Sunday, May 28, 2017

A01—Battery and Energy Technology Joint General Session

Abst# 8 Vertically Aligned Carbon Nanotube Arrays As Efficient Supports for Faradaic Capacitive Electrodes by Moses Oguntoye, Tulane University; Noshir Pesika, Tulane University

Abst# 12 Electrochemical Double Layer Supercapacitor (EDLC) Fabricated with Activated Carbon Derived from Eastern White Pine by Engin Ciftyurek, WVU-MAE; Xinfeng Xie, Michigan Technological University (MTU), Houghton MI; Michael Fouts, WVU-CHE; Katarzyna Sabolsky, WVU-MAE; John Zondlo, West Virginia University; Jingxin Wang, WVU-School of Natural Resources; Edward Sabolsky, U.S. DOE, National Energy Technology Laboratory

Abst# 13 Supercapacitor Electrodes Fabricated from Carbon Extracted from Biomass and Commercial Organic Wastes by Engin Ciftyurek, WVU-MAE; Oluwatosin Oginni, WVU School of Natural Resources; Dustin Bragg, WVU-CHE; Ross Levelle, WVU MAE; Kaushlendra Singh, WVU School of Natural Resources; Litha Sivanandan, WVU-Extension Services; Katarzyna Sabolsky, WVU-MAE; Edward Sabolsky, U.S. DOE, National Energy Technology Laboratory

A05—Lithium-Ion Batteries and Beyond

Abst# 300 Uncertainty Alaysis in the Parameters of an Equivalent Circuit Model of Li-O_2 Battery Impedance Using a Monte Carlo Approach by Ruben Nelson, Florida A&M University - Florida State University; Mark Weatherspoon, Florida A&M University - Florida State University

Abst# 309 XPS Comparative Analysis of the Chevrel Phase Mo_6S_8 and the Analogous Mo_6Se_8 during Mg Insertion by Julien Richard, CEA-LITEN; Jean-Francois Colin, UniversitÃ© Grenoble Alpes, CEA, LITEN; Anass Benayad, CEA, LITEN; Sebastien Martinet, CEA-LITEN

Monday, May 29, 2017

A01—Battery and Energy Technology Joint General Session

Abst# 42 $LiPF_6$ as Effective Etching Agent of $LiMnPO_4$ colloidal Nanocrystals for High Rate Li-Ion Battery Cathodes by Simone Monaco, Istituto Italiano di Tecnologia; Lin Chen, Istituto Italiano di Tecnologia; Enrico Dilena, Istituto Italiano di Tecnologia; Andrea Paolella, Institut de Recherche d'Hydro-QuÃ©bec (IREQ); Giovanni Bertoni, Istituto

Italiano di Tecnologia; Alberto Ansaldo, Istituto Italiano di Tecnologia, Graphene Labs; Massimo Colombo, Istitut

A02—Large-Scale Energy Storage 8

Abst# 151 Improvement of Performance By Using Catalytically EtchedÂ Â Carbon Paper AsÂ Electrode for Vanadium Redox Flow Batteries by Saleem Abbas, Korea University of Science and Technology; Saleem Abbas, Korea Institute of Science and Technology; Jinyeon Hwang, Korea Institute of Sceince and Technology; Sheeraz Mehboob, Korea Institute of Science and Technology; Sheeraz Mehboob, Korea University of Science and Technology; Hyun-Jin Shin, Korea Institute of Science and T

A05—Lithium-Ion Batteries and Beyond

Abst# 322 A Better Understanding of Batteries: Manufacturing and Simulation of Li-Ion Cells by Seshuteja Chepyala, Florida A&M University - Florida State University; Pedro Moss, Florida A&M University - Florida State University; Mark Weatherspoon, Florida A&M University - Florida State University

Abst# 331 Cu-Sb Alloys As Electrode Materials for Lithium Ion Batteries; Thermodynamics, Electrochemistry and Structural Aspects by Alexander Beutl, University of Vienna; Hans Flandorfer, University of Vienna; Herta Effenberger, Universtiy of Vienna, Mineralogy and Crystallography

Abst# 339 Improving the Performance of LiFePO4 Cathode Material By: Finding out an Effective Mixing Ratio for Cathode Slurry and Implementing Calendaring Process by Jobeda Jamal Khanam, Florida State University; Pedro Moss, Florida A&M University - Florida State University; Mark Weatherspoon, Florida A&M University - Florida State University

Abst# 340 Dynamic Pulse Charging Equalization Scheme for Series Connected Cells Using Matlab/Simulink by Jamal Stephens, Department of Electrical and Computer Engineering; Larry Morris, Department of Electrical and Computer Engineering; Pedro Moss, Florida A&M University - Florida State University; Mark Weatherspoon, Florida A&M University - Florida State University

Abst# 341 An Experimental Analysis on the Impacts of Current Pulsing with Varying Current Amplitudes on Lithium Ion Cells by Dhevathi Rajan Rajagopalan Kannan, Florida A&M University - Florida State University; Pedro Moss, Florida A&M University - Florida State University; Mark Weatherspoon, Florida A&M University - Florida State University

