Sunday, October 11, 2015

A03—Batteries Beyond Lithium-Ion

Abst# 206 Reduction of Dendrite Formation in Zn Electrodes By Controlled Pulse Electrodeposition by Grecia Garcia, Ruhr-University Bochum; Edgar Ventosa, University of Bochum; Wolfgang Schuhmann, Ruhr-University Bochum

Abst# 220 An Investigation of $Na_{1-X}Li_{2x}$ $Mn_yNi_zO_d$ Compounds for High Performance Sodium-Ion Batteries by Beatriz Mendoza-Sanchez, Université François Rabelais de Tours; David Roche, Université François Rabelais de Tours; Benedicte Montigny, Université François Rabelais de Tours; Cecile Autret, Université François Rabelais de Tours; Jesus Santos Pena, Université François Rabelais de Tours

Abst# 225 Structural Investigation of Sodium Layered Oxides Via *in Situ* Synchrotron X-Ray Diffraction by Young Hwa Jung, Korea Advanced Institute of Science and Technology; Ane Christiansen, Technical University of Denmark; Rune Johnsen, Technical University of Denmark; Poul Norby, Technical University of Denmark; Do Kyung Kim, Korea Advanced Institute of Science and Technology

Abst# 226 Ultrafine Manganese Oxide As Sodium-Ion Battery Anode Involving Charge-Transfer Between Mn(III) and Mn(II) Oxides by Yu-Ting Weng, National Taiwan University; Tzu-Yang Huang, National Taiwan University; Chek-Hai Lim, National Taiwan University; Pei-Sian Shao, National Taiwan University; Sunny Hy, National Taiwan University of Science and Technology; Chao-Yen Kuo, National Taiwan University of Science and Technology; Ju-Hsiang Cheng, National Taiwan University of Science and Technology; Bing-Joe Hwang, National Taiwan University of Science and Technology; Jyh-Fu Lee, National Synchrotron Radiation Research Center; Nae-Lih Wu, National Taiwan University

I05—Polymer Electrolyte Fuel Cells 15 (PEFC 15)

Abst# 1277 Preparation of Metal Nitrogen Carbon Electrocatalysts By High Pressure Pyrolysis for Oxygen Reduction Reaction in Acid and Alkaline Media by Cenk Gumeci, Michigan State University; Yuanchao Liu, Michigan State University; Jacob Anibal, Michigan State University; Scott Calabrese Barton, Michigan State University

Abst# 1283 Pore Network Modeling of Gas Diffusion Layer As a Support to Better Understand Water Management in Proton Exchange Membrane Fuel Cells by Joel Pauchet, CEA (French Atomic and Alternative Energy Commission); Marc Prat, INPT (Institut National Polytechnique de Toulouse); Najib Belgacem, CEA; Tristan Agaesse, CEA; Benjamin Straubhaar, INPT

L06—Photocatalysts, Photoelectrochemical Cells, and Solar Fuels 6

Abst# 1681 Water Splitting Semiconductor Photoanodes - a Comparative Study by Jan Augustynski, University of Warsaw

Monday, October 12, 2015

A01—Joint General Session: Batteries and Energy Storage -and- Fuel Cells, Electrolytes, and Energy Conversion

Abst# 4 Specific Electrical Conductivity in Molten Potassium Dihydrogen Phosphate KH_2PO_4 Electrolyte at ~300 °C by Aleksey Nikiforov, DTU Energy; Aleksey Nikiforov, Technical University of Denmark; Rolf Berg, DTU Chemistry; Rolf Berg, Technical University of Denmark; Niels Bjerrum, DTU Energy; Niels Bjerrum, Technical University of Denmark

Abst# 8 Manipulating the Polarity of Conductive Polymer Binders for Si-Based Anodes in Lithium-Ion Batteries by Zhe Jia, Lawrence Berkeley National Laboratory; Mingyan Wu, Lawrence Berkeley National Laboratory; Xiangyun Song, Lawrence Berkeley National Laboratory; Xiaosong Liu, Lawrence Berkeley National Laboratory; Vince Battaglia, Lawrence Berkeley National Laboratory; Wanli Yang, Lawrence Berkeley National Laboratory; Gao Liu, Lawrence Berkeley National Laboratory

A03—Batteries Beyond Lithium-Ion

Abst# 240 Effects of Composition and Size of Active Metal Particles on Electrochemical Performance and Characteristics of Sodium Metal Chloride Rechargeable Batteries by Joon-Hwan Choi, Korea Institute of Materials Science; Cheol-Woo Ahn, Korea Institute of Materials Science; Mangi Kim, Korea Institute of Materials Science; Jong-Jin Choi, Korea Institute of Materials Science; Jong-Woo Kim, Korea Institute of Materials Science; Woon-Ha Yoon, Korea Institute of Materials Science; Jungho Ryu, Korea Institute of Materials Science; Byung-Dong Hahn, Korea Institute of Materials Science; Heesoo Lee, Pusan National University

