

Sunday, October 2, 2016

[A05—Beyond Li-ion Batteries](#)

Abst# 643 Recent Progress in Aqueous Organic or Inorganic-Based Redox Flow Batteries at Pnnl by Bin Li, Pacific Northwest National Laboratory; Zimin Nie, Pacific Northwest National Laboratory; James Kizewski, pacific northwest national lab; Wentao Duan, Pacific Northwest National Laboratory; Xiaoliang Wei, Pacific Northwest National Laboratory; Wei Wang, Pacific Northwest National Laboratory; Jun Liu, Pacific Northwest National Labor

[L02—Molten Salts and Ionic Liquids 20](#)

Abst# 3439 Dense Carbon Coated Electrode for Biosensing Application Made By Plating in Molten Salt Bath by Ryo Warigaya, Toppan Printing Co.,LTD.; Toshikazu Okubo, Toppan Printing Co.,LTD.; Tatsuro Sasa, I'MSEP Co.,Ltd.; Hiroyuki Tsujimura, I'MSEP Co.,Ltd.; Tokujiro Nishikiori, I'MSEP Co.,Ltd.; Yasuhiko Ito, I'MSEP Co.,Ltd.

[L04—Photocatalysts, Photoelectrochemical Cells, and Solar Fuels 7](#)

Abst# 3599 Chopped-Illumination Pulse Frequency Effect on the Product Selectivity of CO₂ Reduction at Si Photocathodes by Bijandra Kumar, University of Louisville; Joseph Brian, University of Louisville; Joshua Spurgeon, University of Louisville

Monday, October 3, 2016

[A01—Batteries and Energy Technology Joint General Session](#)

Abst# 20 Disulfonated Copolymer Membranes with Improved Selectivity and Lifetime for Vanadium Redox Flow Batteries by Kenan Kara, TOBB University of Economics and Technology; Mehmet Sankir, TOBB University of Economics and Technology; Nurdan Demirci Sankir, TOBB University of Economics and Technology; Ertan Agar, University of Massachusetts Lowell; Tunc Akay, TOBB University of Economics and Technology; Yagiz Baytas, TOBB University of Economics and Techn

Abst# 24 Countering Degradation of Carbon Felt Electrodes in All-Vanadium Redox Flow Batteries (VRFB) by Igor Derr, FU Berlin; Christina Roth, Freie Universitaet Berlin

[A02—Challenges in Advanced Analytical Tools and Techniques for Batteries: A Symposium in Honor of Zempachi Ogumi](#)

Abst# 160 Imaging the Surface of LiMn₂O₄ with Low-Dose STEM by Charles Amos, The University of Texas at Austin; Paulo Ferreira, The University of Texas at Austin; John

A05—Beyond Li-ion Batteries

- Abst# 650 The Gamma-V₂O₅ phase: A High Voltage Cathode Material for Sodium-Ion Batteries by Marianne Safrany-Renard, ICMPE-CNRS; Rita Baddour-Hadjean, ICMPE-CNRS; Diane Muller-Bouvet, ICMPE-CNRS; Jean-Pierre Pereira-Ramos, ICMPE-CNRS
- Abst# 659 Investigation on Improved Electrochemical Performance of Layered Sodium Manganese Oxide By Partial Transformation of P2-Phase to O3-Phase for Sodium Ion Battery by Junghoon Yang, Dept. of Energy and Materials Eng., Dongguk University; Yong-Mook Kang, Dept. of Energy and Materials Eng., Dongguk University

C03—High Temperature Corrosion and Materials Chemistry 12

- Abst# 1216 Experimentally Determined Ti-Al-Cl Phase Diagram at $T = 150$ to 400 by Evan Copland, CSIRO Manufacturing Flagship; Nathan Webster, CSIRO Minerals Resources
- Abst# 1219 Influence of Alkali Metal Oxide on CMAS Damage Progression in Air Plasma Sprayed Thermal Barrier Coatings by Yuki Hayashi, Nagaoka University of Technology; Siddharth Lokachari, Nagaoka University of Technology; Satoshi Yamagishi, Nagaoka University of Technology; Masakazu Okazaki, Nagaoka University of Technology

D03—Plasma Nano Science and Technology

- Abst# 1503 (Invited) Silicon Oxide Films: Plasma Assisted Formation of Nanostructures from Glass to Organic Polymers by Ruediger Foest, Leibniz Inst. for Plasma Sci. and Technol. Greifswald; Jan Schäfer, Leibniz inst. for Plasma Sci. and Technol. Greifswald; Jaroslav Hnilica, Masaryk University Brno; Jens Harhausen, Leibniz Institute for Plasma Sci. and Technol. Greifswald

E01—Electroless Deposition: Principles and Applications 4: In Honor of Milan Paunovic and Mordechai Schlesinger

- Abst# 1534 Environmentally Conscious Pretreatment Process for Plating on PPS Resins by Taro Nomura, Kanto Gakuin University; Katsuhiko Tashiro, Kanto Gakuin University; Yasushi Umeda, Kanto Gakuin University; Hideo Honma, Kanto Gakuin University; Osamu Takai, Kanto Gakuin University

F02—Electrochemical Impedance Spectroscopy: In Honor of Bernard Tribollet

Abst# 1686 (Keynote) Electrochemical Impedance Spectroscopy Characterization of Advanced Materials for Energy by Thomas Collet, Vrije Universiteit Brussel, SURF Group; Dries Van Laethem, Vrije Universiteit Brussel, SURF Group; Xinhua Zhu, Vrije Universiteit Brussel, SURF Group; Nils Van den Steen, Vrije Universiteit Brussel, SURF Group; Rodrigo Montoya, Vrije Universiteit Brussel, SURF Group; Lucia Fernandez Macia, Vrije Universiteit Brussel, SURF Gr

Abst# 1689 (Invited) Thermoelectrochemical Impedance Method Fundamental Aspect and Applications by OMAR Aaboubi, Universit  f   de Reims Champagne Ardenne

