

ENHANCE Tutorials - "Piezoelectrics, MEMS and Energy Harvesting"

Chairs: M. Lallart / A. Bartastyte

Tue., Oct. 1st

Time	Speaker	Title
09:00-10:30	Wen-jong WU	Material and mechanical perspectives of small-scale piezoelectric energy harvesting transducers
11:00-12:30	Alain BOSSEBOEUF	MicroNano(Opto)ElectroMechanical Systems (MNOEMS) - <i>Part 1: Generalities</i>
13:30-15:00	Alain BOSSEBOEUF	MicroNano(Opto)ElectroMechanical Systems (MNOEMS) - <i>Part 2: Fabrication technology</i>
15:30-17:00	Alper ERTURK	Methods of Piezoelectric Energy Harvesting
17:00-18:00	Open discussion "Young future energy leaders"	
	end of day	

Wed., Oct. 2nd

Time	Speaker	Title
11:00-12:30	Brice GAUTIER	Performances, applications and limitations of Piezoresponse Force Microscopy
end of session		

Thu., Oct. 3rd

Time	Speaker	Title
15:00-16:30	Skandar BASROUR	PiezoMEMS devices for energy harvesting
17:00-18:30	Elie LEFEUVRE	Piezoelectric and Electrostatic energy harvesting MEMS
end of day		

Plenary Lectures		
Wed., Oct. 2nd, 9:30-10:30 - Chair: T. Hemsel		
Paper id	Authors	Title
288959	Einar HALVORSEN	Modeling of interdigitated-electrode piezoelectric transducers
Wed., Oct. 2nd, 14:00-15:00 - Chair: T. Morita		
Paper id	Authors	Title
289243	Paul MURALT	Some recent developments in AlScN thin films and their applications in resonators
Thu. Oct. 3rd, 8:30-9:30 - Chair: J. Wallaschek		
Paper id	Authors	Title
290284	Alper ERTURK	Programmable piezoelectric metamaterials: from tunable bandgaps to nonreciprocal behavior
Fri. Oct. 4th, 8:30-9:30 - Chair: M. Lallart		
Paper id	Authors	Title
291965	Yoann HEBRARD	Smart materials for Industry 4.0
Fri. Oct. 4th, 14:30-15:30 - Chair: S. Priya		
Paper id	Authors	Title
288842	Wen-Jong WU	Toward fully integrated self-powered IoT wireless sensor in a package with piezoelectric vibration energy harvester

Session A

A-1: Ceramics & crystals

Wed., Oct. 2nd, 11:00-12:30 - Chair: P. Muralt

Time	Paper id	Authors	Title
11:00	288752	Raynald SEVENO, Julien LE SCORNEC , Benoit GUIFFARD, Vincent LE CAM, Mohamed EL GIBARI, Jean-Christophe THOMAS, Pierre Jean COTTINET, Mickaël LALLART and Lionel PETIT	Flexible PZT thin films prepared by Chemical Solution Deposition process <i>(invited)</i>
11:20	288885	Michaël JOSSE, Flora MOLINARI, Liza EL KHOURY, Thomas HERISSON DE BEAUVOIR, Marjorie ALBINO, Philippe VEBER, Mario MAGLIONE, Catherine ELISSALDE, Dominique MICHAU, U-Chan CHUNG and Mathieu MARCHIVIE	Cool-SPS : From fragile ferroics to classic ferroelectrics, and beyond <i>(invited)</i>
11:40	276706	Ayse BERKSOY-YAVUZ, Sedat ALKOY and Ebru MENSUR-ALKOY	The Energy Harvesting Applications of Mn Modified 67.5PMN-32.5PT Piezoceramics
11:55	277143	Eun-Ji KIM, Tae-Gon LEE, Sun-Woo KIM, Dae-Su KIM and Sahn NAHM	Piezoelectric and actuating properties of multilayer device fabricated using (001)-textured PZT-PZNN ceramic
12:10	277294	Onuma SANTAWITEE, Simon GRALL, Chanchana THANACHAYANONT, Isabelle DUFOUR and Hélène DEBEDA	High densified free-standing printed PZT disks or cantilevers for MEMS applications
12:25	277144	Sung-Mean PARK, Hyun-Gyu HWANG, Jong-Un WOO and Sahn NAHM	Linear modulation of conductance by adding CuO in crystalline KNbO3 thin film for neuromorphic computing system
12:40	end of session		

