

第27回 超音波エレクトロニクス の基礎と応用に関するシンポジウム

The 27th Symposium on ULTRASONIC ELECTRONICS

第1日：11月15日(水)

15th November, 2006 (Wed)

超音波物性・材料、フォノン物理

Ultrasonic properties of materials, Phonon physics

- A-1** 液晶等方相における超音波光回折の偏光状態
Polarization of diffracted light by ultrasound in isotropic phase of liquid crystal
宮下隼基[†] 松岡辰郎 香田忍(名大)
Junki Miyashita[†], Taturo Matsuoka, Shinobu Koda (Nagoya Univ.)
- A-2** サファイア単結晶の弾性定数の精密測定
Accurate measurements of elastic constants of sapphire single crystal
荒川元孝[†] 間谷泰雄 小田川裕之 櫛引淳一(東北大)
Mototaka Arakawa[†], Yasuo Madani, Hiroyuki Odagawa, Jun-ichi Kushibiki (Tohoku Univ.)
- A-3** 圧電性Ta₂O₅単結晶薄膜の光学特性
Optical properties of piezoelectric Ta₂O₅ single crystal film
森田功[†] 中川恭彦 垣尾省司(山梨大)
Isao Morita[†], Yasuhiko Nakagawa, Shoji Kakio (Univ. Yamanashi)
- A-4** 表面電極対で分極処理したPMN-PT結晶の分域組織
Poled domain structure with a surface electrode pair on PMN-PT crystal
井出清志郎[†] 小針健太郎 辻俊宏 山中一司(東北大)
Seishiro Ide[†], Kentaro Kobari, Toshihiro Tsuji, Kazushi Yamanaka (Univ. Tohoku)

バルク波デバイス

Bulk wave devices

- B-1** 水晶基板を用いた38GHz帯域通過型フィルタ
38GHz bandpass filter using crystal substrate
川幡健児[†] 浅村文雄(日本電波工業) 相川正義(佐賀大)
Kenji Kawahata[†], Fumio Asamura(Nihon Dempa Kogyo), Masayoshi Aikawa(Saga Univ.)
- B-2** 高音響インピーダンス電極を使用した圧電薄膜共振器
Film bulk acoustic resonator using high acoustic impedance electrode
上田政則[†] 西原時弘 谷口眞司 横山剛 佐藤良夫(富士通研究所)
Masanori Ueda[†], Tokihiro Nishihara, Shinji Taniguchi, Tsuyoshi Yokoyama,
Yoshio Satoh (FUJITSU LABORATORIES LTD.)
- B-3** BAW共振器の周波数特性と電極形状の関係
Relationship between frequency characteristics and electrode patterns on BAW resonators
浅井健吾[†] 磯部敦 松本久功(日立)
Kengo Asai[†], Atsushi Isobe, Hisanori Matsumoto (Hitachi Ltd.)

- B-4** イオンビームエッチングによる水晶振動子の周波数変動
Frequency change of the Quartz crystal resonator by ion beam etching
塩野忠久[†] 長田祐介(昭和真空) 中川恭彦(山梨大)
Tadahisa Shiono, Yusuke Osada (Showa Shinku co.,ltd), Yasuhiko Nakagawa(Univ. Yamanashi)
- B-5** 通信用電子回路技術に基づくQCMバイオセンサの発振周波数
Oscillation Frequency of QCM-Biosensor based on Electronic Circuit Technology
for Telecommunication
若松俊一[†] 渡辺重徳 石井武仁 小川光明(日本電波工業) 愛澤秀信 黒澤茂(産総研)
Syunichi Wakamatsu[†], Shigenori Watanabe, Takehito Ishii, Mitsuaki Koyama (NDK),
Hidenobu Aizawa, Shigeru Kurosawa (AIST)
- B-6** 周波数変化型単結晶シリコン2軸加速度センサの構成
Construction of frequency-change-type single crystal silicon 2-axis acceleration sensor
菅原澄夫 斎藤隆[†](石巻専修大)
Sumio Sugawara, Takashi Saito[†] (Ishinomaki Senshu Univ.)

招待講演1 Invited lecture 1

- INV-1** 超高分解能走査型非線形誘電率顕微鏡
Scanning nonlinear dielectric microscopy with super-high resolution
長康雄[†](東北大)
Yasuo Cho[†] (Tohoku Univ.)

水中音響 Underwater ultrasound

- C-1** 送受波器回転型測定機構を用いたイカのターゲットストレングスパターン測定
Target Strength (TS) Pattern Measurements of Squid Using the Rotating Transducer
石井憲[†] 澤田浩一(水工研)
Ken Ishii[†], Kouichi Sawada(National Research Inst.)
- C-2** 位相共役波による音響通信の第1回実海域試験
Experiment of time-reversal communication in ocean
志村拓也[‡] 渡邊佳孝 越智寛(JAMSTEC)
Takuya Shimura[‡], Yoshitaka Watanabe, Hiroshi Ochi (JAMSTEC)
- C-3** 実時間高分解能映像装置用水中音響レンズの波動的解析
Wave theory analysis of acoustic lens system for real time and high resolution imaging sonar system
松本さゆり[‡](港空研) 土屋健伸 穴田哲夫 遠藤信行(神奈川大)
Sayuri Matsumoto[‡](PARI), Takenobu Tsuchiya, Tetsuo Anada, Nobuyuki Endoh (Kanagawa Univ.)

医用超音波 Medical ultrasound

- D-1** 水熱合成PZT多結晶膜を用いた1Dアレイ医用超音波プローブに関する基礎研究
- 一次元アレイ超音波プローブの試作と音響特性の評価 -
Fundamental study on one dimensional array medical ultrasound probe with piezoelectric poly-crystalline film by hydrothermal method
- Experimental fabrication and estimation of acoustic characteristics of 1D-array ultrasound probe -
遠藤聡人[‡] 川島徳道 竹内真一(桐蔭横浜大) 石河睦生 黒澤実(東工大)
Akito Endo[‡], Norimichi Kawashima, Shinichi Takeuchi (Toin Univ.), Mutsuo Ishikawa, Minoru Kurosawa (Tokyo Inst. of Tech.)
- D-2** 医用超音波プローブレンズ用シリコンゴムの音響減衰特性に与える
酸化物微粉末添加物の効果
Effects of Fine Ceramic Particle Dopants on the Acoustic Attenuation Properties of Silicone Rubber Lens for Medical Echo Probe
山下洋八[†](東芝リサーチコンサルティング) 細野靖晴 逸見和弘(東芝)
Yohachi Yamashita[†], Yasuharu Hosono, Kazuhiro Itsumi (Toshiba Research ConsultingCo.),
- D-3** 組織熱パラメータの超音波温度計測に与える影響
Effect of tissue thermal parameters on ultrasonic temperature measurement
炭親良[†] 柳村博幸(上智大)
Chikayoshi Sumi[†], Hiroyuki Yanagimura, Kyousuke Inoue, Tsuneaki Ooba(Sophia Univ.)
- D-4** 心拍による動脈壁の位置変化の影響を低減したひずみ推定
Strain Estimation by Reducing Influences of Translational Motion of Arterial Wall Caused by Heartbeat
長谷川英之[†] 金井浩(東北大)
Hideyuki Hasegawa[†], Hiroshi Kanai (Tohoku Univ.)

表面波デバイス Surface wave devices

- E-1** 良好な温度特性を持つ小形WCDMAフルバンド対応SAWデュプレクサ
Small SAW Duplexer for W-CDMA Full-Band having Good Temperature Characteristic
門田道雄 中尾武志 西山健次[†] 木戸俊介 加藤雅則 表良一 米倉博
高田忠彦 北良一(村田製作所)
Michio Kadota, Takeshi Nakao, Kenji Nishiyama[†], Syunsuke Kido, Masanori Kato, Ryoichi Omote, Hiroshi Yonekura, Norihiko Takada, Ryoichi Kita (Murata MFG. Co., Ltd.)
- E-2** ダイヤモンドSAWの耐電力向上
Improved power durability of diamond SAW resonators
河野秀逸[‡] 梅田隆俊 藤井知(セイコーエプソン)
Syuichi Kawano[‡], Takatoshi Umeda, Satoshi Fujii (Seiko Epson Corp.)
- E-3** 弾性表面波を用いたメタノール濃度センサ
Methanol sensor using surface acoustic wave resonator
野村徹 小野瀬康隆[†] 西田圭佑(芝浦工大) 望月隆義(スター精密)
Toru Nomura, Yasutaka Onose, Keisuke Nisida (Shibaura Inst.), Takayoshi Mochiduki (StarMicronics)

