

USE2016 Schedule

	Nov. 16 (Wed)	Nov. 17 (Thu)	Nov. 18 (Fri)
9:00			
	9:30 Opening Ceremony		
10:00	9:45-10:30 1E1-1~3 Sonochemistry Chair: Younggyu Son (Kumoh National Institute of Technology)	9:30-11:30 Poster Session 2P1-1~8, 2P2-1~10, 2P3-1~6, 2P4-1~12, 2P5-1~16, 2P6-1~6 Chair: Naotaka Nitta (AIST)	9:30-11:30 Poster Session 3P1-1~7, 3P2-1~10, 3P3-1~6, 3P4-1~11, 3P5-1~15, 3P6-1~7 Chair: Naoto Wakatsuki (University of Tsukuba)
11:00	10:30-11:30 1E2-1~4 High power ultrasound, Piezoelectric devices I Chair: Ken-ya Hashimoto (Chiba University)		
12:00	11:30-13:00 Lunch Time	11:30-13:00 Lunch Time	11:30-13:00 Lunch Time
13:00	13:00-14:00 1E3-1~4 Measurement techniques I Chair: Oliver Wright (Hokkaido University)	13:00-13:50 2PL Plenary Talk I Pak-Kon Choi (Meiji University) Chair: Kyuichi Yasui (AIST)	13:00-13:50 3PL Plenary Talk II Jeasoo Kim, Gihoon Byun (Korea Maritime and Ocean University) Chair: Kang Lyeol Ha (Pukyong National University)
14:00			
15:00	14:15-15:00 1E4-1~3 Piezoelectric devices II Chair: Shoji Kakio (University of Yamanashi)	14:00-15:30 2E1-1~6 Ocean acoustics, Biomedical ultrasound I Chair: Kyu Chil Park (Pukyong National University)	14:00-15:30 3E1-1~6 Physical acoustics, Acousto-optics Chair: Hirotsugu Ogi (Osaka University)
16:00	15:10-17:10 Poster Session 1P1-1~8, 1P2-1~9, 1P3-1~5, 1P4-1~12, 1P5-1~14, 1P6-1~10 Chair: Takeshi Morita (University of Tokyo)	15:45-17:15 2E2-1~6 Biomedical ultrasound II Chair: Tsuyoshi Shiina (Kyoto University)	15:45-16:45 3E2-1~4 Measurement techniques II Chair: Mitsutaka Hikita (Kogakuin University)
17:00	17:10-18:00 Organizing Committee Meeting	17:20-17:40 Awards Ceremony	16:45 Closing Ceremony
18:00		18:00-20:00 Banquet	
19:00			

The 37th Symposium on Ultrasonic Electronics (USE 2016) Program

† Speaker

* Applying to Young Scientist Award

Wednesday, November 16

9:30-9:45 OPENING

9:45-10:30 Sonochemistry Chair: Younggyu Son (Kumoh Natl. Inst. of Tech.)

1E1-1 Numerical simulations of extreme conditions in a dissolving ultrafine bubble in the absence of ultrasound
Kyuichi Yasui[†], Toru Tuziuti, Wataru Kanematsu (AIST)

1E1-2* **Electric-fields effect on MBSL and SBSL intensities**
Hyang-Bok Lee[†], Pak-Kon Choi (Meiji Univ.)

1E1-3 Wastewater treatment with acoustic separator
Takuya Kambayashi^{††}, Tomonori Saeki¹, Ian Buchanan² (¹Hitachi; ²Univ. of Alberta)

10:30-11:30 High power ultrasound, Piezoelectric devices I
Chair: Ken-ya Hashimoto (Chiba Univ.)

1E2-1* **Evaluation model of the high power characteristics considering the interaction between temperature rise and nonlinear vibration**
Susumu Miyake[†], Takeshi Morita (Univ. of Tokyo)

1E2-2* **Torque improvement of polymer-based ultrasonic motor through optimal design of vibrator structure**
Jiang Wu[†], Yosuke Mizuno, Kentaro Nakamura (Tokyo Tech.)

1E2-3* **Photoacoustic imaging with PZT/PZT Sol-gel composite ultrasonic transducer fabricated on acoustic lens**
Masayuki Tanabe^{††}, Tai-Chien Wu², Koki Hirata¹, Makiko Kobayashi¹, Masahiko Nishimoto¹, Che-Hua Yang²
(¹Kumamoto Univ.; ²Natl. Taipei Univ. of Tech.)

1E2-4* **Investigation interaction SH-SAW with managed electroinduced domain structures**
Siarhei Barsukou^{1,2†}, Jun Kondoh¹, Sergei Khakhomov² (¹Shizuoka Univ.; ²Gomel State Univ.)

11:30-13:00 LUNCH TIME

13:00-14:00 Measurement techniques I Chair: Oliver Wright (Hokkaido Univ.)

1E3-1 Detection of ultrasonic wave signal in clamp-on ultrasonic flowmeter for low pressure city gas
Hiroshi Nishiguchi^{††}, Toshiyuki Sawayama², Kouki Nagamune³
(¹Kansai Electric Power co.; ²New Sensor inc.; ³Univ. of Fukui)

1E3-2* **Determination of exact gelation point and measurement of tiny elastic modulus using disk-type EMS**
Taichi Hirano[†], Keiji Sakai (Univ. of Tokyo)

1E3-3* **A study for ultrasonic super resolution imaging using tissue harmonics**
Jing Zhu[†], Shuntaro Hamazumi, Yihsin Ho, Kan Okubo, Norio Tagawa (Tokyo Met. Univ.)

1E3-4 Acoustic field evaluation of adhesive-free polymer transducers used for high frequency imaging
Anowarul Habib[†], Sanat Wagle, Adit Decharat, Frank Melandso (UiT The Arctic Univ. of Norway)

14:00-14:15 Break

14:15-15:00 Piezoelectric devices II**Chair: Shoji Kakio (Univ. of Yamanashi)**

- 1E4-1*** Piezoelectric characteristic analysis of ultrasonic transmission and reception using diaphragm type pzt transducer
Yuya Ishiguro[†], Jing Zhu, Tsuyoshi Okubo, Norio Tagawa (Tokyo Met. Univ.)
- 1E4-2** Multi-mode filter composed of single-mode SAW/BAW resonators
Yulin Huang^{1,2†}, Jingfu Bao¹, Gongbin Tang^{2,3}, Yiling Wang¹, Tatsuya Omori², Ken-ya Hashimoto^{2,3}
(¹Univ. of Electronic Sci. and Tech. of China; ²Chiba Univ.; ³Shanghai Jiao Tong Univ.)
- 1E4-3** A study of temperature dependence of immunoreactions using shear horizontal surface acoustic wave immunosensors
Takashi Kogai^{1,2†}, Hiromi Yatsuda¹, Jun Kondoh² (¹Japan Radio Co., Ltd.; ²Shizuoka Univ.)

