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Industrial Electrochemistry and Electrochemical Engineering

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   V. Hock, O. Marshall, M. McInerney, S. Morefield, C. Weiss, P. Malone, and P. Noyce

1597 Study of Mechanically Alloyed Cu-Ni-Fe Based Inert Anodes for Aluminum Production
   S. Helle, B. Davis, D. Guay, and L. Roue

1598 Electrodeposition of Rhodium on Nickel Electrodes Used as Urea Oxidation Electrocatalysts
   A. Miller, M. Muthuvel, and G. Botte

1599 Anode Processes on Carbon in Chloride-Oxide Melts
   R. Tunold, G. Haarberg, K. Osen, A. Martinez, and E. Sandnes

1600 Comments on the Parasitic Copper Deposition during Cathodic Reduction in Copper Chloride Thermo-Chemical Cycle
   M. Reda

1601 The Damköhler Number and the Koutecky-Levich Plots as Indicators for the Efficiency of an Electrochemical Process Applied to Copper Chloride (C\textsubscript{a}C\textsubscript{f}) Thermo-Chemical Cycle for Hydrogen Reduction
   M. Reda

1602 Effect of Sonication on via Filling Behavior for Copper Metallization in Electronics Packaging
   R. Manu, S. Sobha Jayakrishnan, and S. Boopathi

1603 Optimal Design of Electrode Properties for Li-ion Batteries Using Physics-Based Efficient Reformulated Models
   V. Ramadesigan, R. Braatz, G. Sikha, and V. Subramanian

1604 Dissolution Study of Orpiment (As\textsubscript{2}S\textsubscript{3}) in Alkaline Solution
   A. Khodadadi Darban, M. Aazami, A. Meléndez, M. Abdollahy, and I. Gonzalez

1605 Nitrate Removal by a Paired Electrolysis Process
   D. Reyter, D. Bélanger, and L. Roue

1606 Electrochemical-pH-Switchable Polymer Film for Treatment of Metallic Ion Aqueous Waste: From Fundamental Study to Semi-Pilot Industrial Applications
   X. Le, P. Viel, and S. Palacin

1607 Novel Near-Infrared Electrochromic Aramids Based on Electroactive Para-Phenylenediamine-Substituted Triphenylamine and Diphenylamine Derivatives
   L. Huang, H. Yen, and G. Liou

1608 Crystallization Paths in CaO-Al\textsubscript{2}O\textsubscript{3}-SiO\textsubscript{2} System
   V. Lutsyk and A. Zelenaya

1609 Adsorption and Desorption Behavior of Organic Molecules on Silicon Wafer Surface
   S. Tili, S. Gligorovski, B. Temime-Roussel, and H. Wortham

1610 Catalytic Activity of Transition Metal Compounds for Oxygen Evolution Reaction in Sulfuric Acid

1611 Evaluation and Modeling of a Photo-Electrochemical Reactor for Hydrogen Production Operating under High Photon Flux
   C. Ong, S. Dennison, G. Kelsall, and K. Hellgardt
1612 Evaluation of Catalyst Support Materials for Ammonia Electrolysis
   M. Muthuvel and G. Botte
1613 Modification and Formation Control of Anodic Aluminum Oxide (AAO) Nano-Templates
   Synthesized in Oxalic Acid Solution
   M. Soltani, M. Paydar, M. Moradi, F. Behzadi, F. Homayoon-nia, and M. Noormohammadi
1614 Fabrication of Doped Tin Oxide Electrode for Electrochemical Generation of Ozone
   B. Wang and K. Chan
1615 Increase in Efficiency of Electrolytic Process of Zirconium Production
   V. Bezumov, A. Kabanov, N. Matyushkin, and A. Dunaev
1616 Behavior of Soluble and Insoluble Anodes in Cu Electroplating
   Y. Lee, H. Ju, S. Rha, S. Lee, B. Kang, and Y. Lee
1617 Pretreatments for Clean Cu Seed Layer in Electroplating
   H. Ju, Y. Lee, Y. Lee, S. Lee, B. Kang, and S. Rha
1618 A Spectroscopic Study of 4-Phenyl-3-Buten-2-One Dissolved in an Electroplating Zinc Bath
   S. Gama, C. Frausto-Reyes, G. Trejo-Cordova, Y. Meas, and G. Orozco
1619 A Combined Experimental and Numerical Study on Flow Field Performance
   and E. Smotkin
1620 A Variational Multiscale Model for the Numerical Simulation of Electrochemical Systems
   G. Bauer, V. Gravemeier, and W. Wall
1621 A Three-Dimensional Lithium-Ion Battery Model that Includes Thermal, Electrical and
   Electrochemical Behavior: I. Model Description and Validation
   J. Christensen, P. Albertus, and D. Cook
1622 A Three-Dimensional Lithium-Ion Battery Model that Includes Thermal, Electrical and
   Electrochemical Behavior: II. The Effects of Electric Potential and Thermal Variations on Cell
   Aging
   J. Christensen, P. Albertus, and D. Cook
1623 Global Sensitivity Assessment and Optimization of LiMn2O4 Electrode Properties in a
   Surrogate-Based Framework
   W. Du, A. Gupta, X. Zhang, A. Sastry, and W. Shyy
1624 Dynamic Optimization for Maximization of Energy Storage and Minimization of Capacity Fade
   V. Ramadesigan, R. Methkar, R. Braatz, and V. Subramanian
1625 Hybrid Atomistic Modeling of the Interface between Pt catalysts and Nafion Electrolyte
   X. Zhou, X. Zhou, and H. Liu
1626 Electric Field Influence on Li+ Ion Transport through Phase-Change LiFePO4/FePO4 Particles
1627 A Multiscale Mechanistic Model for the Transient Analysis of PEM Water Electrolyzers
   A. Franco, L. Lopes Oliveira, C. Jallut, E. Mayousse, and N. Guillet

**G2 - Characterization of Porous Materials 3**

*Energy Technology / Physical and Analytical Electrochemistry / Industrial Electrochemistry and Electrochemical Engineering*

1628 Heterogeneous through Plane Porosity Distributions of MPL Treated GDLs
   Z. Fishman and A. Bazylak
1629 Lattice Boltzmann Modeling of the Effective Thermal Conductivity of an Anisotropic Gas Diffusion Layer in a Polymer Electrolyte Membrane Fuel Cell  
J. Yablecki and A. Bazylak
1630 3D Visualization of PEMFC Electrode Structures Using FIB Nanotomography  
S. Zils, M. Timpel, T. Arlt, A. Wolz, I. Manke, and C. Roth
1631 Investigation of PEM Fuel Cell Transport Material Flooding and Microstructure with Synchrotron Radiography  
J. Hinebaugh and A. Bazylak
1632 Conductometric Analysis for the Formation of Poly(Vinylidene Fluoride)-Based Ion Track Membranes  
1633 Testing the Puncture Resistance of Li-Ion Battery Separators through Nanoindentation  
I. Halalay, M. Lukitsch, M. Balogh, and C. Curtis A. Wong
1634 A Comparative Study of the Performance of Ultra-Porous Membranes as Separators in Supercapacitor Devices  
A. Laforgue and L. Robitaille
1635 In situ Measurements of Potential, Current, and Charging Rate across an Ultracapacitor Electrode  
K. Hess, J. Whitacre, and S. Litster
1636 Charging Performance of Carbon Aerogel Electrodes with Hierarchical Porosity for Water Desalination and Energy Storage Applications  
M. Suss, J. Santiago, T. Jaramillo, T. Baumann, M. Stadermann, and K. Rose
1637 In situ 3D Imaging and Characterization of Nano-Structures with X-ray Nano-CT Technique  
Y. Wang, Y. Chen, and W. Chiu
1638 Lattice Boltzmann Simulation of Supercritical Carbon Dioxide in Brine-Saturated Underground Porous Media  
A. Ebrahimi Khabbazi, J. Ellis, and A. Bazylak
1639 Characterization of Supercritical Carbon Dioxide Transport within a Brine-Filled Porous Media Using a Two-Phase Pore Network Model  
J. Ellis, A. Ebrahimi Khabbazi, and A. Bazylak
1640 Desalination Shocks and Overlimiting Current in Microstructures  
A. Mani, E. Dydek, D. Deng, B. Zaltzman, I. Rubinstein, and M. Bazant
1641 Defects Origin on Epitaxial Silicon Layer on a Double-Porous Silicon Layer  
E. Arbaoui, J. Hartmann, F. Gonzatti, L. Clement, and A. Halimaoui

G3 - Electrosynthesis and Electrochemical Processes, in Honor of W. Ves Childs
Industrial Electrochemistry and Electrochemical Engineering / Physical and Analytical Electrochemistry

1642 Determination of Kinetic and Thermodynamical Parameters of Cd$^{2+}$ with OC(NH$_2$)$_2$, OS(CH$_3$)$_2$ and C$_6$H$_5$NH$_2$ Ligands in Quasi-Reversible Systems  
L. Zare Haghighi, S. Seyed Sadjadi, and S. Milani
1643 Role of Deposition Potential on the Optical Properties of SnSSe Thin Films  
T. Mahalingam, V. Dhanasekaran, G. Ravi, R. Chandramohan, A. Kathalingam, and J. Rhee
Isothermal Microcalorimetry Applied to Li Battery Electrolyte Stability

L. Krause and L. Jensen

Technological Implications of Active Dissolution Passivation and Electrocatalytic Behavior of Nickel in Fluoride Media

N. Michael

Reversible NAD/NADH Electrocatalysts

R. Arechederra, P. Addo, and S. Minteer

Magnetic Effects on Electron Transfer Kinetics

H. Lee, S. Minteer, and J. Leddy

Electrochemistry within Lyotropic Liquid Crystal Nanostructures

J. Halls and J. Wadhawan

Electron Transfer Relays and Electro-Induced Bond Rupture within Modified Electrodes

J. Halls and J. Wadhawan

The Electrochemical Oxidation of Hydroxylamine on the Low Index Faces of Gold Single Crystals in Aqueous Electrolytes

A. Jacob Jebaraj and D. Scherson

Microbial Electrosynthesis: Converting Carbon Dioxide Directly to Butanol and Other Organic Compounds

P. Tremblay, K. Nevin, C. Leang, S. Hensley, M. Aklujkar, and D. Lovley

Electrochemical Synthesis of Green Rust and Its Modified Form Developed for Wastewater Treatment in Remote Areas

J. Gomes, M. Haider, G. Irwin, P. Bernazzani, and D. Cocke

Electro-Assisted Assembly of Aliphatic Thiol, Dithiol and Dithiocarboxylic Acid Monolayers on Polycrystalline Copper Substrates

