Full program

12th International Workshop on Piezoelectric Materials and Applications in Actuators

2015 – 06 – 28		
17.00 – 20.00	Registration	
20.00	Committee meeting	
2015 – 06 – 29		
8.00 – 9.00	Registration	
9:00 – 9:15	Open ceremony	
Chairman – ***Jorg Wallaschek***		
9.15 – 10.00	**Prof. K. Uchino -** LOSS MECHANISMS IN PIEZOELECTRICS – SHOULD WE DRIVE TRANSDUCERS AT THEIR RESONANCE FREQUENCY?	
10.00 – 10.45	**Prof. R. Bansevicius -** PIEZOMECHANICS IN KAUNAS UNIVERSITY OF TECHNOLOGY – FROM FIRST PIEZOELECTRIC MOTORS TO PIEZOELECTRIC ROBOTS	
10.45 – 11.00	Coffee break	
	Hall - 1	Hall - 2
	Chairman – ***Matthias Hunstig***	Chairman – ***Andrius Ceponis***
11.00-11.20	Jeong Dae-Yong - **COMPARISON OF FERROELECTRIC AND PIEZOELECTRIC PROPERTIES OF $PbTiO_3$, $PbTiO_3$ AND $Pb(Zr,Ti)O_3$ FILM WITH NANO-SIZE GRAINS**	Jens Twiefel - **MODELING OF ULTRASONIC FRICTION REDUCTION IN METAL-ELASTOMER CONTACTS**
11.20-11.40	Hanmin Peng - **CHARACTERISTICS OF SONOPHORESIS ON RAT SKIN AND ARTIFICIAL MEMBRANE**	Sun Mengxin - **RESEARCH ON A SYMMETRIC PIEZOELECTRIC LINEAR MOTOR**
11.40-12.00	Woo-Suk Jung - **HIGH-OUTPUT CURVED PIEZOELECTRIC GENERATOR FOR WEARABLE APPLICATION**	Peter Bruns - **INVESTIGATIONS ON THE MOUNTING POSITION OF ULTRASONIC TRANSDUCERS**
12.00 – 12.30	Coffee break	
	Chairman – ***Seok-Jin Yoon***	Chairman – ***Chong-Yun Kang***
12.30 – 12.50	Tobias Hemsel - **COMPARISON OF DIFFERENT METHODS OF PIEZOELECTRIC STRUCTURAL DAMPING**	Asta Drukteinienė - **FINE TRAJECTORY PLANNING METHOD FOR MOBILE PIEZOROBOTS**
12.50 – 13.10	Peter Bornmann - **MODEL BASED ANALYSIS OF THE INTERACTION BETWEEN ULTRASOUND TRANSDUCER AND SOUND FIELD**	Young-Bog Ham - **MEASURING THE PERFOMANCE OF DEVELOPED JET DISPENSING MECHANISM USING STACKED PIEZOELECTRIC ACTUATOR**
13.10 – 13.30	Han Gao - **A LOW FRICTION PNEUMATIC ACTUATOR BY LONGITUDINAL / BENDING**	HaiBo Xu - **PIEZOELECTRIC NANOGENERATOR SYNTHESIZED USING THE $(Na_{1-x}K_x)NbO_3$ NANORODS WITH VARIOUS CRYSTAL STRUCTURES**

