Sunday, October 2, 2016

A01—Batteries and Energy Technology Joint General Session

Abst# 3 Novel Vanadium Based Cation-Disordered Lithium Transition Metal Oxides for Li-Ion Batteries by Musa Cambaz, Helmholtz Institute Ulm for Electrochemical Storage; Maximilian Fichtner, Karlsruhe Institute of Technology (KIT), Germany

Abst# 12 In Operando Structural and Acoustic Analysis of Lithium-Ion Batteries by Andrew Hsieh, Princeton University; Greg Davies, MAE/ACEE Princeton University; Michael Wang, Princeton University; Daniel Steingart, Princeton University

Abst# 14 Battery Degradation and Cost Analysis of a Lithium Ion Battery System for a 1 MW Green Energy Hub (GEH) by Larry Morris, Department of Electrical and Computer Engineering; Mark Weatherspoon, Florida A&M University - Florida State University

Abst# 16 Reconfigurable Battery Pack for a Lithium Based Battery Charger for BMS Applications by Larry Morris, Department of Electrical and Computer Engineering; Mark Weatherspoon, Florida A&M University - Florida State University; Jamal Stephens, Department of Electrical and Computer Engineering; Pedro Moss, Florida A&M University - Florida State University

A05—Beyond Li-ion Batteries

Abst# 639 Building Stable Radical Cations for Non-Aqueous Redox Flow Batteries by Lu Zhang, Joint Center for Energy Storage Research (JCESR); Ilya Shkrob, Argonne National Laboratory; Wes Brogden, University of Michgan; Wentao Duan, Pacific Northwest National Laboratory; Xiaoliang Wei, Pacific Northwest National Laboratory; Rajeev Assary, Materials Science Division, Argonne National Laboratory; Lei Cheng, Argonne Nation

Abst# 642 Room Temperature, Hybrid Na-Based Flow Batteries with Organic Catholytes and Multi-Electron Transfer Redox Reactions by Jack Shamie, Wanger Institute for Sustainable Energy Research; Caihong Liu, Illinois Institute of Technology; Leon Shaw, Wanger Institute for Sustainable Energy Research; Leon Shaw, Illinois Institute of Technology; Vincent Sprenkle, Pacific Northwest National Laboratory

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

Abst# 647 Design and Optimization of Carbon Foam Electrode for Local Confinement of Bromine in Non-Flowing Single-Chamber Zinc Bromine Batteries by Shaurjo Biswas, Princeton University; Aoi Senju, Princeton University; Thomas Hodson, Princeton University; Xiaofang Yang, Princeton University; Bruce Koel, Princeton University; Daniel Steingart, Princeton University

I01—Polymer Electrolyte Fuel Cells 16 (PEFC 16)

Abst# 2363 A Hydrogen Evolution Reaction Catalyst Using Nickel Phosphides with Mixed Crystalline Structure by Gaoyang Liu, South University of Science and Technology of China; Juyuan Xu, Institute of Metal Research, Chinese Academy of Science; Xindong Wang, University of Science and Technology Beijing; Hui Li, South University of Science and Technology of China; Haijiang Wang, South University of Science and Technology of China

Abst# 2364 Monocrystalline $Ni_{12}P_5$ Hollow Spheres with Ultrahigh Specific Surface Area As Advanced Electrocatalysts for the Hydrogen Evolution Reaction by Jinfa Chang, Changchun Institute of Applied Chemistry; Songtao Li, Jilin University; Guoqiang Li, Changchun Institute of Applied Chemistry; Liang Liang, Changchun Institute of Applied Chemistry; Junjie Ge, HNEI, University of Hawaii - Manoa; Changpeng Liu, Changchun Institute of Applied Chemistry; Wei Xing, Changchun Institute of Applied C

Abst# 2365 Deposition of Nickel Hydroxide on Pt/C to Improve the Efficiency of the Hydrogen Evolution Reaction in Solid-State Alkaline Water Electrolyzers by Guanxiong Wang, Illinois Institute of Technology; Javier Parrondo, Illinois Institute of Technology; Cheng He, Illinois Institute of Technology; Yanxin Li, Illinois Institute of Technology; Vijay Ramani, Illinois Institute of Technology

Abst# 2366 Hydrogen Evolution Reaction on Pt/RuO_2-TiO_2 Electrocatalyst in Alkaline Media by Cheng He, Illinois Institute of Technology; Guanxiong Wang, Illinois Institute of Technology; Javier Parrondo, Illinois Institute of Technology; Vijay Ramani, Illinois Institute of Technology

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

Abst# 3317 Noble Metal Nanoparticle for Oxygen Electroreduction: Size, Shape, Ligand and Composition Effects by Zhenghua Tang, South China University of Technology; Likai Wang, South China University of Technology; Hongyu Yang, South China University of Technology; Qiannan Wang, South China University of Technology; Wei Yan, South China University of Technology; Shaowei Chen, Univeristy of California at Santa Cruz; Shaowei Chen, South China Universi

Abst# 3323 Structural Manipulation of Carbon Nitride for Electrochemiluminescent Analysis by

Yuanjian Zhang, Southeast University

L02—Molten Salts and Ionic Liquids 20

Abst# 3439 Dense Carbon Coated Electrode for Biosensing Application Made By Platingin 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 CO_2 Reduction at Si Photocathodes by Bijandra Kumar, University of Louisville; Joseph Brian, University of Louisville; Joshua Spurgeon, University of Louisville

Abst# 3602 Characterizing CO_2 Reduction Mechanism Using Advanced Synchrotron-Based X-Ray Spectroscopy Techniques by Maryam Farmand, Joint Center for Artificial Synthesis; Maryam Farmand, Lawrence Berkeley National Laboratory; Walter Drisdell, Lawrence Berkeley National Laboratory; Chenghao Wu, Lawrence Berkeley National Laboratory; Junko Yano, Molecular Biophysics and Integrated Bioimaging Division; Jeremy Feaster, Stanford University Department of Chem

Z03—Electrochemical Energy Summit (E2S) - Poster Session

Abst# 4175 The Effect of the Amount of Intercalated Li-Ions on the Electrochemical Performances and the Color Changes in the Electrochromic Layer by Taeyeong Han, Hanbat National University; Hoogil Lee, Hanbat National University; Seokwoo Kim, Hanbat National University; Myung-Hyun Ryou, Hanbat National University; Yong Min Lee, Hanbat National University

Z04—Electrochemical Energy Summit (E2S): Recent Progress in Renewable Energy Generation, Distribution, and Storage

Abst# 4181 (Keynote) DOE's Efforts to Accelerate Federally-Funded Technology to the Marketplace by Robert Dixon, US Department of Energy

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

Abst# 28 Rde Kinetic Study of V(IV)/V(V) and V(II)/V(III) Reactions on Thermally Activated and Non-Activated Carbon Felts by Yue Li, Illinois Institute of Technology; Javier Parrondo, Illinois Institute of Technology; Vijay Ramani, Illinois Institute of Technology

A02—Challenges in Advanced Analytical Tools and Techniques for Batteries: A Symposium in Honor of Zempachi Ogumi

Abst# 156 (Invited) From Solid State Chemistry to Battery Materials Electrochemistry: A Tool for Solid State Chemistry by Claude Delmas, ICMCB - CNRS

Abst# 160 Imaging the Surface of $LiMn_2O_4$ with Low-Dose STEM by Charles Amos, The University of Texas at Austin; Paulo Ferreira, The University of Texas at Austin; John Goodenough, The University of Texas at Austin

A03—Li-Ion Batteries

Abst# 243 Controlled Deposition of Li Metal by Yejing Li, Institute of Physics, Chinese Academy of Sciences; Xuefeng Wang, Institute of Physics, Chinese Academy of Sciences; Zhaoxiang Wang, Institute of Physics, Chinese Academy of Sciences; Liquan Chen, Institute of Physics, Chinese Academy of Sciences

Abst# 256 Room Temperature Synthesized Hybrid Open Frameworks for Li-Ion Battery Cathodes by Shahul Hameed Abdulrahman, Qatar University; Siham Al-Qaradawi, Qatar University; Erhan Deniz, Qatar University; M.V. Reddy, National University of Singapore

A05—Beyond Li-ion Batteries

Abst# 650 The Gamma-V_2O_5 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

A07—Electrochemical Capacitors and Related Devices: Fundamentals to Applications

Abst# 943 3D Printed Structural Pseudocapacitors - a Multi-Scale X-Ray Tomography Study by Xinhua Liu, Imperial College London; Rhodri Jervis, University College London; Robert Maher, Imperial College; Ignacio Villar-Garcia, Imperial College London; Max Naylor-Marlow, Imperial College London; Paul Shearing, University College London; Mengzheng Ouyang, Imperial College London; Lesley Cohen, Imperial College; Nigel Brandon, Imperi

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

Abst# 1221 Nitridation of a Fecral Alloy in H_2+N_2 Environment at 900^{o}c: A Microstructural Study by Nooshin Mortazavi, Chalmers University of Technology; Christine Geers, Chalmers University of Technology; Bo JÃ¶nsson, Sandvik Heating Technology AB; Jan-Erik Svensson, Chalmers University of Technology; Gustav Sundell, Chalmers University of Technology; Lars-Gunnar Johansson, Chalmers University of Technology; Mats Halvarsson, Chalmers Uni

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 SchÃ¤fer, Leibnitz inst. for Plasma Sci. and Technol. Greifswald; Jaroslav Hnilica, Masaryk University Brno; Jens Harhausen, Leibniz Institute for Plasma Sci. and Technol. Greifswald

Abst# 1504 (Invited) Atmospheric Pressure Microplasma Jet: Properties and Applications in Synthesis of Nanoparticles by Xiao-Xia Zhong, Shanghai Jiao Tong University

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

Abst# 1537 Effects of Additives on Ag Nanoparticles Catalyzed Electroless Copper Deposition Using Glyoxylic Acid As a Reducing Agent by Yu-Chen Chang, National Chiao Tung University; Shih-Cheng Chou, National Chiao Tung University; Pu-Wei Wu, National Chiao Tung University; Po-Chun Chen, National Taipei University of Technology; Meng-Chi Huang, Industrial Technology Research Institute; Yu-Ming Wang, Industrial Technology Research Institute; Chang-Jung Hsueh, Industrial Tec

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, UniversitÃ© 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

G04—Processing Materials of 3D Interconnects, Damascene and Electronics Packaging 8

Abst# 1899 a Study on Via Filling Performance in a High-Aspect-Ratio Though-Silicon Via with Various Conditions of Leveler by SangHoon Jin, Korea Institute of Industrial Technology (KITECH); SangHoon Jin, Korea Aerospace University; Woon-Young Lee, Korea Institute of Industrial Technology; Dong-Ryul Lee, Korea Institute of Industrial Technology (KITECH); Yu-Jin Lee, Yonsei University; SangYul Lee, Korea Aerospace University; Min-Hyung Lee, Korea Institute of Indu

G05—SiGe, Ge, and Related Materials: Materials, Processing, and Devices 7

Abst# 1958 (Invited)Â Negative Capacitance Transistors by Sayeef Salahuddin, University of California, Berkeley

Abst# 1959 A Computational Study of Tunneling Field-Effect Transistors: Challenges and Design Optimizations by Gengchiau Liang, National University of Singapore; Kain Lu Low, National University of Singapore

H02—Semiconductor Wafer Bonding: Science, Technology and Applications 14

Abst# 2079 III-V/Si Hybrid Laser Array with Dbr on Si Waveguide by Ran Zhao, Peking University; Tao Li, Peking University; Li Yanping, Peking University; Weixi Chen, Peking University; Jiaoqing Pan, Institute of Semiconductors; Lijun Yuan, Institute of Semiconductors, Chinese Academy of Science

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 CO_2 Electroreduction with Significant Activity and Selectivity Improvements by Seoin Back, Korea Advanced Institute of Science and Technology; Juhyung 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 $NaLaF_4$ 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 Krieke, Institute of Solid State Physics, University of Latvia; Janis Jansons, Institute of Solid State Physics, Univers

K01—Bioengineering Based on Electrochemistry

Abst# 3216 Bioelectronically Initiated Cyt P450s Catalysis without NADPH by Songqin Liu,

Southeast University; Xuan Xu, Southeast University

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

Abst# 3335 New Family of High-Efficieincy Oxygen Evolution Electrocatalyst Based on Ni-Fe Mixed Chalcogenides by Abdurazag Swesi, Missouri University of Science & Technology; Jahangir Masud, Missouri University of Science & Technology; Manashi Nath, Missouri University of Science & Technology

L02—Molten Salts and Ionic Liquids 20

Abst# 3450 Electrochemical Reduction of UO_2 to U in LiCl-KCl Molten Salt Eutectic Using the Fluidized Cathode Process by Rema Abdulaziz, University College London; Leon Brown, University College London; Douglas Inman, University College London; Clint Sharrad, University of Manchester; Paul Shearing, University College London; Daniel Brett, University College London

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

Abst# 3732 ZnO Nanostructured Wires for Gas Sensing Applications by Amir Abidov, Tashkent State Technical University; Sevara Abdukarimova, Tashkent State Technical University; Umida Ziyamukhamedova, Tashkent State Technical University; Eadi Sunil Babu, Kumoh National Institute of Technology; Soon-Wook Jeong, Kumoh National Institute of Technology; Sungjin Kim, Kumoh National Institute of Technology

Tuesday, October 4, 2016

A01—Batteries and Energy Technology Joint General Session

Abst# 41 A Multi-Dimensional Vanadium Redox Flow Battery Performance Model Accounting for Species Crossover by Federico Moro, University of Padua; Alberto Bertucco, University of Padua; Monica Giomo, University of Padua; Massimo Guarnieri, University of Padua

Abst# 48 Electrochemical Refrigeration and Energy Harvesting with the Vanadium-Bromide Couples by Ian McKay, Stanford University; Jay Schwalbe, Stanford University; Matteo Cargnello, Stanford University; Arun Majumdar, Stanford University

Abst# 60 Carbon/Air Thermal Battery: New Materials and Performance by John Cooper, John F Cooper Consulting, LLC

Abst# 63 Anthraquinone Functionalized Reduced Graphene OxideÂ As Electrode Material for

Rechargeable BatteriesÂ Â by Burak Esat, Fatih University; Sumeyye Bahceci, Fatih Univeristy; Anton Momchilov, Bulgarian Academy Of Sciences

Abst# 68 Toward Active and Durable ORR/Oer Bifunctional Non-PGM Electrocatalysts: Surfactant-Assisted Electrodeposition of Mn Oxides by Pooya Hosseini Benhangi, The University of British Columbia; Chun Haow Kung, The University of British Columbia; Akram Alfantazi, Dept of Materials Eng, The University of British Columbia; Elod Gyenge, University of British Columbia

Abst# 70 Ultrasonic Sonochemical Synthesis and Electrochemical Study of Na-Li-Ti-O Quaternary Anode Materials for Secondary Batteries by Swatilekha Ghosh, Indian Institute of Science; Prabeer Barpanda, Indian Institute of Science

Abst# 72 Three-Dimensional Si-Based Composite Nanorods Array Applied in Energy Storage System by Jing Li, Xiamen University; Chuang Yue, Xiamen University; Yingjian Yu, Xiamen University; Wei Lin, Xiamen University; Mingsen Zheng, Xiamen University; Junyong Kang, Xiamen University

Abst# 73 Multivalent Zinc Ion, Nickel Ion and Magananese Ion Batteries: Recent Progress and Battery Products by Chengjun Xu, College of William and Mary

Abst# 74 Composite Nafion-Functionalized PDMS Electrospun Fibers for Direct Methanol Fuel Cells by Yunxi Li, Jilin University; George Mason, University of British Columbia; Mina Hoorfar, University of British Columbia

Abst# 79 Antimony Sulphide As an Anode Material for Lithium and Sodium Ion Batteries by Hyukjae Lee, Andong National University; Chang-Yong Park, Andong National University

Abst# 87 Podiform Graphene-Sulfur Composite for Lithium Sulfur Battery by Yi Guo, Sichuan University; Yun Zhang, Sichuan University

Abst# 97 Electrochemical Charge-Discharge Properties of Co-S/x Wt.% AB5 Composite Materials in Nickel-Based Batteries by Jiajia Li, The Synergetic Innovation Center for Advanced Materials; Jiajia Li, Nanjing Tech University,China; Xiangyu Zhao, Nanjing tech University, China

Abst# 101 Titanium Dioxide As a High Capacity Anode for High Voltage Aqueous Lithium-Ion Batteries by Anirudh Ramanujapuram, Georgia Institute of Technology; Daniel Gordon, Georgia Institute of Technology; Keith Coffman, Georgia Institute of Technology; RamÃ³n A. Sosa, Georgia Institute of Technology; Shuchen Zhang, Georgia Institute of Technology; Gleb Yushin, Georgia Institute of Technology

Abst# 102 Hybrid Energy Harvester Using Piezoelectric and Pyroelectric Properties of PVDF

Nanocomposite Films by Ashok Batra, AL. A&M Univ.; Almuatasim Alomari, AL. A&M Univ.; David Brown, AL. A&M Univ.

