IFFF 2002

ISAF XIII, ISIF XIV & FMA XIX

CONFERENCE OVERVIEW

	Tuesday 5.28	Wednesday 5.29	Thursday 5.30	Friday 5.31	Saturday 6.1
9:00		Opening Remarks	Parallel oral sessions	Parallel oral sessions	Excursions (Optional)
9:30		Plenary lecture (I)			
10:30	Parallel tutorials	*break*	*break*	*break*	
11:00		Parallel oral sessions	Parallel oral sessions	Parallel oral sessions	
12:30		*lunch*	*lunch*	*lunch*	
13:30		Parallel oral sessions	Parallel oral sessions	Parallel oral sessions	
15:15		*break*	*break*	*break*	
15:45		Parallel oral sessions	Plenary lecture (II)	Poster session (III)	
16:00					
16:45	Registration		Attraction		
17:15		*break*	*break*	*break*	
17:30		Poster session (I)	Poster session (II)	Plenary lecture (III)	
18:30				Closing Remarks	
19:00	Welcome “SHOEI” party	*break*	*break*	Farewell party	
19:15		Japanese night			
20:00			Banquet (Mitsui Garden Hotel Nara)		
End	20:30	20:30	22:30	20:30	

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PARALLEL ORAL SESSION DIGEST

Wednesday, 5.29

	Noh-Theatre	Reception Hall	Conference Room 1	Conference Room 3
11:00 – 12:30	Thin films (I)	Piezoelectrics (I)	Characterization (I)	Fundamental (I)
13:30 – 15:15	Thin films (II)	FeRAM & Devices (I)	Characterization (II)	Relaxors
15:45 – 17:15	Thin films (III)	Piezoelectrics (II)	Domain & Switching	Optics (I)

Thursday, 5.30

	Noh-Theatre	Reception Hall	Conference Room 1	Conference Room 3
9:00 – 10:30	Thin films (IV)	Piezoelectrics (III)	Characterization (III)	Fundamental (II)
11:00 – 12:30	Thin films (V)	FeRAM & Devices (II)	Characterization (IV)	Dielectrics (I)
13:30 – 15:15	Thin films (VI)	Piezoelectrics (IV)	Micro-Ferroelectrics	Optics (II)

Friday, 5.31

	Noh-Theatre	Reception Hall	Conference Room 1	Conference Room 3
9:00 – 10:30	Thin films (VII)	Piezoelectrics (V)	Characterization (V)	Device Integration
11:00 – 12:30	Thin films (VIII)	Pyroelectrics	Characterization (VI)	Microwave Devices
13:30 – 15:15	Thin films (IX)	Piezoelectrics (VI)	High-k and Gate Oxides	Dielectrics (II)

IFFF 2002

ISAF XIII, ISIF XIV & FMA XIX

POSTER SESSION DIGEST

Wednesday, 5.29

	Conference Room 2	Conference Room 4	Reception Hall	Gallery
17:30 – 19:00	Microwaves (I) Miscellaneous	Domain Fundamental, Theory, Model	Characterization	Thin films fabrication Pb system (I)

Thursday, 5.30

	Conference Room 2	Conference Room 4	Reception Hall	Gallery
17:30 – 19:00	Dielectrics (Capacitors, Ceramics) Ferroelectrics (Ceramics)	Piezoelectrics (I)	MFS, MFMIS FeRAM, Device, Integration, Circuits	Thin films fabrication Pb system (II), SBT system, BIT system, etc (I)

Friday, 5.31

	Conference Room 2	Conference Room 4	Reception Hall	Gallery
15:45 – 17:15	Single Crystals (Growth, Properties) Microwaves (II)	Piezoelectrics (II) Pyroelectrics Optics	Thin films fabrication etc (II) Thin films properties (II) Electrode High-k, Gate-oxide	Thin films properties (I)

IFFF Program

5/29 (Wed.)

Plenary

Noh Theatre

Plenary (I) (9:30 --- 10:30)

29A-PL1-1PL THE DOWN SCALING OF PIEZOELECTRIC AND PYROELECTRIC CERAMICS: MICRODEVICES, NANOFABRICATION, AND SIZE EFFECTS
N. Setter (EPFL)

Oral

Noh Theatre

Thin Films (I) (11:00 --- 12:30)

29A-TF1-1IN 11:00 <INVITED> A MASS-PRODUCTION COMPATIBLE METAL-ORGANIC CHEMICAL VAPOR DEPOSITION PROCESS OF $Pb(Zr,Ti)O_3$ THIN FILMS AT LOW TEMPERATURES.
S. Jeong, J.-S. Zhao, J. Lim and C. S. Hwang (Seoul National University)

29A-TF1-2C 11:30 IMPACT OF THICKNESS AND A-SITE STOICHIOMETRY ON THE RELIABILITY OF MOCVD $Pb(Zr,Ti)O_3$ THIN FILMS
D. V. Taylor, S. R. Gilbert, D. Ritchey, J. Amano, S. Aggarwal, T. Sakoda*, T. S. Moise*, S. R. Summerfelt*, F. Celii*, J. Rodriquez*, S. Martin* and K. J. Taylor* (Agilent Technologies and *Texas Instruments Inc.)*

29A-TF1-3C 11:45 REPRODUCIBILITY OF MOCVD-PZT THIN FILMS IN THE LONG TERM CONTINUOUS RUNNING BY PZT-MOCVD PRODUCTION MODULE
T. Yamada, T. Masuda, M. Kajinuma, H. Uchida, M. Uematsu, K. Suu and M. Ishikawa (ULVAC, Inc)

29A-TF1-4C 12:00 $Pb(Zr,Ti)O_3$ THIN FILMS DEPOSITED BY MOCVD FOR EMBEDDED MEMORY TECHNOLOGY
S. Aggarwal, S. Martin, F. Celii, L. Hall, J. Rodriguez, K. R. Udayakumar, S. R. Summerfelt, T. S. Moise and K.J. Taylor (Texas Instruments Inc.)

29A-TF1-5C 12:15 GROWTH OF PZT THIN FILMS BY LS-MOCVD FOR HIGH DENSITY FeRAM APPLICATION
J. K. Lee, M. -S. Lee, S. Hong**, W. Lee**, Y. K. Lee and Y. Park (Samsung Advanced Institute of Tech, *Samsung Electronics and **Inha University)*

Thin Films (II) (13:30 --- 15:15)

29A-TF2-1C 13:30 ELECTRICAL PROPERTIES OF DIELECTRIC AND FERROELECTRIC FILMS PREPARED BY PLASMA ENHANCED ATOMIC LAYER DEPOSITION
W.-J. Lee, B.-G. Chae, S.-O. Ryu, I.-K. You, S. M. Cho, B.-G. Yu and K.-I. Cho (ETRI)

29A-TF2-2C 13:45 CHARACTERIZATION OF PLZT FILM CAPACITOR DEGRADATION IN REDUCING AMBIENTS USING A NEWLY DEVELOPED IN-SITU PROBER
J. S. Cross and M. Tsukada (Fujitsu Laboratories)

29A-TF2-3C 14:00 DIELECTRIC AND POLARIZATION CHARERISTICS OF SOL-GEL DERIVED LEAD ZIRCONATE TITANATE THIN FILMS: EFFECT OF ERBIUM DOPING
R. S. Katiyar, A. Dixit, B. Roy, W. Jia and S. B. Majumder (University of Puerto Rico)

29A-TF2-4C 14:15 LEAD CONTENT CONTROL IN PZT FILMS BY USING Ar/O_2 SEQUENTIAL CRYSTALLIZATION ANNEALING
O. Arisumi , S. Nakamura, B. K. Moon, K. Yamakawa and K. Imai (Toshiba Corp. and *Infineon Technologies Corp.)*

29A–TF2–5C 14:30 EFFECT OF TEXTURED $Pb(Zr_{1-X}ti_X)O_3$ SEED LAYER ON FATIGUE IMPROVEMENT OF FERROELECTRIC $Pb_{0.99}[(Zr_{0.6}Sn_{0.4})_{0.85}Ti_{0.15}]_{0.98}Nb_{0.02}O_3$ THIN FILMS

K. H. Yoon, H. C. Shin and D. H. Kang (Yonsei University and *University of Suwon)*

29A–TF2–6C 14:45 ROLE OF FLUORITE FORMATION IN ORIENTATION SELECTION IN SOL–GEL DERIVED PZT FILMS ON PT ELECTRODE LAYERS

G. J. Norga, L. Fè, F. Vasiliu and O. Van der Bies** (IMEC vzw, *National Institute of Materials Physics and **KU Leuven)*

29A–TF2–7C 15:00 RELATIONSHIP BETWEEN ORIENTATION AND FERROELECTRIC PROPERTIES IN Ir/PZT/Ir EPITAXIAL CAPACITORS

K.Okuwada, J.Ishida, T.Yamada*, A.Sawabe* and K.Saito** (Toshiba Corporation, *Aoyama-Gakuin University and **Phillips Japan)*

Thin Films (III) (15:45 --- 17:15)

29A–TF3–1IN 15:45 <INVITED> DEVELOPMENT OF MATERIALS INTEGRATION STRATEGIES FOR ELECTROCERAMIC FILM–BASED DEVICES VIA COMPLEMENTARY IN SITU / EX SITU STUDIES OF FILM AND INTERFACE PROCESSES

O. Auciello, A. H. Muller, E. A. Irene*, A. M. Dhotel** and R. Ramesh** (Argonne National Laboratory, *University of North Carolina and **University of Maryland)*

29A–TF3–2C 16:15 Ln (Ln=La, Pr, Nd, Sm) DEPENDENCE ON FERROELECTRIC PROPERTY FOR $(Bi_{3.25}Ln_{0.75})(Ti_{2.97}V_{0.03})O_{12}$ THIN FILMS PREPARED AT LOW DEPOSITION TEMPERATURE

T. Sakai, T. Watanabe, T. Kojima, M. Osada, Y. Noguchi, M. Miyayama* and H. Funakubo (Tokyo Institute of Technology and *University of Tokyo)*

29A–TF3–3C 16:30 BOTH OHMIC CONTACT PROPERTIES OF TUNGSTEN PLUG AND FERROELECTRIC PROPERTIES OF $(Bi,La)_4Ti_3O_{12}$ THIN FILM IN STACKED CAPACITOR STRUCTURE

S.- Y. Kweon, N.- K. Kim, E.- S. Choi, S.- J. Yeom and J.- S. Roh (HYNIX Semiconductor Inc.)

29A–TF3–4C 16:45 FERROELECTRIC CHARACTERISTICS OF $Bi_{4-X}La_XTi_3O_{12}$ THIN FILMS CRYSTALLIZED AT LOW TEMPERETURES

K. Tanaka, T. Uno and Y. Shimada (Matsushita Electric Industrial Co.)

29A–TF3–5C 17:00 SOL–GEL HYDROTHERMAL SYNTHESIS OF BARIUM STRONTIUM TITANATE THIN FILMS

K. Zelonka, M. Sayer, H. Hammad and A. P. Freundorfer (Queen's University)

Reception Hall

Piezoelectrics (I) (11:00 --- 12:30)

29B–PI1–1IN 11:00 <INVITED> CRITICAL ISSUES IN SINGLE CRYSTAL GROWTH OF PMN:PT BY SEEDED POLYCRYSTAL CONVERSION

H. M. Chan and M. P. Harmer (Lehigh Univ.)

29B–PI1–2C 11:30 ON ORIGIN OF THE ENHANCED PIEZOELECTRIC RESPONSE ALONG A NONPOLAR DIRECTION IN SIMPLE PEROVSKITES

D. Damjanovic, F. Brem and N. Setter (Swiss Federal Institute of Technology – EPFL)

29B–PI1–3C 11:45 HIGH TEMPERATURE, HIGH PERFORMANCE MATERIALS

T. R. Shrout, R. Eitel, S. Zhang, C. A. Randall, P. Rehrig and E. Alberta* (Penn State University and *TRS Ceramics, Inc.)*

29B–PI1–4C 12:00 PIEZOELECTRIC PROPERTIES DEPENDENCE ON THICKNESS OF PZT FILMS FABRICATED BY AEROSOL DEPOSITION METHOD

M. Lebedev and J. Akedo (AIST)

29B–PI1–5C 12:15 APPARENT REDUCTION IN THE VALUE OF THE d_{33} PIEZOELECTRIC COEFFICIENT IN PZT THICK FILMS

R. A. Dorey and R. W. Whatmore (Cranfield University)

FeRAM & Devices (I) (13:30 --- 15:15)

29B-FD1-1IN 13:30 <INVITED> KEY TECHNOLOGIES FOR HIGH DENSITY FERAM APPLICATIONS
N. Nagel (Infineon Technologies)

29B-FD1-2C 14:00 SCALING AND PERFORMANCE ISSUES OF LOW TEMPERATURE CRYSTALLIZED $Pb(Zr,Ti)O_3$ THIN FILMS FOR HIGH DENSITY FRAM DEVICES
S.-H. Kim, C. Y. Koo, D.-S. Lee, H.-J. Woo, D. Y. Park, J. Yang and J. Ha (INOSTEK Inc.)

29B-FD1-3C 14:15 A LOW TEMPERATURE LNO/PZT/LNO FERROELECTRIC CAPACITOR-OVER-INTERCONNECT (COI) FERAM MODULE FOR ADVENCED
S. L. Lung, S. S. Chen, C. W. Tsai, T. T. Sheng, S. C. Lia, C. L. Liu*, T. B. Wu* and R. Liu (Macronix International Co and *National Tsing Hua University)*

29B-FD1-4C 14:30 THE CONTROL OF LEAD LOSS FOR PZT BASED FRAM
F. Chu and G. Fox (Ramtron International Corporation)

29B-FD1-5C 14:45 NOVEL PROCESS INTEGRATION OF PZT CAPACITOR FOR 32M FRAM AND BEYOND
K. M. Lee, K. S. Park, S. D. Nam, S. W. Lee, S. H. Joo, H. G. An, H. J. Kim, M. S. Lee, S. O. Park, U. I. Chung and J. T. Moon (Samsung Electronics Co.)

29B-FD1-6C 15:00 LOW THERMAL BUDGET PROCESS OF THIN $SrBi_2Ta_2O_9$ FILM FOR 3V OR LOWER VOLTAGE OPERATION OF HIGH DENSITY FERAM
M. Lim, V. Joshi, S. Narayan, J. Celinska, Z. Chen, C.A. Paz De Arouujo and L. D. McMillan (Symetrix Corporation)

Piezoelectrics (II) (15:45 --- 17:15)

29B-PI2-1C 15:45 VIBRATION CHARACTERISTICS OF MICROMACHINED LEAD ZIRCONATE TITANATE DIAPHRAGMS
E. Hong, S. V. Krishnaswamy, C. B. Freidhoff and S. T.-McKinstry (The Pennsylvania State University)

29B-PI2-2C 16:00 SOUND GENERATION WITH PIEZOELECTRIC ACTUATORS FOR ACTIVE NOISE REDUCTION APPLICATIONS
T. Morita, E. L. Colla and N. Setter (Swiss Federal Institute of Technology)

29B-PI2-3C 16:15 EVALUATION OF LOW TEMPERATURE PROCESSING OF LEAD ZIRCONATE TITANATE (53/47) CERAMICS DERIVED FROM 1-PROPANOL BASED SOL-GEL STOCK SOLUTIONS
L. Wu, B.-Huei Chen, T.-Y. Chang, J. L.- Hunang and C.-L. Huang (National Cheng Kung University)

29B-PI2-4C 16:30 LOW TEMPERATURE SINTERING OF PIEZOELECTRIC THICK FILMS DERIVED FROM A NOVEL SOL-GEL ROUTE
W. Zhu, Z. H. Wang, C. L. Zhao and O. K. Tan (Nanyang Technological University)

29B-PI2-5C 16:45 PROCESSING AND CHARACTERIZATION OF PRESSURE CONSOLIDATED LEAD-FREE PIEZOCERAMICS BASED ON ALKALINE NIOBATES
C. Pithan, B. Malic, E. Ringgard** and R. Waser (Institute for Electroceramic Materials, *Jozef Stefan Institute and **Ferroperm Piezoceramics A/S)*

29B-PI2-6C 17:00 PREPARATION OF ORIENTATION-CONTROLED $Pb(Zr,Ti)O_3$(PZT) THICK FILM PREPARED BY HIGH-SPEED MOCVD AND THEIR PROPERTY
S. Yokoyama, T. Ozeki, T. Oikawa, Y. Ichikawa, Y. Yamashita*, T. Ochiai* and H. Funakubo (Tokyo Institute of Technology and *TOYO Corporation)*

Conference Room 1

Characterization (I) (11:00 --- 12:30)

29C-CH1-1IN 11:00 <INVITED> IN-SITU SYNCHROTRON X-RAY STUDIES OF METAL-ORGANIC CHEMICAL VAPOR DEPOSITION OF $Pb(Zr_xTi_{1-x})O_3$ THIN FILM
S. K. Streiffer, G. B. Stephenson*, J. A. Eastman*, D. Fong*, M. E. M. Aanerud**, C. Thompson*,**, O. Auciello*, G.-R. Bai* and L. Thompson* (*Materials Science Division, Argonne National Laboratory and **Northern Illinois University)*

29C-CH1-2C 11:30 ANNEALING EFFECT OF PHOTOELECTRON SPECTRA IN $SrBi_2Ta_2O_9$ FILM
M. Takahashi, K. Kodama, M. Noda, P. Hedblom, A. Grishin* and M. Okuyama (Osaka University and *Royal Institute of Technology)*

29C-CH1-3C 11:45 ELECTRICAL PROPERTIES AND MICROSTRUCTURES OF FERROELECTRIC $PbZrTiO_3$ THIN FILMS PREPARED BY LASER ANNEALING
C.-F. Chou, H.-C. Pan and C.-C. Chou (National Taiwan University)

29C-CH1-4C 12:00 DIELECTRIC PROPERTIES OF CAPACITOR MATERIALS IN THE OPTICAL FREQUENCY RANGE
M. Biegalski and S. T.-McKinstry (Pennsylvania State University)

29C-CH1-5C 12:15 ELECTRONIC STRUCTURES OF $Bi_4Ti_3O_{12}$ THIN FILM AND SINGLE CRYSTAL BY RESONANT SOFT-X-RAY EMISSION SPECTROSCOPY
T. Higuchi, K. Kudoh, T. Takeuchi, Y. Masuda, S. Shin** and T. Tsukamoto (Tokyo University of Science, *Hachinohe Institute of Technology and **University of Tokyo)*

Characterization (II) (13:30 --- 15:15)

29C-CH2-1IN 13:30 <INVITED> SCANNING NONLINEAR DIELECTRIC MICROSCOPY -A HIGH RESOLUTION TOOL FOR OBSERVING FERROELECTRIC DOMAINS AND NANO-DOMAIN
Y. Cho (Tohoku University)

29C-CH2-2C 14:00 WAFER-LEVEL TESTING OF SINGLE 1T-1C FERROELECTRIC MEMORY CELLS
S. Tiedke, J. Rickes, T. Schmitz and R. Waser (aixACCT Systems GmbH)

29C-CH2-3C 14:15 PHOTOINDUCED DOMAIN PINNING AND HYSTERESIS CHANGES IN FERROELECTRIC THIN FILMS STUDIED BY SCANNING FORCE MICROSCOPY
A. Gruverman, A. I. Kingon, B. J. Rodriguez and R. J. Nemanich (North Carolina State University)

29C-CH2-4C 14:30 NOVEL NUMERICAL METHOD TO CORRECT FOR BOTH CIRCUIT DISTORTIONS AND PASSIVE LAYERS EFFECT AFFECTING SAWYER-TOWER FERROELECTRIC THIN FILMS HYSTERESIS MEASUREMENTS
R. Bouregba and G. Poullain (Laboratoire CRISMAT-ISMRA et Université de Caen)

29C-CH2-5C 14:45 ROLE OF NON-180° DOMAIN SWITCHING IN ELECTRIC PROPERTIES OF $Pb(Zr,Ti)O_3$ THIN FILMS
K. Saito, T. Oikawa, T. Kurosawa, T. Akai and H. Funakubo* (*Philips Japan Ltd. and **Tokyo Institute of Technology)*

29C-CH2-6C 15:00 THICKNESS-DEPENDENT LEAKAGE CURRENT OF (PVDF/$PbTiO_3$) PYROELECTRIC BILAYER THIN FILM DETECTORS
M. C. Kao, C. M. Wang and Y. C. Chen (National Sun Yat-Sen University and *Cheng-Shiu Institute of Technology)*

Domain & Switching (15:45 --- 17:15)

29C-DS-1IN 15:45 <INVITED> INFLUENCE OF DOMAIN ORIENTATION AND GRAIN SIZE ON PZT THIN FILM PROPERTIES
B. A. Tuttle, G. Brennecka, P. G. Clem, T. J. Boyle, J. T. Dawley, M. A. Rodriguez, S. Streiffer, G. R. Bai* and A. Auciello* and R. Ramesh** (Sandia National Laboratories, *Argonne National Laboratories and **University of Maryland)*

29C-DS-2C 16:15 MODEL RELATING POLARIZATION SWITCHING AND CRYSTALLOGRAPHIC TEXTURE OF PZT FOR FRAM APPLICATIONS
G. R. Fox, S. Sun and S. Summerfelt (Ramtron International Corporation and *Texas Instruments Corporation)*

29C-DS-3C 16:30 NON-KOLMOGOROV-AVRAMI KINETICS OF SWITCHING IN FERROELECTRIC THIN
A. Tagantsev, I. Stolichnov, E. Colla, N. Setter, J. S. Cross and M. Tsukada* (Swiss Federal Institute of Technology and *Fujitsu Laboratories, Ltd.)*

29C-DS-4C 16:45 A RANDOM-FIELD MODEL FOR FERROELECTRIC DOMAIN DYNAMICS AND POLARIZATION REVERSAL
D. Viehland and J. F. Li (Virginia Tech)

29C-DS-5C 17:00 SPONTANEOUS BACKSWITCHING AS A PERFECT TOOL FOR NANO-SCALE DOMAIN PATTERNING
V. Shur, E. Rumyantsev, E. Nikolaeva, E. Shishkin, D. Fursov, R. Batchko, M. Fejer* and R. Byer* (Ural State University and *Stanford University)*

Conference Room 3

Fundamental (I) (11:00 --- 12:30)

29D-FU1-1IN 11:00 <INVITED> A THERMODYNAMIC MODEL FOR THE MORPHOTROPIC PHASE BOUNDARY REGION IN LEAD ZIRCONATE TITANATE AND RELATED MATERIALS
A. J. Bell (University of Leeds)

29D-FU1-2C 11:30 IMPROVED MIXING RULE ON PERMITTIVITY
K. Wakino (Murata Manufacturing Company Ltd. and Ritsumeikan University)

29D-FU1-3C 11:45 PHENOMENOLOGICAL THEORY OF FINITE SIZE EFFECTS IN NANOPHASE FERROELECRTICS
E. K. Akdoğan and A. Safari (Rutgers University)

29D-FU1-4C 12:00 FIRST-PRINCIPLES CALCULATIONS OF NEW FERROELECTRIC MATERIAL $SnTiO_3$
Y. Konishi, M. Ohsawa and Y. Yonezawa (Fuji Electric Corporate Research and Development)

29D-FU1-5C 12:15 NEW ACCURATE TECHNIQUE FOR SOLVING THE LIMM EQUATION AND A COMPARISON WITH OTHER METHODS
S. B. Lang (Ben-Gurion University of the Negev)

Relaxors (13:30 --- 15:15)

29D-RE-1C 13:30 TEMPERATURE AND POLING FIELD DEPENDENCES OFFERROELECTRIC PROPERTIES IN $Pb[(Zn_{1/3}Nb_{2/3})_{0.91}Ti_{0.09}]O_3$ SINGLE CRYSTAL
T. Ogawa, Y. Numamoto and Y. Yamauchi (Shizuoka Institute of Science and Technology)

29D-RE-2C 13:45 TEMPERATURE DEPENDENCE OF FREQUENCY AND DIELECTRIC CONSTANTS OF PURE AND DOPED PBSZT CERAMICS IN THE MORPHOTROPIC PHASE BOUNDARY
B. Guiffard, E. Boucher, L. Lebrun and D. Guyomar (INSA LYON)

29D-RE-3C 14:00 EPITAXIAL PMN-PT PIEZOELECTRIC THICK FILM HETEROSTRUCTURES FOR HIGH FREQUENCY MEICAL ULTRASOUND TRANSDUCERS
C. B. Eom, S. D. Bu, D. M. Kim, S. K. Streiffer, W. Tian**, X. Q. Pan**, T. Yoshimura*** and S. Trolier-McKinstry*** (University of Wisconsin-Madison, *Argonne National Laboratory, **University of Michigan and ***The Pennsylvania State University)*

29D-RE-4C 14:15 TOP-SEEDED SOLUTION GROWTH OF $Pb[(Zn_{1/3}Nb_{2/3})_{0.93}Ti_{0.07}]O_3$ SINGLE CRYSTAL
T. Karaki, M. Nakamoto and M. Adachi (Toyama Prefectural University)

29D-RE-5C 14:30 CRYSTALLINE PROPERTIES OF FERROELECTRIC-RELAXOR PMN-PT THIN FILMS BY PULSED LASER DEPOSITION
S. K. Singh, P. A. Thomas and S. B. Palmer (University of Warwick)

29D-RE-6C 14:45 PRODUCTION AND GROWTH OF COMPOSITIONALLY UNIFORM SINGLE CRYSTALS OF PMN-PT
P. W. Rehrig, W. S. Hackenberger and T. R. Shrout (TRS Ceramics, Inc. and *Penn State University)*

29D-RE-7C 15:00 DIELECTRIC DISPERSION AND DISTRIBUTION OF THE RELAXATION TIMES OF THE RELAXOR PLZT CERAMICS
J. Banys, A. Kajokas, A. Matulis, A. Brilingas and J. Grigas (Vilnius University and *Institute of Semiconductors Physics,Lith. Ac. Sci)*

Optics (I) (15:45 --- 17:15)

29D-OP1-1IN 15:45 <INVITED> PLZT THIN FILM OPTICAL WAVEGUDE DEVICES
K. Nashimoto (Fuji Xerox Lightwave Technologies Co., Ltd)

29D-OP1-2C 16:15 FABRICATION OF BRAGG DIFFRACTION TYPE ACOUSTO-OPTIC DEVICE USING PIEZOELECTRIC PZT THIN FILMS
C. Lee, S. Kim, T.-H. Sung** and K. No (KAIST, *Korea University of Technology and Education and **Korea Electric Power Research Institute)*

29D-OP1-3C 16:30 FERROELECTRIC THIN FILM OPTICAL DETECTORS FOR RETINAL PROSTHESIS
A. Zomorrodian, N. J. Wu, S. Wilczak, A. Ignatiev, T. Bensaoula and C. A. Garcia* (University of Houston and *University of Texas)*

29D-OP1-4C 16:45 IMPROVEMENT OF $LiNbO_3$ SURFACE ROUGHNESS BY USING A MULTISTEP PROCESS: RELATIONSHIP BETWEEN OPTICAL AND AFM ANALYSIS
X. Lansiaux, E. Dogheche and D. Rémiens (Université de Valenciennes)

29D-OP1-5C 17:00 FERROELECTRIC SWITCHING AND ELECTROCLINIC EFFECT IN LIQUID CRYSTALS STUDIED BY SECOND HARMONIC GENERATION
Y. G. Fokin, T. V. Murzina, O. A. Aktsipetrov, S. Soria and G. Marowsky* (Moscow State University and *Laser-Laboratorium Goettingen e.V.)*

Poster

Conference Room 2

Microwaves (I) (17:30 --- 19:00)

29E-MW1-1P 8 GHz MICROWAVE FILTERS BASED ON BULK ACOUSTIC WAVES IN PIEZOELECTRIC ALN THIN FILMS
R. Lanz and P. Muralt (Swiss Federal Institute of Technology EPFL)

29E-MW1-2P MICROWAVE PROPERTIES OF THIN BSTO FILMS DEPENDING ON DEPOSITION CONDITIONS.
S. V. Razumov, A. V. Tumarkin, M. M. Gaidukov and A. G. Gagarin (St. Petersburg State Electrotechnical University)

29E-MW1-3P DESIGN OF MULTILAYER MICROWAVE DEVICES BY COUPLING MATRIX ALGORITHM FOR LTCC PROCESSER
C.-M. Lei, I.-N. Lin, Y.-C. Chen and H.-F. Cheng* (National Tsing-Hua University Hsinchu and *National Taiwan Normal University Taipei)*

29E-MW1-4P 60GHz PHASE SHIFTERS BASED ON BSTO FERROELECTRIC FILM
A. Kozyrev, A. Ivanov, O. Soldatenkov, M. Gaidukov, A. Gagarin, A. Tumarkin, S. Razumov, N. Samoylov and S. Augunova (Electrotechnical University)

29E-MW1-5P OPTIMIZATION OF REFLECTION TYPE MICROWAVE PHASE SHIFTER WITH RESPECT TO SENSITIVITY TO STATISTICAL DISPERSION OF CIRCUIT CHARACTERISTICS
O. G. Vendik, S. P. Zubko and M. A. Nikol'ski (Elecrotechnical University)

29E-MW1-6P A 180° X-BAND HIGH PERFORMANCE PHASE SHIFTER
B. Acikel, T. R. Taylor, P. J. Hansen, J. S. Speck and R. A. York (University of California)

29E-MW1-7P TUNABLE MICROWAVE FILTERS USING FERROELECTRIC MATERIALS
O. G. Vendik, I. B. Vendik, V. V. Pleskachev, M. A. Nikol'ski and M. L. Khazov. (Electrotechnical University)

29E-MW1-9P FABRICATION AND PROPERTIES OF MULTIELECTRODE SLOTLINE MICROWAVE RESONATOR BASED ON FERROELECTRIC FILM
S. F. Karmanenko, I .G. Mironenko, T. Inushima, A. A .Ivanov and A. A. Semenov (Electrotechnical University and *Tokai University)*

29E-MW1-10P PASSBAND AND STOPBAND TUNABLE FILTERS BASED ON FERROELECTRIC MULTISLOT RESONATORS

I. G. Mironenko., A.A. Ivanov, S. S. Karmanenko., A. A. Melkov and A. A. Semenov (Electrotechnical University)*

29E-MW1-11P CHARACTERIZATION OF TUNABLE BANDPASS FILTERS AND PHASE SHIFTERS USING BST THIN FILMS FOR MICROWAVE APPLICATION.