	VIBRATIONS	
13.30 – 13.50	Siwon Yu - **DEVELOPMENT OF THE PIEZOELECTRIC FLEXTENSIONAL TRANSDUCER FOR THE DEGRADATION OF TCE IN AQUEOUS SOLUTION**	Ji-Hyun Lee - **LARGE ELECTRIC FIELD INDUCED STRAINS OF CUO-ADDED $K_{1-X}NA_XNBO_3$ CERAMICS WITH $0 \leq X \leq 0.5$**
13.50 – 15.30	**Lunch**	
15.30 – 20.00	**Excursion to Trakai town**	
2015 – 06 – 30		
Chairman – ***Sahn Nahm***		
9.00 – 9.45	**Prof. M. Ragulskis -** FERMI-ULAM MODEL REVISITED - PROBLEMS AND APPLICATIONS	
9.45 – 10.30	Matthias Hunstig - **CONCEPTION, CONTROL AND CHARACTERISTICS OF FAST PIEZOELECTRIC INERTIA MOTORS**	
	Hall - 1	Hall - 2
	Chairman – ***Jens Twiefel***	Chairman – ***Hanmin Peng***
10.30 – 10.50	Tinghai Cheng - **A NOVEL RESONANT-TYPE SCREW PIEZOELECTRIC IMPACT ACTUATOR**	Viktor Hofmann - **SELF-SENSING FOR PIEZOELECTRICAL TACTILE DISPLAYS**
10.50 – 11.10	Dalius Mažeika - **PIEZOELECTRIC MIRROR WITH ACTIVE KINEMATIC PAIR**	James Kuria Kimotho - **APPLICATION OF SELF-SENSING IN PROGNOSTICS AND HEALTH MANAGEMENT OF PIEZOELECTRIC TRANSDUCERS**
11.10 – 11.30	Ryohei Ozaki - **NON-LINEAR SECOND HARMONIC VIBRATION MODE UNDER HIGH POWER CONDITION**	Qiang Tang - **ACOUSTIC STREAMING FIELD IN THE PROBE-DROPLET-SUBSTRATE SYSTEM**
11.30 – 12.00	Coffee break	
	Chairman – ***Tobias Hemsel***	Chairman – ***Kenji Uchino***
12.00 – 12.20	Gai Zhao - **SIMULATION STUDY ON THE POLYIMIDE BASED FRICTION MATERIALS IN USM APPLICATION**	Charles Mangeot - **TEMPERATURE DEPENDENCE OF SOFT/HARD PZT MATERIAL PROPERTIES AND IMPACT ON THE DESIGN CHOICE**
12.20 – 12.40	Michael Weinstein - **RESONANCE FREQUENCY TUNING OF HIGH POWER PIEZOELECTRIC ULTRASONIC TRANSDUCERS USING HIGH FREQUENCY SWITCHING CONVERTERS**	Jong-Hyun Kim - **FORMATION OF DEFECT DIPOLES AND THEIR EFFECT ON THE PIEZOELECTRIC PROPERTIES OF $KNbO_3$ CERAMICS**
12.40 – 13.00	Li Jinbang - **EXPERIMENT RESEARCH ON VIBRATIONS OF STATOR IN TRAVELLING WAVE ULTRASONIC MOTORS**	Kai-Alexander Saalbach - **SELF-SENSING CAVITATION DETECTION CAPABILITY OF HORN GEOMETRIES FOR HIGH TEMPERATURE APPLICATION**
13.00 – 13.20	Ruinan Ji - **MICRO-NANO CHIPPING OF COMPLICATED HARD**	Andrius Čeponis - **PIEZOELECTRIC ACTUATOR WITH TRAVELING WAVE WAVEGUIDE**

	SURFACE BASED ON ELASTIC WAVES	
13.20 – 14.50	**Lunch**	
Chairman – ***Takeshi Morita***		
14.50 – 15.35	**Prof. S. Nahm -** LEAD-FREE PIEZOELECTRIC THIN FILMS AND THEIR APPLICATION TO ENERGY HARVESTER AND MEMRISTOR DEVICES	
	Chairman – ***Arunas Struckas***	Chairman – ***Sergejus Borodinas***
15.35 – 15.55	Prof. K. Uchino – **ULTRASONIC MOTOR DRIVE METHODS – DRIVE AND CONTROL TECHNIQUES OF PIEZOELECTRIC MOTORS FOR EE AND ME RELATED ENGINEERS**	Igor Ille - **MODEL BASED PARAMETER IDENTIFICATION OF NONLINEAR ULTRASONIC TRANSDUCERS USING FREQUENCY RESPONSE MEASUREMENT**
15.55 – 16.15	Ryuichi Mizukami **- PIEZOELECTRIC LINEAR ACTUATOR WITH ELECTROMAGNETIC CONTROLLED PRELOAD**	Hiroki Yokozawa - **RESONANT-TYPE SMOOTH IMPACT DRIVE MECHANISM USING LEAD-FREE PIEZOELECTRIC MATERIALS**
16:15 – 16.45	Coffee break	
16.45 – 18.00	Poster session: 1. Masaya Takasaki - **$LiNbO_3$ ULTRASONIC TRANSDUCER FOR TACTILE DISPLAY** 2. Bo Fu - **INVESTIGATION OF FRICTION STIR WELDING ASSISTED BY LONGITUDINAL-TORSIONAL ULTRASONIC VIBRATION** 3. Jianping Li - **A LINEAR PIEZOELECTRIC ACTUATOR BY MEANS OF STICK-SLIP MOTION** 4. Jun Zhang - **A NOVEL ULTRASONIC MOTOR DRIVER BASED ON DUAL PWM TOPOLOGY** 5. Takefumi Kanda - **ACTUATORS FOR HIGH TEMPERATURE ENVIRONMENT USING PYROELECTRIC EFFECT** 6. Sergejus Borodinas - **ALGAE CELL DISRUPTION BY ELECTROHYDRAULIC SHOCK** 7. Zi-Jie Niu - **BASED ON THE ELASTIC HZ AND KULUN FRICTION THEORY OF THE STUDY OF ULTRASONIC MOTOR CONTACT** 8. Arunas Struckas - **INVESTIGATION OF ULTRASONIC SYSTEM CAPABLE TO TRANSFORM LONGITUDINAL VIBRATIONS TO RADIAL**	

