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Table of Contents

Presentations on Demand
- AVS 59 (2012)
- AVS 60 (2013)
- AVS 61 (2014)
- ALD 2011
- ALD 2012
- ALD 2013

Books and Monographs

Videos

AVS International Symposia Virtual Programs
Access AVS Presentation on Demand:
To access the following Presentations on Demand, please login to MyAVS and choose Presentations on Demand from the left navigation. If you are not an AVS Member and would like access to the AVS Technical Library, click here to Join.

Energy Frontiers

Chalcogenide Solar Cells I
Research Strategies and Results Toward Improving Thin Film CdTe Photovoltaic Devices Beyond 20% Conversion Efficiency
Presented by: Timothy Gessert, National Renewable Energy Laboratory

Crossover from Intergranular Hopping to Conventional Charge Transport in Pyrite FeS2 Thin Films
Presented by: Xin Zhang, University of Minnesota

Materials and Process Options for Cu(InGa)Se2 Thin Film Solar Cells
Presented by: William Shafarman, University of Delaware

Chalcogenide Solar Cells II

Thin Film, Heterostructured, and Organic Solar Cells
Novel, Single-Crystalline-like Silicon on Low-Cost, Flexible Substrates for High Efficiency Thin Film Photovoltaics
Presented by: Venkat Selvamanickam, University of Houston

Non-Radiative Carrier Recombination in InGaAs/GaAsP Strain-Balanced Superlattice Solar Cell
Presented by: Taketo Aihara, University of Miyazaki, Japan

Piezoelectric Photothermal Spectra and Carrier Nonradiative Recombination in InGaAs/GaAsP Super Lattice Structured Solar Cells
Presented by: Tetsuo Ikari, University of Miyazaki, Japan

Batteries and Fuel Cells
Advanced Polymer Electrolyte Materials for Fuel Cell Applications
Presented by: Andrew Herring, Colorado School of Mines

Organic/Inorganic Composite Materials as Anodes for Lithium Ion Batteries
Presented by: Sibani Lisa Biswal, Rice University

Plasmas for Photovoltaics and Energy Applications
Raman Study of the Properties of Free Standing Silicon Nanocrystals Using Laser Induced Thermal Heating
Presented by: Lihao Han, Delft University of Technology, Netherlands

Characterization of Energy Materials and Systems
Growth Temperature and Stoichiometry Effects on the Inherent Stability of CdS/CdTe Solar Cells
Presented by: David Albin, National Renewable Energy Laboratory

Photocatalysis and Solar Fuels
Doping Effects on the Electronic Structure of Graphitic C3N4 Photocatalysts: Insights from First Principles
Presented by: Sebastian Zuluaga, University of Central Florida
**Energy Frontiers Poster Session**
The Investigation of the Shunt Resistance using Conductive AFM and EL Measurements in Si Based Thin Film Solar Cells
Presented by: Minho Joo, LG Electronics Advanced Research Institute, Republic of Korea

Growth Methods and Applications of SiC Nanopowder and Nanowhiskers
Presented by: Rajnish Dhiman, University of Southern Denmark

Epitaxial Growth of ZnInON Films for Piezo-Electric-Field Effect MQW Solar Cells
Presented by: Koichi Matsushima, Kyushu University, Japan

**Electron Transport at the Nanoscale**

**Electron Transport at the Nanoscale: Nanowires and Junctions**
Probing Surface-Independent Minority Carrier Transport in Semiconductor Nanowires using Kelvin Probe Microscopy
Presented by: Afsoon Soudi, Washington State University

**Electron Transport at the Nanoscale: Molecules and Defects**
Electron Localization in Single Mixed-Valence Molecules
Presented by: Rebecca Quadrus, University of Notre Dame

Transport and Mechanical Properties of Molecular Junctions formed by Acetophenon Deposited on Si (100) Surface
Presented by: Ondrej Krejci, Institute of Physics of ASCR, Czech Republic

**Electron Transport at the Nanoscale: Development of Theories and Techniques**
Quantum Degeneracy Revealed by the Relation between the Tunneling Current and the Chemical Force/Internal Fields and
Presented by: Pavel Jelinek, Institute of Physics of ASCR, Czech Republic

**Graphene and Related Materials**

**Graphene Growth**
Spatial Confinement of Epitaxy of Graphene on Microfabricated SiC to Suppress Thickness Variation
Presented by: Hirokazu Fukidome, RIEC, Tohoku Univ., Japan

Three-Dimensional Graphene Architecture Growth and Its Facile Transfer to Three-Dimensional Substrates
Presented by: Ji-Hoon Park, Sungkyunkwan University, Republic of Korea

**Electronic Properties and Charge Transport**
Tuning Electronic Properties of Graphene by Controlling its Environment
Presented by: Kirill Bolotin, Vanderbilt University

The Adsorption of Molecules with Large Intrinsic Electrostatic Dipoles on Graphene
Presented by: Lingmei Kong, Univ. of Nebraska-Lincoln

Growth of and Interactions in Epitaxial Graphene Layers
Presented by: Eli Rotenberg, Lawrence Berkeley National Laboratory
Graphene Characterization Including Microscopy and Spectroscopy
High Resolution Real and Reciprocal Space Photoelectron Emission Microscopy on Heterogeneous Graphene/SiC(000-1)
Presented by: Konrad Winkler, 1Omicron NanoTechnology, Germany

Evidence of Nanocrystalline Semiconducting Graphene Monoxide during Thermal Reduction of Graphene Oxide in Vacuum
Presented by: Carol Hirschmugl, University of Wisconsin Milwaukee

Chemically-resolved Interface Structure of Epitaxial Graphene on SiC(0001)
Presented by: Jonathan Emery, Northwestern Univ.

Graphene Surface Chemistry, Functionalization, Biological and Sensor Applications
Structural Analysis of Chemically Functionalized Epitaxial Graphene with High-Resolution X-ray Reflectivity
Presented by: Michael Bedzyk, Northwestern University

Dopants and Defects in Graphene; Graphene Interfaces with Other Materials
Increasing Interface Bonding and Tuning Doping Behavior at Metal-Graphene-Metal Sandwich Contact
Presented by: Cheng Gong, The University of Texas at Dallas

Bi-layer Graphene Growth on Ni(111): The Role of Monolayer Graphene Rotation
Presented by: Arjun Dahal, University of South Florida

Graphene Nanostructures
Crystalline and Electrical Properties of Vertically-Laminated Carbon Nanowalls formed by Two-Step Growth Method
Presented by: Hiroki Kondo, Nagoya University, Japan

Surface Modification of Vertically Oriented Graphene Electrochemical Double-Layer Capacitors
Presented by: Ronald Quinlan, Naval Surface Warfare Center, Carderock Division

Beyond Graphene: BN and Other 2D Electronic Materials; 2D Heterostructures
X-ray Photoelectron Spectroscopy Investigation of the Valence and Conduction Band Offset at Hexagonal a-BN:H/Si Interfaces
Presented by: Sean King, Intel Corporation

Graphene Device Physics and Applications
Graphene and Dielectric Integration: A Sticky Situation?
Presented by: Virginia Wheeler, U.S. Naval Research Laboratory

Achieving Scaled Dielectrics on Graphene Using Atomic Layer Deposition
Presented by: Srikar Jandhyala, University of Texas at Dallas

Graphene and Related Materials Poster Session
Using Raman Spectroscopy and X-ray Photoelectron Spectroscopy to Guide the Development of Graphene-Based Materials
Presented by: Tim Nunney, Thermo Fisher Scientific, UK

Dry Transfer of Graphene to Organic and Inorganic Substrates
Presented by: Evgeniya Lock, Naval Research Laboratory
In Situ Microscopy and Spectroscopy

In Situ Spectroscopic Studies of Catalysis and Gas-Solid Reactions
In Situ Soft X-ray Photon-in/Photon-out Spectroscopy of Photo-electrochemical Reactions of Hematite in Water Splitting
Presented by: Jinghua Guo, Lawrence Berkeley National Lab

Probing Nitrogen and Metal Speciation in Non-Platinum Electrocatalysts by Ambient Pressure X-ray Photoelectron Spectroscopies and DFT Calculations
Presented by: Kateryna Artyushkova, The University of New Mexico

Resolving Growth of Palladium Nanocatalysts Using In Situ FT-IR, XAS and PDF under Practical Atomic Layer Deposition Conditions
Presented by: Yu Lei, Argonne National Laboratory

In Situ Study of the Oxidation of CO over Ir(111)
Presented by: Joachim Schnadt, Lund University, Sweden

In Situ Studies of Organic and Soft Materials and In Situ Microscopy
In Situ Real Time Examination of the Thin Film Growth of Pentacene on Polymeric Dielectrics Using X-Ray Synchrotron Radiation: Unexpected Changes in the Evolution of Surface Morphology with Substrate
Presented by: James Engstrom, Cornell University

In Situ, Real-Time Diagnostics of Colon Cancer and Inflammatory Bowel Diseases by Direct Combination of Endoscopy and Rapid Evaporative Ionization Mass Spectrometry
Presented by: Zoltan Takats, Imperial College, UK

Nanocrystal Phase Transformations in ZBLAN Glass Ceramics
Presented by: Jacqueline Johnson, University of Tennessee Space Institute

In Situ Characterization of Solids: Film Growth, Defects, and Interfaces
Understanding the Dynamic Electronic Properties of Electrode Materials by In Situ X-ray Absorption Spectroscopy
Presented by: Michael Bagge-Hansen, Lawrence Livermore National Laboratory

In Situ Studies of Al2O3 ALD Growth and Self-cleaning on III-V Surfaces by STM and XPS
Presented by: Leonard Rodriguez, IMEC, Belgium

Nanomanufacturing Science and Technology

Metrology and Environmental Issues in Nanomanufacturing
Atomic Layer Deposition Monitored and Characterized by Joint In Situ Real-Time Spectroscopic Ellipsometry and Direct Surface Analysis
Presented by: Marcel Junige, Technische Universit?t Dresden, Germany

An Integrated Approach Toward Understanding the Environmental Fate, Transport, Toxicity and Occupational Health Hazards of Nanomaterials
Presented by: Vicki Grassian, University of Iowa
ALD and Scalable Processes for Nanomanufacturing
From R&D Towards Industrial Atomic Layer Deposition: Challenges in Scaling up
Presented by: Matti Putkonen, Beneq Oy, Finland

Migration to ALD Techniques in the Semiconductor Industry: Pattern Effects, Microloading and Film Thickness Variability in Dielectric Thin Films Deposition
Presented by: Michael Belyansky, IBM Semiconductor R&D Center

Interface Analysis of PEALD TaCN Deposited on HfO2 using Parallel Angle Resolved X-ray Photoelectron Spectroscopy for sub-20nm Gate Last CMOS Transistors
Presented by: Fabien Piallat, ST Microelectronics, France

Atmospheric Pressure Atomic Layer Deposition of Al2O3 using Trimethylaluminum and Ozone
Presented by: Moataz Bellah Mousa, North Carolina State University

An Industrial Solution for Surface Passivation of c-Si using Al2O3 Film Deposited by In-line Atmosphere Chemical Vapor Deposition
Presented by: Kristopher Davis, University of Central Florida

Oxide Heterostructures-Interface Form and Function

Structure-Property Relationships in Epitaxial Oxide Interfaces
Structural Characterization of Heterojunction n-ZnO/p-NiO Thin Films Epitaxially Deposited on (0002)Al2O3 Substrates
Presented by: Yong Hun Kwon, Sungkyunkwan University, Republic of Korea

Fabrication and Characterization of Titanium Oxide Films with Tunable Stiffness
Presented by: Sidney Cohen, Weizmann Institute of Science, Israel

Scanning Probe Microscopy

Advances in Scanning Probe Imaging
Functional Imaging of Jahn-Teller Dynamics at the Single-molecule Scale
Presented by: Joonhee Lee, University of California, Irvine

Atomic and Chemical Resolution of Heterogeneous 1-D Metallic Chains on Si(100) by Means of nc-AFM and DFT
Presented by: Martin Ondracek, Institute of Physics of ASCR, Czech Republic

Characterizing the Best Tips for NC-AFM Imaging on Metal Oxides with Force Spectroscopy and Theoretical Simulations
Presented by: Ruben Perez, Universidad Aut?noma de Madrid, Spain

Probe-Sample Interactions, Nano-Manipulation and Fabrication
Acetylene on Cu(111): Imaging a Molecular Pattern with a Constantly Rearranging Tip
Presented by: Yeming Zhu, University of California Riverside

Emerging Instrument Formats
Atomic Imaging with Peak Force Tapping
Presented by: S.C. Minne, Bruker AFM
Simultaneous Scanning Tunneling and Atomic Force Microscopy with Subatomic Spatial Resolution  
Presented by: Franz J. (F.J.) Giessibl, University of Regensburg

**Scanning Probe Microscopy Poster Session**  
Quantitative Barrier Height Measurements of Tryptanthrin Monolayers on HOPG  
Presented by: Krishnan Sriraman, Florida Institute of Technology

**Transparent Conductors and Printable Electronics**

**Transparent Conductors and Devices**  
Surface Functionalization of Amorphous Zinc Tin Oxide Thin Film Transistors  
Presented by: Gregory Herman, Oregon State University

**Printable and Flexible Electronics**  
Metal Oxides and Organic Materials for Printed Electronics  
Presented by: Antonio Facchetti, Polyera Corp. and Northwestern U.

Ion Dependence of Gate Dielectric Behavior of Beta-Aluminas in Transparent Oxide Field-Effect Transistors  
Presented by: Yu Liu, Johns Hopkins University
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APT Analysis of Semiconductor, Magnetic, and Oxide Materials
Atom Probe Analyses of Interfaces in Nd-Fe-B Permanent Magnets for Higher Coercivity
Presented by: Tadakatsu Ohkubo, National Institute for Materials Science, Japan

APT and FIM Analysis of Catalysts and Nanoscale Materials
In-Situ Environmental Atom Probe Tomography for Studying Gas-Solid Reaction in Extreme Environments: Instrumentation and Results
Presented by: Santoshrupa Dumpala, Iowa State University

Atomic Scale Characterisation of Catalyst Material
Presented by: Tong Li, Oxford University, UK

From Field Ion Microscopy of Tips to 3D Atom Probe Tomography of Real Catalyst Nanoparticles
Presented by: Norbert Kruse, Université Libre de Bruxelles, Belgium

Aspects of Helium Ion Microscopy Poster Session
Helium Ion Microscopy and Ionoluminescence of Defects
Presented by: Gregor Hlawacek, University of Twente, Netherlands

Imaging Nascent Soot Particles: Tiniest Soot Particles are Not Structurally Homogeneous
Presented by: Sydnie Lieb, University of Southern California

Atom Probe Tomography Poster Session
Advantage of NbTiN over NbN in Superconducting Properties of Ultra-thin Films
Presented by: Marek Guziewicz, Institute of Electron Technology, Poland

Basics of Helium Ion Microscopy
Monte Carlo Simulations of Helium and Neon Ions Beam Induced Deposition and Etching
Presented by: Rajendra Timilsina, The University of Tennessee Knoxville

Beyond Graphene: Other 2D Electronic Materials and their Heterostructures
Functionalization of MoS2 Surfaces for High-k Atomic Layer Deposition
Presented by: Stephen McDonnell, University of Texas at Dallas
Electronic and Optical Properties of MoS2 at Monolayer Thickness  
Presented by: Tony Heinz, Columbia University

Low Energy Ion Scattering Studies of the Surface Termination of the Topological Insulator, Bi2Se3  
Presented by: Jory Yarmoff, University of California, Riverside

**Dopants, Defects and Interfaces in 2D Materials**  
Epitaxial Graphene Bands and Adsorption of FePc for Stepped SiC-Si Surfaces  
Presented by: Jack Rowe, North Carolina State University

**Education for Interactive R&D & Industrial Implementation**  
21st Century Skills and Educating the Next Generation Workforce for Expedited Innovation and Deployment  
Presented by: Christine Broadbridge, Southern Connecticut State University

**Energy Frontiers Poster Session**  
Angle-Resolved X-Ray Photoelectron Spectroscopy of Iron (II) Fluoride upon Lithiation as a Conversion Reaction Battery Material  
Presented by: Ryan Whitcomb (Rutgers Department of Physics and Astronomy Summer REU Program); Ryan Thorpe, Sylvie Rangan, Robert Bartynski (Rutgers, The State University of New Jersey)

Electrodeposition and Sol-Gel Derived Nitrogen Doped Nanostructured ZnO Thin Films for Possible Use in Photoelectrochemical Splitting of Water  
Presented by: Nirupama Singh, Deemed University, India

**Energy Past, Present, and Future**  
Extremes of Heat Conduction in Molecular Materials  
Presented by: David Cahill, University of Illinois at Urbana Champaign

**Graphene and Other 2D Materials Poster Session**  
Characterization of Coatings for Tribological and High Temperature Applications  
Presented by: S. Vijayalakshmi, Vishwanath Thippesamy, M.R. Sridhar, K.A. Harsha, Rupesh Roshan (GE Global Research, India); Barry Record (GE)

**Growth of 2D Materials**  
A Universal Scheme to Convert Aromatic Monolayers Into Functional Carbon Nanomembranes  
Presented by: Andrey Turchanin, University of Bielefeld, Germany

Graphene-based, Graphene-derived, and New Carbon Materials  
Presented by: Rodney Ruoff, The University of Texas at Austin
Imaging and Lithography with Helium Ions
Characterization of 2D Materials by using Scanning Helium Ion Microscopy
Presented by: Hongxuan Guo, National Institute for Materials Science, Japan

Helium Ion Microscopy of Blood Clot Microstructure
Presented by: Stuart Boden, University of Southampton, UK

Interfacial Challenges in Nanostructured Solar Cells
Interfacial Engineering in ZnO/CdS/CdSe Extremely Thin Absorber (ETA) Solar Cells
Presented by: Michael E. Edley, Drexel University

