

[TS01] Poster Session 1 Best Poster Awards Candidates

Date & Time	July 3(Wed.), 2024 / 10:30–12:00
Place	Exhibition Hall 4,5

TS01W_BP_1**Hierarchical Phonon Scattering from Nano to Macro Scale in Bismuth Telluride Bulk Composites and Cost-Effective Module Structure**

Anil Kumar¹, Saurabh Thoravat¹, Pooja Rawat¹, Hyungyu Jin², and Jong Soo Rhyee¹
 (¹*Kyung Hee University*, ²*POSTECH*)

TS01W_BP_2**First-Principles Study of Mitigating Interfacial Degradation in Semi-Transparent Perovskite Solar Cells**

Wonze Jung¹, Syed Dildar Haider Naqvi², SeJin Ahn², and Kanghoon Yim¹
 (¹*Chungnam National University*, ²*KIER*)

TS01W_BP_3**Enhancing the Output Energy and Durability of Triboelectric Nanogenerator via Nanostructured Interface of Dielectric and Electrode with Hot Water Treatment**

Seonghun Hwang¹, Yoonsang Ra¹, Donghyeon Yoo², and Dongwhi Choi¹
 (¹*Kyung Hee University*, ²*University of Illinois Urbana-Champaign*)

TS01W_BP_4**Finger Motion Recognition with Triboelectric Multimodal Sensor based on Kinematic Design for Human-Machine Interfaces**

Sangbeom Nam, Sumin Cho, Donghan Lee, Sunmin Jang, and Dongwhi Choi
 (*Kyung Hee University*)

TS01W_BP_5**Self-Powered Temperature Monitoring System based on Polydiacetylene Embedded Polyvinylidene Fluoride Nanofibers**

Hakjeong Kim, Jaewon Cho, Seongmin Na, Huang ChenYao, Kyungwho Choi, Miso Kim, and Dukhyun Choi
 (*Sungkyunkwan University*)

TS01W_BP_6**Analysis of Improved Shock Detection and Dielectric Heating Properties by Adding CNTs to Piezoelectric Paint**

Jihun Lee¹, Hyunjin Bae², and Kyungwho Choi^{1,2}
 (¹*Sungkyunkwan University*, ²*Korea Aerospace University*)

TS01W_BP_7

Development of a Battery Thermal Management System with Thermoelectric Module and Phase Change Material

Sung Kyu Chung, Bui Minh Quang, and Kyungwho Choi
(*Sungkyunkwan University*)

TS01W_BP_8

Characterization of a Body-Attached Thermoelectric Generator based on Polyurethane Foam Coated with Carbon Nanotubes

Insik Jo and Kyungwho Choi
(*Sungkyunkwan University*)

TS01W_BP_9

Recovered Graphene-Hydrogel Nanocomposites for Multi-Modal Recognition via Optimized Triboelectrification and Machine Learning

Thien Trung Luu and Dukhyun Choi
(*Sungkyunkwan University*)

TS01W_BP_10

Pyramid-Shaped Ag/PDMS Nanocomposites for Triboelectric Nanogenerators

Akhmetzhanov Nursalim¹, Kang Dong Joo¹, Kim Jong Man¹, Shin Dong-Myeong², and Hwang Yoon-Hwae¹
(¹*Pusan National University*, ²*The University of Hong Kong*)

TS01W_BP_11

Investigating Charge Dynamics: Copper-N-Type Silicon Interface in Sliding Mode DC Triboelectric Nanogenerator

Dimaral Aben¹, Yerkezhan Amangeldinova¹, Kassymzhomart Kunanbayev², Dong-Myeong Shin³, and Yoon-Hwae Hwang¹
(¹*Pusan National University*, ²*KAIST*, ³*The University of Hong Kong*)

TS01W_BP_12

Enhanced Performance of NdFeB-PMMA Composites Based Triboelectric Nanogenerator using Magnetization