15:00-15:10 Break**15:10-17:10 Poster Session****Chair: Takeshi Morita (Univ. of Tokyo)**

- 1P1-1*** Determination of elastic constants of liquid crystal polymer with orthorhombic structure
Shizuka Nakashima[†], Akira Nagakubo¹, Hirotsugu Ogi¹, Masahiko Hirao¹, Akihito Ota²
(¹Osaka Univ.; ²Ueno Fine Chemicals Industry, Ltd.)
- 1P1-2** Study on three-port ultrasonic levitation machine with conveyance technique
Masaki Yamamoto[†], Mitsutaka Hikita (Kogakuin Univ.)
- 1P1-3** Design of non-reciprocal acoustic waveguides by indirect interband transitions
Atsushi Ishikawa[†], Kenji Tsuruta (Okayama Univ.)
- 1P1-4** Measurement of two-dimensional viscoelasticity by EMS method
Maiko Hosoda[†], Keiji Sakai² (¹Tokyo Denki Univ.; ²Univ. of Tokyo)
- 1P1-5** Propagation characteristics of the shock waves from a plane CNTs-coated optoacoustic transducer in water
Xiaofeng Fan¹, Yonggeun Baek^{1†}, Kang Lyeol Ha¹, Moojoon Kim¹, Jungsoon Kim², Duckjong Kim³,
Hyun Wook Kang¹, Junghwan Oh¹ (¹Pukyong Natl. Univ.; ²Tongmyong Univ.; ³KIMM)
- 1P1-6*** Measurement of elastic stiffness of Fe/Cr multilayer by picosecond ultrasound
Nobutaka Takeuchi[†], Nobutomo Nakamura, Hirotsugu Ogi, Masahiko Hirao (Osaka Univ.)
- 1P1-7** Mechanical properties of lithium-ion battery electrode
Ryo Inagaki^{1†}, Tsuyoshi Noge¹, Keita Sonoda¹, Koichi Onishi¹, Kenta Kirimoto², Yong Sun¹
(¹Kyushu Inst. of Tech.; ²Kitakyushu Natl. Coll. of Tech.)
- 1P1-8*** Bright-field photoacoustic tomography
Nhat Quang Bui[†], Junghwan Oh (Pukyong Natl. Univ.)
- 1P2-1*** Estimation of the thickness of refractory ceramics by the impact-echo method
Seongmin Lee¹, Namho Shin², Yongrae Roh^{1†} (¹Kyungpook Natl. Univ.; ²POSCO Technical Research Laboratory)
- 1P2-2*** A method of detecting micro crack in shallow layer of solid material by harmonic component of very high-intensity aerial ultrasonic wave
Ayumu Osumi[†], Masashi Ogita, Youichi Ito (Nihon Univ.)
- 1P2-3** Improvement of spatial resolution in low-frequency ultrasound imaging by using pulse compressed parametric sound
Hideyuki Nomura[†] (Univ. of Electro-Comm.)
- 1P2-4*** A study of defect detection in metal plate using nonlinear ultrasonic waves
Makoto Fukuda[†], Kazuhiko Imano (Akita Univ.)
- 1P2-5*** Flexibility improvement of PZT/PZT Sol-Gel composite ultrasonic transducers
Koki Hirata[†], Masayuki Tanabe, Masahiko Nishimoto, Makiko Kobayashi (Kumamoto Univ.)
- 1P2-6*** A highly sensitive lamb wave transducer by immersion method with natural rubber insulator
Satoshi Obata[†], Masashi Ishikawa, Hideo Nishino (Tokushima Univ.)

- 1P2-7 Clamp-on ultrasonic steam flowmeter using transducer with supercritical angle and damping material with high temperature endurance**
Tomohito Hayashi^{1†}, Hiroshi Sasaki¹, Shuichi Umezawa², Katsuhiko Sugita²
(¹Azbil Corporation.; ²Tokyo Electric Power Company Holdings)
- 1P2-8 High speed non-contact acoustic inspection method for civil engineering structure using multi tone burst wave**
Tsuneyoshi Sugimoto^{1†}, Kazuko Sugimoto¹, Nobuaki Kosuge¹, Noriyuki Utagawa², Kageyoshi Katakura³
(¹Toin Univ. of Yokohama; ²Sato Kogyo Co., Ltd.; ³Meitoku Eng., Lab.)
- 1P2-9* Development of linear array piezoelectric transducer using Sol-Gel spray technique**
Shingo Koda[†], Masayuki Tanabe, Makiko Kobayashi, Masahiko Nishimoto (Kumamoto Univ.)
- 1P3-1* Influence of coupling with SH SAW on lateral propagation of rayleigh SAW on 128°YX-LiNbO₃**
Benfeng Zhang^{1,2†}, Tao Han¹, Qiaozhen Zhang^{1,2}, Gongbin Tang^{1,2}, Tatsuya Omori², Ken-ya Hashimoto^{2,1}
(¹Shanghai Jiao Tong Univ.; ²Chiba Univ.)
- 1P3-2* High-coupling leaky SAWs on LiNbO₃ or LiTaO₃ thin plate bonded to high-velocity substrate**
Masashi Gomi[†], Takuya Kataoka, Junki Hayashi, Shoji Kakio (Univ. of Yamanashi)
- 1P3-3 Tunable rejection filters with ultra-wideband using SH₀ plate wave resonators**
Michio Kadota[†], Shuji Tanaka (Tohoku Univ.)
- 1P3-4* High electromechanical coupling of sezawa mode SAW using a polarization-inverted ScAlN film/high-velocity substrate structure**
Shinji Takayanagi^{1†}, Takahiko Yanagitani² (¹Nagoya Inst. of Tech.; ²Waseda Univ.)
- 1P3-5* Withdraw**
- 1P4-1 Measurement of distribution of sound pressure of fundamental, subharmonic and white noise in sonochemical reactor**
Yoshiyuki Asakura^{1†}, Tam Thanh Nguyen², Nagaya Okada¹, Keiji Yasuda² (¹Honda Electronics; ²Nagoya Univ.)
- 1P4-2* Measurement of sound pressure in the presence of cavitation bubbles**
Tam Thanh Nguyen^{1,3†}, Yoshiyuki Asakura², Nagaya Okada², Keiji Yasuda¹
(¹Nagoya Univ.; ²Honda Electronics; ³Univ. of Sci., VNU-HCM)
- 1P4-3 Effect of hydrophone on high-intensity acoustic fields with generation of acoustic cavitation bubbles**
Nagaya Okada^{1†}, Michihisa Shiiba², Shinichi Takeuchi³
(¹Honda Electronics; ²Nihon Inst. of Med. Sci.; ³Toin Univ. of Yokohama)
- 1P4-4* Non-contact stirring of liquid in micro container using by high-intensity aerial ultrasonic waves**
Taichi Urakami[†], Ayumu Osumi, Youichi Ito (Nihon Univ.)
- 1P4-5 Experiment and modeling to assess ultrasonic attenuation factor in molten aluminum alloy**
Jeong IL Youn^{1†}, Jung Hwan Kim¹, Young Ki Lee¹, Young Jig Kim¹, Hoon CHO²
(¹Sungkyunkwan Univ.; ²Korea Inst. of Industrial Tech.)
- 1P4-6* Effect of ultrasonic frequency on degassing efficiency in molten aluminum alloy**
Young Ki Lee^{1†}, Jeong IL Youn¹, Young Jig Kim¹, Jeong Wook Park² (¹Sungkyunkwan Univ.; ²DR AXION)
- 1P4-7* Influence of the heat leak on the onset temperature in the straight-tube-type thermoacoustic prime mover: The temperature distribution of the thermal buffer tube**
Takahiro Wada[†], Shin-ichi Sakamoto, Yuichiro Orino, So Ueno, Yuma Kajiura (Univ. of Shiga Pref.)
- 1P4-8* Development of a prototype step-shaped-type thermoacoustic cooling system by force driven**
Kohei Egawa[†], Shin-ichi Sakamoto, Yuichiro Orino, So Ueno, Yasuaki Sekimoto (Univ. of Shiga Pref.)
- 1P4-9 A prototype of a step-shaped-type miniature thermoacoustic prime mover of the full-length 90mm - Measurement results in oscillation temperatures and frequencies -**
Shin-ichi Sakamoto[†], Yuichiro Orino, Satoshi Kawamoto (Univ. of Shiga Pref.)
- 1P4-10* Effects of generation for work flow on the standing-wave thermoacoustic-system -Relationship between the installation position and the temperature gradient of stack-**
Seiya Fukuda^{1†}, Shin-ichi Sakamoto², Mana Sugimoto¹, Yoshiaki Watanabe¹ (¹Doshisha Univ.; ²Univ. of Shiga Pref.)

