PiezoMEMS2014 Program

ver 2.3

Convention Hall (2nd Floor)

	Tuesday Oct 28
8:00 - 9:00	**Registration**
9:00 - 9:10	**Opening**
	Session I : Fabrication Technologies 1 Session chair :J. Ouyang (Shandong Univ)
9:10	I-1 K. Suu (ULVAC) CMOS-Integratable High-Performance Piezoelectric PZT Film Fabrication for Piezo-MEMS Applications
9:40	I-2 J. Akedo (AIST) High Speed Coating of Ferroelectric Materials by Aerosol Deposition Method
10:10	O-1 T. Ebefors (SILEX Microsystems AB) PZT developments towards high through-put sol-gel deposition with tunable film properties for actuators, sensors and IPD applications in a MEMS foundry production line
10:25	O-2 Y. Tabuchi (Silicon Sensing Products) Processing Technologies for MEMS PZT Gyroscopes and MEMS Foundry Services
10:40 - 11:00	**Break**
	Session II : Design and Characterization 1 Session chair : T. Iijima (AIST)
11:00	I-3 G. Le Rhun (CEA Leti) Integrated piezoelectric devices : from material to prototypes
11:30	O-3 H. Maekoba (Coventor) Fast System-Level Analysis For A Piezoelectric Angular Rate Sensor
11:45	O-4 T. Schmitz-Kempen (aixACCT) Concurrent measurement of longitudinal and transversal piezoelectric coefficients on wafer-level by double-beam laser interferometry
12:00 - 13:00	**Lunch**
	Session III : Fabrication Technologies 2 Session chair : P. Muralt (EPFL)
13:00	I-4 Y. Fujimori (Rohm) Integrated Manufacturing System for Piezo-MEMS
13:30	I-5 Y. Akiyama (Ricoh) Fabrication of Electronic Devices by Sol-gel Inkjet Printing
14:00	O-5 A. Janssens (SolMateS) Replacement of precious metal electrodes in PZT thin film manufacturing using the PiezoFlare 1200.
14:15	O-6 A. Nishiyama (Mitsubishi Materials) Mass production of 8" PZT thin film by Sol-Gel deposition
14:30 - 14:45	**Break**
	Session IV : Applications 1 Session chair : S. T-.McKinstry (Penn State Univ)
14:45	I-6 M. Akamatsu (Stanley Electric) Development of PZT Films Fabricated by Arc Discharged Reactive Ion-Plating and Application to a Biaxial Optical MEMS Scanner
15:15	I-7 L. Colombo (STMicroelectronics) Pilot line integration for PiezoMEMS in the Lab4MEMS project
15:45 - 16:00	**Break**
16:00 - 17:45	**Poster Session** **P-1 ~ P-20**
18:15 - 21:30	**Banquet** **(Kobe port cruising)**

Convention Hall (2nd Floor)

	Wednesday Oct 29
8:00 - 8:30	Registration
	Session V : Thin Film Materials 1 Session chair :H. Funakubo (Tokyo Inst Technol)
8:30	I-8 K. Shibata (Hitachi Metals) Three-axis angular rate sensors using lead-free KNN piezoelectric films
9:00	I-9 P. Muralt (EPFL) Recent works in piezoelectric thin films and MEMS devices
9:30	O-7 T. Kobayashi (AIST) Pulse poling to enhance the piezoelectric property of PZT thin films within 1 sec.
9:45	O-8 D. Iitsuka (SAE Magnetics) Excellent oriented PZT thin films on Si substrate by high speed deposition sol-gel method
10:00	O-9 V. V. Felmetsger (OEM Group) Enhancement of Preferred Crystal Orientation in Electrode and AlN Thin Films Using Predeposition RF Plasma Etch
10:15 - 10:30	**Break**
	Session VI : Design and Characterization 2 Session chair : I. Kanno (Kobe Univ)
10:30	I-10 F. Tyholdt (SINTEF ICT) PiezoMEMS development from idea to product - case examples from SINTEF
11:00	I-11 R. G. Polcawich (US Army Research Lab) PiezoMEMS Technology: Fabrication and Design of Actuators for Mobility
11:30	O-10 S. Sivaramakrishnan (Xaar plc) Finite element modelling of the clamping effects of substrates on the characterization of piezoelectric thin films
11:45	O-11 J. T. Evans, Jr. (Radiant Technologies) Piezoelectric Membrane Fabrication and Testing
12:00 - 13:00	**Lunch**
	Session VII : Thin Film Materials 2 Session chair : T. Matsushima (Kyoto Univ)
13:00	I-12 H. Funakubo (Tokyo Inst Technol) Enhancement of Piezoelectric Response Using 90° Domain Switching of Pb(Zr, Ti)O3 Films
13:30	I-13 S. Trolier-McKinstry (Penn State Univ) PZT PiezoMEMS with Integrated ZnO Electronics
14:00	O-12 I. Müller (RWTH Aachen Univ) Electrical and Piezoelectric Degradation in PZT 53/47 Thin Films
14:15	O-13 J. Ouyang (Shandong Univ) Piezoelectric coefficients of a ferroelectric thick film elastically coupled with a supporting substrate or underlayer
14:30	O-14 G. R. Fox (Fox Materials Consulting) Seed Layer TiO2 Structure Impact on {111}-Textured Pt Electrodes for Integrated Piezoelectric MEMS Devices
14:45 - 15:00	**Break**
	Session VIII : Applications 2 Session chair : T. Yoshimura (Osaka Pref Univ)
15:00	I-14 C. Troadec (Yole Developpement) Thin film PZT Market and Technology trends
15:30	I-15 T. Metzger (EPCOS AG) Piezoelectric RF-MEMS devices for Mobile Phone Applications
16:00	O-15 J. Ogawa (Panasonic) Airflow-Induced Vibration Energy Harvesters Using Piezoelectric MEMS Technology
16:15	O-16 T. Yoshimura (Osaka Pref. Univ) Electrical and Mechanical Properties of Piezoelectric MEMS Vibrational Energy harvesters using BiFeO3 films
16:30	O-17 Y. Hishinuma (FUJIFILM) MEMS devices developed with high performance sputtered Nb-doped PZT film
16:45	O-18 Y. Lu (UC Davis) Aluminum Nitride Piezoelectric Micromachined Ultrasonic Transducers Fabricated with a Buried Sacrificial Polysilicon Release Layer
17:00 - 17:10	**Closing**
	Adjourn