Poster Session 1

- P1-1** Statistical Mechanical calculation of the ultrasonic relaxation of salt solutions
Tsuyoshi Yamaguchi, Tatsuro Matsuoka, Shinobu Koda (Nagoya Univ.)
- P1-2** Study on the room-temperature aging of Cu thin films: Monitoring of elasticity by resonant-ultrasound spectroscopy
Nobutomo Nakamura[†], Takeo Nakashima, Hirotsugu Ogi, Masahiko Hirao, Masayoshi Nishiyama (Osaka Univ.)
- P1-3** Piezoelectric Properties of $(\text{Bi}_{1/2}\text{Na}_{1/2})\text{TiO}_3$ -based Ferroelectric Ceramics
Yasufumi Ozawa, Kazusige Yoshii, Yuji Hiruma, Hajime Nagata, Tadashi Takenaka (Tokyo University of Science)
- P1-4** Ultrasonic Study of h-BN Machinable Ceramic
Nobuo Kashiwagura[†], Motoki Satoh, Masayuki Akita, Hiroaki Kamioka (Gifu Univ.)
- P1-5** DC Bias Field Dependence on High Power Characteristics for $\text{PbTiO}_3\text{-Pb}(\text{Mg}_{1/3}\text{Nb}_{2/3})\text{O}_3$ Electrostrictive Ceramics
Syuji Hayano[†], Mikio Umeda (Ryukoku Univ.), Sadayuki Takahashi, Takahiro Wada (Lead Techno)
- P1-6** Excitation and detection of ultrasound shear wave by EMAR under high pressure
Ryuichi Tarumi[‡], Yasunori Kawasaki, Hirotsugu Ogi, Masahiko Hirao, Tomoko Kagayama (Osaka Univ.)
- P1-7** Observation of impulsive ultrasound waveform through micro-bubble
Takeki Sato[‡], Hiroshi Inoue (Akita Univ.)
- P1-8** Elastic constants and piezoelectric coefficients of langasite single crystal at low temperatures
Hiroki Nitta[‡], Ryuichi Tarumi, Hirotsugu Ogi, Masahiko Hirao (Osaka Univ.)
- P1-9** Dependence of physical properties on dopants in superstructure films
Shun Fujitsuka[‡], Satoru Noge, Takehiko Uno (Kanagawa Inst. of Tech.)
- P1-10** Growth techniques of single crystal thin films on SiO_2 substrates
Satoru Noge[†], Takehiko Uno (Kanagawa Inst. of Tech.)
- P1-11** Characteristics of receiving sensitivity of ultrasound sensor using a hydrothermal polycrystalline PZT thick film
Mutsuo Isikawa, Masahiro Takase, Minoru Kurosawa (Tokyo Inst. Tech.)
Hiroshi Kitsunai, Akito Endo, Tomohito Hasegawa, Shinichi Takeuchi (Toin Univ. of Yokohama)
- P1-12** Aspect ratio dependence of electromechanical coupling coefficient (k31) of Lateral-Excitation Piezoelectric Vibrator
Jungsoon Kim[‡] (Tongmyong Univ.), Moojoon Kim, Kaglyeol Ha (pukyong Univ.), Weneu Cao (Pennstate Univ.)

- P1-13** Characterization of all the elastic, piezoelectric, and dielectric constants of tetragonal PMN-PT single crystals
Sanghan Lee[†], Yongrae Roh (Kyungpook Nat. Univ.)
- P1-14** Influence of Viscosity Loss on 3-D Vibrations of VHF Rectangular AT-cut Quartz Plates
Hitoshi Sekimoto[†], Jun Tamura, Shigeyoshi Goka, Yasuaki Watanabe (Tokyo Metropolitan Univ.)
- P1-15** Effects of sputtering gas on the formation of (11-20) textured ZnO films
Takayuki Kawamoto[‡], Mami Matsukawa, Yoshiaki Watanabe (Doshisya Univ.),
Takahiko Yanagitani (AIST)
- P1-16** Characteristics of shear mode FBAR using (11-20) textured ZnO films
Takahiko Yanagitani[‡], Masato Kiuchi (AIST), Mami Matsukawa, Yoshiaki Watanabe (Doshisya Univ.)
- P1-17** Fundamental Study of Shear Mode Solidly Mounted Resonator
Takehiko Uno[†], Satoru Noge (Kanagawa Inst. of Univ.)
- P1-18** Resonators Using Lamb Wave on AT Cut Quartz
Yasuhiko Nakagawa[†], Masayuki Momose, Syoji Kakio (Univ. Yamanashi)
- P1-19** The Effect of Adding Coils in Dual-Input Twin-T Quartz Circuit
Koichi Hirama[†], Yasuhiko Nakagawa (Univ. Yamanashi), Takeshi Yanagisawa (Tokyo Inst. of Tech.)
- P1-20** Equivalent network representation for length-extensional vibration modes in a side-plated piezoelectric bar with a varying parameter operating through the transverse piezoelectric effect
Ken Yamada[†] (Tohoku Gakuin Univ.)
- P1-21** Power supply for RFID tag by a piezoelectric generator and its application
Masao Takeuchi[†], Kenji Tairaku, Chikahide Takatsu (Tamagawa Univ.)
- P1-22** Fundamental Study of the Information Transmission System for Wearable Computing Devices using Ultrasonic
Shin-nosuke Suzuki[‡], Manabu Ishihara(Okayama NCT.), Tamotsu Katane, Osami Saito (Chiba Univ.),
Kazuo Kobayashi (Honda Electronics co., ltd)
- P1-23** Local Characteristics of Resonance Patterns in Piezoelectric One-Dimensional Composite System
Michio Ohki[†] (Natl. Def. Acad.)
- P1-24** Analysis of vibration mode of antenna structure MEMS using beam theory and quantum mechanical examination of its quantized displacement
Yoshitada Kobayashi[†], Kiyoshi Ishikawa, Takanori Suzuki, Hideaki Itoh (Shinsyu Univ.)
- P1-25** Mode coupling between two single defects in a sonic/phononic crystal
Toyokatsu Miyashita[†], Naoto Doi (Ryukoku Univ.)
- P1-26** Experimental studies on defect-mode wave guides in a sonic/phononic crystal
Toyokatsu Miyashita, Wataru Sato[†], Yuta Nakaso, Ryota Mukuda (Ryukoku Univ.)

- P1-27** A study on SAW streaming phenomenon based on temperature measurement and observation of streaming in liquids
Shihoko Ito[‡], Mitsunori Sugimoto, Yoshikazu Matsui, Jun Kondoh (Shizuoka Univ.)
- P1-28** Measurement of SAW on a quartz ball with proximate electrodes to improve waveforms of ball SAW device
Satoshi Kai[‡], Kazunori Ohte, Tsuyoshi Mihara (Tohoku Univ.), Tsuneo Ohgi, Noritaka Nakaso (Toppan Printing Co., Ltd.), Ichitaro Satoh, Takeshi Fukiura, Hidekazu Tanaka (Tamatake Corp.), Kazushi Yamanaka (Tohoku Univ.)
- P1-29** Evaluation of response time in ball surface acoustic wave hydrogen sensor
Takuji Abe[‡], Naoya Iwata, Toshihiro Tsuji, Tsuyoshi Mihara (Tohoku Univ.), Shingo Akao, Kazuhiro Noguchi, Noritaka Nakaso (Toppan Printing Co., Ltd.), Dong Youn Sim (Ball Semiconductor Inc.) Yusuke Ebi, Takeshi Fukiura, Hidekazu Tanaka (Yamatake Corp.), Kazushi Yamanaka (Tohoku Univ.)
- P1-30** SAW DNA Sensor with Micro-Fluidic Channels
Jungyul Sakong (Kyungpook Nat. Univ.), Heesu Roh (Korea Science Academy), Yongrae Roh[‡] (Kyungpook Nat. Univ.)
- P1-31** Dynamic Response of Shear Horizontal Wave Propagation in Liquid Crystal Cell to Molecular Reorientation
Masashi Aoki, Ryotaro Ozaki (National Defense Acad.), Katsumi Yoshino (Shimane Univ.), Kohji Toda (Musashi Inst. of Tech.), Hiroshi Moritake (National Defense Acad.)
- P1-32** Study of high sensitivity sensor based on high order mode Lamb Waves
Wei Lin, Li Fan, Changming Gan, Zhemin Zhu (Nanjing Univ.)
- P1-33** Super Low Velocity/Piezoelectric Substrate Structure with High Reflections and Application for SAW Wide Band Resonators and Low Loss Unidirectional Transducers Filters
Yusuke Satoh[‡], Kazuhiko Yamanouchi (Tohoku Inst. of Tech.)
- P1-34** Acoustic Boundary Wave Devices in Si/Inlaid-IDT/LiNbO₃ Structure
Nobuhiro Tai[‡], Tatsuya Omori, Ken-ya Hashimoto, Masatusune Yamaguchi (Chiba Univ.)
- P1-35** Power Flow Angles for Slanted Finger SAW Filters on Langasite Substrate
Mikihiko Goto[‡], Hiromi Yatsuda (Japan Radio Co., Ltd.), Takao Chiba (Meisei Univ.)
- P1-36** High Frequency Resonators with excellent Temperature Characteristic using Edge Reflection
Michio Kadota[†], Tetsuya Kimura, Daisuke Tamasaki (Murata MFG. Co., Ltd.)
- P1-37** Evaluation of Velocity Distribution of Prototype Ultrasonic Surgical Knife and Coagulation of Soft Tissue for Identification of Optimum Operation Frequency
Kosuke Ebina[†], Hideyuki Hasegawa, Hiroshi Kanai (Tohoku Univ.)
- P1-38** Performance evaluation of miniature ultrasonic probe using PZT poly-crystalline film deposited by hydrothermal method
Tomohito Hasegawa[‡], Hiroshi Kitsunai, Norimichi Kawasima, Shinichi Takeuchi (Toin Univ. of Yokohama), Mutsuo Ishikawa, Minoru Kurosawa (Tokyo Inst. of