Abst# 348 Cycling Performance of Lithium Iron Sulphate in the Presence of Binders and Carbon Additives by Aravind Muthiah, School of Materials Science and Engineering,

NTU; Mark Copley, Johnson Matthey; Madhavi Srinivasan, School of Materials Science and Engineering, NTU; Madhavi Srinivasan, Energy Research Institute @ NTU (ERI@N) ,Singapore

B05—Fullerenes - Chemical Functionalization, Electron Transfer, and Theory: In Memory of Robert Haddon

Abst# 751 *(Invited)* 3D Fullerene - Based Metal Organic Frameworks by Catalina Suarez, University of Texas at El Paso; Luis Echegoyen, The University of Texas at El Paso

D02—Plasma Nano Science and Technology

Abst# 1011 (Invited)Â Plasma Assisted Oblique Angle Deposition of Transparent and Conductive in-Plane Anisotropic ITO Thin Films by Julian Parra-Barranco, ICMS-CSIC-US; Juan Ramon Sanchez-Valencia, ICMS-CSIC-US; Francisco J. Aparicio, ICMS-CSIC-US; Francisco Garcia-Garcia, ICMS-CSIC-US; Francisco J. Ferrer, CNA-CSIC-US; Victor Rico, ICMS-CSIC-US; Carmen Lopez-Santos, ICMS-CSIC-US; Ana Borras, ICMS-CSIC-US; Agustin R. Gonzalez-Elipe, ICMS-CSIC-US; Angel Barranco, ICMS-C

G01—Processes at the Semiconductor Solution Interface 7

Abst# 1199 *(Electronics and Photonics Division Award Address)* Compound Semiconductor Science and Technology: A Retrospective by D. Noel Buckley, Department of Physics, University of Limerick

H01—Wide Bandgap Semiconductor Materials and Devices 18

Abst# 1287 Recovery of Bias-Stress Ionized Igzo/SiO_2 Interface States Via Cryogenic Relaxation by Tarun Mudgal, Rochester Institute of Technology; Anish Bharadwaj, Rochester Institute of Technology; Prashant Ganesh, Rochester Institute of Technology; Eli Powell, Rochester Institute of Technology; Robert Manley, Corning Incorporated; Karl Hirschman, Rochester Institute of Technology

L01—Physical and Analytical Electrochemistry, Electrocatalysis, and Photoelectrochemistry General Session and Grahame Award Symposium

Abst# 1758 Square Wave Bipolar Electrochemistry for the Detection of Proteins by Curtis Shannon, Auburn University; Songyan Yu, Auburn University

M01—Sensors, Actuators and Microsystems General Session

Abst# 1876 Enzyme-Based Electrochemical Lactate Biosensors Capable of Operating in Low-Oxygen Environments by Aytekin Uzunoglu, Hitit University; Lia Stanciu, Purdue University

Tuesday, May 30, 2017

A01—Battery and Energy Technology Joint General Session

Abst# 52 Electro-Oxidation of Borohydride in a Molten Alkali Hydroxide Eutectic Mixture and a Novel Borohydride/Periodate Molten Electrolyte Battery by Elod Gyenge, University of British Columbia; Andrew Wang, University of British Columbia

Abst# 60 Integrating Reverse-Electrodialysis Stacks with Flow Batteries to Achieve Improved Energy Recovery from Salinity Gradients and Energy Storage by Xiuping Zhu, Louisiana State University; Bruce Logan, The Pennsylvania State University; Taeyoung Kim, The Pennsylvania State University; Mohammad Rahimi, The Pennsylvania State University; Christopher Gorski, The Pennsylvania State University

Abst# 65 Electric and Hybrid-Electric Marine Ferries for Public Transportation Networks by Timothy Patey, ABB

Abst# 74 Electrochemical Reaction and Direct Energy Conversion of Macroalgae Biomasses By Functional Nanomaterial Modified Electrodes by Huong VU, Hanoi National University of Education

Abst# 80 Investigation of Initial Capacity Loss in Li-Ion Full Cells with Blended Siox/Graphite Anodes by Ankita Faulkner, Boston-Power, Inc.; Chris Allen, Boston-Power, Inc.; Qina Sa, Boston-Power, Inc.; Dennis Bullen, Boston-Power, Inc.; Ethan Beise, Boston-Power, Inc.; Joanna Turteltaub, Boston-Power, Inc.; Rick Chamberlain, Boston Power

Abst# 92 Dynamic, Reversible Oxygen Redox As a Mediator of Voltage Hysteresis in Lithium-Rich Layered Oxide Electrodes by William Gent, Stanford University; Kipil Lim, Stanford Univesrity; Jihyun Hong, Stanford University; Yufeng Liang, Lawrence Berkeley National Laboratory; Mitchell McIntire, Stanford University; David Shapiro, Lawrence Berkeley National Laboratory; David Kilcoyne, Lawrence Berkeley National Laboratory; Apurva Mehta, SLAC National Accelerato

