

The 31st Symposium on Ultrasonic Electronics (USE 2010) Program

† Speaker
* Applying to Young Scientists Award

Monday, December 6

10:00-10:15 OPENING

10:15-11:00 Physical Acoustics

Chair: Mami Matsukawa (Doshisha Univ.)

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| 1J-1* | High-power piezoelectric characteristics at continuous driving of Bi ₄ Ti ₃ O ₁₂ -SrBi ₄ Ti ₄ O ₁₅ -based ferroelectric ceramics Yoji Noumura [†] , Yuji Hiruma, Hajime Nagata, Tadashi Takenaka (Tokyo Univ. of Science) | 1 |
| 1J-2* | Unusual temperature dependence of elastic constants of Pt and Pd studied by picosecond ultrasounds and Ab initio calculation Kenichi Tanigaki [†] , Tatsuya Kusumoto, Naoki Omori, Hirotugu Ogi, Nobutomo Nakamura, Masahiko Hirao (Osaka Univ.) | 3 |
| 1J-3 | Switching characteristics of optical high-bit-rate pulses with weighted acoustooptic devices Nobuo Goto ^{†‡} , Yasumitsu Miyazaki [‡] (Univ. of Tokushima; ² Aichi Univ. of Tech.) | 5 |

11:00-11:15 Break

11:15-12:30 Nonlinear & High-power Ultrasound, Sonochemistry

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Tuesday, December 7

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Chair: Mitsudaka Hikita (Kogakuin Univ.)

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12:30-13:30 LUNCH TIME

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Chair: Oliver B. Wright (Hokkaido Univ.)
Chair: Tatsuro Matsuoka (Nagoya Univ.)**

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| 2E-10 | Sonoluminescence of alkali-metal atoms in sulfuric acid: comparison between ultrasonic horn and cleaner Shin-ichi Hatanaka [†] , Shigeo Hayashi (Univ. of Electro-Com.) | 431 |
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| 2E-12 | High-speed variable-focus small liquid lens using acoustic radiation force Daisuke Koyama [†] , Ryoichi Isago, Kentaro Nakamura (Tokyo Tech) | 435 |

16:00-16:15 Break

**16:15-17:15 Medical Ultrasound & Underwater Sound
Chair: Hiroyuki Hachiya (Tokyo Inst. Tech.)**

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| 2E-14 | In vivo maturity evaluation of tissue-engineered vascular wall based on ultrasonic measurement of viscoelasticity Naotaka Nitta ^{1†} , Goki Matsumura ² , Takashi Yamane ¹ , Kazuhiro Homma ¹ , Tsuyoshi Shiina ³ (¹ AIST; ² TWMU; ³ Kyoto Univ.) | 439 |

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| 2E-15* | Endoscopic optical coherence elastography using acoustic radiation force and bending vibration of optical fiber | 441 |
| | Ryoichi Isago [†] , Kentaro Nakamura (Tokyo Tech.) | |
| 2E-16 | Nulling crosstalk in underwater communication with an adaptive time-reversal mirror | 443 |
| | Jae-Hoon Joo ^{1,3†} , Jea-Soo Kim ¹ , Hee-Chun Song ² , Kee-Cheol Shin ³ , Duk-Yung Kim ³ (¹ Korea Maritime Univ.; ² Marine Physical Lab.; ³ Maritime R&D Lab., LIG Nex1) | |

17:15-17:40 Awards Ceremony

18:00-20:00 Banquet

Wednesday, December 8

9:00-10:30 Measurement Techniques Chair: Kazushi Yamanaka (Tohoku Univ.)

