

Table of Contents



Journal of The
Electrochemical Society

2009 · Vol. 156, No. 3

Batteries and Energy Storage

- Design of Aqueous Processed Thick LiFePO₄ Composite Electrodes for High-Energy Lithium Battery**
W. Porcher, B. Lestriez, S. Jouanneau, D. Guyomard A133
- Multimodal Physics-Based Aging Model for Life Prediction of Li-Ion Batteries**
M. Safari, M. Morcrette, A. Teyssot, C. Delacourt A145
- Reduction of Model Order Based on Proper Orthogonal Decomposition for Lithium-Ion Battery Simulations**
L. Cai, R. E. White A154
- Hydrothermal Synthesis of Nanosized LiMnO₂-Li₂MnO₃ Compounds and Their Electrochemical Performances**
X. Huang, Q. Zhang, H. Chang, J. Gan, H. Yue, Y. Yang A162
- Lithium-Ion (De)Insertion Reaction of Germanium Thin-Film Electrodes: An Electrochemical and In Situ XRD Study**
L. Baggetto, P. H. L. Notten A169
- Thermal Behavior of Charged Graphite and Li_xCoO₂ in Electrolytes Containing Alkyl Phosphate for Lithium-Ion Cells**
Y. Shigematsu, M. Ue, J.-i. Yamaki A176
- Carbon Surface Oxidation by Short-Term Ozone Treatment for Modeling Long-Term Degradation of Fuel Cell Cathodes**
J. Maruyama, M. Umemura, M. Inaba, A. Tasaka, I. Abe A181
- In Situ AFM Measurements of the Expansion of Nanostructured Sn-Co-C Films Reacting with Lithium**
Y. Tian, A. Timmons, J. R. Dahn A187
- Structure and Electrochemistry of LiNi_{1/3}Co_{1/3-y}M_yMn_{1/3}O₂ (M = Ti, Al, Fe) Positive Electrode Materials**
J. Wilcox, S. Patoux, M. Doeff A192
- Electrochemically Induced Phase Transformation and Charge-Storage Mechanism of Amorphous CoS_x Nanoparticles Prepared by Interface-Hydrothermal Method**
C. Yuan, B. Gao, L. Su, L. Chen, X. Zhang A199
- (Sn_{0.5}Co_{0.5})_{1-y}C_y Alloy Negative Electrode Materials Prepared by Mechanical Attriting**
P. P. Ferguson, M. Rajora, R. A. Dunlap, J. R. Dahn A204
- Electrochemical Profile of Oxygen-Deficient LiMn₂O_{4-δ} in Aqueous Electrolyte**
P. He, J.-Y. Luo, J.-X. He, Y.-Y. Xia A209
- Evaluation of Commercially Available Carbon Fibers, Fabrics, and Papers for Potential Use in Multifunctional Energy Storage Applications**
J. F. Snyder, E. L. Wong, C. W. Hubbard A215
- Transient Model of an Alkaline Fuel Cell Cathode**
H. Weydahl, A. M. Svensson, S. Sunde A225
- Simplified Mathematical Model for Effects of Freezing on the Low-Temperature Performance of the Lead-Acid Battery**
K. S. Gandhi, A. K. Shukla, S. K. Martha, S. A. Gaffoor A238
- Electrochemical Behavior of LiM_{0.25}Ni_{0.25}Mn_{1.5}O₄ as 5 V Cathode Materials for Lithium Rechargeable Batteries**
S. Rajakumar, R. Thirunakaran, A. Sivasubramanian, J.-i. Yamaki, S. Gopukumar A246

Fuel Cells and Energy Conversion

- PEMFC Contamination Model: Competitive Adsorption Followed by an Electrochemical Reaction**
J. St-Pierre B291