A. Maho, J. Denayer, J. Delhalle, and Z. Mekhalif

Ir-Ru Supported Electrocatalysts for Oxygen Evolution Reaction in a PEM Water Electrolyzer

R. Fuentes, S. Rau, T. Smolinka, and J. Weidner

Liquid Fuels Extracted from Coal after the Electrolysis to Produce Hydrogen

A. Valenzuela-Muñiz and G. Botte

Gas-Phase Hybrid Sulfur Electrolyzer Stack

J. Staser, C. McPheeters, and S. Stone

Hydrogen-Bromine Flow Battery for Renewable Energy Storage

T. Nguyen

Development of Gas-phase H$_2$-Br$_2$ Flow Battery

R. Zhang and J. Weidner

Toward On-Chip Processes Using Redox-Magnetohydrodynamic Microfluidics without Channels

V. Sahore, C. Nash, M. Weston, M. Gerner, and I. Fritsch

H1 - Electron Transfer and Applications of Fullerenes and Nanostructured Materials

Fullerenes, Nanotubes, and Carbon Nanostructures

Towards Tunable Graphene / Phthalocyanine-PPV Hybrid Systems

D. Guldi
Synthesis and Photoinduced Electron Transfer Dynamics in Mechanically Linked Porphyrin-[60] Fullerene Systems with Interlocked Topologies

Electron Tunneling and Hopping in Fullerene-Based Donor-Acceptor Compounds in Solutions and Solid Films
N. Tkachenko, K. Stranius, H. Saarenpää, A. Efimov, and H. Lemmetyinen

Single- and Multi-Walled Carbon Nanotubes Covalently Linked to Perylenebisimides
A. Sastre-Santos, R. Martin, F. Céspedes-Guirao, M. de Miguel, F. Fernandez-Lázaro, and H. García

Long Distance Photoinduced Electron Transfer in Oligomeric Porphyrin-[60] Fullerene Dyads with Triazole-Based Conjugated Linkers
E. McCord and D. Schuster

Photoinduced Processes of the Supramolecularly Functionalized Semi-Conductive SWNTs with Porphyrins
F. D'Souza, S. Das, N. Subbaiyan, A. Sandanayaka, T. Hasobe, and O. Ito

Photo-Physical Properties of Simple and Double Strand Multi-Porphyrinic Polypeptides
N. Solladie

Endohedral Electrochemistry: New Directions in Metal Nitride Cluster Fullerenes
L. Dunsch, S. Yang, L. Zhang, A. Svitova, and A. Popov

Electrochemical Transfer Doping of Carbon Nanotubes, Graphene and Other Semiconductors
V. Chakrapani, J. Angus, A. Anderson, and G. Sumanasekera

Controlling Inter-Fullerene Electronic Interactions in the Solid and Using Them to Store Information
D. Bassani

Fine-Tuning Redox Properties of Perfluoroalkylated Fullerenes: Playing with Perfluoroalkyl Groups and Addition Motifs
A. Popov, N. Shustova, I. Kuvychko, J. Whitaker, B. Larson, O. Boltalina, S. Strauss, and L. Dunsch

Metallofullerenes M₆₀C₆₀ (M = Pt, Pd) as Catalysts for PEM fuel-Cell Electrodes
G. Krosnicki, N. Guillet, O. Lemaire, L. Guetaz, A. Al-Mayouf, and D. Felder-Flesch

Donor-π-Acceptor Double-Cable Polyythiophenes Bearing Fullerene Pendant with Tunable Donor/Acceptor Ratio: A Facile Postpolymerization
M. Li, P. Xu, J. Yang, and S. Yang

Effect of Purification of Carbon Nanotubes on Their Electrocatalytic Properties for ORR in Acid Solution
I. Kruusenberg, N. Alexeyeva, J. Kozlova, V. Sammelselg, and K. Tammeveski

Effect of Thermally Evaporated Bis (2-methyl-8-quinolinato)-4-Phenylphenolate Cathode Buffer Layer on Performance of Polymer Photovoltaic Cells
D. Kim, Z. Wang, J. Kim, K. Ku, G. Lee, and J. Park

H₂ - Molecular and Supramolecular Chemistry of Fullerenes and Carbon Nanotubes

Photoactive Carbon Nanotube-Based Composites
H. Imahori
Fullerenes, Carbon Nanotubes and Graphene: What Was New and What Have We Learned
R. Haddon

Hierarchical Selectivity in Fullerenes: Site, Regio, Diastereo and Enantio Control in the 1,3-Dipolar Cycloaddition to [70]Fullerene
E. Maroto, S. Filippone, A. Martín-Domenech, M. Suarez, and N. Martin

New Concepts in Receptors for Fullerenes
N. Martin

Customization of Acceptor Materials to Match the Electronic and Physical Properties of Donor Polymers in Organic Photovoltaic Systems
C. Cardona, B. Swain, J. Wall, and S. Joslin

Regioselectivity in High-Temperature Additions to Fullerenes
O. Boltalina, I. Kuvychko, J. Whitaker, B. Larson, T. Folsom, and S. Strauss

Selective Derivatization of Perfluoroalkylfullerenes
S. Strauss, J. Whitaker, B. Larson, I. Kuvychko, and O. Boltalina

Nanocarbon Assemblies for Photovoltaics
Y. Shen and T. Nakanishi

Click Chemistry with Fullerene Hexa-adducts
J. Nierengarten

Clicked Fullerene-Porphyrin Conjugates
M. Vartanian and J. Nierengarten

Synthesis of [60]Fullerene-Fused Lactones
F. Li, B. Zhu, and G. Wang

Supramolecular Cross-Linking of C60-Grafted Polyphenylacetylene Driven by Molecular Recognition
T. Haino

A New CNH-C60 Hybrid: Synthesis and Properties

Functionalized Peapods
N. Tagmatarchis

Mild Methods in the Selective Functionalization of Fullerenes
M. Izquierdo, S. Filippone, and N. Martin

Mass Spectrometry Study of Retro-Cycloaddition Reactions in Fullerene Cycloadducts
R. Martinez, S. Filippone, A. Martín-Domenech, E. Maroto, J. Delgado, and N. Martin

Encapsulation of Fullerenes into Non-Covalent Subphthalocyanine Supramolecular Assemblies

Supramolecular (2,5,7-Trinitrofluorene)-C60/Tetrathiafulvalene-Calix[4]Pyrrole Systems
L. Martin-Gomis, K. Nielsen, F. Fernandez-Lázaro, J. Jeppesen, and A. Sastre-Santos

H3 - Carbon Nanotubes and Nanostructures: Fundamental Properties and Processes
Fullerenes, Nanotubes, and Carbon Nanostructures

(Invited) Compositionally-Tuned Bimetallic Nanocatalysts and Their Influence on the Chirality of As-Grown SWCNTs
R. Sankaran
1694 (Invited) Towards Chiral-Control Growth of Single Walled Carbon Nanotubes: Correlation between Catalyst Structure and Chirality of the Tubes
   G. Chen, T. Paronyan, E. Pigos, E. Stach, and A. Harutyunyan
1695 (Invited) Design, Synthesis and Properties of Nanostructured Carbon
   C. Nuckolls
1696 (Invited) Purification of Single-Chirality Metallic Carbon Nanotubes by DNA
   X. Tu, A. Hight Walker, and M. Zheng
1697 Fundamentals and Applications of Monodisperse Carbon Nanomaterials
   M. Hersam
1698 (Invited) Advances in Graphene Chemistry
   R. Haddon
1699 (Invited) Diameter-Based Separation of Single-Walled Carbon Nanotubes with Dipyrene Nanotweezers
   N. Komatsu
1700 (Invited) Understanding the Selective Retention of Semiconducting SWCNTs onto Agarose
   C. Silvera Batista, S. McLeod, D. Scott, and K. Ziegler
1701 (Invited) Semiconducting Zig-Zag Bundles: Preparation and Properties
   M. Kappes
1702 (Invited) Performance of Type-Separated Single-Walled Carbon Nanotubes in Photovoltaic Blends
   J. Blackburn, J. Holt, A. Ferguson, N. Kopidakis, and G. Rumbles
1703 Diameter and Chiral Selective Purification of SWNT and DWNT Using CO₂
   P. Gagnon, M. Biron, E. Flahaut, P. Desjardins, and R. Martel
1704 (Invited) Characterization of the Chirality Distribution of a Dispersed SWCNT Sample
   J. Fagan
1705 (Invited) Measuring SWCNT Length Distributions from Imaged Brownian Motion
   R. Weisman, J. Streit, D. Tsyboulski, and S. Bachilo
1706 (Invited) Spectroscopy of Metallic Single-Walled Carbon Nanotubes
   E. Haroz, T. Searles, L. Ren, and J. Kono
1707 (Invited) Highly Luminescent Nanotube/Silica Gel Composites: Interfacial Behavior and Optical Properties
1708 (Invited) Nonlinear Optical Properties of Graphene
   B. Zhao and W. Zhao
1709 (Invited) Oxygen Doping Modifies near Infrared Band Gaps in Fluorescent Single-Walled Carbon Nanotubes
   S. Ghosh, S. Bachilo, R. Simonette, K. Beckingham, and R. Weisman
1710 A New Look on SWCNT Electronic Levels and Their Modifications
   S. Bachilo, S. Ghosh, and R. Weisman
1711 (Invited) Multiple Exciton Generation and Fluorescence Brightening in Single-Walled Carbon Nanotubes
   X. Wang, A. Lee, L. Carlson, J. Smyder, and T. Krauss
1712 (Invited) Why Are Fluorescence Quantum Yields of Single-Wall Carbon Nanotubes So Low
   T. Hertel, S. Himmelein, T. Ackermann, D. Stich, and J. Crochet
1713 (Invited) Fluorescence from Molecules Encapsulated inside Carbon Nanotubes
   T. Okazaki
1714 (Invited) Energy Structures of Excitons and Trions in Single-Walled Carbon Nanotubes
R. Matsunaga and Y. Kanemitsu

1715 (Invited) Optical Imaging and Spectroscopy of Carbon Nanotubes Grown by Chemical Vapor Deposition
P. Finnie, A. Li-Pook-Than, P. Vinten, P. Marshall, and J. Lefebvre

1716 (Invited) Probing Localized Excitons and Band Gap States in Single-Walled Carbon Nanotubes
J. Lee

1717 (Invited) Metal-Nanowires in Carbon Nanotubes
H. Shinohara

1718 Electroreduction of Oxygen on Nitrogen-Doped Carbon Nanotube Modified Electrodes
N. Alexeyeva, E. Shulga, V. Kisand, I. Kink, and K. Tammeveski

