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1511 (Invited) Efficient Generation of High Energy Density Fuel from Water
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1512 Ni-Based Catalysts for Hydrogen Evolution Reaction
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1513 Achieving Hydrogen Production through Solid Oxide Electrolyzer Stack by High Temperature Electrolysis
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1514 The Integration of Solid Oxide Fuel Cells and Solid Oxide Electrolysis Cells for the High Efficiency Production of Oxygen and Hydrogen
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1516 Failure Mechanism of (La,Sr)MnO₃ Oxygen Electrodes of Solid Oxide Electrolysis Cells
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1517 Electrochemical Studies on Anode Supported Solid Oxide Electrolyzer Cells (SOEC)
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1518 Reversible Solid Oxide Fuel Cell Development at Versa Power Systems
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1519 Implications Associated with S Contamination for the Production of Syn-Gas from CO₂ Reduction
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1531 IT-SOFC Membrane Formed by Gelcasting Process from Ceria Based Nanopowder

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1587 (Morris Cohen Graduate Student Award of the Corrosion Division) Understanding the Interplay between Water Chemistry Variables and Electrochemical Properties of Copper

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D. Asefi, M. Arami, and N. Mahmoudi

1590 Non-Toxic Compounds as Corrosion Inhibitors: A Review

D. Asefi, M. Arami, and N. Mahmoudi

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1841 Copper-ALD Seed Layer as an Enabler for Device Scaling

J. Mao, E. Eisenbraun, V. Omarjee, A. Korolev, and C. Dussarrat

1842 Plasma Enhanced Atomic Layer Deposited Ru for MIMCAP Applications


1843 Tailor-Made, Magnetic Nanotubes by Template-Directed Atomic Layer Deposition

K. Nielsch and R. Zierold

1844 ALD Applied To Conformal Coating Of Nanoporous γ-Alumina: Spinel Formation And Luminescence Induced By Europium Doping

E. Rauwel, O. Nilsen, A. Galeckas, J. Walmsley, E. Rytter, and H. Fjellvåg

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P. Cunha, M. Scherer, and U. Steiner

1846 Metalcone and Metalcone/Metal Oxide Alloys Grown Using Atomic & Molecular Layer Deposition Techniques

B. Lee, V. Anderson, and S. George
Atomic Layer Deposited Yttria Stabilized Zirconia Barrier Layer for Proton Conducting Oxide

J. Park, T. M. Gür, and F. Prinz

Remote Plasma ALD of Electrochemically Active LiCoO$_2$ for Application in All-Solid-State µBatteries

M. E. Donders, H. C. Knoops, W. Kessels, and P. H. Notten

ALD of Thin Films for Lithium-Ion Batteries

T. Aaltonen, V. Miikkulainen, K. Gandrud, A. Pettersen, O. Nilsen, and H. Fjellvåg

Synthesis and Integration of Solid Electrolyte by Atomic Layer Deposition for 3-D Micro-Batteries

J. P. Chang

Indium Oxide Atomic Layer Deposition Facilitated by the Synergy between Oxygen and Water

J. A. Libera, J. N. Hryn, and J. W. Elam

In Situ Gas-Phase Diagnostics for Titanium Nitride Atomic Layer Deposition

J. E. Maslar, W. Kimes, and B. Sperling

Diffusion-Reaction Model of ALD in Nanostructured Substrates: Analytic Approximations to Dose Times as a Function of the Surface Reaction Probability

A. Yanguas-Gil and J. W. Elam

Reaction Mechanisms in ALD of Ternary Oxides

S. D. Elliott, T. Blomberg, and O. Nilsen

ALD and AVD Grown Perovskite-type Dielectrics for Metal-Insulator-Metal Applications

C. Wenger, M. Lukosius, T. Blomberg, A. Abrutis, P. Baumann, and G. Ruhl

Plasma-Assisted ALD of SrTiO$_3$: Study of Composition and Crystallization Behavior by Spectroscopic Ellipsometry

V. Longo, N. Leick, F. Roozeboom, and W. Kessels

Low Equivalent Oxide Thickness TiO$_2$ Based Capacitors for DRAM Application

K. Fröhlich, B. Hudec, K. Husekova, J. Aarik, A. Tarre, A. Kasikov, and A. Vincze

Optimizing ALD HfO$_2$ for Advanced Gate Stacks with Interspersed UV and Thermal Treatments- DADA and MDMA Variations, Combinations, and Optimization

R. D. Clark, S. Consiglio, G. Nakamura, Y. Trickett, and G. J. Leusink

Structural Characteristics of Electrically Scaled ALD HfO$_2$ from Cyclical Deposition and Annealing Scheme

S. Consiglio, R. D. Clark, E. Bersch, J. LaRose, I. Wells, K. Tapily, G. J. Leusink, and A. Diebold
Picosun SUNALE ALD Systems for High Quality Nanocoatings - Bridging the Gap between R&D and Industrial Production
M. Toivola, P. J. Soininen, T. Lehto, and T. Pilvi

High throughput Atomic Layer Deposition for Encapsulation of Large Area Electronics
J. Kools