Editor

Daniel Scherson
Case Western Reserve University
Cleveland, Ohio 44106

Associate Editors

Cor L. Claeys
IMEC
B-3001 Leuven, Belgium

Takayuki Homma
Waseda University
Tokyo, Japan

Charles L. Hussey
University of Mississippi
University, Mississippi 38677, USA

Yue Kuo
Texas A&M University
College Station, Texas 77843, USA

Dolf Landheer
National Research Council - Canada
Ottawa, Ontario, Canada

Mark E. Orazem
University of Florida
Gainesville, Florida 32611, USA

Ashok K. Shukla
Indian Institute of Science
Bangalore, Karnataka 560 012 India

Martin Winter
University of Münster
Münster, Germany

Editorial Board

Doron Aurbach	Jennifer Bardwell
Cor Claeys	Andrew Gewirth
Dennis Hess	Takayuki Homma
Charles Hussey	Yue Kuo
Dolf Landheer	Mark E. Orazem
Daniel Scherson	Ashok K. Shukla
Martin Winter	

Publications Staff

Annie Goedkoop, <i>Director of Publications</i>	
Dinia Agrawala	Anne L. Clementson
Paul Cooper	Andrea L. Guenzel
John Lewis	Beth Anne Stuebe

Publication Committee

Subhash Singhal, <i>Chairman</i>	
Timothy R. Armstrong	Scott Calabrese Barton
Dennis Hess	Andrew Hoff
Michael J. Kelly	Johna Leddy
Randy Leising	Stephen Lipka
Yunyu Meas	Daniel Scherson
Krishnan Rajeshwar	Steven Visco
Jennifer Wang	John Weidner
Mark Williams	

The Electrochemical Society (ECS) is an educational, nonprofit 501(c)(3) organization with more than 8000 scientists and engineers in over 75 countries world-wide who hold individual membership. Founded in 1902, ECS has a long tradition in advancing the theory and practice of electrochemical and solid-state science by dissemination of information through its publications and international meetings.

The *Journal of The Electrochemical Society* (*J. Electrochem. Soc.*) (USPS 284-140) (ISSN 0013-4651) is published monthly by The Electrochemical Society, 65 South Main Street, Pennington, NJ 08534-2839, USA, at Cummings Printing Co., 4 Peters Brook Drive, PO Box 16495, Hooksett, NH 03106-6495, USA. Periodicals postage paid at Pennington, New Jersey, USA and at additional mailing offices. POSTMASTER: Send address changes to: The Electrochemical Society, 65 South Main Street, Pennington, NJ 08534-2839, USA. Canada Post: Publications Mail Agreement #40612608 Canada Returns to be sent to Bleuchip International, P.O. Box 25542, London, ON N6C 6B2.

© Copyright 2009 by The Electrochemical Society, Inc.

Publication Information

ECS Members: Access to the online edition of the current volume plus the entire online archive of the Journal is available to ECS members as part of their ECS Member Article Pack. The paper edition of the current volume is available to the members at an additional charge. Annual dues: \$98 for Active Members and \$18 for Student Members.

Subscriptions: Rates and packages vary. Send inquiries to Corey Eberhart, Global Sales Manager, ECS, 65 South Main Street, Pennington, New Jersey, 08534-2839, USA. Tel.: 609.647.3616; Fax: 609.737.2743; E-mail: corey.eberhart@electrochem.org. Visit the ECS website for more information.

Address: The address for the Executive Offices and Editorial Department of the Journal is: The Electrochemical Society, 65 South Main Street, Pennington, New Jersey, 08534-2839, USA. Tel.: 609.737.1902; Fax: 609.737.2743; E-mail: ecs@electrochem.org; Web: www.electrochem.org.

The address of the Circulation Department for ECS members is: 65 South Main Street, Pennington, New Jersey, 08534-2839, USA.

The address for the nonmembers' Circulation Department is: American Institute of Physics, P.O. Box 503284, St. Louis, MO 63150-2839, USA.

Manuscripts: Manuscripts are accepted for publication by the *Journal* with the understanding that they are unpublished, original works that have not been submitted elsewhere while under consideration by the *Journal* Editorial Board. See the "Instructions to Authors," which can be found in this issue. To help offset publication costs, a payment of \$80 per printed page is required. A discount is given if at least one author is a Society member at the time of a paper's submission.

Permission to Re-publish: The *Journal* is a copyrighted publication, and manuscripts submitted to the *Journal* become the property of ECS. Permission to re-publish parts of papers in the *Journal* is granted to current periodicals, provided due credit is given and that not more than one-sixth of any one paper is used in derivative works. Reproduction or replication of more than one-sixth of a paper is forbidden and illegal unless prior written authorization is obtained from ECS, along with permission from the author. Please use the Permission Request Form on the ECS Website (www.electrochem.org).