1719 Synthesis and Characterization of Carbon Nanotube Electrodes Grown by Thermal CVD
C. Smart, M. Pearce, S. Oh, R. Hudson, A. Alles, and S. Belli

1720 High-Throughput Fabrication of Functionalized Carbon Nanostructures for DNA Detection
V. Penmatsa, H. Kawarada, and C. Wang

1721 Multiwall CVD Carbon Nanotubes as Insulated Nanowires
S. Belli, S. Oh, S. Kaur, M. Pearce, and C. Smart

1722 Polyoxometalates Modified Carbon Nanotubes for Electrochemical Capacitors
T. Akter, K. Hu, and K. Lian

1723 Structural and Electronic Properties of Graphene Supported on Amorphous SiO₂:
A First Principles Study
K. Kweon and G. Hwang

1724 Copper Sulfide Nanowires Electrodeposition; Method and Mechanism
A. Ghahremaninezhad, E. Asselin, and D. Dixon

1725 Anchoring Gold Nanoparticles to Gold Surfaces through Nitroxyl Radicals
R. Bilewicz, O. Swiech, N. Hrynkieiwicz-Sudnik, B. Palys, and A. Kaim

1726 Rippling in Vertically Aligned Carbon Nanotube Forests Grown by Chemical Vapor Deposition
P. Vinten, J. Bond, P. Marshall, J. Lefebvre, and P. Finnie

H4 - Carbon Nanotubes and Nanostructures: Applications and Devices
Fullerenes, Nanotubes, and Carbon Nanostructures / Sensor

1727 (Invited) Microfluidic Control over Single-Wall Carbon Nanotube Environments
T. Hertel, F. Bergler, and F. Schöppler

1728 (Invited) Tracking and Imaging of High Brightness Colloidal Carbon Nanotubes for Hydrodynamic Investigations
J. Crochet, J. Duque, J. Werner, and S. Doorn

1729 (Invited) Resonance Raman Spectroscopy of Separated SWCNTs

1730 (Invited) Imaging and Spectroscopy of Carbon Nanotubes and Polycrystalline Graphene
J. Park

1731 (Invited) Sensing with Excitons in Single Walled Carbon Nanotubes
J. Lefebvre and P. Finnie

1732 Evaluation Model of Emitter Roughness Impact Responsible for Diamond Based Cold Emitter IV Characteristics Aberration
D. Kartashov, A. Krasnikov, I. Matyushkin, S. Orlov, S. Yanovich, and N. Zaytsev
Elastic Characteristics of Nanocomposite Based on Multiwalled Carbon Nanotubes and Polypropylene
A. Onanko, O. Lyashenko, G. Prodayvoda, S. Vyzhva, and A. Onanko

High-Performance N2O Plasma Treated Multiwall Carbon Nanotubes by Thermal Chemical Vapor Deposition
C. Fan, H. Lai, T. Huang, and W. Wu

(IInvited) Terahertz Response of Carbon Nanotube Transistors
F. Leonard

Force on a Charged Wall Due to the Presence of a Polyelectrolyte Influenced by an Electronically Responsive Cylinder
O. Malysheva, T. Tang, and P. Schiavone

Near-Field ID Probes with Single-Wall Nanotube Antennas
S. Rotkin, A. Nemilentsau, G. Slepyan, S. Maksimenko, and A. Lakhtakia

(IInvited) Polymer Wrapped Carbon Nanotubes Doing It All: From Selection to Self-Assembly of Semiconducting Devices
M. Loi, J. Gao, M. Kwak, and A. Herrmann

(IInvited) Separation and Optical Characterization of Empty and Water-Filled Single-Wall Carbon Nanotubes

(IInvited) Floating Catalyst Synthesis and Direct Dry Deposition of SWCNTs for Thin Film Flexible Electronics Applications
E. Kauppinen

(IInvited) Shaping Nanotubes and Nanowires with Surfaces
E. Joselevich

(IInvited) Nanotube Radio
S. Perisanu, A. Ayari, P. Vincent, T. Barois, M. Choueib, V. Gouttenoire, and S. Purcell

(IInvited) Carbon Nanotube Thin-Film-Transistors of Very High Mobility
H. Shinohara

(IInvited) Conductance Peak in Carbon Nanotube Field Effect Transistors at Low Temperatures and High Magnetic Fields
J. Licini and J. Stephens

Thermopile Based on Single-Walled Carbon Nanotubes for Broadband Light Detection
B. St-Antoine, D. Ménard, and R. Martel

Solution Processing of Highly Conductive and Transparent Single-Walled Carbon Nanotube Films: Surfactant-Free Dispersions and Non-Acidic Dopants
B. Larsen, J. Bergeson, M. Reese, T. Barnes, and J. Blackburn

Substrate Chemistry Modifies Carbon Nanotubes Field-Effect Transistors Transport Characteristics
F. Lapointe, C. Aguirre, P. Levesque, P. Desjardins, and R. Martel

Covalently Functionalized Double-Walled Carbon Nanotubes for Electronic Devices

Highly-Enriched Semiconducting Carbon Nanotubes for the Fabrication of Electronic Devices
G. Tulevski, B. Chandra, and A. Franklin

(IInvited) Efficiently Harvesting Excitons from Electronic Type-Controlled Semiconducting Carbon Nanotube Thin Films
D. Bindl, M. Wu, F. Prehn, and M. Arnold
1751 Transparent Conducting Electrodes Made from Networks of Single-Walled Carbon Nanotubes for Organic Photovoltaics
   J. Blackburn, B. Larsen, J. Bergeson, K. Mistry, M. Reese, J. Holt, and T. Barnes
1752 High-Performance Dye-Sensitized Solar Cells with Gel-Coated Binder-Free Single-Walled Carbon Nanotube Films as Counter Electrode
   X. Mei, S. Cho, and J. Ouyang
1753 Light Emission in Electrically Excited Carbon Canotubes
   E. Adam, B. Cardin St-Antoine, P. Levesque, M. Paillet, D. Ménard, and R. Martel
1754 Single Wall Carbon Nanotubes as Transparent Cathode Electrodes for OLED Applications
   Y. Chien, F. Lefevre, I. Shih, and R. Izquierdo
1755 (Invited) Periodic Buckling as Predominant Deformation Mechanism in Carbon Nanotube Foams as Revealed by In situ Uniaxial Compression Experiments and Modeling
   S. Hutchens, A. Needleman, and J. Greer
1756 (Invited) Carbon Nanotube Photon Filter for Energetic Particle Detectors
   S. Papadakis, D. Deglau, A. Monica, B. Andrews, and D. Mitchell
1757 Single Carbon Nanotube Based Devices for Atto-Liter Studies
1758 Directly Grown Vertically Aligned Single-Walled CNTs on Conducting Substrate as Electrode Material for Electrochemical Capacitor
   M. Asyadi Azam, A. Fujiwara, and T. Shimoda
1759 Pt Based Nanocomposites for Direct Glucose Determination
   B. Singh, T. McCormac, and E. Dempsey
1760 Development of Hybrid Organic-Inorganic Materials for Efficient Charging/Discharging in Electrochemical and Photoelectrochemical Capacitors
   M. Skunik and P. Kulesza
1761 Field Ionization Based Gas Sensor Applying a Novel Three Dimensional Carbon Nanostructures
   S. Darbari, Y. Abdi, and S. Mohajerzadeh

**H5 - Endofullerenes and Carbon Nanocapsules**

*Fullerenes, Nanotubes, and Carbon Nanostructures*

1762 Thermal and Redox Stabilities of Endohedral Metallofullerene Derivatives
   L. Echegoyen, N. Chen, F. Li, A. Balch, M. Olmstead, and B. Mercado
1763 New Insights from Quantum Chemical Molecular Dynamics Simulations on the Formation Mechanism of Metallofullerenes
1764 Recent Crystallographic Studies of Endohedral Fullerenes
   A. Balch, M. Olmstead, B. Mercado, C. Beavers, and F. Bowles
1765 The Role that Internal Metals Play in Endohedral Metallofullerenes
1766 A Family of Metallic Oxide Clusters Encapsulated in Fullerene Cages
   S. Stevenson
1767 Large Ions in Mixed Metal Nitride Clusters: Gadolinium, Thulium, and Holmium
   A. Svitova, A. Popov, S. Yang, L. Zhang, and L. Dunsch
1768  Thermal Properties of Non-IPR Fullerene Solids and their Reactivity with C2  
M. Kappes
1769  Magnetism of Co₁₃ Cluster Embedded into Fullerenes of Different Size and Form  
P. Tereshchuk and A. Kuznetsov
1770  Electronic Properties of Endohedral Fullerenes M₂(C₂)@C₈₂:  
Comparison between DFT and DFTB  
Y. Nishimoto and S. Irle
1771  Further Exploration in Oxometallic Fullerenes and Metallic Nitride Fullerenes  
M. Mackey and S. Stevenson
1772  Taming the Chemistry of Endohedral Fullerenes for Nanoelectronics  
K. Porfyakis
1773  Metal Exchange of a Trimetallic Nitride Templated Endohedral Metallofullerene:  
A Computational Study of a Metathesis Reaction  
T. Fuhrer and H. Dorn
1774  STM/STS Studies on the Local Electronic Structure of Metallofullerene-Peapods  
H. Shinohara
1775  One-Dimensional Molecular Crystals Produced in Carbon Nanotubes  
T. Okazaki
1776  Cluster Dynamics inside Icosahedral C₈₀ Cages  
H. Dorn
1777  Guanidinium Salt as a Selective Organic Solid for the Facile Synthesis of Metal Nitride  
Clusterfullerenes  
S. Yang, L. Zhang, W. Zhang, and L. Dunsch

H7 - Carbon Nanotubes and Nanostructures: Medicine and Biology  
Fullerenes, Nanotubes, and Carbon Nanostructures / Sensor

1779  Optically Pure Fullerodendron Formed by Diastereoselective Diels-Alder Reaction  
Y. Takaguchi, N. Takahashi, N. Tsugawa, and T. Tajima
1780  Molecular Interactions of an Anti-Inflammatory Fullerene Derivative in Serum and Immune  
Effector Cells  
A. Dellinger, Z. Zhou, D. MacFarland, and C. Kepley
1781  Structure and Properties of IPR and Non-IPR Endohedral Metallofullerenes  
A. Rodríguez-Fortea, N. Alegret, X. Aparicio-Ánglès, M. Mulet, and J. Poblet
1782  Erbium Photoluminescence in Er₂C₂@C₈₂ and Er₂@C₈₂ Elucidated by Density Functional  
Theory  
J. Wang and S. Irle
1783  Relative Populations for the Lanthanoid L@C₇₄ Endohedrals  
Z. Slanina, T. Akasaka, and S. Nagase
1784  Molecular and Spin Dynamics of Pristine and Charged Endohedral Metallofullerenes and the  
Impact of Dynamics on the Spectroscopic Properties  
A. Popov and L. Dunsch
1785  (Invited) Toxicity Studies on Carbon Nanotubes: State of the Art  
J. Kolosnjaj and F. Moussa
1786 (Invited) Biomedical Applications of Covalently Functionalized and Dispersed Single Wall Carbon Nanotubes
   D. Scheinberg, M. McDevitt, C. Villa, R. Bowman, and J. Mulvey