A-2: Pb-free & Polymers**Thu. Oct, 3rd, 11:30-13:00** - Chair: H. Débédà

Time	Paper id	Authors	Title
11:30	277140	Ku-Tak LEE, Ji-Won CHOI, Jeong-Seog KIM and Sahn NAHM	Improvement of piezoelectric properties of (Na,K)NbO ₃ -based lead-free ceramics through the formation of pseudocubic-based polymorphic phase boundary structures (<i>invited</i>)
11:50	288242	Vincent LADMIRAL, Marc GUERRE, Bruno AMEDURI, Cédric TOTEE, Gilles SILLY, Rinaldo POLI, Antoine DEBUIGNE, Christophe DETREMBLEUR	Macromolecular Engineering of Poly(vinylidene fluoride) (<i>invited</i>)
12:10	280280	Giacomo CLEMENTI, Giulia LOMBARDI, Samuel MARGUERON, Miguel Angel SUAREZ, Eric LEBRASSEUR, Sylvain BALLANDRAS, Bernard DULMET, Mickael LALLART and Ausrine BARTASYTE	Lead-free LiNbO ₃ Films for Piezoelectric Energy Harvesting
12:25	273861	Etienne LEMAIRE, Rubaiyet I. HAQUE, Morgan M. MONROE, Danick BRIAND and Atila ATLI	Green piezoelectric transducers based on transfer and printing of piezoelectric salts
12:40	288880	Anjneya VERMA, Pedro Fernandes Paes Pinto ROCHA, Thomas FISCHER and Sanjay MATHUR	KNN thick films for piezoelectric energy harvesting
12:55	end of session		

A-3: Other materials**Fri. Oct., 4th, 12:00-13:00** - Chair: S. Nahm

Time	Paper id	Authors	Title
12:00	276349	Sangtae KIM	Stress-Composition Coupling in Li Alloys (<i>invited</i>)
12:20	279464	Quentin MICARD, Guglielmo G. CONDORELLI and Graziella MALANDRINO	MOCVD of Bi(1-x)Dy _x FeO ₃ thin film on Si for energy harvesting
12:35	276815	Hyun-Gyu HWANG, Jong-Un WOO, Sung-Mean PARK and Sahn NAHM	Analog-like Conductance Modulation and Synaptic Plasticity in Ta ₂ O ₅ Memristor Cross-point Array
12:50	end of session		

Session B

B-1: Methods and Characterization

Wed., Oct. 2nd, 15:00-16:30 - Chair: G. Zhao

Time	Paper id	Authors	Title
15:00	290558	Baptiste MARTIN, Eric DANTRAS, Lydia LAFFONT, Antoine LONJON, Colette LACABANNE	Piezoelectric and magnetoelectric properties in polymer based composites <i>(invited)</i>
15:20	278251	Jörg WALLASCHEK	Basic considerations on modeling piezoelectric actuators by impedance and admittance matrices
15:35	280002	Akira IWASAKI and Takeshi MORITA	Electromechanical coupling k ₂ measurement in the direct effect based on the definition of IEEE
15:50	280184	Sarina KINOSHITA and Takahiko YANAGITANI	Estimation of the mechanical Q factor of the piezoelectric film without removing substrate
16:05	288876	Faraz HABIB, Anjenya VERMA, Quentin MICARD, Michael HEUKEN, Ausrine BARTASYTE, Sanjay MATHUR and Graziella MALANDRINO	Theoretical Approach for Better Understanding and Improved MOCVD of Piezoelectric Material
16:20	273615	Bin ZHANG, Jinhui LIANG, Xiaohui WANG, Dezhi LI, Jun GAO and Haoze WU	Modelling Piezoceramic output current under multivariate mechanical stimulations
16:35	end of session		