Plasmonic Sensing of Dye Impregnation Kinetics of Dye Sensitized Solar Cells (DSSC)
Presented by: Bengt Kasemo, Chalmers University of Technology, Sweden

Ions at Aqueous Interfaces
Specific Ion Effects on Acid-Base Equilibria at the Planar Silica/Water Interface
Presented by: Julianne M. Gibbs-Davis, University of Alberta, Canada

Dielectric Interfacial Effects
Presented by: Roland Netz, FU Berlin, Germany

IPF 2013-Manufacturing Challenges for Emerging Technologies
From Quanta to the Continuum: Opportunities for Mesoscale Science
Presented by: George Crabtree, Argonne National Laboratory

Manufacturing Challenges of Directed Self-Assembly
Presented by: Roel Gronheid, IMEC, Belgium

Microfluidics for Chemical Analysis
Presented by: Liz Carr, Agilent Technologies

Materials Discovery and Optimization through Iterative Approaches
Accelerated Optimization of Solar Cell Materials
Presented by: Andriy Zakutayev, National Renewable Energy Laboratory

Microstructural and Interface Analysis of Metals Subjected to Various Conditions
The Renaissance in Metallurgical Design and the Role of Atom Probe Microscopy
Presented by: Simon Ringer, The University of Sydney, Australia

Atom Probe Analysis and Challenges to Study a High-k Dielectric Grown on GaN
Presented by: Baishakhi Mazumder, University of California, Santa Barbara
Novel Synthesis Approaches and Innovative Characterization Techniques Coupled with Theory & Computations
Poking Tips at Surfaces: Mechanical and Electronic Properties of Atomically Defined Interfaces
Presented by: Peter Grutter, McGill University, Canada

Optical, Magnetic, Mechanical and Thermal Properties of 2D Materials
Long-range Magnetic Order in a Purely Organic 2D Layer Adsorbed on Epitaxial Graphene
Presented by: Amadeo Vazquez-de-Parga, Universidad Autónoma de Madrid, Spain

Graphene Nano-Photonics and Carrier Dynamics
Presented by: Pablo Alonso González

Plasma Processing, Surface Chemistry, Functionalization, and Sensor Applications of 2D Materials
Carbon Monoxide-induced Reduction and Healing of Graphene Oxide
Presented by: Stephen Weeks, Colorado School of Mines

Spectroscopic Ellipsometry for Photovoltaics and Instrument Development
Expanded Beam Spectroscopic Ellipsometry for In-line Monitoring of Thin Film Process
Presented by: Miklos Fried, Hungarian Academy of Science, Hungary

Vibrational Properties of Lanthanum Aluminate and Magnesium Aluminate Spinel Using Fourier Transform Infrared Ellipsometry
Presented by: Travis Willett-Gies, New Mexico State University

Spectroscopic Ellipsometry: Perspectives and Novel Applications
Spectroscopic Ellipsometry – A Perspective
Presented by: David Aspnes, North Carolina State University

Spectroscopic Ellipsometry of Thin Films for Archival Optical Data Storage and for Microfabricated Thin Layer Chromatography Plates
Presented by: Matthew Linford, Brigham Young University

Theoretical and Computational Methods
Application of Computational Methods to Material Design and Discovery
Presented by: Susan Sinnott, University of Florida
New Ferroelectrics and Antiferroelectrics by Design  
Presented by: Karin Rabe, Rutgers, the State University of New Jersey

Computational Design of Materials for Catalysis: Interface Matters  
Presented by: Talat Rahman, University of Central Florida

**Theory, Computation and Data-Enabled Scientific Discovery**  
High-throughput Quantum Chemistry and Virtual Screening for Materials Solutions  
Presented by: Mathew Halls, Schrödinger Inc.

Computational Materials Design: Precious Metal Free Catalyst for NO Dissociation  
Presented by: Hideaki Kasai, Osaka University, Japan

**Thin Film, Organic, and Chalcogenide Solar Cells**  
Surface Energetics of AgInSe2 Thin Films  
Presented by: Pamela Peña Martin, University of Illinois at Urbana Champaign

**Thin Films for Energy**  
ALD of Nanolayers and Nanoparticles for Photovoltaics and Other Clean Energy Technologies  
Presented by: Erwin Kessels, Eindhoven University of Technology, Netherlands

Microstructural and Chemical Features Affecting the Reversible Lithiation of SiOx  
Presented by: Branden Kappes, Colorado School of Mines

**AVS 60th Past Presidents Panel Video**  
Presented by: Paul Holloway, Joseph Greene, Fred Dylla, Bill Sproul, Dawn Bonnell, and Gregory Exarhos
AVS 61 Presentations on Demand Index

To access the following Presentations on Demand, please login to MyAVS and choose Presentations on Demand from the left navigation. If you are not an AVS Member and would like access to the AVS Technical Library, click here to Join.

2D Materials Growth and Processing
Influence of Substrate Orientation on the Growth of Graphene on Cu Single Crystals
Presented by: Tyler Mowll, University at Albany-SUNY

Dopants, Defects, and Interfaces in 2D Materials
Cutting and Assembling 2 Nanometer Voids in Single Layer Hexagonal Boron Nitride
Presented by: Thomas Greber, University of Zurich, Switzerland

2D Materials: Surface Chemistry, Functionalization, Bio and Sensor Applications
How Fluorination Enhances Friction Forces for Graphene
Presented by: Xin Liu, University of Pennsylvania

The Mechanochemistry of Chemically Modified Graphene
Presented by: Jonathan Felts, Naval Research Laboratory

2D Materials Characterization including Microscopy and Spectroscopy
Influence of Chemisorbed Oxygen on the Growth of Graphene on Cu(100) and Cu(111) by Chemical Vapor Deposition
Presented by: EngWen Ong, University at Albany-SUNY

Novel Materials Properties at Atomically Thin Limit
Presented by: Zhi-Xun Shen, Stanford University

Novel 2D Materials
Silicene and Germanene: Novel Graphene-like Artificial Silicon and Germanium Allotropes
Presented by: Guy Le Lay, Aix-Marseille University, France

Silicon Growth at the Two-Dimensional Limit on Ag(111)
Presented by: Andrew Mannix, Northwestern University

Growth, Structure, and Properties of 2D SiO2Polymorphs
Presented by: Eric Altman, Yale University
Nanostructures including 2D Heterostructures, Patterning of 2D Materials
Gate Tunable Carbon Nanotube - Single Layer MoS2 p-n Heterojunctions
Presented by: Deep Jariwala, Northwestern University

Exceptional Ballistic Conduction in Epitaxial Graphene Nanoribbons
Presented by: Walt de Heer, Georgia Institute of Technology

Novel Quantum Phenomena in 2D Materials
Use of XPS for Device Characterization
Presented by: Sefik Suzer, Bilkent University, Turkey

2D Materials Poster Session
Modification of Density of States in Iron Chloride Intercalated Epitaxial Graphene with Electric Bias
Presented by: Michael Williams, Clark Atlanta University

Enhanced Electrical Conductivity of Transparent Carbon Nanotube Sheet by Acid Treatment
Presented by: Jinhong Kim, University of Texas at Dallas

Studying Graphene & Other 2D Materials With A Multiprobe Cryogenic System That Provides For Simultaneous Raman & Other Optical Modalities With A Wide Variety of Functional SPM Probes
Presented by: Aaron Lewis, Hebrew University of Jerusalem, Israel

Conservation Studies of Heritage Materials
Parylene Coating for Paper/Book Strengthening
Presented by: Lei Pei, Johns Hopkins University

Iron Gall Ink Chemistry and Corrosion of Historical Documents Probed by XPS and Raman
Presented by: Karen Gaskell, University of Maryland, College Park

Conservation Studies of Heritage Materials 2
A Conservator’s Perspective of Technical Studies and Scientific Analysis
Presented by: Patricia Favero, The Phillips Collection

The Degradation Mechanisms of Cadmium Pigments in Works by Henri Matisse, Edward Munch, and Their Contemporaries
Presented by: Jennifer Mass, Winterthur Museum

The Analysis of Egg-Oil Binding Media by Time-of-Flight Secondary Ion Mass Spectrometry
Presented by: Zachary Voras, University of Delaware
**Conservation Studies of Modern Heritage Materials 3**

Faces from the Past: Microbeam Imaging and Analysis of Artifacts from ancient Mesoamerica  
Presented by: Timothy Rose, Smithsonian Institution

Atomic Layer Deposited Diffusion Barriers on Non-ideal Silver and Bronze Cultural Heritage Objects  
Presented by: Amy Marquardt, University of Maryland, College Park

**Energy Harvesting with Nanostructures**

Triboelectric Nanogenerator - A New Energy Technology  
Presented by: ZhongLin Wang, Georgia Institute of Technology

Conflicting Roles of Charge Traps in ETA Solar Cells: The CREM Point of View  
Presented by: Hagai Cohen, Weizmann Institute of Science, Israel

Stack Numbers Dependence of the Activation Energies for Carrier Escape from and Recombination in Strain-Balanced InGaAs/GaAsP MQW  
Presented by: Atsuhiko Fukuyama, University of Miyazaki, Japan

**Fuel Formation and Thermal Transport**

Atomistic Insights as the the pH Dependence of Onset Potential of the Oxygen Evolution Reaction on Hematite  
Presented by: Anders Hellman, Chalmers University, Sweden

The Effect of Particle Size and Surface Termination of n-Si on Thermal and Electrical Conductivity  
Presented by: Thomas Lopez, University of California - Riverside

**Charge Storage Materials and Devices**

Spatiotemporal Investigation of Li-Air Battery under Operating Condition: Understanding the Cathodic and Anodic Electrochemical Processes and their Interdependence  
Presented by: Di-Jia Liu, Argonne National Laboratory

Solid Micro-supercapacitor using Directed Self-Assembly of Tobacco Mosaic Virus and RuO2  
Presented by: Markus Gnerlich, University of Maryland, College Park

Charged Particles Micro-Penning-Malmberg Trap: An Approach to Store High Densities with Substantially Lower End Barrier Potentials  
Presented by: Alireza Narimannezhad, Washington State University

**Energy Frontiers Poster Session**

Mini-band Formation in a Strain-balanced InGaAs/GaAsP MQW Solar Cell Structure Investigated by a Photoreflectance and a Surface Photovoltage Spectroscopy  
Presented by: Tetsuo Ikari, University of Miyazaki, Japan

Vacuum Deposition Of Photosystem 1 Films In P-Doped Silicon Surface To Improve The Efficiency Of Bio-Photovoltaic Cells  
Presented by: Carlos Felipe Rezende Facchini, University of Campinas, Brazil
Thin Film Photovoltaics
Epitaxy and Nanochemistry of CdS on Cu(In,Ga)Se2 for Photovoltaic Devices
Presented by: Angus Rockett, University of Illinois at Urbana Champaign

Improvement of SnS-based Photovoltaic Devices via Reverse Engineering of the Voc and Study of Optimal n-Type Material
Presented by: Rona Banai, Penn State University

Micro-Structural Activation Mechanisms in Thin Film CdTe Photovoltaic Devices
Presented by: John Walls, Loughborough University, UK

Organic-Inorganic Interfaces for Energy
Towards Efficient Solution Processed Organic Photovoltaic Devices
Presented by: Elsa Reichmanis, Georgia Institute of Technology

Ambient Pressure X-ray Photoelectron Spectroscopy (AP-XPS)
Studying Zeolites and Clays with the Tools of Surface Science from UHV to Near-Ambient Pressures
Presented by: Jorge Boscoboinik, Brookhaven National Laboratory

Environmental Electron Microscopies
Nanocrystal Shape Evolution during Growth
Presented by: Haimei Zheng, Lawrence Berkeley Lab, University of California, Berkeley

Selective Staining for Enhanced Spectroscopic Identification of Domains in Immiscible Polymer Blends by Micro-Raman Spectroscopy
Presented by: Nicholas Heller, SUNY Stony Brook

In-Situ X-ray Absorption and Raman Spectroscopy
Photoelectron Spectroscopy on Ice, Mineral Oxides and Aqueous Solutions of Atmospheric Relevance
Presented by: Markus Ammann, Paul Scherrer Institut, Switzerland

In Situ Analysis of Materials Under Mechanical Stress: A Novel Instrument for Simultaneous Nanoindentation and Raman Spectroscopy
Presented by: Chris Michaels, NIST

Characterization of 3D Structures, 2D films and Interconnects
LEIS Characterization of the Outer Surface, Ultra-Thin Layers and Contacts
Presented by: Hidde Brongersma, ION-TOF / Tascon / Calipso, Netherlands
Characterization of III-Vs (2:00-3:20 pm)/Photovoltaics, EUV masks, etc. (3:40-4:40 pm)

Characterization of Ag/CuInSe2 Thin-Film Photovoltaics by Photoelectron Spectroscopy
Presented by: Pinar Aydogan, Bilkent University, Turkey

Imaging of the Native Inversion Layer on Silicon-on-Insulator via Scanning Surface Photovoltage; Implications for RF harmonic generation
Presented by: Daminda Dahanayaka, IBM

Synchrotron Studies of Processes in Energy Conversion, Electronic Devices and Other Materials I

In Situ Study of Plasma Assisted Atomic Layer Epitaxy of III-N Semiconductors Using Synchrotron X-ray Methods
Presented by: Charles Eddy, Jr., Naval Research Laboratory

Synchrotron Studies of Processes in Energy Conversion, Electronic Devices and Other Materials II

Synchrotron-based In Situ Study of PEMFC, SOFC, Battery and Supercapacitor Components
Presented by: Benedetto Bozzini, Universita' del Salento - Italy

Synchrotron-Based Spectroscopy Shedding Light on Solar Cells
Presented by: Franz Himpsel, University of Wisconsin-Madison

Soft X-ray Spectroscopy for Fundamental Understanding and Practical Optimization of Battery Materials
Presented by: Wanli Yang, Lawrence Berkeley National Laboratory

Free Electron Laser and Synchrotron Studies at the Molecule-Surface Interfaces

Layer Speciation and Electronic Structure Investigation of Hexagonal Boron Nitride Thin Film by Scanning Transmission X-ray Microscopy
Presented by: Jian Wang, Canadian Light Source Inc., Canada

Synchrotron Analysis Poster Session

Soft X-ray Spectroscopy Reveals Chemical Information beneath the Surface of Organic Photovoltaic Devices
Presented by: Claudia Fleischmann, IMEC, Belgium

Plasma Processing of Antimicrobial Materials and Devices

Plasma Polymers: Dogma, Characteristaion and Challenges
Presented by: Sally McArthur, Swinburne University of Technology, Australia
Plasma Processing of Biomemetic Materials
Biofunctionalization of Surfaces by Energetic Ion Implantation: Fundamentals and Recent Progress on Applications
Presented by: Marcela Bilek, University of Sydney, Australia

Probing Chemical Reactions at the Nanoscale
Surface Structures of Catalysts in Reactive Environments with Scanning Tunneling Microscopy
Presented by: Luan Nguyen, University of Kansas

Scanning Probe Microscopy Poster Session
Cross Sectional Mapping of CdTe PV Devices with Scanning Capacitance Microscopy
Presented by: Gilad Zorn, GE Global Research Center

Probe-Sample Interactions and Emerging Instrument Formats
2013 ASSD Student Award Talk: New Insights into Nanoscale Adhesion from In Situ TEM Studies
Presented by: Tevis Jacobs, University of Pennsylvania

Photocatalysis and Photochemistry at Surfaces
Infrared Reflection-Absorption Spectroscopy Study of Adsorption and Photo-Decomposition of Formic Acid on Reduced and Defective Rutile TiO2 (110) Surfaces
Presented by: Andreas Mattsson, Uppsala University, Sweden

Atomistic Modeling of Surface Phenomena
Oxidation of Cu Surfaces with Step-Edge Defects: Insights from Reactive Force Field Simulation
Presented by: Qing Zhu, University of Pittsburgh

The Role of Time-scale Analysis in Simulation of ALD and CVD Surface Reaction Kinetics
Presented by: Raymond Adomaitis, University of Maryland, College Park

Real-Time Ab-Initio KMC Simulation of the Self-Assembly and Sintering of Bimetallic Epitaxial Nanoclusters: Au+Ag on Ag(100)
Presented by: James Evans, Iowa State University
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ALD 2011 Session A

Session A: Electronics I
The Nature of the III-V/Oxide Interface and its Impact on the ALD Growth of High-k Dielectrics for Advanced CMOS

Semiconductor-Metal Transition in Thin VO₂ Films Grown by Ozone Based Atomic Layer Deposition

Atomic Layer Epitaxy of Rare Earth Oxide Films on GaAs(111)A and Their Device Properties

Y₂O₃ Films Grown by a Novel ALD Process from Y(EtCp)₃ and Water Enabling Y-Based Silicates in Direct Contact with Si with Sub-nm EOTs
Presented by: C. Dubourdieu, IBM T.J. Watson Research Center and CNRS Paris France; M. Copel, E. Cartier, J. Bruley, M. Hopstaken, S.M. Rossnagel, IBM T.J. Watson Research Center; A. Kellock, IBM Almaden Research Center; M. M. Frank, IBM T.J. Watson Research Center

Atomic Layer Deposition of Ultrathin High-ê Dielectrics on Epitaxial Graphene via Fluorine Functionalization

ALD Beryllium Oxide as a High-k Gate Dielectric for III-V MOS Devices
Presented by: J. Yum, T. Akyol, M. Lei, D.A. Ferrer, Univ. of Texas at Austin; T.W. Hudnall, Texas State Univ.-San Marcos; M. Downer, C.W. Bielawski, Univ. of Texas at Austin; G. Bersuker, SEMATECH; J.C. Lee, S.K. Banerjee, Univ. of Texas at Austin

Session A: Electronics II
Novel Semi-batch ALD Technology for ULSI Device Fabrication
Atomic Layer Deposition of MgO for High-k Capping Layers  

HfAlO₃ Gate Stack on III-V p-channel Material GaSb: ALD Hf-first Versus Al-first  
Presented by: C. Wang, M. Xu, J. Zhang, P.D. Ye, Purdue Univ.

