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- 159 Evolution of Ordered Conducting Structures under the Effect of Charge Gradient in a System of Nanoparticles
A. Belkin, A. Hubler, and A. Bezryadin
- 160 Raman Characterization of High Edge Plane Carbon Nanotubes
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- 161 Investigation of Long-Term Degradation of Single-Walled Carbon Nanotubes
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- 162 Introduction of Peak Force Tapping Mode AFM for Electrochemical Applications
C. Li and S. Minne
- 163 Electrochemical Characterization of As-Deposited and Oxygen-Functionalized Vertically Aligned Carbon Nanotubes for Use as a Neural Stimulation Electrode
B. Brown, C. Parker, B. Stoner, W. Grill, and J. Glass
- 164 Tethered Enzyme Nanocomposites for Bioelectrocatalysis
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- 165 Development of Gold Coated Superparamagnetic Iron Oxide Nanoparticles for Nitroreductase Delivery
M. Cude, C. Gwenin, and V. Roberts
- 166 Surface Modification of Cobalt Chromium Alloy via Phosphonic Acid Organic Nanosized Thin Films
R. Bhure, T. Abdel-Fattah, C. Bonner, J. Hall, and A. Mahapatro
- 167 In Vitro Corrosion Inhibition of Magnesium Alloy via Organic Nanocoatings
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- 168 Controlled Growth of Gold Nanocrystals on Biogenic As-S Nanotubes by Galvanic Displacement
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- 169 Nanotechnology and Microbial Electrochemistry for Environmental Remediation
M. Palmer, J. Hastings, J. Fitts, and D. Chidambaram
- 170 Biomolecule-Assisted Growth of Selenium Nanocrystals with Striking Optoelectronic Properties
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- 171 Electrochemical Growth of Polythiophene into Nanostructured Porous Silicon Layers
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- 172 Local Reactivity of Thin Pt Overlayers on Ni Single Crystal
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- 173 Interfacial Charge Transfer in Metal/Semiconductor Nanoheterostructures
W. Chen, T. Yang, and Y. Hsu
- 174 Multifunctional n-ZnO/p-NiO Nanoheterostructures: A Novel Approach
N. Hullavarad and S. Hullavarad
- 175 Polyaniline/Pd, Pt, and Au Metal Nanocomposites: Conductivity in Alkaline Solution
N. Millick, T. Quy, D. Hatchett, J. Morgan, and J. Kinyanjui

- 176 Template-Free Electrodeposition of Polypyrrole Nanowire Array
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S. Rosenthal
- 178 Bringing Silicon to Light: Luminescence in Silicon Nanostructures
D. Lockwood
- 179 Functional Porous Silicon Nanostructures for In Vitro and In Vivo Diagnostics
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- 180 Optical Properties and Applications of Doped and Undoped Quantum Dots
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J. Meyers
- 183 Sulfonated Polyphenylsulfone Membrane for all Vanadium Redox Flow Batteries
S. Kim, J. Yan, B. Schwenzer, J. Zhang, L. Li, J. Liu, Z. Yang, and M. Hickner
- 184 Investigation of Voltage Loss in Vanadium Redox Flow Battery
S. Kim, V. Viswanathan, J. Zhang, W. Wang, L. Li, and Z. Yang
- 185 Aging Studies of Vanadium Redox Flow Batteries
J. Noack, L. Vorhauser, K. Pinkwart, and J. Tuebke
- 186 Studies on the Stabilities of V^{2+} , V^{3+} and V^{4+} in H_2SO_4 Solution for all Vanadium Redox Flow Batteries
J. Zhang, L. Li, B. Chen, Z. Nie, S. Kim, W. Wang, B. Schwenzer, V. Murugesan, J. Liu, and Z. Yang
- 187 Liquid Metal Battery: An Electrometallurgical Approach to Large-Scale Energy Storage
D. Bradwell, D. Boysen, L. Ortiz, and D. Sadoway
- 188 Organometallic Acetylacetonate Complexes for Nonaqueous Single Metal Flow Batteries
A. Shinkle, Q. Liu, A. Sleightholme, L. Thompson, and C. Monroe
- 189 Battery Energy Storage System for Peak Shaving and Improving Local Power Availability
Y. Baghzouzens and R. Boehm
- 190 High Temperature Electrolysis Using a Pilot-Scale Cathode-Supported Tubular Solid Oxide Fuel Cell
K. Huang and G. Zhang
- 191 (Edward Goodrich Acheson Award) Energy Storage
J. Newman
- 192 Zinc Layer Current Distribution in Secondary Zinc Metal Batteries for Grid Scale Electrical Storage
J. Gallaway, Y. Ito, D. Desai, M. Nyce, S. Banerjee, and D. Steingart

- 193 Two-Phase Electrolysis Modeling: Two Scales Numerical and Experimental Investigation
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- 194 Cycling Performance of a Metal Hydride-Air Rechargeable Battery
N. Osada, M. Morimitsu, and K. Takano
- 195 Improvement in Energy Density of Metal Hydride-Air Secondary Batteries
Y. Tsuchinaga, M. Morimitsu, and K. Takano
- 196 Primary Lithium Air Cell and Pack Development
J. Stone, R. Tamaki, M. Nagata, and H. Tsukamoto
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S. Cheekati, Y. Xing, Y. Zhuang, and H. Huang
- 198 Charging Time Dependence of a New Charging Method on the Direction of an Additional Oscillating Field
I. Abou Hamad, M. Novotny, D. Wipf, and P. Rikvold
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- 200 Optimization of Ratio and Amount of CMC/SBR Binder for a Graphite Anode
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- 201 Modeling of Lithium Plating in Lithium-Ion Batteries
M. Ecker, S. Käbitz, J. Gerschler, and D. Sauer
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J. Guo, A. Sun, A. Manivannan, and C. Wang
- 203 Porous Silicon as Anode Materials for Li-Ion Batteries
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- 204 New Titanate Insertion Anode for Li-Ion Batteries
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- 205 One-Dimensional Magnéli Phases Ti_nO_{2n-1} as Anodes for Li-Ion Batteries
W. Han and X. Wang
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- 207 Microwave Plasma CVD of Li-Ion Composite Anodes
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- 208 Visualization of Charge Distribution in a Lithium-Ion Battery Electrode
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- 212 In Situ Acoustic Emission and X-ray Diffraction of Cycling Lithium-Ion Batteries
K. Rhodes, C. Daniel, E. Lara-Curzio, and N. Dudney
- 213 EIS Measurements for Determining the SOC and SOH of Li-Ion Batteries
R. Mingant, J. Bernard, V. Sauvant Moynet, A. Delaille, S. Mailley, J. Hognon, and F. Huet

- 214 Electrochemical and Thermal Evaluation of New High Energy Positive, Negative and Electrolyte Materials
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- 222 Li-Ion Battery Gel Electrolytes Based on Tailored New Salts
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- 229 A Solvothermal Route to Synthesis of Cu_xMo₆S₈ Phase for Cathode Active Material of Rechargeable Mg Battery
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- 240 Improvement of SOFC's Cathode by Silver and LSC Infiltration
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- 245 Fabrication and Electrochemical Characteristics of a High Power IT-SOFC Unit Cell with a Thin and Dense GDC Layer
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B2 - Battery Safety and Abuse Tolerance

Battery

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- 983 PtNi/CNT and PtRuNi/CNT as Catalysts for PEM Fuel Cells
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- 984 Control of PtSn Electrocatalyst Architecture for Enhancing Anode CO Tolerance in PEMFCs
R. Utz, Z. Liu, B. Eichhorn, and G. Jackson
- 985 Electrochemical Oxidation of CO on Pt(111)-Oriented Surfaces with Kinks
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- 986 New Ir-V-W Electro-Catalyst Exceeding Pt for the Anode of Fuel Cells
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Battery

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- 988 Study of the Lithium Deintercalation Mechanism from the $\text{Li}_{1.20}\text{Mn}_{0.54}\text{Co}_{0.13}\text{Ni}_{0.13}\text{O}_2$ Positive Electrode Material
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- 990 Synthesis and Characterization of Nanocomposites $x\text{Li}_2\text{MnO}_3 \cdot (1-x)\text{LiMO}_2$ ($M = \text{Cr, Mn, Co, Ni}$) for Li Secondary Batteries
J. Gim, D. Kim, J. Lim, J. Kang, D. Im, W. Choi, K. Park, J. Yoon, and J. Kim
- 991 An Investigation of Structure and Electrochemical Cycling Stability of $\text{Li}[\text{Li}_{0.2}\text{Ni}_{0.2}\text{Mn}_{0.6}]\text{O}_2$ Using Aberration-Corrected Z-Contrast Imaging and EELS
M. Chi, C. Fell, and S. Meng
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- 994 The Effect of Substituents on the Performance of Lithium-Excess Positive Electrode Materials
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- 995 Studies of Lithium-Rich Transition Metal Oxides
A. van Bommel and J. Dahn
- 996 Structure and Performance of Layered $\text{Li}_{1+x}\text{M}_{1-x}\text{O}_2$ Crystals
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- 999 Synthesis of a Series of High Energy Cathodes via an Ion-Exchange Method
E. Wisniewski-Barker and C. Johnson
- 1000 The Effect of Al-Substitution in $\text{LiNi}_{0.45}\text{Co}_{0.1-x}\text{Al}_x\text{Mn}_{0.45}\text{O}_2$ Layered Oxide Cathode Materials
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- 1001 High Power and Low Temperature Behavior of Nickel-Cobalt-Manganese (NCM) Cathode Materials
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- 1002 Structural and Morphological Changes of Mg Substituted $\text{Li}(\text{Ni, Co, Al})\text{O}_2$ during Overcharge Reaction
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- 1003 Thermodynamics Study of Nanostructured Lithium Cobalt Oxide Cathode Material
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- 1006 Electrochemical Shock: Fracture Mechanics of Lithium Battery Cathode Particles during Cycling
W. Woodford, W. Carter, and Y. Chiang
- 1007 Effect of Electrode Microstructure through Particle-Scale Modeling of LiMn_2O_4 Electrode
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- 1008 Design of New Spinel Materials $\text{LiM}_{1-x}\text{M}_2\text{Mn}_{2-x-y}\text{O}_4$ ($0 < x < 0.5, 0 < y < 0.5$) for Cathode of High Voltage High Rate Li-Ion Batteries by First-Principles Computation
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- 1009 Electronic, Structural and Electrochemical Properties of $\text{LiNi}_x\text{Cu}_y\text{Mn}_{2-x-y}\text{O}_4$ ($0 < x < 0.5, 0 < y < 0.5$) High-Voltage Cathode Materials in Li-Ion Batteries
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A. Thapa, Y. Hidaka, and T. Ishihara
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K. Nam, X. Wang, N. Pereira, G. Amatucci, and X. Yang
- 1014 Initial Investigation on Lithium/Air Batteries
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- 1020 Surface Chemistry of LiFePO_4 for Aqueous Processing
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- 1021 Theory of Phase Transformations in LiFePO_4
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- 1022 Synthesis and Electrochemical Properties of LiFePO_4/C Composite Prepared by Co-Precipitation Method
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- 1026 Fabrication and Electrochemical Characteristics of Li_2MnO_3 -Based Cathode for Advanced Lithium-Ion Batteries
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- 1031 Electrochemical Synthesis of LiMn_2O_4 Thin Film for Lithium-Ion Batteries
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- 1104 Synthesis and Characterization of Single Ion Conductors Based on Polymethacrylate and Pedant Borate Salts
X. Sun and S. Dai
- 1105 Performance and Life Testing of Altairnano PHEV Lithium-Ion Cells
J. Belt and C. Ho
- 1106 Adiabatic and Isothermal Testing of Commercial Li-Ion 18650 Cells
P. Ralbovsky, R. Campbell, and I. Beta
- 1107 Comparison of Properties of Trialkyl Phosphate-Based and Cyclic Carbonate-Based Electrolytes from Molecular Dynamics Simulations
O. Borodin, G. Smith, and I. Halalay
- 1108 High Precision Coulometry Measurements of the Effects of Electrolyte Additives in Li-Ion Batteries
J. Burns, A. Smith, and J. Dahn
- 1109 AC Impedance Analysis of 20 Ah Lithium-Ion Cell for Stationary Applications
Y. Kobayashi, M. Aiba, T. Kobayashi, H. Iwasaki, M. Sonoyama, Y. Mita, N. Terada, and H. Miyashiro
- 1110 Comparison of Data and Modeling Results for an Optical Li-Ion Cell
D. Baker and S. Harris
- 1111 Restricted Diffusion in a Microstructured Polymer Electrolyte for Secondary Lithium Batteries
S. Mullin, G. Stone, A. Panday, and N. Balsara

- 1112 Batteries With Hybrid-Ion Aqueous Electrolytes
C. Wessells, R. Huggins, and Y. Cui
- 1113 Full Cell Design and Performance for Stationary Li-ion Battery System
W. Wang, D. Choi, D. Wang, Z. Nie, J. Zhang, G. Graff, J. Liu, and Z. Yang
- 1114 Three Dimensional Thermal and Electrochemical Model for Spirally Wound Large Format Lithium-Ion Batteries
K. Lee, G. Kim, and K. Smith
- 1115 A Study of Lithium Transport in Aluminum Membranes
E. Pollak, I. Lucas, and R. Kostecki
- 1116 Solvent-Free Lithium-Ion Polymer Battery Using $\text{LiNi}_{1/3}\text{Mn}_{1/3}\text{Co}_{1/3}\text{O}_2$ and Graphite
Y. Kobayashi, T. Kobayashi, Y. Ohno, M. Tabuchi, K. Shono, K. Miura, and H. Miyashiro
- 1117 In Situ Inference of Degradation Mechanism in Commercial LiFePO_4 Cells
M. Dubarry and B. Liaw
- 1118 Degradation of Commercial Li-Ion Cells Chosen for PHEV Duty Cycle Applications
M. Dubarry, C. Truchot, B. Liaw, K. Gering, S. Sazhin, D. Jamison, and C. Michelbacher
- 1119 Effect of Mechanical Stress on the Electrochemical Performance of Lithium-Ion Battery Polymer Separators
C. Peabody and C. Arnold
- 1120 Current Research and Development Activities on Next Generation Battery Systems at BASF SE
A. Garsuch, K. Leitner, and R. Oesten
- 1121 Use of Coin Cell Pulse Power Measurements to Guide HEV/PHEV Cell Design
J. Rempel, D. Ofer, B. Barnett, and S. Sriramulu
- 1122 Analysis of the Li-Ion Battery Charging-Discharging Cycles for Developing the Management System
P. Artuso, L. Rambaldi, A. Dell'Era, and E. Bocci
- 1123 Evaluation of Li-Metal Electrode Resistance by "Current-Rest-Method" Using "Four-electrode cell"
S. Yata, S. Mori, H. Satake, M. Kuriyama, and H. Kinoshita
- 1124 Nanostructured $\text{Li}_4\text{Ti}_5\text{O}_{12}$ Spinel as an Anode for Three-Dimensional Li-Ion Battery
M. Zkalova, J. Prochazka, and L. Kavan
- 1125 Thermal Modeling of Cylindrical Li-Ion Battery
S. Baek, D. Jeon, J. Nam, and C. Kim
- 1126 Efficient Modeling for a Lithium-Ion Battery Using the Proper Orthogonal Decomposition and the Orthogonal Collocation on Finite Elements
L. Cai and R. White
- 1127 Reformulated Thermal Model for Lithium-Ion Batteries
S. De, V. Ramadesigan, R. Methekar, and V. Subramanian
- 1128 A Coupled 3-D Electrochemical, Thermal, and Electrical Model for Spirally-Wound Lithium-Ion Batteries
T. Bandhauer, S. Garimella, and T. Fuller
- 1129 Solid-Phase Diffusion Modeling in Lithium-Ion Batteries
P. Mukherjee, S. Pannala, S. Allu, J. Nanda, and J. Turner
- 1130 Charge/Discharge Model for a LiFePO_4 /Graphite Cell
M. Safari, M. Morcrette, A. Teysot, and C. Delacourt
- 1131 Maximizing the Life of a Lithium-Ion Cell by Optimization of Charging Rates
S. Khaleghi Rahimian and R. White

- 1132 Analysis of Lithium Insertion/Deinsertion in LiFePO_4 with a Simple Mathematical Model
C. Delacourt and M. Safari
- 1133 Li Diffusion in Novel Cathode Materials through a Scalable Combined Empirical Potential and Ab Initio Method
C. Moore, R. Armiento, T. Mueller, and G. Ceder
- 1134 High Pressure Driven-Phase Transitions of Li-Based Electrode Materials Guided by First Principles Calculations
E. Arroyo y de Dompablo
- 1135 Elastic Softening of Amorphous and Crystalline Li-Si Phases with Increasing Li Concentration: A First-Principles Study
V. Shenoy, P. Johari, and Y. Qi

B9 - Solid State Ionic Devices 8 - NEMCA

*High Temperature Materials / Energy Technology / Battery / Physical and Analytical Electrochemistry /
New Technology Subcommittee*

- 1136 Permanent Electrochemical Promotion of C_3H_8 Oxidation over Thin Sputtered Pt Films
S. Souentie, L. Lizarraga, E. Papaioannou, C. Vayenas, and P. Vernoux
- 1137 Electrochemical Promotion of Catalysis on Nanometric Sputter-Deposited Films
P. Vernoux, A. Billard, L. Lizarraga, V. Roche, and S. Souentie
- 1138 Exploration of Electric-Field Effects in Solid State Ionic Devices
B. Blackburn and E. Wachsman
- 1139 In Situ Spectroscopic Measurements of Local Potentials and Electrochemically Active Regions on Operating Solid Oxide Cells
C. Zhang, S. DeCaluwe, M. Grass, Z. Liu, H. Bluhm, Z. Hussain, G. Jackson, and B. Eichhorn
- 1140 Measuring Oxygen Reduction Reaction in Fuel Cells on the Nanoscale
A. Kumar, S. Kalinin, and S. Jesse
- 1141 In Situ Optical Studies of Reduction/Oxidation Kinetics in Solid Oxide Fuel Cells
B. Eigenbrodt, J. Kirtley, and R. Walker
- 1142 Characterization of Pt and Pt-Alloy Catalysts for the Oxidation of Glucose
A. Blaesi and C. Buie
- 1143 Pt-Ru Deposition Using ALD(Atomic Layer Deposition) for Methanol Oxidation Catalyst
S. Ha, S. Ji, and S. Cha
- 1144 (High Temperature Materials Division Outstanding Achievement Award Presentation)
Measurement and Modeling of Electrical, Mechanical, and Chemical Properties of a Model Mixed Ionic Electronic Conductor: Pr Doped Ceria
S. Bishop, J. Kim, W. Jung, T. Stefanik, M. Qu, K. Van Vliet, and H. Tuller
- 1145 Tailoring Protonic and Mixed Protonic/Electronic Conductivity of Barium Zirconate by Y and Pr Co-Doping for Intermediate Temperature Solid Oxide Fuel Cells (IT-SOFCs)
E. Fabbri, L. Bi, D. Pergolesi, and E. Traversa
- 1146 Crystal and Electronic Structures of CePO_4 -Based Proton-Electron Mixed Conductors by Using Synchrotron X-rays
N. Kitamura, K. Uchino, and Y. Idemoto
- 1147 Hydrogen Oxidation Reaction at the Ni/YSZ Interface: An Ab Initio Study
C. Cucinotta, M. Bernasconi, and M. Parrinello
- 1148 A Theory of Solid State Electrochemical Junction Devices
E. Fischer and J. Hertz

- 1149 ISGP: Impedance Spectroscopy Analysis Using Evolutionary Programming Procedure
S. Hershkovitz, S. Tomer, S. Baltianski, and Y. Tsur
- 1150 Calcium- and Nickel-Doped Yttrium Chromite as an Advanced Ceramic Interconnect Material for Solid Oxide Fuel Cells (SOFCs)
K. Yoon, J. Stevenson, and O. Marina
- 1151 Electrodeposition of Manganese for Solid Oxide Fuel Cell Interconnect Application
T. Oh, J. Templeton, Z. Nie, G. Xia, and J. Stevenson
- 1152 Development of Protection Coatings and Contact Materials for Metallic Interconnects in SOFCs
G. Xia, S. Li, J. Templeton, Z. Lu, T. Oh, Z. Nie, Z. Yang, and J. Stevenson
- 1153 Transition Metal Spinel Oxide Coatings for Reducing Chromium Poisoning in SOFCs
J. Fergus, K. Wang, and Y. Liu
- 1154 Preparation of Doped LaGaO₃ Electrolyte Thin Film by a Wet Process for Intermediate Temperature SOFCs
J. Hong, S. Ida, and T. Ishihara
- 1155 Effect of Transition Metal Additives on Electrical Properties for La-Excess-Type Lanthanum Silicate-Based Solid Electrolytes
A. Mineshige, Y. Ohnishi, Y. Daiko, M. Kobune, T. Yazawa, and H. Yoshioka
- 1156 Mixed Oxide-Ion and Carbonate-Ion Conductors (MOCCs) as Electrolyte Materials for Solid Oxide Fuel Cells
G. Xiao, X. Li, F. Chen, and K. Huang
- 1157 Mechano-synthesis, Structure Characterization and Conductivity of Sc-Stabilized Zirconia Nanoceramics
V. Zyryanov, N. Uvarov, and A. Ulihin
- 1158 Low Thermal Expansion RBa(Co,M)₄O₇ Cathodes Based on Tetrahedral-Site Cobalt Ions for Solid Oxide Fuel Cells
A. Manthiram, J. Kim, and Y. Kim
- 1159 Study on Performance Degradation: Effect of Activation of LSM-Based SOFC
H. Choi, K. Ahn, and S. Cha
- 1160 Simulation of Electrochemical Reduction of Oxygen on SOFC Cathode by 3PB and 2PB Kinetic Pathways
M. Gong, R. Gemmen, and X. Liu
- 1161 An Investigation of B-Site Doped Strontium Titanates for SOFC Anodes: Redox Stability and Electrical Properties
B. Smith and M. Gross
- 1162 SOFC Anodes Prepared by Infiltration of Strontium Molybdate into Porous YSZ
B. Smith and M. Gross
- 1163 Composite Oxide of Doped CeO₂ and LaFeO₃ for Anode of Direct Hydrocarbon Type SOFCs
T. Shin, S. Ida, and T. Ishihara
- 1164 Sr₂Fe_{1.5}Mo_{0.5}O_{6-δ} as Both Anode and Cathode Materials for Symmetrical SOFCs
Q. Liu, X. Dong, G. Xiao, and F. Chen
- 1165 Degradation Mechanism of Nickel-Yttria Stabilized Zirconia SOFC Anode Materials in PH₃ Containing Coal Syngas
M. Zhi and N. Wu
- 1166 La_{0.9-x}Ca_xCe_{0.1}CrO_{3-δ} as a Potential Anode for SOFCs
X. Dong, K. Huang, and F. Chen

