Thursday, 26 May

[9:00-10:15] Piezoelectric I

26-P-01 Enhancement in piezoelectric properties of (1-x)Bi$_{0.5}$(Na$_{0.8}$K$_{0.2}$)$_{0.5}$TiO$_3$-xBaSnO$_3$ ceramics near morphotropic phase boundary
(Meijo University) Daiki Iida, Hirotaka Ogawa, Susumu Takahashi, Akinori Kan

26-P-02 Evaluation of Domain and Grain Boundaries by Elastic Constants in Piezoelectric Single Crystals and Ceramics
(Shizuoka University of Science and Technology) Toshio Ogawa, Taiki Ikegaya

26-P-03 Orientation Control of (K,Na)NbO$_3$ Ceramics of Using Platelike NaNbO$_3$ Templates Synthesized with Mixed Salt
(Department of Materials Science and Engineering, The National Defense Academy) Keisuke Ishii

26-P-04 Characterization of piezoelectric properties for (Na0.5K0.5)NbO$_3$-Ba2NaNb5O15 by means of the Inverse Method
(“Nagoya Inst. Tech., **Friedrich-Alexander-Univ. of Erlangen-Nuremberg”) Katsuya Yoshida*, Ken-ichi Kakimoto*,
Manuel Weiss**, Stefan J. Rupitsch**, Reinhard Lerch**

26-P-05 Investigation of the displacement property and electric reliability of (Li, Na, K)NbO$_3$ based multilayer piezoceramics
(Taiyo Yuden Co., Ltd.) Keiichi Hatano

[10:15-10:30] Coffee Break

[10:30-12:00] Thin Films II

26-T-06 Observation of Phase Transition in Ferroelectric Polymer Using Scanning Probe Microscopy

26-T-07 Observation of Domain Switching of VDF/TrFE Copolymer Thin Films Using Piezoresponse Force Microscopy
(“Tokyo University of Science, **University of Nebraska-Lincoln”) Yuuta Nakagawa*, Yoichi Hashizume*, Takashi Nakajima*, Alexei Gruverman**, Soichiro Okamura*

26-T-08 Fully printed ferroelectric capacitor directed force sensor
(1. Yamagata Univ. ROEL 2. JST PRESTO, 3. Piezotech 4. ARKEMA K. K.) Tomohito Sekine1, Ryo Sugano1, Kenjiro Fukuda1,2, Daisuke Kumaki1,2, Fabricio Domingues dos Santos3, Atsushi Miyabo4, Shizuo Tokito1

26-T-09 Application of Poly (lactic acid) Film Manufactured by Solid-State Extrusion to Bending and Twisting Sensor
(“Mitsui Chemicals Inc., **Kansai University”) Mitsunobu Yoshida*,**, Yoshiro Tajitsu**

26-T-10 Ultrathin Organic Ferroelectric-gate Field-Effect Transistor
(1. Yamagata Univ. ROEL 2. JST PRESTO, 3. Piezotech 4. ARKEMA K. K.) Ryo Sugano1, Yoshihori Hirai1, Tomohito Sekine1, Kenjiro Fukuda1,2, Daisuke Kumaki1,2, Fabricio Domingues dos Santos3, Atsushi Miyabo4, Shizuo Tokito1

26-T-11 Development of diamond FET with P(VDF-TrFE) gate
(Kanazawa Univ.) Yosuke Mori

[12:00-13:15] Lunch


26-S-01 Thought to the great barium titanate
(Tokyo Tech.) Yukio Sakabe

26-S-02 History of physical research on BaTiO$_3$
(Nagoya Univ.) Yoshihiro Ishibashi

26-S-03 Progress on thin-dielectric-layer MLCCs using fine BaTiO$_3$
(Taiyo Yuden) Hiroshi Kishi

26-S-04 Inhomogeneity in Barium Titanate Probed by Angle-Resolved Polarized Raman Scattering
(Shimane Univ.) Shinya Tsukada

29-S-05 Lattice-and-domain-dynamics, and polarization mechanism BaTiO$_3$
(Tokyo Tech.) Takuya Hoshina

