¹, Shoji Kakio¹, Noritoshi Kimura² (¹Univ. of Yamanashi, ²Piezo Studio Inc.)
- 1Pa3-2* SAW Propagation Properties of (K,Na)NbO₃ Films Deposited by Hydrothermal Synthesis or RF Sputtering**
 ○Kazuma Yoshizawa¹, Masashi Suzuki¹, Shoji Kakio¹, Yoshiharu Ito², Akinori Tateyama³, Hiroshi Funakubo³,
 Tsuyoshi Wakabayashi⁴, Kenji Shibata⁵
 (¹Univ. of Yamanashi, ²Nihon Univ., ³Tokyo Tech., ⁴Koike Co., Ltd., ⁵SCIOCS Co., Ltd.)
- 1Pa3-3* Enhancement of coupling factor K² in higher-mode RSAW on polarity inverted ScAlN films/high velocity AlN or BN substrates**
 ○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**
 ○Kazuki Kawai¹, Hikaru Takahashi¹, Tatsuya Omori¹, Ken-ya Hashimoto^{2,1}
 (¹Chiba Univ., ²Univ. of Electric Sci. and Tech.)
- 1Pa4-1 Basic study of HPA temperature and onset temperature in thermoacoustic prime mover by stability analysis**
 ○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.**
 ○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**
 ○Yoshiki Nagatani^{1,2}, Hiromu Ishikawa², Takayuki Hoshi¹, Seiji Nakagawa² (¹Pixie Dust Technologies, ²Chiba Univ.)
- 1Pa4-4* Effect of eigenmode in cavity on acoustic radiation force in near-field acoustic levitation**
 ○Kohei Aono, Deqing Kong, Manabu Aoyagi (Muroran Inst. of Tech.)
- 1Pa4-5 Accelerating amyloid fibril formation by multi-channel ultrasonic chemical reactor**
 ○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**
 ○Masashi Hishinuma, Ayumu Osumi, Youichi Ito (Nihon Univ.)
- 1Pa5-1** **Regularization for Medical Ultrasound**
 ○Chikayoshi Sumi (Sophia Univ.)
- 1Pa5-2*** **Investigation on effect of transmit condition on displacement estimation by phase-sensitive 2D motion estimators**
 ○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**
 ○Hideyuki Hasegawa¹, Michiya Mozumi¹, Masaaki Omura¹, Ryo Nagaoka¹, Kozue Saito²
 (¹Univ. of Toyama, ²Nara Medical Univ.)
- 1Pa5-4*** **Investigation on singular value decomposition filter for extraction of reflected signals from blood flow in veins**
 ○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**
 ○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**
 ○Atsushi Hosokawa (Natl. Inst. Tech., Akashi Coll.)
- 1Pa5-7*** **Evaluation of Backscattering Properties in Skin Tissue by High-frequency Annular Array**
 ○Wakana Saito¹, Masaaki Omura^{1,2}, Jeffrey A. Ketterling³, Shinnosuke Hirata¹, Kenji Yoshida¹, Tadashi Yamaguchi¹
 (¹Chiba Univ., ²Univ. of Toyama, ³Lizzi Center for Biomedical Eng.)
- 1Pa5-8** **Investigation on application conditions of the ultrasonic velocity change imaging method to living body**
 ○Hana Sonoda¹, Yuki Ito¹, Yuki Minami¹, Tetsuya Matsuyama¹, Kenji Wada¹, Koichi Okamoto¹, Toshiyuki Matsunaka²
 (¹Univ. of Osaka Pref., ²TU Research Lab.)
- 1Pa5-9*** **Basic study on separation of reflected components in pulse wave propagation using ultrafast ultrasound**
 ○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)**
 ○Yoshiaki Tsurugaya¹, Toshiaki Kikuchi², Koichi Mizutani³ (¹Sanyo PT, ²Natl.Defense Academy, ³Univ. of Tsukuba)
- 1Pa6-2*** **The Performance of Underwater Frequency Diversity Communication Applying FFT-based Threshold Estimation**
 ○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**
 ○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**
 ○Yushi Tabata¹, Tadashi Ebihara¹, Hanako Ogasawara², Naoto Wakatsuki¹, Keiichi Zempo¹, Koichi Mizutani¹
 (¹Univ. of Tsukuba, ²Natl.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)O₃-based Sol-gel Composites**
 ○Makie Hidaka, Naoki Kambayashi, Makiko Kobayashi (Kumamoto Univ.)

- 1Pb1-2 Dielectric and Piezoelectric Properties of Pb Perovskite Relaxor type Single Crystals by AC poling**
 ○Yohachi Yamashita^{1,2}, Yiqin Sun¹, Zhuangkai Wang¹, Tomoaki Karaki¹, Tadashi Fujii¹
 (¹Univ. of Toyama Pref., ²North Carolina State Univ.)
- 1Pb1-3 Lattice thermal conductivity in isotope diamond asymmetric superlattices**
 ○Hsu Kai Weng¹, Akira Nagakubo¹, Hideyuki Watanabe², Hirotsugu Ogi¹ (¹Osaka Univ., ²AIST)
- 1Pb1-4 Synthesis and characterization of BNBT15-BNM lead- free piezoelectric ceramics**
 ○Yutaka Doshida¹, Kosuke Hayakawa¹, Hideki Tamura², Satoshi Tanaka³
 (¹Ashikaga Univ., ²Tohoku Inst. of Tech., ³Nagaoka Univ. of Tech.)
- 1Pb1-5* Dielectric and piezoelectric properties of Pb(Mg_{1/3}Nb_{2/3})O₃-PbTiO₃ single crystal ultrasonic transducers with AC low-temperature poling**
 ○Yiqin Sun¹, Tomoaki Karaki¹, Fujii Tadashi¹, Yohachi Yamashita^{1,2} (¹Univ. of Toyama Pref., ²North Carolina State Univ.)
- 1Pb2-1* Improvement of laser-pulse methods in piezoelectric device analyses using laser speckle interferences**
 ○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**
 ○Mao Yamada, Tomohisa Norisuye (Kyoto Inst. of Tech.)
- 1Pb2-3* Development of nano-thin film biosensors using asynchronous picosecond ultrasound method**
 ○Akihiro Tange, Akira Nagakubo, Hirotsugu Ogi (Osaka Univ.)
- 1Pb2-4* Improvement of Spatial Resolution in Temperature Profiling inside Materials by Ultrasound**
 ○Kamui Yoshida, Naoki Wadamori, Ikuo Ihara (Nagaoka Univ. of Tech.)
- 1Pb2-5 Development of Multi-parallel-path Clamp-on Ultrasonic Flowmeter**
 ○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**
 ○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**
 ○Hiroyuki Masuyama (NIT, Toba College)
- 1Pb3-1* Consideration on influence of reflected waves at junction boundary in double layered thickness-shear resonator using α -quartz**
 ○Taisei Noguchi¹, Yuji Ohashi¹, Masaya Omote², Yuui Yokota¹, Shunsuke Kurosawa¹, Kei Kamada¹, Hiroki Sato¹, Satoshi Toyoda¹, Masao Yoshino¹, Akihiro Yamaji¹, Akira Yoshikawa¹ (¹Tohoku Univ., ²XMAT Co.)
- 1Pb3-2 Development of Wireless Quartz Crystal Microbalance Sensor with Antenna-Embedded PDMS Microchannel**
 ○Fumihito Kato¹, Yu Qi¹, Tomoya Aoki¹, Noriyasu Masumoto¹, Hiroyuki Noguchi¹, Hirotsugu Ogi², Dai Matsumoto³, Teruyoshi Matsumoto³ (¹Nippon Inst. of Tech., ²Osaka Univ., ³Pearl Optical Ind.)
- 1Pb3-3* Fundamental study of 2-2 ceramic-air composite transducers for air-coupled ultrasonic measurement**
 ○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**
 ○Kohei Kasai, Jun Kondoh (Shizuoka Univ.)
- 1Pb4-1* Effect of superimposed external sound wave on loop-tube type thermoacoustic system**
 ○Koto Hiramatsu¹, Shin-ichi Sakamoto², Yoshiaki Watanabe¹ (¹Doshisha Univ., ²Univ. of Shiga Pref.)
- 1Pb4-2 Study on Efficiency of Transducers for Sonochemistry by Calorimetry**
 ○Yoshiyuki Asakura¹, Keiji Yasuda² (¹Honda Electronics, ²Nagoya Univ.)
- 1Pb4-3* Acoustic underwater propulsion system using longitudinal vibrator**
 ○Ryo Tanimura, Kong Deqing, Manabu Aoyagi (Muroran Inst. of Tech.)

