The 12th Japan-Korea Conference on Ferroelectrics

JKC-FE12

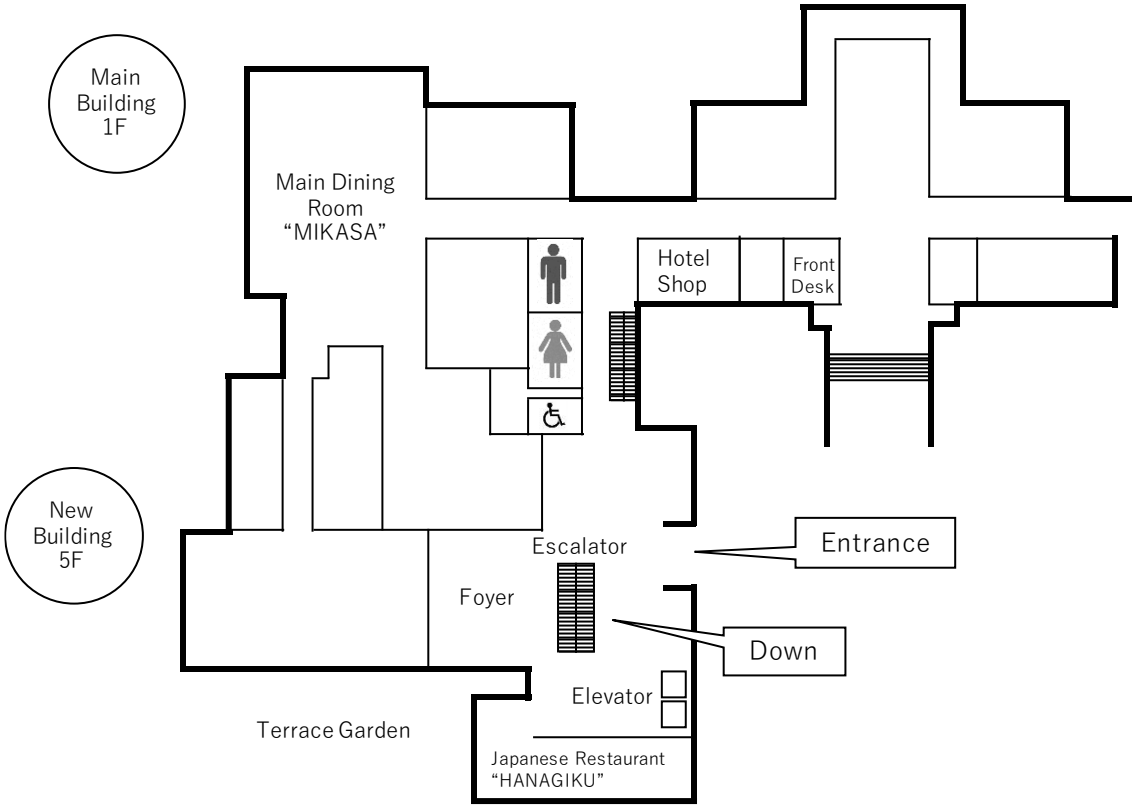
Program

August 5th-8th,2018

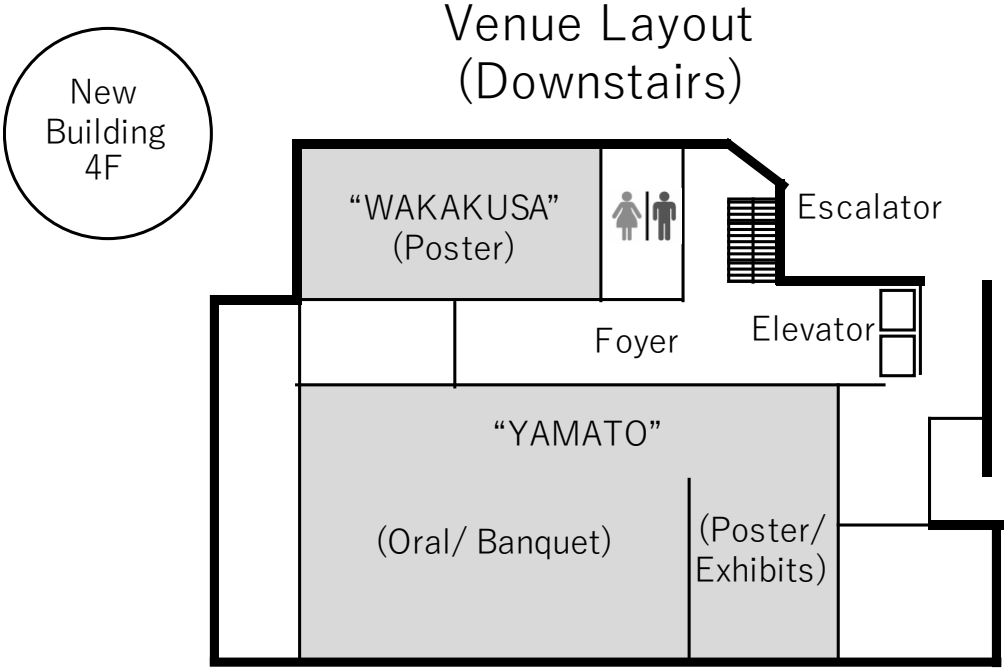
Nara Hotel, Japan

Nara Hotel (Conference Site)

1096 Takabatake-cho, Nara 630-8301, Japan