A02—Large-Scale Energy Storage 8

Abst# 180 A New Membrane-Less Porous Electrode Cell Design for Zinc-Iodide Redox Flow Battery by Fatemeh Shakeri Hosseinabad, University of Calgary; Daouda Fofana, University of Calgary; Jialang Li, University of Calgary; Edward Roberts, University of Calgary

Abst# 192 Free-Standing Two Dimensional MoS_2 nanosheet/Acitvated Carbon Clothes Composite for High Performance of Supercapacitor by Fitri Nur Indah Sari, National

Cheng Kung University; Jyh-Ming Ting, National Cheng Kung University

A03—Battery Electrolytes

Abst# 218 Aged Tris(trimethylsilyl) Phosphite (TMSPi) As a L.I.B. Electrolyte Additive by Cameron Peebles, Argonne National Laboratory; James Gilbert, Argonne National Laboratory; Ritu Sahore, Argonne National Laboratory; Juan Garcia, Argonne National Lab; Meinan He, Argonne National Laboratory; Adam Tornheim, Argonne National Laboratory; Wenquan Lu, Argonne National Laboratory; Zhengcheng Zhang, Argonne National Laboratory; Ha

Abst# 221 Highly Proton Conductive sPPEK /SSi-GO Composite Membranes for Proton Exchange Membranes Fuel Cells by Xiuling Zhu, dalian university of technology; Jianyu Huang, dalian universtiy of technology; Cuihong Jin, dalian university of technology; Shuai Zhang, dalian universtiy of technology; Shuai Li, dalian university of technology; Ben Jiang, dalian university of technology; Fang Sun, dalian university of technology

Abst# 224 Figure of Merit Approach for Evaluating L.I.B. Electrolyte Additives in a Combinatorial Study by Cameron Peebles, Argonne National Laboratory; James Gilbert, Argonne National Laboratory; Adam Tornheim, Argonne National Laboratory; Ritu Sahore, Argonne National Laboratory; Juan Garcia, Argonne National Lab; Wenquan Lu, Argonne National Laboratory; Hakim Iddir, Argonne National Laboratory; Zhengcheng Zhang, Argonne National Laboratory;

A05—Lithium-Ion Batteries and Beyond

Abst# 367 Water-Organic Electrolyte for Rechargeable Zinc Electrode Having Positive Electrode Compatibility by Zempachi Ogumi, Office of Society-Academia Collaboration for Innovation; Tadashi Kakeya, Kyoto University; Akiyoshi Nakata, Kyoto University; Hajime Arai, Kyoto University

Abst# 369 Properties of Ionic Liquids and Their Performance As Electrolytes for Sodium Batteries by Matthias Hilder, Deakin University; Damien Saurel, CIC energiGUNE; Elena Gonzalo, CIC EnergiGUNE; TeÃ³filo Rojo, University of the Basque Country; Michel Armand, CIC EnergiGUNE; Douglas MacFarlane, Monash University; Patrick Howlett, Deakin University; Maria Forsyth, Deakin University

Abst# 370 A Sulfide Solid Electrolyte Surface Layer Formed *Via*Â Electrolyte Additives Enables Stable Plating of Li Metal by Quan Pang, University of Waterloo; Linda Nazar, University of Waterloo

B05—Fullerenes - Chemical Functionalization, Electron Transfer, and Theory: In Memory of Robert Haddon

Abst# 767 *(Invited)* Metal-Bonding Electrons inside the Fullerene Cage: Electrochemical, Quantum Chemical and EPR Studies by Nataliya Samoylova, IFW Leibniz; Steven Stevenson, Purdue University - Fort Wayne; Fupin Liu, IFW Dresden; Alexey Popov, IFW Dresden

B06—Graphene and Beyond: 2D Materials

Abst# 774 Holey Graphene for Energy Storage by Rohit Kanungo, Auburn University; James Radich, Auburn University

C01—Corrosion General Session

Abst# 945 Anodizing and Corrosion Resistance of Aluminum AA7050 Friction Stir Welds by Pedro Atz Dick, Universidade Federal do Rio Grande do Sul; Gerhard KnÃ¶rnschild, Universidade Federal do Rio Grande do Sul; Luis Dick, Universidade Federal do Rio Grande do Sul

Abst# 958 Phase FieldÂ Modeling of Metal Oxidation Kinetics by Youhai Wen, U.S. Department of Energy - NETL

D01—Emerging Materials for Post CMOS Devices/Sensing and Applications 8

Abst# 1003 New, Novel $Al_{2-X}Hf_xO_3$ Materials for M O S Application by Annie Maria Mahat, Faculty of Applied Sciences, Universiti Teknologi MARA; Annie Maria Mahat, Centre for Nanomaterials Research, Institute of Science; Norlida Kamarulzaman, Faculty of Applied Sciences, Universiti Teknologi MARA; Norlida Kamarulzaman, Centre for Nanomaterials Research, Institute of Science; Nurhanna Badar, Faculty of Applie