   B. Sitharaman

1788 (Invited) Ultra-Short Single-Walled Carbon Nanotubes (US-Tubes) as "Smart" Delivery Nanocapsules for Chemotherapeutics
   A. Guven, I. Rusakova, and L. Wilson

1789 (Invited) Noninvasive Radiofrequency (RF) Field Heating of Metallic and Semiconducting Nanoparticles
   S. Curley

1790 Preparation of Fluorescent Diamond Nanoparticles Stably Dispersed under Physiological Environment through Multi-Step Organic Transformations
   N. Komatsu and T. Takimoto

1791 (Invited) C_{60}: A Vital Component of Aqueous Fullerene Colloids
   S. Kuriyavar, J. Damron, R. Maples, M. Hilburn, B. Murdianti, and K. Ausman

1792 (Invited) Fulleropyrrolidines as Drug Vectors
   C. Fabbro, A. Montellano Lopez, M. Carini, M. Prato, and T. Da Ros

1793 (Invited) Polysaccharides and Glycoproteins Complexes with Nanomaterials
   B. Belgorodsky, E. Drug, L. Fadeev, N. Hendler, E. Mentovich, S. Richter, and M. Gozin

H8 - Porphyrins and Supramolecular Assemblies
   Fullerenes, Nanotubes, and Carbon Nanostructures

1794 Bis-Porphyrinic Tweezers for the Molecular Recognition of Bidentate Bases of Various Sizes: Towards the Purification of Polluted Effluents
   R. Rein and N. Solladie

1795 (Invited) Phthalocyanine-Based Systems for Molecular Photovoltaics

1796 (Invited) Porphyrins and Phthalocyanines for Dye-Sensitized Solar Cells
   H. Imahori

1797 (Invited) Electrococduction and Protonation or Depronation of Dipyrrolylquinquoxalines
   K. Kadish, Z. Fu, J. Sessler, E. Karnas, S. Fukuzumi, and K. Ohkubo

1798 (Invited) Supramolecular Photoinduced Electron Transfer via Formation of \pi-Complexes
   S. Fukuzumi

1799 (Invited) Azadipyrromethene - Porphyrin - Fullerene Triad: Synthesis and Photoinduced Processes
   F. D'Souza, A. Amin, M. Zandler, M. El-Khouly, and S. Fukuzumi

1800 (Invited) Activating Multistep Charge-Transfer Processes in Fullerene-Subphthalocyanine-Ferrocene Molecular Hybrids as a Function of \pi-\pi Orbital Overlap
   D. Guldi

1801 (Invited) A 2-D Interactive Affair between Excited Porphyrin and Graphene Oxide
   P. Kamat and A. Wojcik
1802 (Invited) Non-Planar Porphyrin-Dendrimer: Observation of Porphyrin Monocation
S. Vinogradov, S. Thyagarajan, T. Leiding, S. Peterson-Årsköld, and A. Cheprakov

1803 Multicomponent Alkylthiol Self-Assembled Monolayers Formed by Electrochemical Co-Adsorption
L. Lee, B. Pietrobon, and R. Lennox

1804 Metalloporphyrin-Conducting Polymer Oxygen Reduction Electrocatalysts with Full π-Electron Delocalization
T. Boinski, W. Tokarz, and P. Pielu

1805 Cyanide-Treated Fe(III) Porphyrins as an Electrocatalytic Material for Selective H_2S Oxidation
J. Bennett, M. Neiswonger, J. Pander III, and S. McKinney

1806 (Invited) Carbon Nanotubes as Transducers for Metalloporphyrins Based Chemical Sensors
C. Di Natale, M. Penza, and R. Paolesse

1807 (Invited) Application of Chiral Supramolecular Systems and Chiral Materials
V. Borovkov, T. Kizawa, T. Osawa, S. Ikeda, T. Kitamura, and Y. Inoue

1808 (Invited) Binary Ionic Porphyrin Nanomaterials: A New Approach to Artificial Photosynthesis
J. Shelnutt

1809 (Invited) Construction of Multi-Porphyrin Arrays via Pd-Catalyzed Coupling Reactions
N. Aratani, J. Song, H. Shinokubo, and A. Osuka

1810 (Invited) Synthesis of Unsymmetrically Meso-Substituted Porphyrins
M. Senge

1811 (Invited) Polypeptides with Functionalized Pendant Porphyrins for Self-Assembling Processes and the Elaboration of Novel Type of Glues
N. Solladie

1812 (Invited) Redox Active Metallocorroles for Catalytic Decomposition of Cytotoxic Oxygen and Nitrogen Species
A. Mahammed, I. Saltsman, A. Haber, Z. Okun, and Z. Gross

1813 (Invited) Synthesis and Spectroscopy of π-Expanded Porphyrins
D. Gryko, A. Nowak-Król, and J. Lewtak

1814 (Invited) Chiral Binaphthyl Porphyrins: Synthesis, Catalysis and NMR Conformational Studies
E. Rose, E. Gallo, F. Rose-Munch, and O. Lequin

1815 (Invited) Supramolecular Assemblies of Functionalized Corroles

H9 - Nanostructures for Energy Conversion
Fullerenes, Nanotubes, and Carbon Nanostructures / Energy Technology

1816 Photocatalytic Reduction of CO_2: Probing Structure of Photocatalysts and Mechanism of CO_2 Transformation
N. Dimitrijevic, T. Rajh, B. Vijajan, and K. Gray

1817 Dye Sensitized Solar Cells with Enhanced Performance Using TiO_2 Nanotubes via Rational Surface Engineering
Z. Lin, J. Wang, X. Xin, M. Ye, and C. Lin

1818 Hybrid Materials Based on TiO_2 and Polyheptazines for Photochemical Solar Energy Conversion
L. Wang, A. Ramakrishnan, M. Bledowski, and R. Beranek
1819 Plasmonic Enhancement of Photo-Energy Conversion in Organic Monolayer System
K. Ikeda and K. Uosaki

1820 Ordered Layers of TiO2 Nanotubes as Anode for Photoelectrochemical Water Splitting
T. Cottineau, P. Gross, S. Pronkin, N. Keller, V. Keller, and E. Savinova

P. Strasser, M. Oezaslan, R. Yangb, and M. Toney

1822 Bottom-Up Organization of Organic/Inorganic Ternary Composites on Electrode
H. Hayashi, I. Lightcap, P. Kamat, and H. Imahori

1823 Plasmon-Assisted Nano-Processing of an Individual Single-Walled Carbon Nanotube

1824 Hydrogen Evolution at Liquid-Liquid Interfaces
P. Ge, I. Hatay, and H. Girault

1825 Design and Fabrication of Metal Oxide Photocatalysts: Revisiting Principles and Mechanism of Photocatalysts
B. Ohtani and F. Amano

1826 Modeling the Electric Field Effect in Dye-Sensitized Solar Cells Composed of Nanowire Arrays
J. Hill, N. Banks, and K. Ziegler

1827 Oxygen Reduction on Thin-Film Transition Metal Carbides for Fuel Cells
K. Fahy and G. Burstein

1828 High-Quality Inorganic Nanoparticles for Highly Efficient Photoenergy Conversion
T. Teranishi

1829 High Throughput Preparation Processes for Metal and Semiconductor Nanostructures by Using Anodic Porous Alumina
H. Masuda, T. Yanagishita, T. Kondo, and K. Nishio

1830 A Reversible Solid State Thermogalvanic Cell
B. Cola and S. Rao

1831 Picosecond Multiple Exciton Generation from the Excited Singlet State in Rubrene Single Crystal
A. Furube, R. Katoh, H. Mitsuta, T. Miyadera, and Y. Yoshida

1832 Enhancement of Photocatalytic Activities of CdS Nanoparticles by the Immobilization on Au Particles
T. Torimoto, H. Horibe, K. Okazaki, S. Ikeda, and M. Matsumura

1833 Nanostructures to Probe and Accelerate Electrocatalytic Reactions
I. Yagi, K. Kimijima, H. Notsu, K. Nomura, and N. Ohta

1834 Li Diffusion in TiO2 Substrates: A Dynamical Study
H. Yildirim, S. Sankaranarayanan, and J. Greeley

1835 Interfacial Charge Transfer Dynamics in Quantum Dot Solar Cells
P. Kamat, K. Tvrady, and D. Baker

1836 In situ Surface-Enhanced Raman Scattering Spectroscopic Study of Sulfur Adsorption on Polycrystalline Platinum Electrode Surface
B. Xu, I. Park, Y. Li, D. Chen, T. Allison, and Y. Tong

1837 Hydrogen Evolution Reaction Catalyzed by 4,4′-Bipyridine Adsorbed on Metal Electrodes: A Combined Infrared and DFT Study
T. Uchida, A. Yamakata, Y. Sasaki, and M. Osawa
1838 Titanium Oxides-Based Multifunctional Nanostructures for Solar Energy Utilization
V. Subramanian

1839 Inorganic Nanowires: A Perspective about Their Role in Energy Conversion and Storage Applications
M. Sunkara, C. Pendyala, D. Cummins, P. Meduri, J. Jasinski, V. Kumar, H. Russell, E. Clark, and J. Kim

1840 Photovoltaic Energy Conversion at the Heterojunctions of C_{60} and Electrochemical Gradient Copolymers
B. Pate, B. Williams, J. Lloyd, D. Barofsky, M. Laframboise, and M. Hudspeth

1841 Fabrication of Nano Ag Particle with Spin Coating Method for Solar Cell Efficiency Enhancing through Plasmon Effect
S. Wu, W. Huang, Y. Chen, and J. Shieh

1842 Improved Solar Conversion Efficiency under Hole Size of TiO_{2} Photoelectrode Surface
E. Jin, J. Wang, X. Zhao, A. Park, and H. Gu

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J. Wang, X. Zhao, E. Jin, and H. Gu