I.-D. Kim, J.-H. Park, M.-H. Lim, M.-S. Kim, H.-G. Kim, K.-B. Kim, T.-S. Yun* and J.-C. Lee* (KAIST and *Kwangwoon University)*

29E-MW1-12P RESULTS OF FULL-WAVE ANALYSIS OF FERROELECTRIC MULTISLOTLINE AND EXPERIMENTAL STUDY OF THE PHASE SHIFTER

I. G. Mironenko, A. A. Ivanov, T. Inushima, S. F. Karmanenko and A. A. Semenov (Electrotechnikal University and *Tokai University)*

29E-MW1-13P MICROWAVE DIELECTRIC PROPERTIES OF METAL-FERROELECTRIC-OXIDE-SEMICONDUCTOR STRUCTURE

S. Abadei (Chalmers University of Technology)

29E-MW1-14P THEORY AND EXPERIMENTS OF TUNABLE MICROWAVE COUPLED MICROSTRIP PHASE SHIFTERS USING $Ba_xSr_{1-x}TiO_3$ THIN FILMS

F. V. Keuls, C. Mueller, R. Romanofsky and F. Miranda (NASA)

29E-MW1-15P FINLINE FERROELECTRIC PHASE SHIFTERS AND 30GHz ANTENNA ARRAY ON THEIR BASE.

A. Golovkov, D. Kalinikos, O. Buslov, V. Keis, M. Sugak, A. Kozyrev, P. Kulik and L. Sengupta (St. Petersburg Electrotechnical University and *Paratek Microwave Inc.)*

29E-MW1-16P THE DESIGN OF OPTIMAL CONSTRUCTION OF Ka-BAND COPLANAR PHASE SHIFTER FOR LMDS PHASED ARRAY ANTENNA.

A. Kozyrev, V. Osadchy, A. Pavlov, M. Gaidukov, A. Gagarin, A. Vishnevetsky, A. Zverev, A. Fedotov and L.Sengupta (St. Petersburg Electrotechnical University and *Paratek Microwave Inc.)*

Miscellaneous (17:30 --- 19:00)

29E-OT-1P DIELECTRIC AND MAGNETIC PROPERTIES OF FERROELECTROMAGNET $Pb(Fe_{1/3}Nb_{2/3})O_3$ (PFN) CERAMICS

J. T. Wang and M. Mbonye (Southern University and A&M College)

29E-OT-2P POLARIZED TRANSMISSION INTENSITY STUDIES OF OFF-ZONE-CENTER $TlMeX_2$ INCOMMENSURATE SEMICONDUCTORS-FERROELECTRICS

N. Mamedov, Y. Shim and N. Yamamoto (University of Osaka Prefecture)

29E-OT-3P MEMORY EFFECT IN LAYERED SEMICONDUCTOR $TlInS_2$ WITH INCOMMENSURATE PHASE

R. A. Suleymanov, T. G. Mammadov*, S. Özdemir** and K. R. Allakhverdiyev*,*** (*Azerbaijan National Academy of Sciences, **Middle East Technical University and ***Marmara Research Center of TUBITAK)*

29E-OT-4P THERMAL EXPANSION OF LAYERED CRYSTALS $TlInS_2$

N. A. Abdullayev, T. G. Mammadov and R. A. Suleymanov (Azerbaijan National Academy of Sciences)

29E-OT-5P ANALYSIS OF THE LATERAL AND SPURIOUS MODES OF PZT/EPOXY 1-3 COMPOSITE RINGS

C. P. Chong, H. L. W. Chan and P. C. K. Liu (The Hong Kong Polytechnic University and *ASM Assembly Automation Ltd.)*

29E-OT-6P LOW-FREQUENCY DIELECTRIC DISPERSION IN TRIGLYCINE SULPHATE UNDER MICROWAVE IRRADIATION

G. I. Ovtchinnikova, Y. A. Pirogov and A. N. Soloshenko (Moscow State University)

29E-OT-7P PECULIARITIES OF RADIOSPECTROSCOPY LINES SHAPE IN NANOMATERIALS

M. D. Glinchuk, A. N. Morozovskaya, A. M. Slipenyuk and I. P. Bykov (NASc of Ukraine)

29E-OT-8P SYNTHESIS OF PLATELET $SrTiO_3$ BY EPITAXIAL GROWTH ON $Sr_3Ti_2O_7$ CORE PARTICLES

M. E. Ebrahimi, M. Allahverdi and A. Safari (Rutgers University)

29E-OT-9P STUDIES OF PROTON IRRADIATED 0.9PMN-0.1PT/P(VDF-TrFE) 0-3 COMPOSITES

K. H. Lam, H. L. W. Chan, C. L. Choy, E. Z. Luo and I. H. Wilson* (The Hong Kong Polytechnic University and *The Chinese University of Hong Kong)*

29E-OT-10P THE INFLUENCE OF DEFORMATION ON THE PHASE TRANSITION TEMPERATURES IN $TlInS_2$ TYPE CRYSTALS.

K. R. Allakhverdiyev **, T. G. Mammadov*, T. S. Mammadov*, M.-H. Seyidov* and R. A. Suleymanov* (*Azerbaijan National Academy of Sciences and ** Marmara Research Center of TUBITAK)*

29E-OT-11P MATLAB AND PSPICE MICRO-MODELING OF PIEZOELECTIC TRANSFORMER FOR CCFL DRIVE

L. Hwang, J. Yoo, B. Lee, J. Kim, E. Jang, M. Cho, J. Kim** (Semyung University, *Daewon Science College and **Samsung Electro-Mechanics co.)*

29E-OT-12P A STUDY ON THE T5 FLUORESCENT LAMP BALLAST USING CONTOUR VIBRATION MODE PIEZOELECTRIC TRANSFORMER USING A ONECHIP MICROCONTROLLER

L. Hwang, J. Yoo, B. Lee, J. Kim, E. Jang, C. Lee, M. Cho** and J. Kim*** (Semyung University, *Myongji University, **Daewon Science College and ***Samsung Electro-Mechanics co.)*

29E-OT-13P OPTICAL PROPERTIES OF DOPED-SILICA FILMS PREPARED BY MICROEWAVE PLASMA-ENHANCED CHEMICAL VAPOR DEPOSITION

C.-K. Kao, C.-H. Tsai and I.-N. Lin (National Tsing-Hua University)

29E-OT-14P PROPERTIES OF PZT NANO-POWDER DOPED SILICA FILMS PREPARED BY SOL-GEL PROCESS

P.-J. Yuen, J.-S. Kao*,**, C.-H. Tsai* and I.-N. Lin* (*National Tsing-Hua University and **National Science Council)*

29E-OT-15P RELAXATION CHARACTERISTICS OF $Ag(Ta,Nb)O_3$ THIN FILM VARACTORS

J.-H. Koh, A. Lisauskas and A. M. Grishin (Royal Institute of Technology)

29E-OT-16P VARIABLE EMITTANCE RADIATOR USING METAL INSULATOR PHASE TRANSITION IN $La_{1-x}Sr_xMnO_3$

A. Ochi, T. Mori, Y. Shimakawa, Y. Kubo, A. Okamoto, Y. Nakamura* S. Tachikawa**, A. Ohnishi** and K. Shimazaki** (NEC Corp., *Mechanical System Department NEC TOSHIBA Space Systems Ltd. and **Institute of Space and Astronautical Science)*

29E-OT-17P CFRP PASSIVE COMPOSITE DAMPER BY USE OF PIEZOELECTRIC POLYMER/CERAMIC

T. Tanimoto (Shonan Institute of Technology)

29E-OT-18P DYNAMIC AND CONTROL OF COMPOSITE PLATE STRUCTURES CONTAINING FERROELECTRIC POLYMER LAMINAS. APPLICATION TO ANTIFOULING PROCESS.

M. Rahmoune and M. A. A. Hamdi (Mechanic Research Laboratory)

29E-OT-19P PREPARATION AND PERFORMANCE OF NiCuZn-Co_2Z COMPOSITE FERRITE

W. Qu, X. Wang and L. Li (Tsinghua University)

29E-OT-20P LIGHT MODULATION PROPERTIES OF NOVEL PIEZOELECTRIC POLYMER

Y. Tajitsu (Yamagata University)

29E-OT-21P A NOVEL LIQUID DISPENSE DEVICE USING FLUIDIC INERTIA FORCE

S. Takahashi, H, Kitagawa and Y, Tomikawa (Olympus Optical Co., ltd,)

Conference Room 4

Domain (17:30 --- 19:00)

29F-DM-1P TEMPERATURE DEPENDANT DOMAIN STRUCTURES OF LITHIUM NIOBATE SINGLE CRYSTALS

D. Xue, R. Jayavel, K. Terabe*, K. Kurimura* and K. Kitamura (AML/NIMS and *NML/NIMS)*

29F-DM-2P DOMAIN MOTIONS IN EPITAXIAL $Pb(Zr,Ti)O_3$ THIN FILM CAPACITORS BY THE PIEZORESPONSE IMAGING TECHNIQUE

T. Yagi, H. Fujisawa, M. Shimizu and H. Niu (Himeji Institute of Technology)

29F-DM-3P DOMAIN STRUCTURE IN CONGRUENT AND STOICHIOMETRIC LITHIUM TANTALATE CONTROLLED BY ELECTRIC FIELD

V. Shur, E. Shishkin, E. Nikolaeva, D. Fursov, A. Chernykh, A. Shur,K. Terabe, S. Kurimura* and K. Kitamura* (Ural State University and *National Institute for Materials Science)*

29F-DM-4P INVESTIGATION OF THE INFLUENCE OF A IONIC BOMBARDMENT ON THE DOMAIN PROPAGATION IN PZT THIN FILMS.

B. Gautier, C. Soyer , E. Cattan*, J. C. Labrune and D. Remiens* (Université de Franche-Comté and *Université de Valenciennes)*

29F-DM-5P DOMAIN OBSERVATION IN PZN-PT MIXED CRYSTAL

T. Araki, M. Iwata, M. Maeda, I. Suzuki, H. Ohwa, Y. Yasuda*, H. Orihara** and Y. Ishibashi*** (Nagoya Institute of Technology, *Gifu University, **Nagoya University and ***Aichi Shukutoku University)*

29F-DM-6P BASIC APPROACH TO PERIODICAL AND SELF-ORGANIZED SUBMICRON AND NANOSCALE DOMAIN PATTERNING IN FERROELECTRICS BY ELECTRICAL POLING

V. Shur (Ural State University)

29F-DM-7P INVESTIGATION OF DOMAIN STRUCTURE IN MULTILAYER CERAMIC CAPACITORS USING PIEZORESPONSE FORCE MICROSCOPE

H. Okino, K. Yuzawa and T. Yamamoto (National Defense Academy)

Fundamental, Theory, Model (17:30 --- 19:00)

29F-FD-1P STRUCTURAL TRANSFORMATION AND PRESSURE-INDUCED PHASE TRANSITION IN PZT

V. Bornand, J. Haines, J. Rouquette, M. Pintard and P. Papet (Laboratoire de Physicochimie de la Matière Condensée)

29F-FD-2P A DIFFERENCE-EQUATION BASED MODEL FOR FERROELECTRIC THIN FILM CAPACITORS

Shunming Sun and T. S. Kalkur (University of Colorado)

29F-FD-3P SIMULATION OF PTCR BEHAVIOUR IN N-DOPED $BaTiO_3$ CERAMICS

L. Mitoseriu, **, M. Viviani***, D. Ricinschi****, C. Fedor** and P. Nanni* (*Univ. of Genoa, **"Al. I. Cuza" Univ., ***Via de Marini 6 and ****Osaka Univ.)*

29F-FD-4P PHASE TRANSITION IN LAYERED PEROVSKITES: A MONTE CARLO SIMULATION

C. H. Li, J. S. Zhu, X. M. Lü and Y. N. Wang (Nanjing University)

29F-FD-5P COMPARISON BETWEEN MASON'S EQUIVALENT CIRCUIT AND COMPLEX SERIES DYNAMICS FROM ENERGETIC POINT OF VIEW

M. Ohki and K. Toda (National Defense Academy)

29F-FD-6P PROPERTIES OF PROTOTYPE SOLID SOLUTIONS OF $KNbO_3$, $KTaO_3$ AND $LiTaO_3$ ON THE BASIS OF FIRST-PRINCIPLE COMPUTATIONS AND EXPERIMENT

S. A. Prosandeev **, E. Cockayne*, B. Burton*, V. A. Trepakov*** ****, S. Kapphan***, M. S. Savinov***** and L. Jastrabik***** (*National Institute of Standards and Technology, **Rostov State University, ***University of Osnabruck, ****A. F. Ioffe Physical-Technical Institute and *****Institute of Physics AS CR)*

29F-FD-7P FINITE ELEMENT ANALYSIS OF RESIDUAL STRESS CONTRIBUTION TO DOMAIN LOCKING AND STABILITY IN PIEZOELECTRIC THIN FILMS

G. White (NIST)

29F-FD-8P TERAHERTZ TIME DOMAIN SPECTROSCOPY OF PHONON-POLARITON IN FERROELECTRIC LITHIUM NIOBATE CRYSTALS

S. kojima (University of Tsukuba)

29F-FD-9P PIEZOCERAMIC COEFFICIENT HYSTERESIS UNDER HIGH STRESS AND ELECTRICAL FIELD

E. Boucher, G. Sebald and D. Guyomar (INSA de LYON)

29F-FD-10P STUDY OF DIPOLE ORDERING IN $K_{1-x}Li_xTa_{1-y}Nb_yO_3$ BY RAMAN

P. Galinetto, E. Giulotto, G. Samoggia, V. Trepakov **, S. Kapphan**, L. Jastrabik*** and L. Boatner**** (Università di Pavia and INFM, **A.F. Ioffe Physical-Technical Institute, ***University of Osnabrück, ****Institute of Physics AS CR, ***** Oak Ridge Nat. Lab.)*

29F-FD-11P THE EFFECTS INDUCED BY POLING IN A PZT MATERIAL

M. Popa and M. Kakihana (Tokyo Institute of Technology)

29F-FD-12P STRUCTURAL CHARACTERIZATION OF A LEAD ZIRCONATE MATERIAL OBTAINED BY A WET CHEMICAL ROUTE

M. Popa, E. R. Camargo, J. Frantti and M. Kakihana (Tokyo Institute of Technology)

29F-FD-13P KINETICS OF FATIGUE AND REJUVENATION EFFECTS IN BULK CERAMICS AND SINGLE CRYSTALS

V. Shur, I. Baturin, E. Rumyantsev, E. Nikolaeva, E. Shishkin, A. Shur, D. Lupascu, J. Nuffer*, C. Randall**, and M.Ozgul** (Ural State University, *Darmstadt University of Technology and **The Pennsylvania State University)*

29F-FD-14P COMPUTER SIMULATION OF P-E HYSTERESIS OF FERROELECTRICS

Y. Kubota, H. Kakemoto, S. Wada and T. Tsurumi (Tokyo Institute of Technology)

29F-FD-15P FERROELECTRIC PHASE TRANSITION IN Bi-LAYERED $SrBi_2Ta_2O_9$

H. Yamashita, K. Yoshio, W. Murata and A. Onodera (Hokkai-Gakuen University)

29F-FD-16P ELECTRICAL CONDUCTION MECHANISM IN $Bi_4Ti_3O_{12}$

M. Takahashi, Y. Noguchi and M. Miyayama (University of Tokyo)

29F-FD-17P DIELECTRIC RESPONSE IN MICROSCOPICALLY NONUNIFORM MEDIA: $KTa_{1-x}Nbx\ O_3$ AND $K_{1-x}Li_xTaO_3$.

S. A. Prosandeev,**, V. A. Trepakov***,****, S. E. Kapphan**** and L. Jastrabik***** (*National Institute of Standards and Technology, ** Rostov State University, ***University of Osnabrück, ****A. F. Ioffe Physical-Technical Institute and ****Institute of Physics AS CR)*

29F-FD-18P MONTE CARLO SIMULATION OF FERROELECTRIC PROPERTIES

D. Bolten, U. Böttger and R. Waser (Univ. of Aachen)

29F-FD-19P OPTICAL OBSERVATION FOR DOMAIN STRUCTURES AND DIELECTRIC MEASUREMENT IN RELAXOR FERROELECTRICS PZN-PT NEAR MORPHOTROPIC

K. Fujita, N. Yasuda, H. Ohwa*, M. Iwata**, H. Orihara*** and Y. IshibashI**** (Gifu National College of Technology, *Gifu University, **Nagoya Institute of Technology, ***Nagoya University and ****Aichi Shukutoku University)*

29F-FD-20P MORPHOTROPIC PHASE BOUNDARIES IN PEROVSKITE SOLID SOLUTIONS

E. F. Alberta, R. Guo and A. S. Bhalla (The Pennsylvania State Univ.)

29F-FD-21P HYDROGEN BONDS AND PROTON TRANSFER IN FERROELECTRICS AND RELATED MATERIALS (MOLECULAR CHAINS, PROTEINS, DNA): Ab initio GAUSSIAN-98 CALCULATIONS AND SOLITON MODELS

V. Bystrov, M. Green, A. Sapronova, G. Ovtchinnikova, T. Tazieva, A. Soloshenko, M. Shaiko and B. Zapol** (Institute of Mathematical Problems of Biology Russian Academy of Sciences, *City College of City University of New York and **University of Latvia)*

29F-FD-22P SITE OCCUPATION AND DIELECTRIC CHARACTERISTICS OF STRONTIUM BARIUM NIOBATE CERAMICS: Sr/Ba RATIO DEPENDENCE

M.-S. Kim, J.-H. Lee, J.-J. Kim, H. Y. Lee and S.-H. Cho (Kyungpook National University and *Yeongnam University)*

29F-FD-23P MONTE CARLO SIMULATION OF ATOMIC ORDERING IN $(1-x)A(B^{II}_{1/3}B^{V}_{2/3})O_3-xAB^{VI}O_3$ TYPE RELAXOR FERROELECTRICS

J. S. Liu, X. W. Zhang, Z. R. Liu, B. L. Gu and W. H. Duan (Tsinghua University)

29F-FD-24P MODELING AND MONTE CARLO SIMULATION OF INTRINSIC FERROELECTRIC SWITCHING BAHAVIOR IN BARIUM TITANATE

J. S. Liu and Y. N. Wang (Tsinghua University and *Nanjing Uiversity)*

29F-FD-25P OCTAHEDRAL TILTING DOMAIN BOUNDARY IN CALCIUM-MODIFIED LEAD TIAANATE CERAMIC

C.-C. Chou, I..-W. Su and D.-S. Tsai (National Taiwan University)

Reception Hall

Characterization - except SPM (17:30 --- 19:00)

29G-CE-1P THE EFFECT OF DIFFERENT DOPANTS ON DIFFUSE PHASE TRANSITION AND ORDERING DEGREE IN PMN

C. Feng, Y. Yang and Y. Yu (Chinese Academy of Sciences)

29G-CE-2P MECHANICAL AGING BEHAVIOR OF $Pb(Zn_{1/3}Nb_{2/3})O_3$–$PbTiO_3$ AND $Pb(Mg_{1/3}Nb_{2/3})O_3$–$PbTiO_3$ SINGLE CRYSTALS

S. Priya and K. Uchino (Pennsylvania State University)

29G-CE-3P CHARACTERISATION OF THE DIRECT PIEZOELECTRIC COEFFICIENT OF THIN FILMS VIA A MODIFIED BERLINCOURT METHOD

M. G. Cain and M. Stewart (National Physical Laboratory)

29G-CE-4P INTERNATIONAL INTERCOMPARISON OF DIRECT PIEZOELECTRIC COEFFICIENT USING THE BERLINCOURT METHOD

M. G. Cain, M. Stewart and M. Lodeiro (National Physical Laboratory)

29G-CE-5P MEASUREMENT METHOD FOR THE CHARACTERISATION OF THE NON-LINEAR BLOCKING FORCE IN PIEZOELECTRIC ACTUATORS

M. G. Cain and M. Stewart (National Physical Laboratory)

29G-CE-6P RELAXOR BEHAVIOUR AND POLARIZATION RESPONSE OF PROTON IRRADIATED BST / P(VDF-TrFE) COMPOSITES

S. U. Adikary, H. L. W. Chan, C. L. Choy, B. Sundarvel and I. H. Wilson* (The Hong Kong Polytechnic University and *The Chinese University of Hong Kong)*

29G-CE-7P IN SITU TRANSMISSION ELECTRON MICROSCOPY STUDY OF ELECTRIC FIELD-INDUCED MICROSCRACKING IN $Pb(Mg_{1/3}\ Nb_{2/3})O_3$ –$PbTiO_3$ SINGLE

Z. Xu, X. Tan and J. K. Shang (City University of Hong Kong, University of Illinois at Urbana-Champaign)

29G-CE-8P A MEASUREMENT TECHNIQUE FOR MECHANICAL VIBRATION USING A THICKNESS-MODE PIEZOELECTRIC TRANSDUCER WITH TWO COMB-SHAPED

T. Fujita, T. Hashimoto and K. Toda (National Defense Academy)

29G-CE-9P LOCALIZED ELECTROMECHANICAL PROPERTIES OF PZT THIN FILMS MEASURED BY NANOINDENTATION

P. Hvizdos, M. J. Reece, A. J. Bushby, R. W. Whatmore, Q. Zhang and M. Alguero (University of London)

29G-CE-10P MEASUREMENT OF DIELECTRIC PROPERTY BY EVANESCENT MICROWAVE SCOPE

Y.-C. Chen, H.-F. Cheng, C.-M. Lei and I.-N. Lin* (National Taiwan Normal University and *National Tsing-Hua University)*

29G-CE-11P ELECTROMECHANICAL CHARACTERIZATION OF THICK PT AND PZT FILMS

L. Simon and P. Gonnard (Institut National des Sciences Appliquées de Lyon Bâtiment Gustave Ferrié)

29G-CE-12P DETECTION OF HYDROGEN IN FERROELECTRIC THIN FILMS USING ELASTIC RECOIL DETECTION ANALYSIS

T. Kaneko, M. Watamori and G. Kano (Kochi University of Technology)

29G-CE-13P PHASE TRANSITIONS IN PZT CERAMICS PREPARED BY DIFFERENT TECHNIQUES

A. Deineka, L. Jastrabik, G. Suchaneck and G. Gerlach* (Academy of Sciences of the Czech Republic and * Dresden University of Technology)*

29G-CE-14P ESR INVESTIGATION OF NANOSIZE POWDERS OF BARIUM TITANATE

I.. P. Bykov, A. M. Slipenyuk, M. D. Glinchuk, A. N. Morozovskaya, A. V. Ragulya, A. V. Polotai, V. P. Klimenko, V. V. Skorokhod and C. A. Randall (NASc of Ukraine and *Pennsylvania State University)*

29G-CE-15P ESR INVESTIGATION OF MIXED FERROELECTRIC RELAXOR SYSTEM PZ/PT/PNN

I.. P. Bykov, A. M. Slipenyuk, L. P. Yurchenko, M. D. Glinchuk, G. Robert and L. Jastrabik** (NASc of Ukraine, * Swiss Federal Institute of Technology and ** Academy of Science of the Czech Republic)*

29G-CE-16P SPECTRAL ANALYSIS OF THE ELECTROMECHANICAL RESPONSE OF AN ELECTROACTIVE MATERIAL BY IMPLEMENTATION OF FOURIER DECOMPOSITION

C. B. DiAntonio, F. A. Williams Jr., S. M. Pilgrim and W. A. Schulze (Alfred University)

29G-CE-17P PECULIARITIES OF INCOMMENSURATE PHASE IN FERROELECTRICS-SEMICONDUCTORS $TlInS_2$ AND $TlGaSe_2$

B. R. Gadjiev and A. I. Beskrovniy (Frank Laboratory of Neutron physics)

29G-CE-18P STUDIES OF DIELECTRIC PROPERTIES AND CRYSTALLIZATION IN AMORPHOUS $Bi_4Ti_3O_{12}$

M.Takashige, S. Hamazaki, M. Kokubun, Y. Haga, T. Yamaguchi* and M.-S. Jang* (Iwaki Meisei University,*Meisei University and **Pusan National University)*

29G-CE-19P EVALUATION METHOD OF LONGITUDINAL AND TRANSVERSE PIEZOELECTRIC D-COEFFICIENTS FOR THIN FILMS

D. Kim and H.-G. Kim (Korea Advanced Institute of Science and Technology and * PiezoLab Co., Ltd.)*

29G-CE-20P ECHO CANCELLING IN ULTRASONIC RANGING USING ARTIFICIAL NEURAL NETWORK

H. Monsef and R. K. Moridifar (University of Tehran and *Matn Niroo Co.)*

29G-CE-21P MEASUREMENT OF MICROWAVE DIELECTRIC SPECTRA OF $BaTiO_3$ – $BaZrO_3$ CERAMICS USING IMPEDANCE ANALYZER AND 3D ELECTROMAGNETIC FIELD

H. Kakemoto, S. Wada and T. Tsurumi (Tokyo Institute of Technology)

29G-CE-22P THE DESIGN SIMULATION FOR MANUFACTURE OF HIGH FREQUENCY CERAMIC

S. H. Lee, J. Y. Seok, S. J. Ha, J. H. Yoo, S. K. Min* and G. Sa-Gong** (Kyung Book National University, *Se Myung University and **Dong A University)*

29G-CE-23P STRUCTURE AND DIELECTRIC PROPERTIES OF NICKEL OR LANTHANUM/CHROMIUM DOPED BARIUM TITANATE CERAMICS

M. Fukunaga, Y. Uesu and K. Kohn (Waseda University)

29G-CE-24P PIEZOELECTRIC COEFFICIENTS OF PZT THIN FILMS

R. C. W. Tsang, K. W. Kwok, H. L. W. Chan and C. L. Choy (The Hong Kong Polytechnic University)

29G-CE-25P DOMAIN PATTERNING IN LITHIUM NIOBATE: ANALYSIS OF SWITCHING CURRENT

V. Shur, E. Nikolaeva, E. Rumyantsev, E. Shishkin, V. Kozhevnikov, G. Miller, R. Batchko*, M. Fejer* and R. Byer* (Ural State University and *Stanford University)*

29G-CE-26P SEARCH FOR RELAXOR - BEHAVIORS IN FERROELECTRIC - ANTIFERROELECTRIC MIXED CRYSTALS

E. Matsushita and K. Takahashi (Gifu University)

29G-CE-27P FERROELECTRIC AND MAGNETIC PROPERTIES OF Ta_2O_5-DOPED $PrFeO_3$-$PbTiO_3$ AND $BiFeO_3$-$PbTiO_3$ CERAMICS

J. S. Kim, C.-I. Cheon, Y. N. Choi and P. W. Jang (Hoseo University and *KAERI)*

29G-CE-28P A STUDY ON ELECTROSTRICTION AND RESIDUAL STRESS OF HIGH CAPACITANCE MULTILAYER CERAMIC CAPACITORS(MLCS)

Y. Nakano, K. Horino, T. Nomura and T. Takenaka (TDK corporation and *Science University of Tokyo)*

29G-CE-29P EFFECT OF COOLING RATE ON LOSS QUALITY OF $(Zr_{0.8}Sn_{0.2})TiO_4$ CERAMICS WITH ADDITIVES

E. S. Kim (Kyonggi University)

29G-CE-30P ION DOPING EFFECTS IN Bi-LAYERED FERROELECTRIC CERAMICS AND THIN FILMS

T. K. Song, J. S. Kim, J. K. Kim, B. S. Kim, S. S. Kim and M. H. Kim (Changwon National University)

29G-CE-31P MICROWAVE DIELECTRIC SPECTROSCOPY OF FERROELECTRIC THIN FILMS

B. Kim, M. Jeong, S. Baik, V. Kazmirenko and Y. Poplavko* (POSTECH and *National Technical University of Ukraine)*

29G-CE-32P NANOCRYSTALLINE $BaTiO_3$-CERAMICS PREPARED VIA MICROEMULSION SYNTHESIS: POWDER CHARACTERISTICS AND CONSOLIDATION BEHAVIOUR

C. Pithan, F.-H. Haegel, J. Dornseiffer* and R. Waser (Institute for Electroceramic Materials and * Institute of Applied Physical Chemistry)*

29G-CE-33P LUMINESCENCE FROM FLUORESCENT MATERIAL EXCITED BY PIEZOELECTRIC TRANSFORMER

K. Teranishi, S. Suzuki and H. Itoh (Chiba Institute of Technology)

29G-CE-34P BROADBAND MICROWAVE PROBE FOR NONDESTRUCTIVE TEST OF FERROELECTRIC COATINGS

A. M. Grishin and V. P. Denysenkov (Royal Institute of Technology)

29G-CE-35P MEASUREMENTS OF FERROELECTRIC FILMS PARAMETERS AT K-V-BAND.