- P1-39** Development of a Mechanical Scanning-type IVUS System Using a Miniature Ultrasonic Motor
Masayuki Tanabe[‡], Shangping Xie, Norio Tagawa, Tadashi Moriya (Tokyo Metropolitan Univ.)
- P1-40** Imaging System for Ultrasonic Endoscopy by Using Transmitter-Receiver Pair in the Pulse Compression Technique
Naoki Ohno[‡], Shangping Xie, Masayuki Tanabe, Norio Tagawa, Tadashi Moriya (Tokyo Metropolitan Univ.)
- P1-41** Spectroscopic imaging by using ultrasound velocity change caused by optical absorption
Hiromichi Horinaka, Toshiyuki Matsunaka, Tomoaki Ura, Takashi Mukaiyama, Naoki Nakamura, Kenji Wada (Osaka Prefecture Univ.)
- P1-42** A Study of Photoacoustic Resonance Microscopy for Biopsy
Kanao Hatayama, Satoshi Sakai, Taku Kanda, Hiroto Tateno, Yoko Tateno (Kagoshima Univ.)
- P1-43** Research into a photoacoustic measurement of skeletal muscle in vivo
Itsuki Takahara[‡], Hiroto Tateno, Yuu Tsurifune, Taro Takeno (Kagoshima Univ.)
- P1-44** Optical visualization of local variation of microcapsules at a fluid bifurcation and its quantitative evaluation
Yusuke Muramatsu[‡], Ikkou Mizobe, Yosuke Yatoji, Kohji Masuda (Tokyo Univ. of A&T), Ken Ishihara (Ehime Univ.)
- P1-45** Microbubble generation from nano-sized ultrasound contrast agent
Ken-ichi Kawabata[†], Akiko Yoshizawa, Hideki Yoshikawa, Takashi Azuma, Shin-ichiro Umemura (Hitachi, Ltd.)
- P1-46** Phantoms for a Color Doppler Ultrasonic Diagnostic Instrument
Toshio Kondo[†], Tomoji Yoshida (Tokushima Bunri Univ.), Shin-ichiro Umemura (Kyoto Univ.)
- P1-47** Temperature rise in ultrasound-irradiated phantom contacted with acrylic plate
Nobuyuki Endoh, Takenobu Tsuchiya, Shou Oride, Tsunaki Tsuji, Kazuki Nagai, Shintarou Sugimura (Kanagawa Univ.)
- P1-48** Analysis of scatterer structures in ultrasound images using probability density function
Tadashi Yamaguchi[†], Hiroyuki Furihata (Chiba Univ.), Naohisa Kamiyama (Toshiba Medical Systems), Lee Sung Ae, Hiroyuki Hachiya (Chiba Univ.)
- P1-49** Computation for secondary wave of two frequency ultrasound propagating in biological tissues
Iwaki Akiyama[†] (Shonai Inst. of Tech.), Shigemi Saito (Tokai Univ.)
- P1-50** Numerical simulation of sound wave propagation with sound absorption by digital Huygens' model
Takao Tsuchiya[†] (Doshisha Univ.)
- P1-51** Improving Spatial Resolution in Separation of Scatterers by Simultaneous Receiving of Ultrasonic Echoes with Multi-Channel Transducer
Yusaku Abe[†], Hideyuki Hasegawa, Hiroshi Kanai (Tohoku Univ.)
- P1-52** Evaluation experiment of ultrasound CT for the abdominal sound speed imaging
Keisuke Nagomi[‡], Hiroshi Fujihiro, Akira Yamada (Tokyo Univ.)

- P1-53** A study on the radiation pattern using focusing method for the 3-D medical acoustic imaging system with a reflector and a 2-D array
Hirofumi Taki[‡], Toru Sato (Kyoto Univ.)
- P1-54** Animation observation of subcutaneous microvessel with the high frequency ultrasound
Syota Suzuki[‡], Akira Yamada (Tokyo Univ. of A&T)
- P1-55** Motion-Compensated Frame-Accumulation Method for Improved Image Quality of Carotid Artery
Hideki Yoshikawa[‡], Takashi Azuma, Kazuaki Sasaki, Ken-ichi Kawabata (Hitachi, CRL),
Canxing Xu, Siddhartha Sikdar, Ravi Managuli, Yongmin Kim (Univ. of Washington),
Shin-ichiro Umemura (Hitachi, CRL)
- P1-56** Development of instruction algorithm to control ultrasound probe to obtain standard cross section of heart by video stream
Hirotaka Matsuura[‡], Ken-ichi Takara, Hiroto Inoue, Rui Takahashi Kohji Masuda (Tokyo Univ. of A&T)
- P1-57** Experimental study for automatic acquisition of cross section of heart by using the detective algorithm of mitral valve with a diagnosis robot
Hiroto Inoue[‡], Takao Imai, Ken-ichi Takara, Taro Sakai, Yusuke Aoki,
Kohji Masuda (Tokyo Univ. of A&T)
- P1-58** An Experiment of Wideband Underwater Acoustic Communication Using QPSK
Hiroschi Ochi[†], Yoshitaka Watanabe, Takuya Shimura, Yusuke Yano (JAMSTEC)
- P1-59** MSE-OFDM communication in multipath underwater acoustic channel
Chun-Dan Lin (Chiva Univ.), Jong Rak Yoon (Pukyong National Univ.)
- P1-60** Features of the broadband acoustic propagation in very shallow water
Seongwook Lee, Kyu-Chil Park, Jong Rak Yoon (Pukyong National Univ.),
Phil-Ho Lee (Agency of Defence Development)
- P1-61** Time domain analysis of sound propagation in shallow water
-Influence of amplitude of reflected pulse wave from sea bottom with transition layer-
Takenobu Tsuchiya[†] (Kanagawa Univ.), Sayuri Matsumoto (PARI), Nobuyuki Endoh (Kanagawa Univ.)
- P1-62** An Array Beam pattern Synthesis Using Partial Constrained Adaptive Optimization
Byong Doo Jun[†] (NEX1FUTURE Co., LTD.), Jun-Seok Lim (Sejong Univ.),
Koeng-Mo Sung (Seoul National Univ.)
- P1-63** Design of the broadband beamformer for passive sonar arrays
Byong Doo Jun[†] (NEX1FUTURE Co., Ltd.), Moojoon Kim (Pukyong National Univ.),
Koeng-Mo Sung (Seoul National Univ.)
- P1-64** Examination on transfer speed against transmitting power in underwater digital communications
Yoshitaka Ida, Nobuaki Konishi, Yoshikazu Koike (Shibaura Inst. of Tech.)

P1-65 Motion compensation of synthetic aperture sonar with acceleration sensors

Takao Sawa[†] (JAMSTEC), Tomoo Kamakura (UEC), Taro Aoki, Junichiro Tahara (JAMSTEC)

P1-66 Acoustics monitoring of water atmosphere in Lake Biwa

Takaharu Kitamura[†], Yoshiaki Watanabe (Doshisya Univ.)