- 1P4-11*** Applying stainless-mesh stacks to improve cooling performance of a thermoacoustic cooling system with diameter-expanded prime movers
So Ueno[†], Shin-ichi Sakamoto, Yuichiro Orino (Univ. of Shiga Pref.)
- 1P4-12*** Step-type thermoacoustic system using the phase transition
-Study toward the low temperature excitation-
Sho Kawaminami^{1†}, Shin-ichi Sakamoto², Seiya Fukuda¹, Yoshiaki Watanabe¹ (¹Doshisha Univ.; ²Univ. of Shiga Pref.)
- 1P5-1*** Optimal design of an annular 1-3 piezocomposite High Intensity Focused Ultrasound (HIFU) transducer of a concave geometry for medical treatment
Euna Choi, Yongrae Roh[†] (Kyungpook Natl. Univ.)
- 1P5-2*** Evaluation of sound field near blade of ultrasonically activated surgical device
Hiroki Kikuchi[†], Kenji Yoshida, Ryosuke Yahagi, Tadashi Yamaguchi, Hideki Hayashi (Chiba Univ.)
- 1P5-3** Experimental evaluation of high intensity ultrasound source system using acoustic waveguide for calibration of hydrophone
Shigeru Igarashi^{1†}, Takeshi Morishita², Takeyoshi Uchida³, Shinichi Takeuchi² (¹Polytechnic Univ.; ²Toin Univ. of Yokohama; ³AIST)
- 1P5-4** Development of coaxial ultrasonic probe for fatty liver diagnostic system based on ultrasonic velocity-change
Makoto Hori^{1†}, Daiki Yokota¹, Yuhei Aotani¹, Yuta Kumagai¹, Kenji Wada¹, Toshiyuki Matsunaka¹, Hiroyasu Morikawa², Hiromichi Horinaka¹ (¹Univ. of Osaka Pref.; ²Univ. of Osaka City)
- 1P5-5** Investigation on a method for suppression of grating lobe by controlling waveform of transmitted ultrasound
Hiroki Fujita[†], Hideyuki Hasegawa (Univ. of Toyama)
- 1P5-6** Study on improvement of spatial resolution in element domain for high-frame-rate ultrasound
Hideyuki Hasegawa[†] (Univ. of Toyama)
- 1P5-7*** Estimation of sound velocity distribution from time delay received at each element of ultrasonic probe
Gen Onodera[†], Hirofumi Taki, Hiroshi Kanai (Tohoku Univ.)
- 1P5-8*** Imaging of vertebral surface using ultrasound RF data received at each element of probe for thoracic anesthesia
Kazuki Takahashi[†], Hirofumi Taki, Eiko Onishi, Masanori Yamauchi, Hiroshi Kanai (Tohoku Univ.)
- 1P5-9*** Feature extraction from RF received waveforms for effective identification of heart wall
Kohei Takahashi[†], Hirofumi Taki, Hiroshi Kanai (Tohoku Univ.)
- 1P5-10*** Mutual conversion between B-mode image and acoustic impedance image
Tan Wei Chean^{1†}, Naohiro Hozumi¹, Sachiko Yoshida¹, Kazuto Kobayashi² (¹Toyohashi Univ. of Tech.; ²Honda Electronics)
- 1P5-11*** Multispectral phase-contrast imaging of acoustic impedance by using interference method for puncture needle-type ultrasonography
Seiya Ishikura^{1†}, Masasumi Yoshizawa¹, Norio Tagawa², Takasuke Irie^{2,3} (¹Tokyo Met. Coll. of Industrial Tech.; ²Tokyo Met. Univ.; ³Microsonic Co, Ltd.)
- 1P5-12*** High-sensitivity shear wave elasticity imaging using phase-based motion magnification
Heechul Yoon^{1†}, Stanislav Emelianov^{1,2} (¹Georgia Inst. of Tech.; ²Emory Univ.)
- 1P5-13*** Quantitative evaluation method of differentiation process in C2C12 myoblasts using ultrasonic microscope
Kyoichi Takanashi^{1†}, Mamoru Washiya¹, Kazuki Ota¹, Naohiro Hozumi¹, Sachiko Yoshida¹, Kazuto Kobayashi² (¹Toyohashi Univ. of Tech.; ²Honda Electronics)
- 1P5-14*** Quantitative research on the effects of anticancer drugs on glioma brain tumor model using ultrasonic microscope
Thomas Tiong Kwong Soon^{1†}, Tan Wei Chean¹, Kenta Takahashi¹, Naohiro Hozumi¹, Kazuto Kobayashi², Sachiko Yoshida¹ (¹Toyohashi Univ. of Tech.; ²Honda Electronics)
- 1P6-1*** Nulling crosstalk with a time-reversal mirror using the Gram-Schmidt process
Gihoon Byun[†], Sehyun Oh, Jeasoo Kim (Korea Maritime and Ocean Univ.)

- 1P6-2 Spatial performance analysis of passive time reversal communications in time-varying channel during SAVEX15**
Kang-Hoon Choi^{1†}, Sunhyo Kim¹, Seongbeom Kim¹, Jee Woong Choi¹, Sea-Moon Kim², Sungho Cho³
(¹Hanyang Univ.; ²Korea Res. Inst. of Ships and Ocean Eng.; ³Korea Inst. of Ocean Sci. and Tech.)
- 1P6-3* Performance analysis of passive time reversal communication technique for multipath interference in shallow sea acoustic channel**
Yukihiro Kida[†], Mitsuyasu Deguchi, Yoshitaka Watanabe, Takuya Shimura, Hiroshi Ochi, Koji Meguro (JAMSTEC)
- 1P6-4* At-sea experiment of underwater acoustic communication with a prototype of autonomous surface vehicle**
Mitsuyasu Deguchi[†], Yukihiro Kida, Koji Meguro, Yoshitaka Watanabe, Takuya Shimura, Hiroshi Ochi (JAMSTEC)
- 1P6-5 Comparison of adaptive algorithm on the equalizer for underwater acoustic communication in shallow water**
Ming Chuai[†], Kyu Chil Park, Jong Rak Yoon (Pukyong Natl. Univ.)
- 1P6-6 Underwater communication using acoustic particle velocities**
Sunhyo Kim[†], Jee Woong Choi (Hanyang Univ.)
- 1P6-7 Performance of block interleaved multi carrier modulation in underwater fading channel**
Jihyun Park[†], Minja Bae, Jongju Kim, Kyu Chil Park, Jong Rak Yoon (Pukyong Natl. Univ.)
- 1P6-8 Acoustic channel characterization in shallow water acoustic communication**
Jongjoo Kim, Jihyun Park, Minja Bae, Jong Rak Yoon[†] (Pukyong Natl. Univ.)
- 1P6-9 Harbor demonstration of underwater acoustic communication using doppler-resilient orthogonal signal division multiplexing**
Tadashi Ebihara^{1†}, Geert Leus², Hanako Ogasawara³ (¹Univ. of Tsukuba; ²TU Delft; ³Natl. Defense Academy)
- 1P6-10 Performance of carrier frequency variations on the demodulation in underwater communication system**
Kyu Chil Park[†], Jihyun Park, Jong Rak Yoon (Pukyong Natl. Univ.)
- 17:10-18:00 Organizing Committee Meeting (Oral presentation Hall)**

Thursday, November 17

9:30-11:30 Poster Session

Chair: Naotaka Nitta (AIST)