A. Kozyrev, M. Gaidukov, V. Keis, A. Gagarin, I. Kotelnikov and L. Sengupta (St. Petersburg Electrotechnical University and *Paratek Microwave Inc.)*

29G-CE-36P CANLIBRATION OF PZT CANTILEVER USING INTEGRATED PIEZORESISTIVE SENSOR IN HIGH SPEED ATOMIC FORCE MICROSCOPY

H.-J. Nam, Y.-S. Kim, S.-M. Cho, D.-C. Kim and J.-U. Bu (LG Corporate Institute of Technology)

29G-CE-37P SIZE EFFECT ON PHASE TRANSITIONS OF BARIUM TITANATE STUDIED BY DIELECTRIC AND RAMAN SCATTERING METHODS

T.-L. Ren, X.-H. Wang, L.-T. Liu, Z.-J. Li, P.-L. Zhang and W.-L. Zhong* (Tsinghua University and *.Shandong University)*

29G-CE-38P INVESTIGATION OF DEGRADATION MECHANISM ON PZT THIN FILMS BY TSC METHOD

T. Nishida, M. Matsuoka, I. Kawakami and T. Shiosaki (Nara Institute of Science and Technology (NAIST))

Characterization - SPM (17:30 --- 19:00)

29G-CP-1P QUANTITATIVE MEASUREMENT OF DIELECTRIC PROPERTIES USING SCANNING NONLINEAR DIELECTRIC MICROSCOPY WITH ELECTRO-CONDUCTIVE CANTILEVER

K. Ohara and Y. Cho (Tohoku University)

29G-CP-2P INVESTIGATON OF DOMAIN SWITCHING AND RETENTION IN ORIENTED $PbZr_{0.3}Ti_{0.7}O_3$ THIN FILM BY SCANNING FORCE MICROSCOPY

D. Fu,**, K. Kato**, M. Minakata* and H. Suzuki* (*Shizuoka University and **National Institute of Advanced Industrial Science and Technology)*

29G-CP-3P TIP EFFECTS OF PIEZOELECTRIC-MODE ATOMIC FORCE MICROSCOPE FOR LOCAL PIEZOELECTRIC MEASUREMENTS

G. Hu, T. Tang and J. Xu (Fudan University and *the Chinese University of Hong Kong)*

29G-CP-4P DOMAIN AND PIEZO IMAGES OF PZT FAMILY THIN FILMS

Y. Masuda, K. Kakimoto, H. Kakemoto** and K. Watanabe*** (Hachinohe Instutute of Technology, *Nagoya, Institute of Technology, **Tokyo Institute of Technology and ***Seiko Instrument company)*

29G-CP-5P QUANTITATIVE MEASUREMENTS OF PIEZOELECTRIC COEFFICIENTS OF THIN FILMS USING AFM PIEZORESPONSE MODE.

B. Gautier, S. Ballandras, V. B. Patissier*, W. Daniau*, D. Hauden* and J. C. Labrune (Université de Franche-Comté and *Université de Franche Comté)*

29G-CP-6P DETAILED SCANNING FORCE MICROSCOPY STUDY OF SEPARETED NANOSIZED FERROELECTRIC GRAINS USING VARIOUS SCANNING MODES

A. Roelofs, T. Schneller*, C. Szot** and R. Waser** (*IWE II and **IFF)*

29G-CP-7P NANOSCALE SPATIAL CORRELATION OF DYNAMICAL PIEZOELECTRIC DISPLACEMENT HYSTERESIS LOOPS OF PZT FILMS IN THE FRESH AND FATIGUED STATES

D. Ricinschi and M. Okuyama (Osaka Univ.)

29G-CP-8P DETERMINATION OF SCALING ISSUES IN VERY THIN PZT FILM UTILIZING KFM

D. Jang, J. Heo, I. Yi and I. Chung (SungKyunKwan University and *Osaka University)*

Gallery

Thin film - Fabrication - Pb system (I) (17:30 --- 19:00)

29H-TP1-1P PROPERTIES OF LEAD TITANATE THIN FILMS

Z. Kighelman, D. Damjanovic, M. Cantoni and N. Setter (Swiss Federal Institute of Technology – EPFL)

29H-TP1-2P MATERIAL PROPERTIES OF AN EPITAXIAL PZT FILM ON AN EPITAXIAL Ir/ZrN/(100)Si SUBSTRATE FOR FERROELECTRIC MEMORY

S. Horita, T. Toda and H. Kasagawa (Japan Advanced Institute of Science and Technology)

29H-TP1-3P MULTI-LAYER FERROELECTRIC $Pb(Zr_{0.52}Ti_{0.48})O_3$ THICK FILMS PREPARED BY PULSED LASER DEPOSITION PROCESS

H.-F. Cheng, C.-S. Lin and I.-N. Lin* (National Taiwan Normal University and *National Tsing-Hua University)*

29H-TP1-4P DOMAIN STRUCTURE OF EPITAXIAL $PbTiO_3$ THIN FILMS ON Pt(001)/MgO(001) SUBSTRATES

Y. K. Kim, K. H. Ahn, K. Lee and S. Baik (Pohang University of Science and Technology)

29H-TP1-5P MICROSTRUCTURE AND ELECTRICAL PROPERTIES OF $(Pb,La)(Zr, Ti)O_3$ FILMS CRYSTALLIZED BY ONE-STEP POSTDEPOSITION ANNEALING USING PLZT SEED LAYER AND CHEMICAL OXIDATION TREATMENT

R. Wakabayashi, M. Kobune, T. Sawada, S. Kojima and T. Sekino (Himeji Institute of Technology and *Osaka University)*

29H-TP1-6P FERROELECTRIC PROPERTIES OF $PbZr_{0.4}Ti_{0.6}O_3$ FILM ON $La_{1/2}Sr_{1/2}CoO_3$ ELECTRODE

J.-H. Kim, H. S. Kim, W. K. Choo, B. J. Kuh, K. V. Im and S. H. Park (Korea Advanced Institute of Science and Technology and *Samsung electronics Co.)*

29H-TP1-7P FERROELECTRICITY OF RARE EARTH Eu DOPED $Pb(Zr_xTi_{1-x})O_3$ THIN FILMS BY A SOL-GEL METHOD

Y. J. Yu **, H. L.W. Chan**, F. P. Wang*, C. L. Choy**, L. C. Zhao* (* Harbin Institute of Technology and ** the Hong Kong Polytechnic University)*

29H-TP1-8P FABRICATION OF MULTILAYER RING TRANSFORMER

N. Y. Wong, H. L. W. Chan and C. L. Choy (The Hong Kong Polytechnic University)

29H-TP1-9P STRUCTURE CONTROL OF FERROELECTRIC $PbTiO_3$ THIN FILMS USING $SrTiO_3$ BUFFER LAYER PREPARED BY METALORGANIC DECOMPOSITION

K. Kimura, K. M. A. Salam, H. Fukuda and S. Nomura (Muroran Institute of Technology)

29H-TP1-10P THE GRAIN BOUNDARY EFFECT ON THE HYDROGEN-INDUCED DEGRADATION IN LEAD ZIRCONATE TITANATE THIN FILMS

J.-S. Lee, J.-H. Park, J.-I. Yun and S.-K. Joo (Seoul National University)

29H-TP1-11P NUCLEATION AND GROWTH CONTROL IN PZT THIN FILMS BY SCANNING-RAPID THERMAL ANNEALING PROCESS

J.-S. Lee, J.-H. Park, J.-I. Yun and S.-K. Joo (Seoul National University)

29H-TP1-12P LOW TEMPERATURE CRYSTALLIZATION OF LEAD ZIRCONATE TITANATE THIN FILMS BY ION DAMAGED SEED LAYER

J.-H. Park, J.-S. Lee, J.-I. Yun and S.-K. Joo (Seoul National University)

29H-TP1-13P CHRACTERZATION OF PZT CAPACITORS WITH Ir ELECTRODES SUCCESSIVELY PREPARED BY MOCVD

K. Kita, H. Fujisawa, M. Shimizu and H. Niu (Himeji Institute of Technology)

29H-TP1-14P CRYSTALLINE AND FERROELECTRIC PROPERTIES OF LOW TEMPERATURE GROWN $PbZr_xTi_{1-x}O_3$ THIN FILMS BY METALORGANIC CHEMICAL VAPOR DEPOSITION

M. Okaniwa, H. Fujisawa, M. Shimizu and H. Niu (Himeji Institute of Technology)

29H-TP1-15P LOW TEMPERATURE DEPOSITON OF $Pb(Zr,Ti)O_3$ THIN FILMS ON AMORPHOUS $Pb(Zr,Ti)O_3$ INTERMEDIATE LAYER BY RF SPUTTERING

S. Mochizuki, R. Thomas, T. Mihara and T. Ishida (National Institute of Advanced Industrial Science and Technology)

29H-TP1-16P EFFECTS OF SOL-GEL DERIVED SEED LAYERS ON THE CHARACTERISTICS OF RF SPUTTERED PZT THIN FILMS USING EXCESS PbO DOPED $Pb(Zr_{0.5},Ti_{0.5})O_3$ CERAMIC TARGET

R. Thomas, S. Mochizuki, T. Mihara and T. Ishida (AIST Kansai National Institute)

29H-TP1-17P FABRICATION OF A CANTILEVER STRUCTURE FOR PIEZOELECTRIC MICROPHONE AND MICROSPEAKER

L.-T. Zhang, T.-L. Ren, J.-S. Liu, L.-T. Liu and Z.-J. Li (Tsinghua University)

29H-TP1-18P HIGH QUALITY FERROELECTRIC CAPACITOR FOR FERAM APPLICATIONS

T.-L. Ren, L.-T. Zhang, J.-S. Liu, L.-T. Liu and Z.-J. Li (Tsinghua University)

29H-TP1-19P STRUCTURE AND FERROELECTRIC PROPERTIES OF SUPERLATTICES PT/PLT EPITAXIALLY GROWN ON MgO AND $SrTiO_3$

C. Endo, R. Ai, K. Wasa , T. Matsuda, A. Unno, H. Okino and T. Yamamoto* (Yokohama City University and *The National Defense Academy)*

29H-TP1-20P EFFECT OF RTA ON THE PROPERTIES OF PZT THIN FILMS MADE BY LOW TEMPERATURE MOCVD

S.-I. Kim and C.-H. Lee (Keimyung University)

29H-TP1-21P THICKNESS DEPENDENCE OF THE ELECTRICAL AND ELECTROMECHANICAL PROPERTIES OF PZT THIN FILMS

H. Maiwa and N. Ichinose (Shonan Institute of Technology and *Waseda University)*

29H-TP1-22P CHARACTERISTICS OF FERROELECTRIC $Pb(Zr_{1-x}Ti_x)O_3$ THIN FILM CAPACITORS DEPOSITED ON $PtRhO_y$ ELECTRODE BARRIERS

K. Lee, K. H. Lee and B. K. Ju (Sangji University)

29H-TP1-23P WIDE PROCESS WINDOW OF LOW-TEMPERATURE-DEPOSITED $Pb(Zr,Ti)O_3$ FILMS BY PULSED-MOCVD

G. Asano, T. Oikawa, K. Okada and H. Funakubo (Tokyo Institute of Technology)

29H-TP1-24P LOW-LEAKAGE EPITAXIAL PZT THIN FILM GROWN ON Ir/MgO SUBSTRATE BY METALORGANIC CHEMICAL VAPOR DEPOSITION

T. Oikawa, K. Takahashi, J. Ishida, Y. Ichikawa**, T. Ochiai**, K. Saito***, A. Sawabe* and H. Funakubo (Tokyo Institute of Technology, *Aoyama Gakuin University, **TOYO Corporation and ***Philips Japan, Ltd.)*

29H-TP1-25P COMPOSITION AND ORIENTATION DEPENDENCES OF DIELECTRIC AND FERROELECTRIC PROPERITIES OF EPITAXIAL PZT THIN FILMS GROWN BY METALORGANIC CHEMICAL VAPOR DEPISITION

T. Oikawa K. Saito and H. Funakubo (Tokyo Institute of Technology and *Philips Japan, Ltd.)*

29H-TP1-26P FABRICATION OF SONIC SENSORS USING PZT THIN FILM ON Si DIAPHRAGM AND CANTILEVER

S. Murakami, K. Inoue, Y. Suzuki, S. Takamatsu, T. Kitano*, M. Kinoshita*, K. Yamashita** and M Okuyama** (Technology Research Institute of Osaka Prefecture, *Hitachi Zosen Corporation and **Osaka University)*

29H-TP1-27P FAST DEPOSITION OF LEAD-ZIRCONATE-TITANATE THICK FILMS BY ARC DISCHARGED REACTIVE ION-PLATING METHOD

M. Akamatsu, M. Tani and Y. Yasuda (Stanley Electric Co.)

29H-TP1-28P EFFECT OF INTERFACE ON ELECTRICAL PROPERTIES OF THIN $Pb(Zr,Ti)O_3$ FILMS

Y. K. Lee, J. K. Lee and Y. S. Park (Samsung Advanced Institute of Technology P.O.)

29H-TP1-29P POWDER PREPARATION FOR $Pb(Zr_{0.52},Ti_{0.48})O_3$ THICK FILMS FORMED BY AEROSOL DEPOSITION METHOD

J. Akedo and M. Lebedev (AIST)

29H-TP1-30P LOW TEMPERATURE DEPOSITION OF FERROELECTRIC $Pb(Zr,Ti)O_3$ THIN FILMS ON Ir ELECTRODE BARRIERS

K. H. Lee, D. H. Park and K. Lee (Sangji University)

29H-TP1-31P MICROPATTERNING OF FERROELECTRIC $Pb(Zr_{0.3}Ti_{0.7})O_3$ BY PHOTOLITHOGRAPHY AND SOL-GEL PROCESSING

Q. Zhang and R. Whatmore (Cranfield University)

29H-TP1-32P UNIFORMITY OF PZT THIN FILMS PREPARED BY MOCVD ON 8"ϕ SUBSTRATE

T. Masuda, M. Kajinuma, T. Yamada, H. Uchida, M. Uematsu, K. Suu and M. Ishikawa (ULVAC, Inc)

29H-TP1-33P FABRICATION OF FERROELECTRIC MICRO-CAPACITORS WITH SELF-ALIGNED TOP ELECTRODES BY ELECTRON-BEAM-INDUCED PATTERNING PROCESS

S. Okamura, K. Suzuki, R. Takeuchi, T. Maekawa and T. Shiosaki (NAIST)

29H-TP1-34P FABRICATION OF (001) ORIENTATED PZT THIN FILMS FOR MEMS APPLICATIONS

H.-J. Zhao, T.-L. Ren, J.-S. Liu, L.-T. Liu and Z.-J. Li (Tsinghua University)

29H-TP1-35P EPITAXIAL GROWTH AND ELECTRICAL PROPERTIES OF $Pb(Zr,Ti)O_3$ THIN FILMS ON $SrTiO_3$(100) WITH AN ATOMICALLY FLAT SURFACE BY METALORGANIC CHEMICAL VAPOR DEPOSITION

H.Nonomura, H.Fujisawa, M.Shimizu and H.Niu (Himeji Institute of Technology)

29H-TP1-36P PIEZOELECTRIC AND FERROELECTRIC PROPERTIES OF $Pb(Zr,Ti)O_3$ FILMS FOR MEMS APPLICATIONS

C.-Y. Koo, S.-H. Kim, D.-S. Lee, H.-J. Woo, D. Y. Park, J. Yang and J. Ha and C. S. Hwang (INOSTEK Inc and *Seoul National University)*

29H-TP1-37P GROWTH STAGES OF SOL-GEL DERIVED PZT(30/70) ON $Pt/Ti/SiO_2$ AS SHOWN BY SPM (PFM AND TOPOGRAPHY)

S. Dunn, Q. Zhang and R. W. Whatmore (Cranfield University)

29H-TP1-38P PREPARATION OF ELECTRICALLY STABLE $Pb(Zr, Ti)O_3$ THIN FILMS BY THE CSD METHOD WHITH A THICKNESS DOWN TO 50 nm

U. Ellerkmann, T. Schneller*, U. Böttger* and R. Waser*,** (*RWTH Aachen and **Forschungszentrum Jülich)*

29H-TP1-39P CHARACTERIZATION OF THE RESIDUAL STRESS IN TITANIUM/PLATINUM AND TANTALUM/PLATINUM THIN FILM ELECTRODES USED IN THE PROCESSING OF PZT MEMS DEVICES

R. G. Polcawich, J. P. Clarkson, J. Pulskamp, A. Wickenden, M. Wood, M. Ervin, K. Kirchner and M. Dubey (Army Research Laboratory)

29H-TP1-40P STRUCTURAL PROPERTIES OF PZT SYSTEM FILM IN USE OF PULSED-LASER ABRATION DEPOSITION

M. Ichiki, L. Zhang, Z. Wang and R. Maeda (National Institute of Advanced Industrial Science and Technology and *Tohoku University)*

29H-TP1-41P GROWTH OF NIOBIUM DOPED $PbZr_{0.52}Ti_{0.48}$ (PNZT) FILMS FOR FABRCATION OF A GYROSCOPE

S. Kotru, P. Padmini, C. Nistorica and R. K. Pandey (The University of Alabama)

29H-TP1-42P A COMPARISON OF RHOMBOHEDRAL AND TETRAGONAL PZT FOR FERAM APPLICATIONS

A. I. Kingon, A. Gruverman, B. Rodriguez and J.-P. Maria (North Carolina State University)*

29H-TP1-43P PREPARATION OF PLZT FERROELECTRIC FILMS BY RF SPUTTERING ON 200mmϕ SUBSTRATE

S. Kikuchi, Y. Miyaguchi, T. Jimbo, I. Kimura, M. Tanimura, K. Suu and M. Ishikawa (Institute for Semiconductor Technologies)

29H-TP1-44P LOW TEMPERATURE OF $Pb(Zr,Ti)O_3$ THIN FILM BY LIQUID DELIVERY MOCVD

M. Miyake, Y. Ueda, S. Okamura and T. Shiosaki (Nara Institute of Science and Technology (NAIST))

29H-TP1-45P $Pb(Zr,Ti)O_3$ THIN FILMS DEPOSITED BY LIQUID DELIVERY MOCVD USING A SINGLE COCKTAIL SOLUTION WITH $Pb(METHD)_2$, $Zr(METHD)_4$ and $Ti(MPD)(METHD)_2$

Y. Otani, Y. Ueda, M. Miyake, S. Okamura and T. Shiosaki (Nara Institute of Science and Technology (NAIST))

29H-TP1-46P DEPENDENCE ON REACTOR PRESSURES OF $Pb(Zr,Ti)O_3$ FILMS BY LIQUID DELIVERY MOCVD

Y. Ueda, M. Miyake, S. Okamura and T. Shiosaki (Nara Institute of Science and Technology (NAIST))

29H-TP1-47P STUDY OF THICKNESS DEPENDENCE ON ELECTRICAL PROPERTIES OF $(Pb,La)TiO_3$ THIN FILMS FOR MEMORY APPLICATIONS

P. Venkateswarlu,**, P. Victor* and S. B. Krupanidhi* (*Indian Institute of Science and **ISRO Satellite Center)*

29H-TP1-48P ALTERNATING CURRENT CONDUCTION AND IMPEDANCE SPECTROSCOPY ANALYSIS ON PULSED EXCIMER LASER ABLATED $(Pb, La)TiO_3$ THIN FILMS

P. Venkateswarlu,**, P. Victor* and S. B. Krupanidhi* (*Indian Institute of Science and **ISRO Satellite Center)*

29H-TP1-49P STUDY OF RELAXOR BEHAVIOR IN $PbMg_{1/3}Nb_{2/3}O_3$-$PbTiO_3$ THIN FILMS GROWN USING PULSED EXCIMER LASER ABLATION TECHNIQUE

A. Laha, P. Victor and S. B. Krupanidhi (Indian Institute of Science)

29H-TP1-50P DEPOSITION OF THIN FILM PZT AND CONSTITUENT OXIDES: CHEMISTRY, PROCESS, AND FILM CHARACTERISTICS

B. C. Hendrix, I.-S. Chen, S. M. Bilodeau, Z. Wang, C. Xu, T. H. Baum and J. F. Roeder (ATMI, Inc.)

29H-TP1-51P LOW-TEMPERATURE PREPARATION OF $PbZrTiO_3$/Pt/TiNi/Si HETEROSTRUCTURE BY LASER ANNEALING

H.-C. Pan, H.-L. Tsai and C.-C. Chou (National Taiwan University)

29H-TP1-52P ELECTRICAL PROPERTIES OF FERROELECTRIC $PbSrTiO_3$ FILMS ON STAINLESS STEEL SUBSTRATES WITH $LaSrMnO_3$ BUFFER LAYERS

H.-C. Pan and C.-C. Chou (National Taiwan University)

5/30 (Thu.)

Oral

Noh Theatre

Thin Films (IV) (9:00 --- 10:30)

30A-TF4-1IN 9:00 <INVITED> DOMAIN STRUCTURES IN EPITAXIAL PZT THIN FILMS
S. Baik (POSTECH)

30A-TF4-2C 9:30 ELECTRICAL PROPERTIES OF EPITAXIAL (Pb,Sr)TiO_3 THIN FILMS PREPARED BY RF MAGNETRON SPUTTERING
J. Du, T. KARAKI, T. Fujii and M. Adachi (Toyama Prefectural University)

30A-TF4-3C 9:45 FERROELECTRIC PROPERTY OF PZT(001) THIN FILM DEPOSITED ON EPITAXIAL (Ni,Zn,Fe)Fe_2O_4(111) THIN FILM FOR NOVEL FERROELECTRIC/FERROMAGNETIC MEMORY APPLICATIONS
N. Wakiya, K. Shinozaki and N. Mizutani (Tokyo Institute of Technology)

30A-TF4-4C 10:00 CRYSTALLIZATION OF ZIRCONIUM-RICH PLZT THIN FILMS BELOW 500 °C
M. Mandeljc, B. Malič, M. Kosec and G. Dražič (Jožef Stefan Institute)

30A-TF4-5C 10:15 MICROSTRUCTURE AND ELECTRICAL PROPERTIES OF PZT THIN FILMS DEPOSITED BY LASER ABLATION ON TEMPLATE LAYER
Z. J. Wang, H. Kokawa and R. Maeda (Tohoku University and *National Institute of Advanced Science and Technology)*

Thin Films (V) (11:00 --- 12:30)

30A-TF5-1C 11:00 THE PROPERTIES OF MULTI-LAYERED Pt/$(Ba_{0.5}Sr_{0.5})TiO_3$/ $Pb(Zr_{0.52}Ti_{0.48})O_3$/$(Ba_{0.5}Sr_{0.5})TiO_3$/Pt THIN FILMS
F. Yan, P. Bao, J. Zhu and Y. Wang (Nanjing University)

30A-TF5-2C 11:15 THE INFLUENCE OF BOTTOM ELECTRODES AND SEED ISLANDS ON THE EPITAXIAL GROWTH CHARACTERISTICS OF SBT THIN FILMS
S.-Y. Jung, W.-C. Kwak, G. M. A. Kumar, Y.-M. Sung and S.-J. Hwang (Daejin University)

30A-TF5-3C 11:30 PREPARATION OF $SrBi_2Ta_2O_9$ FERROELECTRIC THIN FILMS BY RF MAGNETRON SPUTTERING
*Y. Nishioka *,** and H. Ishiwara ** (*R & D Association for Future Electron Devices and **Tokyo Institute of Technology)*

30A-TF5-4C 11:45 DEVELOPMENT OF 500 Å THICK MOCVD SBT FILMS FOR 0.18 μm FeRAM PROCESS
S. Narayan, V. Joshi, M. Lim, C. A. Paz de Araujo, L. D. McMillan, K. Uchiyama, Y. Shimada*, S. Miedl**, F. Schienle**, M. Schumacher** and H. Juergensen** (Symetrix Corporation, *Matsushita Electronics Corp. and **AIXTRON AG, Kackertstr.)*

30A-TF5-5C 12:00 IMPROVEMENT IN FERROELECRIC PROPERTIES OF $SrBi_2Ta_2O_9$ THIN FILMS WITH Bi_2O_3 BUFFER LAYERS BY LIQUID DELIVERY METALORGANIC CHEMICAL VAPOR DEPOSITION
N.-J. Seong, W.-C. Shin, K.-J. Choi and S.-G. Yoon (Chungnam National University)

30A-TF5-6C 12:15 ELECTRODE SIZE EFFECT ON SWITCHING TIME OF $SrBi_2Ta_2O_9$ THIN FILMS
X. B. Chen,**, F. Yan*, C. H. Li*, J. S. Zhu* and Y. N. Wang* (*Yangzhou University and **Nanjing University)*

Thin Films (VI) (13:30 --- 15:15)

30A-TF6-1C 13:30 MODELING OF THICKNESS EFFECTS ON THE DIELECTRIC PROPERTIES OF BST THIN FILMS
A. I Kingon, C. Parker, J.-P. Maria and S. K Streiffer (North Carolina State University and *Argonne National Laboratory)*

30A-TF6-2C 13:45 INFLUENCE OF STRAINS AND DEFECTS ON FERROELECTRIC AND DIELECTRIC PROPERTIES OF THIN-FILM BARIUM-STRONTIUM TITANATES
D. Balzar, P. A. Ramakrishnan, P. Spagnol**, S. Mani* and A. M. Hermann* (University of Denver, *University of Colorado and **UNESP)*

30A-TF6-3C 14:00 MICROSTRUCTURES AND DIELECTRIC PROPERTIES OF COMPOSITIONALLY GRADED $(Ba_{1-x}Sr_x)TiO_3$ THIN FILMS PREPARED BY PULSED-LASER DEPOSITION
X. Zhu,**, H. L.-W. Chan**, C.-L. Choy** and K.-H. Wong* (*The Hong Kong Polytechnic University and **Nanjing University)*

30A-TF6-4C 14:15 MICROSTRUCTURAL AND ELECTRICAL PROPERTIES OF $(Ba_xSr_{1-x})Ti_{1+y}O_{3+z}$ THIN FILMS PREPARED AT LOW TEMPERATURES (T<450°C) BY RF MAGNETRON SPUTTERING
J. D. Baniecki, T. Shioga and K. Kurihara (Fujitsu Laboratories)

30A-TF6-5C 14:30 THICKNESS DEPENDENT PROPERTIES OF BARIUM STRONTIUM TITANATE THIN FILMS BETWEEN 15 AND 600nm
J-P. Maria, C. B. Parker, G. Stauf and A. I. Kingon (North Carolina State University)

30A-TF6-6C 14:45 LEAKAGE CURRENT MEASUREMENTS OF STO AND BST THIN FILMS INTERPRETED BY THE "DEAD LAYER" MODEL
S. Schmitz and H. Schroeder (Institut für Festkörperforschung Forschungszentrum Jülich GmbH)

30A-TF6-7C 15:00 THE EFFECTS OF POST OXYGEN PLASMA TREATMENT ON Pt/$(Ba,Sr)TiO_3$/Pt CAPACITORS AT LOW SUBSTRATE TEMPERATURES
J.-L. Wang, C.-C. Hwang, D.-C. Shye, M.-J. Lai, C.-C. Jaing1, J.-S. Chen, S. Huang**, M.-H. Juang***, B.-S. Chiou and H.-C. Cheng (National ChiaoTung University, *NSC, **Mosel Vitelic Incorporation and ***National Taiwan University)*

Reception Hall

Piezoelectrics (III) (9:00 --- 10:30)

30B-PI3-1IN 9:00 <INVITED> FINE TOLERANCE RESONATOR APPLICATIONS OF BISMUTH LAYER-STRUCTURED FERROELECTRIC CERAMICS
A. Ando, T. Sawada, H. Ogawa, M. Kimura and Y. Sakabe (Murata Mfg. Co., Ltd.)

30B-PI3-2C 9:30 PROPERTIES OF $(Na_{1/2}Bi_{1/2})TiO_3$ -$Bi_4Ti_3O_{12}$ PIEZOELECTRIC CERAMICS
A. Sanson and R. W. Whatmore (Cranfield University)

30B-PI3-3C 9:45 $Bi_4Ti_3O_{12}$-BASED LEAD-FREE PIEZOELECTRIC CERAMICS WITH GRAIN ORIENTATION
H. Nagata, Y. Yano, T. Enosawa, Y. Fujita and T. Takenaka (Science University of Tokyo)

30B-PI3-4C 10:00 NOVEL PIEZOELECTRIC CERAMIC/POLYMER COMPOSITE TRANSDUCERS
S. Turcu, B. Jadidian, S. C. Danforth and A. Safari (Rutgers University and *Layered Manufacturing, Inc)*

30B-PI3-5C 10:15 PIEZOELECTRIC PROPERTIES AND STRUCTURAL CHARACTERIZATION OF $(Na,Bi)Bi_2Ta_2O_9$ CERAMICS WITH BISMUTH LAYER-STRUCTURE
H. Takeda, K. Komagata, M. Matsushita, R. Aoyagi, S. Okamura and T. Shiosaki (Nara Institute of Science and Technology (NAIST))

FeRAM & Devices (II) (11:00 --- 12:30)

30B-FD2-1IN 11:00 <INVITED> STATUS AND ISSUES ON FeRAM INEGRATION AND CHARACTERIZATION
Y.-J. Park (Hynix Semiconductor Inc.)