1844 Photoelectrochemical Properties of ZnO Nanorod Electrodes Sensitized with ZnS-AgInS_{2} Solid Solution Nanoparticles
T. Sasamura, K. Okazaki, A. Kudo, S. Kuwabata, and T. Torimoto

1845 Efficiency Enhancement of Dye-Sensitized Solar Cell by Included Glass Powders
X. Zhao, A. Park, J. Wang, E. Jin, and H. Gu

1846 Synthesis of Sb Doped SnO_{2} Nanowires for Application to Dye-Sensitized Solar Cells (DSSCs)
S. Park, D. Kim, C. Lee, S. Lee, H. Jung, and K. Hong

1847 Influence of NiO Layer as Hole Collector in Reducing Recombination in Dye-sensitized Solar Cells
A. Park, J. Wang, X. Zhao, E. Jin, and H. Gu

1848 Efficiency Enhancing of Dye-Sensitized Solar Cell Influenced by Phosphor Additives
X. Zhao, J. Wang, A. Park, E. Jin, and H. Gu

1849 Preparation and Electrochemical Properties of Several Types of Counter Electrodes for Dye-Sensitized Solar Cells
M. Le, P. Thi, and T. Pham

1850 Synthesis and Electrochemical Properties of Graphene-Based Nanocarbons for Energy Storage Applications
S. Park, H. Youn, and K. Kim

1851 Post-Annealing Effects of CuInSe_{2} (CIS) Absorber Layer at Thin Film Solar Cells with Compound Semiconductor Prepared by Co-Sputtering Method
S. Seo, H. Kim, K. Bae, D. Kim, S. Sohn, H. Kim, and J. Hong

H10 - Chemistry and Physics of Graphene and 2D Nanostructures
Fullerenes, Nanotubes, and Carbon Nanostructures / Energy Technology

1852 Graphene and Metals: Interactions and Magnetism
J. Coraux
1853 Graphene Oxide Semiconductor Nanocomposites
   P. Kamat and I. Lightcap

1854 Anisotropy and Edge Roughness Scattering in the Lattice Thermal Conductivity of Graphene Nanoribbons
   Z. Aksamija and I. Knezevic

1855 Controlling Electronic and Ionic Mobility in Coatings and at Interfaces: Novel Materials Concepts for Corrosion Protection
   M. Rohwerder

1856 Angles on the Head of a Pin: Moire Physics from Multilayer Graphenes
   E. Mele

1857 Terahertz and Infrared Dynamics in Graphene
   L. Ren, Q. Zhang, L. Booshehri, T. Arikawa, and J. Kono

1858 Plasmonics with Graphene-Coated Structures
   H. Grebel

1859 Probing and Tuning the Properties of Graphene and Graphene Oxide: An Electrochemical Approach
   S. Rapino, G. Valenti, M. Iurlo, A. Catheline, E. Treossi, V. Palermo, M. Marcaccio, A. Penicaud, and F. Paolucci

1860 Facile Synthesis of Soluble Graphene Nanosheets and Its Promising Application in Fuel Cell Electro catalysts
   S. Zhang, Y. Shao, H. Liao, M. Engelhard, G. Yin, and Y. Lin

1861 Sonolytic Design of Graphene-Pt/Au Nanocomposites
   K. Vinodgopal, B. Neppolian, I. Lightcap, F. Grieser, M. Ashokkumar, and P. Kamat

1862 Atomic Layer Deposition of Pt Nanocatalyst on Graphene Nanosheet for PEM Fuel Cell Applications
   S. Sun, G. Zhang, X. Meng, D. Geng, R. Li, A. Sun, S. Ye, and S. Knights

1863 Mechanisms of Chemical Reduction of Graphene Oxide to Graphene: A First Principles Study
   G. Hwang, M. Kim, E. Paek, and K. Kweon

1864 Investigation of Spontaneous Pt Deposition on Carbonaceous Materials for Fuel Cell Applications
   C. Kuo, Y. Hsieh, P. Wu, and J. Lee

1865 Fabrication and Characterization of Graphene-Chitosan/Prussian Blue Composite Nanosheets and Determination of H2O2
   J. Yang and H. Hong

1866 Synthesis and Characterization of Surface-Graphitized Carbon Black (SGCB) and Nanostructured Platinum for PEMFC
   H. Kim, J. Ahn, H. Choi, and M. Han

1867 Graphene-Nanotube Hybrid Transparent Electrodes
   T. Chari, A. Guermoune, Y. Chein, R. Izquierdo, and M. Siaj

1868 Probing Electrochemical Charge Transfer at Surfaces Using Graphene Transistors
   P. Levesque, S. Sabri, C. Aguirre, J. Guillemette, M. Siaj, P. Desjardins, T. Szkopek, and R. Martel

1869 Pre-Industrial Strategies for Epitaxial Graphene on 2 Inches 6H-SiC and 8 Inches Ni Substrates
   A. Zenasni, L. Becerra, D. Rouchon, D. Lafond, D. Mariolle, and N. Chevalier
Preparation and Characterization of a New CuInS$_2$/Graphene Composite Electrode, for Application in Electrochemical Solar Cells
H. Hayet Cherfouh, T. Chari, A. Guermoune, M. Siaj, and B. Marsan

11 - Bioelectrocatalysis

Physical and Analytical Electrochemistry / Energy Technology

A Glucose Biofuel Cell to Generate Electricity
B. Mecheri, A. Geracitano, A. D'Epifanio, C. de Bonis, and S. Licoccia

Process Optimization for the Electroenzymatic Hydroxylation of 3-Phenoytluene Catalyzed by P450 BM-3 Mutant
G. Guven

Alcohol Dehydrogenase Modification in L-Cysteine Monolayer on Palladium Surface Using Polymer
I. Feliciano and C. Cabrera

Bioelectrocatalytic Generation of Code
G. Strack, H. Luckarift, E. Katz, and G. Johnson

High Current Density Bioanodes Based on Linear Poly(ethylenimine) and Polymethylated Ferrocenes for Use in Biofuel Cells
D. Hickey, M. Meredith, D. Kao, D. Schmidtke, and D. Glatzhofer

Bioelectrocatalysis in Redox Films for Biofuel Cells
D. Leech

Direct Bio-Electrocatalysis of Oxygen Reduction Reaction
P. Atanassov, D. Ivnitski, C. Lau, H. Luckarift, R. Ramasamy, and G. Johnson

Electrochemical Studies on Coupled Dicopper Enzymes for Bioelectrocatalysis
N. Parimi and R. Ramasamy

DET and Bioelectrocatalytic Oxygen Reduction at Electrochemically Functionalized Carbon Nanotubes-Lc and BOx Composites
M. Moumene, D. Rochefort, and M. Mohamedi

Development of Bioelectrocatalytic Multi-Component Films for Reduction of Oxygen and Hydrogen Peroxide
P. Kulesza, A. Dobrzeniecka, B. Kowalewska, M. Gierwatowska, and K. Miecznikowski

Electrocatalytic Cycling of Hydrogen and Biological Cofactors NAD$^+$/NADH by Immobilized Enzyme Moieties
Z. Idris, J. Liu, L. Lauterbach, O. Lenz, and K. Vincent

Toluidine Blue O Electrodeposited on Carbon Nanotube Modified Interface for High-Rate Electrocatlysis of NADH Oxidation
H. Li, H. Wen, and S. Calabrese Barton

Carbon Nanotube Modified Microfiber Electrode as Support for Glucose Oxidation Bioanodes
H. Wen, V. Nallathambi, D. Chakraborty, and S. Calabrese Barton

Developing a Complete Oxidation Direct Electron Transfer Enzymatic Glucose Biofuel Cell
S. Xu and S. Minteer

Scanning Electrochemical Microscopy for Investigation of Multicomponent Bioelectrocatalytic Films
A. Dobrzeniecka, A. Zeradjanin, J. Masa, J. Stroka, W. Schuhmann, and P. Kulesza
Development of Non-Platinum Conductive Mesoporous Catalyst as Renewable Materials for Alternative Fuel Cells
K. Sjoholm, M. Cooney, and S. Minteer

Fabrication of Pt Nanoparticle Modified 3-D Cu Nanotube Array Electrode and Its Electro-Catalytical Activity towards $H_2O_2$
M. Jamal, M. Hasan, A. Mathewson, and K. Razeeb

Enzyme Immobilized PPS-SWCNTs Composite Electrodes for Electrochemical Sensing and Biofuel Cell Applications
F. S. Saleh, T. Okajima, L. Mao, and T. Ohsaka

\textbf{13 - Computational Electrochemistry}

Physical and Analytical Electrochemistry

Multiscale Simulation of Proton Exchange Membranes
G. Voth

A DFT Based Coupled Transport-Reaction Model for $H_2$ Fueled SOFC Model Anodes
D. Monder, K. Karan, M. Shishkin, and T. Ziegler

Modeling Techniques for Optimization of 3D-Microbattery Architectures
V. Zadin, H. Kasemägi, A. Aabloo, and D. Brandell

Towards an Understanding of Diffusion-Induced-Stresses and Fracture in Lithium Ion Battery Electrodes
Y. Cheng, M. Verbrugge, and R. Deshpande

On the Effect of Functional Groups in Polymer Electrolyte Membranes for Fuel Cell Performance: Insights from Molecular Simulations
Y. CHOE, E. Tsuchida, T. Ohkubo, Y. Kim, and N. Henson

Theoretical Study of Electrochemical Processes on Novel Platinum Group Metal Catalysts
I. Matanovic, F. Garzon, and N. Henson

$H_2S$ Interactions on CeO$_2$ (111) Surface from First-Principles
D. Marrocchelli and B. Yildiz

Ab Initio Calculation of Redox Potentials in Transition Metal Complexes
S. Konezny, M. Doherty, G. Soloveichik, and V. Batista

Modelling Solid Oxide Fuel Cell Electrochemistry in Three Dimensions
N. Brandon, C. Adjiman, Q. Cai, R. Clague, A. Marquis, K. Rhazaoui, and P. Shearing

Theoretical Approach for Designing Polymer Electrolyte Fuel Cell Materials
M. Koyama, T. Ogura, and T. Ishimoto

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C. Wang and S. Paddison

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Continuum Models of Nafion Morphology
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A. Weber, W. Yoon, and P. Das

1905 Physical Multiscale Modeling of Degradation Phenomena in PEM Fuel Cells
A. Franco

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Y. Kaneko, Y. Hiwatari, K. Ohara, and F. Asa

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Surface Science and Electrocatalysis - Common Principles and Specific Aspects

R. Behm

Enhancement of Electrocatalytic Reactivity of Noble Metal Nanoparticles by Assembling Them within Composite Nanostructured Gold - Metal Oxide Matrices