第 2 日 : 11月16日(木)
16th November, 2006 (Thu)

Measurement technique, Imaging, Non-destructive testing (English session)

- F-1** Integrity evaluation of rockbolts encapsulated by cement-mortar grouting using ultrasonic guided waves
Shin-In Han (Korea Univ.), In-Mo Lee (Posco E&C CO.), Jong-Sub Lee (Korea Univ.)
- F-2** Characterization of Multi-layered Tubes with Inhomogeneous Material Properties using
Laser Ultrasound Technique
Yu-An Lai, Che-Hua Yang (Chang Gung Univ.)
- F-3** Wadge Wave for machine tool inspection
Chia-Hao Hsu, Sung-Nien Du, Che-Hua Yang (Chang Gung Univ.)
- F-4** Imaging the propagation of a gigahertz ultrasonic pulse in a transparent medium
Motonobu Tomoda[†] (Hokkaido Univ.), Roberto Li Voti (Universita di Roma),
Osamu Matsuda, Oliver B. Wright (Hokkaido Univ.)
- F-5** evaluation of ferroelectric domain boundary by ultrasonic atomic force microscopy using
lateral bending mode
Toshihiro Tsuji[†], Kentaro Kobari, Seishiro Ide, Kazushi Yamanaka (Tohoku Univ.)
- F-6** Development of Ultrasonic Multiple Access Method by the M-sequence code
Yong Wang[†], Takehiko Suginochi, Masahiko Hashimoto(Matsushita Electric Industrial Co., Ltd.)
Hiroyuki Hachiya(Univ. Chiba)

Medical ultrasound (English session)

- G-1** A study on pulse-inversion technique applied to semiintermodulated imaging in medical ultrasound
with contrast agents
Chung-You Wu[†] (Micro-Star Int'l Co., Ltd.), Wei-Huan Chao (National Taiwan Univ.),
Yi-Hong Chou(Veterans General Hospital and National Yang-Ming Univ.)
- G-2** Micro bubble trapping by bubble nonlinear oscillation under pumping wave
Yoshiki Yamakoshi[†], Naritsugu Nakajima, Takashi Miwa (Gunma Univ.)
- G-3** Basic Investigation on three-dimensional tissue elasticity microscope
Tsuyoshi Shiina[†], Masashi Yoshida, Makoto Yamakawa (Univ.of Tsukuba), Naotaka Nitta (National Inst.)
- G-4** Animation observation of subcutaneous microvessel with the high frequency ultrasound
Isao Mano[†] (OYO Electric co., Ltd.), Tadahito Yamamoto, Hiroshi Hagino, Ryota Teshima (Tottori Univ.),
Masahiko Takada (Shiga Univ.), Toshiyuki Tsujimoto (Horiba, Ltd.), Takahiko Otani(Doshisha Univ.)

Invited lecture 2 (English session)

- INV-2** The timing system of the European GNSS Galileo
IEEE UFFC-S Distinguished Lecturer Andreas Bauch[†] (Physikalisch-Technische Bundesanstalt)

Physical Acoustics (English session)

- H-1** Variation of high power air transducer
Claes Hedberg, Hamid Gazisaeidi (Blekinge Inst.)
- H-2** Ultrasonically Enhanced Diesel Removal from Soils
Younguk Kim, Ji-Ho Park (Myongji Univ.), Sun-Mee Kim[†], Jeehyeong Kim (Korea Univ.)
- H-3** Micro-Brillouin scattering study of acoustic properties of protein crystals
Yuji Ike[‡], Eiji Hashimoto, Yuichi Sehimo, Seiji Kojima (Univ. Tsukuba)

Device Application (English session)

- I-1** Multi-layered Transducers Using Polyurea Film
Marie Nakazawa[‡], Masaya Tabaru, Kentaro Nakamura, Sadayuki Ueha (Tokyo Tech),
Akihiro Maezawa (KONICA MINOLTA M.G. INC.)
- I-2** Integrated high temperature longitudinal, shear, and plate acoustic wave transducers
Makiko Kobayashi[‡], Cheng-Kuei Jen, Yuu Ono (Industrial Materials Institute), Kuo-Ting Wu (McGill Univ.)
- I-3** Deposition of thin film based on SAW streaming
Nobuaki Murochi[‡], Mitsunori Sugimoto, Yoshikazu Matsui, Jun Kondoh (Shizuoka Univ.)

Poster Session 2

- P2-1** Recent topics on IEC/TC87 meeting concerning international standards for ultrasonic measurements
Tsuneo Kikuchi[†] (NMIJ/AIST), Sadayuki Ueha (Tokyo Inst. of Tech.)
- P2-2** Impulse Response of Energy Modes with Multiresolution Analysis in Piezoelectric Transducer
Michio Ohki[†] (Natl. Def. Acad.)
- P2-3** Experimental Study on Intermediate Layer for Air-Coupled Ultrasonic Transducer with (0-3) Composite Materials
Kazuki Saito[‡], Morimasa Nishihara, Kazuhiko Imao (Akita Univ.)
- P2-4** Propagation Characteristics of Negative Group Velocity of Lamb-type Waves in a Glass-Water-Glass Lay
Kojiro Nishiyama[‡](Univ. of Tsukuba), Ken Yamamoto(Kobayashi Inst. of Physical Research),
Koichi Mizutani, Naoto Wakatsuki (Univ. of Tsukuba)

- P2-5** A Novel Magnetic Field Sensor using Piezoelectric Vibrations
Keita Dan, Kentaro Nakamura, Sadayuki Ueha (Tokyo Inst. of Tech)
- P2-6** Numerical analysis for ultrasonic beam of variable line focus transducer
Takahiro Aoyagi[†], Marie Nakazawa, Kentaro Nakamura, Sadayuki Ueha (Tokyo Tech.)
- P2-7** Time Response and Spatial Distribution of Temperature Rise Due to Absorption of Ultrasound
Chiaki Yamaya[†], Hiroshi Inoue (Akita Univ.)
- P2-8** Observation of surface vibrational modes on gel surface by electric field tweezers system
Maiko Hosoda, Hideo Ogawa(TDU), Kensiro Takagi(Univ. of Tokyo), Hiroyasu Nomura(TDU),
Keiji Sakai (Univ. of Tokyo)
- P2-9** Characterization of Circumferential Waves in Tubes with Laser Ultrasound Measurements and Theoretical Modeling
Chia-Wei Yea, Che-Hua Yang (Chang Gung Univ.)
- P2-10** Nondestructive characterization of Zircaloy tubes with hydride rims
I-Hung Liu, Che-Hua Yang (Chang Gung Univ.)
- P2-11** Dispersion Behaviors of Wedge Waves Propagating along Wedges Tips with Coatings
Sheng-Wei Tang, Che-Hua Yang (Chang Gung Univ.)
- P2-12** Wedge Waves Propagating along Piezoelectric Wedges with Fluid Loadings
Wen-Chi Wang, Che-Hua Yang (Chang Gung Univ.)
- P2-13** The effects of fluid boundary conditions on the dispersion relations of guided waves propagating in piezoelectric plates
Che-Hua Yang, Chia-Han Wu, Kuen-Yi Tsai (Chang Gung Univ.)
- P2-14** Angle beam method to identify leaky Lamb wave modes in an elastic plate
Young H. Kim (Korea Science Academy), S. J. Song (Sungkyunkwan Univ.),
S. D. Kwon (Andong National Univ.)
- P2-15** Discontinuity detection of rock mass by ultrasonic waves
Jong-Sub Lee, Seung-Sun Kim (Korea Univ.), Dong-Hyun Kim, Uk-Young Kim (GS E&C Co.),
In-Mo Lee (Korea Univ.)
- P2-16** Rock property evaluation using wavelet transform analysis
Sung-Won Lee[†], Sung-Wan Hong (KICT), Jong-Sub Lee, In-Mo Lee (Korea Univ.)
- P2-17** Ultrasonic Measurement of Cylindrical Rock Specimens: Engineering Modulus Interpretation
Min-Su Cha, Gye-Chun Cho[†] (Korea Advanced Inst. of Science and Technology)
- P2-18** Detection of Concrete Crack Using Giant-Magnetostriction Vibrator
Youhei Kawamura, Michinori Asaka, Eui Seong Ha, Yu Ito (Univ. of Tsukuba),
Koichi Okawa (Akita Univ.), Koichi Mizutani (univ. of Tsukuba)
- P2-19** Validation of Effectiveness on Magnified Cross-Correlation Analysis in Frequency Domain Based on Directivity of Giant-Magnetostriction Vibrator
Eui Seong Ha[†], Youhei Kawamura, Koichi Mizutani (Univ. of Tsukuba),
Koichi Okawa (Akita Univ.), Michinori Asaka (Univ. of Tsukuba)