- 1Pb4-4 Creep Induced Nonlinear Acoustics in a Ti-Al Alloy**
 ○Toshihiro Ohtani¹, Yutaka Ishii¹, Noritake Hiyoshi², Yasuhiro Yamazaki³, Yutaro Ohta⁴
 (¹Shonan Inst. of Tech., ²Fukui Univ., ³Chiba Univ., ⁴IHI)
- 1Pb4-5 Influence of Microphone Characteristics on Measurement of Near-field of Parametric Acoustic Array**
 ○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**
 ○Tatsuki Sasamura¹, Abdullah Mustafa¹, Susumu Miyake¹, Norio Sashida², Takeshi Morita¹
 (¹Univ. of Tokyo, ²SHINSEI CORPORATION)
- 1Pb5-1* Motion analysis of liver blood vessel using multi-resolution registration**
 ○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**
 ○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**
 ○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**
 ○Che-Chou Shen, Yen-Chen Chu (Dept. Elec. Eng., NTUST)
- 1Pb5-5 Examination of Amplitude Modulated Wave Irradiation for Bubble Cavitation Position Control**
 ○Ren Koda, Taichi Mukai (Gunma Univ.)
- 1Pb5-6* Effect of Number Concentration of Contrast Agent Microbubbles in a Microchamber on Shell Disruption**
 ○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**
 ○Jun Kubota¹, Masatoshi Hashimoto¹, Akihisa Narai¹, Hidetaka Mitsumura², Kazuhiko Hanzawa³
 (¹Hashimoto Electronic Industry, ²Jikei Univ. School of Med., ³Niigata Univ.)
- 1Pb5-8* FDTD verification of influence of layered structure on shear wave velocity**
 ○Kodai Osato¹, Wakana Saito¹, Takuma Oguri^{1,2}, Naohisa Kamiyama², Shinnosuke Hirata¹, Kenji Yoshida¹,
 Tadashi Yamaguchi¹ (¹Chiba Univ., ²GE Healthcare)
- 1Pb5-9* Three-dimensional evaluation of the relationship between speed of sound and scattering characteristics of lymph nodes in tumor-bearing mice**
 ○Kazuma Noguchi¹, Masaaki Omura^{1,2}, Takashi Ohnishi³, Matsumoto Daiki¹, Tetsuya Kodama⁴, Hideaki Haneishi¹,
 Tadashi Yamaguchi¹ (¹Chiba Univ., ²Univ. of Toyama, ³Memorial Sloan Kettering Cancer Center, ⁴Tohoku Univ.)
- 1Pb5-10* Simulation of interfered acoustic field for bending thin catheter in arbitrary direction**
 ○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**
 ○Christine Lee Li Mei¹, Kiyoshi Umemura¹, Mai Murakami¹, Thomas Tiong Kwong Soon¹, Kazuto Kobayashi²,
 Naohiro Hozumi¹, Sachiko Yoshida¹ (¹Toyohashi Univ. of Tech., ²Honda Electronics)
- 1Pb5-12 Noise Suppression Technique Using Deep Learning for Ultrasound Images During Ultrasound-guided High Intensity Focused Ultrasound Treatment**
 ○Ryo Takagi, Yoshihiko Koseki (AIST)
- 1Pb5-13* Behavior simulation of bubble-surrounded cells in flow under exposure of traveling wave**
 ○Shinnosuke Araki¹, Ryota Akutsu¹, Takumi Chikaraashi¹, Daiki Omata², Ryo Suzuki², Kohji Masuda¹
 (¹Tokyo Univ. of A&T, ²Teikyo Univ.)
- 1Pb5-14* Development of automatic focus control system for HIFU devices**
 ○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.**
 ○Mai Murakami¹, Edo Bagus Prastika¹, Yuto Isobe¹, Tomohiro Kawashima¹, Yoshinobu Murakami¹, Naohiro Hozumi¹, Kazuto Kobayashi² (¹Toyohashi Univ. of Tech., ²Honda Electronics)
- 1J3-2** **High-speed Photoacoustic Microscopy Using MEMS Mirror with a Correction Method for Distortion Caused by the Mirror Scanning**
 ○Ryo Shintate¹, Chulhong Kim², Yoshifumi Saijo¹ (¹Tohoku Univ., ²Pohang Univ.)
- 1J3-3*** **Study on photoacoustic properties of bovine cortical bone**
 ○Yoshihiko Maekawa, Keita Yano, Taishi Hattori, Mami Matsukawa (Doshisha Univ.)
- 1J3-4*** **Anisotropy of Acoustically Induced Electric Polarization in Biological Tissues**
 ○Yamato Anzai¹, Kenji Ikushima¹, Mami Matsukawa² (¹Tokyo Univ. of A&T, ²Doshisha 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**
 ○Kana Kitao, Tomohisa Norisuye (Kyoto Inst. of Tech.)
- 1J4-2*** **Ultrasound-spectroscopy imaging on human iPS cells for mechanobiology study**
 ○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**
 ○Karin Hattori¹, Nozomi Watanabe¹, Keishi Suga², Ryuichi Tarumi¹, Nobutomo Nakamura¹ (¹Osaka Univ., ²Tohoku Univ.)
- 1J4-4*** **Cross sectional acoustic impedance imaging of multi layered coating by wide-band ultrasound**
 ○Yuto Isobe¹, Edo Bagus Prastika¹, Mai Murakami¹, Tomohiro Kawashima¹, Yoshinobu Murakami¹, Naohiro Hozumi¹, Kazuto Kobayashi² (¹Toyohashi Univ. of Tech., ²Honda 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**