P. Kulesza, S. Zoladek, K. Skorupska, and I. Rutkowska

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B. Braunschweig, R. Kutz, P. Mukherjee, D. Dlott, and A. Wieckowski

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S. Chen, B. Adams, and A. Chen

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E. Ciapina and E. Ticianelli

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B. Han, V. Viswanathan, and H. Pitsch

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W. Patterson, M. Robson, K. Artyushkova, P. Atanassov, K. Asazawa, and H. Tanaka

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V. Di Noto, E. Negro, S. Lavina, K. Vezzu, and G. Cavinato

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M. Bayati, M. Halasa, and D. Schiffrin

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H. Erikson, A. Kasikov, C. Johans, K. Kontturi, K. Tammeveski, and A. Sarapuu

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1944 Electrochemical Characterization of Cu Triazole Complexes as Oxygen Reduction Reaction Catalysts for Proton Exchange Fuel Cells Applications
G. Goenaga, R. Elgammal, A. Papandrew, A. Belapure, S. Foister, and T. Zawodzinski

1945 Platinum Nanowire-Based Highly Active and Durable Electro catalyst for PEM Fuel Cells
S. Sun, G. Zhang, R. Li, A. Sun, and M. Cai

1946 Bimetallic Electro catalyst and Magnetically Improved Oxygen Reduction Reaction in PEFC
F. Nores Pondal, N. Guillet, and A. Franco

1947 Effects of Heat-Treatment on Properties of Co-PPy-TsOH/C as Catalyst for Oxygen Reduction Reaction (ORR) in Low Temperature Fuel Cells
X. Ding, X. Yuan, H. Kong, and Z. Ma

1948 Redox Catalysis for Dehydrogenation of Liquid Hydrogen Carrier Fuels for Energy Storage
P. Driscoll, S. Rozenel, K. Zarnoch, M. Rainka, A. Usyatinsky, A. Hosseini, O. Luca, C. Chidse, R. Crabtree, G. Zappi, G. Soloveichik, and J. Kerr

1949 Oscillations in Oxidation of Methane and Ethylene on Pt-ceria Anodes for Solid Oxide Fuel Cells: Reforming, Catalysis, and Electro catalysts
V. Medvedev and E. Stuve

1950 Replacement of Au and Ag with the Ni-P and Ni-B Alloys in Electronics
T. Khoperia

1951 Electrochemical Oxidation of Ammonia on Pt-Ir Thin Films Prepared by Pulsed Laser Deposition
R. Imbeault, D. Reyter, L. Roue, and D. Guay

1952 Study of Palladium Catalysts for Oxygen Reduction Reaction Using Rotating Disk Electrode
L. Arroyo-Ramirez and C. Cabrera

1953 Thermogalvanic Energy Conversion with Nitrogen and Boron Doped Carbon Nanotube Array Electrodes
P. Salazar Zarzosa, B. Cola, and S. Kumar
   C. Gumeci, D. Ua Cearnaigh, C. Korzeniewski, and D. Casadonte

1955 Effect of Microwave Irradiation Time on Preparing of Pt/C Catalyst by a Pulse-Microwave Assists Chemical Reduction
   J. Zheng, X. Wang, R. Fu, P. Deng, and J. Ma

1956 Pt-CeOₓ Catalysts Synthesized by Polymeric Precursor Method for the Electro-Oxidation of Methanol, Ethanol and Formic Acid
   R. Freitas, P. Turgeon, Z. Zhang, A. Tavares, and E. Pereira

1957 Correlation between Basic Parameters of the Materials and the Electrocatalytic Properties of the ORR on Pd-Alloy Cathodes
   O. Savadogo and K. Oishi

1958 Effects of Cobalt Loading on Properties of Co-PPy-TsOH/C as Catalyst for Oxygen Reduction
   X. Hu, X. Yuan, X. Ding, H. Kong, Z. Ma, and X. Wang

1959 Titanium Oxy Nitride (TiON) Catalysts as Oxygen Electrode for Low and Medium Temperature Electrochemical Processes
   W. Wang, O. Savadogo, and Z. Ma

1960 Nanostructured TiO₂ Doped with Nb as a Novel Support for PEM Fuel Cells
   E. Valenzuela and O. Savadogo

1961 Dioxygen Reduction by Cobalt(II) Octaethylporphyrin at Liquid|Liquid Interfaces
   R. Partovi Nia, B. Su, M. Mendez, and H. Girault

1962 Hydrogen Evolution Electrocatalysis on Bimetallic Alloy Surfaces
   Y. Pluntke, L. Kibler, and D. Kolb

1963 Electrocatalytic Oxidation Reactions at (100) Facetted Platinum Films
   S. Garbarino, E. Bertin, M. Martin, A. Ponrouch, and D. Guay

1964 Mechanistic Pathways in the Electrooxidation of Hydrazine on Bimetallic Catalysts
   J. Sanabria-Chinchilla, K. Asazawa, H. Tanaka, and P. Strasser

1965 Electro-Oxidation of Ammonia at Carbon Supported PtₓIr₁₋ₓ Nanoparticles with Varying Size
   E. Baranova and T. Lomocso

1966 Formation and Oxidation Kinetics of Adsorbed CO in Electrocatalytic Reactions on Pt
   D. Harrington, F. Seland, P. Dahlstrøm, and R. Tunold

1967 Hydrogen Generation by Electrocatalytic Reforming of Carbohydrates
   K. Spies and E. Stuve

1968 Enhanced Hydrogen Evolution at Non-Flooded Membrane Electrode Assemblies
   E. Smotkin and S. Evarts

1969 Highly Facile Electrochemical Oxidation of Methanol in Aqueous Bicarbonate at Elevated Temperature
   J. Jiang and T. Aulich

1970 Preferential Oxidation of CO Based on Electro-Thermally Assisted Catalytic Ni/Cu Nanostructures on Si Micro-Grass
   A. Ebrahimi, S. Mohajerzadeh, A. Alihosseinzadeh, A. Khodadadi, and Y. Mortazavi

1971 Development of New Method for the Preparation of Pt/C and Pt-Co/C Catalysts
   M. Saha and K. Karan

1972 Microstructure Stabilization in Non-Platinum Electrocatalyst through Co-Nitrogen Motifs
   B. Kiefer, K. Artyushkova, P. Atanassov, S. Pylypenko, and R. O'Hayre
1973 Effects of Different Carbon Sources and Carbonized Carbon Contents during the Carbon Riveting Process on the Pt Based Catalyst Stability
   Z. Jiang, Z. Wang, D. Gu, and G. Yin

1974 Investigation of the Stability of Highly Active Monolayer Pt on Tungsten Carbide Hydrogen Evolution Reaction Catalysts
   D. Esposito, S. Hunt, and J. Chen

1975 Synthesis of Nanostructured Mesoporous Mn$_x$Cu$_{1-x}$Co$_2$O$_4$ and Their Bifunctional Electrocatalytic Activities in Alkaline Medium
   D. Tountian, A. Tavares, and B. Marsan

1976 Self-Sustained Electrochemical Promotion Catalysts for Heavy Hydrocarbon Reforming
   X. Zhou, H. Liu, Z. Wang, and H. Huang

1977 Zirconium Oxide Substrate Effect on Activity of Pt-Based Electrocatalysts during Electrooxidation of Ethanol
   I. Rutkowska, K. Kulakowska, and P. Kulesza

1978 Catalytic Carbon Monoxide Oxidation over Size-Controlled Pt Nanoparticles in the Gas Phase and Elevated Temperatures
   E. Baranova, P. Vernoux, L. Lizarraga, E. Obeid, R. Isaifan, and H. Dole

1979 Voltammetric Peak Enhancement of Cefpirome in Cetyltrimethylammonium Bromide
   R. Jain, V. Lal, and K. Radhapyari

1980 X-ray Photoelectron Spectroscopy of Electrocatalysts - Challenges and Successes
   K. Artyushkova, B. Kiefer, B. Halevi, and P. Atanassov

1981 Surface X-ray Scattering Studies of Cu$_3$Pt (111) Model Electrocatalysts
   R. Yang, P. Strasser, and M. Toney

1982 In situ Coherent X-ray Scattering and STM Studies of Hexagonally Reconstructed Au(001) in Electrolytes
   M. Pierce, V. Komancky, A. Barbour, D. Hennessy, J. Su, A. Sandy, and H. You

1983 Time and Spatially Resolved Study of Fuel Cell Reactions Using In situ X-ray Absorption Spectroscopy
   D. Dixon, J. Melke, S. Kaserer, A. Schoekel, C. Cremers, D. Ramaker, and C. Roth

   A. Stassi, I. Gatto, G. Monforte, E. Passalacqua, V. Antonucci, and A. Aricò

1985 Impedance and Voltammetric Study of the Role of Polyaniline Supports on the Activities of Pd Particles in Formic Acid Oxidation
   R. Beiramzadeh Moghaddam and P. Pickup

1986 Dynamic Electrochemical Impedance of Small Organic Molecule Oxidation on Pd and Pt
   R. Sacci and D. Harrington

1987 Impedance Studies of Platinum in Acidic Solutions
   R. Jurczakowski and A. Lasia

1988 First-Principles Surface Chemistry under Applied Electrode Voltage
   I. Dabo
15 - Grahame Award Symposium and Physical and Analytical Electrochemistry

General Session

Physical and Analytical Electrochemistry

1989 (David C. Grahame Award of the Physical and Analytical Electrochemistry Division)
Electrocatalytic Oxidation of Methanol, Formaldehyde, and Formic Acid on Pt as Revealed by Surface-Enhanced Infrared Absorption Spectroscopy (SEIRAS)
M. Osawa, G. Samjeské, K. Komatsu, T. Uchida, T. Ikeshoji, A. Cuesta, and C. Gutierrez

1990 Structure of Water and other Molecules at the Electrified Solid Liquid Interface Using SFG and Raman Spectrosocopy
A. Gewirth and D. Butcher

1991 Use and Abuse of Equivalent Circuits in EIS
D. Harrington

1992 Kinetics and Sensitivity at Nanostructured Electrodes from Different Carbon Fiber Precursor Materials
A. Brajter-Toth, A. Boateng, and R. Cohen-Shohet

1993 Electrical Double Layer Structure at the Room-Temperature Ionic Liquid | Electrode Interface
E. Lust, L. Siinor, H. Kurig, K. Lust, A. Jänes, and P. Miidla

1994 Phase Behavior and Solvation of Lithium Triflate in Ethylene Carbonate and γ-Butyrlactone

1995 Spectroelectrochemical Studies of Novel Biodegradable Ionic Liquids
S. Harroun, T. Abraham, P. Scammells, R. Singer, and C. Brosseau