G03—Atomic Layer Deposition Applications 12

Abst# 1855 (Invited) Advanced ALD Reactor Designs by Steven Marcus, AIXTRON Inc.; Jerry Mack, AIXTRON Inc.; Vinayak Vats, AIXTRON Inc.; Yoshi Okuyama, AIXTRON Inc.; Ben Nie, AIXTRON Inc.; Lin Yang, AIXTRON, Inc; Kay Song, AIXTRON, Inc; Gi Kim, AIXTRON Inc.; Somnath Nag, AIXTRON Inc.; Eungsoo Kim, AIXTRON Inc.; Zia Karim, AIXTRON Inc

Abst# 1859 ALD Coatings on Lithium Metal for High Energy Lithium Batteries by Lin Chen, Illinois Institute of Technology; Lin Chen, Argonne National Laboratory; Jeffrey Elam, Argonne National Laboratory

H04—Low-Dimensional Nanoscale Electronic and Photonic Devices 9

Abst# 2190 Low Threshold Single Mode ZnO Nanowire Nanolasers by Giuseppe Visimberga, M2I; Markus Boese, Lawrence Berkeley National Laboratory; Colm O'Dwyer, University College Cork

I03—Electrosynthesis of Fuels 4

Abst# 3013 Single-Atom Catalysts for CO₂ Electroreduction with Significant Activity and Selectivity Improvements by Seoin Back, Korea Advanced Institute of Science and Technology; Juhung Lim, Korea Advanced Institute of Science and Technology; Na-Young Kim, Korea Advanced Institute of Science and Technology; Yong-Hyun Kim, Korea Advanced Institute of Science and Technology; Yousung Jung, Korea Advanced Institute of Science and Technology

J01—Luminescence and Display Materials: Fundamentals and Applications

Abst# 3110 (Invited) Intense Red Light Emitting Mesoporous Silicon Nanowires for Luminescent Devices by Colm O'Dwyer, University College Cork; William McSweeney, University College Cork; Gillian Collins, University College Cork

Abst# 3113 Gadolinium Doped NaLaF₄ Nanocrystals in Glass-Ceramics and Polycrystalline Powders by Edgars Elsts, Institute of Solid State Physics, University of Latvia; Andris

Antuzevics, Institute of Solid State Physics, University of Latvia; Meldra Kemere, Institute of Solid State Physics, University of Latvia; Guna Kriekē, Institute of Solid State Physics, University of Latvia; Janis Jansons, Institute of Solid State Physics, University of Latvia

Tuesday, October 4, 2016

[A04—Advances in Electrolytes for Lithium Batteries](#)

Abst# 548 A Reversible Dendrite-Free High-Areal-Capacity Metallic Lithium Electrode by Hui Wang, Mie University; Masaki Matsui, Mie University; Masaki Matsui, Japan Science and Technology Agency; Hiroko Kuwata, Mie University; Yasuaki Matsuda, Mie University; Xuefu Shang, Mie University; Yasuo Takeda, Mie University; Osamu Yamamoto, Mie University; Nobuyuki Imanishi, Mie University

[A07—Electrochemical Capacitors and Related Devices: Fundamentals to Applications](#)

Abst# 968 Investigation of Self Supporting Paper-like Structures Fabricated with Few-Layer Exfoliated Graphene Platelets and Composites with Birnessite-MnO₂ As Electrode Materials for Electric Double-Layer Capacitor and Redox Capacitor by Debkumar Saha, Materials Science & Engg., Michigan State University; Lawrence Drzal, Chemical Engg. and Mat. Sci., Michigan State University

Abst# 982 Electrochemical Properties of CO₂ Laser Radiated Carbon-Based Electrodes for Supercapacitors by Hye-Ryeon Yu, Agency for Defense Development; Yu-Song Choi, Agency for Defense Development; Hae-Won Cheong, Agency for Defense Development

[B01—Carbon Nanostructures: From Fundamental Studies to Applications and Devices](#)

Abst# 1051 Graphene Chemical Modification by Sandra Hernandez, Naval Research Laboratory; Chad Junkermeier, Naval Research Lab; Pratibha Dev, University of Howard; Woo Lee, Naval Research Laboratory; Jeremy Robinson, Naval Research Laboratory; Paul Sheehan, Naval Research Laboratory; Thomas Reinecke, Naval Research Laboratory; Scott Walton, Naval Research Laboratory

Abst# 1079 Mixing \tilde{A} Vs Layering: Importance of Controlled Architecture in Bimetallic Multilayer Electrode Toward Efficient Electrocatalyst by Minsu Gu, UNIST; Byeong-Su Kim, UNIST

[C02—Oxide Films: A Symposium in Honor of Masahiro Seo](#)

Abst# 1166 (Invited) Anodic Oxide Formation and Oxygen Evolution on Metals Such As Al and Ta - Experiment and Simulation by Manuel M. Lohrengel, Heinrich-Heine-

- Abst# 1178 Solution Processing and Conversion of Transparent Metal Oxide Optical Coatings By Solid State Diffusion by Colm Glynn, University College Cork; Damien Aureau, Institut Lavoisier de Versailles; Gillian Collins, University College Cork; Sally O'Hanlon, University College Cork; Arnaud Etcheberry, Institut Lavoisier Versailles; Colm O'Dwyer, University College Cork

[D01—Photovoltaics for the 21st Century 12](#)

- Abst# 1383 Substitutionally-Doped Intermediate Band Absorbers of Readily Tunable Composition by Robert McCarthy, Argonne National Laboratory; Matthew Weimer, Illinois Institute of Technology; Richard Haasch, University of Illinois at Urbana-Champaign; Richard Schaller, Argonne National Laboratory & Northwestern University; Hock Adam, Illinois Institute of Technology; Alex Martinson, Argonne National Laboratory

[D03—Plasma Nano Science and Technology](#)