 ○Zhaohui Wu¹, Yawei Li¹, Keyuan Gong¹, Qi Liang¹, Yu-Po Wong², Jingfu Bao¹, Ken-ya Hashimoto^{2,1} (¹Univ. of Electronic Sci. and Tech. of China, ²Chiba Univ.)
- 2E1-2*** **GHz reflectometry fingerprint imaging using epitaxial PbTiO₃ ultrasonic transducers**
 ○Yusuke Sato^{1,2}, Takahiko Yanagitani^{1,2,3} (¹Waseda Univ., ²ZAIKEN, ³JST-CREST)
- 2E1-3** **Theoretical analysis of Rayleigh SAW propagation characteristics on YbAlN films/ high velocity substrates**
 ○Masashi Suzuki, Shoji Kakio (Univ. of Yamanashi)
- 11:15-12:15** **Poster Session** **Chair: Yasuaki Watanabe (Tokyo Met Univ.)**
- 2Pa1-1*** **Comparison of High Temperature Characteristics of Bi₄Ti₃O₁₂-based, Lead-Free Ultrasonic Transducers**
 ○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**
 ○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**
 ○Kazuki Akae, Masaaki Misawa, Kenji Tsuruta (Okayama Univ.)
- 2Pa1-4 Gigahertz optomechanical photon-phonon transduction between nanolines**
 ○Oliver. B Wright¹, Yuta Imade¹, Vitaliy E. Gusev², Osamu Matsuda¹, Motonobu Tomoda¹, Paul H. Otsuka¹
 (¹Hokkaido Univ., ²Le Mans Univ.)
- 2Pa1-5 Real and complex asymmetric parameters of Fano resonance in a simple classical harmonic oscillator system**
 Seiji Mizuno (Hokkaido Univ.)
- 2Pa2-1 Experimental method to locate the nodal points of the high power ultrasonic transducer**
 ○Moojoon Kim¹, Jungsoon Kim² (¹Pukyong Natl. Univ., ²Tongmyong Univ.)
- 2Pa2-2 Development of an optical interferometer for optical-based mechanical property microscope**
 ○Kazuki Tamura¹, Ken-ya Hashimoto², Seiji Yamamoto¹
 (¹Hamamatsu Univ. School of Med., ²Univ. of Electronic Sci. and Tech. of China)
- 2Pa2-3* Evaluation of reflected waveform from obstacles on the road surface**
 ○Yuki Tan¹, Shinnosuke Hirata², Hiroyuki Hachiya¹ (¹Tokyo Tech., ²Chiba Univ.)
- 2Pa2-4 Study on measurement technique of ultrasonic power for low frequency by radiation force balance method**
 ○Takeyoshi Uchida (AIST)
- 2Pa2-5 Oscillation frequencies and Q value of QCM generator by Internet of Things**
 ○Yasuaki Watanabe, Yuuta Aoki, Yingbo Sun, Yuuki Okamoto (Tokyo Met Univ.)
- 2Pa2-6* Defocus correction in Scanning Acoustic Microscopy**
 ○Prakhar Kumar¹, Nitin Yadav², Aditya Jethliya¹, Azeem Ahmad³, Frank Melandsø³, Anwarul Habib³
 (¹Indian Inst. of Tech. Dhanbad, ²Indian Inst. of Tech. Delhi, ³UiT The Arctic Univ. of Norway)
- 2Pa2-7* Finite element modeling of acoustic transmission and reflection loss in ultrasound transducer**
 ○Kaushik Shukla¹, Azeem Ahmad², Balpreet Singh Ahluwalia², Frank Melandsø², Anwarul Habib²
 (¹Indian Inst. of Tech. Dhanbad, ²UiT The Arctic Univ. of Norway)
- 2Pa3-1* Lateral Energy Confinement of Multi-layered SAW Resonator Employing Low-cut Lithium Tantalate**
 ○Yiwen He¹, Yu-Po Wong², Qi Liang¹, Ting Wu¹, Jingfu Bao¹, Ken-ya Hashimoto^{1,2}
 (¹Univ. of Electronic Sci. and Tech. of China, ²Chiba Univ.)
- 2Pa3-2 Influence of Phase Shifter Location to Piston Mode Operation of TC-SAW Using SiO₂/LN Structure**
 ○Keyuan Gong¹, Zhaohui Wu¹, Yu-Po Wong², Yawei Li¹, Qi Liang¹, Jingfu Bao¹, Ken-ya Hashimoto^{1,2}
 (¹Univ. of Electronic Sci. and Tech. of China, ²Chiba Univ.)
- 2Pa3-3 Comparative Study of Piston Mode Designs for Temperature-Compensated Surface Acoustic Wave Resonators Using SiO₂/LiNbO₃ Structure**
 ○Yawei Li¹, Keyuan Gong¹, Yu-Po Wong², Pingjing Chen¹, Zhaohui Wu¹, Qi Liang¹, Jing-fu Bao¹, Ken-ya Hashimoto^{1,2}
 (¹Univ. of Electronic Sci. and Tech. of China, ²Chiba Univ.)
- 2Pa4-1 Effect of Ultrafine Bubbles on Enrichment of Amino Acid in Aqueous Solution by Ultrasonic Atomization**
 ○Keiji Yasuda¹, Koji Hamada¹, Yoshiyuki Asakura² (¹Nagoya Univ., ²Honda Electronics)
- 2Pa4-2* Separation and Desulfurization of Bitumen from Oil sand Using n-Pentane and Ultrasound**
 ○Yoshitaka Wakisaka, Hirokazu Okawa, Kumi Saigo, Takahiro Kato, Katsuyasu Sugawara (Akita Univ.)
- 2Pa4-3 CO₂ desorption from tertiary amine solutions using ultrasound irradiation at low temperature**
 ○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**
 ○Khanistha Leetang¹, Shinnosuke Hirata², Hiroyuki Hachiya¹ (¹Tokyo Tech., ²Chiba Univ.)