Permission to Reproduce: Reprographic copying beyond that permitted by the fair use provisions of the Copyright Act of 1976 is granted to libraries and other users registered with the Copyright Clearance Center provided that the fee (CCC Code 0013-465 1/97) is paid directly to: Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, USA; Tel: 978.750.8400; Fax: 978.750.4744; E-mail: info@copyright.com. Copying for other than internal or personal use without the express written permission of ECS is prohibited; please use the Permission Request Form on the ECS website (www.electrochem.org).

Article Copies: Single copies of articles are available from ECS to members at \$19.20 (US) per article, and to nonmembers at \$24 (US) per article. Orders may be placed via the ECS website.

Single Issues: ECS has available for sale a limited inventory of single issues of the *Journal*. Contact the ECS Circulation Department for more information. Positive microfilm copies of issues may also be obtained from ProQuest Information and Learning, 300 North Zeeb Road, Ann Arbor, MI 48106, USA; Tel: USA and Canada: 800.248.0360; all other countries 415.433.5500; Fax: 415.433.0100; E-mail: orders@infostore.com.

Claims: All claims for missing issues should be reported within 60 days of normal delivery date, and should be directed to the Circulation Department at the address given above.

Address Changes: Notice of a change in address should be sent to the Circulation Department at the address given above.

Notice: Statements and opinions given in articles and papers in the *Journal of The Electrochemical Society* are those of the contributors, and The Electrochemical Society, assumes no responsibility for them.

Online Edition: Full-text articles are available either through ECS membership, an institutional subscription, or by purchase, for all issues from 1948 (Vol. 93) and forward. The online edition is available at:

<http://www.ecsd.org/JES/>

Measuring the Current Distribution with Sub-Millimeter Resolution in PEFCs

II. Impact of Operating Parameters

M. Reum, S. A. Freunberger, A. Wokaun, F. N. Büchi B301

Analysis of Electrochemical Performance of SOFCs Using Polarization Modeling and Impedance Measurements

K. J. Yoon, S. Gopalan, U. B. Pal B311

Performance of the Micro-SOFC Module Using Submillimeter Tubular Cells

T. Suzuki, Y. Funabashi, T. Yamaguchi, Y. Fujishiro, M. Awano B318

Dimensional Behavior of Ni-YSZ Composites during Redox Cycling

M. Piblatie, A. Kaiser, P. H. Larsen, M. Mogensen B322

Electro-osmosis and Water Uptake in Polymer Electrolytes in Equilibrium with Water Vapor at Low Temperatures

K. G. Gallagher, B. S. Pivovar, T. F. Fuller B330

Grain-Boundary Conduction in Gadolinia-Doped Ceria: The Effect of SrO Addition

P.-S. Cho, Y. H. Cho, S.-Y. Park, S. B. Lee, D.-Y. Kim, H.-M. Park, G. Auchterlonie, J. Drennan, J.-H. Lee B339

Effect of Cell Geometry on the Electrochemical Parameters of Solid Oxide Fuel Cell Cathodes

R. Küngas, I. Kivi, E. Lust B345

Investigation of Temperature-Driven Water Transport in Polymer Electrolyte Fuel Cell: Phase-Change-Induced Flow

S. Kim, M. M. Mench B353

Combinatorial Study of High-Surface-Area Binary and Ternary Electrocatalysts for the Oxygen Evolution Reaction

K. C. Neyerlin, G. Bugosh, R. Forgie, Z. Liu, P. Strasser B363

Oxygen Reduction Reaction on Carbon Supported Pt and Pd in Alkaline Solutions

L. Jiang, A. Hsu, D. Chu, R. Chen B370

Synthesis of Hollow-Cone-Like Carbon and Its Application as Support Material for Fuel Cells

D. Yuan, J. Zeng, J. Chen, S. Tan, Y. Liu, N. Kristian, X. Wang B377

Fabrication of Gd₂O₃-Doped CeO₂ Thin Films for Single-Chamber-Type Solid Oxide Fuel Cells and Their