In-situ Electrical Studies of Ozone Based Atomic Layer Deposition on Graphene  
Presented by: S. Jandhyala, B. Lee, G. Mordi, J. Kim, The Univ. of Texas at Dallas

Evaluation of Novel Precursors for Atomic Layer Deposition of Nb₂O₅ Thin Films  
Presented by: T. Blanquart, J. Niinistö, M. Heikkilä, Univ. of Helsinki; C. Xu, W. Hunks, ATMI; M. Ritala, Univ. of Helsinki

Copper Films Grown via Copper Oxide ALD Integrated with Different Liner Materials for Interconnect Applications  
Presented by: T. Waechtler, Chemnitz Univ. of Technology / Fraunhofer ENAS; S. Mueller, L. Hofmann, R. Mothes, Chemnitz Univ. of Technology; S.-F. Ding, Fudan Univ.; S. E. Schulz, Chemnitz Univ. of Technology /, Fraunhofer ENAS; H. Lang, Chemnitz Univ. of Technology; X.-P. Qu, Fudan Univ.; T. Gessner, Chemnitz Univ. of Technology / Fraunhofer ENAS

Atomic Layer Deposition (ALD) and Chemical Vapor Deposition (CVD) of Copper-Based Metallization for Microelectronic Fabrication  

**Session A: Lighting**

ZnO-Based Light-Emitting Diodes Grown by Atomic Layer Deposition  
Presented by: M. Chen, J-J. Huang, J-R. Yang, National Taiwan Univ.; M. Shiojiri, Kyoto Institute of Technology

Enabling High Performance Ultraviolet Instruments for Astronomy and Space Exploration with ALD  
Presented by: F. Greer, M.E. Hoenk, T.J. Jones, B.C. Jacquot, S. Monacos, Jet Propulsion Lab; E. Hamden, D. Schiminovich, Columbia Univ.; S. Nikzad, Jet Propulsion Lab

**Session A: Precursor Simulation, Modeling, & Theory**

Mechanism of Noble Metal ALD  
Presented by: S. Elliott, Tyndall National Institute

Fluid Flow Effects in ALD for Semiconductor Manufacturing  
Presented by: J.P. Trelles, S.S. Liao, Intel Corporation

In Situ Gas Phase Measurements and Equipment-Scale Simulations of Metal Alkylamide ALD Processes  
Presented by: J.E. Maslar, D.R. Burgess, Jr., E.F. Moore, W.A. Kimes, B.A. Sperling, NIST

Reaction Modeling During TiN Growth Using TiCl₄ and MMH  

Coupling Ballistic Transport and Surface Reaction Models for Direct Simulation of Conformal ALD  
Presented by: R. Adomaitis, Univ. of Maryland

**Session A: Precursors, Precursor Design, & Recipe Development**

New Volatile Precursors for Group 2 Metals  
Presented by: J. Norman, M. Perez, M.S. Kim, X. Lei, S. Ivanov, A. Derecskei, L. Matz, I. Buchanan, Air Products
High Rate Growth of SiO2 by Thermal ALD Using Tris(dimethylamino)silane and Ozone

Plasma-Enhanced ALD of TiO2 Using Cp-Based Precursors and Various Plasma Compositions: Experiments and DFT Calculations
Presented by: S.E. Potts, N. Leick, Eindhoven Univ. of Technology; A. Zydor, S. D. Elliott, Tyndall National Institute; W.M.M. Kessels, Eindhoven Univ. of Technology

Nitrogen-Mediated ALD of Platinum: Precursor Synthesis, Film Deposition and Mechanistic Insights

p-Type Phosphorus-doped Zinc Oxide Films Deposited by Atomic Layer Deposition: Microstructural Effects
Presented by: W.L. Gladfelter, H. Yuan, B. Luo, S.A. Campbell, Univ. of Minnesota

Surface Chemistry of Copper Precursors in Connection with Atomic Layer Deposition (ALD) Processes
Presented by: Q. Ma, Univ. of California; R.G. Gordon, Harvard Univ.; F. Zaera, Univ. of California

**Session A: In-Situ Analysis**
In Situ X-ray Based Characterization of ALD Processes

In-situ Monitoring for ALD Process Control

Indium Oxide Atomic Layer Deposition Facilitated by the Synergy between Oxygen and Water
Presented by: J. Libera, J. Hryn, J. Elam, Argonne National Lab

**Session A: Characterization**
Atomic Layer Deposition of Thin Superconducting Films and Multilayer Metrostructures

Characterization of ALD Coatings in Nanoporous Thin Films by Ellipsometric Porosimetry
Presented by: J. Dendooven, Ghent Univ.; S. Pulinthanthu Sree, Catholic Univ. of Leuven; R. Van Hove, K. Devloo-Casier, Ghent Univ.; M. Baklanov, IMEC; J.A. Martens, Catholic Univ. of Leuven; C. Detavernier, Ghent Univ.

Microstructural Evolution of Silver Thin Films Deposited by ALD and the Resulting Changes in the Plasmonic Properties
Presented by: S.M. Prokes, Naval Research Lab; E. Cleaveland, Naval Research Lab ASEE; O.J. Glembocki, Naval Research Lab; H. Qi, Naval Research Lab ASEE; J. Caldwell, E. Foos, Naval Research Lab; J. Niinistö, Univ. of Helsinki, Finland

Innovative Characterization Techniques for MoO₃ ALD Coatings
Presented by: M. Diskus, O. Nilsen, H. Fjellvåg, S. Diplas, Univ. of Oslo; B. Weckhuysen, Univ. of Utrecht

**Session A: Solar**
ALD of SiO₂ and Al₂O₃ for Surface Passivation of c-Si Solar Cells
Presented by: W.M.M. Kessels, G. Dingemans, C.A.A. van Helvoirt, M.M. Mandoc, M.C.M. van de Sanden, Eindhoven Univ. of Technology
Atomic Layer Deposition and Chemical Vapor Deposition of Tin(II) Sulfide
Replication of Butterfly Wings by ALD and Nanoimprint for Production of High Efficiency Si Solar Cells
Presented by: X. Tang, L. A. Francis, ICTEAM institute, Université catholique de Louvain, Belgium; P. Simonis, Département de Physique, Facultés Universitaires Notre-Dame de la Paix, Belgium; M. Haslinger, R. Delamare, ICTEAM institute, Université catholique, Belgium; O. Deschaume, IMCN institute, Université catholique de Louvain, Belgium; D. Flandre, ICTEAM institute, Université catholique de Louvain, Belgium; P. Defrance, A. M. Jonas, IMCN institute, Université catholique de Louvain, Belgium; J - P. Vigneron, Département de Physique, Facultés Universitaires Notre-Dame de la Paix, Belgium; J-P. Raskin, ICTEAM institute, Université catholique

Dielectric Backside Passivation Improvements by Si-doped Al2O3 Dielectrics
Presented by: F. Benner, S. Kupke, S. Jakschik, E. Erben, Namlab gGmbH Dresden; M. Knaut, IHM TU Dresden; J. Müller, Fraunhofer CNT Dresden; M. Rose, Fraunhofer IKTS Dresden; U. Schroeder, T. Mikolajick, Namlab gGmbH Dresden
High Performance Dye-Sensitized Photovoltaic Cells Incorporating Micro-fibers with Conformal TiO2 Coating by Atomic Layer Deposition

Session A: Catalysis & Fuel Cells
Pt-Ru Alloy Catalyst Development by Atomic Layer Deposition for Direct Methanol Fuel Cells
Presented by: A. Dameron, NREL; S. Christensen, K. Hurst, T. Olson, NREL; S. Pylypenko, Colorado School of Mines; K O'Neill, J Bult, D. Ginley, NREL; R. O'Hayre, Colorado School of Mines; H. Dinh, NREL

Performance Enhancement of Micro-solid Oxide Fuel Cells Fabricated on Nanoporous Anodic Aluminum Oxide Templates by Atomic Layer Deposition
ALD of MnOx as a Catalyst for the Splitting of Water

Nucleation & Growth of Continuous & Ultrathin Pt ALD Films for Improved Oxygen Reduction Activity in Fuel Cells Using W ALD Adhesion Layers
Influence of the Precursors Chemistry on the ALD Growth of Cobalt-molybdenum Oxide Films
Presented by: M. Diskus, O. Nilsen, H. Hjellvåg, Univ. of Oslo; B. Weckhuysen, Univ. of Utrecht

Session A: Batteries & Storage
ALD of Al2O3 for Highly Improved Performance in Li-ion Battery Electrodes
Presented by: A. Dillon, Y. Jung, NREL; L. Riley, Univ. of Colorado/NREL; A. Cavanagh, Univ. of Colorado; Y. Yan, NREL; S.M. George, Univ. of Colorado

Atomic Layer Deposition for Uniform Coating of Biotemplated Nanostructured Electrodes for Lithium-ion Microbatteries
Presented by: E. Pomerantseva, K. Gerasopoulos, X. Chen, G. Rubloff, R. Ghodssi, Univ. of Maryland, College Park
Engineering LixAlySizO Thin Films as a Solid Electrolyte for 3D Microbatteries
ALD of Lithium Containing Compounds
Presented by: J. Hamalainen, T. Hatanpaa, J. Holopainen, Univ. of Helsinki; F. Munnik, Helmholtz-Zentrum Dresden-Rossendorf, Institute of Ion Beam Physics and Materials Research; M. Ritala, M. Leskela, Univ. of Helsinki

ALD of Solid-State Electrolytes – A Prerequisite for 3D All-Solid-State Lithium Ion Batteries
Presented by: T. Aaltonen, O. Nilsen, H. Fjellvåg, Univ. of Oslo

Session A: Energy Devices

Concept of Spatially Divided Deep Reactive Ion Etching with ALD-based Passivation

Ozone Based Atomic Layer Deposition of Polycrystalline V2O5 for Electrochemical Energy Storage

Highly Active Oxide Photocathode for Photoelectrochemical Water Reduction

Session B

Session B: Surface Chemistry & Conformal Coatings I

Atomic Layer Deposition of Smooth Phase Change GeSbTez Layers on Planar and 3D Structures

Comparison of the Conformality of ALD Grown SrTiO3 and BaTiO3 Using H2O or O3 as Oxygen Source

A Quantified-Dosing ALD Reactor with Studies and Applications of Controlled Dosing to the ALD Process
Presented by: T. Larrabee, T. Mallouk, D. Allara, Penn State Univ.
Conformality of Remote Plasma Enhanced ALD Processes: An Experimental Study
Presented by: J. Niinistö, M. Kariniemi, Univ. of Helsinki; M. Putkonen, Beneq Oy; M. Vehkamäki, M. Kemell, M. Ritala, M. Leskelä, Univ. of Helsinki

ALD Growth per Cycle Modulation Using Surface Functionalization: A Strategy for Improved Stoichiometry Control and Higher Doping Efficiencies

In-Situ Study of the Reaction Mechanism Kinetics of Pt ALD
Presented by: I. Erken, Eindhoven Univ. of Technology; A.J.M. Mackus, H.C.M. Knoops, F. Roozeboom, W.M.M. Kessels, Eindhoven Univ. of Technology

Surface Loss in Ozone-based ALD Processes
Presented by: H.C.M. Knoops, Eindhoven Univ. of Technology; J.W. Elam, J.A. Libera, Argonne National Lab; W.M.M. Kessels, Eindhoven Univ. of Technology

Session B: Surface Chemistry & Conformal Coatings II
Oxide Coating of Nanoporous Alumina using ALD to Produce Highly Porous Spinel
Presented by: E. Rauwel, O. Nilsen, Univ. of Oslo; J. Walmsley, Sintef Trondheim; M. Diskus, Univ. of Oslo; E. Rytter, Statoil Trondheim; H. Fjellvåg, Univ. of Oslo

Non-aqueous Sol-gel Routes Applied to the ALD of Oxides: The Case of Titanium Isopropoxide - Acetic Acid Process
Presented by: K. Bernal-Ramos, Univ. of Texas at Dallas, Richardson, USA; C. Marichy, G. Clavel, N. Pinna, CICECO, Univ. of Aveiro, Aveiro, Portugal; Y.J. Chabal, Univ. of Texas at Dallas, Richardson, USA

In Situ Ellipsometric Investigations During the ALD Growth of Ru
Presented by: M. Junige, M. Knaut, M. Geidel, M. Albert, J. W. Bartha, Dresden Univ. of Technology

The Effects of TiO₂ Crystallinity on Nucleation in Atomic Layer Deposition of Platinum

Flash-ALD – A Novel Approach for Atomic Layer Controlled Growth of Thin Films Induced by Flash Heating

Element Interface Cleaning During the Atomic Layer Deposition of Metal Oxides on GaAs(100) Surfaces

In Situ Reaction Mechanism Studies on Atomic Layer Deposition of Ir and IrO₂ from Ir(acac)₃
Presented by: K. Knapas, M. Ritala, Univ. of Helsinki

Using Growth Inhibitors to Enhance Nucleation Density in Low Temperature CVD
Presented by: N. Kumar, P. Zhang, A.C. Dunbar, L.M. Davis, G.S. Girolami, J.R. Abelson, S. Babar, Univ. of Illinois at Urbana Champaign

Session B: Industrial ALD I
Industrial ALD Systems: The Role of Computation in Design

High Throughput Films and Devices by Spatial Atomic Layer Deposition
Presented by: D. Levy, S. Nelson, M. Burberry, L. Tutt, Eastman Kodak Company

Studying Roll-to-Roll ALD Process Conditions Using a Moving Substrate under a Gas Source Coating Head
Presented by: P.R. Fitzpatrick, Z.M. Gibbs, S.M. George, Univ. of Colorado at Boulder

Model-based Methodology for Analysis and Design of ALD Processes
Presented by: A. Holmqvist, S. Stenström, Lund Univ.

Session B: Industrial ALD II
Continuous ALD Deposition on Flexible Substrates – Towards a Roll-to-Roll Process
Presented by: P. Maydannik, T.O. Kääriäinen, K. Lahtinen, D. Cameron, Lappeenranta Univ. of Technology
Fast Atomic Layer Deposition for High Throughput and Low Temperature Applications
Presented by: P. Poodt, A. Illiberi, M. Smets, B. Kniknie, H. Winands, R. Knaapen, TNO; F. Roozeboom, TNO and Eindhoven Univ. of Technology; M. Tijdink, A. van Asten, TNO

PEALD Batch Processing of Al doped TiO₂
Presented by: W. Lehnert, G. Ruhl, Infineon Technologies AG, Germany; A. Gschwandtner, R3T GmbH, Germany

On the Impact of Energetic Photons and Ions on Plasma-assisted ALD of Metal Oxides
Presented by: H.B. Profijt, M.C.M. van de Sanden, W.M.M. Kessels, Eindhoven Univ. of Technology

**Session B: Industrial ALD III**

**High Rate Roll to Roll ALD of Ultra-Barrier Oxide Films**
Presented by: E. Dickey, Lotus Applied Technology

**Cost Effective ALD for Solar Cell Passivation with Al₂O₃: Tool Design and Considerations**
Presented by: V. Kuznetsov, P. Vermont, E.H.A Granneman, Levitech BV

Temperature Window for Al₂O₃ and ZnO Growth by Atmospheric Pressure ALD

Roll to Roll ALD: From Prototype to Manufacturing
Presented by: M. Dalberth, M. Sershen, G. Sundaram, R. Coutu, J. Becker, Cambridge NanoTech

**QCM Sensors for Advanced Process and Equipment Control**
Presented by: M. Knaut, M. Albert, J.W. Bartha, TU Dresden, Institute of Semiconductors and Microsystems

Comparison of Structural and Electrical Properties of In-situ Al₂O₃ Capped and Non-capped La₂O₃ Layers Deposited on Silicon
Presented by: K. Karakaya, IMEC / Holst Centre; C.A. van den Heuvel, Philips Innovation Services; J. Swerts, IMEC VZW; S.H. Brongersma, IMEC / Holst Centre
**Session B: Nanostructures I**

Process Integration of Atomic Layer Deposition (ALD) in Nanoenergy Devices
Presented by: P. Banerjee, A. Brozena, X. Chen, K. Gregorczyk, K. Gerasopoulos, L. Haspert, S. Sherrill, Y. Wang, R. Ghodssi, Univ. of Maryland; S.B. Lee, Korea Advanced Institute of Science and Technology; G.W. Rubloff, Univ. of Maryland
An Approach for Cu ALD via Reduction of Ruthenium-Containing CuxO Films for the Metallization in Spintronic and ULSI Interconnect Systems
Presented by: S. Mueller, Chemnitz Univ. of Technology, Center for Microtechnologies (ZfM), 09107 Chemnitz, Germany
ALD Metal/Oxide Nanoelectrode Arrays for Hybrid Organic/Inorganic Photovoltaic Devices
Presented by: D. Gu, H. Baumgart, G. Namkoong, Old Dominion Univ.
(Sn,Al)Ox Films Grown by Atomic Layer Deposition
Tailor-Made Superparamagnetic Nanotubes for Novel Hybrid Ferrofluid Suspensions
Presented by: R. Zierold, Univ. of Hamburg; Z. Wu, Ulm Univ.; J. Bachmann, Univ. of Hamburg; C.E. Krill III, Ulm Univ.; K. Nielsch, Univ. of Hamburg

**Session B: Nanostructures II**

ALD for Textiles

Characteristics of Sb-rich GeSbTe (GST) Thin Films Grown by Atomic Layer Deposition for High Performance Phase Change Random Access Memory (PCRAM)

Oxidation Behavior of Cu Nanoparticles Embedded in Porous Alumina Films Produced by Molecular Layer Deposition
Presented by: Y. Qin, Max-Planck-Institute of Microstructure Physics; Y. Yang, Institute of Microsystems Engineering (IMTEK), Albert-Ludwigs-Univ. Freiburg; R. Scholz, M. Knez, Max-Planck-Institute of Microstructure Physics
Controlling the Nucleation of Noble Metal ALD and its Application to Nanopatterning