- 1167 Dependence of Electrochemical Performance on Microstructure and Distribution for Ni/YSZ Anode with Y-Doped BaZrO₃ in Solid Oxide Fuel Cells
H. Shimada, E. Takami, C. Takei, F. Ohba, A. Hagiwara, and M. Ihara
- 1168 Conductivity Measurements of Molten Bi₂O₃
V. Yarlagadda and T. Nguyen
- 1169 Improving the Proton Conductivity of Yttrium-Doped Barium Zirconate Electrolytes Towards the Development of Intermediate Temperature Solid Oxide Fuel Cells
E. Traversa
- 1170 Ultra-Thin Proton Conducting Ceramic Electrolytes for Fuel Cells
L. Simpson, Z. Wu, J. Kim, S. Christensen, T. Olson, K. Neyerlin, and B. Pivovar
- 1171 Intermediate Temperature Solid Oxide Fuel Cells Based on a Thin BaZr_{1-x}Y_xO_{3-δ} Proton Conductor Electrolyte
D. Pergolesi, E. Fabbri, and E. Traversa
- 1172 Fabrication and Characterization of Yttrium-Doped Barium Zirconate as Electrolyte for Thin-Film Solid Oxide Fuel Cells
I. Chang, Y. Lee, S. Kang, P. Heo, J. Ha, S. Ha, and S. Cha
- 1173 Intermediate Temperature Fuel Cell on Porous Substrate with Thin Film BaZr_{1-x}Y_xO_{3-δ} Electrolyte
S. Kang, P. Heo, Y. Lee, J. Ha, I. Chang, and S. Cha
- 1174 Fabrication of Nanotubular Membrane Electrode Assembly for a Solid Oxide Fuel Cell
M. Motoyama, C. Chao, T. Gür, and F. Prinz
- 1175 The Functionality of Ultra Thin Protection Layers on Ceria Based SOFCs
Y. Jee, K. Ahn, G. Cho, and S. Cha
- 1176 Oxygen Reduction Reaction in SOFC Cathodes: An Investigation Using Thin Films
L. Miara, K. Yoon, L. Saraf, U. Pal, and S. Gopalan
- 1177 Preparation and Characterization of Combinatorial Thin Films for Solid Oxide Fuel Cell Cathodes
P. Bocchini, H. Bui, T. Beebe, and J. Hertz
- 1178 Effects of Film Thickness and Substrate Related Strain States on Catalytic Activity of SOFC Cathode Materials
L. Yan, B. Kavaipatti, S. Wang, H. Du, and P. Salvador
- 1179 STEM/EELS Characterization of Thin Film Solid Oxide Fuel Cell Cathodes with Improved Electrocatalytic Properties
D. Leonard, Y. Shao-Horn, S. Ahn, E. Crumlin, M. Biegalski, H. Christen, S. Pennycook, and A. Borisevich
- 1180 Effects of Dense Sm(Sr)CoO₃ Interlayer Film on the Power Generation Property and Thermal Cycle Stability
Y. Ju, S. Ida, and T. Ishihara
- 1181 Effects of Anode Thickness and Microstructure on the SOFC Performances
T. Yamaguchi, Y. Shin, K. Galloway, and N. Sammes
- 1182 Investigation of Various Factors Affecting the Gas Conversion Overpotential in Planar Type Anode Supported Solid Oxide Fuel Cells (SOFCs)
H. Lim, S. Hwang, and I. Lee
- 1183 Performance Limiting Factors in Anode Supported SOFC
A. Leonide, A. Weber, and E. Ivers-Tiffée

- 1184 Study on the Bonding Layer of Metal Supported Solid Oxide Electrolysis Cell with Long-Term Operating Condition
H. Yim, P. Kim-Lohsoontorn, and J. Bae
- 1185 Electrochemical Analysis of Microtubular SOFC under Fuel Contaminants
C. Andres Lozano, M. Ohashi, S. Shimpalee, J. Van Zee, and P. Aungkavattana
- 1186 Study for Current Collector of Tubular SOFC Cell
J. Park, H. Choi, and S. Cha
- 1187 P-Type Electrochemical Properties of Undoped $\text{La}_2\text{NiO}_{4+\delta}$
S. Jeon, M. Choi, H. Im, and S. Song
- 1188 Oxygen Chemical Diffusivity of $\text{BaCo}_{0.7}\text{Fe}_{0.22}\text{Nb}_{0.08}\text{O}_{3-\delta}$ via the Chemical Expansion Relaxation Method
M. Choi, S. Jeon, H. Im, and S. Song
- 1189 Solid solutions $\text{La}_{1-x}\text{M}'_x\text{Ga}_{1-y}\text{M}''_y\text{O}_{3-x}$ ($\text{M}' = \text{Ca, Sr, Ba}$, $\text{M}'' = \text{Mg, Zn, Fe}$) Prepared by Various Techniques
Y. Mateyshina, V. Zyryanov, and N. Uvarov
- 1190 Fabrication of a Glass-Ceramics Electrolyte for SOFC Application
T. Morikane, A. Mineshige, Y. Daiko, M. Kobune, T. Yazawa, H. Yoshioka, T. Nakao, T. Fukutsuka, and Y. Uchimoto
- 1191 Apatite-Type Ionic Conductors Fabricated from Lanthanum Oxide and Fluoride Sources
R. Sakamoto, A. Mineshige, Y. Daiko, M. Kobune, T. Yazawa, Y. Matsuo, and H. Yoshioka
- 1192 Highly Porous Anode for Application in Double Electrolyte Fuel Cell
S. Tomer, G. Grader, and Y. Tsur
- 1193 Highly Active Anode Materials for Ammonia Solid Oxide Fuel Cells
T. Tanaka, T. Fujimoto, M. Saito, A. Tasaka, M. Inaba, H. Yoshida, and T. Inagaki
- 1194 Structure, Thermal Stability and Electrical Properties of CaMoO_3 Anode for SOFC
H. Im, M. Choi, S. Jeon, and S. Song
- 1195 Nanofibers for Solid Oxide Fuel Cell Cathode
M. Zhi, N. Mariani, and N. Wu
- 1196 Development of a High Performance Fuel Cell Using an Apatite-Type Ionic Conductor
T. Mitsui, A. Mineshige, Y. Daiko, M. Kobune, T. Yazawa, H. Yoshioka, T. Nakao, T. Fukutsuka, and Y. Uchimoto
- 1197 Hydrocarbon Fueled Operation of Metal Foam-Supported SOFC with Catalytic Layer
J. Jeong, S. Baek, and J. Bae
- 1198 Charging Temperature Dependence of the Fuel Utilization and Ratio of Residual Carbon after Power Generation in Rechargeable Direct Carbon Fuel Cells
F. Ohba, Y. Tagawa, Y. Sakai, A. Yabuki, H. Shimada, and M. Ihara
- 1199 Rechargeable Direct Carbon Fuel Cells Using Directly Supplied Carbon Black Fuel
C. Takei, Y. Chen, Y. Jin, Y. Fujimoto, K. Oshima, and M. Ihara
- 1200 Hydrogen Charge/Discharge Measurement of In-Doped SnP_2O_7 Proton Conductor at Room-Temperature
D. Lim, M. Choi, C. Kim, C. Park, and S. Song
- 1201 Development of Pd/Ag-YSZ Cermet Dual Functional Hydrogen Separation Membranes
C. Kim, M. Choi, D. Lim, and S. Song
- 1202 Synthesis and Electrochemical Properties of Manganese Oxide Nanowires
J. Wu and X. Zhou

D1 - Corrosion General Poster Session

Corrosion

- 1203 (Corrosion Division H.H. Uhlig Award Address) Contributions to the Understanding of Localized Corrosion
G. Frankel
- 1204 (Morris Cohen Graduate Student Award Address) Multiscale Investigation of the Formation and Breakdown of Passive Films on Carbon Steel Rebar in Concrete
P. Ghods and O. Isgor
- 1205 Influence of Iodide Ions on Inhibitive Performance of Benzoic Acid on Iron in 0.5 M H₂SO₄
A. Dadgarinezhad and F. Baghaee
- 1206 Effect of Stray Current on Magnesium Anode Protection System
Q. Zhu, A. Cao, J. Song, and S. Chen
- 1207 Elimination of Surface Oxide Layer of Sn-Ag-Cu Alloy by Chemical Reaction with Halogen Surfactant
H. Takahashi, Y. Shimada, T. Tanaka, M. Hamada, and K. Tohji
- 1208 Study of Atmospheric Corrosion Initiation from Various Pre-Deposited Salt-Particle Species on Steel Using Raman Spectroscopy
S. Li and L. Hihara
- 1209 A Transport Mechanism of Initial Porous Film Growth in 0.4 M Phosphoric Acid Electrolyte
S. Han and H. Kim
- 1210 Corrosion Resistance of Superhydrophobic Surface on Magnesium Alloy Coated with Cerium Oxide Film
T. Ishizaki, N. Saito, and K. Teshima
- 1211 Electropolishing of Niobium in an HF-Free Electrolyte
M. Inman, A. Lozano-Morales, and E. Taylor
- 1212 Corrosion Behavior of Incoloy 800HT in Hydrogen Peroxide Containing Aqueous Solutions
T. Nickchi and A. Alfantazi
- 1213 Fabrication of Nanoporous of Magnesium Oxide by Anodization
E. Seo, S. Choi, and W. Kang
- 1214 Self-Lubricative Coatings Deposited by Microplasma Oxidation on 7075-T6 Aluminum Alloys in the Solution of Aluminate/Molybdenum Disulfide
C. Hua, J. Lee, C. Lu, Y. Lin, and M. Yang
- 1215 Corrosion Behavior of AISI 204Cu and AISI 304 Stainless Steels in Simulated Pore Solution
A. Kocijan, & Donik, M. Godec, D. Mandrino, I. Paulin, and M. Jenko
- 1216 The Synthesis of New Organic Polymers with Anticorrosive and Antiscaling Action for Protection of Industrial Cooling Water Systems
F. Branzoi, I. Branzoi, and A. Stanca
- 1217 Cathodic Protection or Cathodic Prevention: Can We Optimize Efficiency and/or Reduce Side Effects?
D. Koleva, K. van Breugel, H. de Wit, and A. Mol
- 1218 Organic-Inorganic Sol-Gel Coatings for the Corrosion Protection of Metal Surfaces
A. Jiménez-Morales, D. Carbonell, A. A. El hadad, S. Feliu Jr., and J. Galván
- 1219 Corrosion of Carbon Steel in Supercritical CO₂ Fluids
J. Beck, M. Fedkin, S. Lvov, M. Ziomek-Moroz, G. Holcomb, and J. Tylczak

- 1220 Deposition and Characterization of Corrosion-Resistant Amorphous Chromium Carbide Thin Films
J. Högström, M. Hanson, S. Urbonaite, A. Furlan, W. Fredriksson, K. Edström, U. Jansson, and L. Nyholm
- 1221 Electrochemical Study of Alizarin Sulfonic Acid Sodium as Corrosion Inhibition of Steel and Stainless Steel in 1M HCl
F. Baghaei Ravari and A. Dadgarinezhad
- 1222 Electrochemical Effect of Cationic Gemini Surfactant and Halide Salts on Corrosion Inhibition of Low Carbon Steel in Acid Medium
D. Asefi, M. Arami, and N. Mahmoodi
- 1223 Effect of Atomic Hydrogen on the Anodic Dissolution of Iron in a Weakly Acidic Sulfate Electrolyte
A. Rybkina, M. Maleeva, A. Marshakov, and V. Elkin
- 1224 Formation and Oxidation Behavior of Diffusion-Barrier-Coating System on γ -TiAl
Z. Zurek, A. Stawiarski, A. Jaron, and A. Gil
- 1225 Electrochemical Characteristics of YSZ-Coated AZ31 Magnesium Alloy Prepared by Aerosol-Deposition
H. Ryu, S. Hong, J. Ryu, and D. Park
- 1226 A Mechanism of Barrier Film Formation in 0.1 M Ammonium Pentaborate Electrolyte
S. Han and H. Kim
- 1227 Peculiarity Action of Different Additives on Local Activation of Aluminum
T. Borisenkova and S. Kaluzhina
- 1228 Understanding the Mechanism by which Alloying Elements Increase the Activity of Sacrificial Al Anodes
A. Sharma, R. Knoepfel, and D. Morgan
- 1229 Effect of Nitrate and Nitrite on the Corrosion Behavior of Cerium Based Conversion Coatings on AA6061 Aluminum Alloy
S. Kiyota, B. Valdez, M. Stoytcheva, and R. Zlatev
- 1230 Microstructure, Corrosion Resistance and Bonding Strength of Calcium Phosphate Coatings Formed on Pure Magnesium by a Simple Immersion Method
M. Tomozawa and S. Hiromoto
- 1231 Evaluation of Credibility of Plasma Spray Biocompatible HAp Coatings by Electrochemical Impedance Technique
S. Take, M. Kasahana, and Y. Itoi
- 1232 Anodic Dissolution of Refractory Metals in Choline Chloride Based Binary Mixtures
Q. Abbas and L. Binder
- 1233 The Electrochemical Impedance Spectroscopy Method for Investigation Inhibitor Action Benzotriazole under Copper Local Activation
E. Skrypnikova and S. Kaluzhina
- 1234 Increasing the Corrosion Resistant Properties of Electrochemically Deposited Zinc/Nickel Alloys as Protective Coatings on Stainless Steel Substrates
H. Conrad, J. Corbett, and T. Golden
- 1235 Corrosion Behavior of Ni-Alloy/CrN Layered Coatings
F. Wu, Y. Li, H. Huang, and J. Lee
- 1236 High Temperature Oxidation of TiAl Alloys Treated by Fluorine Resin
A. Gil, Z. Zurek, A. Stawiarski, and J. Dąbek

- 1237 The Wear and Corrosion Resistance of a Cr-C Deposited Steel Specimen with Cu Undercoat Observed with an Eco-Friendly Process
C. Chuang, Y. Lieu, and C. Huang
- 1238 An Eco-Friendly Electroplating Process to Obtain Decorative and Functional Cr Deposits on Magnesium-Lithium Alloy (LZ91)
C. Lin, Y. Yeh, and C. Huang
- 1239 Use of Corrosion Inhibitors in GMR Biosensor
Z. Liu, Y. Wang, P. Chinwangso, J. Litvinov, and D. Litvinov

D2 - Corrosion and Biofuels

Corrosion / Energy Technology

- 1240 Materials Compatibility in Biofuels
S. Papavinasam, J. Krausher, M. Paramesh, A. Anand, S. Mani, and S. Krishnamurthy
- 1241 High Temperature Corrosion of Fe-Cr Alloys: Effects of Water Vapor
N. Othman, J. Zhang, and D. Young
- 1242 Electrochemical Behavior of Metals Exposed to Alternative Fuels and Seawater
J. Lee, R. Ray, and B. Little
- 1243 Corrosion and Stress Corrosion Cracking of C-Steel in Ethanolic Environments
P. Singh, X. Lou, and L. Goodman
- 1244 Corrosion and Cracking of Carbon Steel in Fuel Grade Ethanol: Supporting Electrolyte and Susceptible Potential Regime
L. Cao, G. Frankel, and N. Sridhar
- 1245 Mechanistic Studies of Stress Corrosion Cracking of Carbon Steel in Alcoholic Solutions
A. Carcea and R. Newman
- 1246 Role of Oxygen in Localized Corrosion and Stress Corrosion Cracking of Carbon Steel in Fuel Grade Ethanol
F. Gui, N. Sridhar, and J. Beavers
- 1247 Electrochemical Testing and Monitoring Methods to Detect Corrosion Behavior of Carbon Steel in Biofuels
E. Trillo, J. Dante, F. Gui, and N. Sridhar
- 1248 Cathodic Activity of Carbon Steel in Simulated Fuel-Grade Ethanol and Its Impact on Hydrogen Embrittlement
X. Lou and P. Singh
- 1249 Corrosion of Stainless Steel in Amine Solutions for Carbon Dioxide Capture
O. Kongstein and B. Schmid
- 1250 Galvanic Corrosion Behavior between Duplex and Austenitic Stainless Steels
K. Cho, K. Kim, S. Ahn, J. Lee, J. Kim, and K. Kim
- 1251 SVET Study of the Electrochemical Behavior of Different Hot-Dip Zn-Based Coatings on Steel
J. Rodrigues and L. Dick

D3 - Corrosion Issues in Nuclear Waste Storage: A Symposium in Honor of the 65th Birthday of David Shoesmith

Corrosion / Sensor

- 1252 Research in the Yucca Mountain Project Contributed to the Understanding of Corrosion Processes in Engineering Alloys
R. Rebak
- 1253 Pitting and Cracking of Steel in Simulated High-Level Radioactive Waste
G. Frankel, X. Li, C. Brossia, C. Scott, F. Gui, J. Beavers, B. Wiersma, and M. Terry
- 1254 Measurement and Modeling of Pitting Corrosion of Stainless Steel for Radioactive Waste Containers during Storage
A. Davenport, M. Ghahari, T. Rayment, N. Laycock, D. Krouse, C. Padovani, R. Mokso, and M. Stapanoni
- 1255 Modeling and Measurement of Maximum Pit Size during Atmospheric Exposure of Stainless Steels
M. Shedd and R. Kelly
- 1256 In Situ Ellipsometric Study and Point Defect Modeling of Passivity on Iron in Borate Buffer Solutions
Z. Lu and D. Macdonald
- 1257 Gamma Radiation-Induced Carbon Steel Corrosion
K. Daub, X. Zhang, J. Noël, and C. Wren
- 1258 Reactive-Transport Modelling of Corrosion Processes in Nuclear Waste Systems
F. King and M. Kolar
- 1259 Stress Corrosion Cracking of Pure Copper under Possible Nuclear Fuel Waste Management Conditions
B. Ikeda, C. Litke, and G. Kwong
- 1260 Electrochemical Behavior of Cu in Bentonite Absorbing Aqueous Solutions
S. Fujimoto and H. Tsuchiya
- 1261 The Rate Controlling Reactions for Copper Corrosion in Anaerobic Aqueous Sulphide Solutions
J. Chen, Z. Qin, and D. Shoesmith
- 1262 The Effect of Thiosulfate on Stress-Induced Corrosion of Alloy 800 Using Scratching Test and SECM
R. Zhu, L. Yu, J. Luo, and Y. Lu
- 1263 High-Resolution Characterization of the Surface Properties of Tc-Alloy Waste Forms from First-Principles and Experiment
C. Taylor and D. Moore
- 1264 Electrochemical Characterization of Technetium Containing Waste Forms
E. Mausolf, F. Poineau, J. Droessler, K. Czerwinski, T. Hartmann, D. Kolman, and G. Jarvinen
- 1265 Interference of Adsorbed OH in the Oxidation of Dissolved Hydrogen at Pt Electrode in a High Temperature Lithium Borate Solution
J. Yeon, M. Yun, J. Hwang, S. Jung, Y. Jung, and K. Song
- 1266 The Role of Dissolved Hydrogen in the Corrosion/Dissolution of Spent Nuclear Fuel
M. Broczkowski, P. Keech, J. Noël, and D. Shoesmith

D4 - Corrosion Modelling

Corrosion

- 1267 Multicomponent Multidimensional Transport of Charge and Mass with Corresponding Electric Field
G. Kennell and R. Evitts
- 1268 Using the Right Side of Poisson's Equation to Save on Numerical Calculations in FEM Simulation of Cathodic Protection Systems
R. Montoya, J. Galván, and J. Genesca
- 1269 A Thermodynamic Study of the Effect of Small-Scale Electrolytes on Equilibrium Redox Potentials
E. McCafferty
- 1270 Modeling and Prediction of Carbon Dioxide Corrosion for Complex Flow Geometry
A. Demeter, H. Li, J. Deconinck, and S. Nestic
- 1271 The Effect of Dissolution of Lithium Manganese Oxide Particles on Lithium-Ion Battery Performance
J. Park, J. Seo, W. Lu, G. Plett, and A. Sastry
- 1272 Theoretical, Experimental and Computer Simulated Galvanic Current and Corrosion Damage of Mg Alloys
G. Song
- 1273 Integrated Effects of Grain Boundary Characteristics on the Behavior of Intergranular Corrosion in 5XXX-Series Alloys
L. Chen, X. Wang, R. Kelly, and D. Brown
- 1274 Distribution of the Retained Less-Noble Element in Dealloyed Materials
D. Artymowicz, Z. Coull, and R. Newman
- 1275 Continuum and Kinetic Monte Carlo Modeling Hydrogen Absorption in Aluminum during Alkaline Corrosion
G. Zhang, K. Ho, C. Wang, and K. Hebert
- 1276 Stochastic Modeling of Pitting-Related Accumulation Damage in Aluminum Alloys
N. Murer and R. Buchheit
- 1277 Insights on Chloride Ion Attack of Aluminum Oxide: An Experimental and Theoretical Investigation
W. O'Grady, D. Roeper, and P. Natishan
- 1278 Oxide Networks, Graph Theory, and the Passivity of Fe-Cr-Ni Ternary Alloys
E. McCafferty
- 1279 Corrosion Mechanism of Refractory Immersed in Molten Slag
H. Sunayama, Y. Hiramatsu, and M. Kawahara
- 1280 Hot Corrosion of Copper
V. Belousov
- 1281 Measurement Model Analysis of the Thermal Degradation of a Mg-Rich Primer on AA 2024-T3
K. Allahar, M. Orazem, G. Bierwagen, and D. Butt
- 1282 Negative Resistances and Inductances in Equivalent Circuits for Adsorption-Reaction Kinetics
S. Ramanathan
- 1283 Analysis of Copper Dissolution in Glutamic Acid and Hydrogen Peroxide Using EIS
S. Ramanathan and N. Selvam

D5 - High Resolution Characterization of Corrosion Processes 2

Corrosion

- 1284 Submicrometer Surface Reactivity Investigation by Scanning Kelvin Probe Force and Nanocapillary Methods
P. Schmutz, J. Lübber, and T. Suter
- 1285 Electrochemical Activation of Surface Deformed Layers on Aluminum Alloys and Pure Aluminum
H. McMurray, A. Holder, G. Williams, and G. Scamans
- 1286 On the Application of SKPFM for In Situ Study of Corrosion Phenomena
C. Senöz and M. Rohwerder
- 1287 Movement of Hydrogen on SCC of SUS310S Stainless Steel
H. Masuda
- 1288 Microelectrochemical Investigation of Hydrogen Absorption and Dissolution Behavior of MnS Inclusions in Carbon Steel
I. Muto, J. Shinozaki, T. Omura, M. Numata, and N. Hara
- 1289 Microelectrochemical Characterization of the Roles of Hydrogen, Stress and Their Synergism in Pipeline Stress Corrosion Cracking under a Near-Neutral pH Condition
G. Zhang, X. Tang, and F. Cheng
- 1290 Microscopic and Spectroscopic Studies of the Evolution of Crevice Corrosion Damage on Ni-Cr-Mo Alloys
P. Jakupi, D. Zagidulin, J. Noël, and D. Shoesmith
- 1291 Combining Raman Microprobe and XPS to Study High-Temperature Oxidation of Metals
C. Windisch, C. Henager, M. Engelhard, and W. Bennett
- 1292 Investigating the Critical Pitting Temperature and Oxide Film Formation in a Duplex Stainless Steel
S. Policastro, R. Auyeung, A. Pique, F. Martin, R. Rayne, and P. Natishan
- 1293 A Novel Cell to Study In Situ the Corrosion of Steels Exposed to Corrosive Environments at High Pressure and High Temperature
J. Tuggle, W. Kovacs, S. Waters, H. Tsaprailis, and L. Garfias-Mesias
- 1294 Dealloying Studies of Cu₃Pd Single Crystal Surfaces
S. Meimandi, P. Keil, G. Anka, D. Vogel, and F. Renner
- 1295 Synchrotron X-ray Studies of the Chemistry of Localized Corrosion Sites
A. Davenport, A. Dent, M. Monir, J. Hammons, M. Ghahari, M. Amri, P. Quinn, and T. Rayment
- 1296 Aluminum Passive Oxide Breakdown and Pit Initiation Explored Using In Situ and Ex Situ Electron Microscopy
K. Zavadil, P. Lu, J. Sullivan, and J. Huang
- 1297 Anodic Activation of Aluminum Containing Trace Elements Gallium and Tin
E. Senel and K. Nisancioglu
- 1298 Evaluation of the Local Chloride Concentration and the Local Mechanical Stresses in Intergranular Damages Grown on a 2024 Aluminum Alloy
C. Larignon, J. Alexis, E. Andrieu, C. Baret-Blanc, and G. Odemer
- 1299 The Effect of Fluoride Ions on the Behavior of Titanium and Its Alloys in Artificial Saliva
I. Milošev
- 1300 Local Electrochemical Impedance Spectroscopy Investigation of a Partially Blocked Electrode
J. Ferrari, H. Gomez de Melo, B. Tribollet, and V. Vivier