Wed., Oct. 2nd, 17:00-18:30 - Chair: S. Borodinas

Time	Paper id	Authors	Title
17:00	288862	Benoit GUIFFARD, Raynald SEVENO, Maria SAADEH, Pierre FRERE, Victor MERUPO and Adi KASSIBA	Flexoelectricity in soft polymer films <i>(invited)</i>
17:20	289060	Jean-Fabien CAPSAL, Kritsadi THETPRAPHI, David AUDIGIER, Jeff KUHN and Gil MORETTO	4D printing of electrostrictive polymers: LiveMirror Project <i>(invited)</i>
17:40	277351	Michael WEINSTEIN, Jens TWIEFEL and Jörg WALLASCHEK	Identification of the Effect of Ultrasonic Friction Reduction on the Stick-Slip Transition in Dry Metal- Elastomer Contacts
17:55	276742	Xiaoting XIANG, Minh-Quyen LE, Pierre-Jean COTTINET, Jose VILLAFUERTE, Vincent CONSONNI and Lionel PETIT	Electromechanical characterization based ZnO nanowire structure for application of pressure bio-sensor
18:10	280289	Nobuhiko HENMI, Takahiko IWASE and Hiroyuki SHIMA	Flexoelectric effect for share strain gradient in PZT prism under torsion
18:25	end of session		

Fri., Oct.4th, 9:30-11:00 - Chair: S. Basrour

Time	Paper id	Authors	Title
09:30	289212	Brice GAUTIER, Ingrid CANERO INFANTE, Nicolas BABOUX and David ALBERTINI	What Piezoresponse Force Microscopy can and can not do <i>(invited)</i>
09:50	290844	Dragan DAMJANOVIC	New materials and underlying physical mechanisms for high-performance piezoelectric actuators <i>(invited)</i>
10:10	278874	Ada STEPONAVIČIŪTĖ, Aušra SELSKIENĖ, Mindaugas GASPARIUNAS, Sergejus BORODINAS and Genrik MORDAS	17-4PH Stainless Steel as a Material for Additive Manufacturing
10:25	272909	Martin ANGERER, Michael ZAPF and Nicole V. RUITER	Design Validation during Transducer Array Manufacturing for Next Generation USCT
10:40	276863	Henning SEEFISCH and Jens TWIEFEL	Experimental investigations on parallel ultrasonic assisted low temperature sintering process
10:55	276942	Yangyang LONG, Jens TWIEFEL and Jörg WALLASCHEK	Analysis of the energy flows during ultrasonic wire bonding
11:10		end of session	

Session C			
C-1: Motors			
Wed., Oct. 2nd, 11:00-12:30 - Chair: D. Wu			
Time	Paper id	Authors	Title
11:00	273071	Yutaka DOSHIDA, Hideki TAMURA and Satoshi TANAKA	High Power Properties of (Sr,Ca)2NaNb5O15 Piezoelectric Ceramics and Application to Ultrasonic Motor <i>(invited)</i>
11:20	275891	Abdullah MUSTAFA and Takeshi MORITA	Extremum seeking control for efficiency optimization of rotary ultrasonic motors
11:35	288835	Susumu MIYAKE, Tomohiro HARADA, Hiroyuki SHIMIZU, Sumiaki KISHIMOTO and Takeshi MORITA	Elastic fin type ultrasonic motor using (Bi,Na)TiO3-BaTiO3 multilayer piezoelectric transducer
11:50	276809	Gai ZHAO, Jingfu SONG, Yuanhao YU and Jinhao QIU	Light weight USM with polymer based stator
12:05	276819	Shunsuke IZUHARA, Zhong ZHANG and Tomoaki MASHIO	Visual Feedback Control of Micro Ultrasonic Motor
12:20	284176	Weihaio REN, Mojian YANG and Lin YANG	Performance Simulation of a Novel Hollow Traveling Wave Rotary Ultrasonic Motor Based on ADINA
12:35	end of session		
Thu., Oct. 3rd, 11:30-13:00 - Chair: D. Mažeika			
Time	Paper id	Authors	Title
11:30	277011	Xiaoniu LI, Zhiyuan YAO and Dawei WU	Modeling and Tuning Method of the V-shaped Ultrasonic Motor under High Power Driving <i>(invited)</i>
11:50	274459	Ayato KANADA and Tomoaki MASHIMO	Design of Flexible Ultrasonic Motor
12:05	279007	Si CHEN, Shijun GUO and Mingbo TONG	A novel flapping wing rotor driven by rotary ultrasonic motor
12:20	279591	Alexandre PAGES, Adrien GUIGNABERT, Jonathan STENTZ, Olivier FREYCHET, François BARILLOT, Christian BELL, Thomas MAILLARD, Frank CLAEYSEN and Jolan GAUTHIER	Improvement of MSPA Module of Stepping Piezo Actuator and industrial applications in piezo motors
12:35	280328	Takamitsu KANEKO, Yuichiro ORINO and Takeshi MORITA	Application of Ultrasonic Motors for Walking Assistive System
12:50	end of session		