Venue Layout (Downstairs)



○ **Hotel Nikko Nara (Welcome Reception)** is directly connected to JR Nara station

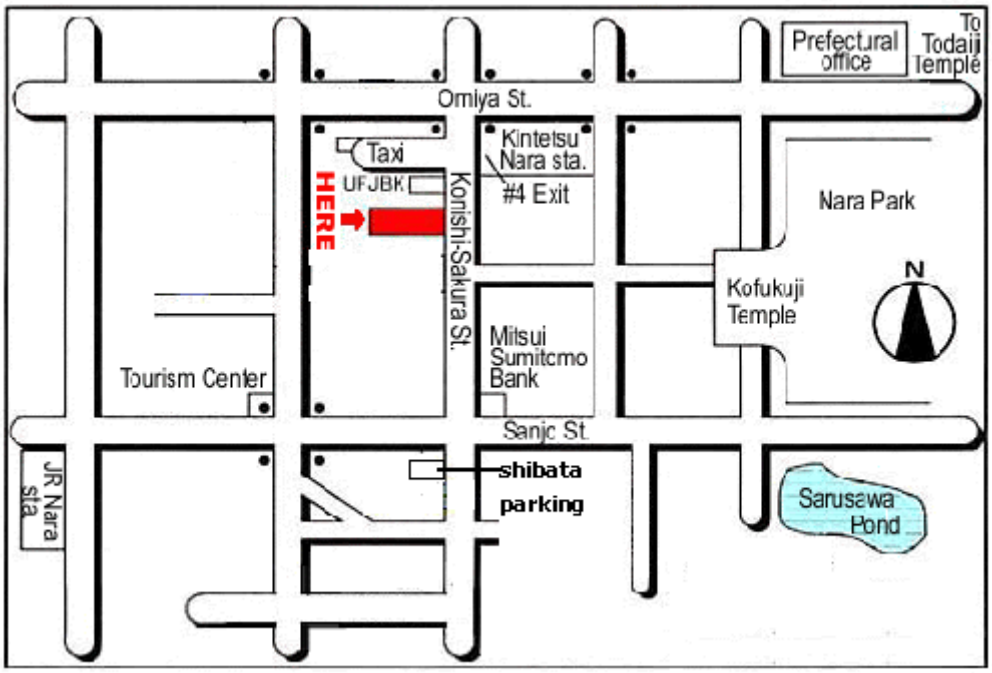
8-1 Sanjo-hommachi Nara-shi Nara 630-8122

○ **Hotel Hanakomichi** (Courtesy Lodging for Students)