D02—Plasma Nano Science and Technology

Abst# 1020 *(Invited)* Plasma Electrochemical Synthesis of Nanomaterials by Qiang Chen, Xiamen University

F01—Electrochemical Engineering General Session

Abst# 1070 Electrochemical Method of Carbonate Melts Regeneration for Efficient Capture of so_2 from Coal Combustion. by Valery Kaplan, Weizmann Institute of Science; Nurlan Dosmukhamedov, Kazakh National Research Technical University; Igor Lubomirsky, Weizmann Institute of Science

Abst# 1080 Platinum Electrodeposition Methods to Enable Incorporation of Low Density Foam-Lined Hohlraums by Corie Horwood, Lawrence Livermore National Laboratory; Michael Stadermann, Lawrence Livermore National Laboratory; Thomas Bunn, Lawrence Livermore National Laboratory

Abst# 1081 Metal Alloy ICF Capsules Created By Electrodeposition by Corie Horwood, Lawrence Livermore National Laboratory; Michael Stadermann, Lawrence Livermore National Laboratory; Thomas Bunn, Lawrence Livermore National Laboratory

F02—Characterization of Porous Materials 7

Abst# 1119 The Role of Morphology in Optimized Electrochemical Performance of KOH-Activated Cellulose for Supercapacitor Applications by Dina Ibrahim Abouelamaiem, 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

G01—Processes at the Semiconductor Solution Interface 7

Abst# 1209 *(Invited)* Electrochemically Tuned Metamaterials: New Scenarios Navigated By Theory by Alexei Kornyshev, Imperial College London

Abst# 1215 *(Invited)* Interfacial Modification of Heterojunction Metal Oxide Photo Anodes for Efficient Â Solar Water Splitting by Sanjay Mathur, University of Cologne; Yakup Gonullu, University of Cologne; Thomas Fischer, University of Cologne

G02—Silicon Compatible Materials, Processes, and Technologies for Advanced Integrated Circuits and Emerging Applications 7

Abst# 1263 Investigation of Thermal Treatment Processes for Dissimilar Wafer Bonding by Chenxi Wang, Harbin Institute of Technology; Yue Li, Harbin Institute of Technology; Yannan Liu, Harbin Institute of Technology; Zhitian Yuan, Harbin Institute of Technology; Yanhong Tian, Harbin Institute of Technology; Chunqing Wang, Harbin Institute of Technology; Tadatomo Suga, School of Engineering, Univ. Tokyo

Abst# 1275 Multi-Wavelength Raman Characterization of Epitaxial Silicon Wafers for In-Line ProcessÂ Characterization and Monitoring Applications by Woo Sik Yoo, WaferMasters, Inc.; Toshikazu Ishigaki, WaferMasters, Inc.; Kitaek Kang, WaferMasters, Inc.

Abst# 1278 Reliability Characteristics of Low Dielectric Constant Materials Under Mechanical-Electrical Stress by Chih-Yen Lee, National Chi-Nan University; Yi-Lung Cheng, National Chi-Nan University; Chiao-Wei Haung, National Chi-Nan University; Yao-Cia Chuang, National Chi-Nan University

H02—Solid-State Electronics and Photonics in Biology and Medicine 4

Abst# 1331 *(Invited)Â* Tuning Physicochemical Properties of MoS_2 By Mechanical Strain by Xiaolin Zheng, Stanford Univeristy

Abst# 1337 *(Invited)Â* Investigation of Phosphorene in Electrochemical Energy Storage Devices by Nikhil Koratkar, Rensselaer Polytechnic Institute

I01—Oxygen or Hydrogen Evolution Catalysts for Water Electrolysis 3

Abst# 1383 Characterization of Hydrogen and Oxygen Evolution Electrocatalysts for PEM Water Electrolysis by Pierre Millet, Paris-Sud University; Baptiste Verdin, CEA-LITEN

Abst# 1398 One Step Synthesis of Cos-Doped Î²-$Co(OH)_2$@Amorphous MoS_{2+X} Hybrid Catalyst Grown on Nickel Foam for High Performance Electrochemical Overall Water Splitting by Taeseung Yoon, Ulsan National Institute of Science and Technology

I02—Materials for Low Temperature Electrochemical Systems 3

Abst# 1444 *(Invited)* Shape Fixing By Salt Nanoreactor to Produce Nanocarbon Materials for the Catalysis of Oxygen Reduction Reaction by Zidong Wei, Chongqing University; Wei Ding, Chongqing University; Li Li, Chongqing University; Siguo Chen, Chongqing University; Xueqiang Qi, Chongqing University

Abst# 1450 Pdaucu Nanobranches As Self-Repair Electrocatalysts for Oxygen Reduction Reaction by Ruizhi Yang, Soochow University; Hongyu Gong, Soochow University; Xuecheng Cao, Soochow University; Mark Rummeli, Soochow University; Peter Strasser, Technical University Berlin