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| 3J-1* | Design of accurate motion capture system using ultrasonic communications Tomohiko Sato ^{1†} , Shigeki Nakamura ¹ , Kotaro Terabayashi ¹ , Masanori Sugimoto ¹ , Hiromichi Hashizume ² (¹ Univ. of Tokyo; ² NII) | 445 |
| 3J-2* | Imaging GHz surface acoustic waves on anisotropic media through the photoelastic effect Taiki Saito [†] , Osamu Matsuda, Motonobu Tomoda, Oliver B. Wright (Hokkaido Univ.) | 447 |
| 3J-3* | Sensitive tint visualization of resonance patterns in glass Kana Izuno [†] , Ken Yamamoto (Kansai Univ.) | 449 |
| 3J-4 | Evaluation method of fictive temperature of synthetic silica glasses by the ultrasonic microspectroscopy technology Jun-ichi Kushibiki, Mototaka Arakawa [†] , Yuji Ohashi, Yuko Maruyama, Takanori Kondo, Tetsuo Yoshida (Tohoku Univ.) | 451 |
| 3J-5 | Development and evaluation of metal MEMS column for the ball SAW gas chromatograph Shingo Akao ^{1,2,3†} , Takamitsu Iwaya ^{2,3} , Toshihiro Sakamoto ^{2,3} , Hiroki Naga ^{2,3} , Noritaka Nakaso ^{1,2,3} , Toshihito Tsuji ^{2,3} , Kazushi Yamanaka ^{2,3} (¹ Tohoku Univ.; ² Toppan Printing; ³ JET-CREST) | 453 |
| 3J-6 | Accurate measurement of pipe wall thickness in noncontact manner by a circumferential Lamb wave generated and detected by a pair of air-coupled transducers Hideo Nishino ^{1†} , Yuta Taniguchi ¹ , Tadashi Asano ¹ , Kenichi Yoshida ¹ , Masakazu Takahashi ² , Yukio Ogura ² , Hitoshi Ogawa ³ (¹ Tokushima Univ.; ² Japan Probe; ³ Tokushima Pref. Industrial Tech. Center) | 455 |

10:30-12:30 Poster Session

Chair: Masahiro Ohno (Chiba Inst. Tech.)

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| 3P-1* | Synthesis process of the hydrothermal (K,Na)NbO ₃ ceramics Takafumi Maeda ^{1†} , Tobias Hemsel ² , Takeshi Morita ¹ (¹ Univ. of Tokyo; ² Univ. of Paderborn) | 457 |
| 3P-2 | Acoustic resonance of one-dimensional nonlinear elastic string Ryuichi Tarumi [†] , Tomohiro Matsuhisa, Yoji Shibutani (Osaka Univ.) | 459 |
| 3P-3* | Elastic properties of orthorhombic lysozyme crystals in cryoprotective solutions Takahiro Ishii [†] , Seiji Kojima (Univ. of Tsukuba) | 461 |
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| 3P-5 | Phonon propagation in solid-liquid superlattices Takuro Nakayama [†] , Seiji Mizuno (Hokkaido Univ.) | 465 |
| 3P-6 | Effects of elastic anisotropy on acoustic-wave rectification Takahiro Murai, Yukihiro Tanaka [†] , Norihiko Nishiguchi (Hokkaido Univ.) | 467 |
| 3P-7 | Phonon dispersion relations of GaN/AlN nanowire superlattices with circular cross-sections Seiji Mizuno [†] (Hokkaido Univ.) | 469 |
| 3P-8* | Layered structure of plural phononic crystals Kojiro Nishimiya ^{1†} , Koichi Mizutani ¹ , Naoto Wakatsuki ¹ , Ken Yamamoto ² (¹ Univ. of Tsukuba; ² Kansai Univ.) | 471 |
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| 3P-58* | Experimental study on the pulse wave propagation in a human artery model Yuya Yamamoto ^{††} , Masashi Saito ¹ , Yuka Shibayama ¹ , Mami Matsukawa ¹ , Yoshiaki Watanabe ¹ , Mio Furuya ² , Takaaki Asada ^{1,2} (¹ Doshisha Univ.; ² Murata Manufacturing) | 571 |
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12:30-13:30 LUNCH TIME

13:30-14:20 Invited Talk 2

Chair: Shin-ichiro Umemura (Tohoku Univ.)

3I-1 Ultrasonic visualization of excitation wavefront propagation in heart wall 589
Hiroshi Kanai[†], Motonao Tanaka (Tohoku Univ.)

14:20-14:30 Break

14:30-16:00 Piezoelectric Devices & Underwater Sound

Chair: Tatsuya Omori (Chiba Univ.)
Chair: Toshiaki Nakamura (Nat. Def. Acad.)

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