23 Konishi-machi, Nara-shi, Nara 630-8226

From Kintetsu Nara Station Exit 4: 1 min. walk to the south

To Nara Hotel 12 min. walk using shortcut



Excursion

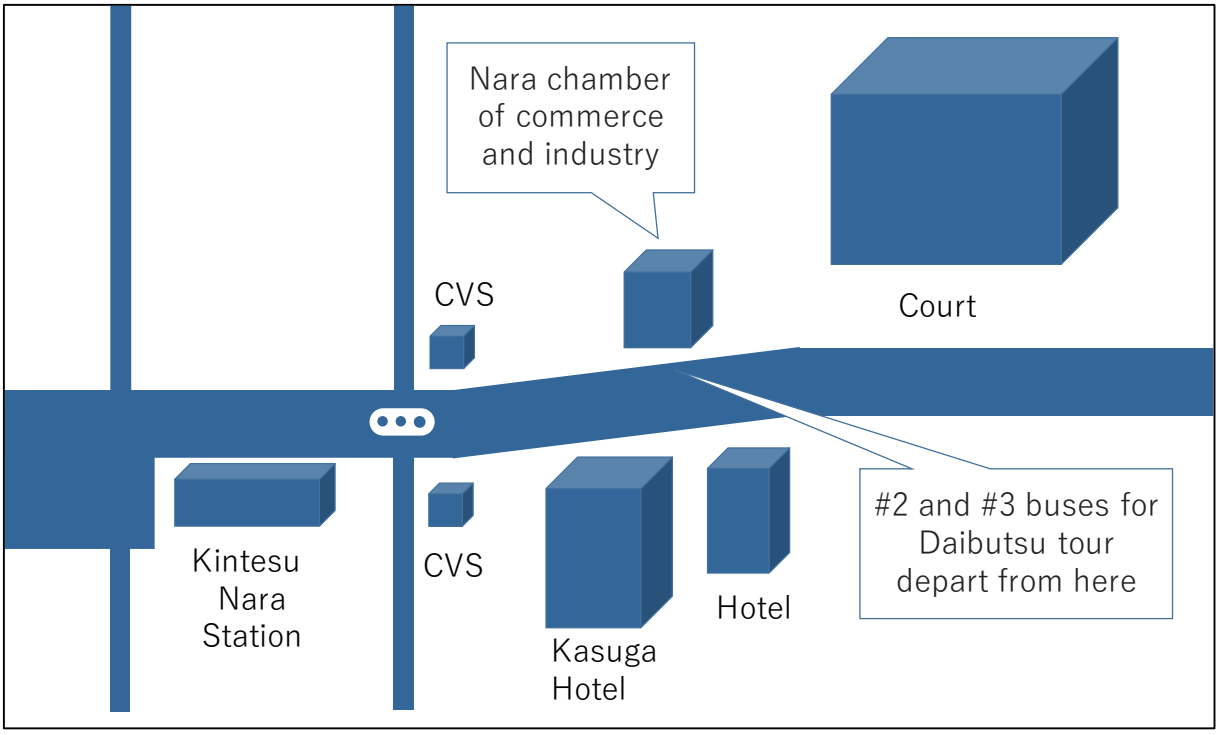
Special Daibutsu Tour (TODAN 登壇) at Todaiji

As a courtesy of Todaiji, special Daibutsu tour can be offered for the participants. Even for Japanese, it is quite rare case to get experience of TODAN. We can come close to Daibutsu and see from above.

Venue: Todaiji Nandaimon at 8:50 on 8th Aug.

#1 bus from Hotel Nikko Nara at 8:15

#2 and #3 buses from Nara chamber of commerce and industry at 8:15 (nearest exit of Kintetsu Nara station is #1)



Timetable

Aug.05th (Sun.)	17:00	～	19:00	Registration/ Welcome Reception(Hotel Nikko Nara)
Aug.06th (Mon.)	9:00	～	9:30	Registration
	9:30	～	9:45	Opening Remarks
	9:45	～	10:30	Plenary 1 (Prof. Hideo Hosono)
	10:30	～	10:45	Coffee Break
	10:45	～	12:00	Fundamentals (Materials Science)
	12:00	～	13:30	Lunch
	13:30	～	15:00	Poster Session
	15:00	～	17:30	Fundamentals (Physics)
Aug.07th (Tue.)	8:30	～	9:00	Registration
	9:00	～	9:45	Plenary 2 (Prof. Tae Won Noh)
	9:45	～	10:15	Thin Films
	10:15	～	10:30	Coffee Break
	10:30	～	12:30	Special Talks -Ferroelectrics for IoT Society-
	12:30	～	14:00	Lunch (Committee Meeting)
	14:00	～	16:00	Applications 1
	16:00	～	16:15	Coffee Break
	16:15	～	18:00	Applications 2
	18:00	～	18:15	Photo Session
	18:15	～	19:00	Free Time
	19:00	～	21:00	Banquet (Nata hotel YAMATO)
Aug.08th (Wed.)	9:00	～	11:00	TODAN, Special Daibutsu Tour (Todaiji)
	11:00	～	13:00	Fundamentals (Structure, Crystallographic)
	13:00	～	13:10	Closing Remarks

