

Wednesday, November 14

09:30 Opening of reception desk

10:15 Opening ceremony

10:25–11:10 Ultrasonic properties of materials, Phonon physics Chairman: Pak-Kon Choi (Meiji Univ.)

- 1-01-01 Evaluation of ZnO Single Crystals by Means of the Ultrasonic Microspectroscopy Technology 1
Tomoya Tanaka‡, Yuji Ohashi, Mototaka Arakawa, Jun-ichi Kushibiki(Tohoku Univ.)
- 1-01-02 Localized torsional mode in a nanowire superlattice with a defect layer 3
Seiji Mizuno†(Hokkaido Univ.)
- 1-01-03 Elastic Anomaly and Lattice Dynamics of Trigonal Class Piezoelectric Materials at Low Temperatures 5
Hiroaki Tao‡, Ryuichi Tarumi, Hirotsugu Ogi, Masahiko Hirao(Osaka Univ.)

11:10–11:15 Break

11:15–12:00 Acousto-optics Chairman: Jun Morimoto (Natl. Def. Acad.)

- 1-04-01 Acousto-Optic Device with compensated temperature characteristics and its Application to Strain Sensing System 7
Shinji Tanaka, Kiyokazu Yamada†, Hideaki Kobayashi, Michio Kadota(Murata Mfg. Co.,Ltd.)
- 1-04-02 Fabrication of long period fiber grating : fundamental characteristics and application to vibration sensing 9
Hiroyuki Somatomo†, Satoshi Tanaka, Nobuaki Takahashi(National Defense Academy)
- 1-04-03 Characterization of Thermal Properties of Nanocrystalline Si Films Using Photoacoustic Technique 11
Qing Shen†, Yusi Kato, Jun Kogakura, Taro Toyoda(Univ. Electro-Communications)

12:00–13:00 Lunch

13:00–13:45 Invited lecture 1 Chairman: Seiji Kojima(Univ. Tsukuba)

- 1-INV Present Developments and Perspective of Lead-Free Piezoelectric Ceramics 13
Tadashi Takenaka†, Hajime Nagata, Yuji Hiruma(Tokyo Univ. of Science)

13:45–13:50 Break

13:50–16:20 Poster session 1 Chairman: Tatsuro Matsuoka(Nagoya Univ.)

- 1-01P-01 Fundamental Experiments on Propagation of Solitons in Two-Dimensional Square Lattice Model Crystal 17
Syouhei Yoshioka†, Masanori Itaba(Ibaraki Univ.), Ryoichi Komuro(Hitachi, Ltd.), Atsushi Minato, Satoru Ozawa(Ibaraki Univ.)
- 1-01P-02 Elastic constants of Co/Pt superlattice studied by acoustic measurements and ab initio calculation 19
Hiroshi Tanei‡, Nobutomo Nakamura, Yosuke Kake, Hirotsugu Ogi, Koich Kusakabe, Masahiko Hirao(Univ. Osaka,)
- 1-01P-03 Resonance Frequency Variation with Kerf-Fill Material between Ultrasonic Array Elements. 21
Jungsoon Kim‡(Multimedia Eng., Tongmyong University), Moojoon Kim, Kanglyeol Ha(Dept. of Physics, Pukyong National University), Wenwu Cao(Materials Research Institute, The Pennsylvania State University)
- 1-01P-04 Atomic force microscopy of organic sensitive film for SAW sensors 23
Kentaro Kobari‡(Tohoku Univ. JST, CREST), Tetsuro Hotta(Tohoku Univ.), Naoya Iwata, Shingo Akao, Toshihiro Tsuji, Kazushi Yamanaka(Tohoku Univ. JST, CREST)
- 1-01P-05 Brillouin scattering study of lower alcohol water mixture 25
Yuichi Seshimo†, Yuji Ike, Seiji Kojima(Univ. Tsukuba)
- 1-01P-06 Acoustic Properties of Lysozyme-Trehalose Aqueous Solution by Brillouin Scattering 27
Keita Sasanuma‡, Yuichi Seshimo, Eiji Hashimoto, Yuji Ike, Seiji Kojima(Univ. Tsukuba)
- 1-01P-07 Millisecond Thermal Phonon Resonance 29
Yasuo Minami‡, Keiji Sakai(Univ. Tokyo)
- 1-01P-08 Optical characterization of alpha quartz crystals 31
Takeshi Matsumoto†, Nobuyuki Sugaya, Toshihiko Kagami, Junji Takahashi(NIHON DEMPA KOGYO Co., Ltd.)

1-01P-09	Elastic Constants of Rare Earth Bismuth Iron Garnet (111) Films Measured by Resonant-Ultrasound Spectroscopy Nobutomo Nakamura†, Hirotsugu Ogi, Masahiko Hirao(Osaka Univ.), Takashi Fukuhara, Kenichi Shiroki, Nobuo Imaizumi(Namiki Precision Jewel Co., Ltd)	33
1-01P-10	Elastic Properties of Bulk Metallic Glasses Studied by Resonance Ultrasound Spectroscopy Noritaka Hayama‡, Ryuichi Tarumi, Masahiko Hirao(Osaka Univ.)	35
1-04P-11	Imaging of undersurface defect by photoacoustic tomography with a line-focus laser beam Mika Hatake-Yama‡, Haruo Endoh, Tsutomu Hoshimiya(Univ. Tohoku-Gakuin)	37
1-04P-12	Photoacoustic Spectra and Thermoelectric Properties of Amorphous Si/Au/Ge/Au Superlattice Hiroaki Takiguchi‡, Yoichi Okamoto, Hisashi Miyazaki, Jun Morimoto(Natl. Def. Acad.)	39
1-04P-13	Study of CuInSe ₂ -related Materials Evaluated by Photoacoustic Spectroscopy Hisashi Miyazaki‡, Youichi Okamoto, Jun Morimoto(Natl. Def. Acad.)	41
1-04P-14	Nondestructive Evaluation of Internal Defect in Weld Metal by Photoacoustic Microscopy Mika Hatake-yama†, Tomoaki Takatsu, Haruo Endoh, Tsutomu Hoshimiya(Tohoku Gakuin Univ.)	43
1-04P-15	Photoacoustic spectra of Au quantum dots adsorbed on nanostructured TiO ₂ films Taro Toyoda†, Sae Tsugawa, Qing Shen(Univ. Electro-Commun.)	45
1-04P-16	Photoacoustic Spectra and Transient Currents of Nanostructured TiO ₂ Electrodes with Different Crystal Types Qing Shen†, Yukihisa Yoshida, Hiromi Otsuka(Univ. Electro-Communications), Hideki Sakai(Toho Titanium Co., Ltd), Taro Toyoda(Univ. Electro-Communications)	47
1-04P-17	Photoacoustic Spectra and Ultrafast Carrier Dynamics of Nanostructured TiO ₂ Films Sensitized with CdS Quantum Dots Akira Sato†, Qing Shen(Univ. Electro-Commun.), Kenji Katayama(Univ. Chuo), Tsuguo Sawada(JST), Taro Toyoda(Univ. Electro-Commun.)	49
1-04P-18	Photoacoustic Spectra and Photoexcited Carrier Dynamics of CdSe Quantum Dots Adsorbed on TiO ₂ Nanotubes Electrodes Kana Yamamoto†, Qing Shen(Univ. Electro-Commun.), Kenji Katayama(Univ. Chuo), Tsuguo Sawada(JST), Taro Toyoda(Univ. Electro-Commun.)	51
1-04P-19	Development of Ultraviolet Excitation-Visible Enhancement Photothermal Spectroscopy Satoshi Hirashima‡, Akira Harata(Univ. Kyushu)	53
1-04P-20	Fundamental Study for Advanced Laser Induced Thermal Wave Microscopy Yoshiaki Tokunaga, Masashi Imai†, Hiroyuki Kobayashi(KIT), Akiyuki Minamide(KTC)	55
1-04P-21	A Detection of Photogenerated Carrier Leakage from GaInNAs/GaAs SQW Shinichi Fukushima†, Tetsuo Ikari, Atsuhiko Fukuyama, Kentaro Sakai(Univ. Miyazaki)	57
1-05P-22	Revisit to Mindlin-Gaziz's analysis and Koga-Fukuyo's data of rotated Y-cut of quartz Morio Onoe(Univ. Tokyo), Shigetaka Kaga † (Nihon Dempa Kogyo Co., Ltd.)	59
1-05P-23	Measurement of Transducer Characteristics under Large Vibration Velocity of 1st Longitudinal and 2nd Flexural Modes in LiNbO ₃ Rectangular Plate. Masashi Iwase‡, Hideki Tamura, Seiji Hirose(Yamagata Univ.), Manabu Aoyagi(Muroran Inst. of Tech.), Takehiro Takano(Tohoku Inst. of Tech.), Yoshiro Tomikawa(Yamagata Univ.)	61
1-05P-24	Single Phase Drive Ultrasonic Motor Using Vibration Mode Coupling Caused by Anisotropic Material Constants in LiNbO ₃ Rectangular Vibrator Kyouusuke Shibata‡, Hideki Tamura, Seiji Hirose(Yamagata Univ.), Manabu Aoyagi(Muroran Inst. of Tech.), Yoshiro Tomikawa(Yamagata Univ.), Takehiro Takano(Tohoku Inst. of Tech.)	63
1-05P-25	Application of Frequency-Change-Type Single-Crystal Silicon Acceleration Sensors to Inclination Angle Sensor Sumio Sugawara, Tokihatu Watanabe†(Ishinomaki Senshu Univ.)	65
1-05P-26	Realization of High Sensitivity of Frequency-Change-Type Single-Crystal Silicon Two-Axis Acceleration Sensor Sumio Sugawara, Jumpei Koike†(Ishinomaki Senshu Univ.)	67
1-05P-27	A three-axis motion sensor using polyurea films Masaya Tabaru‡, Marie Nakazawa, Kentaro Nakamura, Sadayuki Ueha(Tokyo Inst. of Tech.)	69
1-05P-28	An array ultrasonic transducer using polyurea film Marie Nakazawa‡, Masaya Tabaru, Kentaro Nakamura, Sadayuki Ueha(Tokyo Tech)	71
1-05P-29	Study of Sensitivity of Piezoelectric Vibratory Tactile Sensor Using Flexural Vibration Mode Subaru Kudo†(Ishinomaki Senshu Univ.)	73
1-05P-30	Development of Multilayer Actuators with PMN-PT Piezoelectric Single Crystals for an Implantable Hearing Aid Yongrae Roh†, Insik Yun(School of Mechanical Engineering, Kyungpook National University)	75
1-05P-31	Development of Ultrahigh-Sensitive Immunosensor with a Wireless-Electrodeless QCM and Its Application to Detection of Hepatocellular Carcinoma Protein Markers Toshinobu Omori‡, Kenichi Hatanaka, Hirotsugu Ogi, Masayoshi Nishiyama, Masahiko Hirao(Univ. Osaka,)	77
1-05P-32	Hydrogen Gas Sensor Using a Good Characteristic of the Lamb Wave Naoki Yamamoto‡, Yasuhiko Nakagawa, Shoji Kakio(Univ. Yamanashi)	79

