

USE2015 Schedule

	Nov. 5 (Thu)	Nov. 6 (Fri)	Nov. 7 (Sat)
9:00		Registration 8:20	Registration 8:20
10:00		9:00-9:45 2E1-1-3 High Power Ultrasound I, Sonochemistry II Chair: Shin-ichi Hatanaka (The University of Electro-Communications)	9:00-10:15 3J1-1-5 Measurement Techniques II Chair: Hideyuki Nomura (The University of Electro-Communications)
11:00	Registration 11:00	9:45-10:30 2E2-1-3 Biomedical Ultrasound III Chair: Nobuki Kudo (Hokkaido University)	10:15-11:30 3J2-1-5 Piezoelectric Devices II, High Power Ultrasound II, Sonochemistry III Chair: Subaru Kudo (Ishinomaki Senshu University)
12:00	12:05 Opening Ceremony	10:30-11:30 2E3-1-4 Physical Acoustics, Acousto-Optics I, Piezoelectric Devices I Chair: Shoji Kakio (University of Yamanashi)	
13:00	12:15-13:15 1J1-1-4 Biomedical Ultrasound I Chair: Shinichi Takeuchi (Toin University of Yokohama)	11:30-13:00 Lunch Time	11:30-13:00 Lunch Time
14:00		13:00-13:50 2PL Plenary Talk I Kiyotaka Wasa (Yokohama City University) Chair: Jun Kondoh (Shizuoka University)	13:00-13:50 3PL Plenary Talk II Koichi Mizutani (University of Tsukuba) Chair: Keiji Sakai (University of Tokyo)
15:00	13:30-15:30 Poster Session 1P1-1~10, 1P2-1~13, 1P3-1~7, 1P4-1~13, 1P5-1~17, 1P6-1-8 Chair: Takeshi Morita (University of Tokyo)	14:00-16:00 Poster Session 2P1-1~9, 2P2-1~15, 2P3-1~7, 2P4-1~13, 2P5-1~15, 2P6-1~6 Chair: Takenobu Tsuchiya (Kanagawa University)	14:00-16:00 Poster Session 3P1-1~7, 3P2-1~13, 3P3-1~8, 3P4-1~15, 3P5-1~18, 3P6-1~5 Chair: Kohji Masuda (Tokyo University of Agriculture and Technology)
16:00	15:45-16:30 1J2-1-3 Biomedical Ultrasound II Chair: Shin-ichiro Umemura (Tohoku University)		
17:00	16:30-17:15 1J3-1-3 Sonochemistry I Chair: Tatsuro Matsuoka (Nagoya University)	16:15-17:15 2E4-1-4 Measurement Techniques I, Ocean acoustics II Chair: Mitsutaka Hikita (Kogakuin University)	16:15-17:15 3J3-1-4 Physical Acoustics, Acousto-Optics II Chair: Jun Morimoto (National Defense Academy)
18:00	17:15-17:45 1J4-1-2 Ocean acoustics I Chair: Kazuyoshi Mori (National Defense Academy)	17:25-17:45 Awards Ceremony	
19:00	17:45-18:30 Organizing Committee Meeting	18:00-20:00 Banquet	17:20 Closing Ceremony

The 36th Symposium on Ultrasonic Electronics (USE 2015) Program

† Speaker

* Applying to Young Scientists Award

Thursday, November 5

12:05-12:15 OPENING

12:15-13:15 Biomedical Ultrasound I

Chair: Shinichi Takeuchi (Toin Univ. of Yokohama)

- 1J1-1 Analysis of relation between liver fibrosis structure and fluctuation in co-occurrence matrix of ultrasonic images of fibrotic liver using multi-Rayleigh model**
Hiroshi Isono[†], Shinnosuke Hirata, Hiroyuki Hachiya (Tokyo Inst. of Tech.)
- 1J1-2* Acoustic impedance analysis with ultra-high frequency ultrasound for fatty acid species identification in NASH liver**
Kazuyo Ito^{††}, Kenji Yoshida¹, Kazuki Tamura¹, Jonathan Mamou², Hitoshi Maruyama¹, Tadashi Yamaguchi¹
(¹Chiba Univ.; ²Lizzi Center for Biomedical Eng.)
- 1J1-3 Tissue elasticity imaging system based on time reversal process of shear wave**
Keisuke Ogo[†], Kengo Kondo, Makoto Yamakawa, Tsuyoshi Shiina (Kyoto Univ.)
- 1J1-4* Robust contrast source inversion method for waveform reconstruction of the breast tissue in ultrasound computed tomography**
Hongxiang Lin[†], Takashi Azuma, Xiaolei Qu, Shu Takagi (Univ. of Tokyo)
- 13:15-13:30 Break**
- 13:30-15:30 Poster Session** **Chair: Takeshi Morita (Univ. of Tokyo)**
- 1P1-1 Attenuation characteristics of evanescent sound field by porous material**
Ayaka Fujii[†], Naoto Wakatsuki, Koichi Mizutani (Univ. of Tsukuba)
- 1P1-2* Mechanical properties of LIB electrodes measured by vibrating reed method**
Syogo Hatake^{††}, Tsuyoshi Noge¹, Ryo Inagaki¹, Kenta Kirimoto², Yong Sun¹
(¹Kyushu Inst. of Tech.; ²Ariaki Natl. Coll. of Tech.)
- 1P1-3 Range stacked apodization on synthetic aperture array signal processing**
Daiki Sugeno^{††}, Shin-ichi Yagi¹, Kiyoshi Tamura², Masakazu Sato³
(¹Meisei Univ.; ²Hitachi Aloka Medical; ³Microsonic)
- 1P1-4 Measurement of viscoelasticity of condensed molecular layer on water surface by EMS system**
Maiko Hosoda^{††}, Takeo Fujimoto¹, Taichi Hirano², Keiji Sakai² (¹Tokyo Denki Univ.; ²Univ. of Tokyo)
- 1P1-5 Disadvantage of classical and quantum theories in treatment of electromechanical coupling system and advantage of complex series dynamics**
Michio Ohki (Natl. Defense Academy)
- 1P1-6 Deposition of ScAlN thin film using dual-sputtering method**
Satoshi Fujii^{1,2†}, Masahiro Sumisaka³, Yukihiko Okada⁴, Noriyuki Hasuike⁴, Kenji Kisoda⁵, Hiroshi Harima⁴, Tatsuya Omori³, Ken-ya Hashimoto³
(¹Natl. Inst. of Tech., Okinawa College; ²Tokyo Inst. of Tech.; ³Chiba Univ.; ⁴Kyoto Inst. of Tech.; ⁵Wakayama Univ.)
- 1P1-7 Observation of ripplon resonance on micro liquid surface**
Toshiyuki Koga[†], Shujiro Mitani, Keiji Sakai (Univ. of Tokyo)
- 1P1-8* Rectification of lamb wave propagation in thin plates with piezo-dielectric periodic structures**
Yuhei Iwasaki[†], Kenji Tsuruta, Atsushi Ishikawa (Okayama Univ.)