Abst# 243 Semi-Solid Flow Batteries: New Electrochemical Challenges by Edgar Ventosa, University of Bochum; Cristina Flox, IREC; Joan Morante, IREC; Wolfgang Schuhmann, Ruhr-University Bochum

A06—High-Energy Li-Ion Intercalation Materials

Abst# 436 Charging Voltage Limit Effects on the Electro-Chemical Behavior of High Capacity Manganese-Rich Cathode in Lithium Ion Batteries by Wen-feng Mao, Tianjin University; Wen-feng Mao, Lawrence Berkeley National Laboratory; Yanbao Fu, Lawrence Berkeley National Laboratory; Guo Ai, Lawrence Berkeley National Laboratory; Vince Battaglia, Lawrence Berkeley National Laboratory

A09—Recent Advances in Supercapacitors

Abst# 558 Enhanced Performance of TiO2 Based Supercapacitor By MnO2 Modification by Yu-Ting Weng, National Taiwan University; Tzu-Yang Huang, National Taiwan University; Jyh-Fu Lee, National Synchrotron Radiation Research Center; Hwo-Shuenn Sheu, National Synchrotron Radiation Research Center; Nae-Lih Wu, National Taiwan University

Abst# 561 $FeWO_4$ As Electrode Material for High Volumetric Capacitance Supercapacitors by Thierry Brousse, IMN, CNRS/University of Nantes; Thierry Brousse, RS2E; Frederic Favier, Institut Charles Gerhardt; Frederic Favier, RS2E; Nicolas Goubard, RS2E; Nicolas Goubard, IMN; Olivier Crosnier, CNRS-IMN; Olivier Crosnier, RS2E; Christophe Payen, IMN

D05—Processing Materials of 3D Interconnects, Damascene and Electronics Packaging 7

Abst# 868 Impact of Accelerator Decomposition Products to the Stability of TSV Filling Processes by Dirk Rohde, Atotech Deutschland GmbH; Kinga Haubner, Atotech Deutschland GmbH; Cornelia Jäger, Atotech Deutschland GmbH; Andreas Kirbs, Atotech Deutschland GmbH; Manuel Pölleth, Atotech Deutschland GmbH; Josef Gaida, Atotech Deutschland GmbH; Jens Palm, Atotech Deutschland GmbH

G05—GaN & SiC Power Technologies 5

Abst# 1110 (Invited) Wide Bandgap (WBG) Power Switching Devices for Distributed Clean Energy Systems by Krishna Shenai, LoPel Corporation

I02—Harnessing Multi-Step Electrochemical Reactions for Energy Conversion and Storage

Abst# 1231 A Npg-Based Ultra-Thin Anode Catalyst Layer for Spewe by Yachao Zeng, Dalian Institute of Chemical Physics; Xiaoqian Guo, Dalian Institute of Chemical Physics; Xunying Wang, Dalian Institute of Chemical Physics; Zhiqiang Wang, Dalian Institute of Chemical Physics; Hongmei Yu, Dalian Institute of Chemical Physics; Zhigang Shao, Dalian Institute of Chemical Physics; Baolian Yi, Dalian Institute of Chemical Physics

I03—High Temperature Experimental Techniques and Measurements 2

Abst# 1241 Rotating Disk Electrode System for ORR Measurements at Elevated (>100 C) Temperature and Pressure Conditions by Michael Fleige, University of Copenhagen; Gustav Wiberg, University of Copenhagen; Matthias Arenz, University of Copenhagen

Abst# 1247 Potential of Knudsen Effusion Mass Spectrometry (KEMS) for Thermo Chemical Studies in Materials Science by Torsten Markus, Mannheim University of Applied

Sciences

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

Abst# 1597 A Versatile Bioanode with Improved Current Density and the Coulombic Efficiency through a Cascade Reaction by Muhammad Zafar, University of Gujrat, Gujrat, Pakistan; Iqra Aslam, Govt. College University Faisalabad, Pakistan; Shahzad Murtaza, University of Gujrat, Gujrat, Pakistan; Roland Ludwig, University of Natural Resources and Life Science, Austria; Lo Gorton, Lund University, Lund, Sweden

Abst# 1598 Direct Electrochemical Conversion of Nitrogen to Ammonia from Air and Water on Nitride Electro-Catalysts at Ambient Conditions by Younes Abghoui, University of Iceland; Egill Skulason, University of Iceland

Abst# 1604 Effect of High Energy Carbon Beam Irradiation on Carbon Nanotubes Modified Glassy Carbon and Its Application in Sensing of Deoxyguanosine by Rajendra Goyal, IIT Roorkee; Rosy Sharma, IIT Roorkee; Pankaj Gupta, IITRoorkee

Tuesday, October 13, 2015

A01—Joint General Session: Batteries and Energy Storage -and- Fuel Cells, Electrolytes, and Energy Conversion

Abst# 21 Structurally Tailored Polyanion Deficient LiFePO4 As Cathode Materials for Li-Ion Batteries by Changkeun Back, EIG; YoungBae Noh, EIG; YoungJae Cho, EIG