1-05P-33	Analysis and Design of a Flextensional Transducer by means of the Finite Element Method Yongrae Roh†, Kookjin Kang(School of Mechanical Engineering, Kyungpook National University)	81
1-05P-34	Study on fabrication technology of CMUT using sacrifice etching process yuji terao‡, takanori yamazaki, Keishin Koh, koji Hohkawa(Kanagawa Inst. of Tech.)	83
1-05P-35	Fabrication of piezoelectric micromachined ultrasonic transducer array using epitaxial PZT thin film Mikinori Ito‡, Mikito Otonari, Daisuke Akai, Kazuaki Sawada, Makoto Ishida(Toyohashi Univ. Tech.), Nagaya Okada, Kazuki Higuchi(Honda Elect. Co. Ltd.)	85
1-05P-36	A c-axis tilted ZnO film transducer for simultaneous excitation of longitudinal and shear waves Takuya Matsuo‡(Doshisha Univ.), Takahiko Yanagitani(Tohoku Univ.), Mami Matsukawa, Yoshiaki Watanabe(Doshisha Univ.)	87
1-06P-37	A development of a small-sized W-CDMA SAW Duplexer on a SiO ₂ /IDT/LiNbO ₃ structure Hiroyuki Nakamura†, Hidekazu Nakanishi, Tetsuya Tsurunari, Hiroki Kamiguchi, yosuke Hamaoka, Ken Matsunami, Yukio Iwasaki(Panasonic Electronic Devices Co., Ltd.)	89
1-06P-38	Packaging of SAW devices using low temperature sacrifice process Takanori Yamazaki‡, Yuji Terao, Keishin Koh, Koji Hohkawa(Kanagawa Inst. of Tech.)	91
1-06P-39	Surface Acoustic Wave Properties on Reverse-Proton-Exchanged LiNbO ₃ Makoto Maeda‡, Shoji Kakio, Yasuhiko Nakagawa(Univ. Yamanashi)	93
1-06P-40	DC Variable Pass Band Operation on AlGaN/GaN Film Devices Kohji Hohkawa†, Keishin Koh(Kanagawa Inst. Tech.), Kazumi Nishimure, Naoteru Shigekawa(NTT Photonic Labs.)	95
1-06P-41	Development of a novel SH-SAW sensor chip and sensing system for liquids Yusuke Okiyama‡, Satoru Mikuni, Yoshikazu Matsui, Jun Kondoh(Shizuoka Univ.), Hiromi Yatsuda, Makoto Nara, Toshimasa Mori(Japan Radio Co., Ltd.)	97
1-06P-42	Study of Novel SAW Gas Sensor for“Sensor Network” Keiya Minami †, Koki Takimoto, YasushiHiraizumi, Mitsutaka Hikita(Kogakuin Univ.)	99
1-06P-43	Application of φ Imm Ball SAW Gas Sensor with Temperature Compensation using Frequency Dispersion of Harmonics Dongyoun Sim†, Bryan Maxey, Nobuo Takeda(Ball Semiconductor Ltd.), Noritaka Nakaso(Toppan Printing Co.), Naoya Iwata, Toshihiro Tsuji, Kazushi Yamanaka(Tohoku Univ.)	101
1-06P-44	Observation of SAW propagation on a quartz ball with concave proximate electrodes Takayuki Yanagisawa‡(TOPPAN PRINTING CO.,LTD., JST.CREST), Kazunori Ote(Tohoku Univ. JST.CREST), Tsuneo Ohgi, Noritaka Nakaso(TOPPAN PRINTING CO.,LTD., JST.CREST), Kazushi Yamanaka(Tohoku Univ. JST.CREST)	103
1-06P-45	Discussion on engineering application capability of 2 nd harmonic in surface acoustic wave Yoshiaki Tokunaga, Yukihiro Ishimaru†, Masashi Imai(KIT)	105
1-06P-46	Nonlinear Acoustic Field by an Interdigital Transducer in water Rui Kamada‡, Miyuki Maezawa, Tomoo Kamakura(Univ. Electro-Communications)	107
1-07P-47	Calorimetry method for ultrasonic power standard – Influence of acoustic streaming on power measurement – Tsuneo Kikuchi†, Takeyoshi Uchida(NMIJ•AIST)	109
1-07P-48	Analysis of the ultrasonic energy in pilot-scale sonoreactors Younggyu Son‡, Myunghee Lim, Jeehyeong Khim(Department of Civil, Environmental & Architectural Engineering, Korea University)	111
1-07P-49	Combination of ozone and ultrasound process for the degradation of phenol Qiongyuan Gao‡, Myunghee Lim, Seungmin Na, Jeehyeong Khim(Department of Civil, Environmental & Architectural Engineering, Korea University)	113
1-07P-50	Effect of Frequency on Sonoluminescence from K atom Shogo Abe‡, Pak-Kon Choi(Meiji Univ.)	115
1-07P-51	Development of Ultrasound Exposure System of Four Piezoelectric Ceramic Vibrators with Operating Frequency of 150 kHz for Dispersion of Nanometer Sized Diamond Particles Takeyoshi Uchida‡(AIST), Isa Shintarou(Toin Univ. of Yokohama), Tsuneo Kikuchi(AIST), Norimichi Kawashima, Shinichi Takeuchi(Toin Univ. of Yokohama)	117
1-10P-52	Target detectability using a coded acoustic signal in indoor environments Hiroshi Matsuo‡, Tadashi Yamaguchi, Hiroyuki Hachiya(Chiba Univ.)	119
1-10P-53	Ultrasonic Anemometer Using Sound Reflection on Wall Ikumi Saito‡, Naoto Wakatsuki, Koichi Mizutani(Univ. Tsukuba), Masahisa Ishii, Rimi Okushima, Sadanori Sase(National Inst. for Rural Eng.)	121
1-10P-54	Fundamental development of the ultrasonic information transmitter using one-chip microcomputer for a wearable device Shin-nosuke Suzuki‡, Manabu Ishihara(Oyama NCT.), Tamotsu Katane, Osami Saito(Chiba Univ. Eng.), Kazuto Kobayashi(Honda Electronics co., ltd.)	123