- P2-20** Absolute measurement of surface vibrational distribution in piezoelectric devices using burst-wave driven
Sunao Ishii, Yasuaki Watanabe, Noriyuki Imaeda, Shigeyoshi Goka, Takayuki Sato,
Hitoshi Sekimoto (Tokyo Metropolitan Univ.)
- P2-21** Quantitative Characterization of Two Kinds of Surface Roughness Parameters from Air-Coupled
Ultrasound Scattering
Deden Dian Sukmana[†], Ikuo Ihara (Nagoya Univ.)
- P2-22** Diagonally staggered grid for elastodynamic analysis by finite-difference time-domain method
Masahiro Sato[†] (Akita Univ.)
- P2-23** Recognition System for WDM Time-Series Optical Coded Labels
Using Collinear Acoustooptic Devices
without Time Gates
Nobuo Goto[†] (Toyohashi Univ. of Tech), Yasumitsu Miyazaki (Aichi Univ. of Tech.)
- P2-24** Monolithically integrated tandem waveguide-type acoustooptic modulator
driven by surface acoustic waves
Shoji Kakio, Shinji Uotani, Motoki Kitamura[†], Yasuhiko Nakagawa (Univ. of Yamanashi), Takefumi
Hara,
Hiromasa Ito (Tohoku Univ.), Tetsuya Kobayashi, Masayuki Watanabe (Optoquest Corp.)
- P2-25** Beam-propagation analysis of RGB acoustooptic modulator driven by surface acoustic waves
Hiroyuki Kawate[‡], Shoji Kakio, Yasuhiko Nakagawa (Univ. of Yamanashi), Takefumi Hara,
Hiromasa Ito (Tohoku Univ.), Tetsuya Kobayashi, Masayuki Watanabe (Optoquest Corp.)
- P2-26** Powerful Potentiality of Second Order Harmonic in Nonlinear Acoustic Wave Propagating on LiNbO₃
Substrate
Yoshiaki Tokunaga, Masaki Suzuki, Masashi Imai[†] (KIT)
- P2-27** FBG vibration sensor array with temperature compensation using semiconductor optical amplifier tunable
laser source
Kiyoyuki Inamoto[†], Satoshi Tanaka, Hiroki Yokosuka, Nobuaki Takahashi (National Defence
Academy)
- P2-28** Fast temperature-response operation of WDM FBG underwater acoustic sensor array
Hiroki Yokosuka[‡], Satoshi Tanaka, Kiyoyuki Inamoto, Nobuaki Takahashi (National Defence
Academy),
Takao Sawa, Kenichi Asakawa (JAMSTEC)
- P2-29** Basic Study and Fabrication of MEMS Transducer
Manabu Yokota[†] (Kanagawa Inst. of Tech.), Kouji Sakata (Fuji Electric System), Takanori Yamasaki,
Keishin Koh, Kohji Hohkawa (Kanagawa Inst. of Tech.)
- P2-30** Development of a high-sensitive electrodeless QCM immunosensor
Kazuma Motohisa[‡], Kenichi Hatanaka, Toshinobu Ohmori, Hirotsugu Ogi, Masahiko Hirao (Univ.

- P2-31** Shape Memory Piezoelectric Actuator
Takeshi Morita[‡], Yoichi kadota, Hiroshi Hosaka (Unif. of Tokyo)
- P2-32** Load Characteristics of a Diagonally Symmetric Form Ultrasonic Motor Using a LiNbO₃ Plate
Koujiro Kawai[‡], Hideki Tamura (Yamagata Univ.), Takehiko Takano (Tohoku Inst. of Tech.),
Yoshiro Tomikawa, Seiji Hirose (Yamagata Univ.), Manabu Aoyagi (Muroran Inst. of Tech.)
- P2-33** Measurement of an imaginary part of complex Young's modulus of silicone rubber using impedance change of a quartz-crystal tuning-fork tactile sensor
Hideaki Itoh[†] (Shinsyu Univ.)
- P2-34** Assessment of paper's roughness using a quartz-crystal tuning-fork tactile sensor
Yasuhiro Takeuchi, Nobuhiro Yosii, Hideaki Itoh (Shinsyu Univ.)
- P2-35** Experimental study on sensitivity of piezoelectric vibratory tactile sensor
Subaru Kudo[†] (Ishinomaki Sensyu Univ.)
- P2-36** Basic Study On a Threefold Rotatory Symmetric Form Quartz Vibrator for Triaxial Gyrosensor
Toshiaki Soneda[‡], Hideki Tamura, Yoshiro Tomikawa, Seiji Hirose (Yamagata Univ.)
- P2-37** Packaging of SAW Devices with Small, Low Profile and Hermetic Performance
Kaoru Sakinada[†], Satoru Ono, Yasufumi Kaneda, Osamu Kawaguchi
(FUJITSU MEDIA DEVICES Ltd.)
- P2-38** Smaller SAW Duplexer for US-PCS having Good Temperature Characteristic
Takeshi Nakao[†], Michio Kadota, Kenji Nishiyama, Daisuke Yamamoto, Yutaka Ishiura,
Tomohisa Komura, Norihiko Takada, Ryoichi Kita (Murata MFG. Co. Ltd.)
- P2-39** Surface Acoustic wave devices using AlGa_N/Ga_N heterostructures
Takahiko Mizusawa[†], Manabu Yokota, Keishin Koh, Kohji Hokawa (Kanagawa Inst. of Tech.)
- P2-40** Fabrication and evaluation of potassium niobate thin-film by RF sputtering
Tatsunori Suzuki[‡], Hajime Kurosawa, Shoji Kakio, Yasuhiko Nakagawa (Univ. of Yamanashi)
- P2-41** Reflection properties of SH-type SAW in periodic gold grating on langasite
Satoshi Tanabe[‡], Shoji Kakio, Yasuhiko Nakagawa (Univ. of Yamanashi)
- P2-42** Degradation of chlorinated compounds and phenol mixtures by ultrasound
Myunghee Lim[‡], Younggyu Son, Qiongyuan Gao, Sunmee Kim (Korea Univ.),
Younguk Kim (Myongji Univ.), Jeehyeong Khim (korea Univ.)
- P2-43** The effects of pH on the sonolysis of PCE
Qiongyuan Gao[‡], Myunghee Lim, Sunmee Kim, Jongtae Kim (Korea Univ.),
Younguk Kim (Myongji Univ.), Jeehyeong Khim (Korea Univ.)
- P2-44** Effects of Aqueous Temperature on Sonolysis of Bisphenol A
M. Helal Uddin[‡], Shin-ichi Hatanaka, Shigeo Hayashi (Univ. of Electro-Commun.)

- P2-45** Effect of trabecular irregularity on fast and slow wave propagations in cancellous bone
Atsushi Hosokawa[‡] (Akashi National Coll. Tech.)
- P2-46** Attenuation Compensation of Soft Tissue for Acoustic Impedance Measurement of In Vivo Bone by Transducer Vibration Method
Masasumi Yoshizawa[†], Yuuta Nakamura, Masataka Ishiguro (Tokyo Metropol. Coll. of Industrial
Tadashi Moriya (Tokyo Metropol. Univ.)
- P2-47** Longitudinal wave velocity and orientation of HAp crystallites
in local area of bovine femoral cortical bone
Yu Yamato[†] (Hamamatsu Univ.), Hirofumi Mizukawa (Doshisya Univ.), Takahiko Yanagitani (AIST),
Mami Matsukawa (Doshisya Univ.)
- P2-48** A study of Osteoporosis by using Twist osillator
Toru Taniguchi[‡], Hiroto Tateno, Syo Matsushita, Taro Tateno (Kagoshima Univ.)
- P2-49** A Study of drugs infusion by ultrasonic method
Megumi Fukuda, Yuu Turifune, Kuninori Suzuki, Hiroto Tateno (Univ. Kagoshima)
- P2-50** Improvement of tissue elasticity image quality for anechoic area using iterative correction method
Makoto Yamakawa[†], Tsuyoshi Shiina (Umiv. of Tsukuba)
- P2-51** Improvement of Tissue Elasticity Image Quality for Anechoic Area using Iterative Correction Method
Makoto Yamakawa[†], Tsuyoshi Shiina (Umiv. of Tsukuba)
- P2-52** An Approach to Real-Time Imaging of Local Tissue Elasticity Utilizing Aperture Synthetic Motion Vector
Measurement System
Atsushi Sanuga[‡], Shin-ichi Yagi (Univ. Meisei), Yuji Kondo, Tiyoshi Tamura (ALOKA CO., LTD.),
Masakazu Sato (Microsonic Co., Ltd.)
- P2-53** Analysis of Tissue Displacement Induced by Ultrasonic Radiation Force Using MRI
Naotaka Nitta[‡], Kazuhiro Homma, Keigo Hikishima (AIST)
- P2-54** Tissue Classification of Artery Wall based on Elasticity Distribution in Region of Interest Determined by
Spatial Resolution of Ultrasound
Kentaro Tsuzuki[†], Hideyuki Hasegawa Hiroshi Kanai (Tohoku Univ.), Masataka Ichiki (Sendai
Fumiaki Tezuka (Sendai Medical Center)
- P2-55** Angular Dependence of Ultrasonic Echo for Imaging Micro-Order Surface Roughness
Kazuki Kudo[†], Hideyuki Hasegawa, Hiroshi Kanai (Tohoku Univ.)
- P2-56** Ultrasonic Measurement of Change in Elasticity of Intima-Media Region for Radial Artery due to
Flow-Mediated Dilatation
Takuya Kaneko[†], Hideyuki Hasegawa, Hiroshi Kanai (Tohoku Univ.)
- P2-57** Imaging of Transition in Myocardial Contraction and Relaxation by Measuring Strain Rate at High
Temporal Resolution
Hiroki Yoshiara[†], Hideyuki Hasegawa, Hiroshi Kanai (Tohoku Univ.),
Motonao Tanaka (Tohoku Welfare Pension Hospital)