- Abst# 1505 (Invited) Microplasmas Technologies for Third Generation Solar Cells Based on Colloidal Nanocrystals with Quantum Confinement Effects by Vladimir Svrcek, AIST
- Abst# 1507 (Invited) Plasma Deposition of Functional Nanocomposites by Franz Faupel, Christian-Albrechts University at Kiel; Thomas Strunskus, Christian-Albrechts University at Kiel; Oleksandr Polonskyi, Christian-Albrechts University at Kiel; Mady Elbahri, Aalto University; Mady Elbahri, Christian-Albrechts University at Kiel; Michael Bonitz, Christian-Albrechts University at Kiel; Holger Kersten, Christian-

[E04—Electrodeposition for Energy Applications](#)

- Abst# 1609 Electrodeposition and Characterization of Pt(100) Nanostructures by Erwan Bertin, INRS-EMT; Sebastien Garbarino, INRS-EMT; Magali Brunet, CNRS LAAS; David Pech, CNRS LAAS; Daniel Guay, INRS-EMT

[F04—Membrane-based Electrochemical Separations 2](#)

- Abst# 1764 Selective Separation of Organics and Inorganics with Ion-Exchange Membranes: Influence of Solution Matrix and Organics Properties by Marjolein Vanoppen, Ghent University; Griet Stoffels, Ghent University; Lingshan Ma, Ghent University; Evelyn De Meyer, Ghent University; Klaas Schoutteten, Ghent University; Julie Vanden Bussche, Ghent University; Lynn Vanhaecke, Ghent University; Arne Verliefde, Ghent University

[H03—Thin Film Transistors 13 \(TFT 13\)](#)

Abst# 2133 Light Gated Zinc Tin Oxide Thin Film Transistor Fabricated Via Solution Process by I-Wen Wang, National Cheng Kung University; Jeng-Ting Li, National Cheng Kung University; Jen-Sue Chen, National Cheng Kung University

H04—Low-Dimensional Nanoscale Electronic and Photonic Devices 9

Abst# 2204 (Invited) Multi-Functional Flexible Healthcare Sensors and Integrated Circuits by Kuniharu Takei, Osaka Prefecture University

I01—Polymer Electrolyte Fuel Cells 16 (PEFC 16)

Abst# 2439 Design of Organic-Inorganic Hybrid Nanocatalysts to Enhance Catalytic Activity and Durability for Oxygen Reduction Reaction by Namgee Jung, Chungnam National University; Sung Jong Yoo, Korea Institute of Science and Technology (KIST); Sung-Soo Kim, Chungnam National University; Jong-Ryul Jeong, Chungnam National University

Abst# 2470 On-Board Hydrogen Powered Proton Exchange Membrane Fuel Cells by Mehmet Sankir, TOBB University of Economics and Technology; Kenan Kara, Tobb University of Economics and Technology; Nazrin Abdullayeva, Tobb University of Economics and Technology; Nurdan Demirci Sankir, TOBB University of Economics and Technology

Abst# 2506 Gold-Supported Cerium-Doped NiO_x Catalysts for Water Oxidation by Desmond Ng, Stanford University; Max Garcia-Melchor, SUNCAT; Michal Bajdich, Joint Center for Artificial Photosynthesis; Pongkarn Chakthranont, Stanford University Department of Chemical Engineering; Charlotte Kirk, Stanford University; Aleksandra Vojvodic, SUNCAT; Thomas Jaramillo, SUNCAT, SLAC Joint Center for Artificial Photosynthesis

I03—Electrosynthesis of Fuels 4

Abst# 3027 CO₂ Electro-Reduction on Bio-Inspired Iron Sulfide Under Mild Conditions by Alberto Roldan, Cardiff University; Nora de Leeuw, Cardiff University

K01—Bioengineering Based on Electrochemistry

Abst# 3226 High-Energy Density Metal-Free Biobatteries Powered By Soft Drinks by Zhiguang Zhu, Cell-Free Bioinnovations Inc; Y-H Percival Zhang, Tianjin Institute of Industrial Biotechnology; Y-H Percival Zhang, Virginia Tech

Abst# 3232 Synthetic Nerve Endings for Restoring the Axo-Axonal Transport by Nazrin Abdullayeva, Tobb University of Economics and Technology; Deniz Naz Seckin, Lokman Hekim Ankara Hospital; Mehmet Sankir, TOBB University of Economics and Technology; Nurdan Demirci Sankir, TOBB University of Economics and

Technology; Hakan Seckin, Lokman Hekim Ankara Hospital

- Abst# 3236 An Electrochemical Scaffold for Wound-Related biofilms Elimination by Sujala Sultana, Washington State University; Erhan Atci, Washington State University; Jerome Babauta, Washington State University; Azeza Mohamed Falghoush, Washington State University; Kevin Snekvik, Washington State University; Douglas Call, Washington State University; Haluk Beyenal, Washington State University

L01—Physical and Analytical Electrochemistry, Electrocatalysis, and Photoelectrochemistry General Session

- Abst# 3353 Metal Extraction Driven By Galvani Potential at the Interface Between Two Immiscible Electrolyte Solutions by Lasse Murtomäki, Aalto University; Eemi Nieminen, Aalto University, Department of Chemistry

L02—Molten Salts and Ionic Liquids 20

- Abst# 3453 Historical Development of Pyrochemical Methods for Treating Used Nuclear Fuel by Perry Motsegood, Argonne National Laboratory; James Willit, Argonne National Laboratory; Mark Williamson, Argonne National Laboratory

- Abst# 3455 Development of Carbon Anodes for Use in Electrolytic Reduction of Uranium(IV) Oxide by Perry Motsegood, Argonne National Laboratory; James Willit, Argonne National Laboratory; Mark Williamson, Argonne National Laboratory

L04—Photocatalysts, Photoelectrochemical Cells, and Solar Fuels 7

- Abst# 3656 Three-Dimensional ZnO-BiVO₄ Core-Shell Nanostuctured Array for Photoelectrochemical Water Oxidation by Jih-Sheng Yang, National Cheng Kung University; Jih-Jen Wu, National Cheng Kung University

