

Program Key

AA	ALD Applications
AF	ALD Fundamentals
ALE	Atomic Layer Etching
AM	ALD for Manufacturing
AS	Area Selective ALD
EM	Emerging Materials
HM	Hybrid Materials & Infiltration
NS	Nanostructure Synthesis and Fabrication
PS	Plenary Session
TS	Tutorials

PROGRAM NUMBERS: They are listed with the Conference topic letters first, the session number second, the Day of the Week, Morning (M) or Afternoon (A) and the presentation slot (e.g., **AA-MoM2-1**).

ALD/ALE 2022 Program Overview

Room /Time	Arteveldeforum & Pedro de Gante	Auditorium	Baekeland	Van Eyck	Van Rysselberghe
SuA		TS-SuA: Tutorials			
SuP	ALE Poster Session Exhibit: 6:00-8:00 pm				
MoM1	Exhibit: 10:00 am – 7:30 pm	PS-MoM1: Plenary Session I			
MoM2		AF1-MoM2: New Precursors and Processes I	ALE-MoM2: Thermal and/or Isotropic ALE I	AF2-MoM2: High Aspect Ratio/High Surface Area/Powder ALD	AA-MoM2: ALD for Solar Energy
MoA		AF1-MoA: New Precursors and Processes II AF2-MoA: Simul., Model. & Theory of ALD I	ALE1-MoA: Thermal and/or Isotropic ALE II ALE2-MoA: Plasma and/or Anisotropic ALE I	AF3-MoA: Plasma Enhanced ALD AF4-MoA: Surface Science	AA1-MoA: ALD for Catalysis AA2-MoA: ALD for Energy Storage
MoP	Poster Sessions				
TuM1	Exhibit: 10:00 am – 7:30 pm	PS-TuM1: Plenary Session II			
TuM2		AA1-TuM2: ALD for Medical Applications	ALE-TuM2: Atomic Layer Cleaning (ALC), ALE Integrated with ALD, & Alt. ALE Approaches	AF-TuM2: Simulation, Modeling, and Theory of ALD II	AA2-TuM2: ALD for FEOL
TuA		AM1-TuA: ALD for Manufacturing I AM2-TuA: ALD for Manufacturing II	ALE1-TuA: In situ Studies, Mech. and Modeling of ALE ALE2-TuA: Plasma &/or Anisotropic ALE II	AF1-TuA: Characterization I AF2-TuA: Characterization II	AA1-TuA: ALD for Display Applications AA2-TuA: ALD for BEOL
TuP	Poster Sessions				
WeM1	Exhibit: 10:00 am – 1:30 pm	PS-WeM1: Plenary Session III			
WeM2		NS-WeM2: 2D Materials I	AA1-WeM2: ALD for Optical Applications	EM-WeM2: Molecular Layer Deposition	AA2-WeM2: ALD for Memory Applications I
WeA		EM1-WeA: Emerging Materials NS-WeA2: 2D Materials II	AS1-WeA: Area Selective Deposition I AS2-WeA: Area Selective Deposition II	EM2-WeA: Vapor Phase Infiltration EM3-WeA: Hybrid Coatings	AA1-WeA: ALD for Memory Applications II AA2-WeA: Emerging Applications of ALD

Sunday Afternoon, June 26, 2022

Tutorials Room Auditorium - Session TS-SuA Moderators: Christophe Detavernier, Ghent University, Belgium, Erwin Kessels, Eindhoven University of Technology, Netherlands	
1:00pm	INVITED: TS-SuA-1 How I Learned to Stop Worrying and Love the Surface, <i>Seán Barry</i> , Carleton University, Canada
1:45pm	INVITED: TS-SuA-4 Combined Atomic/Molecular Layer Deposition for Designer's Metal-Organic Materials and Inorganic-Organic Multilayers, <i>Maarit Karppinen</i> , Aalto University, Finland
2:30pm	INVITED: TS-SuA-7 Plasma Assisted Atomic Layer Processing and Diagnostics, <i>Sumit Agarwal</i> , Colorado School of Mines, USA
3:15pm	BREAK
3:30pm	INVITED: TS-SuA-11 Synthesis and Integration of 2D Materials Using ALD, <i>Ageeth Bol</i> , University of Michigan, Ann Arbor, USA
4:15pm	INVITED: TS-SuA-13 How Did (and Will) Atomic Scale Processing Change the Logic and Memory Industries?, <i>Giuseppe Alessio Verni</i> , A. Illiberi, ASM, Belgium; <i>P. Deminskyi</i> , ASM Microchemistry Ltd., Finland; <i>M. Givens</i> , ASM, Belgium
5:00pm	INVITED: TS-SuA-16 Artificial Interphases for Interface Control in Li-ion Batteries, <i>Philippe Vereecken</i> , IMEC, Belgium