- P2-58** Angular Dependence of Ultrasonic Scattering from Wire Phantom Mimicking Myocardial Fiber
Teppei Onodera[†], Hideyuki Hasegawa, Hiroshi Kanai (Tohoku Univ.)
- P2-59** Ultrasonic Measurement of Distribution of Longitudinal Displacement along the Radial Direction of Carotid Arterial Wall
Takanori Numata[†], Hideyuki Hasegawa, Hiroshi Kanai (Tohoku Univ.)
- P2-60** A 2D-Array of Multi-Degree-of-Freedom Ultrasonic Actuators
Yasuyuki Gohda, Daisuke Koyama, Kentaro Nakamura, Sadayuki Ueha (Tokyo Inst. of Tech.)
- P2-61** Behavior of Microjets Generated in Molten Metal
Yasuo Saiki[‡], Takashi Kudo, Mamoru Kuwabara, Jian Yang (Nagoya Univ.)
- P2-62** Study on scattering by SAW motor slider using FEM simulation
Minoru kuribayashi Kurosawa[†], Yoshito Miyazakai, Takashi Shigematsu (Tokyo Inst. of Tech.)
- P2-63** Effect of High Intensity Ultrasound on Consolidation of Soft Clay
Jong-Sub Lee, Woo-Jin Lee (Korea Univ.), Jung-Ha Hwang[†], Young U. Kim (Myongji Univ.)
- P2-64** Imperfections of parametrically generated sound beams caused by reflexions
Dirk Olszewski[†], Klaus Linhard (DaimlerChrysler Research and Technology)
- P2-65** Optimum Carrier Frequency for Ultrasound Loudspeaker
Dirk Olszewski[†] (DaimlerChrysler Research and Technology)
- P2-66** Evaluation of Piezoelectric Power Generator using Barium Titanate Based Ceramics
Tatsunori Kakuda[†], Tomoaki Futakuchi (Toyama Industrial Technology Center)
- P2-67** Design of an absolutely aplanatic acoustic lens
Yuji Sato, Ayano Miyazaki, Youichi Miyazaki, Kazuyoshi Mori, Toshiaki Nakamura (National Defence Academy)
- P2-68** Comparison of sound pressure fields focused by a spherical and three kinds of aspherical biconcave lenses
Ayano Miyazaki[‡], Youichi Miyazaki, Yuji Sato, Kazuyoshi Mori, Toshiaki Nakamura (National Defence Academy)
- P2-69** An Analysis on Focusing Characteristics for Phase Continuous Fresnel Lens Using FDTD Method
Kazuyoshi Mori[†], Ayano Miyazaki, Hanako Ogasawara, Toshiaki Nakamura (National Defence Academy), Yasuhito Takeuchi (Kagoshima Univ.)
- P2-70** Analysis of long-distance propagation time differences in the Central Pacific
Hanako Ogasawara[‡], Toshiaki Nakamura (National Defence Academy), Hidetoshi Fujimori (JAMSTEC), Koichi Mizutani (Univ. of Tsukuba)

第3日：11月17日(金)

17th November, 2006 (Fri)

強力超音波 High power ultrasound

- J-1** 美顔器用高効率超音波振動ブロック
High-Efficiency Ultrasonic Device Transmitter for Facial Care Products
布村真人[‡] 齋田至 筏井和康 安倍秀明(松下電工)
Mahito Nunomura[‡], Itaru Saida, Kazuyasu Ikadai (matsushita Electric Works, Lts.)
- J-2** 非鉛系積層圧電セラミックスを用いた小型超音波モータ
- 片持ち張り・屈曲2重モード利用モータの試作 -
Miniature Cantilever-Type Ultrasonic Motor Using Pb-free Multilayer-Piezoelectric Ceramics
土信田豊[†](太陽誘電、山形大学) 岸本純明 石井佳輔 岸弘志(太陽誘電)
Yutaka Doshida[†], Sumiaki Kishimoto, Keisuke Ishii, Hiroshi Kishi, Hideki Tamura,
Yoshiro Tomikawa, Seiji Hirose (Taiyo Yuden. Co., Ltd.)
- J-3** 空中超音波による水霧を併用したガスの除去
Removal of gas using sprinkle water by aerial ultrasonic wave
三浦光[†](日大)
Hikaru Miura[†] (Nihon Univ.)
- J-4** 超音波によるメタンハイドレート分解促進機構に関する研究
Mechanism of dissociating Methane Hydrate by Ultrasonic Waves
田島大輔[†] 露木健一郎 戸梶慎一 三浦悟(鹿島建設)
Daisuke Tajima[†], Kenichiro Tsuyuki, Shinichi Tokaji, Satoru Miura (KAJIMA Corporation.)
- J-5** 微小孔板の超音波振動による液滴生成実験
A Droplet Generation by Ultrasonic Vibration of Micropore
石井直行[‡] 神田岳文 鈴森康一 吉澤秀和(岡山大学) 山田嘉昭(岡山県産業振興財団)
Naoyuki Ishikawa[†], Takefumi Kanda, Koichi Suzumori, Hidekazu Yoshizawa (Okayama Univ.),
Yoshiaki Yamada (Industrial Promotion Foundation of Okayama Prefecture)

測定技術・映像法・非破壊検査 Measurement techniques, Imaging, Nondestructive testing

- K-1** レーザ漏洩波探傷法を用いた微小き裂可視化技術の開発
Visualization of small cracks by leaky waves using laser-ultrasonics
三浦崇広[†] 落合誠 山本智 泉幹雄(東芝)
Takahiro Miura[†], Makoto Ochiai, Satoshi Yamamoto, Mikio Izumi (Toshiba Corp.)
- K-2** 符号付シュリーレン法を利用した音場測定
Measurement of acoustic field using signed Schlieren imaging
東隆[‡](日立) 梅村晋一郎(京大)
Takashi Azuma[‡](Hitachi CRL), Shin-ichiro Umemura (Kyoto Univ.)

- K-3** ガイド波を用いた流量計の理論解析と実験
Theoretical and Experimental Investigation of Guide Wave Flow Meter
佐藤治道[†](産総研) Maxim Lebedev(東京計装), 明渡純(産総研)
Harumichi Sato(AIST), Maxim Lebedev(Tokyo Keiso Co., LTD.), Jun Akedo (AIST)
- K-4** 二層型圧電振動子を用いた金属棒中の閉じた亀裂からの高調波成分の実時間検出
A Real Time Detection of Harmonic Components from Closed-Clack in the Metal Rod Using
Double-Layered Piezoelectric Transducer
福田誠[†] 西平守正, 今野和彦(秋田大)
Makoto Fukuda[†], Morimasa Nishihara, Kazuhiko Imao (Akita Univ.)
- K-5** ガスクロを用いたボールSAWセンサの多種類ガスへの応答解析
Analysis of ball SAW sensor response to a wide variety of gases using gas chromatography
岩田尚也[†] 阿部卓司 辻俊宏 三原毅(東北大) 赤尾慎吾(東北大, 凸版印刷)
Naoya Iwata[†], Takuji Abe, Toshihiro Tsuji, Tsuyoshi Miura(Tohoku Univ),
Shingo Akao(TOPPAN PRINTING CO., LTD.), Kazushi Yamanaka (Tohoku Univ.)
- K-6** 空中音波を用いた非接触型粘度計
Viscometer of noncontact type using aerial sound
伊藤正幸[†] 田井秀一 小林力(日大)
Masayuki Ito[†], Hidekazu Tai, Tsutomu Kobayashi (Nihon Univ.)

招待講演 3 Invited lecture 3

- INV-3** 超音波の分子的生態作用と治療応用
Molecular bioeffects of ultrasound and its therapeutic applications
近藤 隆[†], 趙 慶利, 小川良平, 田淵圭章(富山大)
Takashi Kondo[†], Qing-Li Zhao, Rhohei Ogawa, Yoshiaki Tabuchi (Univ. of Toyama)

Poster Session 3

- P3-1** Two-Dimensional Anemometer with Single Pair of Ultrasonic Tranceducers by Use of Reflected Wave
Ikui Saito[†], Koichi Mizutani, Naoto Iwatsuki (Univ. of Tsukuba)
- P3-2** Crosswind Velocity Measurement Using Ultrasonic Delay line
Akihiko Kon[†] (Univ. of Tsukuba, Yamatake Corp.), Koichi Mizutani, Naoto Wakatsuki (Univ. of
- P3-3** Acoustic Communication in Air Using DBPSK with Influence by Impulse Response
Keiichi Mizutani (Osaka Prefecture Univ.), Naoto Wakatsuki[†], Koichi Mizutani (Univ. of Tsukuba)
- P3-4** Measuring Sound Fields in Air by Michelson Interferometer
Shingo Shibata, Takeshi Ohbuchi, Koichi Mizutani, Naoto Wakatsuki (Univ. of Tsukuba)
- P3-5** Measurement of Temperature Distribution on Surface of Acoustic Reactor by Use of Thermal Video System
Takashi Kubo[†], Jian Yang, Mamoru Kuwabara (Nagoya Univ.)