- 2Pa4-5* Evaluation of (Bi,Na,Ba)(Ti,Mn)O₃ and (Sr,Ca)₂NaNb₅O₁₅ Piezoelectric Ceramics for underwater propulsion systems**
 ○Yuan Qian¹, Takumi Hirata², Deqing Kong², Yutaka Doshida³, Manabu Aoyagi², Minoru Kuribayashi Kurosawa¹
 (¹Tokyo Tech., ²Muroran Inst. of Tech., ³Ashikaga Univ.)
- 2Pa4-6 Non-contact acoustic manipulation in air using several sound sources**
 ○Teruyuki Kozuka¹, Takuya Yoshimoto¹, Masahiro Toyoda², Shin-ichi Hatanaka³
 (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**
 ○Susumu Miyake, Takeshi Morita (Univ. of Tokyo)
- 2Pa5-1* Image Quality Assessment of 3D Ultrasound Images Based on SSIM**
 ○Hiroki Yamaya, Yuki Mimura, Haruto Yamazaki, Hirotaka Yanagida (Yamagata Univ.)
- 2Pa5-2* Ultrasound imaging with L1 norm minimization**
 ○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**
 ○Hiromu Ishikawa, Sho Otsuka, Seiji Nakagawa (Chiba Univ.)
- 2Pa5-4 Deep learning for ultrasound echo speckle reduction and superresolution**
 ○Mengfei Zhang, Yiran Li, Chikayoshi Sumi (Sophia Univ.)
- 2Pa5-5 Superresolution using TecoGAN and DDSRCNN for ultrasound echo image**
 ○Yiran Li, Mengfei Zhang, Chikayoshi Sumi (Sophia Univ.)
- 2Pa5-6* Quantitative analysis of bubble-surrounded cells retained on vessel wall by acoustic radiation force**
 ○Takumi Chikarashi¹, Shunya Watanabe¹, Yoshitaka Miyamoto², Daiki Omata³, Kazuo Maruyama³, Ryo Suzuki³,
 Kohji Masuda¹ (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**
 ○Eiki Hayashi¹, Naoya Kanno¹, Ryo Shintate¹, Takuro Ishii¹, Ryo Nagaoka², Yoshifumi Saijo¹
 (¹Tohoku Univ., ²Univ. of Toyama)
- 2Pa5-8* Numerical Estimation of the Intraventricular Pressure Gradients Based on Echo-Dynamography and Bernoulli's Principle**
 ○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**
 ○Shotaro Miyake¹, Shin Yoshizawa^{1,2} (¹Tohoku Univ., ²SONIRE Therapeutics)
- 2Pa5-10* Quantitative Uncertainty Assessment of Lumen Detection in Intravascular Ultrasound Images Using Deep Ensembles**
 ○Naoya Kanno¹, Takashi Orihara¹, Hiroyuki Yagami², Masanori Kawasaki³, Munenori Okubo³, Takuro Ishii¹,
 Hitoshi Matsuo³, Yoshifumi Saijo¹ (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**
 ○Kyu-Chil Park, Hyunsoo Jeong, Chaehui Lee, Jihyun Park (Pukyong Natl. Univ.)
- 2Pa6-2 Algorithm to improve underwater object recognition using ROV**
 ○YOSEOP HWANG¹, Jongwoo AN¹, Gyedo PARK², Jihyun PARK³
 (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**
 ○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**
 ○Shinnosuke Hirata¹, Yuki Hagihara¹, Kenji Yoshida¹, Tadashi Yamaguchi¹, Matthieu E.G. Toulemonde², Meng-Xing Tang² (¹Chiba Univ., ²Imperial College London)
- 2E2-2* High-frequency Quantitative Ultrasound-based Assessment of Microstructural Change in Myopic Guinea Pig Sclera**
 ○Kazuyo Ito¹, Jonathan Mamou², Kazuki Tamura³, Cameron Hoerig², Sally A. McFadden⁴, Quan V. Hoang^{1,5,6} (¹Singapore Eye Research Institute, ²Riverside Research, ³Hamamatsu Univ., ⁴Univ. of Newcastle, ⁵National Univ. of Singapore, ⁶Columbia Univ.)
- 2E2-3* Generation and Control of Ultrasonic Cavitation on Soft Material by Dual-frequency Acoustic Resonances**
 ○Naohiro Sugita, Taichi Oshino, Tadahiko Shinshi (Tokyo Tech.)
- 2E2-4* Ultrasonic tablet disintegration for controlled digestion**
 ○Craig S. Carlson¹, Nicole Anderton², Antje Pohl³, Andrew J. Smith⁴, Nobuki Kudo⁵, Michiel Postema^{1,2} (¹Univ. of Witwatersrand, ²Tampere Univ., ³Ruhr-Univ. Bochum, ⁴Univ. of Hull, ⁵Hokkaido Univ.)
- 14:30-15:30 Poster Session** **Chair: Hirokazu Okawa (Akita Univ.)**
- 2Pb1-1* Fabrication of LiNbO₃-based Sol-Gel Composite at Low-Temperature**
 ○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**
 ○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**
 ○Taichi Hirano¹, Shujiro Mitani², Keiji Sakai² (¹Meiji Univ., ²Univ. of Tokyo)
- 2Pb1-4* Measurement of acoustic characteristics of mouthpiece type ultrasonic transducer for oral treatment**
 ○Shohei Fukuda¹, Marie Tabaru¹, Kentaro Nakamura¹, Mutsuo Ishikawa², Kazuki Satomi³, Kazuaki Nishimura³ (¹Tokyo Tech., ²Toin Univ. of Yokohama, ³Tohoku Univ.)
- 2Pb1-5 Fabrication of Polymer Particles via Emulsion Template and its Elasticity of Particle in Liquid Determined by Ultrasound Scattering Techniques**
 ○Kazuto Tsuji, Tomohisa Norisuye (Kyoto Inst. of Tech.)
- 2Pb2-1* Ultrasonic signal denoising using hybrid filter for image reconstruction**
 ○Shubham Kumar Gupta¹, Azeem Ahmad², Balpreet Singh Ahluwalia², Frank Melandsø², Anowarul Habib² (¹Indian Inst. of Tech. Guwahati, ²UiT The Arctic Univ. of Norway)
- 2Pb2-2* Multiple damage detection in piezoelectric ceramic sensor using scanning point contact excitation and detection method**
 ○Sayantani Bhattacharya¹, Prakhar Kumar¹, Nitin Yadav², Azeem Ahmad³, Frank Melandsø³, Anowarul Habib³ (¹Indian Inst. of Tech. Dhanbad, ²Indian Inst. of Tech. Delhi, ³UiT The Arctic Univ. of Norway)
- 2Pb2-3* Photoacoustic Response of Soft Tube Embedded in Phantom**
 ○Shili Qu, Kentaro Nakamura (Tokyo Tech.)
- 2Pb2-4 Measurement of rheology in reaction chamber by immersion type EMS system**
 ○Maiko Hosoda¹, Yoshikazu Yamakawa², Keiji Sakai³ (¹Tokyo Denki Univ., ²Triple Eye Co. LTD., ³Univ. of Tokyo)
- 2Pb2-5* Subband Compound with Harmonics in Plane Wave Beamforming**
 ○Jie Zheng¹, Norio Tagawa¹, Masasumi Yoshizawa², Takasuke Irie^{1,3} (¹Tokyo Met Univ., ²Tokyo Met. Coll. of Industrial Tech., ³Microsonic Co, Ltd.)
- 2Pb2-6 3D Ultrasonic Phased-Array Imaging of Fatigue Cracks Using a Piezoelectric and Laser System (PLUS)**
 ○Yoshikazu Ohara¹, Marcel C. Remillieux², T. J. Ulrich², Serina Ozawa¹, Kosuke Tsunoda¹, Toshihiro Tsuji¹, Tsuyoshi Mihara¹ (¹Tohoku Univ., ²Los Alamos National Laboratory)
- 2Pb2-7 Defect detection of composite material using resonance frequency identification by spatial spectral entropy for non-contact acoustic inspection**
 ○Kazuko Sugimoto, Tsuneyoshi Sugimoto (Toin Univ. of Yokohama)

