

The 45th Symposium on Ultrasonic Electronics (USE 2024) Program

○ Speaker

* Applying to Young Scientists Award

Monday, November 25

9:45-10:00 **Opening Ceremony**

10:00-10:45 **Biomedical ultrasound I**

Chair: Takuro Ishii (Tohoku Univ.)

1J1-1
[[[S4100]]]

A study on optimal input image conditions for each type of tumor in convolutional neural network for classifying ultrasound images of liver tumors

○Makoto Yamakawa¹, Tsuyoshi Shiina¹, Naoshi Nishida², Masatoshi Kudo² (¹Sibaura Inst. of Tech., ²Kindai Univ.)

1J1-2
[[[S4094]]]

Quantification of biochemical changes in three-dimensional cultured cancer spheroids by high-frequency backscatter and envelope analysis

○Kazuyo Ito¹, Yuta Iijima¹, Kazuki Tamura², Daisuke Yoshino¹ (¹Tokyo Univ. of A&T, ²Hamamatsu Univ. School of Med.)

1J1-3*
[[[S3990]]]

Relationship between sensitivity of cavitation bubble detection and intensity of HIFU pulse inserted between imaging pulses in triplet pulse sequence

○Nao Yoshida¹, Kensuke Ito¹, Shohei Mori¹, Shin Yoshizawa^{1,2} (¹Tohoku Univ., ²SONIRE Therapeutics)

10:45-11:30 **High power ultrasound I**

Chair: Subaru Kudo (Ishinomaki Senshu Univ.)

1J2-1
[[[S3985]]]

Rapid response amplitude control of high-power ultrasonic transducer using deep reinforcement learning

○Tatsuki Sasamura, Yanbo Wang, Takeshi Morita (Univ. of Tokyo)

1J2-2*
[[[S4116]]]

Directional atomization with surface acoustic wave device for artificial pollination of strawberry

○Kosuke Wakayama, Shun Koda, Yuta Bando, Sakura Takahashi, Yuta Kurashina (Tokyo Univ. of A&T)

1J2-3*
[[[S4092]]]

Ultraprecision ultrasonic vibration polishing

○Hibiki Haruta¹, Hakuto Nakano¹, Peerapong Kasuriya², Hidenari Kanai³, Masahiko Jin¹
(¹Nippon Inst. of Tech., ²King Mongkut's Univ. of Tech., ³Kanari Engineering)

11:30-13:00 **Lunch Time**

13:00-13:25 **Plenary Talk I**

Chair: Jun Kondoh (Shizuoka Univ.)

1PL-1

Performance improvement of high-frequency BAW resonators using polarization inverted structures and high-overtone mode resonance

○Masashi Suzuki (Univ. of Yamanashi)

13:25-13:50 **Plenary Talk II**

Chair: Mitsuyasu Deguchi (JAMSTEC)

1PL-2

Characteristics of acoustic cavitation noise as measurement sound source

○Takanobu Kuroyama (Natl. Defense Academy)

14:00-16:00 **Poster Session**

Chair: Naoto Wakatsuki (Tsukuba Univ.)

1P1-1
[[[S3980]]]

New stabilization method of atomic clock with detecting the maximization of coherent-population-trapping resonance signal

○Yusuke Odagiri¹, Satoshi Hatano¹, Yuichiro Yano³, Masahiro Fukuoka³, Motoaki Hara³, Goka Shigeyoshi²
(¹NEOARK, ²Tokyo Met. Univ., ³National Inst. of Tech.)

1P1-2
[[[S4037]]]

Study of physical property of micro droplet impacted on substrate through observation of vibration behavior.

○Mika Iga¹, Satoshi Ishida¹, Shujiro Mitani², Keiji Sakai² (¹Nippon Paint Corporate Solutions, ²Univ. of Tokyo)

- 1P1-3*** **Temporal observation of shear wave propagation in biological tissue during liquid-solid phase change**
[[[S4025]]] ○Kento Shimizu¹, Naoki Tano¹, Ren Koda², Yoshiki Yamakoshi^{1,2}, Marie Tabaru¹ (¹Science Tokyo., ²Gunma Univ.)
- 1P1-4** **Ultrasonic analysis on early stage of amyloid fibril formation of hen egg white lysozyme**
[[[S4074]]] ○Kichitaro Nakajima, Eriko Asanuma, Tomoki Ota, Hirotsugu Ogi (Osaka Univ.)
- 1P1-5*** **Design of multiple-resonant phononic metasurface for sound absorbing and energy harvesting devices**
[[[S4039]]] ○Akira Kojima¹, Julien Cuau², Yuri Fukaya¹, Kenji Tsuruta¹ (¹Okayama Univ., ²Univ. of Poitiers)
- 1P1-6*** **Design on tubular topological phononic waveguides**
[[[S4082]]] ○Yuta Kono, Hiroaki Takeshita, Yusuke Hata, Yuri Fukaya, Kenji Tsuruta (Okayama Univ.)
- 1P1-7** **Band inversion and singularities in one-dimensional phononic crystals**
[[[S4101]]] Takumi Iijima, ○Seiji Mizuno (Hokkaido Univ.)
- 1P1-8*** **Realization of spatio-temporal boundaries using a one-dimensional active mechanical metamaterial**
[[[S4150]]] ○Nobutaro Hoshi, Osamu Matsuda, Motonobu Tomoda (Hokkaido Univ.)
- 1P1-9*** **Photoacoustic waves from rat tibia**
[[[S4152]]] ○Takeru Kuroiwa, Taishi Hattori, Mami Matsukawa (Doshisha Univ.)
- 1P1-10*** **Investigation of AC poling of sol-gel composites**
[[[S4052]]] ○Ryota Ono, Takeshi Hamada, Makiko Kobayashi (Kumamoto Univ.)
- 1P1-11*** **Effect of film quality on PZT/PZT ultrasonic transducers**
[[[S4059]]] ○Haruka Goda¹, Takeshi Hamada¹, Masayuki Tanabe¹, Kosuke Sato², Toru Uda², Makiko Kobayashi¹
(¹Kumamoto Univ. , ²NOK)
- 1P2-1*** **Stereo analysis of cell-cell spatial interrelationship using scanning acoustic microscopy**
[[[S4122]]] ○Maki Shibata¹, Yuki Kawaguchi², Naohiro Hozumi¹, Kazuki Tamura³, Ryo Nagaoka⁴, Kazuto Kobayashi², Sachiko Yoshida¹
(¹Toyoashi Univ. of Tech., ²Honda Electronics, ³Hamamatsu Univ. School of Med., ⁴Univ. of Toyama)
- 1P2-2*** **Evaluation of mechanical properties using transient vibration excited by acoustic radiation force**
[[[S3977]]] ○Motoi Otani, Hideyuki Nomura (Univ. of Electro-Comm.)
- 1P2-3*** **Intense laser-induced Lamb waves generated on a spherical shell enough to allow transdermal drug delivery**
[[[S4136]]] ○So Nishida, Koji Aizawa (Kanazawa Inst. of Tech.)
- 1P2-4*** **Ultrasonic power measurement by two-layer calorimetric water vessel**
[[[S3986]]] ○Choyu Uehara¹, Takeyoshi Uchida² (¹Shimane Univ. Hosp., ²AIST)
- 1P2-5** **Two-dimensional FDTD simulation of moving sources with arbitrary directivity**
[[[S3945]]] ○Takao Tsuchiya, Kei Inoue (Doshisha Univ.)
- 1P2-6** **Development of a Measurement Method of Bulk Acoustic Wave Properties for Thin Films by Ultrasonic Microspectroscopy Technology**
[[[S4144]]] ○Yuji Ohashi¹, Jun-ichi Kushibiki¹, Kentaro Totsu¹, Shigeharu Matsumoto², Takanori Shirai², Yosuke Inase², Hiroaki Takeno³, Takahiro Ito³ (¹Tohoku Univ., ²Shincron Co., Ltd., ³GEOMATEC Co., Ltd.)
- 1P2-7*** **Numerical simulation for estimating the location and orientation of a crack focus on ultrasonic mode conversion**
[[[S4164]]] ○Masatoshi Mochizuki¹, Naoto Wakatsuki¹, Tadashi Ebihara¹, Yuka Maeda¹, Koichi Mizutani¹, Ryusuke Miyamoto²
(¹Univ. of Tsukuba, ²Tokyo Univ. Marine Sci. Tech.)
- 1P2-8*** **Improving the accuracy of ultrasound CT images using CNN**
[[[S4125]]] ○Masaki Yamashita, Yuki Mimura, Hiroataka Yanagida (Yamagata Univ.)
- 1P2-9** **Application of ultrasonic immersion testing for evaluating flexible printed circuit (FPC)**
[[[S4018]]] ○Toshihiro Tsuji¹, Shoji Yasuda², Keiichi Miyajima², Tsuyoshi Mihara¹ (¹Shimane Univ., ²MEKTEC)
- 1P2-10*** **Study on on-site fabrication of Bi₄Ti₃O₁₂/TiO₂+SrCO₃ by a rubber heater**
[[[S4058]]] ○Mako Nakamura, Takeshi Hamada, Ryota Ono, Kei Nakatsuma, Makiko Kobayashi (Kumamoto Univ.)
- 1P2-11*** **Anomaly detection for split concrete utility poles using autoencoder and Mahalanobis distance**
[[[S3984]]] ○Naoki Furuya¹, Eiji Iwatsuki¹, Teruyuki Kozuka¹, Takahiro Iwata¹, Masahiro Toyoda², Norio Tsuda¹
(¹Aichi Inst. Tech., ²Honda Electronics)