Characterization

S. H. Choi, C. S. Hwang, H.-W. Lee, J. Kim B381

Lanthanum Strontium Vanadate as Potential Anodes for Solid Oxide Fuel Cells

X. M. Ge, S. H. Chan B386

Characteristics of Oxygen Reduction on Nanocrystalline YSZ

H. Huang, J. H. Shim, C.-C. Chao, R. Pornprasertsuk, M. Sugawara, T. M. Gür, F. B. Prinz B392

Activity and Durability of Ternary PtRu/C for Methanol Electro-oxidation

D. Geng, D. Matsuki, J. Wang, T. Kawaguchi, W. Sugimoto, Y. Takasu B397

Analysis of the Reaction Rates in the Cathode Electrode of Polymer Electrolyte Fuel Cells

II. Dual-Layer Electrodes

Y. Wang, X. Feng B403

Pt_xCo_y Catalysts Degradation in PEFC Environments: Mechanistic Insights

I. Multiscale Modeling

A. A. Franco, S. Passot, P. Fugier, C. Anglade, E. Billy, L. Guétaz, N. Guillet, E. De Vito, S. Mailley B410

Corrosion, Passivation, and Anodic Films

Initial Oxidation of Zinc Induced by Humidified Air: A Quantified In Situ Study

P. Qiu, D. Persson, C. Leygraf C81

Determination of Local Corrosion Kinetics on Hyper-Stoichiometric UO_{2+x} by Scanning Electrochemical Microscopy

H. He, R. K. Zhu, Z. Qin, P. Keech, Z. Ding, D. W. Shoesmith C87

Effect of Alloy Nanocrystallization and Cr Distribution on the Development of a Chromia Scale

Z. Huang, X. Peng, C. Xu, F. Wang C95

Alloy 600 Aqueous Corrosion at Elevated Temperatures and Pressures: An In Situ Raman Spectroscopic Investigation

J. E. Maslar, W. S. Hurst, W. J. Bowers, Jr., J. H. Hendricks, E. S. Windsor C103

Selective Dissolution of Alpha Brass in Acid Noncomplexing Media

S. M. Awadh, F. M. Al Kharafi, B. G. Ateya C114

Electrochemical/Chemical Deposition and Etching

Electrodeposition of Mirror-Bright Silver in Cyanide-Free Bath Containing Uracil as Complexing Agent Without a Separate Strike Plating Process

B.-G. Xie, J.-J. Sun, Z.-B. Lin, G.-N. Chen D79

Electrochemical Reduction Process of Sb(III) on Au Electrode Investigated by CV and EIS

F.-H. Li, W. Wang, J.-P. Gao, S.-Y. Wang D84

Patterned Electroless Nickel Plating on a Tacky Photopolymer

A. S. Petrov, J. B. Talbot D92

Adsorption and Desorption Kinetics of a Block Copolymer Wetting Agent Used in Copper Electroplating

M. J. Willey, E. J. McInerney D98

Room-Temperature Wet Etching of Polycrystalline and Nanocrystalline Silicon Carbide Thin Films with HF and HNO_3

C. S. Roper, R. T. Howe, R. Maboudian D104

Effect of Additives on Microstructure and Mechanical Properties of Nickel Plate/Mask Fabricated by Electroforming Process

J. H. Lim, E. C. Park, J. Joo, S.-B. Jung D108

Electrochemical Synthesis and Engineering

Initiation of Organized Nanopore/Nanotube Arrays in Anodized Titanium Oxide

I. Criterion for Initiation

Q. A. S. Nguyen, Y. V. Bhargava, T. M. Devine E55

Initiation of Organized Nanopore/Nanotube Arrays in Titanium Oxide

II. Nanopore Size and Spacing

Y. V. Bhargava, Q. A. S. Nguyen, T. M. Devine E62

Kinetic and Mass-Transfer Parameters for Ce(III)

Electro-oxidation in Nitric Acid with/without Anion Impurities

T.-S. Chen, K.-L. Huang, K.-J. C. Yeh E69

Physical and Analytical Electrochemistry

Enhanced Oxygen Reduction at Composite Electrodes Producing a Large Magnetic Gradient