Atomic Layer Etching

Room Arteveldeforum & Pedro de Gante - Session ALE-SuP

Atomic Layer Etching Poster Session

6:00pm – 8:00pm

ALE-SuP-1 Anisotropic Atomic Layer Etching of Sn by Formation of Hydride/Chloride, **Doo San Kim**, Y. Jang, H. Gil, G. Yeom, Sungkyunkwan University, Korea (Republic of)

ALE-SuP-2 Atomic-Scale Control of a Native Oxide Thickness on Si for Direct Wafer Bonding, **Youngseok Lee**, Y. You, C. Cho, I. Seong, W. Jeong, J. Lee, S. Kim, S. You, Chungnam National University, Korea (Republic of)

ALE-SuP-3 Atomic Layer Etching of Al_2O_3 with NF_3 Plasma Fluorination and Trimethylaluminum Ligand Exchange, **Hyeongwu Lee**, J. Kim, D. Shim, Y. Kim, H. Chae, Sungkyunkwan University (SKKU), Korea (Republic of)

ALE-SuP-4 Low-Temperature Plasma Atomic Layer Etching of Titanium Nitride, **Heeju Ha**, D. Shim, J. Kim, Y. Kim, H. Chae, Sungkyunkwan University (SKKU), Korea (Republic of)

ALE-SuP-5 Prediction of Chemical Evolution and Its Impact on PEAL of Silicon Nitride with Hydrofluorocarbons, **Erik Cheng**, G. Hwang, University of Texas at Austin, USA; P. Ventzek, Z. Chen, S. Sridhar, A. Ranjan, Tokyo Electron America

ALE-SuP-6 Achieving High Uniformity in Atomic-Scale Etching via a Purgeless Atomic Layer Etching Approach, **Yebin You**, Y. Lee, C. Cho, I. Seong, W. Jeong, J. Lee, S. Kim, Y. You, M. Choi, T. Yuk, S. You, Chungnam National University, Korea (Republic of)

ALE-SuP-8 New Oxidants for Cu ALE via In Situ XAS Mechanistic Study, **Adam Hock**, P. Panariti, Illinois Institute of Technology, USA

Monday Morning, June 27, 2022

Plenary Session I Room Auditorium - Session PS-MoM1 Moderators: Christophe Detavernier, Ghent University, Belgium, Erwin Kessels, Eindhoven University of Technology, Netherlands	
8:45am	Welcome, Introductions and Sponsor Thank Yous
9:00am	INVITED: PS-MoM1-2 Plenary Lecture: New Process Requirements Driven by More Than Moore and More Moore Device Integration Innovations, Steven Steen , ASML, USA; P. Leray , IMEC, Belgium
9:45am	INVITED: PS-MoM1-5 ALD 2020 Innovator Awardee Talk: Innovations in ALD Chemistry Open the Door to Applications, Mikko Ritala , University of Helsinki, Department of Chemistry, Finland
10:15am	BREAK & EXHIBITS