Abst# 24 Ternary Metal Fluorides As High-Energy Cathodes with Low Cycling Hysteresis by Feng Wang, Brookhaven National Lab; Sung-Wook Kim, Brookhaven National Lab; Jason Graetz, HRL Laboratories LLC

Abst# 47 A Dual-Mode Rechargeable Lithium-Bromine/Oxygen Fuel Cell by Peng Bai, Massachusetts Institute of Technology; Venkatasubramanian Viswanathan, Carnegie Mellon University; Martin Bazant, Massachusetts Institute of Technology

Abst# 59 Quinhydrone Formation and Its Impact on the Cell Voltage of the Quinone-Bromide Flow Battery by Qing Chen, Harvard School of Engineering and Applied Science; Rafa Bombarelli, Harvard Department of Chemistry and Chemical Biology; Liuchuan Tong, Harvard Department of Chemistry and Chemical Biology; Michael Marshak, Harvard School of Engineering and Applied Sciences; Roy Gordon, Harvard Department of Chemistry and Chemical Biology; Alan Aspuru-Guzik, Harvard Department of Chemistry and Chemical Biology; Michael Aziz, Harvard School of Engineering and Applied Sciences

Abst# 66 Carbon-Supported Metal Oxide Nanoparticles As Electrocatalysts for the Oxygen Reduction Reaction in Li-O_2 Batteries by Jenn-Shing Chen, National University of Kaohsiung; Hong-Kai Yang, National University of Kaohsiung; Chih-Chun Chin, National University of Kaohsiung

A02—Batteries - Theory, Modeling, and Simulation

Abst# 152 Understanding the Intrinsic Limits of Ultra-Fast Charge Batteries by Greg Davies, MAE/ACEE Princeton University; Andrew Hsieh, Princeton University; Daniel Steingart, Princeton University

Abst# 160 Real Time Multi-Cell Multiple Chemistry Simulation of Reformulated Electrochemical Battery Models for EV and Grid Applications by Seong Beom Lee, Chemical Engineering, University of Washington, Seattle; Manan Pathak, University of Washington Seattle; Matthew Lawder, EECE Department, Washington University in St. Louis; Venkat Subramanian, Pacific Northwest National Laboratory; Venkat Subramanian, University of Washington, Seattle

A03—Batteries Beyond Lithium-Ion

Abst# 270 High Areal and Volumetric Capacity Li-Ion Battery Electrodes Prepared Via Particle/Polymer Electrospinning by Ethan Self, Vanderbilt University; Emily McRen, Vanderbilt University; Ryszard Wycisk, Vanderbilt University; Peter Pintauro, Vanderbilt University

Abst# 277 High-Performance Olivine for Lithium Batteries: Effects of Ni/Co Doping on the Properties of $LiFe_aNi_bCo_cPO_4$ Cathodes by Gioele Pagot, Department of Chemical Sciences - University of Padova; Federico Bertasi, Department of Chemical Sciences - University of Padova; Graeme Nawn, Department of Chemical Sciences - University of Padova; Enrico Negro, Department of Chemical Sciences - University of Padova; Stefano Polizzi, Department of Molecular Sciences - University of Venice; Vito Di Noto, Department of Chemical Sciences - University of Padova

A08—Materials and Cell Designs for Flexible Energy Storage and Conversion Devices

Abst# 532 Performance of Si-Integrated Li-Ion Microbatteries with Side-By-Side Electrodes: A Geometry Study by Katrin Hoeppner, Berlin Institute of Technology; Marc Ferch, Berlin Institute of Technology; Piotr Mackowiak, Berlin Institute of Technology; Biswajit Mukhopadhyay, Fraunhofer IZM, Berlin; Andreas Froebe, Fraunhofer IZM, Berlin; Robert Gernhardt, Fraunhofer IZM, Berlin; Sebastian Roder, Fraunhofer IZM, Berlin; Krystan Marquardt, Fraunhofer IZM, Berlin; Robert Hahn, Fraunhofer IZM, Berlin

A09—Recent Advances in Supercapacitors

Abst# 582 Highly Porous Carbon Nanospheres and Carbon Foams for Supercapacitors Using Facile Spray Pyrolysisand One-Pot Reaction by Chengwei Wang, Arizona State University; Michael O'Connell, Arizona State University; Candace Chan, Arizona State University

C05—Critical Factors in Localized Corrosion 8

Abst# 704 Comparison of Fractographic Behaviors of Electrochemically Hydrogenated and Liquid N_2 Treated 4340 Steel of Various Microstructures by Mobbassar Hassan SK, Qatar University; Ruel Overfelt, Auburn University; Aboubakr Abdullah, Center for Advanced Materials, Qatar University

F03—Membrane-based Electrochemical Separations

Abst# 971 Removal of Cyanide in Solution Using Electrodeionization by Yun Tian, Zhejiang University; Yang Yang, Zhejiang University; Zheng Fan, Zhejiang Univerisity; Xingxing Wu, Zhejiang Univerisity; Zucheng Wu, Zhejiang Univerisity