- 1P2-12** **The Hypocenter structure of the earthquake off the southeast coast of the Kii Peninsula and its primary source**
[[[S4030]]] ○Toshiaki Kikuchi (Natl. Defense Academy)
- 1P2-13*** **Statistical Generation of Echo Waveform Obtained by a Single Acoustic Transmitter and Receiver at Unmeasured Locations**
[[[S4166]]] ○Atsushi Tsuchiya, Naoto Wakatsuki, Tadashi Ebihara, Keiichi Zempo, Koichi Mizutani (Univ. of Tsukuba)
- 1P2-14*** **Development of a simultaneous measurement system of wireless-electrodeless QCM and optical microscopy for monitoring changes in mechanical properties of live cells in culture**
[[[S3998]]] ○Motoyuki Hamana, Natsumi Fujiwara, Hirotsugu Ogi (Osaka Univ.)
- 1P3-1*** **Development of a surface acoustic wave sensor measurement system using a compact vector network analyzer**
[[[S4055]]] ○Keiichiro Shibata, Jun Kondoh (Shizuoka Univ.)
- 1P3-2** **Consideration of Design Guidelines for Piezoelectric Vibratory Tactile Sensors**
[[[S4029]]] ○Subaru Kudo (Ishinomaki Senshu Univ.)
- 1P3-3** **Consideration of Feedback Mechanism in Depolarizing Field in Dielectric Material and Piezoelectric Transducer**
[[[S3949]]] ○Michio Ohki (Natl. Defense Academy)
- 1P3-4*** **Intrinsic k_{33}^2 evaluation method from HBAR without substrate removal using ratio of dielectric constant ϵ^T and ϵ^S**
[[[S4184]]] ○Kohei Ekida^{1,2}, Yohkoh Shimano^{1,2}, Takahiko Yanagitani^{1,2} (¹Waseda Univ., ²ZAIKEN)
- 1P3-5*** **SAW excitation by solid flat electrode on periodically polarization inverted structure**
[[[S4185]]] ○Satoshi Matsumura^{1,2}, Yohkoh Shimano^{1,2}, Naoki Ohno^{1,2}, Takahiko Yanagitani^{1,2} (¹Waseda Univ., ²ZAIKEN),
- 1P3-6*** **Propagation characteristics of shear-horizontal-mode acoustic waves transmitted circumferentially around ZnO film/silica glass pipe structure under liquid loading**
[[[S4178]]] ○Sodai Yamaguchi¹, Shinji Takayanagi¹, Takahiko Yanagitani² (¹Doshisha Univ., ²Waseda Univ.)
- 1P3-7*** **Comparison of frequency shift under liquid loading at different resonant frequencies of thickness shear mode resonators**
[[[S4180]]] ○Naoki Sako¹, Shinji Takayanagi¹, Takahiko Yanagitani² (¹Doshisha Univ., ²Waseda Univ.)
- 1P3-8*** **High overtone mode BAW resonators with polarization inverted multilayer ScAlN/SiAlN films**
[[[S3996]]] ○Kei Fukunaga, Masashi Suzuki, Shoji Kakio (Univ. of Yamanashi)
- 1P3-9*** **Evaluation of electromechanical coupling coefficients of (K,Na)NbO₃ films deposited by RF sputtering**
[[[S4158]]] ○Yuta Nakayama, Masashi Suzuki, Shoji Kakio (Univ. of Yamanashi)
- 1P4-1*** **Attempt to levitate and transport a flat plate between horizontally opposed bending vibrating plates**
[[[S4067]]] ○Hiroto Tachibana¹, Hideki Tamura², Manabu Aoyagi¹ (¹Muroran Inst. of Tech., ²Tohoku Inst. of Tech.)
- 1P4-2** **Evaluation of acoustic radiation force on iron spheres in standing wave field**
[[[S4038]]] ○Teruyuki Kozuka¹, Syuto Marume¹, Kenichi Narita¹, Tomoo Kamakura², Masahiro Toyoda³, Shin-ichi Hatanaka⁴ (¹Aichi Inst. Tech., ²Univ. of Electro-Comm., ³Honda Electronics, ⁴Utsunomiya Univ.)
- 1P4-3*** **Application of reinforcement learning in phase control of mid-air ultrasonic haptics**
[[[S3966]]] ○Mifuka Nakamura, Nobuya Sato, Daisuke Mizushima (Aichi Inst. Tech.)
- 1P4-4*** **Visualizing Ultrasound Responsiveness of Ion Channel Receptors for Sonogenetics**
[[[S4096]]] ○Lisa Mitsuda¹, Shun Koda¹, Shigenori Miura², Yuta Kurashina¹ (¹Tokyo Univ. of A&T, ²Hiroshima Univ.)
- 1P4-5*** **Effects of high frequency ultrasound caused by lithium niobate on the intracellular generation of reactive oxygen species**
[[[S4064]]] ○Kotaro Fujishiro¹, Ryota Kawamae¹, Satoshi Okada², Takahiro Kuchimaru³, Yuta Kurashina¹ (¹Tokyo Univ. of A&T, ²Science Tokyo, ³Jichi Medical Univ.)
- 1P4-6*** **Rayleigh wave excitation at multiple frequencies by an elliptical reflector focusing structure**
[[[S4012]]] ○Kyohei Yamada¹, Shoki Ieiri¹, Shinsuke Itoh², Takashi Kasashima², Chikahiro Imashiro¹, Jens Twiefel³, Takeshi Morita¹ (¹Univ. of Tokyo, ²Niterra, ³Hannover Univ.)

- 1P4-7*** **Effects of the input voltage waveform on ultrasonic liquid crystal optical lenses**
[[[S4153]]] ○Ryoya Mizuno¹, Akira Emoto², Daisuke Koyama¹ (¹Doshisha Univ., ²Tokushima Univ.)
- 1P4-8** **Atomization of various solutions using SAW devices**
[[[S4071]]] ○Hiroki Ichihara, Yuki Shimizu, Jun Kondoh (Shizuoka Univ.)
- 1P4-9** **Acoustic and Pathological Analysis of High Intensity Focused Ultrasound Exposed Biological Soft Tissue**
[[[S4103]]] ○Ryo Takagi¹, Kazuki Tamura², Kazuyo Ito³, Katsutoshi Miura²
(¹AIST, ²Hamamatsu Univ. School of Med., ³Tokyo Univ. of A&T)
- 1P4-10** **Effects of Two Different Inner Diameter Tubes on Onset Temperature in a Loop-Tube Thermoacoustic Prime Mover**
[[[S4021]]] ○Shin-ichi Sakamoto, Satoru Ono, Satoshi Hirayama (Univ. of Shiga Pref.)
- 1P5-1** **Study about ultrasound high precision imaging/therapy with frequency modulation and nonlinear processing**
[[[S4060]]] ○Chikayoshi Sumi (Sophia Univ.)
- 1P5-2*** **Deep-learning method based on tri-frequency ultrasound images for high-resolution observation of live cells in culture**
[[[S3967]]] ○Midori Uno¹, Natsumi Fujiwara¹, Akira Nagakubo², Masahiro Kino-oka¹, Hirotsugu Ogi¹ (¹Osaka Univ., ²Tohoku Univ.)
- 1P5-3** **The effect of non-invasive selective mechanical stimulation for the cell nucleus by focused ultrasound**
[[[S3978]]] ○Natsumi Fujiwara, Shao Ying Tan, Mee-Hae Kim, Masahiro Kino-oka, Hirotsugu Ogi (Osaka Univ.)
- 1P5-4*** **Estimation of thermal coagulation region induced by bubble-enhanced ultrasonic heating using numerical simulation**
[[[S3987]]] ○Gen Miura¹, Shohei Mori¹, Shin Yoshizawa^{1,2} (¹Tohoku Univ., ²SONIRE Therapeutics)
- 1P5-5** **Effect of Cortical Bone Layer on Piezoelectric Signal Generated in Cancellous Bone**
[[[S3944]]] ○Atsushi Hosokawa (Natl. Inst. Tech., Akashi Coll.)
- 1P5-6** **Three-Dimensional Observation of Mitotic Phase Cells Using Ultrasound Microscopy**
[[[S3995]]] ○Yuki Kawaguchi¹, Ryo Nagaoka², Kazuto Kobayashi¹, Naohiro Hozumi³, Sachiko Yoshida³
(¹Honda Electronics, ²Univ. of Toyama, ³Toyohashi Univ. of Tech.)
- 1P5-7*** **Investigation of noise reduction filters using singular value decomposition for shear wave elastography**
[[[S4002]]] ○Rikuto Suzuki¹, Ryo Nagaoka², Masaaki Omura², Hideyuki Hasegawa² (¹Univ. of Toyama, ²Univ. of Toyama)
- 1P5-8*** **Estimation of Oxygen Saturation in Microvessels Using Photoacoustic Microscopy with Two-Wavelength Laser**
[[[S4019]]] ○Riku Suzuki, I Gede Eka Sulistyawan, Takuro Ishii, Yoshifumi Saijo (Tohoku Univ.)
- 1P5-9*** **Effect of Transmission Patterns on 2C-3D Flow Vector Estimation with a 2D Matrix Array Transducer**
[[[S4020]]] ○Kei Mitsui, Kaya Takakusagi, Takuro Ishii, Yoshifumi Saijo (Tohoku Univ.)
- 1P5-10*** **Automatic Detection of Vessel Lumen by RF Signal Analysis of Intravascular Ultrasound**
[[[S4023]]] ○Kohei Maruyama, Takuro Ishii, Riku Suzuki, Anam Bhatti, Hiroyuki Yagami, Yoshifumi Saijo (Tohoku Univ.)
- 1P5-11*** **RF Signal-Based Tracking of Swallowing-related Muscle Movement**
[[[S4027]]] ○Sayaka Kawakami, Takuro Ishii, Akari Sawada, Jun Ohta, Yukio Katori, Yoshifumi Saijo (Tohoku Univ.)
- 1P5-12*** **Estimation of flow velocity vectors using two types of multi-angle Doppler methods on stenosed blood vessel models**
[[[S4028]]] ○Kohei Suzuki¹, Masaaki Omura¹, Ryo Nagaoka¹, Kozue Saito², Hideyuki Hasegawa¹
(¹Univ. of Toyama, ²Nara Medical Univ.)
- 1P5-13** **Specific acoustic impedance mapping of shrimp scale using scanning acoustic microscopy**
[[[S4032]]] ○Shivam Ojha¹, Komal Agarwal², M Sarim Ameer Khan¹, Amit Shelke¹, Anwarul Habib²
(¹Indian Inst. of Tech., ²UiT The Arctic Univ. of Norway)
- 1P5-14*** **Calibration-free estimation of pressure and elastic modulus of radial artery using ultrasound and photoplethysmography**
[[[S4035]]] ○Ryo Ishikawa¹, Hiroshi Kanai¹, Kazuto Kobayashi², Mototaka Arakawa¹ (¹Tohoku Univ., ²Honda Electronics)