After closing

Shuttle bus to KIX will depart at 13:20

Shuttle bus to JR and Kintetsu Stations will depart at 13:40

Program Outline

Time	Aug.5th(Sun.)	Aug.6th(Mon.)	Aug.7th(Tue.)	Aug.8th(Wed.)	Time
8:30			Registration		8:30
9:00		Registration	PL-02 T. W. Noh	Special Daibutsu Tour	9:00
		Opening Remarks			
10:00		PL-01 H. Hosono	I-07 H. N. Lee		10:00
			Coffee Break		
		Coffee Break	I-08 K. Hosokawa		
11:00		I-01 J. Kano	I-09 A. Jiang	I-18 D. Y. Cho	11:00
		I-02 Y. S. Oh	I-10 Y. Oku	I-19 S. Aoyagi	
		O-01 T. Hoshina			
12:00		Lunch	I-11 D. S. Jeong	I-20 S. Hong	12:00
			Lunch	I-21 Y. Kim	
13:00				Closing Remarks	13:00
14:00		Poster Session	I-12 K. J. Lee		14:00
			I-13 I. Matsuda		
15:00		I-03 Y. Okimoto	I-14 S. C. Chae		15:00
		I-04 S. Han	I-15 H. Nagata		
16:00		I-05 N. Ogawa	Coffee Break		16:00
			I-16 T. Yanagitani		
		I-06 D. Suh	I-17 M. Kurosawa		
17:00	Registration Welcome Reception (Hotel Nikko Nara)	O-02 H. J. Jin			17:00
		O-03 S. Maeda	O-04 H. Park		
			O-05 K. Takada		
			O-06 M. H. Park		
18:00			Photo Session		18:00
		Night Session (Free social event for students)	Free Time		
19:00			Banquet (~21:00)		19:00

Program

Aug. 5th (Sun)

Registration & Welcome Reception

17:00 – 19:00 Hotel Nikko Nara (FUJI)

Aug. 6th (Mon)

Registration

9:00 – Nara Hotel

Opening

9:30 – 9:45 Norifumi Fujimura (Osaka Prefecture University)
Cheol Seong Hwang (Seoul National University)
Masanori Okuyama (Osaka University)

Plenary 1 (Chair: Norifumi Fujimura, Osaka Pref. Univ.)

9:45 – 10:30 Pl-01 Hideo Hosono (Tokyo Institute of Technology)
Novel transparent semiconductors: design concept and examples

Coffee Break

10:30 – 10:45

Fundamentals (Materials Science) (Chair: Yunsang Lee, Soongsil Univ., Hiroki Taniguchi, Nagoya Univ.)

10:45 – 11:15 I-01 Jun Kano (Okayama University)
Bent core level atomic orbitals in $BaTiO_3$

11:15 – 11:45 I-02 Yoon Seok Oh (Ulsan National Institute of Science and Technology)
Geometrically induced hybrid improper ferroelectricity and multiferroicity in $A_3B_2O_7$ Ruddlesden-Popper compounds

11:45 – 12:00 O-01 Takuya Hoshina (Tokyo Institute of Technology)
Crystal structure and ferroelectric phase transition of barium titanium oxynitride

Lunch

12:00 – 13:30 Restraint Half-time (10 min walk)

Poster Session

13:30 – 15:00 List of poster presentation is posted after oral presentation program

Fundamentals (Physics) (Chair: Young-Han Shin, Univ. of Ulsan, Sumio Ishihara, Tohoku Univ.)

15:00 – 15:30 I-03 Yoichi Okimoto (Tokyo Institute of Technology)
Ultrafast photo-control of ferroelectric cocrystals

15:30 – 16:00 I-04 Seungwu Han (Seoul National University)

		Classical neural network potential learning DFT results
16:00 – 16:30	I-05	Naoki Ogawa (RIKEN CEMS)
		Topological shift current in ferroelectrics
16:30 – 17:00	I-06	Dongseok Suh (Sungkyunkwan University)
		Graphene transistor as a noninvasive probe monitoring oxygen vacancies in $SrTiO_3$
17:00 – 17:15	O-02	Hye-Jin Jin (Ewha Womans University)
		Vortex formation and its dynamics in pseudo-triangular ferroelectric lattice
17:15 – 17:30	O-03	Shinsaku Maeda (Nagoya Institute of Technology)
		PFM observation in the vicinity of domain walls for $(Na,K)NbO_3$ ceramics

<u>Night Session (Free social event for students)</u>

18:30 – 20:30	WESTERN Jun

Aug. 7th (Tue)

Plenary 2 (Chair: Cheol Seong Hwang, Seoul National Univ)

9:00 – 9:45	Pl-02	Tae Won Noh (Seoul National University) Flexoelectricity: next frontier in oxides?