1996 X-ray Reflectivity Studies on Electrified Liquid/Liquid Interface
N. Laanait, J. Yoon, B. Hou, P. Vanysek, C. Zheng, M. Meron, B. Lin, G. Luo, I. Benjamin, and M. Schlossman

1997 Application of Common Analytical Voltammetry Waveforms to Biamperometric Electrochemical Cells
M. Rahimi and S. Mikkelsen

A. Franco

1999 Investigation of Carbon Surface Functionalities as a Mechanism of Self-Discharge in Carbon-Based, Aqueous Electrolyte Electrochemical Capacitors
A. Oickle and H. Andreas

2000 Evaluation of Thermodynamic and Kinetic Parameters for Hydrogen Permeation through Palladium-Copper Alloys
M. Martin, M. Allemand, J. Galipaud, D. Reyter, L. Roue, and D. Guay

2001 Mechanism of Copper and Tert-Butyl Alcohol Adsorption on Carbon Materials at Various Open-Circuit Potentials
M. Goldin, B. Grafov, A. Davydov, M. Goldin, and V. Kolesnikov

2002 Modification of Carbon Materials by Indirect Pyrrole Polymerization
M. Khubutiya, G. Garaeva, A. Stepanov, M. Goldin, and A. Davydov

2003 Study of Hydroxyl Free Radical Generation on Doped Tin Oxide Anodes
B. Wang and K. Chan

2004 Voltammetry of Aniline in 9:1 Acetonitrile/Water
I. Haque and K. Asghar
2005  Voltammetric Study of the Interaction of Co(II) Ions with Oxacillin in the Absence and Presence of Lysine
    E. Coşkun and E. Biçer
2006  Collagen-Cysteine Interaction - An Electrochemical Study
    S. Cakir
2007  Coupled Electron/Proton Transfer Studies of Aminobenzoquinone Modified Monolayers
    W. Zhang and I. Burgess
2008  Influence of Antioxidants on DNA Damage Induced by Catechol
2009  Electrochemical Characteristics of Bi(111) Electrode in Ionic Liquids
    L. Siinor, C. Siimenson, K. Lust, and E. Lust
2010  Iron Uptake and Release from Ferritin-Modified Gold Electrodes
    M. Stobiecka and M. Hepel
2011  Influence of the Chemical Composition on the Electrochemical Behavior of Binary Mixtures of Carboxilate-Based Ionic Liquids
    R. Ortega-Borges, S. Lopez-Leon, G. Trejo-Cordova, Y. Meas-Vong, and G. Brisard
2012  Study of the EC' Mechanism by Scanning Electrochemical Microscopy (SECM)
    R. Calhoun and A. Bard
2013  Designed DNA Duplex/Quadruplex Nano-Switches: Biochemical and Electrochemical Studies
    H. Yu
2014  Advances in Photosystem I Photoelectrochemistry Using Scanning Electrochemical Microscopy
    D. Cliffel, G. Chen, and G. LeBlanc

16 - Nanostructured and Functionalized Electroactive Polymer Films and Related Materials 2

Physical and Analytical Electrochemistry / Sensor / Corrosion

2015  Electrochemical Sol-Gel Films with Organized Pore Structures and Silanized Surfaces
    J. Cox, K. Wiaderek, B. Mehdi, and B. Gudorf
2016  Electrochemical Modification of Surfaces with Organic Layers
    D. Bélanger
2017  Interfacial Processes at the Semiconductor - Biomolecule Phase Boundary
    K. Skorupska, P. Ugarte Berzal, I. Rutkowska, H. Lewerenz, J. Golbeck, and P. Kulesza
2018  Hybrid Nanocomposite Structures Formed by Conducting Polymers and Metals or Metal Oxides
    P. Gomez-Romero
2019  Towards the Understanding of the Optical Properties of Electronic Conducting Polymers. The Ellipsometry Approach
    J. Correia
2020  Electrochemical Investigations of Carbon Nitride Films Deposited on a Conjugated Polymer Substrate
    J. Byers, C. Deslouis, A. Pailleret, and O. Semenikhin
2021  Polymer Based Ionic Systems – From Polymeric Electrolytes to Hybrid Networks
    M. Siekierski and W. Wieczorek
2022 Electrochemical and Covalent Attachment of Functional Monolayers on Carbon Surfaces
  Y. Leroux, F. Hui, J. Noel, C. Roux, and P. Hapiot
2023 On the Redox Capacity and Stability of Polypyrrole and Ways of Increasing Them
  T. Tamm, R. Temmer, M. Marandi, and T. Raudsepp
2024 Correlation between Swelling/Shrinking and Ion Exchange Processes in Electronically Conducting Polymers upon Electrochemical Doping/Undoping. EC-AFM and Ac-Electrogravimetry Investigations
  L. Kim, C. Gabrielli, A. Pailleret, and H. Perrot
2025 Photoelectrocatalytic Reduction and Sensing of O₂ and H₂O₂ on Conjugated Polymer Based Magnetic Electrodes
  C. Janáky, B. Endrodi, and C. Visy
2026 Metal Functionality in Conducting Polymer Films - Preparation and Electrocatalytic Activity of Polypyrrole Incorporating Gold Nanoparticles
  L. Abrantes, V. Ferreira, and A. Mourato
2027 Electrochemical Formation of the Redox-Active Metal-Containing Polymers for Catalytic and Electrocatalytic Applications
  T. Magdesieva, O. Nikitin, A. Yakimansky, M. Goikhman, and I. Podeshvo
2028 Functionalized Hybrid Films of Nobel Metal Nanoparticles and Carbon Nanotubes: Applications in Electrocatalysis, Effective Charge Storage and Propagation
2029 Redox Switching of Electroactive Thin Films Investigated by AC Electrogravimetry
  C. Gabrielli, H. Perrot, L. To Thi Kim, J. Garcia-Jareno, and F. Vicente
2030 Electrosynthesis and Simultaneously Performed In situ Impedance and UV-Vis-NIR Studies on Poly(3-Thiophene-Butyric-Acid)
  P. Tóth, C. Janáky, E. Peintler-Kriván, and C. Visy
2031 Modification of Carbon Electrode with Pyridine
  J. Agullo, M. Morin, and D. Bélanger
2032 Morphology Changes of Porous PPy/TFSI Surface during Activation
  J. Wang, H. Naguib, and A. Bazylak
2033 Electron Transport in Carbon/Molecule/Metal Molecular Electronic Junctions
  R. McCreery, A. Bergren, and A. Bonifas
2034 Conducting Polymers/Nanoparticles Thin Films
  T. Danieli, E. Malel, G. Tanami, M. Sheffer, and D. Mandler
2035 Structure, Morphology and Reactivity of Conducting Polymer-Linked Polyoxometallate-Modified Gold Nanoparticles
  S. Zoladek, K. Skorupska, I. Rutkowska, B. Palys, and P. Kulesza
2036 Electrochemical Fabrication and Properties of Composite of Polyaniiline and Tungsten Oxide
  B. Zou and X. Liu
2037 Intensity Modulated Photocurrent Spectroscopy of Organic Solar Cells
  O. Semenikhin
2038 Consideration on Electrodeposition of Electroactive o-Alkoxyanilines on Planar and Membrane Electrodes- Determination of Diffusion Coefficients, Oxidation Charge and Film Thickness
  M. Strawski, K. Bienkowski, and M. Szklarczyk
2039 Nanostructural Change of Ionic Clusters in Annealed Nafion Membranes Containing Ionic Liquids
  J. Park, M. Shin, Y. Choi, T. Yang, and C. Kim
The Effect of Thiols on the Electrochemical Properties of Polythiophenes
R. Racovita and O. Semenikhin

Nanoscale Studies of the Doping Process of Electronically Conducting Polymers
K. O'Neil and O. Semenikhin

Fabrication of Nanostructured Gold Used for Electrochemical Detection
Y. Tang and P. Chen

Corrosion Protection by Conducting Polymers, Examples and Problems
W. Plieth

On the Role of Micro- and Nanostructure of Conducting Polymers in Composite Coatings for Intelligent Corrosion Protection
M. Rohwerder

Polyvinylacetat/Conductive Polymer Blends for Corrosion Protection - The Effect of Pani-MeSA Concentration
A. Adhikaria, J. Pan, P. Claesson, and C. Leygraf

Mussel Adhesive Protein and Ceria Nanoparticle Composite Films for Corrosion Protection
M. Sababi, F. Zhang, O. Krivosheeva, J. Pan, P. Claesson, and A. Dédinaité

Fabrication of Composite Coatings of 4-(pyrrole-1-yl) Benzoate-Modified Poly(3,4-ethylenedioxythiophene) with Phosphomolybdate and Their Application in Corrosion Protection
L. Adamczyk and P. Kulesza

J1 - Sensors, Actuators, and Microsystems General Session

Sensor

Noise Characteristics of GaN Schottky Barrier Photodetectors with Patterned Sapphire Substrate
Y. Hsu, S. Young, C. Hsiao, T. Chen, S. Wang, C. Chang, and S. Chang

Magnetic Force-Based Microarray Chip Used Slide Glass for Medical Care Prepared by Plating Method
I. Koiwa, H. Takeda, H. Takanashi, and T. Obata

Electrolytic Micropump Actuator with Controlled Cyclic Bubble Growth and Recombination
D. Strickland, J. Ramunas, J. Gonzalez, and J. Santiago

The Fabrication and Study of GaN Schottky Barrier Ultraviolet Photodetectors with Nanorod Template
T. Chen, S. Young, C. Hsiao, S. Wang, Y. Hsu, C. Chang, and S. Chang

Investigating the Molecular Origin of the Redox-Induced Actuation of Microcantilevers Modified with Ferrocenylalkanethiolate Self-Assembled Monolayers
L. Norman, E. Dionne, and A. Badia

Characterization of Electrografted Diazonium Salts as Novel Linkers for Surface Plasmon Resonance Sensing
N. Menegazzo, Q. Zou, and K. Booksh

Nano-Link Based Ultra Low Power Micro Electronic Hotplates for Sensors and Actuators
A. Groenland, R. Wolters, A. Kovalgin, and J. Schmitz

Low-Temperature Grown High-Quality Piezoelectric AlN Film for Sensor Applications
R. Sah, O. Bludau, C. Röhlig, L. Kirste, V. Cimalla, and V. Lebedev
Development of High Temperature Smart Sensor Systems

Polymeric Permanent Magnetic Micro-Actuators
A. Khosla, J. Herchenroeder, D. Miller, and Z. Chen

