Book of Abstracts of the

10th Spring Meeting of the International Society of Electrochemistry

New approaches to nanostructuring electrodes for electroanalysis and energy storage

15 to 18 April, 2012, Perth, Australia

Organized by:
ISE Division 1 Analytical Electrochemistry
ISE Division 3 Electrochemical Energy Conversion and Storage
ISE Region Australia

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Oral Presentation Program

Monday, 16 April, 2012 - Morning

Auditorium

Chaired by: Nae-Lih Wu and Adam Best

08:00 to 08:40 **Keynote**

Ganesan Nagasubramanian (Advanced Power Sources Dept., Sandia National Labs, Albuquerque, USA),

Reducing Li-ion Safety Hazard Through the Use of Non-flammable Solvents

Analytical Electrochemistry

Auditorium

Chaired by: Justin Gooding and Salvatore Daniele

08:50 to 09:20 INVITED

Roland De Marco (Faculty of Science, Health and Education, University of the Sunshine Coast, Sippy Downs, Australia), *Eric Bakker, Marcin Pawlak, Manar Sohail*

A New Ion-to-Electron Transducer for Solid-State Polymeric Ion Sensors Based on Ferrocene Tagged Polyvinyl Chloride

09:20 to 09:50 INVITED

Alan Bond (School of Chemistry, Monash University, Clayton, Australia), *Gianluca Bernardini, Anthony Wedd, Chuan Zhao*

Photochemical Oxidation of Water and Reduction of Polyoxometalates at Light Irradiated Stable and Unstable Water-Ionic Liquid and Other Interfaces

09:50 to 10:20 INVITED

Shen-Ming Chen (Department of Chemical Engineering and Biotechnology, National Taipei University of Technology, Taipei, Taiwan), *Ying Li, Kuo Chiang Lin, Soundappan Thiagarajan, Jeng-You Yang*

Applications of Nanostructured Materials and Biomolecules Modified Electrodes for Electroanalysis and Energy Storage Devices

10:20 to 10:40 **Coffee Break**

10:40 to 11:00

Salvatore Daniele (Department of Molecular Sciences and Nanosystems, University Ca' Foscari Venice, Venice, Italy), *M. Antonietta Baldo, Dario Battistel, Carlo Bragato, Giulia Pecchielan*

Characterisation of Recessed Pt Nanoelectrode Ensembles Fabricated by Using Al_2O_3-coated Pt Thin Films

11:00 to 11:20

Mustafa Musameh (Materials Science and Engineering, CSIRO, Clayton, Australia), *Mark Hickey, Ilias Louis Kyratzis, Marta Redrado Notivoli*

Carbon nanotube-web modified electrodes for ultrasensitive detection of organophosphate pesticides

11:20 to 11:50 INVITED

Philip A. Ash (University of Oxford, Department of Chemistry, Oxford, United Kingdom), *Kylie A. Vincent*

Coupling Three-Dimensional Particle Network Electrodes with ATR-IR Spectroscopy – A Versatile Tool for the Spectroscopic Study of Adsorbed Species under Direct Electrochemical Control

11:50 to 12:10

Sayoko Shironita (Department of Materials Science and Technology, Nagaoka University of Technology, Niigata, Japan), *Mitsuhiro Inoue, Akira Nakazawa, Minoru Umeda*

Analysis of Pt Electrode Dissolution in H_2SO_4 Solution Using Electrochemical Quartz Crystal Nanobalance

12:10 to 12:30

Chuan Zhao (School of Chemistry, The University of New South Wales, Sydney, Australia), *Alan Bond, Xunyu Lu*

Water in Ionic Liquids: from Problems to Opportunities

12:30 to 14:00 **Lunch & Poster Session**

Analytical Electrochemistry
Electrochemical Energy Conversion and Storage - Supercapacitors

Electrochemical Energy Conversion and Storage - Batteries

Case Study Room

08:50 to 09:20 INVITED

Atsuo Yamada (The Universiy of Tokyo, Tokyo, Japan), *Prabeer Barpanda, Naoya Furuta, Shin-ichi Nishimura*

High Voltage (ca. 4V) Operation of High-spin Fe^{3+}/Fe^{2+} Redox Couple in $Li_{2-x}MP_2O_7$ Pyrophosphate Framework

09:20 to 09:50 INVITED

Scott Donne (University of Newcastle, Callaghan, Australia), *Joshua Lehr, Marina Yakovleva*

Lithiation of Manganese Dioxide for Li-Ion Batteries

09:50 to 10:20 INVITED

Nae-Lih Nick Wu (Department of Chemical Engineering, National Taiwan University, Taipei, Taiwan)

Synthesis and *In-Situ* Characterization of Li-alloying Anode Materials with Porous Microstructures

10:20 to 10:40 Coffee Break

10:40 to 11:10 INVITED

Chris Menictas (School of Chemical Engineering, University of NSW, Sydney, Australia), *Maria Skyllas-Kazacos*

An Overview of Materials Research and Development for Vanadium Redox Flow Battery Applications

11:10 to 11:40 INVITED

Shigeto Okada (Institute for Materials Chemistry and Engineering, Kyushu University, Kasuga, Japan), *Irina D. Gocheva, Kousuke Nakamoto, Sun Il Park, Jun-ichi Yamaki*

Aqueous Sodium-Ion Battery with NASICON-type Anode

11:40 to 12:10 INVITED

Neeraj Sharma (The Bragg Institute, Australian Nuclear Science and Technology Organisation, Kirrawee DC, Australia), *Vanessa K. Peterson*

Investigating Materials for Lithium-ion Batteries Using Neutron Diffraction

12:10 to 12:30

Zhonghui Cui (State Key Laboratory of High Performance Ceramics and Superfine Microstructure, Shanghai Institute of Ceramics, Chinese Academy of Sciences, Shanghai, China), *Xiangxin Guo*

Thin-film Electrodes for Li-ion Batteries: Study of Interfacial and Crystallinity Effects

12:30 to 14:00 **Lunch & Poster Session**

Analytical Electrochemistry
Electrochemical Energy Conversion and Storage - Supercapacitors

Electrochemical Energy Conversion and Storage - Supercapacitors

Seminar Room 1

Chaired by: Soo-Gil Park and Thierry Brousse

08:50 to 09:20 INVITED

Colin Raston (The University of Western Australia, Crawley, Aruba), *Xianjue Chen*

Microfluidic Thin Film Fabrication of Functional Materials

09:20 to 09:50 INVITED

Masashi Ishikawa (Dept. of Chemistry, Kansai University, Suita, Japan), *Yuka Murakumo, Masaki Yamagata, Shigeaki Yamazaki*

Charge-Discharge Mechanism of Capacitor Utilizing Bromine Species

09:50 to 10:20 INVITED

Tony Pandolfo (CSIRO Energy Technology, Clayton, Australia)

Increasing the Specific Energy of Electrochemical Capacitors

10:20 to 10:40 Coffee Break

10:40 to 11:00

Damian Kowalski (Department of Materials Science, Friedrich-Alexander University of Erlangen-Nurnberg, Erlangen, Germany), *Patrik Schmuki*

Electrodeposition in TiO_2 nanotubes - Conducting polymers as a model case

11:00 to 11:20

Thierry Brousse (Polytech Nantes - IMN, Nantes Cedex 3, France), *Christophe Aucher, Saïd Bouhtiyya, Fabien Capon, Jean-Baptiste Ducros, Renaud Frappier, Raul Lucio Porto, Jean-François Pierson*

Nitride-based Micro-supercapacitors

11:20 to 11:40

Krzysztof Fic (Poznan University of Technology, Institute of Chemistry and Technical Electrochemistry, Poznan, Poland), *Elzbieta Frackowiak, Grzegorz Lota, Mikolaj Meller*

Enhancement of the Activated Carbon Electrode Capacitance by Dihydroxybenzene Electrochemical Grafting

11:40 to 12:10 INVITED

Michael Thompson (Chemistry, University of Toronto, Toronto, Canada), *Christophe Blaszykowski*

Ultra-thin Film Modulation of Work Function Studied by Scanning Kelvin Nanoprobe

12:30 to 14:00 **Lunch & Poster Session**

Analytical Electrochemistry
Electrochemical Energy Conversion and Storage - Supercapacitors

Monday, 16 April, 2012 - Afternoon

Auditorium

Chaired by: Ganesan Nagasubramaniam and Shigeto Okada

14:00 to 14:40 **Keynote**

Lyn Beazley (Chief Scientist of Western Australia Department of Commerce, Perth, Australia)

Super Science and Engineering in Western Australia

Analytical Electrochemistry

Auditorium

Chaired by: Roland De Marco and Susana Torresi

14:50 to 15:20 INVITED

Danny Wong (Department of Chemistry and Biomolecular Sciences, Macquarie University, Sydney, Australia), *Shaneel Chandra, Stephanie LeStrange, Anthony Miller*

Fouling-resistant Physically Small Carbon Electrodes for Detection of Dopamine *In Vivo*

15:20 to 15:40

Peter Munyao Ndangili (Department of Chemistry, University of the Western Cape, Cape Town, South Africa), *Jijana N. Abongile, Priscilla G.L. Baker, Emmanuel I. Iwuoha, Stephen N. Mailu, Fanelwa R. Ngece, Rasaq A. Olowu, Tesfaye T. Waryo, Avril Williams*

Gallium-induced electronic properties of surface capped chalcogenic (selenide) quantum dots electrochemical genosensors for 5-enolpyruvylshikimate-3-phosphate synthase (CP4 EPSPS)

15:40 to 16:00

Sara Dale (University of Bath, Bath, United Kingdom), *Edward Barnes, Richard Compton, Barbara Kasprzyk-Hordern, Grace Lewis, Frank Marken, Adrien Mermet*

Pulse Electroanalysis at Gold-Gold Junction Electrodes

16:00 to 16:20 Coffee Break

16:20 to 16:50 INVITED

Alison Downard (MacDiarmid Institute for Advanced Materials and Nanotechnology, Department of Chemistry, University of Canterbury, Christchurch, New Zealand), *Ben Glossop, Clement Roux, Brad Simons, Rebecca Warr, Sam Yu*

Tuning the Properties of Polymer Membranes via Covalent Grafting of Nanoscale Organic Layers

16:50 to 17:20 INVITED

Debbie Silvester (Department of Chemistry, Curtin University, Perth, Australia), *Junqiao Lee, Krishnan Murugappan*

Screen-printed Electrodes for Ammonia Gas Sensing in Ionic Liquids

17:20 to 17:40

Alan O'Riordan (Nanotechnology Group, Tyndall National Institute, Cork, Ireland)

Single Nanowire Electrode-based Devices for Highly Sensitive Electroanalysis

17:40 to 18:00

Danmar Gloria (School of Chemistry, University of New South Wales, University of New South Wales, Australia), *J. Justin Gooding, David Brynn Hibbert, Grainne Moran*

Electrochemically Fabricated Three Dimensional Nano-porous Gold Films Optimized for Surface Enhanced Raman Scattering Applications

Electrochemical Energy Conversion and Storage - Batteries

Case Study Room

Chaired by: Ganesan Nagasubramaniam and Shigeto Okada

14:50 to 15:20

Xinyong Tao (College of Chemical Engineering and Materials Science, Zhejiang University of Technology, Hangzhou, China), *Yongping Gan, Hui Huang, Yang Xia, Han Xiao, Wenkui Zhang*