Nhat Nam Hoang¹, Gi Hyeon Han², and Jae Won Lee¹
(¹*Kangwon National University*, ²*Yonsei University*)

TS01W_BP_13

Eu/Y-Codoped TiO₂-Based Thin Film for Power Enhancement and UV Protection of Dye-Sensitized Solar Cells

Darya Goponenko, Kamila Zhumanova, and Timur Sh. Atabaev
(*Nazarbayev University*)

TS01W_BP_14

TiO₂-NaYF₄:Yb,Er Upconverting Nanostructures for the Improved Solar Light Harnessing in Dye Sensitized Solar Cells (DSSCs) and Photoelectrochemical (PEC) Devices

Kamila Zhumanova, Darya Goponenko, and Timur Atabaev

(Nazarbayev University)

TS01W_BP_15

Magneto-Mechano-Triboelectric Nanogenerator for Stray Magnetic Field Energy Harvesting

Tae Kyoung Yoon^{1,2}, Hyun Soo Kim¹, Hyun-Cheol Song¹, and Jeong Min Baik²

(¹KIST, ²Sungkyunkwan University)

TS01W_BP_16

Non-Contact Rotating Triboelectric Nanogenerator for Self-Powered Safety Light

Jong Gun Park and Jae Won Lee

(Kangwon National University)

TS01W_BP_17

Enhancing Charge Retention in Non-Contact Triboelectric Nanogenerators using Electrospun Polyvinyl Alcohol (PVA)/Polystyrene Sulfonic Acid (PSSA) Nanofibers

Yoo Song Lee and Jae Won Lee

(Kangwon National University)

TS01W_BP_18

Chemically Transformed Cu₂Se-PbSe Thermoelectric Kinked Nanoowires

Minseong Lee, Seungwon Moon, Huigeun Lee, Sumin Choi, Geonhaeng Lee, Junyeong Suh, Sungmin Go, Sung-Gu Kang, Hyeon-Jun Bae, Sangwoo Lee, and Yun-Mo Sung

(Korea University)

TS01W_BP_19

High Durability Moisture Electric Generator with PSSA/PVA/CNC Film

Yeong heum Moon, Yeong jun Moon, and Jae Won Lee

(Kangwon National University)

TS01W_BP_21

Mechanically Guided Geometry Transformation-Based Three-Dimensional Structure to Assign Various Functionality to Sensor

Dongik Kam, Dayeon Jang, Yu-seop Kim, Donghan Lee, Hyeoncheol Yang, and Dongwhi Choi

(Kyung Hee University)

[TS02] Poster Session 1 Best Poster Awards Candidates

Date & Time	July 3(Wed.), 2024 / 10:30-12:00
Place	Exhibition Hall 4,5

TS02W_BP_1**Screening Strategy of Ideal Quinone-Based RMs for Direct Cathode Lithiation of Spent Li-Ion Batteries**

Hyun Ju Yoon, Suji Kim, and Won-Hee Ryu

*(Sookmyung Women's University)***TS02W_BP_2****Functional Group Control of Polarizable Molecular Dipoles as Interface Stabilizing Electrolyte Additive for Rapid Operative and Longer Lifespan Lithium Metal Batteries**

ChaeYeong Son and Won-Hee Ryu

*(Sookmyung Women's University)***TS02W_BP_3****Binder-Free Oxide-Sulfide Composite Electrolyte Membrane for All-Solid-State Batteries**A-Yeon Kim^{1,2}, Hyeon-Ji Shin¹, Jun Tae Kim¹, and Hun-Gi Jung^{1,3}*(¹KIST, ²Korea University, ³UST)***TS02W_BP_4****The Cathode Material $\text{Na}_3\text{V}_{1.5}\text{Cr}_{0.4}\text{Fe}_{0.1}(\text{PO}_4)_3$, Belonging to the NASICON-Type, Is Renowned for its Exceptional Performance in Sodiumion Batteries, Particularly for its High Voltage and High-Rate Capabilities**