Plasma-Enhanced Atomic Layer Deposition of Silver Thin Films for Applications in Plasmonics and Surface-Enhanced Raman Scattering
Presented by: E. Cleveland, H. Qi, NRL; J. Niinistö, M. Ritala, Helsinki Univ.; S. Prokes, NRL

**Session B: Novel Materials I**

New Directions, Ideas or Trends in ALD
Presented by: C.S. Hwang, Seoul National Univ.
Surface Modification of Materials Using Atomic Layer Deposition for Biotechnological Applications
Presented by: R.J. Narayan, NCSU
PEALD of Silver Thin Films
Presented by: M. Kariniemi, J. Niinistö, T. Hatanpää, M. Vehkamäki, M. Kemell, Univ. of Helsinki; T. Sajavaara, Univ. of Jyväskylä; M. Ritala, M. Leskelä, Univ. of Helsinki
Molecular Layer Deposition of Organic Thin Films for EUV Photoresist Applications
Zircone & Tunable Zircone: ZrO₂ Alloy Films Grown Using Molecular Layer Deposition Techniques
Presented by: B.H. Lee, V.R. Anderson, S.M. George, Univ. of Colorado
Titanicone Molecular Layer Deposition Using TiCl₄ and Ethylene Glycol or Glycerol and Porous TiO₂ Films Produced by Annealing
Presented by: A.I. Abdulagatov, R.A. Hall, S.M. George, Univ. of Colorado at Boulder

Session B: Novel Materials II
A Route towards Metal-Polymer Hybrid Materials Prepared by Vapor Phase Infiltration
Presented by: S.-M. Lee, Korea Institute of Machinery & Material (KIMM); V. Ischenko, E. Pippel, Max-Planck-Institute of Microstructure Physics; A. Masic, Max-Planck-Institute of Colloids and Interfaces; O. Moutanabbir, Max-Planck-Institute of Microstructure Physics; P. Fratzl, Max-Planck-Institute of Colloids and Interfaces; M. Knez, Max-Planck-Institute of Microstructure Physic
Mesoporous Metal Oxides Prepared by Sequential Vapor Infiltration and Atomic Layer Deposition on Surfactant Films
Presented by: B. Gong, D.H. Kim, G.N. Parsons, NC State Univ.
Molecular Layer Deposition of Flexible, Transparent and Conductive Hybrid Organic-Inorganic Thin Films
Presented by: B. Yoon, B.H. Lee, S.M. George, Univ. of Colorado Boulder
ALD of MOF-5 and IRMOF-8 Thin Films
Presented by: L.D. Salmi, M.J. Heikkilä, Univ. of Helsinki; D. Grosso, Collège de France; M. Ritala, Univ. of Helsinki
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**ALD 2012**

**Session I**
Atomic-scale simulation of the transmetallation mechanism for copper ALD
Presented by: T. S. D. Elliott, G. Dey and Y. Maimaiti, Tyndall National Institute, University College Cork, Lee Maltings, Cork, Ireland
In-situ FTIR characterization of growth inhibition in Atomic Layer Deposition using reversible surface functionalization

Oxidative Molecular Layer Deposition of PEDOT a Conductive Polymer
Presented by: S. Atanasov, B. Gong, G. N. Parsons, Department of Chemical and Biomolecular Eng, North Carolina State Univ. Raleigh NC, USA

**Session II**
TiO$_2$-on-insulating-layer and insulating-layer-on-TiO$_2$ photo anodes for next-generation dye-sensitized solar cells
Presented by: A. K. Chandiran, Md. K. Nazeeruddin, M. Grätzel, Laboratory of Photonics and Interfaces, Swiss Federal Institute of Technology (EPFL), Station 6, 1015 Lausanne, Switzerland
Ferroelectric Phase Transitions in Poly-Crystalline Al:HfO$_2$-Thin Films
Presented by: S. Mueller, A. Singh, T. Mikolajjick, J. Müller, S. Riedel, J. Sundqvist, NaMLab gGmbH & TU Dresden, Noethnitzer Straße 64, 01187 Dresden, Germany
Low Temperature Growth of High Purity, Low Resistivity Copper Films by Atomic Layer Deposition
Presented by: T. Knisley, T. C. Ariyasena, C. H. Winter, T. Sajavaara, M. J. Saly, Department of Chemistry, Wayne State University, Detroit, Michigan 48202, USA

**Session III: High k on III/V Semiconductor**
Investigating the interface between high mobility III-V semiconductors and ALD oxides for future transistor applications
Presented by: P. Hurley, V Djara, É. O’Connor, J. Lin, S. Monaghan, I. Povey, M. Pemble, M. A. Negara, D. O’Connell and K. Cherkaoui, Tyndall National Institute, University College Cork, Cork
Surface chemistry during incubation period of ALD of aluminium and hafnium oxides on oxidised III-V substrate from simulation
Presented by: S. Klejna, S. D. Elliott, Tyndall National Institute, University College Cork, Cork
Effect of H$_2$ plasma pre-treatment on the reduction of native oxides at the PEALD Al$_2$O$_3$/GaSb interface
Interface Electronic State Characterization of Remote PEALD High-k Dielectrics on GaN
Presented by: B. S. Eller, J. Yang, and R. J. Nemanich, Department of Physics, Arizona State University, Tempe, Az 85287, USA

**Session IV: Characterization**
Scanning Probe Microscopy of Single Molecules on Ultrathin Insulation Films
Presented by: Jascha Repp, Institute of Experimental and Applied Physics, University of Regensburg, 93053 Regensburg, Germany

Measuring Adhesion of ALD Aluminum Oxide Thin Films on Silicon Substrate by using Embedded Nanospheres
Presented by: Jussi Lyytinen, Maria Berdova, Xuwen W. Liu, Juha Larismaa, Jari Koskinen and Sami Franssila, Department of Materials Science and Engineering, Aalto University, Espoo, Finland

Surface Characterization and Process Control for ALD using Inline XPS Technique
Presented by: Min Dai, Srinivasan Rangarajan, Joseph F Shepard, Rishikesh Krishnan, Bing Sun, Arun Srivatsa, Michael P Chudzik / Mark Klare, Michael Kwan, and Tom Larson, IBM, 2070 Route S2, Hopewell Junction, NY 12533

Probing ultrathin film continuity and interface abruptness with x-ray photoelectron spectroscopy and low-energy ion scattering
Presented by: Wenyu Zhang, Rambert K. Nahm, James R. Engstrom, Paul F. Ma, School of Chemical and Biomolecular Engineering Cornell University, Ithaca, NY 14853, USA

Densification of Low-Temperature ALD Aluminum Oxide Thin Films by in-situ Flash Annealing

**Session V: High k Metal Gate/Metal**
Atomic layer deposition of ruthenium (Ru) thin films using ethylbenzene-cyclohexadienyl Ru(0) as a seed layer for copper metallizations
Presented by: Seungmin Yeo, Sang-Hyeok Choi, Soo-Hyun Kim, Taehoon Cheon, Byoung-Yong Lim, Sunjung Kim, Tae-Eun Hong, School of Materials Science and Engineering, Yeungnam University, 214-1, Dae-dong, Gyeongsan-City, 712-749, Korea

Plasma-enhanced atomic layer deposition of TiCx films using tetrakis neopentyl titanium and H2 plasma and applications to a diffusion barrier and contact material
Presented by: Sang-Kyung Choi, Soo-Hyun Kim, Taehoon Cheon, School of Materials Science and Engineering, Yeungnam University, Daedong, Gyeongsan city, Gyeongsangbuk-do 712-749, Korea

Development of a TaCN Batch Furnace ALD Process
Low temperature PEALD SiN for gate first HKMG sidewall protection layer
GLOBALFOUNDRIES, Wilschdorfer Landstraße 101, 01109 Dresden, Germany

**Session VI: Functional Materials I**
Elaboration of functional carbon based heterostructures by controlled surface functionalization and metal oxide ALD
Presented by: C. Marichy, N. Pinna, K.H. Lee, M.G. Willinger, J.-P. Tessonnier, S. Cavaliere, G. Neri, World Class University (WCU) program of Chemical Convergence for Energy and Environment (C2E2), School of Chemical and Biological Engineering, College of Engineering, Seoul National University (SNU), Seoul, 151-744, Korea
Patternning of ALD Coatings on Textiles
Presented by: William J. Sweet III, Christina K. Devine, Christopher J. Oldham, Gregory N. Parsons, Jesse S. Jur, Department of Chemical and Biomolecular Engineering / Department of Textile Engineering, Chemistry and Science North Carolina State University, Raleigh, North Carolina, 27695, USA
Synthesis of noble metal core/shell nanoparticles by ALD
Atomic layer deposition of W:Al2O3 nanocomposites with tunable resistivity
Presented by: Anil U. Mane and Jeffrey W. Elam, Argonne National Laboratory, Argonne, Illinois 60439, USA

**Session VII: Solar/Transparent Conducting Oxides I**
Nanoscale Architectures Fabricated by Atomic Layer Deposition and Conformal Coating of Nanotemplates for Solar Energy Conversion
Presented by: Hyunjung Shin, School of Advanced Materials Engineering, Kookmin University, Seoul 136-702, Korea
ALD of transition metal doped ZnO films for transparent electrode
Presented by: Do-Joong Lee, Ki-Ju Kim, Ki-Bum Kim / Jimmy Xu / Jang-Yeon Kwon / Soo-Hyun Kim, WCU Hybrid Materials Program, Department of Materials Science and Engineering, Seoul National University, Seoul 151-742, Korea
ALD-enabled tunneling and transparent conductive oxide layers for novel silicon nanowire solar cells
Presented by: Minna Toivola, Satu Ek, Tero Pilvi, Juhana Kostamo, Sanna Arpiainen, Picosun Oy, Tietotie 3, FI-02150 Espoo, Finland
ALD for 3D Nanostructured Building Blocks: Urchin-Inspired Architectures for Solar Cells
High deposition rate (~ nm/s) of TCOs for solar and electronic devices by Spatial ALD
Presented by: A. Illiberi, P. Pooldt, F. Roozeboom, Netherlands Organization for Applied Scientific Research (TNO), PO Box 6235,5600 HE Eindhoven, The Netherlands
Session VIII: Characterization II
Surface Chemistry of Atomic Layer Deposition Processes
Presented by: Francisco Zaera, Department of Chemistry, University of California, Riverside, California 92521, USA
Interface oxide evolution on InP(100) during atomic layer deposition of Al₂O₃ studied by in-situ infrared spectroscopy
Presented by: W. Cabrera, B. Brennan, H. Dong, R.M. Wallace, Y. J. Chabal, I. M.Povey, Department of Material Science and Engineering, The University of Texas at Dallas Richardson, TX, U.S.A.
In-situ analysis of Al₂O₃ ALD growth on PET and PEN substrates for flexible organic electronics
Presented by: Marion Geidel, Christoph Hossbach, Martin Knaut, Matthias Albert and Johann W. Bartha, TU Dresden, Institute of Semiconductors
In situ reaction mechanism studies on ALD of mixed silicon aluminium oxides from trimethylaluminium, hexakis ethylaminodosilane and Water
Presented by: Yoann Tomczak, Kjell Knapas, Marianna Kemell, Mikko Heikkilä, Markku Leskelä, Mikko Ritala, Suvi Haukkka, Marcel Ceccato, Laboratory of Inorganic Chemistry, University of Helsinki, P.O.Box 55 FIN-00014 University of Helsinki, Finland

Session IX: High k Metal Gate/Dielectric
ALD Process Applications of Advanced Logic Technology
ALD high-k surface pre-treatment and sequence tuning for reliability improvement in 28nm CMOS devices
Critical Challenges in the Atomic Layer Deposition of Highly Electropositive Metals in Semiconductor Fabrication
ALD of Dy₂O₃ and Er₂O₃ Thin Films: A Study on the ALD Characteristics, Structural and Electrical Properties
HfO₂ / SiO₂ Composite-layer One-Time Programmable Memory Cell Prepared by Atomic Layer Deposition
Presented by: Xi Lin, Wei Wang, Xiao-Yong Liu, Peng-Fei Wang, Qing-Qing Sun, and David Wei Zhang, State Key Laboratory of ASIC and System, Dept. of Microelectronics, Fudan University, Shanghai, 200433 China

Session X: Functional Materials II
Nanoparticles by ALD: From Nucleation Mechanisms to Applications in Quantum Dot Solar Cells
Presented by: Stacey F. Bent, Han-Bo-Ram Lee, Marja Mullings, Bruce Clemens, Thomas P. Brennan, Pendar Ardalan, Jonathan R. Bakke, I-Kang Ding, Michael D. McGehee, Departments of Chemical Engineering and Materials Science and Engineering, Stanford University, Stanford, CA 94305 USA
Atomic Layer Deposition of Cobalt Ferrites films for Magneto-Plasmonic Core-Shell Nanowires
Thermoelectric Characterizations of ALD grown Sb₂Te₃ Films
Presented by: Sebastian Zastrow, Johannes Gooth, Tim Böhnert, Kornelius Nielsch, Stefan Heimann, Stephan Schulz, University of Hamburg, Institute of Applied Physics, Germany
Atomic Layer Deposited TiO₂ Nanotubes and Thin Films for Biosensor Applications
Presented by: Mingun Lee, Antonio Lucero, Jie Huang, MoonJ Kim and Jiyoung Kim Department of Material Science and Engineering, The University of Texas at Dallas, Richardson, TX, USA
Porous TiO$_2$ nanotubes with controlled pore size by molecular layer deposition
Presented by: Yong Qin, Mato Knez, Institute of Coal Chemistry, Chinese Academy of Sciences, 030001, Taiyuan, P.R. China

Session XI: Solar/Transparent Conducting Oxides II
ALD for solar cells
Presented by: Jan Benick, Fraunhofer ISE Freiburg

Selective ALD of SiO$_2$ on Dye-Sensitized Solar Cells
Presented by: Roy G. Gordon, Xinwei Wang / Ho-Jin Son, Chaiya Prasittichai, Joseph T. Hupp, Department of Chemistry and Chemical Biology, Harvard University, Cambridge, MA
Atomic layer deposition of transparent conducting oxide substrates for CdTe based photovoltaics
Presented by: Paul R. Chalker, Paul A. Marshall, Simon Romani / Stuart J C Irvine, Daniel A. Lamb, Andrew J. Clayton / Paul A. Williams, Centre for Materials & Structures, University of Liverpool, Liverpool, L69 3GH, UK
ALD developments in the Zn(O,S) buffer layer for CIGS solar cells
Presented by: Steven Christensen, Jonathan Mann / Stephen Glynn, Jian Li, Rommel Noufi, Kannan Ramanathan, Arrelaine Dameron, National Center for Photovoltaics National Renewable Energy Laboratory, Golden, Colorado 80401, USA
Growth, characterization and performance of amorphous Zn$_{1-x}$Sn$_x$O$_y$ thin films by atomic layer deposition for CuIn$_{1-x}$Ga$_x$Se$_2$ solar cells
Presented by: Tobias Törndahl, Johan Lindahl, Adam Hultqvist, Jörn Timo Wätjen and Marika Edoff, Ångström Solar Center, Solid State Electronics, Uppsala University, Box 534, SE-75121 Uppsala, Sweden

Session XII: Nucleation & Growth control
Controlling the growth morphology of ALD copper oxide on CNTs by thermal oxidation prior to the ALD
Presented by: H. Van Bui, A. A. I. Aarnink, A. Y. Kovalgin and R. A. M. Wolters, MESA+ Institute for Nanotechnology, University of Twente, P.O. Box 217, 7500 AE Enschede, the Netherlands
Reactions Mechanisms in $\text{Al}_2\text{O}_3$ Atomic Layer Deposition studied by Density Functional Theory

Apital Atomic Layer Deposition Reactions
Presented by: Paul Poodt, Andrea Illiberi, Raymond Knaapen, Mireille Smets, Fred Roozeboom, Almie van Asten, TNO, PO Box 6235, 5600HE Eindhoven, The Netherlands

On the role of ions during plasma-assisted ALD
On the mechanism of zinc oxide ALD using diethylzinc and ozone
Presented by: Wayne L. Gladfelter, Ellis Warner, Stephen A. Campbell and Christopher J. Cramer, Departments of Chemistry and Electrical and Computer Engineering, University of Minnesota, Minneapolis, USA

Session XIII: Emerging Applications
Enabling High Performance Detectors and Optics for Astronomy and Planetary Exploration with ALD
Presented by: Frank Greer, Erika Hamden, Michael C. Lee, Matthew Beasley, David Schiminovich, Peter Day, Rick Leduc, Shoule Nikzad, Jet Propulsion Laboratory/California Institute of Technology, 4800 Oak Grove Drive, Pasadena, CA 91109 U.S.A

Thermal and PEALD deposition of MgF$_2$
Presented by: A. Szeghalmi, H. Yang, E.-B. Kley, M. Knez, A. Tünnermann, Institut für Angewandte Physik, Abbe Center of Photonics, Friedrich-Schiller-Universität Jena, Max-Wien-Platz 1, 07743 Jena

Efficient SERS substrates by combining PEALD silver with electrospun fibers
Presented by: Eero Santala, Maarit Kariniemi, Timo Hatanpää, Jaakko Niinistö, Markku Leskelä, Mikko Ritala, Orest J. Glembocki, Sharka M. Prokes, Department of Chemistry, University of Helsinki
Deposition of a self-assembled monolayer using a molecular layer deposition (MLD) technique for pore sealing application
Presented by: James Connolly, Paul Ma, Jeff Bielefeld, Applied Materials, Santa Clara, CA, USA / Intel Corporation, Portland, OR, USA

Session XIV: MLD
Synergic Combinations of Organic and Inorganic Nanolayers Using Molecular Layer Deposition with Atomic Layer Deposition
Presented by: Myung Mo Sung, Department of Chemistry, Hanyang University