N. B. Chauré, J. M. D. Coey F39

Sintering and Oxygen Transport in $Ce_{0.8}Pr_{0.2}O_{2-\delta}$: A Comparative Study of Mn and Co Oxide Additives

D. P. Fagg, S. Garcia-Martin, M. J. Pascual, V. V. Kharton, J. R. Frade F47

Dielectric Science and Materials

Dielectric Relaxation in $SrLi_9O_{15}$ Glasses

R. Vaish, K. B. R. Varma G17

Society Officers

President

D. Noel Buckley

University of Limerick
Limerick, Ireland

Vice-President

Paul Natishan

U.S. Naval Research Laboratories
Washington, DC 20375, USA

Vice-President

William D. Brown

University of Arkansas
Fayetteville, Arkansas 72701, USA

Vice-President

Esther Takeuchi

University at Buffalo
Buffalo, New York 14260, USA

Secretary

Johna Leddy

University of Iowa
Iowa City, Iowa 52242, USA

Treasurer

John R. Susko

JRS Technology
Owego, New York 13827, USA

Executive Director

Roque J. Calvo

The Electrochemical Society
65 South Main Street
Pennington, New Jersey 08534-2839, USA
Phone: 609 737 1902
Fax: 609 737 2743
E-mail: ecs@electrochem.org
Web: www.electrochem.org

Benefits of Membership

- **The Journal of The Electrochemical Society.** Society membership includes this top-quality, peer-reviewed monthly publication. Each issue includes some 70 or more original papers selected by a prestigious editorial board, on topics covering both electrochemical and solid-state science and technology. The electronic edition is available to members at:
<http://ecsd.org/JES/>
- **Electrochemical and Solid-State Letters.** This peer-reviewed, rapid publication electronic journal is available to members at:
<http://ecsd.org/ESL/>
- **Interface.** This quarterly publication features articles and news of general interest to those in the field.
- **Professional Development and Education.** Exchange technical ideas and advances at the Society's semi-annual international meetings or through the programs of the 19 local sections in the USA, Canada, Europe, Israel, Korea, and Japan.
- **Publications.** Stay aware of pertinent scientific advances through the Society's publications, including ECS Transactions, proceedings volumes, meeting abstracts, and monograph volumes.
- **Opportunity for Recognition.** Recognize the accomplishments of your peers through the Awards Program, which provides over two dozen ECS Awards annually.
- **Networking and Contacts.** Take advantage of the numerous opportunities to meet with your peers and expand your circle of valuable contacts.
- **Membership Directory.** Available only to members, the Directory provides easy reference to your colleagues throughout the world.
- **Money Savings.** Get exceptional discounts on all ECS publications, page charges, meetings, and short courses.

Divisions

Battery

Kuzhikalail Abraham, *Chair*
Charles R. Walk, *Vice-Chair*
Zempachi Ogumi, *Secretary*
Nancy J. Dudney, *Treasurer*
Curtis F. Holmes, *Advisor*

Corrosion

Patrik Schmuki, *Chair*
Alison Davenport, *Vice-Chair*
Douglas C. Hansen, *Secretary-Treasurer*
Gerald Frankel, *Advisor*

Dielectric Science and Technology

Durga Misra, *Chair*
Kalpathy Sundaram, *Vice-Chair*
Oana Leonte, *Secretary*
Dolf Landheer, *Treasurer*
John Flake, *Advisor*

Electrodeposition

Gery Stafford, *Chair*
Christian Bonhote, *Vice-Chair*
Hariklia Deligianni, *Secretary*
Giovanni Zangari, *Treasurer*
Cynthia Bruckner-Lea, *Advisor*

Electronics and Photonics

Albert Baca, *Chair*
Ping-Chih Chang, *First Vice-Chair*
Yue Kuo, *Second Vice-Chair*
Andrew M. Hoff, *Secretary*
Ren Fan, *Treasurer*
M. Jamal Deen, *Advisor*

Energy Technology

Karim Zaghib, *Chair*
Sundar Narayanan, *Vice-Chair*
Jean St-Pierre, *Secretary*
Jeremy P. Meyers, *Treasurer*
Ping-Chih Chang, *Advisor*