Bio-template Fabrication of Phosphate/Carbon, Oxide/Carbon, and Carbide/Carbon Nanostructures for Energy Storage

15:20 to 15:40

Christine Cachet-Vivier (Institut de Chimie et des Matériaux Paris-Est, Thiais, France), *Stéphane Bastide, Michel Latroche, Michel Laurent, Claudia Zlotea*

Electrochemical study of metallic nanoparticles/carbon composites for hydrogen storage with powder electrodes and cavity microelectrodes

15:40 to 16:00

Chun-Chieh Lin (National Taiwan University, Taipei, Taiwan), *Jing-Pin Pan, Hung-Chun Wu, Nae-Lih Nick Wu*

Enhanced Thermal Stability with Hyper-Branched Polymer Additive for Li-ion Batteries

16:00 to 16:20 Coffee Break

16:20 to 16:50 INVITED

Reddy M. V. (Solid State Ionics, Advanced Batteries Lab, Department of Physics, Singapore, Singapore), *Chowdari B. V. R., Subba Rao*

Synthesis, cyclic voltammetry, galvanostatic cycling and impedance studies on energy storage materials

16:50 to 17:10

Gao Liu (EETD/LBNL, Berkeley, USA)

Conductive Polymer Binder for High Capacity Alloy Anode

Electrochemical Energy Conversion and Storage - Fuel Cells

Seminar Room 1

Chaired by: Pawel J. Kulesza and Anthony O'Mullane

14:50 to 15:10 INVITED

San Ping Jiang (Department of Chemical Engineering, Curtin University, Perth, Australia)

Self-Assembly of Pt-based Nanoparticles on Non-covalent Functionalized CNTs and Graphene as Electrocatalysts for Fuel Cells

15:10 to 15:30

Lathe Jones (RMIT University, Melbourne, Australia)

Direct Electrodeposition of Porous Platinum

15:30 to 15:50

Ladislav Kavan (J. Heyrovsky Institute of Physical Chemistry, Prague 8, Czech Republic), *Michael Grätzel, Mohammad Khaja Nazeeruddin, Jun-Ho Yum*

Dye-sensitized Solar Cells: New Challenges from Graphene Cathode Interfaced to Co-based Redox Mediators

15:50 to 16:20 Coffee Break

16:20 to 16:40 INVITED

Gordon Thorogood (ANSTO, IME, Lucas Heights, Australia), *Gordon Kearley, Michael Koza, Hannu Mutka, Vanessa Peterson, Elvis Shoko, Jun-Ichi Yamaura*

Lattice Dynamics in W Pyrochlores: How Inelastic Neutron Scattering and Modeling Can Help

16:40 to 17:00 INVITED

Sangaraju Shanmugam (Department of Energy Systems Engineering, Daegu Gyeongbuk Institute of Science and Technology (DGIST), Daegu, Korea)

Nitrogen-doped carbon nanoshells derived from pyrolysis of bio-polymers as a non-precious metal catalyst for oxygen reduction reaction

17:00 to 17:20

Wolfgang Schuhmann (Analytische Chemie - Elektroanalytik & Sensorik; Ruhr-Universität Bochum, Bochum, Germany), *Dmitrii Guschin, Raoudha Haddad, Martin Muhler, Sascha Pöller, Minling Shao, Leonard Stoica, Jeevanthi Vivekananthan, Wei Xia*

Hierarchically-structured carbon microfiber/carbon nanotube modified electrodes for biofuel cells

17:20 to 17:40 INVITED

Christopher Munnings (CSIRO Energy Technology, Melbourne, Australia), *Sukhvinder Badwal*, *Sarbjit Giddey*

Hydrogen Production via Solid Electrolytic Routes

17:40 to 18:00

Carolina Galeano (Department of Heterogeneous Catalysis, Max-Planck-Institut für Kohlenforschung, Mülheim an der Ruhr, Germany), *Karl J.J. Mayrhofer, Josef C. Meier, Volker Peinecke, Ferdi Schüth*

Improved Durability of Fuel Cell Catalysts by Nanostructured Supports

Tuesday 17 April, 2012 - Morning

Analytical Electrochemistry

Auditorium

Chaired by: Danny Wong and Roland De Marco

08:00 to 08:40 **Keynote**

Joseph Wang (NE, UCSD, San Diego, USA)

Catalytic Nanomachines: Design and Applications

08:40 to 08:50 Short interval

08:50 to 09:20 INVITED

Gamini Senanayake (Faculty of Science & Engineering, Murdoch, Australia), *Nimal Perera*

Application of electrochemical studies to rationalise the leaching of gold in thiosulphate solutions

09:20 to 09:50 INVITED

Damien Arrigan (Curtin University, Dept. of Chemistry, Nanochemistry Research Institute, Perth, Australia), *Mickael Rimboud*

Electrochemical Behaviour at Nanoscale Liquid-Liquid Interface Arrays

09:50 to 10:20 INVITED

Conor Hogan (Department of Chemistry, La Trobe University, Bundoora, Australia), *Egan Doeven, Paul Francis, Elizabeth Zammit*

Electrochemical Modulation of Emission Wavelength in Mixed Electrochemiluminescent Systems

10:20 to 10:40 Coffee Break

10:40 to 11:00

Bruno Fabre (UMR 6226 Sciences Chimiques de Rennes, CNRS/ Univ. Rennes 1, Matière Condensée et Systèmes Electroactifs (MaCSE), Rennes, France), *Dario M. Bassani, Philippe Hapiot, Fei Hui, Chih-Kai Liang, Debdas Ray*

Covalent assembly of anthracene and fullerene monolayers on oxide-free, hydrogen-terminated silicon surfaces

11:00 to 11:20

Susana Cordoba de Torresi (Instituto de Química, Universidade de Sao Paulo, São Paulo, Brazil), *Vinicius Gonçales, Elaine Matsubara, Marco Antonio Minadeo, Filipe B. Nogueira, Jose Mauricio Rosolen*

Wiring Glucose Oxidase Enzymes with CNTs and Conducting Polymers for Direct Electronic Transfer

11:20 to 11:40

Ellen Reid (Chemistry Department, La Trobe University, Bundoora, Australia), *Vernon Cook, Conor Hogan*

New Electrochemiluminescent Horizons: Novel Platinum Schiff-base Complexes

11:40 to 12:00

Philippe Mandin (University of South Brittany (UBS), Laboratory of Engineering of Materials of Brittain (LIMATB), Lorient, France), *Zine Derhoumi, Hervé Roustan*

Two-phase Electrolysis Modelling and Zero Gravity Experimental Study

12:00 to 12:20

Katherine Lawrence (Department of Chemistry, University of Bath, Bath, United Kingdom), *Tony James, Frank Marken, John Watkins*

Covalently Modified Carbon Nanoparticles for Electrochemical Processes

12:30 to 14:00 **Lunch & Poster Session**

Electrochemical Energy Conversion and Storage
- Batteries
- Fuel Cells

Electrochemical Energy Conversion and Storage - Batteries

Case Study Room

Chaired by: Atsuo Yamada and Manickam Minakshi

08:50 to 09:10

Rossano Amadelli (ISOF-CNR, Ferrara, Italy)

Alcohols Oxidation on Cathodically Deposited Nickel Oxide-Hydroxyde Electrodes

09:10 to 09:30

Kenza Maher (Energy Research Institute, Nanyang Technological University, Singapore, Singapore), *Harry Hoster, Rachid Yazami*

Effect of Ageing on the Entropy of Lithium-ion Batteries

09:30 to 09:50

Arenst Andreas Arie (Department of Chemical Engineering, Faculty of Industrial Technology, Parahyangan Catholic University, Bandung, Indonesia)

Electrochemical characteristics of Fullerene C60 coated $LiCoO_2$ cathodes for lithium secondary batteries

09:50 to 10:20

Manickam Minakshi (Chemistry, Perth, Australia), *Pritam Singh, Stephen Thurgate*

Looking beyond lithium-ion technology

10:20 to 10:40 Coffee Break

10:40 to 11:10 INVITED

Adam Best (CSIRO Energy Technology, Clayton, Australia), *Andrew Basile, Anand Bhatt, Anthony Hollenkamp, Thuy Huynh, Pon Kao, Robert Rees, Thomas Ruther, Graeme Snook, Martin Yoon*

Enabling the next generation of lithium metal batteries: The development and characterization of advanced ionic liquid electrolytes

11:10 to 11:30 INVITED

Kyung Yoon Chung (Energy Storage Research Center, Korea Institute of Science and Technology, Seoul, Korea), *Won-Young Chang, Byung-Won Cho, Jeon-Jin Choi, Won-Bin Im, Jong-Hak Kim*

Electrochemical performance of Li_2MSiO_4 (M=transition metal) Synthesized by Microwave Assisted Sol-Gel Process with Surface Modification

11:30 to 11:50

Wesley Dose (University of Newcastle, Newcastle, Australia), *Scott Donne*

Heat Treated Electrolytic Manganese Dioxide for Primary Li/MnO_2 Batteries: Effect of Precursor Properties on Electrochemical Performance

11:50 to 12:10

Roberto Torresi (Instituto de Química - Universidade de São Paulo, Sao Paulo, Brazil), *Vitor Leite Martins, Nedher Sanchez Ramirez*

New Ionic Liquids Based in Tetracyanoborate Anions as Electrolyes for Lithium Batteries

12:10 to 12:30

Shahnaz Ghasemi (TUM CREATE Centre for Electromobility, Singapore, Singapore), *Harry Hoster, Rachid Yazami*

Particle Size Effect on Thermodynamic Properties of Lithium Cobalt Oxide

12:30 to 14:00 **Lunch & Poster Session**

Electrochemical Energy Conversion and Storage
- Batteries
- Fuel Cells

Electrochemical Energy Conversion and Storage - Fuel Cells

Seminar Room 1

Chaired by: Ladislav Kavan and Sangaraju Shanmugam

08:50 to 09:10

Pawel J. Kulesza (Department of Chemistry, University of Warsaw, Warsaw, Poland)

Functionalized carbon nanostructures and metal nanoparticles: From effective charge propagation to enhancement of electrocatalytic and bioelectrocatalytic properties

09:10 to 09:30 INVITED

Anthony O'Mullane (School of Applied Sciences, RMIT University, Melbourne, Australia)

The utilisation of complimentary electrochemical routes for the creation of active bimetallic electrocatalysts

09:30 to 09:50

Sara Cavaliere (AIME-ICGM, University of Montpellier 2, CNRS, Montpellier, France), *Julien Bernard d'Arbigny, Deborah Jones, Jacques Rozière, Iuliia Savych, Surya Subianto*

Fuel Cell Electrodes Based on Electrospun Nanofibres

09:50 to 10:20

Bjorn Winther-Jensen (Dept. Materials Engineereing, Monash University, Clayton, Australia), *Vanessa Armel, Bartlomiej Kolodziejczyk, Douglas MacFarlane, Orawan Winther-Jensen*

Light enhanced electro-catalysis on conjugated polymer hetero-junction composites

10:20 to 10:40 Coffee Break

10:40 to 11:00 INVITED

Armelle Ringuedé (Laboratoire d'Electrochimie, Chimie aux Interfaces et Modélisation pour l'Energie UMR 7575 CNRS, ENSCP - Chimie Paristech, Paris, France), *Valérie Albin, Virginie Lair, Pascal Loiseau, Philippe Vermaut*