Abst# 1451 Bifunctional Oxygen Reduction/Evolution Reaction Electrocatalyst Based on MnO_2 for Rechargeable Alkaline Metal-Air Batteries and Regenerative Fuel Cells: Challenges and Opportunities by Elod Gyenge, Dept. of Chemical and Biological Engineering; Pooya Hosseini Benhangi, University of British Columbia

I03—Renewable Fuels via Artificial Photosynthesis 2

Abst# 1534 *(Invited)* Photo-Induced Force Mapping of Plasmonic Nanostructures by Isabell Thomann, Rice University

I04—Solid-Gas Electrochemical Interfaces 2 - SGEI 2

Abst# 1576 Assessing Doping Effects on Surface Chemical Stability By in Situ AP-XpsÂ in Barium Perovskites, $BaCe_xZr_{0.9-X}Y_{0.1}O_{2.95\ Â}$ (x = 0.9 ; 0.2 ; 0)Â by Angelique Jarry, Dept. of Chemistry & Biochemistry, University of Maryland; Sandrine Ricote, Mechanical Eng. Dept., Colorado School Of Mines; Aaron Geller, University of Maryland; Xiaohang Zhang, University of Maryland; Christopher Pellegrinelli, University of Maryland; Ichiro Takeuchi, University of Maryland; Eric Wachsman, University of

L01—Physical and Analytical Electrochemistry, Electrocatalysis, and Photoelectrochemistry

General Session and Grahame Award Symposium

Abst# 1770 Image Detection of Yeast *Saccharomyces Cerevisiae* By Light-Addressable Potentiometric Sensors (LAPS) by Dewen Zhang, Queen Mary University of London; Steffi Krause, Queen Mary University of London

M01—Sensors, Actuators and Microsystems General Session

Abst# 1897 Patchable Ion Channel Pressure Sensors Inspired By Somatic Organs by Kyoung-Yong Chun, Korea University; Young Jun Son, Korea University; Chang-Soo Han, Korea University

Abst# 1904 Electrochemical Detection of Sulfanilamide at MWCNT Coated Conducting Polymer Modified Electrode by Shirinaz Khan, Visvesvaraya National Institute of Technology, Nagpur.; Rakesh Chillawar, Visvesvaraya National Institute of Technology, Nagpur.; Pradesh Digal, Visvesvaraya National Institute of Technology, Nagpur.; Ramani Motghare, Visvesvaraya National Institute of Technology, Nagpur.

M02—Nano/Bio Sensors

Abst# 1918 Flexible Hybrid Mouth-Guard-Based Electrochemical Biosensing by David Schwartz, PARC; Ping Mei, PARC; Brent Krusor, PARC; Yong Zhang, PARC; Robert Street, PARC; Jonathan Rivnay, PARC; Patrick Mercier, UCSD; Joseph Wang, UCSD

Z01—General Student Poster Session

Abst# 1987 Towards Synthesis of Steel Foams through Carbothermal Reduction of Iron Oxide Nanoparticles and Renewable Biopolymers by Joshua Sparks, Clemson University; Monsur Islam, Clemson University; Rodrigo Martinez-Duarte, Clemson University

Abst# 1994 Transition Metal Oxide-Based Conversion Reaction for High-Capacity Lithium-Ion Batteries by Eunho Cha, University of North Texas; Wonbong Choi, University of North Texas

Wednesday, May 31, 2017

A01—Battery and Energy Technology Joint General Session

Abst# 115 Restoration of Nickel Rich Electrodes from Spent Lithium-Ion Batteries by Steven Sloop, OnTo Technology LLC

A03—Battery Electrolytes

Abst# 235 Effect of Phosphorus-Based Additives on Cathode-Electrolyte Interface of Charged Ncm Surface through Potentiostatic Holds by Adam Tornheim, Argonne National Laboratory; Ritu Sahore, Argonne National Laboratory; Javier Bareno, Argonne National Laboratory; Juan Garcia, Argonne National Lab; Hakim Iddir, Argonne National Laboratory; Cameron Peebles, Argonne National Laboratory; Chen Liao, JCESR at Argonne National Laboratory; Daniel Abraham, Argonne National Labora

Abst# 236 Li-Metal/Solid Electrolyte Interfacial Stability Elucidated Via *in Situ* Electron Microscopy by Miaofang Chi, Oak Ridge National Laboratory; Asma Sharafi, University of Michigan; Yongqiang Cheng, Oak Ridge National Lab; Jeff Sakamoto, University of Michigan; Nancy Dudney, Oak Ridge National Laboratory; Cheng Ma, Oak Ridge National Laboratory

Abst# 238 Suppressing the Dendrite Growth on Li Metal Anode Via Manipulating the Solid Electrolyte Interface (SEI) Formation by Haodong Liu, University of California, San Diego; Hongyao Zhou, University of California, San Diego; Xing Xing, University of California, San Diego; Byoung-Sun Lee, University of California, San Diego; Ping Liu, University of California, San Diego