1-10P-55	Automatic Interference Elimination Algorithm for Ultrasonic Multiple Access Method Yong Wang†, Takehiko Siginouchi, Masahiko Hashimoto(Matsushita Electric Industrial Co., Ltd.), Hiroyuki Hachiya(Univ. Chiba)	125
1-10P-56	DPSK Acoustic Communication in Air with Reduction of Impulse Response Influence for Low SNR Environment Keiichi Mizutani‡(Tokyo Inst. of Tech.), Naoto Wakatsuki, Koichi Mizutani(Univ. Tsukuba)	127
1-10P-57	Micromachined Arrayed Capacitive Ultrasonic Sensor/Transmitter with Parylene Diaphragm Daisuke Ono‡, Go Kawai, Seiji Aoyagi(Kansai Univ.), Kaoru Yamashita, Masanori Okuyama(Osaka Univ.)	129
1-10P-58	Adaptive beamforming in superdirectional acoustic systems Tomohiro Nishino‡, Masashi Ueki, Akira Hirose(Univ. Tokyo)	131
1-10P-59	Digital Information Transmission Using Thermally Induced Ultrasonic Emitter Based on Nanocrystalline Porous Silicon Yoshifumi Watabe†, Yoshiaki Honda(Matsushita Electric Works, LTD.), Nobuyoshi Koshida(Tokyo Univ. of A & T)	133
1-10P-60	Acoustic Standing Wave Field for Manipulation in Air. Teruyuki Kozuka†, Kyuichi Yasui, Toru Tuziuti, Atsuya Towata, Yasuo Iida(AIST)	135
1-10P-61	The experimental investigation on the reproduction of audible sound from two ultrasonic beams Ye Chao†, Kuang Zheng, Ji Peifeng, Yang Jun(Institute of Acoustics, Chinese Academy of Sciences)	137
1-01P-62	Characterization of AlN Single Crystals by the Ultrasonic Microspectroscopy Technology Yuji Ohashi‡, Mototaka Arakawa, Jun-ichi Kushibiki(Tohoku Univ.), B. M. Epelbaum, A. Winnacker(Univ. Erlangen-Nuremberg)	139
1-06P-63	RF • SAW Filter having Narrow Bandwidth and Excellent Temperature Characteristic Takaki Murata‡, Michio Kadota, Takeshi Nakao, Kenji Matsuda(Murata Mfg. Co., Ltd.)	141
1-06P-64	Degradation of a liquid-phase SH-SAW sensor due to SSBW and a compensation method Takashi Kogai‡, Hiromi Yatsuda(Japan Radio co.,Ltd.), Showko Shiokawa(SAW&SPR-Tech co.,Ltd.)	143
1-06P-65	SAW Sensor by Water Surface Partial Casting Molecular Films Yasutaka Onose†, Nomura Tsuru, Atsusi Saitou(Shibaura Inst. of Tech.)	145

16:20-16:25 Break

16:25-17:40 Bulk wave devices

Chairman: Subaru Kudo (Ishinomaki Senshu Univ.)

1-05-01	An AC-DC converter based on a parallel drive of two piezoelectric transformers Takeshi Inoue†, Mitsuru Yamamoto, Yasuhiro Sasaki, Atsushi Ochi(NEC Corp.), Sunao Hamamura(NEC Engineering Ltd.)	147
1-05-02	Development of a Tactile Interface Using a Resonance of Piezoelectric Bimorphs Arranged in Parallel Yohei Motoki‡, Masashi Konyo, Satoshi Tadokoro(Tohoku Univ.), Takashi Maeno(Keio Univ.)	149
1-05-03	Single crystal FBAR with LiNbO ₃ and LiTaO ₃ Tomoyoshi Tai‡, Masahiro Sakai, Yukihisa Osugi, Kenji Suzuki(NGK)	151
1-05-04	High Frequency Acoustic Filters using Air-Gap type Film Bulk Acoustic Resonators Masanori Ueda, Motoaki Hara†, Tsuyoshi Yokoyama, Yoshio Satoh(FUJITSU LTD.), Shinji Taniguchi, Masafumi Iwaki, Tokihiro Nishihara(FUJITSU LABORATORIES LTD.)	153
1-05-05	Texture control of ZnO piezoelectric films by ion beam irradiation Takahiko Yanagitani†, Masato Kiuchi(AIST)	155

17:40-17:45 Break

17:45-19:00 Surface wave devices

Chairman: Mitsutaka Hikita (Kogakuin Univ.)

1-06-01	New Piezoelectric Acoustic Boundary Waves in the Structure of Multi-Layer Thin Films/Electrode/Piezoelectric Substrates Yusuke Satoh‡, Kazuhiko Yamanouchi(Tohoku Inst. of Tech.)	157
1-06-02	A Laser Probe for 2 GHz SH-SAW Devices Keisuke Kashiwa‡, Tatsuya Omori, Ken-ya Hashimoto, Masatsune Yamaguchi(Chiba Univ.)	159
1-06-03	Temperature Compensated SAW Duplexer using Spin on Glass film Satoshi Waga†, Takashi Sato, Takeshi Ikeda, Toshihiro Meguro, Kyosuke Ozaki, Haruhiko Fujimoto(ALPS ELECTTRIC CO., LTD)	161
1-06-04	Growth of <100> Epitaxial ZnO Film on Y-plane LiNbO ₃ Substrate Michio Kadota†, Yoshihiro Ito, Hideaki Kobayashi(Murata Mfg. Co., Ltd.)	163

- 1-06-05 Development of Micro Separation Column for Ball Surface Acoustic Wave Gas Chromatograph 165
 Shingo Akao†(Tohoku Univ., TOPPAN PRINTING CO.,LTD., JST, CREST), Naoya Iwata(Tohoku Univ. JST, CREST), Masanori Sakuma(Tohoku Univ., JST, CREST), Hidekazu Oonishi(Tohoku Univ.), Kazuhiro Noguchi(TOPPAN PRINTING CO.,LTD., JST.CREST), Toshihiro Tsuji(Tohoku Univ., JST, CREST), Noritaka Nakaso(TOPPAN PRINTING CO.,LTD., JST.CREST), Kazushi Yamanaka(Tohoku Univ., JST, CREST)

Thursday, November 15

8:30 Opening of reception desk

9:00-10:00 High power ultrasound Chairman: Minoru Kurosawa (Tokyo Inst. of Tech.)

- 2-09-01 A self-running standing wave type ultrasonically levitated linear guide 167
 Daisuke Koyama‡, Hiroyuki Takei, Kentaro Nakamura, Sadayuki Ueha(Tokyo Inst. of Tech.)
- 2-09-02 Wireless Energy Transmission to Piezoelectric Components 169
 Satyanarayan Bhuyan, Hu Junhui†(Nanyang Technological University)
- 2-09-03 Effect of Atmospheric Pressure Plasma Treatment on Joint Strength between Flip Chip Bump and Flexible Printed Circuit Board (FPCB) Bonded Using Ultrasonic 171
 Ja-Myeong Koo‡, Jung-Lae Jo, Yu-Na Kim, Jong-Bum Lee, Seung-Boo Jung(School of Advanced Materials Science & Engineering, Sungkyunkwan University), Won-Chum Moon(Micro Electronic Packaging Consortium, Sungkyunkwan University), Jeong-Hoon Moon(Department of Mechanical Engineering, Suwon Science College)
- 2-09-04 Remediation of Diesel-Contaminated Soil using Supercritical Carbon Dioxide and Ultrasound 173
 Ik B. Park†, Younggyu Son(Department of Civil, Environmental & Architectural Engineering, Korea University), Il S. Song, Jongchan Kim(Gyeonggi-do Institute of Health and Environment), Jeehyeong Khim(Department of Civil, Environmental & Architectural Engineering, Korea University)

10:00-10:05 Break

10:05-10:50 Ultrasonic properties of materials, Phonon physics Chairman: Oliver B. Wright (Hokkaido Univ.)

- 2-01-01 Polar Nanoregions in Relaxor Ferroelectrics Probed by Micro-Brillouin Spectroscopy 175
 Shinya Tsukada‡, Yuji Ike, Jun Kano(Univ. Tsukuba), Tadashi Sekiya, Yoshiro Shimojo, Ruiping Wang(AIST), Seiji Kojima(Univ. Tsukuba)
- 2-01-02 Piezoelectric Properties of Potassium Niobate Ceramics using Hydrothermally Crystallized Powders 177
 Mutsuo Ishikawa‡, Norihito Takiguchi, Hiroshi Hosaka, Takeshi Morita(Univ. Tokyo)
- 2-01-03 Elastic Stability of Epitaxial Cu Thin Films: Measurement by Acoustic-Phonon Resonance 179
 Nobutomo Nakamura†, Hirotosugu Ogi, Masahiko Hirao(Osaka Univ.)