- 1P5-15*** Basic investigation on effects from movement induced by pulsation on a method for estimation of average speed of sound
[[[S4049]]]
○Miku Iida, Ryo Nagaoka, Masaaki Omura, Hideyuki Hasegawa (Univ. of Toyama)
- 1P5-16*** Effect of HIFU reverberation component on estimation of HIFU heating distribution by acoustic radiation force imaging
[[[S4051]]]
○Konosuke Kodama¹, Shohei Mori¹, Shin Yoshizawa^{1,2} (¹Tohoku Univ., ²SONIRE Therapeutics)
- 1P6-1** Propagation of prominent underwater acoustic waves originating near Torishima Island to a wide area in the Pacific Ocean
[[[S4146]]]
○Ryoichi Iwase (JAMSTEC)
- 1P6-2** Analysis of characteristic changes depending on the thickness and aspect ratio of the shell in a class-4 flextensional transducer
[[[S4001]]]
○Moojoon Kim¹, Jungsoon Kim² (¹Pukyong Natl. Univ., ²Tongmyong Univ.)
- 1P6-3** A Study on Sparse Adaptive Equalization Algorithms for Communication with a High-Speed Moving Object in Underwater Acoustic Channels
[[[S4112]]]
○Yukihiro Kida, Mitsuyasu Deguchi, Takuya Shimura (JAMSTEC)
- 1P6-4*** Image Enhancement Using Adjacent Cell-Based Noise Detection Method in Underwater Communication
[[[S4088]]]
○Hyunsoo Jeong, Jihyun Park, Kyu-Chil Park (Pukyong Natl. Univ.)

16:15-17:30 Ultrasonic properties I • Measurement techniques I

Chair: Taichi Hirano (Meiji Univ.)

- 1J3-1** Measurement of dynamic molecular adsorption onto liquid surface by on-substrate droplet horizontal oscillation method
[[[S4022]]]
○Satoshi Ishida¹, Shujiro Mitani², Keiji Sakai² (¹Nippon Paint Corporate Solutions, ²Univ. of Tokyo)
- 1J3-2** Ultrasonic propagation in particle assemblies and solid-coated core-shell particles
[[[S4047]]]
○Mayu Hiromoto, Mayuko Hirano, Tomohisa Norisuye (Kyoto Inst. of Tech.)
- 1J3-3*** Experimental evaluation of Bessel-like ultrasound beam with a single drive system
[[[S3962]]]
○Junnosuke Saito, Hideyuki Nomura (Univ. of Electro-Comm.)
- 1J3-4*** Time-Resolved Two-Dimensional Imaging of sub-GHz Surface Acoustic Waves Induced by Ring-Shaped Optical Excitation
[[[S4068]]]
○Shugo Ogawa, Paul H. Otsuka, Motonobu Tomoda, Osamu Matsuda (Hokkaido Univ.)
- 1J3-5*** Curing Monitoring Method for Underwater Curing Resin Coatings Using Ultrasonic Spectrum Analysis
[[[S4077]]]
○Taiki Okabe, Naoki Mori, Takahiro Hayashi (Osaka Univ.)

17:45-18:30 Steering Committee Meeting

Tuesday, November 26

9:15-10:15 Measurement techniques II • High power ultrasound II

Chair: Takahiro Hayashi (Osaka Univ.)

- 2E1-1** Machine learning assisted characterization of submicron-sized failures in 3D interconnect technologies utilizing scanning acoustic microscopy
[[[S3941]]]
Priya Paulachan¹, Ingo Wiesler², Tatjana Djuric-Rissner², Peter Czurratis², ○Rol Brunner¹ (¹Materials Center Leoben, ²PVA TePla)
- 2E1-2** Detection of Bubble Size and Location using Ultrasound Simulation with Machine Learning
[[[S4036]]]
○Zi Wang, Shu Takagi, Yoshiki Watanabe (Univ. of Tokyo)

2E1-3* Separation and recovery of bitumen from oil sand using CO₂-absorbed amine solution and ultrasound
[[[S4177]]] ○Jie Ren, Hirokazu Okawa, Takahiro Kato (Akita Univ.)

2E1-4* The effects of ultrasonic cavitation and environmental factors on amyloid formation
[[[S4041]]] ○Tomoki Ota, Kichitaro Nakajima, Koya Nakandakari, Keiichi Yamaguchi, Yuji Goto, Hirotsugu Ogi (Osaka Univ.)

10:15-11:30 Ultrasonic properties II • Piezoelectric devices II • Ocean acoustics I
Chair: Kentaro Nakamura (Science Tokyo)

2E2-1* Anomalous elastic behavior associated with magnetic ordering in Cu₂OSeO₃ observed using resonant ultrasound spectroscopy
[[[S3997]]] ○Kanta Adachi¹, Heribert Wilhelm², Marcus Schmidt³, Michael Carpenter⁴
(¹Osaka Univ., ²Helmholtz-Institute Ulm, ³Max Planck Institute, ⁴Univ. of Cambridge)

2E2-2 Mechanical properties estimation of PVDF polymer using scanning acoustic microscopy
[[[S4033]]] ○Amit Shelke¹, Shivam Ojha¹, Biswajoy Ghosh², Md. Mamun Molla³, Frank Melandsø², Azeem Ahmad², Anowarul Habib² (¹Indian Inst. of Tech., ²UiT The Arctic Univ. of Norway, ³North South Univ.)

2E2-3 Piston like design for longitudinal resonance suppression on SAWs
[[[S3957]]] ○Zijiang Yang, Ting Wu, Jingfu Bao, Ken-ya Hashimoto (Univ. of Electronic Sci. and Tech. of China)

2E2-4* Vibration characterization of Elliptical Reflector Focusing Transducer for High-power Bulk-Wave Acoustophoresis
[[[S4070]]] ○Zhirui Chen¹, Chikahiro Imashiro¹, Wei-quan Wang¹, Wei Qiu², Takeshi Morita¹ (¹Univ. of Tokyo, ²Lund Univ.)