Abst# 104 The Materials for Sodium Battery: Synthesis and Electrochemical Characterization by Van Hoang Nguyen, VNU-HCM University of Science; Tran Man, VNU-HCM University of Science; Nguyen Huynh, VNU-HCM University of Science; LE Phung, VNU-HCM University of Science

Abst# 105 Breakthrough in Increasing Li-Ion Battery Energy and Safety, and Reducing Cost. Synergistic Effect of Novel Nanomaterials, Technology, Equipment for Production, and Non-Destructive Method of the Testing by Elena Shembel, Enerize Corporation; Vlad Redko, Enerize Corporation, FL. USA; Nikolai Klyui, Enerize Corporation; Alexandr Markevich, Ukrainian State Chemical Technology University; Valeriy Tutyk, Enerize Corporation; Irina Maksyuta, Ukrainian State Chemical Technology Iniversity; Olga Kolomoyets, Ukrainian State Chemical Technology Univer

A03—Li-Ion Batteries

Abst# 275 Investigation of the Conductivity Effect on Silicon Anode Performance for Lithium Ion Batteries by Neslihan Yuca, Enwair Energy Technologies Corp.; Neslihan Yuca, Istanbul Technical University; Murat Ferhat DoÄŸdu, Enwair Energy Technologies Corp.; Mehmet Cetintasoglu, Enwair Energy Technologies Corp.; Omer Taskin, Enwair Energy Technologies Corp.; Ipek Avci, Enwair Energy Technologies Corp.

Abst# 288 Investigation of Pristine $Li_{1.2}Ni_{0.13}Mn_{0.56}Co_{0.13}O_2$ By Advanced TEM by Christian Wiktor, McMaster University; Hanshuo Liu, McMaster University; Meng Jiang, GM R&D Center; Yan Wu, General Motors Global R&D; Xingyi Yang, Optimal CAE; Gianluigi Botton, McMaster University

Abst# 299 Mixing and Coating Procedure Development for $LiNiCoAlO_2$ cathodes at Prototype Production Scale by Marcus Jahn, The University of Warwick; Irene Rubio, WMG; Daniel Gonzalez, The University of Warwick; Rohit Bhagat, University of Warwick

Abst# 311 High Performance and Flexible Si Anodes Enabled By a Facile Electrode Design by Kun Feng, University of Waterloo; Matthew Li, University of Waterloo; Zhongwei Chen, University of Waterloo

Abst# 316 Sulfur Atoms Bridging Few-Layered MoS_2 with S-Doped Graphene Enables Highly Robust Anode for Lithium-Ion Batteries by Xiaolei Wang, University of Waterloo; Ge Li, University of Waterloo; Min Ho Seo, University of Waterloo; Zhongwei Chen, University of Waterloo

Abst# 317 Nanostructured MoS_2/Graphene Composite As Superior Anode Material for Li-Ion Batteries by Yongqiang Teng, University of Science and Technology Beijing; Hailei

Zhao, University of Science and Technology Beijing; Zijia Zhang, University of Science and Technology Beijing; Zhaolin Li, University of Science and Technology Beijing; Qing Xia, University of Science and Technology Beijing; Yang Zhang, University of Science and Technolog

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# 947 Significant Performance Enhancement in Asymmetric Supercapacitors with Redox Additive Aqueous Electrolyte and Trade-Off Between Capacitance/Cycling at Elevated Temperatures by Arvinder Singh, Indian Institute of Technology Kharagpur; Amreesh Chandra, Indian Institute of Technology Kharagpur

Abst# 966 Interconnected Carbon Nanostructures for High Performance Supercapacitor Applications by Hyun-Kyung Kim, University of Cambridge; Ali Reza Kamali, University of Cambridge; R Kumar, University of Cambridge; Derek John Fray, University of Cambridge

Abst# 968 Investigation of Self Supporting Paper-like Structures Fabricated with Few-Layer Exfoliated Graphene Platelets and Composites with Birnessite-MnO_2 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# 971 Preparation and Electrochemical Properties of the Pouch-Type Edlc by Ick-Jun Kim, Korea Electrotechnology Research Institute; Sunhye Yang, Korea Electrotechnology Research Institute; Sang-Min Lim, Korea Electrotechnology Research Institute; Bo-Kun Koo, Korea Electrotechnology Research Institute

Abst# 974 Fabrication and Enhanced Electrochemical Properties of $Bi_{3.64}Mo_{0.36}O_{6.55}$ Nanoparticles with a High Bi Content for Pseudocapacitor Electrodes by Xiaoheng Liu, nanjing university of science and technology; Dan Zhu, nanjing university of science and technology; Weiwei Wang, nanjing university of science and technology

Abst# 975 Facile Synthesis of Nickel Cobalt Layered Double Hydroxides Microspheres with High Pseudocapacitive Performance by Daosong Zha, Nanjing University of Sci. & Tech.; Qiaofeng Han, Nanjing University of Sci. & Tech.; Xin Wang, Nanjing University of Science and Technology

Abst# 977 Activated Carbons By Nitrogen Doped Chemical Activation and Their Performance forÂ Electrical Double Layer Capacitors by Masaaki Yoshikawa, Osaka Gas co., ltd.; Hiroyuki Fujimoto, Osaka Gas Co., Ltd. Energy Technology Laboratories

Abst# 979 Vertically Stacked Bilayer $CuCo_2O_4/MnCo_2O_4$ heterostructures on Functionalized Graphite Paper for High-Performance Electrochemical Capacitors by Shude Liu, Pusan National University; Kwan San Hui, Hanyang University; Kwun Nam Hui, Institute of Applied Physics and Materials Engineering

Abst# 980 In-Situ TEM Analysis of Ink-Jet Printed MnO_2-Graphene for Supercapacitor Electrodes by Lorcan McKeon, CRANN, School of Physics, Trinity College Dublin; Edmund Long, CRANN, School of Physics, Trinity College Dublin; JoÃ£o Coelho, School of Chemistry/CRANN,Trinity College Dublin; Chuanfang Zhang, CRANN, School of Chemistry, Trinity College Dublin; Sang Hoon Park, Trinity College Dublin; Richard Coull, CRANN, Trinity College Dub

Abst# 982 Electrochemical Properties of CO_2 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

Abst# 985 Three-Dimensional Graphene Sponge with Hierarchically Porous Structure for Electrochemical Supercapacitors by Changsheng Shan, Los Alamos National Laborotary; Hsing-Lin Wang, Los Alamos National Lab

Abst# 986 Synthesized the Nano-Rod Structured Metal Oxide By AAO Template Method Application to Electrochemical Capacitors by Cheong Kim, Chungbuk National University; Hiroki Habazaki, Hokkaido University; Soo-gil Park, Chungbuk National University

Abst# 989 Graphene Oxide Self-Assembled with a Cationic Fullerene for High Performance Supercapacitor Applications by Krishnan Senthilkumar, Suncheon University

Abst# 990 High Performance Supercapacitors Electrode Based on N-Doped Carbon Nanofibers by Rong Liu, Harbin Institute of Technology; Fangping Zhang, Harbin Institute of Technology; Enyuan Li, Harbin Institute of Technology; Jun Xu, Harbin Institute of Technology; Guohui Yuan, Harbin Institute of Technology

Abst# 1000 Optoelectronics and Electrochemical Properties of RuO_2/PEDOT:PSS Transparent, Conductive Ultrathin Films by Chuanfang Zhang, CRANN, School of Chemistry, Trinity College Dublin; Thomas Higgins, CRANN, School of Physics, Trinity College Dublin; Sang Hoon Park, Trinity College Dublin; Jonathan Coleman, School of Physics and CRANN, Trinity College Dublin; Valeria Nicolosi, CRANN, School of Chemistry, Trinity College Dublin

Abst# 1005 Polyaniline / Nickel Ferrite / Nitrogen Doped Graphene Ternary Composite for Supercapacitors by Xifeng Xia, Nanjing University of Science and Technology; Luyou Tong, Nanjing University of Science and Technology; Wu Lei, Nanjing University of Science and Technology; Qingli Hao, Nanjing University of Science and Technology

Abst# 1006 Wearable Fiber-Shaped Solid-State Supercapacitors Based on Hierarchical MoS_2 for a Self-Powered Photodetecting System by Bin Wang, Institute of Chemical Materials, CAEP; Jianli Cheng, Institute of Chemical Materials, CAEP

B01—Carbon Nanostructures: From Fundamental Studies to Applications and Devices

Abst# 1046 Control Synthesis of Nitrogen Doped Carbon Nanotubes and Their Application in Energy Storage by Hao Liu, Chengdu Green Energy and Green Technology R&D Center; Jun Mei, Chengdu Green Energy and Green Technology R&D Center

Abst# 1047 CVD Grown Mwcnts and Graphene for Pemfcs Application by Daniela Ion-Ebrasu, ICSI-Rm. Valcea; Stanica Enache, ICSI-Rm. Valcea; Constantin Bubulinca, ICSI-Rm. Valcea; Elena Carcadea, ICSI Rm. Valcea; Mihai Varlam, ICSI-Rm. Valcea; Ioan Stefanescu, ICSI-Rm. Valcea; Gunther Wittstock, Carl von Ossietzky University of Oldenburg

Abst# 1050 Gallium Catalysed Direct Growth of Graphene Epitaxial Layer on SiC Substrates By Chemical Vapor Deposition by Kulandaivel Jeganathan, Bharathidasan University; Periyanagounder Dharmaraj, Bharathidasan University

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# 1059 Macroscale Superlubricity Enabled By Ensembles of Graphene on Diamond Nanoscrolls by Subramanian Sankaranarayanan, Argonne National Laboratory

Abst# 1064 Improving Gas Barrier Performance of Polymer Nanocomposites with Carbon Nanotube Nanofillers by Yanbin Cui, Institute of Process Engineering, CAS; S Kumar, Masdar Institute of Science and Technology

Abst# 1065 RCC Inspired Synthesis ofÂ Graphene - Carbon Nanotube Hybrid for Use in Flexible Electronics by Brahma Teja M S, Sri Sathya Sai Institute of Higher Learning; Siva Kumar B, Sri Sathya Sai Institute of Higher Learning

Abst# 1066 Improved Performance in Flexible Organic Solarcells Via Optimization of Highly Transparent Silvergrid/Graphene Electrodes by Jung Hwa Seo, Dong-A University; Bright Walker, Ulsan National Institute of Science and Technology

Abst# 1069 Scalable Conversion of Carbon Dioxide into Graphene for Electrochemical Energy Storage by Chen Li, Institute of Electrical Engineering; Xiong Zhang, Institute of Electrical Engineering; Yanwei Ma, Institute of Electrical Engineering

Abst# 1076 Study of the Active Centers and Reaction Mechanism of Fe/IRMOF-3 Derived Porous Carbons As Fe-N-C Electrocatalysts in Oxygen Reduction Reaction by Hui Sun, Institute of New Energy; Haixia Su, College of Chemical Engineering; Xingyu Ma, College of Chemical Engineering; Xin Zhang, College of Chemical Engineering

Abst# 1079 MixingÂ 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-UniversitÃ¤t DÃ¼sseldorf

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

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Abst# 1230 High Temperature Corrosion of High Strength Materials for Boiler Applications in the Temperature Range from 550 C to 750 C by Lorenz Singheiser, Forschungszentrum JÃ¼lich GmbH; Joanna Zurek, Forschungszentrum JÃ¼lich GmbH; Pawel Huczkowski, Forschungszentrum JÃ¼lich GmbH; Michael MÃ¼ller, Forschungszentrum JÃ¼lich GmbH; Joe Quadakkers, Forschungszentrum JÃ¼lich GmbH

Abst# 1236 Investigation of Passive Layers Formed on Alloy 600 in Zinc Containing High Temperature Primary Water by Yifan Jiang, University of California Berkeley; Thomas Devine, University of California Berkeley

C04—Pits & Pores 7: Nanomaterials â€“ Fabrication Processes, Properties, and Applications

Abst# 1281 Modeling of Porous Metal Oxide Layer Growth in the Anodization Process by Michal

Habera, Charles University in Prague

C06—Metallic, Organic and Composite Coatings for Corrosion Protection

Abst# 1342 Microstructure and EIS Characterization of Multi-Layered Coatings on Metals by Shawei Tang, Harbin Inst Technol; Jin Hu, Harbin Inst Technol

Abst# 1345 The Effect of Environmental Stress Crazing on the Corrosion Performance of PET Coated Packaging Steel by David Warren, Swansea University; Arnoud de Vooys, Tata Steel; Hamilton McMurray, Swansea University

Abst# 1351 A Novel, Highly Effective, Chrome-Free, Smart-Release, Economically Viable Corrosion Inhibitor- from Lab Kinetics through to Industrial Coating Incorporation by Patrick Dodds, Swansea University; Geraint Williams, Swansea University; Phil Ansell, Swansea University; Carol Glover, Swansea University

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Abst# 1381 Flexible Crystalline Silicon Solar Cell with Vertically Aligned Microwire Arrays by Inchan Hwang, Ulsan National Institute of Science and Technology; Han-Don Um, Ulsan National Institute of Science and Technology; Kwanyong Seo, Ulsan National Institute of Science and Technology

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-

Abst# 1520 IR Laser Modifications of Anodic Tantalum Pentoxide for Photonic Applications by Alina Kulpa, The University of British Columbia

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# 1758 (Invited) Ceramic Membranes for Gas Separation and Electro-Synthesis: Effect of Surface and Interfaces by Yu Chen, School of Materials Science and Engineering, Georgia Tech; Meilin Liu, School of Materials Science and Engineering, Georgia Tech

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

Abst# 1766 Lithium Conducting Solid Electrolytes for Electrolysis of Lithium Tritide and Enrichment of Lithium-6 by Luke Olson, Savannah River National Laboratory; Brenda Garcia-Diaz, Savannah River National Laboratory; Hector Colon-Mercado, Savannah River National Laboratory; Joseph Teprovich, Savannah River National Laboratory

G03—Atomic Layer Deposition Applications 12

Abst# 1864 (Invited) Nanostructured Photocatalysts Prepared By Atomic Layer Deposition by Imre Szilagyi, Budapest University of Technology and Economics

Abst# 1870 Refractory Solar Selective Coatings Synthesized By Atomic Layer Deposition by Anil Mane, Argonne National Laboratory; Joseph Libera, Argonne National Laboratory; Angel Yanguas-Gil, Argonne National Laboratory; Jason Avila, Argonne National Laboratory; Jeffrey Elam, Argonne National Laboratory

G04—Processing Materials of 3D Interconnects, Damascene and Electronics Packaging 8

Abst# 1928 Effect of Cu Diffusion on Electrical and Reliability Characteristics of Low Dielectric Constant Dielectrics by Yi-Lung Cheng, National Chi-Nan University; Yao-Jia Zhuang, National Chi-Nan University