- 2P1-1* High temperature properties of $\text{PbTiO}_3 / \text{Ba}_{0.7}\text{Sr}_{0.3}\text{TiO}_3$**
Kazuho Kiyofuji[†], Keisuke Kimoto, Makiko Kobayashi (Kumamoto Univ.)
- 2P1-2* Piezoelectric stiffening in the thickness direction of c-plane ZnO single crystal measured by Brillouin scattering**
Shota Tomita^{1†}, Takahiko Yanagitani², Shinji Takayanagi³, Mami Matsukawa¹
(¹Doshisha Univ.; ²Waseda Univ.; ³Nagoya Inst. Tech.)
- 2P1-3 Wave-propagation properties of alpha and beta lanthanum studied by ab-initio calculations**
Akira Nagakubo[†], Hirotsugu Ogi, Koichi Kusakabe, Masahiko Hirao (Osaka Univ.)
- 2P1-4* Measurements of ultrasonic surface wave velocities in silicon crystals and its comparison with FE analysis**
Hye Soo Park[†], Hyun-Seok Lee, Hyeon-Soo Lee, Hak-Beom Kim, Young H. Kim (Korea Sci. Academy of KAIST)
- 2P1-5 Low frequency limit characteristics in complex series dynamics and its advantages from engineering point of view**
Michio Ohki[†] (Natl. Defense Academy)
- 2P1-6 Suppressing diffraction of surface acoustic waves using phononic lens**
Yuan-Hai Yu[†], Jia-Hog Sun (Chang Gung Univ.)
- 2P1-7 Ultrasound scattering studies on pickering emulsion**
Nguyen Thao Tran[†], Hideyuki Nakanishi, Tomohisa Norisuye, Qui Tran-Cong-Miyata (Kyoto Inst. of Tech.)

- 2P1-8 Imaging surface acoustic wave propagation on crystal spheres**
Paul Otsuka^{1†}, Osamu Matsuda¹, Motonobu Tomoda¹, Istvan Veres², Oliver Wright¹ (¹Hokkaido Univ.; ²RECENDT)
- 2P2-1* Study about accuracy of position and velocity measurement by multi-channel pulse compression using M-sequence modulated ultrasound**
Kota Yamanaka[†], Shinnosuke Hirata, Hiroyuki Hachiya (Tokyo Tech.)
- 2P2-2* Measurement of love wave propagation characteristics along elastic substrate and viscoelastic surface layer**
Yusuke Chiba[†], Tadashi Ebihara, Koichi Mizutani, Naoto Wakatsuki (Univ. of Tsukuba)
- 2P2-3 Nondestructive evaluation of surface defects on flexible circuits using high frequency focused polymer transducers**
Sanat Wagle[†], Anowarul Habib, Frank Melandsø (UiT The Arctic Univ. of Norway)
- 2P2-4* Dynamics of carbon-black suspension probed by dynamic ultrasound scattering techniques**
Motoki Ozaki[†], Tomohisa Norisuye, Hideyuki Nakanishi, Qui Tran-Cong-Miyata (Kyoto Inst. of Tech.)
- 2P2-5* Acoustical positioning method using transponders without clock synchronization**
Hirokazu Iwaya[†], Koichi Mizutani, Tadashi Ebihara, Naoto Wakatsuki (Univ. of Tsukuba)
- 2P2-6* Effects of curvatures and torsions on dispersion property of guided waves propagating in a helical structure obtained by a semi-analytical finite element method**
Kosuke Kanda[†], Toshihiko Sugiura (Keio Univ.)
- 2P2-7 Visualization of the cavitation bubble cloud produced in a clinical shock wave field using micro-pulse LED light**
Gwansuk Kang[†], Min Joo Choi (Jeju Natl. Univ.)
- 2P2-8* Effect of intermediate material at contact surface of bone-conducted sound transducer on propagation characteristics**
Satoki Ogiso[†], Koichi Mizutani, Naoto Wakatsuki, Keiichi Zempo, Yuka Maeda (Univ. of Tsukuba)
- 2P2-9* Piezomagnetic effect of steel bars in cement composite structures**
Miki Uehara^{1†}, Masafumi Kuroda¹, Hisato Yamada¹, Yutaka Kawano^{1,2}, Kenji Ikushima¹
(¹Tokyo Univ. of A&T; ²IHI Inspection & Instrumentation Co., Ltd.)
- 2P2-10* Estimation of defect position and size in billet using time-of-flight deviation of ultrasonic bottom echo**
Ryusuke Miyamoto[†], Koichi Mizutani, Tadashi Ebihara, Naoto Wakatsuki (Univ. of Tsukuba)
- 2P3-1 Energy trapping of quartz resonators with pillar phononic crystals**
Yung-Yu Chen^{1†}, Yan-Ruei Lin¹, Shih-Yung Pao² (¹Tatung Univ.; ²TXC Corp.)
- 2P3-2 Variation in resonance characteristics of a thickness-shear trapped-energy vibrator by gradual dipping in liquids - For the purpose of liquid-level sensing -**
Ken Yamada[†], Yuki Kunii (Tohoku Gakuin Univ.)
- 2P3-3* Piezoelectric probe for measurement of longitudinal and shear components of elastic wave**
Masafumi Aoyanagi[†], Naoto Wakatsuki, Koichi Mizutani, Tadashi Ebihara (Univ. of Tsukuba)
- 2P3-4 Design of an ultrasonic fingerprint sensor made of 1-3 piezocomposites by the finite element method**
Haejune Park, Yongrae Roh[†] (Kyungpook Natl. Univ.)
- 2P3-5* Evaluation of piezoelectric Ta₂O₅ thin films deposited on SrTiO₃ substrates**
Yu Sugaya[†], Shoji Kakio (Univ. of Yamanashi)
- 2P3-6 Size distribution of nano particles in the droplets ultrasonic atomized from Al₂O₃ suspension**
Jungsoon Kim^{1†}, Jihyang Kim², Jiyeong Yeom², Kang Lyeol Ha², Moojoon Kim²
(¹Tongmyong Univ.; ²Pukyong Natl. Univ.)
- 2P4-1 The effect of gas sparging on sonochemical oxidation reactions**
Hyeon-jae Lee, Wontae Lee, Younggyu Son[†] (Kumoh Natl. Inst. of Tech.)
- 2P4-2* Viscosity dependences of multibubble sonoluminescence in aqueous solutions of glycerol**
Munenori Ban[†], Pak-Kon Choi (Meiji Univ.)