Relations Microstructure–Electrochemical Properties for Electro-deposited Yttrium-doped Ceria Thin Layers in View of Solid Oxide Cell Applications

11:00 to 11:20

Hyejung Cho (Research Master, Energy Lab., Samsung Advanced Institute of Technology, Samsung Electronics, Ltd., Yongin-Si, Korea)

Challenges in System Design and Control for Thermal Reliability of High Efficient DMFC System

11:20 to 11:40

Holly A. Reeve (University of Oxford, Department of Chemistry, Oxford, United Kingdom), *Philip A. Ash, Lars Lauterbach, Oliver Lenz, Kylie A. Vincent*

A Modular System for Regeneration of NAD Cofactors using Enzyme Modified Pyrolytic Graphite Particles

11:40 to 12:00

Enn Lust (Institute of Chemistry, University of Tartu, Tartu, Estonia), *Eneli Härk, Jaak Nerut, Silver Sepp, Kersti Vaarmets, Peeter Valk*

Pt and Pt Ru Catalysts for PEMFC Deposited onto Carbide Derived Carbons Supports

12:00 to 12:20

Minoru Umeda (Department of Materials Science and Technology, Nagaoka University of Technology, Niigata, Japan)

Pt-C and Pt-Ru-C Sputtered Electrodes: Unexpected Oxygen-Enhancing Methanol Oxidation Performance

12:20 to 14:00 Lunch & Poster Session

Tuesday 17 April, 2012 - Afternoon

Analytical Electrochemistry

Auditorium

Chaired by: M.W. Sangaranarayanan and Alan O'Riordan

14:00 to 14:40 **Keynote**

Justin Gooding (School of Chemistry and Australian Centre for NanoMedicine, The University of New South Wales, Sydney, Australia)

Making Silicon Water Friendly: An Approach to Producing Stable Oxide Free Silicon for Electrochemical Applications

14:40 to 14:50 Short Interval

14:50 to 15:10

Nimal Perera (Faculty of Science & Engineering, Murdoch, Australia), *Gamini Senanayake*

A comparative study of the anodic oxidation of gold in alkali, ammonia, halide and thiocyanate solutions

15:10 to 15:30

Shane O'Sullivan (Curtin University, Dept. of Chemistry, Nanochemistry Research Institute, Perth, Australia)

Electrochemistry of Proteins at Arrays of Micro-scale Liquid-Liquid Interfaces

15:30 to 16:00

Priscilla Baker (Chemistry Department, University of the Western Cape, Bellville, South Africa), *Euodia Hess, Emmanuel Iwuoha, Nontle Mniki, Tesfaye Waryo*

Plasmonic properties of novel conductive polymer nanocomposites

16:00 to 16:20 Coffee Break

16:20 to 16:40

Magdalena Gebala (Analytische Chemie - Elektroanalytik & Sensorik, Ruhr-Universität Bochum, Bochum, Germany), *Fabio La Mantia, Wolfgang Schuhmann*

Modulation of the electron transfer rate of redox active DNA labels imposed by intercalation

16:40 to 17:00

Yuanhua Shao (Institute of Analytical Chemistry, Peking University, Beijing, China), *Yitong Dong, Tianrong Ji, Shujuan Liu, Yonghui Qiao, Xiaohong Yin, Xinyu Zhu*

Functionality of Glass Micro/Nanopipettes and Their Applications

17:00 to 17:20

Eduardo Silva (CICECO- Dept. of Ceramics & Glass Engineering, Aveiro, Portugal), *António Bastos, Filipe Oliveira, Rui Silva, Mikhail Zheludkevich*

Boron-doped Nanocrystalline Diamond Microelectrodes for Corrosion Studies – The Detection of Zn^{2+} and Dissolved O_2

17:20 to 17:40

Young-Rae Hong (Institute of Materials Research and Engineering, Singapore, Singapore)

Effect on Oxygen Evolution Catalysts on Nanostructured Hematite Photoanodes for Solar Water Splitting

Electrochemical Energy Conversion and Storage - Batteries

Case Study Room

Chaired by: Chris Menictas and M. V. Reddy

14:50 to 15:20 INVITED

Jang-Kyo Kim (Department of Mechanical Engineering, The Hong Kong University of Science and Technology, Hong Kong, China), *Zhendong Huang, Seiwoon Oh, Biao Zhang*

Electrospun SnO_x/Carbon Nanofiber/Graphene Nanocomposite Films as Anode for Li Ion Batteries

15:20 to 15:40

Stefan Klink (Ruhr-Universität Bochum, Analytische Chemie - Elektroanalytik & Sensorik, Bochum, Germany), *Fabio La Mantia, Martin Muhler, Wolfgang Schuhmann, Edgar Ventosa, Wei Xia*

Tailoring of CNT Surface Oxygen Groups by Gas-phase Oxidation and Its Implications for Lithium Ion Batteries

15:40 to 16:00

Feng Chen (College of Chemical Engineering and Materials Science, Zhejiang University of Technology, Hangzhou, China), *Jintao Yang, Hongfei Yao, Mingqiang Zhong*

Electrochemical properties of mesoporous NiO synthesized by ligin sulfonate template

16:00 to 16:20 Coffee Break

16:20 to 16:50 INVITED

Justin Kimpton (Australian Synchrotron, Clayton, Australia), *David Williams, Helen Brand, Qinfen Gu, Bridget Ingham, Monica Ko, Helen Maynard-Casely, Neeraj Sharma*

In situ Electrochemical Studies Using Powder Diffraction at the Australian Synchrotron

16:50 to 17:10

Prabeer Barpanda (Chemical System Engineering, The University of Tokyo, Tokyo, Japan), *Mohamed Ati, Jean-Noel Chotard, Brent Melot, Gwanaelle Rousse, Jean-Marie Tarascon*

Realizing the Highest FeII/III Redox Potential at 3.9 V in a Triplite-structured Metal Fluorosulphate Cathode for Li-ion Batteries

Electrochemical Energy Conversion and Storage - Supercapacitors

Seminar Room 1

Chaired by: Colin Raston and Masashi Ishikawa

14:50 to 15:10

Dennis Antiohos (University of Wollongong, ACES, IPRI, Wollongong, Australia)

Composite carbon materials for supercapacitors

15:10 to 15:40 INVITED

Elzbieta Frackowiak (Poznan University of Technology, Institute of Chemistry and Technical Electrochemistry, Poznan, Poland), *Krzysztof Fic, Grzegorz Lota, Mikolaj Meller*

Transition Metal Nitrides and Their Composites with Activated Carbons as Electrodes for Supercapacitors

15:40 to 16:00

Purnama Ningsih (Discipline of Chemistry, University of Newcastle, Newcastle, Australia), *Scott W. Donne, Clovia Z. Holdsworth*

Effect of Concentration of Composite Solutions on Polypyrrole-Manganese Oxides (PPy-MnO) Films Capacity and Morphology for Electrode Supercapacitor

16:00 to 16:20 Coffee Break

16:20 to 16:50 INVITED

Soo-gil Park (Chungbuk National University, Cheongju, Korea), *Chang-soo Jin, Hyong-jin Kim, Han-joo Kim, Jeong-jin Yang*

Electrochemical Characteristic of Carbon Nanotubes by Controlled W/O Emulsion Condition

Electrochemical Energy Conversion and Storage - Fuel Cells

Seminar Room 1

Chaired by: Sang Ping Jiang and M.W. Sangaranarayanan

17:00 to 17:20

Shuihua Tang (State Key Lab of Oil and Gas Reservoir Geology & Exploitation, Southwest Petroleum University, Chengdu, China), *Paul A. Christensen, Geir Martin Haarberg, Wenfeng Lin*

Effect of Methanol Concentration on Activity of Catalyst and AC Impedance of Catalyst Layer

Wednesday 18 April, 2012 - Morning

Auditorium

Chaired by: Mike Thompson and Sang Ping Jiang

08:00 to 08:40 **Keynote**

François Béguin (ICTE, Poznan University of Technology, Poznan, Poland), *Céline Decaux, Elzbieta Frackowiak, Grzegorz Lota, Encarnacion Raymundo*

Development of a high voltage graphite/carbon hybrid capacitor

Analytical Electrochemistry

Auditorium

Chaired by: Alan Bond and Philippe Mandin

08:50 to 09:10

Jie Zhang (School of Chemistry, Monash University, Melbourne, Australia), *Alan Bond, Si-Xuan Guo, Shu-Feng Zhao*

Voltammetric performance of graphene modified electrodes

09:10 to 09:30

Nurul Ain Jabit (Murdoch University, Murdoch, Australia), *Michael J. Nicol, Gamini Senanayake*

An Electrochemical and Leaching Study of Ilmenite in Hydrochloric Acid Solutions

09:30 to 09:50

Alexander Kuhn (University of Bordeaux, Pessac, France), *Matthias Heim, Nicolas Mano, Serge Ravaine, Stephane Reculusa, Blaise Yvert*

Highly controlled nanostructuration of porous electrodes for electroanalytical applications

09:50 to 10:10

Nadira Batool (Chemistry, Murdoch University, Murdoch, Australia), *Peter May, Danielle Meyrick*

Electrochemical Speciation of Oxovandium with Simple Organic Ligands in Aqueous Solutions

10:10 to 10:40 Coffee Break

10:40 to 11:00

Serge Cosnier (Grenoble University, CNRS, Département de Chimie Moléculaire UMR CNRS 5250, Grenoble- Cedex 9, France)

Nanostructuration of Biosensor Interfaces by Affinity Systems and Carbon Nanotubes

11:00 to 11:20

Leigh Aldous (School of Chemistry, University of New South Wales, Sydney, Australia), *Richard G. Compton, Tsz W. B. Lo, Janjira Panchompoo*

Nanostructuring Electrodes with Carbon Black: Advantages and Applications in Electroanalysis

11:20 to 11:40

Wenrong Yang (School of Life and Environmental Sciences, Deakin University, Geelong, Australia)

Protein Electrochemistry Using Graphene-based Nano-assembly

11:40 to 12:00

Fethi Bedioui (UMR 8151, U 1022 Pharmacologie Chimique et Genetique et Imagerie, Chimie ParisTech, Paris, France), *Tiphaine Béziaud, Aurélie Girard, Laurent Griscom, Sophie Griveau, Catherine Marchand, Achille Nassi, Florence Razan, Laurent Thouin, Loan To Thi Kim*

Dual Ultramicroelectrodes for Direct Detection of NO-Release from S-Nitrosothiols in Biological Fluids

12:00 to 12:20

Hong-yuan Chen (Nanjing University, Nanjing, China)

The Coupling of Localized Surface Plasmon Resonance-based Photoelectrochemistry and Nanoparticle Size Effect: Towards Novel Plasmonic Photoelectrochemical Biosensing

12:20 to 14:00 Lunch

Electrochemical Energy Conversion and Storage - Batteries

Case Study Room

Chaired by: Qingsong Tong and Ganesan Nagasubramaniam

08:50 to 09:20 INVITED

Kwang Kim (Department of Material Science and Engineering, Yonsei University, Seoul, Korea), *Jin Go Kim, Ji Young Kim, Hee Chang Youn*