- 1P1-9*** **Withdraw**
- 1P1-10*** **Effect of ultrasonic melt treatment on grain size and tensile properties of A356 alloy**
Tae Yup Lee^{1†}, Jeong IL Youn², Woo Chun Kim¹, Jeong Wook Park¹
(¹DR AXION Co., Ltd.; ²Sungkyunkwan Univ.)
- 1P2-1** **Detection of human motion using ultrasonic sing-around method**
Marie Tabaru[†], Takahiro Aoyagi, Kentaro Nakamura (Tokyo Inst. of Tech.)
- 1P2-2** **Preliminary experimental channel modeling for airborne ultrasonic wave propagation of WBAN**
Takahiro Aoyagi[†], Marie Tabaru, Kentaro Nakamura (Tokyo Inst. of Tech.)
- 1P2-3** **Development of compact, fast, and sensitive ball SAW trace moisture sensor using amorphous SiO_x film**
Shingo Akao[†], Toru Oizumi, Nobuo Takeda, Yusuke Tsukahara, Toshihiro Tsuji, Kazushi Yamanaka
(Tohoku Univ.)
- 1P2-4*** **Non-contact imaging for micro crack in shallow layer of concrete using very high-intensity aerial ultrasonic wave**
Ayumu Osumi[†], Masashi Ogita, Youichi Ito (Nihon Univ.)
- 1P2-5*** **Dispersion property of guided waves propagating a helical structure obtained by analysis and experiment**
Kousuke Kanda[†], Toshihiko Sugiura (Keio Univ.)
- 1P2-6*** **Second harmonic components generation for size and number of micro-cracks using finite element method**
Makoto Fukuda[†], Kazuhiko Imano (Akita Univ.)
- 1P2-7*** **Measuring acoustic nonlinearity using three wave mixing in metals during fatigue**
Yutaka Ishii[†], Takumi Honnma, Toshihiro Ohtani (Shonan Inst. of Tech.)
- 1P2-8*** **Creep-induced nonlinear ultrasonic changes in ASME Gr. 122 heat resistant steel welded joint**
Takumi Honma^{1†}, Yutaka Ishii¹, Toshihiro Ohtani¹, Masahiko Tabuchi², Hiromichi Hongo², Masahiko Hirao³
(¹Shonan Inst. Tech.; ²NIMS; ³Osaka Univ.)
- 1P2-9*** **Measurements of acoustically stimulated electro-magnetic response from reinforcing steel bars**
Miki Uehara^{1†}, Masafumi Kuroda¹, Hisato Yamada¹, Kenji Ikushima¹, Yutaka Kawano², Yuhei Suzuki², Ami Kohri²
(¹Tokyo Univ. of A&T; ²IHI Inspection & Instrumentation Co., Ltd.)
- 1P2-10*** **Soundness evaluation of adhesive anchors using magnetostrictive vibration**
Kazuhiko Hasebe[†], Yosuke Mizuno, Marie Tabaru, Kentaro Nakamura (Tokyo Inst. of Tech.)
- 1P2-11*** **Detection of cracking near welding of SUS316 pipe by shear-vertical-wave point-focusing-electromagnetic acoustic transducer**
Takashi Takishita[†], Kazuhiro Ashida, Nobutomo Nakamura, Hirotsugu Ogi, Masahiko Hirao (Osaka Univ.)
- 1P2-12** **Enhance amplitude of incident wave by using acoustic matching wedge for subharmonic ultrasound measurement**
Ren Koda^{1†}, Makoto Hamai², Tsuyoshi Mihara¹ (¹Tohoku Univ.; ²Univ. of Toyama)
- 1P2-13*** **Effect of mode conversion on defect detection in billet from profile of time-of-flight using ultrasonic transmission method**
Ryusuke Miyamoto[†], Koichi Mizutani, Tadashi Ebihara, Naoto Wakatsuki (Univ. of Tsukuba)
- 1P3-1** **Loss reduction of leaky surface acoustic wave by loading with high-velocity thin film**
Shoji Kakio[†], Keiko Hosaka (Univ. of Yamanashi)
- 1P3-2*** **Loss reduction of longitudinal-type leaky surface acoustic wave by loading with ScAlN thin film**
Masashi Gomi[†], Shoji Kakio (Univ. of Yamanashi)
- 1P3-3*** **Simulation of temperature compensation for SC-cut oscillators using B-mode**
Ryo Haga[†], Rifwa Hayashi, Yosuke Hanada, Takayuki Sato, Yasuaki Watanabe (Tokyo Met. Univ.)
- 1P3-4*** **Study on generation mechanisms of third-order nonlinear signals in SAW devices on the basis of simulation**
Ryo Nakagawa^{1,2†}, Takanao Suzuki¹, Hiroshi Shimizu¹, Haruki Kyoya¹, Katsuhiko Nako¹, Ken-ya Hashimoto²
(¹Murata Mfg.; ²Chiba Univ.)

- 1P3-5 On modeling of oblique propagation of acoustic waves in infinitely long grating structures**
Gongbin Tang^{1,2}, Tao Han¹, Jing Chen¹, Tatsuya Omori², Ken-ya Hashimoto^{2,1†}
(¹Shanghai Jiao Tong Univ.; ²Chiba Univ.)
- 1P3-6* Thin plate model for transverse mode analysis of surface acoustic wave devices**
Gongbin Tang^{1,2}, Benfeng Zhang^{1,2†}, Tao Han¹, Jing Chen¹, Tatsuya Omori², Ken-ya Hashimoto²
(¹Shanghai Jiao Tong Univ.; ²Chiba Univ.)
- 1P3-7 Ultra-wideband ladder filters for digital TV band**
Michio Kadota[†], Shuji Tanaka (Tohoku Univ.)
- 1P4-1* Relationship between the fundamental wavelength and the phase-adjuster length in the looped-tube thermoacoustic system**
Kazusa Taga^{1†}, Shin-ichi Sakamoto², Yoshiaki Watanabe¹ (¹Doshisha Univ.; ²Univ. of Shiga Pref.)
- 1P4-2* Use of heat transfer fluids to drive a loop-tube-type multistage thermoacoustic system with two diameter-expanded prime movers**
Yuichiro Orino^{1†}, Shin-ichi Sakamoto¹, So Ueno¹, Takahiro Wada¹, Yoshitaka Inui¹, Yoshiaki Watanabe²
(¹Univ. of Shiga Pref.; ²Doshisha Univ.)
- 1P4-3* Development of a prototype thermoacoustic cooling system with diameter expanded prime movers—
—A study on the relationship between input power and cooling properties—**
So Ueno^{1†}, Shin-ichi Sakamoto¹, Yuichiro Orino¹, Takahiro Wada¹, Yoshitaka Inui¹, Yoshiaki Watanabe²
(¹Univ. of Shiga Pref.; ²Doshisha Univ.)
- 1P4-4* On the thermoacoustic phenomena caused by the heat phase adjuster.**
Aiko Kido^{1†}, Shin-ichi Sakamoto², Yoshiaki Watanabe¹ (¹Doshisha Univ.; ²Univ. of Shiga Pref.)
- 1P4-5* Effect of ultrasound on electrochemiluminescence of tris(2,2'-bipyridine)ruthenium with various coreactants**
Fumiki Takahashi[†], Masanori Matsuoka, Jiye Jin (Shinshu Univ.)
- 1P4-6* The secondary Bjerknes force on a spherical bubble cluster in a periodic pressure field**
Naohiro Sugita[†], Toshihiko Sugiura (Keio Univ.)
- 1P4-7* Basic study on aggregation and dispersion of nanodiamond particles by ultrasound exposure**
Riki Tohda[†], Masashi Ikegami, Shinichi Takeuchi (Toin Univ. of Yokohama)
- 1P4-8 Study on measurement technique for amount of generated cavitation -Relationship between concentration of microbubbles and output signal of sensor-**
Takeyoshi Uchida^{1†}, Masahiro Yoshioka¹, Youichi Matsuda¹, Shinichi Takeuchi², Ryuzo Horiuchi¹
(¹AIST; ²Toin Univ. of Yokohama)
- 1P4-9* OH emission and bubble instability in single-bubble sonoluminescence**
Hayao Yae[†], Pak-Kon Choi (Meiji Univ.)
- 1P4-10* Synthesis of calcite-type calcium carbonate using monoethanolamine and calcium chloride under ultrasound irradiation**
Tatsuo Fujiwara[†], Hirokazu Okawa, Takahiro Kato, Katsuyasu Sugawara (Akita Univ.)
- 1P4-11 Effect of reaction temperature on the size and morphology of scorodite synthesized using ultrasound irradiation**
Yuya Kitamura[†], Hirokazu Okawa, Takahiro Kato, Katsuyasu Sugawara (Akita Univ.)
- 1P4-12* Effect of radical scavenger addition on ultrasonic degradation of methylene blue**
Kaho Shimakage^{1†}, Daisuke Kobayashi^{1,2}, Masakazu Naya¹, Hideyuki Matsumoto³, Yuichiro Shimada¹, Katsuto Otake¹, Atsushi Shono¹ (¹Tokyo Univ. of Sci.; ²Tokyo Denki Univ.; ³AIST)
- 1P4-13 Optimization of ultrasonic soil washing processes for the remediation of heavy metals contaminated soils**
Seulgi Kim, Wontae Lee, Younggyu Son[†] (Kumoh Natl. Inst. of Tech.)
- 1P5-1 Numerical simulation of piezoelectric effect under ultrasound irradiation: Consideration of the conductivity**
Atsushi Hosokawa[†] (Natl. Inst. Tech., Akashi Coll.)

