

[TS01] Poster Session 2 Best Poster Awards Candidates

Date & Time	July 4(Thu.), 2024 / 10:30–12:00
Place	Exhibition Hall 4,5

TS01T_BP_1

Microbial Disinfection in Portable Water Bottles Powered by Walking-Induced Electrostatic Charges

Jinsong Kim¹, Young-Jun Kim², Zheng-Yang Huo³, and Sang-Woo Kim¹

(¹Yonsei University, ²KRICT, ³Renmin University of China)

TS01T_BP_2

Engineered Thermoplastic Polyurethane with Tunable Tribopolarity and Biodegradability for Advanced Triboelectric Nanogenerator

Yugyung Jin, Hyeonseo Joo, and Ju-Hyuck Lee

(DGIST)

TS01T_BP_3

Electrodynamic Screen-Based Dust Removal using Wind-Driven Triboelectric Nanogenerators for Solar Panels

Junyeong Yang, Minsu Heo, and Ju-Hyuck Lee

(DGIST)

TS01T_BP_4

Enhancing Sensitivity of MWCNT/Ecoflex Composite Strain Sensors via Pre-Stretching and Circular Auxetic Metamaterials

Jaewon Cho, Dong Hwi Kim, Yong Jun Choi, and Miso Kim

(Sungkyunkwan University)

TS01T_BP_5

Activating Hydrogen Evolution Reaction Activity of Layered Double Hydroxide-Based Catalysts with Atomically Dispersed Rhodium Sites in Acidic Environments

Youngeun Kim and Wooseok Yang

(Sungkyunkwan University)

TS01T_BP_6

Geometric Optimization of Cu₂Se-Based Thermoelectric Device for Maximizing Power Generating Performance

Jungsoo Lee, Seungjun Choo, and Jae Sung Son

(POSTECH)

TS01T_BP_7

Ductile (Ag,Cu)₂(S,Se,Te)-Based Auxetic Metamaterials for Efficient and Durable Thermoelectric Power Generation

Seong Eun Yang¹, Youngtaek Oh², and Jae Sung Son¹

(¹POSTECH, ²UNIST)

TS01T_BP_8

Ultrasound-Driven, Capacitance-Optimized Triboelectric Implants for Neurostimulation

Jinyoung Jeon¹, Young-Jun Kim², and Sang-Woo Kim¹

(¹Yonsei University, ²KRICT)

TS01T_BP_9

High-Performance and Super-Flexible Core-Shell Fiber Moisture Electric Generators Enabled by Biomimetic Dual Driving Forces

Guangtao Zan and Cheolmin Park

(Yonsei University)

TS01T_BP_10

Fabrication of Complex 3D Structured Ceramics based on Direct Ink Writing

So-Min Song, Hyun-Cheol Song, and Sunghoon Hur

(KIST)

TS01T_BP_11

Intelligent Sensor Applications using Conductive Carbon Nanotube Sponge-Integrated Triboelectric Nanogenerators

Jaehee Shin, Doohyun Han, and Jinhyoung Park

(KOREATECH)

TS01T_BP_12

Surface Reconstruction of Ni-Fe Layered Double Hydroxide Inducing Chloride Ion Blocking Materials for Outstanding Overall Seawater Splitting

Enkhubayar Enkhtuvshin and HyukSu Han

(Sungkyunkwan University)

TS01T_BP_13

Biological Mechano-Electric Coupling Properties based on β -Chitin Nanofibrils of Deep-Sea Tubeworms

Hyunseung Kim¹, Gyoung-Ja Lee², Yu Ogawa³, Yebin Lee¹, Min-Ku Lee², Changyeon Baek², and Chang Kyu Jeong¹

(¹Jeonbuk National University, ²KAERI, ³Université Grenoble Alpes)

TS01T_BP_15

Beyond Traditional Droplet-Based Electricity Generators: Exploring the Potential of Energy Harvesting with Droplet Squeezing Motion on Stenocara-Inspired Surface with Heterogeneous Wettability

Soban Ali Shah, Sunmin Jang, Sumin Cho, and Dongwhi Choi

(Kyung Hee University)

TS01T_BP_16

Sound-Based Triboelectric Platform Fabricated by using Mechanically 4D Printing Technology

Girak Gwon, Dongik Kam, Yoonsang Ra, Donghan Lee, and Dongwhi Choi

(Kyung Hee University)

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[TS01] Poster Session 2

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TS01T_P_1

Electronic Structure of Polytetrafluoroethylene with Surface States and its Role on Contact Electrification

Yong Hyun Kwon, Seong Min Kim, and Sang-Woo Kim
(*Yonsei University*)

TS01T_P_2

Injectable and Fully Biodegradable Triboelectric Nanogenerator Powered by Ultrasound

Yong Hyun Kwon, Xiao Xiao, and Sang-Woo Kim
(*Yonsei University*)