- 1301 In Situ Interface Imaging with a Shielded Probe in SG/TC Mode SECM
K. Fushimi, K. Matsushita, Y. Hasegawa, and H. Konno
- 1302 The Influence of Non-Stoichiometry on the Corrosion Kinetics of Uranium Dioxide
H. He, Z. Qin, and D. Shoesmith
- 1303 Corrosion Behaviors of Boiler Steel T91 Investigated by In Situ Electrochemical AFM in Aqueous Solution
J. Lee, Y. Liao, J. Huang, S. Chyou, and C. Yang
- 1304 In Situ Monitoring of the Microstructural Corrosion Mechanisms of Zinc-Magnesium-Aluminum Alloys Using Time Lapse Microscopy and ICP-MS Ionic Analysis
S. Mehraban and J. Sullivan
- 1305 Combinatorial Corrosion Studies of PVD Deposited, Thermally Interdiffused, Magnesium Coated Galvanized Steel
Z. Barrett, H. McMurray, and G. Williams
- 1306 Effect of Phase on the Electrochemical and Morphological Properties of Praseodymium-Based Coatings
B. Treu, W. Pinc, W. Fahrenholtz, M. O'Keefe, E. Morris, and R. Albers
- 1307 Physical, Chemical and Electrochemical Investigations of Trivalent Chrome Process (TCP) Coatings Applied to Aluminum Alloys
D. Woodbury, A. Howells, G. Swain, and G. Swain
- 1308 The Effect of Peroxide Stabilizers on the Corrosion Protection of Sprayed and Electrodeposited Cerium-Based Conversion Coatings on Al 2024-T3
E. Kulp, S. Maddela, W. Fahrenholtz, and M. O'Keefe
- 1309 The Chain Length Influence of Nonionic Co-Surfactants on Inhibition Effect of Cationic Surfactant on Steel Corrosion
D. Asefi, M. Arami, and N. Mahmoodi
- 1310 Electrochemical Effect of Gemini Surfactant and Co-Surfactants on Corrosion Inhibition of Steel in Acid Medium
D. Asefi, M. Arami, and N. Mahmoodi
- 1311 Effect of pH on the Corrosion Behavior of Reinforcing Steel in Simulated Concrete Pore Solutions: A Scanning Microreference Electrode Study
R. Du, H. Xu, W. Chen, and C. Lin
- 1312 Local Hydrogen Enrichment Induced by Corrosion in a 2024 Aluminum Alloy
C. Larignon, J. Alexis, E. Andrieu, C. Baret-Blanc, L. Lacroix, and G. Odemer
- 1313 Corrosion Performance of Composite Galvanic Coatings with Variable Concentration of Polymeric Nanoaggregates and/or Cr(III) Conversion Layers
D. Koleva, P. Taheri, N. Tsvetkova, N. Boshkov, K. van Breugel, H. de Wit, and A. Mol

D6 - Pits and Pores 4: New Materials and Applications - In Memory of Ulrich Gosele
Corrosion / Luminescence and Display Materials

- 1314 Remembering Ulrich Gösele
H. Föll
- 1315 Silicon Nanowire Arrays Combining Nanosphere Lithography and Metal-Assisted Etching
X. Wang, P. Pittet, and C. Lévy-Clément
- 1316 Towards Self-Ordered Silica Nanotubes by Electrochemical Anodization of Si (100)
M. Yang, N. K Shrestha, and P. Schmuki

- 1317 Rational Design of Etchants for Electroless Porous Silicon Formation
K. Kolasinski
- 1318 Formation of Macro-Meso-Microporous Multilayer Structure via Strong Oxidizers
D. Ge, J. Jiao, S. Zhang, P. Chen, and Y. Wang
- 1319 Fabrication of Micro/Nano-Structured Semiconductors by Anodic Etching through Colloidal Crystal Templating
S. Ono, S. Kotaka, I. Jun, and H. Asoh
- 1320 Nanoporous Anti-Reflective Black Silicon Surface by a One-Step Liquid Etch: Optics and Efficient Solar Cells
H. Branz, P. Stradins, M. Page, J. Oh, V. Yost, K. Jones, Y. Yan, and H. Yuan
- 1321 Ellipsometry and XPS Comparative Studies of Oxidation Effects on Graded Porous Silicon Antireflection Coatings
J. Selj, A. Thøgersen, S. Foss, and E. Stensrud Marstein
- 1322 Localized Breakdown of the Natural Oxide Film on Aluminum by Chloride Ions
E. McCafferty and P. Natishan
- 1323 Evaluation of Oxide Growth and Relation Between Electrolytic Parameters during Porous Anodizing of Aluminum in an Extensive Experimental Range
T. Aerts, E. Tourwé, R. Pintelon, I. De Graeve, and H. Terryn
- 1324 Area Selective Formation of Porous Type Aluminum Anodic Oxide Film by Sf-MDC
M. Sakairi, T. Murata, Y. Goto, K. Fushimi, and T. Kikuchi
- 1325 Nanoimprinting Process Using Highly Ordered Anodic Porous Alumina
T. Yanagishita, K. Nishio, and H. Masuda
- 1326 Anodic Synthesis of Highly Ordered TiO₂ Nanotube Arrays Using Ionic Liquids
H. Li, H. Xu, H. Luo, S. Dai, H. Meyer III, and J. Qu
- 1327 A Comparison of TiO₂ Nanotubes and Anodic TiO₂ Mesosponge in Advanced Functional Applications
D. Kim, P. Roy, K. Lee, and P. Schmuki
- 1328 Transparent TiO₂ Nanotube-Based Dye-Sensitized Solar Cells
J. Kim, K. Zhu, A. Halverson, N. Neale, and A. Frank
- 1329 Origin of Interface Instability during the Initial Growth of Porous Anodic Oxide Films
K. Hebert and W. Hong
- 1330 The Effect of Structural Ordering on Active, Passive and Localized Corrosion in Selected Model Alloy Systems
D. Horton and J. Scully
- 1331 Electrochemical Nanostructuring of Mg Surfaces
S. Virtanen
- 1332 Electrodeposition of Copolymer Electrolyte in Titania Nanotubes for Li-Ion Microbatteries
N. Kyeremateng, P. Knauth, and T. Djenizian
- 1333 Electrodeposition of Poly(para-phenylene)vinylene Films Inside Porous Si and Related Photonic Properties
B. Gelloz, R. Mentek, T. Djenizian, F. Dumur, L. Jin, and N. Koshida
- 1334 Pt Filling within Mesoporous Silicon by Electrodeposition
K. Fukami, D. Shiojima, T. Sakka, and Y. Ogata
- 1335 A Simple Single-Source Chemical Bath Technique for the Passivation of Porous Silicon by LaF₃
A. Ismail and A. Mortuza

- 1336 A Porous Silicon/Iron Oxide Nanocomposite with Superparamagnetic and Ferromagnetic Behavior
P. Granitzer, K. Rumpf, M. Venkatesan, L. Cabrera, A. Roca, P. Morales, P. Poelt, and M. Albu
- 1337 Electrodeposited Metallic Nanowires as a Scanning Probe Tip
M. Motoyama and F. Prinz
- 1338 Macropores in p-Si: Morphology and Effect of a Magnetic Field during Pore Formation
F. Ozanam, J. Chazalviel, E. Media, and R. Outemzabet
- 1339 Nanopore Morphology during Current Oscillations at the Si/Electrolyte Contact
J. Grzanna, T. Notz, T. Stempel, and H. Lewerenz
- 1340 Porous Silicon as a Nanostructured Template for Enhanced Immobilization and Crystallization of Inorganic and Biomaterials
S. Stolyarova and Y. Nemirovsky
- 1341 Optical Properties of Ge Dots Self-Assembled on Porous TiO₂ Templates
D. Lockwood, N. Rowell, I. Berbezier, G. Amiard, A. Ronda, and D. Grosso
- 1342 Nanostructure Directed Gas-Surface Physisorption Based on Selective Modification of Nanopore Coated Micropores
J. Gole and S. Ozdemir
- 1343 Photocatalytic Performance of Silicon Nanowire Arrays
N. Megouda, S. Szunerits, Y. Coffinier, T. Hadjersi, and R. Boukherroub
- 1344 Sensing and Manipulating Molecules with Optical Nanostructures
M. Sailor
- 1345 Novel Catalysts for Complete Oxidation of Volatile Organic Compounds and Carbon Monoxide at Moderate Temperatures
N. Imanaka
- 1346 Production and Investigation of Porous Si-Ge Structures for Thermoelectric Application
A. Cojocaru, J. Carstensen, J. de Boor, D. Kim, V. Schmidt, and H. Föll
- 1347 Nanotubes Consisting of Ni-Particles Covering the Walls of Porous Silicon
K. Rumpf, P. Granitzer, P. Poelt, and M. Albu
- 1348 Encapsulation of Organic Molecules and Magnetic Nanoparticles in Hollow Polymeric Capsules
K. Kijewska, D. Kubacka, M. Mazur, and P. Krysiński
- 1349 Nanoparticle Concentration Measurement Using Quartz Crystal Microbalance
V. Reipa, G. Purdum, and J. Choi
- 1350 Peculiar Properties of Dealloyed Materials with Extremely Fine Porosity
S. Parida, M. Bryk, S. Sun, K. Sieradzki, and R. Newman
- 1351 Formation of Self-Organized Pores on Fe-Cr Alloys
H. Tsuchiya, T. Suzumura, and S. Fujimoto
- 1352 Analyzing the Decay of Metastable Pitting Transients
R. Lillard, G. Vasquez, and D. Bahr
- 1353 Effects of Minor Alloying Elements on the Localized Corrosion Resistance and Dealloying Induced Porosity in Al-Cu-Mg Alloys
T. Aburada, J. Fitz-Gerald, and J. Scully
- 1354 Preparation and Photoluminescence Properties of SiO₂-Passivated Nanoporous Silicon Nanowires
C. Jin, S. Park, and C. Lee

- 1355 Porous Silicon in Mass Spectrometry: Rapid Roadside Drug Detection in Oral Fluids
T. Guinan, R. Lowe, H. Kobus, and N. Voelcker
- 1356 The Photoelectrical Properties of a-Si:H Thin Films Deposited on Porous Silicon by DC-Magnetron Sputtering
F. Hamadache, L. Zougar, K. Mokeddem, A. Brighet, and B. Gelloz
- 1357 Capacitance-Voltage Hysteresis Behavior of Organic Memory Device Monolayered Biomolecule-Capped Au Nanoparticle
S. Jung, H. Kim, B. Kim, T. Yoon, Y. Kim, and H. Lee
- 1358 Pd Assisted HF Etching of Si: Electrochemical Measurement
M. Tashiro, Y. Morii, N. Fukumuro, S. Yae, and H. Matsuda
- 1359 Nano-Branched Gold Deposits Prepared by Electrochemical Deposition Using Porous Silicon
R. Miyagawa, K. Fukami, M. Chourou, T. Sakka, and Y. Ogata
- 1360 Gold Electrodeposition into Mesoporous Silicon: The Effect of Solution Composition
M. Chourou, K. Fukami, R. Miyagawa, T. Sakka, and Y. Ogata
- 1361 Thin Porous Silicon Films Displaying a Near-Surface Dip in Porosity
J. Selj, A. Thøgersen, S. Foss, and E. Stensrud Marstein
- 1362 Modification of Luminescent Nanostructured Silicon in Water Solutions
V. Shevchenko, V. Makara, and O. Dacenko
- 1363 Self-Assembled Formation of Porous $\text{In}_{0.52}\text{Al}_{0.48}\text{As}$ by Electrochemical Anodization
Y. Jiang and F. Liu
- 1364 A Study on Mass Spectrometry of Alkylated [60] Fullerenes Using the "In-beam" Electron Impact Technique
H. Al-Matar and S. Badawy
- 1365 Self-Assembled Formation of Porous InAlAs by Electrochemical Anodization
Y. Jiang and F. Liu
- 1366 A Correlation between the Kinetics and Thermodynamics for the Photoelectrochemical Etching of n-Si in 2MHF-Ethanol Solutions
W. Jehng and J. Lin
- 1367 Corrosion Inhibition of 304 Stainless Steel, Copper and Nickel Metals Using Mesoporous Silica (MCM- 41) and 2, 5-Distyrylpyrazine Photopolymer
M. Zakaria, M. El-Morsi, and E. Ebied

E1 - Solid State Topics General Session

Dielectric Science and Technology / Electronics and Photonics

- 1368 Comparison of Diffusion Mechanisms in Si Bulk, Nanomembranes, and Nanowires
C. Ndoye, T. Liu, and M. Orlovski
- 1369 Suppression of Lateral Encroachment of Ni Silicide into Si Nanowires Using Nitrogen Incorporation
N. Shigemori, S. Satou, K. Kakushima, P. Ahmet, K. Tsutsui, A. Nishiyama, N. Sugii, K. Natori, T. Hattori, and H. Iwai
- 1370 Electrodeposition and Thermoelectric Properties of Sb Doped BiTe Nanowires
R. Mannam and D. Davis
- 1371 Hydrogen Doped ZnO:Al Thin Films by Reactive Sputtering
K. Sundaram, B. Shantheyanda, V. Todi, A. Vijayakumar, and I. Oladeji

- 1372 Influence of Alkaline Chemicals on Electrical and Optical Characteristics of Ga-Doped ZnO Transparent Thin Films
N. Yamamoto, S. Osone, H. Makino, T. Yamada, and T. Yamamoto
- 1373 Optical Properties for Antireflection Coating of TiAlN Thin Films for Semiconductor Photo Detectors
A. Razeghi and M. Hantehzadeh
- 1374 Structural, Electrical, and Thermoelectric Properties of CrSi₂/SiO₂/Si Multilayers
M. Abd El Qader, R. Kumar, and R. Venkat
- 1375 Electrochemical Deposition of Cadmium and Zinc Selenide Thin Film Semiconductors
R. Kowalik, H. Kazimierzczak, and P. Zabinski
- 1376 Fabrication of Semiconductor Nanocrystal-Based White Light-Emitting Diodes
Q. Dai, M. Hu, T. Zhu, K. Yu, C. Duty, I. Ivanov, and C. Bennett
- 1377 Observation of Tunneling FET Operation in MOSFET with NiSi/Si Schottky Source/Channel Interface
Y. Wu, N. Shigemori, S. Sato, K. Kakushima, P. Ahmet, K. Tsutsui, A. Nishiyama, N. Sugii, K. Natori, T. Hattori, and H. Iwai
- 1378 Oxygen Injection for Resistance Memory Application
C. Hsieh, J. Jao, W. Chen, G. Chuang, M. Chen, C. Wu, and N. Shih
- 1379 Trapped Charge Distribution in Nitride-Based Charge Trapping Memory Devices
J. Lee and H. Jung
- 1380 Misalignment Study From Etch-Induced Silicon Damage in STI Process
J. Lee, M. Kim, K. Oh, M. Kang, S. Nam, and Y. Roh
- 1381 The Influence of Anode Parameters on Solid Oxide Fuel Cell Performances
J. Milewski and A. Miller
- 1382 Co and Pr Diffusion in La_{1.9}Sr_{0.1}NiO_{4+δ} and La₂Ni_{0.8}Cu_{0.2}O_{4+δ} Studied by SIMS
N. Čebašek, R. Haugsrud, Z. Li, and T. Norby
- 1383 Redox Stability of Sm_{0.95}Ce_{0.05}Fe_{1-x}Cr_xO_{3-δ} Perovskite Materials
S. Bukhari and J. Giorgi
- 1384 Proposed Model of Ionic Conductivity in Solid Oxide Lattices in the Presence of Point and Line Defects
S. Tosto
- 1385 Investigation of Secondary Reactions on Carbon-Based Fuel Cells by Transient Techniques
A. Chien and S. Chuang
- 1386 Influence of Sintering Temperature on Ce_{0.8}Sm_{0.2}O_{2-δ} for Intermediate Temperature Solid Oxide Fuel Cells
K. Park, H. Hwang, and J. Choi
- 1387 Densification of CVD-SiO₂ Film Using Radical Oxidation
K. Kawase, A. Teramoto, H. Umeda, T. Suwa, Y. Uehara, T. Hattori, and T. Ohmi
- 1388 Fabrication and Characterization of Short Channel OTFT Using Ink Jet Combined Imprint Process
K. Kim, J. Han, N. Kwon, and I. Chung
- 1389 Synthesis and Photo Catalytic Studies of Nitrogen-Doped ZnO Particles
J. Jones and P. Nandakumar
- 1390 Applications of Nanocomposite Materials for Improving the Performance of Proton Conducting Electrolytes of Intermediate Temperature SOFCs
S. Min, J. Rhee, Y. Jeon, S. Park, and Y. Shul

- 1391 Atmosphere, Temperature and Pressure Dependent Segregation of Bulk Impurities in yttria-Stabilized Zirconia
T. Andersen, K. Jensen, M. Mogensen, and I. Chorkendorff
- 1392 Influence of Ni on the Microstructure and Thermoelectric Properties of Polycrystalline $\text{Na}(\text{Co}_{1-x}\text{Ni}_x)_2\text{O}_4$ ($0 \leq x \leq 0.15$) Ceramics
K. Park and J. Choi
- 1393 Effect of Dy on the Microstructure and Electrical Conductivity of Polycrystalline $\text{Ce}_{0.8}\text{Gd}_{0.2-x}\text{Dy}_x\text{O}_{2-\delta}$ ($0 \leq x \leq 0.2$) Ceramics
K. Park, H. Hwang, and Y. Choi
- 1394 Improvements of Resistive Switching Properties of Pt/ZrO₂/Pt Device Using Pyramid-Like Metal Array
C. Huang, I. Yao, M. Lin, P. Lin, and T. Tseng
- 1395 Study on Improvement of 6,13-bis(triisopropylsilylethynyl) (TIPS) Pentacene Crystalline Morphology for Organic Thin Film Transistor
J. Han, K. Kim, I. Bae, and I. Chung
- 1396 New Implantation Method to Incorporate Deuterium into the Gate Oxide Film in the Metal-Oxide-Semiconductor (MOS) Structure
Y. Seo, S. Do, J. Kim, C. Bu, Y. Lee, and J. Lee
- 1397 Irradiation Effects of Electron-Cyclotron-Resonance Argon Plasma on Various Conducting Oxides
T. Miyata, J. Nomoto, Y. Nishi, and T. Minami
- 1398 Composition Control of Evaporated BaTiO₃ Films by Optical Emission Spectroscopy
S. Park
- 1399 High T_g and Low Dielectric Constant Poly(arylene ether)s
W. Liu, W. Huang, C. Lee, and W. Sie

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- 1400 Thermally Stable Nanoporous Gold-Alumina Core-Shell with Tunable Optical Transmission
L. Qian and B. Das
- 1401 ALD on High Mobility Channels: Engineering the Proper Gate Stack Passivation
S. Sioncke, H. Lin, G. Brammertz, A. Delabie, T. Conard, M. Caymax, M. Meuris, H. Struyf, S. De Gendt, M. Heyns, C. Fleischmann, K. Temst, A. Vantomme, M. Müller, M. Kolbe, and B. Beckhoff
- 1402 Atomic Layer Deposition for Nanoelectrode Devices
B. Willis
- 1403 Electrophoretic Light Scattering for Surface Zeta Potential Measurement of ALD Metal Oxide Films
D. Gu, S. Yalcin, H. Baumgart, S. Qian, O. Baysal, and A. Beskok
- 1404 Atomic Layer Deposition for Epitaxial Oxides on Silicon
B. Willis
- 1405 ALD High-k for All-Oxide Electronics
P. Ye
- 1406 The Influence of Ions and Photons during Plasma-Assisted ALD of Metal Oxides
H. Profijt, P. Kudlacek, M. van de Sanden, and W. Kessels

- 1407 Designing and Fabricating Coatings with Targeted Tunable Electrical Properties via ALD: $\text{Al}_2\text{O}_3/\text{ZnO}$ and $\text{Nb}_2\text{O}_5/\text{Ta}_2\text{O}_5$
A. Brodie, Y. Gotkis, P. Petric, C. Bevis, R. Bhatia, G. Sundaram, and E. Deguns
- 1408 All-Solid-State Batteries: A Challenging Route towards 3D Integration
M. Donders, L. Baggetto, J. Oudenhoven, H. Knoops, M. van de Sanden, W. Kessels, and P. Notten
- 1409 Atomic Layer Deposition of LiOH and Li_2CO_3 Using Lithium t-Butoxide as the Lithium Source
A. Cavanagh, Y. Lee, B. Yoon, and S. George
- 1410 Microstructural Observation of an Efficient Si Light-Emitting Diode Based on an n-ZnO/ SiO_2 -Si Nanocrystals- SiO_2 /p-Si Heterostructure
H. Tsai, W. Li, J. Liao, E. Sun, M. Chen, and J. Yang
- 1411 Reactions during Atomic Layer Deposition on Polymer Films and Fibers
G. Parsons, J. Spagnola, B. Gong, J. Jur, and G. Hyde
- 1412 The Surface Chemistry of Atomic Layer Deposition (ALD) Processes for Metal Nitride Film Growth
F. Zaera
- 1413 Structural and Electrical Analysis of Thin Interface Control Layer Effects of MgO or Al_2O_3 Deposited by Atomic Layer Deposition, Incorporated at the High-k/IIIV Interface of $\text{MO}_2/\text{In}_x\text{Ga}_{1-x}\text{As}$ ($M = \text{Hf|Zr}$, $x = 0|0.53$) Gate in Metal-Oxide-Semiconductor Capacitors
A. O'Mahony, S. Monaghan, R. Chiodo, I. Povey, A. Blake, K. Cherkaoui, R. Nagle, E. O'Connor, R. Long, V. Djara, D. O'Connell, F. Crupi, P. Hurley, and M. Pemble
- 1414 Capacitors with an Equivalent Oxide Thickness of < 0.5 nm for Nanoelectronic Semiconductor Memory
S. Kim, S. Lee, J. Han, B. Lee, S. Han, and C. Hwang
- 1415 Enhanced Voltage Linearity of HfO_2 Metal-Insulator-Metal Capacitors by H_2O Prepulping Treatment on Bottom Electrode
C. Lin, Y. Chen, C. Lee, H. Chang, W. Chang, and C. Liu
- 1416 New Mechanisms for Ozone-Based ALD Growth of High-k Dielectrics via Nitrogen-Oxygen Species
S. Jung, P. Raisanen, M. Givens, E. Shero, A. Delabie, J. Swerts, S. Van Elshocht, and J. Maes
- 1417 Plasma Enhanced Atomic Layer Deposition of TaN Thin Films
P. Ma and J. Lu
- 1418 Plasma-Enabled ALD of Niobium Nitride with Organometallic Nb Precursors
E. Deguns, M. Sowa, M. Dalberth, R. Bhatia, R. Kanjolia, D. Moser, G. Sundaram, and J. Becker
- 1419 ALD TaN from PDMAT and a New Monoguanidinate Tantalum Molecule Precursor in TSV Architectures
V. Brizé, R. Boichot, S. Daniele, B. Doisneau, A. Mantoux, and E. Blanquet
- 1420 Interactions of Metal-Organic PEALD TaN with Ultra-Low k Dielectric Materials
O. van der Straten, H. Shobha, J. Demarest, and J. Maniscalco
- 1421 Ultra-Conformal CVD at Low Temperatures: The Role of Site Blocking and the Use of Growth Inhibitors
J. Abelson
- 1422 Developments of ALD Processes: Experiments and Thermodynamic Evaluations
E. Blanquet, V. Brizé, R. Boichot, A. Mantoux, I. Nuta, P. Violet, and S. Daniele