2E2-5* Investigation of Parameter Determination Method for Basis Pursuit Denoising in Underwater Acoustic Communication Using Orthogonal Signal Division Multiplexing
[[[S4087]]] ○Ryoichi Ishijima, Tadashi Ebihara, Naoto Wakatsuki, Yuka Maeda, Koichi Mizutani (Univ. of Tsukuba)

11:30-13:00 Lunch Time

13:00-13:50 Plenary Talk III **Chair: Mami Matsukawa (Doshisha Univ.)**
2PL Ultrasound and microbubbles for anticancer drug delivery: From physics to clinics
○Ayache Bouakaz (Univ. of Tours)

14:00-16:00 Poster Session **Chair: Yuji Ohashi (Tohoku Univ.)**

2P1-1 Design of acousto-optic Q-switch with BAW energy removal
[[[S3938]]] ○Vladimir Ya. Molchanov, Alexander I. Chizhikov, Alexander N. Darinskii, Natalya F. Naumenko, Konstantin B. Yushkov (MISIS Univ.)

2P1-2* Dielectric and piezoelectric properties of AC poled relaxor single crystals grown by solid state crystal growth method
[[[S4127]]] ○Xi Chen¹, Yu Xiang¹, Yan Sun¹, Yohachi (John) Yamashita^{1,2}, Ho-Yong Lee³, Hiroshi Maiwa¹
(¹Shonan Inst. of Tech., ²NC State Univ., ³Ceracomp)

2P1-3* Characteristics and magnetic field orientation of Eu-substituted Sr₂NaNb₅O₁₅-based lead-free piezoelectric ceramics
[[[S3947]]] ○Youneng Gao¹, Yutaka Doshida¹, Satoshi Tanaka², Hideki Tamura³, Yoshiki Takano⁴, Satoshi Demura⁴
(¹Ashikaga Univ., ²Nagaoka Univ. of Tech., ³Tohoku Inst. of Tech., ⁴Nihon Univ.)

2P1-4* Low temperature fabrication using Bi₄Ti₃O₁₂ based sol-gel composite
[[[S4061]]] ○Takeshi Hamada, Ono Ryoua, Mako Nakamura, Makiko Kobayashi (Kumamoto Univ.)

2P1-5 Elastic Properties of Glassy Baltic Amber under High-Pressure: Ultrasonic Measurement using Paris–Edinburgh Press
[[[S3979]]] Sergey N. Tkachev¹, Charlie M. Zoeller², Muhtar Ahart², Russell J. Hemley², C. Kenney-Benson³, Vladimir N. Novikov⁴,
○Seiji Kojima⁵ (¹Univ. of Chicago, ²Univ. of Illinois Chicago, ³Argonne Nat. Lab., ⁴Inst. Auto. Elect., ⁵Univ. of Tsukuba)

2P1-6 Acoustic properties of chitosan-GelMA composite hydrogel
[[[S4013]]] ○Komal Agarwal¹, Shivam Ojha², Chirag Agarwal², Frank Melandsø¹, Krishna Agarwal¹, Anowarul Habib¹, Biswajoy Ghosh¹ (¹UiT The Arctic Univ. of Norway, ²Indian Inst. of Tech.)

2P1-7 Scanning Acoustic Microscope for Visualizing 3D Cell Clusters Embedded in Hydrogel Systems
[[[S4075]]] ○Biswajoy Ghosh, Komal Agarwal, Frank Melandsø, Krishna Agarwal (UiT The Arctic Univ. of Norway)

- 2P1-8*** **Enhancement of Brillouin scattering peak by high frequency ultrasound**
[[[S4160]]] ○Chikako Kawato, Shun Kawatani, Taiga Wada, Mami Matsukawa (Doshisha Univ.)
- 2P1-9** **Liquid heating based on interaction between evanescent light and Au nanoparticles**
[[[S3943]]] ○Iwao Matsuya (Tokyo Denki Univ.)
- 2P1-10*** **Hardening and magnetic field orientation behavior of KNN-based lead-free piezoelectric ceramics**
[[[S3948]]] ○Jun Li¹, Zhiwei Zhang¹, Hyo Matsui¹, Yutaka Doshida¹, Satoshi Tanaka², Hideki Tamura³, Yoshiki Takano⁴, Satoshi Demura⁴ (¹Ashikaga Univ., ²Nagaoka Univ. of Tech., ³Tohoku Inst. of Tech., ⁴Nihon Univ.)
- 2P1-11*** **Ultrasonic Scattering Analysis of Colloidal Particle Assemblies Composed of Particles of Different Elastic Modulus**
[[[S3952]]] ○Yuki Tominaga, Mayu Hiromoto, Tomohisa Norisuye (Kyoto Inst. of Tech.)
- 2P2-1*** **Frequency characteristics of surface plasmon resonance ultrasonic receiver**
[[[S4009]]] ○Kota Dezaō, Ayumi Matsudera, Yuki Harada, Mami Matsukawa (Doshisha Univ.)
- 2P2-2** **Research on improving defect detection performance using signal processing during movement measurement with noncontact acoustic inspection method**
[[[S3936]]] ○Yutaka Nakagawa¹, Tsuneyoshi Sugimoto¹, Kazuko Sugimoto¹, Itsuki Uechi¹, Chitose Kuroda², Noriyuki Utagawa², Yasukazu Nihei³ (¹Toin Univ. of Yokohama, ²SatoKogyo, ³FUJIFILM)
- 2P2-3** **Development of a wideband, wide-directivity ultrasonic speaker**
[[[S3976]]] ○Toshiki Imamura, Kenji Ikeda (SECOM Co., Ltd.)
- 2P2-4** **Single Transducer Ultrasound Imaging by Multiple Elements Reception**
[[[S4133]]] ○Mohammad Syaryadhi, Eiko Nakazawa, Norio Tagawa (Tokyo Met.Univ.)
- 2P2-5*** **Sagnac Interferometer with Phase Bias Enhancement by 3x3 Fiber Coupler for Airborne Ultrasound Detection**
[[[S3994]]] ○Zijian Wang, Kentaro Nakamura (Science Tokyo)
- 2P2-6** **Young's modulus distribution of additive manufactured parts measured by laser ultrasonics**
[[[S4147]]] ○Harumichi Sato, Naoko Sato, Hisato Ogiso (AIST)
- 2P2-7*** **Remote detection of deposits in pipes by laser ultrasonics**
[[[S4129]]] ○Takumi Okada, Takahiro Hayashi, Naoki Mori (Osaka Univ.)
- 2P2-8** **Plastic strain-induced nonlinear ultrasonic properties in annular notches in aluminum alloys**
[[[S3974]]] ○Yutaka Ishii¹, Toshihiro Ohtani¹, Toshihito Ohmi¹, Masayuki Kamaya² (¹Shonan Inst. of Tech., ²Institute of Nuclear Safety System Inc.)
- 2P2-9*** **k_{32} evaluation of thin films via piezoelectric stiffening by using ultrasonic reflectometry**
[[[S4182]]] ○Motoshi Suzuki^{1,2}, Yohkoh Shimano^{1,2}, Takahiko Yanagitani^{1,2} (¹Waseda Univ., ²ZAIKEN)
- 2P2-10*** **Method for evaluating mechanical Q_m factor of thin films using GHz pulse echo technique**
[[[S4183]]] ○Yohkoh Shimano^{1,2}, Takahiko Yanagitani^{1,2} (¹Waseda Univ., ²ZAIKEN)
- 2P2-11** **Measurement of ultra-low viscosity under steady shear flow by suspended EMS system**
[[[S4044]]] ○Maiko Hosoda¹, Yoshikazu Yamakawa², Keiji Sakai³ (¹Tokyo Denki Univ., ²Triple Eye Co. LTD., ³Univ. of Tokyo)
- 2P2-12*** **Development of underwater experimental apparatus to confirm the principle of longitudinal wave sound speed CT**
[[[S3988]]] ○Koki Midori, Hiroki Arakawa, Yuki Mimura, Hirotaka Yanagida (Yamagata Univ.)
- 2P2-13** **Coded Signal Scanning Acoustic Microscopy**
[[[S4034]]] ○M Sarim Ameer Khan¹, Shivam Ojha¹, Komal Agarwal², Amit Shelke¹, Azeem Ahmad², Anowarul Habib² (¹Indian Inst. of Tech., ²UiT The Arctic Univ. of Norway)
- 2P3-1*** **Modelling of in-plane diffraction in SAW resonator based on COM model**
[[[S3950]]] ○Yiming Liu, Yiwen He, Yingbo Kang, Zijiang Yang, Jingfu Bao, Ken-ya Hashimoto (Univ. of Electronic Sci. and Tech. of China)
- 2P3-2*** **Study on Finding Range of Rotation Angle for Effective Transverse Mode Suppression Based on Using Dielectric Stripes Structure of Surface Acoustic Wave Resonators**
[[[S3955]]] ○Fangyi Li, Yiwen He, Yiming Liu, Ying Yang, Jingfu Bao, Ken-ya Hashimoto (Univ. of Electronic Sci. and Tech. of China)