10:50-10:55 Break

10:55-11:25 Sonochemistry Chairman: Shin-ichiro Umemura (Tohoku Univ.)

- 2-07-01 Effect of chlorinated compounds in sonochemical degradation of 2-chlorophenol 181
 Myunghee Lim‡, Younggyu Son, Seungmin Na, Jeehyeong Khim(Department of Civil, Environmental & Architectural Engineering, Korea University)
- 2-07-02 Multi-Bubble Sonoluminescence and Bubble Dynamics with burst-type ultrasound 183
 Ayako Ozawa‡, Yoshihisa Kaneko, Pak-Kon Choi(Meiji Univ.)

11:25-11:30 Break

11:30-12:00 Underwater ultrasound Chairman: Hiroshi Ochi (JAMSTEC)

- 2-11-01 Time Reversal Communication in Deep Ocean - The result of the second at-sea experiment - 185
 Takuya SHIMURA‡, Hiroshi OCHI, Yoshitaka WATANABE(JAMSTEC)
- 2-11-02 Analysis of the time reversal wave in the shallow water using the FDTD method. 187
 Toshio Tsuchiya†, Hideaki Saito, Jun Naoi, Hiroshi Ochi(JAMSTEC)

12:00-13:00 Lunch

13:00-13:45 Measurement techniques, Nondestructive testing

Chairman: Hirotsugu Ogi (Osaka Univ.)

- 2-02-01 Ultrasonic Evaluation of Closed Cracks Using Subharmonic Phased Array 189
Yoshikazu Ohara†, Setsu Yamamoto(Tohoku Univ.), Tsuyoshi Mihara(Toyama Univ.), Kazushi Yamanaka(Tohoku Univ.)
- 2-02-02 Tone-burst generations of circumferential guided waves propagating in a pipe and their time-frequency analyses 191
Hideo Nishino†, Ryuji Yokoyama, Kenichi Yoshida(Univ. Tokushima)
- 2-02-03 Circumferential Shear Horizontal Waves in a Partial Cylinder 193
Morio Onoe†(Univ. Tokyo)

13:45-13:50 Break

13:50-16:20 Poster session 2

Chairman: Jun Kondoh (Shizuoka Univ.)

- 2-01P-01 Experimental and theoretical analyses of mode coupling between single-defects in a 2-D sonic crystal 195
Toyokatsu Miyashita†, Shin-ichi Takubo, Kohei Waki(Ryukoku Univ.)
- 2-01P-02 Negative Group Velocity of Lamb-Type Wave on Solid/Liquid/Solid Structure 197
Kojiro Nishimiya‡, Koichi Mizutani, Naoto Wakatsuki(Univ. Tsukuba), Ken Yamamoto(Kansai Univ.)
- 2-01P-03 Ultrasonic Study of h-BN Machinable Ceramic (II) 199
Nobuo Kashiwagura†, Motoki Sato, Mitsuo Yamaga, Masayuki Akita, Hiroaki Kamioka(Gifu Univ.)
- 2-01P-04 Fabrication and Piezoelectric Properties of Grain Oriented (Bi_{1/2}K_{1/2})TiO₃-BaTiO₃ Ceramics 201
Masahiro Nemoto†, Yuji Hiruma, Hajime Nagata, Tadashi Takenaka(Tokyo Univ. of Sci.)
- 2-01P-05 Fabrication and Evaluation of Highly Oriented Potassium Niobate Thin Films Prepared by RF-Magnetron Sputtering 203
Hajime Kurosawa‡, Tatsunori Suzuki, Shoji Kakio, Yasuhiko Nakagawa(Univ. Yamanashi)
- 2-01P-06 Control of LiNbO₃ Thin Film Orientation by Crystal Contact Epitaxy 205
Takehiko Uno†(Kanagawa Inst. Tech.), Satoru Noge(Numazu Nation. College Tech.), Takehiko Adachi(Yokohama Nation. Univ.)
- 2-01P-07 Glass Transitions and Elastic Properties of Lithium Borate Glasses Over a Wide Composition Range Studied by Micro-Brillouin Scattering 207
Yasuteru Fukawa†, Yu Matsuda, Yuji Ike(Univ. Tsukuba), Masao Kodama(Sojo Univ.), Seiji Kojima(Univ. Tsukuba)
- 2-01P-08 Dehydration Process of Protein Crystals by Micro-Brillouin Scattering 209
Eiji Hashimoto†, Yuichiro Aoki, Keita Sasanuma, Yuichi Seshimo, Yuji Ike, Seiji Kojima(Univ. Tsukuba)
- 2-02P-09 Evaluation of attenuation coefficients of wave motions propagating through thin materials using group delay spectrum method 211
Shinobu Sugawara†(National Maritime Institute)
- 2-02P-10 Applicability in Cepstrum Analysis Applied to Non-destructive Testing for Crack of Rock Slope Using Giant-magnetostriction Vibrator 213
Michinori Asaka‡, Youhei Kawamura, Shingo Nakasato(Univ. Tsukuba), Hirokazu Okawa(Akita Univ.), Koichi Mizutani(Univ. Tsukuba)
- 2-02P-11 Creep-induced Microstructural change and Acoustic Characterization in a Cr-Mo-V Steel 215
Toshihiro Ohtani†(Shonan Inst. Tech.), Fuxing Yin(NIMS), Yasuhiro Kamada(Iwate Univ.)
- 2-02P-12 Optical and acoustic observation of a bubble adhered to the piezoelectric transducer under ultrasound field -pressure signal caused by bubble behaviors- 217
Shintaro Nakatani‡, Kenji Yoshida, Yoshiaki Watanabe(Doshisha Univ.)
- 2-02P-13 Novel Double-Layered Piezoelectric Transducer of Same Polarization Directions for the Detection of Sub-Harmonic Components from Plastic-Deformed Metals. 219
Makoto Fukuda‡, Morimasa Nishihira, Kazuhiko Imano(Akita Univ.)
- 2-02P-14 B/A Measurement for Small Volume Liquid Sample Using Focused Ultrasound 221
Shigemi Saito†, Shin'ya Takahashi, Kenji Saida(Tokai Univ.)
- 2-03P-15 Detection of flaws on metal surfaces using tone burst laser ultrasound 223
Tetsuo Fukuchi†, Hiroyuki Fukutomi, Takashi Ogata(CRIEPI)
- 2-03P-16 Study on the shallow underground imaging method at submerged sand -Study on the imaging method using ultrasound wave- 225
Kunihiko Seo‡, Takashi Shirakawa, Tsuneyoshi Sugimoto(Toin Univ. of Yokohama)
- 2-03P-17 Time of Flight CT Image Reconstruction Based on ML-EM 227
Honghui Fan‡, Yasutaka Tamura, Hirotaka Yanagida(Yamagata Univ.)