TS01T_P_3

Eu and Mn Co-Doped High Tc PIN PMN PT Piezoelectric Ceramics for High Power Application

Min Woo Kim^{1,2}, Dong-Gyu Lee^{1,2}, Chong-Yun Kang¹, Sahn Nahm², and Hyun-Cheol Song^{1,3}
(¹KIST, ²Korea University, ³Sungkyunkwan University)

TS01T_P_4

Selective Wavelength Multi-Stacked Layer Absorber for Solar Desalination

Ga Eun Lee and Jeong Min Baik
(*Sungkyunkwan University*)

TS01T_P_5

Recent Advances in Functional Fiber-Based Wearable Triboelectric Nanogenerators

Seongmin Na and Dukhyun Choi
(*Sungkyunkwan University*)

TS01T_P_6

Extraction of Heavy Metals from Contaminated Soil using Electrokinetic Process and Different Chelating Agents

Muhammad Awais, Muhammad Ramzan Khawar, and Dongwhi Choi
(*Kyung Hee University*)

[TS02] Poster Session 2 Best Poster Awards Candidates

Date & Time	July 4(Thu.), 2024 / 10:30-12:00
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TS02T_BP_1

Mesoporous Silicon-Graphene Composite Anode for High-Performance Lithium-Ion Batteries

Subin Lee, Na-Yeong Kim, and Ji-Won Jung

(University of Ulsan)

TS02T_BP_2

Preparation of Sagoe Starch Based Activated Porous Carbons as Cathode's Components for Lithium Sulfur Battery

Nicholas Jonathan^{1,2}, Hans Kristianto³, Sang Ok Kim^{1,2}, and Arenst Andreas Arie³

(¹KIST, ²UST, ³Parahyangan Catholic University)

TS02T_BP_3

Off-Stoichiometric Composition Strategy for High Structural Integrity in Co-Free Li-Rich Layered Cathode

Youngsu Lee and Kyu-Young Park

(POSTECH)

TS02T_BP_4

Surface Roughness-Induced Enhancement of Binder Fibrillation Processibility in Dry Electrode Manufacturing for Lithium-Ion Battery

Jonggyu Park¹, Jeong-Keun Yoo², and Kyu-Young Park¹

(¹POSTECH, ²KIST)

TS02T_BP_5

Effect of Elastic Framework for Shape Resilience Lithium-Ion Batteries

Jong-Heon Lim¹, Jaehyun Kim², Jaesub Kwon¹, Kyoung Eun Lee¹, Youngsu Lee¹, Seongeun Park¹, Janghyuk Moon², and Kyu-Young Park¹

(¹POSTECH, ²Chung-Ang University)

TS02T_BP_6

3-D Interconnected Porous Cu Current Collector for Anode-Free Lithium-Metal Batteries

Suji Kim¹, MinJae Lee², SeKwon Oh², and Won-Hee Ryu¹

(¹Sookmyung Women's University, ²KITECH)

TS02T_BP_7

Surface Stabilization of High-Nickel Cathodes via Solvent-Free Mechano-fusion Process for Li-Ion Batteries

Yoo-Jung Choi, Hyeon-Ju Song, and Won-Hee Ryu
(*Sookmyung Women's University*)

TS02T_BP_8

Hierarchical Growth of Durable Carbon Nanotube Bundles from Graphite Interlayer Seeds for Free-Standing Oxygen Electrodes for Lithium-Oxygen Battery

Yeji Lim, Fuxi Peng, Huiju Kim, Boran Kim, Hyun-Soo Kim, Zhenyu Wang, Zuowan Zhou, Jinyang Li, and Won-Hee Ryu
(*Sookmyung Women's University*)

TS02T_BP_9

Revealing On-Demand Molecular Traps Effects of Electrostatic Covalent Organic Frameworks for High-Energy Li Metal Battery Electrodes

Jae-Seung Kim¹, Kyeong-Seok Oh², Sodam Park², Sang-Young Lee², and Dong-Hwa Seo¹
(¹*KAIST*, ²*Yonsei University*)

TS02T_BP_10

Complex Charge Transport of Carbon Network in Composite Cathode for Solid-State Batteries

Juho Lee^{1,2}, Hyeong-Jong Kim², Chanhyun Park², Jingyu Choi², Sung-kyun Jung², and Jinsoo Kim¹
(¹*KIER*, ²*UNIST*)

TS02T_BP_11

Cycling Protocol for Mn-Based Disordered Rock-Salt Li-Ion Cathodes for Improved Cycling Stability

DongHwa Seo
(*KAIST*)

TS02T_BP_12

Coated Current Collector for All Solid State Battery

Hyeon-Seong Oh^{1,2} and Hun-Gi Jung¹
(¹*KIST*, ²*Yonsei University*)