- 1423 Growth Rate Control in ALD by Surface Functionalization: Alkyl Alcohols on Metal Oxides
A. Yanguas-Gil and J. Elam
- 1424 Chemisorption Reaction Mechanisms for Atomic Layer Deposition of High-k Oxides on High Mobility Channels
A. Delabie, S. Sioncke, S. Van Elshocht, M. Caymax, G. Pourtois, and K. Pierloot
- 1425 Investigation of Volmer-Weber Growth during the Nucleation Phase of ALD Platinum Thin Films and Template Based Platinum Nanotubes
P. Shrestha, D. Gu, N. Tran, K. Tapily, H. Baumgart, and G. Namkoong
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M. Polignano, D. Codegoni, G. Borionetti, F. Bonoli, J. Brivio, S. Greco, A. Marino, P. Monge, I. Patoprsta, V. Privitera, and C. Riva
- 1567 A DLTS Study of SiO₂ and SiO₂/SiN_x Bi-Layer Surface Passivation of Silicon
E. Simoen, C. Gong, N. Posthuma, E. Van Kerschaver, J. Poortmans, and R. Mertens
- 1568 Modeling Hydrogen Diffusion and Segregation in Amorphous Silicon
B. Johnson, J. McCallum, M. Mastromatteo, E. Napolitani, D. De Salvador, and A. Carnera
- 1569 Recent Insights in the Diffusion of B in Silicon and Germanium
S. Mirabella, D. De Salvador, E. Bruno, E. Napolitani, G. Scapellato, M. Mastromatteo, G. Impellizzeri, G. Bisognin, A. Terrasi, A. Carnera, and F. Priolo
- 1570 Single Dopant Implantation into a Nanoscale MOSFET Devices
B. Johnson, A. Alves, J. van Donkelaar, S. Thompson, C. Yang, D. Jamieson, A. Verduijn, J. Mol, G. Tettamanzi, S. Rogge, R. Wacquez, M. Vinet, and A. Dzurak

- 1571 Combined IV and CV Analysis of Laser Annealed Carbon and Boron Implanted SiGe Epitaxial Layers
D. Kobayashi, M. Bargallo-Gonzalez, E. Rosseel, A. Hikavy, K. Hirose, E. Simoen, and C. Claeys
- 1572 Nano-Beam Diffraction: Crystal Structure and Strain Analysis at the Nanoscale
P. Favia, M. Popovici, G. Eneman, G. Wang, M. Bargallo-Gonzalez, E. Simoen, N. Menou, and H. Bender
- 1573 Impact of Stress and Defects on Advanced Junction Leakage
V. Moroz and M. Choi
- 1574 Recent Insights into Solid Phase Epitaxy of Silicon and Germanium
B. Johnson, N. Stavrias, S. Kandasamy, A. Holland, and J. McCallum

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- 1575 Nanoelectronic Devices from Nanowire Heterostructures
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- 1576 Nanoelectronics and Microelectronics Based on Carbon Nanotubes
C. Zhou
- 1577 Colorimetric DNA Detection via Nicking Endonuclease-Assisted Nanoparticle Amplification
X. Liu
- 1578 Formation of InAs Nanowire by Solid Source Reaction: A Promising Material as the High Mobility Channel for Nanoelectronics
Y. Chueh, A. Ford, J. Ho, and A. Javey
- 1579 In Situ Growth of Carbon for Nanoelectronics: From Nanotubes to Graphene
L. Rispal, P. Ginsel, and U. Schwalke
- 1580 Rational Design of Freestanding Photoelectric Nanodevices as Highly Efficient Photocatalysts
X. Duan
- 1581 Nanostructured Materials as Antireflection Coatings and Their Optoelectronic Applications
J. He
- 1582 Self-Assembly of Magnetically Responsive Photonic Structures
Y. Yin
- 1583 Electrochemically Tunable Photonic Metamaterial
L. Shao, M. Ruther, S. Linden, J. Weissmüller, and M. Wegener
- 1584 Metal Oxide Nanowire Arrays for Photoelectrochemical Hydrogen Generation
G. Wang, J. Hensel, J. Zhang, and Y. Li
- 1585 Scanning Photocurrent Microscopy of Carbon Nanotube Devices in a Liquid Environment
Y. Ahn, J. Park, J. Park, and S. Lee
- 1586 Growth of Nanowhiskers of Al, Ti, Cr, Mn, Fe, Co, Ni, Zn, Cu, Ag and Au by High-Temperature Glancing Angle Deposition
M. Suzuki, K. Hamachi, K. Nagai, R. Kita, K. Nakajima, and K. Kimura
- 1587 3D Ordered Assemblies of Micro/Nanowires Using Fibrous Building Blocks
M. Su and Y. Hong
- 1588 Metal/Polymer Wire Growth Studied by X-ray Imaging
J. Kim, S. Seol, and J. Je

- 1589 Crystallization-Induced Optical Properties from Highly Conjugated Molecules
C. Park and H. Choi
- 1590 Full-Color Light-Emitting Diodes Based on Colloidal Quantum Dots
C. Lee, W. Bae, J. Kwak, J. Lim, D. Lee, M. Nam, K. Char, and S. Lee
- 1591 In Situ TEM Investigation of Silicide/Si/Silicide Heterostructure Nanowires
W. Wu, K. Lu, L. Chen, and K. Tu
- 1592 The Application of Atomic Layer Deposition for Low Dimensional Nanomaterial Synthesis
H. Kim
- 1593 Capacitance and Interface State Density of HfO₂/Nanowire Capacitor Arrays
Q. Li, X. Zhu, D. Gu, H. Baumgart, J. Suehle, and C. Richter
- 1594 SU-8 Nanopillars and Hierarchically Branched Nanowires Fabricated Using Anodic Aluminum Oxide Templates
J. Fang, Y. Song, and Z. Chen
- 1595 pH Value and Divalent Cation Controlled Surface-Enhanced Raman Scattering
M. Li and N. Wu
- 1596 Structural Aspects of Si and Ge Nanowires Embedded with Au on Various Substrates
D. Kwak, D. Lee, D. Kim, W. Yang, W. Kim, S. Heo, K. Park, H. Kwon, and H. Cho
- 1597 Study of the Relationship between Shape and Spectroscopic Properties of PbSe Quantum-Rods and Crosses
E. Bovero, J. Young, S. Hughes, and F. van Veggel
- 1598 Effect of the Deposition Conditions on the Optical Properties of Samarium and Samarium-Cobalt Doped Zinc Oxide Nanowires
E. Matei, M. Enculescu, N. Preda, M. Sima, M. Toimil Nolaes, J. Ansermet, and I. Enculescu
- 1599 Homo- and Hetero- Junction Semiconductor Nanowire Photodiodes
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- 1600 Vertically and Laterally Self-Aligned Double Layers of Nanocrystals in Nanopatterned Dielectric Layer for Nanocrystal Floating Gate Memory
Q. Hu, T. Eom, S. Kim, H. Kim, H. Lee, Y. Kim, D. Ryu, K. Kim, and T. Yoon
- 1601 Carrier Lifetime, Leakage, and Retention Time in Memories
V. Koldyaev
- 1602 Electrical Properties of GaN/InGaN Multiple Quantum Wells Single Nanorod Light-Emitting Diode
Y. Lee, C. Chen, and C. Lee
- 1603 Vapor Phase Growth of Ge Nanowhiskers Induced by Glancing Angle Deposition at High Temperature
H. Hara, M. Suzuki, K. Hamachi, K. Nakajima, and K. Kimura
- 1604 A Numerical Approach to Transient Currents in a Quantum Dot Connected to a Single Electrode
K. Sasaoka, T. Yamamoto, and S. Watanabe
- 1605 Controlled Growth of Disordered Si Nanowire Arrays at Room Temperature for Self-Cleaning and Antireflection Applications
H. Chang, Y. Dai, K. Lai, C. Lin, and J. He

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Energy Technology / Industrial Electrochemistry and Electrochemical Engineering / Electrodeposition / Dielectric Science and Technology

- 1606 Reflectometry: A New Technique to Determine Grain Orientations in Multicrystalline Silicon
Y. Wang, J. Murphy, and P. Wilshaw
- 1607 Crack Propagation in PV Silicon
P. Kulshreshtha, K. Youssef, and G. Rozgonyi
- 1608 Mono-Crystalline Silicon Solar Cell Optimization and Modeling
J. Huang and V. Moroz
- 1609 Fixed Charge Control in the Passivation Films Using Binary Oxide Dielectrics for Crystalline Silicon Solar Cells
T. Tachibana, T. Sameshima, Y. Iwashita, Y. Kiyota, T. Chikyow, H. Yoshida, K. Arafune, S. Satoh, and A. Ogura
- 1610 The Effect of Oxygen and Carbon on the Structural and Electrical Properties of mc-Si
C. Radue, Y. Yoon, and G. Rozgonyi
- 1611 (Invited) Epitaxial Film Crystal Silicon Photovoltaics on Inexpensive Substrates: Progress and Challenges
H. Branz, D. Young, P. Stradins, I. Martin, K. Alberi, M. Romero, and C. Teplin
- 1612 Electrochemical Etching of Zinc Oxide for Silicon Thin Film Solar Cell Applications
S. Pust, J. Worbs, J. Hüpkes, S. Klemm, and K. Mayrhofer
- 1613 Recovery of Light Induced Degradation of Micromorph Solar Cells by Reverse Bias
H. Sun, W. Chen, T. Cheng, Y. Yang, and C. Liu
- 1614 Light Trapping in Thin-Film Silicon Solar Cells for Superstrate and Substrate Configurations
D. Madzharov, R. Dewan, and D. Knipp
- 1615 Effects of Microwave Power on Thermal Annealing Behaviors of Hydrogenated Amorphous Silicon
P. Wu, C. Wu, C. Hsieh, I. Chen, C. Lien, Y. Chu, J. Chang, T. Li, and C. Su
- 1616 Electrodeposition of Low-Resistivity Y-Doped ZnO and Its Thermal Stability as a TCO Layer
X. Han and M. Tao
- 1617 A Conductive Antireflection Coating Using Porous ITO on Sputtered ITO Double Layers for Silicon-Based Solar Cells
A. Chu, W. Tien, J. Lu, W. Huang, and C. Lee
- 1618 Light Trapping of Zinc Oxide Nano Particle Films
M. Marinkovic, S. Arabi, A. Raykov, S. Phadke, R. Noriega, A. Salleo, and D. Knipp
- 1619 Enhancement of Light Absorption in Organic Solar Cells Using Porous ITO/ITO Electrode
A. Chu, J. Lu, W. Tien, Y. Chen, and M. Chang
- 1620 Porous Germanium Layers by Electrochemical Etching for Layer Transfer Processes of High-Efficiency Multi-Junction Solar Cells
E. Garralaga Rojas, J. Hensen, J. Carstensen, H. Föll, and R. Brendel
- 1621 The Effect of the Pattern of Circle-Grid Electrode on Concentrated GaAs Solar Cells Efficiency
C. Chung, H. Yu, L. Hsu, C. Kuo, N. Quan, Y. Chiu, and E. Chang
- 1622 Metrology for Process Solutions Used in Photovoltaic Industry
E. Shalyt, G. Liang, J. Tyutina, M. Pavlov, N. Weeks, C. Bai, and P. Bratin
- 1623 Syntheses of Fluorene/Carbazole-Thienothiadiazaole Copolymers for Organic Photovoltaics
D. Vyprachticky, I. Kmimek, P. Pavlačková, and V. Cimrova

- 1624 Indium Tin Oxide-Carbon Nanotubes Nano Composite Electrodes for Dye Sensitized Solar Cell Applications
J. Park, S. Pammi, H. Jung, and S. Yoon
- 1625 Low-Band Gap Donor-Acceptor Copolymers Containing Thienothiadiazole Units for Photovoltaics
V. Cimrova, I. Kmínek, P. Pavlačková, and D. Vyprachticky
- 1626 Corrosion Resistance of Metallic Substrates for Fabrication of Dye-sensitized Solar Cells
G. Reynolds, T. Watson, G. Williams, and D. Worsley
- 1627 Integration of Polymer Electrolytes in Inorganic Nanostructures for Photovoltaic Applications
S. Nejati and K. Lau
- 1628 Peptide Nucleic Acids in Dye-Sensitized Solar Cells: Functional Component and a Means of Immobilizing Silver Nanoparticles
N. Loew, S. Ikenouchi, and M. Ihara
- 1629 Ultrafast TiO₂ Sintering of Metal Mounted Dye Sensitized Solar Cells
T. Watson, I. Mabbett, and D. Worsley
- 1630 Degradation Characteristics of DSSCs Using EIS Equivalent Circuit Model and Theoretical Modeling
S. Ha, M. Ramanathan, V. Ramani, and J. Prakash
- 1631 Optimization of TiO₂ DSC Anode via P-doping and Composites with Electrospun Fibers
J. Prochazka, M. Zikalova, L. Kavan, and M. Graetzel
- 1632 Branched TiO₂ Nanorod Arrays Coated by TiO₂ Nanosheets for Dye Sensitized Solar Cells
W. Guo, D. Zheng, and C. Lin
- 1633 Anatase Nanowires: Application to Functional Light Scattering Layers in Dye-Sensitized Solar Cells
H. Jung and J. Lee
- 1634 Earth Abundant Chalcogenide Materials for Thin Film PV
A. Wangperawong, J. King, S. Herron, B. Tran, K. Pangan-Okimoto, and S. Bent
- 1635 Energy and Time Efficient Synthesis of Bismuth Vanadate for Solar Photovoltaic and Photocatalytic Applications
K. Rajeshwar, N. de Tacconi, W. Chanmanee, L. Dall'Antonia, and H. Timmaji
- 1636 Si:O Alloys for Photovoltaics: Optical and Electrical Properties from Quantum Dots to Thin Films
S. Mirabella, G. Di Martino, I. Crupi, S. Gibilisco, M. Miritello, R. Lo Savio, F. Simone, A. Terrasi, and F. Priolo
- 1637 STEP (Solar Thermal Electrochemical Photo) Generation of Energetic Molecules: A Synergy of Solar Photovoltaics and Solar Thermal to Form a New, Higher Efficiency Solar Energy Process
S. Licht
- 1638 Electrodeposition of Indium on Copper for CIS/CIGS Solar Cell Applications
Q. Huang, K. Reuter, S. Ahmed, L. Romankiw, R. Vaidyanathan, H. Deligianni, M. Mason, D. Nielsen, S. Jaime, P. Grand, V. Charrier, and P. de Gasquet
- 1639 ZnO Buffer Layer Deposition for Extremely Thin Absorber Solar Cells
S. Sanchez, R. Salazar, C. Lévy-Clément, and V. Ivanova
- 1640 Thermal Stability of Deep Level Defects in Proton Implanted CIGS Solar Cells
D. Kim, M. Seol, D. Kwak, D. Lee, J. Jeong, and H. Cho
- 1641 Photoluminescence Characterization and Passivation of CIGS Absorber
T. Cheng, W. Hsu, C. Huang, J. Lu, J. Chen, and C. Liu

- 1642 Study of Ga Thin Film Alloying during Self-Annealing
S. Ahmed, H. Deligianni, Q. Huang, K. Reuter, L. Romankiw, S. Jaime, and P. Grand
- 1643 Synthesis and Characterizations of Nanocrystalline CIGS Chalcopyrite Powders by Ambient Atmosphere Non Vacuum Process
J. Suh, K. Song, C. Ham, J. Cho, and E. Bae
- 1644 CNTs Electric Field Enhancement of CIGS Solar Cells
W. Lee and S. Han
- 1645 The Study of Mechanisms of Formation of Nanostructured Silicon and Its Properties on Textured Substrates Intended for Solar Cells
T. Bilyk, K. Svezhentsova, M. Melnichenko, A. Luchenko, and O. Shmyryeva
- 1646 Plasma Etching and Texturing of Multi-Crystalline for Silicon Solar Cells Using Remote-Type Pin-to-Plate Dielectric Barrier Discharge
J. Park, J. Oh, E. Gil, and G. Yeom
- 1647 Structural and Chemical Properties of Cu-In Alloys Formed Using Co-Electrodeposition for the Application of CuInSe₂ Solar Cells
K. Moon, J. Kim, K. Shin, M. Jeong, J. Yu, and C. Choi
- 1648 The Side Chain Induced Crystallization of PCBM Cluster Effect on the Performances of Thin Film Solar Cells
W. Liu, W. Huang, and S. Wang
- 1649 Phosphorous Precipitates in Selective Emitter Formed Using Screen Printed Phosphorous Diffusion Paste
J. Kim, M. Jeong, K. Shin, K. Moon, H. Yun, and C. Choi
- 1650 Photo Response of Amorphous Si Films Grown at Room Temperature Using ICP CVD
J. Lim, S. Lee, and S. Yun
- 1651 The Control of Light Harvesting Efficiency in Poly(3-thiophene Acetic Acid) Sensitized Solar Cell
Y. Cho and M. Pyo
- 1652 Incorporation of TiO₂-Anchored MWNT into Photoanode of DSSCs Prepared at Low Temperature
Y. Hwang and M. Pyo
- 1653 Characterization of Leakage Current Mechanism in Conventional Single Crystalline Si Solar Cells
K. Shin, J. Kim, K. Moon, V. Janardhanam, M. Jeong, H. Lee, and C. Choi
- 1654 Passivation Behavior of Thermally Grown SiO₂ Layer Using Wet and Dry Oxidation Processes
M. Jeong, J. Kim, K. Moon, K. Shin, and C. Choi
- 1655 Optimization of Photoanode Compositions of DSSC Containing MWCNT-COOH by Genetic Algorithm; Low Temperature Process
S. Kim, K. Sohn, and M. Pyo
- 1656 The Study on SiC_x Rear Passivation Synthesized by a RF Magnetron Co-Sputtering System
J. Seo, K. Ko, J. Kim, and W. Choi
- 1657 On the Electrical Characterization of Grain Boundaries in Multicrystalline Silicon
J. Chen, E. Cornagliotti, E. Hieckmann, S. Behrendt, J. Weber, E. Simoen, and J. Poortmans
- 1658 High Surface-Roughness Si-Pillar with Extremely Low Reflectivity Produced by Curing Process
I. Lee, S. Baek, T. Shim, and J. Park

- 1659 Dependency of Donor and Acceptor Weights on Power Conversion Efficiency of Polymer Photovoltaic Cells
J. Kim, D. Kim, Z. Wang, and J. Park
- 1660 Electrodeposited Low Platinum Loaded Films as Efficient Counter Electrodes for Dye-Sensitized Solar Cells
L. Li, C. Chang, C. Chen, and E. Diau
- 1661 Single-Crystalline Si Nanowire on Pyramid with Extremely Low Reflectivity Independent on Light Incident Angle
G. Lee, I. Lee, J. Shim, and J. Park
- 1662 Enhanced Photovoltaic Properties of Hybrid Structured Titania Layer for Dye-Sensitized Solar Cell
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- 1663 Electrochemical Etching of p-Si for the Double Layer Porous Silicon Fabrication
J. Lee, H. Lee, and J. Lee
- 1664 Plasmon Effects in Silicon Solar Cells Coated with Polymer Thin Film Containing Silver and Gold Nanoparticles
Y. Tanaka, H. Hachimura, T. Mishima, and M. Ihara
- 1665 Natural Resource Limitations to Terawatt Solar Cell Deployment
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- 1666 Supramolecular Solar Cells
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- 1667 Estimation of Organic Tandem Solar Cell Power Conversion Efficiency via Optical Simulation Methods
P. Boland, K. Foe, D. Gu, H. Baumgart, K. Lee, and G. Namkoong
- 1668 Porous Silicon Formation and Photoluminescence Decay Analysis
A. Karoui and H. Zhang
- 1669 Characterizations of Electronic and Ionic Processes in Nanocrystalline TiO₂ Dye-Sensitized Solar Cell
H. Mai, H. Nguyen, and P. Nguyen

E9 - Processing, Materials, and Integration of Damascene and 3D Interconnects

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- 1670 Integration and Frequency Dependent Parametric Modeling of Through Silicon via Involved in High Density 3D Chip Stacking
L. Cadix, C. Fuchs, M. Rousseau, P. Leduc, H. Chaabouni, A. Thuairé, M. Brocard, A. Valentian, A. Farcy, C. Bermond, N. Sillon, B. Fléchet, and P. Ancy
- 1671 Modeling of Electromigration Induced Contact Resistance Reduction of Cu-Cu Bonded Interface
R. I Made, C. Gan, K. Pey, and C. Tan
- 1672 Formation of Electroless Barrier Layer Using Au Nanoparticles Catalyst for All-Wet TSV-Fill Technology
F. Inoue, T. Yokoyama, T. Shimizu, T. Terui, S. Tanaka, and S. Shingubara
- 1673 Improvement in the Deposition Profile of Electroless Plated Barrier on TSV Sidewall and Evaluation of the Barrier Film Properties
T. Yokoyama, F. Inoue, S. Tanaka, T. Terui, and S. Shingubara

- 1674 Leakage Current Analysis of Lateral p+/n Ge Based Diode Activated at Low Temperature for Three-Dimensional Integrated Circuit (3D-ICs)
W. Jung, J. Park, D. Kuzum, W. Kim, S. Wong, and K. Saraswat
- 1675 Use of Polymer Liners for 3D-WLP TSVs: Process, Reliability and Cost
D. Sabuncuoglu Tezcan, N. Pham, B. Majeed, Y. Civale, and E. Beyne
- 1676 Advanced Metallization for 3D Interconnect
R. Beica, D. Erickson, P. Kusler, and R. Kuzler
- 1677 Nanoimprint Lithography for Directly Patterning on Porous Low Dielectric Constant Materials
H. Wang, H. Lin, and Y. Cheng
- 1678 Electroplating of Thin Films and Narrow Trenches of Copper Alloys
K. Hong, D. Keum, H. Suh, S. Ahn, S. Choi, and Y. Ryu
- 1679 From 2D Lithography to 3D Patterning
H. van Zeijl and P. Sarro
- 1680 3D Hybrid Integration Technology for Opto-Electronic Hetero-Integrated Systems
K. Lee, T. Fukushima, T. Tanaka, and M. Koyanagi
- 1681 High Performance 3D Interconnects Based on Electrochemical Etch and Liquid Metal Fill
H. Hedler, T. Scheiter, and M. Schieber
- 1682 CMOS Compatible Anodization Process for Low Cost High Density Capacitors
M. Detalle, M. Rakowski, G. Potoms, A. Mercha, M. de Potter de ten Broeck, A. Phommahaxay, D. Sabuncuoglu Tezcan, and P. Soussan
- 1683 Ultra Low-k Materials: Challenges of Scaling
L. Zhao, M. Baklanov, M. Pantouvaki, and Z. Tokei
- 1684 Ultra-Low Temperature Deposition of Copper Seed Layers by PEALD
J. Mao, E. Eisenbraun, V. Omarjee, A. Korolev, C. Lansalot, and C. Dussarrat
- 1685 Ultrathin (5-35 nm) SiCNH Dielectrics for Damascene Cu Cap Application: Thickness Scaling and Oxidation Barrier Performance Limitation
S. Nguyen, T. Haigh Jr., T. Shaw, S. Molis, C. Dziobkowski, C. Zahakos, S. Cohen, H. Shobha, A. Grill, G. Bonilla, and N. Klymko
- 1686 CMP for Cu Interconnects with Advanced Barrier Materials
Y. Wang, M. Gage, K. Xu, Y. Wang, Y. Chen, S. Xia, W. Tu, and L. Karuppiah
- 1687 Subtractive Etching of Cu with Hydrogen-Based Plasmas
F. Wu, G. Levitin, and D. Hess

