

Student Oral Presentation Competition

(A) Batteries and Storage Devices

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
1	0214	Fast Statistical Tuning of Carbon-Shelled Na ₃ V ₂ (PO ₄) ₃ Cathodes Yields 85 % Capacity Retention after 3500 Cycles at 3C	Arshid Numan	Sunway University	Hafiz Kashif razzaq, Kainat Darwaishb, Chun-Chen Yangb, Arshid Numan
2	0280	Deciphering the Role of Fe ²⁺ vs. Fe ³⁺ Oxidation States: Coordination Engineering of Single-Atom Catalysts for Stable Li-S Batteries	Ashok vallal saravanan	National Taiwan University of Science and Technology	Ashok vallal Saravanan, Keseven Lakshmanan, Wei-Nien Su, She-Hwang Wu, Chun-Chen Yang, Bing Joe Hwang
3	0074	Ultrahigh High Mass Loading CoNi-LDH @Cu foam as Cathode for Zinc Ion Alkaline Aqueous Battery	Cheng-Hong Du	National Dong Hwa University	Cheng-Hong Du, Yu-Kuei Hsu
4	0084	Operational strategy for capacity retention in VRFB based on standing time adjustment	Cheng-Pang Chen	National Chin-Yi University of Technology	Tien-Fu Yang, Cheng-Pang Chen
5	0262	In-situ Formation of Phosphide-rich SEI Layer on Three-dimensional Carbon Nanotube Aerogels for Highly Stable Lithium	Chi-Wei Wu	National Tsing Hua University	Che-Ning Yeh, Chi-Wei Wu
6	0167	Emergent Lithium Storage in Metal-Organic Frameworks Driven by Electrochemically Structural Transformation	Chun-Yen Yang	National Taiwan University	Chun-Yen Yang, Gang Wan, Chia-Chin Chen
7	0246	Tuning Lithium-Ion Solvation Structure with Fluorinated Esters for Enhanced Interfacial Stability in Wide-Temperature Lithium-Ion Capacitors	Cing-Yu Hu	National Cheng Kung University	Cing-Yu Hu, Hsisheng Trng
8	0273	Effect of Dopant-induced Residual Stress on Fast-charging Performance of Silicon Anodes for Lithium-ion Batteries	Han-Shiuan, Lin	National Tsing Hua University	Han-Shiuan, Lin, Che-Ning, Yeh
9	0172	Small Molecule Derived Self-Assembled layer for Enhancing Kinetics and Stability of NCM811 Cathodes in Lithium-Ion Batteries	Hany Khammar	National Taiwan University	Hany Khammar, Ibrahim Habib, Chia-Chin Chen
10	0206	Multi-Electron Transfer Enabled by Interhalogen Chemistry for High Energy Density Zinc-Iodine Batteries	Jian-Zhi Hong	National Taipei University of Technology	Jian-Zhi Hong, Ying-Chu Chen*
11	0118	Exploring Surface Stability of Li-Argyrodite Solid Electrolytes Using First-principles Calculations Combined with Machine-learning Interatomic Potentials	Jing-Yan Wu	National Cheng Kung University	Jing-Yan Wu, Hong-Kang Tian,
12	0157	Synergistic Interface Strategy of in-situ Formed 3D Lithiophilic Oxide Layer Integrated with "Retention and Restoration" Buffer Layer on Copper Foil for Stable Lithium Metal Batteries	Kainat Darwaish	Ming Chi University of Technology	Kainat Darwaish, Chun-Chen Yang