- 2Pb2-8 Diagnosis of Fire Damage inside Mortar Using Aerial Ultrasound Wave Source Scanning Method**
○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**
○Ting Wu¹, Yu-Po Wong², Yi-wen He¹, Jing-fu Bao¹, Ken-ya Hashimoto^{1,2}
(¹Univ. of Electronic Sci. and Tech. of China, ²Chiba Univ.)
- 2Pb3-2 Systematic Design of Layered Structures for Wideband and High Frequency SAW Resonators**
○Qi Liang¹, Zhaohui Wu¹, Keyuan Gong¹, Bin Shi¹, Yawei Li¹, Jingfu Bao¹, Ken-ya Hashimoto^{1,2}
(¹Univ. of Electronic Sci. and Tech. of China, ²Chiba Univ.)
- 2Pb3-3* Analysis of Longitudinal Leaky SAW on Quartz Thin Plate Bonded to Similar-material Substrate**
○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**
○Seongeun Lee, Iseul Na, Younggyu Son (Kumoh Natl. Inst. of Tech.)
- 2Pb4-2* Effect of Dissolved Gas on Sonochemical Oxidation**
○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**
○Iseul Na, Seongeun Lee, Younggyu Son (Kumoh Natl. Inst. of Tech.)
- 2Pb4-4* Study on mixing and heating of microdroplets by surface acoustic waves**
○Shosei Iwashita, Jun Kondoh (Shizuoka Univ.)
- 2Pb4-5* Vibration Characteristics of Ultrasonic Complex Vibration Source Using Transmission Rod with Different Cross-Sectional Area**
○Yoshihiro Miyata, Takuya Asami, Hikaru Miura (Nihon Univ.)
- 2Pb4-6* Examination of Arrangement of facing ultrasonic transducer arrays for design of omnidirectional loudspeaker**
○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**
○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**
○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**
○Seiji Nakagawa, Koichiro Doi, Sho Otsuka (Chiba Univ.)
- 2Pb5-3* Acoustic characterization of lipid bubbles with different shell property**
○Chiaki Kaneko¹, Yiting Zhang², Taro Toyota², Hideki Hayashi¹, Shinnosuke Hirata¹, Tadashi Yamaguchi¹, Kenji Yoshida¹ (¹Chiba Univ., ²Univ. of Tokyo)
- 2Pb5-4* Evaluation of elastic change during mitotic phase of murine breast cancer cells using scanning acoustic microscope**
○Thomas Tiong Kwong Soon¹, Ruka Sasaki¹, Edo Bagus Prastika¹, Yuki Kawaguchi², Kazuto Kobayashi², Naohiro Hozumi¹, Sachiko Yoshida¹ (¹Toyohashi Univ. of Tech., ²Honda Electronics)
- 2Pb5-5 Blood flow imaging of thyroid and carotid artery using singular value decomposition filter**
○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**
○Daisuke Hatamoto^{1,2}, Makoto Yamakawa², Tsuyoshi Shiina², Naoshi Nishida³, Masatoshi Kudo³
(¹Shizuoka collage of medicalcare science, ²Kyoto Univ., ³Kindai Univ.)
- 2Pb5-7 Evaluation of collagen release from cultured human fibroblasts via ultrasonic microscope**
○Shigehisa Satake¹, Taichi Shintani¹, Shizuka Nakada¹, Thomas Tiong Kwong Soon¹, Edo Bagus Prastika¹, Kazuto Kobayashi², Naohiro Hozumi¹, Sachiko Yoshida¹ (¹Toyohashi Univ. of Tech., ²Honda 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**
 ○Yu Obara¹, Shohei Mori¹, Masumi Iwai-Takano^{1,2}, Mototaka Arakawa¹, Hiroshi Kanai¹
 (¹Tohoku Univ., ²Fukushima Med. Univ.)
- 2Pb5-9 Study on Applying Deep Learning to Reverberation Artifacts in Ultrasound Diagnosis**
 ○Yu Terada¹, Yos hiki Watanebe¹, Tatsuki Koike¹, Takashi Azuma², Shu Takagi¹ (¹Univ. of Tokyo, ²Lily 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**
 ○Yuto Shoji¹, Shohei Mori¹, Mototaka Arakawa¹, Shigeo Ohba¹, Kazuto Kobayashi², Hiroshi Kanai¹
 (¹Tohoku Univ., ²Honda Electronics)
- 2Pb5-11 A basic study on ultrasound noninvasive measurement of temperature elevation inside biological tissue cauterized by radiofrequency catheter ablation**
 ○Michio Takeuchi¹, Toshihiko Sakai¹, Yusuke Oshima², Yasuhiro Kojima², Kenji Mori², Masaaki Omura³, Ryo Nagaoka³, Hideyuki Hasegawa³ (¹Tateyama Kagaku Co., Ltd., ²Japan Lifeline Co., Ltd., ³Univ. of Toyama)
- 2Pb5-12 Ultrasonic velocity change imaging of blood vessels in the forearm of living body**
 ○Yuki Minami¹, Yuki Ito¹, Hana Sonoda¹, Tetsuya Matsuyama¹, Kenji Wada¹, Koichi Okamoto¹, Toshiyuki Matsunaka²
 (¹Univ. of Osaka Pref., ²TU Research Lab.)
- 2Pb5-13* Examination of validity of sample preparation method for speed of sound evaluation in ultra-high frequency band**
 ○Suguru Seto¹, Kazuma Noguchi¹, Kazuki Tamura², Shinnosuke Hirata¹, Kenji Yoshida¹, Tadashi Yamaguchi¹
 (¹Chiba Univ., ²Hamamatsu Univ. School of Med.)