E11 - Semiconductor Wafer Bonding 11: Science, Technology, and Applications in Honor of Ulrich Gösele

Electronics and Photonics

- 1688 A Survey of Patterned Metal /Dielectric Surface Bonding: Mechanism, Alignment and Characterization
L. Di Cioccio
- 1689 Metal Surface Preparation with Point of Use Wet Chemistry
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- 1690 Metal Thermocompression Wafer Bonding for 3D Integration and MEMS Applications
V. Dragoi, G. Mittendorfer, J. Burggraf, E. Cakmak, and M. Wimplinger
- 1691 Failure Diagnostics for 3D System Integration Technologies in Microelectronics
F. Altmann, C. Schmidt, S. Brand, P. Czurratis, and M. Petzold

- 1692 Room Temperature Bonding of Wafers with Thin Nanocrystalline Metal Films
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- 1693 Cu-Sn Wafer Level Bonding for Vacuum Encapsulation of Microbolometer Focal Plane Arrays
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- 1695 Al-Ge Eutectic Wafer Bonding and Bond Characterization for CMOS Compatible Wafer Packaging
S. Sood, S. Farrens, R. Pinker, J. Xie, and W. Cataby
- 1696 Novel Test Structures for Hermeticity Testing of Wafer Bonding Technologies
A. Schneider, H. Rank, R. Müller-Fiedler, O. Wittler, and H. Reichl
- 1697 Wafer Bonding Technology in Nitride Semiconductors for Applications in Energy and Communications
K. Ryu, J. Chung, B. Lu, and T. Palacios
- 1698 Bonding of ALD Alumina for Advanced SOI Substrates
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- 1699 New SOI Substrates with High Thermal Conductivity for High Performance Mixed-Signal Applications
T. Lee, A. Aliev, M. Burzo, P. Komarov, P. Raad, and M. Kim
- 1700 Circular Geometry Transistors Fabricated on Germanium-on-Alumina Bonded Substrates
P. Baine, Y. Low, P. Rainey, H. Gamble, M. Armstrong, N. Mitchell, and D. McNeill
- 1701 Characterization and Mechanical Reliability Evaluation of Gold Polysilicon Eutectic Bonded Wafers
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- 1702 Finite Element Modeling and Raman Study of Strain Distribution in Patterned Device Islands on Strained Silicon-on-Insulator (sSOI) Substrates
D. Gu, H. Baumgart, F. Naumann, and M. Petzold
- 1703 Interface Morphology Investigation of Bonded p-GaAs/p-Si Wafers
C. Hsieh and Y. Wu
- 1704 Novel Application of Wafer-Bonded MultiSOI: Junctionless Nanowire (NW) Transistors for CMOS Logic
F. Wessely, T. Krauss, and U. Schwalke
- 1705 Wafer Bonding Process Selection
V. Dragoi and E. Pabo
- 1706 Low Temperature Metal Bonding for 3D Integration and Packaging
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- 1707 Direct Bonding of Glass Substrates
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- 1708 Atmospheric-Pressure Plasma Activation for Low Temperature Bonding
Y. Low, P. Rainey, P. Baine, J. Montgomery, N. Mitchell, D. McNeill, H. Gamble, and M. Armstrong

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N. Poduje, W. Kerr, and K. Turner
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- 1712 Innovative Megasonic Cleaning Technology Evaluate Through Direct Wafer Bonding
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- 1713 Bonding Energy of Silicon-to-Glass Wafer Bonding
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- 1714 Structural and Electrical Properties of Low Temperature Direct Bonded Germanium to Silicon Wafer for Photodetector Applications
R. Yu, K. Byun, F. Gity, J. Hayes, I. Ferain, C. Colinge, and B. Corbett
- 1715 The Characteristics of Interface Microstructures in Germanium/SiO₂ Low Temperature Wafer Bonding
X. Zhang, T. Ye, S. Zhuang, and J. Jiao
- 1716 Silicon Nitride Surface Conversion into Oxide to Enable Hydrophilic Bonding
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- 1717 Field Plate Effect on Blocking Capability of High-Voltage Lateral SOI Devices
H. Sumida and M. Yamaji
- 1718 AuSi Eutectic System: A Study in Hermetic MEMS Wafer Level Packaging
S. Farrens, S. Sood, and L. Karlin
- 1719 Lead Free Glass Pastes for Wafer Level Bonding of MEMS Silicon Wafers
S. Sridharan, V. Dragoi, B. Gardner, J. Holthus, and J. Maloney
- 1720 3D Assembly Using Au-Si Eutectic and Au-Au Thermocompression Wafer Level Bonding for M(O)EMS Device Fabrications
S. Lani, M. Canonica, D. Bayat, C. Ataman, W. Noell, and N. De Rooij
- 1721 The Role of the Nucleation Annealing Temperature Annealing on the Exfoliation of Hydrogen-Implanted GaN
E. Padilla and M. Goorsky
- 1722 Optimization of Silicon-Silicon Adhesive Wafer Bonding
S. Holl, S. Korrapati, and C. Colinge
- 1723 Design Rules for Wafer Level Packaging of MEMS, CMOS-MEMS Integration, and Smart Systems Using Anodic Bonding and Lateral Feedthroughs
J. Lee
- 1724 Dielectrical Layer Transfer by Low-Temperature Wafer Bonding for Optical Characterization
R. Knechtel and D. Gaebler
- 1725 Dry Techniques for Epitaxial Graphene Transfer: Wafer Bonding Approaches for Expanded Functionality
J. Caldwell, T. Anderson, K. Hobart, G. Jernigan, J. Culbertson, F. Kub, J. Tedesco, J. Hite, M. Mastro, R. Myers-Ward, C. Eddy, P. Campbell, and D. Gaskill
- 1726 Pattern Stamping Using Exfoliation for Heterogeneous Integration
K. Byun, R. Yu, N. Saeidi, M. Flynn, I. Ferain, and C. Colinge

- 1727 Porous Silicon Films for Thin Film Layer Transfer and Wafer Bonding Applications
M. Joshi, S. Hu, and M. Goorsky
- 1728 200 mm Silicon on Porous Layer Substrates Made by the Smart Cut Technology
A. Stragier, T. Signamarcheix, T. Salvetat, E. Nolot, J. Dechamp, A. Tauzin, L. Clavelier, and M. Lemiti
- 1729 Single Crystal Silicon Film Transfer to Polymer
M. Argoud, H. Moriceau, C. Fretigny, F. Rieutord, C. Morales, and L. Clavelier
- 1730 LiNbO₃ Single Crystal Layer Transfer Techniques for High Performances RF Filters
C. Deguet, M. Pijolat, N. Blanc, B. Imbert, S. Loubriat, E. Defay, L. Clavelier, J. Moulet, B. Ghyselen, F. Letertre, and S. Ballandras
- 1731 Adhesive Wafer Bonding, Applications and Trends
F. Niklaus
- 1732 MEMS Process by Film Transfer Using Fluorocarbon Anti-Adhesive Layer
G. Schelcher, F. Parrain, S. Brault, E. Lefeuvre, D. Bouville, M. Tatoulian, and A. Bosseboeuf
- 1733 Reactive Bonding and Low Temperature Bonding of Heterogeneous Materials
M. Wiemer, J. Bräuer, D. Wünsch, and T. Gessner
- 1734 Low-Temperature Direct Bonding of Borosilicate, Fused Silica, and Functional Coatings
M. Eichler, B. Michel, P. Hennecke, M. Gabriel, and C. Klages
- 1735 III-V-On-Insulator MOSFETs on Si Substrates Fabricated by Direct Bonding Technique
S. Takagi, M. Yokoyama, H. Takagi, Y. Urabe, T. Yasuda, H. Yamada, M. Hata, and M. Takenaka
- 1736 Investigation of Sulfur Passivation Treatments for Direct Wafer Bonding of III-V Materials
M. Jackson and M. Goorsky
- 1737 High Quality Thin Body III-V-On-Insulator Channel Layer Transfer on Si Wafer Using Direct Wafer Bonding
M. Yokoyama, T. Yasuda, H. Takagi, H. Yamada, Y. Urabe, N. Fukuhara, M. Hata, M. Sugiyama, Y. Nakano, M. Takenaka, and S. Takagi
- 1738 Direct and Polymer Bonding of III-V to Processed Silicon-on-Insulator for Hybrid Silicon Evanescent Lasers Fabrication
D. Bordel, A. Maxime, A. Emmanuel, H. Julie, P. Paul, O. Nicolas, M. Sonia, G. Karen, G. Philippe, B. Badhise, and F. Jean-Mars
- 1739 Die-to-Die Adhesive Bonding for Evanescently-Coupled Photonic Devices
S. Stanković, D. Van Thourhout, G. Roelkens, R. Jones, J. Heck, and M. Sysak
- 1740 Demonstration of Enhanced III-V-on-Silicon Hybrid Integration by Using the Strained Superlattice as Defect Blocking Layers
D. Liang, S. Srinivasan, J. Peters, A. Fang, and J. Bowers
- 1741 In Memoriam Ulrich Gösele (1949 - 2009)
M. Reiche
- 1742 In Memoriam Ulrich Gösele: Wafer Bonding à la Carte
I. Radu
- 1743 Wafer Bonding for the Manufacture of High-Brightness and High-Efficiency Light-Emitting Diodes
A. Ploessl
- 1744 Ion-Cut from Smart to Smarter: Ulrich Gösele's Impact on Science and Technology of Ultrathin Layer Transfer
O. Moutanabbir

- 1745 Wafer Bonding: A Retrospective
S. Bengtsson
- 1746 Properties of Interfacial Dislocations in Hydrophobic Bonded Si-Wafers
M. Reiche, M. Kittler, A. Haehnel, T. Arguirov, and T. Mchedlidze
- 1747 Defect Formation at Hydrophilic Silicon Bonding Interfaces
F. Rieutord, S. Vincent, J. Penot, H. Moriceau, and I. Radu
- 1748 Efficiency of H₂O Diffusion Barriers at Si-Si Direct Bonding Interfaces
H. Moriceau, F. Rieutord, L. Libralesso, C. Ventosa, F. Fournel, C. Morales, T. McCormick, T. Chevolleau, and I. Radu
- 1749 Room-Temperature Bonding Using Fluorine Containing Plasma Activation and Its Bonding Mechanism
C. Wang and T. Suga
- 1750 Characterization of Sequentially Plasma Activated Silicon, Silicon Dioxide and Germanium Surfaces and Bonded Interfaces for Low Temperature Applications
M. Kibria, F. Zhang, K. Cormier, and M. Howlader
- 1751 Effect of Pattern Geometry on the Fracture Behavior of Direct Bonded Silicon Wafers
H. Kim-Lee and K. Turner
- 1752 Process Induced Stresses in Cavity SOI Wafers
O. Elkhatib, J. Makinen, M. Palokangas, T. Lin, H. Johnson, and G. Horn
- 1753 Lattice Strain and Strain Evolution in Hydrogen-Implanted Materials: The Roles of Mechanical Properties and Hydrogen Diffusion
C. Ventosa-Moulet, S. Hayashi, and M. Goorsky
- 1754 Hydrogen Ion-Induced AlN Thin Layer Transfer: An Elastomechanical Study
K. Tapily, O. Moutanabbir, M. Abdullah, D. Gu, H. Baumgart, and A. Elmustafa
- 1755 Development of Nonuniform Residual Stresses during Anodic Bonding
G. Horn, R. Gerbach, T. Lin, M. Bernach, S. Brand, and H. Johnson
- 1756 Anisothermal Anodic Bonding: A Method to Control Global Curvature and Residual Stress
M. Yadav, T. Lin, H. Johnson, and G. Horn
- 1757 Characterization of Hysteresis of Surface Energy in Room-Temperature Direct Bonding Processes
D. Grierson and K. Turner
- 1758 Intercomparison of Methods for Detecting and Characterizing Voids in Bonded Wafer Pairs
R. Allen, A. Rudack, D. Read, and W. Baylies

E12 - State-of-the-Art Program on Compound Semiconductors 52 (SOTAPOCS 52)

Electronics and Photonics / Sensor

- 1759 Surface Immobilizations of AlGaIn/GaN High Electron Mobility Transistor Based Sensors
B. Chu, C. Chang, Y. Wang, S. Pearton, and F. Ren
- 1760 Hybrid Integration of Microwave Circuit Solenoid Inductors and AlGaIn/GaN HEMTs Using an SU-8 Photosensitive Epoxy Interposer Layer
R. Fitch, M. Kazimierzuk, J. Gillespie, A. Mattamana, P. Orlando, K. Groves, and T. Quach
- 1761 Growth and Characterization of AlN and AlGaIn Epitaxial Films on AlN Single Crystal Substrates
R. Dalmau, B. Moody, R. Schlessler, S. Mita, J. Xie, M. Feneberg, B. Neuschl, K. Thonke, R. Collazo, A. Rice, J. Tweedie, and Z. Sitar

- 1762 GaN-Based LEDs with High Emission Directionality Using Photonic Crystal Structures for Sidewall Reflection and Light Extraction
Y. Cheng, S. Wang, J. Tan, Y. Sun, S. Yang, and J. Huang
- 1763 Transient Photoluminescence Spectroscopy of ZnO Tetrapod Structures
S. Lee, S. Chen, D. Hongxing, Z. Chen, W. Chen, and I. Buyanova
- 1764 Influence of Dry Etch Conditions on the Performance of Recessed Gate GaN/AlGaIn HEMTs
W. Pletschen, R. Kiefer, S. Müller, R. Quay, M. Mikulla, and O. Ambacher
- 1765 Enhancement Performance of GaN-Based Light-Emitting Diodes by Modified Patterned Sapphire Surface
B. Lin, Y. Wu, and W. Hsu
- 1766 Terahertz Quantum-Cascade Lasers and Active Terahertz Metamaterials
B. Williams, A. Tavallae, K. Mehta, P. Hon, and T. Itoh
- 1767 A Review of Materials Issues and Degradation of III-V Compound Semiconductors and Optical Devices
O. Ueda
- 1768 High Mobility III-V Permeable Base Transistors with Suppressed Base Current
C. Chui and K. Shih
- 1769 "Graphene-Like" Exfoliation of Atomically-Thin Films of Bi₂Te₃ and Related Materials: Applications in Thermoelectrics and Topological Insulators
A. Balandin
- 1770 Using Soft Xrays to Look into (Buried) Interfaces of Energy Conversion Devices Based on Compound Semiconductors
C. Heske
- 1771 Dependence of Thermal Decomposition of Metal Organic Gases on Metal Surface for Gas Distribution System
S. Yamashita, K. Watanuki, H. Ishii, Y. Shiba, M. Kitano, Y. Shirai, S. Sugawa, and T. Ohmi
- 1772 Challenges to III-V Epi Growth for Increased Performance and Functionality Required in Advanced Wireless Devices
E. Rehder, C. Lutz, and K. Stevens
- 1773 Commodity Element Chalcogenide Semiconductors for >GW-Scale Photovoltaics
M. Scarpulla, W. Hlaing Oo, E. Lund, H. Nukala, A. Bhatia, J. Johnson, and L. Rieth
- 1774 Improving Gain Efficiency in Planar Impact Ionization Devices
M. Johnson, R. Shuldberg, and A. Hawkins
- 1775 Nanocrystalline Diamond Thin Films: High Temperature Dielectric Properties and Wide Bandgap Semiconductor Device Passivation Applications
N. Govindaraju, D. Das, P. Kosel, and R. Singh
- 1776 Towards a Nanomechanical Buckled Memory: Mechanical Dependence of the Anomalous Hall Effect in GaMnAs
C. Yang, H. Choi, T. Kim, and Y. Park
- 1777 Flip-Chip Packaging of MHEMT Device on Low-Cost Organic Substrate for W-band Applications
W. Lim, L. Hsu, C. Kuo, C. Wang, S. Tsai, and E. Chang
- 1778 Heterointegration of Compound Semiconductors by Ultrathin Layer Splitting
O. Moutanabbir

- 1779 The Control of Optical and Structural Properties of ZnO:Mg Films Deposited by the Electrochemical Techniques
H. Ishizaki and S. Ito
- 1780 Large-Scale Automated Identification and Quality Control of Exfoliated and CVD Graphene via Image Processing Technique
C. Nolen, D. Teweldebrhan, G. Denina, B. Bhanu, and A. Balandin
- 1781 Optical Degradation of Yellow-Phosphor Converting White GaN-based Light-Emitting Diodes under High Electrical Stress and High Temperature
E. Jung and H. Kim
- 1782 In Situ Deposition of High-k Dielectrics on Compound Semiconductor in MOCVD System
C. Cheng and E. Fitzgerald
- 1783 Properties of Mechanically Exfoliated Quasi-Two-Dimensional Crystals of Titanium Dioxide
J. Khan, C. Nolen, D. Teweldebrhan, and A. Balandin

E13 - Thin Film Transistors 10 (TFT 10)

Electronics and Photonics

- 1784 Performance and Modeling of Thin Film Transistor Implemented Using Different Materials Systems
M. Shur
- 1785 A Charge Based Compact Modeling Technique for Monocrystalline TFTs on Glass
C. Nassar, T. J. Tredwell, C. Kosik Williams, J. Revelli, and R. Bowman
- 1786 Downscaling Issues in Polycrystalline Silicon TFTs
G. Fortunato, M. Cuscunà, P. Gaucci, L. Maiolo, L. Mariucci, A. Pecora, and A. Valletta
- 1787 AMOSFET Devices: The Simplest Transistors
S. Fonash
- 1788 Stabilities of TFTs under Bias-Stress
J. Jang and J. Choi
- 1789 The Influence of Electromechanical Stress on the Stability of Nanocrystalline Silicon Thin Film Transistors Made on Colorless Polyimide Foil
I. Chiu, J. Huang, Y. Chen, I. Cheng, J. Chen, and M. Lee
- 1790 The Electrical Properties of Atomic Layer Deposition ZnO:N Thin Film Transistors Exposed with Ultraviolet
J. Kim, S. Lim, D. Kim, and H. Kim
- 1791 The Stability of Oxide TFTs under Electrical Gate Bias and Monochromatic Light Illumination
S. Lee, S. Kim, Y. Lee, K. Yoon, W. Lee, J. Kwon, and M. Han
- 1792 The Effect of Light Illumination on Transfer Curve and Stability of Amorphous Hf-In-ZnO Thin Film Transistors
J. Kim, U. Kim, Y. Chung, S. Rha, H. Jung, S. Lee, J. Jung, S. Lee, and C. Hwang
- 1793 Reliability of Polycrystalline Silicon Thin-Film Transistors (Poly-Si TFTs): Laser- and AMFERTA- Crystallized poly-Si TFTs
S. Choi and M. Han
- 1794 The AC-Bias Stability of Short Channel a-Si:H TFT
S. Park, S. Lee, J. Woo, J. Yoo, and M. Han
- 1795 Enhanced Performance and Thermal Stability of a-Si:H TFTs
A. Indluru and T. Alford

- 1796 The 1/f Noise Performance for TFTs Fabricated in Three TFT Technologies: Monocrystalline Silicon on Glass, Low Temperature Polysilicon on Glass, and Silicon on Insulator
S. Marshall, C. Nassar, T. J. Tredwell, and R. Bowman
- 1797 Reduction of Hot Carrier Effects in SiOG TFTs
M. Mativenga, M. Choi, W. Choi, J. Choi, J. Jang, R. Mruthyunjaya, T. J. Tredwell, E. Mozdy, and C. Kosik Williams
- 1798 High Field Induced Stress Suppression of GIDL Effects in Accumulation-Mode P-Channel TFTs
A. McCabe, R. Manley, C. Kosik Williams, and K. Hirschman
- 1799 Improved Performance of NILC Poly-Si Nanowire TFTs by Using Ni-Gettering
B. Wang, T. Yang, Y. Wu, C. Su, and H. Lin
- 1800 Electrical Characteristics of a Reduced-Gate Structure Polycrystalline Silicon Thin Film Transistor Using Field-Aided Lateral Crystallization
J. You, K. Lee, D. Choi, and Y. Kim
- 1801 A New Insulator for Thin-Film Transistor Backplanes and Permeation Barriers for Rollable OLED Displays
S. Wagner, L. Han, K. Song, and P. Mandlik
- 1802 Characterization of Silicon-on-Glass Substrates Using Variable Angle Spectroscopic Ellipsometry
R. Rettmann, K. Hirschman, and J. Couillard
- 1803 Characterization of Lightly Doped, Single Crystal Silicon-on-Glass (SiOG) Substrates via Capacitance Voltage Measurements
R. Manley, C. Kosik Williams, and K. Hirschman
- 1804 Protection Layer Effects on the Device Performance of Oxide/Organic Hybrid TFTs
S. Yang, S. Ko Park, M. Ryu, C. Hwang, S. Yoon, C. Byun, K. Cho, O. Kwon, S. Kim, C. Park, and J. Jang
- 1805 Nano-Inkjet and Its Application to Metal-Induced Crystallization of a-Si for poly-Si TFTs
T. Asano and Y. Ishida
- 1806 Reducing Ni residues of Metal Induced Crystallization Poly-Si with a Simple Chemical Oxide Layer
M. Lai and Y. Wu
- 1807 Polycrystalline Silicon Thin Film Transistors
T. Sameshima
- 1808 Nanocrystalline Silicon Thin Film Transistors
A. Nathan
- 1809 Electrical and Mechanical Behaviors of Micro Crystalline TFTs Deposited on PEN
S. Janfaoui, K. Kandoussi, K. Belarbi, C. Simon, N. Coulon, S. Crand, and T. Mohammed-Brahim
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I. Souleiman, K. Kandoussi, K. Belarbi, C. Simon, N. Coulon, S. Crand, and T. Mohammed-Brahim
- 1811 Inkjet-Patterned Organic Complementary Circuits and Non-Volatile Memory Arrays Based on Ferroelectric Field-Effect Transistors
T. Ng, S. Sambandan, J. Daniel, and A. Arias
- 1812 Printed, Sub-2V Organic TFTs and Circuits Based on Semiconducting Polymers and Carbon Nanotubes
D. Frisbie