Abst# 242 Detection and Influence of Residual Water Content on Electrochemical Performance of Solid State Polymer PEO-Litfsi Electrolytes by Heiko Graebe, Institue for Particle Technology, TU Braunschweig; Heiko Graebe, Robert Bosch GmbH; Andreas Netz, Robert Bosch GmbH; Arno Kwade, Institute for Particle Technology, TU Braunschweig

Abst# 243 *(Invited)* Ion-Transport in Polymer-in-Ceramic Electrolytes by Diana Golodnitsky, School of Chemistry, Tel Aviv University; Raymond Blanga, Tel Aviv University; Marc Berman, Hunter College of City University of New York; Moshiel Biton, Imperial College London; Farid Tariq, Quantitative Imaging Division, IQM Elements; Vladimir Yufit, Quantitative Imaging Division, IQM Elements; Nigel Brandon, Quantitat

Abst# 244 Large Enhancement of Ionic Conductivity in Composite Polymer Electrolyte with Well-Aligned Ceramic Nanowires by Wei Liu, Stanford University; Yi Cui, Stanford University

A05—Lithium-Ion Batteries and Beyond

Abst# 403 Passivated Lithium Metal As Anode Materials for Advanced Battery Applications by Eunho Cha, University of North Texas; Wonbong Choi, University of North Texas

Abst# 418 Synthesis of MoS2/Reduced Graphene Oxide/Si-Nanopowder Composite As an Anode Material for Li-Ion Batteries by Setiawan Abdillah, National Cheng Kung University; Jyh-Ming Ting, National Cheng Kung University

Abst# 437 Synthesis and Nitrogen-Plasma Treatment of Silicon/Carbon Nanotube/Graphene

Composites As Anode Materials for Lithium-Ion Batteries by Chuen-Chang Lin, National Yunlin University of Science and Technology; Jyun-Wei Chang, National Yunlin University of Science and Technology

Abst# 457 Conditioning Safety Index of Ni-Rich Cathode Oxides for Lithium Ion Batteries by Jihyeon Gim, Argonne National Laboratory; Bryan Yonemoto, Argonne National Laboratory; Jianzhao Liu, Argonne National Laboratory; Han Gao, Argonne National Laboratory; Gui-Liang Xu, Argonne National Laboratory; Khalil Amine, Argonne National Laboratory; Zonghai Chen, Argonne National Laboratory

Abst# 469 Imidazolium Based Dicationic Ionic Liquids As Electrolyte for Lithium Ion Batteries by Yung-Che Yen, Nation Cheng Kung University; I-Wen Sun, Nation Cheng Kung University

Abst# 482 Lithium-Oxygen Battery with a Phosphorene-Derived Protective Layer on a Lithium Anode by Youngjin Kim, Seoul National University; Seongmin Ha, Seoul National University; Dongho Ku, Seoul National University; Junyoung Mun, Incheon National University; Seung M. Oh, Seoul National University; Kyu Tae Lee, Seoul National University

B01—Carbon Nanostructures for Energy Conversion

Abst# 598 Thermally Chargeable All-Solid-State Flexible Supercapacitor for Waste Heat Harvesting and Storage by Arpan Kundu, Purdue University; Timothy Fisher, Purdue University

B06—Graphene and Beyond: 2D Materials

Abst# 809 *In Situ* variable-Temperature Scanning Tunneling Microscopy Studies of 2D Graphene and Hexagonal Boron Nitride (hBN) Layer Growth Kinetic by Suneel Kodambaka, Department of Materials Science and Engineering, UCLA

C01—Corrosion General Session

Abst# 978 Corrosion Resistance of Stainless Steel Coated with Hydrogen Silsesquioxane Based Spin-on-Glass Coatings Cured in Oxygen Deprived Atmosphere by Felix Lampert, Technical University of Denmark; Annemette Jensen, SiOx Aps; Rameez Din, Technical University of Denmark; Per MÃ¸ller, Technical University of Denmark

E02—Metallization of Flexible Electronics

Abst# 1058 All-Solution-Processing of Nanoporous and Wrinkled Electrodes on Polymer Substrates for Use in Electrochemical Biosensing by Christine Gabardo, McMaster University; Chris Adams-McGavin, McMaster University; Barnabas Fung, McMaster University; Jie Yang, McMaster University; Leyla Soleymani, McMaster University

Abst# 1063 *(Invited)* Redox Switchable Organic Conjugated Materials for Flexible Electrochromic Devices by Matteo Salamone, University of Milano Bicocca; Riccardo Ruffo, University of Milano Bicocca; Claudio Mari, University of Milano Bicocca; Luca Beverina, University of Milano-Bicocca

F01—Electrochemical Engineering General Session

Abst# 1090 Numerical Analysis of the Effect of Diaphragm Length, Position and Porosity on the Electric Field and Mass Transport inside a Lithium Electrolysis Cell by Elaheh Oliaii, UniversitÃ© de Sherbrooke; Martin Desilets, UniversitÃ© de Sherbrooke; GaÃ©tan Lantagne, Hydro-QuÃ©bec research institute

F04—Applications of Electrochemistry to Additive Manufacturing

Abst# 1167 Powder Pulse Electrodeposition for Additive Manufacturing by Andrew Abbott, University of Leicester; Salih Cihangir, University of Leicester; Karl Ryder, University of Leicester

G01—Processes at the Semiconductor Solution Interface 7

Abst# 1232 *(Invited)* Constructing Photocatalyst with Visible Light Response by Zaicheng Sun, Beijing Univ. Tech.