15:45-16:45 Measurement techniques II

Chair: Hirotsugu Ogi (Osaka Univ.)

- 2E3-1 Noncontact measurement of liquid viscosity in a soft container using free vibration after acoustic irradiation**
 ○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**
 ○Mohd Syaryadhi, Norio Tagawa (Tokyo Met Univ.)
- 2E3-3* A deep autoencoder for ultrasonic image denoising in point contact excitation and detection method**
 ○Himanshu Singh¹, Anowarul Habib², Frank Melandsø², Balpreet Singh Ahluwalia², Sk Arif Ahmad²
 (¹Indian Inst. of Tech. Guwahati, ²UiT The Arctic Univ. of Norway)
- 2E3-4 Underwater Acoustic Positioning Using Time-of-flight Signal Blocks**
 ○Tohru Yoshihara¹, Tadashi Ebihara², Koichi Mizutani², Yuma Sato¹ (¹Aomi Construction, ²Univ. 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**
 ○Soraki Fuchiwaki, Yuji Wada, Kentaro Nakamura (Tokyo Tech.)
- 2E4-2* Model-free Reinforcement Learning for Speed Control of Ultrasonic Motors**
 ○Abdullah Mustafa¹, Tatsuki Sasamura¹, Tokuo Sashida², Susumu Miyake¹, Takeshi Morita¹
 (¹Univ. of Tokyo, ²Shinsei Corp.)
- 2E4-3* Thermoacoustic Streaming**
 ○Wei Qiu¹, Jonas H. Joergensen², Enrico Corato¹, Henrik Bruus², Per Augustsson¹
 (¹Lund Univ., ²Tech. Univ. of Denmark)
- 2E4-4* Sonic shrinking of Pickering-stabilised ultrasound contrast agent at a low acoustic amplitude**
 ○Nicole Anderton¹, Craig S. Carlson², Ryunosuke Matsumoto³, Ri-ichiro Shimizu³, Albert T. Poortinga⁴, Nobuki Kudo³, Michiel Postema^{1,2} (¹Tampere Univ., ²Univ. of Witwatersrand, ³Hokkaido Univ., ⁴Eindhoven Univ. of Tech.)

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

Chair: Mami Matsukawa (Doshisha Univ.)

- 2E5-1*** **Impact of interface damping in high-frequency surface-wave resonances on nanostrip-attached substrates**
 ○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**
 ○Teguh Firmansyah^{1,2}, Gunawan Wibisono², Eko Tjipto Rahardjo², Jun Kondoh¹ (¹Shizuoka Univ., ²Univ. of Indonesia)
- 2E5-3*** **Effect of electric field on elastic properties of BaTiO₃ single crystals: A micro-Brillouin scattering study**
 ○M. A. Helal^{1,2}, S. Kojima¹ (¹Univ. of Tsukuba, ²Begum 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**
 ○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**
 ○Kohei Ueda¹, Shin-ichiro Umemura^{1,2}, Shin Yoshizawa^{1,2} (¹Tohoku Univ., ²SONIRE Therapeutics)
- 3J1-3*** **Validation of damage on vascular endothelial cells under ultrasound exposure according to adhered density of bubbles**
 ○Yoshiki Ito¹, Tatsuya Saito¹, Naoya Kajita¹, Yoshitaka Miyamoto², Ryo Suzuki³, Kazuo Maruyama³, Daiki Omata³, Kohji Masuda¹ (¹Tokyo Univ. of A&T, ²National Center for Child Health and Development, ³Teikyo Univ.)
- 3J1-4** **Relationship between size and translational velocity of bubbles driven by acoustic radiation force**
 ○Kenji Yoshida¹, Masaaki Omura^{1,2}, Shinnosuke Hirata¹, Tadashi Yamaguchi¹ (¹Chiba Univ., ²Univ. 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**
 ○Michio Kadota, Yoshimi Ishii, Shuji Tanaka (Tohoku Univ.)
- 3J2-2** **Vibration Analysis of the Complex Bar Resonator with Longitudinal-torsional Vibration Converter**
 ○Subaru Kudo (Ishinomaki Senshu Univ.)
- 3J2-3** **Shortening interval of burst waveform undersampling measurement of ball SAW sensor for characterizing metal surface morphology**
 ○Toshihiro Tsuji¹, Hideyuki Fukushi², Toru Oizumi², Nobuo Takeda², Takamitsu Iwaya², Shingo Akao², Yusuke Tsukahara², Kazushi Yamanaka², Yoshikazu Ohara¹, Tsuyoshi Mihara¹ (¹Tohoku Univ., ²Ball Wave Inc.)

11:15-12:15 Poster Session

Chair: Shinnosuke Hirata (Chiba Univ.)

- 3Pa1-1*** **Influence of Atmosphere on the Polarization of PbTiO₃/Pb(Zr, Ti)O₃**
 ○Yuki Matsuda, Kohei Hirakawa, Makiko Kobayashi (Kumamoto Univ.)
- 3Pa1-2** **Novel system for fabrication of pico-liter droplets with high viscosity**
 ○Shujiro Mitani, Keiji Sakai (Univ. of Tokyo)
- 3Pa1-3*** **Numerical analysis of ultrasonic wave propagating through a thin plate stacked structure**
 ○Takaaki Fukuchi, Naoki Mori, Takahiro Hayashi (Osaka Univ.)
- 3Pa1-4** **Ultrafast imaging and simulation of cavity modes in a phononic crystal**
 ○Paul H. Otsuka¹, Ryota Chinbe¹, Motonobu Tomoda¹, Osamu Matsuda¹, Yukihiro Tanaka¹, Dieter M. Profunser¹, Sihan Kim², Heonsu Jeon², Istvan A. Veres³, Alex A Maznev⁴, Oliver B. Wright¹
 (¹Hokkaido Univ., ²Seoul National Univ., ³Research Center for Nondestructive Testing, ⁴Massachusetts Inst. Tech.)