- 1813 Electrical and Environmental Stability of Organic Transistors
J. Bedolla, J. Northrup, D. Belaineh, V. Wagner, and D. Knipp
- 1814 Flexible Poly (3-hexylthiophene) Thin-Film Transistor with Improved Reliability
J. Meena, M. Chung, J. Tiwari, and F. Ko
- 1815 Flow Rate's Influence on Low Temperature Silicon Oxide Deposited by Atmospheric Pressure Plasma Jet for Organic Thin Film Transistor Application
K. Chang and S. Huang
- 1816 Characterize of Two Types of Rectifier Using Organic Thin Film Transistor
L. Dong-Hoon, K. Jung-Min, and K. Yong-Sang
- 1817 The Application of Organic Electrochemical Transistors in Biosensors
F. Yan
- 1818 Fully Transparent Zinc Oxide Based Thin Film Transistors Deposited at Low Temperature: Choice of Gate Dielectric and Effect of Bias Stress
F. Li, M. Mann, A. Flewitt, W. Milne, J. Dutson, S. Wakeham, and M. Thwaites
- 1819 Metal-Channel-Aided Oxide Thin Film Transistor
E. Kim, M. Ryu, K. Son, T. Kim, K. Lee, K. Park, J. Park, W. Maeng, H. Kim, J. Seon, W. Choi, and S. Lee
- 1820 Improved Thermal Stability of Indium Zinc Oxide TFTs by Low Temperature Post Annealing
A. Indluru and T. Alford
- 1821 Quantitative Calculation of Oxygen Incorporation in Sputtered Indium Gallium Zinc Oxide (IGZO) Films and the Subsequent Impact on the Electron Transport and Thin Film Transistor Properties
S. Kwon, J. Noh, J. Noh, P. Rack, I. Papautsky, and J. Heikenfeld
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S. Han, G. Herman, and C. Chang
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L. Su, H. Lin, S. Wang, Y. Yeh, C. Cheng, L. Peng, and J. Huang
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Y. Kim, J. Lee, Y. Lee, and M. Han
- 1825 Mechanism and Performance of Floating-Gate a-Si:H TFT Nonvolatile Memory Devices
Y. Kuo
- 1826 High Retention-Time Nonvolatile Amorphous Silicon TFT Memory for Static Active Matrix OLED Display Without Pixel Refresh
Y. Huang, B. Hekmatshoar, S. Wagner, and J. Sturm
- 1827 Amorphous Oxide Semiconductor Memory Using High-k Charge Trap Layer
S. Rha, J. Ji-Sim, K. Jeong Hwan, U. Kim, Y. Chung, H. Jung, L. Sang-Yoon, and C. Hwang
- 1828 Nonvolatile Pentacene Thin Film Transistor Memory with CdSe Nanoparticles
J. Kim, D. Lee, H. Lee, T. Yoon, and Y. Kim
- 1829 TFTs for Flexible Electronics
R. Street
- 1830 Towards EPC Compatible Plastic RFID Tags
K. Myny, S. Steudel, P. Vicca, S. Smout, M. Beenhakkers, N. van Aerle, F. Furthner, B. van der Putten, A. Tripathi, G. Gelinck, J. Genoe, W. Dehaene, and P. Heremans

- 1831 Low Voltage Driven CMOS Circuits Based on SiOG
M. Choi, J. Choi, S. Park, W. Choi, M. Mativenga, J. Jang, R. Mruthyunjaya, T. J. Tredwell, E. Mozdy, and C. Kosik Williams
- 1832 Foldable, Ultraflexible, and Stretchable Organic Transistor Integrated Circuits
T. Someya and T. Sekitani
- 1833 Poly-Si TFT Based Technologies and Circuits for Multipurpose Sensors
O. Bonnaud and T. Mohammed-Brahim
- 1834 Polysilicon Source-Gated Transistors for Mixed-Signal Systems-on-Panel
R. Sporea, X. Guo, J. Shannon, and S. Silva
- 1835 Excimer Laser Crystallization of Thick a-Si for Photo Diode and Solar Cell Applications
M. Tajari Mofrad, K. Huet, C. Boniface, R. Ishihara, J. Derakhshandeh, J. van der Cingel, J. Venturini, and K. Beenakker
- 1836 Medical X-ray Imaging Sensors for Digital Radiography and Fluoroscopy
J. Rowlands and W. Zhao
- 1837 Characterization and Reliability of Gate-All-Around Poly-Si TFTs with Multinanowire Channels
H. Liu, S. Chiou, C. Hung, and F. Wang
- 1838 The Effect of Illumination on the Negative Bias Temperature Instability in Zinc Tin Oxide Thin Film Transistors
U. Kim, J. Kim, H. Oh, Y. Chung, and C. Hwang
- 1839 Capacitance Model for Thin-Film Transistors with Interface Traps
H. Tsuji, Y. Kamakura, and K. Taniguchi
- 1840 Using Fluorine-Ion Implanted a-Si Layer to Reduce Ni Contamination and Passivate the Defects in NILC poly-Si
C. Chen and Y. Wu
- 1841 Solution-Processed Oxide Thin Film Transistors with Indium Zinc Tin Oxide Semiconductor: Nitrogen Effect
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- 1842 Improved Performance of Pentacene OTFT with HfLaO Gate Dielectric by Annealing in NH₃
L. Deng and P. Lai
- 1843 Fabrication of Location-Controlled Zinc Oxide Thin Film Transistors by Hydrothermal Method
P. Yang, J. Wang, W. Tsai, S. Wang, P. Chen, I. Lee, C. Chang, C. Wang, H. Li, Y. Huang, C. Wu, Y. Wei, C. Lin, and H. Cheng
- 1844 A Metal Source/Drain Bottom Gate Polycrystalline Silicon Thin Film Transistors Utilized Inverted Aluminum-Induced Layer Exchange
C. Wang, I. Lee, P. Yang, C. Chang, C. Wu, Y. Cheng, and H. Cheng
- 1845 Poly-Si SONOS-TFT Devices with Single Grain Boundary by Excimer Laser Crystallization
I. Lee, Y. Po-Yu, W. Chao-Lung, C. Chia-Tsung, T. Chun-Chien, K. Hsu-Hang, T. Chien-Yun, and C. Huang-Chung
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Y. Wu and C. Chang
- 1847 Improved Electrical Performance of NILC Poly-Si TFTs Manufactured Using H₂SO₄ and HCl Solution
Y. Chen, Y. Chao, and Y. Wu

- 1848 Low Temperature Solution-Processed Zinc Tin Oxide Thin Film Transistor with O₂ Plasma Treatment
J. Lee, Y. Kim, Y. Lee, Y. Kim, J. Kwon, and M. Han
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B. Choi, K. Kim, J. Bae, S. Lee, H. Lee, S. Kim, K. Park, C. Kim, Y. Hwang, and I. Chung
- 1850 The Effects of Oxygen Partial Pressure and Annealing Temperature in the IGZO TFTs
J. Bak, W. Cheong, S. Yang, S. Ko Park, C. Hwang, S. Yoon, H. Oh, K. Cho, and H. Kim
- 1851 Fabrication of a P3HT Transistor Using Ionic Liquid and Investigation of the Operation Mechanism
Y. Kimura, S. Fukase, and M. Niwano
- 1852 Influence of Bank Structure on the Film Morphology and Electrical Properties of Ink-Jet Printed TIPS Pentacene Thin-Film Transistors
Y. Kim, M. Oh, S. Park, and M. Han

E14 ~ E22 - SiGe, Ge, and Related Compounds: Materials, Processing, and Devices 4

Electronics and Photonics

- 1853 Past, Present and Future: SiGe and CMOS Transistor Scaling
K. Kuhn and A. Murthy
- 1854 Scaling Energy and Form Factor with Germanium Microphotonics
L. Kimerling
- 1855 Strain Scaling and Modeling for FETs
V. Moroz and M. Choi
- 1856 Feasibility of Ge CMOS for Beyond Si-CMOS
A. Toriumi, C. Lee, T. Nishimura, K. Kita, S. Wang, M. Yoshida, and K. Nagashio
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A. Claverie, N. Cherkashin, F. Hue, S. Reboh, F. Houdellier, and M. Hytch
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D. Sadana, S. Bedell, T. Adam, A. Reznicek, and H. He
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E. Arkun, S. Semans, G. Vosters, and A. Clark

- 1866 Laser-Induced Epitaxial Growth (LEG) Technology for Multi-Stacked MOSFETs
Y. Son and E. Yoon
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- 1869 The Compositional Distribution of Ge Islands Grown by Ultra-High Vacuum Chemical Vapor Deposition
H. Chang, C. Lee, and S. Lee
- 1870 Formation of Pseudo-Expitaxial Ge Films on Si(100) by Droplet of Ge Microliquid
T. Matsumoto, S. Higashi, K. Makihara, M. Akazawa, and S. Miyazaki
- 1871 Investigation of Process Parameters on the Properties of Selective Epitaxial Growth SiGe Structure
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- 1872 Design, Manufacture and Performance of Germanium Bipolar Transistors
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- 1873 Modeling of NPN-SiGe-HBT Electrical Performance Improvement through Si₃N₄ Strain in the Collector Region
M. Al-Sa'di, S. Fregonese, C. Maneux, and T. Zimmer
- 1874 $> 10^{20} \text{ cm}^{-3}$ n-Doping in Ge by Sb/P Co-Implants: n⁺/p Diodes with Improved Rectification
J. Kim, S. Bedell, and D. Sadana
- 1875 Control of Strain Relaxation Behavior of Ge_{1-x}Sn_x Layers for Tensile Strained Ge Layers
Y. Shimura, S. Takeuchi, O. Nakatsuka, and S. Zaima
- 1876 Optical Property of Si_{0.8}Ge_{0.2}/Si Multilayer Grown by Using RPCVD
T. Kim, M. Shin, Y. Kil, H. Lee, H. Yang, T. Jeong, S. Kang, C. Choi, and K. Shim
- 1877 Improving the Performance of SiGe-based IR Detectors
M. Kolahdouz, A. Afshar Farniya, M. Ostling, and H. Radamson
- 1878 Formation of Al₂O₃ Film on Si Substrate by Microwave Generated Remote Plasma Assisted Atomic Layer Deposition Technique
H. Ishizaki, M. Iida, Y. Otani, Y. Fukuda, T. Sato, T. Takamatsu, and T. Ono
- 1879 Characterization of Interface States of HfO₂/Ge with Fluorine Treatment by Using DLTS/ICTS
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F4 - Molecular Structure of the Solid-Liquid Interface and Its Relationship to Electrodeposition 7

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- 2039 Adsorption/Desorption of Suppressor Complex on Copper: Description of the Critical Potential
T. Atanasova, K. Strubbe, and P. Vereecken
- 2040 In Situ Stress and Nanogravimetric Measurements during Hydrogen Adsorption/Absorption on Pd Overlayers Deposited onto (111)-Textured Au
G. Stafford, J. Shin, and U. Bertocci
- 2041 Additive Contributions to Cu Thin Film Stress Evolution via In Situ Surface Stress Monitoring
T. Heaton and C. Friesen
- 2042 Preparation and Analysis of Nanoemitter Structures for Photovoltaic and Photocatalytic Electrochemical Solar Energy Conversion
H. Lewerenz
- 2043 Electrodeposition of PV Materials Using Atomic Layer Deposition
D. Banga, B. Perdue, and J. Stickney
- 2044 Surface-Layer Mediated Electrodeposition of Indium-Based Nanostructures
P. Vereecken, G. Hautier, N. Sergeant, and J. D'Haen
- 2045 Molecular Self-Assembly and Electrochemistry: A Symbiosis for the Nanoscale
M. Buck
- 2046 Investigation of Electroless Deposition Process Using DFT Calculation: Catalytic Effect of Metal Surface
T. Homma, M. Kunimoto, R. Kinoshita, A. Otomo, and H. Nakai
- 2047 Multi-Scale Molecular Simulation of Crystal Growth and Mass Transport in Solution in Copper Electrodeposition
Y. Kaneko, Y. Hiwatari, K. Ohara, and F. Asa
- 2048 Multi-Ion Deposition Modelling: Copper and Zinc Layers Production Application
P. Mandin, T. Percevault, Z. Derhoumi, F. Ricoul, and H. Roustan
- 2049 Electrochemical Deposition of Alloys Immiscible in the Bulk: The Case of Cu-Ag and Au-Ni
D. Liang and G. Zangari
- 2050 Microstructure of Electrodeposited Nano-Crystalline Au-Ni Alloy Films
T. Inoue, K. Sato, T. Yokoshima, A. Sugiyama, Y. Okinaka, and T. Osaka
- 2051 Morphology Control of Pt Sub-Monolayers
D. Gokcen, O. Miljanic, and S. Brankovic
- 2052 Superconformal Film Growth: Mechanism and Quantification
T. Moffat, L. Ou-Yang, and C. Lee
- 2053 Platinum Islands on SAMs as Template for Enzyme-Catalyzed Glucose Oxidation
J. Lenz, J. Gajdzik, H. Natter, R. Hempelmann, G. Kohring, F. Giffhorn, Y. Schmitt, K. Jacobs, M. Manolova, and D. Kolb
- 2054 Electrolytic Deposition of ZrO₂/CaP Coatings on Magnesium Alloy for Biomedical Applications
M. Wang and S. Yen
- 2055 AC Impedance Study of Lithium/Silver Vanadium Phosphorous Oxide Cells
E. Takeuchi, M. Sharma, A. Marschilok, and K. Takeuchi

- 2056 (2010 Electrodeposition Division Research Award) Electrochemical Fabrication of Functional Micro/Nanostructures: Process Development and Mechanistic Understandings
T. Homma
- 2057 Exploring the Au/Electrolyte Interface Using Single Nanoslits and Nanoslit/Groove Pairs
C. Susut, A. Agrawal, G. Stafford, J. Weiner, H. Lezec, and A. Talin
- 2058 Materials Electrodeposition at Lithographically Patterned Electrodes
R. Penner
- 2059 The Interface Ionic Liquid(s)/Metal Electrode(s): Investigation of the Complex Solvation and Electrochemical Double Layers by In Situ Scanning Probe Microscopy
F. Endres
- 2060 Metal Deposition from Ionic Liquids
M. Gnahn, T. Pajkossy, and D. Kolb
- 2061 In Situ STM Studies of Electrodeposition of Magnetic Metals in a Non-Chloroaluminated Ionic Liquid
C. Sun, Y. Wei, J. Li, J. Yan, and B. Mao
- 2062 Electrodeposition of Li in Ionic Liquid
T. Nishida, K. Nishikawa, T. Mori, T. Homma, and Y. Fukunaka
- 2063 Electrolytic CaP/Gelatin/Gentamicin Composite Coatings on Post HA/TiO₂ Coated Ti Alloy
S. Yen, T. Lin, and C. Yang
- 2064 Electrolytic Vancomycin/CaP Composite Coating on Post Bioceramics Coated Ti Alloy
S. Yen, Y. Chen, and C. Yang

II - Physical and Analytical Electrochemistry General Session

Physical and Analytical Electrochemistry

- 2065 Development and Characterization of a Single Channel Microfluidic Electrolysis Cell
J. Kuleshova, D. Pletcher, P. Birkin, R. Brown, J. Hill-Cousins, and T. Underwood
- 2066 Side-Reaction Free Electrodes for Electrokinetic Lab-On-A-Chip Applications
P. Erlandsson and N. Robinson
- 2067 Improving the Efficiency of Biofuel Cells with Enzymatic Cascades
S. Minter, D. Sokic-Lazic, P. Addo, and M. Moehlenbrock
- 2068 Electrochemical Impedance Testing of Enzymes from Directed Evolution Microbes in Non-Terrestrial Environmental Conditions
C. DiCarlo and G. Kortman
- 2069 Highly Sensitive and Selective Dopamine Biosensor Fabricated with Silanized Graphene
S. Hou, M. Kasner, and S. Su
- 2070 Acetyl Salicylic Acid (Aspirin) and Antioxidative Agents in Joshanda: A Herbal (Medicinal) Tea
M. Soomro, M. Mohammad, and Z. Aqeel
- 2071 Chemical and Electrochemical Properties of Alkyl-Terminated GaP and GaAs Interfaces
J. Mukherjee and S. Maldonado
- 2072 High Speed Etching of SiO₂ Using Modified Dielectric Barrier Discharges
J. Oh, J. Park, E. Gil, and G. Yeom
- 2073 Anodic Catalyst Development for the Hybrid Sulfur Cycle
J. O'Brien, S. Donne, and J. Hinkley

- 2074 Solid State Electrochemistry of AgCN, Ag₂S, Cu(OH)₂ and AuCl(octadecylamine) Nanofibers: Fundamentals and Applications
G. Bourret and R. Lennox
- 2075 The Effect of Nanometric Metal / Metal Oxide Vapor Deposited Surface Coatings on TiO₂ Photocatalysed PVC Degradation
A. Robinson and D. Worsley
- 2076 Surface Electrochemistry Study of Iron Oxides Particles in LiOH Solution Using Electrochemical Impedance Spectroscopy
H. Zebardast, S. Rogak, and E. Asselin
- 2077 Characterize of Ring Striation Pattern Distributed COP in Czochralski Silicon Wafer
J. Kim, W. Lee, D. Hwang, and B. Lee
- 2078 Analysis of Fine Bulk Micro Defects in Denuded Zone of Silicon Wafer
E. Lee, S. Lee, D. Hwang, and B. Lee
- 2079 Confirmation that Concentration Polarization is Controlling during Electrochemical Measurement
M. Reda
- 2080 Possibilities and Limitations of Non-Traditional Electrodes for Voltammetry and Amperometry
J. Barek and J. Wang
- 2081 Novel Strategy for Finding the Optimal Parameters of Ion Selective Electrodes
J. Jasielec, B. Wierzba, B. Gryszakowski, T. Sokalski, M. Danielewski, and A. Lewenstam
- 2082 Novel Electrochemiluminescent Platinum (II) Schiff-Base Complexes
E. Reid, C. Hogan, and V. Cook
- 2083 Mechanistic Aspects of Carbon Monoxide Oxidation on Unsupported Platinum Nanoparticles
E. Ciapina and E. Gonzalez
- 2084 An Imaging Ammeter for Electrochemical Measurements
P. Sides, C. Wirth, and D. Prieve
- 2085 Adsorption of Poly-L-Lysine on Platinum Electrodes as a Function of Applied Potential
S. Nilsson, M. Fahlman, F. Björefors, and N. Robinson
- 2086 Amperometric H₂ Sensors Using a Pt NPs-Decorated MWNT Working Electrode
D. La, S. Park, and Y. Kim
- 2087 Kinetics of Hydrogen Sorption in Pt-Pd Alloy Nanoparticles
A. Januszewska, A. Lewera, and R. Jurczakowski
- 2088 Measurement of Calcium Activity in Liquid Calcium-Bismuth Alloys by EMF Method
H. Kim, S. Poizeau, W. Wei, K. Jiang, A. Tomaszowska, D. Bradwell, D. Boysen, and D. Sadoway
- 2089 Copper Analysis Using NanoBand Electrode System and Its Removal in Wastewater by Electrocoagulation
J. Gomes, K. Islam, K. Das, M. Rahman, G. Irwin, P. Bernazzani, and D. Coker
- 2090 The Many Mechanisms of Proton-Coupled Electron Transfer: The Effect of Added Base on the Non-Aqueous Electrochemistry of p-Phenylenediamines
D. Smith, L. Clare, L. Rojas, S. Pavlovsky, and J. Woods
- 2091 Voltammetry of N-bromosuccinimide in Hexafluoropropan-2-ol
I. Haque, W. Akram, and A. Khan
- 2092 Determination of Organic Compounds in Coal Extracts Using Cyclic Voltammetry
A. Valenzuela Muñiz and G. Botte

- 2093 Treatment of Electrode Surfaces with Radicals and Its Consequences
M. Donten, A. Nowicka, F. Scholz, and Z. Stojek
- 2094 Effect of Supporting Electrolyte on Mass Transport through Nafion Films
K. Stewart, S. Barrett, and L. Zook-Gerdau
- 2095 Assembly and Electrochemical Characterization of Nano-Cellulose-Poly-Aniline Composite Films
S. Shariki, M. J. Bonné, W. Thielemans, K. Edler, and F. Marken
- 2096 Thermodynamics of Potassium Ferricyanide Diffusion Through B-1355N Exopolysaccharide Films
C. Bucur, G. Cote, and V. Finkenstadt
- 2097 Non-Adiabatic Electronic Relaxation Events at Monolayer-Modified Electrode-Electrolyte Interfaces: Physics and Applications
C. Gupta, R. Howe, and M. Shannon
- 2098 Electrochemical Kinetics in Room Temperature Ionic Liquids (RTILs)
N. Siraj, G. Grampp, and S. Landgraf
- 2099 Study of High-Frequency Artifacts on EIS Measurements of Ti and Its Alloys in Simulated Body Fluid
X. Zhou and P. Mohanty
- 2100 Improving the Production Process and Durability of Amperometric Biosensors for Detection of Cholesterol Using Gold Microelectrodes
T. McCaslin and A. Harper
- 2101 Transport Properties of $\text{BiVO}_4\text{-V}_2\text{O}_5$ Composites with Liquid-Channel Grain-Boundary Structure
V. Belousov, S. Fedorov, and A. Vorobiev
- 2102 Adsorption of Human Plasma Fibrinogene on Differently Treated Titanium Samples
L. Fojt, S. Hasoň, L. Strašák, V. Vetterl, J. Vaněk, S. Bartáková, and J. Šoukalová
- 2103 Surface Characterization and Electrochemical Behavior of New Biomedical Zr-Based Metal/Ceramic Composite in Fetal Bovine Serum
I. Branzoi, M. Iordoc, F. Branzoi, G. Sbarcea, and V. Marinescu
- 2104 Zinc Nickel Codeposition in Ammonium Sulfat Combined Effect of Cadmium and Boric Acid
Y. addi, P. Duverneuil, and A. Khouider
- 2105 SECM Soft Contact Mode: An Approach to Electrochemical Microfabrication
D. Zhan, D. Yang, L. Han, W. Wang, H. An, Z. Tian, and Z. Tian
- 2106 Adsorption and 2D Condensation of 5-Fluorocytosine on Mercury and Gold Single Crystal Surfaces
L. Fojt, V. Vetterl, and T. Doneux
- 2107 The Electrolytic Dissociation of Acetylenedicarboxylic Acid
E. Kvaratskhelia and R. Kvaratskhelia
- 2108 Physicochemical and Electrochemical Characterization of Sulfate-Base Ionic Liquid
T. Wu, L. Jou, Y. Lin, S. Su, and I. Sun
- 2109 Nanostructured AuCu_3 Alloy Electrode: Preparation, Characterization, and Biosensing Applications
J. Zen, C. Tai, and J. Chang
- 2110 Reversible Hydrogen Electrode Application as Indicator Electrode for Real Time Kinetic Study of Microbial H_2 Production
C. Iniguez, R. Zlatev, M. Stoytcheva, B. Valdez, J. Magnin, and S. Kiyota

- 2111 (Ga,N) and (Cu,Ga) Co-Doped ZnO Films for Improving Photoelectrochemical Response for Solar Driven Hydrogen Production
S. Shet
- 2112 Nanoporous Composite Based on Carbon Nanotubes and Conducting Polymers for Obtaining of Modified Electrodes
I. Branzoi, F. Branzoi, and L. Pilan
- 2113 Electrochemical Behavior to Electron Transfer through L-Cysteine Monolayer on Palladium Surface Using Redox Probe
I. Feliciano, M. Caban, and C. Cabrera
- 2114 Synthesis, Characterization and Use of Ru-Fc Intercalation Complex as an Electrochemical Label for the Detection of Pathogen-DNA
M. Díaz, A. Rosado, J. del Pilar, E. Vega, and A. Guadalupe
- 2115 Very Strong Redox-Dependent Hydrogen Bonding between a bis-Dimethylaminophenylurea and a Cyclic Diamide
K. Valencia, J. Woods, A. Cooksy, and D. Smith