Water Vapor Transmission Rates and Critical Tensile Strains for Alloy Films Grown Using $\text{Al}_2\text{O}_3$ ALD & Alucone MLD
Presented by: Shih-Hui Jen, Byoung H. Lee, Steven M. George, Robert S. McLean and Peter F. Garcia, Department of Chemistry and Biochemistry
Highly fluorescent monolayers of Alq$_3$ prepared by molecular layer deposition
Presented by: A. Räupke, D. Theirich, T. Riedl, F. Albrecht, H.-H. Johannes, W. Kowalsky, Institute of Electronic Devices, University of Wuppertal, Germany
Session XV: Memory
Enabling Resistive RAM for Next Generation Memory through ALD Processes

In-Situ Control of Oxygen Vacancy Concentration by ALD for Resistive Switching Devices
Presented by: Woo Lee , Sang-Joon Park, Byung Youn You, Jeong-Pyo Lee, Jong Shik Jang, Hyun Rhu, Chang Soo Kim, Yong-Jai Cho, Kyung Joong Kim, Byungsung, Hyunung Yu, Sang-Wook Han, Sunggi Baik, Korea Research Institute of Standards and Science (KRISS), Daejeon 305-340, Korea
Deposition and Electrical Characterization of ALD Ge,Sb,Te, for Future Applications of Phase Change Memory Devices
Scalability of ALD strontium titanate films for 3X DRAM MIM capacitors
Presented by: Mihaela Popovici, Johan Swerts, Kazuyuki Tomida, Min-Soo Kim, Annelies Delabie, Johan Meerschaut, Alexis Franquet, Ben Kaczer, Malgorzata Jurczak, Sven Van Elshocht, imec, Kapeldreef 75, 3001-Leuven, Belgium
Atomic layer deposition of metal silicates as scalable high-k metalinsulator-metal capacitors with low leakage, high-breakdown fields and improved voltage linearity
Presented by: Ian M. Povey and Scott Monaghan, Tyndall National Institute, University College Cork, Lee Maltings, Cork, Ireland

Session XVI: Reactor/Roll to Roll
Leading Edge Atomic Layer Deposition Applications and Equipment for Semiconductor Manufacturing
Presented by: Paul Ma, Schubert S. Chu, Mei Chang, Vicky Nguyen, Atif Noori, Maitreyee Mahajani, Srinivas Gandikota, and Joseph Yudovsky, Applied Materials, 974 E. Arques Avenue, Sunnyvale, CA 94085, USA
Atmospheric-pressure ALD for production of nanostructured particles
Presented by: J. Ruud van Ommen, Delft University of Technology, ChemE, Julianalaan 136, 2628 BL Delft, the Netherlands
Model-based Optimization of Cross-Flow ALD Reactors
Presented by: Anders Holmqvist, Stig Stenström, Department of Chemical Engineering, Lund University, Lund, SE-221 00, Sweden
Deposition of Al,O, Films by Spatially Separated Atomic Layer Deposition with a Large Gap Distance
Presented by: Sungin Suh, Sanghyun Park, Hajin Lim, Yu-Jin Choi, Hyeong Joon Kim / Seok-Jun Won, Department of Materials Science and Engineering, and Inter-University Semiconductor Research Center, Seoul National University, Seoul, 151-744, Korea / Technology
Atmospheric Spatial ALD in Roll-to-Roll Processes
Presented by: Raymond Knaapen, Paul Poodt, Ruud Olieslagers, Adriaan Lankhorst, Matijs van den Boer, Dennis van den Berg, Almie van Asten / Fred Roozeboom, TNO, PO Box 6235, 5600 HE Eindhoven, The Netherlands

Session XVII: Energy Storage
Reduction of Leakage Current in Supercapacitors by Atomic Layer Deposition of a Blocking Layer on the Electrodes
Presented by: Jing Wang, Tete Tevi, Paula Algarin, Arash Takshi, Sylvia Thomas / Adrien LaVoie, Department of Electrical Engineering, University of South Florida, Tampa FL 33620, U.S.A.
Atomic Layer Deposition of Li,Ti,O, Films
Presented by: Ville Miikkulainen, Ola Nilsen, Helmer Fjellvåg / Mikko Laitinen, Timo Sajavaara, Centre for Materials Science and Nanotechnology (SMN), Department of Chemistry, University of Oslo, P.O. Box 1126 Blindern, NO-0318 Oslo, Norway
Atomic-layer-deposition synthesis of energy nanomaterials and their applications in lithium-ion batteries
Presented by: Jian Liu, Xifei Li, Xiangbo Meng, Yuhai Hu, Dongsheng Geng, Ruying Li, Xueliang Sun, Nano+Energy@Western Group, Department of Mechanical & Materials Engineering, University of Western Ontario, London, ON N6A 5B9, Canada
Atomic Layer Deposition of RuO$_2$ for Energy Storage Applications
Presented by: Keith Gregorczyk, Xinyi Chen, Gary W. Rubloff, Department of Material Science and Engineering & Institute for Systems Research, University of Maryland, College Park, MD, 20742, USA
Electrochemical Supercapacitors Fabricated Using TiO$_2$ ALD on Graphene and Carbon Nanotubes
Presented by: Xiang Sun, Gongkai Wang, Hongtao Sun, Jie Lian / Ming Xie, Matthias J. Young, Jonathan J. Travis, Andrew S. Cavanagh, Steven M. George, Dept. of Mechanical, Aerospace & Nuclear Engineering, Rensselaer Polytechnic Institute, New York 12180
ALD V$_2$O$_5$ as active electrochemical material in energy storage nanostructures
Presented by: Liangbing Hu, Xinyi Chen, Gary W. Rubloff, Keith Gregorczyk, Department of Materials Science & Engineering, University of Maryland, College Park, MD 20742, USA

Session XVIII: Epitaxy and Doping
Epitaxial growth of oxide thin films by atomic layer deposition
Presented by: Jaan Aarik, Hugo Mändar, Aivar Tarre, Teet Uustare, Institute of Physics, University of Tartu, Riia 142, 51014 Tartu, Estonia
Growth of epitaxial oxide films on silicon substrates using ALD: Case study of TiO$_2$, SrTiO$_3$, and LaAlO$_3$ on SrTiO$_3$-buffered Si(001)
Presented by: Martin D. McDaniel, Thong Q. Ngo, John G. Ekerdt, Alex A. Demkov, University of Texas at Austin, Department of Chemical Engineering, Austin, TX 78712, USA
Deposition and X-ray Characterization of Epitaxial Thin Films of LaAlO$_3$
Presented by: Sønsteby, H, Østreng, E, Nilsen, O, Fjellvåg, H., University of Oslo, Centre for Materials Science and Nanotechnology, Norway
Structural properties of as deposited and annealed ZrO$_2$ influenced by ALD, substrate, and doping
Presented by: W. Weinreich, L. Wilde, J. Müller; E. Erben; J. Heitmann; M. Lemberger, A. J. Bauer, Fraunhofer Center Nanoeletronic Technologies, Dresden, Germany / Globalfoundries, Dresden, Germany
Atomic layer deposition of oxide layers as dopant source for ultra-shallow doping of silicon
Presented by: Bodo Kalkofen, Max Klingsporn, Edmund P. Burte, Marco Lisker, IMOS, University of Magdeburg, Universitätsplatz 2, 39106 Magdeburg, Germany

Session XIX: Precursor
Metal Chalcogenide Precursors at KRICT
Presented by: Chang Gyoun Kim, Taek-Mo Chung, Ki-Seok An, Sun Sook Lee, and Bo Keun Park, Advanced Materials Division, Korea Research Institute of Chemical Technology Yuseong P.O.Box 107, Daejeon 305-600, Republic of Korea
Atomic Layer Deposition of SrO and SrTiO$_3$ Using Novel Sr Imidazolate Precursors
Presented by: M. S. Kim, S.H. Yang, Sergei Ivanov, John A. T. Norman, Iain Buchanan, Air Products and Chemicals, 7201 Hamilton Blvd, Allentown, PA 18195
Elementary reaction analyses on NH$_2$ radicals in gas phase for Cobalt thin film deposition by hot wire assisted ALD (HW-ALD)
Presented by: Hideharu SHIMIZU, Takeshi MOMOSE, and Yukihiro SHIMOGAKI, The University of Tokyo
Novel nitride processes, Li$_3$N and Mo$_3$N by ALD
Presented by: Erik Østreng, Ponniah Vajeeston, Ola Nilsen, Helmer Fjellvåg, University of Oslo, Norway
Non-Pyrophoric Al Precursor for the ALD of Al$_2$O$_3$ and Al-Doped ZnO
Presented by: S. E. Potts, P. M. Hermkens, D. García-Alonso, W. M. M. Kessels, C. Lachaud, Department of Applied Physics, Eindhoven University of Technology, Eindhoven, The Netherlands

Session XX: Nucleation & Growth
Low Temperature ALD of Noble Metals Using Ozone and Molecular Hydrogen as Reactants
Presented by: Jani Hämäläinen, Esa Puukilainen, Mikko Ritala, Markku Leskelä, Timo Sajavaara, Department of Chemistry, P.O. Box 55, FI-00014 University of Helsinki, Finland
Comparison of three processes for plasma-enhanced ALD of platinum
Presented by: D. Longrie, K. Devloo-Casier, C. Detavernier, S. Van den Berghe, K. Driesen, Department of Solid State Sciences, Ghent University Ghent, Belgium
Nucleation of 1-D Pt Nanowires by Atomic Layer Deposition on Highly Oriented Pyrolytic Graphite
Presented by: Han-Bo-Ram Lee, Jong Suk Yoo, and Stacey F. Bent, Department of Chemical Engineering, Stanford University, Stanford, CA94305, USA
Dehydrogenation reactions and catalytic combustion during Ru ALD
Presented by: N. Leick, A.J.M. Mackus, W.M.M. Kessels, S. Agarwal, Eindhoven University of Technology, P.O. Box 513, 5600 MB Eindhoven, The Netherlands
Atomic layer deposition of (GeTe)$_{1-x}$(Sb$_2$Te$_3$)$_x$ pseudo-binary layers for phase change memories
Presented by: Cheol Seong Hwang, Taeyong Eom, Taehong Gwon, Si Jeong Yoo / Moo-Sung Kim / Manchao Xiao, Iain Buchanan, Department of Materials Science & Engineering and Inter-university Semiconductor Research Center, Seoul National University, Seoul 151-744, Korea / Air Products Korea, 15 Nongseo-dong, Giheung-gu, Yongin-si, Gyeonggi-do, 446-920, Republic of Korea / Air Products and Chemicals, Inc., 1969 Palomar Oaks Way, Carlsbad, CA 92011, USA
**Session XXI: Catalysis**

Fabrication of Pt-ZnO catalysts by UV-assisted atomic layer deposition for electro-oxidation of methanol

Presented by: Chung-Yi Su, Yang-Chih Hsueh, Chi-Chung Kei, Chun-Ting Lin, Tsong-Pyng Perng, Department of Materials Science and Engineering, National Tsing Hua University, Hsinchu, Taiwan

Synthesis of Nanostructured Catalysts by Atomic Layer Deposition

Presented by: Junling Lu, Yu Lei, Joseph A. Libera, Jeffrey W. Elam, Argonne National Laboratory, Argonne, Illinois 60439, USA

Atomic layer deposition of platinum on tungsten oxide as a novel PEM cathode catalyst


Systematic catalytic current enhancement for the oxidation of water at nanostructured iron (III) oxide electrodes

Presented by: Julien Bachmann, Julia Gemmer, Yvonne Hinrichsen, Annik Abel, Physics Department, Chemistry Department, and Interdisciplinary Nanoscience Center Hamburg, University of Hamburg, Sedanstrasse 19, D–20146 Hamburg, Germany

Nanostructured Materials for Photoelectrochemical Water Splitting by ALD

Presented by: Qing Peng, Jeffrey T. Glass, Paul Hoertz, Berç Kalanyan, Gregory N. Parsons, Jie Liu, Electrical and Computer Engineering and 4Chemistry Departments, Duke University, Durham, NC, 27708 / Research Triangle Institute, NC, 27709

**Session XXII: Nucleation & Growth**

Nucleation and Growth of Atomic Layer Deposition of PtOx Using (MeCp)PtMe3 and O2 Plasma


Atomic layer deposition of Bi2Te3

Presented by: Tiina Sarnet, Timo Hatanpää, Mikko Ritala, Markku Leskelä, Laboratory of Inorganic Chemistry, Department of Chemistry, University of Helsinki, Finland

Atomic layer deposition of bismuth ferrite

Presented by: Manjunath Puttaswamy, Mikko Ritala, Markku Leskelä, Kaupo Kukli, Marko Vehkamäki, Kemell, Timo Hatanpää, Mikko Heikkilä/Mukesh Chandra, Marriana, Aile Tamm / Dimri, Raivo Stern / Marcel Ceccato, University of Helsinki, Department of Chemistry, P.O.Box 55, FI-00014, Helsinki, Finland

Atomic layer deposition of a-Fe2O3 using FeCl3 and H2O

Presented by: Jeffrey A. Klug, Nicholas G. Becker, Shannon C. Riha, Alex B. F. Martinson, Jeffrey W. Elam, Michael J. Pellin, and Thomas Proslier, Argonne National Laboratory, Argonne, Illinois 60439, USA

Optimization of the annealing conditions for thin VO2 ALD films

Presented by: Geert Rampelberg, Davy Deduysche, Bob De Schutter, Christophe Detavernier, Marc Schaeckers, Koen Martens, Jorge Kittl, Department of Solid State Sciences, Ghent University, Krijgsstraan 281/S1, B-9000 Ghent, Belgium
Deuterium uptake during heavy water ALD half reaction of transparent conductive oxide nanolaminates $\text{Al}_2\text{O}_3$/ZnO
Presented by: Ivo Utke, James Whitby, Deborah Alberts, Jeanne Baudot, Johann Michler, Max Döbeli, EMPA – Swiss Federal Laboratories of Materials Science & Technology, Laboratory for Mechanics of Materials and Nanostructures, Thun, Switzerland
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ALD 2013 Plenary Session
Atomic Layer Deposition from Development to Commercialization
Presented by: S. George, Univ. of Colorado at Boulder

Circuits at the Atomic Scale: Putting Layer by Layer Fabrication Methods into Our Toolbox
Presented by: J. Clarke, Intel Corp.

ALD 2013 Special Session
Conductive Metal Oxide/Carbon Composite Films by Pyrolysis of Hybrid Organic-inorganic MLD Films
Presented by: J.J. Travis, A.I. Abdulagatov, K.E. Terauds, A.S. Cavanagh, R. Raj, S.M. George, Univ. of Colorado at Boulder

Low temperature ALD of counter electrodes for flexible dye-sensitized cells
Presented by: D. Garcia-Alonso, Eindhoven Univ. of Technology; V. Zardetto, Univ. of Rome-Tor Vergata; A.J.M. Mackus, Eindhoven Univ. of Technology; T.M. Brown, Univ. of Rome-Tor Vergata; W.M.M. Kessels, M. Creatore, Eindhoven Univ. of Technology

Low Temperature Plasma-enhanced ALD of Vanadium Nitride as Copper Diffusion Barrier

ALD 2013 Session A
Session A: Memory I
Unusual ALD Behaviors in Oxides and Chalcogenides
Presented by: C.S. Hwang, Seoul National Univ.

ALD Enabled Synthesis of Nanostructured BiFeO3/CoFe2O4 composites for Multiferroic Applications
Presented by: C. Pham, J. Chang, Univ. of California, Los Angeles

Resistive Switching of AIN Films Grown by Plasma Enhanced Atomic Layer Deposition
Presented by: B.J. Choi, A.C. Torrezan, M. Zhang, J.J. Yang, R.S. Williams, Hewlett Packard

High Performance Floating Gate Memories Using Graphene as Charge Storage Medium and Atomic Layer Deposited High-κ Dielectric Layers as Tunnel Barrier
Resistive Switching Characteristics of ALD SrTiO3 Films  

Session A: Semiconductors – High-k Metal Gate  
High-k and Metal Gate Technology for 3D and Emerging Devices  
Presented by: A. Noori, Applied Materials

ALE of Lanthanide Oxides on Gallium Arsenide and Germanium  

Atomic Layer Deposition of Hafnium Aluminum Carbide As a Metal Gate Workfunction Material in MOS Devices  

Developments of ALD-(Ta/Nb)ON Films As Gate Insulator for Gate-last High-k CMOS Process  
Presented by: T. Nabatame, National Institute for Materials Science; H. Yamada, M. Kimura, Shibaura Institute of Technology; A. Ohi, National Institute for Materials Science; T. Ohishi, Shibaura Institute of Technology

High-k Atomic Layer Deposition on 2-D Materials  
Presented by: S. McDonnell, A. Azcatl, J. Kim, R.M. Wallace, Univ. of Texas at Dallas

Session A: Semiconductors – FEOL Applications  
III-V 3D MOS Transistors Enabled by ALD  
Presented by: P. Ye, Purdue Univ.