C-2: Ultrasonics**Wed., Oct. 2nd, 15:00-16:30 - Chair: E. Halvorsen**

Time	Paper id	Authors	Title
15:00	282590	Reinhard SCHEMMEL, Tobias HEMSEL and Walter SEXTRO	Low frequency test rig for the experimental investigation of intermetallic bond formation in ultrasonic wire bonding <i>(invited)</i>
15:20	288923	Mutsuo ISHIKAWA, Ayaho TSUKAMOTO, Nao SAITO, Akito ENDO, Shintaro YASUI, Marie TABARU, Hiroshi FUNAKUBO and Minoru KUROSAWA	Deposition of epitaxial piezoelectric films for high intensity and high frequency ultrasonic transducers and their applications <i>(invited)</i>
15:40	277341	Ilja PLETNER and Jens TWIEFEL	Operation and Control of an Ultrasonic Actuator in Anti-resonant Mode
15:55	277148	Gabriel ERTZ, Krishnaveni SIVAKUMAR and Jens TWIEFEL	Modal parameter comparison of 3D-printed and CNC-machined titanium ultrasonic sonotrode
16:10	279417	Fushi BAI	Investigation of ultrasonic cavitation on peening inner surfaces of holes
16:25	end of session		

Fri., Oct. 4th, 9:30-11:00 - Chair: X. Lu

Time	Paper id	Authors	Title
09:30	288715	Hiroki YOKOZAWA, Satori HACHISUKA, Jens TWIEFEL, Tien-Fu LU and Takeshi MORITA	Effective cavitation generation with non-sinusoidal waveform excited by multi-modal ultrasonic transducer <i>(invited)</i>
09:50	288655	Piotr VASILJEV, Sergejus BORODINAS, Dalius MAZEIKA, Arunas STRUCKAS, Regimantas BAREIKIS and Ying YANG	The investigation of the flat ring-type radial-torsional ultrasonic actuator and its application in micro UAV's
10:05	271044	Kang CHEN, Takasuke IRIE, Takashi IJIMA and Takeshi MORITA	Double Parabolic Reflectors Wave-guided High-power Ultrasonic Transducers
10:20	279594	Qingyang LIU, Kang CHEN, Junhui HU and Takeshi MORITA	DPLUS Based High-Frequency Ultrasonic Tweezers
10:35	288733	Masahiro KUBOTA, Masaya TAKASAKI, Daisuke YAMAGUCHI, Yuji ISHINO and Takeshi MIZUNO	Study on frequency dependence of ultrasonic suspension
10:50	288858	Hiroshi KIMURA, Masaya TAKASAKI, Daisuke YAMAGUCHI, Yuji ISHINO and Takeshi MIZUNO	Higher resonant frequency of bulk wave ultrasonic transducer for tactile display
11:05	end of session		

C-3: Actuation & Control**Wed., Oct. 2nd, 17:00-18:30** - Chair: H. Peng

Time	Paper id	Authors	Title
17:00	286873	Marta BERARDENGO, Stefano MANZONI, Olivier THOMAS and Marcello VANALI	The use of negative capacitances in piezoelectric resonant shunt (<i>invited</i>)
17:20	280959	Frédéric GIRAUD, Christophe GIRAUD-AUDINE, Michel AMBERG and Betty LEMAIRE-SEMAIL	Vector Control Method for an Ultrasonic Haptic Surface (<i>invited</i>)
17:40	288244	Dezhu SHEN, Jianming WEN and Jianping LI	An Inertial Piezoelectric Actuator Based on Asymmetric Clamping Materials
17:55	287577	Mickaël LALLART, Kui LI, Zhichun YANG and Shengxi ZHOU	System-Level Direct and Inverse Hysteresis Models for Piezoelectric Actuators and Application to Control
18:10	end of session		