- P3-6** Applications of a Pinhole-Based Low-Frequency Air-Coupled Ultrasonic System into Precision Displacement Measurements
Katsuhiro Sasaki[‡], Morimasa Nishihara, Kazuhiko Imao (Akita Univ.)
- P3-7** Precise position measurement of objects using an acoustic M-sequence signal in the air
Kuramitsu Nishihara[‡], Tadashi Yamaguchi, Hiroyuki Hachiya (Chiba Univ.)
- P3-8** Calibration of hydrophone sensitivity using planar scanning method: effect of nonlinear propagation
Tsuneo Kikuchi[†], Masahiro Yoshioka, Sojun Sato (NMIJ/AIST)
- P3-9** Measurement of the acoustic property of small volume liquid sample beyond acoustic window.
Shigemi Saito[†](Tokai Univ.)
- P3-10** Measurements of intense ultrasound field in air using a fiber optic probe.
Hiroyuki Takei[‡], Takeshi Hasegawa, Kentaro Nakamura, Sadayuki Ueha (Tokyo Tech)
- P3-11** Theoretical study of determining accurate acoustical physical constants of piezoelectric hexagonal single crystals
Yuji Ohashi[‡], Mototaka Arakawa, Hiroyuki Odagawa, Jun-ichi Kushibiki (Tohoku Univ.)
- P3-12** High-resolution-acoustic imaging of material properties using scanning probe microscopy
Keiji Takata[†] (Hitachi, Ltd.)
- P3-13** An edge mode probe sensor for scanning probe microscopy
Kouji Honda[‡], Takefumi Kanda, Koichi Sugimori (Okayama Univ.)
- P3-14** Comparison of Ultrasonic Hardness-Tester Hardness and Micro-Vickers Hardness
Ryoji Aoyagi[†] (Sendai National College of Tech.), Kaoru Umezu (Sacra-tech)
- P3-15** Detection of backwall slit by laser ultrasonic technique
Hiroyuki Fukutomi, Tetsuo Fukuchi, Takeshi Okuyama[†], Takashi Ogata (CRIEPI)
- P3-16** Development of a multi-beam laser ultrasonic system
Tetsuo Fukuchi[†], Takeshi Okuyama, Hiroyuki Fukutomi, Takashi Ogata (CRIEPI)
- P3-17** Ultraviolet-Laser Excitation Microscopic Photothermal Lens Imaging for Observing Biological Cells
Akira Harata[†], Takashi Matuda, Satoshi Hirashima (Kyusyu Univ.)
- P3-18** Ultrasonic transmission images using phase conjugate waves
Tetsuya Seki[‡], Hiroaki Ishida, Masahiro Ohno (Chiba Inst. of Tech.)
- P3-19** Imaging of the vortex air flow profile by acoustic tomography
Kazuhiro Hayashi[‡], Haiyue Li, Takaaki Ueki, Akira Tamada (Tokyo Univ. of A&T)
- P3-20** Discussion on Transmission and Reception of SV wave Propagating along Surface of Test Object
Tomonori Kimura[†], Koichiro Misu, Shusou Wadaka (Mitsubishi Electric Corp.),
Mitsuhiro Koike (Ryoden Shonan Electronics Corp.)

- P3-21** On SH wave propagating in a pipe in the longitudinal direction
Takahiro Hayashi[‡](Nagoya Inst. Tech.), Sachiro Sugimoto, Yoshihide Tanaka (Ryoden Syonan)
- P3-22** Generations of circumferential guided waves propagating in a pipe using a bulk shear wave sensor
Hideo Nishino[†], Ryuichi Yokoyama, Kenichi Yoshida (Univ. Tokushima)
- P3-23** Higher harmonic imaging of minute damage in engineering materials
Morimasa Murase[‡], Koichiro Kawashima (Ultrasonic Materials Diagnosis Lab.)
- P3-24** Nonlinear acoustic evaluation of creep damage in boiler heat-exchange tubes
Toshihiko Ohtani[‡] (Ebara Research Co., Ltd.),
Koichiro Kawashima (Ultrasonic Materials Diagnosis Lab.),
Michael Drew, Paul Guagliard (Australian Nuclear Science & Technology Organization)
- P3-25** Optimization of input amplitude for closed-crack imaging by nonlinear response of acoustic waves
Yoshikazu Ohara[†], Setsu Yamamoto, Tsuyoshi Mihara, Kazushi Yamanaka (Tohoku Univ.)
- P3-26** Ultrasonic Measuring Method of Accumulated Compressive Elasticity Strain Energy on the Compressin
Stress Strain Metal Beam Using Sing-around method
Masaaki Ohashi[†] (Shibaura Inst. of Tech.)
- P3-27** Evaluation of Rubber Viscoelasticity by Pulse Echo Method
Junjie Chang[†] (Dailian Maritime Univ.)
- P3-28** Evaluation on elastic constants of an antifouling paint film using group delay spectrum method
Shinobu Sugasawa[†], Toshiaki Shibata (National Maritime Research Inst.)
- P3-29** Lateral resolution of 3D underground imaging
Liang Tao[‡], Seichi Motooka (Chiba Inst. Tech.)
- P3-30** Sound Radiation Analysis of a Board-type Speaker Based on Lamb Wave Propagation
Kazunori Kawashima[‡], Naoto Wakatsuki, Koichi Mizutani (Univ. of Tsukuba)
- P3-31** Development of Capacitive Ultrasonic Sensor having Parylene Film by Micromachining Technique
Katsuhide Furukawa[†], Seiji Aoyagi (Kansai Univ.), Kaoru Yamashita, Masanobu Okuyama (Osaka)
- P3-32** Integration technology of two-dimensional ultorasonic transducers
Yuji Terao, Manabu Yokota, Keishin Koh, Kohji Hokawa (Kanagawa Inst. of Tech.)
- P3-33** Thermal Diffusivity of Semi-Insulating 6H-SiC Single Crystal Wafers Evaluated by Photopyroelectric
(PPE) Method
Watimakun Passapong[†], Taichiro Mori, Hisashi Miyazaki, Yoichi Okamoto,
Jun Morimoto (National Defense Academy), Toshihiko Hayashi, Hiromu Shiomi (SiXON, Ltd.)
- P3-34** Nonradiative Recombination Process in Semi-insulating 6H-SiC Bulk Single Crystals Evaluated by
Photoacoustic Spectroscopy
Taichiro Mori[†], Wutimakun Passapong, Hisashi Miyazaki, Jun Morimoto (National Defense Academy),
Toshihiko Hayashi, Hiromu Shiomi (SiXON, Ltd.)

- P3-35** Structure and Photoacoustic Spectra of Y-doped $\text{Eu}_2\text{W}_2\text{O}_9$ Phosphor
Atsushi Aruga[†], Yoichi Okamoto, Masahiro Tsuchiya (Nat. Def Acad.)
- P3-36** Evaluation of weldment by photothermal electrochemical(PE) detection
Yoichiro Hiwatashi, Ryota Kamata[†], Haruo Endoh, Tsutomu Hoshimiya (Tohoku Gakuin Univ.)
- P3-37** Nondestructive Evaluation of Wedge-Shaped Surface Defects by Photoacoustic Microscopy
Haruo Endoh, Naoki Ohtaki[†], Yoichiro Hiwatashi, Tsutomu Hoshimiya (Tohoku Gakuin Univ.)
- P3-38** Photoacoustic and photoelectrochemical characterization of CdSe quantum dots grafted onto fluorine-doped tin oxide (FTO) glass and nanostructured SnO_2 electrodes
Taro Toyoda, Makoto Yanai[†], Qing Shen (The Univ. Electro-Commun.),
Kenji Katayama (Chuo Univ.), Tsuguo sawada (Tokyo Univ. A&T)
- P3-39** Effect of Interface states at SiO_2/Si boundaries on Surface Photovoltage and Piezoelectric Photothermal Spectra
Hiromitsu Hayashi[‡], Takahiro Kuroki, Atsuhiko Fukuyama(Univ. of Miyazaki),
Maki Suemitsu(Univ. of Miyazaki, Tohoku Univ.), Tetsuo Ikari (Univ. of Miyazaki)
- P3-40** Nondestructive Image Evaluation of Welded Zone of Steel Plates by Photoacoustic Microscope
Naoki Ohtaki, Mika Hatake-yama[†], Mamoru Suzuki, Haruo Endoh,
Tsutomu Hoshimiya (Tohoku Gakuin Univ.), Masaru Kawakami, Yutaka Muraki, Takeshi Nakajima,
Akihide Tominaga, Masami Takeshi (Suzuki Motor Corp.)
- P3-41** Photoacoustic Spectroscopy of CdSe Quantum dots absorbed on nano structural TiO_2 electrode
Taro Toyoda, Terumasa Uehata[†], Qing Shen (The Univ. Electro-Commun.)
- P3-42** Direct measurement of optical absorption for Si-Ge-Au amorphous thin films by using PAS
Hiroaki Takiguchi, Yoichi Okamoto, Atsushi Aruga (National Defense Academy)
- P3-43** Development of Millisecond Brillouin Spectroscopy
Yasuo Minami[‡], Takeshi Yogi, Keiji Sakai (Univ. of Tokyo)
- P3-44** Observation of induced shear acoustic phonons by Brillouin scattering
Shigeo Murata[‡], Takayuki Kawamoto, Mami Matsukawa (Doshisya Univ.), Takahiko Yanagitani
(AIST)
- P3-45** Reconstruction of Vibrating Surface of Ultrasonic Transducer Using O-CT and Acoustical Holography
Takeshi Ohbuchi[†], Shingo Shibata, Koichi Mizutani, Naoto Wakatsuki (Univ. of Tsukuba),
Hiroyuki Masuyama (Toba Natl. Coll. Mar. Tech.)
- P3-46** Sonoluminescence and Na-atom emission from SDS surfactant solutions
Pak-Kon Choi, Kouta Funayama (Meiji Univ.)
- P3-47** Intensity variation in sonoluminescence by ultrasonic driving conditions
Misun Jo[‡], Kwanho Mun, Moojoon Kim, Kanglyeol Ha (Pukyong Univ.),
Jangsoon Kim (Tongmyong Univ.)