ALD Vertical Transistor Architectures and Circuits  
Presented by: L.W. Tutt, S. Nelson, Eastman Kodak Company

Defect Passivation of In0.53Ga0.47As(100) by Trimethylaluminum and Water Vapor Dosing Prior to ALD-Al2O3 Gate Dielectric Deposition  

Session A: Mechanism & Characterization  
Reliable Electrical Calcium Test for the Evaluation of the WVTR of Al2O3 Barrier Films Deposited by Low Temperature Atomic Layer Deposition  

X-ray Absorption Studies of Surface Species in SnO2 and FeOx ALD  

Dynamic Ellipsometry Study during Initial Stages of ALD Growth  
Presented by: T.P. Muneshwar, K.C. Cadien, Univ. of Alberta

Parameter Estimation of ALD Kinetics Applied to QCM Diagnostics  

In Situ Reaction Mechanism Studies on the Atomic Layer Deposition Processes of Ti(OiPr)2(NMe2)2 and Ti(OiPr)3(NiPr-Me-amd) with D2O and Ozone  
Presented by: Y. Tomczak, K. Knapas, M. Leskelä, M. Ritala, Univ. of Helsinki
Session A: Spatial ALD
Spatial ALD of Transparent and Conductive Oxides
Presented by: A. Illiberi, Holst Centre/TNO; F. Roozeboom, Holst Centre/TNO & TU Eindhoven; R. Scherpenborg, P. Pooldt, Holst Centre/TNO

Patterned by Printing--Taking Advantage of the Speed of Spatial ALD
Presented by: C.R. Ellinger, S.F. Nelson, Eastman Kodak Company

Atmospheric Pressure Plasma Enhanced Spatial ALD
Presented by: P. Pooldt, Holst Centre/TNO; Y. Creyghton, M. Simor, TNO; A. Illiberi, F. Roozeboom, Holst Centre/TNO

Atmospheric Pressure R2R ALD with In-situ Process Monitoring
Presented by: M. Groner, J. Spencer, ALD NanoSolutions; A. Yersak, Y.C. Lee, Univ. of Colorado

An Industrial Scale Roll-to-roll Atomic Layer Deposition Process for Coating Flexible Web Substrates
Presented by: P. Maydannik, T. Kaariainen, K. Lahtinen, D. Cameron, Lappeenranta Univ. of Technology

Session A: Organic-Inorganic Interfaces
Layer-by-layer Designed and Deposited Multifunctional Inorganic-organic Hybrid Materials
Presented by: M. Karppinen, Aalto Univ.

Metallation by Atomic Layer Deposition in a Metal-organic Framework

Atomic Layer Deposition of Inorganic Materials onto Carbon Fibres
Presented by: W. Goedel, S. Knohl, A.K. Roy, Chemnitz Univ. of Technology

Atomic Layer Deposition of Pt Using Ozone Reactant on Carbon Surfaces

Session A: Energy Applications
Atomic Layer Epitaxy of Semiconductor Grade III-N Materials: Discovery of a Novel InN Phase

Preparation of Gallium Nitride Surfaces for ALD Deposition of Aluminum Oxide

Characterization and Electronic Device Applications of III-nitride Thin Films Deposited by Plasma-enhanced ALD

Precise Control of NiO Nanomaterial Growth through ALD
Presented by: X. Tong, Z. Gao, X. Guo, Institute of Coal Chemistry, Chinese Academy of Sciences; E. Pippel, Max Planck Institute of Microstructure Physics; Y. Qin, Institute of Coal Chemistry, Chinese Academy of Sciences, China; M. Knez, CIC nanoGUNE, Donostia-San Sebastian
Atomic Layer Deposition of the Photovoltaic Absorber Cu₂ZnSnS₄  

Stabilizing Cu₂S Photovoltaics via Ultrathin ALD Barrier Layers  
Presented by: S.C. Riha, A. Martinson, Argonne National Lab

**Session A: Nucleation & Growth**  
Initial Growth of Ru Thin Films by Atomic Layer Deposition  
Presented by: S.K. Kim, Korea Institute of Science and Technology; J.H. Han, C.S. Hwang, Seoul National Univ.

Atomic Layer Deposition of AlF₃ Using Trimethylaluminum and Hydrogen Fluoride-Pyridine  
Presented by: Y. Lee, A.S. Cavanagh, S.M. George, Univ. of Colorado, Boulder

Atomic Layer Deposition of Epitaxial MoN, NbN, and TiN  

Atomic Layer Deposition of TiO₂ on Surface Modified Nanoporous Low-k Films  
Presented by: E. Levrau, K. Devloo-casier, J. Dendooven, Univ. of Ghent; K.F. Ludwig, Boston Univ.; P. Verdonck, J. Meersschaut, M.R. Baklanov, IMEC; C. Detavernier, Univ. of Ghent

Low Temperature Atomic Layer Deposition of MgO Thin Films on Si  
Presented by: S. Vangelista, R. Mantovan, A. Lampert, G. Tallarida, B. Kutrzeba-kotowska, S. Spiga, Laboratorio MDM, IMM-CNR; M. Fanciulli, Università di Milano Bicocca

**Session A: Novel Applications**  
Atomic Layer Deposition of Pb(ZrxTi1-x)O₃ Thin Films for PiezoMEMS Applications  

ALD Coating on Cotton Fabric: a Novel Method for Improving Fire Retardant Properties  

Synthesis of a Bio-inspired Multilayer Polarizer Using ALD and Its Application to Anti-counterfeiting  
Presented by: O. Poncelet, L. Francis, Université catholique de Louvain

Improved Cut and Stab Resistance of Kevlar after Coating by Atomic Layer Deposition  

Safety Aspects of Polymer Films with Atomic Layer Deposited Thin Al2O3 Barrier Layers  
Presented by: M. Vähä-nissi, M. Pitkänä, E. Salo, J. Sievänen, VTT Technical Research Centre of Finland; M. Putkonen, VTT Technical Research Centre of Finland and Aalto Univ., School of Chemical Technology; A. Harlin, VTT Technical Research Centre of Finland

Fracture Bulge Testing of Suspended ALD Thin Films and Nanolaminates  
Presented by: M. Berdova, P.T. Törmä, P. Kostamo, S. Franssila, Aalto Univ.
**Session A: Nitrides & Oxides**

Characteristics of ALD SiO2 Film at Low Temperature Using SDPCVD System  
Presented by: M. Cheon, B. Cho, H. Kim, JUSUNG Engineering

Plasma-assisted ALD of Silicon Nitride from BTBAS: Material Properties and Surface Chemistry  
Presented by: H.C.M. Knoops, E.M.J. Braeken, S.E. Potts, Eindhoven Univ. of Technology; S. Haukka, V. Pore, ASM; W.M.M. Kessels, Eindhoven Univ. of Technology

Properties of Low Temperature PEALD SiO2  
Presented by: M. Putkonen, R.L. Puurunen, O.M.E. Ylivaara, VTT Technical Research Centre of Finland; M. Bosund, Beneq Oy; T. Sajavaara, Univ. of Jyväskylä; M. Vähä-nissi, VTT Technical Research Centre of Finland

Room-temperature ALD of Aluminium Oxide, Titanium Dioxide, Silicon Dioxide and Silicon Nitride Enabled by Energy-enhanced ALD Techniques  
Presented by: S.E. Potts, H.B. Profijt, R. Roelofs, E.M.J. Braeken, H.C.M. Knoops, Eindhoven Univ. of Technology; S. Haukka, V. Pore, ASM; W.M.M. Kessels, Eindhoven Univ. of Technology

Designing High Performance Precursors for Atomic Layer Deposition of Silicon Oxide  

Mechanism of Atomic Layer Deposition of Silicon Oxide and Silicon Nitride Dielectric Films  
Presented by: C. Murray, S. Elliott, Tyndall National Institute; D. Hausmann, J. Henri, A. Lavoie, Lam Research Corp.

**ALD 2013 Session B**

**Session B: Energy Applications – Fuel Cell**

Nanostructured Interfaces for Energy Conversion Reactions  
Presented by: J. Bachmann, Friedrich Alexander Univ. of Erlangen-Nürnberg

Stabilizing Chromophores in Dye-Sensitized Solar Cells (DSSCs) Using Atomic Layer Deposition  

Investigation of ALD Dielectrics and Nanolaminates for Rectenna Based Energy Harvesting Applications  

**Session B: Energy Applications – Storage**

Atomic Layer Deposited Gallium Sulfide and Its Electrochemical Application as a Battery Anode  

V2O5 and SnO2 ALD on Graphene for the Fabrication of High-performance Anodes for Lithium Ion Batteries  
Presented by: M. Xie, Univ. of Colorado; X. Sun, H. Sun, J. Lian, Rensselaer Polytechnic Institute; S.M. George, Univ. of Colorado
Atomic Layer Deposition of Lithium Manganate for Thin Film Lithium Ion Batteries
Presented by: V. Miikkulainen, A. Ruud, E. Østreng, O. Nilsen, Univ. of Oslo; M. Laitinen, T. Sajavaara, Univ. of Jyväskylä; H. Fjellvåg, Univ. of Oslo

Atomic Layer Deposition of LiCoO2 Thin-film Electrodes for All-solid-state Li-ion Micro-batteries

Role of Mesoporosity in Cellulose Fiber for Li-ion Migration in High-rate Li-storage Paper Electrodes

ALD of SnO2 and Sb-doped SnO2 As Transparent Conductor

Session B: Characterization of ALD Processes
In Situ Optical Characterization of Solid Precursor Delivery for ALD Processes

In Situ Synchrotron Radiation X-ray Diffraction Studies of Metal ALD

In-situ Infrared Study of Aluminum Silicate on Chemically-treated InP(100) Using Atomic Layer Deposition
Presented by: W. Cabrera, K.B. Ramos, Univ. of Texas at Dallas; I.M. Povey, Univ. College Cork; H. Dong, B. Brennan, R.M. Wallace, Y.J. Chabal, A. Vega, Univ. of Texas at Dallas

Resolving Pd Atomic Layer Deposition for Synthesis of Sintering-resistant Pd Catalysts

Characterization of Bubbler Performance as a Proof of Principle for Using Optical Diagnostics to Monitor Precursor Concentration in ALD and CVD Delivery Lines

High Energy X-ray Analysis of High Dielectric Constant Oxides
Presented by: J. Church, J.J. Krajewski, R.L. Opila, Univ. of Delaware; C. Weiland, National Institute of Standards and Technology

Session B: Selective ALD
Advanced Ultrathin Nano Layers Selective Cobalt and Conformal SiN Caps for Sub-20 nm Copper/Low k Interconnects

Selective Metal Deposition on Cu
The Effect of Substrate Composition on Selective Area Atomic Layer Deposition Using Self-assembled Monolayers as Blocking Layers

Area-selective ALD by Area-activation for Contacting of Carbon Nanomaterials
Presented by: A.J.M. Mackus, N.F.W. Thissen, Eindhoven Univ. of Technology; J.L.L. Mulders, FEI Electron Optics; A.A. Bol, W.M.M. Kessels, Eindhoven Univ. of Technology

Selective Synthesis of Infiltrated Metal Oxide into Block Copolymers via ALD for Sub-10 nm Patterned Media
Presented by: Y.A. Chapuis, R. Ruiz, L. Wan, H. Gao, J. Lille, K. Panel, T.R. Albrecht, HGST, a Western Digital Company

Selective Surface Reactions during Atomic Layer Deposition on Bi-component Polymer Fibers
Presented by: G. Parsons, B. Gong, S. Arvidson, S. Khan, P. Williams, North Carolina State Univ.

**Session B: Novel Precursors**

Precursors and Processes for the Growth of Metallic First Row Transition Metal Films by Atomic Layer Deposition

Low Temperature Formation of Ru and RuO2 Thin Films by Thermal Atomic Layer Deposition Using a Novel Zero-valence Ru Metallorganic Precursor and O2
Presented by: S.J. Lee, S. Yeo, J.Y. Park, S.H. Kim, Yeungnam Univ.; T.M. Jung, C.G. Kim, E.A. Jung, Korea Research Institute of Chemical Technology; T.E. Hong, Korea Basic Science Institute

Characterization of Bismuth Oxide Deposited by Atomic Layer Deposition Using Bi(OCMe2iPr)3 and H2O

Atomic Layer Deposition of Molybdenum Oxide Using Bis(Tert-butylimido)bis(Dimethylamido) Molybdenum
Presented by: A. Bertuch, G. Sundaram, Ultratech / Cambridge Nanotech; M. Saly, Formerly at SAFC Hitech; D. Moser, R. Kanjolia, SAFC Hitech

Atomic Layer Deposition of Cerium Oxide Using Tris(Isopropyl-cyclopentadienyl)cerium and Water Vapor
Presented by: J.I. Rossero, C.G. Takoudis, R.F. Klie, A. Gulec, Univ. of Illinois at Chicago

**Session B: ALD Reactor Design & New Concepts**

Analytic Solution to the Problem of ALD Growth in Cross-flow Reactors: Surface Coverage, Saturation Curves, and Scale-up
Presented by: A. Yanguas-Gil, Argonne National Lab

ALD Process Selection for Scalable Nanomanufacturing

Thermal and Plasma-enhanced ALD of Titanium Nitride on Powders Using a Rotary Reactor
Presented by: D. Longrie, D. Deduytsche, J. Haemers, Ghent Univ.; K. Driesen, Umicore; C. Detavernier, Ghent Univ.

Design and Implementation of a Novel Portable ALD/CVD Hybrid Reactor
Presented by: S.K. Selvaraj, G. Jursich, C.G. Takoudis, Univ. of Illinois at Chicago
Session B: Semiconductors – Interconnects
ALD Metal Processes and the Challenges in their Introduction into BEOL Interconnect Metallization
Presented by: O. Van der straten, IBM

Low Temperature ALD Cu Nucleation and Full-fill for BEOL Interconnects

Comparison of Step Coverage in ALD and CVD

Plasma-enhanced ALD Metal Compound for Cu Diffusion Barrier
Presented by: B. Sheu, A. Lakshmanan, P. Ma, Applied Materials

ALD of Nickel Oxide and Its Reduction to Nickel for Potential Applications in Interconnects and Spintronics
Presented by: T. Waechtler, Fraunhofer Institute for Electronic Nano Systems and Chemnitz Univ. of Technology; A. Sharma, Chemnitz Univ. of Technology; N. Ahner, Fraunhofer Institute for Electronic Nanosystems and Chemnitz Univ. of Technology; M. Melzer, Fraunhofer Institute for Electronic Nanosystems; S. Müller, D. Lehmann, P. Schäfer, S. Schulze, Chemnitz Univ. of Technology; S.E. Schulz, Fraunhofer Institute for Electronic Nano Systems and Chemnitz Univ. of Technology; D.R.T. Zahn, M. Hietschold, Chemnitz Univ. of Technology; T. Gessner, Fraunhofer Institute for Electronic Nano Systems and Chemnitz Univ. of Technology

Session B: Emerging Technologies
Robust Electrically-programmable and UV-erasable IGZO-based TFT Memory with Pt Nanocrystals Charge Trapping Layer
Presentation by: X. Cui, S. Chen, S. Ding, W. Zhang, Fudan Univ., Shanghai, China

Atomic Layer Deposition-A Growth Method for Novel Spintronics Materials
Presentation by: M.I. Lukasiewicz, M. Godlewski, E. Guziewicz, A. Wojcik-Glodowska, K. Kopalko, A. Wolska, M. Klepka, B.S. Witkowski, R. Jakiela, I.A. Kowalik, Institute of Physics, Polish Academy of Sciences

Plasmon Enhanced Conductivity in ALD-enabled Au Nanorod-ZnO Nanocomposites
Presentation by: F. Wu, L. Tian, Washington Univ. in St. Louis; R. Kanjolia, SAFC Hitech; S. Singamaneni, P. Banerjee, Washington Univ. in St. Louis

Atomic Layer Deposition of Nanocomposite Charge Drain Coating for MEMS Devices
Presentation by: A.U. Mane, J.W. Elam, Argonne National Laboratory; A.D. Brodie, W.M. Tong, KLA-Tencor; M.A. Mccord, KLA-Tencor

Atomic Layer Deposition of Rare Earth Oxides
Presentation by: J. Niinistö, T. Blanquart, M. Kaipio, S. Seppälä, K. Mizohata, Univ. of Helsinki; C. Lansalot, W. Noh, Air Liquide Labs. Korea; M. Ritala, M. Leskelä, Univ. of Helsinki

Session B: Dielectrics
Recent Advancements in ALD Dielectric Integration with Graphene
Presented by: V. Wheeler, U.S. Naval Research Lab
In-situ Growth Control for AlxTiyOz Films and Laminates
Presented by: M. Knaut, TU Dresden; F. Benner, Nanoelectronic Materials Lab gGmbH (NaMLab); C. Hossbach, M. Geidel, TU Dresden; I. Dirnstorfer, Nanoelectronic Materials Lab gGmbH (NaMLab); M. Albert, J.W. Bartha, TU Dresden

Pd/ALD Al2O3/GaN MOS Structures: GaN Surface Preparation, Annealing and Device Characterization

Integration of Functional Perovskite (ABO3) Layers on Si (001) by ALD Using a Thin SrTiO3 Buffer Layer

Crested Barrier Tunnel Junctions Using PEALD Al2O3/HfO2 Stackings
Presented by: K.E. Hajjam, Université de Sherbrooke; N. Baboux, INSA Lyon; S. Ecoffey, Université de Sherbrooke; L. Francis, ICTEAM, ELEN, UCL; A. Souifi, Université de Sherbrooke; F. Calmon, INSA Lyon; D. Drouin, Université de Sherbrooke

Session B: Novel Precursor Development/Nanolaminates

Low Temperature PEALD Deposition of Copper
Presented by: J. Connolly, Applied Materials; D. Hagen, R. Nagle, S. Rushworth, I. Povey, Tyndall National Institute; P. Ma, Applied Materials; M. Pemble, Tyndall National Institute

The Surface Chemistry of Ligands in ALD Precursors
Presented by: F. Zaera, Univ. of California, Riverside

Novel Heteroleptic Precursors for Atomic Layer Deposition of TiO2
Presented by: T. Blanquart, J. Niinistö, Univ. of Helsinki; V. Longo, Technische Universiteit Eindhoven; M. Gavagnin, Vienna Univ. of Technology; V.R. Pallem, C. Dussarrat, Air Liquide; M. Ritala, M. Leskela, Univ. of Helsinki

Evaluation of a Metal-organic Precursor with Regard to a Gold ALD Process by Utilizing In-situ Spectroscopic Ellipsometry
Presented by: M. Junige, Technische Universität Dresden; D. Schmidt, Univ. of Nebraska-Lincoln; S.T. Barry, Carleton Univ.; J.W. Bartha, Technische Universität Dresden; M. Schubert, Univ. of Nebraska-Lincoln

Electrical Characterization of Platinum and Aluminum Oxide Nano-laminates
Presented by: F. Purkl, Univ. of Freiburg and Robert Bosch LLC; T.S. English, Stanford Univ.; J. Provine, Stanford Univ.; A. Feyh, Robert Bosch LLC; O. Ambacher, Univ. of Freiburg; G. O’Brien, Robert Bosch LLC; T.W. Kenny, Stanford Univ.