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Poster Session

Lobby (1st Floor)

P-1 K. Umeda (Murata Manufacturing) Temperature Compensated Solidly Mounted BAW Resonator using High Electromechanical Coupling Scandium doped Aluminum Nitride Film
P-2 W. Xiong (SAE Magnetics) Dual layer hetero PZT thin films with good thermal stability
P-3 S. Ikeuchi (Murata Manufacturing) Piezoelectric properties of CaTiO3-added (K, Na)NbO3 film
P-4 Y. Tsujiura (Kobe Univ) Power generation reliability of PZT thin films on stainless-steel cantilevers
P-5 T. Ebefors (SILEX Microsystem AB) SILEX developments within SEHPMET towards Figure of Merit optimization for use of PZT in energy harvesting applications and MEMS integration challenges for vacuum packaged PZT structures through WL-bonding in a MEMS foundry production line
P-6 H. Tofteberg (SINTEF) Micropump with active valves based on thin film PZT
P-7 K. Kanda (Univ Hyogo) Estimation of d31 constant for Microfabricated and Free-Standing Thin-Film Bimorph Structure of Pb[Zr,Ti]O3
P-8 D. Balma (EPFL) PZT thin films on titanium foils for MEMS applications
P-9 F. Kurokawa (Kobe Univ) Compositional dependence of (1-x)Ba(Zr0.2Ti0.8)O3-x(Ba0.7Ca0.3)TiO3 piezoelectric thin films prepared by combinatorial sputtering
P-10 T. Schmitz-Kempen (aixACCT) Temperature dependent measurements of the piezoelectric coefficient on thin films
P-11 H. Kobayashi (ULVAC) Improvement of Piezoelectric Fatigue of Sputtered Pb(Zr,Ti)O3 films for MEMS application
P-12 R. Matloub (EPFL) Precise measurements of longitudinal and transverse piezoelectric coefficients in Al1-xScxN thin films
P-13 N. Oshima (Tokyo Inst Technol) Preparation of {110} one-axis-oriented perovskite oxide films on (100)Si substrates using (101)PdO//(111)Pd buffer layers
P-14 M. Henmi (ULVAC) Sputtered Pb(Zr,Ti)O3 piezoelectric films for MEMS application
P-15 T. Matsushima (Kyoto Univ) Pb(Zr,Ti)O3 Thin Films Directly Deposited on Diamond Substrate
P-16 K. Kariya (Osaka Pref Univ) Structure Modification of Piezoelectric MEMS Vibration Energy Harvesters using BiFeO3 thin films
P-17 T. Date (Rohm) Optimization of Electromechanical Properties for Highly Oriented PZT Thin Films with Various Zr/Ti Ratios
P-18 B. J. Gibbons (Oregon State Univ) Lead-Free Piezoelectric Thin Films for Microelectromechanical Systems
P-19 H. F. Zhu (Shandong Univ) Middle-to-low temperature deposition of BiFeO3 thick films on Pt/Ti/SiO2/Si for lead-free Piezo MEMS applications
P-20 H. Cheng (Shandong Unv) The effect of substrate on microstructure and piezoelectric properties of highly c-axis oriented Ba(Zr0.2Ti0.8)O3 thin films prepared by RF-magnetron sputtering