

Wednesday AM

COMP SEB 1200

Student Oral
Presentation Competition

Chair(s) - David Shoosmith

08:10 Introductory
Remarks

08:15 0001 *Grain Boundaries and Coincidence Site Lattices in the Corneal Nano-Nipple Eye Surface Structure of the Mourning Cloak Butterfly* *Lee K.C., §Erb U.

08:30 0002 *Study of the Behaviour of Thiosulfate During Leaching of Au from Oxide Ores* Smith S.R., Li S.B., Tian X.D., Huang Y.F., Tian Z.Q., Baron J.Y., Choi Y., §Lipkowski J.

08:45 0003 *Plasma Immersion Ion Implantation for Silicon Photonics* Purdy S.K., §Bradley M.P.

09:00 0004 *Monitoring Magnesium Cation Release Dynamics During Magnesium Alloy Corrosion Using a Potentiometric Mg²⁺ Ion-Selective Microelectrode* §Dauphin Ducharme P., *Mauzeroll J.

09:15 0005 *Tip Enhanced Raman Spectroscopy of Self-Assembled Thiolated Monolayers on Gold Nanoplates Using Transverse and Radially Polarized Excitations* §Pashaee F., Gobbo P., Workentin M.S., *Lagugné-Labarthe F.

09:30 0006 *Nanoengineered Films as a New Class of Correlated Materials* Tie M., *Joanis P., §Dhirani A.-A.

09:45 0007 *Single-Site Studies of Chirality Transfer Complexes on Chirally Modified Pt(111)* *Lemay J.-C., Goubert G., Dong Y., Zeng Y., Demers-Carpentier V., §McBreen P.H., Rasmussen A.M.H., Ferrighi L., Hammer B.

10:00 0008 *Surface Immobilized Gold Nanoparticles by Organometallic Chemical Vapor Deposition and their Plasmonic Biosensor Applications* Ertorer E., Ip S., Soleimani R., Walker G., *Mittler S.

10:15 Coffee Break

This coffee break is generously supported by OCI Vacuum Microengineering, Inc.

10:30 0009 *Structure of Sub-10 nm Epitaxial Nickel Silicide Films on Silicon (001) Substrate* Arthur Z., Miller K., Chen N., Gaudet S., Yang B., Zhang Z., Lavoie C., Joly Y., *Jiang D.T., Chen W.F.

10:45 0010 *Antimicrobial UV-Cured Phosphonium Thin Films* Cuthbert T.J., Guterman R., Karamdoust S., Gillies E.R., *Ragogna P.J.

11:00 0011 *Fabrication of Hg/Pt Hemispherical Nanoelectrodes for Localized Quantitative Detection of Mn²⁺ Produced at Battery Material* §Danis L., *Mauzeroll J.

11:15 0012 *In-situ Fluorescence Characterization of the Potential Induced Responses of the Aib Peptide Self-Assembled Monolayer* Yu Z.L., *Bizzotto D., Maran F.

11:30 0013 *Novel Effects of Doping on Nanowire Growth Rates* *Yee R.J., Gibson S.J., Dubrovskii V.G., §LaPierre R.R.

11:45 0014 *Microstructural Characterization of Titanium Alloys Plasma Nitrided at Low Temperatures* Farokhzadeh K., Qian J., *Edrissy A.

12:00 0015 *Reticular Si Island Growth on a Si(100) Surface* *Dedyulin S.N., Fanchini G., Goncharova L.V.

12:15 0016 *Formation and Utilization of Polyelectrolyte Networks from Photopolymerized Phosphonium Salts* *Guterman R., Hesari M., Berven B.M., Gillies E.R., Workentin M.S., §Ragogna P.J.

12:30 End of Session

Wednesday PM

Mustang Lounge W

Posters

From 12:35 until 14:30

The Poster Session will be held in conjunction with a sandwich lunch and a commercial exhibition in the Mustang Lounge West in the University Community Centre

Presenters should be at their posters between 13:00 and 14:15

0017 *Formation of Chromium Oxide Nanoparticles by Gamma Irradiation of Chromate Solutions* Alrehaily L.M., Joseph J.M., Wren J.C.

0018 *Evaluation of the Surfaces of Corroding Magnesium Alloys* *Asmussen R.M., Binns W.J., Jakupi P., §Shoosmith D.W.