30B-FD2-2C 11:30 COMPARISON OF MFOS AND MFMOS ONE TRANSISTOR MEMORY DEVICES
T. Li, S. T. Hsu, B. Ulrich and D. Evans (Sharp Laboratories of America, Inc)

30B-FD2-3C 11:45 A NOVEL SINGLE-FET CELL AND ARRAY ARCHITECTURE FOR FERROELECTRIC NONVOLATILE MEMORIES
W.-Q. Zhang, T.-L Ren, C.-X. Li, T.-Q. Shao, J. Zhu, L.-T. Liu and Z.-J. Li (Tsinghua University)

30B-FD2-4C 12:00 A 0.13 μ m 1.5V 1T1C 4Mb EMBEDDED FERROELECTRIC RAM WITH NOVEL SENSE-AMPLIFIER AND PLATE-LINE ARCHITECTURE
J. Rickes, J. Grace, J. Fong, S. Gilbert, C. Pietrzyk, R. Lanham, J. Amano, H. McAdams, S. Summerfelt* and T. Moise* (Agilent Technologies Inc. and *Texas Instruments)*

30B-FD2-5C 12:15 ADVANCED ENCAPSULATING BARRIER LAYER TECHNOLOGY FOR 0.25 μ m 1T1C 32MB FRAM
H. J. Joo, Y. J. Song, H. H. Kim, N. W. Jang, S. Y. Lee, Y. S. Park and K. Kim (Samsung Electronics Co. Ltd and *samsung Advanced institute of Technology)*

Piezoelectrics (IV) (13:30 --- 15:15)

30B-PI4-1IN 13:30 <INVITED> PIEZOELECTRIC APPLICATIONS OF FERROELECTRIC SINGLE CRYSTALS
K. Nakamura (Tohoku Univ.)

30B-PI4-2C 14:00 DIELECTRIC AND PIEZOELECTRIC PROPERTIES OF $BaTiO_3$ AND PMN-PT SINGLE CRYSTALS GROWN FROM POLYCRYSTALLINE PRECURSORS
J.–B. Lee, T.–M. Heo, D.–H. Kim, H.–Y. Lee and D.–Y. Kim (Sunmoon University and *Seoul National University)*

30B-PI4-3C 14:15 DIELECTRIC AND PIEZOELECTRIC PROPERTIES OF $0.93Pb(Zn_{1/3}Nb_{2/3})O_3$-$0.07PbTiO_3$ SINGLE CRYSTALS FOR PHASED ARRAY
Y. Hoson, T. Kobayashi, K. Harada, K. Itsumi, M. Izumi, Y. Yamashita and N. Ichinose (Toshiba Corporation and *Waseda University,)*

30B-PI4-4C 14:30 PZN-PT- AND BS-PT-BASED HIGH FREQUENCY SINGLE-ELEMENT TRANSDUCERS FOR MEDICAL ULTRASONIC IMAGING
S. Rhee, S. Zhang, T. Shrout and K. K. Shung (The Pennsylvania State University)

30B-PI4-5C 14:45 NON-LINEAR CHARACTERIZATION OF HIGH POWER TRANSDUCERS
P. Gonnard and L. Petit (Institut National des Sciences Appliquées de Lyon Bâtiment Gustave Ferrié)

30B-PI4-6C 15:00 POTASSIUM NIOBATE SINGLE-DOMAIN CRYSTALS AS THE PIEZOELECTRICS WITH LOW DIELECTRIC AND HIGH ELECTROMECHANICAL COUPLING PROPERTIES
S. Wada, K. Muraoka, H. Kakemoto, H. Kumagai and T. Tsurumi (Tokyo Institute of Technology and *Asahi Techno Glass Co., Ltd.)*

Conference Room 1

Characterization (III) (9:00 --- 10:30)

30C-CH3-1IN 9:00 <INVITED> APPLICATION OF SCANNING PROBE MICROSCOPE (SPM) FOR NOVEL CHARACTERIZATION OF FERROLECTRIC CAPACITOR
I. Chung, I. Yi and M. Yastake (SungKyunKwan University and *Seiko Instruments Inc.)*

30C-CH3-2C 9:30 DEPTH PROFILING OF FERROELECTRIC THIN FILMS WITH HIGH ENERGY ION BEAM SPECTROMETRY
T. Kaneko, S. Nomura, G. Kano and M. Watamori (Kochi University of Technology)

30C-CH3-3C 9:45 SPM INVESTIGATION OF THE PT/PZT INTERFACE IN ULTRATHIN FERROELECTRICS
X. Lu, F. Schlaphof, C. Loppacher, G. Suchanek and L. M. Eng (Institute for Applied Photophysics)

30C-CH3-4C 10:00 MICROSTRUCTURAL CHARACTERIZATION OF $SrRuO_3$ FILMS DEPOSITED ON Si USING SrO AS BUFFER LAYERS
Y. X. Chen, J. Koike, T. Higuchi, S. Iwashita*, M. Ishida* and T. Shimoda* (Tohoku University and *SEIKO EPSON Co.)*

30C-CH3-5C 10:15 ELECTRIC FIELD-INDUCED POLARIZATION REVERSAL BY SCANNING PIEZOELECTRIC MICROSCOPY

V. V. Shvartsman, N. A. Pertsev, A. Yu. Emelyanov* and A. L. Kholkin (University of Aveiro and *A. F. Ioffe Physico-Technical Institute)*

Characterization (IV) (11:00 --- 12:30)

30C-CH4-1IN 11:00 <INVITED> MODELS OF ELECTRODE-DIELECTRIC INTERFACES IN FERROELECTRIC THIN-FILM DEVICES

J. F. Scott and M. Dawber (Cambridge University)

30C-CH4-2C 11:30 SEPARATION OF THE NEAR INTERFACE REGIONS FROM THE BULK IN A FERROELECTRIC THIN FILM

D. P. Chu, B. M. McGregor, Z. G. Zhang, P. Migliorato, K. Ohashi, K. Hasegawa and T. Shimoda (Epson Cambridge Laboratory, University of Cambridge and Seiko Epson Corporation)*

30C-CH4-3C 11:45 NEW APPROACH TO THIN FILM CHARACTERIZATION BY SWITCHING CURRENT ANALYSIS

V. Shur, I. Baturin, E. Shishkin and M. Belousova (Ural State University)

30C-CH4-4C 12:00 FERROELECTRIC CAPACITOR COMPACT MODEL INCLUDING DYNAMIC AND TEMPERATURE BEHAVIOR

E. Supriyanto, I. Schultz, M. Ullmann and H. Goebel (University of the Federal Armed Forces)

30C-CH4-5C 12:15 IMPACT OF THICKNESS ON THE DIELECTRIC AND ELECTRICAL PROPERTIES OF PULSED LASER ABLATED $SrBi_2Nb_2O_9$ THIN FILMS

S. Bhattacharyya, P. Victor and S. B. Krupanidhi (Indian Institute of Science)

Micro Ferroelectrics (13:30 --- 15:15)

30C-MF-1C 13:30 FERROELECTRIC NANOSTRUCTURES

M. Alexe, A. Visinoiu, C. Harnagea, D. Hesse and U. Gösele (Max Planck Institute of Microstructure Physics)

30C-MF-2C 13:45 SIZE EFFECT FOR LEAD ZIRCONIUM TITANATE NANOPOWDERS WITH $Pb(Zr_{0.3}Ti_{0.7})O_3$ COMPOSITION

T. Ohno, T. Mori, H. Suzuki, W. Wunderlich, M. Takahashi* and K. Ishikawa** (Shizuoka University, *Nagoya Institute of Technology and **Yokkaichi University)*

30C-MF-3C 14:00 SIZE-EFFECT IN MESOSCOPIC EPITAXIAL FERROELECTRIC STRUCTURES: INCREASE OF PIEZOELECTRIC RESPONSE WITH DECREASING FEATURE-SIZE

S. Bühlmann, B. Dwir, J. Baborowski and P. Muralt (Swiss Federal Institute of Technology Lausanne (EPFL))

30C-MF-4C 14:15 NON-LINEARITY OF LOCAL ELECTROMECHANICAL PROPERTIES STUDIED BY SCANNING PIEZOELECTRIC MICROSCOPY

V. V. Shvartsman, N. A. Pertsev, P. M. Vilarinho and A. L. Kholkin (University of Aveiro and *A. F. Ioffe Physico-Technical Institute)*

30C-MF-5C 14:30 COMPENSATION OF THE PARASITIC CAPACITANCE OF A SFM CANTILEVER USED FOR MEASUREMENTS ON FERROELECTRIC CAPACITORS OF SUBMICRON SIZE BY MEANS OF FINITE ELEMENT SIMULATIONS

K. Prume, S. Tiedke, T. Schmitz, A. Roelofs and R. Waser* (aixACCT Systems GmbH and *Institut für Werkstoffe der Elektrotechnik Sommerfeldstr)*

30C-MF-6C 14:45 SUBMICRON SCALE SIZE EFFECT IN PZT FILM CAPACITORS: POLARIZATION DISTRIBUTION ANOMALIES AND UNDERLYING MECHANISM

I. Stolichnov, E. Colla, A. Tagantsev, S. Hong, B. Srowthi, N. Setter, J. S. Cross and M. Tsukada* (Swiss Federal Institute of Technology and *Fujitsu Laboratories, Ltd.)*

30C-MF-7C 15:00 METAL ORGANIC CHEMICAL VAPOR DEPOSITED ELECTRODES FOR FERROELECTRIC AND HIGH-PERMITTIVITY OXIDE APPLICATIONS

P. K. Baumann, K. Fröhlich, O. Valet**, P. Doppelt**, F. Schienle, M. Schumacher, J. Lindner, G. Strauch and H. Juergensen (AIXTRON AG, *Slovak Academy of Sciences and **ESPCI-CNRS University)*

Conference Room 3

Fundamental (II) (9:00 --- 10:30)

30D-FU2-1IN 9:00 <INVITED> DEFECT ENGINEERING FOR CONTROL OF POLARIZATION PROPERTIES IN $SrBi_2Ta_2O_9$

Y. Noguchi, M. Miyayama, K. Oikawa and T. Kamiyama* (The University of Tokyo and *High Energy Accelerator Research Organization)*

30D-FU2-2C 9:30 SWITCHING DYNAMICS IN FERROELECTRIC THIN FILMS: AN EXPERIMENTAL SURVEY

M. Dawber, P. Chandra, F. D. Morrison, D. J. Jung, J. F. Scot, L. J. Sinnamon**. J. M. Gregg**. Q. Zhang*** and R. W. Whatmore*** (Cambridge University, *NEC Research Institute, **Queen's University Belfast and ***Cranfield University)*

30D-FU2-3C 9:45 CONTRIBUTION OF Pb TO FERROELECTRICITY IN PEROVSKITE-TYPE OXIDES

H. Miyazawa, E. Natori, M. Ishida, T. Shimoda, F. Ishii and T. Oguchi* (SEIKO EPSON Corporation and *Hiroshima University)*

30D-FU2-4C 10:00 CRYSTAL CHEMISTRY OF BISMUTH-BASED FERROELECTRICS

D. I,. Woodward, I. M. Reaney, A. R. West and C. A. Randall (University of Sheffield and *University Park)*

30D-FU2-5C 10:15 BIOFERROELECTRICITY AND BIOMEDICINE: NEW RESULTS AND APPROACHES

V. Bystrov, N. Bystrova, G. Ovtchinnikova, Y. Pirogov and Y. Dekhtyar (Russian Academy of Sciences)

Dielectrics (I) (11:00 --- 12:30)

30D-DI1-1IN 11:00 <INVITED> RECENT TOPICS IN THE FIELD OF MATERIAL TECHNOLOGY OF

T. Nomura, M. Miyauchi, Y. Fujikawa and Y. Nakano (TDK Corporation)

30D-DI1-2C 11:30 $BaTiO_3$ SYSTHESIS TECHNIQUE AND ITS EFFECT ON BME DIELECTRIC

D. McCauley, M. Chu, M. Megherhi and E. Davis (Ferro Electronic Materials)

30D-DI1-3C 11:45 DIELECTRIC PROPERTIES OF FINE-GRAINED $BaTiO_3$ CERAMICS DOPED WITH CaO

Y. Sakabe, N. Wada, T. Hiramatsu, T. Tonogaki and T. Tsujimoto (Murata Mfg. Co.,Ltd.)

30D-DI1-4C 12:00 THE EFFECT OF Ho/Mg RATIO ON FORMATION OF CORE-SHELL STRUCTURE IN $BaTiO_3$ AND ON DIELECTRIC PROPERTIES OF $BaTiO_3$ CERAMICS.

A. Kirianov, T. Hagiwara, H. Kishi* and H. Ohsato (Nagoya Institute of Technology and *Taiyo Yuden Co. Ltd.)*

30D-DI1-5C 12:15 DIELECTRIC PROPERTIES OF $(Ba,Sr)TiO_3$ MOD FILMS GROWN ON VARIOUS SUBSTRATES

P. Woo, I. P. Koutsaroff, M. Zelner, L. McNeil, J. Obeng, L. Chmiel, A. Kassam, B. McClelland and A. C.-Lawry (Gennum Corporation)

Optics (II) (13:30 --- 15:15)

30D-OP2-1IN 13:30 <INVITED> DEFECT CONTROLLED STOICHIOMETRIC LITHIUM NIOBATE AND LITHIUM TANTALATE CRYSTALS FOR NOVEL DEVICE

K.Kitamura and Y.Furukawa (National Institute for Materials Science and *OXIDE Corporation)*

30D-OP2-2C 14:00 A NOVEL MINIATURE OPTICAL SWITCH ARRAY WITH CANTILEVER MICROMIRRORS DRIVEN BY PZT FILMS

Y. Xu, T.-L. Ren, L.-T. Zhang, J.-S. Liu, L.-T. Liu and Z.-J. Li (Tsinghua University)

30D-OP2-3C 14:15 NANO-SIZED INVERTED DOMAIN DOT FORMATION IN STOICHIOMETRIC $LiTaO_3$ SINGLE CRYSTAL USING SCANNING NONLINEAR DIELECTRIC MICROSCOPY
Y. Hiranaga, Y. Cho, Y. Wagatsuma, K. Terabe and K. Kitamura* (Tohoku University and *National Institute for Materials Science)*

30D-OP2-4C 14:30 DEFLECTION OF LIGHT UNDER ELECTRIC FIELD IN FERROELECTRIC-FERROELASTIC AHSe CRYSTAL
Z. Czapla, S. Dacko and P. Staniorowski (Univeristy of Wrocław)

30D-OP2-5IN 14:45 <INVITED> HOLOGRAPHIC STORAGE SYSTEMS AND MATERIALS
M. Zgonik (Swiss Federal Institute of Technology)

Plenary

Noh Theatre

Plenary (II) (15:45 --- 16:45)

30A-PL2-1PL DOES MEMORY OF DREAM COME TRUE? (MARKET PROSPECTS AND TECHNICAL HURDLE FOR FRAM)
H. Nishi (Fujitsu)

Poster

Conference Room 2

Dielectrics (Capacitors, Ceramics) (17:30 --- 19:00)

30E-DC-1P DENSIFICATION AND DIELECTRIC PROPERTIES OF BARIUM NEODYMIUM TITANIUM OXIDE
C.-H. Lu and Y.-H. Huang (National Taiwan University)

30E-DC-2P DIELECTRIC PROPERTIES OF $Pb(Mg_{1/3}V_{2/3})O_3$-$PbZrO_3$ MATERIALS
Y. Yamashita and Y. Hosono (Toshiba Corporation)

30E-DC-3P A NEW, LEAD FREE, FAMILY OF PEROVSKITES WITH A DIFFUSE PHASE TRANSITION: $NaNbO_3$-BASED SOLID SOLUTIONS
I. P. Raevski, S. A. Prosandeev and L. Jastrabik (Rostov State University and *Institute of Physics AS CR)*

30E-DC-4P NET SHAPE GRAIN ORIENTED LEAD METANIOBATE COMPONENTS BY LAYERED MANUFACTURING
M. Allahverdi, N. M.-Hagh, K. Nonaka and A. Safari (Rutgers University)

30E-DC-5P EFFECT OF Mn ADDITION ON ELECTRICAL PROPERTIES OF Ni-MLCC
K. Morita, Y. Mizuno, H. Chazono and H. Kishi (Taiyo Yuden Co., Ltd.)

30E-DC-6P STUDY OF THE ELECTRO-MECHANICAL BEHAVIOR OF FERROELECTRIC CERAMICS
O. Guillon, F. Thiebaud, D. Perreux and P. Delobelle (Université de Franche-Comté 24)

30E-DC-7P EFFECT OF DIELECTRIC LAYER THICKNESS REDUCTION ON INSULATION RESISTANCE OF Ni-MLCs
D. Iwanaga, M. Miyauchi, T. Hibi and Y. Nakano (TDK Corporation)

30E-DC-8P EFFECT OF NICKEL CONTENT ON THE CRYOGENIC DIELECTRIC RESPONSE OF TEMPERATURE $Pb((Mg_{1-X}Ni_X)_{1/3}Ta_{2/3})O_3$
A. K. Gutmann and S. M. Pilgrim (Alfred University)

30E-DC-9P INFLUENCE OF Nb_2O_5 CONTENT ON DIELECTRIC CHARACTERISTICS OF FERROELECTRIC SBN CERAMICS.
M.-S. Kim, S.-I. Kang, J.-H. Lee, J.-J. Kim, H. Y. Lee and S.-H. Cho (Kyungpook National University and *Yeongnam University)*

30E-DC-10P AN EFFECTIVE INTERLAYER DIELECTRIC AND PASSIVATION SCHEME USING REACTIVELY SPUTTERED Al_2O_3 FOR THE MULTILAYER (Ba,Sr)TiO_3 CAPACITORS.

L. McNeil, A.Kassam, M. Zelner and P. Woo. (Gennum Corporation)

30E-DC-11P AN EFFECTIVE INTERLAYER DIELECTRIC AND PASSIVATION SCHEME USING REACTIVELY SPUTTERED Al_2O_3 FOR (Ba,Sr)TiO_3 CAPACITORS

A. Kassam, I. Koutsaroff, L. McNeil, J. Obeng, P. Woo and M. Zelner (Gennum Corporation)

30E-DC-12P EFFECT OF Y DOPING ON ACCEPTOR VALENCE

S. Sato, T. Nomura and K. Fukuda (TDK materials research center and *TDK research center)*

30E-DC-13P MICROSTRUCTURAL AND DIELECTRIC PROPERTIES OF CERAMICS BASED ON $K_2Sr_4Nb_{10}O_{30}$ and $BaTiO_3$

R. Chen, L. Li and Z. Gui (Tsinghua University)

30E-DC-14P MODIFICATION OF DIELECTRIC PROPERTIES IN THE LEAD MAGNESIUM NIOBATE-LEAD TITANATE FERROELECTRIC SYSTEM

W.-J. Hwang and C.-H. Lu (National Taiwan University)

30E-DC-15P PROPERTIES OF LEAD BARIUM ZIRCONATE TITANATE-BASED RELAXOR DIELECTRICS FOR POWER ELECTRONICS APPLICATIONS

M.-J. Pan, R. J. Rayne and B. A. Bender* (NOVA Research, Inc. and *Naval Research Laboratory)*

Ferroelectrics (Ceramics) (17:30 --- 19:00)

30E-FC-1P PROPERTIES OF $PbFe_{2/3}W_{1/3}O_3$-$PbTiO_3$ SYSTEM IN THE RANGE OF MORPHOTROPIC PHASE BOUNDARY

L. Mitoseriu,**, P. M. Vilarinho* and J. L. Baptista* (*University of Aveiro and **Univ. of Genoa)*

30E-FC-2P MICROSTRUCTURE STUDY OF INTERGROWTH $Bi_4Ti_3O_{12}$-$SrBi_4Ti_4O_{15}$ AND $Bi_{3.25}La_{0.75}Ti_3O_{12}$-$SrBi_4Ti_4O_{15}$ CERAMICS

D. Su,**, Y. Ding*,**, J. S. Zhu* and Y. N. Wang* (*Nanjing University and **Chinese Academy of Sciences)*

30E-FC-3P DIELECTRIC AND MECHANICAL PROPERTIES OF (1-X)PMN-XPT

P. Bao, W. li, F. Yan, Y. Dai, H. Shen, J. Zhu, H. L. W. Chan**, C. L. Choy** and Y. Wang (Nanjing University, *Cambridge University and **The HongKong Polytechnic University)*

30E-FC-4P FERROELECTRIC-RELAXOR COMPOSITE THICK FILMS

A. Wu, P. M. Vilarinho, A. Kholkin and J. L. Baptista (University of Aveiro)

30E-FC-5P STRUCTURAL AND DIELECTRIC BEHAVIOR OF Ba-SUBSTITUTED $Pb(Yb_{1/2}Nb_{1/2})O_3$ CERAMICS

J.-H. Kim , H. S. Kim and W. K. Choo (Korea Advanced Institute Of Science and Technology)

30E-FC-6P PHASE TRANSITION BEHAVIOR OF Sc-SUBSTITUTED $Pb(Yb_{1/2}Nb_{1/2})O_3$ CERAMICS

J.-H. Kim, K. S. Koh and W. K. Choo (Korea Advanced Institute of Science and Technology and *Chungang University)*

30E-FC-7P HOT-PRESSED FERROELECTRIC CERAMICS OF SOLID SOLUTIONS OF THE SYSTEM $Ba_{1.65}Sr_{3.35}Nb_{10}O_{30}$-$Ba_4Na_2Nb_{10}O_{30}$ WITH TTB STRUCTURES

R. Z. Mehdiyeva and A. I. Mamedov (National Academy of Sciences of Azerbaija)

30E-FC-8P PHASE TRANSITION OF Fe AND Nb-SUBSTITUTED $Pb(Mg_{1/2}W_{1/2})O_3$ CERAMICS

K. S. Koh, I. W. Shim, J.-H. Kim and W. K. Choo* (Chungang University and *Korea Advanced Institute of Science and Technology)*

30E-FC-9P POLING OF FERROELECTRIC PT/P(VDF-TrFE) 0-3 COMPOSITES

Y.-T. Or, B. Ploss, F. G. Shin, H. L.-W. Chan and C.-L. Choy (The Hong Kong Polytechnic University)

30E-FC-10P DIELECTRIC PROPERTIES OF SAMARIUM SUBSTITUTED PLZT

C. Prakash and O. P. Thakur (Solid State Physics Laboratory)

30E-FC-11P STRUCTURAL AND DIELECTRIC PROPERTIES OF CALCIUM SUBSTITUTED LEAD TITANATE

C. Prakash and A. Bhalla (The Pennsylvania State University and *Solid State Physics Laboratory)*

30E-FC-12P PREPARATION OF nm-ORDERED BARIUM TITANATE FINE PARTICLES USING THE 2-STEP THERMAL DECOMPOSITION OF BARIUM TITANYL OXALATE AND THEIR DIELECTRIC PROPERTIES

S. Wada, T. Hoshina, H. Kakemoto and T. Tsurumi (Tokyo Institute of Technology)

30E-FC-13P FERROELECTRIC PROPERTIES IN MODIFIED-$SrBi_2Ta_2O_9$ CERAMICS

C. I. Cheon, B. Y. Lee and J. S. Kim (University Asan)

30E-FC-14P ELECTRICAL PROPERTIES OF FERROELECTRIC PLZT AS A ENERGY TRANSDUCER IN APPLICATION TO OPTICAL MOTOR

M. Ichiki, Y. Morikawa and T. Nakada (National Institute of Advanced Industrial Science and Technology and *Tokyo Denki University)*

30E-FC-15P ORIGIN OF ABNORMAL GRAIN GROWTH IN TUNGSTEN BRONZE STRUCTURED FERROELECTRIC $Sr_Xba_{1-X}Nb_2O_6$(SBN) CERAMICS.

M.-S. Kim, J.-H. Lee, J.-J Kim, H. Y. Lee and S.-H. Cho (Kyungpook National University and *Yeongnam University)*

30E-FC-16P EFFECTS OF SILVER-DOPING ON FERROELECTRIC $SrBi_2Ta_2O_9$

B. Sih, A. Jung and Z.-G. Ye (Simon Fraser University)

30E-FC-17P FERROELECTRIC PROPERTIES AND SOLID SOLUTION RANGE IN SrO-Bi_2O_3-Ta_2O_5 SYSTEM AROUND $SrBi_2Ta_2O_9$

K. Komagata, H. Takeda, S. Okamura and T. Shiosaki (Nara Institute of Science and Technology (NAIST))

30E-FC-18P INFLUENCE OF SINTERING ATMOSPHERE ON DENSIFICATION AND DIELECTRIC CHARACTERISTICS OF FERROELECTRIC SBN CERAMICS

S.-I. Kang, M.-S. Kim, J.-H. Lee, J.-J. Kim, H. Y. Lee and S.-H. Cho (Kyungpook National University and *Yeongnam University)*

30E-FC-19P PREPARATION ,SINTERING BEHAVIOR ,PROPERTIES OF $SrBi_2Ta_2O_9$

B. Li, X. Wang and L. L (Tsinghua University)

Conference Room 4

Piezoelectrics (I) (17:30 --- 19:00)

30F-PZ1-1P $Ba_{0.5}Sr_{0.5}TiO_3$ FERROELECTRIC THICK FILM WITH UNIFORM THICKNESS AND ITS APPLICATION TO RF MEMS DEVICES

Z. Wang, J. Liu, T. Ren, L. Liu and Z. Li (Tsinghua University)

30F-PZ1-2P STUDY OF ZINC AND NIOBIUM MODIFIED LEAD ZIRCONATE TITANATE FIBER/EPOXY 1-3 COMPOSITES

K. Li, H. L. W. Chan and C. L. Choy (The Hong Kong Polytechnic University)

30F-PZ1-3P EFFECT OF Ta-DOPING ON DIELECTRIC AND PIEZOELECTRIC PROPERTIES OF Ta-DOPED $yPbMg_{1/3}(Nb_{1-x}Ta_x)_{2/3}O_3$-$(1-y)PbTiO_3$

J. T. Wang (Southern University and A&M College)

30F-PZ1-4P PZT COATED MEMBRANE STRUCTURES FOR MICROMACHINED ULTRASONIC TRANSDUCERS

J. Baborowski, P. Muralt, D. Schmitt*, N. Ledermann, P. K. Weber*, W. Steichen**,S. Petitgrand***, A. Bosseboeuf***, N. Setter and Ph. Gaucher**** (Swiss Federal Institute of Technology EPFL, *Fraunhofer IBMT, **Thales-Microsonics, Sophia-Antipolis, ***Université Paris XI, **** Thales Central Research Laboratory)*

30F-PZ1-5P DESIGN AND ANALYSIS OF PMN-PNN-PZT BASED PIEZOELECTRIC ULTRASONIC TRANSDUCERS FOR DISTANCE MEASUREMENT

Z. Gui, X. Hu and L. Li (Tsinghua University)

30F-PZ1-6P EFFECTS OF MICROWAVE AND HOT-PRESS HYBRID SINTERING ON MICROSTRUCTURE AND PIEZOELECTRIC PROPERTIES OF $0.24Pb(Zn_{1/3}Nb_{2/3})O_3$-$0.376PbTiO_3$-$0.384PbZrO_3$ CERAMICS

M. Kobune, K. Muto, H. Takahashi, J. Qiu** and J. Tani** (Himeji Institute of Technology, *Fuji Ceramics Corporation and **Tohoku University)*

30F-PZ1-7P PIEZOELECTRIC PROPERTIES OF METASTABLE (Li, Na)NbO_3 CERAMICS

M. Kimura, T. Ogawa, A. Ando and Y. Sakabe (Murata Mfg. Co., Ltd.)

30F-PZ1-8P DIELECTRIC AND PIEZOELECTRIC PROPERTIES OF Mn-MODIFIED $Bi_4CaTi_4O_{15}$ BASED CERAMICS

M. Yokosuka (Iwaki-Meisei University)

30F-PZ1-9P ELECTROMECHANICAL CHARACTERISTICS OF MICROMACHINED PZT CANTILEVER FOR PROTEIN MASS DETECTING SYSTEM

J. H. Lee, **, K. H. Yoon* and T. S. Kim** (*Yonsei University and **KIST)*

30F-PZ1-10P LEAD ZIRCONATE TITANATE THICK FILMS BY SOL-GEL METHOD FOR PIEZOELECTRIC APPLICATION

Y. Ohya, T. Tamakoshi, T. Ban and Y. Takahashi (Gifu University)

30F-PZ1-11P SINTERABILITY AND PIEZOELECTRIC PROPERTIES OF $KNbO_3$ CERMICS SUBSTITUTED BY LEAD AND SODIUM FOR POTASSIUM

S. Tashiro, H. Nagamatsu and K. Nagata (The National Defense Academy)

30F-PZ1-12P PREPARATION OF $Ba(TiZr)O_3$ THICK FILMS BY SCREEN PRINTING

T. Futakuchi, Y. Nakamura and M. Adachi* (Toyama Industrial Technology Center and *Toyama Prefectural University)*

30F-PZ1-13P THE DIELECTRIC AND ELECTRIC CHARACTERISTICS OF PIEZOELECTRIC CERAMIC FOR ULTRASONIC OSCILLATOR APPLICATION

S. H. Lee, J. Y. Seok, G. H. Ryoo, K. H. Sin, K. H. Yoon** and J. H. Yoo** (Kyung Book National University, *Kyung Seong University and **Se Myung University)*

30F-PZ1-14P ROOM-TEMPERATURE WAFER BONDING OF SILICON AND PIEZOELECTRIC CERAMICS BY MEANS OF ARGON BEAM SURFACE ACTIVATION

H. Takagi, R. Maeda and T. Suga (National institute of advanced industrial science and technology and *University of Tokyo)*

30F-PZ1-15P A NOVEL MEMS GAS SENSOR WITH EFFECTIVE COMBINATION OF HIGH SENSITIVITY AND HIGH SELECTIVITY

J. Zhou,**, P. Li*, S. Zhang*, F. Zhou*, Y. Huang*, P. Yang*, M. Bao* (*Fudan University and **East-China University of Science and Technology)*