G05—SiGe, Ge, and Related Materials: Materials, Processing, and Devices 7

Abst# 1979 RAMAN Characterization of $Ge_{1-X}Sn_X$ Allows By Using a SPACE Correlation MODEL by HÃ©ctor PÃ©rez LadrÃ³n de Guevara, Universidad de Guadalajara;

Miguel Angel Vidal Borbolla, CIACYT Universidad AutÃ³noma de San LuÃs PotosÃ; Angel Gabriel Rodriguez Vazquez, CIACYT Universidad AutÃ³noma de San LuÃs PotosÃ; Hugo Ricardo Navarro Contreras, CIACYT Universidad AutÃ³noma de San LuÃs PotosÃ

Abst# 1981 Fabrication and Characterization of SiGe on Insulator through Condensation and Wafer Bonding Techniques by Mohammad Noroozi, KTH Royal Institute of Technology; Bejan Hamawandi, KTH Royal Institute of Technology; Muhammet Toprak, KTH Royal Institute of Technology; Henry Radamson, KTH Royal Institute of Technology

H02—Semiconductor Wafer Bonding: Science, Technology and Applications 14

Abst# 2096 Direct Wafer Bonding and Layer Exfoliation of Sapphire by Christine Wong, University of California, Los Angeles; Melissa Forstell, University of California, Los Angeles; Mark Goorsky, University of California, Los Angeles

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

Abst# 2142 Stretched-Exponential Trends in a-Igzo Tfts by Fan Zhou, Oregon State University; Tsung Chiang, Oregon State University; John Wager, Oregon State University

Abst# 2144 Comprehensive Depletion-Mode Model for TFT Assessment by Fan Zhou, Oregon State University; Tsung Chiang, Oregon State University; John Wager, Oregon State University

H04—Low-Dimensional Nanoscale Electronic and Photonic Devices 9

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

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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# 2443 Mimicking Active Pt_3ni (111) Surface on Pt_3ni Icosahedron for Oxygen Reduction by Wei Xing, Changchun Institute of Applied Chemistry; Jianbing Zhu, changchun

institute of applied chemistry; Meiling Xiao, changchun institute of applied chemistry; Songtao Li, Jilin University; Junjie Ge, Changchun Institute of Applied Chemistry; Changpeng Liu, Changchun Institute of Applied Chemistry

Abst# 2449 A Controllable Synthesis of Pt-Based Electrocatalyst for the Oxygen Reduction Reaction of PEMFC with High Pt Utilization by Fengjuan Zhu, Shanghai Jiao Tong University; Liuxuan Luo, Institute of Fuel Cells, Shanghai Jiao Tong University; Shuiyun Shen, Institute of Fuel Cells,Shanghai Jiao Tong University; Guofeng Xia, Institute of Fuel Cells,Shanghai Jiao Tong University; Junliang Zhang, Institute of Fuel Cells,Shanghai Jiao Tong 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# 2486 (Invited) A General Strategy to Synthesize High-Performance Open Nanoframe Structured Catalysts by Pei Kang Shen, Guangxi University

Abst# 2506 Gold-Supported Cerium-Doped NiO_x Catalysts for Water Oxidation by Desmond Ng, Stanford University; Max GarcÃa-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

Abst# 2507 Electron-Conducting Perovskites As Oer Electrocatalysts in Alkaline Medium by Anchal Jain, Illinois Institute of Technology; Vijay Ramani, Illinois Institute of Technology

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Abst# 3027 CO_2 Electro-Reduction on Bio-Inspired Iron Sulfide Under Mild Conditions by Alberto Roldan, Cardiff University; Nora de Leeuw, Cardiff University

Abst# 3048 Pomegranate-Inspired Design of Highly Active and Durable Bifunctional Electrocatalysts for Rechargeable Metal-Air Batteries by Ge Li, University of Waterloo; Xiaolei Wang, University of Waterloo; Zhongwei Chen, University of Waterloo

J01—Luminescence and Display Materials: Fundamentals and Applications

Abst# 3137 Both Directional Organic Light-Emitting Diodes Using Thin Film Electrodes by Jong-Lam Lee, POSTECH; Illhwan Lee, POSTECH

Abst# 3138 Low Temperature Fluorinated Silicon Films Synthesis by Dmitry Milovzorov, Fluens Technology Group Ltd

Abst# 3142 Ooptically and Thermally Stimulated Luminescence in x-Ray Irradiated Sn-Doped Sro-B_2O_3 and ZnO-P_2O_3 Glasses for Passive-Type Dosimeter by Hidehito Nanto, Kanazawa Institute of Technology; Ryota Nankagawa, Kanazawa Institute of Technology; Yoshinori Takei, Kanazawa Institute of Technology; Kazuki Hirasawa, Kanazawa Institute of Technology; Yuka Miyamoto, Chiyoda Technol Co.; Hirokazu Masai, Kyoto University; Go Okada, NAIST; Takayuki Yanagida, NAIST

Abst# 3154 Zinc Phosphate Glasses Doped Yttrium-Europium Oxide, a Luminescence Study by L. Mariscal B., CINVESTAV; S. Carmona-Tellez, CINVESTAV; H. Murrieta, IF UNAM; Ciro Falcony, CINVESTAV; Zacarias Rivera-Ãlvarez, Cinvestav

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

Abst# 3239 Electrochemical and Power Performance of Microbial Fuel Cells: A Novel Numerical Approach by Giacomo Falcucci, University of Naples "Parthenope"; Rosa Anna Nastro, University of Naples "Parthenope"; Viviana Cigolotti, ENEA; Mariagiovanna Minutillo, University of Naples "Parthenope"; Elio Jannelli, University of Naples "Parthenope"

Abst# 3260 Effects of Temperature and Calciums on the Treatment of Organics and Nutrient in Swine Wastewater Using an Integrated BioelectrochemicalÂ Ion-Exchange System by Seung Lim, Korea Atomic Energy Research Institute; Tak-Hyun Kim, Korea Atomic Energy Research Institute

K02—Recent Advances in the Application of Electrochemistry to Problems in Organic Chemistry

and Biology

Abst# 3306 Electrochemical Studies of Cysteine by Matthew Worosz, United States Naval Academy; Graham Cheek, United States Naval Academy

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

Abst# 3345 Rational Band Structure Engineering of TiO_2 for Photoelectrochemical Water Splitting by Wan-Jian Yin, Soochow University

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

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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

Abst# 3469 Electrochemical Synthesis and Electrocatalytic Activity of Nano-Powders of Tungsten Carbide by Inessa Novoselova, V.Vernadskii Institute of General & Inorganic Chemistry; Sergei Kuleshov, V.Vernadskii Institute of General & Inorganic Chemistry; Elena Fedoryshena, V.Vernadskii Institute of General & Inorganic Chemistry

Abst# 3488 Electrochemical Synthesis of Nanomaterials in Molten Salts by Sergey Kuznetsov, Institute of Chemistry, Kola Science Centre RAS

Abst# 3492 Electrochemical Synthesis of Tantalum Carbide in the NaCl-KCl-K_2TaF_7-K_2CO_3 Melt by Vladimir Dolmatov, Institute of Chemistry, Kola Science Centre RAS; Sergey Kuznetsov, Institute of Chemistry, Kola Science Centre RAS

Abst# 3493 Influence of the Alkaline Earth Metal Cations on the Standard Rate Constants of Charge Transfer for the Redox Couple Ti(IV)/Ti(III) in Chloride-Fluoride Melts by Daria Vetrova, Institute of Chemistry, Kola Science Centre RAS; Sergey Kuznetsov, Institute of Chemistry, Kola Science Centre RAS

Abst# 3494 Solubility of Calcium and Zirconium Oxides in Melts CaO-$(CaCl_2$-$MCl)_{eut}$ and CaO-

$CaCl_2$-MCl (M - Li, Na, K) by Ruslan Savchuk, Institute of General & Inorganic Chemistry; Larisa Gritsai, Institute of General & Inorganic Chemistry; Anatolii Omel'chuk, Institute of General & Inorganic Chemistry

Abst# 3495 Intervalence Charge Transfer of the Nb(V)/Nb(IV) Redox Couple in Alkali Chloride Melts: Experiment and Quantum-Chemical Calculations by Anna Popova, Institute of Chemistry, Kola Science Centre RAS; Vyacheslav Kremenetsky, Institute of Chemistry, Kola Science Centre RAS; Sergey Kuznetsov, Institute of Chemistry, Kola Science Centre RAS

Abst# 3496 Electrochemical Reduction of Zirconia in Melts Based on Mixture of Calcium Chloride and Calcium Oxide by Larisa Gritsai, Institute of General & Inorganic Chemistry; Anatolii Omel'chuk, Institute of General & Inorganic Chemistry

Abst# 3498 Protective Ceramic Coatings on the Base of the Refractory Metals Carbides by Yuriy Stulov, Institute of Chemistry, Kola Science Centre RAS; Vladimir Dolmatov, Institute of Chemistry, Kola Science Centre RAS; Sergey Kuznetsov, Institute of Chemistry, Kola Science Centre RAS

Abst# 3501 Electrochemical Synthesis of $LaSi_2$ from a NaCl-Naf-LaF_3-K_2SiF_6 Melt at 1023 K by Svetlana Kochetova, Institute of General and Inorganic Chemistry; Ruslan Savchuk, Institute of General & Inorganic Chemistry; Alexandr Pisanenko, Institute of General and Inorganic Chemistry; Sergei Devyatkin, Institute of General and Inorganic Chemistry

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Abst# 3583 Nano-Surface FinishingÂ forÂ ElectrothermalÂ InstabilityÂ Evolution Studies by W. Yelton, Sandia National Labs, Albuquerque, New Mexico, 87185, USA; T.J. Awe, Sandia National Labs; Jamin Pillars, Sandia National Labs; E.P. Yu, Sandia National Labs; K.J. Peterson, Sandia National Labs; S.E. Rosenthal, Sandia National Labs; D.B. Sinars, Sandia National Labs; M.R. Gomez, Sandia National Labs; R.a. Vesey, Sandia National

Abst# 3591 Study about Overall Adhesion-Spreading Process of Liposomes on a Gold Electrode. Influence of the Presence of CdTe Quantum Dots by Eduardo MuÃ±oz, Pontificia Universidad CatÃ³lica de ValparaÃso; Javier RomÃ¡n, Pontificia Universidad CatÃ³lica de ValparaÃso; Emilio Navarrete, Pontificia Universidad CatÃ³lica de ValparaÃso; Ricardo Schrebler, Pontificia Universidad CatÃ³lica de ValparaÃso

Abst# 3594 Kinetic Regularities of Lead Dioxide Electrocrystallization by Olesia Shmychkova, Ukrainian State University of Chemical Technology; Tatiana Luk'yanenko, Ukrainian State University of Chemical Technology; Alexander Velichenko, Ukrainian State University of Chemical Technology; Rossano Amadelli, UniversitÃ di Ferrara

L04—Photocatalysts, Photoelectrochemical Cells, and Solar Fuels 7

Abst# 3639 Synthesis and Characterization of g-C_3N_4/$B_{12}O_{17}Cl_2$ Composites with Visible-Light Photocatalytic Performance by Lifeng Dong, Hamline University; Lifeng Dong, Qingdao University of Science and Technology; Xuegang Yu, Qingdao University of Science and Technology; Yan Shan, Qingdao University of Science and Technology

Abst# 3640 Photoelectrochemical Hydrogen Production Using Inverted Perovskite Solar Cell by Oh Ilhwan, Kumoh National Institute of Technology; Han Jihun, Kumoh National Institute Of Technology

Abst# 3646 Simultaneous Decomposition and Energy Production from Industrial and Bio- Waste Using Flexible Photocatalytic Fuel Cell by Gregory Lui, University of Waterloo; Gaopeng Jiang, University of Waterloo; Jared Lenos, University of Waterloo; Edric Lin, University of Waterloo; Michael Fowler, University of Waterloo; Aiping Yu, Univerisity of Waterloo; Zhongwei Chen, University of Waterloo

Abst# 3648 High Efficiency Photoelectrochemical Water Splitting Using Graphene/GaN Nanowire Photoelectrode by Jun-Seok Ha, Chonnam national university; Hyojung Bae, Chonnam national university; Jung-Wook Min, Gwangju Institute of Science and Technology; Dong-Ju Seo, Gwangju Institute of Science and Technology; Hokyun Ryo, Korea Institute of Science and Technology; Hyo-Jong Lee, Dept. Materials Science and Engineering Dong-A Univ.; Dong-Seon Lee, G

Abst# 3656 Three-Dimensional ZnO-$BiVO_4$ Core-Shell Nanosturctured Array for Photoelectrochemical Water Oxidation by Jih-Sheng Yang, National Cheng Kung University; Jih-Jen Wu, National Cheng Kung University

Abst# 3678 Photoelectrochemical Behaviour of Pulse Electrodepoisted $CuIn_{0.9}Al_{0.1}Se_2$ Thin Films by Kollegal Ramakrishna Murali, University of Madras; Thirummorthy Thiru M, Shree Venkateshwara Hi-Tech Engineering College; Ramesh RamK, Vidyaa Vikas College of Engineering and Technology

Abst# 3679 Photo-Electrochemical Investigation of Single Crystalline and Polycrystalline TiO_2 Nanostructures for Solar Hydrogen Production by Bee Yang, Kumoh National of Institute of Technology

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

Abst# 3766 Printable Hecl Electrode Materials for Disposable Bioaffinity Assay Cartridges by Sakari Kulmala, Department of Chemistry, Aalto University; Kalle Salminen, Department of Chemistry, Aalto University; PÃ¤ivi Kuosmanen, Department of Chemistry, Aalto University

Abst# 3769 Amyloid Î² Detection with Integrative Chip for Alzheimer Desease by Jeong Hoon Lee, Kwangwoon University; Yong Kyoung Yoo, Kwangwoon University; Kyo Seon Hwang, Korea Institute of Science and Technology

Abst# 3771 Highly Swellable Hydrogel Electrolyte for Metal Air Battery by Naoya Yamada, Yamagata University; Kumkum Ahmed, Yamagata University; Masato Wada, Yamagata University; Ajit Khosla, Yamagata University; Hidemitsu Furukawa, Yamagata University

Abst# 3772 Disposable Plasmonic Plastic SERS Sensor Using Gold Nanoparticles Arrays by Minwoo Song, University of Suwon; Dooyong Lee, University of Suwon; Hee Jung Park, Western Seoul Center Korea Basic Institute; Seunghyun Lee, University of Suwon

Abst# 3773 Mercury Chemical Sensors Based on Chalcogenide Glasses by Alla Paraskiva, University of Littoral, France; Mariana Milochova, University of Littoral, France; Sohayb Khaoulani, University of Littoral, France; Eugene Bychkov, University of Littoral, France

Abst# 3784 Versatile Sensing Platform Assemble on Flexible Organic Transistors by Caizhi Liao, The Hong Kong Polytechnic University; Feng Yan, The Hong Kong Polytechnic University

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

Abst# 3792 Electrochemical Study of Conducting Poly(thionine) Electropolymerization in Two Methods and Its Significance for the Detection of Dopamine by Mohammad Rahman, Department of Applied Life Science, Konkuk University; Chuang-ye Ge, Dongguk University; Jae Joon Lee, Dongguk University

M02—Microfabricated and Nanofabricated Systems for MEMS/NEMS 12

Abst# 3859 Enhanced ZnO Nanorods Field Emitter with Adsorbed Silver Nanoparticles by Sheng-Joue Young, National Formosa University Taiwan

Abst# 3862 Hydrogel Coating on Soft Polymeric Substrates for Microfabricated Devices by Kumkum Ahmed, Yamagata University; Naoya Yamada, Yamagata University; Masato Wada, Yamagata University; Toshiki Kameyama, Yokohama National University; Masaru Kawakami, Yamagata University; Ajit Khosla, Yamagata University; Hidemitsu Furukawa, Yamagata University

Abst# 3866 New Top-Down Approach for Fabricating Si-Based Nanostructures by Lingkuan Meng, Institute of Microelectronics,CAS; Xiaobin He, Institute of Microelectronics,CAS; Jianfeng Gao, Institute of Microelectronics,CAS; Junjie Li, Institute of Microelectronics,CAS; Yayi Wei, Institute of Microelectronics,CAS; Jiang Yan, Institute of Microelectronics,CAS