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13	0232	Electrochemically Modified Interface Promoting the Oxygen-Electrocatalytic Kinetics in Near-Neutral Zinc-Air Batteries	Kai-Yu Tseng	National Tsing Hua University	Chi-Chang Hu, Kai-Yu Tseng,
14	0170	Bridging Theory and Reality: Predicting Mixed Ion-Electron Transport Phenomena in Actual Battery Electrodes	Le-Yen Lin	National Taiwan University	Le-Yen Lin, Meng-Hua Lin, Chia-Chin Chen
15	0111	A Computational Method for Simulating PEO-Based Electrolyte Oxidation on NMC Cathodes and Predicting CEI Components	Liang-Ting Wu	National Taiwan University of Science and Technology	Liang-Ting Wu, Jyh-Chiang Jiang
16	0151	Uncovering Dopant-Induced Modulation of Na-Ion Dynamics in $\text{Na}_5\text{Y}_{1-x}\text{La}_x\text{Si}_4\text{O}_{12}$ solid electrolyte via First-Principles and Machine Learning Interatomic Potentials	Li-Lun Lin	National Cheng Kung University	Li-Lun Lin, Hong-Kang Tian
17	0148	Microwave-Assisted Synthesis and Characterizations of Nitrogen-Doped Carbon-Coated $\text{Na}_4\text{Fe}_3(\text{PO}_4)_2\text{P}_2\text{O}_7$ Cathode for Sodium-Ion Batteries	Manoj Kumar Senniyappan	Ming Chi University of Technology	Manoj Kumar Senniyappan, Tai-Feng Hung
18	0184	The Effect of WO_3 Coating Layer on the High-Voltage LNMO Cathodes in Lithium-Ion Batteries	Nikholas Kukuh Pambudi	National Taiwan University	Nikholas Kukuh Pambudi, Chen-Hao Wang, Heng-Liang Wu
19	0213	High-Performance Sb/Cu Anode with Exceptional Rate Capability and Areal Capacity for Aqueous Alkaline Batteries	Pei-Rong Chen	National Taipei University of Technology	Pei-Rong Chen
20	0211	Stable Mn Anode Enabled by Stearic Acid-Copper Interfacial Layer	Pei-Teng Chou	National Taipei University of Technology	Pei-Teng Chou, Ying-Chu Chen
21	0212	Oxygen-rich Interface Enables Long-Lasting Zinc-Iodine Batteries with Ultrahigh Areal Capacity	Ping-Hung Chen	National Taipei University of Technology	Ping-Hung Chen, Ting-Yi Tsai
22	0257	Intra-Shell Interactions Revolutionizing Electrolyte Development for Lithium-Ion Batteries in Harsh Conditions	Po Wei Huang	National Cheng Kung University	Po Wei Huang, Hsisheng Teng
23	0173	Synergistic Enhancement of Structural Stability and Electrochemical Performance in NMC811 via $\text{Na}^+/\text{Al}^{3+}$ Co-Doping	Ru-Hong Chiu	National Tsing Hua University	Ru-Hong Chiu, Che-Ya Wu, Tzu-Ying Lin
24	0041	Rational Design of $\text{MnFe}_2\text{O}_4@/\text{Ti}_3\text{C}_2\text{T}_x$ MXene Heterostructures from Bimetallic MOFs for High-Capacity Li/Na-Ion Batteries	S Kishore Babu	Chung Yuan Christian University	S Kishore Babu, Wei-Ren Liu
25	0259	All-solid-state lithium sulfur batteries with tin/sulfur cathode	Shih Lun Yang	National Cheng Kung University	Shih Lun Yang, Sheng-Heng Chung
26	0282	Investigation of Electrochemical Reaction Mechanism Inside Zinc-Sulfur Batteries Using Ethaline-Based Deep Eutectic Solvent Electrolytes	Shih-Ming Lin	National Tsing Hua University	Shih-Ming Lin, Shu-Chi Wu, Bing-Ni Gu, Hsuan-Yu Lee, Wei-Hsiang Huang, Hsueh-Shih Chen, Yu-Lun Chueh