- 2P4-3 **Rate control of sono-oxidation of KI by adding NaHCO₃**
Hisashi Harada[†] (Meisei Univ.)
- 2P4-4 **Enhancement of oxidation reaction of 2-deoxyribose by ultrasound**
Soojeong Shim[†], Young H. Kim (Korea Sci. Academy of KAIST)
- 2P4-5* **Productivity of reactive oxygen species by low-intensity focused ultrasound irradiation to titanium dioxide particles**
Keisuke Hashimura[†], Akio Kaya, Masaki Misawa, Yoshihiko Koseki, Kiyoshi Yoshinaka, Naotaka Nitta (AIST)
- 2P4-6* **A study on power accumulator of surface acoustic wave by using PZT substrate and its application to AU foil joining**
Hiroki Nakamura^{1†}, Yuji Watanabe¹, Kengo Naruse² (¹Takushoku Univ.; ²Seidensha Electronics Co., Ltd.)
- 2P4-7* **Surface hardness monitoring of object during hardening by high-intensity aerial ultrasonic waves**
Hajime Fujiwara[†], Ayumu Osumi, Youichi Ito (Nihon Univ.)
- 2P4-8* **An analysis of ultrasonically rotating droplet with moving particle semi-implicit and distributed point source method in a rotational coordinate**
Yuji Wada^{1†}, Kohei Yuge¹, Hiroki Tanaka², Kentaro Nakamura² (¹Seikei Univ.; ²Tokyo Tech.)
- 2P4-9* **Study of a liquid droplet ejection device using multi-actuator**
Kei Ozaki[†], Kengo Ando, Yoshihiro Ono, Akira Yasuda, Chiaki Tanuma (Hosei Univ.)
- 2P4-10* **Examination of the inner rotor type coiled stator ultrasound motor using wire acoustic waveguide**
Choyu Uehara^{1†}, Keisuke Kurita¹, Seiya Ozeki^{1,2}, Shinichi Takeuchi¹
(¹Toin Univ. of Yokohama; ²Tsukuba International Univ.)
- 2P4-11* **Examination of the outer rotor type coiled stator ultrasound for intravascular**
Keisuke Kurita^{1†}, Choyu Uehara¹, Seiya Ozeki^{1,2}, Shinichi Takeuchi¹
(¹Toin Univ. of Yokohama; ²Tsukuba international Univ.)
- 2P4-12* **Dynamic resonant frequency controllable system for ultrasonic transducer**
Hiroki Yokozawa^{1†}, Jens Twiefel², Michael Weinstein², Takeshi Morita¹ (¹Univ. of Tokyo; ²Leibniz Univ. Hannover)
- 2P5-1* **Long monitoring of portal vein with 3D ultrasound: Image tracking, respiratory motion analysis and diameter measurement**
Iori Terada[†], Yuki Togoe, Tomohiro Ueno, Koichi Ishizu, Yasutomo Fujii, Tsuyoshi Shiina, Naozo Sugimoto (Kyoto Univ.)
- 2P5-2* **Image analysis for classification of stools and gases in large intestine**
Kanako Tomihara^{1†}, Masayuki Tanabe¹, Junko Yotsuya², Masahiko Nishimoto¹ (¹Kumamoto Univ.; ²Fukui Univ.)
- 2P5-3* **A study on mechanism of temporal variation in ultrasonic integrated backscatter from human heart wall**
Yumi Tobinai[†], Hirofumi Taki, Hiroshi Kanai (Tohoku Univ.)
- 2P5-4* **Basic study on USCT for brain imaging**
Yuki Hayashi[†], Hirofumi Nakamura, Xiaolei Qu, Takashi Azuma, Shu Takagi (Univ. of Tokyo)
- 2P5-5* **Total calibration of position, response, and directivity of transducer elements for precise imaging with plane-wave based ultrasound computed tomography**
Takahide Terada[†], Kazuhiro Yamanaka, Atsuro Suzuki, Yushi Tsubota, Wenjing Wu, Ken-ichi Kawabata (Hitachi)
- 2P5-6* ***In Vivo* measurement of propagation of myocardial contraction along swine heart wall**
Yuya Matsuno[†], Hirofumi Taki, Hiroaki Yamamoto, Michinori Hirano, Susumu Morosawa, Hiroaki Shimokawa, Hiroshi Kanai (Tohoku Univ.)
- 2P5-7 **Relative pressure imaging of the left ventricle by ultrasonic vector flow mapping**
Tomohiko Tanaka[†], Takashi Okada, Tomohide Nishiyama, Yoshinori Seki (Hitachi)
- 2P5-8* **Thin catheter bending to the perpendicular direction of ultrasound propagation using 2-dimensional array transducer**
Toshiya Suzuki[†], Takashi Mochizuki, Hidetaka Ushimizu, Shinya Miyazawa, Nobuhiro Tsurui, Kohji Masuda (Tokyo Univ. of A&T)
- 2P5-9 **Forward propagated shear wave imaging using CD SWI elastography**
Yoshiki Yamakoshi[†], Mayuko Yamazaki, Takahiro Sato, Ren Koda, Naoki Sunaguchi (Gunma Univ.)

- 2P5-10*** **Ex-Vivo tumor characterization using the multimodal ARFI imaging system**
Jihun Kim[†], Jae Youn Hwang (Daegu Gyeongbuk Inst. of Sci. and Tech.)
- 2P5-11*** **Velocity measurement of shear-wave 2D propagation using high-speed localized motion imaging**
Shun Yoshimura^{1†}, Takashi Azuma¹, Keisuke Fujiwara², Hideki Takeuchi¹, Mika Seki¹,
Kazunori Itani², Kiyoshi Yoshinaka³, Shu Takagi¹ (¹Univ. of Tokyo; ²Hitachi; ³AIST)
- 2P5-12*** **Fabrication of bone phantoms by 3D printers and the measurement of ultrasonic scattering**
Shohei Nakata[†], Chikako Kamiyama, Gen Watanabe, Masahiro Ohno (Chiba Inst. of Tech.)
- 2P5-13*** **Influence of abnormal collagen cross-links on ultrasonic velocity in bone**
Ryohei Ueda[†], Mami Kawase, Mami Matsukawa (Doshisha Univ.)
- 2P5-14** **Experimental observation of piezoelectric effect in cancellous bone under ultrasound irradiation**
Atsushi Hosokawa[†] (Natl. Inst. Tech., Akashi Coll.)
- 2P5-15*** **Ultrasonically induced electric potentials in extracted collagen from cortical bone**
Shunki Mori^{1†}, Sayaka Matsukawa¹, Mami Kawase¹, Shinji Takayanagi², Mami Matsukawa¹
(¹Doshisha Univ.; ²Nagoya Inst. of Tech.)
- 2P5-16*** **Evaluation of piezoelectricity in bone by ultrasound irradiation**
Sayaka Matsukawa^{1†}, Shunki Mori¹, Daisuke Koyama¹, Shinji Takayanagi², Katsunori Mizuno³,
Takahiko Yanagitani⁴, Mami Matsukawa¹ (¹Doshisha Univ.; ²Nagoya Inst. Tech.; ³Univ. of Tokyo; ⁴Waseda Univ.)
- 2P6-1** **Acoustic propagation in shallow water by the effective depth approximation**
Seongwook Lee[†] (KIOST)
- 2P6-2*** **Effects of water temperature inversion layer on underwater sound propagation in the East China Sea**
Seong Hyeon Kim^{1†}, Byoung-Nam Kim², Eung Kim¹, Bok Kyoung Choi¹
(¹Maritime Safety Research Center; ²Korea Inst. of Ocean Sci. & Tech.)
- 2P6-3** **Sediment acoustic characteristic measurement at hashirimizu port for study of sound propagation at very shallow water**
Hanako Ogasawara[†], Kazuyoshi Mori (Natl. Defense Academy)
- 2P6-4*** **Array gain variation of bulb signals in vertically directional noise field**
Dong-Gyun Han^{1†}, Su-Uk Son¹, Young Geul Yoon¹, Jee Woong Choi¹, Joung-Soo Park²
(¹Hanyang Univ.; ²Agency for Defense Dev.)
- 2P6-5*** **Weighted time reversal combining in snapping shrimp noise**
Hyeonsu Kim[†], Jongpil Seo, Jiwoong Kang, Jaehak Chung (Inha Univ.)
- 2P6-6*** **Preliminary statistical analysis of transient noise observed at several coastal waters in japan**
Keiichi Shikata[†], Hiroyuki Kawahara, Kazuyoshi Mori, Hanako Ogasawara (Natl. Defense Academy)
- 11:30-13:00** **LUNCH TIME**
- 13:00-13:50** **Plenary Talk I** **Chair: Kyuichi Yasui (AIST)**
- 2PL** **Sonoluminescence and the acoustic cavitation**
Pak-Kon Choi[†] (Meiji Univ.)
- 13:50-14:00** **Break**
- 14:00-15:30** **Ocean acoustics, Biomedical ultrasound I**
Chair: Kyu Chil Park (Pukyong Natl. Univ.)
- 2E1-1** **Sound and low intensity pulse ultrasound stimulation for aquaculture oncorhynchus masou**
Yohachi (John) Yamashita[†], Takuya Kawakami, Xianqiang Xu, Tomoaki Karaki (Toyama Pref. Univ.)
- 2E1-2** **MIMO underwater acoustic communication using adaptive time reversal in deep ocean**
Takuya Shimura[†], Yukihiko Kida, Mitsuyasu Deguchi, Hiroshi Ochi (JAMSTEC)
- 2E1-3*** **Optimal design of a sparse array to simulate a fully dense underwater planar array transducer for underwater vehicles**
Muhammad Shakeel Afzal, Yongrae Roh[†] (Kyungpook Natl. Univ.)