Abst# 3867 Plasmonic Nanostructures for High-Performance Biosensing Devices by Bo Xiao, Norfolk State University; Sangram Pradhan, Norfolk State University; Kevin Santiago, Center for Materials Research, Norfolk State University; Gugu Rutherford, Center for Materials Research, Norfolk State University; Aswini Pradhan, Center for Materials Research

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 Invsetigation on High Charge Density of States in Electrocheimcal PolymerÂ Transistor by Jiyoul Lee, Pukyong National University

Abst# 3879 Anionic-Exchange Ionomer-Films for Electrocatalytic Applications by Paolo Bertoncello, 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# 3904 High Performance Piezoelectric Nanogenerators Using Vanadium-Doped Ferroelectric Â ZnO Nanosheets and Polymer Composite by Junghyo Nah, Chungnam National University; Sung-Ho Shin, Chungnam National University; Yang Hyeog Kwon, Chungnam National University; Min Hyung Lee, Kyung Hee University

Abst# 3905 Nano-Biosensors: An Advanced and Essential Tool in Monitoring Microcystins in Water by Vasileia Vogiazi, 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# 3906 Approaches for Extractive Hydrometallurgy of Niobium and Tantalum from Ethiopian Kenticha Ores by Goitom Gebreyohannes Berhe, Mekelle University

Abst# 3907 Improvement of Hot Hole-Induced Degradation in HV Pmosfets by Dongjun Lee, Samsung Electronics Co.; Dongjun Lee, Sungkyunkwan University; Changsub Lee, Samsung Electronics Co.; Duheon Song, Samsung Electronics Co.; Byoung-deog Choi, Sungkyunkwan University

Abst# 3909 Fabrication of TiO_2 Based Microspheres By Spray Drying Method and Their Application for Dye-Sensitized Solar Cells by Maho Mizuno, Tokai University; Koji Tomita, Tokai University; Yoshihito Kunugi, Tokai University

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

Abst# 3925 Electrical Characterization of Electron Beam Induced Damage on Sub-10nm SRAM Using Nano-Probing Technique by Jonghyuk Kang, Samsung Electronics Co.; Jonghyuk Kang, Sungkyunkwan University; Sungho Lee, Sungkyunkwan University; Sungho Lee, Samsung Electronics Co.; Byoung-deog Choi, Sungkyunkwan University

Abst# 4006 In-Situ Synthesis of Tungsten Carbides Functional Support for PEMFC Catalyst by JI-Won Oh, Korea University; Hyunwoong Na, Korea Institute of Industrial Technology; Sahn Nahm, Korea University; Hanshin Choi, Korea Institute of Industrial Technology

Abst# 4007 Preparation of High Durable Catalyst By Morphological ChangeÂ of Carbon Support for PEMFC by Hyunwoong Na, Yonsei University; JI-Won Oh, Korea Institute of Industrial Technology; Yong Soo Cho, Yonsei University; Hanshin Choi, Korea Institute of Industrial Technology

Abst# 4016 Facile Synthesis of Low and Non-Precious Metal Nanocatalysts for Oxygen Reduction Reaction in Fuel Cells by Shaofang Fu, Washington State University; Chengzhou Zhu, Washington State University; Junhua Song, Washington State University; Dan Du, Washington State University; Yuehe Lin, Washington State University

Abst# 4046 Development of Miniaturized Nongassing Electroosmotic Pump for the Drug Delivery by Enhua Zhu, Sogang University; Woonsup Shin, Department of

Chemistry, Sogang University

Abst# 4089 Analysis of Electrochemical Behavior of Carbon Nanomaterials Doped with Sulfur and Their Use As Support of Pt Nanoparticles by Elizabeth Montiel-Macias, Instituto Tecnologico de Cancun; Perla Balbuena, Texas A&M University; Ana Valenzuela-MuÃ±iz, Instituto Tecnologico de Cancun; Ysmael Verde GÃ³mez, Instituto TecnolÃ³gico de CancÃºn

Abst# 4106 Multi-Scale Modeling of Lithium-Ion Batteries by Geonhui Gwak, Inha University; Hyunchul Ju, Inha University

Abst# 4114 Effect of Surface Nanocrystallization on the Sensitization and Desensitization Behaviors of the Novel Super304H Stainless Steel by Rui.Kun Wang, South China University of Technology

Abst# 4115 2D Metal Carbide($Ti_3C_2T_x$) Electrochemical Capacitors in Ionic Liquids by Mohamed Alhabeb, A.J Drexel Nanomaterials Institute; Katherine Van Aken, A. J. Drexel Nanomaterials Institute; Babak Anasori, A.J. Drexel Nanomaterials Institute; Yury Gogotsi, Drexel University

Abst# 4116 *In-Situ* Cross-Sectional SEM Observations of Li Plating and Stripping on Oxide-Based-Solid-State Electrolytes by Ryusuke Tsukamoto, Graduate School of Engineering, Nagoya University; Fumihiro Yonemoto, Graduate School of Engineering, Nagoya University; Munekazu Motoyama, Graduate School of Engineering, Nagoya University; Yasutoshi Iriyama, Graduate School of Engineering, Nagoya University

Z05—Late Poster Session

Abst# 4186 Electrochemical Detection of Low-Concentration Ammonia Gas on Miniaturised Electrodes in Room Temperature Ionic Liquids by Ghulam Hussain, Curtin University; Debbie Silvester, Curtin University

Abst# 4187 Design and Fabrication of an Ultrasonic Waveguide for Microchip Cooling Applications by Hyunse Kim, Korea Institute of Machinery and Materials; Euisu Lim, Korea Institute of Machinery and Materials

Abst# 4190 Mesoporous Materials by Duc Dam, Nanyang Technological University; Jong-Min Lee, Nanyang Technological University

Abst# 4191 Ceramic Polymer Composite Electrolytes (CPCE) for Wearable Metal Battery by Brian Henslee, Cornerstone Research Group, Inc.; Jitendra Kumar, University of Dayton Research Institute; Priyanka Bhattacharya, University of Dayton Research Institute; Guru Subramanyam, University of Dayton

Abst# 4193 Gear Train Triboelectric Nanogenerator (TENG) System for Enhancing Power Conversion Efficiency (PCE) by Dukhyun Choi, Kyung Hee University

Abst# 4194 The Prospects of Functionalized Cellulose-based â€˜Papersâ€™ 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

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A01—Batteries and Energy Technology Joint General Session

Abst# 110 Real-Time Observations of Electrochemical Reactions in Rechargeable Energy Storage Systems by Reza Shahbazian-Yassar, University of Illinois at Chicago

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# 337 First Principle Investigation of C606 Molecule Absorption on Graphene As 2D Eco-Electrode of Lithium-Ion Battery by Zicheng Wang, Beihang University; Junxia Meng, Beihang University; Lishuang Xu, Beihang University; Huaizhe Xu, Beihang University

Abst# 339 Development and Validation of a ROM Incorporated By a Semi-Empirical Aging Model for a Large-Format LiFePO4/Graphite Cell by Xinchen Zhao, Auburn University; Song-Yul Choe, Auburn University

Abst# 340 Quinone Derivatives for Lithium-Ion Batteries: First-Principles Density Functional Theory Modeling by Seung Soon Jang, Georgia Institute of Technology; Seung Woo Lee, Georgia Institute of Technology

Abst# 349 Analysis on Overvoltage Relaxation of Lithium Secondary Batteries after Current Interruption by Tomohiro Ito, Academic Asssembly, Yamagata University; Kazuhiro Tachibana, Academic Asssembly, Yamagata University; Tatsuo Nishina, Academic Asssembly, Yamagata University; Takao Kawahira, IMV CORPORATION

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# 354 Performance of Si-Integrated Li-Ion Microbatteries with Side-By-Side Electrodes: A Geometry Study by Katrin Hoeppner, Berlin Institute of Technology

Abst# 364 Towards a Better Understanding of Batteries: Manufacturing and Modeling Using Comsol by Pedro Moss, Florida A&M University - Florida State University; Seshuteja Chepyala, Florida A&M University - Florida State University; Mark Weatherspoon, Florida A&M University - Florida State University

Abst# 368 High Capacity and High POWER Ncm/Graphite Lithium ION Battery Using MicrogridÂ® Expanded Metal Current Collectors by John Hart, Dexmet

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# 372 Influence of the Degree of Doping on the Efficiency in a Battery LiFePO4 - Yttrium Used As Cathode Material by Francisco Herrera, Universidad de Santiago de Chile; Paulina Marquez, Universidad de Santiago de Chile; Domingo Ruiz, Universidad de Santiago de Chile; Juan Luis Gautier, universidad de Santiago de Chile; Daniela Alburquenque, universidad de Santiago de Chile

Abst# 373 Impedance Analysis of High Capacity Manganese Rich Cathode in Lithium Ion Batteries by Wen-feng Mao, Lawrence Berkeley National Laboratory; Wen-feng Mao, Guangzhou Automobile Group Co., Ltd.; Yanbao Fu, Lawrence Berkeley National Laboratory; Vince Battaglia, Lawrence Berkeley National Laboratory

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# 377 Core-Shelled Low-Oxidation State Oxides@Reduced Graphene Oxides Cubes Via Pressurized Reduction for Highly Stable Lithium Ion Storage by Ping Li, Sungkyunkwan University; Jong Hyeok Park, Yonsei University

Abst# 385 The Effect of Upper Voltage Limits on Electrochemical Performance of Li-Rich Cathode for Lithium Ion Batteries by Mehmet Cetintasoglu, ENWAIR; Neslihan Yuca, Istanbul Technical University; Omer Taskin, Kirklareli University; Murat Dogdu, ENWAIR; Ipek Avci, Enwair Energy Technologies Corp.

Abst# 395 3D Hierarchical Anode Configuration Composed of Ultralong N-Doped Graphene Scrolls-Wrapped MnO Nanowires for High-Performance Li-Ion Batteries by Hao Wu,

College of Materials Science and Engineering; Penghui Chen, College of Materials Science and Engineering; Yun Zhang, Sichuan 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# 398 Hierarchical Porous Carbon Derived from Low-Cost Sucrose for Advanced Lithium-Sulfur Batteries by Heng Liu, Sichuan University; Ming Xiang, Sichuan University

Abst# 402 LiVxFeyPO$_4$f Nanostructure Cathodes for Lithium Ion Batteries by V. S. Reddy Channu, Avomeen LLC; Shri Thanedar, Avomeen LLC

Abst# 403 Electrochemical Characteristics of Coal Tar Pitch Prepared By Chemical Activation for Lithium Ion Battery by Jong Dae Lee, Chungbuk National University; Jin Ung Hwang, Chungbuk National University

Abst# 410 Microstructure and Electrochemical Properties of the Si-M(M : Cr, Ni) Anode for Lib According to the Si Amount by SeongHyeun Lee, Chungnam National University; Sung-soo Kim, Chungnam National University

Abst# 418 Understand the Voltage Fade Mechanism of Li-Rich Layered Oxide Cathodes during Extended Cycling by Quanxin Ma, Harbin Institute of Technology; Changsong Dai, Harbin Institute of Technology

Abst# 420 $Li_3V_2(PO_4)_3$ Particles Anchored in Carbon Nanofiber As a Cathode Material for High-Power Lithium Rechargeable Battery by Jeongyim Shin, Dept. of Energy and Materials Eng., Dongguk University; Junghoon Yang, Dept. of Energy and Materials Eng., Dongguk University; Yong-Mook Kang, Dept. of Energy and Materials Eng., Dongguk University

Abst# 421 Cobalt Ferrite Nanoparticles Anchored on Functionalized Graphene Oxide for High Performance Lithium Ion Battery by Xianmin Zhao, Nanjing University of Science and Technology; Qiaofeng Han, Nanjing University of Science and Technology; Yongsheng Fu, Nanjing University of Science and Technology

Abst# 425 Electrochemical Properties of $LiNi_{0.85}Co_{0.10}Al_{0.05}O_2$ synthesized By Using AAO(Anodic Aluminum Oxide) Template by Mi-Ra Shin, Korea National University of transportation

Abst# 451 Heat-Resisting and Flame-Retarding Difunctional Separators for Safe Lithium-Ion Battery by Suyeon Hwang, Hanbat National University; Hyunkyu Jeon, Hanbat National University; Taejoo Lee, Hanbat National University; Myung-Hyun Ryou,

Hanbat National University; Yong Min Lee, Hanbat National University

Abst# 452 Electrochemical Properties of Nb-Based Oxides As Active Materials for the Negative Electrode of Lithium Secondary Batteries by Soon-Ki Jeong, Soonchunhyang University; Yang Soo Kim, Korea Basic Science Institute

Abst# 453 Nickel Oxalate Dihydrate Nanorods Attached to Reduced Graphene Oxide Sheets As a High Capacity Anode for Rechargeable Lithium Batteries by Seung-Taek Myung, Sejong University; Chang Heum Jo, Sejong University; Chong seung Yoon, Hanyang University; Hitoshi Yashiro, Iwate University; Yang-Kook Sun, Department of Energy Engineering, Hanyang University

Abst# 456 The Effects of Surface Polyanions on the Lithium-Excess Layered Cathode by Guofeng Xu, University of Science and Technology Beijing; Jianling Li, University of Science and Technology Beijing; Xindong Wang, University of Science and Technology Beijing

Abst# 463 Role of Water Molecules on the Electrochemical Properties of Î±-MnO_2 Hydrate: A Combined Computational and Experimental Study by Huan Duan, Graduate School at Shenzhen, Tsinghua University; Baozheng Jiang, Graduate School at Shenzhen, Tsinghua University; Jia Li, Graduate School at Shenzhen, Tsinghua University; Chengjun Xu, Graduate School at Shenzhen, Tsinghua University; Lin Gan, Graduate School at Shenzhen, Tsinghua University; Hongda Du, Graduate School at Shen

Abst# 465 Graphene Coated $LiNi_{0.5}Mn_{1.5}O_4$ for High Power Positive Electrode Material of Lithium Batteries by Chang-Woo Lee, Department of Chemical Engineering, Donga University; Jun-Ho Kim, Department of Chemical Engineering, Dong-A University; Hyun-Ju Lee, Department of Chemical Engineering, Dong-A University; Jeom-Soo Kim, Department of Chemical Engineering, Dong-A University

Abst# 468 Morphology-Tuned $NiCo_2O_4$-Coated 3D Graphene Rrchitectures As Binder-Free Electrode for Lithium Ion Battery by Chunfei Zhang, DGIST; Jong-Sung Yu, DGIST

A04—Advances in Electrolytes for Lithium Batteries

Abst# 578 Chemical and Structural Changes of Li_2s-P_2S_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 $Li_7La_3Zr_2O_{12}$ 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

Abst# 599 High Ionic Conductivity and Moduli Iongels Made with Tetraglyme/Litfsi /Methyl Cellulose for Lithium Batteries by Parameswara Rao Chinnam, Temple University; Sumanth Chereddy, Temple University; Stephanie Wunder, Temple University

Abst# 602 A Piperidinium-Based Ester-Functionalized Task-Specific Ionic Liquid As Electrolytes in Li/$LiFePO_4$ Batteries by Peixia Yang, Harbin Institute of Technology; Xiaona Pan, Harbin Institute of Technology; Jinqiu Zhang, Harbin Institute of Technology; Maozhong An, Harbin Institute of Technology

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# 696 Structural and Chemical Synergistic Encapsulation of Polysulfides Enables Ultralong-Life Lithium-Sulfur Batteries by Xiaolei Wang, University of Waterloo; Ge Li, University of Waterloo; Jingde Li, University of Waterloo; Zhongwei Chen, University of Waterloo

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# 709 Sulfur-Embedded Polymers for High Performance Li-S Batteries by Jang Wook Choi, KAIST

Abst# 713 Computational Modelling Studies on Stability of Li-S-Se System by Phuti Ngoepe,