30F-PZ1-16P A METHOD OF IMPROVING THE RESOLUTION AND TORQUE OF STEPPER ULTRASONIC MOTOR

L. Li, Z. Xing, X. Chu and Y. Li (Tsinghua University)

30F-PZ1-17P MULTI-FREQUENCY HARMONIC ARRAY TRANSDUCER FOR MEDICAL IMAGING

B. Jadidian, A. Winder, W. Shi,** F. Forsberg** and A. Safari*** (Layered Manufacturing, Inc., *Acoustic Science Associates, **Thomas Jefferson University Hospital and ***Rutgers University)*

30F-PZ1-18P EVALUATION OF LONGITUDINAL DISPLACEMENT FOR LEAD ZIRCONATE TITANATE THICK FILMS

T. Iijima and H. Matsuda (AIST)

30F-PZ1-19P PREPARATION OF DIFFUSER TYPE MICROPUMP USING SCREEN-PRINTED PZT-PCW THICK FILMS

Y.-B. Kim, H.-J. Kim, J.-Y. Kang*, C.-I. Cheon**, D.-J. Choi and T.-S. Kim* (Yonsei University, *Korea Institute of Science and Technology and **Hoseo University)*

30F-PZ1-20P DEVELOPMENT OF MULTILAYER CERAMIC SPEAKER WITH LOW TEMPERATURE FIRED PIEZOELECTRICS

H. Uenishi, Y. Inomata, H. Suzuki, Y. Watanabe and H.Kishi (Taiyo Yuden Co.)

30F-PZ1-21P RF-MEMS BAW FILTER USING SURFACE MICROMACHINING

P. Cong, T.-L. Ren, J.-S. Liu, L.-T. Liu and Z.-J. Li (Tsinghua University)

30F-PZ1-22P METHOD TO ADJUST THE RESONANT FREQUENCY FOR THIN-FILM BAW FILTERS

P. Cong, T.-L. Ren, J.-S. Liu, L-T. Liu and Z.-J. Li (Tsinghua University)

30F-PZ1-23P RELATION BETWEEN SAMPLE CONFIGURATIONS AND NONLINEAR PIEZOELECTRIC COEFFICIENTS

K. Ishii, S. Tashiro and K. Nagata (The National Defense Academy)

30F-PZ1-24P FREQUENCY LIMITATIONS OF PHONON HOLE BURNING IN PIEZOELECTRIC POWDERS

F. Tsuruoka (Kurume University)

30F-PZ1-25P DESIGN AND FABRICATION OF PIEZOELECTRIC CERAMIC ACTUATORS WITH FUNCTIONAL GRADIENTS

D. Jin and Z. Meng (Shanghai Jiaotong University and *Shanghai University)*

30F-PZ1-26P NUMERICAL SIMULATIONS OF THE STATOR IN TRAVELING-WAVE ULTRASONIC

X. Zhao, H. Chen and Z. Meng (Shanghai University)

30F-PZ1-27P THIN-FILM BULK ACOUSTIC RESONATORS AND FILTERS USING PZT/PT BASED STRUCTURES

H.-J. Zhao, J.-S. Liu, T.-L. Ren, L.-T. Liu and Z.-J. Li (Tsinghua University)

30F-PZ1-28P MODELING AND SIMULATION OF THIN-FILM BULK ACOUSTIC RESONATORS

H.-J. Zhao, T.-L. Ren, J.-S. Liu, L.-T. Liu and Z.-J. Li (Tsinghua University)

30F-PZ1-29P VOLTAGE CREEP ON PIEZOELECTRIC MATERIALS

D. Guyomar and D. Audigier and C. Richard (INSA)

30F-PZ1-30P LOW-LOSS SURFACE ACOUSTIC WAVE FILTER BASED ON ZnO DEPOSITED ON GALLIUM ARSENIDE SUBSTRATE

E. Dogheche, V. Sadaune and D. Rèmiens (IEMN)

30F-PZ1-31P CHARACTERISTICS OF THE L_1-B_4 MODE LINEAR ULTRASONIC MOTORS

T. G. Park, B. J. Kim, M. H. Kim and K. Uchino (Changwon University and *Pennsylvania State University)*

30F-PZ1-32P VERY HIGH DISPLACEMENT MONOLITHIC PIEZO ACTUATORS

A. Hooley (St John's Innovation Centre)

30F-PZ1-33P HIGH PERFORMANCE ACTUATOR AND TRANSDUCER DEVICES BASED ON ELECTROSTRICTIVE P(VDF-TRFE) POLYMER

Q. M. Zhang, Z.-Y. Cheng, T. -B. Xu and F. Xia (The Pennsylvania State University)

30F-PZ1-34P MODELING OF PIEZOELECTRIC MICROPHONE WITH MULTILAYER FERROELECTRIC STRUCTURES

T.-L. Ren, L.-T. Zhang, J.-S. Liu, L.-T. Liu and Z.-J. Li (Tsinghua University)

30F-PZ1-35P CHARACTERISATION OF MEMS DEVICES USING A POLARISATION INTERFEROMETER

D. Jenkins, W. Clegg, X. Liu, E. Fribourg-Blanc, E. Cattan* and D. Remiens* (University of Plymouth and *Université de Valenciennes)*

30F-PZ1-36P THE LINEARISATION OF AN ELECTROSTRICTIVE DEVICE FOR MEMS APPLICATIONS

D. Jenkins, E. Fribourg-Blanc, E. Cattan* and D. Remiens* (University of Plymouth and *Université de Valenciennes)*

30F-PZ1-37P ULTRSONIC LINEAR MOTOR USING MULTILAYER PIEZOELECTRIC ACTUATORS MADE OF PIEZOELECTRIC MATEARIAL WITH HIGH MECHANICAL QUALITY FACTOR

T. Funakubo,** Y. Tomikawa*, M. Nakamura**, Y. Kasai** and I. Nakazawa** (*Yamagata University and **Olympus Optical Co., Ltd.)*

30F-PZ1-38P PIEZOELECTRIC LINEAR MOTOR WITH TWO MOTIONAL FUNCTIONS OF SMALL DISPLACEMENT AND LARGE DISPLACEMENT

Y. Tomikawa, Y. Maruko and T. Takano (Yamagata University and *Tohoku Institute of Technology)*

30F-PZ1-39P ELECTRICAL PROPERTIES AND MICROSTRUCTURES OF MICROWAVE SINTERED PZN-BASED CERAMICS

C.-L. Li and C.-C. Chou (National Taiwan University)

Reception Hall

MFS, MFMIS (17:30 --- 19:00)

30G-MM-1P ONE TRANSISTOR MEMORY DEVICES WITH IMPROVED RETENTION

T. Li (Sharp labs of America, Inc)

30G-MM-2P METAL-FERROELECTRIC-METAL-INSULATOR-SEMICONDUCTOR (MFMIS) STRUCTURES USING $(Bi,La)_4Ti_3O_{12}$ AND HIGH-k DIELECTRIC FILMS

E. Tokumitsu and T. Suzuki (Tokyo Institute of Technology)

30G-MM-3P SIMULATION MODEL OF A FERROELECTRIC FIELD EFFECT TRANSISTOR

T. C. MacLeod and F. D. Ho (NASA and *University of Alabama)*

30G-MM-4P FABRICATION OF METAL/FERROELECTRIC/INSULATOR/SEMICONDUCTOR FIELD EFFECT TRANSISTOR USING Mo/$Pb(Zr,Ti)O_3$/$ZrTiO_4$/POLY Si THIN FILM STRUCTURE

J.-H. Park, Y.-G. Yoon and S.-K.Joo (Seoul National University)

30G-MM-5P INVESTIGATION OF A NOVEL MFS FET ARRAY

C.-X. Li, T.-L. Ren, W.-Q. Zhang, T.-Q. Shao, J.-S. Liu, L.-T. Liu and Z.-J. Li (Tsinghua University)

30G-MM-6P MFIS FET WITH UNTRA THIN Si_3N_4 BUFFER LAYER MADE BY ATOMIC NIGROGEN RADICALS

Y. Fujisaki, S. Ogasawara, K. Aizawa and H. Ishiwara (Tokyo Institute of Technology)

30G-MM-7P Au/FERROELECTRIC $Na_{0.5}K_{0.5}NbO_3$/Ta_2O_5/Si - MFIS MEMORY DIODES

C.-R. Cho ***, B.-M. Moon*, J. Sundqvist**, A. Hårsta** and A. Grishin*** (*Korea University, **The Ångström Laboratory and ***Royal Institute of Technology)*

30G-MM-8P FABRICATION OF MFIS DIODES USING BLT $(Bi, La)_4Ti_3O_{12}$ AND $LaAlO_3$ BUFFER LAYERS

B.-E. Park and H. Ishiwara (Tokyo Institute of Technology)

30G-MM-9P FINITE-DIFFERENCE SIMULATION OF CONDUCTION CURRENT IN METAL-FERROELECTRIC-METAL CAPACITANCE WITH THE DEPLETION EFFECTS

M.-H. Lai, T. G.-Y. Lee, C.-L. Wang, D.-C. Shye*, C.-C. Hwang*, C.-Y. Yeh, T.-Y. Tseng* and H.-C. Cheng* (University of Feng Chia and *National Chiao Tung University)*

30G-MM-10P A NEW COMPACT MODEL FOR THE FERROELECTRIC DEPLETION EFFECTS OF METAL-FERROELECTRIC-OXIDE-SEMICONDUCTOR FIELD EFFECT TRANSISTORS

C.-Y. Yeh, T. G.-Y. Lee, C.-L. Wang, D.-C. Shye*, C.-C. Hwang*, M.-H. Lai, T.-Y. Tseng* and H.-C. Cheng* (University of Feng Chia and *National Chiao Tung University)*

30G-MM-11P SIMULATION OF RETENTION PROPERTY OF FERROELECTRIC MEMORIES

T. Tamura, Y. Arimoto and H. Ishiwara** (R&D Association for Future Electron Devices, *Fujitsu Laboratories Ltd and **Tokyo Institute of Technology)*

30G-MM-12P FABRICATION OF MFIS CAPACITORS USING $Pb_5Ge_3O_{11}$ AND ALTERNATIVE GATE OXIDE BY PULSED LASER DEPOSITION

J.-H. Park, I..-D. Kim, M.-S. Kim, J.-H. Ahn and H.-G. Kim (KAIST and *LG Elite)*

30G-MM-13P DEPTH PROFILE OF FIXED CHARGE IN EPITAXIAL OXIDE FILMS ON SILICON SUBSTRATE FOR MFIS STRUCTURE

T. Yamada, N. Wakiya, K. Shinozaki and N. Mizutani (Tokyo Institute of Technology)

30G-MM-14P CHARACTERISTICS OF $LaAlO_3$ AS INSULATING BUFFER LAYERS OF FERROELECTRIC-GATE FETS

S. K. Kang and H. Ishiwara (Tokyo Institute of Technology)

30G-MM-15P IMPROVEMENT OF RETENTION CHARACTERISTICS IN METAL-FERROELECTRIC-INSULATOR-SEMICONDUCTOR STRUCTURE BY OPTIMIZING STRUCTURE AND MATERIAL PROCESSING

M. Noda, K. Kodama, M. Takahashi, D. Ricinshi, A. I. Lerescu and M. Okuyama (Osaka University)

30G-MM-16P FERROELECTRIC/AMORPHOUS Si MIS STRUCTURES FOR MEMORY APPLICATIONS

A. L. Kholkin, R. Martins, H. Aguas*, I. Ferreira*, V. Silva*, O. Smirnova, M. E. V. Costa, P. M. Vilarinho, E. Fortunato* and J. L. Baptista (Universidade de Aveiro and *CENIMAT, DCM da Faculdade de Ciências e Technologia da Universidade Nova de Lisboa and CEMOP-UNINOVA)*

30G-MM-17P EFFECTS OF CHARGE TRAPPING ON THE ASYMMETRICAL SHIFT OF MEMORY WINDOW IN MFIS DEVICES

Y. W. Lee, D. Kang, Y. Roh, S. K. Lee and Y. Kim* (Sungkyunkwan University and *Semiconductor Materials Laboratory)*

30G-MM-18P THE EFFECT OF LEAKAGE CURRENT ON THE RETENTION PROPERTY OF $YMnO_3$ BASED MFIS CAPACITOR

D. Ito, N. Fujimura and T. Ito (Graduate School of Engineering Osaka Prefecture University)

FeRAM, Device, Integration, Circuits (17:30 --- 19:00)

30G-IF-1P REDUCED THERMAL BUDGET ADVANCED PROCESS FOR SBT THIN FILMS IN HIGH DENSITY STACK CELL FeRAMs

J. Karasawa, Y. Hamada, E. Natori*, K. Oguchi*, T. Shimoda*, V. Joshi**, N. Solayappan**, Larry D McMillan** and Carlos A Paz de Araujo** (Epson Research and Development, Inc. *Seiko Epson Corporation. and **Symetrix Corporation)*

30G-IF-2P NEW APPROACH ON LOGIC APPLICATION OF FERAM TECHNOLOGY

M. Takayama, S. Koyama and H. Nozawa (Kyoto University)

30G-IF-3P PLASMA-ASSISTED DRY ETCHING OF FERROELECTRIC CAPACITOR MODULE AND APPLICATION TO 32M FRAM DEVICE WITH SUB-MICRON FEATURE SIZE

S. W. Lee, S. H. Joo, K. M. Lee, S. D. Nam, K. S. Park, Y. T. Lee, H. G. An, M. S. Lee, H. J. Kim, S. O. Park, U. I. Chung and J. T. Moon (Samsung Electronics Co.)

30G-IF-4P SIGNAL WINDOW MAP – A NEW ANALYSIS TOOL FOR FERAM

N. Rehm, ,l. Jacob and J. Wohlfahrt (Infineon Technologies Japan K.K.)

30G-IF-5P INTEGRATION OF 1T1C COB CELL WITH $Ir/IrO_2/PZT/Ir$ CAPACITOR FORMED BY MOCVD-PZT

M.-S. Lee, K.-S. Park, S.-D. Nam, K.-M. Lee, S.-H. Joo, S.-W. Lee, H.-G. An, H.-J. Kim, S.-O. Park, U.-I. Chung and J.-T. Moon (Samsung Electronics Co. Ltd.)

30G-IF-6P ELECTRICAL PROPERTIES OF FERROELECTRIC FILM ETCHED BY HELICON PLASMA ETCHING METHOD

I.-K. You, W.-J. Lee, S.-O. Ryu, S. M. Cho, N. Y. Lee, B.-G. Yu, K.-I. Cho, S.-H. Lee, J. Sone* and J. Moon* (ETRI and *NexTech Solutions Co.)*

30G-IF-7P ROBUST PROCESS INTEGRATION AND RELIABILITIES FOR 1MB FERROELECTRIC MEMORIES USING NOBLE-BAKED BLT FILMS

B. Yang, S. S. Lee, Y. M. Kang, K. H. Noh, S. W. Lee, N. K. Kim, S. Y. Kweon, S. J. Yeom and Y. J. Park (Hynix Semiconductor Incorporated)

30G-IF-8P A NOVEL NON-VOLATILE FLIP-FLOP USING A FERROELECTRIC CAPACITOR

M. Ueda, T. Otsuka, K. Toyoda, K. Morimoto and K. Morita (Matsushita Electric Industrial Co.)

30G-IF-9P HIGHLY RELIABLE AND MANUFACTURABLE 1MB 1T1C FERAM

S.-H. Oh, S.-K. Hong, C.-G. Lee, E.-Y. Kang, Y.-M. Kang, S.-S. Lee, H.-B. Kang and Y.-J. Park (Hynix Semiconductor, Inc.)

30G-IF-10P ETCH CHARACTERISTICS OF FERROELECTRIC $(Bi_{4-X}la_X)Ti_3O_{12}$ THIN FILMS IN AN INDUCTIVELY COUPLED PLASMA

C. W. Chung, Y. H. Byun, H. I. Kim, J. K. Yoon, Y. S. Song and J. K. Lee (Inha University, *Samsung Advanced Institute of Technology)*

30G-IF-11P FABRICATION AND CHRACTERIZATION OF 1T2C-TYPE FERROELECTRIC MEMORY CELL WITH LOCAL INTERCONNECTIONS

S. Ogasawara and H. Ishiwara (Tokyo Institute of Technology)

30G-IF-12P Cr BASED TERNARY BARRIER LAYER FOR HIGH DENSITY FERAM APPLICATIONS

J. Koo, N. Park, J. Kim, S.-K. Hong and S. J. Yeom* (Kookmin University and *Hynix Semiconductor Inc.)*

30G-IF-13P PLASMA ETCHING OF PZT CAPACITOR FOR FERROELECTRIC MEMORY APPLICATION

M. Ueda, M. Endo and K.Suu (ULVAC)

30G-IF-14P CHARACTERISTICS OF PAIRED $Bi_{(4-x)}La_xTi_3O_{12}$ CAPACITORS ARRAY SUITABLE FOR 1T2C-TYPE FERAM

B.J. Koo and H. Ishiwara (Tokyo Institute of Technology)

30G-IF-15P ON-CHIP INTEGRATION OF $Pt/Ba_{0.7}Sr_{0.3}TiO_3/Pt$ THIN FILM CAPACITORS

R. Liedtke and R. Waser*,** (*RWTH Aachen and **Forschungszentrum Jülich)*

30G-IF-16P ELECTRICAL MEASUREMENTS ON WAFER-SCALE FERROELECTRIC CAPACITORS

D. J. Jung,**, M. Dawber*, K. N. Kim** and J. F. Scott* (*Cambridge University and **Samsung Electronic Co.)*

30G-IF-17P A MATHEMATICAL DESCRIPTION OF THE SWITCHING BEHAVIOR OF FERROELECTRIC THIN FILMS FOR FRAM APPLICATIONS

F. Chu (Ramtron International Corporation)

30G-IF-18P REACTIVE ION BEAM ETCHING EFFECTS ON MASKLESS PZT PROPERTIES

C. Soyer, E. Cattan and D. Rèmiens (Université de Valenciennes)

30G-IF-19P INTEGRATION TECHNOLOGY OF INTERLAYER AND INTERMETALLIC DIELECTRICS FOR HIGH DENSITY 32Mb FRAM

Y. J. Song, H. J. Joo, N. W. Jang, S. Y. Lee, H. H. Kim, Y. S. Park and K. Kim (Samsung Electronics Co. Ltd.,)

30G-IF-20P SbSI FILMS FOR FERROELECTRIC MEMORY APPLICATIONS

S. R. Surthi, S. Kotru and R. K. Pandey (The University of Alabama)

30G-IF-21P HYDROGEN BARRIER ENCAPSULATION MATERIALS AND TECHNIQUES FOR THE CONTROL OF HYDROGEN-INDUCED DEGRADATION OF FERROELECTRIC CAPACITORS

J. Celinska, S. Narayan, V. Joshi, M. Lim, Z. Chen, L. McMillan and C. A. pas de Araujo (Symetrix Corporation)

30G-IF-22P SELF-ASSEMBLED GROWTH OF NANOSIZED SINGLE CRYSTALLINE FERROELECTRIC GRAINS FOR FUTURE MEMORY APPLICATIONS - A BOTTOM UP APPROACH -

T. Schneller, A. Roelofs and R. Waser (RWTH Aachen and *IFF/EKM)*

30G-IF-23P ADVANCES IN THIN FILM INTEGRATION BY SPINCVD FOR NOVEL FERROELECTRIC MATERIALS AND DEVICES

J. D. Cuchiaro, G. S. Tompa, C. Rice and L. G. Provost (SMI)

30G-IF-24P Ka-BAND (36GHz) GUNN DIODE VOLTAGE CONTROLLED OSCILLATORS (VCO) WITH TUNING BY FERROELECTRIC VARACTOR.

A. Kozyrev, V. Dobrov and T. Samoilova,L.Sengupta (St. Petersburg Electrotechnical University and *Paratek Microwave Inc.)*

30G-IF-25P Ka-BAND TUNABLE 4-POLE FILTER ON BASE OF WAVEGUIDE DIELECTRIC RESONATORS.

A. Kozyrev, O. Buslov, V. Keis, D. Dovgan, P. Kulik and L. Sengupta (St. Petersburg Electrotechnical University and *Paratek Microwave Inc.)*

30G-IF-26P INTERFACE STATE DENSITIES OF METAL OXIDES ON SILICON FOR Pt/ $SrBi_2Ta_2O_9$/ METAL OXIDE/ Si STRUCTURES

M. Lim, S. Narayan, V. Joshi, J. Celinska, Z. Chen, C. A. Paz De Araujo and L. D. McMillan (Symetrix Corporation)

30G-IF-27P ETCHING OF SILICON-BASED FERROELECTRIC THIN FILMS FOR INTEGRATED

T.-L. Ren, L.-T. Zhang, J.-S. Liu, H.-J. Zhao, L.-T. Liu and Z.-J. Li (Tsinghua University)

30G-IF-28P HIGH TEMPERATURE OXIDATION OF TiAlN THIN FILMS FOR MEMORY DEVICES

S. S. Park (Sangju National University)

30G-IF-29P RELIABILITY STUDIES OF MOCVD SBT FOR HIGH DENSITY FERAM APPLICATIONS

Z. Chen, N. Solayappan, V. Joshi, M. Lim, J. Celinska, C. A. Paz de Araujo and L. D. Mcmillan (Symetrix Corporation)

30G-IF-30P READ/WRITE CHARACTERISTICS OF NANO SCALE FERROELECTRIC DOMAINS

S. Hong and H. Shin (Samsung Advanced Institute of Technology)

Gallery

Thin film - Fabrication - Pb system (II) (17:30 --- 19:00)

30H-TP2-1P PREPARATION AND ELECTRICAL PROPERTY OF b-PVDF/$PbTiO_3$ THIN FILMS

C. M. Wang, M. C. Kao and Y. C. Chen* (Cheng-Shiu Institute of Technology and *National Sun Yat-Sen University)*

30H-TP2-2P FABRICATION AND ELECTRICAL PROPERTIES OF SOL-GEL DERIVED PMNT THIN FILMS WITH SINGLE PEROVSKITE PHASE

H. Fan and H.-E. Kim (Seoul National University)

30H-TP2-3P FERROELECTRIC PROPERTIES OF PMNT THIN FILMS EPITAXIALLY GROWN ON La-DOPED $SrTiO_3$

K. Wasa, Y. Yamada, M. Shimoda, T. Matsuda, A. Unno, S. H. Seo, D. Y. Noh*, H. Okino** and T. Yamamoto** (Yokohama City Universit, *Kwangju Institute of Science and Technology and **The National Defense Academy)*

30H-TP2-4P SOL-GEL DERIVED $Pb(Sc_{0.5}Nb_{0.5})O_3$ THIN FILMS : PROCESSING AND DIELECTRIC PROPERTIES

B. J. Kuh, W. K. Choo, K. Brinkman, J.-h. Kim, D. Damjanovic* and N. Setter* (KAIST and *Swiss Federal Institute of Technology)*

30H-TP2-5P THICK $Pb(Ni_{1/3}Nb_{2/3})O_{3-}(Pb_{1-X})(Ti_{1-Y}Zr_Y)O_3$ FILMS PREPARED BY TAPE-CASTING

N.-H. Tai, Y.-M. Shen, T.-Hsu, I.-N. Lin. L.-J. Hu and T.-S. Yeh* (National Tsing-Hua University and *Chun-Shan Institute of Science)*

30H-TP2-6P STRUCTURAL EVOLUTION OF PEROVSKITE $Pb(Mg_{1/3},Mb_{2/3})O_3$ THIN FILMS ON $SrTiO_3$ AND MgO SUBSTRATES

S. H. Seo, D. Y. Noh, Y. Yamada and K. Wasa* (Kwangju Institute of Science and Technology and *Yokohama City University)*

30H-TP2-7P ENHANCED MICRO-ACTUATION FOR MEMS DEVICES USING PMN-30PT THIN FILMS

D. Jenkins, E. Fribourg-Blanc, E. Cattan* and D. Remiens* (University of Plymouth and *Université de Valenciennes)*

30H-TP2-8P COMPOSITIONALLY MODULATED $Pb(Mg_{1/3}Nb_{2/3})O_3$–$PbTiO_3$ RELAXOR THIN FILMS DEPOSITED BY PULSED EXCIMER LASER ABLATION TECHNIQUE

A. Laha, P. Victor and S. B. Krupanidhi (Indian Institute of Science)

30H-TP2-9P DEVELOPMENT OF PMNT ELECTROSTRICTIVE THIN FILMS FOR BULK ACTUATION

E. Fribourg-Blanc,***, E. Cattan*, D. Remiens*, D. Jenkins**, M. Dupont*** and D. Osmont*** (*Université de Valenciennes, **University of Plymouth and ***ONERA, DMSE/MECS)*

Thin film - Fabrication - SBT system (17:30 --- 19:00)

30H-TS-1P PREPARATION OF $SrBi_2Ta_2O_9$ THIN FILMS BY LIQUID-DELIVERY MOCVD WITHOUT ADDITION OF SOLVENTS

N. Nukaga, H. Ono, T. Shida*, H. Machida**, T. Suzuki** and H. Funakubo (Tokyo Institute of Technology, *LINTEC Co., LTD and **TRI Chemical Laboratories INC.)*

30H-TS-2P DIELECTRIC RESPONSE OF EPITAXIAL $SrBi_2Ta_2O_9$ THIN FILMS OBSERVED WITH INTERDIGITAL ELECTRODES

K. Kotani, I. Kawayama and M. Tonouchi (Osaka University)

30H-TS-3P INITIAL GROWTH OF $SrBi_2Ta_2O_9$ THIN FILMS ON $SrTiO_3$ (100) AND MgO (100) SUBSTRATES

I. Kawayama, K. Kotani and M. Tonouchi (Osaka University)

30H-TS-4P INFLUENCE OF Ca ON STRUCTURAL AND FERROELECTRIC PROPERTIES OF LASER ABLATED $SrBi_2Ta_2O_9$ THIN FILMS

R,. R.. Das, P. Bhattacharya, W. Pérez and R. S. Katiyar (University of Puerto Rico)

30H-TS-5P THICKNESS EFFECT IN PZT THIN FILMS INVESTIGATED BY MEANS OF X-RAY PHOTO-ELECTRON, UV PHOTO-YIELD AND PHOTO-REFLECTANCE SPECTROSCOPIES

A. I. Lerescu, M. Noda and M. Okuyama (Osaka University)

30H-TS-6P FERROELECTRIC $SrBi_2Ta_2O_9$ THIN FILMS BY AQUEOUS CHEMICAL SOLUTION DEPOSITION

D. Nelis, D. Mondelaers, G. Vanhoyland, H. Van den Rul, M. K. Van Bael, J. Mullens, L. C. Van Poucke, W. Laureyn and D. J. Wouters* (Laboratory of Inorganic and Physical Chemistry, IMO and *IMEC)*

Thin film - Fabrication - BIT system (17:30 --- 19:00)

30H-TB-1P EFFECT OF HEAT TREATMENT ON ELECTRIC PROPERTIES OF $Bi_4Ti_3O_{12}$ THIN FILMS BY TWO-DIMENSION RF MAGNETRON SPUTTERING

K. Kudoh, T. Higuchi, M. Tanaka and T. Tsukamoto (Tokyo University of Science)

30H-TB-2P $Bi_{3.99}Ti_{2.97}V_{0.03}O_{12}$ FERROELECTRIC THIN FILMS PREPARED BY PULSED LASER DEPOSITION

D.-Y. Wang, J.-S. Zhu**, H. L.-W. Chan* and C.-L. Choy* (*The Hong Kong Polytechnic University and ** Nanjing University)*

30H-TB-3P EFFECT OF NIOBIUM DOPING ON THE FERROELECTRIC PROPERTIES OF BISMUTH TITANATE

Z. H. Bao, Y. Y. Yao, X. M. Lü, J. S. Zhu and Y. N. Wang (Nanjing University)

30H-TB-4P La DOPED EFFECT ON THE FATIGUE PROPERTIES IN $Bi_4Ti_3O_{12}$–$SrBi_4Ti_4O_{15}$ THIN FILMS

J. S. Zhu,**, D. Y. Wang**, H. X. Qin*, Z. H. Bao*, D. Su*, Y. Ding*, X. M. Lü*, H. L. W. Chan** and C. L. Choy** (*Nanjing Univ. and **The Hong Kong Polytechnic Univ.)*

30H-TB-5P STRUCTURAL AND ELECTRICAL PROPERTIES OF $Bi_{3.25}La_{0.75}Ti_3O_{12}$ AND $Bi_{3.25}Pr_{0.75}Ti_3O_{12}$THIN FILMS FOR MEMORY APPLICATIONS

D. Wu, A. Li, Z. Liu and N. Ming (Nanjing University)

30H-TB-6P DOPING EFFECTS ON THE PROPERTIES AND MICROSTRUCTURE OF THE INTERGROWTH $Bi_4Ti_3O_{12}$–$SrBi_4Ti_4O_{15}$ THIN FILMS

H. Qin and R. A. Gerhardt (Georgia Institute of Technology)

30H-TB-7P DEPENDENCE OF METAL COMPOSITION OF BLT THIN FILMS PREPARED BY MOCVD ON METALORGANIC PRECURSORS

Y. Tasaki, T. Tanaka, T. Hashimoto*, T. Yamamoto*, T. Nittamachi* and S. Yoshizawa* (Toshima MFG Co. and *Meisei University)*

30H-TB-8P EFFECT OF METALORGANIC PRECURSORS ON THE MORPHOLOGY OF BLT THIN FILMS PREPARED BY MOCVD

T. Tanaka, S. Yoshizawa, T. Hashimoto, T. Yamamoto, T. Nittamachi and Y. Tasaki (Meisei University and *Toshima MFG Co., Ltd.)*

30H-TB-9P EFFECT OF V-SUBSTITUTION ON THE FERROELECTRIC PROPERTIES OF $Bi_4Ti_3O_{12}$ AND $(Bi,M)_4Ti_3O_{12}$ [M = LANTHANOID] FILMS FABRICATED BY CHEMICAL SOLUTION DEPOSITION TECHNIQUE.