- 2P3-3*** **Insertion of Si₃N₄ Layer for Suppression of Hybrid Mode in Low Velocity SAW Resonator**
[[[S3956]]] ○Weijian Zhou, Richeng Hu, Yingbo Kang, Jingfu Bao, Ken-ya Hashimoto (Univ. of Electronic Sci. and Tech. of China)
- 2P3-4*** **S₀-like SAW Mode Resonator Based on LiTaO₃/SiO₂/SiC Platform**
[[[S4011]]] ○Yingbo Kang, Xinzhi Li, Weijian Zhou, Jingfu Bao, Ken-ya Hashimoto (Univ. of Electronic Sci. and Tech. of China)
- 2P3-5** **Analysis of the acoustic field distribution depending on the radius of the circular plate attached to the Langevin transducer**
[[[S4000]]] ○Jungsoon Kim¹, Moojoon Kim² (¹Tongmyong Univ., ²Pukyong Natl. Univ.)
- 2P3-6** **Analysis of the Distribution of the Ultrasonic Field Transmitted into a Solid Cylinder from the Outside**
[[[S4004]]] ○Misun Jo, Moojoon Kim (Pukyong Natl. Univ.)
- 2P3-7*** **Fabrication and evaluation of piezoelectric boundary acoustic wave filter for a gate drive circuit**
[[[S4048]]] ○Kazuya Murakami¹, Masashi Suzuki¹, Shoji Kakio¹, Shigeyoshi Goka² (¹Univ. of Yamanashi, ²Tokyo Met.Univ.)
- 2P3-8*** **Analysis of resonance properties of longitudinal leaky SAW on LiNbO₃/Ca₃TaGa₃Si₂O₁₄ bonded structure**
[[[S4062]]] ○Yuya Kobayashi¹, Masashi Suzuki¹, Shoji Kakio¹, Noritoshi Kimura² (¹Univ. of Yamanashi, ²Piezo Studio)
- 2P3-9*** **Evaluation of Cell Viability Using a Surface Acoustic Wave Device with Silicone Chamber**
[[[S4126]]] ○Shun Koda¹, Takahiro G. Yamada², Hiroaki Onoe³, James Friend², Yuta Kurashina¹ (¹Tokyo Univ. of A&T, ²Univ. of California, ³Keio Univ.)
- 2P4-1*** **Effects of the surface tension of a droplet levitated in an acoustic standing wave on the vibrational behavior**
[[[S4154]]] ○Takaya Hirayama, Daisuke Koyama (Doshisha Univ.)
- 2P4-2** **Topology optimization of large ultrasonic tools for uniform vibration using level-set method**
[[[S3961]]] ○Yuji Wada, Kentaro Nakamura (Science Tokyo)
- 2P4-3*** **Sound pressure distribution in a wet cloth sample in a standing wave sound field formed by two intense aerial ultrasonic sources**
[[[S3982]]] ○Chika Owada, Takuya Asami, Hikaru Miura (Nihon Univ.)
- 2P4-4** **Evaluation of a prototype levitation device using a spherical resonant cavity with a 40 kHz BLT type ultrasound emitter**
[[[S3992]]] ○Hideki Tamura¹, Takashi Kasashima², Shinsuke Itoh², Asuka Tsujii², Hikaru Miura³, Takehiro Takano¹, Manabu Aoyagi⁴ (¹Tohoku Inst. of Tech., ²Niterra Co., Ltd., ³Nihon Univ., ⁴Muroran Inst. of Tech.)
- 2P4-5*** **Analysis of the levitation force acting on a cylinder with a hole placed between vibrating surface and a plane**
[[[S4054]]] ○Yuta Fujioka¹, Yimeng Wang¹, Hideki Tamura², Manabu Aoyagi¹ (¹Muroran Inst. of Tech., ²Tohoku Inst. of Tech.)
- 2P4-6*** **An attempt to catch a falling plate on a vibrating surface without contact**
[[[S4078]]] ○Masaharu Nagahara¹, Hidekazu Kajiwara¹, Hideki Tamura², Manabu Aoyagi¹ (¹Muroran Inst. of Tech., ²Tohoku Inst. of Tech.)
- 2P4-7*** **Enhancement of underwater acoustic streaming using a cylinder with a cavity located away from vibrating surface**
[[[S4079]]] ○Yimeng Wang, Manabu Aoyagi (Muroran Inst. of Tech.)
- 2P4-8** **An Amplification Method of Ultrasonic Monopole Pulse without Reverberation for Precision Ultrasonic Machining**
[[[S4170]]] ○Sayuri Tarvainen, Yuji Watanabe (Takushoku Univ.)
- 2P4-9** **Friction control using ultrasonic vibration and application to sheet metal forming**
[[[S4073]]] Saowalak Kongiang¹, Rudeemas Jankree¹, Sutasn Thipprakmas¹, ○Masahiko Jin² (¹King Mongkut's Univ. of Tech., ²Nippon Inst. of Tech.)
- 2P4-10*** **Miniature Sandwich Type Linear Ultrasonic Motor Utilizing Traveling Flexural Waves**
[[[S3993]]] ○Zhiyi Wen^{1,2}, Yuji Wada¹, Dawei Wu², Kentaro Nakamura¹ (¹Science Tokyo, ²Nanjing Univ.)
- 2P5-1*** **In situ culture conditions of vascular endothelial cells retained on channel wall using microbubbles and acoustic interference modulation**
[[[S4066]]] ○Ayako Noguchi¹, Shunya Watanabe¹, Yoshitaka Miyamoto², Daiki Omata³, Ryo Suzuki³, Kohji Masuda¹ (¹Tokyo Univ. of A&T, ²National Center for Child Health and Development, ³Teikyo Univ.)

- 2P5-2*** **A compact cavity resonant ultrasound transducer for transdermal drug delivery of biopharmaceuticals**
[[[S4072]]] ○Shinya Yamamoto, Naohiro Sugirta, Tadahiko Shinshi (Science Tokyo)
- 2P5-3*** **Development of numerical vessel wall model based on fluid-structure interaction analysis for local pulse wave velocity estimation**
[[[S4080]]] ○Yuki Sakaguchi¹, Masaaki Omura¹, Ryo Nagaoka¹, Kozue Saito², Hideyuki Hasegawa¹
(¹Univ. of Toyama, ²Nara Medical Univ.)
- 2P5-4*** **Application of hybrid attention transformer for increasing spatial resolution of ultrasound human breast images**
[[[S4085]]] ○Chengyen Wu, Chikayoshi Sumi (Sophia Univ.)
- 2P5-5*** **Effectiveness of transformer on U-net segmentation for human ultrasound images**
[[[S4086]]] ○Jiang Zhou, Chikayoshi Sumi (Sophia Univ.)
- 2P5-6** **Examination of characteristics of vibrotactile perception by bone-conducted stimuli presented to the human face**
[[[S4090]]] ○Seiji Nakagawa¹, Ko Uemura², Sho Otsuka¹ (¹Chiba Univ., ²Chiba Univ. Hosp.)
- 2P5-7** **Improvement of reference signal generation method for larger-area measurement using scanning acoustic microscopy**
[[[S4091]]] ○Kazuki Tamura¹, Kazuyo Ito², Genta Hongo³, Tadashi Yamaguchi³
(¹Hamamatsu Univ. School of Med., ²Tokyo Univ. of A&T, ³Chiba Univ.)
- 2P5-8*** **Reconstruction of liver blood vessel network spanning multiple ultrasound volumes using point cloud registration**
[[[S4081]]] ○Kaho Takahashi¹, Koki Tanaka¹, Takeru Kurihara¹, Yoshihiro Edamoto², Kohji Masuda¹
(¹Tokyo Univ. of A&T, ²Secomedic Hosp.)
- 2P5-9** **Examination of generalized removal method of high-intensity non-speckle signals for echo-envelope statistics analysis**
[[[S4095]]] ○Shohei Mori¹, Shin Yoshizawa^{1,2} (¹Tohoku Univ., ²SONIRE Therapeutics)
- 2P5-10*** **Simulation and Experimental Studies of Phase Shift and Adhesion in Biological Tissues**
[[[S4097]]] ○Naoki Tano¹, Ren Koda², Yoshiki Yamakoshi^{1,2}, Marie Tabaru¹ (¹Science Tokyo, ²Gunma Univ.)
- 2P5-11*** **Effect of harmonic imaging on velocity estimation using 2D phase-sensitive motion estimator**
[[[S4102]]] ○Hitoshi Hirano¹, Rikuto Suzuki¹, Masaaki Omura¹, Ryo Nagaoka¹, Kozue Saito², Hideyuki Hasegawa¹
(¹Univ. of Toyama, ²Nara Medical Univ.)
- 2P5-12*** **Ultrasonic velocity change method utilizing the cooling effect of ultrasonic gel**
[[[S4107]]] ○K. Nakata¹, K. Takayama¹, K. Wada², T. Matsuyama¹, K. Okamoto¹, T. Matsunaka³
(¹Osaka Met Univ., ²OMU-ESCARI, ³TU Research Lab.)
- 2P5-13*** **Ultrasound imaging method of cavitation bubbles by superimposing HIFU pulse on imaging pulse**
[[[S4110]]] ○Kensuke Ito¹, Shohei Mori¹, Shin Yoshizawa^{1,2} (¹Tohoku Univ., ²SONIRE Therapeutics)
- 2P5-14*** **Effect of PRF on efficiency of tissue erosion in histotripsy with ultrasonic focus scanning in the direction of propagation**
[[[S4111]]] ○Kazuki Takahashi¹, Shohei Mori¹, Shin Yoshizawa^{1,2} (¹Tohoku Univ., ²SONIRE Therapeutics)
- 2P5-15*** **Relationship between singular value decomposition filter settings and image contrast in backscattering analysis of blood**
[[[S4121]]] ○Shunya Suzuki, Masaaki Omura, Ryo Nagaoka, Hideyuki Hasegawa (Univ. of Toyama)
- 2P5-16*** **A traveling wave mode ultrasonic transducer for low-frequency sonophoresis**
[[[S4128]]] ○Yusuke Yamasaki, Shinya Yamamoto, Naohiro Sugita, Tadahiko Shinshi (Science Tokyo)
- 2P5-17** **Fasciculation Detection Using Ultrasound Images for Early Diagnosis of ALS**
[[[S4130]]] ○Junfeng Zhou¹, Junna Yoneda¹, Norio Tagawa¹, Kota Bokuda² (¹Tokyo Met.Univ., ²Tokyo Met Neurological Hosp.)
- 2P6-1*** **Numerical simulation of effects of fish school density on multiple scattering inside fish school and echogram**
[[[S4108]]] ○Ryusuke Miyamoto, Seiji Akiyama (Tokyo Univ. Marine Sci. Tech.)