I2 - Electrochemistry in Nanospaces

Physical and Analytical Electrochemistry

- 2116 Nanostructured Materials for the Electrocatalysis of Biomolecules and Biosensors Applications
S. Chen, A. Periyasamy, Y. Umasankar, S. Thiagarajan, and A. Balamurugan
- 2117 Renewable Gold Nanopores as Support for (Bio)Functionalized Electrodes
J. Lenz, R. Hempelmann, S. Ravaine, and A. Kuhn
- 2118 Pressure Effects on Supercapacitors from Activated Carbon Fabrics and Single-Wall Carbon Nanotubes
X. Li, C. Masarapu, J. Rong, Q. Zhang, and B. Wei
- 2119 Ionic Diffusion Analysis of Layer by Layer Films Embedded with Polyoxometalate
R. Vyas, K. Li, and B. Wang
- 2120 Enhanced Raman Spectroscopy at Electrochemically-Synthesized Metal-Organic-Metal Nanojunctions
F. Zamborini and R. Dasari
- 2121 Three-Dimensional Nanoscale Imaging of Electrochemical Interfaces Using Atom Probe Tomography
A. Hillier and Y. Zhang
- 2122 Electrochemical Correlation Spectroscopy (ECS) in Nanofluidic Channels
P. Singh, M. Zevenbergen, E. Goluch, and S. Lemay
- 2123 Ionic Nanopore Devices
S. Smirnov, I. Vlassiuk, and Z. Siwy
- 2124 Electroosmotic Flow Rectification in Pyramidal-Pore Mica Membranes
H. Mukaibo, P. Jin, G. Bishop, F. Tongay, L. Horne, P. Guo, and C. Martin
- 2125 Electrochemical Microscopy of Nanoporous Materials
L. Baker, M. Deryo, C. Chen, S. Niya, and C. Morris
- 2126 Cationic and Anionic Transport through Single Nanopipettes
G. Wang, J. Liu, J. Feng, W. Brown, B. Wu, D. Robinson, Z. Tang, and B. Nadia

- 2127 Organic Solvent-Induced Permeability Changes of PS-*b*-PMMA-Derived Nanoporous Films Studied Using Electrochemical Impedance Spectroscopy
D. Perera and T. Ito
- 2128 Investigation of Electron Transport through Ferrocene Moieties Covalently Linked to the Surface of PS-*b*-PMMA-Derived Nanopores
F. Li and T. Ito
- 2129 Electrochemical Investigation of Diffusion of Cytochrome c within PS-*b*-PMMA-Derived Nanopores
B. Pandey and T. Ito
- 2130 Electrochemically Assisted Fabrication of Cooper Atomic Wires on Chip for Their Quantum Conductance Measurement
Y. Yang, J. Liu, J. Yang, F. Yang, M. Lv, and Z. Tian
- 2131 Characterization of Novel SnO₂ Nanowire Supported Pd Catalyst for Methanol-Electro Oxidation
S. Lee, J. Oh, M. Song, and Y. Yoon

I3 - International Symposium on Molten Salts and Ionic Liquids 17

Physical and Analytical Electrochemistry / High Temperature Materials / Electrodeposition / Energy Technology

- 2132 Controlled Chemistry of Moisture Sensitive Reagents in Ionic Liquids
E. Amigues, C. Hardacre, G. Keane, M. Migaud, S. Norman, and W. Pitner
- 2133 Extraction of Phenols from Aqueous Solution by Magnetic Ionic Liquids for Environmental Remediation
N. Deng, M. Li, S. de Rooy, B. El-Zahab, and I. Warner
- 2134 Process Variables that Control Natural Fiber Welding
L. Haverhals, H. Sulpizio, Z. Fayos, W. Reichert, M. Foley, H. De Long, and P. Trulove
- 2135 POSS-Modified Cellulose Using 1-ethyl-3-Methylimidazolium Acetate as a Reaction Solvent
D. Fox, J. Lee, J. Jones, M. Zammarano, and J. Gilman
- 2136 Characterization of Polymer Movement in Fiber Welded Cellulose Composites
L. Haverhals, Z. Fayos, H. Sulpizio, W. Reichert, M. Foley, P. Trulove, and H. De Long
- 2137 Grass to Gas: Application of Ionic Liquids to Biomass
M. Foley, W. Reichert, W. McIlvaine, H. De Long, and P. Trulove
- 2138 Selective Gas Absorption by Ionic Liquids
S. Shunmugavel, S. Kegnæs, J. Due-Hansen, T. Gretasdottir, A. Riisager, and R. Fehrmann
- 2139 New Functionalized Imidazolium-Based Room-Temperature Ionic Liquids and Composite Materials for Gas Separation and Selective Transport Applications
D. Gin, R. Noble, T. Carlisle, B. Voss, J. Bara, A. LaFrate, A. Miller, Y. Hudiono, B. Wiesenauer, and M. Reynolds
- 2140 New Ionic Liquids Containing Fluorosulfonyl(trifluoromethylsulfonyl)amide and 5-Phosphoniaspiro[4.4]nonan
H. Matsumoto, T. Umecky, and S. Tsuzuki
- 2141 Ionic Liquid/Zeolite Composites: Synthesis and Characterization Using Vibrational Spectroscopy
S. Ntais, A. Moschovi, V. Dracopoulos, and V. Nikolakis
- 2142 Syntheses of Applications of Frozen Ionic Liquid Nanomaterials
B. El-Zahab, A. Tesfai, D. Bwambok, S. de Rooy, M. Li, S. Das, and I. Warner

- 2143 Spectroscopic Properties of One-Dimensional Nano and Microstructures from Thiocarbocyanine Frozen Ionic Liquids
S. de Rooy, S. Das, A. Jordan, M. Li, B. El-Zahab, and I. Warner
- 2144 Carbon Composite with Pt Nanoparticles Prepared by Room-Temperature Ionic Liquid-Sputtering Method
K. Yoshii, T. Tsuda, T. Torimoto, and S. Kuwabata
- 2145 Immobilization of Au Nanoparticles Synthesized by Sputter-Deposition in Ionic Liquids, on $\text{TiO}_2(110)$
S. Suzuki, Y. Ohta, K. Okazaki, S. Kuwabata, and T. Torimoto
- 2146 Physical Properties of High Temperature Molten Salts
Y. Sato
- 2147 Investigation of Fluoroacidity in Molten Fluorides by the Combination of High Temperature NMR and Molecular Dynamics
G. Moussaed, M. Gobet, A. Rollet, V. Sarou-Kanian, M. Salanne, C. Simon, and C. Bessada
- 2148 Electrochemical Behavior of Dissolved Titanium Species in Molten Salts
G. Haarberg, O. Kjos, A. Martinez, K. Osen, E. Skybakmoen, and K. Dring
- 2149 Current Efficiency for Aluminum Electrowinning from Cryolite-Alumina Melts in a Laboratory Cell
G. Haarberg, J. Armoo, H. Gudbrandsen, E. Skybakmoen, A. Solheim, and T. Jentoftsen
- 2150 Electrochemical Corrosion Behavior of Refractory Metals in $\text{LiCl-Li}_2\text{O}$ Molten Salt
M. Misra, K. Raja, and J. Ruppert
- 2151 Microstructures of Electro-Carburized Steels in Molten Carbonates
N. Siambun and G. Zheng Chen
- 2152 Electrochemical Formation of Nd-Ni Alloys in Molten $\text{LiF-CaF}_2\text{-NdF}_3$
T. Nohira, S. Kobayashi, K. Kobayashi, R. Hagiwara, T. Oishi, and H. Konishi
- 2153 Electrical Conductivity of Molten Fluoride-Chloride Electrolytes
A. Dedyukhin, A. Apisarov, A. Redkin, and Y. Zaikov
- 2154 Pyrochemical Reprocessing of Used Nuclear Fuels
T. Koyama, Y. Sakamura, and M. Iizuka
- 2155 Oxygen Reduction Reaction on LaNiO_3 in Li/Na Eutectic Carbonate Melt with La_2O_3
K. Matsuzawa, K. Watanabe, S. Mitsushima, and K. Ota
- 2156 Effect of Addition of Multi-Component Lanthanides to LiCl-KCl Eutectic on Thermal and Electrochemical Properties
M. Misra, K. Raja, A. Jaques, and S. Baral
- 2157 Tin Oxide as Oxygen Evolving Anode in Molten Chlorides
E. Kvalheim, G. Haarberg, and A. Martinez
- 2158 Inert Anode Development for Molten Oxide Electrolysis
J. Paramore, H. Kim, A. Allamore, G. Azimi, and D. Sadoway
- 2159 Production of Tantalum Fine Powder by Reducing Tantalum Chloride with Zinc in Molten Salt
K. Onodera, Y. Hoshino, O. Takeda, and Y. Sato
- 2160 Electrolytic Reduction of Powdery SiO_2 in Molten CaCl_2 with Pellet-Type SiO_2 Contacting Electrodes
K. Kobayashi, T. Nohira, and R. Hagiwara
- 2161 Electrochemical Studies of ZnTe Dissolved in Molten ZnCl_2
D. Bradwell, S. Osswald, W. Wei, and D. Sadoway

- 2162 Amperometric Gas Detection Using RTIL Solvents
R. Compton, L. Aldous, A. O'Mahony, E. Rogers, and F. del Campo
- 2163 Photoassisted Anodic Oxidation of Bromide on an n-Type Titanium Dioxide Electrode in an Amide-Type Ionic Liquid
Y. Katayama, S. Koshizawa, and T. Miura
- 2164 Influence of Chemical Composition of the Room Temperature Ionic Liquids on the Electrical Double Layer Capacitance at Micro-Meso-Porous Carbon and Bi(111) Single Crystal Electrodes
E. Lust, L. Siinor, H. Kurig, A. Jänes, P. Miidla, K. Lust, and J. Eskusson
- 2165 Electrical Conductivity of the Coexisting System Containing Molten Carbonates and Rare-Earth Oxide
M. Mizuhata and T. Ohashi
- 2166 Voltammetric Investigations of Ketone Complexation by Lewis Acids in Ionic Liquids
G. Cheek
- 2167 Electrodeposition of Crystalline Silicon Films from Alkali Fluoride Mixtures
K. Osen, A. Martinez, S. Rolseth, H. Gudbrandsen, M. Juel, and G. Haarberg
- 2168 Electrodeposition of Ga and Cu-Ga Alloys from Eutectic Based Ionic Liquids Containing Choline Chloride and Urea for CuGaSe₂-Based Thin Film Solar Cells
M. Steichen, P. Dale, and S. Siebentritt
- 2169 Manufacturing of Porous Refractory Metals Structure by Electrodeposition from Molten Salts
T. McKechnie and A. Shchetkovskiy
- 2170 Potentiostatic Cu-Zn Alloying for Polymer Metallization Using Medium-Low Temperature Ionic Liquid Baths
K. Murase, K. Yanase, T. Ichii, and H. Sugimura
- 2171 The Group I Alkali Metals in Ionic Liquids: Electrodeposition and Determination of Their Kinetic and Thermodynamic Properties
R. Wibowo, L. Aldous, S. Ward Jones, and R. Compton
- 2172 Electrochemical Preparation of Nickel and Iron Nanoparticles in a Hydrophobic Ionic Liquid
Y. Zhu, Y. Katayama, and T. Miura
- 2173 Irradiation-Induced Metal Nanoparticles in Room-Temperature Ionic Liquid
T. Tsuda, T. Sakamoto, S. Seino, A. Imanishi, T. Uematsu, and S. Kuwabata
- 2174 The Influence of Potential Under Diffusion-Controlled Region on Electrodeposition of Silver in an Amide-Type Ionic Liquid
R. Fukui, Y. Katayama, and T. Miura
- 2175 Surface Finishing of Mg Alloys by Al Electroplating in AlCl₃-EMIC Ionic Liquid
M. Ueda, Y. Tabei, and T. Ohtsuka
- 2176 Surface Characterization of High Purity Niobium Electropolished with an Ionic Liquid
T. Abdel-Fattah and R. Crooks
- 2177 Electrochemical Behavior of Titanium, Silicon and Boron Oxides in Cryolite-Alumina Melts
S. Devyatkin, A. Pisanenko, and S. Sarychev
- 2178 Electrochemical and Spectroscopic Properties of Technetium in Fused Alkali Metal Chlorides
V. Volkovich, B. Vasin, and T. Griffiths
- 2179 The Effect of Fission Product Elements on the Behavior of Uranyl Species in Alkali Chloride Melts
V. Volkovich, D. Aleksandrov, B. Vasin, D. Maltsev, and T. Griffiths
- 2180 Behavior of Molybdenum Chloro-Species in Alkali Chloride-Based Melts
V. Volkovich, I. Polovov, R. Kamalov, and T. Griffiths

- 2181 Electrochemistry of the Nb(V)/Nb(IV) Redox Couple in the KCl-K₂NbF₇ Melt
A. Popova and S. Kuznetsov
- 2182 Syntheses of Indium Metal Particles and Hollow Indium Oxide Particles by the Sputter Deposition Technique in Ionic Liquids
T. Suzuki, K. Okazaki, S. Suzuki, T. Shibayama, S. Kuwabata, and T. Torimoto
- 2183 Reaction of Curium(III) Ions with Oxo-Species in Alkali Chloride Melts
A. Osipenko, A. Maershin, V. Volkovich, and M. Kormilitsyn
- 2184 Physicochemical Properties of Bis(trifluoromethylsulfonyl)imide-Based Room-Temperature Ionic Liquids: Application to the Mass Transport of Tris(2,2'-bipyridyl)ruthenium(II)
Y. Pan, L. Boyd, W. Cleland, and C. Hussey
- 2185 Cyclic Voltammetry of Solid TiO₂ in Molten Alkali Chlorides
K. Jiang, X. Hu, X. Jin, D. Wang, and G. Chen
- 2186 Spectroelectrochemical Study of Stainless Steel Corrosion in NaCl-KCl Melt
A. Abramov, I. Polovov, V. Volkovich, O. Rebrin, T. Griffiths, I. May, and H. Kinoshita
- 2187 Electronic Absorption Spectra of Vanadium Species in Halide Melts
M. Chernyshov, I. Polovov, V. Volkovich, O. Rebrin, B. Vasin, K. Vinogradov, and T. Griffiths
- 2188 Processing of Vanadium and Niobium Electrodeposited from Alkali Chloride Melts
M. Chernyshov, I. Polovov, O. Rebrin, V. Volkovich, R. Kamalov, and T. Griffiths
- 2189 Electrolytic Synthesis of NF₃ Using the High Concentration Boron Doped Diamond Anode in a Molten NH₄F•2HF
Y. Iida, H. Oomori, T. Shiono, M. Uno, Y. Nishiki, T. Furuta, M. Saito, M. Inaba, and A. Tasaka
- 2190 Electrochemical Fluorination of (CH₃)₃N•5HF Melt Using Boron Doped Diamond Anode
K. Ikeda, N. Osawa, M. Uno, Y. Nishiki, T. Furuta, M. Inaba, M. Saito, and A. Tasaka
- 2191 Interactions of Perfluoroalkyltrifluoroborate Anions with Cations: Effects of Perfluoroalkyl Chain Length on Motion of Ions in Ionic Liquids
S. Tsuzuki, T. Umecky, and H. Matsumoto
- 2192 CuO Solubility in Alkali-Chloride Melts
I. Skryptun
- 2193 Investigation the Interaction of Components in the System NaF-LiF-LaF₃
R. Savchuk, N. Faidyuk, and A. Omel'chuk
- 2194 Corrosion of Stainless Steel in NaCl-KCl Based Melts
A. Abramov, I. Polovov, O. Rebrin, V. Volkovich, E. Denisov, T. Griffiths, I. May, and H. Kinoshita
- 2195 Electrodeposition of Selenium from the 1-Ethyl-3-Methylimidazolium Chloride-Tetrafluoroborate Room-Temperature Ionic Liquid
L. Chou, I. Sun, and C. Hussey
- 2196 Molecular Dynamics Simulation of Room-Temperature Ionic Liquid Mixture of [Pyr15][TFSI] and Dimethyl Carbonate
Y. Wang, G. Smith, O. Borodin, and W. Henderson
- 2197 The Standard Rate Constants of Charge Transfer for the Cr(III)/Cr(II) Redox Couple in NaCl-KCl-K₃CrF₆ Melt
Y. Stulov and S. Kuznetsov
- 2198 Structural Study of Lanthanide(III) Bistriflamides, Ln(NTf₂)₃
C. Hardacre, K. Seddon, and A. Tomaszowska

- 2199 Synthesis and Characterization of Choline Chloride Based Binary Mixtures
Q. Abbas and L. Binder
- 2200 Fluorescence Activity of Green Fluorescent Protein in Ionic Liquids
L. Haverhals, C. DaBronzo, J. Schlessman, W. Reichert, M. Foley, H. De Long, and P. Trulove
- 2201 (Max Bredig Award Presentation) From Slags to Molten Salts to Ionic Liquids: A 50 Year Joyride
C. Angell
- 2202 Bulk and Interfacial Behavior of Ionic Liquids from Molecular Dynamics Simulations
O. Borodin, J. Vatamanu, G. Smith, and J. Hooper
- 2203 Semi-Empirical Molecular Modeling Methods of Ionic Liquid Tribology: Ionic Liquid-Hydroxylated Silicon Surface Interactions
N. Nooruddin, P. Wahlbeck, and W. Carper
- 2204 Ionic Interactions in Ionic Liquids
L. Crowhurst, J. Hallett, M. Lui, and T. Welton
- 2205 A Neutron Diffraction and Molecular Dynamics Investigation of Acetate-Based Ionic Liquids as Solvents for Glucose
C. Mullan, C. Hardacre, J. Holbrey, C. Lagunas, T. Youngs, D. Bowron, L. Gladden, M. Mantle, and C. D'Agostino
- 2206 Vibrational Spectra and Dynamics of Anions and Acids in Ionic Liquids
J. Owrutsky, C. Houchins, D. Weidinger, and D. Brown
- 2207 Analysis of Cationic Structure in Some Room Temperature Molten Fluorides and Dependence of Their Ionic Conductivity and Viscosity on HF-Concentration
A. Tasaka, T. Nakai, H. Inoue, K. Nakanishi, T. Isogai, M. Saito, and M. Inaba
- 2208 Superionic and Superacidic Glasses, Liquids and Plastic Crystals
C. Angell
- 2209 Superfragility of Decahydroisoquinoline is Lost on Conversion to Ionic Liquid
K. Ueno and C. Angell
- 2210 Intermediate Phases Derived from Fluorohydrogenate Ionic Liquids
K. Matsumoto, R. Taniki, F. Xu, and R. Hagiwara
- 2211 Dynamics, Phase Transitions, and Ion Correlations in the Plastic Crystalline N,N,N,N-Tetramethylammonium Dicyanamide System
J. Hooper and O. Borodin
- 2212 In Situ Experimental Approach of the Speciation in Molten Lanthanide and Actinide Fluorides Combining NMR, EXAFS and Molecular Dynamics
C. Bessada, O. Pauvert, D. Zanghi, A. Rollet, V. Sarou-Kanian, M. Gobet, G. Moussaed, A. Rakhmatullin, M. Salanne, C. Simon, and H. Matsuura
- 2213 Exploring the Effect of Structural Modification on the Physical Properties of Various Ionic Liquids
S. Lall-Ramnarine, J. Hatcher, A. Castano, M. Thomas, and J. Wishart
- 2214 Effects of Crystal Packing on the Thermal Behavior of N,N'-Alkylpiperidinium and Morpholinium Iodide Salts
W. Reichert, W. Henderson, J. Urban, H. De Long, and P. Trulove
- 2215 Transport Properties in Cryolitic Melts: NMR Measurements and Molecular Dynamics Calculations of Self-Diffusion Coefficients
M. Gobet, V. Sarou-Kanian, A. Rollet, M. Salanne, C. Simon, and C. Bessada

- 2216 Fundamental Questions on the Capacitance of Room-Temperature Ionic Liquids
M. Kobrak
- 2217 Electrochemical Capacitors Using Fluorohydrogenate Ionic Liquid Electrolytes
K. Matsumoto, K. Takahashi, A. Senda, T. Nohira, and R. Hagiwara
- 2218 High Conductivity of Ionic Liquids, Based on the Symmetrical Guanidinium Cation
Z. Zhao and C. Angell
- 2219 Ionic Liquids and Ionic Liquid Binary Mixtures as Electrolytes for Lithium Batteries
M. Kunze, G. Kim, S. Jeong, G. Appetecchi, M. Schönhoff, M. Winter, and S. Passerini
- 2220 Spiro-Ammonium TFSI Ionic Liquids for Lithium Battery Electrolytes
A. Yeates
- 2221 Electrowinning of Lithium from Molten Salt Containing LiOH for Hydrogen Storage and Transportation
O. Takeda, M. Li, M. Hoshi, and Y. Sato
- 2222 Synthesis of New Protic Ionic Liquids for Fuel Cells on the Basis of In Situ FT-IR Measurements
H. Munakata, T. Tashita, M. Haibara, and K. Kanamura

I4 - Oscillations and Pattern Formation in Electrochemistry

Physical and Analytical Electrochemistry

- 2223 Oscillations and Pattern Formation in an Electrochemical Membrane Reactor Exposed to H₂/CO Mixtures
R. Hanke-Rauschenbach, S. Kirsch, and K. Sundmacher
- 2224 PEMFC Oscillatory Behavior on a Pd-Pt/C Electrocatalyst
P. Lopes, H. Varela, and E. Ticianelli
- 2225 Time Dependent Oscillations during the Electrocatalytic Oxidation of Aqueous Sulfur Dioxide
J. O'Brien, J. Hinkley, and S. Donne
- 2226 Interfacial Electrochemistry vs. the Homogeneous Redox Chemistry: Interpretation of the Potentiometric Responses of Various Electrodes Monitoring the Oscillatory Course of the Cu²⁺-Catalyzed Oxidation of Thiocyanates with Hydrogen Peroxide
M. Orlik, A. Wisniewski, and K. Pekala
- 2227 Spatio-Temporal Instabilities during CO Bulk Electrooxidation on Pt
A. Bonnefont, P. Bauer, S. Malkhandi, and K. Krischer
- 2228 Fractal Silicon Micropatterns: Surface Analysis with Spatial Resolution
M. Lublow, B. Bouabadi, C. Pettenkofer, and H. Lewerenz
- 2229 Pattern Formation during Anodic Etching of Semiconductors
H. Föll and J. Carstensen
- 2230 Pattern Formation of Sulfur Deposition/Dissolution in the Electrochemical Oxidation of Sulfide on a Platinum Electrode
S. Wang, J. Yang, X. Hu, J. Feng, and Q. Gao
- 2231 Cell-Cell Communication in Electricity-Producing Bacteria
S. Nakanishi and K. Hashimoto
- 2232 Nonlinear Electrochemical Emulation of Unidirectional Wave Propagation Along Upper Urinary Tract
S. Nakabayashi and H. Koyama

- 2233 Optimal Waveform for the Entrainment of a Weakly Forced Electrochemical Oscillator
I. Kiss, T. Harada, H. Tanaka, and M. Hankins
- 2234 Bursting Oscillations, Synchronization and Resonance during Anodic Dissolution of Metals
A. Karantonis
- 2235 Impact of Fluctuations on Electrochemical Oscillations at Nonoscale Electrodes
T. Pourrostami, V. Garcia-Morales, and K. Krischer
- 2236 Synchrony and Precision of Chaotic Electrochemical Oscillators: Effects of Temperature and Coupling
M. Wickramasinghe and I. Kiss
- 2237 Decoding Complexity: Application of Principal Critical Simplification to Electrochemical Systems
G. Yablonsky and I. Kiss
- 2238 Effect of Preceding Chemical Reaction Rate on Dynamical Instability in an Electrochemical System
V. Pototskaya, O. Gichan, and A. Omel'chuk
- 2239 The Role of Oxotungstate in Xray Induced Patterned Metal Deposition
E. Timofeeva, J. Katsoudas, and C. Segre
- 2240 Oscillations in the Electrodeposition of Cobalt Oxide Compounds
N. Ivanova, O. Stadnik, and E. Boldyrev