2-03P-18	Imaging of time and space variation of the vortex wind velocity fields using acoustic tomography Haiyue Li†, Takaaki Ueki, Akira Yamada(Tokyo Univ. of A&T)	229
2-03P-19	Application of Alternate Optimization to Acoustic Computerized Tomography Using Reflection Ayumu Minamide‡, Koichi Mizutani, Naoto Wakatsuki(Univ. Tsukuba)	231
2-03P-20	Sound Velocity Measurement Using Optical-CT and Nearfield Acoustical Holography Ohbuchi Takeshi‡, Mizutani Koichi, Wakatsuki Naoto(Univ. Tsukuba), Masuyama Hiroyuki(Toba Natl. Coll. Mar. Tech.)	233
2-04P-21	Optical Switch utilizing Refractive Index Memory induced by Electrical Imprint Toshinori Ohashi‡, Hiroshi Hosaka, Takeshi Morita(Univ. Tokyo)	235
2-04P-22	Recognition Characteristics of Layered Code for Optical Time-Series WDM Labels Using Collinear Acoustooptic Switch Arrays Nobuo Goto†(Univ. Tokushima), Yasumitsu Miyazaki(Aichi Univ.)	237
2-04P-23	Frequency-Shifted Feedback Fiber Laser Oscillation with Monolithically Integrated Tandem Waveguide-Type AOM Driven by SAWs Motoki Kitamura‡, Shoji Kakio, Yasuhiko Nakagawa(Univ. Yamanashi), Takefumi Hara, Hiromasa Ito(Tohoku Univ.)	239
2-04P-24	Silica Based Superstructure Films on Piezoelectric Substrates for Light Amplification Use Takehiko Uno†(Kanagawa Inst. Tech.), Satoru Noge(Numazu Nation. College Tech.), Kei Kasahara(Kanagawa Inst. Tech.)	241
2-05P-25	Investigation of the quantized displacement observed in an antenna structure typed MEMS resonator Hideaki Itoh†, Yoshitada Kobayashi(Faculty of Eng., Shinshu Univ.), Kiyoshi Ishikawa(Club Analyst)	243
2-05P-26	Design of an underwater Tonpilz transducer with 1-3 mode piezocomposite materials Da Lie Pei‡, Yongrae Roh(School of Mechanical Engineering, Kyungpook National University)	245
2-05P-27	Motion analysis of make/break operation of an electromagnetic relay Hiroshi Honma†, Nobuo Takatsu, Noboru Wakatsuki(Ishinomaki Senshu Univ.)	247
2-05P-28	A study of correction of sensitivity descent in the ultrasonic wave sensor due to Doppler shift. Shinichi Aizawa‡, Yoshikazu Koike(Shibaura Inst. of Tech.)	249
2-05P-29	Estimation of Piezoelectric Equivalent Circuit Parameters Based on Principle of Least Variance Michio Ohki†(Natl. Def. Acad.)	251
2-05P-30	Equivalent circuit constant measurement result of the crystal resonators for QCM immersed in liquid based on the international-standards measuring method Mistuaki Koyama†, Shunichi Wakamatsu, Shigenori Watanabe(NIHON DEMPA KOGYO Co., Ltd.)	253
2-06P-31	Propagation characteristics of SH-SAW in (11-20) ZnO film/silica glass substrate structures. Atsushi Tanaka‡(Doshisha Univ.), Takahiko Yanagitani(Tohoku Univ.), Mami Matsukawa, Yoshiaki Watanabe(Doshisha Univ.)	255
2-06P-32	Love-Mode SAW Resonators on Y-X LiTaO ₃ with TeO ₂ Thin Film Shoji Kakio†, Ryota Haino, Yusuke Asano, Yasuhiko Nakagawa(Univ. Yamanashi)	257
2-06P-33	Improved Characteristics of Diamond SAW Resonator Shuichi Kawano‡, Takatoshi Umeda, Satoshi Fujii(Seiko Epson Corp.)	259
2-06P-34	Growth of c-axis oriented LiNbO ₃ films on ZnO/SiO ₂ /Si substrate by pulsed laser deposition for surface acoustic wave applications Wen-Ching Shih, Tzyy-Long Wang†, Xiao-Yun Sun, Mu-Shiang Wu(Graduate Program in Electro-Optical Engineering, Tatung University)	261
2-08P-35	Ultrasonic wave properties in the bone axis direction of bovine cortical bone Kazufumi Yamamoto†(Hamamatsu Univ. Sch. Med.), Yuichiro Yaoi(Doshisha Univ.), Yu Yamato(Hamamatsu Univ. Sch. Med.), Hirofumi Mizukawa(Doshisha Univ.), Takahiko Yanagitani(Tohoku Univ.), Mami Matsukawa(Doshisha Univ.), Kaoru Yamazaki, Akira Nagano(Hamamatsu Univ. Sch. Med.)	263
2-08P-36	Experimental Study on the Anisotropy and Distribution of Ultrasound Speed in Bovine Cancellous Bone Katsunori Mizuno‡, Mami Matsukawa, Takahiko Otani(Doshisha Univ.), Masahiko Takada(Shiga Univ. of Medical Sci.), Isao Mano(Oyo Electronic Co. Ltd.), Toshiyuki Tsujimoto(Horiba, Ltd.)	265
2-08P-37	Measurement of wave velocity in bovine bone tissue by micro Brillouin scattering Masanori Sakamoto‡, Masahiko Kawabe, Mami Matsukawa, Noriko Koizumi(Doshisha Univ.)	267
2-08P-38	Influence of Trabecular Elements on Fast and Slow Wave Propagations through a Stratified Trabecular Phantom Atsushi Hosokawa†(Akashi Nat. Coll. Tech.)	269
2-08P-39	Trial fabrication of needle type hydrophone with taper type structure using hydrothermally synthesized PZT Kazuho Yoshimura‡(Toin Univ. of Yokohama), Takeyoshi Uchida, Masahiro Yoshioka, Tsuneo Kikuchi(AIST), Minoru Kurosawa(Tokyo Institute of Technology), Norimichi Kawashima, Shinichi Takeuchi(Toin Univ. of Yokohama)	271

2-08P-40	Interference-Based Acoustic Impedance Measurement Method for the Puncture Needle-Type Ultrasonography Masasumi Yoshizawa†(Tokyo Metropolitan Industrial College), Takasuke Irie(Microsonic Co., Ltd.), Kouichi Itoh(Hitachi-Omiya Saiseikai Hospital), Tadashi Moriya((emeritus) Tokyo Metropolitan Univ.)	273
2-08P-41	Acoustic characteristics of bi-frequency drive annular transducers Natsuki Yoshizumi‡(Shonan Inst. of Tech.), Shigemi Saito(Tokai Univ.), Daisuke Koyama, Kentaro Nakamura(Tokyo Inst. of Tech.), Iwaki Akiyama(Shonan Inst. of Tech.)	275
2-08P-42	A new contrast echo imaging method using the crossed beams of two ultrasonic frequencies Naoki Yoshimoto‡, Kenji Yoshida, Yoshiaki Watanabe(Doshisha Univ.), Iwaki Akiyama(Shonan Inst. Tech.)	277
2-08P-43	Inline Transmitter/Receiver System for Harmonic Pulse Compression Imaging Masayuki Tanabe‡, Kan Okubo, Norio Tagawa(Tokyo Metropolitan Univ.), Tadashi Moriya(Professor Emeritus of Tokyo Metropolitan Univ.)	279
2-08P-44	Vibration Analysis of Phantom during Fragmentation Process Yun-Seok Jang†(School of Electrical and Control Engineering, Pukyong National University), Kyu-Chil Park(Pukyong National University)	281
2-08P-45	Development of spatial recognition software of heart to quantitate distribution of acoustic window Takao Imai‡, Taro Sakai, Kohji Masuda(Tokyo Univ. of A&T)	283
2-09P-46	Plating method with ultrasonic agitation to fabricate a near-field optical fiber probe Shuji Mononobe†(Toyo Univ.)	285
2-09P-47	Thermal Reliability of Package with Underfill using Ultrasonic Bonding Bo-In Noh†, Ja-Myeong Koo, Seung-Boo Jung(School of Advanced Materials Science and Engineering, Sungkyunkwan University)	287
2-09P-48	Effect of Bonding Condition on Joint Strength between Rigid and Flexible Printed Circuit Boards Jong-bum Lee†, Ja-Myeong Koo, Seung-Boo Jung(Sungkyunkwan University), Soon-Min Hong, Hyoyoung Shin, Young-jun Moon(SAMSUNG ELECTRONICS CO.LTD)	289
2-09P-49	Design of ultrasonic welding horn for microelectronic components bonding using Finite element analysis Jinwoo Kang‡, Young H. Kim(Korea Science Academy), Jeong-Hoon Moon(Dept. of Mechanical Eng., Suwon Science College), Cheolho So(Dongshin University), Kyoung-soo Kim(Changjo Engineering Co.)	291
2-09P-50	Vibration Characteristics of Stepped Horn Joined Cutting Tip Using Ultrasonic Vibration for Circular Cutting Hikaru Miura†(Nihon Univ.)	293
2-09P-51	Configuration of Ultrasonic Complex Vibration Tools Using a Different Sound Velocity Metal-Ring-Pair Vibration Converter Jiromaru Tsujino, Yu Kubodera†(KANAGAWA Univ.)	295
2-09P-52	Welding and Vibration Characteristics of a 27 kHz Ultrasonic Complex Vibration Converter Jiromaru Tsujino, Shun Tanaka†(KANAGAWA Univ.)	297
2-09P-53	Vibration and Welding Characteristics of 27 kHz Complex Vibration Source Using a (2, 1) Transverse Vibration Disk with 40-mm-Diameter Bolt-Clamped Langevin Type PZT Transducers Tsujino Jiromaru, Ueoka Tetsugi†(KANAGAWA Univ.)	299
2-09P-54	Air flow in a small gap between a bending vibrator and a reflector Hiroyuki Takei†, Daisuke Koyama, Kentaro Nakamura, Sadayuki Ueha(Tokyo Inst. of Tech.)	301
2-09P-55	Examination of non-contact excitation of objects by using high-intensity aerial ultrasonic waves. Youichi Ito, Ayumu Oosumi†, Naoto Asakura(Nihon Univ.)	303
2-10P-56	High intensity ultrasound source in diffusion chamber for fine particles Tetsuro Otsuka†, Keiichi Mizumura, Tomoo Nakane(Nihon Univ.)	305
2-10P-57	Examination on a high power Aerial Ultrasonic Generator using a Cross Type Direction Changer for Longitudinal Vibrations. Youichi Ito, Kazuki Ide†(Nihon Univ.)	307
2-10P-58	Measurement of Air Temperature Using Temperature Dependence of Parametric Phenomenon in Airborne Ultrasound Akihiko Kon†(Univ. Tsukuba/Yamatake Corp.), Naoto Wakatuki, Koichi Mizutani(Univ. Tsukuba)	309
2-11P-59	Analysis of meridionally reciprocal sound propagation in the Central Pacific Hanako Ogasawara‡, Toshiaki Nakamura(National Defense Acad.), Hidetoshi Fujimori(JAMSTEC), Hiroyuki Hachiya(Chiba Univ.), Koichi Mizutani(Univ. Tsukuba)	311
2-11P-60	Numerical analysis of sound propagation in Lutzow-Holm bay of Antarctic Ocean Takenobu Tsuchiya†, Tetsuo Anada, Shuki Ushio, Nobuyuki Endoh(Kanagawa Univ.)	313
2-11P-61	Experimental Characterization of Frequency Dependence of Short Range Propagation Losses in Very Shallow Water Seongwook Lee†, Jong Rak Yoon(Division of Electronic, Computer and Telecommunication Engineering, Pukyong National Univ., Korea), En Kyu Nam, Phil-Ho Lee(Agency for Defense Development, Korea)	315