Reduced Graphene Oxide-based Nanocomposites for High Rate Electrochemical Energy Storage Applications

09:20 to 09:40

Emmanuel Iwuoha (Sensor Lab, Department of Chemistry, University of Western Cape, Cape Town, South Africa), *Priscilla Baker, Chinwe Ikpo, Kenneth Ozoemena*

High Performance Lithium Ion Battery Composite Cathode Materials Developed with Bimetallic Nanocrystal Alloys-functionalised Carbon Nanotubes

09:40 to 10:00

Wen-Chin Chen (National Taiwan University, Taipei, Taiwan), *Shih-Chieh Liao, Hung-Chun Wu, Nae-Lih Wu*

Study on Synthesis of High Capacity $Li_{1+x}(NiMn)_{1-x}O_2$ Composite Cathode for Li-ion Batteries

10:00 to 10:20

Shulei Chou (University of Wollongong, Wollongong, Australia), *Shi-Xue Dou, Hua-Kun Liu, Jiazhao Wang*

Nanostructured $Li_4Ti_5O_{12}$: Fast Preparation and Its Binder Effect as Anode Materials for Lithium-ion Battery

10:20 to 10:40 Coffee Break

10:40 to 11:00

Fabio La Mantia (Analytische Chemie, CES - Zentrum für Elektrochemie, Bochum, Germany)

Extracting Energy from Salinity Gradient through Secondary Battery Systems

11:00 to 11:20

Hirotomo Nishihara (Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan), *Shinichiroh Iwamura, Takashi Kyotani*

Si Nanoparticles Covered with Carbon Nanolayer for Lithium-ion Battery Anodes

11:20 to 11:40

Gunars Bajars (Institute of Solid State Physics, University of Latvia, Riga, Latvia), *Liga Grinberga, Janis Kleperis, Gints Kucinskis*

Structure and Electrochemical Performance of Li_2FeSiO_4 Cathode Material

11:40 to 12:00

Qingsong Tong (College of Chemistry and Materials Science, Fujian Normal University, Fuzhou, China)

High-rate Discharge Performance of the Li-rich Lithium Iron Phosphate Doped by Fluoride

12:30 to 14:00 Lunch

Electrochemical Energy Conversion and Storage - Supercapacitors

Seminar Room 1

Chaired by: Mike Thompson and Sang Ping Jiang

08:00 to 08:40 Keynote

François Béguin (ICTE, Poznan University of Technology, Poznan, Poland), *Céline Decaux, Elzbieta Frackowiak, Grzegorz Lota, Encarnacion Raymundo*

Development of a high voltage graphite/carbon hybrid capacitor

08:40 to 08:50 Coffee Break

08:50 to 09:10

Jeom-Soo Kim (Advanced Batteries Research Center / Korea Electronics Technology Institute, Seonggnam-si, Korea), *Young-Jun Kim, Young-Geun Lim, Jung-Woo Park, Min-Sik Park*

Effect of Applying Li_2MO_3 (M=Mo, Ru) as Lithium Sources for Lithium Ion Capacitors

09:10 to 09:30

Jay Wadhawan (Deaprtment of Chemistry, The University of Hull, Kingston-upon-Hull, United Kingdom), *Jonathan Halls*

Liquid Nanotechnology for Personalised Energy Sources

Electrochemical Energy Conversion and Storage - Fuel Cells

Seminar Room 1

Chaired by: Wolfgang Schuhmann and Sang Ping Jiang

09:50 to 10:20 INVITED

Stylianos Neophytides (Foundation of Research and Technology Hellas, Institute of Chemical Engineering and High Temperature Processes, Patras, Greece), *Maria Daletou, Alin Orfanidi*

Increase in Pt Utilization on Pyridine Modified Pt/CNTs for High Temperature PEM Fuel Cells

10:20 to 10:40 Coffee Break

10:40 to 11:00

Virginie Lair (Chimie Paristech ENSCP, Paris, France), *Kevin Giffard, Oleg Lupan, Daniel Morvan, Armelle Ringuedé, Frédéric Rousseau, Marine Tassé*

Characterization of Ceria-based Layers Deposited by Low Plasma Pressure Technique for High Temperature Applications

11:00 to 11:20

Hiroshi Inoue (Osaka Prefecture University, Sakai, Japan), *Masanobu Chiku, Akinori Haze, Eiji Higuchi*

Mechanism of Ethanol Oxidation Reaction at Rh and/or SnO_x Monolayers-Modified Pt Electrodes

11:20 to 11:40

Germano Tremiliosi-Filho (Instituto de Quimica de Sao Carlos, Universidade de Sao Paulo, Sao Carlos, Brazil), *Luiz Henrique da Silva Gasparotto, Janaina Fernandes Gomes*

The Influence of the Support Coverage with Au on the Glycerol Electro-oxidation

11:40 to 12:00

Gregory Offer (Department of Earth Science Engineering, Imperial College London, London, United Kingdom), *Nigel Brandon, Lesley Cohen, Robert Maher*

In-operando Raman Spectroscopy of Carbon Deposition from Carbon Monoxide and Syngas on Solid Oxide Fuel Cell Anodes

12:30 to 14:00 Lunch

Wednesday 18 April, 2012 - Afternoon

Auditorium

Chaired by: Manickam Minakshi and Ganesan Nagasubramanian

14:00 to 14:40 **Keynote**

Ulrich Stimming (TUM Create Ltd., Centre for Elektromobility, c/o Nanyang Technological University, Singapore, Singapore)

Nanotechnology in Energy Conversion and Storage

Analytical Electrochemistry

Auditorium

Chaired by: Alison Downard and Philippe Mandin

14:50 to 15:10

Serge Zhuiykov (Materials Science and Engineering Division of CSIRO, Melbourne, Australia)

Impact of the Sintering Conditions on Performance of Dissolved Oxygen Sensor Based on ZnO-doped RuO_2 Sensing Electrode

15:10 to 15:30

Emilie Vanhove (LAAS-CNRS, Toulouse, France), *Laurent Bouscayrol, Véronique Conédéra, Aymeric Gérard, Jérôme Launay, Robin Naval, Pierre Temple-Boyer, Mohamed Ali Zouari*

Long-life Insulating Layers for Integrated Microelectrodes

15:30 to 15:50

Jacqui Delaney (La Trobe University, Melbourne, Australia), *Egan Doeven, Conor Hogan*

Use of Mobile Cell Phone for the Generation and Detection of Electrogenerated Chemiluminescence in Low-cost Sensors

15:50 to 16:20 Coffee Break

16:20 to 16:40

Fernando Cortés Salazar (Laboratoire d'Electrochimie Physique et Analytique (LEPA), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland), *Hubert Girault, Andreas Lesch, Dmitry Momotenko, Gunther Wittstock*

Soft Stylus, Fountain Pen and Microelectrode Array for Scanning Electrochemical Microscopy

16:40 to 17:00

Manuel Lohrengel (Institute for Physical Chemistry and Electrochemistry, Heinrich-Heine-University Düsseldorf, Düsseldorf, Germany), *T. R. Münninghoff, K. P. Rataj*

Shaping of micro systems by anodic dissolution

Electrochemical Energy Conversion and Storage - Batteries

Case Study Room

Chaired by: Manickam Minakshi and Ganesan Nagasubramanian

14:50 to 15:10

Enrique Quiroga-Gonzalez (Institute for Materials Science, University of Kiel, Kiel, Germany), *Jürgen Carstensen, Helmut Föll*

Good Cycling Performance of High Density Arrays of Si Wires of 1 [mu]m in Diameter as Anodes for Li-ion Batteries

15:10 to 15:30

Krzysztof Miecznikowski (Department of Chemistry, University of Warsaw, Warsaw, Poland), *Sebastian Fiechter, Pawel J. Kulesza, Alejandra Ramírez*

The effect of doping material on the efficiency of mesoporous WO_3 film photoanodes for water splitting

15:30 to 15:50

She-huang Wu (Department of Materials Engineering, Tatung University, Taipei, Taiwan), *Wei Kong Pang, Hung-Huei Tsai, Yu-Syuan Wei*

Characteristics of Li_2MnO_3-Stabilised $LiMnO_2$ Composite Cathode for Li-ion Batteries

15:50 to 16:20 Coffee Break

16:20 to 16:40

Graeme Snook (CSIRO Process Science and Engineering, Clayton, Australia), *Adam Best, Anthony Hollenkamp, Thuy Huynh*

Electrochemical Investigation of the Stability of $LiCoO_2$ in Ionic Liquid Electrolytes

Electrochemical Energy Conversion and Storage - Fuel Cells

Seminar Room 1

Chaired by: Pawel Kulesza and Ladislav Kavan

14:50 to 15:10 INVITED

Kohei Uosaki (International Center for Materials Nanoarchitectonics (MANA)/ National Institute for Materials Science (NIMS), Tsukuba, Japan), *Hitoshi Fukumitsu, Katsuyoshi Ikeda, Takuya Masuda, Yu Sun*

Interfacial Arrangements with Atomic/Molecular Resolution for Highly Efficient Photoelectrochemical Energy Conversion

15:10 to 15:30

Seong Ihl Woo (Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Korea), *Chang Hyuck Choi, Sung Hyeon Park*

Strategy to Develop Highly Active Carbon-based Catalysts for Oxygen Reduction Reactions

15:30 to 15:50

Annick Hubin (Vrije Universiteit Brussels, Brussels, Belgium), *Elisabet Ahlberg, Andrea Boschin, Tom Breugelmans, Paolo Pescarrmona, Xia Sheng, Heidi Van Parys, Ivo Vankelecom, Benny Wouters*

New approach towards the fast screening of electrocatalysts for cogeneration of chemicals and electricity

15:50 to 16:20 Coffee Break

16:20 to 16:40

Na Ai (Fuels and Energy Technology Institute, Curtin University, Perth, Australia), *Kongfa Chen, San Ping Jiang*

Promoting Effect of (Gd,Ce)O_2 and CeO_2 Nanoparticles on the Electrocatalytic Activity of Mono-layered Pt electrodes

16:40 to 17:00

Chih-Wei Hu (Department of Chemical Engineering, Taipei, Taiwan), *Kuo-Chuan Ho, Sheng-Yuan Kao, Yin-Chih Liao*

Water Processable Polyaniline-Prussian Blue Nanocomposites for Electrochromic Applications

Poster Presentation Program

Analytical Electrochemistry

s1-001

Omar Abdul-Rahim (School of Chemistry, Monash University, Clayton, Australia), *Alan Bond, David Collins, Patrick Perlmutter, Thomas Rüther*

Introduction of Third Generation Solvent System: Electro-Reduction of Organic Molecules in IL

s1-002

Eva Alvarez de Eulate (Curtin University, Department of Chemistry, Nanochemistry Research Institute, Perth, Australia), *Debbie Silvester*

Proton and Protein Voltammetry at a Water | Ionic Liquid Microinterface Array

s1-003

Kiran Bano (School of Chemistry, Monash University, Clayton, Australia), *Alan M. Bond, Inam-ul Haque, Ayman Nafady, Jie Zhang*