Fullerenes, Nanotubes, and Carbon Nanostructures

Dirk Guldi, *Chair*
R. Bruce Weisman, *Vice-Chair*
Jean-Francois Nierengarten, *Secretary*
Francis D'Souza, *Treasurer*
Carl F. Holmes, *Advisor*

High Temperature Materials

Eric Wuchina, *Chair*
Enrico Traversa, *Senior Vice-Chair*
Jeffrey Fergus, *Junior Vice-Chair*
Timothy Armstrong, *Secretary-Treasurer*
David Shifler, *Advisor*

Industrial Electrochemistry and Electrochemical Engineering

John Weidner, *Chair*
Vijay K. Ramani, *Vice-Chair*
Gerardine Botte, *Secretary-Treasurer*
Gerald Frankel, *Advisor*

Luminescence and Display Materials

Uwe Happek, *Chair*
Kailash Mishra, *Vice-Chair*
Holly Comanzo, *Secretary*
John Collins, *Treasurer*
Alok Srivastava, *Advisor*

Organic and Biological Electrochemistry

Isao Taniguchi, *Chair*
Albert Fry, *Vice-Chair*
James D. Burgess, *Secretary-Treasurer*
M. Jamal Deen, *Advisor*

Physical and Analytical Electrochemistry

Hugh De Long, *Chair*
Paul Trulove, *Vice-Chair*
Shelley D. Minteer, *Secretary-Treasurer*
Cynthia Bruckner-Lea, *Advisor*

Sensor

Rangachary Mukundan, *Chair*
Jing Li, *Vice-Chair*
Zoraida P. Aguilar, *Secretary*
Michael T. Carter, *Treasurer*
David Shifler, *Advisor*

Semiconductor Devices, Materials, and Processing

Optimization and Temperature-Dependent Luminescence of LiBaPO₄:Eu²⁺ Phosphor for Near-UV Light-Emitting Diodes

Z. Wu, J. Liu, M. Gong, Q. Su H153

Large-Surface-Area Nanowall SnS Films Prepared by Chemical Bath Deposition

Y. Wang, Y. B. K. Reddy, H. Gong H157

Toward High-Performance Amorphous GIZO TFTs

P. Barquinha, L. Pereira, G. Goncalves, R. Martins, E. Fortunato H161

Selective Epitaxial Growth with Full Control of Pattern Dependency Behavior for pMOSFET Structures

M. Kolahdouz, J. Hallstedt, M. Ostling, R. Wise, H. H. Radamson H169

Nonoxidative Aqueous Cleaning Solutions for Tungsten Layers

J. D. Park, S.-Y. Kim, D.-H. Lee, P. K. Jun, H.-J. Yi, Y.-K. Lee, S.-K. Chae H172

Effect of pH on Material Removal Rate of Cu in Abrasive-Free Polishing

Z. Wei, L. Xinchun, L. Yuhong, P. Guoshun, L. Jianbin H176

Metal-Oxide-Semiconductor Structure Solar Cell Prepared by Low-Temperature (<400°C) Anodization Technique

C.-Y. Wang, J.-G. Hwu H181

High Reliable and Manufacturable Gallium Indium Zinc Oxide Thin-Film Transistors Using the Double Layers as an Active Layer

S. I. Kim, J.-S. Park, C. J. Kim, J. C. Park, I. Song, Y. S. Park H184

Effect of pH in Ru Slurry with Sodium Periodate on Ru CMP

I.-K. Kim, B.-G. Cho, J.-G. Park, J.-Y. Park, H.-S. Park H188

Blue-Green-Emitting Phosphor CaSc₂O₄:Tb³⁺: Tunable Luminescence Manipulated by Cross-Relaxation

Z. Hao, J. Zhang, X. Zhang, S. Lu, X. Wang H193

High-Precision Alignment for Low-Temperature Wafer Bonding

C. Wang, S. Taniyama, Y.-H. Wang, T. Suga H197

Synthesis, Characterization, and Luminescent Properties of Europium Complexes with Fluorine Functionalized Phenanthroline