Thin Films (Chair: Hajime Nagata, Tokyo Univ. of Sci.)

9:45 – 10:15	I-07	Ho Nyung Lee (Oak Ridge National Laboratory) Novel multiferroics made by strain- A synthesis science driven approach

Coffee Break

10:15 – 10:30

Special Talks -Ferroelectrics for IoT Society-

(Chair: Sang Don Bu, Chonbuk National Univ., Eisuke Tokumitsu, JAIST)

10:30 – 11:00	I-08	Kohji Hosokawa (IBM Japan Ltd.) An analog accelerator chip for AI computing
11:00 – 11:30	I-09	Anquan Jiang (Fudan University) High-density Ferroelectric domain-wall resistance switching random access memory
11:30 – 12:00	I-10	Yoshiaki Oku (ROHM Co., Ltd.) Application of PZT thin film devices to realize IoT society
12:00 – 12:30	I-11	Doo SeokJeong (Hanyang University) Nanoscale resistance switches for deep learning acceleration

Lunch

12:30 – 14:00 Lunch box

Applications 1 (Chair: Yunseok Kim, Sungkyunkwan Univ., Yuji Noguchi, Univ. of Tokyo)

14:00 – 14:30	I-12	Keon Jae Lee (KAIST) Self-powered flexible electronics beyond thermal limits
14:30 – 15:00	I-13	Isao Matsuda (Taiyo Yuden Co., Ltd.) Application and development of a piezoelectric sensing solution system
15:00 – 15:30	I-14	Seung Chul Chae (Seoul National University) Ferroelectricity in HfO_2 for the single transistor based memory device
15:30 – 16:00	I-15	Hajime Nagata (Tokyo University of Science) Quenching effects for depolarization temperature and their electrical properties on $(Bi_{1/2}Na_{1/2})TiO_3$-based lead-free ferroelectric ceramics

Coffee Break

16:00 – 16:15

Applications 2 (Chair: Keon Jae Lee, KAIST, Hironori Fujisawa, Univ. of Hyogo)

16:15 – 16:45	I-16	Takahiko Yanagitani (Waseda University) A method for extracting GHz electromechanical coupling coefficient from piezoelectric film/substrate structure without removing substrate
16:45 – 17:15	I-17	Minoru Kurosawa (Tokyo Institute of Technology) Mechanical vibration conversion to RF power using piezoelectric transducers
17:15 – 17:30	O-04	Hyeon Woo Park (Seoul National University) Study on transient NC effect in ferroelectric thin films by phase field simulation approach
17:30 – 17:45	O-05	Kenshi Takada (Osaka Prefecture University) Investigation of physical nature of transient negative capacitance emerged in ferroelectric-gate FETs
17:45 – 18:00	O-06	Min Hyuk Park (Pusan National University) Research on HfO_2 in Namlab.

Photo Session

18:00 – 18:15 Entrance of Nara Hotel

Free Time

18:15 – 19:00

Banquet

19:00 – 21:00 Nara Hotel (YAMATO)

19:30 – 20:00 Young Scientist Session

Aug. 8th (Wed)

Special Daibutsu Tour

9:00 – 11:00 TODAN at Todaiji

Fundamentals (Structure, Crystallographic)

(Chair: Woo Seok Choi, Sungkyunkwan Univ., Chikako Moriyoshi, Hiroshima Univ.)