2P6-2 Performance of underwater acoustic variable data transmission technique through coherence time variation estimation using deep learning techniques
[[[S3968]]]
○Jihyun Park, Sanghoo Shin, Kyu-Chil Park (Pukyong Natl. Univ.)

2P6-3 Performance of M-ary Frequency Shift Keying method applying short period raised cosine filter in underwater delay diffusion channel
[[[S4050]]]
○Sanghoo Shin, Jihyun Park (Pukyong Natl. Univ.)

2P6-4* Preliminary Experiment of Acoustic Positioning in Shallow Water Based on Delay-and-Sum Beamforming Using Semi-circular Array
[[[S4159]]]
○Taiga Saito, Tadashi Ebihara, Naoto Wakatsuki, Keiichi Zempo (Univ. of Tsukuba)

16:15-17:00 Biomedical ultrasound II **Chair: Kazuyo Ito (Tokyo Univ. A&T)**

2E3-1 Preliminary study on the speed-of-sound measurement of cartilage tissue based on a two-layer model
[[[S4181]]]
○Naotaka Nitta, Toshikatsu Washio, Keigo Hikishima (AIST)

2E3-2* Development of acoustic lens with dual frequency peaks suitable for cell observation
[[[S3963]]]
○Hiroki Okita, Natsumi Fujiwara, Wenlou Yuan, Hirotsugu Ogi (Osaka Univ.)

2E3-3* Effects of hematoma-induced changes in auricular thickness on the propagation components of cartilage conduction
[[[S3942]]]
○Akane Tamura¹, Sho Otsuka¹, Seiji Nakagawa^{1,2} (¹Chiba Univ., ²Chiba Univ. Hosp.)

17:05-17:45 Award Ceremony

18:00-20:00 Banquet

Wednesday, November 27

9:15-10:30 Biomedical ultrasound III • Ocean acoustics II
Chair: Takenobu Tsuchiya (Kanagawa Univ.)

3J1-1* Evaluation of Transdermal Dosing Volume for Biopolymer Drug Model by Sequential Ultrasound Irradiation
[[[S4099]]]
○Kengo Matsubara¹, Kentaro Nakamura², Yuta Kurashina¹ (¹Tokyo Univ. of A&T, ²Science Tokyo)

3J1-2 Proposal of liquid viscosity measurement by burst-wave-aided contrast-enhanced ultrasonography
[[[S4172]]]
○Kenji Yoshida¹, Masaaki Omura², Shinnosuke Hirata¹, Tadashi Yamaguchi¹ (¹Chiba Univ., ²Univ. of Toyama)

3J1-3* Wide Field-of-View Vector Flow Imaging with Convex Array using Archimedean-Spiral Wavefronts
[[[S4017]]]
○Kaya Takakusagi, Kei Mitsui, Riku Suzuki, Takuro Ishii, Yoshifumi Saijo (Tohoku Univ.)

3J1-4 Effects of nonuniform Doppler shifts on underwater acoustic communication with a rapidly moving terminal in shallow water
[[[S4156]]]
○Mitsuyasu Deguchi, Yukihiro Kida, Yoshitaka Watanabe, Takuya Shimura (JAMSTEC)

3J1-5 Underwater acoustic positioning in reflective environments using acoustic lens and code division multiplexing
[[[S4148]]]
○Yuji Sato, Tadashi Ebihara, Naoto Wakatsuki (Univ. of Tsukuba)

10:30-11:30 Ultrasonic properties III • Measurement techniques III
Chair: Hideyuki Nomura (The Univ. of Electro-Commun.)

3J2-1* Estimation of Physical Properties of Si by Laser Heterodyne Photothermal Displacement Method and Machine Learning
[[[S4031]]]
○Shota Urano, Tomoki Harada, Tetsuo Ikari, Atsuhiko Fukuyama (Univ. of Miyazaki)

3J2-2 Visualization of topological edge mode in a rotating mechanical metamaterial
[[[S4137]]]
○Motonobu Tomoda, Konosuke Yamaguchi, Gun Yoon, Osamu Matsuda (Hokkaido Univ.)

- 3J2-3*** **Non-contact Precise Measurement of Heat Treatment Effect on Elastic Properties of Metallic Materials**
[[[S4005]]] ○Masatoshi Tsuchida¹, Saburo Okazaki², Ryo Nakajima², Yuji Ozawa², Takeshi Morita¹
(¹Univ. of Tokyo, ²Kobe Material Testing Laboratory Co., Ltd.)
- 3J2-4** **Non-contacting in-situ evaluation of torsional fatigue damage of carbon steel using axial-shear-wave resonance**
[[[S3958]]] ○Takashi Takishita^{1,2}, Hiroyuki Takamatsu¹, Hirotsugu Ogi² (¹Kobe Steel, Ltd., ²Osaka Univ.)
- 11:30-13:00** **Lunch Time**
- 13:00-13:50** **Plenary Talk IV** **Chair: Tsuyoshi Shiina (Shibaura Inst. of Tech.)**
3PL **Application of high-resolution ultrasound / photoacoustic imaging for medicine and biology**
○Yoshifumi Saijo (Tohoku Univ.)
- 14:00-16:00** **Poseter Session** **Chair: Daisuke Koyama (Doshisha Univ.)**
- 3P1-1** **Ultrasonic Viscoelastic Measurement of Inkjet Inks**
[[[S3937]]] ○Nobuaki Omata (Highfrequency Viscoelasticity)
- 3P1-2** **Preparation of upconversion nanoparticles by ultrasonic irradiation and investigation for cancer therapy**
[[[S3972]]] Junya Yoshida, Moeno Shiota, ○Hiroyuki Wada (Science Tokyo)
- 3P1-3*** **Structural Inverse Design of 2D Phononic Crystals using Deep Learning Model**
[[[S4040]]] ○Yuji Sato, Yuri Fukaya, Kenji Tsuruta (Okayama Univ.)
- 3P1-4*** **Elastic-wave circuit with hinge modes in higher-order topological phononic crystals**
[[[S4046]]] ○Yusuke Hata, Kenji Tsuruta (Okayama Univ.)
- 3P1-5** **Low frequency ultrasonic transducer fabrication in sol-gel composites**
[[[S4056]]] ○Kenta Kaida, Takeshi Hamada, Ryota Ono, Mako Nakamura, Makiko Kobayashi (Kumamoto Univ.)
- 3P1-6*** **Fabrication parameter effects on film quality in Pb(Zr,Ti)O₃/Pb(Zr,Ti)O₃**
[[[S4057]]] ○Yukino Tokushige¹, Mako Nakamura¹, Ryota Ono¹, Isamu Matsumoto², Kazuhisa Nishimatsu², Hiroyuki Odagawa³, Makiko Kobayashi¹ (¹Kumamoto Univ., ²Amakusa Ikeda Electric Co., ³Kumamoto-NCT)
- 3P1-7*** **Polyacrylamide-based Tissue-Mimicking Phantoms for Performance Evaluation of Photoacoustic Systems**
[[[S4089]]] ○Reimy Chacon, Fumiko Takida, Yoshifumi Saijo (Tohoku Univ.)
- 3P1-8** **Observation of droplet landing on substrate from below**
[[[S4093]]] ○Shujiro Mitani, Miki Hirano, Keiji Sakai (Univ. of Tokyo)
- 3P1-9** **Effect of concentration condition in microencapsulation and gelation of sodium alginate on viscosity behavior of gel-like particle dispersion**
[[[S4104]]] Toshiki Johnouchi, ○Taichi Hirano (Meiji Univ.)
- 3P1-10*** **A study on the relationship between Young's modulus and vibration duration of tuning forks**
[[[S4140]]] ○Takahiro Ueno¹, Sho Ostuka¹, Seiji Nakagawa^{1,2} (¹Chiba Univ., ²Chiba Univ. Hosp.)
- 3P1-11*** **Elastic anomalies accompanying antiferromagnetic phase transition in NiO studied by resonant ultrasound spectroscopy.**
[[[S4151]]] ○Sho Hirano¹, Akira Nagakubo², Kanta Adachi¹, Nobutomo Nakamura¹, Hirotsugu Ogi¹ (¹Osaka Univ., ²Tohoku Univ.)
- 3P2-1*** **Evaluation of electrical conductivity of silicon using resonant vibration of piezoelectric material**
[[[S3983]]] ○Aya Yoshida, Kanta Adachi, Nobutomo Nakamura (Osaka Univ.)
- 3P2-2** **Measurement of vibration characteristics of quartz resonators in water**
[[[S3940]]] ○Yasuaki Watanabe¹, Kengo Hara², Yuta Aoki³ (¹Tokyo Met.Univ., ²Seiko Instruments Inc., ³Kioxia Corp.)
- 3P2-3*** **Cooperative and self-diffusion dynamics of highly concentrated bimodal particle suspensions by Dynamic Ultrasound Scattering method**
[[[S3951]]] ○Manami Yamane, Kana Kitao, Misaki Tani, Tomohisa Norisuye (Kyoto Inst. of Tech.)