[15:30-15:45] Coffee Break
**Plenary Talk**
Atomic Structures and Local Chemistry of Oxide Interfaces
(The University of Tokyo) Yuichi Ikuhara

**Tutorial**
The piezoelectric characteristics of polymer and plastic
(Kansai Univ.) Yoshiro Tajitsu

**Friday, 27 May**

**[9:00-10:15] Dielectrics I**
Chairperson Hajime Nagata (Tokyo University of Science)

27-D-01 Crystal structure and microwave dielectric properties of spinel-structured Li0.5Ga2.5O4 ceramics
(Meijo University) Susumu Takahashi, Akinori Kan, Hirotaka Ogawa

27-D-02 Electrocaloric Properties of K(Ta,Nb)O3 Crystals
(Shonan Institute of Technology) Hiroshi Maiwa

27-D-03 Direct Measurements of the Electrocaloric Effect using Thin Film Thermocouple
(Osaka Prefecture University) Yuji Matsushita, Hirotaka Yamashita, Takeshi Yoshimura, Norifumi Fujimura

27-D-04 Growth of strontium substituted gehlenite single crystals and characterization of their electrical and mechanical properties

27-D-05 Time-resolved Crystal Structure Analysis of Resonantly Vibrating Langasite Oscillator

**[10:15-10:30] Coffee Break**

**[10:30-12:00] Thin Films III**
Chairperson Hironori Fujisawa (Univ. of Hyogo)

27-T-12 Composition dependence of electrical properties and crystal structure for the epitaxial PZT thin films grown on Si and SrTiO3 substrates

27-T-13 Influence of charge screening at interface of tetragonal/rhombohedral Pb(ZrxTi1-x)O3 artificial superlattice thin films on the piezoelectric property

27-T-14 Structure change of continuously strain controlled Pb(Zr, Ti)O3 films by Zr/(Zr+Ti) ratio

27-T-15 Breakdown voltage and piezoelectric fatigue of Pb(Zr, Ti)O3 thin film
(Silicon Sensing Products Ltd.) Yusuke Tabuchi, Takashi Ikeda, Gen Matsuoka

27-T-16 Design and fabrication of a MEMS optical scanner device considering deformation caused by internal stress
(AIST1, Kyushu University2, JST-CREST3) T. Takeshita1,2, R. Sawada2, N. Makimoto1,3, T. Kobayashi1,3

27-T-17 Wireless sensing module using piezoelectric vibration energy harvester

**[12:00-13:15] Lunch**

**[13:15 - 14:45] Fundamental II**
Chairperson Shinya Tsukada (Tottori Univ.)

27-B-07 Domain and Defect Structures in the ferroelectric phase of Ba1-xSr2Al2O4 (0.7 < x < 1.0)
(Osaka Prefecture University) Hirofumi Tsuchiaki, Eri Tanaka, Yui Ishii, Shigeo Mori, Shogo Kawaguchi

27-B-08 Broadband Light-scattering on Fractal and Non-fractal Relaxors
(Ritsumeikan University) Akitoji Koreeda
Angular dependence of Raman spectrum for Pb(Zr,Ti)O3 epitaxial films

Field Dependent Elastic Anomaly in Uniaxial Tungsten Bronze Relaxors
(Univ. of Tsukuba, *Univ. of Silesia, *Duisburg-Essen Univ.*) M. Aftabuzzaman, J. Dec*, W. Kleemann**, S. Kojima

Ferroelectric phase transition of NaVO3 investigated by broadband micro light scattering spectroscopy

Nonlinear dielectric susceptibility in relaxor Pb(Zn1/3Nb2/3)O3-PbTiO3
(Nagoya Inst. of Tech., *Nagoya Univ.* Makoto Iwata*, Kenta Nino*Kei*, Ryo Nagahashi*, Yoshihiro Ishibashi**

Coffee Break

Thin Films IV
Chairperson Masaki Azuma (Tokyo Inst. of Tech)

Influence of (Bi1/2Na1/2)TiO3 in the electrical properties of BiFeO3-based thin films
(Osaka Prefecture University) JinHong Choi, Takeshi Yoshimura, Norifumi Fujimura