11:00 – 11:30	I-18	Deok-Yong Cho (Chonbuk National University) Local structures of active interfaces in some dielectrics-metal contacts
11:30 – 12:00	I-19	Shinobu Aoyagi (Nagoya City University) Transient crystal structure of piezoelectric oscillators vibrating under alternating electric field
12:00 – 12:30	I-20	Seungbum Hong (KAIST) Visualization of emerging phenomena: materials imaging initiative
12:30 – 13:00	I-21	Yunseok Kim (Sungkyunkwan University) Evaluation of ferroelectricity at the nanoscale

Closing Remarks

13:00 – 13:10 Norifumi Fujimura (Osaka Prefecture University)
Cheol Seong Hwang (Seoul National University)

Poster presentation — 6th Aug.(Mon)13:30～15:00

Number	Presenter	Title
P-01	Tomohiro Abe (Hiroshima Univ.)	Electron density study on $BiFeO_3$-type oxides using synchrotron radiation X-ray diffraction
P-02	Yukio Sato (Kyushu Univ.)	An attempt of high precision electron microscopy observation of a dielectric crystal under external electric field
P-03	Yuya Ouchi (Osaka Prefecture Univ.)	Single crystal X-ray diffraction investigation for $Ba_{0.93}Sr_{0.07}Al_2O_4$
P-04	QingZhao (Hiroshima Univ.)	Electronic charge order in double perovskite $BaBiO_3$ visualized by synchrotron radiation powder diffraction
P-05	Yuki Nakahira (Hiroshima Univ.)	Structural phase transition of improper ferroelectric $BaAl_2O_4$
P-06	Hiroki Taniguchi (Nagoya Univ.)	Ferroelectricity and functional dielectric properties in Bi_2SiO_5-based compounds
P-07	Shuhei Tsugita (Hiroshima Univ.)	Sublattice polarization of $PbZrO_3$ in antiferroelectric phase by SXRD
P-08	Hiroko Yokota (Chiba Unv.)	Direct observations of polarity at the domain boundaries
P-09	Shigeo Mori (Osaka Prefecture Univ.)	Observation of charged domain walls and defect structures in improper ferroelectric materials
P-10	Eiichi Oishi (Ritsumeikan Univ.)	Circularly-polarized Raman spectroscopy on $NaClO_3$ single crystals with opposite chiralities
P-11	Yuji Matsushita (Osaka Prefecture Univ.)	Characterization of electrocaloric temperature changes in P(VDF-TrFE) thin films
P-12	Takahiro Okada (Ritsumeikan Univ.)	Transient thermal grating spectroscopy for thermal waves in quantum- paraelectric $SrTiO_3$
P-13	Taro Aso (Ritsumeikan Univ.)	Anomalies of acoustic phonon and central peak in ordered and disordered $Pb(Sc_{1/2}Ta_{1/2})O_3$ ceramics probed by Brillouin scattering
P-14	Yasuhiro Fujii (Ritsumeikan Univ.)	Polarization-angle-resolved Raman analysis on local symmetry in 0.73PMN-0.27PT single crystals
P-15	Yuto Yokoi (Hiroshima Univ.)	Electric field induced phase transition of PMN-PT by single crystal synchrotron radiation X-ray diffraction
P-16	Kotaro Abe (Ritsumeikan Univ.)	External electric-Field effect on the power-law quasi-elastic light-scattering spectra of PZN-PT
P-17	Shota Noda (Hiroshima Univ.)	Anharmonic thermal vibration in relaxor ferroelectric $Pb(Mg_{1/3}Nb_{2/3})O_3$ by high energy synchrotron radiation X-ray diffraction
P-18	Katsuya Shiratori (Ritsumeikan Univ.)	Polarization-angle-resolved Raman spectroscopy on $Pb(Zn_{1/3}Nb_{2/3})O_3$-8%$PbTiO_3$ under external electric field