University of Limpopo; Cliffton Masedi, University of Limpopo/CSIR; Happy Sithole, CSIR

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

Abst# 719 Developing Li-Metal Alloy Batteries with High Cyclability and Rate Capability by Junjie Niu, University of Wisconsin-Milwaukee

Abst# 720 Investigation of $Nafe(PO_3)_3$ and $Na_3Fe_3(PO_4)_4$ Orthophosphates for Sodium-Ion Batteries: Structural and Electrochemical Insight by Ritambhara Gond, Indian Institute of Science; Ganesh Shinde, Indian Institute of Science; Prabeer Barpanda, Indian Institute of Science

Abst# 728 Honeycomb-Layer Structured Na3M(II)2M(V)O6 Cathode for Sodium-Ion Batteries by Kyung-Wan Nam, Dongguk University

Abst# 730 Exploring the Electrochemical Reaction Mechanism of Carbonate Oxidation in Li-Air/CO_2 Battery through Tracing Missing Oxygen by Ping He, Nanjing University

Abst# 733 Oxygen Selective Membrane for Lithium Air Batteries by Lujie Cao, South University of Science and Technology of China; Fucong Lv, South University of Science and Technology of China; Ying Liu, South University of Science and Technology of China; Wenxi Wang, South University of Science and Technology of China; Yifeng Huo, South University of Science and Technology of China; Zhouguang Lu, South

Abst# 737 Synthesis and Characterization of Distorted Orthorhombic Type $Na_{0.7}MnO_2$ Cathode Material By Spray Pyrolysis by Ji Ung Choi, Sejong University; Seung-Taek Myung, Sejong University

Abst# 741 Compatibility Studies with New F-Free Electrolyte for Sodium Ion Batteries by Anna Bitner-Michalska, Warsaw University of Technology, Faculty of Chemistry; Tomasz Trzeciak, Warsaw University of Technology, Faculty of Chemistry; Marcin Poterala, Warsaw Technical University, Faculty of Chemistry; Grazyna Zukowska, Warsaw University of Technology, Faculty of Chemistry; Leszek Niedzicki, Warsaw University of Technology,

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# 773 Performance Enhancement in Redox Flow Batteries Using Bismuth Based Catalyst by Yongchai Kwon, Seoul National University of Science and Technology; Yustian Suharto, Seoul National University of Science and Technology; Seungwon Yang, Seoul National University of Science and Technology; Ki Jae Kim, Seoul National University of Science and Technology

Abst# 775 Study on Lithium-Sulfur Batteries by Yong-Gang Wang, Fudan University; Lina Wang, Fudan University; Shouyi Yuan, Fudan University; Yong-Yao Xia, Fudan 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

Abst# 796 Decomposition Mechanism of Discharged Product in Lithium Air Battery Optimized By Dandelion-like $NiCo_2O_4$ Hollow Sphere by Bo Chi, Huazhong University of Scienc and Technology; Lu Zou, Huazhong University of Science &Technology; Yuexing Jiang, Huazhong University of Science and Technology; Junfang Cheng, Huazhong University of Science and Technology; Jin Li, Huazhong University of Science and Technology; Jun Li, Huazhong University of Science and Techonolgy

Abst# 799 The Effects of Electrolyte Variations on the Oxygen Efficiency in Lithium Air Batteries by Kyoung Han Ryu, HYUNDAI MOTOR COMPANY; Won Keun Kim, HYUNDAI MOTOR COMPANY; Samuel Seo, HYUNDAI MOTOR COMPANY; Ho-Teak Lee, HYUNDAI MOTOR COMPANY

Abst# 803 Vanadium Dioxide Reduced Graphene Oxide Composite As Cathode Materials for Rechargeable Li and Na Batteries by Seung-Taek Myung, Sejong University; Nurul Mahadi, SEJONG UNIVERSITY; Jae sang Park, Sejong University; Yang-Kook Sun, Department of Energy Engineering, Hanyang University

Abst# 805 Thermally Reduced Graphite Oxide for Potassium Ion Battery Anodes by Jae Jeong, Sunchon National University, Sunchon, S. Korea.; Myoungho Pyo, Sunchon National University, Sunchon, S. Korea.,

Abst# 806 Short and Intermediate Range Ordering in Fast Cation Glasses for Battery Applications by Mohammad Kassem, University of Littoral, France; Takeshi Usuki, Yamagata University, Japan; Eugene Bychkov, University of Littoral, France

Abst# 812 Electro Chemical Properties of Hard Carbon Single Particles for Anode in Sodium Ion Batteries by SeongHyeon Lim, Chungnam national university; Yuto Yamada, Tokyo Metropolitan University; Sung-soo Kim, Chungnam National University; Kiyoshi Kanamura, Tokyo Metropolitan University

Abst# 813 Mesoporous Sodium Vanadium Phosphate/Carbon As Efficient Cathode Materials for Rechargeable Sodium-Ion Batteries by Tai-Feng Hung, Industrial Technology Research Institute; Wei-Jen Cheng, National Taiwan University of Science and Technology; Wen-Sheng Chang, Industrial Technology Research Institute; Chang-Chung Yang, Industrial Technology Research Institute; Yu-Lin Kuo, National Taiwan University of Science and Technology

Abst# 816 A Simple Approach of Electrolyte Development for Magnesium Ion Battery by Niya Sa, JCESR at Argonne National Laboratory; Hao Wang, Joint Center for Energy Storage Research; Baris Key, JCESR at Argonne National Laboratory; Scott Brombosz, Argonne National Lab; Anthony Burrell, National Renewable Energy Laboratory; John Vaughey, Argonne National Laboratory; John Vaughey, JCESR at Argonne National Laboratory

Abst# 817 Catalytic Activity Variation with the Crystal Structure Change of PdCu Nanocatalysts for Rechargeable Lithium-Oxygen Batteries by Mihui Park, Dept. of Energy and Materials Eng., Dongguk University; Kyeongse Song, Dept. of Energy and Materials Eng., Dongguk University; Yong-Mook Kang, Dept. of Energy and Materials Eng., Dongguk University

Abst# 822 Local Structure and Li Ion Dynamics in Garnet $Li_{7-2x}Ga_xLa_3Zr_2O_{12}$ Solid Electrolytes by Randy Jalem, National Institute for Materials Science (NIMS), Japan; Masanobu Nakayama, National Institute for Materials Science (NIMS), Japan; Masanobu Nakayama, Nagoya Institute of Technology

Abst# 823 1D Structured Fe-Doped Tunnel $Na_{0.44}MnO_2$ Cathode Material with Excellent High

Rate and Long Cycle Life Performance for Sodium Ion Battery Application by Mawuse Amedzo-Adore, Dept. of Energy and Materials Eng., Dongguk University; Dong-Wook Han, Korea Automotive Technology Institute; Junghoon Yang, Dept. of Energy and Materials Eng., Dongguk University; Yong-Mook Kang, Dept. of Energy and Materials Eng., Dongguk University

Abst# 824 Mesoporous RuO_2/Fe_2O_3 Nanofiber As Efficient Electrocatalyst for Lithium Oxygen Batteries by Zhimei Huang, laboratory of energy storage and conversion; Yue Shen, laboratory of energy storage and conversion; Yunhui Huang, laboratory of Energy Storage and Conversion

Abst# 826 A Renewable Anthraquinone Derivative As Organic Anode Materials for Sodium-Ion Batteries by Dabei Wu, Huazhong University of Science and Technology; Yunhui Huang, laboratory of energy storage and conversion; Xianluo Hu, Huazhong University of Science and Technology

Abst# 827 Insight into the Na-Storage Mechanism of Bismuth Oxyiodide Anode Materials by Xiaoxiao Liu, Huazhong University of Sicence and Technology; Yunhui Huang, Huazhong University of Science and Technology; Xianluo Hu, Huazhong University of Science and Technology

Abst# 829 {001} Facets Exposed Anatase TiO_2 Nanosheets and Reduced Graphene Oxide Composite Anodes for High Performance Na-Ion Batteries by Yueni Mei, Huazhong University of Science and Technology; Yunhui Huang, Huazhong University of Science and Technology; Xianluo Hu, Huazhong University of Science and Technology

Abst# 835 Spinel $NiCo_2O_4$-Deposited CNT Bucky Paper As a Cathode for Rechargeable Li-O_2 Battery by Kyu-Nam Jung, Korea Institute of Energy Research; Jong-Won Lee, Korea Institute of Energy Research

Abst# 837 Bi_2O_3-Added $Li_{1.4}Al_{0.4}Ti_{1.6}(PO_4)_3$ with Enhanced Li-Ion Conductivity As a Solid Electrolyte for All-Solid-State Battery by Jong-Won Lee, Korea Institute of Energy Research; Kyu-Nam Jung, Korea Institute of Energy Research

A06—Failure Mode and Mechanism Analyses

Abst# 899 The Effect of Contact Resistance during Nail Penetration of Commercial Automotive Lithium-Ion Cells by Ahmed Abaza, WMG, the University of Warwick

Abst# 905 Investigation of Anode/Cathode Electrolyte Interfaces at High Cell Voltages with and without Additives by Dongqing Liu, Graduate School at Shenzhen, Tsinghua University

A07—Electrochemical Capacitors and Related Devices: Fundamentals to Applications

Abst# 1009 Double Reinforced Energy Storage of Graphene By KOH Activation and Nitrogen Doping by Yiran Wang, University of Tennessee Knoxville; Jiang Guo, university of tennessee, knoxville; Hailong Lyu, University of Tennessee Knoxville; Suying Wei, Lamar University; Zhanhu Guo, University of Tennessee Knoxville

Abst# 1013 Hemp-Derived Activated Carbons for Electrochemical Energy Storage by Stephen Lipka, University of Kentucky; Christopher Swartz, University of Kentucky; Joanna Mroczkowska, University of Kentucky; Wei Sun, University of Kentucky

Abst# 1015 Investigating the Effects of Slurry Preparation Protocol on Electrochemical Performance of Carbon Based Flowable Electrodes by Bilen Akuzum, Drexel University; Lutfi Agartan, Drexel University; Yury Gogotsi, Drexel University; E. Caglan Kumbur, Drexel University

Abst# 1017 Simultaneous Production of High-Performance Flexible Textile Electrodes and Fiber Electrodes for Wearable Energy Storage by Chengjun Xu, College of William and Mary; Liubing Dong, Tsinghua University

Abst# 1020 Metal-Free Nanocomposite Materials Based on Carbon Nitride Nanofibers and Graphene Oxide for Electrochemical Applications: Supercapacitors & Catalysts for Oxygen Reduction Reaction (ORR) by Omar Movil-Cabrera, Ohio University; John Staser, Chemical Engineering; Allen Rodriguez-Silva, Ohio University

B01—Carbon Nanostructures: From Fundamental Studies to Applications and Devices

Abst# 1090 Tunable Giant Magnetoresistance Behavior and Electron Conductivity of Conjugated Naopolyaniline by Zhanhu Guo, University of Tennessee Knoxville; Jiang Guo, University of Tennessee Knoxville; Qingliang He, University of Tennessee Knoville; Yiran Wang, University of Tennessee Knoxville; Xingru Yan, University of Tennessee Knoxville

Abst# 1093 Hierarchical Porous Carbon Scaffolds As a Materials Scaffold for the Attachment of Silicon in Lithium Ion Battery Anodes by Luis Estevez, Pacific Northwest National Laboratory; Sookyung Jeong, Pacific Northwest National Laboratory; Ruiguo Cao, Pacific Northwest National Laboratory; Jianming Zheng, Pacific Northwest National Laboratory; Xiaolin Li, Pacific Northwest National Laboratory; Wu Xu, Pacific Northwest National Laboratory; Ji-Guang Zhang, Pacific Northw

Abst# 1095 Carbon Nanocomposite for Photo-Energy Conversion by Yanfei Shen, Medical School, Southeast University

C01—Corrosion General Poster Session

Abst# 1108 Electrochemical Corrosion Behaviors of 304 Stainless Steel with the Bimodal Grain Size Distribution by Yan Gao, South China University of Technology

Abst# 1117 Local Electrochemical Study of Friction Stitch Welded X65 Steel Using Scanning Vibrating Electrode Technique by Yanhong Gu, Beijing Institute of Petrochemical Technology; Huijuan Ma, Beijing Institute of Petrochemical Technology; Hui Gao, Beijing Institute of Petrochemical Technology

Abst# 1120 Corrosion Resistance of Laser Powder Bed Fusion Built Fe-Cr-Mn-Si-W-Mo-B-C Alloy by JI-Won Oh, Korea Institute of Industrial Technology; Hyunwoong Na, Korea Institute of Industrial Technology; Hanshin Choi, Korea Institute of Industrial Technology

Abst# 1124 Influences of Inert Particles on Corrosion Behavior of Carbon Steel Under Sodium Chloride Droplet by Yanhua Wang, Ocean University of China; Lian Zhong, Ocean University of China

Abst# 1127 Effects of Crystallinity of Spark Plasma Sintered Fe Base Nano-Composite Alloy by Hyunwoong Na, Korea Institute of Industrial Technology; JI-Won Oh, Korea Institute of Industrial Technology; Hanshin Choi, Korea Institute of Industrial Technology

Abst# 1129 Effect of Green Corrosion Inhibitors on the Corrosion Behaviour of Nanocrystalline W-42Cr-5Ni Alloy in 0.5 M NaCl Solution by Dhruba Subedi, Universal Science College

Abst# 1130 Surface Analysis of 4-Methyl-2-Phenyl-Imidazole on the Cu Surface by Matjaz Finsgar, University of Maribor

Abst# 1131 The Synthesis and Anticorrosion Performance of Polyaniline/SiO_2 Nanocomposites with Different Wettability by Lian Zhong, Ocean University of China

Abst# 1139 The Contribution of Hydrogen to the Loss of Mechanical Properties of a 7046 Aluminium Alloy Pre-Exposed in a Chloride Media by LoÃ¯c Oger, Constellium Technology Center; LoÃ¯c Oger, UniversitÃ© de Toulouse, CIRIMAT, UPS / INPT / CNRS; Christine Blanc, CIRIMAT, UniversitÃ© de Toulouse, CNRS, INPT, UPS; Lionel Peguet, Constellium Technology Center; Gregory Odemer, CIRIMAT - ENSIACET; Eric Andrieu, UniversitÃ© de Toulouse, CIRIMAT, UPS/INPT/ CNRS

Abst# 1142 Study of Micro-Scale Experimental Teaching Materials of Corrosion and Corrosion Protection for Maintenance Engineers by Daisuke Ito, Faculty of Engineering, Yokohama National University; Takashi Yokoyama, Faculty of Engineering, Yokohama National University; Shinji Okazaki, Faculty of Engineering, Yokohama National University

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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

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Abst# 1298 Quantification and Prediction Tools for Atmospheric Corrosion and Electrochemistry in Non-Conventional (Micro-)Setups by Hans Simillion, Vrije Universiteit Brussel, SURF Group; Nils Van den Steen, Vrije Universiteit Brussel, SURF Group; Herman Terryn, Vrije Universiteit Brussel, SURF Group; Johan Deconinck, Vrije Universiteit Brussel, SURF Group

Abst# 1306 Contribution of Hydrogen to the Intergranular Corrosion Damage in a 2024 T351 Aluminum Alloy by Marie-Laetitia de Bonfils-Lahovary, CIRIMAT, UniversitÃ© de Toulouse, CNRS, INPT, UPS; Manon Lafouresse, CIRIMAT, UniversitÃ© de Toulouse, CNRS, INPT, UPS; Lydia Laffont, CIRIMAT, UniversitÃ© de Toulouse, CNRS, INPT, UPS; Christine Blanc, CIRIMAT, UniversitÃ© de Toulouse, CNRS, INPT, UPS

Abst# 1316 Micro-Biologically Induced Steel Corrosion and Corrosion Control in Simulated Marine Environment: Steel Electrochemical Response and Micro-Organisms Viability within Cathodic Protection Application by D. a. Koleva, Delft University of Technology; Y Gonzalez-Garcia, Delft University of Technology; H.M. Jonkers, Delft University of Technology; L Polerecky, Utrecht University