- 3Pa1-5* Fabrication of LiNbO₃/Al₂O₃ Ultrasonic Transducer**
 ○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**
 ○Koji Matsuura, Nobutomo Nakamura, Ryuichi Tarumi, Hirotsugu Ogi (Osaka Univ.)
- 3Pa2-2* Development of 30-GHz phonon biosensor using graphite thin-film resonator**
 ○Takuya Haraguchi¹, Akira Nagakubo¹, Kensuke Murashima², Mutsuaki Murakami², Hirotsugu Ogi¹
 (¹Osaka Univ., ²KANEKA Corporation)
- 3Pa2-3 Detection of micro-defects by acoustic waves propagating in topographic waveguide**
 ○Harumichi Sato, Hisato Ogiso (AIST)
- 3Pa2-4* Investigation of sound pressure waveforms observed using surface plasmon resonance sensors**
 ○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**
 ○Tsuyoshi Yamaguchi, Tatsuro Matsuoka (Nagoya Univ.)
- 3Pa2-6* QCM method using 100MHz SC-cut crystal units- examination of viscoelastic loads -**
 ○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**
 ○Tatsuya Nanba, Masashi Ishikawa, Hideo Nishino (Tokushima Univ.)
- 3Pa2-8 Measurement of mechanical properties of liquid by observation of droplet oscillation on substrate**
 ○Satoshi Ishida¹, Mika Iga¹, Shujiro Mitani², Keiji Sakai² (¹Nippon Paint Holdings, ²Univ. of Tokyo)
- 3Pa3-1* Deposition and Evaluation of Ta₂O₅ Piezoelectric Thin Film on Pt Crystal Film**
 ○Keisuke Matsuura¹, Masashi Suzuki¹, Shoji Kakio¹, Masanori Kodera², Hiroshi Funakubo²
 (¹Univ. of Yamanashi, ²Tokyo Tech.)
- 3Pa3-2* Growth of polarity inverted SiAlN/AlN multilayered films and applications to high-order mode BAW resonators**
 ○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**
 ○Takumi Tominaga¹, Shinji Takayanagi¹, Takahiko Yanagitani² (¹Doshisha Univ., ²Waseda Univ.)
- 3Pa4-1* Laser Diffraction Caused by Shockwaves from Acoustic Cavitation Bubbles**
 ○Fumitaka Yokoyama¹, Takanobu Kuroyama², Naoto Wakatsuki¹, Tadashi Ebihara¹, Koichi Mizutani¹
 (¹Univ. of Tsukuba, ²NIT, Gifu College)
- 3Pa4-2 Threshold pressure of focused ultrasound at 1 MHz in sonochemiluminescence**
 ○Pak-Kon Choi¹, Takumi Akiu¹, Shogo Minowa¹, Jungsoon Kim², Moojoon Kim³
 (¹Meiji Univ., ²Tongmyong Univ., ³Pukyong Natl. Univ.)
- 3Pa4-3 Remediation of Polychlorinated Biphenyls (PCBs) contaminated soils using ultrasonic washing process**
 ○Dukyong Lee, Jongbok Choi, Younggyu Son (Kumoh Natl. Inst. of Tech.)
- 3Pa4-4* Temperature Compensation of Ultrasonic Transducer Using Dynamic Resonant Frequency Control**
 ○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**
 ○Hayao Ando, Takuya Asami, Hikaru Miura (Nihon Univ.)
- 3Pa4-6* Sound field between an object and an ultrasonic non-contact sensor using radiation impedance**
 ○Natsumi Nakaoka, Daisuke Koyama (Doshisha Univ.)
- 3Pa4-7 Study of longitudinal-torsional vibration source using stepped horn with hollow part**
 ○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
 ○Kyohei Higashiyama¹, Shohei Mori¹, Mototaka Arakawa¹, Satoshi Yashiro², Yasushi Ishigaki², Hiroshi Kanai¹
 (¹Tohoku Univ., ²Iwate Medical Univ.)
- 3Pa5-2*** Evaluation of relationship between liver structure and frequency dependency of speed of sound and attenuation
 ○Mai Ino¹, Kazuma Noguchi¹, Suguru Seto¹, Masaaki Omura^{1,2}, Kazuki Tamura³, Shinnosuke Hirata¹, Kenji Yoshida¹,
 Tadashi Yamaguchi¹ (¹Chiba Univ., ²Univ. of Toyama, ³Hamamatsu Univ. School of Med.)
- 3Pa5-3*** Design of robust broadband filter based on truncated singular value decomposition for ultrasound received signal matrix
 ○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
 ○Taiga Bando¹, Shohei Mori¹, Hiroshi Kanai¹, Eiko Onishi², Masanori Yamauchi², Mototaka Arakawa¹
 (¹Tohoku Univ., ²Tohoku Univ. Hosp.)
- 3Pa5-5*** Evaluation of reliability in measured local displacement inside carotid plaque to improve elasticity measurement accuracy
 ○Yuta Haji¹, Shohei Mori¹, Mototaka Arakawa¹, Toshio Yamagishi², Hiroshi Kanai¹
 (¹Tohoku Univ., ²Tohoku Kosai Hosp.)
- 3Pa5-6*** On the investigation of separation between reflection and backscattering components by plane wave imaging for estimation of surface roughness
 ○Kazuhiro Tochigi¹, Ryo Nagaoka¹, Jens E. Wilhjem², Hideyuki Hasegawa¹
 (¹Univ. of Toyama, ²Tech. Univ. of Denmark)
- 3Pa5-7*** Improvement in Spatial Resolution of a Two-Dimensional Sparse Array Probe by Mechanical Scanning
 ○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
 ○Ryota Kabata¹, Jun Orihara¹, Junko Yotsuya², Masayuki Tanabe¹ (¹Kumamoto Univ., ²Fukui Univ.)
- 3Pa6-1** Analysis of the relationship between frequency offset and Doppler effect of phase modulation method for wireless communication of underwater vehicles
 ○Jihyun PARK¹, Chaehui LEE¹, Yoseop HWANG², Kyu-Chil PARK¹ (¹Pukyong Natl. Univ., ²CILAB Co., Korea)
- 3Pa6-2*** Performance of Improving Image Quality using DAE Algorithm in Underwater Fading Channel
 ○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
 ○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
 ○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 Research and Development in Academia and Industry in Area of Ultrasonic Electronics for Medicine

○Shin-ichiro Umemura (Tohoku Univ.)

14:00-15:00 Poster Session

Chair: Kazuyoshi Mori (Natl. Defense Academy)

3Pb1-1* Fabrication of Pb(Zr, Ti)O₃-based Bi-Material Sol-Gel Phase Ultrasonic Transducer

○Enya Ogata, Hiroaki Akatsuka, Naoki Kambayashi, Makiko Kobayashi (Kumamoto Univ.)

3Pb1-2* Design of topological phononic structure for multi mode propagation

○Hiroaki Takeshita, Masaaki Misawa, Kenji Tsuruta (Okayama Univ.)

- 3Pb1-3* Longitudinal wave velocity in bones of streptozotocin induced diabetic rat**
 ○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**
 ○Nur M. M. Kalimullah¹, Amit Shelke¹, Anowarul Habib²
 (¹Indian Inst. of Tech. Guwahati, ²UiT The Arctic Univ. of Norway)
- 3Pb2-1 Research on improvement of defect detection accuracy by resonance judgment for noncontact acoustic inspection method**
 ○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**
 ○Dai Chimura (KUMAGAI GUMI CO., LTD.)
- 3Pb2-3 Odorant analysis of sake using a palm sized ball SAW gas chromatograph**
 ○Shingo Akao¹, Takamitsu Iwaya¹, Tatsuhiko Okano¹, Nobuo Takeda¹, Yusuke, Tsukahara¹, Toru Oizumi¹, Hideyuki Fukushi¹, Tomoki Tanaka¹, Maki Sugawara¹, Toshihiro Tsuji^{2,1}, Akinobu Takeda¹, Kenichi Suzuki¹, Shigeo Miyagawa¹, Kazushi Yamanaka^{1,2} (¹Ball Wave Inc., ²Tohoku Univ.)
- 3Pb2-4 3-D FDTD simulation of moving sound source and receiver**
 ○Takao Tsuchiya, Yu Teshima, Shizuko Hiryu (Doshisha Univ.)
- 3Pb2-5 Internal vibration of active faults and lateral pulse generation mechanism**
 ○Toshiaki Kikuchi¹, Koichi Mizutani² (¹Natl. Defense Academy, ²Univ. of Tsukuba)
- 3Pb2-6* Indoor Self-Localization of Moving Vehicle Using Acoustic Multipath Arrival Time**
 ○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**
 ○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**
 ○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**
 ○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**
 ○Shinji Baba, Jun Kondoh, Naoki Horikawa (Shizuoka Univ.)
- 3Pb4-1 Synthesis of porous γ -Fe₂O₃ from scorodite synthesized using ultrasound irradiation and evaluation of its battery performance**
 ○Yuya Kitamura¹, Hirokazu Okawa¹, Kozo Shinoda², Takahiro Kato¹, Katsuyasu Sugawara¹
 (¹Akita Univ., ²Tohoku Univ.)
- 3Pb4-2 Initial Growth and Subsequent Unstable Oscillation of Single Bubble**
 ○Takanobu Kuroyama (NIT, Gifu College)
- 3Pb4-3 Specific effect of ultrasonic irradiation on amyloid-fibril formation reaction**
 ○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**
 ○Kota Yokoyama^{1,2}, Takashi Kasashima², Susumu Miyake¹, Takeshi Morita¹
 (¹Univ. of Tokyo, ²NGK SPARK PLUG Co., Ltd.)
- 3Pb4-5 Experimental Verification of Nonlinear Attenuation of Airborne Ultrasound**
 ○Takayuki Hoshi, Yoshiki Ooka (Pixie Dust Technologies)
- 3Pb4-6* Agglomeration experiment using enlarged volume by two ultrasonic sound sources using cylinder type vibrating plate**
 ○Yusuke Hoda, Takuya Asami, Hikaru Miura (¹Nihon Univ.)