H. Uchida, H. Yoshikawa, I. Okada, H. Matsuda, T. Iijima*, T. Watanabe** and H. Funakubo** (Sophia University, *AIST and **Tokyo Institute of Technology)*

30H-TB-10P MICROSTRUCTURES AND FERROELECTRIC PROPERTIES OF NIOBIUM-DOPED $Bi_4Ti_3O_{12}$ THIN FILMS PREPARED BY SOL-GEL METHOD

J. K. Kim, S. S. Kim, E. K. Choi, J. S. Kim and T. K. Songa, (Changwon National University)

30H-TB-11P FERROELECTRIC PROPERTIES OF DONOR-DOPED $Bi_4Ti_3O_{12}$ THIN FILMS PREPARED BY SOL-GEL PROCESS

S. S. Kim, J. K. Kim, E. K. Choi, B. S. Kim, J. S. Kim and T. K. Song (Changwon National University)

30H-TB-12P PREPARATION AND PROPERTIES OF $Bi_{4-X}La_XTi_3O_{12}$ FERROELECTRIC THIN FILMS USING EXCIMER UV IRRADIATION

T. Hayashi, D. Togawa, M. Yamada, W. Sakamoto* and S. Hirano* (Shonan Institute of Technology and *Nagoya University)*

30H-TB-13P PREPARATION AND CHARACTERIZATION OF SITE-ENGINEERED $Bi_4Ti_3O_{12}$-BASDED THIN FILMS BY MOCVD

T. Watanabe, T. Kojima, T. Sakai, H. Funakubo, M. Osada, K. Saito, Y. Noguchi** and M. Miyayama** (Tokyo Institute of Technology, *Philips Analytical JAPAN and **University of Tokyo,)*

30H-TB-14P LARGE REMANENT POLARIZATION OF $(Bi,Nd)_4Ti_3O_{12}$ EPITAXIAL THIN FILMS GROWN BY METALORGANIC CHEMICAL VAPOR DEPOSITION

T. Kojima, T. Sakai, T. Watanabe and H. Funakubo (Tokyo Institute of Technology)

30H-TB-15P DIRECT CRYSTALLIZATION AND CHARACTERIZATION OF Bi_3TiTaO_9 AND $Bi_{3-X}La_XTiTaO_9$ THIN FILMS PREPARED BY MOCVD

M. Suzuki, M. Masatoshi, N. Nukaga, T. Watanabe, N. Hajime, T. Takenaka and H. Hunakubo (Science University of Tokyo)

30H-TB-16P ORIENTATION CONTROL OF $(Bi,La)_4Ti_3O_{12}$ THIN FILMS BY ADDITION OF SILICATES AND GERMANATES

Y. Kawashima, T. Kijima and H. Ishiwara (Tokyo Institute of Technology)

Thin film - Fabrication - etc (I) (17:30 --- 19:00)

30H-TE1-1P MULTI-STEP GROWTH OF ORIENTED $LiNbO_3$ THIN FILMS

V. Bornand, I.. Huet and P. Papet (Laboratoire de Physicochimie de la Matière Condensée)

30H-TE1-2P DIELECTRIC AND TUNABLE PROPERTIES OF $Ba_{0.96}Ca_{0.04}Ti_{0.84}Zr_{0.16}O_3$ (BCTZ) ON MgO AND SiO_2/Si SUBSTRATES

T. S. Kalkur, W. C. Yi, E. Philofsky and L. Kammerdiner (University of Colorado)

30H-TE1-3P MICROSTRUCTURAL AND SURFACE MORPHOLOGICAL EVOLUTIONS IN COMPOSITIONALLY GRADED $(Ba_{1-x}Sr_x)TiO_3$ THIN FILMS AND RELATED DIELECTRIC PROPERTIES

X. Zhu,**, H. L.-W. Chan*, C.-L. Choy* and K.-H. Wong* (*The Hong Kong Polytechnic University and **Nanjing University)*

30H-TE1-4P DIELECTRIC PROPERTIES AND MICROSTRUCTURES OF $Ba_{1-x}Sr_xTiO_3$ EPITAXIAL THIN FILMS WITH COMPOSITIONAL GRADIENTS NORMAL TO THE SUBSTRATES

X. Zhu,**, H. L.-W. Chan**, C.-L. Choy** and K.-H. Wong* (*The Hong Kong Polytechnic University and **Nanjing University)*

30H-TE1-5P PLANAR DIELECTRIC PROPERTIES OF COMPOSITIONALLY GRADED $(Ba_{1-x}Sr_x)TiO_3$ THIN FILMS PREPARED BY PULSED-LASER DEPOSITION

X. Zhu,**, H. L.-W. Chan*, C.-L. Choy* and K.-H. Wong* (*The Hong Kong Polytechnic University and **Nanjing University)*

30H-TE1-6P GROWTH OF STOICHIOMETRIC $LiNbO_3$ THIN FILMS THROUGH METALLO-ORGANIC DECOMPOSITON PROCESS

H. Zhang, X. Wang and T. A. Rabson (Rice University)

30H-TE1-7P LOW-TEMPERATURE PREPARATION OF FERROLECTRIC $Ba_2NaNb_5O_{15}$ THIN FILMS BY PULSED LASER DEPOSITION

K. Ohnuki, M. Takayasu, T. Higuchi and T. Tsukamoto (Tokyo University of Science)

30H-TE1-8P HETEROEPITAXIAL GROWTH OF MgO THIN FILMS ON Al_2O_3(00・1) BY METALORGANIC CHEMICAL VAPOR DEPOSITION

W. I. Park, D. H. Kim and G.-C. Yi (Pohang University of Science and Technology)

30H-TE1-9P PREPARATIOIN OF BARIUM STRONTIUM TITANATE THIN FILM BY SPRAY DEPOSITION

Y. Takeshima, K. Nishita, K. Tanaka and Y. Sakabe (Murata Mfg. Co., Ltd.,)

30H-TE1-10P EFFECTS OF SBN SELF-TEMPLATE LAYER ON THE STRUCTURAL PROPERTIES OF SOL-GEL DERIVED $Sr_{0.6}Ba_{0.4}Nb_2O_6$ FILMS

A. -D. Li,**, C. L. Mak**, K. H. Wong**, M. M. T. Ho***, M. K. Yeung**, D. Wu* and N. -B. Ming* (*Nanjing University and **The Hong Kong Polytechnic University)*

30H-TE1-11P FORMATION OF EPITAXIAL $BaTiO_3/SrTiO_3$ MULTILAYERS GROWN ON Nb-DOPED $SrTiO_3$ (001) SUBSTRATES

A. Visinoiu, M. Alexe, H. N. Lee, D. N. Zakharov, D. Hesse and U. Gösele (Max Planck Institute of Microstructure Physics)

30H-TE1-12P DIELECTRIC AND PYROELECTRIC PROPERTIES OF FERROELECTRIC THIN FILMS

*M. D. Glinchuk, E. A. Eliseev and V. A. Stephanovich (NASc of Ukraine and *Opole University)*

30H-TE1-13P GROWTH MORPHOLOGY AND CRYSTAL ORIENTATION OF $KNbO_3$ ON $SrTiO_3$ BY LIQUID PHASE EPITAXY

K. Kakimoto, S. Ito, I. Masuda, N. Adachi, H. Ohsato and T. Okuda (Nagoya Institute of Technology)

30H-TE1-14P CRYSTAL GROWTH AND INTERFACIAL CHARACTERIZATION OF DIELECTRIC $BaZrO_3$ THIN FILMS ON Si SUBSTRATES

Y. Kitano, T. Matsui, N. Fujimura, K. Morii and T. Ito (Osaka Prefecture University)

30H-TE1-15P SYNTHESIS OF HIGH DIELECTRIC CONSTANT TITANIUM OXIDE THIN FILMS BY METALORGANIC DECOMPOSITION

S. Maeda, K. M. A. Salam, H. Fukuda and S. Nomura (Muroran Institute of Technology)

30H-TE1-16P EFFECTS OF ADDITIVE ELEMENTS ON IMPROVEMENT OF THE DIELECTRIC PROPERTIES OF Ta_2O_5 FILMS FORMED BY METALORGANIC DECOMPOSITION

K. M. A. Salam, H. Fukuda and S. Nomura (Muroran Institute of Technology)

30H-TE1-17P MICROSTRUCTURE AND ELECTRICAL PROPERTIES OF $(Ba,Sr)TiO_3$ THIN FILMS PREPARED BY A SOL-GEL METHOD

T.-L. Ren, X.-N. Wang, J.-S. Liu, H.-J. Zhao, T.-Q. Shao, L.-T. Liu and Z.-J. Li (Tsinghua University)

30H-TE1-18P FERROELECTRIC CHARACTERIZATION OF Bi MODIFIED $YMnO_3$ THIN FILMS GROWN BY PULSED LASER DEPOSITION FOR METAL-FERROELECTRIC-INSULATOR-SEMICONDUCTOR (MFIS) STRUCTURE.

T. Choi, S. H. Shin, Y. S. Kim and J. Lee (Sung Kyun Kwan Univ.)

30H-TE1-19P FABRICATION AND CHARACTERISTIC OF Mn(II)- AND Mn(IV)-DOPED BST THIN FILMS

J.-B. Bao, T.-L Ren, J.-S. Liu, X.-N. Wang, L.-T. Liu and Z.-J. Li (Tsinghua University)

30H-TE1-20P FERROELECTRIC $Na_XK_{(1-X)}NbO_3$ THIN FILMS ON SINX/SI SUBSTRATES BY METAL ORGANIC CHEMICAL VAPOR DEPOSITION

C.-R. Cho (The Ångström Laboratory)

5/31 (Fri.)

Oral

Noh Theatre

Thin Films (VII) (9:00 --- 10:30)

31A-TF7-1IN 9:00 <INVITED> CHEMICAL APPROACH USING TAILORED LIQUID SOURCES TO TRADITIONAL AND NOVEL FERROELECTRIC THIN FILMS
K. Kato **, K. Suzuki*, D. Fu*, K. Nishizawa* and T. Miki* (*National Institute of Advanced Industrial Science and Technology and **Tokyo Institute of Technology)*

31A-TF7-2C 9:30 ANNEALING TEMPERATURE DEPENDENCE OF CRYSTALLINITY, STRAIN, AND MEMORY EFFECTS OF $SrBi_2Ta_2O_9$ /SiN/Si STRUCTURE
J.-P. Han, C. J. Xie, K.-H. Kim , C. C. Broadbridge, D. L. Pechkis*, Y. X. Liu, W. Tong, A. H. Lehman** and T. P. Ma (Yale University, *Southern Connecticut State University and **Trinity College)*

31A-TF7-3C 9:45 OXYGEN BARRIER FOR STACKED SBT-FECAP ON W-PLUG
J. Lisoni, D. Maes, J.-L. Everaert, J. Johnson, V. Paraschiv, L. Haspeslagh, D. J. Wouters, P. Casella, C. Corvasce*, R. Zambrano*, H. Monchoix** and L. V. Autryve** (IMEC, *STMicroelectronics and **Applied Materials France)*

31A-TF7-4C 10:00 EFFECT OF CATION SUBSTITUTION ON THE CRYSTALLIZATION KINETICS OF SOL-GEL DERIVED SBT THIN FILMS
W.-C. Kwak, S.-Y. Jung, G. M. A. Kumar, S.-J. Hwang and Y.-M. Sung (Daejin University)

31A-TF7-5C 10:15 LOW TEMPERATURE CRYSTALLIZATION OF $SrBi_2Ta_2O_9$ (SBT) IN THE ULTRA THIN FILM REGION FABRICATED BY MOCVD
K. Uchiyama, S. Narayan, Y. Shimada**, L. McMillan* and C. A. Paz de Araujo* (Panasonic Semiconductor Development Company, *Symetrix CorpSymetrix Corp and **Matsushita Electronics Corp.)*

Thin Films (VIII) (11:00 --- 12:30)

31A-TF8-1C 11:00 BIAS SPUTTERING AS A TOOL FOR PROCESSING TEXTURED FERROELECTRIC FILM
M. Maglione and J. P. Manaud (ICMCB-CNRS)

31A-TF8-2C 11:15 CHARACTERIZATION OF SOL-GEL DERIVED $Bi_{4-x}La_xTi_3O_{12}$ FILMS
N. Sugita, T. Suzuki, E. Tokumitsu and M. Osada (Tokyo Institute of Technology)

31A-TF8-3C 11:30 DIELECTRIC PROPERTIES OF $CaCu_3Ti_4O_{12}$ THIN FILM
K. Y. Cho, N. J. Wu and A. Ignatiev (University of Houston)

31A-TF8-4C 11:45 PREPARATION AND APPLICATION OF PZT THIN FILMS DEPOSITED BY HYBRID PROCSESS: SOL-GEL METHOD AND LASER ABLATION
J. W. Wan, J.-J. Tsaur, Z. J. Wang and R. Maeda (National Institute of Advanced Science and Technology and *Tohoku University)*

31A-TF8-5C 12:00 STRESS INDUCED PHASE TRANSFORMATIONS IN (001) MOCVD-GROWN PZT THIN FILMS
M. B. Kelman and P. C. McIntyre (Stanford University)

31A-TF8-6C 12:15 PREPARATION OF FERROELECTRIC $Ba(Ti_{0.85}Sn_{0.15})O_3$ THIN FILMS BY METAL-ORGANIC DECOMPOSITION
T. Miyamoto, S. Murakami, K. Inoue, Y. Suzuki, T. Nomura, M. Noda** and M. Okuyama** (Technology Research Institute of Osaka Prefecture, *Ritsumeikan University and **Osaka University)*

Thin Films (IX) (13:30 --- 15:15)

31A-TF9-1IN 13:30 <INVITED> FERROELECTRIC LEAD ZIRCONATE TITANATE THIN FILMS SYNTHESIZED VIA A HIGH-PRESSURE CRYSTALLIZATION PROCESS
C.-H. Lu and Y.-C. Sun (National Taiwan University)

31A-TF9-2C 14:00 RF-MAGNETRON SPUTTERED FERROELECTRIC (Na,K)NbO_3 FILMS
M. Blomqvist, J.-H. Koh, S. I. Khartsev and A. M. Grishin (Royal Institute of Technology)

31A-TF9-3C 14:15 A NEW CLASS OF FERROELECTRICS SUITABLE FOR 0.5 V OPERATION OF NON-VOLATILE RANDOM ACCESS MEMORY
T. Kijima,** and H. Ishiwara** (*R&D Association for Future Electron Devices and **Tokyo Institute of Technology)*

31A-TF9-4C 14:30 HIGH FREQUENCY LIMM- A POWERFUL TOOL FOR FERROELECTRIC THIN-FILM CHARACTERIZATION
T. Sandner, G. Suchaneck, R. Koehler and G. Gerlach (Dresden University of Technology)

31A-TF9-5C 14:45 INVESTIGATION OF THE THERMAL STABILITY OF $Pb_5Ge_3O_{11}$ THIN FILMS AND METHODS OF IMPROVEMENT
F. Zhang, W. Zhuang and S. T. Hsu (Sharp Labs of America, Inc)

31A-TF9-6C 15:00 CHARACTERIZATION OF RHOMBOHEDRAL (111) AND (100) LEAD ZIRCONATE TITANATE FILMS FABRICATED BY RF MAGNETRON SPUTTERING
T. Fujii and M. Adachi (Toyama Prefectural University)

Reception Hall

Piezoelectrics (V) (9:00 --- 10:30)

31B-PI5-1IN 9:00 <INVITED> THE DEVELOPMENT OF NEW HIGH PERFORMANCE MECHANICAL - ELECTROMECHANICAL ACTUATORS
R. W. Schwartz and M. Narayanan (Clemson University)

31B-PI5-2C 9:30 A 35MHz LINEAR ULTRASONIC ARRAY FOR MEDICAL IMAGING
J. M. Cannata, T. R. Shrout and K. K. Shung (Pennsylvania State University)

31B-PI5-3C 9:45 PIEZOELECTRIC TRANSFORMER FOR 30W OUTPUT AC-DC CONVERTERS
M. Yamamoto, Y. Sasaki, T. Inoue, A. Ochi and S. Hamamura (NEC Corporation and *NEC Engineering Ltd.)*

31B-PI5-4C 10:00 DESIGN OF A 50 MHz ANNULAR ARRAY USING FINE-GRAIN LEAD TITANATE
K. A. Snook, T. R. Shrout and K. K. Shung (Pennsylvania State University)

31B-PI5-5C 10:15 PERFORMANCE ENHANCEMENT OF TUNABLE BANDPASS FILTERS USING SELECTIVELY ETCHED FERROELECTRIC THIN FILMS
F. Miranda, C. Mueller, F. Van Keuls, R. Romanofsky, G. Subramanyam and S. Vignesparamoorthy* (NASA and *University of Dayton)*

Pyroelectrics (11:00 --- 12:30)

31B-PY-1C 11:00 HIGH PERFORMANCE PST THIN FILMS ON POLYSILICON SACRIFICIAL LAYERS FOR UNCOOLED IR DETECTOR ARRAYS
C. J. Anthony, M. A. Todd, P. P. Donohue and M. A. C. Harper (Camera Technologies Group, Imaging Dept)

31B-PY-2C 11:15 PYROELECTRIC BARIUM STRONTIUM TITANATE THIN FILMS FOR UNCOOLED THERMAL IMAGING
J.-G. Cheng,**,***, J. Tang* and J.-H. Chu* (*Chinese Academy of Sciences, **Shandong University and ***Corporate Technology)*

31B-PY-3C 11:30 THERMAL ANALYSIS OF PYROELECTRIC INFRARED SENSORS FABRICATED BY A FLIP-CHIP TRANSFER METHOD
W. G. Liu, L. L. Sun, W. Zhu and O. K. Tan (Nanyang Technological University)

31B-PY-4C 11:45 THERMAL ANALYSIS OF PYROELECTRIC SENSORS IN SCANNING THERMAL MICROSCOPY
W.-M. Lin, G. Suchaneck, R. Koehler and G. Gerlach (Dresden University of Technology)

31B-PY-5C 12:00 PYROELECTRIC CHARACTERIZATION OF THIN FILM PZT-Si STRUCTURES WITH QUADRANT-DIAGONAL ELECTRODE SYSTEM AS AN ELEMENT OF POSITION SENSITIVE IR-DETECTOR
S. L. Bravina, E. Cattan, N. V. Morozovsky, E. Fribourg-Blanc* and D. Remiens* (NASU and *Université de Valenciennes)*

31B-PY-6C 12:15 ELECTRICAL PROPERTIES OF Er-DOPED $BaTiO_3$ CERAMICS FOR PTCR
M. Viviani, M. T. Buscaglia, V. Buscaglia, L. Mitoseriu,**, A. Testino* and P. Nanni* (Via de Marini 6, *Univ. of Genoa and **"Al. I. Cuza" Univ.)*

Piezoelectrics (VI) (13:30 --- 15:15)

31B-PI6-1IN 13:30 <INVITED> PHASE DEVELOPMENT AND ELECTRICAL PROPERTIES OF $Pb(Yb_{1/2}Nb_{1/2})O_3$-$PbTiO_3$ EPITAXIAL FILMS
T. Yoshimura and S. T.-McKinstry (The Pennsylvania State University)

31B-PI6-2C 14:00 HYSTERESIS PROPERTIES OF PZT THIN-FILM BULK ACOUSTIC RESONATORS
R. Gabl, M. Schreiter, R. Primig, D. Pitzer and W. Wersing (Siemens AG, Corporate Technology)

31B-PI6-3C 14:15 FABRICATION AND RESONANT BEHAVIOR OF PZT THICK FILM CANTILEVER FOR BIOCHIP
H. J. Kim, Y.-B. Kim*, **, J.-Y. Kang* and T. S. Kim* (*KIST and ** Yonsei University)*

31B-PI6-4C 14:30 ULTRASONIC PHASED ARRAY MICRO SENSOR USING PIEZOELECTRIC PZT THIN FILM AND RESONANT FREQUENCY TUNING BY POLING
K. Yamashita, T. Fukunaga*, M. Okuyama*, S. Aoyagi** and Y. Suzuki*** (*Osaka University, **Kansai University and ***Technology Research Institute of Osaka Prefecture)*

31B-PI6-5C 14:45 INTEGRATION OF PIEZOELECTRIC PZT THIN FILMS WITH INTERNAL ELECTRODES INTO AN ACTUATOR STRUCTURE FOR MEMS APPLICATIONS
M. Hoffmann, C. Kügeler, U. Böttger and R. Waser (IWE II, RWTH Aachen and *IFF, Research Laboratories Juelich)*

31B-PI6-6C 15:00 FUNCTIONALLY GRADIENT PIEZOELECTRIC CERAMICS FOR ULTRASONIC TRANSDUCERS
S. Takahashi, N. Miyamoto and N. Ichinose (Waseda University)

Conference Room 1

Characterization (V) (9:00 --- 10:30)

31C-CH5-1C 9:00 $PBTIO_X$ NANOTUBE OBSERVED BY ELECRTON MICROSCOPY
J. Zhu, X. Zhu, K. Yang, Q. Li, G. Ma, Z. Liu and N. Ming (Nanjing University)

31C-CH5-2C 9:15 INVESTIGATION OF THE ELECTRICAL TUNABILITY OF SILVER-NIOBATE-TANTALATE THICK FILMS
F. Zimmermann, W. Menesklou and E. I.-Tiffée (Universität Karlsruhe)

31C-CH5-3C 9:30 DOPING EFFECTS IN LAYER STRUCTURED $Bi_4Ti_3O_{12}$ FERROELECTRICS: LATTICE DYNAMICS AND PROPERTY DESIGN INVESTIGATED BY RAMAN SPECTROSCOPY
M. Osada **, M. Kakihana**, Y. Noguchi***, M. Miyayama***, T. Watanabe** and H. Funakubo** (*JST, **Tokyo Institute of Technology and ***The University of Tokyo)*

31C-CH5-4C 9:45 NON-LINEAR DIELECTRIC PROPERTIES OF $BaTiO_3/SrTiO_3$ SUPERLATTICE
L. Kim, J. Kim, D. Jung, Y. S. Kim and J. Lee (Sung Kyun Kwan University)

31C-CH5-5C 10:00 INVESTIGATION ON THE POLYETHERKETONE POLED POLYMER WITH HIGHLY THERMAL STABILITY FOR ELECTRO-OPTICAL APPLICATION
Q. Pan, C. Fang, Z. Qin, W. Shi, Q. Gu and X. Wu, (Shandong University)

31C-CH5-6C 10:15 DYNAMICAL ASPECTS OF RETENTION AND ITS RELATION TO FATIGUE IN FERROELECTRIC THIN FILMS

B. S. Kang, J. -G. Yoon*,**, T. K. Song***, S. Seo*, Y. W. So and T. W. Noh* (*.Seoul National University, **University of Suwon and ***Changwon National University)*

Characterization (VI) (11:00 --- 12:30)

31C-CH6-1IN 11:00 <INVITED> FERROIC GLASS CERAMICS

Y. Xi (Tongi Univ.)

31C-CH6-2C 11:30 LITERALLY TWO-DIMENSIONAL FERROELECTRICITY PROBED BY SHG IN FERROELECTRIC LB MONOLAYERS

T. V. Murzina, Y. G. Fokin, T. V. Misuryaev, O. A. Aktsipetrov, S. P. Palto and S. G. Yudin* (Moscow State University and *Russian Academy of Sciences)*

31C-CH6-3C 11:45 SIMULTANEOUS MEASUREMENT OF SPECIFIC HEAT CAPACITY, THERMAL CONDUCTIVITY AND THERMAL DIFFUSIVITY OF FERROELECTRIC CERAMICS BY THERMAL RADIATION CALORIMETRY

K. Morimoto, A. Uematsu, S. Sawai, K. Hisano and T. Yamamoto (National Defense Academy)

31C-CH6-4C 12:00 EFFECT OF COPPER SUBSTITUTION ON THE DIELCTRIC AND MAGNETIC PROPERTIES OF LOW-SINTERED Z-TYPE HEXAFERRITES

X. Wang, J. Zhou, S. Su, Z. Gui and L. Li (Tsinghua University)

31C-CH6-5C 12:15 DIELECTRIC SPECTRA ANOMALIES IN NANOMATERIALS

A. V. Ragulya, M. D. Glinchuk, A. M. Slipenyuk, A. N. Morozovskaya, I. P. Bykov, A. V. Polotai, V. P. Klimenko, V. V. Skorokhod and C. A. Randall (NASc of Ukraine and *Pennsylvania State University)*

High-k and Gate Oxides (13:30 --- 15:15)

31C-FE-1IN 13:30 <INVITED> HIGH K GATE DIELECTRICS FOR THE SILICON INDUSTRY

L. Manchanda (Agere Systems)

31C-FE-2C 14:00 FABRICATION AND CHARACTERIZATION OF AlN THIN FILMS AS GATE DIELECTRICS FOR SILICON DEVICES

J. H. Song, T. Chikyow**, Y. Z. Yoo**, P. Ahmet**, K. Nakajima**, T. Naruke**, Y. Matsumoto* and H. Koimuna*,** (* Tokyo Institute of Technology and **National Institute for Materials Science)*

31C-FE-3C 14:15 PREPARATION BY PULSED LASER DEPOSITION AND CHARACTERIZATION OF ZrO_2, HfO_2 and PrO_x THIN FILMS FOR HIGH-k GATE INSULATOR

T. Kanashima, S. Kitai, M. Sohgawa, H. Kanda and M. Okuyama (Osaka University)

31C-FE-4C 14:30 Al_2O_3/Si_3N_4 STACKED INSULATOR FOR ADVANCED MOS FETS

Y. Fujisaki and H. Ishiwara (Tokyo Institute of Technology)

31C-FE-5C 14:45 HAFNIUM NITRATE PRECURSOR SYNTHESIS AND HAFNIUM OXIDE THIN FILM PROPERTIES

W. Zhuang, J. F. Conley Jr.*, Y. Ono*, D. R. Evans** and R. Solanki** (*Sharp Laboratories of America and **Oregon Graduate Institute)*

31C-FE-6C 15:00 ELECTRICAL PROPERTIES OF HfO_2 GATE DIELECTRIC GROWN BY PLASMA ENHANCED CHEMICAL VAPOR DEPOSITION IN THE ABSENCE OF OXYGEN

K.-J. Choi, W.-C. Shin, J.-B. Park and S.-G. Yoon (Chungnam National University)

Conference Room 3

Device Integration (9:00 --- 10:30)

31D-DE-1C 9:00 A CONSTANT REFERENCE BIT-LINE VOLTAGE DATA SENSING TECHNIQUE WITHOUT REFERENCE CELL FOR 1T1C FERAMS

S. Kim, J. S. Kim, I. K. You, W. J. Lee*, B. G. Yu* and H. Maes** (Wonkwang University and *ETRI, **STDI, IMEC)*

31D-DE-2C 9:15 INTEGRATION OF FERAM DEVICES INTO A STANDARD CMOS PROCESS: IMPACT OF FERROELECTRIC ANNEALS ON CMOS-CHARACTERISTICS
M. Röhner, T. Mikolajick, R. Hagenbeck and N. Nagel (Infineon Technologies)

31D-DE-3C 9:30 HIGH TEMPERATURE ETCHING OF PZT CAPACITOR FOR FeRAM
M. Endo, M. Ueda, N. Hirai, S. Ishiwatari, H. Fujimoto, K. Watanabe K. Suu, M. Ishikawa, J. Fujiyama, K. Suezawa, H. Kikuchi*, G. Komuro*, S. Mihara* and T. Yamazaki* (ULVAC, Inc. and *FUJITSU LIMITED)*

31D-DE-4C 9:45 HIGH TEMPERATURE PLASMA ETCHING CHARACTERISTICS OF SUB-MICRON Ir/PZT/Ir FERROELECTRIC CAPACITOR STACKS
S. Marks, L. G. Jerde, F. G. Celii, S. A. Aggarwal* and J. S. Martin* (Tegal Corporation and *Texas Instruments)*

31D-DE-5C 10:00 ELECTRICAL PROPERTIES OF NONVOLATILE LATCHS FOR NEW LOGIC APPLICATION
Y. Fujimori, T. Nakamura and H. Takasu (ROHM Co.Ltd.)