Electrode Kinetics Associated with TCNQ, $TCNQ^{-}$ and $TCNQ^{2-}$ (TCNQ = 7,7,8,8-tetracyanoquinodimethane) Redox Chemistry in Acetonitrile as Determined by Analysis of Higher Harmonic Components Derived from Fourier Transformed Large Amplitude ac Voltammetry

s1-004

Jiri Barek (Charles University in Prague, Faculty of Science, Department of Analytical Chemistry, UNESCO Laboratory of Environmental Electrochemistry, Prague 2, Czech Republic), *Hana Dejmkova, Jan Fischer, Karolina Peckova, Vlastimil Vyskocil, Jiri Zima*

Voltammetric and Amperometric Determination of Chemical Carcinogens and Markers of their Exposition using Novel Electrode Materials

s1-005

Abbas Barfidokht (School of Chemistry, University of New South Wales, Sydney, Australia), *J. Justin Gooding, Erwann Luais*

Regain of Electrochemistry on Passivated Electrodes Decorated by Gold Nanoparticles: Thickness Dependence of the Passivating Layer

s1-006

Shuping Bi (Chemistry Department, Nanjing University, Nanjing, China)

Numerical Simulation Studies on Cyclic Reciprocal Derivative Chronopotentiometry of Reversible Electrode Reaction Coupled with Langmuir Adsorption Processes

s1-007

David Bower (Chemistry Department, La Trobe University, Bundoora, Australia), *Conor Hogan*

Low-cost LEECs based on room temperature ionic liquids

s1-008

Daeic Chang (Physicochemical Analysis lab, Ulsan Fine Chemical Industrial Center, Ulsan Technopark, ULSAN, Korea), *Ju-Uck Kang, Jong-Kuk Kim, Ji-Hye Park*

Electrochemically Synthesis and Characterization of Polyaniline for Gas Sensing Application

s1-009

Shen-ming Chen (Department of Chemical Engineering and Biotechnology, National Taipei University of Technology, Taipei, Taiwan), *Tse-Wei Chen, Ying Li, Tsung-Hsuan Tsai, Jeng-You Yang*

Applications of Enzyme/ Multi-walled Carbon Nanotube and Metal Hexacyanoferrate/Poly(3,4-ethylenedioxythiophene) Hybrid Film Modified Electrodes for Biomolecules Detection

s1-010

Xin Chen (School of Chemistry, The University of New South Wales, Sydney, Australia), *J. Justin Gooding*

Detection of Trace Nitroaromatic Isomers Using AgNPs/β-Cyclodextrin Modified ITO Electrodes

s1-011

Moinul Choudhury (School of Chemistry, University of New South Wales, Sydney, Australia), *Simone Ciampi, J. Justin Gooding, Xunyu Lu, Chuan Zhao*

Light Addressable n-Type Silicon Photo-Electrodes

s1-012

Zhenyu Chu (State Key Laboratory of Materials-Oriented Chemical Engineering, College of Chemistry and Chemical Engineering, Nanjing University of Technology, Nanjing, China), *Wanqin Jin*

Electric Field Induced Self-assembly Approach for Fabrication of Double Structured Prussian Blue Film as Highly Sensitive Biosensors

s1-013

Kyloon Chuah (School of Chemistry, University of New South Wales, UNSW Sydney, Australia), *Rose Amal, J. Justin Gooding, Ian Y. Goon, Leo M. H. Lai*

Ultrasensitive Electrochemical Detection of Prostate-specific Antigen (PSA) Using Gold-coated Magnetic Nanoparticles as 'Dispersible Electrodes'

s1-014

Fernando Cortés Salazar (Laboratoire d'Electrochimie Physique et Analytique (LEPA), Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland), *Siham Beggah, Hubert Girault, Jan Roelof Van der Meer*

Environmental Monitoring with an Electrochemical Cell-based Biochip Sensor: As(III) in Tap Water

s1-015

Egan Doeven (Department of Chemistry, La Trobe University, Melbourne, Australia)

New Dimensions in Electrochemiluminescence

s1-016

Roman Dronov (School of Chemical and Physical Sciences, Flinders University, Bedford Park, Australia)

Direct Electrochemistry of Cytochrome c at PDMS-supported Carbon Nanotubes

s1-017

Bruno Fabre (UMR 6226 Sciences Chimiques de Rennes, CNRS, Univ. Rennes 1, Matière Condensée et Systèmes Electroactifs (MaCSE), Rennes, France), *Cyril Herrier*

Local Anodic Oxidation (LAO)-directed Nanopatterning of Organic Monolayer-modified Silicon Surfaces

s1-018

Louise Graham (Queen's University Belfast, Belfast, United Kingdom), *Christopher M.A. Brett, Andrew P. Doherty, Rasa Pauliukaite*

Electrochemical Study of a Ferrocene Appended Ionic Liquid as a Redox Mediator for an Amperometric Glucose Biosensor

s1-019

Christian Andre Gunawan (The University of New South Wales, School of Chemistry, Sydney, Australia), *Xunyu Lu, Bryan Harry Rahmat Suryanto, Chuan Zhao*

Tuning the Electrodeposition Parameters to Yield Nanostructured Metals from Protic Ionic Liquid Electrolytes

s1-020

Jonathan Halls (Department of Chemistry, University of Bath, Bath, United Kingdom), *Frank Marken*

Redox Processes in Metal-Organic Frameworks

s1-021

Koo Hoe-Jin (Battery R&D Association of Korea, Seoul, Korea), *Kim Yu-Tack*

Chemical Vapor Deposition Synthesis of Carbon Coated $LiMn_2O_4$ for Hybrid Capacitor

s1-022

Corie Horwood (Department of Chemistry, University of Calgary, Calgary, Canada), *Viola Birss, Hany El-Sayed*

Nanostructured Tantalum Oxide Electrodes for Amperometric Glucose Biosensors

s1-023

Paul Kilmartin (School of Chemical Sciences, University of Auckland, Auckland, New Zealand), *Alice Beaumont, Hande Karaosmanoglu, Alexander Türke*

Nanostructured Poly(3,4-ethylenedioxythiophene) (PEDOT) Electrodes for Polyphenol and Bisulfite Analysis

s1-024

Jérôme Launay (LAAS-CNRS, Toulouse, France)

Microtechnologies in favour of the analytical electrochemistry and vice-versa

s1-025

Junqiao Lee (Department of Chemistry, Curtin University, Bentley, Australia), *Roland De Marco*

A neutron/X-ray reflectometry study of the interactions between syndiotatic-PMMA and organic ISE-dopants at the air/water interface.

s1-026

Qi Li (School of Chemistry, Monash University, Clayton, Australia), *John Boas, Alan Bond, Jinzhen Lu, Lisandra Martin, Tadaharu Ueda*

Electrochemically Directed Synthesis and Properties of Structurally Characterized $[TTF]_4[SVM_{11}O_{40}]$ (M = Mo, W; TTF = tetrathiafulvalene) Charge Transfer Materials

s1-027

Dorota Matyszewska (Faculty of Chemistry, University of Warsaw, Warsaw, Poland), *Renata Bilewicz*

Thiolipid Layers as Model Cell Membranes in Drug Delivery Studies

s1-028

Pauline Michaels (School of Chemistry, University of New South Wales, Sydney, Australia), *Simone Ciampi, Justin Gooding, Erwann Luais*

Characterisation of DNA-modified Si(111) and Si(100) Using Electrochemical Impedance Spectroscopy

s1-029

Grzegorz Milczarek (Institute of Chemistry and Technical Electrochemistry, Poznan University of Technology, Poznan, Poland)

Nanostructures and Polymers Containing Lignins, Lignin Derivatives and Lignin-Like Macromolecules for Electrochemical Sensing and Energy Storage

s1-030

Sungmo Moon (Korea Institute of Materials Science, Changwon, Korea)

Formation of TiO_2 Nanotubes by Anodic Oxidation

s1-031

Elizabeth Murago (School of Chemistry, Faculty of Science, University of New South Wales, Sydney, Australia)

Towards a Multiple-Analyte Sensor by use of Dispersible Modified $Au@Fe_3O_4$ Nanoelectrodes

s1-032

Ruchika Ojha (Monash University, Clayton, Australia), *Alan Bond, Glen Deacon, Peter Junk, Ayman Nafady*

Synthesis and Electrochemical Oxidation of Organoamidoplatinum(II) Compounds: Generation and Stabilisation of Platinum(III) Monomeric Species in Weakly Coordinating Media

s1-033

Stephen Parker (School of Chemistry, The University of New South Wales, Sydney, Australia), *Simone Ciampi, Justin Gooding*

Capture and Releasing Rare Circulating Tumour Cells Using Electrochemically-switchable Surfaces

s1-034

Yuri Pleskov (Frumkin Institute of Physical Chemistry and Electrochemistry, Moscow, Russian Federation), V*alerii Elkin, Marina Krotova, Irina Teremetskaya, Valentin Varnin*

Benzene Oxidation on Boron-doped Microcrystalline Diamond and Nitrogenated Nanocrystalline Diamond Electrodes: Electrochemical-Impedance Study of Adsorption Effects

s1-035

Aravind Ramachandran (School of Chemistry, The University of New South Wales, Sydney, Australia), *J. Justin Gooding, Michael J. Manefield*

Modified Electrodes for Detecting Bacterial Activity

s1-036

Kamil Paul Rataj (Physical Chemistry 2, Duesseldorf, Germany), *M. M. Lohrengel*

Anodization of sintered Ta nano particles

s1-037

Masniza Sairi Binti (Dept. of Chemistry, Curtin University, Nanochemistry Research Institute, Perth, Australia), *Salmah Abdul Aziz, Debbie Silvester*

Comparison of the Chronoamperometric Response at Micro- and Nano-Interface Arrays

s1-038

Lei Shi (State Key Laboratory of Materials-oriented Chemical Engineering, College of Chemistry and Chemical Engineering, Nanjing University of Technology, Nanjing, China), *Wanqin Jin, Yannan Zhang*

Self-assembly Fabrication of Prussian Blue Nanocubes by Controlling the Adsorption Temperature of PDDA

s1-039

Manzar Sohail (Faculty of Science, Health and Education, University of the Sunshine Coast, Sippy Downs, Australia), *Eric Bakker, Roland De Marco*

Calibration Free Coulometric Determination of Nitrate in Fresh Water and Seawater

s1-040

Hanna Sopha (Analytical Chemistry Laboratory, National Institute of Chemistry, Ljubljana, Slovenia), *Samo B. Hocevar, Božidar Ogorevc*

Recent Investigations of Antimony-based Electrodes

s1-041

Chia-Liang Sun (Dept. of Chem. and Mater. Eng., Chang Gung University, Tao-Yuan, Taiwan), *Jheng-Sin Su, Jui-Hsiang Tang*

Electrochemical detection of hydrogen peroxide using graphene/size-selected Pt nanocomposites

s1-042

Bryan Harry Rahmat Suryanto (School of Chemistry, The University of New South Wales, Sydney, Australia), *Christian Andre Gunawan, Xunyu Lu, Chuan Zhao*

Electrodeposition of Metals from Room Temperature Protic Ionic Liquid

s1-043

Roya Tavallaie (School of Chemistry, University of New South Wales, Sydney, Australia), *J.Justin Gooding, D. Brynn Hibbert*

Direct Modification of Gold-coated Magnetic Nanopartciles with Nitrophenyl Groups by Electrochemical Reduction of *In Situ* Generated Nitrophenyl MonoDiazonium Cations

s1-044

Chen-Ya Tseng (Department of Chemical Engineering, National Taiwan University, Taipei, Taiwan), *Li-Chi Chang, Kuo-Chuan Ho, Chih-Wei Hu, Kuan-Chieh Huang, R. Vittal*