Enabling Manganese Alkyl Amidinate Precursor for 3-dimensional Integration with Through-silicon Vias
Session C: Plasma Enhanced ALD
The Growth Characteristic and Film Properties of Dy2O3 and Dy Doped HfO2 Dielectrics by Plasma Enhanced Atomic Layer Deposition on Si Using Newly Synthesized Dy Precursor

High-quality Metal Films by Hot-wire-assisted ALD Using Metallocenes and NH2 Radical
Presented by: G. Yuan, H. Shimizu, T. Momose, Y. Shimogaki, The Univ. of Tokyo

Surface Modification of the PEALD Al2O3/GaSb Interface for Enhanced Electrical Performance
Presented by: E.R. Cleveland, L.B. Ruppalt, B.R. Bennett, S.M. Prokes, Naval Research Lab

Low-temperature Deposition of Crystalline AlN Thin Films Using Nitrogen Plasma-enhanced Atomic Layer Deposition

Interface Electronic State Characterization of Remote PEALD Al2O3 Grown by DMAI on Free Standing GaN

Session C: Memory II
Advanced ALD Materials and Equipment Design for High-volume Production of Next Generation Memory Devices
Presented by: B. Lu, AIXTRON Inc.

Applications of ALD in Thin Film Magnetic Head Processing, Current and Future
Presented by: X. Du, A. Zhao, R. Umeda, S. Maat, HGST, a Western Digital Company

Improved Polarity Symmetry of TiN-ZrO2/Al2O3/ZrO2-TiN MIM Capacitors by In-situ TaCN Barrier Layers
Presented by: W. Weinreich, J. Koch, K. Seidel, S. Riedel, Fraunhofer IPMS-CNT; J.-. Chiang, National Taiwan Univ.; M. Drescher, J. Sundqvist, Fraunhofer IPMS-CNT

Evaluating the Mechanism for Leakage Current Reduction of ALD TiO2 Film by Al-doping

Investigating ALD Oxides on III-V Semiconductors for Future Transistor Applications

Session C: Dopant & Film Property Tuning
Impact of Different Dopant Materials on the Ferroelectric Properties of ALD HfO2
Presented by: U. Schroeder, Namlab gGmbH

Molecular Oxide Embedded in Atomic Layer Deposition Oxide As Atomic-level Precise Artificial Atom

Controllable Nitrogen Doping in As Deposited TiO2 Film and Its Effect on Post Deposition Annealing
Tuning the Electronic Properties by Interrupted Atomic Layer Growth of Magnesium Zinc Oxide
Presented by: M. Ballarotto, J. Hackley, K. Gaskell, C.J.K. Richardson, W.N. Herman, D.B. Romero, Univ. of Maryland

Atomic Layer Deposition of Thin Film Laminates and Solid Solutions-the Case of Zinc Tin Oxide

Session C: Simulations & Modeling
Cycle-by-cycle Growth Simulations and the Cooperation between Adsorbate Molecules in ALD
Presented by: M. Shrazi, S. Elliott, Tyndall National Institute

Atomic Layer Deposition of Ruthenium on a Titanium Nitride Surface: A Density Functional Theory

Dehydrogenation Reactions During O2 Based Ru ALD Processes: First-principles Calculations and Experiments
Presented by: C.K. Ande, N. Leick, Eindhoven Univ. of Technology; S.D. Elliott, Tyndall National Institute; W.M.M. Kessels, Eindhoven Univ. of Technology

Finite Element Modeling of ALD Process: Conformality and Surface Reactions
Presented by: L. Zhong, Seagate Technology

ALD 2013 Poster Session I
Investigating the Impact of an ALD Layer of Alumina on the Strength of Glass Capillaries for Use in Gas Storage

Studies on SOI-MOS Capacitors with HfLaO Dielectrics Deposited by Plasma-enhanced-atomic-layer-deposition

The Role of Nucleation Density on the Long Scale Statistical Roughness of HfB2 Films Grown by CVD
Presented by: S. Babar, T.T. Li, Univ. of Illinois at Urbana Champaign; T. Karaback, Univ. of Arkansas at Little Rock; J.R. Abelson, Univ. of Illinois at Urbana Champaign

Controlling Copper Thin Film Morphology Using a Growth Inhibitor in Chemical Vapor Deposition
Presented by: S. Babar, P. Zhang, L.M. Davis, G.S. Girolami, J.R. Abelson, Univ. of Illinois at Urbana Champaign

Characterization of ALD Ultathin Films Using Surface Enhanced Raman Spectroscopy
Presented by: C. Ko, L. Nien, M. Lin, M. Chen, National Taiwan Univ.

Application of Atomic Layer Deposited Al2O3 on Encapsulation of Implantable Medical Devices
Presented by: X. Xie, L. Rieth, P. Tathireddy, F. Solzbacher, Univ. of Utah
Improving the Microwave Absorption Performance of Light Conductive Materials with Magnetic Coatings by Atomic Layer Deposition
Presented by: G. Wang, Z. Gao, C. Chen, Y. Qin, Institute of Coal Chemistry, Chinese Academy of Sciences

Coupling a Sub-monolayer Water Oxidation Catalyst with Hematite Photoanodes by ALD
Presented by: S. Riha, Argonne National Lab; B. Klahr, Michigan State Univ.; E. Tyo, Yale Univ.; S. Seifert, S. Vajda, M. Pellin, Argonne National Lab; T. Hamann, Michigan State Univ.; A. Martinson, Argonne National Lab

Implementation of ALD Thin Films as Stress Compensation Layers in NEMS
Presented by: M. Berdova, M. Brandt, Aalto Univ.; L. Grönberg, VTT Technical Research Center of Finland; M. Sillanpää, S. Franssila, Aalto Univ.

Atomic Layer Deposited Tunnel Oxides Stabilize Silicon Photoanodes for Catalytic Water Oxidation
Presented by: A. Scheuermann, C.E.D. Chidsey, P.C. McIntyre, Stanford Univ.

ALD/MLD Deposited Hybrid of DL-lactic Acid and Trimethylaluminium
Presented by: M. Vähä-nissi, J. Sievänen, E. Salo, VTT Technical Research Centre of Finland; L. Johansson, Aalto Univ.; E. Kenttä, VTT Technical Research Centre of Finland; M. Putkonen, VTT Technical Research Centre of Finland and Aalto Univ.; A. Harlin, VTT Technical Research Centre of Finland

Comparison Between Cyclopentadienyl-based SrO and MgO ALD: an In-situ Spectroscopic Ellipsometry Investigation
Presented by: H. Wang, B. Willis, Univ. of Connecticut

Atmospheric-Pressure Atomic Layer Deposition of Platinum Nanoclusters on Titania Nanoparticles
Presented by: A. Goulas, J.R. Van Ommen, Delft Univ. of Technology

Low Energy Ion Scattering Analysis of TiN Deposited on Al2O3 for MEMS Applications
Presented by: T. Grehl, ION-TOF GmbH; R. ter Veen, Tascon GmbH; T. Blomberg, ASM Microchemistry, Ltd.

Microbalance for the Masses: A Lid-Integrated QCM for In-situ Mapping of ALD in Low-profile Tools
Presented by: S. Riha, J. Libera, J. Elam, A. Martinson, Argonne National Lab

Atomic Layer Deposition of Lithium Fluoride
Presented by: M. Mäntymäki, J. Hämäläinen, M. Ritala, M. Leskelä, Univ. of Helsinki

Using Quartz Crystal Microbalance with Dissipation Monitoring for Real-time Characterization of Al2O3 and TiO2 ALD
Presented by: M. Dixon, M. Poggi, Biolin Scientific; J.B. Li, X. Lin, C.Y. Yuan, Univ. of Wisconsin-Milwaukee

Properties of Permeation Barrier Layers Deposited by Atomic Layer Deposition

Cuprous Oxide Based p-n Junction Using Atomic Layer Deposited ZnO Layers

Exploring the Application of Atomic Layer Deposition in Conventional and All-solid-state Lithium-ion Batteries
Presented by: J. Liu, X. Li, R. Li, X. Sun, Western Univ.
Growth Behavior and Properties of Atomic Layer Deposited Tin Oxide on Silicon from Novel Tin(II)acetylacetonate Precursor and Ozone
Presented by: S.K. Selvaraj, C.G. Takoudis, Univ. of Illinois at Chicago

Atomic Layer Deposition of Zinc Oxide: Detailed Quantum Chemical and Spectroscopic Ellipsometry Studies of the Growth Mechanism
Presented by: A. Afshar, K.C. Cadien, Univ. of Alberta

Effects of Passivation Layer on Ga-doped ZnO Films Grown by ALD

Characterization of Atomic Layer Deposited Metal Films and Nanolaminates by Multi-parametric Surface Plasmon Resonance

ALD/MLD Growth of Hybrid Inorganic-organic Superlattice Structures
Presented by: T. Tynell, M. Karppinen, Aalto Univ.

Photocatalysis and Hydrogen Generation of Zn- and Al-doped TiO2 Nanotubes Fabricated by Atomic Layer Deposition
Presented by: C.Y. Su, National Tsing Hua; Y.C. Hsueh, S.H. Huang, National Tsing Hua Univ.; C.C. Wang, The Univ. of Texas at Austin; T.P. Perng, National Tsing Hua Univ.

The Role of Atomic Layer Deposited Oxide Films in Infrared Power Generation
Presented by: G. Scarel, H.S. Mann, Y. Schwab, B.N. Lang, James Madison Univ.; J.L. Lancaster, Univ. of North Carolina - Greensboro

XPS Analysis of Strontium Containing Films under ALD Conditions Using Strontium Imidazolate Precursors
Presented by: X. Qin, Q. Ma, Univ. of California, Riverside; J.A.T. Norman, Air Products and Chemicals; M.S. Kim, Air Products Korea; F. Zaera, Univ. of California, Riverside

Adhesion Strength of Tungsten ALD Films

In Situ ATR-FTIR Study of the Surface Reactions during Atomic Layer Deposition of TiO2
Presented by: L. Ye, T. Gougousi, Univ. of Maryland, Baltimore County

Single Atoms of Pt on Graphene by ALD As Highly Active and Co-tolerant Electrocatalyst for Methanol Oxidation Used in Fuel Cells

Effects of Film Thickness and Oxidation State on Electrocatalysts Deposited by ALD
Graphene Oxide Based Charge Trapping Memory Fabricated by Low Temperature Atomic Layer Deposition
Presented by: L. Wang, Fudan University; W. Yan, Q. Sun, H. Lu, S. Ding, D.W. Zhang, Fudan Univ.

A New Route for Atomic Layer Deposition of GeTe Film for Phase Change Memory

Atomic Layer Deposition and Characterization of Al2O3 Film on Few Layer MoS2 Flakes

Al2O3 from Me3Al and H2O by ALD on Si: Residual Stress, Elastic Modulus, Hardness and Adhesion

Atomic Layer Deposition of P-type Copper(I) Oxide (Cu2O) Thin Films by Using a Bis(1-dimethylamino-2-methyl-2-butoxy)copper and H2O
Presented by: H. Kim, S. Yeo, J. Park, T. Cheon, S. Kim, Yeungnam Univ.

Fabrication and Characterization of P-type ZnO Films Grown on GaAs Substrate by Atomic Layer Deposition

Photoluminescence of Anodic Aluminum Oxide Modulated by Atomic Layer Deposited ZnO Films

Effect of DC Bias on Inductively Coupled Plasma Enhanced Atomic Layer Deposition of Ruthenium Thin Films

Fabrication of Pt@TiO2@CNT Hierarchical Structure Catalyst by Atomic Layer Deposition and Characterization of Photocatalytic Properties

Al2O3 Protection Layer of Nitinol Prepared by Using Atomic Layer Deposition

Mechanical Properties of ALD SiO2, HfO2, SrO and ZnO Films

Electrical Characteristics of Ga2O3 Thin Films Deposited by Plasma-enhanced Atomic Layer Deposition

Photocatalytic Activities of ZnO and TiO2 Nanostructures Fabricated by Atomic Layer Deposition Using Organic Templates
Iron-based Inorganic-organic Hybrid Thin Films by ALD/MLD
Presented by: A. Tanskanen, M. Karppinen, Aalto Univ.

Controlled Molecular Layer Deposition Enables Extremely Low Friction of Liquid Water Flow on Structured Surfaces
Presented by: J. Knauf, Advanced Molecular Films GmbH, DWI at RWTH Aachen Univ.; L. Reddemann, Advanced Molecular Films GmbH, Universität zu Köln; A. Böker, DWI at RWTH Aachen Univ.; K. Reihs, Advanced Molecular Films GmbH

Improvement of Mechanical and Barrier Properties of Polyethylene Blown Films Using ALD Process

Atomic Layer Deposition of Aluminum Phosphate

Atomic-layer Deposition of Transparent Top Electrode for Inverted Organic Photovoltaic Devices
Presented by: M. Ballarotto, W.N. Herman, D.B. Romero, Univ. of Maryland

XRR Characterization of ALD Al2O3/TiO2 Nanolaminates with Ultra-thin Bilayers

Growth and Properties of Highly Oriented ZnO Nanorod Arrays Synthesized by the Two Step Method: ALD and Microwave Assisted-hydrothermal
Presented by: R. Ortiz Castro, E. Martinez-Guerra, Centro de Investigación en Materiales Avanzados S. C. (CIMAV); E. Pérez-Tijerina, Centro de Innovación, Investigación y Desarrollo en Ingeniería y Tecnología de la UANL (CIIDIT).

Corrosion Resistance of ALD Zirconium Dioxide Films on Cu and Nickel-plated Cu

Synthesis of PbTe Thin Films by Atomic Layer Depositon

Organic-inorganic Hybrid Materials Formation into Polyesters during Sequential Vapor Infiltration

Using ALD to Create Tungsten Inverse Opals Capable of Structured Thermal Emission at 1000C for Thermophotovoltaic Applications
Presented by: M.D. Losego, North Carolina State Univ.; K.A. Arpin, H. Ning, Univ. of Illinois; B. Kalanyan, North Carolina State Univ.; P.V. Braun, Univ. of Illinois; G.N. Parsons, North Carolina State Univ.

Role of PEALD Reactor Wall Conditions on Radical and Ion Substrate Fluxes
Controlling Phase and Stoichiometry in the Quaternary Cu2zNsNs4 System Using the Atomic Layer Deposition of Four Precursors
Presented by: A. Short, L. Jewell, A. Bielecki, A. Myers, T. Keiber, UCSC; J. Norman, Air Products; F. Bridges, S. Carter, G. Alers, UCSC

Conductivity and Mechanical Properties of ALD Coated Nonwoven Fibers

Photoremediation of Toxic Heavy Metals by Nonwoven Fabrics Coated with Thin Films Deposited by Atomic Layer Deposition

Controlled Nano-scaled Modification of the Total Surface Area of Single Particles and Powders by ALD
Presented by: S. Ek, W. Li, M. Pudas, M. Toivola, T. Pilvi, V. Kilpi, N. Holm, R. Laine, J. Kostamo, Picosun

Analysis of Bi2Te3/Sb2Te3 Nanolaminate Structures Synthesized by Atomic Layer Deposition
Presented by: K. Zhang, D. Nminibapiel, M. Tangirala, Old Dominion Univ.; V.S.K. Chakravadhanula, Karlsruhe Institute of Technology; H. Baumgart, Old Dominion Univ.; V. Kochergin, MicroXact Inc.

Fast Surface FT-IR Spectroscopy during ALD
Presented by: B.A. Sperling, J. Hoang, W.A. Kimes, J.E. Maslar, NIST

Diffusion of In0.53Ga0.47As Elements through Hafnium Oxide during Post Deposition Annealing
Presented by: W. Cabrera, B. Brennan, H. Dong, Univ. of Texas at Dallas; T.P. O'regan, Army Research Lab; I.M. Povey, S. Monaghan, E. O'connor, P.K. Hurley, Univ. College Cork; R.M. Wallace, Y.J. Chabal, Univ. of Texas at Dallas

Atomic Layer Deposition for the Fabrication of Large-area Microchannel Plates

Development of an Open-ended Rotary Reactor for Plasma-assisted ALD on Particles
Presented by: J.W. Clancey, J. Yin, L. Baker, A.S. Cavanagh, S.M. George, Univ. of Colorado

Pressure Dependence of Atomic Layer Deposition on Nanoparticles in Fluidized Bed Reactors

Reference Band Assignments for Alkylamide Precursors for Elucidation of Atomic Layer Deposition Reaction Mechanisms Using In Situ Infrared Spectroscopy
Presented by: B.A. Sperling, J. Hoang, J.E. Maslar, W.A. Kimes, National Institute of Standards and Technology; M.D. Halls, Schrödinger Inc.