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#	Abstract No.	Title	Presenter	Institution / Organization	Authors
27	0194	Heteroatom-doped ZnFe PBA as An Efficient Electrocatalyst Enabling Bifunctional Electrocatalyst for High Value-added Rechargeable $2e^-$ ORR/Zn-Air Battery	Sofiannisa Aulia	National Taiwan University of Science and Technology	Sofiannisa Aulia, Tzu-Ting Liu, Mia Rinawati, Min-Hsin Yeh
28	0274	Autogenous Phase Conversion of VOOH into $V_{10}O_{24} \cdot nH_2O$: A Strategy for High-Performance Lithium-Ion Electrodes	Soumallya Banerjee	Academia Sinica	Soumallya Banerjee, Hong-Cheu Lin, Chih-Wei Chu
29	0221	Two-Step Desolvation in Defect-Engineered MOF-801 Enables Highly Reversible Zn Electroplating under Highly Acidic Solution	Ting-Yu Wang	National Tsing Hua University	Ting-Yu Wang, Chi-Chang Hu
30	0189	Porous Hard Carbon/Silicon Composite Derived from Biowaste for High-Performance Lithium-Ion Battery Anodes	Tsung-Ying Yang	National Tsing Hua University	Tsung-Ying, Yang, I-Hua, Kao, Che-Ya, Wu, Tzu-Ying, Lin
31	0124	MIL-88 as a Self-Templated to Cobalt Ion Layered Double Hydroxide as Anode Materials for Sodium-ion Battery.	Wei-Cheng Chen	National Taipei University of Technology	Lu-Yin Lin, Wei-Cheng Chen
32	0267	Metal Oxide-Modified Carbon Nanotube Aerogel as a Functional Host for High-Loading Lithium-Sulfur Batteries	Wen Sun	National Tsing Hua University	Wen Sun, Yi-Jhe Jhou, Che-Ning Yeh
33	0049	Derivation of Sulfide-Carbon Composites from Octahedral CuBTC for Application in Sodium-Ion Battery Anodes	Yen-Yu Liu	National Taipei University of Technology	Yen-Yu Liu, LuYinLin
34	0174	Frequency-Specific Modeling for Battery Parameter Identification Under Battery Aging	Ying Kung	NTUIAM	Ying Kung, Cheng-Hsi Tien, Chi-Jyun Ko, Kuo-Ching Chen
35	0193	Spherulitic vs. Amorphous Domains: Probing Ionic Transport in Polymer Solid Electrolyte	Yu-Chi Wang	National Taiwan University	Yu-Chi Wang, Shun-Jih Yang, Chia-Chin Chen
36	0122	2D Continuum Modeling to Predict Lithium-Ion Conductivity and Transport Pathways in Ceramic-Polymer Hybrid Solid Electrolytes	Yu-Hsuan Lin	National Cheng Kung University	Yu-Hsuan Lin, Hong-Kang Tian
37	0225	Poly(acrylic acid)-Regulated Crosslinked Gel Electrolytes with Self-Healing Properties for Potential Flexible Supercapacitor Applications	YUN KU	National Tsing Hua University	YUN KU, Yi-An Chen, Hung-Yi Huang, Rou-Han Lai, Yi-Heng Tu, Ho-Hsiu Chou, Chi-Chang Hu
38	0132	A Nitrogen- and Carbonyl-rich Supramolecular Layered Compound as Sustainable Cathode Material for Magnesium-ion Batteries	Yu-Tien Chen	National Cheng Kung University	Watchareeya Kaveevivitchai, Yu-Tien Chen
39	0236	Modified Layered Double Hydroxide Electrodes: Controlling Interlayer Spacing and Interfacial Performance for Highly Efficient and Stable Oxygen Evolution in Seawater Electrolysis	Zih-You Chen	National Taipei University of Technology	Ling-Yu Chang, Zih-You Chen

(B) Photoelectrochemistry & Solar Cells

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
1	0005	Engineering an advanced NH ₂ -functionalized MOF/NiIn ₂ S ₄ /phosphorene hybrid for high performance photoelectrocatalytic hydrogen evolution reaction	Deblina Roy	National Tsing Hua University	Deblina Roy, Ruey-An Doong
2	0021	Revealing light intensity effect on the selectivity of photoelectrochemical glycerol oxidation	WEN Lan	City University of Hong Kong	WEN Lan, Kaijian Zhu, Xinyi Zhang, WU Hao, Songying Qu, Fatwa F. ABDI
3	0027	In-Situ Formation of NiFe Coordination Layers on BiVO ₄ for Boosting Photoelectrochemical Water Splitting	Chuang Kai Jie	National Taipei University of Technology	Lu-Yin Lin, Chuang Kai Jie
4	0083	Fabrication of 2D/3D Perovskite Heterostructure Films via Aqueous Lead Nitrate Precursors	Kerstien Eunike Rupidara	National Taiwan University of Science and Technology	Kerstien Eunike Rupidara, Tzu-Sen Su
5	0105	Manipulating Phosphorus-Doped Cobalt-Iron Oxide Heterojunction Photoanode for Photoelectrochemical Water Oxidation	Zher Yu You	National Taipei University of Technology	Zher Yu You, Lu Yin Lin
6	0153	Visible-Light-Driven Degradation of Organic Dyes Using Spinel CoCr ₂ O ₄ Prepared via Hydrothermal Method	YuHao Chen	Institute of Science Tokyo	YuHao Chen, Tomoyuki KURIOKA, Chun-Yi Chen, Yung-Jung Hsu, Masato Sone, Tso-Fu Mark Chang, Xinyu Jin
7	0169	Single-Crystal Precursor Engineering for Enhanced Performance and Stability in MAPbI ₃ Perovskite Solar Cells	Shafna Kunnathum Peedika	National Tsing Hua University	Shafna Kunnathum Peedika, Tzu-Chien Wei
8	0200	Efficient Ta ₃ N ₅ Photoanodes via Interface Engineering of Bixbyite-Type Ta ₂ N ₃ Precursors	Chia-Wei Chang	National Taiwan University	Chia-Wei Chang, Chang-Ming Jiang
9	0237	Morphology-Controlled Tube-Array PEDOT-MeOH Films for High-Performance Photoelectrochromic Devices	Ya-Lun Wu	National Taipei University of Technology	Ya-Lun Wu, Lin-Yu Chang