G02—Semiconductor Cleaning Science and Technology 14 (SCST 14)

Abst# 1034 (Invited) Nano-Controlled Etching of Polycrystalline Metals - a Key Enabler for Future Technologies by Kanwaljit Singh, Intel Corporation

G05—GaN & SiC Power Technologies 5

Abst# 1120 Avalanche Energy of High-Voltage Silicon and SiC Power Diodes by Krishna Shenai, LoPel Corporation

H01—Low-Dimensional Nanoscale Electronic and Photonic Devices 8

Abst# 1149 (Invited) Enhanced Energy Harvesting Scheme Utilizing Hierarchical Micro/Nanostructures by Yu-Lun Chueh, Dept. of Mater. Sci. and Eng., NTHU

H03—State-of-the-Art Program on Compound Semiconductors 58 (SOTAPOCS 58)

Abst# 1213 Flexible Graphene Electrode-Based Organic Photovoltaics with Record-High Efficiency by Hyesung Park, Ulsan National Institute of Science and Technology; Sehoon Chang, Massachusetts Institute of Technology; Xiang Zhou, Massachusetts Institute of Technology; Jing Kong, Massachusetts Institute of Technology; Tomas Palacios, Massachusetts Institute of Technology; Silvija Gradecak, MIT Department of Materials Science

I04—Ionic Conducting Oxide Thin Films

Abst# 1258 Electrochemical Characterization of Columnar Anodic Thin Films Deposited By

Pulsed Laser Deposition by Adrian Cavazos Sepulveda, Materials for Energy Conversion and Storage Laboratory; Adrian Cavazos Sepulveda, King Abdullah University of Science and Technology; Lei Bi, King Abdullah University of Science and Technology-KAUST; Enrico Traversa, Saudi Arabia

Abst# 1259 Let`s Design the Structural-Defect Twists in Solid State Ionic Films: Strained Architectures for Novel Electronics and Energy Conversion Devices by Jennifer Rupp, Electrochemical Materials ETH Zurich; Jennifer Rupp, Electrochemical Materials, ETH Zurich

I05—Polymer Electrolyte Fuel Cells 15 (PEFC 15)

Abst# 1312 Electrochemical Characterisitcs of Thin Carbon Coatings for Metal Bipolar Plates - Evaluation of the Relative Porosity Using EIS by Hanna Bramfeldt, Sandvik Materials Technology AB; Anna Jansson, Sandvik Materials Technology AB; Gilles Rannou, French Corrosion Institute; Dominique Thierry, French Corrosion Institute

Abst# 1318 Gas Permeation Study in Thin and Ultra-Thin Ionomer Films by Adam Weber, Lawrence Berkeley National Laboratory; Meron Tesfaye, Lawrence Berkeley National Laboratory; Bryan McCloskey, Lawrence Berkeley National Laboratory

Abst# 1330 Stabilization Strategies for PtCo/C Catalysts for Htpem Fuel Cells by Christoph Grimmer, Graz University of Technology; Alexander Schenk, Graz University of Technology; Birgit Pichler, Graz University of Technology; Viktor Hacker, Graz University of Technology

Abst# 1344 Tomographic Analysis of Polymer Electrolyte Fuel Cell Catalyst Layers: Methods, Validity and Challenges by Simon Thiele, University of Freiburg; Severin Vierrath, University of Freiburg; Matthias Klingele, University of Freiburg; Roland Zengerle, University of Freiburg

Abst# 1417 Study of Ionomer Adsorption on Carbon Supported Pt Catalyst By the Quartz-Crystal Microbalance (QCM) Method by Takumi Okuyama, Asahi Glass Co., Ltd.; Shinji Kinoshita, Asahi Glass Co., Ltd.; Toshihiro Tanuma, Asahi Glass Co., Ltd.

Abst# 1429 Effects of Contact Angle Variation of the Gas Flow Channel Walls on Liquid Water Removal in PEMFC by Geunchan Lee, Hanbat National University; Myeongho Song, Hanbat National University; Kyoungyoun Kim, Hanbat National University

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

Abst# 1616 Selective Patterning on Pyrocarbon Interdigitated Electrodes for Bienzymatic Sensing of Glutamate by Kirstin Morton, National Institute of Standards and Technology; Steve Semancik, National Institute of Standards and Technology

Abst# 1629 Electrochemical Investigations of Aromatic Hydrocarbons in Adiponitrile by Graham Cheek, United States Naval Academy

L04—Electrode Processes 10

Abst# 1657 DFT-Based Screening for a New Electro-Catalyst to Convert Nitrigen to Ammonia at Room Temperature and Ambient Pressure by Younes Abghoui, University of Iceland; Egill Skulason, University of Iceland

L06—Photocatalysts, Photoelectrochemical Cells, and Solar Fuels 6

Abst# 1697 Metal Organic Framework Solar Cells: A New Class of Sensitized Light Harvesting Devices by William Maza, Virginia Tech; Amanda Morris, Virginia Tech