0019 *Radiation-Induced Corrosion of Stellite-6 at Elevated Temperature* Behazin M., §Wren J.C.

0020 *Nanopatterning of Single Crystal Silicon Using Anodized Aluminum Oxide as a Template for Photovoltaics* Chao W., §Kherani N.P., *Erb U.

0021 *The Corrosion of Copper Nuclear Waste Containers in Anaerobic Aqueous Sulphide Solutions* Chen J., Qin Z., *Shoosmith D.W.

0022 *Tuning the Barrier Properties of the Scaffolded Vesicle Nutraceuical Transporter in Biologically Relevant pH Environments* §Conlon S., Seenath R., *Lipkowski J.

0023 *Highlights of Canadian Light Source Inc.* Cui X.Y., §Ellis T.

0024 *Magnetic Nanoporous Gold Thin Films* *Dong P., Trudel S.

0025 *A Surface Analytical and Electrochemical Comparison of the Corrosion Behaviour of Nickel-Chromium-Molybdenum Alloys* **†Ebrahimi N.**, Jakupi P., Barker I., Moser D., **†Shoosmith D.W.**

0026 *Rheological Properties of Dispersions of Multi-Wall Carbon Nanotubes in Polyisoprene* **†Ge R.**, **†de Bruyn J.R.**

0027 *Ion Beam Analysis and Materials Modification for Nanoelectronics* **†Goncharova L.V.**, Barbagiovanni E.G., Dedyulin S.N., Lobacheva O.

0028 *Low-Energy Electron Irradiation and Adsorption Studies of Iron Pentacarbonyl Films on Metal and Organic Substrates* **Henkie J.R.**

0029 *Corrosion of Gr70 A516 Carbon Steel in High Chloride Environments under Nuclear Waste Disposal Conditions* **Hill S.L.W.**, **†Shoosmith D.W.**

0030 *Redox Switchable Doping of Carbon Nanotubes by Aniline Oligomers* **†Hoque E.**, Chowdhury T., **†Kruise P.**

0031 *Cu₂ZnSnS₄ Nanocrystal Monolayer on ITO-Glass* **Jeffs K.S.B.**, **†Ding Z.**

0032 *Carbon Deactivation of Nickel Catalysts in Dry Reforming of Methane* **Kennema M.**

0033 *In Situ Deposition Monitoring by a Tilted Fiber Bragg Grating Optical Probe: Probing Nucleation and Polarization-Dependent Properties of Gold Grown via Chemical Vapour Deposition* **Mandia D.J.**, **†Barry S.T.**, Griffiths M.B.E., Gordon P.G., Zhou W., Albert J.

0034 *Electrochemistry of Sulphide Film Formation on Copper in Aqueous Chloride Solutions* **Martino T.**, **†Partovi-Nia R.**, Smith J., **†Shoosmith D.W.**

0035 *Statistical Study of Metallic Nanostructures Prepared by Nanosphere Lithography* **†Merlen A.**, Courmontagne P., Sangar A., Torchio P., Vedraïne S., Chevallier V., Patrone L., Lagugné-Labarthe F.

0036 *Molybdenum Carbide Synthesis During Hydro Cracking Reaction Conditions Monitored by in situ XPS* **†Molero H.**, Scott C., Pereira-Almao P.

0037 *Corrosion Properties of Phosphonium-Based Ionic Liquids towards Carbon Steel* **Morco R.P.**, Musa A.Y., Joseph J.M., Wren J.C.

0038 *Effect of Water Radiolysis on Corrosion: Steel, Cobalt and Nickel Alloys* **Musa A.Y.**, Behazin M., Knapp Q., Mizzi D., **†Wren J.C.**

0039 *Cross-Linked Polymeric Dielectric for Solution-Processed Organic-Thin Film Transistors* **Naderigohar S.**, Wu Y., Lau W.M., Nie H.-Y.