Ferro magnetism in BiFe1-xCo3O3 thin films and the correlation between ferroelectric and ferromagnetic domains

In-situ Observation of a Lattice Distortion in an Epitaxial BiFeO3 Thin Film under an Electric Field

Influence of Transition Metal Element Doping on Anomalous Photovoltaic Effects in Single-Domain BiFeO3 Thin Films
(University of Hyogo) Kota Takayama, Seiji Nakashima, Hironori Fujisawa, Masaru Shimizu

Fabrication and photo-induced properties of Ag nanoparticles-BiFeO3 composite thin films by chemical solution deposition

Piezoelectric property of BiFeO3 thick films fabricated by rf magnetron sputtering system
(Osaka Prefecture Univ.*, TRI Osaka **) M. Aramaki*, K. Kariya*, T. Yoshimura*, S. Murakami**, N. Fujimura*

Growth, and Magnetic and Structural Properties of Multiferroic Fe3O4/BNEut Composite Thin Films
(University of Hyogo) Masahumi Kobune, Ryosuke Furutani, Satoshi Fujita, Kazuki Kikuchi, Tomoyuki Kuriyama, Takeyuki Kikuchi, Hironori Fujisawa, Masaru Shimizu, Naoki Fukumuro

International Award

Invited Talk
PZT PiezOMENS with integrated Electronics
(The Penn State Univ.) M. Wallace, J. I. Ramirez, T. N. Jackson, and S. Trolier-McKinstry

Saturday 28 May

Ferroelectric II
Chairperson Kenichi Kakimoto (Nagoya Inst. of Tech)

Development of ferroelectric SEIs for Li ion batteries with high charge—discharge rate capability
(Okayama Univ.) Takashi Teranishi*, Yumi Yoshikawa*, Hidetaka Hayashi*, Akira Kishimoto*

Thermoelectric property of hexagonal BaTiO3
(Tokyo Inst. of Tech.) Shintaro Yasui, Yusuke Ishimoto, Tomoyasu Taniyama, Mitsuru Itoh, Takao Shimizu

Fabrication of BaTi2O5 Semiconducting Ceramics by Yttrium Addition
(The National Defense Academy) Shinjiro Tashiro, Keisuke Ishii

Quenching Effects for Electrical Properties of (Bi0.5Na0.5)TiO3 Ceramics
(Tokyo University of Science) Hiroki Muramatsu, Hajime Nagata, Tadashi Takenaka

The core-shell structure and dielectric properties of (K0.5Na0.5)NbO3-SrZrO3, the ceramics indicating suitable characteristics for high temperature capacitors
(TDK Corporation) Sanshiro Aman, Keiko Kubo, Hiroki Akiba and Daisuke Iwanaga
Coffee Break

**10:30-12:00** Thin Films V

Chairperson: Jun Akedo (AIST)

28-T-25 Orientation Control of Barium Titanate Films using Metal-oxide Nanosheet Layer


28-T-26 Fabrication and characterization of BaTiO$_3$ epitaxial thin films

(University of Tokyo) Hisashi Maki, Yuji Noguchi, Masaru Miyayama

28-T-27 Fabrication and dielectric properties of barium titanate based solid solution nanocube assembly films

(AIST) Ken-ichi Mimura, Qiang Ma, Kazumi Kato

28-T-28 Improvement in the resistive hysteresis characteristics of BaTiO$_3$ thin film for ReRAM by layer-by-layer annealing process

(Kyoto Institute of Technology) Toshiyuki Sugie, Shuhei Hashimoto, Sou Maejima, Kaoru Yamashita, Minoru Noda

28-T-29 Pulse laser growth of tetragonal (Bi,K)TiO$_3$ epitaxial films and their piezoelectric properties

(*Tokyo Tech., *Sophia Univ.) Yuichi Nemoto, Daichi Ichinose, Takao Shimizu*, Hiroshi Uchida**, Hiroshi Funakubo*

28-T-30 Influence of substrate on piezoelectric property of BaTiO$_3$ films deposited by AD method

(Research Institute for Electromagnetic Materials) Yoshihiro Kawakami

[12:00-] Closing Remarks