M01—Chemical Sensors 12. Chemical and Biological Sensors and Analytical Systems

- Abst# 3788 Environmental Sensor Based on Stretchable Textile by Hyung-Kun Lee, Electronics & Telecommunications Research Institute; Do Yeob Kim, Electronics & Telecommunications Research Institute; Sung Q Lee, Electronics & Telecommunications Research Institute; Wooseup Youm, electronics & Telecommunications Research Institute

M03—Electrochemical Analysis with Nanomaterials and Nanodevices

- Abst# 3872 Probe Sensor Using Nano-Structured Multi Walled Carbon Nanotube Yarn for Direct Selective and Sensitive Dopamine Detection by Wed Al-Graiti, University of Wollongong, Fairy Meadow, 2519, Australia; Wed Al-Graiti, ARC Centre of Excellence for Electromaterials Science; Javad Foroughi, University of Wollongong,

Fairy Meadow, 2519, Australia; Javad Foroughi, ARC Centre of Excellence for Electromaterials Science; Zhilian Yue, University of Wollongong, Fairy Meadow, 25

- Abst# 3876 Investigation on High Charge Density of States in Electrochemical Polymer- λ Transistor by Jiyoul Lee, Pukyong National University
- Abst# 3879 Anionic-Exchange Ionomer-Films for Electrocatalytic Applications by Paolo Bertocello, Swansea University; Thomas Jones, Swansea University; Sandra Aldave Hernandez, Swansea University; Robert Kaspar, University of Delaware; Michael Letterio, University of Delaware; Yushan Yan, University of Delaware
- Abst# 3880 Enabling Local Electrochemistry in Fast, High-Resolution Scanning Probe Microscopy by Nathan Kirchhofer, Oxford Instruments Asylum Research; Roger Proksch, Oxford Instruments Asylum Research; Maarten Rutgers, Oxford Instruments Asylum Research; Irene Revenko, Oxford Instruments Asylum Research

Z01—General Student Poster Session

- Abst# 3905 Nano-Biosensors: An Advanced and Essential Tool in Monitoring Microcystins in Water by Vasileia Voghazi, University of Cincinnati; Lu Zhang, University of Cincinnati; Daoli Zhao, Department of Chemistry, University of Cincinnati; Noe Alvarez, University of Cincinnati; Soryong Chae, The University of Cincinnati; Laura Sagle, University of Cincinnati; William Heineman, Department of Chemistry, University of Cincinnati; Vesseli
- Abst# 3910 CFD Systems Level Modeling of a Protonic Ceramic Fuel Cell by Kevin Anderson, Calif. State Polytechnic Univ. at Pomona; Chris McNamara, Calif. State Polytechnic Univ. at Pomona; Neal Sullivan, Mechanical Eng. Dept., Colorado School Of Mines; Andrew Murphy, California State Polytechnic University at Pomona

Z05—Late Poster Session

- Abst# 4194 The Prospects of Functionalized Cellulose-based λ -Papers λ ™ as Electrode Materials in Electrochemical Conversion and Storage Devices by Abou El Amaiema, University College London; Ana Belen Jorge, Queen Mary University; Maria-Magdalena Titirici, Queen Mary University of London; Paul Shearing, University College London; Daniel Brett, University College London

Wednesday, October 5, 2016

A01—Batteries and Energy Technology Joint General Session

- Abst# 131 Automated Silver-Zinc Fiber Battery Fabrication by Abhishek Raj, Princeton University; Andrew Kim, Princeton University; Daniel Steingart, Princeton University

A03—Li-Ion Batteries

- Abst# 350 Structural Changes in Copper-Tin Alloy Anodes Observed with X-Ray Microtomography by Logan Ausderau, University of Alabama in Huntsville; Joseph Buckley, University of Alabama in Huntsville; Piyush Jibhakate, University of Alabama in Huntsville; Xianghui Xiao, Argonne National Laboratory; George Nelson, University of Alabama in Huntsville
- Abst# 371 Electrochemical Performance of Carbon-Coated Cauliflower-like WO_3 for Li-Ion Batteries by Sasidharachari Kammari, Kongju National University; Sukeun Yoon, Kongju National University
- Abst# 374 A Polymer Surfactant Assisted Method for the Synthesis of Clusters of Mn_3O_4 Nanoparticles on Few-Layer Exfoliated Graphene Platelet Surface and Its Application As Lithium-Ion Battery Anode by Debkumar Saha, Materials Science & Engg., Michigan State University; Lawrence Drzal, Chemical Engg. and Mat. Sci., Michigan State University
- Abst# 397 An Optimized Carbon Matrix for Negative Lithium-Ion Battery Electrodes Based on Silicon and Carbon by Pirmin Ulmann, IMERYS Graphite & Carbon; Sergio Pacheco, IMERYS Graphite & Carbon; Eddie Mombelli, IMERYS Graphite & Carbon; Antonio Leone, IMERYS Graphite & Carbon
- Abst# 425 Electrochemical Properties of $\text{LiNi}_{0.85}\text{Co}_{0.10}\text{Al}_{0.05}\text{O}_2$ synthesized By Using AAO(Anodic Aluminum Oxide) Template by Mi-Ra Shin, Korea National University of transportation

A04—Advances in Electrolytes for Lithium Batteries

- Abst# 578 Chemical and Structural Changes of $\text{Li}_2\text{S-P}_2\text{S}_5$ Solid Electrolyte during Heat Treatment by Yasuhito Aoki, Toray Research Center, Inc.; Kengo Ogawa, Toray Research Center, Inc.; Takeshi Nakagawa, Toray Research Center, Inc.; Yuichi Hasegawa, Toray Research Center, Inc.; Yoko Sakiyama, Toray Research Center, Inc.; Toshikatu Kojima, AIST; Mitsuharu Tabuchi, AIST
- Abst# 584 Stable Cyclability of Novel Triblock Polyelectrolyte Separators for Lithium Metal Battery by Kun Lin Liu, National Taiwan University; Chi Yang Chao, National Taiwan University
- Abst# 590 The Effect of Heating Rate on Li Losses from Al Stabilized $\text{Li}_7\text{La}_3\text{Zr}_2\text{O}_{12}$ by Kamil Dermenci, Anadolu University; Servet Turan, Anadolu University
- Abst# 596 DFT Molecular Dynamics Simulations of Li^+ by Nima Leclerc, San Francisco State