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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&

Abst# 1374 Adhesion and Interface Study of Cu/Ni/Polyimide Film by Seung Kim, LS Mtron; Jeong Lee, LS Mtron; Joong An, LS Mtron; Shan Jin, LS Mtron; Sang Jun, LS Mtron; Young Kim, LS Mtron; Joon Park, LS Mtron

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Abst# 1418 Designing Three-Dimensional Nanowire Arrays As Efficient Counter Electrodes for Quantum-Dot-Sensitized Solar Cells by Jin-Song Hu, Institute of Chemistry, Chinese Academy of Sciences

Abst# 1419 Enhancement in Efficiency of Hybrid Polymer Solar Cells By CdSe Quantum Dot Doping by Kusum Kumari, National Institute of Technology Warangal, India; Suresh Chand, National Physical Laboratory (CSIR), New Delhi, India

Abst# 1423 Edge-Fluorinated Graphene Nanoplatelets As Electrocatalysts for Solar Cells and Lithium Ion Batteries by Myung Jong Ju, UNIST; In-Yup Jeon, UNIST; Jae-Joon Lee, Dongguk University; Jong-Beom Baek, UNIST

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

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Abst# 1551 Composition, Structure and Properties of Electroless Deposited Rhenium-Rich Re-Co Thin Films by Alla Duhin, University Tel Aviv; Alexandra Inberg, University Tel Aviv; Noam Eliaz, University Tel Aviv; Eliezer Gileadi, Unitersity Tel Aviv

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Abst# 1633 Anodized Porous Oxide Thin Films for Energy Application by Hua Cheng, South University of Science and Technology of China; Dehui Zhang, South University of Science and Technology of China; Dong Wu, South University of Science and Technology of China; Zhouguang Lu, South University of Science and Technology of China

Abst# 1635 Pulse Electrodeposited $AgGaS_2$ Films and Their Optical Properties K.R.Murali by Kollegal Ramakrishna Murali, University of Madras

Abst# 1637 Ionic Liquid-Assisted Electron Transfer in Micelles for Simultaneous Deposition of Uniform Ag Nanoparticles at Electrode Surface and in Bulk Microemulsions by Zenglin Wang, Shaanxi Normal University; Yuhan Li, Shaanxi Normal University; Chuan Zhao, The University of New South Wales

Abst# 1638 Improving the Electrolytic Hydrogen Production Using Co-Cu-Mo Based Ionic Activator by Milica Marceta Kaninski, Vinca Institute of Nuclear Sciences; Sladjana Maslovara, Vinca Institute of Nuclear Sciences; Petar Lausevic, Vinca Institute of Nuclear Sciences; Djordje Saponjic, Vinca Institute of Nuclear Sciences; Zeljka Nikolic, Vinca Institute of Nuclear Sciences; Gvozden Tasic, Vinca Institute of Nuclear Sciences; Vladimir

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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

Abst# 1671 Electrochemical Reactor Design and Operation for the Simons Fluorination of Methyl Sulfonyl Fluoride by Dawei WANG, Yangzhou University; Yaqiong WANG, Yangzhou University; Wenlin Xu, Yangzhou University

Abst# 1672 Paired Electro-Synthesis of PbO_2 and Pb As Lead Storage Battery Active Materials Using $Pb(NO_3)_2$ as a Precursor by Yaqiong WANG, Yangzhou University; Baotong LI, Yangzhou University; Wenlin Xu, Yangzhou University

Abst# 1673 Paired Electro-Synthesis of PbO_2 and Pb As Lead Storage Battery Active Materials Using $PbSO_4$ As a Precursor by Yaqiong WANG, Yangzhou University; Xuan Zhao, Yangzhou University; Wenlin Xu, Yangzhou University

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Abst# 1713 Interfacial Impedance Characterization and Equivalent Circuit Modeling Analysis of a Li-O_2 Battery by Ruben Nelson, Florida A&M University - Florida State University;

Mark Weatherspoon, Florida A&M University - Florida State University

Abst# 1726 (Invited) Corrosion Inhibitor (Decanethiol) for Carbon Steels Exposed to Aqueous CO_2 by Zineb Belarbi, Ohio University; Fernando Farelas, Ohio University; Marc Singer, Ohio University; David Young, Ohio University; Srdjan Nesic, 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 Nesic, Ohio University; Yao Juncheng, Ohio University; Ahmadreza Rashedi, Ohio University

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Abst# 1797 High Purity Analysis of Low Melting Point Such As Gallium By Glow Discharge Mass Spectrometry by Jaesik Yoon, Korea basic science institute

Abst# 1798 *Ab-Initio*Â Studies of Acceptor Impurities andÂ Stability ofÂ Complexes in Ge by Igumbor Emmanuel, Samuel Adegboyega University, Ogwa Edo state Nigeria; Igumbor Emmanuel, University of Pretoria; Edwin Mapasha, University of Pretoria; Andrew Richard, University of Pretoria; Walter Meyer, University of Pretoria

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Abst# 1844 Temperature-Dependent and Dielectric Relaxation of Porous Silicon Prepared by Electrochemical Etching by Faruk Fonthal Rico, Autonoma de Occidente University; Edward Oliveros, Autonoma de Occidente University; Mario Chavarria, Ecole Polytechnique FÃ©dÃ©rale de Lausanne (EPFL)

Abst# 1850 Vertically Integrated ZRAM toward Extremely Scaled Memory by Byung-Hyun Lee, Korea Advanced Institute of Science and Technology; Dae-Chul Ahn, Korea Advanced Institute of Science and Technology; Min-Ho Kang, National Nanofab Center; Seung-Bae Jeon, Korea Advanced Institute of Science and Technology; Tewook Bang, Korea Advanced Institute of Science and Technology; Hagyoul Bae, Korea Advanced Institut

Abst# 1851 Comparison of Various Low Dielectric Constant Materials by Wei-jie Hung, National Chi-Nan University; Yi-Lung Cheng, National Chi-Nan University

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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

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Abst# 2169 Organic Electrochemical Transistors for Bio-Sensing Applications by Naixiang Wang, The Hong Kong Polytechnic University; Feng Yan, The Hong Kong Polytechnic University

Abst# 2176 Design of Bi-Directional Transmission Gate Driver in Amorphous Silicon Technology for TFT-LCD Application by Guang-Ting Zheng, Electronic Engineering; Guang-Ting Zheng, Department of Electronics, National Tsing Hua University; Po-Tsun Liu, Department of Photonics, National Chiao Tung University,; Meng-Chyi Wu, National Tsing Hua University; i-Hsiang Lu, Department of Photonics and Display Institute; i-Hsiang Lu, National Chiao Tung University

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Abst# 2219 (Invited) Understanding the Energy Band Alignment in Inverted Organic Thin-Film Photovoltaic Devices by Liwei Chen, Suzhou Institute of Nanotech and Nanobionics, CAS

Abst# 2221 (Invited) Nanoscale Morphology Control in Halide Perovskite/Polymer Composites for Printed LEDs and Beyond by Zhibin Yu, Florida State University

Abst# 2222 Zno Nanowires Electrodeposited for UV Detector Applications by Cristina V. Manzano, EMPA; Laszlo PethÃ¶, 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

Abst# 2229 Amorphous Cobalt-Iron Hydroxide Nanosheet Array Electrocatalyst for Efficient Electrochemical and Photoelectrochemical Oxygen Evolution by Xingwang Zhang, Zhejiang University; Wei Liu, Zhejiang University; Hu Liu, Zhejiang University

Abst# 2233 (Invited) Si/$NiCoSe_x$ Nanorods Photocathode for Enhanced Photoelectrochemical Hydrogen Production by Xingwang Zhang, Zhejiang University; Hongxiu Zhang, Zhejiang University; Denghong He, Zhejiang University

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

Abst# 2286 (Invited) Microfluidic Synthesis of Functional Nanomaterials by Jiashu Sun, National Center for Nanoscience and Technology

Abst# 2287 Design and Fabrication of Ag / AgCl Composite Reference Electrode Based on Microfluidic Chip by Li Chen, Bioengineering College, Chongqing University; Xiaolin Zheng, Bioengineering College, Chongqing University; Ning Hu, Bioengineering College, Chongqing University; Yanjian Liao, Bioengineering College, Chongqing University

Abst# 2289 Deformation Measurement of the Hybrid Cells Using a Microfluidic Array Device by Xiaoling Zhang, Bioengineering College, Chongqing University; Jun Yang, Bioengineering College, Chongqing University; Ning Hu, Bioengineering College, Chongqing University; Xiaolin Zheng, Bioengineering College, Chongqing University

Abst# 2291 (Invited) Automatic Particle and Cell Detection and Manipulation in a Microfluidic Chip by Yongxin Song, Dalian Maritime University

Abst# 2297 Dynamics of High Weber Number Droplets Impacting on Hydrophobic Surfaces with Closed Micro-Cells by Rui Zhang, School of Aerospace Engineering, Tsinghua University; Feng He, School of Aerospace Engineering, Tsinghua University; Pengfei Hao, School of Aerospace Engineering, Tsinghua University

Abst# 2299 Dynamic Characteristics of Air-Water Interface in a Patterned Microchannel by Jingxian Zhang, Tsinghua University; Yucheng Jie, Tsinghua University; Zhaohui Yao, Tsinghua University

Abst# 2301 Numerical Simulation of Thermal Diffusion and Convection in Electrokinetic Microchannel Flow by Kai Zhang, Institue of Flow Measurement and Simulation; XiaoFei Lv, Chemical Inspection and Regulation Service(CIRS)

Abst# 2302 Miniaturized Redox Flow Batteries for Electronic Applications: CFD Modeling by

Brijesh Kumar, IIT Gandhinagar; Atul Bhargav, IIT Gandhinagar; Patrick Ruch, IBM Research - Zurich

Abst# 2303 Viscoelastic Slip Velocity for Microscale Electrokinetic Flows by Sang Joo, Yeungnam University; Amir Saadat, University of Tennessee, Knoxville; Bamin Khomami, University of Tennessee, Knoxville

Abst# 2305 Electric Field-Driven Particle Separation in a Bifurcating Microchannel by Di Li, Clemson University; Xinyu Lu, Clemson University; Yongxin Song, Dalian Maritime University; Junsheng Wang, Dalian Maritime University; Dongqing Li, University of Waterloo; Xiangchun Xuan, Clemson University

Abst# 2306 Electroosmotic Flow through a Tubular Channel by Bo-Tau Liu, National Yunlin University of Science and Technology; Ci-Da Li, National Yunlin University of Science and Technology

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Abst# 2342 An Organic Metal Halide Tandem Solar Cell Embracing Non-Toxic Tin Perovskite by Hoang Minh Tam, Kumoh National Institute of Technology; Oh Ilhwan, Kumoh National Institute of Technology

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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# 2552 Proton Conducting Nanocomposites Using Phosphonic Acid Grafted Polyhedral Oligomeric Silsesquioxane (POSS) by Taeyung Youn, Dept. of Chem. & Biomolecular Eng., Sogang Univ; Hee-Woo Rhee, Dept. of Chem. & Biomolecular

Eng., Sogang Univ

Abst# 2557 (Invited) Self-Humidifying Membrane Electrode Assembly Prepared by Adding Moisture Preserve Materials in Anode Catalyst Layer by Shijun Llao, School of Chemistry and Chemical Engineering; Sanying Hou, South China University of Technology

Abst# 2562 PEMFC Stack Diagnostics Using EIS by Samuel Smon Araya, Aalborg University; Christian Jeppesen, Aalborg University; SÃ¸ren KÃ¦r, Aalborg University

Abst# 2564 Investigation on the Improvement of PEM Fuel Cell Performance through Two Novel Flow Field Designs by Shuiyun Shen, Institute of Fuel Cells,Shanghai Jiao Tong University; Chao Wang, Institute of Fuel Cells,Shanghai Jiao Tong University; Qinglei Zhang, Shanghai Jiao Tong University; Junliang Zhang, Shanghai Jiao Tong University

Abst# 2575 Synthesis of Anion Exchange Membranes with Side-Chain-Type Benzylic Cationic Groups Using Chloromethylbenzoylation by Zhenghui Zhang, Nanyang Normal University; Lihui Wang, Illinois Institute of Technology; Vijay Ramani, Illinois Institute of Technology

Abst# 2576 Anion Exchange Membrane Separators Based on Polystyrene-*Block*-Poly(ethylene-*ran*-butylene)-*Block*-Polystyrene Triblock Copolymers by Zhongyang Wang, Illinois Institute of Technology; Javier Parrondo, Illinois Institute of Technology; Vijay Ramani, Illinois Institute of Technology

Abst# 2580 Evaluating Electrospun Polyacrylic Acid-Nafion Composite As Stable Catalyst Support for PEM Fuel Cell Electrodes by Manoj Krishna Kayarkatte, Freie UniversitÃ¤t Berlin; Ã–znur Delikaya, Freie UniversitÃ¤t Berlin; Christina Roth, Freie Universitaet 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# 2621 Nitrogen and Sulfur Co-Doped Three-Dimensional Reduced Graphene Oxide Networks-Supported Cobalt Nanoparticles with High Catalytic Activity in the Oxygen Reduction Reaction by Yi Li, School of Materials Science and Engineering; Juan Yang, School of Materials Science and Engineering; Yazhou Zhou, School of Materials Science and Engineering; Zulei Chen, School of Materials Science and Engineering; Jipei Huang, School of Materials Science and Engineering

Abst# 2629 Novel Non-Stoichiometric Tungsten Oxide Based Catalyst Support for the Increased

CO Tolerance in PEMFC by Milica Marceta Kaninski, Vinca Institute of Nuclear Sciences; Snezana Brkovic, Vinca Institute of Nuclear Sciences; Ivana Perovic, Vinca Institute of Nuclear Sciences; Petar Lausevic, Vinca Institute of Nuclear Sciences; Igor Pasti, Faculty of physical chemistry; Djordje Saponjic, Vinca Institute of Nuclear Sciences; Vladimir Nikolic, Vinc

Abst# 2630 Low Platinum Content Catalyst on the Non-Stoichiometric Tungsten Oxide Based Catalyst Support for the Increased CO Tolerance in PEMFC by Milica Marceta Kaninski, Vinca Institute of Nuclear Sciences; Snezana Brkovic, Vinca Institute of Nuclear Sciences; Ivana Perovic, Vinca Institute of Nuclear Sciences; Petar Lausevic, Vinca Institute of Nuclear Sciences; Djordje Saponjic, Vinca Institute of Nuclear Sciences; Igor Pasti, Faculty of physical chemistry; Vladimir Nikolic, Vinc

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# 2656 Understanding Pt Nanoparticle Anchoring on Graphene Supports through Surface Functionalization by Le Xin, Indiana University Purdue University Indianapolis; Somaye Rasouli, The University of Texas at Austin; Fan Yang, Indiana University-Purdue University Indianapolis; Aytekin Uzunoglu, Purdue University; Cheng-Jun Sun, Argonne National Laboratory; Paulo Ferreira, The University of Texas at Austin; Yuzi Liu, Argonne National Laboratory;

Abst# 2670 Iron-Polypyrrole Electrocatalyst with Remarkable Activity and Stability for Oxygen Reduction Reaction by Thanh-Nhan Tran, DGIST; Min Young Song, DGIST; Jong-Sung Yu, DGIST

Abst# 2675 Electrochemical Decontamination of Platinum Nanocrystals and Its Electrocatalytic Performances for Methanol by Leilei Lu, Faculty of science, Xiâ€™an University of Technology; Baozhong Du, Faculty of science, Xiâ€™an University of 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# 2680 Monolithic Carbon Foam-Supported Pd-Ni Catalysts for Ethanol Electro-Oxidation in Alkaline Media by Yinshi Li, Xiâ€™an Jiaotong University

Abst# 2688 Electrocatalysts for Direct Alcohol Oxidation Fuel Cells Prepared Using Ion Beam Assisted Deposition Technique by Vasily Poplavsky, Belarusian State University of Technology