- 2E1-4 High-sensitivity measurement method of bubble cavitation signal generated from infinitesimal amount of microbubbles**
Ren Koda[†], Takumu Origasa, Toshitaka Nakajima, Yoshiki Yamakoshi (Gunma Univ.)
- 2E1-5* Evaluation of frequency-dependent ultrasound attenuation in transparent medium using focused shadowgraph technique**
Yukina Iijima[†], Nobuki Kudo (Hokkaido Univ.)
- 2E1-6* Computational cost reduction by avoiding ray-link iteration of bent-ray method for sound speed image reconstruction in ultrasound computed tomography**
Xiaolei Qu[†], Takashi Azuma¹, Hongxiang Lin¹, Hirofumi Nakamura¹, Satoshi Tamano², Shu Takagi¹, Ichiro Sakuma¹, Shin-ichiro Umemura², Yoichiro Matsumoto¹ (¹Univ. of Tokyo; ²Tohoku Univ.)
- 15:30-15:45 Break**
- 15:45-17:15 Biomedical ultrasound II** **Chair: Tsuyoshi Shiina (Kyoto Univ.)**
- 2E2-1 Accuracy improvement of multimodal measurement of speed of sound based on image processing**
Naotaka Nitta[†], Akio Kaya¹, Masaki Misawa¹, Koji Hyodo¹, Tomokazu Numano² (¹AIST; ²Tokyo Met. Univ.)
- 2E2-2* Efficient phase velocity estimation of ultrasonic guided wave propagating in cortical bone using adaptive beamforming technique**
Shigeaki Okumura[†], Vu-Hieu Nguyen², Hirofumi Taki³, Toru Sato¹ (¹Kyoto Univ.; ²Univ. Paris-Est; ³Tohoku Univ.)
- 2E2-3 Ex Vivo assessment of porcine aortic stiffness based on leaky lamb-wave dispersion analysis of shear wave propagation**
Jun-keun Jang[†], Kengo Kondo, Takeshi Namita, Makoto Yamakawa, Tsuyoshi Shiina (Kyoto Univ.)
- 2E2-4 Ultrasound computed tomography for orthopedic application**
Takashi Azuma[†], Xiaolei Qu (Univ. of Tokyo)
- 2E2-5* Prediction of ultrasonically induced thermal coagulation from the distribution of absorption of pulsed high-intensity focused ultrasound**
Ryosuke Iwasaki[†], Ryo Takagi, Kentaro Tomiyasu, Shin Yoshizawa, Shin-ichiro Umemura (Tohoku Univ.)
- 2E2-6* Subcellular observation of C2C12 myoblast differentiation using ultrasonic microscope**
Mamoru Washiya[†], Kyoichi Takanashi¹, Kazuki Ota¹, Naohiro Hozumi¹, Kazuto Kobayashi², Sachiko Yoshida¹ (¹Toyohashi Univ. of Tech.; ²Honda Electronics)
- 17:20-17:40 Awards Ceremony**
- 17:40-18:00 Break**
- 18:00-20:00 Banquet**

Friday, November 18

- 9:30-11:30 Poster Session** **Chair: Naoto Wakatsuki (Univ. of Tsukuba)**
- 3P1-1* FEA of lamb wave in anisotropic plate**
Donghyun Kim[†], Young H. Kim (Korea Sci. Academy of KAIST)
- 3P1-2* Design of composite-structured acoustic metasurface toward wideband energy harvesting**
Yuta Kobayashi[†], Kenji Tsuruta, Atsushi Ishikawa (Okayama Univ.)
- 3P1-3* Simulation study of axial ultrasound propagation in heterogeneous cortical bone model**
Koki Takano[†], Yoshiki Nagatani², Mami Matsukawa¹ (¹Doshisha Univ.; ²Kobe City Coll. Tech.)
- 3P1-4* Local ultrasonic wave velocities in articular cartilage measured by micro-Brillouin scattering technique**
Mami Kawase[†], Yoshiaki Shibagaki, Shota Tomita, Shunki Mori, Masahiko Kawabe, Mami Matsukawa (Doshisha Univ.)

- 3P1-5 Temperature dependence of acoustic property for $\text{Ca}_3\text{Ta}(\text{Ga},\text{Al})_3\text{Si}_2\text{O}_{14}$ single crystals**
Yuji Ohashi^{1†}, Mototaka Arakawa¹, Yuui Yokota¹, Yasuhiro Shoji², Akihiro Yamaji¹, Shunsuke Kurosawa¹, Kei Kamada^{1,2}, Akira Yoshikawa^{1,2} (¹Tohoku Univ.; ²C&A)
- 3P1-6* Evaluation of acoustic properties of multilayer graphene sheet by ultrasonic microscopy**
Ryosuke Kaneko^{1†}, Michio Kadota¹, Masamitsu Tachibana², Mutsuaki Murakami², Jun-ichi Kushibiki¹, Yuji Ohashi¹, Shuji Tanaka¹ (¹Tohoku Univ.; ²Kaneka Corp.)
- 3P1-7 Piezoelectric photothermal detection of the mini-band edge energies of strain-balanced InGaAs/GaAsP superlattice structures**
Tetsuo Ikari^{1†}, Atsuhiko Fukuyama¹, Tsubasa Nakamura¹, Masakazu Sugiyama², Yoshiaki Nakano² (¹Univ. Miyazaki; ²Univ. of Tokyo)
- 3P2-1 Detection of sleeping and rising states in care environment using sound at upper vocal register of 18-20 kHz installation in sensor network**
Mitsutaka Hikita[†], Yukari Kaneta (Kogakuin Univ.)
- 3P2-2* Ultrasound scattering studies on the aqueous suspension of thermo-sensitive gel particles**
Takehisa Inoue[†], Tomohisa Norisuye, Hideyuki Nakanishi, Qui Tran-Cong-Miyata (Kyoto Inst. of Tech.)
- 3P2-3 Ultrasound scattering studies on silica micro-particle suspensions**
Tomohisa Norisuye[†], Hayato MORI, Hideyuki Nakanishi, Qui Tran-Cong-Miyata (Kyoto Inst. of Tech.)
- 3P2-4* Long range acoustic sensing using super-directivity speaker and super-resolution signal processing with pulse compression technique**
Yuya Asakura[†], Kan Okubo, Norio Tagawa (Tokyo Met. Univ.)
- 3P2-5* Room-temperature poling of $\text{CaBi}_4\text{Ti}_4\text{O}_{15}$ / $\text{Pb}(\text{Zr},\text{Ti})\text{O}_3$ sol-gel composite films by pulse discharge**
Hikaru Kouyama[†], Taiga Kibe, Takao Namihira, Makiko Kobayashi (Kumamoto Univ.)
- 3P2-6* A comparison examination on treatment of interface between different media for sound field simulation using CIP method**
Akihiro Fukuda^{1†}, Kan Okubo¹, Takao Tsuchiya² (¹Tokyo Met. Univ.; ²Doshisha Univ.)
- 3P2-7 Evaluation of abdominal sound speed tomographic image using regularized ART algorithm**
Akira Yamada[†], Kensuke Kawai, Tomohiro Kurokawa (Tokyo Univ. of A&T)
- 3P2-8* Simulation of optical propagation for phase retrieval in shadowgraph of ultrasonic field**
Hiroki Hanayama[†], Takuya Nakamura, Ryo Takagi, Shin Yoshizawa, Shin-ichiro Umemura (Tohoku Univ.)
- 3P2-9 Moisture adsorption desorption characteristics of stainless steel tubing measured by ball surface acoustic wave trace moisture analyzer**
Toshihiro Tsuji¹, Shingo Akao^{1,2†}, Toru Oizumi¹, Nobuo Takeda^{1,2}, Yusuke Tsukahara^{1,2}, Kazushi Yamanaka^{1,2} (¹Tohoku Univ.; ²Ball Wave Inc.)
- 3P2-10* Fabrication of high-temperature flexible ultrasonic transducer by printing method**
Yuto Yonemura[†], Kazuho Kiyofuji, Taiga Kibe, Makiko Kobayashi (Kumamoto Univ.)
- 3P3-1 Three-level inverter system based on multiplex transmission using surface acoustic wave filters**
Keita Kubo^{1†}, Nanae Kanai¹, Fumiya Kobayashi¹, Shigeyoshi Goka¹, Keiji Wada¹, Shoji Kakio² (¹Tokyo Met. Univ.; ²Univ. of Yamanashi)
- 3P3-2 Transportation control of microfluidic particles using mode switching between surface acoustic waves and plate waves**
Jin-Chen Hsu[†], Yeo-Wei Huang, Chih-Hsun Hsu (Natl. Yunlin Univ.)
- 3P3-3 Study on the indenter shape of vibratory tactile sensor**
Subaru Kudo[†] (Ishinomaki Senshu Univ.)
- 3P3-4* Real-time monitoring of methanol concentration using shear horizontal surface acoustic wave sensor**
Kyosuke Tada[†], Takuya Nozawa, Jun Kondoh (Shizuoka Univ.)
- 3P3-5 High-frequency QCM biosensor fabricated with PDMS polymer process**
Fumihito Kato^{1†}, Yukinari Kodaka¹, Yuuki Sakai¹, Hiroyuki Noguchi¹, Hirotsugu Ogi², Masahiko Hirao² (¹Nippon Inst. of Tech.; ²Osaka Univ.)