TS02T_BP_13

Facial Synthesis of Single Crystal Mo₄P₃ Nanowires with Large D-Spacing for Easy Li + Ion Uptake

Jeong In Lee, Seo Hyun Kim, Minjeong Shin, and Hyeuk Jin Han
(*Sungshin Women's University*)

[TS02] Poster Session 2

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TS02T_P_1

Study on the Improvement of Rate Capability and Application as Anode Material of $\text{Li}_4\text{Ti}_5\text{O}_{12}$ using NH_4F

Il-Seop Jang^{1,2}, Bo-Ye Song^{1,2}, Eunhye Kim^{1,2}, and Jinyoung Chun¹
(¹KICET, ²Korea University)

TS02T_P_2

A Study on the Removal of Residual Silica in Waste Silicon, Nanopore Generation, and Enhancement of Electrochemical Properties using NH_4F

Il-Seop Jang^{1,2}, Bo-Ye Song^{1,2}, Byeong-Jun Ahn^{1,2}, and Jinyoung Chun¹
(¹KICET, ²Korea University)

TS02T_P_3

Effect of Mg^{2+} Doping on the Ionic Conductivity and Density Enhancement of von-Alpen Type NASICON Ceramics

Gunhee Park^{1,2}, Byeong-Jun Ahn^{1,2}, Eun-Hye Kim¹, and Jinyoung Chun¹
(¹KICET, ²Korea University)

TS02T_P_4

Enabling Uniform Distribution of Carbon Nanotubes for Thick-Cathode in Lithium-Ion Batteries using Electropray

Ho-Jin Lee, Na-Yeong Kim, and Ji-Won Jung
(University of Ulsan)

TS02T_P_5

Zinc-Bridged Lithium on Carbon Nanofibers for Enhancing Anode-Free Li-Metal Battery Performance

Ho-Jin Lee¹, Ilgyu Kim¹, Tae-Hyeon Pyo², Sang-Joon Kim², and Ji-Won Jung¹
(¹University of Ulsan, ²KRICT)

TS02T_P_6

Scanning Transmission X-Ray Microscopy Study of In-Situ Annealing Effect on Cathode Primary Particles for Secondary Ion Batteries

Hansol Jang¹, Namdong Kim², Changhoon Jung³, and Hyun-Joon Shin¹
(¹Chungbuk National University, ²Pohang Accelerator Laboratory, ³SAIT)

TS02T_P_7

Construction of Dual Crosslinked Network Binder via Sequential Ionic Crosslinking for High-Performance Silicon Anodes

Chao Chen

(Jiaying University)

TS02T_P_8

Refreshing Lithium Metal Anodes: Mechano-Thermal Milling for Native Passivation Layer Removal

Sanghyeon Park and Hongkyung Lee

(DGIST)

TS02T_P_9

Designing Durable Zn Anodes: The Efficacy of In-Situ Coated Metal Fluoride/Polymer Bi-Layers

Jaewoong Han and Hongkyung Lee

(DGIST)

TS02T_P_10

Characterization of Sulfonated Cross-Linked Reinforced Films for Polymer Electrolyte Fuel Cells (PEFCs) using Microporous Flat Sheet Membranes

Suk-Yong Jang, Ji-Su Lee, and Sien-Ho Han

(Tech University of Korea)

TS02T_P_11

Facile Synthesis of Si/rGO Composites based on Particle Size Differences with High Reversibility for Lithium Ion Batteries

Wanseop Shin, Chaewon Kim, and Sang-Wha Lee

(Gachon University)

TS02T_P_12

Atomic Layer Deposition for Lithium-Ion Battery Cathode Materials

Chae-Woong Kim, Hyoug Kwon, Yonghyeon Kim, Junil Kim, Sungjun Jeong, and Hyngsang Park

(ISAC Research)

TS02T_P_13

Synthesis of Nickel Fluoride (NiF₂)/Porous Carbon Nanocomposites and their Electrochemical Properties as the Electrode of Li-Ion Batteries

Gunhee Park^{1,2}, Il-Seop Jang^{1,2}, and Jinyoung Chun¹

(¹KICET, ²Korea University)

TS02T_P_14

Ni/LiF/C Nanocomposite as Pre-Lithiation Cathode Additive for High Energy Density Lithium-Ion Batteries

Bo-Ye Song¹, Gunhee Park^{1,2}, Byeong-Jun Ahn^{1,2}, and Jinyoung Chun¹

(¹KICET, ²Korea University)

TS02T_P_15

Synthesis of Sodium Cobalt Fluoride (NaCoF₃) Nanocomposite and Electrochemical Performance as Lithium-Ion Batteries

Bo-Ye Song¹, Il-Seop Jang^{1,2}, Eun-Hye Kim¹, and Jinyoung Chun¹

(¹KICET, ²Korea University)

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