High-throughput Quantum Chemistry and Virtual Screening for Thin Film Deposition Precursors
Presented by: M.D. Halls, D.J. Giesen, A. Goldberg, T.F. Hughes, Y. Cao, Schrödinger Inc.
Atomic Layer Deposition of Cadmium Sulfide As an Emitter Layer in Thin-film Poly Crystalline Photovoltaics
Presented by: K. Hurst, K. Ramanathan, National Renewable Energy Lab; D. Nordlund, T. Weng, A. Mehta, SLAC National Accelerator Lab; R. Noufi, S. Christensen, National Renewable Energy Lab

Dual Passivation of Defects on InGaAs(001)-(2x4)
Presented by: M. Edmonds, T. Kent, Univ. of California, San Diego; R. Droopad, Texas State Univ.; E. Chagarov, A. Kummel, Univ. of California, San Diego

Mitigating Surface Energies to Optimize Interfaces in ALD-Pt/C Catalysts
Presented by: A.A. Dameron, J.B. Bult, S. Kocha, S.T. Christensen, J. Zack, B.S. Pivovar, K.E. Hurst, NREL

Growth Window and Characterization of PEALD ZnO Films Using Dimethyl Zinc Precursor

Core-shell Photoelectrochemical Electrodes for Water Splitting by Atomic Layer Deposition

ALD N-ZnO/P-SiC Heterojunction--Structural and Electronic Properties
Presented by: M. Guziewicz, W. Jung, R. Kruszka, A. Piotrowska, J.Z. Domagala, Institute of Electron Technology; T. Krajewski, E. Guziewicz, Institute of Physics, Polish Academy of Science

EXAFS Analysis of ZnS/Cu2S Multi-layer Films Prepared Using ALD
Presented by: L. Jewell, A. Short, A. Bielecki, A. Myers, T. Keiber, Univ. of California, Santa Cruz; J. Norman, Air Products; F. Bridges, S.A. Carter, G. Alers, Univ. of California, Santa Cruz

Amine Catalyzed Atomic Layer Deposition of (3-mercaptopropyl)trimethoxysilane for the Production of Heterogenous Sulfonic Acid Catalysts

Catalytic Activity of Pt/Ru Formed by Atomic Layer Deposition
Presented by: Q. Takmeel, S. Moghaddam, Univ. of Florida

Ultrathin ALD Tan Barrier Films for Sub-22nm Technologies: Challenges in Fabrication and Characterization

ALD-mediated Densification of Plasma-produced Nanoparticles into Bulk Nanostructured Silicon
Presented by: L. Mangolini, M. Rieke, A.M. Penaloza, Univ. of California, Riverside
**ALD 2013 Poster Session II**

Low Temperature Film Properties of HfO2 Grown with H2O, O3 or Remote O2- Plasma
Presented by: C. Richter, U. Schroeder, T. Mikolajick, NaMLab gGmbH

Impact of Crystal Orientation of GaAs on the Interfacial Structures and Electrical Properties of HfLaOx Films

Thermal Chemistry of Cu(I) s-butyl Amidinate, an Atomic Layer Deposition (ALD) Precursor, on Ni and Cu Surfaces
Presented by: Y. Yao, F. Zaera, Univ. of California, Riverside

Selective Chemistry for the Atomic Layer Deposition (ALD) of Alumina Oxide on Silicon Surfaces
Presented by: L. Guo, X. Qin, F. Zaera, Univ. of California, Riverside

Optimized Gas Delivery System for Run/Vent Switching Applications
Presented by: A. Bousetta, T. Dibiase, J. Baxter, Swagelok Company

Atomic Layer Deposition of Ag Nanoparticles: Synthesis and Characterization

Antireflection Coatings and Optical Filters for High Performance Detectors

ALD with an Advanced Multi-station Sequential Deposition Platform
Presented by: H. Kang, S. Swaminathan, R. Chandrasekharan, K. Leeser, A. Lavoie, Lam Research Corp.

PEALD TaSiN Films with Stable and High Resistivity
Presented by: G. Wei, P. Ma, F. Gungor, D. Wu, Applied Materials

Presented by: W. Dong, T. Meng, Q. Chen, Beijing Institute of Graphic Communication

Atomic Layer Deposition Process and Characterization of (GeTe2)x(Sb2Te3)ySbz Layers for Phase Change Memories

Screening Of Atomic-layer-deposited Thin Films for Cu Diffusion Barrier Applications

Atomic Layer Deposited TiO2/Al2O3 Bilayer Gate Stacks for Germanium pMOSFETS
Presented by: L. Zhang, P.C. McIntyre, Stanford Univ.
Atomic Layer Deposition of Manganese Borate and Cobalt Borate Thin Films Using Bis(Tris(Pyrazolyl)borate) Precursors

Deposition of Copper Films by Atomic Layer Deposition Using an Amine Borane Adduct As the Reducing Agent

Crystalline Phase Discrimination through Oxidant Selection Alone: The Low Temperature ALD of Iron Oxides

Barrier Properties of Plastic Films Coated with Al2O3 by Roll-to-roll ALD
Presented by: W. Li, T. Hirvikorpi, R. Laine, Picosun Oy; M. Vähä-nissi, E. Salo, VTT; V. Kilpi, S. Lindfors, Picosun Oy; J. Vartiainen, E. Kenttä, J. Nikkola, A. Harlin, VTT; J. Kostamo, Picosun Oy

ALD of Indium Oxide Thin Films: Evaluation of Guanidinate Based Indium Complexes as Potential Precursors and Its ALD Characteristics

Novel Guanidinate Precursors for the ALD of Zirconium Oxide
Presented by: T. Blanquart, J. Niinistö, Univ. of Helsinki; N. Aslam, Research Centre Juelich; M. Banerjee, Ruhr-Universitäts Bochum; Y. Tomczak, Univ. of Helsinki; M. Gavagnin, Vienna Univ. of Technology; V. Longo, Technische Universität Eindhoven; H.D. Wanzenboeck, Vienna Univ. of Technology; W.M.M. Kessels, Technische Universität Eindhoven; A. Devi, Ruhr-Universitäts Bochum; S. Hoffmann-eifert, Research Centre Juelich; M. Ritala, M. Leskela, Univ. of Helsinki

Characterization of Self-forming AlOx Layer as Cu Diffusion Barrier Using Alternative Atomic Layer Deposition

Insights into the Surface Chemistry of Zinc Tin Oxide ALD by Experimental and Theoretical Methods

Dielectric Characteristics of Phase Controlled Hf1-xZrxO2 High-k Materials

Plasma-enhanced Atomic Layer Deposition of Nickel Nitride Films Deposited for Transistor Contact Applications
Presented by: S. Bönhardt, S. Riedel, J. Sundqvist, Fraunhofer Center Nanoelectronic Technologies (IPMS-CNT)

Ultra Conformal Si Precursors for Plasma Enhanced Atomic Layer Deposition with New Chemical Structure Design

Analyses of Current Conduction Mechanism of Al2O3 Films Prepared by Thermal- and Plasma-mode Atomic Layer Deposition Methods
Presented by: S.F. Chen, Y.F. Chang, C.L. Liao, C.L. Ho, M.C. Wu, National Tsing Hua Univ.

High Speed and Reliable GaN-based Green Light-emitting Diode with Gallium-doped ZnO by Atomic Layer Deposition
Presented by: C.L. Liao, S.F. Chen, Y.F. Chang, C.C. Huang, W.J. Wang, C.L. Ho, M.C. Wu, Institute of Electronics Engineering; A.S. Liu, Research and Development Center
Influence of Co-reagents on the Atomic Layer Deposition of Copper and Silver Thin Films
Presented by: P.R. Chalker, P.A. Marshall, S. Romani, J. Roberts, Univ. of Liverpool; S. Hindley, P.A. Williams, SAFC Hitech

Influencing Precursor Manufacturing Cost
Presented by: D. Niyogi, W. Stibbs, R. Laxman, J. Guy, Digital Specialty Chemicals

The Growth Behavior and Film Properties of Conductive ALD SnOx Using Tdmasn and Hydrogen Peroxide

ALD Membrane Strength Measurement with a Stylus Profilometer
Presented by: F. Gao, R. Puurunen, A. Laukkanen, L. Kilpi, H. Ronkainen, J. Kiihamäki, VTT Technical Research Centre of Finland

Organic-inorganic Nano-laminate Deposited by Molecular-atomic Layer Deposition (MALD) for Electronics Applications
Presented by: J. Huang, M. Lee, A. Lucero, J. Kim, The Univ. of Texas at Dallas

Surface Chemistry of MeCpMn(Co)3, an Atomic Layer Deposition (ALD) Precursor, Studied by X-ray Photoelectron Spectroscopy
Presented by: X. Qin, H. Sun, F. Zaera, Univ. of California, Riverside

Surface Chemistry of the Atomic Layer Deposition of Copper on Chemically Deposited Manganese Films on Silicon Oxide Substrates
Presented by: H. Sun, F. Zaera, Univ. of California, Riverside

Functional Cellular Bulk Materials Via Atomic Layer Deposition

Roll to Roll Spatial ALD and Ultra Barriers
Presented by: M. Söderlund, Beneq Oy; B. Aitchison, Beneq Inc; P. Soininen, Beneq Oy

A New Ge Precursor for Atomic Layer Deposition of Germanium Telluride
Presented by: M-S. Kim, Air Products Korea; M. Xiao, I. Buchanan, S. Ivanov, Air Products and Chemicals

Reducing Micro-defect Formation in Atomic Layer Deposited SrTiO3 Films during Crystallization Annealing

Characteristics of High Quality TiN Film at Low Temperature Using SDPCVD System

Improving Step Coverage of SrRuO3 Film Grown by Combining ALD SrO and CVD RuO2 or Ru Layers

Atomic Layer Deposition of W-Si-N Thin Films Using a Silicon and Nitrogen-containing W Metalloorganic Precursor and H2 Plasma and Application to Diffusion Barrier for Cu Metallization
Presented by: J. Jung, S. Kim, T. Cheon, Yeungnam Univ.; T.M. Jung, C.G. Kim, S.J. Yeo, Korea Research Institute of Chemical Technology
Atomic Layer Deposition of MoS2 Thin Film as an Active Channel Layer of Bottom Gate Thin Film Transistor
Presented by: Y. Jang, T. Cheon, S.H. Kim, Yeungnam Univ.; E.S. Kim, Samsung Advanced Institute of Technology; J.Y. Kwon, S. Yang, Yonsei Univ.

Atomic Layer Deposited ZrO2 Films on Various Substrates with New Zr Precursor

New Si Containing Hf Precursor as High Barrier Potential for Laminated High-k Metal Gate Oxide

Impact of Sulfur Passivation on GaAs MOS Capacitors Using Atomic Layer Deposited TiAlO Gate Stacks

Diffusion Barrier Properties of Molybdenum Nitride Thin Film Prepared by Atomic Layer Deposition
Presented by: J. Park, B. Han, J. Hwang, Sejong Univ.; C. Dussarrat, Air Liquide; W. Lee, Sejong Univ.

Investigation on Charge-trapping Memory Device with SiO2/HfTiO/SiO2 Layers Grown by Atomic Layer Deposition

Development of a Novel Ruthenium Precursor for Non-oxidative Thermal CVD/ALD Processes

ALD Deposited SrCoO3-δ
Presented by: E. Ahvenniemi, M. Matvejeff, M. Karppinen, Aalto Univ.

Plasma-enhanced Atomic Layer Deposition and Analysis of Gan Deposited from Triethyl Gallium and Ammonia Plasma

Advances Using Carbene as a Ligand in Group 11 Precursors for ALD of Copper and Gold
Presented by: S.T. Barry, J.P. Coyle, Carleton Univ.; M. Pemble, D.J. Hagen, Univ. College Cork; M. Leskelä, M. Ritala, M. Kariniemi, Univ. of Helsinki

Structural and Electrical Properties of Zinc Oxide Films Deposited by ALD at Low Temperature
Presented by: E. Guziewicz, D. Snigurenko, T.A. Krajewski, K. Kopalko, M. Godlewski, R. Jakiela, W. Paszkowicz, Institute of Physics, Polish Academy of Sciences

Ruthenium Nanowires by Selective Atomic Layer Deposition

Area Selective Molecular Layer Deposition of Polyurea Films
Performance Improvement of ALD Based ZnO:Ga Film by Oxygen Ion Bombardment
Presented by: C.C. Huang, Institute of Electronics Engineering; Y.L. Lee, Institute of Photonics Technologies; S.F. Chen, C.L. Liao, Y.F. Chang, M.C. Wu, Institute of Electronics Engineering

Study of the Initial Surface Reactions of Tungsten Nitride Atomic Layer Deposition by In-situ Infrared Spectroscopy
Presented by: K.B. Ramos, The Univ. of Texas at Dallas; R.K. Kanjolia, SAFC Hitech; Y.J. Chabal, The Univ. of Texas at Dallas

Conformal Doping Via Plasma-activated Atomic Layer Deposition
Presented by: S. Swaminathan, J. Qian, A. Lavoie, Lam Research Corp.

Deposition of Tantalum-based Films Using Solution-based ALD Precursors
Presented by: C. Ma, K. Kim, A. Athalye, Linde LLC

Electrical Characteristics of a Non-volatile MIM Based Memory (Al/Al2O3/W) Fabricated on Glass at 300°C for BEOL Processing

Increased Conductivity of ALD TiN Electrodes by Deposition of a Silicon Capping Layer
Presented by: B. Milligan, ASM America; V. Machkaoutsan, J. Maes, ASM Belgium; F. Alokozai, M. Verghese, E. Shero, ASM America

Structure and Reactivity of Transition Metal Diazadienyl Precursors
Presented by: S.D. Elliott, Tyndall National Institute

Cryogenic Single Particle Detection Enabled by High Aspect Ratio ALD of Functional Nanofilms

Atomic Layer Deposition of Transparent Conducting Tin and Zinc Tin Oxides Using Tetraethyltin and Ozone
Presented by: E.J. Warner, F. Johnson, S.A. Campbell, W.L. Gladfelter, Univ. of Minnesota

High Surface Area /High Aspect Ratio ALD Process Optimization Using Anodic Aluminum Oxide

Patterned Atomic Layer Deposition of TiO2 on Silicon Surfaces

Investigation of the Growth Mechanism of Al2O3-ALD on Silver Surfaces
Presented by: S. Huppmann, M. Kamp, Univ. of Wuerzburg

Mechanistic Understanding of Atomic Layer Deposition of Silicon Nitride by In-situ Characterization
Presented by: A. Vega, The Univ. of Texas at Dallas; M. Boleslawski, R. Novak, Nova-Kem, Seward, IL, USA; Y.J. Chabal, The Univ. of Texas at Dallas
Improved Growth of Atmospheric Pressure ALD Using a Novel Ozone/Water Exposure Step

Permeation Half-life Control with Plastic Ablator Capsules for ICF Experiments
Presented by: M. Schoff, D. Steinman, General Atomics; A. Alberti, Purdue Univ.; H. Huang, A. Nikroo, General Atomics

Interface Electronic State Characterization of Remote PEALD Dielectric/AlGaN/GaN Structures

Atomic Layer Deposition of Silicon Nitride Films Using Silicon Chlorides and Ammonia
Presented by: S. Woo, H. Lee, L. Yusup, B. Han, Sejong Univ.; W. Koh, UP Chemical Co. Ltd.; W. Lee, Sejong Univ.

Atomic Layer Deposition of Gate Oxides: Precursor Consumption and Oxide Quality
Presented by: A. Afshar, A. Foroughi-abari, Univ. of Alberta; B. Rayner, Kurt J. Lesker Company; P.V. Hauff, K. Bothe, D. Barlage, K. Cadien, Univ. of Alberta

Time Dependent Precursor Quality Variation of Liquid CpZr(DMA)3 and Its ALD-ZrO2 Film

Effect of Oxidant and Deposition Temperature on ALD Iron Oxide

In-situ Electrical Studies of Atomic Layer Deposition of Dielectrics on Thin MoS2 Layers
Presented by: S. Jandhyala, M. Ha, G. Mordi, J. Kim, The Univ. of Texas at Dallas

Atomic Layer Deposition of High-quality (Ti,Nb)O2 Thin Films from TiCl4, Nb(OEt)5 and H2O Precursors

Low Resistive Pure Ni ALD Precursor
Presented by: C. Lansalot-matras, Air Liquide Labs Korea; J. Gatineau, Air Liquide Asia Pacific; J. Yokota, C. Ko, Air Liquide Labs

Development of Ag Metallization Using ALD TiN Diffusion Barrier
Presented by: C-W. Ho, R-J. Chung, C-A. Jong, National Nano Device Labs

Effects of In-situ Hydrogen Plasma Treatment on ZnO ALD Films Grown by Using Water at Low Temperature of 100°C
Presented by: J. Kwon, K. Nam, J. Park, Korea Institute of Materials Science

Atomic Layer Deposited Aluminum Oxide Barrier Coatings for Encapsulation of Plastics-based Polymer Solar Cells
Presented by: Q. Lei, C. Zhang, L. Sang, Q. Chen, Beijing Institute of Graphic Communication

Zn- and Ti-containing Inorganic-organic Hybrid Thin Films Based on Amines
Presented by: P. Sundberg, A. Sood, M. Karppinen, Aalto Univ.
Comparative Studies of Thermal and Plasma Enhanced Atomic Layer Deposited Al2O3-films by XPS, UV-VIS and MIR Ellipsometry


Composition and Trace Metal Analysis of Zinc Telluride Thin Films
Presented by: S. Liu, J. Huang, ChemTrace Analytical Services
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The Fundamentals of Vacuum Technology by: Harland G. Tompkins

An Elementary Introduction to Vacuum Technique by: G. Lewin

Pumps Used in Vacuum Technology by: Harland Tompkins and Timothy Gessert

Excimer Laser Ablation and Etching by: J. Brannon

Vacuum Gauging and Control by: Harland Tompkins

Electric Probes for Low-Temperature Plasmas by: David Ruzic

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Thin Film Deposition and Patterning by: Robert K. Waits

Partial Pressure Analyzers, Analysis, and Applications by: Rudolf Schubert

Plasma Etching in Microelectronics by: Nace Layadi, Simon Molloy, Avi Kornbilt, John T.C. Lee, Thomas M. Wolf, and Dale Ibbotson

Vacuum Technology: A Beginning by: Harland Tompkins

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Ultrahigh Vacuum Design and Practice by: Ronald A. Outlaw and Harland Tompkins

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AVS PacSurf

The new Pacific Rim Symposium on Surfaces, Coatings and Interfaces (PacSurf 2014) was held on the Big Island of Hawaii from December 7 - 11, 2014. This conference is being organized by AVS (United States) with a Steering Committee composed of representatives from Australia, Canada, Chile, China, Japan, Korea, Mexico, New Zealand, Singapore, and Taiwan. Symposium attendees will interact during morning and evening sessions that will include plenary, invited, and contributed presentations.

The main topics for PacSurf 2014 are focused on the latest advances in Biomaterial Interfaces, Energy Harvesting & Storage, Nanomaterials, and Thin Films.

- 2014 PacSurf Virtual Program