

# Oral Presentation

## Symposium 7. Materials for Self-powered Generators and Devices Applications

### February 22 (WED)

Program		
Time	<b>[Session 7-1]</b> Materials for Self-powered Generators and Devices Applications	
	<b>Chair:</b> Sohini Kar-Narayan (University of Cambridge), Zhou Li(Beijing Institute of Nanoenergy and Nanosystems)	
10:40-11:10	[SO7-1] Materials Engineering for the Development of Flexible Nanogenerators (invited speaker)	Xudong Wang (University of Wisconsin Madison)
11:10-11:40	[SO7-2] Triboelectric Charging at Solid/Liquid Interface for Converting Water Wave Energy: Mechanism, Flexible Device, and Applications (invited speaker)	Guang Zhu (Beijing Institute of Nanoenergy and Nanosystems)
11:40-12:10	[SO7-3] Chemical methods for performance enhancement of piezoelectric and triboelectric generators (invited speaker)	Junghyo Nah (Chungnam National University)
Program		
Time	<b>[Session 7-2]</b> Materials for Self-powered Generators and Devices Applications	
	<b>Chair:</b> Guang Zhu (Beijing Institute of Nanoenergy and Nanosystems), Junghyo Nah(Chungnam National University)	
15:50-16:20	[SO7-4] Polymer-based Nanogenerators for Piezoelectric and Triboelectric Energy Harvesting Applications (invited speaker)	Sohini Kar-Narayan (University of Cambridge)
16:20-16:50	[SO7-5] Design of Piezoelectric Energy Harvesting Modules for Self-Powered Smart Roadways (invited speaker)	Chong-Yun Kang (KIST)
16:50-17:20	[SO7-6] ITENG in Self-powered Implantable Medical Electronic Devices (invited speaker)	Zhou Li (Beijing Institute of Nanoenergy and Nanosystems)
17:20-17:50	[SO7-7] Towards High Power Density Self-Charging Power Cell (invited speaker)	Sang Jae Kim (Jeju National University)

### February 23 (THU)

Program		
Time	<b>[Session 7-3]</b> Materials for Self-powered Generators and Devices Applications	
	<b>Chair:</b> Dongsung Kim (POSTECH)	
09:00-09:30	[SO7-8] A Priori Predicting Material Parameters and Device Performance Using Ion Properties (invited speaker)	Steven C Tidrow (Alfred University)
09:30-10:00	[SO7-9] Chemo-Electro-mechanical Model for Flexible Electrochemical Devices: from Actuators to Piezoionic Systems (invited speaker)	Hyacinthe Randria (Université Paris Diderot)
10:00-10:30	[SO7-10] Timescale Tunability in Mechanical Energy Harvesters (invited speaker)	Sangtae Kim (KIST)
Program		
Time	<b>[Session 7-4]</b> Materials for Self-powered Generators and Devices Applications	
	<b>Chair:</b> Hyacinthe Randria (Université Paris Diderot), Sangtae Kim (KIST)	
10:50-11:20	[SO7-11] Mapping strain/pressure with ZnO nanowire arrays by piezo-phototronic effect (invited speaker)	Caopeng Pan (Beijing Institute of Nanoenergy and Nanosystems)
11:20-11:50	[SO7-12] Metamaterial-based Enhancement of Acoustic and Elastic Wave Energy Harvesting (invited speaker)	Miso Kim (KRISS)
11:50-12:05	[SO7-13] External ultrasound driven triboelectric nanogenerator for in-vivo application	Hong-Joon Yoon (Sungkyunkwan University)
Program		
Time	<b>[Session 7-5]</b> Materials for Self-powered Generators and Devices Applications	
	<b>Chair:</b> Caopeng Pan (Beijing Institute of Nanoenergy and Nanosystems), Miso Kim (KRISS)	
13:30-14:00	[SO7-14] Discrete liquid-solid contact electrification on hydrophobic material surfaces and its use of energy harvesting (invited speaker)	Dongsung Kim (POSTECH)
14:00-14:30	[SO7-15] Flexible Nanogenerators Based on Semiconducting and Perovskite Piezoelectric Nanostructures for Harvesting Mechanical Energy (invited speaker)	Manoj Gupta (Indian Institute of Science Education and Research)
14:30-14:45	[SO7-16] High Performance Triboelectric Nanogenerators Based on Solid Polymer Electrolytes with Asymmetric Pairing of Ions	HanJun Ryu (Sungkyunkwan University)
Program		
Time	<b>[Session 7-6]</b> Materials for Self-powered Generators and Devices Applications	
	<b>Chair:</b> Manoj Gupta (IISER)	
15:00-15:15	[SO7-17] Utilization of Thermoplastic Fluoropolymers for One-step Fabrication of Triboelectric Replicable Nanogenerators	Dongwhi Choi (POSTECH)
15:15-15:30	[SO7-18] Self-healing triboelectric nanogenerator using shape memory polymer	Jeong Hwan Lee (Sungkyunkwan University)

15:30-15:45	[SO7-19] High Performance Piezoelectric Energy Harvesting from Atomic-Layered MoS <sub>2</sub> via Sulfur Vacancy Passivation	Tae-Ho Kim (Sungkyunkwan University)
15:45-16:00	[SO7-20] Spontaneous dipole coupling of ferroelectric BaTiO <sub>3</sub> NPs-polymer structure for performance enhancement of triboelectric nanogenerators	Sung-Ho Shin (Chungnam National University)
16:00-16:15	[SO7-21] Large electric power generation from movement of a single droplet on graphene/PTFE by triboelectrification	Sung Soo Kwak (Sungkyunkwan University)