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# 2691 Novel Catalyst Support Based on Mesoporous Cobalt and Molybdenum Carbide for Enhanced ORR Kinetics in Alkaline Fuel Cells by Vladimir Nikolic, Vinca Institute of Nuclear Sciences; Ivana Perovic, Vinca Institute of Nuclear Sciences; Aleksandra Saponjic, Vinca Institute of Nuclear Sciences; Maja Kokunesoski, Vinca Institute of Nuclear Sciences; Milos Tosic, Vinca Institute of Nuclear Sciences; Dubravka Milovanovic, Vinca Institute of Nuclear Sciences; Milica Marce

Abst# 2696 Synthesis of Metal-Free Electrocatalyst Obtained from Different Biomass Sources with High Performance for Oxygen Reduction Reaction in Fuel Cells by Ivonne Alonso-Lemus, CINVESTAV UNIDAD SALTILLO, CÃ¡tedra CONACyT; Beatriz Escobar-Morales, Centro de InvestigaciÃ³n CientÃfica de YucatÃ¡n; Fransico RodrÃguez-Varela, CINVESTAV-Saltillo; Diego GonzÃ¡lez-Quijano, CINVESTAV Saltillo; Daniel Lardizabal, Centro de InvestigaciÃ³n en Materiales Avanzados S.C.; Kehila Pacheco-Saucedo, Centro de Invest

Abst# 2697 Enhanced Water Activation By High Oxophilicity of $LaMnO_3$ Supports for Ag-Based Electrocatalysts in Alkaline Media by A-Yeong Lee, Advanced Power Source Laboratory,Pusan National Univ.; Shin-Ae Park, GyeongnamTechnopark; Yong-tae Kim, Pusan National University

Abst# 2698 Investigation of Solvent Effects on the Dispersion of Carbon Agglomerates and Nafion Ionomer Particles in Catalyst Inks Using Ultra Small Angle X-Ray Scattering Method by Fan Yang, Purdue University; Fan Yang, Indiana University Purdue University Indianapolis; Le Xin, Indiana University Purdue University Indianapolis; Aytekin Uzunoglu, Purdue University; Lia Stanciu, Purdue University; Jan Ilavsky, X-ray Science Division, Argonne National Laboratory; Steven Son, Purdue University; Jian Xie, Indiana Universi

Abst# 2699 Evaluating *in Situ* Platinum Deposition As a Preparative Step for Fibsem Tomography of PEMFC Cathodes by Andrew Star, Georgia Institute of Technology; Thomas Fuller, Georgia Institute of Technology

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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# 2715 Degradation of Polymer Electrolyte Membrane Fuel Cell By Siloxane in Biogas by Tae-Young Kim, Korea Institute of Energy Research (KIER)

Abst# 2717 A Hybrid of Palladium-Graphitic Carbon Nitride-Reduced Graphene Oxide for Methanol and Formic Acid Electrooxidation by Wenyao Zhang, Nanjing University of Science and Technology; Xin Wang, Nanjing University of Science and Technology; Lili Zhang, Huaiyin Normal University; Weiguang Zhang, Huaiyin Normal University

Abst# 2721 Enthalpy Analysis and Heat Exchanger Sizing of an Air-Cooled Proton Exchange Membrane Fuel Cell System by Xin Gao, Department of Energy Technology Aalborg University

Abst# 2722 Promotion Effect of Adding Cr/Al/Fe to Cu/ZnO on the Stability of Hydrogen Produciton Catalyst for Dimethyl Ether Steam Reforming by Jing Xie, China University of Petroleum Beijing; Kaijie Ding, China University of Petroleum Beijing; Ranjia Li, China University of Petroleum Beijing; Changchun Yu, China University of Petroleum Beijing; Shuai Ban, China university of petroleum; Hongjun Zhou, China University of Petroleum Beijing

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

Abst# 2740 Evaluation of Selected Anode and CathodeÂ Gas Diffusion LayersÂ for Use in PEM Water Electrolysis with Focus on Compatibility with 3M's Ir-Nstf Based Electrolyzer Catalyst Coated Membranes by Fuxia Sun, 3M Company; Krzysztof Lewinski, 3M Company

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Abst# 2913 Fabrication of the Large Area Thin-Film Solid Oxide Fuel Cells with Anodized Aluminum Oxide by Soonwook Hong, Hanyang University; Young-Beom Kim, Hanyang University; Hun Park, Hanynag University; Tae Hee Han, Hanyang University

Abst# 2917 Design and Fabrication of a Flat Tubular SOFC Stack by Bin Xie, University of Science and Technology of China; Bin Xie, G-cell technology Co. Ltd,; Weijie Ji, University of Science and Technology of China; Li Ming, University of Science and Technology. of China; Yousong Jiang, G-cell technology Co. Ltd

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 LÃ¼, Harbin Institute of Technology

Abst# 2927 A Material Study on Na-$SrSiO_3$ Ionic Conductor by Youngseok Jee, University of South Carolina; Xuan Zhao, University of Texas at Austin; Kevin Huang, University of South Carolina

Abst# 2942 Morphology and Structure of SOFC Components Fabricated By Spray Pyrolysis by George Tsimekas, Technological Education Institute of West Macedonia; George Tsimekas, University of St Andrews; Efthimis Papastergiades, Technological Education Institute of Thessaloniki; Nikolas Kiratzis, Technological Education Institute of West Macedonia

Abst# 2948 Biomass Integrated Gasification Fuel Cell in CO2 Atmosphere by Jong-Pil Kim, Pusan National University; Chung-Hwan Jeon, Pusan Clean Coal Center; Chung-Hwan Jeon, Pusan National University

I03—Electrosynthesis of Fuels 4

Abst# 3058 A Systems Perspective in the Conversion of CO_2/H_2o 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 H_2o and CO_2 into Synthetic Natural Ga by Robert Braun, Colorado School of Mines

Abst# 3061 High Temperature and Pressure Alkaline Electrochemical Reactor for Conversion of Power to Chemicals by Christodoulos Chatzichristodoulou, DTU Energy, Technical University of Denmark

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

Abst# 3104 Electrochemical Conditioning, Energy Consumption, and Long-Term Performance of Inverted Capacitive Deionization Cells by Nicolas Holubowitch, University of Kentucky; A. Omosebi, University of Kentucky; Xin Gao, University of Kentucky; J. Landon, University of Kentucky; K-L. Liu, University of Kentucky

K01—Bioengineering Based on Electrochemistry

Abst# 3277 (Invited) Electrochemical Luminescent Imaging of Activated Neutrophils Using Multi-Microwell Array Electrode by Eiichi Tamiya, Osaka University

Abst# 3280 (Keynote) Recent Advance in Sensor Technologies for Mobile Healthcare by Christopher Lowe, University of Cambridge

K02—Recent Advances in the Application of Electrochemistry to Problems in Organic Chemistry and Biology

Abst# 3316 The Unusual Redox Properties of Fluoroferrocenes Revealed through a Comprehensive Study of the Haloferrocenes by Michael Inkpen, Imperial College; Shuoren Du, Imperial College; Mariana Hildebrand, Imperial College; Andrew White, Imperial College; Nicholas Harrison, Imperial College; Tim Albrecht, Imperial College London; Nicholas Long, Imperial College

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, UniversitÃ© de Rennes 1; Benoit Boichard, UnivresitÃ© de Rennes 1; Yann Leroux, CNRS; Pascale Even-Hernadez, UniversitÃ© de Rennes 1; Valerie Marchi, UniversitÃ© 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# 3372 Photoinduced Charge Transfer Kinetics and Electrochemical Investigation on Porphyrin by Xiaoquan Lu, Key Lab. Bioelectrochemistry and Environmental Analysis; Samrat Devaramani, Key Lab. Bioelectrochemistry and Environmental Analysis; Shouting Zhang, Key Lab. Bioelectrochemistry and Environmental Analysis; Wenqi Li, Key Lab. Bioelectrochemistry and Environmental Analysis; Jiajian Du, Key Lab. Bioelectrochemistry and Environmen

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

Abst# 3376 Maskless Generation of Highly Periodic 3D Semiconductor Nanostructures in Response to Defined Illumination Inputs by Azhar Carim, California Institute of Technology; Nicolas Batara, California Institute of Technology; Anjali Premkumar, California Institute of Technology; Harry Atwater, California Institute of Technology; Nathan Lewis, California Institute of Technology

Abst# 3385 Bifunctional Electrocatalysts for Oxygen Reduction and Evolution Reactions (ORER) in Alkaline Electrolyte by Yohannes Kiros, KTH Royal Institute of Technology; Alagar Raj Paulraj, KTH Royal Institute of Technology

Abst# 3386 Preparation of Pt@Cu Core-Shell Particles Incorporated in Poly-(3,4-ethylenedioxythiophene) for Catalytic Applications by Ralf Peipmann, Technische UniversitÃ¤t Ilmenau; Anna Endrikat, Technische UniversitÃ¤t Ilmenau; Andreas Bund, Technische UniversitÃ¤t Ilmenau

Abst# 3392 Pd/Uio-66/Ti Electrode for Electrocatalytic Debromination of Tetrabromobisphenol a by Fang Jiang, Nanjing University of Science and Technology; Xiangwen Feng, Nanjing University of Science and Technology; Huan Chen, Nanjing University of Science and Technology

Abst# 3397 Platinum Electrodeposition on in-Situ Grown Prussian Blue Nanostructures and Reduced Graphene Oxide Composite for Synergistic Methanol Oxidation by Kyuwon Kim, Incheon National University; Inhak Kang, Incheon National University; Shanmugam Manivannan, Incheon National University

Abst# 3398 Virus-Assisted Growth of Metal Alloy Nanostructure and Its Use an Electrocatalyst by Kyuwon Kim, Incheon National University; Yeji Seo, Incheon National University; Inhak Kang, Incheon National University; Shanmugam Manivannan, Incheon National University

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, Univeristy 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

M03—Electrochemical Analysis with Nanomaterials and Nanodevices

Abst# 3886 Mesoporous Hollow MnO_2 nanotubes Confined Sulfur As Cathode by Guowang Diao, Yangzhou University; Zhen Wu, Yang Zhou University; Lubin Ni, Yangzhou University

Abst# 3889 Graphene Polyaniline/Polyoxometalate Hybrid As Cathode for Lithium Ion Batteries with Improved Lithium Storage Capacity by Guowang Diao, Yangzhou University

Abst# 3890 Preparation of $Li_4Ti_5O_{12}$ Nanosheets/Carbon Nanotube Composites and Application of Anode Materials for Lithium-Ion Batteries by Guowang Diao, Yangzhou University; Pengfei Zhang, Yangzhou University; Ming Chen, Yangzhou University

Abst# 3893 Study about an Experimental Design for CdTe Quantum Dots Synthesis. Analysis of the Optical and Electrochemical Changes after Their Interaction with Hydroxyl Radicals by Eduardo MuÃ±oz, Pontificia Universidad CatÃ³lica de ValparaÃso; Emilio Navarrete, Pontificia Universidad CatÃ³lica de ValparaÃso; Rodrigo HenrÃ-quez, Pontificia Universidad CatÃ³lica de ValparaÃso; Ricardo Schrebler, Pontificia Universidad CatÃ³lica de ValparaÃso; Ricardo CÃ³rdova, Pontificia Universidad CatÃ³lica de ValparaÃso; Luis Aguilar, Pont

Abst# 3900 A Sensitive Electrochemical Glucose Biosensor Based on Flower-Shaped Zinc Oxide Nanostructures by Juan Li, Yangzhou University; Jingjing Tong, Yangzhou University

Abst# 3901 Streptavidin-Functionalized Nitrogen Doped Graphene Platform for Sensitive Electrochemical Immunoassay of Tumor Marker by Zhanjun Yang, Yangzhou University; Qingchun Lan, Yang Zhou University

Z02—Nanotechnology General Session

Abst# 4119 First-Principles Study on Mechanical Strain and Defect in Materials by Minseok Choi, Inha University

Abst# 4126 Best-Match Electrocatalysts from Homologous Ni_xM_y (M=O, S, P) Nanobelt Arrays in Overall Water Splitting by Wei Zhou, Beihang University; Jinlong Zheng, Beihang University; Lin Guo, Beihang University; Yuzhen Lv, North China Electric Power University

Abst# 4132 A Two-Dimensional Supramolecular Carpet with Widely Uniform Interfacial Structure by Ju-Hyung Kim, Pukyong National University; Ju-Hyung Kim, RIKEN; Maki Kawai, The University of Tokyo; Jaehoon Jung, RIKEN; Jaehoon Jung, University of Ulsan; Takanori Fukushima, Tokyo Institute of Technology; Yousoo Kim, RIKEN

Abst# 4134 In Situ Tuning of Magnetization Via Double Layer Charging and Topotactic Li Insertion in Polymer-Templated Mesostructured Thin Films by Christian Reitz, Karlsruhe Institute of Technology, INT; Torsten Brezesinski, Karlsruhe Institute of Technology, INT-BELLA

Abst# 4135 Fabrication and Characterization of Ag Doped CeO_2 Nanoparticles By a Hydrothermal Process by Dong Sik Bae, Changwon National University

Abst# 4136 Dry Reforming of Methane on Ni@SiO_2 Core-Shell Nanoparticles: Influence of Core-Shell Morphology on Catalytic Performance by Dong Sik Bae, Changwon National University

Abst# 4143 Study about Electrostatic Deposition of CdTe Quantum Dots on Glassy Carbon Electrodes by Eduardo MuÃ±oz, Pontificia Universidad CatÃ³lica de ValparaÃso; Emilio Navarrete, Pontificia Universidad CatÃ³lica de ValparaÃso; VÃctor Rojas, Pontificia Universidad CatÃ³lica de ValparaÃso; Mario Romero, Pontificia Universidad CatÃ³lica de ValparaÃso; Rodrigo HenrÃquez, Pontificia Universidad CatÃ³lica de ValparaÃso; Ricardo Schrebler, Pontifi

Abst# 4144 Synthesis and Characterization of Gold Nanoparticles and Study of Their Interaction with Hydroxyl Radicals by Eduardo MuÃ±oz, Pontificia Universidad CatÃ³lica de ValparaÃso; Renzo Milesi, Pontificia Universidad CatÃ³lica de ValparaÃso; Emilio Navarrete, Pontificia Universidad CatÃ³lica de ValparaÃso; Rodrigo HenrÃquez, Pontificia Universidad CatÃ³lica de ValparaÃso; Ricardo Schrebler, Pontificia Universidad CatÃ³lica de ValparaÃso

Abst# 4149 Hybrid Film Deposition for High-Aspect-Ratio Structures with Functional Surfaces by Jeong Hwan Kim, University of Science and Technology(UST); Jeong Hwan Kim, Korea Institute of Machinery and Materials(KIMM); Seong Woong Lee, Korea Institute of Machinery and Materials(KIMM); Jae-Sung Yoon, University of Science and Technology(UST); Jae-Sung Yoon, Korea Institute of Machinery and Materials(KIMM); Yeong-Eun Yoo, University

Abst# 4154 Non-Plasma Based Atomic Layer Dry Removal Technology for 10nm Node and Beyond by Yongzhuo Su, TEL Technoly Center, America, LLC; Tomoki Suemasa, Tokyo Electron Yamanashi Limited; Aelan Mosden, TEL Technology Center, America, LLC; Peter Biolsi, TEL Technoly Center, America, LLC

Thursday, October 6, 2016

A01—Batteries and Energy Technology Joint General Session

Abst# 144 A Novel Rapid Processing Route to Sintered Plaque 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

Abst# 149 Electrochemical Modeling, Optimization and Control of Lithium Metal Batteries by Seong Beom Lee, University of Washington, Seattle; Suryanarayana Kolluri, University of Washington, Seattle; Wu Xu, Pacific Northwest National Laboratory; Ji-Guang Zhang, Pacific Northwest National Laboratory; Venkat Subramanian,

University of Washington, Seattle

A02—Challenges in Advanced Analytical Tools and Techniques for Batteries: A Symposium in Honor of Zempachi Ogumi

Abst# 220 Electromagnetic Non-Destructive Non-Contact Methods & Device for Evaluation Nanostructured Electrode Materials and Electrode Structure of Li-Ion Batteries. by Vlad Redko, Enerize Corporation, FL. USA; Elena Shembel, Enerize Corporation; Volodymyr Khandetskyy, Enerize Corporation; Nely Zaderey, Ukrainian State Chemical Technology University

Abst# 226 Real-Time Collection, Visualization, and Processing of Electrochemical-Acoustic Data from Battery Cycling Experiments by Barry Van Tassell, Princeton University; Andrew Hsieh, Princeton University; Greg Davies, MAE/ACEE Princeton University; Daniel Steingart, Princeton University

A03—Li-Ion Batteries

Abst# 471 Interface Design with Conducting Polypyrrole Thin Film for Improving the Storage Property of Ni-Rich Materials by Jingchao Cao, Kingray New Materials Science&Technology Co Ltd; Kesong Xiao, Kingray New Materials Science&Technology Co Ltd

Abst# 473 Mesoporous Spinel Metal Oxides As High Performance Cathode in Aqueous Rechargeable Lithium Ion Battery by Nicholas Schuppert, University of Louisville; Santanu Mukherjee, University of Louisville; Alex Bates, University of Louisville; Moon Jong Choi, DGMIF; Taehee Park, Colorwon; Sam Park, University of Louisville

Abst# 475 Initial Coulombic Efficiency Improvement of the Li-Rich Layered Oxide Cathodes Via Tellurium Doping by Junxia Meng, Beihang University; Zicheng Wang, Beihang University; Lishuang Xu, Beihang University; Huaizhe Xu, Beihang University

Abst# 486 Coronene-Based Conductive and Ductile Polymer Binder for Lithium-Ion Batteries by Omer Taskin, Enwair Energy Technologies Corp.; Omer Taskin, Kirklareli University; Neslihan Yuca, Enwair Energy Technologies Corp.; Neslihan Yuca, Istanbul Technical University; Mehmet Cetintasoglu, ENWAIR; Murat Dogdu, ENWAIR; Ipek Avci, Enwair Energy Technologies Corp.