Number	Presenter	Title
P-19	Junpei Tanaka (Osaka Prefecture Univ.)	Electric and magnetic properties of multiferroic $YbFe_2O_4$ thin films with non-stoichiometric composition
P-20	Badari Narayana Aroor Rao (Tokyo Institute of Tec.)	Characterization of multiferroic $AlxFe_2$-xO_3 epitaxial thin films
P-21	June Hyuk Lee (KAERI)	Improvement of HANARO polarized neutron reflectometer for multiferroic oxides
P-22	Kohei Miura (Osaka Prefecture Univ.)	Photo-induced phenomena of strongly correlated ferroelectric $YMnO_3$ epitaxial films
P-23	Seiya Kato (Hiroshima Univ.)	Dielectric responses of $BaTiO_3$ and $Pb(Zr, Ti)O_3$ under electric field studied by time-resolved x-ray absorption spectroscopy
P-24	Sanggyun Byeon (Sungkyunkwan Univ.)	Dielectric properties and structural distortion of $BaTiO_3$ surface by first principles study
P-25	Muhammad Sheeraz (Univ. of Ulsan)	Enhancement of ferroelectric polarization by sulfurization
P-26	Nguyen Xuan Duong (Univ. of Ulsan)	Oxygen-vacancy-mediated polymorphic phase transition in Ni doped $BaTiO_3$ ceramics
P-27	Taewon Min (Pusan National Univ.)	A first-principles study of the $LaAlO_3/SrTiO_3$ (111) interface
P-28	Gijae Kang (Seoul National Univ.)	Ab-initio study on charge trapping K centers in amorphous Si_3N_4
P-29	Kyeongpung Lee (Seoul National Univ.)	First-principles study on Al doping in $SrTiO_3$
P-30	Dohyung Song (Sungkyunkwan Univ.)	First principles study on band structure modification of CdSe quantum dots
P-31	Se-Hun Kim (Jeju National Univ.)	Quest for hydrogen environments in hydrogen-bonded systems
P-32	Genta Kawamura (Hiroshima Univ.)	Structure fluctuation of stuffed aluminate sodalites $Ca_8[AlO_2]_{12}(SO_4)_2$ and $Sr_8[AlO_2]_{12}(SO_4)_2$ in cubic phase
P-33	Hayato Hirano (Osaka Prefecture Univ.)	Microstructures and their relevance to photoluminescence in Sr1-x-yEuxCayAl_2O_4
P-34	Dongheon Lee (Seoul National Univ.)	Atomic and electronic structures of Al-, Zn-, and Ga-doped $Ge_2Sb_2Te_5$
P-35	Koki Hagura (Hiroshima Univ.)	Structure fluctuation of halogen-type layered double hydroxides by synchrotron radiation X-ray diffraction
P-36	Hye Jung Kim (Univ. of Ulsan)	Surface effects in dipolar hydrofluorinated graphene multilayers
P-37	Hisashi Ichimiya (Osaka Prefecture Univ.)	Spontaneous pattern-formation toward effective doping in 2D materials

Number	Presenter	Title
P-38	Akito Fukui (Osaka Prefecture Univ.)	Synthesis and characterization of a molecular dopant for 2D semiconducting materials
P-39	MyoungPyo Chun (KICET)	Characterization of BN nanofibers fabricated by electrospinning method
P-40	Jin San Choi (Univ. of Ulsan)	Influence of Ni charge valency on the metal-to-insulator transition in epitaxial nickelate films
P-41	Yunsang Lee (Soongsil Univ.)	Surface-direction dependence of the oxygen vacancy formation in $SrTiO_3$ single crystals
P-42	Sungmin Woo (Sungkyunkwan Univ.)	Enhanced magnetic and thermoelectric properties in epitaxial polycrystalline $SrRuO_3$ thin film
P-43	Chang Jae Roh (GIST)	Non-centrosymmetric phase of $SrRuO_3$ thin films
P-44	Jeong Rae Kim (Seoul National Univ.)	Comparative study on pulsed laser deposition of $CaTiO_3$ thin films from single and dual targets
P-45	Sang Mo Yang (Sookmyung Womens Univ.)	Scanning probe microscopy investigation of the mixed electrochemical-ferroelectric states in ultrathin BaTiO3 grown on silicon
P-46	Tsubasa Migita (Univ. of Hyogo)	Fabrication and structural, ferro- and piezoelectric properties of heteroepitaxially c-axis-oriented BNEuT thin films
P-47	Ryoga Ito (Univ. of Hyogo)	Fabrication and structural characteristics of BNEuT thin films heteroepitaxially grown by sputtering
P-48	Wei Peng (Seoul National Univ.)	Polar instability-induced relaxor-like ferroelectric in (111)-oriented $BaTiO_3$ epitaxial Films
P-49	Miyu Hasegawa (Tokyo Institute of Tech.)	Fabrication and evaluation of (Bi, Na) TiO_3 - $BaTiO_3$ based thin film by using PLD method
P-50	Ryu Hayashimoto (Univ. of Hyogo)	Optical strains of Mn-doped $BiFeO_3$ thin films induced by bulk photovoltaic effect and inverse piezoelectric effect
P-51	Nao Yoshimura (Univ. of Hyogo)	Metalorganic chemical vapor deposition of $BiFeO_3$ thin films using FeOx seed layer
P-52	Naoki Okamoto (Osaka Prefecture Univ.)	The direct piezoelectric properties of (100) $BiFeO_3$ epitaxial films deposited by rf magnetron sputtering
P-53	Ryuta Noda (Waseda Univ.)	Investigation of MPB in Pb(Zrx,Ti1-x)O_3 epitaxial films by RF magnetron sputtering growth
P-54	Takahiro Shimidzu (Waseda Univ.)	Frequency switchable polarity inverted resonators based on cubic PMN-PT/tetragonal PZT epitaxial stack
P-55	Izuru Kanagawa (Osaka Prefecture Univ.)	Piezoelectric properties of vinylidene fluoride – trifluoroethylene copolymer [P(VDF-TrFE)] films
P-56	Bich Thuy Nguyen (Univ. of Ulsan)	Fabrication condition of lead-free $(K_{0.5}Na_{0.5})NbO_3$-based thin films by RF magnetron sputtering