On the Electrochromic Switching of a Poly(5,6-dimethoxyindole-2-carboxylic acid) (PDMICA) Thin Film: An EQCM Study

s1-045

Jens Ulstrup (DTU Chemistry, Technical University of Denmark, Kongens Lyngby, Denmark), *Qijin Chi, Victor Climent, Allan Glargaard Hansen, Richard John Nichols, Princia Salvatore, Palle Skovhus Jensen, Jingdong Zhang*

Electrochemistry of single DNA-based molecules

s1-046

Jan Vacek (Department of Medical Chemistry and Biochemistry, Faculty of Medicine and Dentistry, Palacky University, Olomouc, Czech Republic), *Zdenka Bartosova, Vladimir Halouzka, Jan Hrbac, Petr Jakubec, David Jirovsky, Vlastimil Masek, Peter Mojzes, Daniel Riman*

Electrochemical Pretreatment of Carbon Fiber Microelectrodes Based on Potential Cycling: Amperometric Sensing, Raman Spectroscopy and Scanning Electron Microscopy Characterization

s1-047

Jean-Pierre Veder (CSIRO Process Science and Eng., Clayton, Australia)

The Effect of Ionic Liquids Containing Functionalised Cations on the Electrodeposition of Aluminium

s1-048

Anne Vuorema (Lappeenranta University of Technology, Laboratory of Green Chemistry, Mikkeli, Finland), *Adrian C. Fisher, Yunfeng Gu, Frank Marken, Mika Sillanpää*

Pore Electrochemistry in Sputter-coated Silica Membranes

s1-049

Alexander Weremfo (School of Chemistry, University of New South Wales, Sydney, Australia), *David Brynn Hibbert, Paul Carter, Chuan Zhao*

Characterization of Electrochemically Roughened Platinum Electrode: Exposure to the Atmosphere

s1-050

David Williams (School of Chemical Sciences, University of Auckland, Auckland, New Zealand), *Margaret Brimble, Olivia Laita, Jennifer Malmstrom, Clement Roux, Lisa Strover, Jadranka Travas-Sejdic*

Electrochemically Switchable Surface-bound Polymers

s1-051

Jing-Juan Xu (Nanjing University, Nanjing, China)

Synthesis of Potassium-doped Graphene and Its Application in Nitrite Selective Sensing

s1-052

Jang-Hee Yoon (Korea Basic Science Institute, Busan, Korea), *Mi-Sook Won*

Study on electrochemical degradation of phenol and 2-chlorophenol

s1-053

Jingxian Yu (School of Chemistry and Physics, Adelaide, Australia), *Andrew Abell, Joe Shapter*

Electron Transfer through α-Peptides Attached to Vertically Aligned Carbon Nanotube Arrays: From Superexchange to Hopping Mechanism

s1-054

Jie Zhao (Intelligent Polymer Research Institute, ARC Centre of Excellence for Electromaterials Science, Australian Institute of Innovative Materials, Innovation Campus, University of Wollongong, Wollongong, Australia)

Carbon Nanotube NanoWeb as Bio-Electrochemical Platform in Highly Selective Dopamine Sensor

s1-055

Yongchun Zhu (Dept. Chemistry, Shenyang Normal University, Shenyang, China), *Fei Li, Xiaochen Liu, Hong Tian*

Solid phase nano extraction and its application in selective determination of cysteine from mouse blood samples by cyclic voltammetry

s1-056

Varun Rai (Chemistry and Biological Chemistry, School of Mathematical Sciences, Nanyang Technological University, Singapore) *Chee Seng Toh*

Electrochemical DNA Sensor for Ultrasensitive DNA Sequence Specific Detection of Legionella sp. and Dengue

s1-057

Philani Mashazi (Advanced Materials Division, Randburg, South Africa), *Tebello Nyokong, Sibulelo Vilakazi*

Carbon nanotubes and metallophthalocyanine hybrid systems for applications in electrocatalysis

Electrochemical Energy Conversion and Storage - Batteries

s2a-001

Marie Josephe Vanessa Armel (Department of Material Engineering Monash University, Clayton, Australia)

Electrodeposition of metal and semiconductor nanoparticles inside conducting polymers

s2a-002

Mark Bailey (Discipline of Chemistry, University of Newcastle, Callaghan, Australia)

The Role of Titanium Dioxide in Enhancing the Performance of the Alkaline γ-MnO_2 Cathode

s2a-003

Cameron Bentley (CSIRO Energy Technology, Clayton, Australia), *Tony Hollenkamp, Peter Mahon*

Corrosion Studies of Lithium-ion Positive Electrodes in Conventional and Ionic Liquid Media

s2a-004

Dengjie Chen (State Key Laboratory of Materials-oriented Chemical Engineering, College of Chemistry & Chemical Engineering, Nanjing University of Technology, Nanjing, China), *Zongping Shao, Huangang Shi*

Electrochemical performance of polycrystalline cation-ordered layered perovskites: a comparative study of $SmBaCo_2O_{5+\delta}$ and $SmBaFe_2O_{5+\delta}$ cathodes

s2a-005

Liang-Yih Chen Chen (Department of Chemical Engineering, National Taiwan University of Science and Technology, Taipei City, Taiwan), *Huan-Tsung Chang, Chia-Ying Chen Chen, Tsung-Yeh Ho, Po-Wei Liu*

Cascade Quantum Dots Sensitized TiO_2 Nanorod Arrays for Solar Cells Application

s2a-007

Kuo-Feng Chiu (Department of Materials Science and Engineering, Feng Chia University, Taichung, Taiwan), *C. L. Chen, H. J. Leu, M. H. Weng*

High rate performances of $LiFePO_4$_Ag composite thin film cathodes

s2a-008

Sung-Ho Choo (Seoul National University of Science And Technology, Material Science and Engineering, Seoul, Korea), *Won Il Cho, Yudai Huang, Sung-Soo Kim, Dong Young Yoon*

Structural analysis and Electrochemical performance of Li-rich layered cathode material $Li_{1.2}Ni_{0.2}Mn_{0.6}O_2$ for Lithium secondary batteries

s2a-009

Youngmin Chung (Energy Storage Research Center, Korea Institute of Science and Technology, Seoul, Korea), *Won Il Cho, Ho Young Park*

Structure and electrochemical characteristics of $LiNi_{0.70}Co_{0.15}Mn_{0.15}O_2$ cathode thin film for lithium-ion secondary batteries

s2a-010

Kyung Yoon Chung (Energy Storage Research Center, Korea Institute of Science and Technology, Seoul, Korea), *Won-Young Chang, Byung-Won Cho, Dong-Hyun Kim, Kwang-Bum Kim, Won-Sub Yoon*

Characterization and Electrochemical Performance of Ni-based Cathode materials Coated with Conducting Polymer for Lithium Secondary Batteries

s2a-011

Andrew Cross (The University of Newcastle, Callaghan, Australia), *Scott Donne, Mickaël Drozd, Tony Hollenkamp, Alban Morel, Iñaki Olcomendy*

Active Mass Analysis and EIS on Thin Films of Electrodeposited Manganese Dioxide

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Wesley Dose (University of Newcastle, Newcastle, Australia), *Scott Donne*

Effect of Heating Atmosphere on Electrolytic Manganese Dioxide Material Properties

s2a-013

Hiroshi Fukunaga (Shinshu University, Ueda City, Japan), *Hiroshi Kishimoto, Takuya Shimoyama, Nobuhide Takahashi, Toru Takatsuka*

Enhancement of Oxygen Reduction Reaction of Silk-derived Activated Carbon by Ammonia Treatment

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Kuan-Chieh Huang (Department of Chemical Engineering/National Taiwan University, Taipei, Taiwan), *Abhishek Baheti, Kuo-Chuan Ho, Chuan-Pei Lee, Lu-Yin Lin, K. R. Justin Thomas, R. Vittal, Min-Hsin Yeh*

Novel Organic Co-Sensitization in Dye-sensitized Solar Cells with High Light-to-electricity Efficiency

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Hui Huang (College of Chemical Engineering and Materials Science, Zhejiang University of Technology, Hangzhou, China), *Yongping Gan, Xinyong Tao, Jian Tian, Yang Xia, Wenkui Zhang*

Electrochromic Device Based on Lithium Ions Injection/Extraction Reaction of Nanostructured WO_3 and NiO Thin Films

s2a-016

Kuan-Chieh Huang (Department of Chemical Engineering, National Taiwan University, Taipei, Taiwan), *Kuo-Chuan Ho, Chih-Wei Hu, Chen-Yu Liu, Chen-Ya Tseng, Min-Hsin Yeh*

A Counter Electrode Based on Hollow Spherical Particles of Polyaniline for a Dye-sensitized Solar Cell

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Seong Mu Jo (NanoHybrids Research Center, Korea Institute of Science and Technology, Seoul, Korea), *Sung-Yeon Jang, Dong Young Kim*

Electrodynamically sprayed thin films of aqueous dispersible nanocarbons for photo- and electrochemical energy storage cell

s2a-018

Martin Jonsson-Niedziolka (Institute of Physical Chemistry, Polish Academy of Sciences, Warsaw, Poland), *Marcin Opallo, Adrianna Zloczewska*

Carbon Nanotube Modified Electrodes for Biocatalytic Oxygen Reduction

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Jin Gu Kang (Nanophotonics Research Center, Korea Institute of Science and Technology, Seoul, Korea) *Dong-Wan Kim, Jae-Gwan Park*

Synthesis and Characterization of Self-Supported MWCNT/SnS_2 Nanosheets Electrodes for High-Power Lithium Ion Battery

s2a-020

Pon Kao (CSIRO, Energy Technology, Clayton, Australia), *Anand Bhatt, Youssof Shekibi*

Examining the effect of temperature and electrolyte concentrations for Li metal|ionic liquid|$LiFePO_4$ batteries for operation at high temperatures

s2a-021

Hyun-Soo Kim (Battery Research Center, Korea Electrotechnology Research Institute, Changwon, Korea), *Jae-man Choi, Bong-soo Jin, Hyun-ju Kim, Hoe-jin Koo*

Synthesis and electrochemical characterization of $LiNi_{0.5}Mn_{1.5}O_4$/C cathode material via a modified-solid state reaction method

s2a-022

Hyung Sun Kim (Energy Storage Research Center, Korea Institute of Science and Technology, Seoul, Korea)

Electrochemical properties of organic electrolytes for lithium-sulfur batteries

s2a-023

Il To Kim (School of Integrated Technology, Yonsei University, Incheon, Korea), *Sang Min Jung, Young Bok Kim, Moo Whan Shin, Myeong Jun Song*

Characteristics of Metal Catalysts Dispersed Graphene-based Cathode for Li-air Battery

s2a-024

Sang-Ok Kim (Energy Storage Research Center, Korea Institute of Science and Technology, Seoul, Korea), *Yu Jin Chae, Joong Kee Lee*

Electrochemical Characteristics of Sn_2Fe/Fe_3O_4/C Composite Anode for Li-ion Batteries

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Seok Kim (Pusan National University, Busan, Korea), *Juhyun Kim, Lyungyu Lee, Misoon Oh, Jaeyoung Park*