- 3P3-6*** Estimation of liquid properties by inverse problem analysis based on shear horizontal surface acoustic wave sensor responses
Kento Ueda[†], Jun Kondoh (Shizuoka Univ.)
- 3P4-1*** Influence of ultrasonic irradiation condition on aggregation reaction of insulin
Daisuke Nishioka[†], Kichitaro Nakajima, Hirotsugu Ogi, Masahiko Hirao, Masatomo So, Yuji Goto (Osaka Univ.)
- 3P4-2*** The desulphurization process of bitumen using ultrasound
Wan Mohamad Ikhwan bin Wan Kamal[†], Hirokazu Okawa, Takahiro Kato, Katsuyasu Sugawara (Akita Univ.)
- 3P4-3** Heavy metals removal from fine soils in ultrasonic soil washing processes
Dukyong Lee[†], Wontae Lee, Younggyu Son (Kumoh Natl. Inst. of Tech.)
- 3P4-4** Utilization of ultrasonic atomization for dust control in underground mining
Hirokazu Okawa[†], Kentaro Nishi, Youhei Kawamura, Takahiro Kato, Katsuyasu Sugawara (Akita Univ.)
- 3P4-5** Effect of ultrasound irradiation on size and morphology of scorodite particles synthesized under different acidic conditions
Yuya Kitamura[†], Hirokazu Okawa, Takahiro Kato, Katsuyasu Sugawara (Akita Univ.)
- 3P4-6*** Piezoelectric transducer design for particle excitation hydraulic control valve
Takahiro Ukida^{††}, Koichi Suzumori¹, Hiroyuki Nabae¹, Takefumi Kanda² (¹Tokyo Tech.; ²Okayama Univ.)
- 3P4-7** Withdraw
- 3P4-8** Evaluation of a spraying state using a nozzle oscillated by a torsional transducer
Takefumi Kanda^{1†}, Seren Miyake¹, Shoki Ofuji¹, Shunsuke Tsuyuki¹, Shin-ichiro Kawasaki² (¹Okayama Univ.; ²AIST)
- 3P4-9** Ultrasonic welding by using planar vibration locus of longitudinal-torsional vibration source consisting of two transducers
Takuya Asami[†], Yusuke Higuchi, Hikaru Miura (Nihon Univ.)
- 3P4-10*** Ultrasonic welding of copper plate and aluminum plate by complex vibration
Yusuke Higuchi[†], Takuya Asami, Hikaru Miura (Nihon Univ.)
- 3P4-11*** Study of rectangular vibrating plate size of aerial ultrasonic source combined with rigid wall
Ryo Sato[†], Takuya Asami, Hikaru Miura (Nihon Univ.)
- 3P5-1** Application of organic IR788-loaded sIPN dyes for photoacoustic imaging
Van Phuc Nguyen[†], Hyejin Kim, Mingyoeng Kang, Minsoek Kwak, Hyun Wook Kang (Pukyong Natl. Univ.)
- 3P5-2** Morphological observation of the HT-22 cells in a culture well exposed to ultrasound
Tsengel Bayarsaikhan[†], Gwansuk Kang, Su-Yong Eun, Min Joo Choi (Jeju Natl. Univ.)
- 3P5-3** Quantitative investigations on thermal response of adipose tissue to focused ultrasonic energy
Hanjae Pyo^{1†}, Suhyun Park², Jae Hyun Jung³, Sung Min Kim³, Hyun Wook Kang¹ (¹Pukyong Natl. Univ.; ²Univ. of Texas at Austin; ³Bluecore Company)
- 3P5-4*** Experimental study on the pressure wave propagation in tubes mimicking stenosed vessels
Shimpei Ono^{1†}, Mami Matsukawa¹, Pierre-Yves Lagree² (¹Doshisha Univ.; ²Université Pierre et Marie Curie)
- 3P5-5*** Wall shear stress measurement method based on novel flow model near vascular wall in echography
Motochika Shimizu[†], Tomohiko Tanaka, Takashi Okada, Yoshinori Seki, Tomohide Nishiyama (Hitachi)
- 3P5-6** Fluid flow measurement for diagnosis of ventricular shunt malfunction using nonlinear response of microbubbles in the contrast-enhanced ultrasound imaging
Suhyun Park^{1†}, Heechul Yoon², Stanislav Emelianov^{2,3}, Salavat Aglyamov¹ (¹Univ. of Texas at Austin; ²Georgia Inst. of Tech.; ³Emory Univ.)
- 3P5-7** Development of sensor system using quartz crystal microbalance for detecting nano - and microbubbles
Kenji Yoshida^{1†}, Yasuhiro Yokoi², Yoshiaki Watanabe² (¹Chiba Univ.; ²Doshisha Univ.)
- 3P5-8*** Validation of tracking performance of cell-microbubble aggregations versus variation of acoustic field
Riki Oitate^{1†}, Akie Shimomura¹, Hikaru Wada¹, Takashi Mochizuki¹, Kohji Masuda¹, Yusuke Oda², Ryo Suzuki², Kazuo Maruyama² (¹Tokyo Univ. of A&T; ²Teikyo Univ.)