Thu., Oct. 3rd, 11:30-13:00 - Chair: J. Twiefel

Time	Paper id	Authors	Title
11:30	291104	Manuel COLLET	Waves Control by Using Programmable Piezoelectric Metacomposite (<i>invited</i>)
11:50	289984	Simon CHESNE, Kevin BILLON, Nathan MONTCOUDIOL, Alice AUBRY, Rémi PASCUAL, Frédéric MOSCA, Frédéric JEAN, Charles PEZERAT and Charlie BRICAULT	Shunted piezoelectrical suspension for vibration attenuation: Isolation and Damping (<i>invited</i>)
12:10	279381	Xiaolong LU, Zhiwen WANG, Hui SHEN, Kangdong ZHAO, Tianyue PAN and Dexu KONG	A dual-axis piezoelectric thruster for micro underwater vehicles (<i>invited</i>)
12:30	256853	Jianping LI, Nen WAN, Dezhu SHEN and Jianming WEN	A Linear Walking-Type Piezoelectric Actuator with Asymmetrical Flexure Mechanisms
12:45	270788	Pancheng ZHU, Hanmin PENG, Jianzhi YANG and Chunsheng ZHAO	Thermal Analyses of a Piezoelectric Micro-Actuator Operated in Endoscopic Biopsy Channel
13:00	end of session		

C-4: Transducers**Fri., Oct. 4th, 12:00-13:00** - Chair: W.-J. Wu

Time	Paper id	Authors	Title
12:00	275764	Youn-Hwan SHIN, Sangtae KIM, Deepam MAURYA, Tae-Hyun SUNG, Shashank PRIYA, Chong-Yun KANG and Hyun-Cheol SONG	Automatic Resonance Tuning Mechanism for Ultra-wide Bandwidth Mechanical Energy Harvesting (<i>invited</i>)
12:20	276745	Mustafa Yunus KAYA and Sedat ALKOY	Development and Analysis of a Novel Class V Flextensional Transducer: The Sea-Shell
12:35	277800	Sang-Hyo KWEON and Isaku KANNO	Piezoelectric PZT thin-film transformers with a ring-dot structure
12:50	280514	Lucas BONNIN, Adrien PIOT, Nathalie ISAC, Raphael LEVY, Olivier LE TRAON and Alain BOSSEBOEUF	Piezoelectric semi-insulating GaAs beam resonators fabricated by deep reactive ion etching
13:05	end of session		

Session D

D-1: Energy Harvesting

Wed., Oct. 2nd, 15:00-16:30 - Chair: A. Erturk

Time	Paper id	Authors	Title
15:00	289962	Shashank PRIYA	Energy Harvesting Materials and Systems <i>(invited)</i>
15:20	289926	Hiroki KUWANO, Gaël SEBALD, Le Van MINH, Ngyen Hoang HUNG, Haruhiko ASANUMA and Hiroyuki OGUCHI	Efficient vibration-driven micro energy harvesting with piezoelectric materials <i>(invited)</i>
15:40	272362	Shengxi ZHOU	Multi-stable vibration energy harvesters: Design, analysis and application <i>(invited)</i>
16:00	273154	Zhengqiu XIE and Wenbin HUANG	A very wide band nonlinear T-shaped piezoelectric energy harvester with 1:2:3:4 internal resonance
16:15	end of session		

Wed., Oct. 2nd, 17:00-18:30 - Chair: E. Lefeuvre

Time	Paper id	Authors	Title
17:00	288650	Daniil YURCHENKO, Lucas MACHADO and Chris BOWEN	Lazy PE-based energy harvesting for electronic gadgets <i>(invited)</i>
17:20	280216	Gregorio BOCCALERO, Claire JEAN-MISTRAL, Simon CHESNE, Emmanuel MIGNOT and Nicolas RIVIERE	Underwater electrical conversion from shallow water sea waves through piezoelectric and electroactive materials
17:35	270624	Bin BAO, Wen CHEN and Quan WANG	A low-head piezoelectric hydroenergy harvester
17:50	279789	Giulia LOMBARDI and Mickaël LALLART	Synchronized Switch Harvesting for hybrid energy harvesting systems
18:05	end of session		