0040 *Electrochemical Study of Copper Corrosion under Anoxic Conditions* **†Partovi Nia R.**, Qin Z., Zagidulin D., Noël J.J., **†Shoosmith D.W.**

0041 *Quantification of Multidrug Resistance in Human Cancer Cells Using Scanning Electrochemical Microscopy* **Polcari D.**, Kuss S., Geissler M., Brassard D., **†Mauzeroll J.**

0042 *Physical and Electronic Surface Structure and Dynamics of Fe(CO)₅ Dissociation* **Read S.T.**, **†Rowntree P.A.**

0043 *Design and Characterization of Model Biological Membranes Tethered to Au(111) Electrode Surfaces* **Seenath R.**, Leitch J.J., **†Lipkowski J.**

0044 *Characterization of Biphasic Metal Extraction through Electrochemistry Using Ionic Liquids* **Stockmann T.J.**, **†Ding Z.**

0045 *The Effect of Initial Iron Concentration and pH on the Radiolytic Formation of gamma-FeOOH Nanoparticles* **Sutherland T.I.**, Yakabuskie P.A., **†Wren J.C.**

0046 *Electrochemiluminescence of a Heterometallic Ion Pair* **Swanick K.N.**, Sandroni M., Zysman-Colman E., **†Ding Z.**

0047 *The Effect of Montmorillonite on Polypropylene Nanocomposites in 3.5 wt% NaCl Solution* **†Toloei A.S.**, **†Mousavi S.H.**, Janghorban K.

0048 *Electrogenerated Chemiluminescence at a Bipolar Electrode for Low Concentration Electrochemical Sensing* **Vaccarello D.**, **†Ding Z.**

0049 *Metal Nanoparticles to Increase Light Absorption of Organic Thin Film Solar Cells* **Vedraïne S.**, **†Torchio P.**, Flory F., Merlen A., Sangar A., Escoubas L.

0050 *The Effect of H₂O₂ on the Corrosion of Metal Alloy Wasteforms* **Wallon S.**, Asmussen R.M., Zagidulin D., Chen J., Noël J.J., **†Shoosmith D.W.**

0051 *Free-Standing Paper-Based Graphene Composites as Binder Free Anodes for Lithium Ion Batteries* **Wang B.**, Hu Y., Liu J., Li X., Xiao B., Banis M., Li R., **†Sun X.**

0052 *The Role of Fission Products on Spent Nuclear Fuel Corrosion in Hydrogen Peroxide Solutions* **Wu L.**, Qin Z., **†Shoosmith D.W.**

0053 *Improvement of 316L Stainless Steel Surface Properties by Molybdenum Nitride Deposition for Use as Bipolar Plates in PEMFC* **†Medhat S.**, **†Yari M.**, Shokouhy A., Eshghabadi M.

0054 *Tribofilm Morphology and Composition in Lubricated Systems containing Mg(Co)/Al-CO₃²⁻-LDHs Nanoparticles* **Zhao D.**, **†Sham T.K.**, Kasrai M., Bai Z.M.

PLEN SEB 1200

Plenary Lecture

Chair(s) - Peter Norton

14:30 0055 *Material Analysis Using Synchrotron Radiation: From Surface Overlayers to Thin Films to Nanocomposites and Interfaces*
Sham T.K.

15:15 End of Session

BIO SEB 1200

Biosensors and surface functionalization

Chair(s) - Jungsook Wren

15:15 0056 *Photoemission Overview at Canadian Light Source Inc. - From VUV to Hard X-Ray*
Cui X.Y.

15:45 0057 *Surface Chemistry and Plasmonic Nanomaterials for Drug and Protein Monitoring*
Masson J.F.

16:15 Coffee Break

16:30 0058 *Advances in Surface Plasmon Resonance Imaging Enable Quantitative Measurement of Laterally Heterogeneous Coatings: New Insights into the Enzymatic Degradation of Cellulose Microfibrils*
Raegen A.N., Reiter K., Clarke A.J., Lipkowski J., Dutcher J.R.

17:00 0059 *Electrochemiluminescence of Iridium-Containing ROMP Polymers for Bioassay Applications*
Mauzeroll J., Tefashe U.M., Metera K.J., Sleiman H.F.

17:15 0060 *Redox-Induced Ion-Pairing between Anionic Amphiphiles and Ferrocenylalkanethiolate Self-Assembled Monolayers*
Dionne E., Badia A.

17:30 0061 *Tailored Surfactants for the Production of Functional Thin Film Coatings*
Rajasingam A., Schmidt R., Forgione P., DeWolf C.

17:45 0062 *Waveguide Evanescent Field Fluorescence and Scattering Microscopy*
Fleissner F., Nahar Q., Shuster J., Southam G., Dixon S.J., Langbein U., Mittler S.