M01—Sensors, Actuators, and Microsystems General Session

Abst# 1771 Doped ZnO Nanorod Array for Ultra Low NO_2 Sensing by Rishabh Jain, University of Connecticut; Rishabh Jain, Center for Clean Energy Engineering; Venkata Manthina, Fraunhofer Center for Energy Innovation; Radenka Maric, University of Connecticut; Radenka Maric, Center for Clean Energy Engineering

Z01—General Student Poster Session

Abst# 1910 Irrigation System Using Photovoltaics and Lithium Ion Batteries for Energy Storage by Eugene Moss, Department of Electrical and Computer Engineering; Charles Oladimeji, Department of Electrical and Computer Engineering; Charles Oladimeji, FAMU-FSU College of Engineering; Pedro Moss, Florida A&M University - Florida State University; Mark Weatherspoon, Department of Electrical and Computer Engineering

Wednesday, October 14, 2015

A01—Joint General Session: Batteries and Energy Storage -and- Fuel Cells, Electrolytes, and Energy Conversion

Abst# 102 Rota-Hull Cell Study on Pulse Charging of Zinc/Air Redox Flow Batteries by Christian Zelger, CEST GmbH; Christian Zelger, Graz University of Technology; Jennifer Laumen, Graz University of Technology; Bernhard Gollas, Graz University of Technology

Abst# 105 Lithium Ion Dynamics in Amorphous Li-Si Electrochemically Prepared from Semiconductor Grade, Monocrystalline Silicon - an NMR Study about Local Structures and Li^+ Self-Diffusivity by Andreas Dunst, CD-Laboratory for Li Ion

Batteries, TU-Graz; Michael Sternad, CD-Laboratory for Li Ion Batteries, TU-Graz; Viktor Epp, CD-Laboratory for Li Ion Batteries, TU-Graz; Martin Wilkening, CD-Laboratory for Li Ion Batteries, TU-Graz

Abst# 106 Bulk Silicon/Graphite Alloy Anode Material for High Energy Density Li-Ion Batteries by Myongjai Lee, XALT Energy, LLC; Peter Feng, XALT Energy, LLC; Vishal Mahajan, XALT Energy, LLC; Kevin Dahlberg, Energy Power Systems, LLC; Lamuel David, XALT Energy, LLC; Fabio Albano, XALT Energy, LLC

Abst# 109 A Design of Spherical Skein-like Si/C Composite Structure for Large-Volume-Change Lithium Battery Anodes by Seongho Jeon, Samsung Electronics; Min Je Park, Samsung Fine Chemicals; Mijong Kim, Samsung Electronics; Taehwan Yu, Samsung Fine Chemicals; Seok-Gwang Doo, Samsung Electronics

A05—Electrolytes and Electrochemical Interfaces in Energy Storage Systems

Abst# 401 Optimizing Sintering Conditions of Garnet Electrolytes for Scalable All Solid State Li-Ion Batteries by Dennis McOwen, University of Maryland Energy Research Center; Gregory Hitz, University of Maryland Energy Research Center; Yang Wen, University of Maryland Energy Research Center; Yunhui Gong, University of Maryland Energy Research Center; Tanner Hamann, University of Maryland Energy Research Center; Eric Wachsman, University of Maryland Energy Research Center

A06—High-Energy Li-Ion Intercalation Materials

Abst# 479 Probing Electrochemically-Induced Structural Changes and Defects Affecting Li-Ion Intercalation and De-Intercalation in High Capacity Orthosilicate Cathodes by Xia Lu, Institut de recherche d'Hydro-Québec (IREQ); Hsien-Chieh Chiu, McGill University; Zachary Arthur, University of Guelph; Jigang Zhou, Canadian Light Source; Huijing Wei, McGill University; Ning Chen, Canadian Light Source; Raynald Gauvin, McGill University; De-Tong Jiang, University of Guelph; Karim Zaghib, IREQ; George Demopoulos, McGill University

A07—Intermetallic Anodes

Abst# 514 Dimensionally Stable and Fast-Charging Graphite-Silicon Planar Composite Anode for Li-Ion Batteries by Nae-Lih Wu, National Taiwan University; Nai-Hsuan Yang, National Taiwan University; Yu-Shiang Wu, China University of Science and Technology; Jackey Chou, Long Time Technology Corp.