University; Nicole Adelstein, San Francisco State University

Abst# 598 First-Principles Molecular Dynamics of Non-Arrhenius Li⁺ Diffusion in Solid Electrolytes for Batteries by Alysia Zevgolis, San Francisco State University; Thomaz Alves, San Francisco State University; Nicole Adelstein, San Francisco State University

A05—Beyond Li-ion Batteries

Abst# 695 Enhancement of Lithium-Sulfur Batteries By Introducing Metal-Organic-Framework (MOF) Coated Separators by Seho Sun, Department of Energy Engineering, Hanyang University; Junghyun Choi, Department of Energy Engineering, Hanyang University; Joo Hyun Kim, Department of Energy Engineering, Hanyang University; Youngsik Kim, UNIST; Ungyu Paik, Department of Energy Engineering, Hanyang University

Abst# 704 Integrated Anion and Cation Capture Agent for Use in Lithium Sulfur Batteries by Brian Perdue, Sandia National Laboratories; David Wheeler, Sandia National Labs; Christopher Apblett, University of New Mexico

Abst# 714 Revisiting the Criterion for Mechanical Suppression of Dendrites at the Li/Electrolyte Interface by Zeeshan Ahmad, Carnegie Mellon University; Venkatasubramanian Viswanathan, Carnegie Mellon University

Abst# 737 Synthesis and Characterization of Distorted Orthorhombic Type Na_{0.7}MnO₂ Cathode Material By Spray Pyrolysis by Ji Ung Choi, Sejong University; Seung-Taek Myung, Sejong University

Abst# 746 Low-Cost Modular Battery Fabrication System Based on 3D-Printed Parts and Microcontrollers by Andrew Kim, Princeton University; Abhishek Raj, Princeton University; Lindsay Epstein, Massachusetts Institute of Technology; Shaurjo Biswas, Princeton University; Daniel Steingart, Princeton University

Abst# 755 Charge-Discharge Properties of a Phosphoric Acid Material System for Application in Sodium Ion Batteries by Keisuke Nagao, IHI Corporation; Hiroo Takahashi, IHI Corporation

Abst# 756 Tin Oxide Anchored on Reduced Graphene Oxide Sheet to Provide Improved Electrochemical and Structural Properties for Alkali Ion (Li, Na) As an Anode Material for Rechargeable Battery by Chang Heum Jo, Sejong University; Jae Hyeon Jo, Sejong University; Seung-Taek Myung, Sejong University

Abst# 767 Investigation of Self Supporting Paper-like Structures and Metallic Current Collector Backed Structures with Exfoliated Graphene Platelets As Cathodes for Lithium-Air

Battery by Debkumar Saha, Materials Science & Engg., Michigan State University; Lawrence Drzal, Chemical Engg. and Mat. Sci., Michigan State University

Abst# 785 Synthesis of Graphitic Ordered Mesoporous Carbon for High-Performance of Lithium-Sulfur Battery by Min-Seop Kim, Korea University; Min-Seop Kim, Korea Institute of Science and Technology; Woong Kim, Korea University; Won Il Cho, Korea Institute of Science and Technology

Abst# 793 In Operando X-Ray Imaging and Tracking of Degradation and Failure Phenomena inside Zinc-Air Systems by Vladimir Yufit, Imperial College London; Farid Tariq, Imperial College London; David Eastwood, Research Complex at Harwell; Moshiel Biton, Imperial College London; Billy Wu, Imperial College London; Peter Lee, Research Complex at Harwell; Nigel Brandon, Imperial College London

[C04—Pits & Pores 7: Nanomaterials “ Fabrication Processes, Properties, and Applications](#)

Abst# 1286 Pitting Corrosion of Copper Tubes for Drinking Water Applications Due to Silicate Films by Ralf Feser, University of applied sciences South Westphalia; Sven Schewe, University of applied sciences South Westphalia

[C06—Metallic, Organic and Composite Coatings for Corrosion Protection](#)

Abst# 1373 Effects of CNT-Zinc Hybrid Structure on Corrosion, Scratch and Adhesion Strength of Epoxy Composite Coating by Farhad Daneshvar Fatah, Polymer Technology Center, Texas A&M University; Farhad Daneshvar Fatah, Materials Science and Engineering, Texas A&M University; Hung-Jue Sue, Polymer Technology Center, Texas A&M University; Hung-Jue Sue, Materials Science and Engineering, Texas A&M University; Homero Castaneda, National Corrosion Center, Texas A&

[D01—Photovoltaics for the 21st Century 12](#)

Abst# 1397 Opto-Electronic Properties of Hybrid Perovskites by Aditya Mohite, Los Alamos National Laboratory; Wanyi Nie, Los Alamos National Laboratory; Hsinhan Tsai, Los Alamos National Lab; Jean-Christophe Blancon, Los Alamos National Lab; Sergei Tretiak, Los Alamos National Laboratory; Gautam Gupta, Los Alamos National Laboratory

Abst# 1425 Synthesis and Characterization of Fullerene Derivatives with Alkyl Spacers and Alkyl Chains in Organic Photovoltaic Devices by Hiroshi Moriyama, Toho University; Mizuki Igawa, Toho University; Yuki Kuda, Toho University

[D02—Nonvolatile Memories 5](#)

Abst# 1462 Hopping Conduction in Intermediate Resistance State of Tantalum Oxide Resistive Switching Memory by Jiu-Xing Huang, National Cheng Kung University; Jen-Sue

[F01—Industrial Electrochemistry and Electrochemical Engineering General Session](#)

- Abst# 1651 A Study on Workability and Durability of Different Plating Thickness of Silver on Monel As a Cathode Material for Oxygen Reduction by Utsav Dotel, University of Stavanger

[F02—Electrochemical Impedance Spectroscopy: In Honor of Bernard Tribollet](#)