Abst# 487 Poly(fluorene phenylene) Graft Copolymer As a Novel Binder with Polyvinylpyrrolidone for High-Capacity Silicon Anode in Lithium-Ion Batteries by Ipek Avci, Enwair Energy Technologies Corp.; Omer Taskin, Enwair Energy Technologies Corp.; Neslihan Yuca, Enwair Energy Technologies Corp.; Mehmet Cetintasoglu, Enwair Energy Technologies Corp.; Murat Ferhat DoÄŸdu, Enwair Energy Technologies Corp.

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 Uinversity; Jie Liu, Department of Chemistry, Xiamen University; Tao Zhang, College of Energy, Xiamen Uinversity; 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 SchrÃ¶der, 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 BardÃ©, Toyota Motor Europe; Fabio Rosciano, Toyota Motor Europe; Mickael DollÃ©, UniversitÃ© de MontrÃ©al

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

Abst# 860 Li Ion Transport and Electrochemical Decomposition of Garnet $Li_{7-X}La_3Zr_{2-X}Ta_xO_{12}$ Solid Electrolytes by Randy Jalem, National Institute for Materials Science (NIMS), Japan; Yasuyuki Morishita, Nagoya Institute of Technology, Japan; Takashi Okajima, Nagoya Institute of Technology, Japan; Masanobu Nakayama, National Institute for Materials Science (NIMS), Japan; Masanobu Nakayama, Nagoya Institute of Technology; Toshihiro Kasuga, Nagoya Instit

A06—Failure Mode and Mechanism Analyses

Abst# 913 Coupled Electrochemical, Electrical and Thermal Modeling of Li-Ion Battery Modules by Sergiy Kalnaus, Oak Ridge National Laboratory; Srikanth Allu, Oak Ridge National Laboratory; Sreekanth Pannala, SABIC; Srdjan Simunovic, Oak Ridge National Laboratory; Wael Elwasif, Oak Ridge National Laboratory; John Turner, Oak Ridge National Laboratory

Abst# 915 Novel Diagnostic Methods Via Instrumented Lithium Batteries by Rohit Bhagat, University of Warwick; Joe Fleming, University of Warwick; Euan McTurk, University of Warwick; Sampan Seth, University of Warwick; Richard Dashwood, University of Warwick; David Greenwood, University of Warwick; Stefania Ferrari, University of Warwick

Abst# 930 3D Imaging and inâ€‘Operando X-Ray Tomography Study of Lithiation Induced Delamination and Cracking of Si Based Anodes for Lithium Ion Batteries by Farid Tariq, Imperial College London; Vladimir Yufit, Imperial College London; Kristina Kareh, Imperial College London; Pui-kit Lee, City University of Hong Kong; Dennis Yu, School of Energy & Environment City University of Hong Kong; David Eastwood, Research Complex at Harwell; Peter Lee, Research Complex at Harwell; Moshiel Biton, Imperi

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 MaterialsÂ, CAEP

Abst# 1034 Effect of Porous Structure of Electrodes on the Properties of AC/AC Edlc with Organic Electrolyte by Kadir KÃ¶se, Middle East Technical University; Mehmet Aydinol, Middle East Technical University

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)

Abst# 1037 Carbonized Nanocellulose Sustainably Boosts the Performance of Activated Carbon in Ionic Liquid Supercapacitors by Zhi Li, University of Alberta; Jun Liu, University of Alberta; Thomas Thundat, University of Alberta

C05—Atmospheric â€“andâ€“ Marine Corrosion

Abst# 1319 Modeling Film Thicknesses and Estimating Corrosion Depths Under Climate Control by Nils Van den Steen, Vrije Universiteit Brussel, SURF Group; Hans Simillion, Vrije Universiteit Brussel, SURF Group; Dominique Thierry, French Corrosion Institute; Johan Deconinck, Vrije Universiteit Brussel, SURF Group

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.

G05—SiGe, Ge, and Related Materials: Materials, Processing, and Devices 7

Abst# 2000 (Invited) Industrial Applications of Si-Based Epitaxy in Nanoelectronics by Didier Dutartre, STMicroelectronics

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

Abst# 2273 (Invited) Threshold Voltage Modulation By Interface Charge Engineering for High Performance Enhancement-Mode Al_2O_3/GaN Power Mosfets by Qi Zhou, Univ. of Electronic Science and Technology of China; Anbang Zhang, Univ. of Electronic Science and Technology of China; Yuanyuan Shi, UESTC; Zeheng Wang, UESTC; Li Liu, UESTC; Wanjun Chen, UESTC; Bo Zhang, UESTC

I01—Polymer Electrolyte Fuel Cells 16 (PEFC 16)

Abst# 2781 Enhanced Performance of Pristine Au Catalysts in the Presence of Ag for Alcohol Electrooxidation by Brahma Teja M S, Sri Sathya Sai Institute of Higher Learning; Sai Siddhardha R S, Sri Sathya Sai Institute of Higher Learning; Sai Saihish R, Sri Sathya Sai Institute of Higher Learning; Sai Siva Kumar B, Sri Sathya Sai Institute of Higher Learning

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

Abst# 2787 Platinum-Nickel Nanowires As Electrocatalysts in Alkaline Hydrogen Oxidation and Evolution by Shaun Alia, National Renewable Energy Laboratory; Chilan Ngo, Colorado School of Mines; Sarah Shulda, Colorado School of Mines; Svitlana Pylypenko, Colorado School of Mines; Bryan Pivovar, National Renewable Energy Laboratory

Abst# 2808 Statistical Analysis for the Electrochemical Performance of a 3D Reconstructed Catalytic Layer by Romeli Barbosa, Universidad de Quintana Roo; Beatriz Escobar, Centro de InvestigaciÃ³n CientÃfica de YucatÃ¡n; Victor Soberanis, Universidad de Quintana Roo

Abst# 2821 Design and Fabrication of Pt-Au Nanocatalyst with High Performance by Geping Yin, Harbin Institute of Technology

Abst# 2823 Platinum Based Catalysts for Direct Alcolhol Oxidation and Oxygen Reduction Reaction by Tran Man, VNU-HCM University of Science

Abst# 2849 Detection of Superoxide Anion Radical in Anion Exchange Membrane Fuel Cells Using in-Situ Fluorescence Spectroscopy by Yunzhu Zhang, Illinois Institute of Technology; Vijay Ramani, Illinois Institute of Technology

I03—Electrosynthesis of Fuels 4

Abst# 3070 (Invited) Elevated Temperature CO_2 Adsorption Separation and Electrochemical Conversionï¼šReaction Mechanism and Technology Development by Xiang Shi, Tsinghua University; Yu Luo, Department of Thermal Engineering, Tsinghua University; Ningsheng Cai, Tsinghua University

Abst# 3083 Carbide Supported Phosphides Are Superior Electrocatalysts for Hydrogen Generation Than Nanocrystalline Phosphides by Yagya Regmi, University of Tennesse, 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# 3409 Tunable Electrocatalytic Performance of Metal Nanocrystals By Tailoring Surface Electronic Structures by Yujie Xiong, University of Science and Technology of China

Abst# 3410 Molybdenum-Based Nanomaterials As High Efficient Electrocatalysts for HER by Zexing Wu, Huazhong University of Science and Technology; Jie Wang, Huazhong University of Science and Technology; Huolin Xin, CFN, Brookhaven National Laboratory; Deli Wang, Huazhong University of Science and Technology

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

Abst# 3417 Nanocrystal Seeded Growth of High Activity Ni-Mo Electrocatalysts for the Hydrogen Evolution Reaction by Ian McKay, Stanford University; Jay Schwalbe, Stanford University; Matteo Cargnello, Stanford University; Arun Majumdar, Stanford University

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

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

Abst# 3827 Chemical Vapor Deposition Graphene Sensors for Scale Detection by Hammad Younes, Masdar Institute of Science and Technology; Souhila Kaddour, Masdar Institute of Science and Technology; Amal Al Ghaferi, Masdar Institute of Science and Technology; Irfan Saadat, Masdar Institute of Science and Technology; Lina Tizani, Masdar Institute of Science and Technology

Abst# 3832 Mobile Water Kit 2.0: A Field Deployable Solution for E. coli Detection in Potable Water by Naga Siva Gunda, York University; Ravi Chavali, York University; Sushanta Mitra, York University

Abst# 3833 Cd (II) Ion-Selective Electrode Based on 2 â€“Acetylthiophene Semicarbazone in Polymeric Membrane by Chandra Mohan, Maharaja Agresan Institute of Technology; Kusum Sharma, Maharaja Agresan Institute of Technology; Sulekh Chandra, Zakir Husain College,New Delhi, India

Friday, October 7, 2016

A03—Li-Ion Batteries

Abst# 505 Ca-doped $Li_4Ti_5O_{12}$Â Nanosphere as aÂ Superior Anode Material for Lithium-ion Batteries by Qianyu Zhang, Guangzhou Institute of Energy Conversion

Abst# 507 Surface Modification Strategies of High Capacity Anodes Towards Exceptional Robust Cycling by Yue Ma, Uppsala University

Abst# 514 Double-Sided Carbon Covered Hierarchical Tin Oxide Anode for High Capacity Lithium-Ion Batteries by A-Young Kim, Korea Institute of Science and Technology; A-Young Kim, Korea University; Dongjin Byun, Korea University; Joong Kee Lee, Korea Institute of Science and Technology

Abst# 520 Superior Li-Storage Performances of Liquid-Phase Exfoliated Two-Dimensional Gallium Sulfide Nanosheets/Single-Walled Carbon Nanotubes Flexible Composite by Chuanfang Zhang, CRANN, School of Chemistry, Trinity College Dublin; Sang Hoon Park, Trinity College Dublin; Oskar Ronan, CRANN; Andrew Harvey, School of Physics and CRANN, Trinity College Dublin; Jonathan Coleman, School of Physics and CRANN, Trinity College Dublin; Valeria Nicolosi, CRANN, School of

Chemistry, Trinity College Dublin

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# 523 Flexible, Three-Dimensional Ordered Macroporous TiO2 Electrode with Enhanced Electrode-Electrolyte Interaction in High-Power Li-Ionbatteries by Gregory Lui, University of Waterloo; Ge Li, University of Waterloo; Xiaolei Wang, University of Waterloo; Gaopeng Jiang, University of Waterloo; Edric Lin, University of Waterloo; Michael Fowler, University of Waterloo; Aiping Yu, Univerisity of Waterloo; Zhongwei Chen, University of Waterloo

Abst# 524 Synthesis, Characterization and Electrochemical Properties of Germanium@Multiwalled Carbon Nanotubes Composite As Anode in Lithium Ion Batteries by Subrahmanyam Goriparti, Universita Degli Studi di Genova; Subrahmanyam Goriparti, Istituto Italiano di Tecnologia; Remo Zaccaria, Istituto Italiano di Tecnologia; Claudio Capiglia, Istituto Italiano di Tecnologia

Abst# 525 Bismuth Thin Films As Anodes for Low Voltage All-Solid-State Li-Ion Batteries by Brigitte Pecquenard, CNRS, UniversitÃ© de Bordeaux, ICMCB; Jules Galipaud, CNRS, UniversitÃ© de Bordeaux, ICMCB; StÃ©phane Cotte, CNRS, UniversitÃ© de Bordeaux, ICMCB; FrÃ©dÃ©ric Le Cras, CEA LETI, UniversitÃ© Grenoble Alpes

Abst# 526 Effect of Iodination Temperature on the Polyvinyl Alcohol Based Carbon Nanofiber for Lithium Ion Battery Anodes by Esra Serife Pampal, TEMAG Laboratories, Istanbul Technical University; Elena Stojanovska, TEMAG Laboratories, Istanbul Technical University; Serra Kucukkalfa, TEMAG Laboratories, Istanbul Technical University; Davut Uzun, TUBITAK MRC; Safak Yilmaz, Dept of Mechanical Engineering,ITU; Ali Kilic, TEMAG Laboratories, Istanbul Technical Univer

Abst# 527 Improving High-Rate Performance of Graphene Anode By Anchoring Titanium Nitride Nanoparticles in Lithium Ion Batteries by Elahe Yousefi, Sharif University of Technology; Elahe Yousefi, Iwate University; Mohammad Ghorbani, Sharif University of Technology; Abolghasem Dolati, Sharif University of Technology; Hitoshi Yashiro, Iwate University

A05—Beyond Li-ion Batteries

Abst# 865 A Porous Air Electrode for Li-O_2 Batteries Based on a Green Method by Guofeng Xia, Institute of Fuel Cells,Shanghai Jiao Tong University; Shuiyun Shen, Institute of Fuel Cells,Shanghai Jiao Tong University; Fengjuan Zhu, Shanghai Jiao Tong University; Aiming Wu, Institute of Fuel Cells,Shanghai Jiao Tong University; Ruofei

Wu, Institute of Fuel Cells, Shanghai Jiao Tong University,; Junliang Zhang, Institute

Abst# 870 Low-Overpotential Li-O_2 Battery: An Application of Nanostructured Cathode Architecture By Atomic Layer Deposition by Xiangyi Luo, Argonne National Laboratory; Lu Ma, Argonne National Laboratory; Mar Piernavieja-Hermida, University of Alabama in Huntsville; Jianguo Wen, Argonne National Laboratory; Yang Ren, Argonne National Laboratory, Advanced Photon Source; Tianpin Wu, Argonne National Laboratory; Yu Lei, Argonne National Laboratory; Jun Lu, Argonne Na

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Abst# 3422 Developing Molecular Imprinted Layers As Electro-Analytical Probes for Dydrogesterone 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

Abst# 3433 Electrochemical Synthesis of Single Pt Atom Catalyst for Hydrogen Reactions by Wei-Fu Chen, National Taiwan University; Si-Lin Fang, National Taiwan University; Li-Chyong Chen, Center for Condensed Matter Sciences, Natl Taiwan Univ; Kotaro Sasaki, Chemistry Department, Brookhaven National Laboratory