- P3-48** Test temperature dependence on transesterification of triolein under ultrasonic irradiation condition
Hoang Duc Hanh[‡], Nguyen The Dong, Kenji Okitsu, Yasuaki Maeda, Rokuro Nishimura
(Osaka Pref. Univ.)
- P3-49** Effect of Ultrasound on Surfactant Aided Soil Washing for Diesel Decontamination
Jeehyeong Khim, Sunmee Kim[†], Myunghee Lim, Qiong Yuan, Anna Hwang (Korea Univ.),
In-Chul Park, Younguk Kim (Myongji Univ.)
- P3-50** Improvement in the Flow Rate of a Miniature Ultrasonic Suction Pump
Takeshi Hasegawa[‡], Daisuke Koyama, Kentaro Nakamura, Sadayuki Ueha (Tokyo Tech)
- P3-51** A self-running ultrasonic levitated linear guide
Daisuke Koyama[†], Kentaro Nakamura, Sadayuki Ueha (Tokyo Inst. of Tech.)
- P3-52** Development of a cylindrical type ultrasonic motor
Yasuyuki Katsube[†], Kazutaka Honma, Duala (FDK Corp.), Jun Kondoh (Shizuoka Univ.)
- P3-53** An examination of a powder transportation device with groove using ultrasonic vibration
Keisuke Okada[‡], Hideyuki Haruna, Yoshikazu Koike (Shibaura Inst. of Tech.)
- P3-54** Nano-tip formation by nickel electroless plating under ultrasonic irradiation
Syuji Mononobe[†] (Toyo Univ.)
- P3-55** Extraction of catechins from green tea using ultrasound
Hitoshi Koiwai[†], Nobuyoshi Masuzawa (Musashi Inst. of Tech.)
- P3-56** Influence of high power ultrasonic irradiation on primary nucleation process during solidification
Kazumasa Yasuda[†], Yasuo Saiki, Takashi Kudo, Mamoru Kuwabara, Jian Yang (Nagoya Univ.)
- P3-57** Study of microphone with probe for measuring of high-intensity aerial ultrasonic sound waves
Kennichi Komaba[‡], Youichi Ito (Nihon Univ.)
- P3-58** An in-wheel type micro ultrasonic motor using sector-shaped piezoelectric ceramics vibrators
Yusuke Matsunaga[‡], Takefumi Kanda, Koichi Sugimori, Takashi Ichihara (Okayama Univ.)
- P3-59** Vibration and Welding Characteristics of a Complex Vibration Source Using a (1, 1) Transverse Vibration Disk with 40-mm-diameter Bolt-clamped Langevin Type PZT Transducers
Jiromaru Tsujino, Tetsugi Ueoka[†], Tohru Aoyama, Ryohei Karatsu (Kanagawa Univ.)
- P3-60** Configuration of a 150 kHz Ultrasonic Welding Equipment Using a Different Sound Velocity Metal-Ring-Pair Complex Vibration Converter
Jiromaru Tsujino, Goh Kishimoto[†] (Kanagawa Univ.)
- P3-61** Configuration of a 20 kHz Ultrasonic Complex Vibration Welding System Using a Transverse Vibration Welding Tip and a Complex Vibration Converter with Diagonal Slits
Jiromaru Tsujino, Ryohei Karatsu[†], Shun Tanaka, Tetsugi Ueoka (Kanagawa Univ.)

- P3-62** Configurations of Ultrasonic Motors Using Different Sound Velocity Metal-Ring-Pair Vibration Converters
 Jiromaru Tsujino, Yuu Kubodera[†], Akimitsu Hirai (Kanagawa Univ.)
- P3-63** Vibration and Welding Characteristics of a 27 kHz Complex Vibration Source Using a (2, 1) Transverse Vibration Disk and Six Bolt-clamped Langevin Type PZT transducers
 Jiromaru Tsujino, Tohru Aoyama[†], Ryohei Karatsu, Tetsugi Ueoka (Kanagawa Univ.)
- P3-64** Vibration Characteristics and Dimensions of Diagonal Slits for 27 kHz Ultrasonics Vibration Converter
 Jiromaru Tsujino, Shun Tanaka[†], Ryohei Karatsu (Kanagawa Univ.)
- P3-65** Vibration and Welding Characteristics of a 27 kHz Complex Vibration Source Using Longitudinal vibratic disk and Six Bolt-clamped Langevin Type PZT transducers
 Jiromaru Tsujino Takefumi Kyuzen[†], Takaharu Doi, Tetsugi Ueoka (Kanagawa Univ.)
- P3-66** A robot finger joint driven by a Multi-Degree-of-Freedom ultrasonic actuator
 Xiaofeng Zhang[†], Yasuyuki Gouda, Daisuke Koyama, Kentaro Nakamura, Sadayuki Ueha (Tokyo Inst. of Tech), Masaki Takasan (Toyota Industries Corp.)
- P3-67** Gyro-Moment Motor : Experimental Studies of 2-Phase-Drive-Type
 Yoshitaka Kimura[‡] (Seikoh Giken Co., Ltd.), Yoshiro Tomikawa, Chiharu Kusakabe (Yamagata Univ.),
 Kouji Matsumoto, Toshio Tokairin (Seikoh Giken Co., Ltd.)
- P3-68** Non-Contact Acoustic Manipulation in Air
 Teruyuki Kozuka[†], Kyuichi Yasui, Toru Tuziuti, Atsuya Towada, Yasuo Iida (AIST)
- P3-69** Application of Phase Adjuster for Improvement in cooling effect of thermoacoustic cooling system
 Shin-ichi Sakamoto[‡], Yosuke Imamura, Yoshiaki Watanabe (Doshisha Univ.)
- P3-70** Torque Characteristics of a Ultrasonic Motor a Coiled Stator
 Junichi Tsuchiya[†], Tadashi Moriya (Tokyo Metropolitan Univ.)

光-超音波エレクトロニクス Acousto-optics

- L-1** 音響光学素子を用いた歪み・振動センサ
 Application of Acoustic Optic Tunable Filter to Strain or Vibration Sensing System
 田中伸治[†] 山田清和 小林英晃 門田道雄 (村田製作所)
 Shinji Tanaka[†], Kiyokazu Yamada, Hideaki Kobayashi, Michio Kadota (Murata Mfg, Co., Ltd.)
- L-2** 圧電素子光熱分光法を用いたp-n接合シリコン界面におけるキャリア振る舞いの評価
 A piezoelectric photothermal study on carrier behavior at the interface of Si p-n junction
 内堀裕樹[‡] 中馬博樹 福山敦彦 碓哲雄 (宮崎大)
 Yuki Uchibori[‡], Hiroki Chuuman, Atsuhiko Fukuyama, Tetsuo Ikari (Univ. of Miyazaki)

ソノ・ケミストリー Sonochemistry

- M-1** カロリーメトリーによるソノリアクター用超音波振動子の評価
Characterization of Ultrasonic Transducer for Sonochemical Reactor by Calorimetry
朝倉義幸[†](本多電子、名大) 松岡辰郎 香田忍(名大)
Yoshiyuki Asakura[†] (Honda Electronics, Univ. Nagoya), Tatsuro Matsuoka, Shinobu Koda
- M-2** マイクロチャンネルにおけるリポソーム形成過程に対する超音波照射効果
Ultrasonic irradiation effects on the fabrication of liposomes in a microchannel
飯田康夫[†] 辻内亨 安井久一 小塚晃透 砥綿篤哉(産総研)
Yasuo Iida[†], Toru Tuziuti, Kyuichi Yasui, Teruyuki Kozuka, Atsuya Towata (AIST)