(C) Basic Electrochemistry & Electroplating

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
1	0244	Twin spacing manipulation of (111)-oriented nanotwinned copper via aeration flow control in a high-speed direct-current electroplating system with thiol organic additives	H. Tsou	National Tsing Hua University	H. Tsou, Hsiang-Sheng Wei, Chi-Chang Hu
2	0180	Tuning the Interlayer Spacing of Ti ₃ C ₂ T _x MXene via Cation-Sized Ionic Liquids for Enhanced Electrochemical Energy Storage	Jeremiah Hao Ran Huang	National Cheng Kung University	Jeremiah Hao Ran Huang, I-Wen Peter Chen

(C) Basic Electrochemistry & Electroplating

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
3	0201	Design Graphene Quantum Dots modified CuFe Prussian Blue Analogues for Highly Sensitivity Nitrate Sensors	Jing-Ju Ho	National Taiwan University of Science and Technology	Chieh Li, Mia Rinawati, Kuan-Jung Chen, Min-Hsin Yeh, Pin-Hsuan Lin, Jing-Ju Ho
4	0196	Molecularly Dispersed Zinc on Graphene Quantum Dots as an Efficient Electrocatalyst for the Two-Electron Oxygen Reduction to Hydrogen Peroxide	Kuan-Ling Liu	National Taiwan University of Science & Technology	Kuan-Ling Liu, Tzu-Ting Liu, Mia Rinawati, Min-Hsin Yeh
5	0113	Mo-Modified High Entropy Prussian Blue analogues as a Highly Efficient Cathode Material for Water Splitting	Ping-Chen Shi	National Taipei University of Technology	Ping-Chen Shi, Ling-Yu Chang
6	0215	Direct Hydrogen Peroxide Formation Induced by Contact Electrification at the Water-Solid Interface and Its Role in Silver Nanoparticle Synthesis	Po-Rong Lin	National Taiwan University of Science and Technology	Min-Hsin Yeh, Po-Rong Lin
7	0144	Morphologies Control of Electrodeposited Polypyrrole in Supercritical Carbon Dioxide and Water Emulsion with Various Volume Ratios	Punvinai Vinaisurtern	Institute of Science Tokyo	Punvinai Vinaisurtern, Tomoyuki Kurioka, Tso-Fu Mark Chang, Masato Sone
8	0149	Mechanistic Insights into Electrochemical Growth of $\text{Cu}_3(\text{HHTP})_2$ Thin Films: Unraveling Dual-Site Nucleation and Potential-Governed Morphology	Sarin Sajjadu Krishna	National Tsing Hua University	Sarin Sajjadu Krishna, Vidya Kattoor, Kala Kannankutty, Tzu Chein Wei
9	0183	Synthesis of Imprinted Poly(ENA-co-EGDMA) Modified Au Electrode for Determination of Urinary Uric Acid	Sheng-Fu Wu	National Cheng Kung University	Sheng-Fu Wu, Mei-Jywan Syu
10	0192	Ultrasensitive Electrochemical Oxalic Acid Sensors Based on PEDOT-Modified Screen-Printed Carbon Electrodes by Using Multiple-Pulse Amperometric Detection	Sheng-Shin Wu	Tunghai University	Sheng-Shin Wu, Yesong Gu, Ching-Chou Wu
11	0109	Charge Storage and Transport in Electronic, Ionic, and Mixed Conductors	Shu-Han Chen	National Taiwan University	Shu-Han Chen, Chia-Chin Chen
12	0085	ZIF-8-Derived ZnFe-LDH and ZnFe-Phosphide Materials as Efficient Electrocatalysts for Water Splitting	Shun-Feng Kuan	National Taipei University of Technology	Shun-Feng Kuan, Lu-Yin Lin
13	0044	Magnetic Field-Driven Spin Polarization in Co-Doped MoS_2 for Efficient N_2 to NH_3 Conversion	Tsung-Min Tsai	National Taipei University of Technology	Tsung-Min Tsai, Yang-Sheng Lu, I-Yu Cheng, Chao-Yao Yang, Hsin-An Chen, Shao-Sian Li
14	0253	Confinement-Driven Hydrogen Evolution Reaction on Gold Surface	Tzu-Hsuan Huang	National Taiwan University	Tzu-Hsuan Huang, Valentina Wieser, Dominik Dworschak, Hsiu-Wei Cheng