Abst# 521 $FeSn_5$@Graphene Anodes for Li-Ion and Na-Ion Batteries by Weiqiang Han, NingBo Inst. Mater. Tech. Engi. CAS; Fengxia Xin, NingBo Inst. Mater. Tech. Engi. CAS; Huajun Tian, Ningbo Inst. Mater. Tech. Engi. CAS

Abst# 526 A New Design and Fabrication of Si-C Composite for Lithium-Ion Batteries Anodes

by Ken Ogata, Samsung Advanced Institute of Technology; Ken Ogata, Samsung Research Institute of Japan; Koichi Takei, Samsung Advanced Institute of Technology; Byoung-Sun Lee, Samsung Advanced Institute of Technology; Kang Hee Lee, Samsung Advanced Institute of Technology; Tae-Hwan Yu, Samsung Fine Chemicals; Seokgwang Doo, Samsung Advanced Institute of Technology

A08—Materials and Cell Designs for Flexible Energy Storage and Conversion Devices

Abst# 548 Improving Lto Performance: Gassing, Impedance and Cycling Study by Carine Margez, SAFT America; Bing Tan, SAFT America; Saori Tokuoka, SAFT America; Thomas Greszler, Saft Batteries

Abst# 551 Preparation and Electrochemical Characterization of Polyaniline/Carbon Fiber Binary Composite Film Obtained with Carbon Fiber Treated at Different Temperatures by Dalva Almeida, Instituto Nacional de Pesquisas Espaciais; Carla Fonseca, IQX Inove Qualyx Tecnologia e Desenvolvimento em Resinas; Neidenei Ferreira, Instituto Nacional de Pesquisas Espaciais

Abst# 553 Baseline Si Electrode Fabrication and Performance for the Battery for Advanced Transportation Technologies Program by Zhe Jia, Lawrence Berkeley National Laboratory

C02—Coating and Surface Modification for Corrosion Protection

Abst# 638 Micron Scale Cathodically Coated Graphene Impedes Corrosion on Ti, Cube, and Stainless Steel by Patrick Staley, University of California, San Diego; Joy Metzger, San Diego State University; Danielle Griffo, Luminit, LLC; Emily Simmons, San Diego State University; Chris Griffo, Luminit, LLC; Mark Bennahmias, Bennahmias Consulting; Russel Kurtz, Luminit, LLC; Diane Smith, San Diego State University

Abst# 640 Fabrication and Characterization of Superhydrophobic Poly(vinylidene fluoride-co-hexafluoropropylene)/TiO_2 Nanocomposite Coating for Corrosion Protection Applications by Ahmed Bahgat, Center for Advanced Materials, Qatar University; Aboubakr Abdullah, Center for Advanced Materials, Qatar University; Adel Mohamed, Center for Advanced Materials, Qatar University; Mariam Almaadeed, Center for Advanced Materials, Qatar University

Abst# 649 Copper Nanoparticles Effect on the Corrosion Behavior of Different Types of Nickel-Based Super Alloys by Aboubakr Abdullah, Center for Advanced Materials, Qatar University; Adel Mohamed, Center for Advanced Materials, Qatar University; Mostafa Sliem, Center for Advanced Materials, Qatar University, Qatar

D02—Nonvolatile Memories

Abst# 766 Modulating the Anionic-Electronic Transport Kinetics to Trigger Memristance for

Resistive Switching Non-Volatile Memories: New Materials, Structering and Methods by Jennifer Rupp, Electrochemical Materials ETH Zurich; Felix Messerschmitt, Electrochemical Materials ETH Zurich; Sebastian Schweiger, Electrochemical Materials ETH Zurich; Rafael Schmitt, Electrochemical Materials ETH Zurich; Markus Kubicek, Electrochemical Materials, ETH Zurich

E04—Semiconductors, Metal Oxides, and Composites: Metallization and Electrodeposition of Thin Films and Nanostructures 3

Abst# 934 Electrochemical Deposition of Hybrid Material Based on Polyindole and CdTe/CdS by Magdalena Osial, University of Warsaw

F03—Membrane-based Electrochemical Separations

Abst# 974 Recovery Cyanide from Cyanide-Containing Wastewater By Selective Electroconcentration by Yang Yang, Zhejiang University; Yun Tian, Zhejiang University; Zheng Fan, Zhejiang Univerisity; Xingxing Wu, Zhejiang Univerisity; Zucheng Wu, Zhejiang Univerisity

G01—Atomic Layer Deposition Applications 11

Abst# 992 Synthesis of Transition Metal Dichalcogenide WSe_2thin Films By Atomic Layer Deposition by Kai Zhang, Old Dominion University; Kai Zhang, Applied Research Center; Xin Chen, Old Dominion University; Xin Chen, Applied Research Center; Pengtao Lin, Old Dominion University; Pengtao Lin, Applied Research Center; Quinton Rice, Hampton University; Mahmoud Abdel-Fattah, Hampton University; Felix Seo, Hampton University; Qiliang Li, George Mason University; Helmut Baumgart, Applied Research Center; Helmut Baumgart, Old Dominion University

Abst# 997 On the Growth of Silver Thin Films By Atmospheric-Plasma Spatial ALD by Alfredo Mameli, Eindhoven University of Technology; Fieke van den Bruele, TNO Eindhoven; W.M.M. Kessels, Eindhoven University of Technology; Fred Roozeboom, Eindhoven University of Technology

Abst# 1002 Synthesis of Noble Metal Nanoparticles By Atomic Layer Deposition Utilizing Self-Assembled Monolayers Templates by Qianqian Zhu, Huazhong University of Science and Technology; Kun Cao, Huazhong University of Science and Technology; Bin Shan, Huazhong University of Science and Technology; Rong Chen, Huazhong University of Science and Technology