2-11P-62	A Study on Implementation of Underwater Acoustic Communication Channel using 2-D TLM Modeling and Correlation Function	317
	Kyu-Chil Park†(Division of Electronic, Computer and Telecommunication Engineering, Pukyong National University), Seongwook LEE, Jong Rak YOON(Pukyong National University)	
2-11P-63	Variation of Beam Pattern with Calculation Area of Mutual Radiation Impedance in a Cylindrical Array.	319
	Jungsoon Kim‡(Multimedia of Eng., Tongmyong University), Moojoon Kim, Kanglyeol Ha(Dept. of Physics, Pukyong National University), Heeseon Seo, Cheeyoung Joh(Agency for Defense Development)	
2-11P-64	OFDM Performance Dependence on Pulse Shape in Underwater Channel	321
	Chundan Lin(Department of Mathematics and Physics, China University of Petroleum, Beijing, China), Seongwook Lee, Jong Rak Yoon†(Department of Telecommunication Engineering, Pukyong National University, Pusan, Korea)	
2-11P-65	Characteristics of light reflection by the sound field of intermittent burst pulse underwater	323
	Yasuhiro Nakashima‡, Suginori Iwasaki, Yasunori Sasaki(National Defense Academy)	

16:20-16:25 Break

16:25-17:25 Medical ultrasound

Chairman: Iwaki Akiyama (Shonan Inst. of Tech.)

2-08-01	Cortical Bone Quality Assessed In Vitro With A Combination Of Mechanical And Ultrasonic Techniques	325
	Quentin Grimal‡, Sylvain Hauptert(Université Pierre et Marie Curie-Paris6), David Mitton, Pierre Gravel(Laboratoire de Biomécanique), Laurent Vastel(Banque de tissus osseux Cochin AP-HP, Hôpital Cochin), Raphaël Bardonnnet(BIOBank®), Pascal Laugier(Université Pierre et Marie Curie-Paris6)	
2-08-02	Ultrasonic Propagation Through Trabecular Bone Modelled As A Random Medium	327
	Frederic Padilla‡, Pascal Laugier(CNRS UMR 7623 - Laboratoire d'Imagerie Parametrique)	
2-08-03	Investigation of the effect of aberration caused by subcutaneous fat on the transmit beam pattern	329
	Hirofumi Taki‡, Tetsuya Matsuda, Toru Sato(Kyoto Univ.)	
2-08-04	Micro Bubble Self-adhesion to Surface of Object	331
	Yoshiki Yamakoshi†, Takashi Miwa(Gunma Univ.)	

17:30-17:40 Awarding ceremony

18:00-18:30 Movement

18:30- Banquet

Friday, November 16

8:30 Opening of reception desk

9:00-10:00 Wave propagation, Imaging

Chairman: Masahiro Ohno (Chiba Inst. of Tech.)

3-03-01	Monitoring Device of Au Nano-Particle Distribution in Living Body by Using Optically Assisted Ultrasonic Velocity Change Imaging	333
	Hikomichi Horinaka†, Toshiyuki Matsunaka, Naoki Nakamura, Takashi Mukaiyama, Shyunsuke Kawakami, Kenji Wada, Tetsuya Matsuyama, Kenji Kono(Osaka Prefecture Univ.)	
3-03-02	Underground Sonar Using Shear Waves - Resolution Improvement Using Pulse Compression and Dynamic Focusing -	335
	Hiraku Kawasaki‡, Tsuneyoshi Sugimoto(Univ. Toin Yokohama)	
3-03-03	Imaging of megahertz thermal diffusion using ultrasonic atomic force microscopy	337
	Motonobu Tomoda†(Hokkaido Univ.), Roberto Li Voti(Università di Roma), Oliver B. Wright(Hokkaido Univ.)	
3-03-04	Performance evaluation of the visceral fat measurement using ultrasound tomography	339
	Akira Yamada†, Yoske Yatoji(Tokyo Univ. of A&T)	

10:00-10:05 Break

10:05-10:50 High power ultrasound

Chairman: Youichi Ito (Nihon Univ.)

3-09-01	Improvement in Heat-to-Sound Energy Conversion Efficiency Caused by Change in Phase Adjuster Inner Diameter in Thermoacoustic System	341
	Shin-ichi Sakamoto‡, Masahiro Nishikawa, Takahiro Ishino, Yoshiaki Watanabe, Jiro Senda(Doshisha Univ.)	

3-09-02	Electrode Structure of the multi-layered piezoelectric transducer for longitudinal-bending ultrasonic actuators Masahiro Takano†, Ryuji Shintani, Koichi Nakano(Industrial Research Institute of Ishikawa), Koji Ando, Mikio Takimoto(Nikko Corp.), Kentaro Nakamura(Tokyo Inst. of Tech)	343
3-09-03	Ultrasonic Joining of Au foil using a Surface Acoustic Wave Device Kengo Naruse†(Seidensha Electronics Co., Ltd.), Kiyomi Mori, Yuji Watanabe(Takushoku Univ.)	345
	10:50-10:55 Break	
	10:55-11:25 Underwater ultrasound	Chairman: Toshiaki Nakamura (National Defense Acad.)
3-11-01	A Measurement of Absorption Loss at 80 kHz Band Hiroshi Ochi†, Yoshitaka Watanabe, Takuya Shimura(JAMSTEC)	347
3-11-02	Variable range focusing of the phase conjugated wave in shallow water Yoshiaki Tsurugaya†(NEC Corp.), Toshiaki Kikuchi(NDA), Koichi Mizutani(Univ. Tsukuba)	349
	11:25-11:30 Break	
	11:30-12:00 Measurement techniques, Nondestructive testing	Chairman: Kazushi Yamanaka (Tohoku Univ.)
3-02-01	Guided wave dispersion curves derived with a semi-analytical finite element method and its applications to nondestructive inspection. Takahiro Hayashi†(Nagoya Inst. Tech.)	351
3-02-02	Measurements of surface acoustic wave velocity using a polyurea ultrasonic variable-line-focus-beam-transducer. Takahiro Aoyagi†, Marie Nakazawa, Masaya Tabaru, Kentaro Nakamura, Sadayuki Ueha(Tokyo Inst. of Tech.)	353
	12:00-13:00 Lunch	
	13:00-13:45 Invited lecture 2	Chairman: Keiji Sakai (Univ. of Tokyo)
3-INV	The introduction to rheology for ultrasonic experts Takanobu Ueda†(Nippon paint)	355
	13:45-13:50 Break	
	13:50-16:20 Poster session 3	Chairman: Kentaro Nakamura (Tokyo Inst. of Tech.)
3-02P-01	Observation of surface resonance on liquid surface by electric field tweezers system Maiko HOSODA†, Hideo OGAWA, Hiroyasu NOMURA(Tokyo Denki Univ.), Keiji SAKAI(Univ. Tokyo)	359
3-02P-02	Basic Study on Proximity Sensors Utilizing Air-Film Damping Effect Caused by Longitudinal-Mode Piezoelectric Vibrator Ken Yamada†(Tohoku Gakuin Univ.), Shou Kaneko(Tohoku Univ.), Tatsuya Nagasawa(Tohoku Gakuin Univ.)	361
3-02P-03	Quantitative analysis of mixed gas using ball SAW sensor with a separation column Sakuma Masanori†(Tohoku Univ. JST, CREST), Hidekazu Oonishi(Tohoku Univ.), Naoya Iwata(Tohoku Univ. JST, CREST), Shingo Akao(Tohoku Univ., TOPPAN PRINTING CO.,LTD., JST, CREST), Kazuhiro Noguchi(TOPPAN PRINTING CO.,LTD., JST, CREST), Toshihiro Tsuji(Tohoku Univ. JST, CREST), Noritaka Nakaso(TOPPAN PRINTING CO.,LTD., JST, CREST), Takeshi Fukiura(Yamatate CO., LTD.), Kazushi Yamanaka(Tohoku Univ. JST, CREST)	363
3-02P-04	Ultrasonic Monitoring of Transient Variation in Internal Temperature Profile of Heated Materials Manabu Takahashi†, Ikuo Ihara(Nagaoka Univ. of Tech.)	365
3-02P-05	Measurement of deviation between nominal and effective sizes of hydrophone active element Masahiro Yoshioka†(AIST)	367
3-02P-06	Fundamental study of cavitation sensor fabricated with PZT film deposited by hydrothermal method -Analysis and consideration of output signal from the sensor- Yuki Seto†, Norimichi Kawashima(Toin Univ. of Yokohama), Minoru Kurosawa(Tokyo Inst. of Tech.), Shinichi Takeuchi(Toin Univ. of Yokohama)	369
3-02P-07	Magnetic field sensing with the vibrating ferrite core of a pick-up coil Keita Dan†, Kentaro Nakamura, Sadayuki Ueha(Tokyo Inst. of Tech.)	371
3-02P-08	Study of Novel Ultrasonic Positioning Method for "Sensor Network" Koki Takimoto†, keiya Minami, Yasushi Hiraizumi, Mitsutaka Hikita(Kogakuin Univ)	373