Fri., Oct. 4th, 9:30-11:00 - Chair: I. Kanno

Time	Paper id	Authors	Title
09:30	291656	Amin KARAMI	Applications of smart materials and energy harvesting in biomedical devices <i>(invited)</i>
09:50	272197	Yipeng WU and Jinhao QIU	Frequency up-converting piezoelectric harvesters based on internal resonances <i>(invited)</i>
10:10	287875	Grzegorz LITAK, Yi LI and Shengxi ZHOU	Uncertainty Analysis of Bistable and Monostable Vibration Energy Harvesters
10:25	277269	Erwin MAZWARDI, Tien-Fu LU and Rini AKMELIAWATI	Energy Harvester with Multiple Fundamental Resonances using Piezoelectric Stacks
10:40	280300	David GIBUS, Pierre GASNIER, Adrien MOREL, Sebastien BOISSEAU and Adrien BADEL	High electromechanical coupling of a broadband PZT-based vibration energy harvester
10:55	end of session		

D-2: Sensing			
Fri., Oct. 4th, 12:00-13:00 - Chair: A. Bartasyte			
Time	Paper id	Authors	Title
12:00	276557	Jie HU, Hanming PENG and Chunsheng ZHAO	Flexible and Surface Mount Piezoelectric Artificial Cilia for Airflow Sensing in Mobile Robot
12:15	276305	Andreas Sebastian SCHMELT, Jens TWIEFEL, Torben MARHENKE and Jörg HASENER	Investigation and enhancement of spatial resolution of measuring grid points with air-coupled ultrasound for NDT of panel materials using the re-radiation method
12:30	280160	Sarina KINOSHITA and Takahiko YANAGITANI	ScAlN thin film stack for BAW transformer in rectifying antenna
12:45	272777	Sota KOGAWA, Shuichi WAKIMOTO, Takefumi KANDA and Kento OMURA	Composite structure of McKibben artificial muscle with optical fiber sensor
13:00	end of session		

Posters

Pitch time	Paper id	Authors	Title
09:30	272480	Hikaru YAMAMOTO, Takefumi KANDA, Shuichi WAKIMOTO, Koichi SUZUMORI, Takahiro UKIDA and Hiroyuki NABAE	Control of a hydraulic cylinder by a particle excitation type three way valve
09:33	274459	Ayato KANADA and Tomoaki MASHIMO	Design of Flexible Ultrasonic Motor
09:36	274501	Andrius ČEPONIS, Dalius MAŽEIKA, Piotr VASILJEV and Jianmin QIU	Flat Cross-Shaped Piezoelectric Rotary Motor
09:39	276513	Dalius MAZEIKA, Andrius CEPONIS, Sergejus BORODINAS, Vytautas JURENAS, Genadijus KULVIETIS and Jelena STANKEVIC	A cylinder type multimodal traveling wave piezoelectric actuator
09:42	276819	Shunsuke IZUHARA, Zhong ZHANG and Tomoaki MASHIO	Visual Feedback Control of Micro Ultrasonic Motor
09:45	276982	Yassine CHAOUICHE and Mourad SOUADIA	The structural and elastic properties of Li ₂ X (X = S and Te) compounds.
09:48	276992	Liang WANG, Jens TWIEFEL, Chunsheng ZHAO, Dawei WU and Jörg WALLASCHEK	Anatylcal Modeling on a Surface-Bonded Type Piezoelectric Transducer with Longitudinal-Bending Coupling Vibration
09:51	277086	Teng CAO, Xiaoniu LI and Dawei WU	Polymer-Based Linear Ultrasonic Motor With In-Plane Longitudinal and Bending Mode
09:54	277259	Daisuke HIROOKA, Naomichi FURUSHIRO and Yamaguchi TOMOMI	Expansion of the controllable flow rate of particle-excitation valve
09:57	278876	Donatas GURAUSKIS, Arturas KILIKEVICIUS, Artur PISCALOV and Sergejus BORODINAS	An Investigation of Linear Encoder's Metrological Errors under different scanning speeds
10:00	279464	Quentin MICARD, Guglielmo G. CONDORELLI and Graziella MALANDRINO	MOCVD of Bi(1-x)Dy _x FeO ₃ thin film on Si for energy harvesting
10:03	279561	Gabriel BARRIENTOS, Graziella MALANDRINO and Valeria CINNERA MARTINO	Piezoelectric Microelectromechanical System Energy Harvesters Simulation and Enhancements
10:06	280004	Norifumi TANAKA, Yihong WANG and Nobuhiko HENMI	Comparison between the piezoelectric jerk sensor and differentiation methods of acceleration
10:09	280161	Julien LE SCORNEC, Benoît GUIFFARD, Raynald SEVENO and Vincent LE CAM	Low frequency flexible piezoelectric energy harvesters
10:12	280215	Linjuan YAN, Clémentine DELAUNAY, Mickaël LALLART and Manuel COLLET	Self-adjusting nonlinear energy harvesting system under rotational motion
10:15	280280	Giacomo CLEMENTI, Giulia LOMBARDI, Samuel MARGUERON, Miguel Angel SUAREZ, Eric LEBRASSEUR, Sylvain BALLANDRAS, Bernard DULMET, Mickael LALLART and Ausrine BARTASYTE	Lead-free LiNbO ₃ Films for Piezoelectric Energy Harvesting
10:18	280285	Arun ICHANGI, Andres GOMEZ, Namanu PANAYANTHATTA, Baptiste ROUCHIE, Anjneya VERMA, Thomas FISCHER and Sanjay MATHUR	Piezoelectrics go Lead-free: Electrospinning of Potassium Sodium Niobate Nanofibers
10:21	280396	Akshayaa Y.S. PANDIYAN, Michail E. KIZIROGLOU and Eric M. YEATMAN	Performance Analysis of Amplified Piezoelectric Actuators (APA) for Energy Harvesting
10:24	280499	Mert GÜL, A. Baturay GÖKÇEYREK, Mevlut GÜRBÜZ, Ayse Gul TOKTAŞ, Taner KAVAS and Aydın DOĞAN	Switching Properties of Mn doped NBT-6BT Multilayer Ceramics
10:27	282138	Ioannis NIKIFORIDIS and Paul D. MITCHESON	Design and Modelling of Class EF Inverters for Wireless Power Transfer Applications