18:00 End of Session

Thursday AM

COMP SEB 1200

Student Oral Presentation Competition

Chair(s) - Keith Griffiths

08:15 0063 *Nano Pattern Formation during Electropolishing*
Wang Y., Kruse P.

08:30 0064 *Hydroxyphenol Interaction with Iron Oxide Colloids by Chemical Force Spectrometry*
Azmi A., Horton J.H.

08:45 0065 *Adsorption States of Copper Phthalocyanine on Cu(111)*
Stock T., Nogami J.

09:00 0066 *The Interactions of Small Molecule Corrosion Inhibitors with Iron Oxide Surfaces and the Origin of Their Mobility*
Chowdhury T., Kruse P.

09:15 0067 *Self-Catalyzed Growth of Ordered GaAs Nanowire Arrays Using Nano-Patterned Silicon Substrates*
Gibson S.J., LaPierre R.R.

09:30 0068 *Characterisation of Ceramic Coatings on 6061 Al Alloy Produced by Plasma Electrolytic Oxidation*
Dehnavi V., Luan B.L., Shoesmith D.W., Liu X.Y., Rohani S.

09:45 0069 *Irreversible Adsorption of Nanoparticles at Fluid Interfaces: A Dynamic Surface Tension Study*
Bizmark N., Ioannidis M.A., Henneke D.

10:00 0070 *Direct Nanopatterning of Al₂O₃ via Step and Flash Imprint Lithography (S-FIL)*
Safari Dinachali S., Dumond J., Saifullah M.S.M., Ganesan R., Thian E.S., He C.

10:15 Coffee Break

10:30 0071 *Pd and S Binding Energies and Auger Parameters on a Model Silica-Supported Suzuki-Miyaura Catalyst: Insights into Catalyst Activation*
Hanif M., Horton J.H.

10:45 0072 *Class Iia Bacteriocins towards the Detection of Foodborne Pathogens*
Etayash H., Norman L., Kaur K., Thundat T.

11:00 0073 *Development, Evaluation and Surface Behaviour of Metallic Alloy Waste Forms*
Asmussen R.M., Chen J., Zagidulin D., Noël J.J., Shoesmith D.W.

11:15 0074 *Fano Resonances in the Mid-Infrared Spectra of Single-Walled Carbon Nanotubes*
Lapointe F., Gaurfès É., Tremblay I., Tang N., Desjardins P., Martel R.

11:30 0075 *Corrosion Behaviour of AGR Simulated Fuels: Evolution of the Fuel Surface*
Rauff-Nisthar N., Boxall C., Wilbraham R., Farnan I., Lee W., Zoltan H., Perkins C.

11:45 0076 *IR Photodetector Based on Multiple Quantum Dot Confinement within InP/InAsP Nanowires*
Kuyanov P., LaPierre R.R.

12:00 0077 *Influence of Surface Modification on Dispersion Energy and Mechanical Properties of Polymer/NCC Nanocomposites*
Khoshkava V., Kamal M.R.

12:15 0078 *Experimental Investigation of Photo-Initiated Chemical Vapor Deposition (PICVD) as a Potential Scalable Nanoparticle Functionalization Technology*
Dorval Dion C.A., Tavares J.R.

12:30 End of Session

Thursday PM

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Posters

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0079 *Exploring the Mechanism of Enantiomeric Separations Using a Proline-Based Chiral Stationary Phase* **Arjumand R.**, [†]Horton J.H.

0080 *Understanding and Preparation of Sharp Metallic Tips Via Electrochemical Etching* **Awez Mohammad A.**, [†]Wang Y., [§]Kruse P.

0081 *Electrochemical and Microscopic Investigations of the Corrosion Performance of AM50 Magnesium Alloys* **Binns W.J.**, [†]Asmussen R.M., [†]Jakupi P., [§]Shoesmith D.W.

0082 *Hard X-Ray Photoemission Spectroscopy at Canadian Light Source* [†]Xiao Q.F., **Cui X.Y.**, [†]Hu Y.F., [§]Sham T.K.

0083 *Electron Mediation through Double Stranded DNA Modified with Diphenylphenanthroline (dpp) Coordinated with Cu^I* **Dauphin Ducharme P.**, [†]Rosati F., [†]Salvatore D., [†]Toader V., [†]Sleiman H.F., [†]Mauzeroll J.