- 1P5-2 Fabrication of cancellous bone models by a 3D printer and the measurement of ultrasonic transmission properties**
Masahiro Ohno[†], Masashi Shoji, Yasuaki Takahashi, Takafumi Fujii (Chiba Inst. of Tech.)
- 1P5-3* The influence of bone medullary in cancellous bone on two phenomenon**
Takuma Hachiken[†], Shoko Nakanishi, Mami Matsukawa (Doshisha Univ.)
- 1P5-4* Ultrasonically induced electric potentials in the cortical bone**
Sayaka Matsukawa^{1†}, Shunki Mori¹, Elodie Fontanel¹, Isao Mano¹, Katsunori Mizuno², Takahiko Yanagitani³, Shinji Takayanagi¹, Mami Matsukawa¹ (¹Doshisha Univ.; ²Univ. of Tokyo; ³Waseda Univ.)
- 1P5-5* Distribution of ultrasonic wave velocities in radial direction of bovine cortical bone**
Yuma Nishimura[†], Mami Matsukawa (Doshisha Univ.)
- 1P5-6 Propagation characteristics of the bone-conducted ultrasound in the living human head: Estimation of the propagation delay by Gabor wavelet analysis**
Takuya Hotehama[†], Seiji Nakagawa (AIST)
- 1P5-7* Study on heavy matching layer transducer towards producing second harmonic.**
Zulfadhli Zaini[†], Masamizu Osuga, Hayato Jimbo, Jun Yasuda, Ryo Takagi, Shin Yoshizawa, Shin-ichiro Umemura (Tohoku Univ.)
- 1P5-8 Multi-element transducer module for ultrasound therapy**
Shingo Toyoda^{1,2†}, Kiyoshi Yoshinaka², Hideki Takeuchi^{2,3}, Takashi Azuma³, Akira Sasaki², Shu Takagi³, Kazuyuki Mizuhara¹ (¹Tokyo Denki Univ.; ²AIST; ³Univ. of Tokyo)
- 1P5-9 Improvement of high voltage staircase drive circuit waveform for high-intensity therapeutic ultrasound**
Satoshi Tamano^{1,3†}, Hayato Jimbo¹, Takashi Azuma², Shin Yoshizawa¹, Keisuke Fujiwara³, Kazunori Itani³, Shin-ichiro Umemura¹ (¹Tohoku Univ.; ²Univ. of Tokyo; ³Hitachi Aloka Medical)
- 1P5-10 Improved highly accurate localized motion imaging for monitoring high-intensity focused ultrasound treatment**
Xiaolei Qu^{1†}, Takashi Azuma¹, Ryusuke Sugiyama¹, Kengo Kanazawa¹, Mika Seki¹, Akira Sasaki¹, Hideki Takeuchi¹, Keisuke Fujiwara², Kazunori Itani², Satoshi Tamano², Shu Takagi¹, Ichiro Sakuma¹, Yoichiro Matsumoto¹ (¹Univ. of Tokyo; ²Hitachi Aloka Medical)
- 1P5-11* Monitoring of high-intensity focused ultrasound treatment using shear wave elastography induced by 2D array therapeutic transducer**
Ryosuke Iwasaki[†], Ryo Takagi, Ryo Nagaoka, Hayato Jimbo, Shin Yoshizawa, Yoshifumi Saijo, Shin-ichiro Umemura (Tohoku Univ.)
- 1P5-12 Influence by heat transfer of blood flow at temperature rise distribution in tissue phantom caused by ultrasound radiation**
Takenobu Tsuchiya[†], Hatano Yuichi, Lechen Shen, Hironori Mouri, Nobuyuki Endoh (Kanagawa Univ.)
- 1P5-13* Destruction of tissue marker for gastrointestinal tumor localization by ultrasound irradiation**
Ryosuke Yahagi^{1†}, Kenzi Yosida¹, Yiting Zhang¹, Masahiko Ebata¹, Taro Toyota², Tadashi Yamaguchi¹, Hideki Hayashi¹ (¹Chiba Univ.; ²Univ. of Tokyo)
- 1P5-14* Effect on red blood cell membrane induced by pulsed ultrasound**
Masato Imura[†], Kentaro Tani, Daisuke Koyama, Yoshiaki Watanabe (Doshisha Univ.)
- 1P5-15 Axisymmetric finite element simulation for high intensity ultrasound source system using acoustic waveguides**
Shigeru Igarashi^{1,2†}, Takeshi Morishita², Shinichi Takeuchi² (¹Polytechnic Univ.; ²Toin Univ. of Yokohama)
- 1P5-16 Effect of acoustic properties of lens materials on the performance of capacitive micromachined ultrasonic transducers**
Sung Ho Kim[†], Jin Ho Chang (Sogang Univ.)
- 1P5-17 No-power-supply steering and drive for endoscope capsule by AC-added DC magnetic field - Investigation of combination with ultrasonic beacon -**
Kaihei Miyazaki[†], Mitsutaka Hikita (Kogakuin Univ.)
- 1P6-1 The effect of ray focusing gain in shallow water**
Jooyoung Hahn[†], Joungsoo Park (Agency for Defense Dev.)

- 1P6-2 Bottom sand waves influence on low-frequency propagation in shallow water environment**
Sungho Cho[†], Donhyug Kang (Korea Inst. of Ocean Sci. and Tech.)
- 1P6-3* Tank experiment for backscattering measurements from rough bottom interfaces**
Su-Uk Son^{1†}, Sungho Cho², Jee Woong Choi¹ (¹Hanyang Univ.; ²Korea Inst. of Ocean Sci. & Tech.)
- 1P6-4 Behavior pattern of marine organism by using acoustical imaging sonar**
Kyoungheon Lee^{1†}, Yongsu Yang², Donggil Lee², Yongbeom Pyeon¹, Hyungbeen Lee²
(¹Chonnam Natl. Univ.; ²Natl. Fish. Res. & Dev. Inst.)
- 1P6-5 Design and fabrication of a wideband tonpilz transducer with a cavity-type head mass**
Yongrae Roh[†], Hyunki Kim (Kyungpook Natl. Univ.)
- 1P6-6 Underwater acoustic source localization using closely-spaced hydrophone pairs**
Min Seop Sim^{1†}, Bok Kyoung Choi¹, Byoung Nam Kim¹, Kyun Kyung Lee²
(¹Korea Inst. of Ocean Sci. and Tech.; ²Kyungpook Natl. Univ.)
- 1P6-7 Measurement of swimming ability of moon jellyfish using a particle imaging velocimetry**
Yongbeom Pyeon¹, Kyoungheon Lee^{1†}, Yongsu Yang², Donggil Lee², Euna Yoon¹
(¹Chonnam Natl. Univ.; ²Natl. Fish. Res. & Dev. Inst.)
- 1P6-8 Measurement of underwater radiated noise from a ship using self-recording hydrophones**
Bong-Chae Kim^{1†}, Bok Kyoung Choi¹, Byoung-Nam Kim¹, Cheolsoo Kim²
(¹Korea Inst. of Ocean Sci. and Tech.; ²Korea Res. Inst. of Ships and Ocean Eng.)

15:30-15:45 Break

15:45-16:30 Biomedical Ultrasound II Chair: Shin-ichiro Umemura (Tohoku Univ.)

- 1J2-1* Lifetime control of vaporized nano droplets using ambient temperature conditioning**
Jun Tanaka[†], Kentaro Kikuchi, Ayumu Ishijima, Takashi Azuma, Kosuke Minamihata, Satoshi Yamaguchi,
Teruyuki Nagamune, Ichiro Sakuma, Shu Takagi (Univ. of Tokyo)
- 1J2-2* High-speed observation of cell-microbubble interaction from frontal and lateral directions**
Yasunobu Igarashi[†], Nobuki Kudo (Hokkaido Univ.)
- 1J2-3 Development of a bone-conducted ultrasonic hearing aid for the profoundly deaf: Assessments of the modulation type with regard to monosyllable articulation and confusion analyses**
Seiji Nakagawa^{1,2†}, Takuya Hotehama¹, Takayuki Kagomiya^{1,3}
(¹AIST; ²Univ. of Washington; ³Natl. Inst. Japanese Language & Linguistics)

16:30-17:15 Sonochemistry I Chair: Tatsuro Matsuoka (Nagoya Univ.)

- 1J3-1 Optical measurement of particle size distribution of acoustic cavitation and surrounding sound field**
Takanobu Kuroyama^{1†}, Koichi Mizutani¹, Naoto Wakatsuki¹, Tadashi Ebihara¹, Takeshi Ohbuchi²
(¹Univ. of Tsukuba; ²Natl. Defense Academy)
- 1J3-2 Influence of ultrasonic cavitation on measurement of sound pressure**
Yoshiyuki Asakura^{1†}, Tam Thanh Nguyen², Keiji Yasuda², Shinobu Koda² (¹Honda Electronics; ²Nagoya Univ.)
- 1J3-3 Study of the onset conditions for a thermoacoustic engine**
Teruyuki Kozuka^{1†}, Ryouta Kogiso¹, Kyuichi Yasui² (¹Aichi Inst. of Tech.; ²AIST)

17:15-17:45 Ocean acoustics I Chair: Kazuyoshi Mori (Natl. Defense Academy)

- 1J4-1 Analysis of long-distance propagation characteristic by an air gun source**
Toshio Tsuchiya^{2,3†}, Koji Futa¹, Shinpei Goto², Fujio Yamamoto², Etsuro Shimizu³
(¹Mitsubishi Precision; ²JAMSTEC; ³Tokyo Univ. of Marine Sci. and Tech.)
- 1J4-2* Acoustical environment measurement at a very small port**
Hanako Ogasawara[†], Kazuyoshi Mori (Natl. Defense Academy)

17:45-18:30 Organizing Committee Meeting

Friday, November 6

9:00-9:45 High Power Ultrasound I, Sonochemistry II
Chair: Shin-ichi Hatanaka (The Univ. of Electro-Comm.)