- Abst# 1726 (Invited) Corrosion Inhibitor (Decanethiol) for Carbon Steels Exposed to Aqueous CO₂ by Zineb Belarbi, Ohio University; Fernando Farelas, Ohio University; Marc Singer, Ohio University; David Young, Ohio University; Srdjan Nescic, Ohio University
- Abst# 1727 (Invited) Using High Frequency Impedance Measurements for Phase Wetting Detection and Water Layer Thickness Characterization in Two-Phase Oil-Water Flow by Luciano Paolinelli, Ohio University; Srdjan Nescic, Ohio University; Yao Juncheng, Ohio University; Ahmadreza Rashedi, Ohio University

[G01—High Purity and High Mobility Semiconductors 14](#)

- Abst# 1794 Chemical Bath Deposited ZnO:Al Thin Films and Their Application to CuInGaSe₂ Thin Film Solar Cells by Yesol Choi, Hanbat National University; Hyun Jun Jang, Hanbat National University; Ki-Ha Hong, Hanbat National University; Choong-Heui Chung, Hanbat National University

[G02—Semiconductors, Dielectrics, and Metals for Nanoelectronics 14](#)

- Abst# 1826 CMP Development for New Generation Materials through Metal Oxide Thin Film Characterization by G. Bahar Basim, Ozyegin University
- Abst# 1841 Selected Success Stories from Twenty Years of High-k Gate Dielectric Research by Samares Kar, Indian Institute of Technology, Kanpur

[G03—Atomic Layer Deposition Applications 12](#)

- Abst# 1890 A High Mobility of p-Type SnO Thin Films Grown By Atomic Layer Deposition for Thin Film Transistors by Soo Hyun Kim, Korea Institute of Science and Technology; Jung Joon Pyeon, Korea Institute of Science and Technology; Seong Keun Kim, Korea Institute of Science and Technology
- Abst# 1894 Atomic Layer Deposited Metal Oxides Films for Solar Cells by Do-Heyoung Kim, Chonnam National University

H04—Low-Dimensional Nanoscale Electronic and Photonic Devices 9

- Abst# 2216 (Invited) Bottom-up Growth of Fully Transparent Indium Tin Oxide Nanowire Layers for Enhanced Light Output for Light Emitting Devices by Colm O'Dwyer, University College Cork
- Abst# 2222 ZnO Nanowires Electrodeposited for UV Detector Applications by Cristina V. Manzano, EMPA; Laszlo Pethő, EMPA; Johann Michler, EMPA; Laetitia Philippe, EMPA
- Abst# 2224 Enhancement of Light Extraction Efficiency in Organic Light Emitting Diode with Nano-Scaled Random Patterns by Heon Lee, Korea University; Yangdoo Kim, Korea University

H06—Fundamentals and Applications of Microfluidic and Nanofluidic Devices 3

- Abst# 2281 (Invited) Analytical Models for Field Effect Control of Electrokinetic Transport Phenomena in Nanofluidics by Yu Ma, Harbin Institute of Technology; Shizhi Qian, Old Dominion University; Li-Hsien Yeh, National Yunlin University of Science and Technology
- Abst# 2283 Towards Understanding the Ion Transport in Polyelectrolyte-Modified Nanopores with Bipolar Charges by Chih-Yuan Lin, National Taiwan University; Li-Hsien Yeh, National Yunlin University of Science and Technology; J.P. Hsu, National Taiwan University

H07—Emerging Nanomaterials and Devices

- Abst# 2330 Probing the Growth Mechanisms of Vertical-Stacked and Lateral-Grown MoS₂ Few Layers by Ya-Ting Chung, AIM-HI; Ming-Yen Lu, AIM-HI; Hsiang-Chen Wang, AIM-HI

I01—Polymer Electrolyte Fuel Cells 16 (PEFC 16)

- Abst# 2536 Model-Based Analysis of Carbon Corrosion in Start-up/Shutdown, Fuel Starvation, and Voltage Reversal of a Polymer Electrolyte Fuel Cell by Jixin Chen, Ford Motor Company; Jingwei Hu, Automotive Fuel Cell Cooperation Corporation; James Waldecker, Ford Motor Company
- Abst# 2549 Graphene Oxide-Nafion Multilayer Membrane: Influence of Preparation Method by Carolina Musse Branco, University of Birmingham; Surbhi Sharma, University of Birmingham; Robert Steinberger-Wilckens, University of Birmingham, UK
- Abst# 2557 (Invited) Self-Humidifying Membrane Electrode Assembly Prepared by Adding Moisture Preserve Materials in Anode Catalyst Layer by Shijun Liao, School of

Chemistry and Chemical Engineering; Sanying Hou, South China University of Technology

- Abst# 2580 Evaluating Electrospun Polyacrylic Acid-Nafion Composite As Stable Catalyst Support for PEM Fuel Cell Electrodes by Manoj Krishna Kayarkatte, Freie Universität Berlin; Zeynep Delikaya, Freie Universität Berlin; Christina Roth, Freie Universität Berlin
- Abst# 2591 Bilayer Cathode Structure to Improve Ice Tolerance in PEM Fuel Cells by Chao Lei, Automotive Fuel Cell Cooperation Corp.; Carmen Chuy, Automotive Fuel Cell Cooperation Corp.; Tran Ngo, Automotive Fuel Cell Cooperation Corp.; Sharon Wong, Automotive Fuel Cell Cooperation Corp.; Scott McDermid, Automotive Fuel Cell Cooperation Corp.
- Abst# 2645 PdFe Nanoparticles for Oxygen Reduction Reaction in Polymer Electrolyte Fuel Cells by Kug-Seung Lee, Pohang Accelerator Laboratory; Yun Sik Kang, Korea Institute of Science and Technology
- Abst# 2678 Development of Hydroxide-Stable Anion-Conducting Functional Groups by Thomas Weissbach, Simon Fraser University; Andrew Wright, Simon Fraser University; Steven Holdcroft, Simon Fraser University
- Abst# 2689 Structure of Anion-Conducting Polymers from x-Ray Scattering and MD Simulations by Eric Schibli, Simon Fraser University; Barbara Frisken, Simon Fraser University
- Abst# 2711 Pore Structure Effect of Cathode Catalyst Layer on Performance and Durability of PEMFC by Sang-Kyung Kim, Korea Institute of Energy Research; Hye-Yeong Lee, Korea Institute of Energy Research; Dong-Hyun Peck, Korea Institute of Energy Research; Chang-Soo Kim, Korea Institute of Energy Research
- Abst# 2729 Preparation and Characterization of Cgo-Based Catalyst for Methanol Steam Reforming By Glycine-Nitrate Process by Junghun Lee, Agency for Defense Development; Eunyeong Choi, Agency for Defense Development; Hyunjin Ji, Agency for Defense Development
- Abst# 2730 Numerical Study on Flow Distribution in PEMFC with Metal Foam Bipolar Plate by Kyoungyoun Kim, Hanbat National University; Myeongho Song, Hanbat National University
- [102—Solid State Ionic Devices 11](#)
- Abst# 2893 Innovative Approach on Nano-Structuring of Electrode for Solid Oxide Cells by Jaeha Myung, University of St.Andrews; Dragos Neagu, University of St Andrews; John Irvine, University of St. Andrews