Effect of TSA Concentration on the Structural and Electrochemical Properties of Polyaniline/Titanium Oxide Composites

s2a-026

Seok Kim (Pusan National University, Busan, Korea), *Wonbin Cho, Juhyun Kim, Misoon Oh, Sukeun Park*

Synthesis and Electrochemical Properties of Graphene Electrodes Prepared by Microwave-assisted Polyol Reduction

s2a-027

Yang Soo Kim (Korea Basic Science Institute, Sunchon, Korea), *Soon-Ki Jeong, Yong-Seok Ko, Sang-Rho Lee, Sang-Hyun Lee, Ri-Zhu Yin*

Preparation and Electrochemical Characterization of $Li_{1.1}Nb_{0.9}O_{2-y}$ as a Negative Electrode Material for Lithium Secondary Batteries

s2a-028

Young Bok Kim (School of Integrated Technology, Yonsei University, Incheon, Korea), *Sang Min Jung, Il To Kim, Moo Whan Shin, Myeong Jun Song*

Fabrication of Vanadium Oxides Catalysts for the Application of Cathode in Lithium Air Batteries

s2a-029

Sang-Min Lee (Battery Research Center, Korea Electrotechnology Research Institute, Changwon, Korea), *Chil-Hoon Doh, Seung-Wook Eom, Yeon-Joo Kim, Ki-Won Kim*

Improvement in discharge efficiency of Zn anode for Zn-air batteries with high energy density

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Simon Leijonmarck (Division of Applied Electrochemistry, KTH Royal Institute of Technology, Stockholm, Sweden), *Ann Cornell, Göran Lindbergh, Lars Wågberg*

Flexible, paper-based electrodes for use in Li-ion batteries

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Xunyu Lu (School of Chemistry, The University of New South Wales, Kensington, Australia), *Chuan Zhao*

Tuning the Ionic Liquid Electrolytes toward Efficient Water Splitting

s2a-032

Manickam Minakshi (Dept. Chemistry, Murdoch University, Perth, Australia), *Sathiyaraj Kandhasamy, Pritam Singh, Stephen Thurgate*

Comparing synthetic strategies for better battery performance through materials and chemistry advances

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Soo-gil Park (Chungbuk National University, Cheongju, Korea), *Changhae Choi, Han-joo Kim, Jeong-sik Kim, Su-jin Yun*

Electrochemical Characterization of Coated Carbon on Titanium Dioxide for Capacitive Deionization

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Soo-gil Park (Chungbuk National University, Cheongju, Korea), *Jonghwan Choi, Chang-hea Choi, Han-joo Kim, Kyung-hee Shin*

Enhancement Power Density of MWNT/MCMB Electrode for Lithium Ion Battery

s2a-035

Christopher Reilly (Department of Chemistry, University of Newcastle, Callaghan, Australia)

A Step Potential Electrochemical Spectroscopy Study of Proton Diffusion in Different Manganese Dioxide Samples

s2a-036

Mark Romano (Intelligent Polymer Research Institute and the ARC Centre of Excellence for Electromaterials Science, Fairy Meadow, Australia), *Dennis Antiohos, Ray Baughman, Jun Chen, Rouhollah Jalili, Na Li, Andrew Nattestad, Joselito Razal, Gordon Wallace*

Novel Carbon Nanomaterials for Thermal Energy Converters

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Steffen Schlueter (TUM CREATE Centre for Electromobility, Singapore, Singapore), *Harry Hoster, Rachid Yazami, Kenza Maher, Denis Y. W. Yu*

Relaxation Behavior of the Open-circuit Voltage for Aged Lithium-ion Batteries

s2a-038

Ju Nam Son (Faculty of Applied Chemical Engineering, Chonnam National University, Gwangju, Korea), *Jae Youn An, A Ra Jo, Yun Sung Lee*

Enhanced electrochemical properties of lithium vanadium phosphate-cathode materials by metal doping for lithium-ion batteries

s2a-039

Min Seob Song (Energy Storage Research Center, Korea Institute of Science and Technology, Seoul, Korea), *Won Il Cho, Yudai Huang, Sung-Soo Kim, Shan Nahm*

Effects of pH value of $ZnMn_2O_4$ as an anode material for Li-ion batteries

s2a-040

Wataru Sugimoto (Shinshu University, Ueda, Japan), *Shoji Ikuta*

Ruthenium Oxide Nanosheet Electrodes Fabricated by Electrophoretic Deposition of Aqueous and Non-aqueous Colloids

s2a-041

Qingsong Tong (College of Chemistry and Materials Science, Fujian Normal University, Fuzhou, China)

A Novel Tin-copper-oxygen Alloy with High Capacity Synthesized by a Controlled Oxidation

s2a-042

Wahyu Utomo (Discipline of Chemistry, Newcastle, Australia)

Adsorption Characteristics of Manganese Ion on Titanium Dioxide

s2a-043

Guntars Vaivars (University of Latvia, Institute of Solid State Physics, Riga, Latvia), *Andris Actins, Janis Kleperis*

Preparation of Phosphorized Zirconium Oxide Particles for Composite Electrode Materials

s2a-044

Ana M. Valenzuela-Muñiz (Center for Electrochemical Engineering Research, Chemical and Biomolecular Engineering Department, Russ College of Engineering and Technology, Ohio University, Athens, USA), *Gerardine G. Botte*

Evaluation of Carbon Nanostructures from Coal as Support of Electrocatalytic Materials

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Dawei Wang (ARC Center of Excellence for Functional Nanomaterials, Brisbane, Australia)

Sub-nanometer confinement extends cathode life of lithium sulfur batteries

s2a-046

Natasha West (Dept. of Chemistry, University of the Western Cape, Cape Town, South Africa), *Emmanual Iwuoha*

Transition Metal Alloy-modulated Lithium Manganese Oxide Nanosystem for Energy Storage and Conversion in Lithium-ion Battery Cathodes

s2a-047

She-huang Wu (Department of Materials Engineering, Tatung University, Taipei, Taiwan), *Fan-Ping Liu, Wei Kong Pang*

Characteristics of $Li_3V_2(PO_4)_3$ and Fe-Substituted $Li_3V_2(PO_4)_3$ Cathodes in Li-ion Batteries

s2a-048

Dong Young Yoon (Korea Institute of Science and Technology, Seoul, Korea), *Won Il Cho, Sung Ho Choo*

In situ X-ray diffraction spectroscopy and Raman studies on the structural change of $Li_{1.2}Ni_{0.2}Mn_{0.6}O_2$

s2a-049

Seungho Yu (Energy Storage Research Center, Korea Institute of Science and Technology, Seoul, Korea), *Won Il Cho, Tae Young Kim, Jonha Lee, Jeong Soon Shin*

Electrode Design for High Energy Density $LiFePO_4$ /Graphite Battery

s2a-050

Wenkui Zhang (College of Chemical Engineering and Materials Science, Zhejiang University of Technology, Hangzhou, China), *Junwu Fang, Yongping Gan, Saijun Gu, Hui Huang, Xinyong Tao*

ZnO-Bi_2O_3 Nanocomposite as the Nucleation Site of ZnO Anode Materials for Ni/Zn Rechargeable Battery

Electrochemical Energy Conversion and Storage - Supercapacitors

s2b-001

Arenst Andreas Arie (Dept. of Chemical Engineering, Faculty of Industrial Technology, Parahyangan Catholic University, Bandung, Indonesia)

Activated Carbon Derived from Coconut Shell as Electrode Material in Electrochemical Double Layer Capacitor

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Gunars Bajars (Institute of Solid State Physics, University of Latvia, Riga, Latvia), *Jevgenijs Gabrusenoks, Ineta Liepina, Andrejs Lusis, Evalds Pentjuss*

Preparation of TiO_2 Thin Films by Particulate Sol-electrophoretic Deposition

s2b-003

Madeleine Dupont (Discipline of Chemistry, University of Newcastle, Newcastle, Australia), *Scott W. Donne, Tony F. Hollenkamp*

Kinetic and Mass Transport Phenomena in Different Phases of Manganese Dioxide for Application in Electrochemical Capacitors

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Jaanus Eskusson (University of Tartu, Tartu, Estonia), *Alar Jänes, Enn Lust*

Characterisation of Non-Aqueous Supercapacitors Using Aluminum and Titanium Current Collectors

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Krzysztof Fic (Poznan University of Technology, Institute of Chemistry and Technical Electrochemistry, Poznan, Poland), *Elzbieta Frackowiak, Grzegorz Lota, Mikolaj Meller*

Solvation Effect on Capacitor Operating Voltage

s2b-006

Alar Jänes (University of Tartu, Tartu, Estonia), *Heisi Kurig, Ann Laheäär, Enn Lust, Indrek Tallo, Thomas Thomberg, Kerli Tõnurist*

Electrical Double-layer Capacitors Based on Different Carbide Derived Carbon Electrode Materials

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Myung Gi Jeong (Sungkyunkwan University, Suwon, Korea), *Serhiy Cherevko, Chan-hwa Chung, Zhuo Kai*

Facile Formation of Dendritic Metal Foams and Powders for Supercapacitors

s2b-008

Kwang Kim (Department of Material Science and Engineering, Yonsei University, Seoul, Korea), *Jin Go Kim, Ji Young Kim, Hee Chang Youn*

Reduced Graphene Oxide and Its Nanocomposite for Supercapacitor Applications

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Seok Kim (Pusan National University, Busan, Korea), *Wonbin Cho, Lyungyu Lee, Sukeun Park, Jaeyoung Park*

Pulse Microwave-assisted Synthesis of Cobalt oxide/GNS Composites for Supercapacitor Electrodes

s2b-010

Jong Dae Lee (Department of Chemical Engineering, Chungbuk National Univ., Cheongju, Korea), *Hong Jin Yoon*

Electrochemical Characteristics of Activated Carbon Prepared by Chemical Activation for Hybrid Capacitor Electrode

s2b-011

Grzegorz Lota (Institute of Non-ferrous Metals Department in Poznan, Central Laboratory of Batteries and Cells, Poznan, Poland)

Improvement of Carbon and Carbon | Transition Metal Oxide Electrodes Capacitance by Electrolyte Modification

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M. V. Sangaranarayanan (Department of Chemistry Indian Institute of Technology-Madras, Chennai, India)

Analysis of Conducting Polymers-based Electrochemical bupercapacitors

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Soo-gil Park (Chungbuk National University, Cheongju, Korea), *Changhae Choi, Han-joo Kim, Jeong-sik Kim, Su-jin Yun*

Electrochemical Property of Metal Oxide Electrode for Capacitive Deionization

s2b-014

Chen-Ya Tseng (Department of Chemical Engineering, National Taiwan University, Taipei, Taiwan), *Li-Chi Chang, Kuo-Chuan Ho, Chih-Wei Hu, Kuan-Chieh Huang, Chung-Wei Kung*

Electrodeposited Poly(5,6-dimethoxyindole-2-carboxylic acid) Thin Films for Supercapacitor Application

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Shuai Zhou (Department of Applied Chemistry, School of Chemical Engineering and Technology, Tianjin University, Tianjin, China), *Chengde Huang, Yuxin Wang, Shixiong Zhao*

Performance evaluation of MnO_2/CNTs composite electrodes for electrochemical capacitors