- 2E1-1* **High amplitude vibration test of polymers at ultrasonic frequencies**
Jiang Wu[†], Yosuke Mizuno, Marie Tabaru, Kentaro Nakamura (Tokyo Inst. of Tech.)
- 2E1-2* **Frequency dependence of threshold values for white noise, chemical and mechanical effects**
Tam Thanh Nguyen^{1†}, Yoshiyuki Asakura², Shinobu Koda¹, Keiji Yasuda¹ (¹Nagoya Univ.; ²Honda Electronics)
- 2E1-3 **Sonochemiluminescence of lucigenin in an aqueous solution using alcohol as coreactant**
Masanori Matsuoka^{1†}, Yoshiyuki Asakura², Jin Jiye¹ (¹Shinshu Univ.; ²Honda Electronics)

9:45-10:30 Biomedical Ultrasound III **Chair: Nobuki Kudo (Hokkaido Univ.)**

- 2E2-1* **Ultrasonic wave propagation in the cortical bone with heterogeneous character.**
Toshiho Hata^{1†}, Koki Takano¹, Yoshiki Nagatani², Mami Matsukawa¹ (¹Doshisha Univ.; ²Kobe City Coll. of Tech.)
- 2E2-2 **Shear wave transmissivity measurement by color Doppler shear wave imaging**
Yoshiki Yamakoshi[†], Mayuko Yamazaki, Toshihiro Kasahara, Naoki Sunaguchi, Yasushi Yuminaka (Gunma Univ.)
- 2E2-3* **Real-time treatment feedback using novel filter for eliminating therapeutic ultrasound noise in US-guided high-intensity focused ultrasound treatment**
Ryo Takagi[†], Hayato Jimbo, Ryosuke Iwasaki, Kentaro Tomiyasu, Shin Yoshizawa, Shin-ichiro Umemura (Tohoku Univ.)

10:30-11:30 Physical Acoustics, Acousto-Optics I, Piezoelectric Devices I
Chair: Shoji Kakio (Univ. of Yamanashi)

- 2E3-1* **Extraordinary transmission of gigahertz surface acoustic waves**
Sylvain Meziel^{1†}, Kazuki Chonan¹, Sam H. Lee², Motonobu Tomoda¹, Osamu Matsuda¹,
Paul H. Otsuka¹, Oliver B. Wright¹
(¹Hokkaido Univ.; ²Yonsei Univ.)
- 2E3-2* **Deep ultraviolet-excitation photothermal heterodyne-interferometer combined with micro-HPLC**
Kai Aoki[†], Miki Isoda, Akira Harata (Kyushu Univ.)
- 2E3-3* **Enhancement of effective electromechanical coupling factor by mass loading in layered SAW device structures**
Gongbin Tang^{1,2†}, Tao Han¹, Jing Chen¹, Tatsuya Omori², Akihiko Teshigahara³, Takao Iwaki³, Ken-ya Hashimoto^{2,1}
(¹Shanghai Jiao Tong Univ.; ²Chiba Univ.; ³DENSO Corp.)
- 2E3-4* **Room temperature poling of sol-gel composite materials with high coercive field piezoelectric powder phase**
Hikaru Kouyama[†], Taiga Kibe, Syouta Fujimoto, Takao Namihira, Makiko Kobayashi (Kumamoto Univ.)

11:30-13:00 LUNCH TIME

13:00-13:50 Plenary Talk I **Chair: Jun Kondoh (Shizuoka Univ.)**

- 2PL **Thin films as material engineering**
Kiyotaka Wasa[†] (Yokohama City Univ.)

13:50-14:00 Break

14:00-16:00 Poster Session **Chair: Takenobu Tsuchiya (Kanagawa Univ.)**

- 2P1-1 **Classification of cylindrical shell using acoustic shock wave in water**
Dong Wan Lee[†], Bok-Kyoung Choi, Min Seop Sim, Byoung-Nam Kim (Korea Inst. of Ocean Sci. and Tech.)

- 2P1-2 Integration of high frequency PVDF copolymer transducers in microfluidic system for ultrasonic spectral characterization of microparticles**
Frank Melandsø†, Sanat Wagle, Adit Decharat, Anowarul Habib, Balpreet Singh Ahluwalia (UiT The Arctic Univ. of Norway)
- 2P1-3* Influence on sol-gel composite properties caused by sol-gel phase with different dielectric constants**
Keisuke Kimoto†, Makoto Matsumoto, Tsukasa Kaneko, Makiko Kobayashi (Kumamoto Univ.)
- 2P1-4* Crystal growth and evaluation of langasite type crystal grown by micro pulling down method**
Masanori Kitahara†, Yuji Ohashi¹, Yuui Yokota¹, Kenji Inoue², Tetuo Kudo¹, Kei Kamada^{1,2,3}, Shunsuke Kurosawa¹, Akira Yoshikawa^{1,2,3} (¹Tohoku Univ.; ²Piezo Studio; ³C&A)
- 2P1-5 Dependence of acoustic property on Al substitution for $\text{Ca}_3\text{Ta}(\text{Ga}_{1-x}\text{Al}_x)_3\text{Si}_2\text{O}_{14}$ single crystal**
Yuji Ohashi†, Tetsuo Kudo¹, Yuui Yokota¹, Yasuhiro Shoji², Shunsuke Kurosawa¹, Kei Kamada^{1,2}, Akira Yoshikawa^{1,2} (¹Tohoku Univ.; ²C&A)
- 2P1-6* Fundamental study on crystal growth process of hydrothermally synthesized PZT poly-crystals**
Seiya Ozeki†, Minoru Kuribayashi Kurosawa², Shinichi Takeuchi¹ (¹Toin Univ. of Yokohama; ²Tokyo Inst. of Tech.)
- 2P1-7* Shear mode electromechanical coupling coefficient of c-axis parallel oriented ZnO films by sputtering with H_2O**
Chihiro Takata†, Shinji Takayanagi¹, Takahiko Yanagitani², Mami Matsukawa¹ (¹Doshisha Univ.; ²Waseda Univ.)
- 2P1-8 Characteristics of shock waves by CNT coated laser generated ultrasound transducers**
Xiaofeng Fan¹, Kanglyeol Ha†, Moojoon Kim¹, Jung-Hwan Oh¹, Hyunwook Kang¹, Jungsoon Kim², Duckjong Kim³ (¹Pukyong Natl. Univ.; ²Tongmyong Univ.; ³KIMM)
- 2P1-9 Imaging surface acoustic waves on a metamaterial based on silica microspheres**
Paul H. Otsuka†, Sylvain Mezil¹, Osamu Matsuda¹, Motonobu Tomoda¹, Tian Gian², Nicholas Boechler³, Alex A. Maznev², Nicholas Fang², Oliver B. Wright¹ (¹Hokkaido Univ.; ²Massachusetts Inst. of Tech.; ³Univ. of Washington)
- 2P2-1* Monitoring of dissociation dynamics of alzheimer-disease aggregates by poly-phenol with TIRFM-QCM system**
Kotaro Yamada†, Kichitaro Nakajima, Daisuke Nishioka, Hirotsugu Ogi, Yuji Goto, Masahiko Hirao (Osaka Univ.)
- 2P2-2 Damage detection in piezoelectric crystal using surface acoustic wave sensors**
Anowarul Habib†, Adit Decharat¹, Sanat Wagle¹, Amit Shelke², Sourav Banerjee³, Frank Melandsø¹ (¹UiT The Arctic Univ. of Norway; ²Indian Inst. of Tech. Guwahati; ³Univ. of South Carolina)
- 2P2-3* Simultaneous evaluation of size distribution and mechanical properties of microparticles in suspensions by ultrasound spectroscopy**
Nguyen Thao Tran†, Hideyuki Nakanishi, Tomohisa Norisuye, Qui Tran-Cong-Miyata (Kyoto Inst. of Tech.)
- 2P2-4 Acoustical birefringence for experimental stress analysis in casting iron using ultrasonic techniques**
Jia-Hang Theng†, Che-Hua Yang¹, Sung-Mao Chiu² (¹Natl. Taipei Univ. of Tech.; ²Metal Industries Res. & Development)
- 2P2-5 A modified equivalent-network model for the liquid-level sensors operating in trapped-energy vibration modes**
Ken Yamada†, Takuya Ishikawa (Tohoku Gakuin Univ.)
- 2P2-6 Quantitative evaluation of transient heat flux through solid surface by ultrasonic thermometry**
Ikuo Ihara†, Shingo Isobe, Akira Kosugi, Yudai Honma, Iwao Matsuya, Yuya Ichige (Nagaoka Univ. of Tech.)
- 2P2-7 Imaging of closed cracks in coarse-grained materials by nonlinear ultrasonic phased array**
Yoshikazu Ohara†, Koji Takahashi, Yoshihiro Ino, Kazushi Yamanaka, Tsuyoshi Mihara (Tohoku Univ.)
- 2P2-8 Withdraw**
- 2P2-9 Characterization of compressive stress layer of chemically tempered glasses by the ultrasonic microspectroscopy technology**
Mototaka Arakawa†, Jun-ichi Kushibiki (Tohoku Univ.)
- 2P2-10 Sound speed of nano particle suspension depending on concentration**
Jungsoon Kim†, Jihyang Kim², Minkun Bae², Kanglyeol Ha², Moojoon Kim², Mincheol Chu³ (¹Tongmyong Univ.; ²Pukyong Natl. Univ.; ³Korea Res. Inst. of Standards and Sci.)