3-02P-09	Experimental study on remote excitation of trapped energy modes of vibration Morio Onoe(Professor Emeritus, Univ. Tokyo), Takanobu Suzuki†(KGG, Co. Ltd.)	375
3-02P-10	Motion detection in ultrasound image-sequence using tensor voting Inba Masafumi†, Yasutaka Tamura, Hirotaka Yanagida(Yamagata Univ.)	377
3-02P-11	Phase singular point elimination in ultrasonic images based on complex-valued Markov random field model Tomohiro Nishino‡, Ryo Yamaki, Akira Hirose(Univ. Tokyo)	379
3-02P-12	Fundamental Study for Estimation of Crack Distribution in Rock Slope Using Giant-magnetostriction Vibrator Shingo Nakasato‡, Youhei Kawamura, Michinori Asaka(Univ. Tsukuba), Hirokazu Okawa(Akita Univ.), Koichi Mizutani(Univ. Tsukuba)	381
3-02P-13	Study on Driving Energy of Reinforcing Steel Bar for Discriminating Background Medium of Concrete Ryo Toh‡, Takahiro Kawasaki, Yahiro Mori, Seiichi Motooka(Chiba Inst. Tech.)	383
3-02P-14	High-speed Measurement of Mode Shapes and Vibration Amplitude in Piezoelectric Resonators Using Two-Lasers with Different Wavelengths. Noriyuki Imaeda‡, Yasuaki Watanabe, Shigeyoshi Goka, Takayuki Sato, Hitoshi Sekimoto(Tokyo Metropolitan Univ.)	385
3-03P-15	Proposition of Underground Imaging Method Using Magnified Cross-correlation Analysis Euseong Ha‡, Youhei Kawamura(Univ. Tsukuba), Hirokazu Okawa(Akita Univ.), Koichi Mizutani(Univ. Tsukuba)	387
3-03P-16	Seismic Prospection of Ultra-shallow Region in S-wave Reflection Method using Maximum Attenuation Point of Surface Wave Akihiro Kamohara‡, Youhei Kawamura, Euseong Ha(Univ. Tsukuba), Hirokazu Okawa(Akita Univ.), Koichi Mizutani(Univ. Tsukuba)	389
3-03P-17	Direction-Variable Beam by Decentered Annular Array Sound Source with Rounded Width of Elements Hiroyuki Masuyama‡(Toba Nat. Col. Mar. Tech.), Koichi Mizutani(Univ. Tsukuba)	391
3-03P-18	Extraction of Fine Blood Vessels from Ultrasound Images Masayasu Ito, Yuzuru Saito†, Yasuaki Osawa(Tokyo Denki Univ.)	393
3-03P-19	Study on Tissue Elasticity Measurement based on Pulse Compression Harmonic Imaging Naoto Akazawa‡, Masayuki Tanabe, Kan Okubo, Norio Tagawa(Tokyo Metropolitan Univ.), Tadashi Moriya(Professor Emeritus of Tokyo Metropolitan Univ.)	395
3-03P-20	Numerical Simulation of Nonlinear Sound Wave Propagation Using CIP Method –One dimensional case– Takao Tsuchiya†(Doshisha Univ.), Kan Okubo(Tokyo Metropolitan Univ.), Nobunao Takeuchi(Akita Prefectural Univ.)	397
3-03P-21	Diagonally Staggered Grid for the Analysis of Elastic Wave Fields in Isotropic and Anisotropic Solids Using the Finite-Difference Time-Domain Method Masahiro Sato†(Akita Univ.)	399
3-03P-22	Performance Comparison between Some Types of CIP Analysis for Acoustic Wave Propagation Masahito Konno‡, Kan Okubo(Tokyo Met. Univ.), Takao Tsuchiya(Doshisha Univ.), Norio Tagawa(Tokyo Met. Univ.)	401
3-03P-23	FDTD Simulation Considering Viscous Damping with Frequency Dispersion – An Approach of RAM-Saving Algorithm – Yoshiki Nagatani‡, Takefumi Sakaguchi, Hiroshi Hosoi(Nara Medical Univ.)	403
3-08P-24	Effects of Particle Size of Ytterbium Oxide Nanopowder on the Acoustic Properties of Silicone Rubber Lens for Medical Echo Probe Yohachi Yamashita†(Toshiba Research Consulting Corp.), Yasuharu Hosono, Kazuhiro Itsumi(Corporate Research & Development Center, Toshiba Corp.)	405
3-08P-25	Observation of microcapsules behavior by producing acoustic standing wave at the bifurcated flow Yusuke Muramatsu‡, Kohji Masuda, Sawami Ueda(Tokyo Univ. Agri.&Tech.), Ken Ishihara(Ehime Univ.)	407
3-08P-26	Design Principle of Frequency Compound Mariko Yamamoto‡(Hitachi, Ltd.)	409
3-08P-27	Extraction of the diseased tissue information from echo signal based on independence of speckles Tadashi Yamaguchi†, Kazuya Matsumoto(Chiba Univ.), Naohisa Kamiyama(Toshiba Medical Systems Co.), Hiroyuki Hachiya(Chiba Univ.)	411
3-08P-28	Parametric Imaging For Inhomogeneous Tissue By Scatterer Density Estimation Tadashi Yamaguchi†, Hiroshi Ezuka(Chiba Univ.), Kamiyama Naohisa(Toshiba Medical Systems Co.), Hiroyuki Hachiya(Chiba Univ.)	413
3-08P-29	Measurement of Angular Dependence of Ultrasonic Scattering from Nylon Phantom Which Mimics Bundle of Myocardial Fibers Teppei Onodera†, Hideyuki Hasegawa, Hiroshi Kanai(Tohoku Univ.)	415
3-08P-30	Parameter Dependency of Shear Rate Estimation in Flow Naotaka Nitta†, Naoto Takeda(AIST)	417