Number	Presenter	Title
P-57	Ryosuke Kanaya (Osaka Prefecture Univ.)	Fabrication of ZnO thin films by PLD using nonequilibrium with additional oxygen-nitrogen plasma source
P-58	Taiki Obayashi (Univ. of Hyogo)	Electrical characteristics of BNEuT thin films heteroepitaxially grown in the c-axis direction
P-59	Tae Kwon Song (Changwon National Univ.)	Improvement of piezoelectric and ferroelectric properties in thermally quenched $BiFeO_3$-$BaTiO_3$ ceramics
P-60	Chang Won Ahn (Univ. of Ulsan)	Large electrostrain response under low electric-field of $Bi_{1/2}Na_{1/2}TiO_3$-based relaxor/ferroelectric composite ceramics
P-61	Masaaki Aramaki (Osaka Prefecture Univ.)	Development of high performance piezoelectric MEMS vibration energy harvester using $BiFeO_3$ films
P-62	Kyohei Izumi (Osaka Prefecture Univ.)	Energy harvesting from AC power line
P-63	Yuka Mazda (Waseda Univ.)	Thick PZT epitaxial film growth for ultrasonic transducer application below 100 MHz
P-64	Masayuki Sohgawa (Niigata Univ.)	Characterization of PZT thin film deposited on Si cantilever embedded in PDMS for tactile sensing as force and vibration detection
P-65	Sang-Don Bu (Chonbuk National Univ.)	Fabrication and characterization of lead free $(Bi_{0.5}Na_{0.5})TiO_3(Bi_{0.5}K_{0.5})TiO_3$/multi-wall carbon nanotubes composite
P-66	Su Hyoun Kwon (Ewha Womans Univ.)	Ferroelectric polarization-mediated transport of MoS_2 layers on c-cut $LiNbO_3$ single crystals
P-67	Atsushi Kobayashi (Osaka Prefecture Univ.)	Improved hydrogen resistance of $(Pb,La)(Zr,Ti)O_3$ capacitor by employing Sn-doped In_2O_3 top and bottom electrodes
P-68	Yoshinori Takikawa (Nagoya Institute of Tech.)	Dielectric dispersion in PCPB/MBBA mixtures showing the dual frequency characteristic
P-69	Yong Bin Lee (Seoul National Univ.)	Interfacial oxide engineering of hafnium zirconium oxide-based ferroelectric capacitors for ferroelectric and negative capacitance field effect transistor applications
P-70	Daiki Kamada (Osaka Prefecture Univ.)	Growth process of HfO_2:Y epitaxial thin films on (001) Si
P-71	Sanghyun Park (Hanyang Univ.)	Negative capacitance phenomenon depending on the wake-up effect and the measurement temperature in the ferroelectric Si:HfO_2 films
P-72	Shuhei Nakayama (Sophia Univ.)	Phase transition and ferroelectric property of Ca doped HfO_2 thin films

Number	Presenter	Title
P-73	Jangho Roh (Seoul National Univ.)	Ferroelectric characteristics of $Hf_{0.5}Zr_{0.5}O_2$-based Metal-ferroelectricInsulator-semiconductor capacitors for steep-slope transistor
P-74	Jinho Byun (Pusan national Univ.)	First-principles studies of the effects of oxygen vacancies on the HfO_2-based ferroelectric tunnel junction
P-75	So Yeon Lim (Sookmyung Womens Univ.)	Piezoresponse force microscopy investigation of the doped HfO_2 films annealed at different temperatures