- 2P2-11*** Propagation characteristics of love-type wave in a structure with viscoelastic and elastic layers
Yusuke Chiba[†], Tadashi Ebihara, Koichi Mizutani, Naoto Wakatsuki (Univ. of Tsukuba)
- 2P2-12** Eigenmode analysis of a lamb wave isotropic plate waveguide by the finite-difference time-domain method using staggered grids with collocated grid points of velocities
Yousheng Wang^{1†}, Koji Hasegawa¹, Takashi Yasui² (¹Muroran Inst. of Tech.; ²Kitami Inst. of Tech.)
- 2P2-13*** Simulation of ultrasound B-mode image in heterogeneous media using FDTD method
Xiaoying Yang[†], Shinnosuke Hirata, Hiroyuki Hachiya (Tokyo Inst. of Tech.)
- 2P2-14** Low-frequency ultrasound imaging using pulse compressed parametric sound
Hideyuki Nomura[†], Hideo Adachi, Tomoo Kamakura (Univ. of Electro-Comm.)
- 2P2-15** The detection of reinforced concrete crack caused by corrosion using non-contact acoustic inspection method
Kazuko Sugimoto^{1†}, Tsuneyoshi Sugimoto¹, Yutaka Kawano², Takayuki Nishido²
(¹Toin Univ. of Yokohama; ²IHI Inspection & Instrumentation Co., Ltd.)
- 2P3-1*** Measurement of cantilever vibration using impedance-loaded surface acoustic wave sensor
Masaki Oishi[†], Hiromitsu Hamashima, Jun Kondoh (Shizuoka Univ.)
- 2P3-2*** Evaluation of atomization using surface acoustic wave devices with different frequencies
Tatsuya Sugiyama[†], Jun Kondoh (Shizuoka Univ.)
- 2P3-3*** Behavior simulation of the liquid droplet injection device according to the multi-actuator
Yoshihiro Ono[†], Michitaka Yosino, Akira Yasuda, Chiaki Tanuma (Hosei. Univ.)
- 2P3-4** The method of estimating density of the object using vibratory tactile sensor
Subaru Kudo[†] (Ishinomaki Senshu Univ.)
- 2P3-5** New structure of frequency-change-type two-axis acceleration sensor
Sumio Sugawara, Yuji Sato[†] (Ishinomaki Senshu Univ.)
- 2P3-6** Study of composite-type vibration sensor for detection of two-axis acceleration and one-axis angular velocity
Sumio Sugawara, Ryota Sato[†] (Ishinomaki Senshu Univ.)
- 2P3-7** Construction of three-axis acceleration sensor using a cross- coupled vibrator
Jiro Terada[†], Yusuke Ueha, Yasutomo Uetsuji (Osaka Inst. of Tech.)
- 2P4-1*** Numerical analysis of capillary wave for ultrasonic nebulizing
Jungsoon Kim¹, Jihyang Kim^{2†}, Kanglyeol Ha², Moojoon Kim² (¹Tongmyong Univ.; ²Pukyong Natl. Univ.)
- 2P4-2*** Non-contact atomizer of droplets changing surface tension and viscosity by aerial intense ultrasonic waves
Arisa Endo[†], Takuya Asami, Hikaru Miura (Nihon Univ.)
- 2P4-3*** Ultrasonic atomization using circular vibrating plate with a small gap
Ryo Yakou[†], Takuya Asami, Hikaru Miura (Nihon Univ.)
- 2P4-4*** An analysis of ultrasonically rotating droplet with moving particle semi-implicit and distributed point source method
Yuji Wada^{1†}, Kohei Yuge¹, Hiroki Tanaka², Kentaro Nakamura² (¹Seikei Univ.; ²Tokyo Inst. of Tech.)
- 2P4-5** Industrial ultrasonic levitation machine considering conveyance
- Experimental and simulation investigation of conventional sound systems -
Masaki Yamamoto[†], Mitsutaka Hikita (Kogakuin Univ.)
- 2P4-6** Primary Si refining of A390 Al alloy by using sacrificial sonotrode in high intensity ultrasound
Jeong IL Youn^{1†}, Young Ki Lee¹, Young Jig Kim¹, Woo Chun Kim², Jung Wook Park²
(¹Sungkyunkwan Univ.; ²DR AXION Co., Ltd.)
- 2P4-7*** Microstructure evolution of AZ31 Mg alloy with ultrasonic injection time
Jeong IL Youn¹, Young Ki Lee^{1†}, Young Jig Kim¹, Jung Wook Park², Hoon Cho³
(¹Sungkyunkwan Univ.; ²DR AXION Co., Ltd.; ³Korea Inst. of Industrial Tech.)
- 2P4-8*** Effect of ultrasonic frequency on energy efficient range in molten aluminum alloy
Jeong IL Youn, Jong Hwan Lee[†], Young Ki Lee, Young Jig Kim (Sungkyunkwan Univ.)

- 2P4-9*** Improved battery performance using Pd nanoparticles synthesized on the surface of LiFePO₄/C with ultrasound irradiation
Muhammad Ali Saliman^{1†}, Hirokazu Okawa¹, Misaki Takai², Takahiro Kato¹, Mineo Sato², Katsuyasu Sugawara¹
(¹Akita Univ.; ²Niigata Univ.)
- 2P4-10** The effect of temperature in underground mining on the dust control using ultrasonic atomization
Hirokazu Okawa^{1†}, Kentaro Nishi¹, Naosuke Kawai¹, Youhei Kawamura², Katsuyasu Sugawara¹
(¹Akita Univ.; ²Univ. of Tsukuba)
- 2P4-11*** Effect of ultrasonic frequency on the inactivation of yeast
Yoshinori Ike[†], Takashi Ikeno, Shohei Ota, Ken Yamamoto (Kansai Univ.)
- 2P4-12*** Effect of alcohols on the ultrasonic degradation of polyethylene glycol
Kazuya Nagamine[†], Yu Takemura, Yuta Kato, Ryuichi Arakawa, Ken Yamamoto (Kansai Univ.)
- 2P4-13** Decomposition of cellulose by ultrasonic welding in water
Shinfuku Nomura, Seiya Miyagawa[†], Shinobu Mukasa, Hiromichi Toyota (Ehime Univ.)
- 2P5-1*** 3-dimensional active control of microbubbles and its observation by spatio-temporal control of acoustic field
Shinya Miyazawa[†], Tomohiro Kurokawa, Hikaru Wada, Naoto Hosaka, Takashi Mochizuki, Kohji Masuda
(Tokyo Univ. of A&T)
- 2P5-2*** Acceleration of lithotripsy using cavitation bubbles induced by second-harmonic superimposition
Masamizu Osuga[†], Jun Yasuda, Hayato Jimbo, Shin Yoshizawa, Hiroshi Ishii, Shin-ichiro Umemura (Tohoku Univ.)
- 2P5-3*** Advantage of annular focal region generated by sector-vortex array in cavitation-enhanced high-intensity focused ultrasound treatment
Hayato Jimbo[†], Ryo Takagi, Kota Goto, Kei Taguchi, Shin Yoshizawa, Shin-ichiro Umemura (Tohoku Univ.)
- 2P5-4** Efficient generation of cavitation bubbles and reactive oxygen species using triggered HIFU sequence for sonodynamic treatment
Jun Yasuda[†], Shin Yoshizawa, Shin-ichiro Umemura (Tohoku Univ.)
- 2P5-5** Antitumor effect of sonodynamically activated pyrrolidine tris-acid fullerene
Yumiko Iwase^{1†}, Hiroyuki Kuwahara¹, Koji Nishi¹, Junya Fujimori¹, Nagahiko Yumita¹,
Toshihiko Ikeda¹, Fu-shin Chen², Yasunori Momose³, Shin-ichiro Umemura⁴
(¹Yokohama Univ. of Pharm.; ²Natl. Dong Hwa Univ.; ³Toho Univ.; ⁴Tohoku Univ.)
- 2P5-6*** Study on aggregation reactions of amyloid β peptides induced by ultrasonic irradiation and stirring agitation
Kichitaro Nakajima[†], Hirotsugu Ogi, Masahiko Hirao, Yuji Goto (Osaka Univ.)
- 2P5-7*** Study of cavitation behavior during high-intensity focused ultrasound exposure by using flash imaging
Kei Taguchi[†], Ryo Takagi, Jun Yasuda, Shin Yoshizawa, Shin-ichiro Umemura (Tohoku Univ.)
- 2P5-8*** Experimental analysis of behavior in nanobubbles using echograms under various conditions of ultrasound exposure
Hikaru Wada^{1†}, Shinya Miyazawa¹, Tomohiro Kurokawa¹, Takashi Mochizuki¹, Kohji Masuda¹, Johan Unga²,
Yusuke Oda², Ryo Suzuki², Kazuo Maruyama² (¹Tokyo Univ. of A&T; ²Teikyo Univ.)
- 2P5-9*** Evaluation of statistical analysis models for envelope amplitude of liver based on histology
Mikito Ito^{1†}, Kenji Yoshida¹, Shohei Mori², Hiroyuki Hachiya², Tadashi Yamaguchi¹
(¹Chiba Univ.; ²Tokyo Inst. of Tech.)
- 2P5-10*** Experimental analysis of estimation method of scatterer parameters in multi-Rayleigh model using contrast phantom
Minori Ohashi[†], Sinnosuke Hirata, Hiroyuki Hachiya (Kyoto Inst. of Tech.)
- 2P5-11*** Stability evaluation of estimation method of multi-Rayleigh model using simulated ultrasound B-mode image for liver fibrosis
Shohei Mori[†], Sinnosuke Hirata¹, Tadashi Yamaguchi², Hiroyuki Hachiya¹ (¹Tokyo Inst. of Tech.; ²Chiba Univ.)
- 2P5-12*** Quantitative evaluation of acoustic concentration of NASH rat liver using statistical analysis models for echo amplitude envelope
Kazuki Tamura^{1†}, Kenji Yoshida¹, Jonathan Mamou², Hitoshi Maruyama¹, Hiroyuki Hachiya³, Tadashi Yamaguchi¹
(¹Chiba Univ.; ²Lizzi Center for Biomedical Engineering; ³Tokyo Inst. of Tech.)