3-08P-31	Estimation Error of Medium Constants from Temperature Rise by Ultrasound Irradiation Chiaki Yamaya†, Hiroshi Inoue(Akita Univ.)	419
3-08P-32	Thermal property reconstructions on the basis of ultrasonic temperature measurements –How to deal with perfusion and thermal source Chikayoshi Sumi†, Akinari Minami, Tatsuya Uchida(Sophia Univ.)	421
3-08P-33	Lateral modulation - Study on functions used in apodization Chikayoshi Sumi†, Atsushi Tanuma(Sophia Univ.)	423
3-08P-34	3D Myocardial Strain Measurement Using Multi-Frame Dynamic Grid Interpolation Method Shuhui Bu†, Tsuyoshi Shiina, Makoto Yamakawa, Hotaka Takizawa(Univ. Tsukuba)	425
3-08P-35	Experimental Analysis of Real-Time Displacement Vectors across Shear Elastic Medium Ryouta Yokoyama†, Shin-ichi Yagi(Meisei Univ.), Kiyoshi Tamura(Aloka Co., Ltd.), Masakazu Sato(Microsnoc Co., Ltd.)	427
3-08P-36	Boundary Imaging Based on Tissue Motion Vector Hironari Masui†, Takashi Azuma(Hitachi), Kazuaki Sasaki(Tokyo Univ. of A&T)	429
3-08P-37	Ultrasonic Measurement of Displacement Distribution Inside Object Cyclically Compressed by Dual Acoustic Radiation Force Yoshitaka Odagiri†, Hideyuki Hasegawa, Hiroshi Kanai(Tohoku Univ.)	431
3-08P-38	Optimization of Elasticity-Based Tissue Classification of Arterial Wall by Evaluating Variance in Measurement of Radial Strain Kentaro Tsuzuki†, Hideyuki Hasegawa, Hiroshi Kanai(Tohoku Univ.), Masataka Ichiki(Sendai Hospital of East Railway Company), Fumiaki Tezuka(Sendai Medical Center)	433
3-08P-39	Ultrasonic Measurement of Transient Change in Viscoelasticity of Radial Artery Wall Caused by Endothelial-Dependent Vasodilation Kazuki Ikeshita†, Hideyuki Hasegawa, Hiroshi Kanai(Tohoku Univ.)	435
3-08P-40	Evaluation of Coherence Among Ultrasonic RF Echoes for Automated Identification of Heart Wall Takaomi Kinugawa†, Hideyuki Hasagawa, Hiroshi Kanai(Tohoku Univ.)	437
3-09P-41	Fundamental Study on A Thickness-Shear Transformer using X-cut Lithium Niobate Takashi Shigematsu†(Heinz Nixdorf Institute, University of Paderborn), Takeshi Morita(Graduate School of Frontier Sciences, University of Tokyo), Tobias Hensel(Heinz Nixdorf Institute, University of Paderborn)	439
3-09P-42	Hybrid ultrasonic actuator for force-feedback interface. Tsuyoshi Takemura†, Manabu Aoyagi(Muroran Institute of Tech.), Takehiro Takano(Tohoku Institute of Tech.), Hideki Tamura, Yoshiro Tomikawa(Yamagata Univ.)	441
3-09P-43	Surface Particle Motion of Coiled Waveguide caused by Flexural Wave Propagation Shangping Xie†, Masayuki Tanabe, Kan Okubo, Norio Tagawa, Tadashi Moriya(Tokyo Metropolitan Univ.)	443
3-09P-44	On the Drive of the Coiled-Stator Ultrasonic Motor Masayuki Tanabe, Shangping Xie, Norio Tagawa(Tokyo Metropolitan Univ.), Tadashi Moriya†(Professor Emeritus of Tokyo Metropolitan Univ.)	445
3-09P-45	Friction drive simulation of a surface acoustic wave motor characteristics based on contact mechanics Minoru Kuribayashi Kurosawa†, Takashi Shigematsu(Tokyo Institute of Technology)	447
3-09P-46	Modeling and performance evaluation of an ultrasonic suction pump Takeshi Hasegawa†, Daisuke Koyama, Kentaro Nakamura, Sadayuki Ueha(Tokyo Inst. of Tech.)	449
3-09P-47	How to design the thermoacoustic system considering the relaxation time τ —Introduction of parameter $\omega \tau$ to determine the position of stack— Yoshiyuki Tsuji†, Shin-ichi Sakamoto, Takahiro Ishino, Yoshiaki Watanabe, Jiro Senda(Doshisha Univ.)	451
3-09P-48	Basic study on the energy conversion efficiency for the miniaturization of thermoacoustic cooling system Tetsuya Wakata†, Shin-ichi Sakamoto, Masahiro Nishikawa, Yoshiaki Watanabe(Doshisha Univ.)	453
3-09P-49	Effect of copper mesh at the interface between stack and heat source in the thermoacoustic cooling system Naoki Miya†, Shin-ichi Sakamoto, Yoshiaki Watanabe(Doshisha Univ.)	455
3-09P-50	Rapid calculations of the scattered sound fields generated by two sound beams Ji Peifeng†, Yang Jun, Tian Jing(Institute of Acoustics, Chinese Academy of Sciences)	457
3-09P-51	Experimental study on an ultrasonic purification apparatus for civil engineering use. Takafumi Yoshino†, Daisuke Koyama, Kentaro Nakamura, Sadayuki Ueha(Tokyo inst. of tech.), Katuhiro Seino(Narasaki Seisakusyo Co.,Ltd.)	459
3-09P-52	Application of ultrasound to the decontamination of heavy metals from soils Boyoun Kweon†, Myunghee Lim, Anna Hwang(Department of Civil, Environmental & Architectural Engineering, Korea University), Jongchan Kim(Gyeonggi-do Institute of Health & Environment), Jeehyeong Khim(Department of Civil, Environmental & Architectural Engineering, Korea University)	461

3-09P-53	The effect of frequency in the ultrasound-enhanced soil washing process Beomguk Park†, Younggyu Son, Jongtae Kim, Khanh An Huynh, Jeehyeong Khim(Department of Civil, Environmental & Architectural Engineering, Korea University)	463
3-11P-54	Measurement of Sound Pressure Field Focused by Spherical Biconcave Acoustic Lens for Ambient Noise Imaging on Small Scale Trial Kazuyoshi Mori†, Hanako Ogasawara, Toshiaki Nakamura(Natl. Def. Acad.)	465
3-11P-55	A Study on Acoustic Positioning of AUV with Data Transmission Yoshitaka Watanabe‡, Hiroshi Ochi, Takuya Shimura(JAMSTEC)	467
3-11P-56	ADCP echo amplitude variability associated with environmental fluctuation on deep seafloor Ryoichi Iwase†(JAMSTEC), Toshiaki Kikuchi(Natl. Def. Acad.), Koichi Mizutani(Univ. Tsukuba)	469
3-11P-57	Interactive Analysis in Target Strength (TS) Pattern Measurements of Small Aquatic Organism Ken Ishii†, Koki Abe, Kouichi Sawada(Inst. Fisheries Eng.), Kazuo Amakasu(Univ. Kaiyo), Tohru Mukai(Univ. Hokkaido)	471
3-11P-58	Focal Depth Shifting of Phase Conjugated Wave in Pekeris Yoshiaki Tsurugaya†(NEC Corp.), Toshiaki Kikuchi(NDA), Koichi Mizutani(Univ. Tsukuba)	473
3-11P-59	Wave Guide Jun Naoi†, Takashi T. Sakamoto, Hideaki Saito, Toshio Tsuchiya(JAMSTEC)	475
3-11P-60	Design for an Aspherical Phase-Continuous Acoustic Fresnel Lens Yuji Sato‡, Koichi Mizutani, Naoto Wakatsuki(Univ. Tsukuba), Toshiaki Nakamura(National Defense Acad.)	477
3-11P-61	Underwater Acoustic Lens Convergence Measurement –Converged Point and Beam Diameter at its Point– Sayuri Matsumoto(PARI), Yuichi Shin†, Takenobu Tsutiya, Tetsuo Anada, Nobuyuki Endoh(Univ. Kanagawa), Hidenori Takeyama(Genesia)	479
3-09P-62	Double-Mode Miniature Cantilever-Type Ultrasonic Motor Using Pb-free Array-Type Multilayer Piezoelectric Ceramics Yutaka Doshida†(Taiyo Yuden.Co.,Ltd., Yamagata Univ.), Sumiaki Kishimoto, Taisei Irieda(Taiyo Yuden.Co.,Ltd.), Hideki Tamura, Yoshiro Tomikawa, Seiji Hirose(Yamagata Univ.)	481
16:20-16:25 Break		
16:25-17:25 Medical ultrasound		Chairman: Hiroyuki Hachiya (Chiba Univ.)
3-08-01	Fundamental study on high frequency ultrasound probe with PZT transducer deposited by aerosol deposition method Akito Endo‡, Jun Akedo(AIST)	483
3-08-02	Mechanical effects of collapsing bubble behaviors caused by ultrasound on surface of soft material Kenji Yoshida‡, Shintaro Nakatani, Yoshiaki Watanabe(Doshisha Univ.), Akira Tsukamoto, Takashi Ushida(Univ. Tokyo)	485
3-08-03	Accurate Tracking of Arterial Wall at High Frame Rate Hideyuki Hasegawa†, Hiroshi Kanai(Tohoku Univ.)	487
3-08-04	Strain Distribution Estimation using Adaptive Dynamic Grid Interpolation Model Makoto Yamakawa†, Shuhui Bu, Tsuyoshi Shiina(Univ. Tsukuba)	489
17:25-	Closing ceremony	