31D-DE-6C 10:15 OXYGEN DIFFUSION BARRIERS FOR HIGH-DENSITY FERAMS
B. K. Moon, C. U. Pinnow, K. Imai, O. Arisumi*, H. Itokawa*, K. Hornik, K. Tsutsumi*, A. Hilliger, I. Kunishima*, N. Nagel, K. Yamakawa* and G. Beitel (Infineon Technologies Corp., *Toshiba Corp. Semiconductor Company)*

Microwave Devices (11:00 --- 12:30)

31D-MW-1IN 11:00 <INVITED> MICROWAVE TUNABLE COMPONENTS AND SUBSYSTEMS BASED ON FERROELECTRICS: PHYSICS AND PRINCIPLES OF DESIGN
O. G. Vendik (Elecrotechnical University)

31D-MW-2C 11:30 ENHANCED DIELECTRIC PROPERTIES OF (Ba,Sr)TiO_3 THIN FILMS APPLICABLE TO TUNABLE MICROWAVE DEVICES
B. H. Park and Q. Jia (Konkuk University and *Los Alamos National Laboratory)*

31D-MW-3C 11:45 APPEARANCE MECHANISM OF MICROWAVE DIELECTRIC PROPERTY CORRELATED WITH CRYSTAL STRUCTURE
H. Ohsato, Y. Futamata, K. Kakimoto and S. Nishigaki (Nagoya Institute of Technology and *Robert Bosch GmbH)*

31D-MW-4C 12:00 THE INTERPLAY BETWEEN THIN FILM FERROELECTRIC MICROSTRUCTURE AND PHASE SHIFTER PERFORMANCE
C. Mueller, F. V. Keuls, F. Miranda and R. Romanofsky (NASA)

31D-MW-5C 12:15 TUNABLE INTEGRATED PASSIVE CIRCUITS USING BST THIN FILMS
B. Acikel, H. Xu, J. Serraiocco, T. R. Taylor, P. J. Hansen, J. S. Speck and R. A.York (University of California)

Dielectrics (II) (13:30 --- 15:15)

31D-DI2-1IN 13:30 <INVITED> EFFECT OF OCCUPATIONAL SITES OF RARE-EARTH ELEMENTS ON THE CURIE POINT IN $BaTiO_3$
H. Kishi, N. Kohzu, N. Ozaki, H. Ohsato* and T. Okuda* (Taiyo Yuden Co., Ltd and *Nagoya Institute of Technology)*

31D-DI2-2C 14:00 THE ROLE OF GRAIN BOUNDARIES ON THE HIGH TEMPERATURE CONDUCTION BEHAVIOR OF TITANATE THIN FILMS AND NANOCRYSTALLINE CERAMICS
C. Ohly, S. Hoffmann-Eifert and R. Waser (Institut für Festkörperforschung-Elektrokeramische Materialien Forschungszentrum Jülich)

31D-DI2-3C 14:15 DIELECTRIC PROPERTIES OF $BaTiO_3$ BASED CERAMICS UNDER HIGH ELECTRIC
T. Tsurumi, H. Adachi, H. Kakemoto, S. Wada, H. Chazono and H. Kishi* (Tokyo Institute of Technology and *Taiyo Yuden Co., Ltd.)*

31D-DI2-4C 14:30 DIELECTRIC PROPERTIES OF Ba ($Mg_{1-X}Ta_X$)-$BaMg_{1-X}Nb_X$) CERAMICS MEASURED BY TERAHERTZ AND FAR-INFRARED SPECTROSCOPY
I.-N. Lin, Y.-C. Chen, H.-F. Cheng*, T.-R. Tsai and C.-C. Chi (National Tsing-Hua University and * National Taiwan Normal University)*

31D-DI2-5C 14:45 PHASE EVOLUTION AND MICROWAVE DIELECTRIC PROPERTIES OF (BaSr)O-Sm_2O_3-TiO_2 CERAMICS.
T. J. Kim, J.-J. Kim and H. Y. Lee (Yeungnam University and *Kyungpook National University)*

31D-DI2-6C 15:00 NEW DIELECTRIC MATERIAL SYSTEM WITH HIGH TEMPERATURE OXIDE SUPERCONDUCTOR
S. Sugihara, T. Kawashima, C. Ishizuka and Y. Yutoh (Shonan Institute of Technology)

Poster

Conference Room 2

Single Crystals (Growth, Properties) (15:45 --- 17:15)

31E-SC-1P HIGH CURIE TEMPERATURE, HIGH PERFORMANCE PEROVSKITE SINGLE CRYSTALS
S. Zhang, C. A. Randall and T. R. Shrout (Pennsylvania State University)

31E-SC-2P LINEAR AND SECOND-ORDER NONLINEAR OPTICAL DIELECTRIC BEHAVIORS OF LITHIUM NIOBATE SINGLE CRYSTALS AT HIGH TEMPERATURES
D. Xue, K. Kurimura and K. Kitamura (AML/NIMS and *NML/NIMS)*

31E-SC-3P INFLUENCE OF TEMPERATURE ON THE STRUCTURE AND CHARGE DISTRIBUTION OF LITHIUM NIOBATE SINGLE CRYSTALS
D. Xue, N. Iyi and K. Kitamura ((AML/NIMS))

31E-SC-4P SURFACE ACOUSTIC WAVE BAND-PASS FILTERS OF AlN THIN FILMS SPUTTERED ON $LiNbO_3$ SUBSTRATES
K. S. Kao, C. C. Cheng, Y. C. Chen and C. H. Chen (National Sun Yat-Sen University and *De Lin Institute of Technology)*

31E-SC-5P TEMPERATURE CHARACTERISTICS FOR SURFACE ACOUSTIC WAVE IN ANNEALED PROTON-EXCHANGED $LiNbO_3$ WAVEGUIDES
C.-C. Cheng and Y.-C. Chen (De Lin Institute of Technology and *National Sun Yat-Sen University)*

31E-SC-6P GROWTH OF PIEZOELECTRIC $Ca_3NbGa_3Si_2O_{14}$ SINGLE CRYSTALS FOR SAW APPLICATIONS
M. Adachi, T. Funakawa and T. Karaki (Toyama Prefectural University)

31E-SC-7P SINGLE CRYSTAL $Pb[(Zn_{1/3}Nb_{2/3})_{0.93}Ti_{0.07}]O_3$ (PZNT 93/7) FOR ULTRASONIC TRANSDUCERS
K. Harada, Y. Hosono and Y. Yamashita (Toshiba Corp.)

31E-SC-8P DIRECT GROWTH OF ORTHORHOMBIC POTASSIUM NIOBATE CRYSTAL
R. Komatsu, K. Adachi and K. Ikeda (Yamaguchi University)

31E-SC-9P DIELECTRIC PROPERTIES AND PHASE TRANSITIONS OF <001>-ORIENTED $Pb(Zn_{1/3}Nb_{2/3})O_3$-$PbTiO_3$ SINGLE CRYSTALS
W. Ren, S.-F. Liu and B. K. Mukherjee (Royal Military College of Canada)

31E-SC-10P DC BIAS DEPENDENCE OF THE PIEZOELECTRIC PROPERTIES OF <111> ORIENTED $Pb(Zn_{1/3}Nb_{2/3})O_3$-$PbTiO_3$ SINGLE CRYSTALS
S.-F. Liu, W. Ren, B. K. Mukherjee, S. J. Zhang and T. R. Shrout* (Royal Military College of Canada and *The Pennsylvania State University)*

31E-SC-11P CHARACTERIZATION STUDY OF THE GROWTH AND ELECTROMECHANICAL PROPERTIES OF 67PMN-33PT SINGLE CRYSTALS
C. B. DiAntonio, S. M. Pilgrim, W. A. Schulze and F. A. Williams Jr. (Alfred University)

31E-SC-12P PMN-PT SINGLE CRYSTAL GROWTH BY TEMPLATED GRAIN GROWTH (TGG) AND FUSED DEPOSITION OF CERAMICS (FDC) TECHNIQUES
R. Brennan, M. Allahverdi and A. Safari (Rutgers University)

31E-SC-13P PIEZOELECTRIC PROPERTIES OF $KNbO_3$ IN VARIOUS CRYSTAL ORIENTATIONS BY
T. Yamamoto, H. Okino, E. Matsuzaki and Y. Yamashita (National Defense Academy)

31E-SC-14P LINEAR AND NONLINEAR DIELECTRIC RESPONSES OF $Sr_{0.61}Ba_{0.39}Nb_2O_6$ SINGLE CRYSTAL

J.-H. Ko and S. Kojima (University of Tsukuba)

31E-SC-15P LONG-RANGE DISPLACIVE TO SHORT-RANGE ORDER-DISORDER CROSSOVER IN WEAKLY CONCENTRATED $Kta_yNb_{1-y}O_3$.

V. A. Trepakov **, S. A. Prosandeev***, M. S. Savinov****, P. Galinetto*****, G. Samoggia*****, S. E. Kapphan*, L. Jastrabik****, L. A. Boatner****** (*University of Osnabrück,**A.F. Ioffe Physical-Technical Institute, ***Rostov State University, ****Institute of Physics AS CR, ***** "A. Volta", Università di Pavia and INFM and ******Oak Ridge Nat. Lab.)*

31E-SC-16P PHASE TRANSFORMATION BEHAVIOR OF SINGLE CRYSTAL PMN-PT

A. Sehirlioglu, P. Han and D. A. Payne (University of Illinois)

31E-SC-17P X-RAY-INDUCED MODIFICATION OF LITHIUM TANTALATE AND LITHIUM NIOBATE

V. Shur, E. Blankova, E. Nikolaeva, E. Shishkin, A. Barannikov, L. Lvova, L. Yurchenko, R. Route**, M. Fejer** and R. Byer** (Ural State University, *The Ural Division of the RAS and ** Stanford University)*

31E-SC-18P CRYSTAL GROWTH AND SOME PROPERTIES OF LEAD INDIUM NIOBATE-LEAD TITANATE SINGLE CRYSTALS PRODUCED BY SOLUTION BRIDGMAN METHOD

N. Yasuda, N. Mori, T. Takasaki, H. Ohwa, H. Yosono, Y. Yamashita*, M. Iwata**, M. Maeda**, I.. Suzuki** and Y. Ishibashi*** (Gifu University, *Toshiba Corporation, **Nagaya Institute of Technology and ***Aichi Shukutoku University)*

31E-SC-19P DOMAIN ENGINEERING OF MONOCLINIC $0.91Pb(Zn_{1/3}Nb_{2/3})O_3$-$0.09PbTiO_3$ SINGLE CRYSTALS AND PIEZOELECTRIC RELATED PROPERTIES

A. Renault,**, H. Dammak*, M. Pham Thi**, P. Gaucher** and G. Calvarina* (*Laboratoire Structures, Propriétés et Modélisation des Solides, Ecole Centrale and **THALES Research & Technology-France)*

31E-SC-20P GROWTH AND CHARACTERIZATION OF PIEZOELECTRIC PZN-PT 91/9 AND PMN-PT 65/35 SINGLE CRYSTALS FOR ULTRASONIC TRANSDUCERS

J. Santailler, B. Ferrand, M. Couchaud, P. Dusserre, S. Mibord and T. Abad. (CEA GRENOBLE, DRT/DTEN and LETI-DOPT)

31E-SC-21P MORPHOTROPIC PHASE BOUNDARY AND RELATED PROPERTIES OF RELAXOR PIEZOELECTRIC SINGLE CRYSTALS

Z.-G. Ye and A. A. Bokov (Simon Fraser University)

31E-SC-22P TOP-SEEDED SOLUTION GROWTH AND CHARACTERIZATION OF PIEZO-/FERROELECTRIC PZN-PT AND PMN-PT SINGLE CRYSTALS

W.-Z Chen and Z.-G. Ye (Simon Fraser University)

31E-SC-23P CRYSTAL GROWTH AND ELECTRICAL PROPERTIES OF LEAD-FREE PIEZOELECTRIC MATERIAL $Na_{0.5}Bi_{2.5}Nb_2O_9$

R. Aoyagi, H. Takeda, S. Okamura and T. Shiosaki (Nara Institute of Science and Technology (NAIST))

31E-SC-24P SEEDED GROWTH OF RELAXOR FERROELECTRIC SINGLE CRYSTAL $Pb[(Zn_{1/3}Nb_{2/3})_{0.91}Ti_{0.09}]O_3$ BY THE VERTICAL BRIDGMAN METHOD

J. Y. Xu, J. Tong, M. L. Shi and S. J. Fan (Chinese Academy of Sciences)

31E-SC-25P CHEMICAL VARIATION IN $Pb(Mg_{1/3}Nb_{2/3})O_3$-$PbTiO_3$ SINGLE CRYSTALS AND CERAMICS

S. P. McBride and A. J. Bel (University of Leeds)

Microwaves (II) (15:45 --- 17:15)

31E-MW2-1P STRUCTURAL EVOLUTION AND DIELECTRIC PROPERTIES OF SOL-GEL $(Ba,Sr)TiO_3$ THIN FILMS FOR MICROWAVE DEVICES

X. F. Chen, W. Zhu, S. Y. Lim and O. K. Tan (Nanyang Technological University and *DSO National Laboratories)*

31E-MW2-2P EFFECT OF A-SITE SUBSTITUTION BY Nd^{3+} ON THE MICROWAVE DIELECTRIC PROPERTIES OF $(PbCa)(FeNb)O_3$ CERAMICS

Q. H. Yang, E. S. Kim, J. Xu** and Z. Y. Meng (Shanghai University, *Kyonggi University and **Chines Academy of Sciences)*

31E-MW2-3P STUDY ON DIELECTRIC FREQUENCY RESPONSE OF MICROWAVE $Bi_2(Zn_{1/3}Nb_{2/3})_2O_7$ THIN FILMS

H.-F. Cheng, Y.-C. Chen, H.-L. Liu, L.-G. Hwa and I. N. Lin** (National Taiwan Normal University, *Fu-Jen catholic University and **National Tsing-Hua University)*

31E-MW2-4P INVESTIGATION OF ELECTRICAL DEGRADATION EFFECTS IN FERROELECTRIC THIN FILM BASED TUNABLE MICROWAVE COMPONENTS

K. Astafiev, V. Sherman, A. Tagantsev, N. Setter, T. Rivkin and D. S. Ginley* (Swiss Federal Institute of Technology and *National Renewable Energy Laboratory)*

31E-MW2-5P TUNABLE DIELECTRIC PROPERTIES OF BST THIN FILMS FOR RF/MW PASSIVE COMPONENTS

J. Bellotti, E. K. Akdogan and A. Safari (Rutgers University)

31E-MW2-6P MICROWAVE PROPERTIES OF COMPSITIONALLY GRADED (Ba, Sr)TiO_3 THIN FILMS FOR ELECTRICALLY TUNABLE MICROWAVE DEVICES

S.-J. Lee, Y.-T. Kim, S.-E. Moon, W.-J. Kim and E.-K. Kim (Electronics and Telecommunications Research Institute)

31E-MW2-7P MICROWAVE DIELECTRIC CHARACTERISTICS OF Y_2BaZnO_5 CERAMICS WITH Sm SUBSTITUTION FOR Y

A. Kan, H. Ogawa and H. Ohsato (Meijo University and *Nagoya Institute of Technology)*

31E-MW2-8P PREPARATION AND DIELECTRIC PROPERTIES OF BST THIN FILMS BY RF SPUTTERING FOR TUNABLE MICROWAVE APPLICATIONS

J. Xu, C. Weil, W. Menesklou, R. Jakoby* and E. I.-Tiffée (Universität Karlsruhe (TH) and *Technische Universität Darmstadt)*

31E-MW2-9P THE EFFECT OF ANNEALING CONDITION ON DIELECTRIC PROPERTIES OF (Ba,Sr)TiO_3 THIN FILMS FOR MICROWAVE TUNABLE DEVICES

B. Y. Lee, C. I. Cheon and J. S. Kim (Hoseo University)

31E-MW2-10P CHARACTERISTICS OF Ni DOPED $(Ba_{0.5}Sr_{0.5})TiO_3$ THIN FILMS ON MOCVD-$(Ba_{0.5}Sr_{0.5})RuO_3$ INTERFACIAL LAYERS FOR MICROWAVE TUNABLE

Y.-A. Jeon, N.-J. Seong, T.-S. Seo and S.-G. Yoon (Chungnam national university)

Conference Room 4

Piezoelectrics (II) (15:45 --- 17:15)

31F-PZ2-1P EFFECT OF STRESS INDUCED DOMAIN SWITCHING ON THE POLARIZATION AND FERROELECTRIC HYSTERESIS CURVE IN SOFT AND HARD PZT CERAMICS UNDER COMPRESSIVE LOADING

J. M. Calderon-Moreno, M. Popa and M. Yoshimura (Tokyo Institute of Technology)

31F-PZ2-2P ELECTRICAL PROPERTIES OF BST THIN FILM ON Pt AND Ru BOTTOM ELECTRODE UTILIZING 2-STEPS O_2 ANNEAL TECHNIQUE

M. Tanimura, I. Kimura, K. Suu and M. Isikawa (ULVAC JAPAN)

31F-PZ2-3P THE STRONG TENDENCY OF PREFERRED ORIENTATION IN NBT CERAMICS FABRICATED BY HOT-FORGING METHOD

I. W. Kim, C. W. Ahn, D. S. Lee, M. S. Ha, J. S, Lee, B. M. Jin (University of Ulsan, *Dong-eui University)*

31F-PZ2-4P DIELECTRIC, ELASTIC AND PIEZOELECTRIC LOSSES OF PZT CERAMICS IN THE RESONANCE STATE

T. Tsurumi, H. Kakemoto and S. Wada (Tokyo Institute of Technology)

31F-PZ2-5P THE INFLUENCE OF $Pb(Mg_{1/3}Nb_{2/3})O_3$ CONTENT ON THE PIEZOELECTRIC AND DIELECTRIC PROPERTIES OF PMMN-PZT SYSTEM NEAR THE MPB

H. Chen, X. Guo and Z. Meng (Shanghai University)

31F-PZ2-6P EFFECT OF GRAIN ORIENTATION ON ELECTRIC FIELD-INDUCED STRAIN IN BISMUTH SODIUM POTASSIUM TITANATE

Y. Saito, T. Tani and K. Takatori (Toyota Central R&D labs. Inc.)

31F-PZ2-7P PIEZOELECTRIC PROPERTIES OF SPARK-PLASMA-SINTERED (Na,K)NbO_3 -$PbTiO_3$ CERAMICS

R. Wang, R. Xie, T. Sekiya, Y. Shimojo, Y. Akimune, N. Hirosaki and M. Itoh** (National Institute of Advanced Industrial Science and Technology, *National Institute of Materials Science and **Tokyo Institute of Technology)*

31F-PZ2-8P PREPARATION AND PROPERTIES OF $(K_{0.5}Bi_{0.5})TiO_3$ CERAMICS BY POLYMERIZED COMPLEX METHOD

T. Wada, A. Fukui and Y. Matsuo (Ryukoku University)

31F-PZ2-9P THE SYNTHESIS AND ELECTRICAL PROPERTIES OF $Pb(Zr,Ti)O_3$ CERAMICS WITH IMPROVED PROCESS.

M.-H. Kim, A. Golovchanski, C.-S. Youn, T. K. Song and T.-G. Park (Changwon National University)

31F-PZ2-10P PREPARATION OF THICK PIEZOELECTRIC FILMS ON SILICON SUBSTRATE BY LASER LIFT-OFF TECHNIQUE

N.-H. Tai, Y.-M. Shen, T.-Hsua, I.-N. Lin, L.-J. Hu and T.-S. Yeh* (National Tsing-Hua University and *Chun-Shan Institute of Science and Technology)*

31F-PZ2-11P PIEZOELECTRIC FUNCTIONAL GRADIENT MATERIAL FOR BENDING DEVICES BASED ON $Ba(Ti, Sn)O_3$ CERAMIC

R. Steinhausen, A. Kouvatov, W. Seifert, H. Beige, H. T. Langhammer and H.-P. Abicht (Martin-Luther-Universität)

31F-PZ2-12P CONFORMATIONAL DEFECTS IN HIGH-STRAIN, ELECTROSTRICTIVE POLYMERS

G. J. Kavarnos, T. Ramotowski and Q. Zhang** (University of Rhode, *NUWC and **Pennsylvania State University)*

31F-PZ2-13P PIEZOELECTRICS FOR INKJET PRINT TECHNOLOGY

J. Brünahl, A. Grishin and S. Khartsev (Royal Institute of Technology)

31F-PZ2-14P CHARACTERIZATION OF PIEZOELECTRIC PZT IN VIEW OF TRANSDUCERS AND POWER GENERATOR

M. Ichiki, K. Ashida and T. Kitahara* (National Institute of Advanced Industrial Science and Technology and *Shonan Institute of Technology)*

31F-PZ2-15P FABRICATION OF MICROCANTILEVER ARRAYS USING SOL-GEL PZT THIN FILM

H. Zhu, M. Zhou, J. Miao, T. Suna and M. Okuyama (Nanyang Technological University and *Osaka University)*

31F-PZ2-16P MICROSTRUCTURAL AND ELECTRICAL PROPERTIES OF (Pb, La, Nd)(Mn, Sb,Ti)O_3 SYSTEM CERAMICS FOR 20 MHz CERAMIC RESONATOR

J. Yoo, S. Min, C. Park, S. Suh, H. Yoon** and J. Kim*** (Semyung University, *Gain-tech, **Kyungmoon College and ***Samsung Electromechanics Co.)*

31F-PZ2-17P PIEZOELECTRIC AND DIELECTRIC PROPERTIES OF $Pb(Ni_{1/3}Nb_{2/3})O_3$ -$Pb(Mn_{1/3}Nb_{2/3})O_3$ -$Pb(Zr,Ti)O_3$ CERAMICS FOR PIEZOELECTRIC

S. Hwang, J. Yoo, L. Whang,J. Hong, S. Ryu**, S. Lee ** and M. Lee*** (Semyung University, *Dongseoul College, **Chungju University and ***KATS)*

31F-PZ2-18P MICROSTRUCTURAL, DIELECTRIC AND ELECTRICAL PROPERTIES OF (Pb,La,Ce)TiO_3 CERAMICS FOR HIGH FREQUENCY CERAMIC RESONATOR AS A FUNCTION OF MnO2 ADDITION

D. Oh, J. Lee, J. Yoo, H. Jeong, C. Park and S. Lee** (Semyung University, *Juseong College and **Kyungbuk National University)*

31F-PZ2-19P DOPANT EFFECTS ON PROPERTIES OF PZT95/5 MATERIAL

H. Du, D. Z. Sun, S. W. Lin, N. Zhong and M. Y. Zhao (Chinese Academy of Sciences)

31F-PZ2-20P THE THERMOMECHANICAL STRESS IN THE 1.3 PIEZOELECTRIC COMPOSITE

H. S. Lee, C. Richard and D. Guyomar (Laboratoire de Génie Electrique et Ferroélectricité)

Pyroelectrics (15:45 --- 17:15)

31F-PY-1P INFLUENCE OF DIFFERENT SUBSTRATE ON THE DETECTIVITY OF PYROELECTRIC SENSORS

J. Li, Y. Ningyi, H. L. W. Chan and C. L. Choy* (Jiangsu Institute of Petrochemical Technology and *The Hong Kong Polytechnic University)*

31F-PY-2P PROPERTIES OF PT/P(VDF-TrFE) PYROELECTRIC SENSOR BASED ON PLASTIC FILM SUBSTRATE

Y. Ningyi, J. Li, H. L. W. Chan and C. L. Choy* (Jiangsu Institute of Petrochemical Technology and *The Hong Kong Polytechnic University,)*

31F-PY-3P PYROELECTRIC PROPERTIES OF THE b-PVDF THIN FILM PREPARED BY VACUUM DEPOSITION METHOD WITH APPLYING ELECTRIC FIELD

D. H. Chang and Y. S. Yoon (Inha University)

31F-PY-4P RESPONSE ANALYSIS OF MULTILAYER PYROELECTRIC STRUCTURES

D. H. Chang, S. J. Kang and Y. S. Yoon (Inha University and *Yosu University)*

31F-PY-5P SELF-POLARIZATION AND MIGRATORY POLARIZATION IN THIN-FILM FERROELECTRIC CAPACITOR

*I. P. Pronin, E. Yu. Kaptelov, E. A. Tarakanov and *V. P. Afanasjev (A.F.Ioffe Physico-Technical Institute and *LETI)*

31F-PY-6P PREPARTION OF 3D 256 ELEMENTS PCLT/P(VDF-TrFE) INFRARED ARRAY

L. Jinhua **, Y. Ningyi* **, H. L. W. Chan* and C. L. Choy* (*The Hong Kong Polytechnic University and **Jiangsu Institute of Petrochemical Technology)*

31F-PY-7P A DIELECTRIC BOLOMETER MODE OF INFRARED SENSOR USING A $Ba(Ti_{0.85}Sn_{0.15})O_3$ THIN FILM WITH A HIGH TEMPERATURE COEFFICIENT OF DIELECTRIC CONSTANT

M. Noda, T. Miyamoto, S. Murakami*, T. Nomura**, K. Inoue* and M. Okuyama (Osaka University, *Technology Research Institute of Osaka Pref. and **Ritsumeikan University)*

31F-PY-8P EFFECT OF Mn DOPING ON THE PROPERTIES OF PST:BST SYSTEM

C. Prakash and A. Bhalla (Solid State Physics Laboratory and *The Pennsylvania State University)*

31F-PY-9P PYROELECRIC PROPERTIES OF BARIUM TITANATE CERAMICS PREPARED BY SOL-GEL AND SAG METHODS

T.-L. Ren, X.-H. Wang, L.-T. Liu, Z.-J. Li, P.-L. Zhang and W.-L. Zhong* (Tsinghua University and *.Shandong University)*

Optics (15:45 --- 17:15)

31F-OP-1P FERROELECTRIC BST THIN FILMS USING SOL-GEL TECHNOLOGY FOR FLAT PANEL DISPLAY APPLICATION

W. Zhu, O. K. Tan, J. Ray and M. A. Imam (Nanyang Technological University)

31F-OP-2P STUDY ON THE APPLICATION OF ELECTRO-OPTIC POLYMER FOR WAVEGUIDE

Z. Qin, C. Fang, Q. Pan, W. Shi, Q. Gu and X. Wu (Shandong University)

31F-OP-3P MODELS OF MOLECULAR ALIGNMENT STRUCTURE IN POLYMER-STABILIZED FERROELECTRIC LIQUID CRYSTALS

H. Furue, T. Takahashi, S. Kobayashi** and H. Yokoyama*** (Japan Science and Technology Corporation, * Kogakuin University, ** Science University of Tokyo in Yamaguchi, *** Naitional Institute of Advanced Industrial Science and Technology)*

31F-OP-4P ANISOTROPY OF INDUCED BIREFRINGENCE IN FERROELECTRICS WITH PSEUDOILMENITE STRUCTURE

A. M. Mamedov, M. Z. Kurt and K. Kymac (Cukurova University)

31F-OP-5P ON THE CRYSTAL OPTICS OF PHASES WITH INCOMMENSURATE SUPERSTRUCTURE IN FERROELECTRICS SEMICONDUCTORS $TlGaSe_2$ AND $TlInS_2$

B. R. Gadjiev (Frank Laboratory of Neutron physics)

31F-OP-6P FERROELECTRIC THIN FILM OPTICAL DETECTORS FOR RENTINAL PROSTHESIS

A. Zomorrodian, N. J. Wu, S. Wilczak, A. Ignatiev, T. Bensaoula and C. A. Garcia* (University of Housto and *University of Texas)*

31F-OP-7P TIME-DOMAIN TERAHERTZ SPECTROSCOPY OF $SrBi_2Ta_2O_9$ THIN FILMS ON MgO SUBSTRATES

I. Kawayama, K. Kotani and M. Tonouchi (Osaka University)

31F-OP-8P ELECTRO-OPTIC EFFECT IN EPITAXIAL ZnO:Li THIN FILMS

T. Nagata, A. Ashida, Y. Takagi, N. Fujimura and T. Ito (Osaka Prefecture University)

31F-OP-9P MICROSTRUCTURE AND OPTICAL PROPERTIES OF W, Li-DOPED PZT PIEZOCERAMICS

R. Ramer, E. Dimitriu and V. Ghiordanescu* (University of South Wales and * National Institute for Materials Physics)*

31F-OP-10P FOUR-PORTS BIDIRECTIONAL OPTICAL SWITCH USING (Pb, La)(Zr, Ti)O_3 CERAMICS

T. Utsunomiya (The National Defense Academy)

Reception Hall

Thin film - Fabrication - etc (II) (15:45 --- 17:15)

31G-TE2-1P INFRARED SPECTROSCOPIC STUDY ON REACTION MECHANISMS OF TITANIUM SOURCE MOLECULES IN METALORGANIC CHEMICAL VAPOR DEPOSITION OF (Ba,Sr)TiO_3 FILMS

T. Nakamura, S. Momose and K. Tachibana (Kyoto University)

31G-TE2-2P IN SITU DIAGNOSTICS OF CRYSTAL GROWTH IN METALORGANIC CHEMICAL VAPOR DEPOSITION OF (Ba,Sr)TiO_3 FILMS USING INFRARED REFLECTION ABSORPTION SPECTROSCOPY

T. Nakamura, S. Momose and K. Tachibana (Kyoto University)

31G-TE2-3P DIELECTRIC PROPERTIES OF EPITAXIALLY GROWN Y_2O_3 ON Si SUBSTRATES

N. Fujimura, K. Kakuno, T. Matsui, K. Morii and T. Ito (Osaka Prefecture University)

31G-TE2-4P PROCESSING AND PROPERTIES OF TUNGSTEN BRONZE (Ba,Ln)Nb_2O_6 [Ln: RARE EARTH] THIN FILMS BY CHEMICAL SOLUTION DEPOSITION

W. Sakamoto, M. Mizuno, Y. Horie, T. Yogo and S. Hirano (Nagoya University)

31G-TE2-5P CHEMICAL PROCESSING AND PROPERTIES OF $(Sr,Ca)_2(Nb,Ta)_2O_7$ THIN FILMS

W. Sakamoto, Y. Yura, D. Kawasaki, T. Yogo and S. Hirano (Nagoya University)

31G-TE2-6P EFFECT OF A-SITE SUBSTITUTION ON THE MAGNETIC AND DIELECTRIC BEHAVIORS OF $YMnO_3$ BASED FERROELECTRIC THIN FILMS

H. Sakata, N. Fujimura, D. Ito, T. Yokota and T. Ito (Osaka Prefecture University)

31G-TE2-7P NUCLEATION AND GROWTH OF THIN (Ba,Sr)TiO_3 FILMS IN A MOCVD REACTOR

P. Ehrhart, F. Fitsilis*, S. Regnery*,**, R. Waser*, F. Schienle**, M. Schumacher**, H. Juergensen** (*IFF-Forschungszentrum Jülich and **Aixtron AG Aachen)*