- 3P5-9*** Study of induction method of nanobubbles using frequency response analysis of ultrasound to verify with florescent observation
Hikaru Wada^{1†}, Aska Furutani¹, Riki Oitate¹, Takashi Mochizuki¹, Kohji Masuda¹, Johan Unga², Yusuke Oda², Ryo Suzuki², Kazuo Maruyama² (¹Tokyo Univ. of A&T; ²Teikyo Univ.)
- 3P5-10*** Two-dimensional microbubble manipulation by mechanically controlled ultrasound focus
Hironobu Matsuzaki^{1†}, Taichi Osaki¹, Kazuhito Inoue¹, Mitsuhsa Ichihyanagi², Takashi Azuma¹, Shu Takagi¹ (¹Univ. of Tokyo; ²Sophia Univ.)
- 3P5-11*** Simultaneous high-speed optical and acoustic observation of cavitation bubbles generated in biological tissue
Kai Suzuki[†], Ryosuke Iwasaki, Ryo Takagi, Shin Yoshizawa, Shin-ichiro Umemura (Tohoku Univ.)
- 3P5-12** Study on ultrasonic monitoring using 1.5 dimensional ultrasound phased array in US-guided high-intensity focused ultrasound treatment
Ryo Takagi[†], Ryosuke Iwasaki, Kentaro Tomiyasu, Shin Yoshizawa, Shin-ichiro Umemura (Tohoku Univ.)
- 3P5-13*** Study on control of treatment size in bubble-enhanced high-intensity focused ultrasound using radio-frequency echo signal
Kentaro Tomiyasu[†], Ryo Takagi, Ryosuke Iwasaki, Shin Yoshizawa, Shin-ichiro Umemura (Tohoku Univ.)
- 3P5-14** Improvement of the power efficiency by direct driving for HIFU transducer
Hideki Takeuchi^{1†}, Takashi Azuma¹, Kiyoshi Yoshinaka², Shu Takagi¹, Ichiro Sakuma¹ (¹Univ. of Tokyo; ²AIST)
- 3P5-15** Multifunctional pulse generator for high-intensity focused ultrasound system
Satoshi Tamano^{1,2†}, Shin Yoshizawa¹, Shin-ichiro Umemura¹ (¹Tohoku Univ.; ²Hitachi)
- 3P6-1** Experimental analysis of underwater acoustic source localization using closely spaced hydrophone pairs
Min Seop Sim^{1†}, Byoung-Nam Kim¹, Eung Kim¹, Bok Kyoung Choi¹, Kyun Kyung Lee² (¹Korea Inst. of Ocean Sci. and Tech.; ²Kyungpook Natl. Univ.)
- 3P6-2** Various applications of acoustic data to deep-seabed mineral deposits
Jongmin Joo^{1,2†}, Jee Woong Choi², Youngtak Ko¹, Jonguk Kim¹, Sang Joon Pak¹, Michael Chandler¹, Seung Kyu Son¹, Kyeong-Young Lee¹, Jai-Woon Moon¹, Sang-Bum Chi¹ (¹Hanyang Univ.; ²Korea Inst. of Ocean & Tech.)
- 3P6-3*** Analysis of the crosstalk in an underwater planar array transducer using the equivalent circuit method
Seonghun Pyo, Yongrae Roh[†] (Kyungpook Natl. Univ.)
- 3P6-4*** Detection of shellfish in the sediment using acoustic coring system with 1-MHz focus probe
Hiroki Suganuma^{1†}, Katsunori Mizuno¹, Akira Asada¹, Masumi Yamamuro¹, Yohei Uehara², Kazutoshi Okamoto² (¹Univ. of Tokyo; ²Shizuoka Pref. Res. Inst. of Fishery)
- 3P6-5*** Ultrasonic target ranging in water by using sensitivity compensated signal and time reversal method
Dai Chimura[†], Ryo Toh, Seiichi Motooka (Chiba Inst. of Tech.)
- 3P6-6** Numerical analysis for estimating scattered waveform from complex-shaped object in water
Shunichi Fujii[†], Takenobu Tsuchiya, Hironori Mori, Nobuyuki Endoh (Kanagawa Univ.)
- 3P6-7*** A contour tracking method for underwater targets tracking
Lixin Liu^{1,2,3†}, Hongyu Bian², Wen Xu¹, Shin-ichi Yagi³ (¹Chinese Academy of Sci.; ²Harbin Eng. Univ.; ³Meisei Univ.)
- 11:30-13:00** LUNCH TIME
- 13:00-13:50** Plenary Talk II **Chair: Kang Lyeol Ha (Pukyong Natl. Univ.)**
- 3PL** Robust control of sound field in an ocean waveguide
Jeasoo Kim[†], Gihoon Byun (Korea Maritime and Ocean Univ.)
- 13:50-14:00** Break

14:00-15:30 Physical acoustics, acousto-optics Chair: Hirotsugu Ogi (Osaka Univ.)

- 3E1-1*** A fundamental study on measurement of elastic properties in compacted bentonite by ultrasonic velocity measurement
Shun Kimura^{1†}, Kazumi Kitayama¹, Kazushi Kimoto², Katsuyuki Kawamura², Hiroshige Kikura¹
(¹Tokyo Tech.; ²Okayama Univ.)
- 3E1-2*** Monitoring of carrier dynamics in GaN during disappearance of piezoelectricity by resonant ultrasound spectroscopy
Kanta Adachi[†], Hirotsugu Ogi, Akira Nagakubo, Nobutomo Nakamura,
Masahiko Hirao, Mamoru Imade, Masashi Yoshimura, Yusuke Mori (Osaka Univ.)
- 3E1-3*** Band gap control with acoustic diffraction modes in two-dimensional phononic crystals
Hwi Suk Kang^{1†}, Kang Il Lee², Suk Wang Yoon¹ (¹Sungkyunkwan Univ.; ²Kangwon National Univ.)
- 3E1-4*** GHz extraordinary acoustic transmission of bulk waves through nanostructures
Hiroya Tozawa^{1†}, Motonobu Tomoda¹, Paul Otsuka¹, Sylvain Mezi¹, Osamu Matsuda¹, Istvan Veres², Oliver Wright¹
(¹Hokkaido Univ.; ²Research Center for Non-destructive Testing)
- 3E1-5** Imaging of laser excited surface acoustic wave for in-process evaluation of 3D additive manufacturing (AM) process
Harumichi Sato¹, Hisato Ogiso^{1†}, Naoko Sato¹, Toru Shimizu¹, Shizuka Nakano¹, Yoshikazu Ohara², Kazushi Yamanaka²
(¹AIST; ²Tohoku Univ.)
- 3E1-6*** Collision dynamics of microdroplets
Daichi Hayakawa[†], Shujiro Mitani, Keiji Sakai (Univ. of Tokyo)

15:30-15:45 Break

15:45-16:45 Measurement techniques II Chair: Mitsutaka Hikita (Kogakuin Univ.)

- 3E2-1** Ultrasonic guided wave testing based on high sensitive SQUID magnetic sensor for pipes
Yoshimi Hatsukade[†], Natsuki Masutani, Shouta Teranishi, Ken Masamoto, Shouya Kanenaga (Kindai Univ.)
- 3E2-2*** Nondestructive failure analysis technique for IC interconnection by using ultrasound heating
Takuto Matsui^{1†}, Naohiro Hozumi¹, Akihiro Otaka², Toru Matsumoto²
(¹Toyohashi Univ. of Tech.; ²Hamamatsu Photonics K.K.)
- 3E2-3*** Viscoelasticity response during fibrillation of amyloid β peptides on quartz crystal microbalance biosensor
Yen-Ting Lai[†], Hirotsugu Ogi, Arihiro Iwata, Masahiko Hirao (Osaka Univ.)
- 3E2-4** Simultaneous measurement of gas concentration and temperature by the ball SAW sensor
Kazushi Yamanaka^{1,2†}, Shingo Akao^{1,2}, Nobuo Takeda^{1,2}, Toshihiro Tsuji¹, Toru Oizumi¹, Yusuke Tsukahara^{1,2}
(¹Tohoku Univ.; ²Ball Wave Inc.)

16:45-17:00 CLOSING