Electrochemical Energy Conversion and Storage - Fuel Cells

s2c-001

Gunars Bajars (Institute of Solid State Physics, University of Latvia, Riga, Latvia)

Characteristics of Electrode with TiO_2 Nanostructured Layers for Photoelectric Hydrogen Production

s2c-002

Nam Kyu Bang (School of Chemical Engineering, Sungkyunkwan University, Suwon, Korea)

A study on the development of MEA fabrication for fuel cell using dendrite metal

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Tom Breugelmans (Vrije Universiteit Brussel, Brussels, Belgium), *Bart Geboes, Annick Hubin, Heidi Van Parys, Benny Wouters*

Development of a fast screening methodology for electrocatalysts in a new reactor design

s2c-004

Christophe Chauvin (Faculty of Textile Science and Technology, Shinshu University, Ueda, Japan), *Koodlur Lokesh, Takahiro Saida, Wataru Sugimoto, Yoshio Takasu*

RuO_2 nanosheet size effect on Pt/C activity and durability

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Kongfa Chen (Fuels and Energy Technology Institute, Department of Chemical Engineering, Curtin University, Perth, Australia), *Na Ai, San Ping Jiang*

Enhanced Electrochemical Performance and Stability of Palladium Infiltrated $(La,Sr)MnO_3$-$(Gd,Ce)O_2$ Oxygen Electrodes of Solid Oxide Electrolysis Cells

s2c-006

Liang-Yih Chen (Department of Chemical Engineering, National Taiwan University of Science and Technology, Taipei City, Taiwan), *Yu-Tung Yin*

Preferential Growth of Ultra-long ZnO Nanowire Arrays via Continuous Flow Injection Process for Dye-sensitized Solar Cells

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Yi Cheng (Curtin University, Perth, Australia), *San Ping Jiang*

Self-assembly of Pt-Ru onto PDDA Functionalized Multi-walled Carbon Nanotubes with Enhanced Activity for Direct Methanol Fuel Cells

s2c-008

EunAe Cho (Fuel Cell Research Center, KIST, Seoul, Korea), *MinJoong Kim, Hyoung-Juhn Kim, HyukSang Kwon, JoungWook Ryu*

Effects of Sintering Time on Electrode Structure and Performance of HT-PEMFCs

s2c-009

EunAe Cho (Fuel Cell Research Center, KIST, Seoul, Korea), *KwangSup Eom, Jong Hyun Jang, Hyoung-Juhn Kim, Tae-Hoon Lim*

Degradation of PEMFCs with Metallic Bipolar Plates via 1.4-V Pulse Cycling

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Scott Donne (University of Newcastle, Callaghan, Australia), *Jim Hinkley, Jessica O'Brien*

Thermochemical Hydrogen: Fundamental Electrochemical Investigations of the HyS Cycle Electrolyser

s2c-011

Hiroshi Inoue (Osaka Prefecture University, Sakai, Japan), *Masanobu Chiku, Eiji Higuchi, Chiaki Matsuda*

New Hydrogen Production System from Ammonia Borane Using Visible Light

s2c-012

Gayoung Jo (Department of Energy Systems Engineering, Daegu Gyeongbuk Institute of Science and Technology (DGIST), Daegu, Korea)

Boron-doped Carbon Nanostructures as Non-precious Oxygen Reduction Reaction Catalyst in Alkaline Medium

s2c-013

Deborah Jones (Institut Charles Gerhardt, Aggregates, Interfaces and Energy Materials, University Montpellier 2, Montpellier, France), *Julien Bernard d'Arbigny, Mathieu Marrony, Jacques Roziere, Gilles Taillades*

Nanostructured High Surface Area Tungsten Carbide Electrodes for High Temperature PEMFC

s2c-014

Kriangsak Ketpang (Department of Energy Systems Engineering, Daegu Gyeongbuk Institute of Science & Technology (DGIST), Daegu, Korea)

Fabrication and Characterization of SBPPO reinforced E-spun Conducting Fibers as a Novel Proton Conducting Membrane for PEMFCs

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Haekyoung Kim (School of Materials Science and Engineering, Yeungnam University, Geyoungsan, Korea), *Hyun Woo Jin*

Synthesis and characterization of $La_{0.58}Sr_{0.4}Co_{0.2}Fe_{0.8}O_{3-\delta}$ using 1, 2 epoxide for Solid Oxide Fuel Cell

s2c-016

Soo-Kil Kim (School of Integrative Engineering, Chung-Ang University, Seoul, Korea), *Sang Hyun Ahn, Insoo Choi, Seung Jun Hwang, Hyoung-Juhn Kim, Jae Jeong Kim, Tae-Hoon Lim, Taeho Lim, Suk Woo Nam, Sung Jong Yoo*

High Activity Ni Dendrite Catalysts for Alkaline Water Electrolysis Prepared by Electrodeposition

s2c-017

Virginie Lair (Chimie Paristech ENSCP, Paris, France), *Michel Cassir, Oleg Lupan, Armelle Ringuedé, Ljiljana Zivkovic*

Electrodeposition of Ceria and Samarium-doped Ceria Nanostructured Thin Layers

s2c-018

Manika Mahajan (RMIT, Melbourne, Australia), *Suresh K. Bhargava, Anthony P. O'Mullane*

Facile synthesis of TCNQ based organic charge-transfer complexes with photocatalytic and catalytic applications

s2c-019

Christopher Munnings (CSIRO Energy Technology, Melbourne, Australia), *Sukhvinder Badwal, Fabio Ciacchi, Daniel Fini, Sarbjit Giddey, Aniruddha Kulkarni*

Evaluation of MIEC Anode in a Direct Carbon Fuel Cell

s2c-020

Ilija Najdovski (School of Applied Sciences, RMIT University, Melbourne, Australia), *Suresh Bhargava, Anthony O'Mullane, P. R. Selvakannan*

Rapid electrochemical synthesis of highly active Cu/Pd and Cu/Au bi-metallic honeycomb films

s2c-021

Hiroki Nara (Faculty of Science and Engineering, Waseda University, Tokyo, Japan), *Aki Hasegawa, Toshiyuki Momma, Tetsuya Osaka*

Impedance Analysis on Flooding in Cathode Catalyst Layer of Polymer Electrolyte Fuel Cell

s2c-022

Jimmi Nielsen (Fuel Cells and Solid State Chemistry Division, Roskilde, Denmark), *Peter Blennow, Christopher Graves, Trine Klemensø*

Characterization of a well performing and durable Ni:CGO-infiltrated anode for metal-supported SOFC

s2c-023

Jung Park (Samsung Advanced Institute of Technology, Yongin-si, Korea), *Jinsu Ha, Suk-Gi Hong, Taeyoung Kim, Yoonhoi Lee, Chanho Pak*

Changes in Electrodes During Activation of High Temperature PEMFC MEA

s2c-024

Myunggeun Park (Yonsei University, Seoul, Korea), *Altalsukh Dorjgotov, Sang-Hoon Hyun, Yukwon Jeon, Sunghwan Min, Yong Gun Shul*

Enhanced Durability of $La_2Sn_2O_7$-doped Ni/GDC anode materials for dry methane-fueled Solid Oxide Fuel Cells

s2c-025

Blake J. Plowman (School of Applied Sciences, RMIT University, Melbourne, Australia), *Suresh K. Bhargava, Anthony P. O'Mullane*

Templated Electrodeposition of Gold and Platinum Nanostructures for Electrocatalytic Applications

s2c-026

Armelle Ringuedé (CNRS, ENSCP, Laboratoire d'Electrochimie, Chimie aux Interfaces et Modélisation pour l'Energie, Paris, France), *Michel Cassir, Aziz Nechache*

Study of SOEC Reaction and Degradation Mechanisms Using Electrochemical Impedance Spectroscopy

s2c-027

Armelle Ringuedé (CNRS, ENSCP Laboratoire d'Electrochimie, Chimie aux Interfaces et Modélisation pour l'Energie, Paris, France), *Valérie Albin, Michel Cassir, Virginie Lair, Bianca Medina-Lott, Marine Tassé*

Electrochemical Performances of New Carbonate Mixture in Carbonate/oxide Composite Electrolytes for Solid Oxide Fuel Cells

s2c-028

Jakkid Sanetuntikul (Department of Energy Systems Engineering, Daegu Gyeongbuk Institute of Science & Technology, Daegu, Korea)

Fabrication and Electrocatalytic Oxygen Reduction Activity of Pt-Fe Nanofiber Prepared by Electrospinning

s2c-029

Huangang Shi (State Key Laboratory of Materials-oriented Chemical Engineering, College of Chemistry & Chemical Engineering, Nanjing University of Technology, Nanjing, China), *Dengjie Chen, Zongping Shao*

Novel design of a tubular single chamber solid oxide fuel cell

s2c-030

Zih-Yu Shih (Department of Chemistry, National Taiwan University, Taipei, Taiwan), *Huan-Tsung Chang, Zong-Hong Lin*

Se/Ru–Au Nanocomposites Provide Enhanced Electroactivity in Direct Methanol Fuel Cells

s2c-031

Tatyana Soboleva (Automotive Fuel Cell Cooperation, Vancouver, Canada), *Max Cimenti, Jasna Jankovic, Juergen Stumper, Darija Susac, Mickey Tam*

Toward rational design of the cathode catalyst layer in the PEM fuel cell

s2c-032

Won Kyo Suh (Dept. of Energy Systems Eng., DGIST, Daegu, Korea)

Oxygen Reduction Activities of Pt and Pt-Ni Supported on Graphene

s2c-033

Seong Ihl Woo (Department of Chemical and Biomolecular Engineering, Korea Advanced Institute of Science and Technology, Daejeon, Korea), *Yousung Jung, Heejin Kim, Ki Rak Lee*

DFT calculation study on enhanced ORR activity of N-doped graphene catalysts

s2c-034

Zhang Yanxiang (Building Energy Research Group, Department of Building and Real Estate, The Hong Kong Polytechnic University, Hong Kong, China), *Xia Changrong, Ni Meng, Sun Qiong*

Computation of Geometric Properties of Infiltrated SOFC Electrodes from Numerical Construction and Analytical Modeling

s2c-035

Minyu Zeng (Department of Chemical Engineering & Biotechnology, University of Cambridge, Cambridge, United Kingdom), *Adrian Fisher, Yunfeng Gu, Kamran Yunus*

The Study of Low-cost PEM Fuel Cells for Electricity and Chemical Cogeneration

s2c-036

Xueping Zhang (Department of Applied Chemistry, School of Chemical Engineering and Technology, Tianjin University, Tianjin, China), *Chengde Huang, Yuxin Wang, Shixiong Zhao*

Pt-graphene/polymer composites for methanol oxidation in Direct Methanol Fuel Cells (DMFC)

s2c-037

Shixiong Zhao (Fuel Cell Group, School of Chemical Engineering and Technology, Tianjin University, Tianjin, China), *Lijuan Zhang*

Electrocasting of Proton Exchange Membrane from Heterogeneous Solution

s2c-038

Marketa Zukalova (J. Heyrovsky Institute of Physical Chemistry, Prague, Czech Republic), *Zdenek Bastl, David Havlicek, Ladislav Kavan, Barbora Laskova, Jan Prochazka*

Modification of TiO_2 Electronic Properties by means of Chemical Treatment (Doping)