ALD for Sustainable Future - Paving the Way to Cleaner World from Sub-Nanometer Level
M. Toivola and T. Pilvi

Deposition and Characterization of Atomic Layer Deposited ZnS Thin Films on p-type GaSb(100) Using Diethylzinc Precursor and Hydrogen Sulfide
R. Xu, J. Huang, S. Ghosh, and C. Takoudis

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G. Liu, E. Deguns, M. Sowa, R. Bhatia, A. Bertuch, M. Dalberth, L. Lecordier, G. Sundaram, and J. Becker

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H. Li, T. Perera, D. Shenai, Z. Li, and R. Gordon

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H. Ishii, J. Yokota, M. Minoura, and J. Gatineau

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T. Chung, C. G. Kim, K. An, S. Lee, and B. Park

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K. Pradhan and P. F. Lyman

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D. Gu, D. Nminibapiel, H. Baumgart, H. Robinson, and V. Kochergin

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T. Abdel-Fattah, D. Gu, and H. Baumgart
Molecular Layer Deposition of Flexible, Transparent and Conductive Hybrid Organic-Inorganic Thin Films
B. Yoon, B. Lee, and S. George

Novel Hybrid Organic/Inorganic Photovoltaic Device Configuration Utilizing ALD Technology and Template Based Nanoelectrode Arrays
D. Gu, H. Baumgart, and G. Namkoong

Atomic Layer Deposited Oxides for Passivation of Silicon Photoelectrodes for Solar Photoelectrochemical Cells
B. Kalanyan and G. Parsons

Unique Properties of ALD Al₂O₃ for Si Photovoltaics
G. Dingemans and W. Kessels

High Performance Dye-Sensitized Photovoltaic Cells with Micro-Fiber-Based Photoanodes Using Conformal ALD TiO₂ Coatings
D. Kim and G. Parsons

ALD for Next Generation Nanostructured Dye-Sensitized Solar Cells
N. Tétreault, P. Labouchere, A. Chandiran, and M. Gratzel

E4 - High Dielectric Constant and Other Dielectric Materials for Nanoelectronics and Photonics 9
Dielectric Science and Technology, Electronics and Photonics

MOS Interface Control Technologies for III-V/Ge Channel MOSFETs
S. Takagi, R. Zhang, T. Hoshii, and M. Takenaka

Interaction of Aluminium Oxide with Germanium upon Annealing in Different Atmospheres

Fabrication of High-k/Ge Stacks with High Quality GeO₂ Interlayer
Y. Suzuki, Y. Oniki, Y. Iwazaki, and T. Ueno

Theoretical Study of Ge Dangling Bonds in GeO₂ and Correlation with ESR Results at Ge/GeO₂ Interfaces
M. Houssa, G. Pourtois, V. Afanas’ev, and A. Stesmans

Defects and Impurities in Ge-Based Electronic Devices
L. Tsetseris

Theoretical and Experimental Demonstration of Electronic State of GeO₂

Fabrication of III-V Nanowire-Based Surrounding-Gate Transistors on Si Substrate
K. Tomioka, J. Motohisa, S. Hara, and T. Fukui
Atomic-Scale Mechanisms of Growth and Doping of Graphene Nano-Ribbons

L. Tsetseris and S. Pantelides

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B. Luo, C. Lin, and Y. Kuo

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A. Laha, A. Bin, P. Babu, A. Fissel, and H. Osten

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W. Li, W. Banerjee, S. Maikap, and J. Yang

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S. Migita and H. Ota

The NH$_3$ Nitridation Effects on a Al$_2$O$_3$ Passivation by Atomic Layer Deposition (ALD) in the HfO$_2$/GaAs Systems

Y. Cho, D. Suh, D. Ko, Y. Lee, and M. Cho

Al$_2$O$_3$ Atomic Layer Deposition on Semiconductor Substrates

A. Delabie, S. Sioncke, G. Pourtois, S. Van Elshocht, and K. Pierloot

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R. Dargis, D. Williams, R. Smith, E. Arkun, S. Semans, G. Vosters, M. Lebby, and A. Clark

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   E. Golias, A. Dimoulas, G. Brammertz, C. Merckling, and M. Caymax

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   P. Nagaiah, V. Tokranov, M. Yakimov, S. Novak, H. Bakhru, and S. Oktyabrsky

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   C. Merckling, A. Alian, X. Sun, M. Heyns, M. Caymax, and J. Dekoster

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   R. Balderas, and C. Falcony

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   F. Xue, H. Zhao, Y. Chen, Y. Wang, F. Zhou, and J. Lee

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   K. Ishikawa and K. Kobayashi

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A. Kulpa and N. A. Jaeger

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P. Paliwoda and D. Misra

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E. Cartier

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T. Wu, P. Sze, C. C. Hu, T. Huang, F. Adriyanto, C. Wu, and Y. Wang

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C. C. Hu, M. Lin, T. Wu, F. Adiyanato, P. Sze, C. Wu, and Y. Wang