Abst# 1003 Spectroscopic Ellipsometry Characterization of Pd Thin Film Grown by Atomic Layer Deposition by Yihang Zhang, Huazhong University of Science and Technology; Xueqi Zhou, Huazhong University of Science and Technology; Kun Cao, Huazhong University of Science and Technology; Xiuguo Chen, Huazhong University of Science and Technology; Shiyuan Liu, Huazhong University of Science and Technology; Bin Shan, Huazhong University of Science and Technology; Rong

Chen, Huazhong University of Science and Technology

G05—GaN & SiC Power Technologies 5

Abst# 1131 Leakage Current Mechanisms in Reverse Biased High-Voltage 4H-SiC Power Diodes by Krishna Shenai, LoPel Corporation; Balaji Raghothamachar, Stony Brook University; Michael Dudley, Stony Brook University

H01—Low-Dimensional Nanoscale Electronic and Photonic Devices 8

Abst# 1179 (Invited) Imprinted Functional Nano-Structures for Highly Efficient Photonic Devices by Heon Lee, Korea University

I05—Polymer Electrolyte Fuel Cells 15 (PEFC 15)

Abst# 1467 Study of Polyphenylene Oxide Membranes Containing Long and Short Alkyl Side Chains by Alina Amel, Technion; Yair Ein Eli, Technion

Abst# 1492 Modeling the Effect of Pt Precipitation on PEM Degradation by Sergei Burlatsky, United Technologies Research Center; Vadim Atrazhev, Institute of Biochemical Physics, RAS

Abst# 1512 Effective Nickel and Ruthenium Modified Palladium Anode Catalysts for Ethylene Glycol Oxidation in Alkaline Medium by Rodrigo Da Silva, Universidade de São Paulo; Rodrigo Da Silva, Université de Poitiers; Adalgisa De Andrade, Universidade de São Paulo; Karine Servat, Université de Poitiers; Claudia Morais, Université de Poitiers; Teko Napporn, Université de Poitiers; Kouakou Kokoh, Université de Poitiers

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

Abst# 1632 Electron Transfer Studies Between New Fad-Dependent Glucose Dehydrogenase and Different Osmium Polymers (Applications in Biosensors and Biofuel Cells) by Iqra Aslam, Govt. College University Faisalabad, Pakistan; Muhammad Zafar, University of Gujrat, Gujrat, Pakistan; Roland Ludwig, University of Natural Resources and Life Science, Austria; Dónal Leech, National University of Ireland Galway, Ireland; Lo Gorton, Lund University, Lund, Sweden

L06—Photocatalysts, Photoelectrochemical Cells, and Solar Fuels 6

Abst# 1719 Atomic Layer Deposition of Epitaxial Iron Oxides for Photoelectrochemical Water Oxidation by Jonathan Emery, Argonne National Laboratory; Christian Schlepütz, Argonne National Laboratory; Peijun Guo, Northwestern University; Shannon Riha, Argonne National Laboratory; Robert Chang, Northwestern University; Alex

Martinson, Argonne National Laboratory

Z02—Nanotechnology General Session

Abst# 1929 Fabrication of Large Scale Silver Nanowire Network By Ion Beam Irradiation by Shehla Honey, Center of Excellence in Solid State Physics; Shehla Honey, UNESCO-UNISA Africa Chair in Nanosciences; F.T. Thema, iThemba Labs; F.T. Thema, UNESCO-UNISA Africa Chair in Nanosciences; Ishaq Ahmad, National Centre for Physics; Shahzad Naseem, Centre of Excellence in Solid State Physics; Maaza Malik, iThemba Labs, Somerset West 7129, South Africa; Maaza Malik, UNESCO-UNISA Africa Chair in Nanosciences

Abst# 1930 Influence of Focused Electron Beam on Electrical Characterization of Advanced Mosfets by Jonghyuk Kang, Sungkyunkwan University; Jonghyuk Kang, Samsung Electronics; Sungho Lee, Samsung Electronics Co.; Sungho Lee, Sungkyunkwan University; Byoungdeog Choi, Sungkyunkwan University

Z03—Impedance Technologies, Diagnostics, and Sensing Applications

Abst# 1935 Development of Equivalent Circuits for Litihum-Air Battery Impedance Using Mixed and Isolated Diffusion Models by Ruben Nelson, Florida A&M University - Florida State University; Ruben Nelson, Department of Electrical and Computer Engineering; Mark Weatherspoon, Department of Electrical and Computer Engineering

Abst# 1937 Analysis of Shunt Currents and Associated Corrosion of Bipolar Plates in PEM Fuel Cells by Vadim Lvovich, NASA Glenn Research Center; William Bennett, NASA Glenn Research Center; Mark Hoberecht, NASA Glenn Research Center

Thursday, October 15, 2015

A01—Joint General Session: Batteries and Energy Storage -and- Fuel Cells, Electrolytes, and Energy Conversion