Abst# 1234 *(Invited)* Atomic Layer Deposited Oxides on Silicon for Enhanced Solar Energy Conversion by Nicholas Strandwitz, Lehigh University

H02—Solid-State Electronics and Photonics in Biology and Medicine 4

Abst# 1353 *(Invited)*Â Nanowire-Modified Electrode Enabling Low-Voltage Electroporation for Cell Inactivation by Xing Xie, Georgia Institute of Technololgy

I03—Renewable Fuels via Artificial Photosynthesis 2

Abst# 1556 Theoretical Investigations of Electrochemical CO2 Reduction by Karen Chan, Stanford University; Xin-Yan Liu, Stanford University; Jianping Xiao, Stanford University; Jens NÃ¸rskov, Stanford University

I04—Solid-Gas Electrochemical Interfaces 2 - SGEI 2

Abst# 1598 Mechanism of Enhanced Sulfur Tolerance on Sm-Doped CeO_2: A Density Functional Study by Dong-Hee Lim, Fuel Cell Research Center, KIST; Sung Pil Yoon, Fuel Cell Research Center, KIST; Jonghee Han, Fuel Cell Research Center, KIST; Sun Hee Choi, Fuel Cell Research Center, KIST; Chang Won Yoon, Fuel Cell Research Center, KIST; Suk Woo Nam, Fuel Cell Research Center, KIST; Hyung Chul Ham, Fuel Cell Research Center, KIST

K02—Electron Transfer in Biological Systems

Abst# 1725 Invited: Efficient Proton Transport in Rhodopsins Biohybrid Electrochemical Materials and Systems by Yan Xiang, School of Space and Environment, Beihang University

L01—Physical and Analytical Electrochemistry, Electrocatalysis, and Photoelectrochemistry General Session and Grahame Award Symposium

Abst# 1786 Study of Charge Transfer Dynamics in Spray Deposited Cu2ZnSnS4 (CZTS) Photoelectrodes for Performance Improvement by Animesh Mondal, Auburn University; James Radich, Auburn University

Abst# 1810 Kinetics of the Hydrogen Evolution Reaction at Rh-Doped $SrTiO_3$ Driven By Visible Light: A Study By Photoelectrochemical Impedance Spectroscopy by Pierre Millet, Paris-Sud University; Manuel Antuch, Paris-Sud University; Akihiko Kudo, Tokyo University of Science

M02—Nano/Bio Sensors

Abst# 1931 Interactions of TiO_2 Nanotubes with Contaminants of Emerging Concern for Applications in Point-of-Use Electrochemical Detection by Ashley Timmerman, University of Utah; Swomitra Mohanty, University of Utah; Krista Carlson, University of Utah

Abst# 1940 NAD-Glucose Dehydrogenase Immobilized on Gold Via Iron-Sulfur Based Molecular Wires for Biosensing Applications by Aishwarya Mahadevan, Texas A&M University; Sandun Fernando, Texas A&M University

Z03—Solid State Topics General Session

Abst# 2056 Developement of Printed OTFTs and Logic Circuits by Ta-Ya Chu, National Research Council Canada; Afshin Dadvand, National Research Council Canada; Neil Graddage, National Research Council Canada; Py Christophe, National Research Council Canada; Stephen Lang, National Research Council Canada; Ye Tao, National Research Council of Canada

Z04—Sustainable Materials and Manufacturing 2

Abst# 2072 A Novel Approach to the Sustainable Synthesis of Carbon Fibers by Devin Keck, Clemson University; Monsur Islam, Clemson University; Rodrigo Martinez-Duarte, Clemson University

Abst# 2088 Fabrication of 3D Shapes of Carbon By Origami by Monsur Islam, Clemson

University; Joshua Flach, Clemson University; Rodrigo Martinez-Duarte, Clemson University

Thursday, June 1, 2017

A01—Battery and Energy Technology Joint General Session

Abst# 137 Using Filtering Techniques on a Physical Based Battery Models to Estimate State of Charge, State of Health, and Remaining Useful Life in a $LiFePO_4$ Battery Management System (BMS) by Larry Morris, Florida A&M University - Florida State University; Larry Morris, Department of Electrical and Computer Engineering; Mark Weatherspoon, Florida A&M University - Florida State University

A03—Battery Electrolytes

Abst# 259 Sulfide-Based Solid Electrolytes By Solution Processing by Byoung-Sun Lee, University of California, San Diego; Xing Xing, University of California, San Diego; Haodong Liu, University of California, San Diego; Ping Liu, University of California, San Diego