Low Stress In situ Boron Doped Poly SiGe Layers for MEMS Modular Integration with CMOS
S. Kazmi, T. Aarnink, C. Salm, and J. Schmitz

Hybrid Backside Illuminated CMOS Imager for High-End Applications

Synthesis and Characterization of New Blue Light Emitting Material with High Thermal Stability
H. Wen and M. Chang

Field-Structured Chemiresistors
J. Martin and D. Read

Evaluation of Corrosion Behavior in the SAE 1018 Carbon Steel Pipelines that Carry Potable Water Applying Acquisition and Data Processing
H. Lara Ordaz, E. Bolaños Rodriguez, and J. Ramirez Hernandez

High Performance Hydrogen Sensor Based on Ternary PtPdRu/C Electrocatalysts
Y. Weng and J. Wang

The Effects of Fabrication Process on the Performance of a CMOS Based Capacitive Humidity Sensor
N. Saeidi, A. Blake, C. Colinge, M. Burke, A. Quinn, A. Demosthenous, and N. Donaldson

NOx Monitoring with Thin-Film Nano-Composite Metal Oxide Materials
C. Gonzalez, M. Post, X. Du, and J. Dunford

Miniband-Resonant-Tunneling Optoelectronic Device
D. Guo

BaSnO₃ Thick Film Carbon Dioxide Sensors
L. Cavanagh, P. Smith, and R. Binions

Optoelectronic Device with Dual Quantum Wells
D. Guo

Selective Vapor Sensing: Beyond Sensor Arrays
R. Potyrailo

Surface Chemistry Based on Diazonium Salts and on Ionic Liquid Monolayers for Sensing Applications
D. Correia-Ledo, A. Provencher-Girard, M. Ratel, A. Schmitzer, and J. Masson

Detection of TATP Using Thermodynamic Based Gas Sensors with Metal Oxide Catalysts
Y. Chu, K. Waterman, C. Hurley, M. Amani, and O. Gregory

Design and Fabrication of a 3D Force Sensor

Development of a Miniaturized Gas Ionization Sensor for Harsh Environments by Using Polyimide Spacer
T. Walewyns, G. Scheen, E. Tooten, P. Dupuis, and L. Francis
2074 Detection of 2,4-Dinitrotoluene with Surface-Modified Three-Dimensionally Ordered Macroporous (3DOM) Carbon  
  M. Fierke, E. Olson, P. Buhlmann, and A. Stein

2075 Understanding the Mixed Potential Sensor Response through Four Electrode Measurements  
  P. Sekhar, E. Brosha, F. Garzon, and R. Mukundan

2076 Packaging and Testing of an Electrochemical Hydrogen Safety Sensor Prototype  
  P. Sekhar, E. Brosha, M. Rangachary, and F. Garzon

2077 Detection and Discrimination of Harmful Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) Vapors Using Electrochemical Gas Sensors  
  P. Sekhar, E. Brosha, M. Rangachary, and F. Garzon

2078 PPB-Level Detection of Halogenated Hydrocarbons in Drinking Water with an Electrochemical Sensor  

2079 Direct Detection of Salmonella on Tomatoes and Cantaloupes Using Multiple Magnetoelastic Biosensors  
  S. Li, W. Shen, S. Horikawa, and B. Chin

2080 Multi-Walled Carbon Nanotube Doped Polydimethylsiloxane Ribbon Cables for Flexible Microsystems  
  K. Griffith, C. Ahmadizadeh, C. Huang, M. Pararameswaran, J. Young, C. Lee, T. Yang, C. Tam, Y. Jin, J. Jones, M. Sjoerdsma, B. Gray, and A. Khosla

2081 Engineered Nanomaterials for Biosciences  
  Z. Aguilar, H. Xu, J. Dixon, B. Jones, D. Chou, Y. Aguilar, and A. Wang

2082 Selectivity Issues for Nanostructured Metal Oxide Gas Sensing Elements in Dry and Humid Flare Environments  
  M. Rasheed, J. Cheng, and K. Poduska

2083 Fabrication and Modeling of a Novel SAW-Like Transducer Device Based on Branched Carbon Nanotubes  
  S. Darbari, Y. Abdii, A. Ebrahimi, N. Doostani, and S. Mohajerzadeh

2084 Detection of DNA Using AlGaN/GaN HEMT Biosensor with Amine-Based Chemistry  
  R. Thapa, S. Alur, T. Gnnaprakasa, Y. Wang, F. Tong, Y. Sharma, X. Wang, C. Ahyi, A. Simonian, J. Williams, A. Son, and M. Park

2085 Thin Film Thermocouples Based on Aluminum and Nitrogen Co-Doped Zinc Oxide  
  M. Amani and O. Gregory

2086 Magnetic Field Transistor Sensors for Biological Analysis Applications  
  J. Suh, K. Song, and K. Kim

2087 Selective Accumulation and Determination of the Dopamine on the Surface of Gold Electrode Modified by SAMs Method with Cysteamine-SWCN  
  R. Shabani, S. Mozaffari, Y. Ghahremani, and M. Saber Tehrani

2088 Elastostriction and Electrostriction in PZT Transducers  
  M. Wischke, N. Dieterich, D. Haller, M. Kroner, and P. Woias

2089 The Difference of Humidity Sensing in CNT-Based Thin Film by Silane Binder  
  S. Kim and Y. Won

2090 Effect of the Surface Composition on the Redox Actuation of Microcantilevers Functionalized with Ferrocenyl-Alkanethiolates  
  E. Dionne, J. Mauzeroll, and A. Badia

2091 Electrochemical Characteristics of Ascorbic Acid Oxidation at Cu-ZSM5 Modified Electrodes  
  M. Oliver-Tolentino, A. Guzmán-Vargas, E. Arce-Estrada, and A. Manzo-Robledo
Effect of the Mixed N₂/O₂ Oxidation Process on Improvement of the Sensitivity of the SiGe Nano-Wire

A Glucose Biosensor Based on Electrodeposited Conductive Polymer Films
D. Pires Pinto, F. Moro Loureiro, R. Pacheco Pereira, and A. Rocco

Critical Analysis of Ion Detection Using Semiconductor Field Effect Devices: Consequences for Chemical and Biomedical Applications
R. Nascimento and M. Mulato

The Effect of Hydrogen-Gas Sensing Properties of Niobium Oxide - Polyaniline Solid Electrolyte Electrodes
M. Paramasivam, U. Guth, J. Zosel, and M. Berthold

Phosphate Sensors Operating on Amperometric and Impedance Alterations on Iron Oxide Thin-Film Electrodes
R. Moss, J. Jackowski, and M. Anderson

Fabrication of PMMA Microfluidic Chips with Integrated Micro Heaters

Depletion- and Enhancement-Mode Self-Aligned InGaP/GaAs Heterojunction Doped-Channel FET
S. Lai, S. Tan, W. Lour, and J. Tsai

J3 - Sensors for Biomedical Applications
Sensor / Organic and Biological Electrochemistry

Functional Immuno Magnetic Nanoshells Integrated Voltammetric Sensor for Whole Cell Bacteria Detection
C. Li

Electrochemical Behavior of Nimodipine on Glassy Carbon Electrode
L. Fang, P. He, Y. Yuan, W. Wang, Y. Chen, L. Du, and T. Zhang

Multiplexed Detection of Cancer Biomarkers Using Phase Change Nanoparticles
C. Wang, L. Ma, and M. Su

Spectroscopic and Electrochemical Studies of the Interactions of Fluorone Black with Glutathione
M. Stobiecka and M. Hepel

Planar Microfluxgates Using Electroplated NiFe Cores Aimed for the Monitoring of Cardiac Valves Prosthesis
T. Heimfarth and M. Mulato

The Recognition of Cytochrome c by Immobilized Calixarenes Using Electrochemical Impedance Spectroscopy
M. Mohsin, F. Banica, T. Oshima, and T. Hianik

Direct Electron Transfer of Immobilized Ferritin on the Cobalt Oxide Nanoparticles
A. Bayandori Moghaddam, S. Hosseini, D. Asheghali, A. Khodadadi, M. Esmaeili, and Z. Ghasemi

A USB-Powered, Stand-Alone Electrochemical Biosensor for Point-of-Care Medical Diagnosis
C. Loncaric, C. Ho, A. Parameswaran, and H. Yu
2107 IROSL Emission in UV-Irradiated SrAl₂O₄:Eu²⁺, Dy³⁺  

2108 Thermal Stimulated Processes in SrAl₂O₄:Eu²⁺, Dy³⁺ Exposed to UV-VIS Radiation  
C. Pereyda-Pierre, R. Meléndrez, R. Garcia-Gutierrez, M. Pedroza-Montero, and M. Barboza-Flores

2109 Solid-State Nanopores with Integrated Electrodes as New Routes towards Single-Molecule Biosensing  
T. Albrecht, J. Edel, A. Ivanov, E. Instuli, and M. Ayub

2110 Lateral Flow Impedance Transducer for Salmonella Detection  
M. Navaei, J. Xu, P. Hesketh, W. Daley, and S. Grullon

2111 Nanoengineering of Self-Assembled Monolayers for Sensing Bioinspired Recognition  
J. Yu

2112 Fabrication of GMRF Structure on Glass Substrates by Direct Electron Beam Lithography  
G. Nagare and S. Mukherji

2113 Respiratory Activity and Trans-Epithelial Resistance Measurements on Cultured Human Corneal Epithelia during Growth  
M. Rahimi, Y. Zhou, F. So, D. McCanna, J. Sivak, and S. Mikkelsen

2114 Electrochemical Surface Plasmon Resonance Biosensor Using HRP-Gold Nanoparticle (AuNP) Modified Sensor Chip  
V. Mani, D. Wasalathanthri, C. Kumar, and J. Rusling

2115 Portable Electrochemical Sensor for Detection of Tricresyl-Phosphate  
X. Yang, R. Overfelt, and A. Simonian

2116 Influence of a Redox Marker on the Structure of DNA Probes in Biosensing  
A. De Rache, T. Doneux, and C. Buess-Herman

2117 Ta₂O₅ Nanotube Templates for Amperometric Glucose Biosensors  
C. Horwood, H. El-Sayed, and V. Birss

2118 Nucleic Acids Sensing: The New Application by Mesoscopic Oxyhydroxide Thin Films of Transition Metals  
M. Jiang, A. Vo, Y. Li, R. Villagomez, D. Wilson, T. Nguyen, and L. Spears

2119 Development of Diagnostic Criteria of Rejection Crises in Liver Transplantation by Redox Potential Measurements  
M. Khubutiya, M. Goldin, A. Zhao, A. Evseev, A. Salienko, and A. Davydov

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