

[TS01] Poster Session 3

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

TS01F_P_1

Direct Current-Generating Tribovoltaic Nanogenerators based on Dynamic p-n Junction with Defect Passivation

Sera Jeon¹, Dabin Kim², and Sang-Woo Kim¹

(¹Yonsei University, ²Sungkyunkwan University)

TS01F_P_2

Development of Triboelectric Nanogenerator Based Electrostatic Discharge Prevention System

Cheoljae Lee and Ju-Hyuck Lee

(DGIST)

TS01F_P_3

Electromagnetic Induction Core of Energy Harvester with Augmented Magnetic Flux Gradient

Jihoon Park, Jinsoo Yang, and Dahoon Ahn

(Seoul National University of Science and Technology)

TS01F_P_4

10% Photoelectrochemical Water Splitting via Organic Light Absorbers with Ni-Heazlewoodite Electrocatalysts

Jaemin Park and Wooseok Yang

(Sungkyunkwan University)

TS01F_P_5

Triboelectric Characteristics of Laser-Fabricate Crumbled MoS₂ and Application as Haptic Sensors

Junki Lee¹, HyunSeung Kim¹, Jiseul Park¹, Seoung-Ki Lee², and Chang Kyu Jeong¹

(¹Jeonbuk National University, ²KIST)

TS01F_P_6

Enhanced Security Systems through Innovative Implementation of Triboelectric Nanogenerator

Doohyun Han, Jaehee Shin, and Jinhyoung Park

(KOREATECH)

TS01F_P_7

Delta-Doping Activation of Nanotunneling Junction Layer for Si Tandem Solar Cells Applications

Inseung Lee and Keunjoo Kim

(Jeonbuk National University)

TS01F_P_8

Utilization and Generalization of Triboelectric Nanogenerator's Energy Harvesting Ability for Simultaneous Energy Storage and Motion Sensing Applications

Mandar Vasant Paranjape, Punnarao Manchi, Jun Kyu Lee, Venkata Siva Kavarthapu, Kurakula Anand, Sontyana Adonijah Graham, and Jae Su Yu

(Kyung Hee University)

TS01F_P_9

Application of VO₂(B)/V₂O₅ Thin Film Thermistor for High Temperature Operation of Uncooled Microbolometer

Jeongeun Mo^{1,2}, Haeri Park¹, Donghee Park¹, Jeong Min Baik², and Won Jun Choi¹

(¹KIST, ²Sungkyunkwan University)

TS01F_P_10

Rotational Motion Converter for Wearable Powering Technologies

Ji-Seok Kim and Il-Kwon Oh

(KAIST)

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KOREA
2024
Symposium

[TS02] Poster Session 3

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

TS02F_P_1

Doping Engineering of Manganese on Cobalt Oxide in Particle Size-Controllable Compound Anode for Lithium-Ion Batteries

Hyunmin Na¹, Na Yeong Kim¹, Promoda Kumar Behera^{2,3}, Ho-Jin Lee¹, Jeong-Ho Park¹, Lawrence Robert Msalilwa², Jae-Woo Seo⁴, Seon-Jin Choi⁴, Jiyoung Lee⁵, Jun Young Cheong^{2,6}, and Ji-Won Jung¹
 (¹University of Ulsan, ²University of Bayreuth, ³Technical University of Liberec, ⁴Hanyang University, ⁵Northwestern University, ⁶University of Glasgow)

TS02F_P_2

Enhancing Durability and Atomization of Pt/C Catalyst for PEMFC MEA through Intense Pulsed Light Method

Hyunmin Na¹, Hamin Shin², Su-Ho Cho³, Ho-Jin Lee¹, Jeong-Ho Park¹, Dae-Kwon Boo¹, and Ji-Won Jung¹
 (¹University of Ulsan, ²ETH Zurich, ³NNFC)

TS02F_P_3

β -Chitin Separator via Centrifugal Spinning for Superior Aqueous Zinclon Batteries

Jeong-Ho Park, Myeong-Oh Song, Jungho Jin, and Ji-Won Jung
 (University of Ulsan)

TS02F_P_4

α -Chitin Separator via Filtration for Superior Aqueous Zinc-Ion Batteries

Jeong-Ho Park, Myeong-Oh Song, Jungho Jin, and Ji-Won Jung
 (University of Ulsan)

TS02F_P_5

Surface Flattening Molecular Dipole as Electrolyte Additive for Longer Lifespan Sodium-Metal Batteries

Seo-Young Jun, Chae Yeong Son, and Won-Hee Ryu
 (Sookmyung Women's University)

TS02F_P_6

A Surface Flattening and Interface Stabilizing Additive with Monovalent Polyanion Functional Groups for Longer Lifespan Lithium Metal Batteries

ChaeYeong Son, Seo-Young Jun, and Won-Hee Ryu
 (Sookmyung Women's University)

TS02F_P_8

Advancements in Aqueous Zinc-Ion Batteries using Electrospun Polyimide Separators with Al₂O₃ ALD Coating

HaEun Baeg and Ji-Won Jung
(*University of Ulsan*)

TS02F_P_9

Utilizing Sulfurized Polyacrylonitrile Cathodes with Advanced Triple-Salt Carbonate Electrolytes Enhancing Performance in Li-S Batteries

Changki Jeon and Jang-Yeon Hwang
(*Hanyang University*)

TS02F_P_10

Machine Learning-Assisted Electron Energy Loss Spectroscopy Mapping for Silicon-Based Anode Materials of Lithium-Ion Batteries