(C) Basic Electrochemistry & Electroplating

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
15	0199	Molecular Fe Conjugated F-doped Graphene Quantum Dots Decorated Carbon Nanotubes as a Bifunctional Electrocatalyst for High Value-added Rechargeable $2e^-$ ORR/Zn–Air Battery	Yu-Hua Chen	National Taiwan University of Science and Technology	Yu-Hua Chen, Tzu-Ting Liu, Sofiannisa Aulia, Mia Rinawati, Min-Hsin Yeh
16	0156	Engineering Porous Nanofiber Structures via Chaotropic Salt Inclusion for Enhanced Organic Electrochemical Transistor Performance	Yi-Hsaun Tung	National Cheng Kung University	Yi-Hsaun Tung, Tzu-Yen Huang, Yan-Cheng Lin
17	0198	TiO ₂ /g-C ₃ N ₄ Heterostructure enhanced PVDF for High-performance Wearable Triboelectric Pressure Sensors	Yin-Chun Chen	National Taiwan University of Science and Technology	Yin-Chun Chen, Mia Rinawati, Min-Hsin Yeh, Yen-Shuo Chiu
18	0119	A Scalable Simulation Framework for Die-Scale Prediction of Copper Pillar Coplanarity in Wafer-Level Packaging	Yu-Cheng Kuo	National Cheng Kung University	Yu-Cheng Kuo, Hong-Kang Tian
19	0275	Fe Molecular Catalysts immobilized Graphene Quantum Dot for Hydrogen Evolution Reaction in Alkaline Water Splitting	Zhi-Yu Jiang	National Taiwan University of Science and Technology	Zhi-Yu Jiang, Mia Rinawati, Ling-Yu Chang, Wei-Nien Su, Min-Hsin Yeh

(D) Conversions

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
1	0013	A hierarchical transparent nanostructured bifacial photocatalyst synthesized with hydrogenated titanium dioxide nanotubes and sculptured nickel oxide thin film for enhanced CO ₂ conversion	Tarek Fawzi	National Sun Yat-Sen University	Tarek Fawzi, Xu Teng Ke, Hsueh Chien Liu, Hyeonseok Lee
2	0063	Spatial Confinement Effect of SnO ₂ Nanospheres Catalysts Enables Ampere-Level CO ₂ Reduction to Formic Acid and Artificial Photosynthesis system	Chi Kang	National Yang Ming Chiao Tung University	Chi Kang, Sung-Fu Hung*,
3	0068	One-dimensional Ag Nanowire for Industrial Electrocatalytic Carbon Dioxide Reduction to Carbon Monoxide	Shuo-Peng Lin	National Yang Ming Chiao Tung University	Shuo-Peng Lin, Sung-Fu Hung
4	0097	Electrodeposited Cu/Polyaniline Composites as High-Performance Glucose Catalytic Electrodes	Runze Huang	Institute of Science Tokyo	Runze Huang, Tomoyuki Kurioka, Chun-Yi Chen, Hwai En Lin, Yung-Jung Hsu, Tso-Fu Mark Chang, Masato Sone
5	0127	Predicting Optimal OER Activity of 2D Bimetallic Metal–Organic Frameworks with Varying Metal Center Combinations Using First-Principles Calculations	Kuan-Lun Chen	National Cheng Kung University	Hong-Kang Tian, Kuan-Lun Chen

(D) Conversions

#	Abstract No.	Title	Presenter	Institution / Organization	Authors
6	0146	Boosting Acidic OER: Zn and Sn Synergy Unlocks High-Performance Ru Catalysts	CHIEN YU CHEN	National Tsing Hua University	CHIEN YU CHEN, Lu-Yu Chueh, Yung-Tin Pan
7	0155	High-Performance and Long-Lasting PEM Water Electrolysis Anode via Strategic Catalyst Layer Positioning	Yu Wei Hsu	National Tsing-Hua University	Yu Wei Hsu, Hsiang-I Chang, Yung-Tin (Frank) Pan
8	0163	In situ visualization of local electrochemical activity at low-dimensional electrocatalysts	Septia Kholimatussadiah	National Taiwan University	Septia Kholimatussadiah, Mohammad Qorbani, Kuei-Hsien Chen, Li-Chyong Chen
9	0181	Nickel-based Porous Metal-organic Materials for Carbon Dioxide Adsorption and Catalyzed Electrochemical Reduction of Carbon Dioxide	Ching-yu Chen	National Cheng Kung University	Mei-Jywan Syu, Ching-yu Chen, Pei-Cheng Lin
10	0209	Unleashing the potential of capacitive deionization via surface engineering of Ti_3C_2 MXene nanosheets by Mo_{132} polyoxometalate (Mo_{132} -MX) for ammonium capture	Van Thanh Nguyen	National Tsing Hua University	Van Thanh Nguyen, Ruey - an Doong