15 - Professor V. S. Bagotsky: 65 Years in Theoretical Electrochemistry, Electrocatalysis, and Applied Electrochemistry

Physical and Analytical Electrochemistry/Energy Technology

- 2241 Capacitance Measurements in Room Temperature Ionic Liquids Containing an Imidazolium Cation
D. Misticak, A. Gaal, and W. Fawcett
- 2242 AC Admittance Study of Electron-Transfer Kinetics to the Metallocenes in Imidazolium Ionic Liquids
A. Gaal, D. Misticak, and W. Fawcett
- 2243 In Situ Soft Xray Characterization of Hydrogen Oxidation in a Solid-Oxide Electrochemical Cell
F. El Gabaly, A. McDaniel, M. Grass, Z. Liu, and K. McCarty
- 2244 Pt Monolayer Electrocatalysts: Improvements with Pd Nanorod and Nanowire Supports Obtained by Electrochemical Deposition
S. Bliznakov, M. Vukmirovic, E. Sutter, and R. Adzic
- 2245 Tuning the Redox Potential of Surface-Confined Macrocyclic Complexes for the Highest Catalytic Activity in Electron Transfer Processes
J. Zagal, F. Silva, M. Sancy, J. Pavez, M. Paez, C. Linares, and R. Arratia-Perez
- 2246 Electrochemical Behavior of Ammonia at Carbon Supported Pt-Based Nanoparticles
E. Baranova, A. Kapalka, and T. Lomocso
- 2247 Accelerated Electrochemical Oxidation of Small Organic Molecules in Hot Aqueous Base Solution
J. Jiang and T. Aulich
- 2248 The Oxidation of Hydroxylamine on Au in Aqueous Acidic Electrolytes: Electrochemical and In Situ Spectroscopic Studies
D. Scherson, D. Martins de Godoi, Y. Chen, and H. Zhu

- 2249 New Electrode Materials for Lithium-Ion Batteries
T. Kulova and A. Skundin
- 2250 Fundamental Thermodynamic Modifications in Wagner's Equation in Solid State Electrochemistry
T. Miyashita
- 2251 Nanostructured Electrocatalysts Based on Organo-Metallic Clusters for Ethanol-Air and Borohydride-Air Fuel Cells
V. Grinberg, N. Mayorova, and A. Pasynskii
- 2252 Macroporous Ruthenium and Ruthenium Oxide Electrodes for Electrochemical Applications
J. Lenz, V. Trieu, A. Kuhn, and R. Hempelmann
- 2253 Electrochemical Determination of Hydroquinone Using Hydrophobic Ionic Liquid-Type Carbon Paste Electrode
H. Liu and Y. She
- 2254 Comparative Study of the Selectivity of Co and Fe Phthalocyanines for the Catalytic Reduction of Molecular Oxygen when Attached to Self-assembled Monolayers of Thiols on Gold (111)
I. Ponce, J. Pavez, M. Paez, F. Silva, and J. Zagal

J1 - Chemical Sensors 9: Chemical and Biological Sensors and Analytical Systems

Sensor

- 2255 (Sensor Division Outstanding Achievement Award) Nanomechanical Chemical Sensors
T. Thundat
- 2256 Electrochemical DNA Nano-Biosensors Based on MWCNT-AuNP Nanocomposites
T. Gnanaprakasa and A. Simonian
- 2257 Biosensors for the Detection of DNA Damage by Toxicants
A. Prance, K. Coopersmith, M. Stobiecka, and M. Hepel
- 2258 Hepatitis C Virus Sensor Based on Its RNA Hybridization with the Complementary PNA Immobilized on the Thiophene-Diaza-18-Crown-6 SAM and Subsequent EIS Detection
J. Park, Y. Lee, B. Chang, and S. Park
- 2259 Nanoporous Sensors
S. Smirnov and X. Wang
- 2260 Localized Electrochemistry for Electrochemical Readout of Microarray on a Monolith Electrode
S. Lee, D. Moore, and R. Saraf
- 2261 Molecular Substrate Imprinted Sensors: The Molecular Recognizers
Y. Zhou
- 2262 Electroenzymatic Oxidation and Reduction of Directed Immobilized Dehydrogenases for Electrochemical Cofactor Regeneration
J. Gajdzik, J. Lenz, H. Natter, A. Walcarius, G. Kohring, F. Giffhorn, A. Demir, and R. Hempelmann
- 2263 Advantage of Ultra Thin Overoxidized Polypyrrole Membrane in the Design of Amperometric Biosensor
C. Debiemme-Chouvy, G. Navarro, S. Chebil, H. Sauriat-Dorizon, H. Korri-Youssofi, and H. Le
- 2264 Effect of Cetyltrimethylammonium Bromide on the Voltammetric Determination of Dexamethasone
R. Goyal

- 2265 Encapsulation of Enzymes Inside Peptide Nanotubes for Hydrogen Peroxide Detection
B. Park, D. Yoon, and D. Kim
- 2266 A New In Vivo Reference Electrode for Bioelectrochemical Applications
M. Reda
- 2267 Fabrication of High Sensitivity pH-Meters by Nano-Porous Silicon Structures
M. Shahmohammadi, N. Zehfroosh, and S. Mohajerzadeh
- 2268 SnO₂/NiO Composite Thin Films for Formaldehyde Detection
J. Dunford, J. Tunney, and X. Du
- 2269 Double Sided Tape Assisted Bonding Method for Low Cost Poly(methyl methacrylate) Based Passive and Active μ -TAS Devices
A. Khosla and M. Akbari
- 2270 Stimuli-Responsive Thin Hydrogel Membranes Coupled with Biocatalytic Processes
I. Tokarev, V. Gopishetty, J. Zhou, M. Pita, M. Motornov, E. Katz, and S. Minko
- 2271 Metabolic Assay System for Micropatterned Contractile Myotubes
K. Nagamine, Y. Ido, S. Sekine, T. Miyake, M. Kanzaki, and M. Nishizawa
- 2272 Surface-Functionalized Magnetoelastic Resonators Interfaced with a Landscape Phage Layer for Wireless Biosensing Applications
S. Horikawa, S. Li, D. Bedi, I. Chen, M. Auad, M. Bozack, J. Barbaree, V. Petrenko, and B. Chin
- 2273 Electrochemical Whole-Cell Low Profile Biochips
H. Ben-Yoav, A. Freeman, M. Sternheim, T. Amzel, N. Fishelson, A. Biran, R. Pedahzur, S. Belkin, S. Buchinger, G. Reifferscheid, and Y. Shacham-Diamand
- 2274 Real-Time Biosensor Platform: Fully Integrated Device for Impedimetric Assays
A. Ghindilis, M. Smith, K. Schwarzkopf, Z. Changqing, D. Messing, I. Sezan, D. Evans, and H. Simon
- 2275 Nanomaterials in Medicine
Z. Aguilar, Y. Aguilar, H. Xu, B. Jones, J. Dixon, H. Xu, and Y. Wang
- 2276 Electrochemical Sensor with Multifunctional Nanocomposite Interface for Detection of Several Analytes
S. Mantha and A. Simonian
- 2277 A Multiple Magnetoelastic Sensor System for Detection of *Salmonella Typhimurium* Using Pulse Method
W. Shen, S. Li, S. Horikawa, and B. Chin
- 2278 Detection of Plant Pathogen Using LPNE Grown Single Conducting Polymer Nanoribbon
N. Chartuprayoon, Y. Rheem, W. Chen, and N. Myung
- 2279 Detecting Insect Infestation Using a Carbon/Polymer Composite Based Sensor Array
K. Weerakoon and B. Chin
- 2280 Detection of *Salmonella Typhimurium* on Fresh Food Produce Using Multiple Phage-Based Magnetoelastic Biosensors
S. Li, S. Horikawa, W. Shen, and B. Chin
- 2281 Functional Magnetic Nanoparticles Integrated Voltammetric Sensor for Tracing of Environmental Uranium Contamination
R. Banerjee, K. Pannell, and C. Li
- 2282 Electrical Properties of ITO Deposited on Various YSZ Substrates and Their NO₂ Gas Sensing Properties
M. Yang, K. Heo, S. Hong, and S. Hong

- 2283 Statistical Investigation of a Novel Signal Conditioning Circuit for Reliable Detection of Exhaust Gas Components
P. Sekhar, E. Brosha, R. Mukundan, B. Farber, and F. Garzón
- 2284 Selectivity Improvements and Response Time Scale of Porous Silicon Conductometric Gas Sensors
S. Ozdemir and J. Gole
- 2285 Potentials of $\text{Sm}_{0.95}\text{Ce}_{0.05}\text{Fe}_{1-x}\text{Cr}_x\text{O}_{3-\delta}$ Perovskite Materials for Gas Sensing
S. Bukhari and J. Giorgi
- 2286 Detection of Nitrogen Dioxide Gas in Nitrogen Atmospheres via Passive Monitoring of Iron (II) Phthalocyanine Thin Films
J. Shu, H. Wickle, and B. Chin
- 2287 Porous SnO_2 Films Fabricated by Anodic Oxidation and RIE Process and CuO Additives Effect on Gas Sensing Properties
J. Jeun and S. Hong
- 2288 Catalytic Metal-Oxide Based Sensors for Unstable Gaseous Radicals
U. Cvelbar, M. Mozetic, and K. Ostrikov
- 2289 Metal Hexacyanoferrate with Conducting Polymer Composite Film Modification Electrodes for Selectively Determination of AA, DA and UA
T. Chen, T. Tsai, and S. Chen
- 2290 Electrical Properties and Reliability of CdS Thin Films for Flexible Opto-Electronic Device
S. Hur, M. Hwang, J. Ahn, and S. Yoon
- 2291 Gas Sensing Properties of Bismuth Oxychloride Nanowires and Nanoribbons
C. Michel, N. López-Contreras, A. Cruz-Hernández, A. Yocupicio, and C. Rivera-Tello
- 2292 Electrochemical Behavior of Doped Poly(Phenazine 2,3- diimino(pyrrole-2-yl)) Immobilized at BDD Electrode as Redox Stimulated Actuators for Drug Delivery Dose Control
F. Iftikhar and P. Baker
- 2293 Electrochemical Detection of Dopamine in Cephaloraquid Liquid Using Modified Electrodes with Nanocomposites of PAMAM Dendrimers and Pt Nanoparticles
E. Bustos, L. Godinez, T. Lopez, and Y. Meas
- 2294 A Detection of Viral Protein with the CMOS Based Biosensor
H. Hong and K. Song
- 2295 A Detection of Beta-amyloid for Early Diagnosis of Alzheimer's Disease by Using Photo-Transistor
K. Kim, J. Kang, J. Cho, C. Chae, J. Suh, and K. Song
- 2296 pH Micro-Sensors Associated with Micro-Fluidics for Chemical Analysis
A. Kherrat, F. Le Bihan, F. Razan, N. Coulon, L. Griscom, O. De Sagazan, S. Crand, and T. Mohammed-Brahim
- 2297 Electrochemical Characterization of Solid-Supported Liquid Membrane Systems Based on Aryl Aldoxime, 2-hydroxy-5-nonylbenzaloxime Ionophore
F. Alguacil and J. Galván
- 2298 Cadmium Ion Sensors for Environmental Monitoring
M. Milochova and E. Bychkov
- 2299 Development of an Amperometric Propylamine Sensor based on a Ni Screen-Printed Electrode
T. Shiu, W. Yuan, C. Hsu, C. Chang, and Y. Weng

- 2300 Self-Contained Microelectrochemical Assay with Enhanced Capture Surface for Sensitive Detection of Proteins
C. Wansapura
- 2301 Chemiluminescence Analysis of Amino Acids: Examination of Enzyme Reaction Conditions
A. Kugimiya, F. Babe, and R. Fukada
- 2302 A Strategy for Constructing a Hybrid Hydrogel/Nanoparticle to Develop Biosensors with Improved Performance
V. Pedrosa, A. Revzin, and A. Simonian
- 2303 Polypyrrole-Immobilized Urease Biosensor for Amine Detection
H. Wu, W. Yuan, Y. Weng, Y. Lai, C. Chang, and C. Hsu

J2 - Luminescence and Energy Efficiency

Luminescence and Display Materials / Energy Technology

- 2304 Nitride and Oxynitride Compounds Used as Host Lattices Whose Phosphors for White LED
K. Uheda
- 2305 Theoretical Maximum Efficacy and Color Rendering Assessment of Energy-Efficient Light Sources
J. Carreras, J. Quintero, and C. Hunt
- 2306 Luminescent Property and Thermal Stability of α -SiAlON Phosphors Synthesized by Spark Plasma Sintering
S. Choi and S. Hong
- 2307 Luminescent Ceramics for Phosphor Converted LEDs
A. Tuecks, B. Schreinemacher, H. Bechtel, P. Schmidt, and O. Shchekin
- 2308 Eu^{2+} Doped Calcium Chlorosilicate Phosphors: Polymorphism and Luminescence Properties
N. Karkada, D. Porob, P. Kumar, and A. Setlur
- 2309 Site Occupancy, Charge Compensation, and Quenching in $\text{Sr}_3\text{AlO}_4\text{F}:\text{Ce}^{3+}$ -Based Phosphors
A. Setlur and U. Happek
- 2310 Y_2O_3 Red Phosphors for General Lighting Coated by Atomic Layer Deposition (ALD) of ZnO for Enhanced Efficacy, Lifetime, and Thermal Stability
K. Tapily, D. Gu, H. Baumgart, and C. Hunt
- 2311 Photoluminescence Characteristics of $\text{Sr}_3\text{SiO}_5:\text{Eu}^{2+}$ Yellow Phosphors Synthesized by Solid-State Method and Pechini Process
E. Kang, S. Choi, and S. Hong
- 2312 Visible Emission Properties of Nd^{3+} -Doped $(\text{Y},\text{Gd})\text{BO}_3$ Phosphors
R. Balakrishnaiah, D. Kim, S. Yi, S. Kim, K. Jang, H. Lee, B. Moon, and J. Jeong
- 2313 Enhanced Light Output of AlGaInP LEDs Using Indium-Zinc Oxide Film as TCL and Electroplated Nickel Substrate
D. Kuo, K. Uang, T. Chen, W. Lee, P. Wang, and S. Wang
- 2314 Luminescent Properties of Ce^{3+} -Doped $(\text{Y}_{(1-x)},\text{Gd}_{(x)})\text{VO}_4$ Phosphors
R. Balakrishnaiah, S. Yi, S. Kim, K. Jang, H. Lee, and J. Jeong
- 2315 Effect of Ba Thickness in Ba/Al Cathode on Built-In Potential and Electroluminescence Characteristics of Organic Light-Emitting Diodes
J. Kwon, J. Lim, and G. Yeom

- 2316 Citric Sol-Gel Synthesis and Photoluminescence Properties of Un-Doped and Sm³⁺ Doped Ca₃Y₂Si₃O₁₂ Phosphors
V. Bandi, M. Jayasimhadri, K. Jang, H. Lee, S. Yi, and J. Jeong
- 2317 Improved Current Spreading and Blocking Designs for High-Power Vertical-Structure GaN-Based LEDs
P. Wang, S. Wang, K. Uang, T. Chen, W. Lee, and D. Kuo

J3 - Microfabricated and Nanofabricated Systems for MEMS/NEMS 9

*Sensor / Dielectric Science and Technology / Physical and Analytical Electrochemistry /
Electronics and Photonics*

- 2318 Novel Photolithography Yield-Enhancement Technique: Megasonic-Enhanced Development
E. Cakmak, J. Bartel, V. Dragoi, and D. Dussault
- 2319 Rigidity Percolation in Plasma Enhanced Chemical Vapor Deposited SiC_x:H Thin Films
S. King
- 2320 Fabrication of Silicon Needle-Like Structures Suitable for Controlled Gas Permeability
Z. Sanaee and S. Mohajerzadeh
- 2321 Integrated Perfusion Culture Microchamber Array Chip for High-Throughput Drug Dose Response Assay
S. Sugiura, K. Hattori, and T. Kanamori
- 2322 Microcantilevers with Nanowells
M. Lee, D. Lee, and S. Jeon
- 2323 Microcantilever Arrays with In-Plane Photonic Readout for Biosensing
G. Nordin, S. Kim, W. Hu, R. Anderson, J. Noh, S. Ness, W. Dahlquist, and D. Richards
- 2324 Microelectrode Array Supported by Microfluidic Channel for High-Throughput Sensing: Fabrication Optimization and Characterization
A. Delcourt Lancon, R. Katakya, D. Wood, and A. Gallant
- 2325 Characterization of HKUST-1 Crystals and Their Application to MEMS Microcantilever Sensors
A. Venkatasubramanian, J. Lee, R. Houk, M. Allendorf, S. Nair, and P. Hesketh
- 2326 Novel Concept for the Formation of Sensitive, Selective, Rapidly Responding Conductometric Sensors
J. Gole and S. Ozdemir
- 2327 Ultra-Low Power Microbridge Gas Sensor
R. Aguilar, Z. Peng, P. Hesketh, and J. Stetter
- 2328 Nanoparticle Formation and Characterization in Continuous Flow Microfluidic Systems
J. Hong and M. Gaitan
- 2329 High Toughness and Moisture Insensitive Hydrogenated Amorphous Silicon Carbide Films for MEMS/NEMS
Y. Matsuda, S. King, J. Bielefeld, and R. Dauskardt
- 2330 Characterization of Thermo-Mechanical Properties of Carbon-Based Low-Dimensional Material/Metallic Thin-Film Composites from NEMS Structures
M. Cho, Y. Kim, B. Lee, S. Hong, and Y. Park
- 2331 Development of High Temperature Wireless Sensor Technology Based on Silicon Carbide Electronics
G. Hunter, G. Beheim, G. Ponchak, M. Scardelletti, R. Meredith, F. Dynys, P. Neudeck, J. Jordan, and L. Chen

- 2332 The Development and Fabrication of MEMS in the Semiconductor World
G. Winterton
- 2333 Wafer Level Characterization of the Sacrificial HDP Oxide Lateral Etching by Anhydrous Vapor HF with Ethanol Vapor for SiGe MEMS Structures
H. Cui, R. Van Hoof, S. Severi, A. Witvrouw, A. Knoops, T. Delande, J. Pancken, and M. Claes
- 2334 Self Patterned Gold Electroplating for High-Aspect Ratio MEMS Structures
H. Zareie and M. Agah
- 2335 Photopatternable Electrical Conductive Ag- SU-8 Nanocomposite for MEMS/MST
A. Khosla and B. Gray
- 2336 Electrodeposition Assisted Xray Lithography: Single Step Approach
J. Katsoudas, E. Timofeeva, and C. Segre
- 2337 Design Approach and Realization of Integrated Silicon Piezoresistive Pressure Sensors for Wide Application Ranges
W. Schreiber-Prillwitz, M. Saukoski, G. Chmiel, and R. Job
- 2338 Magnetic Elastomeric Polymers for Soft MEMS: Fabrication and Process Technology
A. Khosla and B. Gray

J4 - Physics and Chemistry of Luminescence and Display Materials

Luminescence and Display Materials / Sensor

- 2339 Prediction of $4f^n - 4f^{n-1}5d^1$ Transition Spectra of Rare-Earth Ions in Crystals Based on First-Principles Calculation
K. Ogasawara
- 2340 Experimental Evidence and Interpretation of Rare Earth Dopant Segregation in Oxide Optical Ceramics
G. Boulon, W. Zhao, S. Anghel, D. Amans, T. Epicier, V. Chani, and A. Yoshikawa
- 2341 Optical Spectroscopy of YI_3-Nd^{3+} : Charge Transfer Transition and Efficient Visible Emission
A. Srivastava, S. Camardello, H. Comanzo, and A. Meijerink
- 2342 Metal-free Polymer Light-Emitting Electrochemical Cells Incorporating a Transparent Graphene Electrode
P. Matyba, H. Yamaguchi, G. Eda, M. Chhowalla, L. Edman, and N. Robinson
- 2343 Inorganic Scintillator Development: Applications and Fundamental Understanding
G. Bizarri
- 2344 Rapid Processing and Characterization of Luminescent Materials
E. Bourret-Courchesne, G. Bizarri, and S. Derenzo
- 2345 Effects of Binary Fluxes on Structure and Luminescence of $BaMgAl_{10}O_{17}:Eu^{2+}$ Phosphor
C. Lin and N. Wu
- 2346 Energy Transfer in $SrAl_{12}O_{19}:Pr^{3+}:Mn^{2+}$
U. Happek and A. Setlur
- 2347 The Decay of the 1D_2 Level of Pr^{3+} in YPO_4
J. Collins, M. Bettinelli, and B. Di Bartolo
- 2348 Color Tuning of Electrochromic Materials for Color e-Paper
S. Jeon, R. Das, C. Noh, and Y. Jin
- 2349 Preparation of Luminescent Nanosheets by Exfoliation of Layered Perovskite Oxide
S. Ida, Y. Matsumoto, and T. Ishihara

- 2350 Luminescent Evolution of Sr-Si-O-N Systems Prepared by a Solid-State Reaction Method
S. Lee, J. Lee, W. Jung, K. Lee, and Y. Kim
- 2351 Vacuum Ultraviolet Photoluminescence Properties of (Y,Gd)VO₄:Eu,Al Phosphors Synthesized by Ultrasonic Spray Pyrolysis
K. Park, M. Heo, and K. Kim
- 2352 Emission Peak Shift in Non-Stoichiometric CaAl_xSi_{(7-3x)/4}N₃:Eu²⁺ Phosphors
B. Lee, W. Park, J. Park, and K. Sohn
- 2353 (La,Gd)PO₄:Tb Phosphors Synthesized by Ultrasonic Spray Pyrolysis for Plasma Display Panel Applications
K. Park, M. Heo, and K. Kim
- 2354 A Tunable Emission Prepared by Novel Photo-Induced Color-Change Materials of Blue Polymer Light-Emitting Diodes
W. Liu and W. Huang
- 2355 PL and EL Characteristics in Bi- and Rare Earth-Co-Doped (La_{1-x}Ga_x)₂O₃ Phosphor Thin Films Prepared by Magnetron Sputtering
T. Minami, J. Nomoto, Y. Nishi, and T. Miyata
- 2356 Combustion Synthesis and Photoluminescence Characteristics of SrY_{1.7}B_{0.3}O₄:Eu Nanoparticles
S. Khatkar and M. Kumar
- 2357 High Efficiency of Organic Color Thin Films
W. Liu and W. Huang
- 2358 Pulsed Laser Ablation in Liquid: An Efficient Screening Tool for Luminescent Nanoparticles
M. Diouf, C. Mancini, D. Amans, F. Chaput, G. Ledoux, and C. Dujardin
- 2359 Synthesis of SrCaSi₅N₈:Eu²⁺ by Carbothermal Reaction Method
H. Chae and C. Kim
- 2360 From 20 Hz to Hundreds of Electron Volts: Band Structure, New Materials, and Applications of Rare Earth Ions to Optical Signal Processing, Quantum Information Science, and Lasers
R. Cone, C. Thiel, R. Macfarlane, Y. Sun, and T. Böttger
- 2361 Two-Photon Pumped Solid State Random Laser
J. Fernandez, S. Garcia-Revilla, I. Sola, R. Balda, L. Roso, D. Levy, and M. Zayat
- 2362 NASA Lasers Monitor the Health of Planet Earth
N. Barnes
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