	9. Sergejus Borodinas - **PIEZOACTUATOR WITH TESLA VALVES IN UNDERWATER VEHICLE** 10. Filomena Di Modugno - **MODELING AND SIMULATION OF CANTILEVER BEAM FOR WIND ENERGY HARVESTING** 11. Genadijus Kulvietis – **COMPUTER ALGEBRA FOR REAL-TIME DYNAMICS OF TRUNK-LIKE ROBOTS WITH LARGE NUMBER OF JOINTS** 12. Arunas Struckas - **INVESTIGATION OF STACKED TYPE ULTRASONIC BENDING SYSTEM** 13. Sergejus Borodinas – **HEMISPHERE-SHAPE ACTUATOR'S RESONANCE BOTH AT LONGITUDINAL AND RADIAL VIBRATIONS**
18.30 – 22.00	**Banquet**

2015 – 07 – 01		
Chairman – ***Ying Yang***		
9.00 – 9.45	**Prof. K. Uchino –** MEDICAL APPLICATIONS OF PIEZOELECTRIC DEVICES – INTRODUCTION TO PRACTICAL SUCCESSFUL PIEZOELECTRIC PRODUCTS IN THE MEDICAL AREA	
9.45 – 10.30	Jungho Ryu - **MAGNETO-MECHANO-ELECTRIC HARVESTERS WITH PIEZOELECTRIC SINGLE CRYSTAL FIBER COMPOSITE AND MAGNETOSTRICTIVE Ni PLATE**	
	Hall - 1	Hall - 2
	Chairman – ***Jeong Dae-Yong***	Chairman – ***Dalius Mazeika***
10.30 – 10.50	Ying Yang - **ENHANCED ENERGY DENSITY OF PZT-PZN-PNN CERAMICS AND ITS APPLICATION IN PIEZOELECTRIC WIND ENERGY HARVESTING DEVICE**	Takeshi Morita - **ESTIMATION OF NONLINEAR LEVEL IN PIEZOELECTRIC TRANSDUCERS**
10.50 – 11.10	Jing Chen - **A HIGH-TEMPERATURE-CAPACITOR DIELECTRIC BACED ON $BaSnO_3$-MODIFIED $Bi_{0.5}Na_{0.5}TiO_3$**	Xu Wang - **AN ULTRASONIC MANIPULATOR WITH NONCONTACT AND CONTACT-TYPE NANOWIRE TRAPPING FUNCTIONS**
11.10 – 11.30	Igor Ille – **MODEL-BASED FEEDBACK CONTROL OF AN ULTRASONIC TRANSDUCER FOR ULTRASONIC ASSISTED TURNING USING A NOVEL DIGITAL CONTROLLER**	Sung-Jin Jung - **ENHANCEMENT IN MECHANICAL PROPERTIES OF Bi-Te BASED THERMOELECTRIC MATERIALS BY EMBEDDING B_4C NANOPARTICLES**
11.30 – 12.15	Closing of the conference	
12.15 – 13.00	Coffee break	
13.00 – 15.00	Excursion around Vilnius	