- 3P2-4** **Dynamic ultrasound scattering analysis of nanoparticles using oblique incident ultrasound pulses**
[[[S3953]]] ○Kana Kitao, Manami Yamane, Kotoha Hamaguchi, Tomohisa Norisuye (Kyoto Inst. of Tech.)
- 3P2-5*** **Development of nanogap Ag nanoparticle using noncontact piezoelectric resonance method for surface enhanced Raman scattering**
[[[S4053]]] ○Kaichi Yatsugi¹, Nozomi Watanabe¹, Keishi Suga², Nobutomo Nakamura¹ (¹Osaka Univ., ²Tohoku Univ.)
- 3P2-6*** **Studies on ionomer stabilized carbon black suspensions by ultrasound scattering techniques with core-shell model**
[[[S3954]]] ○Mao Yamada, Tomohisa Norisuye (Kyoto Inst. of Tech.)
- 3P2-7** **Improvement of Reflection Point Search with Rectangular Sound Source by Concise Processing of Search Results**
[[[S4069]]] ○Hiroyuki Masuyama (NIT, Toba College)
- 3P2-8** **Improvement of selectivity in nonlinear ultrasonic phased array based on fundamental wave amplitude difference with calibrated scaling factors**
[[[S3999]]] ○Toshiki Yoshikawa, Yoshikazu Ohara (Tohoku Univ.)
- 3P2-9*** **Development of remote-batteryless displacement sensor using polarization relaxation of bare resonator**
[[[S4167]]] ○Riki Nishihara¹, Wenlou Yuan¹, Motoharu Haga², Fumihito Kato³, Nobutomo Nakamura¹, Hirotsugu Ogi¹ (¹Osaka Univ., ²Daicel, ³Nippon Inst. of Tech.)
- 3P2-10*** **Development of low-frequency 3D ultrasonic phased array for visualizing crack-type defects in highly attenuative materials**
[[[S3970]]] ○Yuto Fujikawa¹, Takumi Yamada¹, Tomoki Nagata², Hyo Eun Joo², Yuya Takahashi², Timothy James Ulrich^{3,4}, Marcel C. Remillieux³, Yoshikazu Ohara¹ (¹Tohoku Univ., ²Univ. of Tokyo, ³Los Alamos National Laboratory, ⁴Texas A&M Univ.)
- 3P2-11*** **Large-displacement Incidence by Simultaneous Focusing of Longitudinal and Shear Waves for Ultrasonic Phased Array**
[[[S3969]]] ○Yuki Tanaka, Yoshikazu Ohara (Tohoku Univ.)
- 3P2-12*** **Reconstruction of sawtooth waves using phase compensation of surface waves excited by focused airborne nonlinear ultrasound**
[[[S4165]]] ○Kiyosuke Shimizu¹, Taiju Kamitani², Youichi Ito², Ayumu Osumi² (¹Ehime Univ., ²Nihon Univ.)
- 3P2-13*** **Observation of non-classical elastic nonlinearity in ultrafast phased-array imaging with large-displacement pump excitation**
[[[S3971]]] ○Yoshiaki Ishizuka¹, Sinan Li², Yoshikazu Ohara¹ (¹Tohoku Univ., ²Verasonics Inc.)
- 3P2-14*** **Evaluation of enhancing effect of supplements on collagen release from cultured human fibroblasts using scanning acoustic microscopy**
[[[S4120]]] ○Daiki Yamanaka¹, Naohiro Hozumi¹, Kazuto Kobayashi², Yuki Ogura³, Sachiko Yoshida¹ (¹Toyohashi Univ. of Tech., ²Honda Electronics, ³Shiseido Global Innovation Center)
- 3P3-1*** **Study on Protein Detection Using a UHF-Band Wireless QCM Sensor Array Chip**
[[[S3964]]] ○Ryo Umetsu¹, Manabu Suzuki¹, Fumihito Kato¹, Hirotsugu Ogi² (¹Nihon Inst. of Tech., ²Osaka Univ.)
- 3P3-2*** **High-Sensitive Wireless QCM Sensor for Hydrogen Gas Detection with PdAu Alloy Film**
[[[S3965]]] ○Takato Otake¹, Manabu Suzuki¹, Fumihito Kato¹, Hirotsugu Ogi² (¹Nihon Inst. of Tech., ²Osaka Univ.)
- 3P3-3*** **X-cut LiNbO₃ Based Multi-Strip Acoustic Resonator (XSAR) Surrounded by Groove and Airgap**
[[[S3989]]] ○Yong Guo, Michio Kadota, Shuji Tanaka (Tohoku Univ.)
- 3P3-4*** **High order mode HAL SAW quartz resonator using silicon or sapphire as support substrate**
[[[S4045]]] ○Shota Tanakura, Michio Kadota, Shuji Tanaka (Tohoku Univ.)
- 3P3-5*** **Spurious Mode Suppression of First Symmetric Mode Lamb Wave Resonator by Modifying Wavelength**
[[[S4142]]] ○Ferriady Setiawan, Michio Kadota, Shuji Tanaka (Tohoku Univ.)
- 3P3-6*** **Analysis of longitudinal leaky SAW in leaky region on LiNbO₃/SiC structure**
[[[S3975]]] ○Ryo Takei¹, Masashi Suzuki¹, Shoji Kakio¹, Yasushi Yamamoto² (¹Univ. of Yamanashi, ²Yamamoto-ADEC LLC)
- 3P3-7** **Analysis of resonance properties for SH₀ mode plate waves on thin LiTaO₃/HR-SiC plate**
[[[S4043]]] ○Noriyuki Watanabe, Shoji Kakio (Univ. of Yamanashi)