- 2P5-13 Investigation on quantitative assessment of fat content in human liver using acoustic velocity-change**
Kazune Mano^{1†}, Shohei Tanigawa¹, Makoto Hori¹, Daiki Yokota¹, Kenji Wada¹, Toshiyuki Matsunaka¹,
Hiroyasu Morikawa², Hiromichi Horinaka¹ (¹Univ. of Osaka Pref.; ²Univ. of Osaka City)
- 2P5-14* Verification of correlation of speed of sound and QUS parameters for infection of ulcer just under skin**
Masaaki Omura^{1†}, Masato Sendo¹, Masushi Kohta², Takashi Kubo², Toshimichi Ishiguro³,
Kazuto Kobayashi³, Naohiro Hozumi⁴, Kenji Yoshida¹, Tadashi Yamaguchi¹
(¹Chiba Univ.; ²Alcare; ³Honda Electronics; ⁴Toyohashi Univ. of Tech.)
- 2P5-15* Measurement of attenuation and backscattering coefficients of bubble suspension in low-velocity steady flow**
Kenji Yoshida[†], Kazuki Tamura, Tadashi Yamaguchi (Chiba Univ.)
- 2P6-1 Fading statistics characterization of shallow water acoustic communication channel**
Minja Bae[†], Jihyun Park, Jongju Kim, Dandan Xue, Kyu-Chil Park, Jong Rak Yoon (Pukyong Natl. Univ.)
- 2P6-2 The effect of divided coefficient on the equalizer for underwater acoustic communication**
Ming Chuai, Kyu-Chil Park[†], Jihyun Park, Jong Rak Yoon (Pukyong Natl. Univ.)
- 2P6-3 Phase estimate using phase code in underwater spatial variation channel**
Jihyun Park[†], DanDan Xue, Minja Bae, Jongju Kim, Kyu-Chil Park, Jong Rak Yoon (Pukyong Natl. Univ.)
- 2P6-4* Performance analysis of MC-MFSK communication system over multipath fading underwater channel**
Dandan Xue[†], Jihyun Park, Minja Bae, Jongju Kim, Kyu-Chil Park, Jong Rak Yoon (Pukyong Natl. Univ.)
- 2P6-5 Effectiveness of frequency hopping/ Frequency shift keying in shallow water multipath interference channel**
Jongju Kim[†], Dandan Xue, Jihyun Park, Minja Bae, Kyu-Chil Park, Jong Rak Yoon (Pukyong Natl. Univ.)
- 2P6-6 Underwater acoustic communication channels at two different bottom types**
Sunhyo Kim[†], Su-Uk Son, Jee Woong Choi (Hanyang Univ.)
- 16:00-16:15 Break**
- 16:15-17:15 Measurement Techniques I, Ocean acoustics II**
Chair: Mitsutaka Hikita (Kogakuin Univ.)
- 2E4-1* Thickness control of piezoelectric film made by stencil printing**
Tsukasa Kaneko[†], Taiga Kibe, Keisuke Kimoto, Ryota Nishimura, Makiko Kobayashi (Kumamoto Univ.)
- 2E4-2* Ultrasonic Doppler method with single reflector traceability**
Antonin Povolny^{1†}, Adrian Filip^{1,2}, Hiroshige Kikura¹ (¹Tokyo Inst. of Tech.; ²Univ. Politehnica Bucuresti)
- 2E4-3 Evaluation of adhesive free crossed array PVDF copolymer transducers for high frequency imaging**
Sanat Wagle[†], Adit Decharat, Anowarul Habib, Balpreet Singh Ahluwalia, Frank Melandso
(UiT The Arctic Univ. of Norway)
- 2E4-4 Design of adaptively operated underwater acoustic communication modem in shallow water**
Jong R. Yoon[†], Jihyun Park, Minja Bae, Jongju Kim, Dandan Xue, Kyu-Chil Park (Pukyong Natl. Univ.)
- 17:15-17:25 Break**
- 17:25-17:45 Awards Ceremony**
- 17:45-18:00 Break**
- 18:00-20:00 Banquet**

9:00-10:15 Measurement Techniques II

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

- 3J1-1 Detection of the ultrasonic propagation time shift in the clamp-on ultrasonic flowmeter for gas**
Hiroshi Nishiguchi^{1†}, Toshiyuki Sawayama², Kouki Nagamune³
(¹Kansai Electric Power Co.; ²New Sensor Inc.; ³Univ. of Fukui)
- 3J1-2 Experimental study on super-resolution imaging using vibro-Doppler measurement**
Takashi Miwa[†], Seiya Kobayashi (Gunma Univ.)
- 3J1-3* Quantitative measurement of ultrasound pressure field by optical phase contrast method and acoustic holography**
Seiji Oyama[†], Jun Yasuda, Hiroki Hanayama, Shin Yoshizawa, Shin-ichiro Umemura (Tohoku Univ.)
- 3J1-4 Direction of arrival estimation on unevenly-spaced single-channel microphone array**
Keiichi Zempo[†], Kazuki Suemitsu, Koichi Mizutani, Naoto Wakatsuki (Univ. of Tsukuba)
- 3J1-5 Quantitative thickness measurement in layered polarity- inverted piezoelectric thin films using scanning nonlinear dielectric microscopy**
Koshiro Terada^{1†}, Hiroaki Nishikawa¹, Yohei Tanaka¹, Hiroyuki Odagawa¹, Takahiko Yanagitani², Yasuo Cho³
(¹Natl. Inst. of Tech, Kumamoto; ²Waseda Univ.; ³Tohoku Univ.)

10:15-11:30 Piezoelectric Devices II, High Power Ultrasound II, Sonochemistry III

Chair: Subaru Kudo (Ishinomaki Senshu Univ.)

- 3J2-1 Resonant frequency analysis of a lamé mode resonator on a quartz plate by the finite-difference time-domain method with the collocated grid points of velocities**
Takashi Yasui^{1†}, Koji Hasegawa², Koichi Hirayama¹ (¹Kitami Inst. of Tech.; ²Muroran Inst. of Tech.)
- 3J2-2* Polarity inverted Al-polar ScAlN/O-polar ZnO multilayers for high conversion efficiency transducer in the GHz range**
Takeshi Mori^{1†}, Masashi Suzuki², Takahiko Yanagitani² (¹Nagoya Inst. of Tech.; ²Waseda Univ.)
- 3J2-3* Vibration properties of lead zirconate titanate thick film transducer fabricated by ultrasonic assisted hydrothermal method**
Katsuhiko Saigusa[†], Takeshi Morita (Univ. of Tokyo)
- 3J2-4 Development of a metal bonded langevin transducer using LiNbO₃**
Hiroshi Ito[†], Hikaru Jimbo, Koichi Shiotani, Nagahide Sakai (Olympus)
- 3J2-5 Simplified evaluation method for piezoelectric nonlinear vibration under high power operation**
Yaoyang Liu, Takeshi Morita[†] (Univ. of Tokyo)

11:30-13:00 LUNCH TIME

13:00-13:50 Plenary Talk II

Chair: Keiji Sakai (Univ. of Tokyo)

- 3PL Trends in measurement techniques on ultrasonic electronics**
Koichi Mizutani[†], Naoto Wakatsuki, Tadashi Ebihara (Univ. of Tsukuba)

13:50-14:00 Break

14:00-16:00 Poster Session

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

- 3P1-1 Guided wave propagation in a 2-D patterned nano-bridge studied by picosecond ultrasonics**
Akira Nagakubo^{1†}, Shigeru Iwagami¹, Hirotsugu Ogi¹, Takuya Taniguchi², Teruo Ono², Masahiko Hirao¹
(¹Osaka Univ.; ²Kyoto Univ.)
- 3P1-2 Photoacoustic tuning characteristics and imaging using a spheroidal acoustic resonance cell with leakage**
Tsutomu Hoshimiya[†] (Tohoku Gakuin Univ.)