Yuseong Heo¹, Young-Hoon Kim¹, Taewon Min^{1,2}, Jae-Hyun Shim³, Jaekwang Lee², and Young-Min Kim¹
(¹*Sungkyunkwan University*, ²*Pusan National University*, ³*Dongshin University*)

TS02F_P_11

Gas Evolution Kinetics in Overlithiated Positive Electrodes and its Impact on Electrode Design

Munsoo Song¹, Danwon Lee¹, Juwon Kim¹, Subin Choi¹, Ikcheon Na¹, Sungjae Seo¹, Sugeun Jo², Chiho Jo³, and Jongwoo Lim¹
(¹*Seoul National University*, ²*Pohang Accelerator Laboratory*, ³*LG Energy Solution*)

TS02F_P_12

Effect of Iron Oxide Impurities on Activated Carbon Material in Electrochemical Supercapacitor Performances

Kye-yeol Lee¹, S. Radhakrishnan², and Byoung-Suhk Kim²
(*Jeonbuk National University*)

TS02F_P_13

A Facile Preparation of Nickel Bismuth Oxide as Negative Electrode Material for Enhanced Asymmetric Supercapacitor

Il-yeong Jeong¹, Sivaprakasam Radhakrishnan², and Byoung-Suhk Kim²
(*Jeonbuk National University*)

TS02F_P_14

Computational Study of Prussian Blue Analogues as a New Type of Sodium Solid Electrolytes for All-Solid-State Batteries

You-Yeob Song¹, Taewon Kim², Sang Hyeok Ahn², Sung-Kyun Jung², Hyun-Wook Lee², and Dong-Hwa Seo¹
(¹*KAIST*, ²*UNIST*)

TS02F_P_15

Impact of Varying Oxygen Levels in Upcycling of Spent NCM Cathode

Jaehyun Noh^{1,2}, Geunmin Jang^{1,3}, Jayoung Kim^{1,2}, Jeonghwan Song^{1,3}, Jiwoo Kim^{1,2}, Hayong Song¹, Jinju Song¹, Sangryun Kim², Jiyoung Ma¹, and Jung-Je Woo¹

(¹KIER, ²GIST, ³Chonnam National University)

TS02F_P_16

Dry Electrode Technologies for High Energy Density Battery with Solid Polymer Electrolyte-Based Binders

Min Jang^{1,2}, Seok Ju Kang¹, and Jinsoo Kim²

(¹UNIST, ²KIER)

TS02F_P_17

Negative Impact of Polyvinylidene Fluoride Binder on NCM Cathode Material in Lithium-Ion Battery Recycling

Geunmin Jang^{1,2}, Jaehyun Noh¹, Junghwan Song¹, Jiwoo Kim¹, Jinju Song¹, Hayong Song¹, Jaekook Kim², Jiyoung Ma¹, and Jung-Je Woo¹

(¹KIER, ²Chonnam National University)

TS02F_P_18

Fluorine-Free Binder-Based Dry Thick Electrodes toward Sustainable and Efficient LIBs

Min Kyung Kim and Jinsoo Kim

(KIER)

TS02F_P_19

Unveiling the Structure-Property Relationship in Solid Polymer Electrolyte based on Change of Charge Density by Lithium Salt Formulation for Solidstate Batteries

Seung Min Lee and Jinsoo Kim

(KIER)

TS02F_P_20

Enhanced Battery Electrode Protection via Etched Superhydrophobic Stainless Steel Surfaces

Chenyao Huang and Dukhyun Choi

(Sungkyunkwan University)

TS02F_P_21

Highly Active–Material–Concentrated Cathodes of Nickel and Cobalt–Free Cation–Disordered Rock–Salts for Li–Ion Batteries Nanocomposite

Eunryeol Lee¹, Dae–Hyung Lee^{1,2}, Stéphanie Bessette³, Sang–Wook Park^{1,2}, Nicolas Brodusch³, Gregory Lazaris³, Hojoon Kim^{1,2}, Rahul Malik⁴, Raynald Gauvin³, Dong–Hwa Seo^{1,2}, and Jinhyuk Lee³

(¹UNIST, ²KAIST, ³McGill University, ⁴Natural Resources Canada)

TS02F_P_22

Enhancing Structural Stability via Sb⁵⁺ Substitution for High–Performance Potassium Ion Batteries

Junseong Kim, Myungeun Choi, and Jongsoon Kim

(Sungkyunkwan University)

TS02F_P_23

Revamping O3–Type NaCrO₂ Cathodes: Exploring Cationic and Transition Metal Co–Substitution for Enhanced Performance in Sodium–Ion Batteries

Seonjge Ryu and Jang–Yeon Hwang

(Hanyang University)

TS02F_P_24

Strategy for Stabilizing Solid Electrolyte Interphase in Postassium Metal Batteries using Potassium–Polysulfide

Seungwon Lee and Jang–Yeon Hwang

(Hanyang University)

TS02F_P_25

Improving Fast–Charging Performance in Lithium–Ion Batteries with Innovative Dual–Layer Graphite Anode Design

Hyuntae Lee and Hongkyung Lee

(DGIST)

TS02F_P_26

Enhancing Interfacial Kinetics for Extreme Fast Charging in Lithium–Ion Batteries using a LiPF₆–Concentrated Electrolyte

Hyuntae Lee and Hongkyung Lee

(DGIST)

TS02F_P_27

N–Doped Carbon Synthesis from *Chlorella vulgaris* with Urea and Melamine Doping with NaOH and K₂CO₃ Activator

Angela Justina Kumalaputri, Ferdinandus Ivan, and Arenst Andreas

(Parahyangan Catholic University)