0084 *Single-Molecule Level Study of Heterogeneous Asymmetric Hydrogenation Catalysis on Pt(111)* **Dong Y.**, [†]Demers-Carpentier V., [†]Rasmussen A.M.H., [†]Goubert G., [†]Ferrighi L., [†]Lemay J.-C., [†]Masini F., [†]Zeng Y., [†]Hammer B., [§]McBreen P.H.

0085 *Reduction Kinetics of Nickel Oxide in the Presence of Metal Sulfate Additives* **Foran G.**, [†]Grossutti J., [§]Rowntree P.A.

0086 *Synthesis of Small Water-Soluble Diazirine-Functionalized Gold Nanoparticles for Biological Applications* **Ghiassian S.**, [§]Workentin M.S.

0087 *Surface Analytical Studies of Gramicidin A in a Floating Bilayer Lipid Membrane* **Goodall B.L.**, [†]Quirk A., [§]Lipkowski J.

0088 *Near-Infrared Electrogenerated Chemiluminescence Emission Using Au₂₅L₁₈ Clusters* **Hesari M.**, [§]Ding Z., [†]Workentin M.S.

0089 *Study of Photoinducedmolecular Orientation of Azo Compound Thin Films Using Polarization Modulation Infrared Spectroscopy* **Hou R.**, [†]Snell K., [†]Lagugné-Labarthe F., [†]Ishow E.

0090 *The Effect of Water Radiolysis on Film Formation on 316L Stainless Steel at 25 °C and 80 °C in Mildly Basic Conditions* **Knapp Q.W.**, [†]Musa A.Y., [§]Wren J.C.

0091 *Forced Convection during Scanning Electrochemical Microscopy Imaging over Living Cells: Effect of Topographies and Kinetics on the Microelectrode Current* **Kuss S.**, [†]Kuss C., [†]Trinh D., [†]Schougaard S.B., [†]Mauzeroll J.

0092 *Enhanced Electrochemical Performance of Porous Carbon-Sulfur Cathode by Atomic Layer Deposition* **Li X.**, [†]Liu J., [†]Li X., [†]Xiao B., [†]Li R., [†]Sun X.

0093 *Structural Characterization of Even and Odd Alkanethiol Self-Assembled Monolayers on Au(111) by MADS and IRRAS* **Lyagusha A.**, [†]Read S.T., [§]Rowntree P.A.

0094 *Ferromagnetic Silver: Fabrication of Ferromagnetic Thin Films from Diamagnetic Metals* **Marenco A.J.**, [§]Pedersen D.B., [†]Trudel S.

0095 *Electron-Induced Oxygen Attachment on n-Alkanethiolate SAMs Studied by Electron Stimulated Desorption* **Massey S.**, [†]Bass A.D., [†]Sanche L.

0096 *Hierarchical Materials for Surface-Enhanced Raman Spectroscopy (SERS): Applications to Monitoring Oil in Water* **Rahman M.M.**, [†]Sarkar M., [†]Whelan L.D., [§]Merschrod S E.F.

0097 *Effect of Water Radiolysis on Oxide Film Formation on Inconel 600 in Mildly Basic Solutions* **Mizzi D.**, [†]Musa A.Y., [§]Wren J.C.

0098 *Processing and Optoelectronic Characterization of Solution Processed Metal Oxide Thin Films as Buffer Layers in Organic Solar Cells* **Mohtasebi A.**, [†]Stubhan T., [†]Brabec C.J.

0099 *Surface Area and Pore Analysis of Pre- and Post-Reduced Nickel Oxide* **Moore M.**, [§]Rowntree P.A.

0100 *Microscopy Studies Aimed at Understanding the Dissolution Sites of Nickel* **Moula M.G.**, [†]Huang H., [§]Lipkowski J.

0101 *Adsorption and Decomposition of Formic Acid on Co(0001)* **Ould Hamou C.A.**, [§]Giorgi J.B.

0102 *Microscopic Surface Deformation on Si(111) Due to Defects Induced by Ion Bombardment* **Piercy P.** PAPER WITHDRAWN

0103 *The Influence of pH and Carbonate Concentration on the Electrochemical Reactivity of Gd-Doped Uranium Dioxide (UO₂)* **Razdan M.**, [§]Shoesmith D.W.