Abst# 2918 Rapid Structure Degradation of Silver Under SOFC Conditions with a Ni-YSZ Anode and Methane-Oxygen Mixed Gas by Zhihong Wang, Department of Physics, Harbin Institute of Technology; Zhe Lǎng^{1/4}, Harbin Institute of Technology

I03—Electrosynthesis of Fuels 4

Abst# 3058 A Systems Perspective in the Conversion of CO₂/H₂O Feedstocks Using Intermediate-Temperature Reversible Solid Oxide Cell Technology for Energy Storage Applications by Robert Braun, Colorado School of Mines; Evan Reznicek, Colorado School of Mines

Abst# 3059 Comparing Low- and High-Temperature Electrochemical Process Pathways for Converting H₂O and CO₂ into Synthetic Natural Gas by Robert Braun, Colorado School of Mines

I04—Energy/Water Nexus: Power from Saline Solutions

Abst# 3089 A New Mode of Reverse Electrodialysis Operation to Reduce Seawater RO Energy Demand by Marjolein Vanoppen, Ghent University; Griet Walpot, Ghent University; Ella Criel, Ghent University; Arne Verliefde, Ghent University

L01—Physical and Analytical Electrochemistry, Electrocatalysis, and Photoelectrochemistry General Session

Abst# 3362 Investigating the Photo-Electrochemical Properties of Quantum Rods Using Scanning Electrochemical Microscopy by Philippe Hapiot, CNRS; Sebastien Lhenry, Universit  de Rennes 1; Benoit Boichard, Universit  de Rennes 1; Yann Leroux, CNRS; Pascale Even-Hernandez, Universit  de Rennes 1; Valerie Marchi, Universit  de Rennes 1 - CNRS

Abst# 3369 Profiling Carrier Generation in Semiconductor Microwire Arrays Via Photoelectrochemical Metal Deposition by Mita Dasog, California Institute of Technology; Azhar Carim, California Institute of Technology; Sisir Yalamanchili, California Institute of Technology; Harry Atwater, California Institute of Technology; Nathan Lewis, California Institute of Technology

Abst# 3373 Enhanced Photoelectrochemical Performance of Nanostructured Zinc Oxide Photoelectrodes Via Morphology Control by Nurdan Demirci Sankir, TOBB University of Economics and Technology; Demet Yolacan, TOBB University of Economics and Technology; Pelin Komurcu, TOBB University of Economics and Technology; Mehmet Sankir, TOBB University of Economics and Technology

M01—Chemical Sensors 12. Chemical and Biological Sensors and Analytical Systems

Abst# 3802 Impedance-Based Biosensing Using Virus-Poly(3,4-ethylenedioxythiophene) by

Alana Ogata, University of California Irvine; Shae Schlegel, PhageTech; Jeffrey Briggs, PhageTech; Ming Tan, Wainamics Inc; Gregory Weiss, University of California Irvine; Reginald Penner, University of California Irvine

Z02—Nanotechnology General Session

- Abst# 4119 First-Principles Study on Mechanical Strain and Defect in Materials by Minseok Choi, Inha University
- Abst# 4134 In Situ Tuning of Magnetization Via Double Layer Charging and Topotactic Li Insertion in Polymer-Templated Mesoporous Thin Films by Christian Reitz, Karlsruhe Institute of Technology, INT; Torsten Brezesinski, Karlsruhe Institute of Technology, INT-BELLA

Thursday, October 6, 2016

A01—Batteries and Energy Technology Joint General Session

- Abst# 144 A Novel Rapid Processing Route to Sintered Porous Aqueous Nickel Electrodes for Low Cost Building Scale Energy Storage by Jordan Marinaccio, Swansea University; Carol Glover, Swansea University; Raman Subramanian, Swansea University; Alistair Barnes, Swansea University; Geraint Williams, Swansea University; Jonathon Elvins, Tata Steel Europe

A03—Li-Ion Batteries

- Abst# 491 Guar Gum: A Promising Aqueous Binder for Electrode Material with High Energy Density by Jun-Tao Li, College of Energy, Xiamen University; Zhan-Yu Wu, College of Energy, Xiamen University; Jie Liu, Department of Chemistry, Xiamen University; Tao Zhang, College of Energy, Xiamen University; Ling Huang, Department of Chemistry, Xiamen University; Shi-Gang Sun, Department of Chemistry, Xiamen University
- Abst# 497 Development of a Water Based Process for Stable Conversion Cathodes on the Basis of FeF_3 by Alexander Pohl, Karlsruhe Institute of Technology (KIT), Germany; Mohammadkazem Faraz, Karlsruhe Institute of Technology (KIT), Germany; Andreas Schröder, Karlsruhe Institute of Technology (KIT), Germany; Michael Baunach, Karlsruhe Institute of Technology (KIT), Germany; Wilhelm Schabel, Karlsruhe Institute of Technology (KIT), Germany; Al