Pitch time	Paper id	Authors	Title
10:30	282272	Luis Arturo ORTIZ BRUNICARDI, Nabil BENCHEIKH, Xavier DE LEPINE, Claude RICHARD and Frank CLAEYSSEN	Preliminary design of energy harvesters based on bistable hybrid piezoelectric-electromagnetic coupling
10:33	285444	Karolis STRAVINSKAS, Sergejus BORODINAS, Ada STEPONAVICIUTE and Genrik MORDAS	New Type of Metal Particle Dosing, Transportation and Positioning System
10:36	287640	Jun LIU, Zi-Jie NIU, Hua ZHU and Chun-sheng ZHAO	Design and experiment of a large-aperture hollow traveling wave ultrasonic motor with low speed and high torque
10:39	288280	Piotr WOLSZCZAK, Grzegorz LITAK and Krystian ŁYGAS	Analysis of complex L shape beam deflection for energy harvester applications
10:42	288847	Bartłomiej AMBROŹKIEWICZ, Piotr WOLSZCZAK and Grzegorz LITAK	Modelling of electromagnetic energy harvester with rotating pendulum
10:45	288874	Neetu KUMARI and Micky RAKOTONDRABE	Piezoelectric-pyroelectric energy transducer
10:48	288876	Faraz HABIB, Anjenya VERMA, Quentin MICARD, Michael HEUKEN, Ausrine BARTASYTE, Sanjay MATHUR and Graziella MALANDRINO	Theoretical Approach for Better Understanding and Improved MOCVD of Piezoelectric Material
10:51	288880	Anjneya VERMA, Pedro Fernandes Paes Pinto ROCHA, Thomas FISCHER and Sanjay MATHUR	KNN thick films for piezoelectric energy harvesting
10:54	289912	Nishant PEDDAGOPU, Carmela BONACCORSO, Patrizia ROSSI, Paola PAOLI and Graziella MALANDRINO	Synthesis of novel Lithium Adducts as Precursors for Lithium containing phases
10:57	292681	Giulia LOMBARDI, Mickaël LALLART, Michail KIZIROGLOU and Eric M. YEATMAN	Active rectification of rotational electromagnetic energy harvesting using piezoelectric elements for AC/DC power conversion improvement
11:00	292882	Namanu PANAYANTHATTA, Edwige BANO, Xavier MESCOT and Laurent MONTÈS	Piezoresponse of spin coated KNN thin films studied by AFM