0104 *Development of a High Resolution Near-Field Spectroscopic Mapping Technique for Plasmonic Metallic Nanostructures in Organic Photovoltaic Cells* **Sangar A.**, [†]Merlen A., [†]Torchio P., [†]Lagugné-Labarthe F.

0105 *Continuous and Pulsed Plasma-Assisted Surface and Interface Engineering* **Côté C.**, [†]Kpetsu J.-B., [†]Porter R., **Sarkissian A.**, [†]Wolfe S., [†]Zandi K.

0106 *Electrochemical STM Study of Trichogin Molecules Aggregation in Lipid Monolayer* **Smetanin M.**, [§]Lipkowski J.

0107 *Quantifying the Local Rate of Hydrogen Emission from Magnesium Alloys Using Scanning Electrochemical Microscopy* **Snowden M.E.**, [†]Tafeshe U.M., [†]Dauphin Ducharme P., [†]Mauzeroll J.

0108 *Photocurrent Enhancement of a Low Cost, One-Pot CuInS₂ Light Absorbing Layer* **Tapley A.**, [†]Hart C., [†]Vaccarello D., [§]Ding Z., [†]Love D.A.

0109 *A Study on Different Surface Characteristics of Polypropylene/Montmorillonite Nanocomposites in Acidic Solution* **Toloei A.S.**, [§]Mousavi S.H., Janghorban K.

0110 *Thermal Transformations and Low Energy Electron Irradiation of 1,3,5-Trimethylbenzene on Au(111) Surfaces and on Alkanethiol SAMs* **Vandergust A.**, Rowntree P.A.

0111 *Plasmonics for Raman Spectroscopy* **Vedraïne S.**, Kazemi-Zanjani N., Hou R., Wallace G., Pashae F., [†]Laguné-Labarthe F.

0112 *The Influence of Dissolved Metal Species on Radiation-Induced Steel Corrosion and H₂ Production* **Yakubuskie P.A.**, Pejman S., [†]Joseph J.M., [§]Wren J.C.

0113 *Tribological and Corrosion Behavior of AM60 Mg Alloy with TiO₂ Deposition Film Produced by Plasma Electrolytic Oxidation* **Yi R.**, [§]Nie X.

0114 *Electrochemical, Micro-Electrochemical, and Scanning Electrochemical Probe Investigations of the Corrosion of Multiphase Alloy Waste Forms (MAWF)* **Asmussen R.M.**, [†]Zagidulin D., Noël J.J., [§]Shoesmith D.W.

0115 *Characterization of Tribofilms Generated from Zinc Dialkylthiophosphate and Serpentine Studied by X-Ray Absorption Spectroscopy* **Zhao F.**, Kasrai M., [†]Sham T.K., Bai Z.M.

OTHER SEB 1200

Other relevant surface studies

Chair(s) - Lyudmila Goncharova

14:30 0116 *The Effect of Hydrophilic Ligands on the Formation of Gold Nanoparticle Monolayer Films at the Air/Water Interface* **Bradford S.M.**, [§]Meli M.-V.

14:45 0117 *Enabling in situ Real-Time Characterization of Interfaces with Quartz Crystal Microbalance with Dissipation Monitoring* **Poggi M.A.P.**, Jaiswal A., Dixon M.C.

15:00 0118 *Selected Studies on the Surface Chemistry of Iron Oxide Nanoparticles under Geochemical and Atmospheric Conditions* [§]**Al-Abadleh H.A.**

15:15 0119 *XPS Characterization of Oil Saturated Quartz (Sands). Core and Carbonate Cores* **Molero H.**, Pereira-Almao P.

15:30 0120 *Study of Single-Crystal Domains of Tetracene Films via Shear Force Microscopy and X-Ray Diffraction* [§]**Qin X.R.**, Tersigni A., Jiang D.T.

15:45 0121 *Hunt for Ferromagnetic Behavior of Strontium Titanate* **Lobacheva O.**, Chavahra M., Sham T.K., [†]Goncharova L.V.