A05—Beyond Li-ion Batteries

- Abst# 848 Towards All Solid State Batteries Using Perovskite Solid Electrolytes by Thomas Bibienne, Department of Chemistry, University of Montreal; Pauline Alvares,

University of Montreal; Laurent Castro, Toyota Motor Europe; Fanny Bard^Å, Toyota Motor Europe; Fabio Rosciano, Toyota Motor Europe; Mickael Doll^Å, Universit^Å de Montr^Å

Abst# 859 Developing Solid-State Lithium Ion Battery with Oxide-Based Electrolytes by Byoungwoo Kang, POSTECH

[A07—Electrochemical Capacitors and Related Devices: Fundamentals to Applications](#)

Abst# 1031 Flexible and Weaveable Wire-Shaped Capacitor with Ultra-High Energy Density by Jianli Cheng, Institute of Chemical Materials, CAEP; Bin Wang, Case western Reserve University; Bin Wang, Institute of Chemical Materials^Å, CAEP

Abst# 1035 Mechanism Study on the Asymmetric Behaviors of Carbon/Carbon Supercapacitors by Lintong Hu, Huazhong University of Science and Technology (HUST); Huiqiao Li, Huazhong University of Science and Technology (HUST)

[D01—Photovoltaics for the 21st Century 12](#)

Abst# 1439 (Invited) Innovation and Challenges of 3-D NAND Flash Technology by Ki-Seog Kim, SK Hynix Co.; Jin Woong Kim, SK Hynix Co.; Kyo-Won Jin, SK Hynix Co.

[H05—Gallium Nitride and Silicon Carbide Power Technologies 6](#)

Abst# 2265 (Invited) SiC Growth Parameter Evolution Utilizing Infrared Thermal Imaging Towards Realization of Extremely Low Dislocation Bulk SiC by Andrew Trunek, NASA Glenn Research Center

[I01—Polymer Electrolyte Fuel Cells 16 \(PEFC 16\)](#)

Abst# 2784 Fe/N Co-Doped Carbon Materials with Controllable Structure As Highly Efficient Electrocatalysts for Oxygen Reduction Reaction by Haiyan Wang, Central South University; Haiyan Wang, The Hong Kong University of Science & Technology; Minhua Shao, The Hong Kong University of Science and Technology; Jiajie Chen, Central South University

[I03—Electrosynthesis of Fuels 4](#)

Abst# 3083 Carbide Supported Phosphides Are Superior Electrocatalysts for Hydrogen Generation Than Nanocrystalline Phosphides by Yagya Regmi, University of Tennessee, Knoxville, CRC-UTIA; Asa Roy, University of Tennessee; Gabriel Goenaga, The University of Tennessee-Knoxville; Thomas Zawodzinski, University of Tennessee, Knoxville, TN; Nicole Labbe, University of Tennessee, Knoxville, CRC-UTIA; Stephen Chmely, University of Tennessee, Knoxville, CRC-UTIA

L01—Physical and Analytical Electrochemistry, Electrocatalysis, and Photoelectrochemistry General Session

Abst# 3411 Growth of Transition Metal Nanoclusters to Get Enhanced Catalytic Abilities by Tajamal Hussain, University of the Punjab, Lahore-54590, Pakistan; Munazza Ashraf, University of the Punjab, Lahore-54590, Pakistan; Adnan Mujahid, University of the Punjab, Lahore-54590, Pakistan; Muhammad Hamid Raza, University of the Punjab, Lahore-54590, Pakistan; Khurram Shehzad, Zhejiang University, Hangzhou-310027, China

L04—Photocatalysts, Photoelectrochemical Cells, and Solar Fuels 7

Abst# 3697 Copper Indium Sulfide Photoelectrode Design for Solar Water Splitting by Nurdan Demirci Sankir, TOBB University of Economics and Technology; Emre Yarali, TOBB University of Economics and Technology; Ahmet Selim Han, TOBB University of Economics and Technology; Erkan Aydin, TOBB University of Economics and Technology; Mehmet Sankir, TOBB University of Economics and Technology

Abst# 3700 Experimental Demonstration of Integrated Photoelectrochemical Hydrogen Generation Utilizing Concentrated Irradiation by Saurabh Tembhurne, Lab. of Renewable Energy Science & Engg. (LRESE), EPFL; Fredy Nandjou, Lab. of Renewable Energy Science & Engg. (LRESE), EPFL; Sophia Haussener, Lab. of Renewable Energy Science & Engg. (LRESE), EPFL

Friday, October 7, 2016

A03—Li-Ion Batteries

Abst# 522 Electrochemical Properties of Nickel Oxide Nanostructures Grown Using a Low Pressure Chemical Vapor Deposition Process As Anode in Lithium Ion Batteries by Venkata Puli, Xavier University of Louisiana; Joshua Adkins, Xavier University of Louisiana; Corey Arnold, Xavier University of Louisiana; Lamartine Meda, Xavier University of Louisiana

Abst# 525 Bismuth Thin Films As Anodes for Low Voltage All-Solid-State Li-Ion Batteries by Brigitte Pecquenard, CNRS, Université de Bordeaux, ICMCB; Jules Galipaud, CNRS, Université de Bordeaux, ICMCB; Stéphane Cotte, CNRS, Université de Bordeaux, ICMCB; Frédéric Le Cras, CEA LETI, Université Grenoble Alpes

L01—Physical and Analytical Electrochemistry, Electrocatalysis, and Photoelectrochemistry General Session

Abst# 3422 Developing Molecular Imprinted Layers As Electro-Analytical Probes for Dhydrogesterone Determination by Adnan Mujahid, University of the Punjab, Lahore-

54590, Pakistan; Tajamal Hussain, University of the Punjab, Lahore-54590,
Pakistan; Sobia Ashraf, University of the Punjab, Lahore-54590, Pakistan; Hamid
Raza, University of the Punjab, Lahore-54590, Pakistan