A05—Lithium-Ion Batteries and Beyond

Abst# 508 Sparingly Solvating Electrolytes for Lis Batteries by Lei Cheng, Joint Center for Energy Storage Research; Lei Cheng, Argonne National Laboratory; Mahalingam Balasubramanian, Joint Center for Energy Storage Research; Mahalingam Balasubramanian, Argonne National Laboratory; Chang Wook Lee, Joint Center for Energy Storage Research; Chang Wook Lee, Argonne National Laboratory; Seungbum Ha, Joint

Abst# 521 Dual-Functional Polymer Coating on Lithium Anode for Suppressing Dendrite Growth and Polysulfide Shuttling in Liâ€“S Batteries by Jing Luo, National Taiwan University; Nae-Lih Wu, National Taiwan University

Abst# 532 Electrochemical-Thermal Modelling and Optimisation of Lithium Ion Battery Design Parameters Using Analysis of Variance (ANOVA) by Elham Hosseinzadeh, WMG - University of Warwick; James Marco, WMG - University of Warwick; Paul Jennings, WMG - University of Warwick

Abst# 535 Enhanced Heat Transfer in Porous Media for Reducing Degradation of the of Lithium-Ion Batteries by Masoud Jabbari, Warwick Manufacturing Group, University of Warwick; Ramez Kian, Dep of Industrial Engineering, Istanbul Bilgi University

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Abst# 537 Three-Dimensional Lithium-Iodine Microbatteries for Implantable Devices by Michael Citrin, California Institute of Technology; Julia Greer, California Institute of Technology

Abst# 552 Composite Tin Dioxide-Titanium Dioxide Nanostructured Thin Film Electrodes As Lithium-Ion Anodes by Clayton Kacica, Washington University in St Louis; Louis Wang, Washington University in St. Louis; Tandeep Chadha, Washington University in St. Louis; Pratim Biswas, Washington University in St. Louis

Abst# 563 Application of Ordered Intermetallic Nanoparticles to Polymer Electrolyte Fuel Cells by Yubin Liu, Kanagawa University; Takao Gunji, Kanagawa University; Takashi Tsuda, Kanagawa University; Toyokazu Tanabe, Kanagawa University; Shingo Kaneko, Kanagawa University; Takeo Ohsaka, Kanagawa University; Futoshi Matsumoto, Kanagawa University

Abst# 571 Hybrid Cathode of $LiFePO_4$ and Activated Carbon Prepared with a Porous Al Current Collector and Its Battery Performance by Takashi Tsuda, Kanagawa University; Takao Gunji, Kanagawa University; Toyokazu Tanabe, Kanagawa University; Shingo Kaneko, Kanagawa University; Takeo Ohsaka, Kanagawa University; Naohiko Soma, Wired Co., Ltd; Kaoru Itagaki, Wired Co., Ltd; Futoshi Matsumoto, Kanagawa University

Abst# 574 A Steric Approach to Modifying Redox Potentials by Corrine Elliott, University of Kentucky; Matthew Casselman, University of Kentucky; Subrahmanyam Modekrutti, University of Kentucky; Chad Risko, University of Kentucky; Susan Odom, University of Kentucky

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Abst# 1243 Simulation of the Interfaces of Anatase TiO_2 (001), (100), (101) with KOH Solution By Molecular Dynamics by LiXia Sang, Beijing University of Technology; Lei Lei, Beijing University of Technology

Abst# 1245 $Cu_2(ZnSn)(SSe)_4$ Electrodeposition from a Single Bath and Sulfur-Selenium Atomic Ratio Optimization by Mahfouz Saeed, A'Sharqiyah University

Abst# 1246 Resistive Switching Characteristics of Hydrogen Peroxide Surface Oxidized ZnO-Based Transparent Resistive Memory Devices by Firman Simanjuntak, National Dong Hwa University; Bhaskar Pattanayak, National Chiao Tung University; Chun-Chieh Lin, National Dong Hwa University; Tseung-Yuen Tseng, National Chiao Tung University

I02—Materials for Low Temperature Electrochemical Systems 3

Abst# 1519 New High Potential Membrane Material (For Electrochemical Hydrogen

Compression) by Menno Koeman, Hydrogen Efficiency Technologies (HyET) B.V.; Peter Bouwman, Hydrogen Efficiency Technologies (HyET) B.V.; Doetze Sikkema, MXpolymers; Martijn Mulder, Hydrogen Efficiency Technologies (HyET) B.V.; Leonard Raymakers, Hydrogen Efficiency Technologies (HyET) B.V.; Wouter Dalhuijsen, Hydrogen Efficiency Technologies (HyET) B.V.;

I04—Solid-Gas Electrochemical Interfaces 2 - SGEI 2

Abst# 1611 Improve Activity and Stability of Ni-$Ce_{0.8}Sm_{0.2}O_{1.9}$ As the Anode of a Methanol Fuelled Solid Oxide Fuel Cell by Yicheng Zhao, Tianjin University; Yongdan Li, Tianjin University