

**Symposia - A03**  
**Nano Energy Materials**

**Sunday, Oct 15 (Sunday), 2023**

**Conference Room: 5502, 5# floor**

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**9:00-10:50    Session I**  
**Chair: Qijun Sun**

**9:00-9:30 (A01-01)**  
**Biomolecule-based Piezoelectric Nanomaterials and Their Energy Harvesting Application** (Invited)  
Rusen Yang, Xidian University, China

**9:30-10:00 (A01-02)**  
**Effective Interfacial Energy Band Engineering for Enhanced Triboelectric Nanogenerator** (Invited)  
Zhen Wen, Soochow University, China

**10:00-10:25 (A01-03)**  
**Bulk transfer of GaN for flexible skin display** (Invited)  
Weiguo Hu, Beijing Institute of Nanoenergy and Nanosystems, CAS, China

**10:25-10:50 (A01-04)**  
**Self-powered acceleration sensors based on triboelectric nanogenerators** (Oral)  
Zhengbing Ding, Sungkyunkwan University, South Korea

**10:50-11:00    Coffee Break**

**11:00-11:50    Session II**  
**Chair: Yusen Yang**

**11:00-11:25 (A01-05)**  
**High performance triboelectric nanogenerator using functional polymers** (Invited)  
Ju-Hyuck Lee, Daegu Gyeongbuk Institute of Science & Technology (DGIST), South Korea

**11:25-11:50 (A01-06)**  
**Triboelectric Nanogenerator-Driven Rapid Air Disinfection System for Efficient Microbial Inactivation** (Oral)  
Feng-Yi Pang, Yonsei University, South Korea

**12:00-14:00    Lunch**

**14:00-15:45    Session III**  
**Chair: Weiguo Hu**

**14:00-14:30 (A01-07)**  
**From 0-1 New Discoveries to the Collision Electro-Magnetic Theory** (Invited)  
Xia Cao, University of Science and Technology Beijing, China

**14:30-14:55 (A01-08)**  
**Self-Powered Triboelectric Buoys and Applications in Marine IoT** (Invited)  
Xiya Yang, Jinan University, China

**14:55-15:20 (A01-09)**  
**Multiscale Structural Nanocellulosic Triboelectric Aerogels Induced by Hofmeister Effect** (Oral)  
Bin Luo, Guangxi University, China

**15:20-15:45 (A01-10)**  
**Biocompatible 2-Hydroxyethyl Methacrylate Utilized in Triboelectric Nanogenerator Powered by Ultrasound** (Oral)  
Byung-Joon Park, Yonsei University, South Korea

**15:45-15:55    Coffee break**

**15:55-17:00    Session IV**  
**Chair: Xiya Yang**

**15:55-16:20 (A01-11)**  
**Flexible Biomechanical Energy Harvester toward Self-Powered Wearable Electronics** (Invited)  
Lingyun Wang, Shandong University, China

**16:20-16:45 (A01-12)**  
**Wet-Bioadhesive Ultrasound-Mediated Triboelectric Nanogenerator for Emergent Wound Treatment** (Oral)  
Xiangchun Meng, Yonsei University, South Korea

**16:45-17:00 (A01-13)**  
**4D Printing based Integration of Droplet-based Electricity Generator and Triboelectric Nanogenerator for Improvement of Droplet Energy Harvesting Efficiency** (Oral)  
Dongik Kam, Kyung Hee University, South Korea

**17:50    Dinner**

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**9:00-10:40 Session V**  
**Chair: Qijun Sun**

**9:00-9:25 (A01-14)**

**Numerical calculations for the piezoelectric response of ZnO nanotetrapods** (Invited)  
Morten Willatzen, Technical University of Denmark, CAS, China

**9:25-9:50 (A01-15)**

**Flexotronic effects in two-dimensional semiconductor materials** (Invited)  
Junyi Zhai, Beijing Institute of Nanoenergy and Nanosystems, CAS, China

**9:50-10:15 (A01-16)**

**Piezo-Phototronic Effect in Multi-Layer Structured Optoelectronic: Bilateral Piezoelectric Charge Modulation** (Invited)  
Wenbo Peng, Xi'an Jiaotong University, China

**10:15-10:40 (A01-17)**

**Multifunctional Self-Powered Wound Healing Patch based on Triboelectric Nanogenerator** (Oral)  
Hakjeong Kim, Sungkyunkwan University, South Korea

**10:40-10:50 Coffee Break**

**10:50-11:55 Session VI**

**Chair: Junyi Zhai**

**10:50-11:15 (A01-18)**

**Chemical reaction mechanism in metal-free defective carbon-based materials: defect, structural flexibility, and chemical reactions** (Oral)  
Keunsu Choi, Ulsan National Institute of Science and Technology, South Korea

**11:15-11:40 (A01-19)**

**On the temperature and humidity effects of contact electrification in semiconductor-semiconductor case: An energy band model for electron transfer in triboelectrification** (Oral)  
Jia Tian, Xi'an Jiaotong University, China

**11:40-11:55 (A01-20)**

**Injection Molding-assisted Mass Production of Fluorinated Thermoplastic for Triboelectric Nanogenerator** (Oral)  
Yoonsang Ra, Kyung Hee University, South Korea

**12:00-14:00 Lunch**

**14:00-15:55 Session VII**

**Chair: Xiaojing Liu**

**14:00-14:25 (A01-21)**

**Self-powered wearable textile technology** (Invited)  
Kai Dong, Beijing Institute of Nanoenergy and Nanosystems, Chinese Academy of Sciences, China

**14:25-14:50 (A01-22)**

**AI design of the electrochemical materials MoS<sub>2</sub>** (Invited)  
Xiaojing Liu, Shandong University, China

**14:50-15:15 (A01-23)**

**Flexible, transparent, and hydrophobic organogel elastomer for organogel sensor underwater and energy harvesting applications** (Oral)  
Zhaowei Cui, Beijing Institute of Nanoenergy and Nanosystems, CAS, China

**15:15-15:40 (A01-24)**

**Surficial Self-Reconstruction on Activating the Alkaline Electrocatalytic Hydrogen Evolution Reaction** (Oral)  
Yueshuai Wang, Beijing University of Technology, China

**15:40-15:55 (A01-25)**

**2D mineral hydrogel-derived single atoms-anchored heterostructures for ultrastable hydrogen evolution** (Oral)  
Fucong Lyu, City University of Hong Kong Shenzhen Research Institute, China

**15:55-16:05 Coffee break**

**16:05-17:45 Session VIII**

**Chair: Kai Dong**

**16:05-16:30 (A01-26)**

**Bioinspired Nanocellulosic Triboelectric Aerogels for Wearable Health Monitoring** (Oral)  
Chenchen Cai, Guangxi University, China

**16:30-16:55 (A01-27)**

**On the contact electrification mechanism in semiconductor-semiconductor case by vertical contact-separation triboelectric nanogenerator** (Oral)

Yue He, Xi'an Jiaotong University, China

**16:55-17:20** (A01-28)

**A Biodegradable and Miniaturized Ultrasound-Mediated Nanogenerator for Fibroblast Cells Stimulation** (Oral)

Xiao Xiao, Yonsei University, South Korea

**17:20-17:45** (A01-29)

**Mechanical Switches Integrated Sandwich Triboelectric Nanogenerator with High Instantaneous Output Power**

Han Wu, Chongqing University, China

**18:10 Dinner**