16:00 Coffee Break

16:15 End of Session

MET SEB 1200

Metal, oxide, thin film and mineral surfaces

Chair(s) - Lyudmila Goncharova

16:15 0122 *An Investigation of the Structural Stability of Pyrochlore-Type Oxides Proposed for the Sequestration of Nuclear Waste by Glancing Angle X-Ray Absorption Spectroscopy* [§]Aluri E.R., [†]Grosvenor A.P.

16:30 0123 *Nanoscale Morphology of XRD-Amorphous Annabergite* [§]**Jiang D.T.**, Chen N., Kim E., Arthur Z., Daenzer R., Warner J., Reid J., Demopoulos G.P., Joly Y.

16:45 0124 *Evaluation of Adhesion of Titanium Sliding against Thin Hard Coatings During Breaking-In Period* **Jin L.**, Riahi A.R., Farokhzadeh K., [†]Edrisky A.

17:00 0125 *Study of Self-Assembled Monolayers as Buffer Layers in Organic Photovoltaic Devices* **Lyubarskaya Y.L.**, [†]Angel F.A., [§]Shestopalov A.A., Tang C.W.

17:15 0126 *Hydrogen Absorption into Titanium under Cathodic Polarization: An in-situ Neutron Reflectometry and EIS Study* **Vezevaie M.**, [†]Noël J.J., Tun Z., [§]Shoesmith D.W.

17:30 0127 *Nb-Doped TiO₂ Coated Functionalized Carbon Paper* **Navaei Alvar E.**, Zhou B., Eichhorn S.H.

17:45 0128 *Applications of the Electron Back-Scatter Diffraction (EBSD) Technique to Industrial Alloys and Coatings* [§]**Jakupi P.**, Barker I., Ramamurthy S., Jacklin R., Shoesmith D.W., Moser D., Keech P.

18:00 End of Session

Friday AM

NANO SEB 1200

Nanomaterials and nanopatterning

Chair(s) - François Laguné-Labarthe

08:15 0129 *Fabrication and Characterization of Metallic Nanostructures for Plasmonic Photovoltaics* [§]**Merlen A.**, [†]Sangar A., Torchio P., Laguné-Labarthe F.

08:30 0130 *MD Simulation of Mica Surface Pattern Formation in Solution* **Xu M.**, [§]Merschrod S E.F.

08:45 0131 *Pattern Recognition and Characterization for Surface Self-Assembly Imaging* **Suderman R.J.**, Lizotte D., Abukhdeir N.M.

09:00 0132 *2D XANES-XEOL Mapping: Observation of Enhanced Band Gap Emission in ZnO Nanowire Arrays* **Wang Z.Q.**, [§]Sham T.K.

09:15 0133 *Radiation-Induced Nanoparticle Formation under Steady-State Radiolysis: Comparison of the Fe, Co and Cr Systems* **Joseph J.M.**, Alrehaily L.M., Yakabuskie P.A., *Guzonas D.A., *Wren J.C.

09:30 0134 *Manipulating the Morphology and Surface Chemistry of Nanoporous Metals for Potential (Electro)catalytic Applications* **Newman R.C.**, Vega A.A.

10:00 Coffee Break

10:15 0135 *Strategies for Controlled Assembly at the Nanoscale* ***Rosei F.**

10:45 0136 *Research on Heavy-Duty Anticorrosive Nano-Coatings for 16MnR Steel Containers* ***Lu Y.F.**, Lou M., Qiu S., Zhou M., Hu M.Z., Hu X.D., Lu F., Huang Y.J.

11:00 0137 *Imaging and Electronic Structure of Iron Encapsulated within Pod-Like Carbon Nanotubes Studied by Scanning Transmission X-Ray Microscopy* **Chen X.Q.**, Wang J., Hu Y.F., Pan X.L., Deng D.H., Deng J., Bao X.H.

11:15 0138 *Ultrathin Nafion Films: Structure, Function and Degradation* ***Giorgi J.B.**, Paul D.K., Karan K.

11:30 End of Session

SCAN SEB 1200

Scanning probe and high resolution electron microscopy

Chair(s) - François Lagugné-Labarthe

11:30 0139 *Biology as Surface Science: Advantages of Surface-Science Tools in Understanding Biological Materials* ***Merschrod S E.F.**

11:45 0140 *Surfaces and Interfaces Analysis with Electron Microscopy* ***Botton A.**, Stambula S., Gauquelin N., Rossouw D., Zhu G.-Z., Prabhudev S., Bellido-Sosa E., Bugnet M.