31G-TE2-8P PREPARATION OF FERROELECTRIC $YMnO_3$ THIN FILMS BY METAL-ORGANIC DECOMPOSITION PROCESS

S. G. Kang (Kyonggi University)

31G-TE2-9P COMPARATIVE MICROSTRUCTURE AND ELECTRICAL PROPERTY STUDIES OF PST THIN FILMS AS PREPARED BY LDCVD, SOL-GEL AND SPUTTERING TECHNIQUES

Z. Huang, P. P. Donohue, Q. Zhang, D. Williams*, C. J. Anthony*, M. A. Todd* and R. W. Whatmore (Cranfield University and *St. Andrews Rd)*

31G-TE2-10P ROLE OF ULTRA THIN SiO_X LAYER ON EPITAXIAL YSZ/SiO_X/Si THIN FILM AS MULTI FUNCTIONAL BUFFER LAYER BY NANO-PROBE AND IN-SITU TEM INVESTIGATION

T. Kiguchi, N. Wakiya, K. Shinozaki and N. Mizutani (Tokyo Institute of Technology)

31G-TE2-11P THE EFFECT OF ANNEALING ON THE STRUCTURE AND DIELECTRIC PROPERTIES OF $(Ba_{1-X}Sr_X)TiO_3$ THIN FILMS

W. Wu, D. Peng, X. Liang and Z. Meng (Shanghai University)

31G-TE2-12P PREPARATION OF $BaTiO_3$ – $BaZrO_3$ FILMS BY METAL-ORGANIC CHEMICAL VAPOR DEPOSITION

T. Tohma, H. Masumoto and T. Goto (Tohoku Univ.)

31G-TE2-13P CrTiN/TiN DOUBLE BARRIER LAYER OF COB STRUCTURE FOR HIGH DENSITY FERAM APPLICATIONS

J. Kim, J. Koo, S.-K. Hong and S.-J. Yeom* (Kookmin University and *Hynix Semiconductor Inc.)*

31G-TE2-14P PREPARATION OF $BaTiO_3$ THIN FILM AT 140°C BY MOD-HYDROTHERMAL METHOD WITH DIFFERENT PRECURSOR

Z. Wei, M. Noda and M. Okuyama (Osaka University)

31G-TE2-15P GROWTH PROCESS AND SURFACE ACOUSTIC WAVE CHARACTERISTICS OF $LiNbO_3$ / DIAMOND / SILICON MULTILAYERED STRUCTURES

E. Dogheche, V. Sadaune, S. Chauvin and D. Rèmiens* (IEMN and *MIMM)*

31G-TE2-16P THIN OXIDIZED TITANIUM AS A BOTTOM ELECTRODE ADHESION LAYER FOR Pt/BST/Pt CAPACITORS

I. P. Koutsaroff, P. Woo, L. McNeil, M. Zelner, M. Buchbinder and B. McClelland (Gennum Corporation)

31G-TE2-17P INVESTIGATION OF ALUMINA BARRIER LAYER FOR FERAM PREPARED BY RF MAGNETRON SPUTTERING METHOD

T. Jimbo, Y. Miyaguchi, S. Kikuchi, I. Kimura, M. Tanimura, K. Suu and M. Ishikawa (Institute for Semiconductor Technologies)

31G-TE2-18P LEAKAGE CURRENT PROPERTIES OF $(Ba_{0.7}Sr_{0.3})TiO_3$ THIN FILMS DEPENDING ON THE FILM THICKNESS

C. Kügeler, R. Liedtke* and R. Waser*,** (*Institut für Werkstoffe der Elektrotechnik II and **Institut für Festkörperforschung)*

31G-TE2-19P AQUEOUS CHEMICAL SOLUTION DEPOSITION FOR FERROELECTRIC THIN FILMS

M. K. Van Bael, K. Van Werde, D. Nelis, D. Mondelaers, A. Hardy, G. Vanhoyland, H. Van den Rul, J. Mullens, L. C. Van Poucke, F. Frederix and D. J. Wouters* (Limburgs Universitair Centrum and *IMEC)*

31G-TE2-20P STUDY OF NON-LEAD BASED RELAXOR – PULSED EXCIMER LASER ABLATED Sn MODIFIED $BaTiO_3$ THIN FILMS

S. Halder, P. Victor, A. Laha, S. Bhattacharya and S. B. Krupanidhi (Indian Institute of Science)

31G-TE2-21P PULSE-EXTENDED EXCIMER LASER CRYSTALLISATION OF FERROELECTRIC THIN FILMS FOR INTEGRATION ON LOW THERMAL BUDGET SUBSTRATES

P. P. Donohue and M. A. Todd (QinetiQ Ltd.)

Thin film - Properties (II) (15:45 --- 17:15)

31G-PP2-1P EFFECTS OF SUBSTRATES ON ALKOXY-DERIVED (Y,Yb)MnO_3 THIN FILMS

K. Suzuki, D. Fu, K. Nishizawa, T. Miki and K. Kato (National Institute of Advanced Industrial Science and Technology)

31G-PP2-2P FERROELECTRIC PROPERTIES OF CSD-DERIVED $Sr_{0.3}Ba_{0.7}Nb_2O_6$ (SBN30) THIN FILMS

D. G. Lee, H. Y. Lee, J. J. Kim and S. H. Cho* (Yeungnam University and *Kyungpook National University)*

31G-PP2-3P FERROELECTRIC AND MAGNETIC PROPERTIES OF $PrFeO_3$-$PbTiO_3$ THIN FILMS

C. I. Cheon, J. S. Kim and P. W. Jang (Hoseo University and *Chongju University)*

31G-PP2-4P CHARACTERIZATION OF POTASSIUM NIOBATE PRODUCED BY SELF-ASSEMBLED NANOSHEET FROM AQUEOUS SOLUTION

K. Toda, N. Ohtake, M. Kawakami, S. Tokuoka, K. Uematsu and M. Sato (Niigata University)

31G-PP2-5P DIELECTRIC RELAXATION IN PULSED EXCIMER LASER ABLATED AMORPHOUS ZIRCONIUM TITANATE THIN FILMS

P. Victor and S. B. Krupanidhi (Indian Institute of Science)

31G-PP2-6P IMPACT OF MICROSTRUCTURE ON THE ELECTRICAL PROPERTIES OF ZIRCONIUM TITANATE THIN FILMS IN MOS CONFIGURATION

P. Victor and S. B. Krupanidhi (Indian Institute of Science)

31G-PP2-7P INFLUENCE OF EXCITATION FREQUENCY AND AMPLITUDE ON THE SWITCHING PROPERTIES OF SBT AND PZT THIN FILMS AT 10MHz HYSTERESIS FREQUENCY

U. Kall, U. Bottger*, Y.-K. Lin*, A. Werner*, R. Waser*,**, C. Szot** and S. Tiedke*** (*RWTH, **Forschungszentrum Julich and ***Aixacct)*

Electrode (15:45 --- 17:15)

31G-EL-1P HIGHLY TEXTURED (100)RuO_2/(001)Ru MULTI-LAYERS PREPARED BY SPUTTERING

Y. Abe, M. Kawamura and K. Sasaki (Kitami Institute of Technology)

31G-EL-2P TUNGSTEN BASED ELECTRODES FOR STACKED CAPACITOR FERROELECTRIC MEMORIES

L. Trupina, J. Baborowski, P. Muralt, J.-M. Salese, D. Bouvet* and P. Fazan* (Ceramics Laboratory and *General Electronics Laboratory)*

31G-EL-3P PREPARATION OF (100)-ORIENTED $LaNiO_3$ OXIDE ELECTRODES FOR $SrBi_2Ta_2O_9$-BASED FERROELECTRIC CAPACITORS

G. Hu, T. Tang and J. Xu (Fudan University and *the Chinese University of Hong Kong)*

31G-EL-4P COMPOSITION AND ELECTRICAL PROPERTY OF METALLIC RUTHENIUM THINS FILMS USING $Ru(C_6H_6)_2$ PRECURSOR

J. Choi, Y. Choi, H. Tian, S. Kim and K. No (Korea Advanced Institute of Science and Technology and *Korea University of Technology)*

31G-EL-5P HIGH TEMPERATURE ETCH PROPERTIES OF IRIDIUM AND IRIDIUMOXIDE ELECTRODE MATERIALS

S. Schneider, H. Kohlstedt and R. Waser (Forschungszentrum Jülich)

31G-EL-6P THERMAL STABILITY OF $SrRuO_3$-BOTTOM-ELECTRODE AND THE CRYSTAL STRUCTURE AND THE ELECTRICAL PROPERTY OF PZT THIN FILM DEPOSITED ON $SrRuO_3$

K. Takahashi, T. Oikawa, Keisuke Saito, H. Fujisawa**, M. Shimizu** and H. Funakubo (Tokyo Institute of Technology, *Philips Japan, Ltd. and **Himeji Institute of Technology)*

31G-EL-7P PROPERTIES OF Pt ALLOY THIN FILM ELECTRODES FOR FERROELECTRIC CAPACITORS

M. Kurita,**, T. Shiosaki** and S. Okamura** (*Tanaka Kikinzoku Kogyo and **NAIST)*

31G-EL-8P EPITAXIAL GROWTH OF $SrRuO_3$ THIN FILM ELECTRODE ON Si BY PULSED LASER DEPOSITION

T. Higuchi, S. Iwashita, M. Ishida T. Shimoda, Y. X. Chen and J. Koike* (SEIKO EPSON Corporation and *Tohoku University)*

31G-EL-9P PREPARATION OF Ag ALLOY TOP ELECTRODES FOR FERROELECTRIC Pb(Zr, Ti) O_3 FILM

H. Masumoto, A. Kojima, T. Iijima and T. Goto (Tohoku Univ and *AIST)*

31G-EL-10P INFLUENCE OF ELECTRODE MATERIAL ON THE INTERFACIAL CAPACITANCE AND THE FAILURE MECHANISMS IN PZT THIN FILMS

U. Ellerkmann, U. Boettger*, T. Schneller*, R. Waser*,**, N. Nagel*** and R. Bruchhaus*** (*RWTH AachenI, **Forschungszentrum Jülich and ***MP FDAc/o Toshiba Corporation)*

31G-EL-11P PREPARATION OF $BaPbO_3$ ELECTRODE THIN FILMS BY RF MAGNETRON SPUTTERING AND EVALUATION OF THEIR ELECTRICAL PROPERTY

I. Kawakami, M. Matsuoka, T. Nishida, S. Okamura and T. Shiosaki (Nara Institute of Science and Technology)

31G-EL-12P EFFECT OF $(Ba,Sr)RuO_3$ THIN FILMS ON HYDROGEN ANNEALING OF $(Ba,Sr)RuO_3/(Ba,Sr)TiO_3/(Ba,Sr)RuO_3$ CAPACITORS

E.-S. Choi and S.-G. Yoon (Chungnam National University)

31G-EL-13P PREPARATION AND CHARACTERISTICS OF NiCr BOTTOM ELECTRODE OF FERROELECTRIC THIN FILMS.

E.-M. Lee and S.-G. Yoon (Chungnam National University)

High-k, Gate-oxide (15:45 --- 17:15)

31G-HG-1P Si DIFFUSION IN HfO_2 THIN FILMS DEPOSITED BY ATOMIC LAYER DEPOSITION FOR GATE OXIDE APPLICATION

M. Cho, J. Park, B. K. Park and C. S. Hwang (Seoul National University)

31G-HG-2P INTERFACIAL REACTION BETWEEN CHEMICALLY VAPOR DEPOSITED HfO_2 THIN FILMS AND HF-CLEANED Si SUBSTRATE DURING FILM GROWTH AND

J. Park, B. K. Park, M. Cho and C. S. Hwang (Seoul National University)

31G-HG-3P FORMATION OF RELIABLE $HfO_2/HfSi_XO_Y$ GATE-OXIDE FOR METAL-OXIDE-SEMICONDUCTOR DEVICES

H. Kang, Y. Quan, D. Jung and Y. Roh (Sungkyunkwan University)

31G-HG-4P CHARACTERISTICS OF ZrO_2 THIN FLIMS USING ATOMIC LAYER DEPOSITION FOR ALTERNATIVE GATE DIELECTRIC

J. Park, B. Choi, N. Park and J. Kim (Kookmin University)

31G-HG-5P CHARACTERISTICS OF ZIRCONIUM BASED AMORPHOUS THIN FILMS DEPOSITED BY CO-SPUTTERING

C. Jeon, S. Kong, J. An and J. Kim (Kookmin University and *Hanyang University)*

31G-HG-7P La AND Zr-BASED ALTERNATIVE GATE DIELECTRICS: A STRUCTURAL AND ELECTRICAL INVESTIGATION

C. R. Hoffman, D. Wicakasana, H. Schmidt, E. Garfunkel*, S. Stemmer**, J-P. Maria and A. I. Kingon (North Carolina State University, *Rutgers University and **Rice University)*

31G-HG-8P REDUCTION OF LEAKAGE CURRENT BY HfO_2 HIGH K DIELECTRIC FILM STACKED ON FERROELECTRIC LAYER FOR EXTENDING THE RETENTION TIME OF MFMIS FET

T. Nishikawa, T. Otsuka and K. Morita (Matsushita Electric Industrial Co.)

Gallery

Thin film - Properties (I) (15:45 --- 17:15)

31H-PP1-1P CHARACTERISTICS OF BST THIN FILM PREPARED BY NOVEL CHEMICAL SOLUTION DEPOSITON METHOD FOR HIGH DENSITY DRAM APPLICATION

Y. Lin, Y. Xie and T. Tang (Fudan University)

31H-PP1-2P FIELD AND TIME INDUCED ORDER-DISORDER TRANSITION IN "HARD" PZT THICK

D. Damjanovic, A. Tagantsev, J. Dorn, J. Mueller and N. Setter (Swiss Federal Institute of Technology – EPFL)

31H-PP1-3P CHARACTERISTICS OF LOW-TEMPERATURE-PRERPARED (Ba, Sr)TiO_3 FILMS POST TREATED BY NOVEL EXCIMER LASER ANNEALING

D.-C. Shye, B.-S. Chiou, C.-C. Hwang, J.-S. Chen, I.-W. Su**, C.-C. Chou** and H.-C. Cheng (National Chiao Tung University, *National Science Council and **National Taiwan University of Science and Technology)*

31H-PP1-4P EFFECTS OF POLING ON THE SWITCHING PROPERTIES OF $SrBi_2Ta_2O_9$ FILMS

X. M. Lü, J. S. Zhu, X. B. Chen, X. S. Zhang, Z. G. Liu and Y. N. Wang (Nanjing University and Yangzhou University*)*

31H-PP1-5P CHARACTERIZATION OF (Ba,Sr)TiO_3 (BST) THIN FILMS GRWON BY LIQUID DELIVERY METAL ORGANIC CHEMICAL VAPOR DEPOSITION USING A NOVEL Ti PRECURSOR, $Ti(2meip)_2$

Y. J. Cho, Y.-S. Min, J.-H. Lee, J. S. Kim, J. H. Kim and C. S. Hwang* (Samsung Advanced Institute of Technology and *Seoul National University)*

31H-PP1-6P DIELECTRIC PROPERTIES OF IRRADIATED FERROELECTRIC AND ANTIFERROELECTRIC THIN FILMS

R. Bittner, K. Humer, H. W. Weber, L. Cakare, A. Sternberg**, D. V. Kulikov*** and Y. V. Trushin*** (Atomic Institute of the Austrian Universities, *Jozef Stefan Institute, **University of Latvia and ***A. F. Ioffe PTI of RAS)*

31H-PP1-7P THERMALLY ACTIVATED LOW FREQUENCY DIELECTRIC DISPERSION OF ANTIFERROELECTRIC $Pb_{1.1}La_{0.025}Zr_{0.95}Ti_{0.05}O_3$ THIN FILM

I. W. Kim, D. S. Lee, S. H. Kang, Y. H. Kim, B. C. Choi* and J. H. Jeong* (University of Ulsan and *Pukyong National University)*

31H-PP1-8P EFFECT OF IN-SITU APPLIED FIELD ON THE PROPERTIES OF $SrBi_2Ta_2O_9$ THIN

H. Ling, A. Li, D. Wu, Z. Liu and N. Ming (Nanjing University,)

31H-PP1-9P RELAXATION OF REMANENT POLARIZATION IN PZT THIN FILM CAPACITORS

K. W . Lee and W. J. Lee (KAIST)

31H-PP1-10P INTERNAL STRAIN EFFECT ON POLARIZATION PROFILE AND DOMAIN STRUCTURE IN FERROELECTRIC THIN FILMS

S. V. Pavlov (Moscow State University)

31H-PP1-11P ANALYSIS OF THE GRAIN SIZE SATURATION IN SELECTIVLEY NUCLEATED AND LATERAL CRYSTALLIZED LEAD ZIRCONATE TITANATE THIN FILMS

J.-S. Lee, J.-H Park and S.-K. Joo (Seoul National University)

31H-PP1-12P PARTICULARITIES OF BEHAVIOR OF THE SELF-POLARIZED LEAD ZIRCONATE TITANATE THIN FILMS

*V. P. Afanasjev, A. V. Pankrashkin, *I. P. Pronin and *L. M. Sorokin (St.-Petersburg State Electrotechnical University and *A.F.Ioffe Physico-Technical Institute Russian Academy of Sciences)*

31H-PP1-13P DIELECTRIC PROPERTY AND LATTICE DISTORTION OF $BaTiO_3/SrTiO_3$ SUPERLATTICE BY PULSED LASER DEPOSITION

J. Kim, L. Kim, D. Jung, Y. S. Kim and J. Lee (Sung Kyun Kwan University)

31H-PP1-14P CURRENT TRANSPORT THROUGH ULTRA-THIN PZT AND BTO TUNNEL BARRIERS

H. Kohlstedt, J. R. Contreras, J. Schubert, U. Poppe, C. L. Jia and R. Waser (Forschungszentrum Jülich)

31H-PP1-15P EFFECT OF Zr/Ti RATIO IN TARGETS ON ELECTICAL PROPERTIES OF PZT THIN FILMS DERIVED BY LASER ABLATION

Z. J. Wang, L. J. Yan, H. Kokawa and R. Maeda (Tohoku University and *National Institute of Advanced Science and Technology)*

31H-PP1-16P FERROELECTRIC FATIGUE IN SOL-GEL DERIVED $Pb(Zr_{0.40},Ti_{0.60})O_3$ THIN FILMS HAVING Pt BOTTOM AND PtO_X TOP ELECTRODES

J. E. Lim, K. S. Cho, C. S. Hwang, S.-H. Kim, D.-S. Lee*, H.-J. Woo*, C.-Y. Koo* and J. Ha* (Seoul National University and *INOSTEK Inc)*

31H-PP1-17P HEAT-TREATMENT INDUCED FERROELECTRIC FATIGUE OF $Pt/Sr_{1-x}Bi_{2+y}Ta_2O_9/Pt$ THIN-FILM CAPACITORS

J. Zhao, S. Jeong, J. Lim, C. S. Hwang and S.-H. Kim (Seoul National University and *INOSTEK Inc)*

31H-PP1-18P CHARACTERIZATION OF $(Bi_{3.15}La_{0.85})Ti_3O_{12}$ THIN FILMS FABRICATED BY CHEMICAL SOLUTION DEPOSITION ON VARIOUS SUBSTRATES

S.-O. Ryu, W.-J. Lee, N.-Y. Lee, K.-J. Choi, I.-K. You, S. M. Cho, B.-G. Yu, K.-I. Cho and S.-G. Yoon* (ETRI and *Chungnam National University)*

31H-PP1-19P FIRST-PRINCIPLES STUDY OF ELECTRONIC POLARIZATION IN Bi-LAYER STRUCTURE OXIDES

H. Miyazawa, E. Natori, M. Ishida, T. Shimoda and D. Vanderbilt (SEIKO EPSON Corporation)

31H-PP1-20P PROPERTY DEGRADATION OF $Pb(Zr_{0.52},Ti_{0.48})O_3$ (PZT) THIN FILM WITH THICKNESS AND AGING TIME

H. W. Song, H. Shin, S. Kim** and K. No (KAIST, *Samsung Advanced Institute of Technology and **Korea University)*

31H-PP1-21P ELECTRICAL AND STRUCTURAL PROPERTIES OF PZT FILMS DEPOSITIED BY MOCVD USING ULTRASONIC NEBULIZATION

H.-S. Shin, C.-H. Lee (Keimyung University)

31H-PP1-22P HYDROGEN-INDUCED DEGRADATION MECHANISMS IN FERROELECTRIC $(Bi,La)_4Ti_3O_{12}$ AND $Pb(Zr,Ti)O_3$ THIN FILMS

J.-G. Yoon,**, S. Seo*, B. S. Kang*, J. D. Kim*, T. W. Noh*, Y. K. Lee*** and Y. S. Kim*** (*Seoul National University, **University of Suwon and ***Samsung Institute of Technology)*

31H-PP1-23P IMPRINT CHARACTERISTICS OF FERROELECTRIC THIN FILMS AT HIGH STORAGE AND OPERATION TEMPERATURES

K. H. Noh, Y. M. Kang, B. Yang, S. W. Lee, S.-S. Lee and Y.-J. Park (Hynix Semiconductor Inc.)

31H-PP1-24P REJUVENATION AND FATIGUE EFFECTS IN SOL-GEL PZT FILMS WITH PLATINUM ELECTRODES

V. Shur, E. Rumyantsev, I. Baturin, E. Nikolaeva, E. Shishkin, D. Kuznetsov, D. Bolten, T. Schneller* and R. Waser* (Ural State University and *RWTH Aachen)*

31H-PP1-25P FERROELECTRIC PROPERTIES AND CURRENT CONDUCITON MECHANISMS OF $Pt/(Bi,La)_4Ti_3O_{12}/Pt$ CAPACITORS

N.-K. Kim, C.-R. Song, S.-Y. Kweon, E.-S. Choi, S.-J. Yeom and J.-S. Roh (Hynix Semiconductor, Inc.)

31H-PP1-26P ELECTRICAL PROPERTIES OF VANADIUM DOPED Bi-La-Ti-O THIN FILMS DERIVED BY CHEMICAL SOLUTION DEPOSITION METHOD

T.-W. Chiu, N. Wakiya, K. Shinozaki and N. Mizutani (Tokyo Institute of Technology)

31H-PP1-27P SIMULATION OF LEAKAGE CURRENT IN THIN FILMS WITH DEAD LAYERS

H. Schroeder, S. Schmitz, P. Meuffels and R. Liedtke (Institut für Festkörperforschung Forschungszentrum Jülich GmbH and *Institut für Werkstoffe)*

31H-PP1-28P CONDUCTION BEHAVIOR OF STRONTIUM-BISMUTH-TANTALATE THIN FILMS BY PULSED LASER DEPOSITION

J. S. Kim, T. K. Song, S. S. Kim, J. K. Kim, I. W. Kim, B. C. Choi** and J. H. Jeong** (Changwon National University, * University of Ulsan and **Pukyong National University)*

31H-PP1-29P FINITE ELEMENT ANALYSIS OF DOMAIN STRUCTURES IN EPITAXIAL $PbTiO_3$ THIN FILMS ON MgO AND Pt/MgO SUBSTRATES

K. Lee, Y. K. Kim and S. Baik (Pohang University of Science and Technology)

31H-PP1-30P ELECTRICAL PROPERTIES OF IN-PLANE ORIENTED FERROELECTRIC $Bi_4Ti_3O_{12}$-BASED THIN FILMS SYNTHESIZED BY CHEMICAL SOLUTION

H. Matsuda and T. Iijima (Institute of Advanced Industrial Science and Technology)

31H-PP1-31P CHARACTERIZATION OF SBT BASED CAPACITORS USING Zr-SILICATE INSULOTER LAYERS

H. Min, C. Jun, N. Park, S. Kong, J. Lee and J. Kim (Kookmin University)

31H-PP1-32P INFLUENCE OF STRUCTURAL PROPERTIES ON THE TEMPERATURE OF FERROELECTRIC TRANSITION OF $Ba_xSr_{1-x}TiO_3$ FILMS

S. F. Karmanenko, A. I. Dedyk, Y.-J. Oh, V. I. Sakharov** and I. T. Serenkov** (Electrotechnical University, *Korea Institute of Science and Technolory and **A. F. Ioffe Physical Technical Institute)*

31H-PP1-33P CHARACTERIZATION AND MODELING OF FERROELECTRIC THIN FILM INTEGRATING TEMPERATURE AND AGEING DEPENDANCE

L. Cima and E. Labouré (Ecole Normale Supérieure de Cachan)

31H-PP1-34P A MODEL FOR SWITCHING IN FERROELECTRIC THIN FILMS BY NUCLEATION-GROWTH OF DOMAINS WITH THREE-DIMENSIONAL POLARIZATION

D. Ricinschi, Y. Ishibashi, Makoto Iwata**, Liliana Mitoseriu*** and Masanori Okuyama (Osaka Univ., *Aichi Shukutoku Univ., **Nagoya Inst and ***'Al. I. Cuza' Univ.)*

31H-PP1-35P EVALUATION OF PLZT THIN FILM SPUTTERED ON $Pt/IrO_x/Ir$ BOTTOM ELECTRODE FOR FERROELECTRIC MEMORY APPLICATION

Y. Miyaguchi, T. Jimbo, S. Kikuchi, K. Suu and M. Ishikawa (ULVAC Inc.)

31H-PP1-36P CURRENT-TEMPERATURE CHARACTERISTICS OF LOW-TEMPERATURE-SPUTTERED $(Ba,Sr)TiO_3$ FILMS POST TREATED BY RAPID THERMAL ANNEALING

M.-W. Kuo, J.-S. Chen, B. C. S. Chou*, D.-C. Shye, C.-K. Jan, M.-F. Wu*, H.-Y. Tseng, B.-S. Chiou and H.-C. Cheng (National Chiao Tung University and *National Science Council, 20 R&D Road VI)*

31H-PP1-37P ELECTRICALLY ACTIVATED REJUVENATION OF RETENTION IN THERMALLY IMPRINTED PLZT CAPACITORS

S. Sun (Ramtron International Corporation)

31H-PP1-38P AGING EFFECT IN SOL-GEL DERIVED LEAD ZIRCONATE TITANATE THIN FILMS

R. S. Katiyar, A. Dixit and S. B. Majumder (University of Puerto Rico)

31H-PP1-39P CORRELATION BETWEEN MICROSTRUCTURE AND LOCAL FERROELECTRIC PROPERTIES OF NON-c-ORIENTED EPITAXIAL $SrBi_2Ta_2O_9$ THIN FILMS

C. Harnagea, A. Pignolet, M. Alexe, D. N. Zakharov, H. N. Lee and D. Hesse (Max Planck Institute of Microstructure Physics)

31H-PP1-40P RESISTANCE DEGRADATION OF ACCEPTOR DOPED $Pt/Ba_{0.7}Sr_{0.3}TiO_3/Pt$ THIN FILM CAPACITORS: COMPARISON OF EXPERIMENT AND NUMERICAL SIMULATION

R. Liedtke, U. Boettger* and R. Waser*,** (*RWTH Aachen and **Forschungszentrum Jülich)*

31H-PP1-41P POLARISATION STATE INSTABILITY IN SINGLE GRAINS OF $Pb(Zr_{0.45}Ti_{0.55})O_3$ THIN FILMS

E. L. Colla, K. Torii, S. Hiboux, H. W. Song**, I. Stolichnov, A. Tagantsev, K. No and N. Setter (Swiss Federal Institute of Technology, *Hitachi Ltd.Kokubunji and **KAIST)*

31H-PP1-42P TRACER ISOTOPE STUDIES OF IONIC DEFECT REDISTRIBUTION DURING IMPRINT AND FATIGUE TESTING OF PZT THIN FILMS

L. F. Schloss and P. C. McIntyre (Stanford University)

31H-PP1-43P PHYSICAL PROPERTIES OF MOD DERIVED $Bi_4Ti_3O_{12}/Bi_2SiO_5/Si$ STRUCTURES

M. Yamaguchi, T. Nagatomo and Y. Masuda (Shibaura Institute of Technology and *Hachinohe Institute of Technology)*

31H-PP1-44P ASYMMETRIC DIELECTRIC AND FERROELECTRIC BEHAVIOUR OF CSD ULTRA-THIN $Sr_{0.8}Bi_{2.2}Ta_2O_9$ THIN FILMS

R. Jiménez, C. Alemany, A. González, M. L. Calzada and J. Mendiola (Inst. Ciencia de Materiales de Madrid (CSIC))

31H-PP1-45P SPECIFIC HEAT AND THERMAL CONDUCTIVITY OF $BaTiO_3$ POLYCRYSTALLINE THIN FILMS

B. A. Strukov, S. T. Davitadze, S. N. Kravchun, B. M. Goltzman, V. V. Lemanov* and S. G. Shulman* (Moscow State University and *A.F.Ioffe Physico-TechnicalInstitute)*

31H-PP1-46P A METAL-FERROELECTRIC-SEMICONDUCTOR FIELD-EFFECT TRANSISTOR MEMORY CELL

M. A. Bailey and F. D. Ho (Tec-Masters Inc., and *University of Alabama in Huntsville)*

Plenary

Noh Theatre

Plenary (III) (17:30 --- 18:30)

31A-PL3-1PL SOLID FREEFORM FABRICATION: AN INTELLIGENT CAD-BASED SYSTEM FOR FABRICATION OF NOVEL FUNCTIONAL ELECTROCERAMICS

A. Safari (Rutgers University)