L. Zhang, B. Li, L. Zhang, P. Chen, S. Liu H202

High-Hole-Mobility Silicon Germanium on Insulator Substrates with High Crystalline Quality Obtained by the Germanium Condensation Technique

L. Souriau, T. Nguyen, E. Augendre, R. Loo, V. Terzieva, M. Caymax, S. Cristoloveanu, M. Meuris, W. Vandervorst H208

Influence of Annealing on Europium Photoexcitation Doped into Nanocrystalline Titania Film Prepared by Magnetron Sputtering

A. Podborodecki, G. Zatoryb, J. Misiewicz, J. Domaradzki, D. Kaczmarek, A. Borkowska H214

Optical Investigations of Directly Wafer-Bonded InP-GaAs Heterojunctions

Y.-F. Lao, H.-Z. Wu, M. Cao, C.-F. Cao H220

Sensors and Displays: Principles, Materials, and Processing

Influences of Dye Doping and Hole Blocking Layer Insertion on Sky-Blue OLED Performance

S.-H. Yang, B.-C. Hong, S.-F. Huang J41

Zeolite-Modified Discriminating Gas Sensors

R. Binions, H. Davies, A. Afonja, S. Dungey, D. Lewis, D. E. Williams, I. P. Parkin J46

Effect of Local Structures on the Luminescence of Li₂(Sr,Ca,Ba)SiO₄:Eu²⁺

C. Kulshreshtha, A. K. Sharma, K.-S. Sohn J52

Nanostructured Materials, Carbon Nanotubes, and Fullerenes

Investigation of Carbon Nanotube Growth on Multimetal Layers for Advanced Interconnect Applications in Microelectronic Devices

N. Lin, H. Wang, P. Dixit, T. Xu, S. Zhang, J. Miao K23

High- κ HfO₂ Nanocrystal Memory Capacitors Prepared by Phase Separation of Atomic-Layer-Deposited HfO₂/Al₂O₃ Nanomixtures

S. Maikap, A. Das, T.-Y. Wang, T.-C. Tien, L.-B. Chang K28

Hydrothermal Synthesis and Characterization of Undoped and Eu-Doped ZnGa₂O₄ Nanoparticles

P. M. Aneesh, K. M. Krishna, M. K. Jayaraj K33

Interdisciplinary Topics

Preparation and Characterization of Titanium Tetrachloride-Based Ionic Liquids

L. Gao, L. Wang, T. Qi, J. Chu, J. Qu P49

Relation Between the SHE and the Internal Ag/AgCl Reference Electrode at High Temperatures

J. Öjjerholm, S. Forsberg, H-P. Hermansson, M. Ullberg P56

Sections

Council of Section Officers

Venkat Srinivasan, *Chair*
Lawrence Bottomley, *Vice-Chair*
James Noel, *Secretary*
Don Gervasio, *Past-Chair*

Brazilian

Luís Frederico P. Dick, *Chair*
lfidick@ufrgs.br

Canadian

Sasha Omanovic, *Chair*
sasha.omanovic@mcgill.ca

Chicago

Giselle Sandi, *Chair*
gsandi@anl.gov

China

Ming Yang, *Chair*
myang@icspectrum.com

Cleveland

Irina Serebrennikova, *Chair*
Irina.Serebrennikova@energizer.com

Detroit

Alvaro Masias, *Chair*

European

Carmel Breslin, *Chair*

Georgia

Peter Hesketh, *Chair*
peter.hesketh@me.gatech.edu

Israel

Doron Aurbach, *Chair*
aurbach@mail.biu.ac.il

Japan

Shunri Oda, *Chair*
soda@pe.titech.ac.jp

Korea

Kwang Bum Kim, *Chair*
kbkim@yonsei.ac.kr

Mexican

Ignacio Gonzalez, *Chair*
igm@xanum.uam.mx

Pittsburgh

Konstantin Pimenov, *Chair*
konstantinpimenov@consolenergy.com

San Francisco

Kenneth Lux, *Chair*
ken@altotech.com

Taiwan

Jing-Yih Cherng, *Chair*
amitajim@yahoo.com

Texas

Harovel G. Wheat, *Chair*
hwheat@mail.utexas.edu

Twin Cities

Michael Root, *Chair*
michael.root@bsci.com