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M. Oshima

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P. Shrestha, K. P. Cheung, A. Ochia, H. Baumgart, and G. Harris

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F. Chin, W. Yang, T. Chao, Y. Zhang, L. Lin, S. Liu, and C. Lin

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Resistive Switching Characteristics of Core-Shell Nanoparticles of Metal-Oxide on Flexible Substrates  
J. Yoo, Q. Hu, Y. Baek, C. Kang, H. Lee, and T. Yoon

**E5 - Processing Materials of 3D Interconnects, Damascene and Electronics Packaging**  
*Dielectric Science and Technology, Electrodeposition, Electronics and Photonics*

Additive Behavior in Cu Electroplating and the Recrystallization of Plated Cu  
Q. Huang, B. Baker-O'Neal, J. Kelly, and C. Cabral Jr.

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Y. Chen and D. Barkey

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    T. Lim, K. Park, M. Kim, O. Kwon, and J. Kim

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    M. Pavlov, E. Shalyt, and P. Bratin

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    J. Onuki, Y. Sasajima, and K. Tamahashi

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    J. D. Adolf and U. Landau

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    J. Kelly, T. Nogami, C. Parks, O. van der Straten, J. Demarest, J. Li, P. DeHaven, C. Hu, E. Liniger, C. Penny, and T. Vo

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    W. Zhang, K. Hughes, R. Nahm, J. Engstrom, P. Ma, and D. Thompson

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    P. R. McHugh, G. Wilson, and T. Ritzdorf

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    A. Joi and U. Landau

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    K. Kondo, M. Takeuchi, H. Kuri, M. Bunya, N. Okamoto, and T. Saito

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    T. Hayashi, K. Kondo, M. Takeuchi, T. Saito, N. Okamoto, and M. Bunya

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    Y. Au and R. Gordon

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    A. Radisic, L. Yang, C. Drijbooms, and H. Bender

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   J. D. Adolf and U. Landau

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

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   R. Beica

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   R. Baskaran, P. R. McHugh, G. Wilson, and J. Burnham

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   C. S. Tiwari

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   T. Ohba

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   G. Oosterhuis, B. Huis in't Veld, and B. Van der Zon

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   H. Lin and H. Chen

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   M. Raeis-Zadeh and P. Kohl

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   M. Jung, H. Lee, and J. Lee

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   I. Kang and J. Lee

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J. Lu

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H. Koo, R. Saha, and P. Kohl

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N. Fritz, S. Bidstrup Allen, and P. Kohl

Design and Verification of BCB Templates for Chip-to-Wafer Alignment in 3D Integration
D. Zhang and J. Lu

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Z. Wang, R. Peng, S. Xia, and S. Tsai

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T. Tanaka, K. Lee, T. Fukushima, and M. Koyanagi

Self-Controlled Constant-Current Temperature Stress for Triangular Voltage Sweep Measurements of Cu
I. Ciofi, M. Mannarino, Y. Li, K. Croes, and G. Beyer

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Y. Nakata

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J. Byrom, S. Kasisomayajula, and V. J. Gelling

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Y. Nakagawa, K. Osada, T. Matsumura, H. Koike, N. Miyamoto, and K. Takeda

Processing Methods for Polynorbornene Dielectric with Superior Mechanical and Electrical Properties
M. Raeis-Zadeh and P. Kohl

E6 - Photovoltaics for the 21st Century
Energy Technology, Dielectric Science and Technology, Electronics and Photonics, Industrial Electrochemistry and Electrochemical Engineering, Electrodeposition

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A. Karoui

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   E. Bae, M. Pyo, and K. Sohn

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A. Beati, R. Rocha, R. Bertazzoli, and M. R. Lanza

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Characterization of Copper Nanostructures Grown on Porous Silicon by Displacement Deposition
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Fullerenes, Nanotubes, and Carbon Nanostructures, Dielectric Science and Technology, Sensor, Energy Technology

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K. Winkler, E. Grądzka, and A. Picón Marín

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G. Valenti, J. Quimby, C. Fontanesi, L. Scott, F. Paolucci, and M. Marcaccio

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Fabrication of Mechanically Stable Solution-processed Ag nanoparticle/MWCNT Composite Films for Flexible Electronics via Oxygen Pressure Controlled Annealing
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Cross-Linking Carbon Nanotubes for Improved Bending and Linear Bucky Gel Actuators
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Effects of Single Walled Carbon Nanotubes on Arabidopsis Mesophyll Cells
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V. Krivchenko, D. Itkis, S. Evlashin, D. Semenenko, E. Goodilin, A. Rakhimov, and A. Pilevsky

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C. Ahn, A. Kulkarni, and T. Kim

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C. A. Hacker, M. Walsh, S. Pookpanratana, and C. Richter

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2435 Enhanced Catalytic Activity of Metallo-Phthalocyanines for the Reduction of O_2 when Linked to Au(111) Modified with Self-Assembled Aromatic Thiols  
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2439 Surface Segregation of the Au_4Pd Nanoparticulate Alloys Triggered by Electrocatalytic Reactions  
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