- 3P1-3 Characterization of Cu₂O thin films by photoacoustic spectroscopy**
Hisashi Miyazaki^{1†}, Jun Morimoto¹, Genki Tsuji², Yuki Takiguchi², Shinsuke Miyajima²
(¹Natl. Defense Academy; ²Tokyo Inst. of Tech.)
- 3P1-4 Application of guided acoustic waves for inversion calculation of material properties in bones**
Po-Ying Tseng[†], Che-Hua Yang (Natl. Taipei Univ. of Tech.)
- 3P1-5* Electric field effect of relaxor ferroelectric (1-x)Pb(Mg_{1/3}Nb_{2/3})O_{3-x}PbTiO₃ crystals near MPB composition probed by Brillouin scattering**
Md Aftabuzzaman[†], Seiji Kojima (Univ. of Tsukuba)
- 3P1-6 Effect of hydrogen concentration and microporosity on high cycle fatigue property of ultrasonic molten metal treatment A356 alloy**
Jeong Wook Park^{1†}, Jeong IL Youn², Tae Yup Lee¹, Woo Chun Kim¹ (¹DR AXION Co., Ltd.; ²Sungkyunkwan Univ.)
- 3P1-7* Design of acoustic metasurface toward a perfect absorber**
Yuta Kobayashi[†], Kenji Tsuruta, Atsushi Ishikawa (Okayama Univ.)
- 3P2-1 Basic study on the detection of the water stress in the plant using ultrasonic sound source (II)**
Yutaka Nakagawa[†], Tsuneyoshi Sugimoto, Motoaki Sano, Takashi Shirakawa, Takeyuki Ohdaira, Chiharu Uchikawa
(Toin Univ. of Yokohama)
- 3P2-2* Simultaneous measurement of respiration and heart rate using airborne ultrasound**
Kotaro Hoshiba[†], Shinnosuke Hirata, Hiroyuki Hachiya (Tokyo Inst. of Tech.)
- 3P2-3* Evaluation of correlation of LFM signals coded by M-sequences**
Kota Yamanaka[†], Shinnosuke Hirata, Hiroyuki Hachiya (Tokyo Inst. of Tech.)
- 3P2-4* Measurement of reflection characteristics of road surfaces using airborne ultrasound**
Shinnosuke Hirata[†], Quan Sun, Masato Ueda, Hiroyuki Hachiya (Tokyo Inst. of Tech.)
- 3P2-5 Estimation of water stress of plant by vibration analysis of leaf with high speed camera 2**
Motoaki Sano[†], Yutaka Nakagawa, Takuya Anzai, Chiharu Uchikawa, Takeyuki Ohdaira,
Takashi Shirakawa, Tsuneyoshi Sugimoto (Toin Univ. of Yokohama)
- 3P2-6 Molten glass viscosity measurement with open-type EMS system**
Masanori Yasuda^{1†}, Taichi Hirano², Keiji Sakai² (¹Kyoto Electronics Mfg.; ²Univ. of Tokyo)
- 3P2-7 Detection of target protein via aptamer electrostatically immobilized on wireless-electrodeless QCM biosensor chip**
Hiroomi Torii[†], Hirotsugu Ogi, Masahiko Hirao, Masaki Yamato, Takashi Matsuzaki, Tetsuo Minamino (Osaka Univ.)
- 3P2-8 Study on movement detection in care environment using precise ultrasonic distance measurement at 40 kHz - Aiming at installation in sensor network -**
Yukari Kaneta[†], Mitsutaka Hikita (Kogakuin Univ.)
- 3P2-9 Investigation on transmitting and receiving elements applied in reflection point search by rectangular sound source**
Hiroyuki Masuyama[†] (Natl. Inst. of Tech, Toba Coll.)
- 3P2-10* Sensitive tint visualization of ultrasonic propagation in the glass with a crack**
Yoshito Hosaka[†], Kazuhiko Imano (Akita Univ.)
- 3P2-11 A method of the wall thickness measurement using resonant phenomena of the circumferential lamb waves generated by plural transducers located evenly on the girth**
Hideo Nishino[†], Kodai Iwata, Masashi Ishikawa (Univ. of Tokushima)
- 3P2-12 Time reversal pulse of hypocenter and its initial polarity**
Toshiaki Kikuchi^{1†}, Koichi Mizutani² (¹Natl. Defense Academy; ²Univ. of Tsukuba)
- 3P2-13 Fabrication of 4-path remote outdoor wind velocity measurement system and its performance evaluation**
Akira Yamada[†], Kensyo Oba, Yuki Nagatsuma, Masato Shimizu (Tokyo Univ. of A&T)
- 3P3-1 Selective sintering of sol-gel composite films by commercial microwave oven**
Makiko Kobayashi[†], Makoto Matsumoto (Kumamoto Univ.)

- 3P3-2 Effect of Sc concentration on quasi-shear mode electromechanical coupling k_{15}^2 in c-axis tilted ScAlN films**
Masashi Suzuki[†], Takahiko Yanagitani (Waseda Univ.)
- 3P3-3* Mode-selective excitation of resonance vibration for piezoelectric rectangular parallelepiped using plate antennas**
Nobutaka Takeuchi[†], Nobutomo Nakamura, Hirotsugu Ogi, Masahiko Hirao (Osaka Univ.)
- 3P3-4* Structure optimization of PZT-on-silicon diaphragmed highly sensitive ultrasound transducer**
Jing Zhu[†], Hiroki Makino, Tsuyoshi Okubo, Norio Tagawa (Tokyo Met. Univ.)
- 3P3-5* Thermal dispersion method for an ultrasonic phased array transducer**
Euna Choi, Wonseok Lee, Yongrae Roh[†] (Kyungpook Natl. Univ.)
- 3P3-6 Burst waveform undersampling circuit for ball surface acoustic wave sensor**
Toshihiro Tsuji[†], Toru Oizumi, Nobuo Takeda, Shingo Akao, Yusuke Tsukahara, Kazushi Yamanaka (Tohoku Univ.)
- 3P3-7* Operational verification in multiplex transmission system for gate drive signals of inverter circuit using SAW filters**
Akifumi Suzuki^{1†}, Kensuke Ueda¹, Shigeyoshi Goka¹, Keiji Wada¹, Shoji Kakio²
(¹Tokyo Met. Univ.; ²Univ. of Yamanashi)
- 3P3-8 Improvement of phase-noise in colpitts oscillators using partial electrode SC-cut resonators**
Rifwa Hayashi[†], Ryo Haga, Yosuke Hanada, Takayuki Sato, Yasuaki Watanabe (Tokyo Met. Univ.)
- 3P4-1* Convergence of intense acoustic field by rectangular reflective plates using a transverse vibrating plate**
Tomoki Nakai[†], Takuya Asami, Hikaru Miura (Nihon Univ.)
- 3P4-2* Behavior of liquid in a vessel irradiated by high-intensity aerial ultrasonic waves**
Taichi Urakami[†], Ayumu Osumi, Youichi Ito (Nihon Univ.)
- 3P4-3* Temperature rise of soft material surface by irradiation with high-intensity aerial ultrasonic waves**
Hirotaka Sato[†], Ayumu Osumi, Youichi Ito (Nihon Univ.)
- 3P4-4* Orientational control of the liquid crystal molecular using acoustic radiation force**
Satoki Taniguchi[†], Yuki Shimizu, Akira Emoto, Daisuke Koyama, Mami Matsukawa (Doshisha Univ.)
- 3P4-5 Downsizing of impact-reduction device using ultrasonic transducer**
Atsuyuki Suzuki^{1†}, Shota Ikeoka¹, Jiromaru Tsujino² (¹Natl. Inst. of Tech., Tokuyama Coll.; ²Kanagawa Univ.)
- 3P4-6 Study on energy-harvesting dynamo using both swing and rotation - Investigation of voltage Up-conversion with mechanical switches -**
Takahiro Nishi[†], Mitsutaka Hikita (Kogakuin Univ.)
- 3P4-7 Evaluation of a microchannel device for an emulsion generation by using a piezoelectric polymer sensor**
Takefumi Kanda^{1†}, Masaki Yabumoto¹, Koichi Suzumori² (¹Okayama Univ.; ²Tokyo Inst. of Tech.)
- 3P4-8 Simultaneous achievement for X, Y movement and Θ rotation of stage with straight-move ultrasonic vibrators - Application to microscope -**
Toshiaki Sakayachi[†], Mitsutaka Hikita (Kogakuin Univ.)
- 3P4-9* Study on spherical stator for multi-degree-of-freedom ultrasonic motor**
Shuta Nakajima^{1†}, Hidekazu Kajiwara¹, Manabu Aoyagi¹, Hideki Tamura², Takehiro Takano²
(¹Muroran Inst. of Tech.; ²Tohoku Inst. of Tech.)
- 3P4-10* Examination of high output sandwich-type annular spherical ultrasonic motor**
Koki Oikawa^{1†}, Hidekazu Kajiwara¹, Manabu Aoyagi¹, Hideki Tamura², Takehiro Takano²
(¹Muroran Inst. of Tech.; ²Tohoku Inst. of Tech.)
- 3P4-11 Study on a preload mechanism for micro ultrasonic motor (2nd Report)**
Tomoaki Mashimo[†] (Toyohashi Univ. of Tech.)
- 3P4-12* Development of anti-cavitation hydrophone using a titanium front plate-Effect of the titanium front plate in high intensity acoustic field with generation of acoustic cavitation-**
Michihisa Shiiba^{1,2†}, Nagaya Okada³, Minoru Kurosawa⁴, Shinichi Takeuchi¹
(¹Toin Univ. of Yokohama; ²JSPS Research Fellow; ³Honda Electronics; ⁴Tokyo Inst. of Tech.)