Deokhyeon Son and Jang-Yeon Hwang

*(Hanyang University)***TS02W_BP_5****Elucidating Redox Mediator-Assisted Relithiation Mechanisms for Direct Cathode Recycling of Spent Li-Ion Batteries**

Suji Kim, Hyun Ju Yoon, and Won-Hee Ryu

(Sookmyung Women's University)

TS02W_BP_6

Enhanced Dispersibility and Electrochemical Properties of Thick Dry Electrodes through Thermoplastic Binder-CNT Composite

Min Jeong Kim¹, Jang-Yeon Hwang¹, and Jung-Keun Yoo²

(¹Hanyang University, ²KIST)

TS02W_BP_7

Improvement of Lithium-Ion Battery Performance through Siloxane Binder Application

Jun-Kyu Park^{1,2}, Jin-Joo², and Jung-Keun Yoo¹

(¹KIST, ²Kyungpook National University)

TS02W_BP_8

Controlling Dendrite Growth in Sodium Metal Batteries using Tailored Gel Polymer Electrolytes

Da-Sol Kwon¹, Jimin Shim², and Minah Lee¹

(¹KIST, ²Seoul National University)

TS02W_BP_9

Applying for the Thermoplastic Polyurethane (TPU) Blending Binder for High Energy Density Lithium-Ion Batteries

Min Sol Kim¹, Jong Soon Kim¹, and Jung-Keun Yoo²

(¹Sungkyunkwan University, ²KIST)

TS02W_BP_10

Enhanced Li-Ion Conductivity by Directionally Ordered Oxygen Vacancies in Perovskite Oxide-Based Solid Electrolyte

Hyeon-Ah Ju¹, Eun-Byeol Park¹, Jaejin Hwang², Young-Hoon Kim¹, Jae Hyuck Jang³, Jaekwang Lee², Jae-Hyun Shim⁴, and Young-Min Kim¹

(¹Sungkyunkwan University, ²Pusan National University, ³KBSI, ⁴Dongshin University)

TS02W_BP_11

Weakly Solvating Solution-Based Chemical Prelithiation for Lithium-Ion Capacitors with High Energy Density

Seungyun Jeon^{1,2}, Sehee Im¹, Inyeong Kang¹, Dongki Shin¹, Seung-Ho Yu², Minah Lee¹, and Jihyun Hong¹

(¹KIST, ²Korea University)

TS02W_BP_12

Stabilized Electrolyte Design for High-Voltage Co-Free NMX Cathode with CEI-Controlling

Myungeun Choi, Junseong Kim, and Jongsoon Kim

(Sungkyunkwan University)

TS02W_BP_13

Highly Conductive and Durable WO_{3-x} Particles as Cathode Framework Stabilizing Additive for All-Solid-State Batteries

Hyeon-Ju Song, Yoo-Jung Choi, and Won-Hee Ryu

(Sookmyung Women's University)

TS02W_BP_14

Heterogeneous Oxide Composite Nanofiber as Robust and Efficient Catalyst for High-Performance Li-CO₂ Batteries

Huiju Kim¹, Dae-Kwon Boo², Ji-Won Jung², and Won-Hee Ryu¹

(¹Sookmyung Women's University, ²University of Ulsan)

TS02W_BP_15

Non-Precious Metal Based Dual Atom Catalysts Loaded on N-Doped Carbon Nanotubes for High Performance Li-O₂ Batteries

Yeji Lim, Yoon Jeong Yoo, and Won-Hee Ryu

(Sookmyung Women's University)

TS02W_BP_16

CEI Layer Formation by TPU-Based Binder for Improved Cyclability of LiFePO₄ Lithium-Ion Batteries

Jiny Lee¹, Jong Soon Kim¹, and Jung-Keun Yoo²

(¹Sungkyunkwan University, ²KIST)

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