Abst# 131 Estimate the States of Pseudo-Two-Dimensional (P2D) Reformulation Model Li-Ion Battery Management System Using Non-Linear Particle Filter (PF) Compared to Linear Kalman Filter (KF) by Larry Morris, Florida A&M University - Florida State University; Larry Morris, Department of Electrical and Computer Engineering; Mark Weatherspoon, Department of Electrical and Computer Engineering; Jamal Stephens, Department of Electrical and Computer Engineering; Jamal Stephens, FAMU-FSU College of Engineering; Pedro Moss, Florida A&M University - Florida State University

A02—Batteries - Theory, Modeling, and Simulation

Abst# 179 (Invited) Applications of the Reaxff Force Field for Identifying Reactive Properties for Complex Battery Materials and Interfaces by Adri C. T. van Duin, Penn State; Md Mahbubul Islam, Penn State; Alireza Ostadhossein, Penn State; Murali Raju, Stanford; Murali Raju, Penn State; Sulin Zhang, Penn State; Efthimios Kaxiras, Harvard; Oleg Borodin, US Army Research Laboratory

A03—Batteries Beyond Lithium-Ion

Abst# 330 Composite of Two-Dimensional Titanium Carbonitride Mxene and Nano-Sulfur As Cathode for Li-S Batteries by Michael Naguib, Oak Ridge National Laboratory; Hui Wang, Oak Ridge National Laboratory; Chengdu Liang, Oak Ridge National Laboratory; Jagjit Nanda, Oak Ridge National Laboratory

Abst# 331 Carbon Wrapped Sulfur Cathode Materials for Rechargeable Batteries by Arun Kumar, University of Puerto Rico ,Mayaguez; moises-Miguel Gallozzo, University of Puerto Rico, Physics, Mayaguez; Maharaj Tomar, University of Puerto Rico ,Mayaguez

A05—Electrolytes and Electrochemical Interfaces in Energy Storage Systems

Abst# 411 Engineered Ionic Diffusion Layers to Increase Rate Capability of NCA Cathode with Larger Particle Sizes in Lithium-Ion Cells by Kevin Dahlberg, Energy Power Systems, LLC; Debasish Mohanty, Oak Ridge National Laboratory; Vishal Mahajan, XALT Energy, LLC; Myongjai Lee, XALT Energy, LLC; Lisa Stevenson, XALT Energy, LLC; Joel Stanley, XALT Energy, LLC; David King, PneumatiCoat Technologies; David Wood, University of Tennessee; Fabio Albano, XALT Energy, LLC

A06—High-Energy Li-Ion Intercalation Materials

Abst# 502 Laser Battery with Outstanding Liquid Electrolyte Wetting and Performance by Johannes Pröll, Karlsruhe Institute of Technology, IAM-AWP; Hans Seifert, Karlsruhe Institute of Technology, IAM-AWP; Wilhelm Pfleging, Karlsruhe Nano Micro Facility, H.-von-Helmholtz-Platz; Wilhelm Pfleging, Karlsruhe Institute of Technology, IAM-AWP

Abst# 510 Biwedge Octahedron-Shaped Li-Excess Nickel-Manganese Oxide Cathode Showing Remarkably Suppressed Potential Fade by Nae-Lih Wu, National Taiwan University; Wen-Chin Chen, National Taiwan University; Hung-Chun Wu, Industrial Technology Research Institute

E04—Semiconductors, Metal Oxides, and Composites: Metallization and Electrodeposition of Thin Films and Nanostructures 3

Abst# 941 Construction of Asymmetric Graphene Sandwiches: Decoration Using

Semiconductor and Metal Nanostructures by Peter Toth, School of Chemistry, University of Manchester; Robert Dryfe, School of Chemistry, University of Manchester

Abst# 949 Bottom-up Filling of Damascene Trenches with Cobalt By Electroplating Process by Chiao-Chien Wei, BASF/AP/CME/Wet Deposition; Eric Chou, BASF/AP/CME/Wet Deposition; Steve Shih, BASF/AP/CME/Wet Deposition; Shih-Ming Lin, BASF/AP/CME/Wet Deposition

l05—Polymer Electrolyte Fuel Cells 15 (PEFC 15)

Abst# 1555 Determination of Permeability of the Gas Diffusion Layer of Proton Exchange Membrane Fuel Cells (PEMFCs) by Sadegh Hasanpour, the University of British Columbia; Mina Hoorfar, University of British Columbia; Andre Phillion, The University of British Columbia

L06—Photocatalysts, Photoelectrochemical Cells, and Solar Fuels 6

Abst# 1738 Impact of Catalyst Performance on the Life-Cycle CO_2 Emissions of Methanol Production By Direct Electrocatalytic Reduction of CO_2 by Matthew Pellow, Global Climate and Energy Project, Stanford University; Sally Benson, Dept. of Energy Resources Engineering, Stanford Univ.; Sally Benson, Global Climate and Energy Project, Stanford University