- 3P4-13 Characteristics of large amplitude vibration velocity of hydrothermally deposited KNbO₃ films ultrasonic transducers using thickness vibration mode.**
Mutsuo Ishikawa^{1†}, Yousuke Uchida¹, Nobuaki Kosuge¹, Motoko Shibuya¹, Hiroshi Funakubo², Minoru Kurosawa²
(¹Toin Univ. of Yokohama; ²Tokyo Inst. of Tech.)
- 3P4-14 Complex vibration source consisted of two transducers with longitudinal and torsional vibration mode**
Takuya Asami[†], Hikaru Miura (Nihon Univ.)
- 3P4-15* Piezoelectric nonlinear vibration focusing on the second harmonic vibration mode**
Ryohei Ozaki[†], Yaoyang Liu, Takeshi Morita (Univ. of Tokyo)
- 3P5-1* Computational complexity reduction techniques for high-contrast and high-resolution medical ultrasound imaging using adaptive signal processing**
Shigeaki Okumura^{1†}, Hirofumi Taki², Toru Sato¹ (¹Kyoto Univ.; ²Tohoku Univ.)
- 3P5-2 Accurate intensity estimation in high-resolution ultrasound imaging based on adaptive beamforming technique**
Hirofumi Taki[†], Hiroshi Kanai (Tohoku Univ.)
- 3P5-3* Improvement of beam profile by quasi-array along elevation direction of ultrasound transducer**
Haruki Konno^{1†}, Norio Tagawa¹, Kan Okubo¹, Shinichi Amemiya² (¹Tokyo Met. Univ.; ²FandF Co., Ltd.)
- 3P5-4* Ultrasound imaging method adaptable to various tissue properties of patients**
Tomoya Murakami^{1†}, Takashi Azuma¹, Kazunori Itani², Shu Takagi¹ (¹Univ. of Tokyo; ²Hitachi Aloka Medical)
- 3P5-5* Ultrasonic observation of 3 dimensional arterial bifurcation geometry using a chick chorioallantoic membrane model**
Soohong Min[†], Gicheol Ra, Changzhu Jin, Kweon-Ho Nam, Juho Kim, Dong-Guk Paeng (Jeju Nat. Univ.)
- 3P5-6 Group comparison of luminal surface roughness of human carotid artery estimated by ultrasound micro-displacement measurement**
Kazuyoshi Kidokoro[†], Hirofumi Taki, Hiroshi Kanai (Tohoku Univ.)
- 3P5-7 Separation of forward and reflected pulse waves in carotid artery using directional filter**
Hideyuki Hasegawa[†] (Univ. of Toyama)
- 3P5-8* Experimental study on pulse waveforms of various ages measured by piezoelectric transducer**
Takuya Odahara^{1†}, Masashi Saito², Takaaki Asada², Mami Matsukawa¹ (¹Doshisha Univ.; ²Murata Mfg.)
- 3P5-9 Asymmetric three-dimensional pulsation of rat carotid artery bifurcation observed using a high-resolution ultrasound imaging**
Chang-zhu Jin^{1†}, Kweon-Ho Nam², Dong-Guk Paeng^{1,3} (¹Ocean System Eng.; ²Biophysics Lab; ³Jeju Natl. Univ.)
- 3P5-10 Accurate evaluation of viscoelasticity of radial arterial wall by in vivo measurement of arterial pressure and diameter at the same position**
Yasumasa Sakai[†], Hirofumi Taki, Hiroshi Kanai (Tohoku Univ.)
- 3P5-11 Improvement of accuracy and computational efficiency in intracardiac blood velocity estimation**
Hiroki Takahashi^{1†}, Magnus Cinthio², Hideyuki Hasegawa¹ (¹Univ. of Toyama; ²LTH, Lund Univ.)
- 3P5-12* Analysis of ultrasound echo in low frequency oscillation for detection of microcalcification**
Yu Naito^{1†}, Masayuki Tanabe¹, Masahiko Nishimoto¹, Hiroshi Hashimoto², Takao Jibiki², Tadashi Shimazaki²
(¹Kumamoto Univ.; ²GE Healthcare Japan)
- 3P5-13 A hilbert-huang transform based time-of-flight method for shear wave elastography of thin layered media**
Jun-keun Jang[†], Kengo Kondo, Takeshi Namita, Makoto Yamakawa, Tsuyoshi Shiina (Kyoto Univ.)
- 3P5-14* Visualization of shear wave propagation generated by dual acoustic radiation force**
Yuta Mochizuki[†], Hirofumi Taki, Hiroshi Kanai (Tohoku Univ.)
- 3P5-15* Shear wavelength estimation based on inverse filtering and multiple-point shear wave generation**
Tomoaki Kitazaki[†], Kengo Kondo, Makoto Yamakawa, Tsuyoshi Shiina (Kyoto Univ.)
- 3P5-16 Measurement of transitional change of myocardial expansion and contraction using two-dimensional speckle tracking**
Takuma Asai[†], Hirofumi Taki, Hiroshi Kanai (Tohoku Univ.)

- 3P5-17*** **Robust estimation of red blood cell aggregation *in vivo* using the spectrum analysis of high-frequency ultrasound**
Yusaku Kurokawa^{1†}, Hirofumi Taki¹, Yasushi Ishigaki², Satoshi Yashiro², Kan Nagasawa², Hiroshi Kanai¹
(¹Tohoku Univ.; ²Iwate Medical Univ.)
- 3P5-18** **Estimation of particle aggregation degree in high concentration suspension with ultrasonic peak frequency shift**
Sho Watanabe[†], Takayuki Sato, Yasuaki Watanabe (Tokyo Met. Univ.)
- 3P6-1** **Variation on sound field caused by the sound source moving from continental shelf to shelf break**
Yoshiaki Tsurugaya^{1†}, Toshiaki Kikuchi², Koichi Mizutani³ (¹Sanyo PT; ²Natl. Defense Academy; ³Univ. of Tsukuba)
- 3P6-2*** **A study of the influence that a high power air gun sound source of MCS gives to a marine mammal**
Shinpei Gotoh^{1,2†}, Toshio Tsuchiya^{1,3}, Yoshihiro Fujiwara¹, Etsuro Shimizu³, Koji Futa⁴, Fujio Yamamoto¹
(¹JAMSTEC; ²Univ. of Tsukuba; ³Tokyo Univ. of Marine Sci. and Tech.; ⁴Mitsubishi Precision)
- 3P6-3** **The 2nd sea trial for ambient noise imaging with acoustic lens**
Kazuyoshi Mori^{1†}, Hanako Ogasawara¹, Takenobu Tsuchiya², Nobuyuki Endoh²
(¹Natl. Defense Academy; ²Kanagawa Univ.)
- 3P6-4** **Estimation of elastic wave velocity of surface sediment on seafloor and localization of sound source based on transmitted wave observation with an ocean bottom seismometer**
Ryoichi Iwase[†] (JAMSTEC)
- 3P6-5*** **A configuration-conjunct threshold segmentation method of underwater linear object detection for forward-looking sonar**
Lixin Liu^{1,2†}, Hongyu Bian¹, Shin-ichi Yagi², Xiaodong Yang² (¹Harbin Eng. Univ.; ²Meisei Univ.)
- 16:00-16:15** **Break**
- 16:15-17:15** **Physical Acoustics, Acousto-Optics II**
Chair: Jun Morimoto (Natl. Defense Academy)
- 3J3-1*** **Dynamic viscoelasticity measurement with quadruple electromagnetically spinning method**
Yusuke Matsuura[†], Taichi Hirano, Keiji Sakai (Univ. of Tokyo)
- 3J3-2*** **Growth of c-axis parallel oriented ScAlN films by ion-beam assisted sputtering and their application in pure shear mode resonators**
Mineki Oka^{1†}, Shinji Takayanagi¹, Takahiko Yanagitani², Mami Matsukawa¹ (¹Doshisha Univ.; ²Waseda Univ.)
- 3J3-3*** **Angle-resolved polarized raman scattering from BaTiO₃ crystals**
Shinya Tsukada^{1†}, Yasuhiro Fujii², Seiji Kojima³, Yukikuni Akishige¹
(¹Shimane Univ.; ²Ritsumeikan Univ.; ³Univ. of Tsukuba)
- 3J3-4** **Laser ultrasonic characterization of additive manufacturing objects fabricated by powder bed fusion**
Harumichi Sato^{1†}, Hisato Ogiso¹, Naoko Sato¹, Toru Shimizu¹, Shizuka Nakano¹, Yoshikazu Ohara², Kazushi Yamanaka²
(¹AIST; ²Tohoku Univ.)
- 17:20-17:30** **CLOSING**