- 3P3-8*** **Analysis of A_0 - and A_1 -mode Lamb waves resonance properties on piezoelectric substrates with periodic voids**
[[[S4076]]]
○Shumpei Kobayashi, Masashi Suzuki, Shoji Kakio (Univ. of Yamanashi)
- 3P4-1** **Development of droplet manipulation system using surface acoustic wave**
[[[S4063]]]
○Shoma Nagao, Jun Kondoh (Shizuoka Univ.)
- 3P4-2** **Origin of the broadband noise of acoustic emission based on the dynamic behavior of a single bubble**
[[[S4161]]]
○Hyang-Bok Lee¹, Pak-Kon Choi² (¹Japan Women's Univ., ²Meiji Univ.)
- 3P4-3*** **Mechanism of liquid Ga/In dispersion by ultrasonic cavitation**
[[[S4134]]]
○Hijiri Kijima, Ken Yamamoto (Kansai Univ.)
- 3P4-4** **Predicting the rate reaction constant of sonochemical process using machine learning**
[[[S4119]]]
○Iseul Na, Yeji Lee, Suwan An, Younggyu Son (Kumoh Natl. Inst. Tech.)
- 3P4-5*** **Behavior of Sonochemical Reaction in Small Tube**
[[[S4118]]]
○Kazuma Mukai, Yuki Mizuno, Tsuyoshi Yamaguchi, Keiji Yasuda (Nagoya Univ.)
- 3P4-6** **Sonochemical Production of H_2 using Water/Organic Acid Mixtures in a 300 kHz System**
[[[S4114]]]
○Seokho Yoon, Jongbok Choi, Tae-Oh Kim, Younggyu Son (Kumoh Natl. Inst. Tech.)
- 3P4-7** **Geometric effects on sonochemical oxidation activity in 20kHz sonicator systems**
[[[S4113]]]
○Chaewoon Hwang, Iseul Na, Mireu Song, Dukyoung Lee, Younggyu Son (Kumoh Natl. Inst. Tech.)
- 3P4-8*** **Size Control of Au@Pt Core-shell NPs using Ultrafine Bubbles and Ultrasound, and Evaluation of Catalytic Activity**
[[[S4042]]]
○Yuki Mizuno, Yuta Yamamoto, Tsuyoshi Yamaguchi, Keiji Yasuda (Nagoya Univ.)
- 3P4-9** **Dependence of Acoustic Cavitation Noise Spectra on Standing Wave Ratio in 28 kHz Sonoreactor**
[[[S4024]]]
○Takanobu Kuroyama, Hanako Ogasawara, Kazuyoshi Mori (Natl. Defense Academy)
- 3P4-10** **Visualization of Charged Heavy Particle Tracks in Water with Ultrasonic Imaging**
[[[S4132]]]
○Masanori Kobayashi¹, Osamu Okudaira¹, Naoya Shikazono², Kazuhiro Terasawa³, Satoshi Kodaira⁴, Nagaya Okada⁵
(¹Chiba Inst. of Tech., ²QST-KPSI, ³Keio Univ., ⁴QST-NIRS, ⁵Honda Electronics)
- 3P5-1*** **Three-dimensional super-resolution imaging using Sonazoid microbubbles**
[[[S4131]]]
○Rentaro Fukuchi, Kenji Yoshida, Tadashi Yamaguchi, Shinnosuke Hirata (Chiba Univ.)
- 3P5-2** **Study on improving accuracy in shape estimation of ultrasonic flexible transducer using direct waves**
[[[S4135]]]
○Masayuki Tanabe¹, Kosuke Sato², Toru Uda², Makiko Kobayashi¹ (¹Kumamoto Univ., ²NOK)
- 3P5-3*** **Ultrasonic Doppler Imaging Based on Steered Beam-forming Using Dual-Chirp Plane Wave**
[[[S4138]]]
○Wenlan Dong, Satoshi Nakayama, Norio Tagawa (Tokyo Met.Univ.)
- 3P5-4*** **Analysis of acoustic absorption distribution during bubble-enhanced HIFU heating by fitting simulations to temperature measurements**
[[[S4141]]]
○Taisuke Sato¹, Shohei Mori¹, Shin Yoshizawa^{1,2} (¹Tohoku Univ., ²SONIRE Therapeutics)
- 3P5-5*** **Ultrasound Imaging with a Single Transmitter/Receiver Circuit Based on Selective Addition of Received Signals**
[[[S4143]]]
○Eiko Nakazawa, Mohammad Syaryadhi, Norio Tagawa (Tokyo Met.Univ.)
- 3P5-6*** **Effects of stimulus placement on distantly-presented bone-conducted ultrasound transmission**
[[[S4145]]]
○Naoya Takahashi¹, Sho Otsuka¹, Seiji Nakagawa^{1,2} (¹Chiba Univ., ²Chiba Univ. Hosp.)
- 3P5-7*** **Basic study on measurement of tissue sound speed and attenuation by opposed planar transducer and matrix array probe**
[[[S4149]]]
○Mizuki Hashimoto, Kenji Yoshida, Tadashi Yamaguchi, Shinnosuke Hirata (Chiba Univ.)
- 3P5-8*** **Comparison of accuracy of multi-component media evaluation for higher-order amplitude enveloping statistics models**
[[[S4155]]]
○Tingzhen Zhang, Mami Shirai, Shinnosuke Hirata, Kenji Yoshida, Tadashi Yamaguchi (Chiba Univ.)
- 3P5-9*** **Confirmation of relationship of acoustic and electrical properties in rat livers**
[[[S4157]]]
○Miyu Nagaoka, Koichi Ito, Kenji Yoshida, Shinnosuke Hirata, Tadashi Yamaguchi (Chiba Univ.)

- 3P5-10*** Numerical model of contrast-enhanced ultrasound imaging coupled with nonlinear bubble dynamics
[[[S4162]]] ○Junseok An, Naohiro Sugita, Tadahiko Shinshi (Science Tokyo)
- 3P5-11*** A simulation study on comparison of singular value decomposition filtering in pre- and post-beamforming
[[[S4163]]] ○Masahiro Matsuzaki, Masaaki Omura, Ryo Nagaoka, Hideyuki Hasegawa (Toyama Univ.)
- 3P5-12*** Features of pulse waveform at the carotid artery for the estimation of cerebral arteriosclerosis
[[[S4168]]] ○Tomoya Ikeada¹, Koki Akiyoshi¹, Mami Matsukawa¹, Kozue Saito² (¹Doshisha Univ., ²Nara Medical Univ.)
- 3P5-13*** Piezoelectric polarization induced by oblique ultrasound irradiation in biological tissues
[[[S4169]]] ○Yuki Sakakura¹, Yoshino Enomoto¹, Nobuto Kaitoh^{1,2}, Kenji Ikushima^{1,2} (¹Tokyo Univ. of A&T, ²ASEMtech)
- 3P5-14** Observation of Lamb wave-like propagation behavior of shear waves propagating near lung tissue
[[[S4171]]] ○Ren Koda¹, Kazumasa Osawa¹, Kento Shimizu², Naoki Tano², Hayato Taniguchi³, Yasuyuki Shiraishi⁴, Marie Tabaru² (¹Gunma Univ., ²Science Tokyo, ³Yokohama city Univ., ⁴Tohoku Univ.)
- 3P5-15*** Bending control of thin catheter using tempo-spatial variations of acoustic interference
[[[S4173]]] ○Nodoka Tanaka, Miyu Ito, Kohji Masuda (Tokyo Univ. of A&T)
- 3P5-16*** Evaluation of contrast of blood flow image obtained with deep learning
[[[S4179]]] ○Hongpeng Wang, Jiayi Li, Masaaki Omura, Ryo Nagaoka, Shangce Gao, Hideyuki Hasegawa (Univ. of Toyama)
- 3P6-1*** Fundamental Study of an Automatic Discrimination Method for Clams in Sedimentary Layers Using an Acoustic Coring System
[[[S3973]]] ○Rintaro Ueda¹, Kazuki Abukawa¹, Kei Terayama², Hiroshi Washiyama², Yohei Uehara³, Teiichi Saito⁴, Kazutoshi Okamoto⁴, Katsunori Mizuno⁵ (¹Civil eng., NIT Kisarazu Col., ²Yokohama city Univ., ³Shizuoka Pref.Res.Inst.of Fish.and Oc., ⁴MaOI inst., ⁵Univ. of Tokyo)
- 3P6-2** Resonant frequency variation depending on the structure and parameters of the acoustic metamaterial cavity
[[[S3960]]] ○Kyu-Chil Park, Hyunsoo Jeong, Jihyun Park (Pukyong Natl. Univ.)
- 3P6-3*** Effect of Signal Retransmission Interval on Communication Quality in Underwater Acoustic Communication Using Time- diversity and Orthogonal Signal Division Multiplexing
[[[S3981]]] ○Junnosuke Yoshita, Tadashi Ebihara, Naoto Wakatsuki, Yuka Maeda (Univ. of Tsukuba)
- 3P6-4** Fundamental study on the effect of Doppler in biomimetic pulse trains for underwater acoustic localization
[[[S4139]]] ○Hanako Ogasawara, Takanobu Kuroyama, Kazuyoshi Mori (Natl. Defense Academy)
- 3P6-5** Variation of sound field surrounding target in TR (Time Reversal) sound field using ICA (Independent Component Analysis) processing results
[[[S3946]]] ○Yoshiaki Tsurugaya¹, Toshiaki Kikuchi² (¹Sanyo PT, ²Natl. Defense Academy)

16:15-17:00 Piezoelectric devices III Chair: Shoji Kakio (Univ. of Yamanashi)

- 3J3-1** 9 GHz Harmonic Surface Acoustic Wave Resonator with Grooved Al Electrodes in LiNbO₃
[[[S3991]]] ○Michio Kadota, Fuyuko Yamashita, Shuji Tanaka (Tohoku Univ.)
- 3J3-2** Ultra-low profile and high heat dissipation multi-layered SAW device employing sapphire substrate
[[[S4003]]] ○Ryohei Komiyama, Takayuki Suzuki, Masayuki Kitajima, Motoi Yamauchi (Taiyo Yuden Mobile Technologies)
- 3J3-3** Low Insertion Loss Hexaplexer for Band 1+3+7 Using Spurious-Suppressed I.H.P. SAW Devices
[[[S4007]]] ○Motoki Ozasa, Naoto Yoshida, Yasuaki Shin, Noriyoshi Ota (Murata Manufacturing Co., Ltd.)

17:05-17:25 Closing Ceremony