- 3Pb4-7* Design of High-efficiency Sound Absorption and Energy Harvesting Devices Using Acoustic Metasurfaces**
○Ryota Takami , Masaaki Misawa , Kenji Tsuruta (Okayama Univ.)
- 3Pb5-1* Fabrication of Two-Dimensional Sparse Array Probe Based on Sol-gel Composite Spray Technique**
○Masayuki Ishii, Masayuki Tanabe, Makiko Kobayashi (Kumamoto Univ.)
- 3Pb5-2* Visualization of subcutaneous flow tract using SVD filtering of ultrafast high frequency ultrasound imaging**
○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**
○Shota Yoshisue, Masayuki Tanabe (Kumamoto Univ.)
- 3Pb5-4* Effect of temporal bone structure on Transcranial Doppler measurements**
○Hidehisa Suzuyama¹, Kazuki Miyashita¹, Yasuyo Kobayashi², Kozue Saito², Mami Matsukawa¹
(¹Doshisha Univ., ²Nara Medical Univ.)
- 3Pb5-5* Evaluation of cerebral artery occlusion by simple measurement of pulse wave at carotid artery**
○Takuma Shimada¹, Mami Matsukawa¹, Miho Ohsaki¹, Yasuyo Kobayashi², Kozue Saito², Hiroshi Yamagami³
(¹Doshisha Univ., ²Nara Medical Univ., ³Osaka 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**
○Nozomi Obara, Shin ichiro Umemura , Shin Yoshizawa (Tohoku Univ.)
- 3Pb5-7* Axial Transmission technique for evaluation of bone with mild periostitis.**
○Kazuki Miyashita¹, Hidehisa Suzuyama¹, Ko Chiba², Hiroshi Mita³, Norihisa Tamura³, Mami Matsukawa¹
(¹Doshisha Univ., ²Nagasaki Univ. , ³JRA Equine Research Institute)
- 3Pb5-8 Prediction of otoacoustic emission caused by bone conduction actuator using piezo-electric device**
○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**
○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**
○Erika Numahata¹, Shin-ichiro Umemura¹, Shin Yoshizawa^{1,2} (¹Tohoku Univ., ²SONIRE 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**
○Akiho Isshiki¹, Yuki Ujihara¹, Dar-In Tai², Po-Hsiang Tsui², Kenji Yoshida¹, Tadashi Yamaguchi¹, Shinnosuke Hirata¹
(¹Chiba Univ., ²Chang Gung Univ.)
- 3Pb5-12* Structure extension of 3D liver blood vessel with multiple ultrasound volumes and comparison with MRI**
○Hiromi Iwazaki¹, Kansai Okadome¹, Kosuke Watanabe¹, Kohji Masuda¹, Yoshihiro Edamoto²
(¹Tokyo Univ. of A&T, ²Secomedic Hosp.)
- 3Pb5-13* Adaptive Compound of Angle and Frequency with a Single Plane Wave Transmission**
○Yuta Saito, Norio Tagawa (Tokyo Met Univ.)
- 3Pb5-14* Controlled release of particles included in giant cluster vesicles by exposure of ultrasound**
○Kota Seo¹, Yiting Zhang^{1,2}, Taro Toyota², Hideki Hayashi¹, Shinnosuke Hirata¹, Tadashi Yamaguchi¹, Kenji Yoshida¹
(¹Chiba Univ., ²Univ. of Tokyo)
- 3Pb5-15* High-Resolution Ultrasound Imaging by Adaptive Compounding Using Deep Learning**
○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**
Taizo Maruyama, ○Kazuyuki Nakahata (Ehime Univ.)

3J3-2* Development of a Portable Ball SAW Gas Chromatograph Using Three-layered Metal MEMS Columns
○Takamitsu Iwaya¹, Shingo Akao¹, Kazushi Yamanaka¹, Tatsuhiro Okano¹, Nobuo Takeda¹, Yusuke Tsukahara¹,
Toru Oizumi¹, Hideyuki Fukushi¹, Maki Sugawara¹, Toshihiro Tsuji¹, Tomoki Tanaka¹, Akinobu Takeda¹, Asuka Shima²,
Satoshi Matsumoto², Haruna Sugahara², Takeshi Hoshino², Tetsuya Sakashita² (¹Ball Wave Inc., ²JAXA)

3J3-3* Implementation of Self-Bending Airborne Ultrasonic Beam with a Reflector for Phase-Coded Modulation
○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
○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
○Yuki Ujihara¹, Kazuki Tamura², Shohei Mori³, Dar-In Tai⁴, Po-Hsiang Tsui⁵, Shinnosuke Hirata¹, Kenji Yoshida¹,
Tadashi Yamaguchi¹
(¹Chiba Univ., ²Hamamatsu Univ. School of Med., ³Tohoku Univ., ⁴Chang Gung Memorial Hosp., ⁵Chang Gung Univ.)

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

3J4-3* Comparison of tracking methods of particle distribution in ultrafast ultrasound imaging
○Masaaki Omura¹, Ryo Nagaoka¹, Kunimasa Yagi¹, Kenji Yoshida², Tadashi Yamaguchi², Hideyuki Hasegawa¹
(¹Univ. of Toyama, ²Chiba Univ.)

3J4-4 Basic investigation on identification of tissue composition based on propagation speeds of longitudinal and shear waves
○Naotaka Nitta¹, Toshikatsu Washio¹, Tomokazu Numano² (¹AIST, ²Tokyo 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
○Hyang-Bok Lee¹, Pak-Kon Choi², Kageyama Yuya² (¹Japan Women's Univ., ²Meiji Univ.)

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

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

3J5-4* Variability characteristics of reflected sound waves from sea surface using effective roughness of sea surface
○Tomoya Tsukui¹, Shinnosuke Hirata², Hiroyuki Hachiya³ (¹IHI, ²Chiba Univ., ³Tokyo Tech.)

18:45-19:00 CLOSING