12:00 0141 *Friction Contrast on Atomically Thin Lubricants: CVD-Grown Graphene on Polycrystalline Copper Foils* **Egberts P.**, Han G., Liu X.-Z., Johnson A.T.C., *Carpick R.W.

12:15 0142 *One-Dimensional Metallic Chains on Germanium Surfaces* **Melnik S.**, ***Gallagher M.C.**

12:30 End of Session

Friday PM

ELEC SEB 1200

Electrochemistry/physics/chemistry of solid/liquid interfaces

Chair(s) - Zhifeng Ding

14:00 0143 *Highly Porous and Preferentially {100} - Oriented Pt Electrode for Electrocatalysis and Energy Conversion* ***Guay D.**

14:30 0144 *Modeling Hydrogen Permeation through a TiO₂ Film and Pd* ***Qin Z.**, Zeng Y., Norton P.R., *Shoesmith D.W.

14:45 0145 *Photochemically Accessed Highly Efficient Heterogeneous Catalysts for the Water Oxidation Reaction* ***Trudel S.**, Berlinguette C.P., Fagan R., Prévot M.S., Smith R.D.L.

15:00 0146 *Oxidation of Formic Acid at Pd Electrodes* **Sacci R.L.**, **Harrington D.A.**

15:15 Coffee Break

15:30 0147 *Electrochemical and Surface Characterization of Oxide Films Formed on Steels in Radiation Environments* ***Wren J.C.**

15:45 0148 *Scanning Electrochemical Microscopy Detection of Hydrogen Generated by Corrosion of AM50 Magnesium Alloys* ***Tefashe U.M.**, Dauphin Ducharme P., *Mauzeroll J.

16:00 0149 *Electrodeposition of Fluorine Doped PbO₂ on 316L Stainless Steel for Use as Bipolar Plates in PEMFCs* ***Mohammadi N.**, **Yari M.**, Allahkaram S.R.

16:15 0150 *X-Ray Absorption Spectroscopy Study of Advanced Lithium-Ion Battery Cathode Materials for Electric Vehicles* **Tang Y.**, Wang J., Yang J., Li R., Liang G., *Sham T.K., *Sun X.

16:30 0151 *Three-Dimensional Kinetic Monte Carlo Simulations of Electrodeposition under Galvanostatic Conditions* **Treeratanaphitak T.**, Pritzker M., *Abukhdeir N.M.

16:45 0152 *A Set of Mathematical Equations for Solving One Dimensional Steady State Problems in Interfacial Electrochemistry which Include Coupled Homogenous and Heterogeneous Reactions* **Reda M.**

17:00 0153 *Monitoring the Voltage-Gated Opening and Closing of the Cholera Toxin B Subunit in a Model Biological Membrane* ***Leitch J.J.**, Brosseau C.L., Bessonov K., Roscoe S.G., Dutcher J.R., *Lipkowski J.

17:15 End of Session

Saturday AM

WORK SEB 1200

Workshop on Experimental Techniques to Investigate Surfaces

09:00 0154 *Surface Science Research at Synchrotrons* **Ellis T.**

09:30 0155 *Photoemission Spectroscopy* **Cui X.Y.**

10:00 Coffee Break

10:30 0156 *Secondary Ion Mass Spectrometry: Techniques and Applications in Materials Characterization* **Dimov S.**

11:15 0157 *X-Ray Photoelectron and Auger Spectroscopy (XPS and SAM/AES)* **Biesinger M.**

12:00 Sandwich Lunch

Saturday PM

WORK SEB 1200

**Workshop on
Experimental Techniques
to Investigate Surfaces**

12:35 0158 *Electron Beam
Lithography for Plasmonics*
Lagugné-Labarthe F.

13:00 0159 *Applications of
FIB/SEM to Nanofabrication and
Surface Analysis* **Simpson T.**

13:20 0160 *Ion Beam Analysis
Modification for Current Issues in
Surface Science* **Goncharova L.V.**

14:05 0161 *Scanning
Electrochemical Microscopy with
Scanning Electron Microscopy and
Other Techniques* **Ding Z.**

14:50 0162 *Various Techniques
for Studying Electrochemical Energy
Storage* **Sun X.**

15:35 End of Session