Monday Morning, June 27, 2022

ALD Applications Room Van Rysselberghe - Session AA-MoM2 ALD for Solar Energy Moderators: Paul Poodt, Holst Centre / TNO, Netherlands		ALD Fundamentals Room Auditorium - Session AF1-MoM2 New Precursors and Processes I Moderators: Sean Barry, Carleton University, Canada, Elisabeth Blanquet, SIMaP, CNRS, Univ. Grenoble Alpes, France	
10:45am	INVITED: AA-MoM2-1 Atomic Layer Deposition for Silicon-Perovskite Tandem Cells, Bart Macco , <i>N. Phung, E. Kessels, M. Creatore</i> , Eindhoven University of Technology, Netherlands	AF1-MoM2-1 Atomic Layer Deposition of Ruthenium Dioxide Thin Films Based on Redox Reactions between RuO ₄ and Alcohols, Matthias Minjauw , <i>N. Poonkottil, A. Werbrueck, C. Detavernier, J. Dendooven</i> , Ghent University, Belgium	
11:00am		AF1-MoM2-2 Low Temperature ALD of Ni from Novel Precursors, Anton Vihervaara , <i>T. Hatanpää, K. Mizohata, G. Popov, M. Chundak, M. Ritala</i> , University of Helsinki, Finland	
11:15am	AA-MoM2-3 ALD Al ₂ O ₃ /SiO _x Multilayers for c-Si Surface Passivation: Modification of Interface Properties by Voltage Stress and Plasma Treatments, Armin Richter , <i>H. Patel, C. Reichel, P. Masuch, J. Benick, S. Glunz</i> , Fraunhofer ISE, Germany	AF1-MoM2-3 Enhanced Cation Control in ALD of Alkali Metal Containing Films by Avoiding Water-Reservoir Effects, Henrik H. Sønsteby , University of Oslo, Norway	
11:30am	AA-MoM2-4 Atomic Layer Deposition of Aluminium Doped Zn _{1-x} Mg _x O as Transparent Conducting Films for Photovoltaics, Poorani Gnanasambandan , <i>N. Adjeroud, R. Leturcq</i> , Luxembourg Institute of Science and Technology (LIST), Luxembourg	AF1-MoM2-4 Atomic Layer Deposition of Lead Halides: PbBr ₂ and PbCl ₂ , Georgi Popov , <i>C. Van Dijk, L. Junkers</i> , University of Helsinki, Finland; <i>G. Bačić</i> , Carleton University, Canada; <i>A. Weiss, M. Mattinen, A. Vihervaara, P. Jalkanen, K. Mizohata, J. Räisänen, M. Kemell, M. Leskelä</i> , University of Helsinki, Finland; <i>S. Barry</i> , Carleton University, Canada; <i>M. Ritala</i> , University of Helsinki, Finland	
11:45am	AA-MoM2-5 An in-Situ Infrared Spectroscopy Study on the Influence of ALD SnO ₂ on Formamidinium-Based Metal Halide Perovskite, A.E.A. (Andrea) Bracesco , <i>J. Jansen, W. Kessels</i> , Eindhoven University of Technology, Netherlands; <i>V. Zardetto</i> , Solliance Solar Research, Netherlands; <i>M. Creatore</i> , Eindhoven University of Technology, Netherlands	AF1-MoM2-5 Carbene Based Precursors for the ALD of Coinage Metals, Nils Boysen , Ruhr University Bochum, Germany; <i>A. Philip</i> , Aalto University, Finland; <i>D. Rogalla</i> , Ruhr University Bochum, Germany; <i>M. Karppinen</i> , Aalto University, Finland; <i>A. Devi</i> , Ruhr University Bochum, Germany	
12:00pm		AF1-MoM2-6 Low Temperature ALD of Metals and Nitrides Using Thermally Generated Radical Precursors, Goran Bacic , Carleton University, Canada; <i>C. Dezelah</i> , ASM Microchemistry Ltd., Finland; <i>S. Barry</i> , Carleton University, Canada	

Monday Morning, June 27, 2022

	ALD Fundamentals Room Van Eyck - Session AF2-MoM2 High Aspect Ratio/High Surface Area/Powder ALD Moderators: Jolien Dendooven, Ghent University, Belgium, Juhani Taskinen, Picosun Oy, Finland	Atomic Layer Etching Room Baekeland - Session ALE-MoM2 Thermal and/or Isotropic ALE I Moderators: Steven M. George, University of Colorado at Boulder, USA, Anil Mane, Argonne National Laboratory, USA
10:45am	AF2-MoM2-1 Influence of the High Aspect Ratio Geometry to ALD Thin Film Growth, <i>Oili Yliavaara</i> , VTT Technical Research Centre of Finland; <i>M. Utriainen</i> , <i>P. Hyttinen</i> , Chipmetrics Oy, Finland; <i>R. Puurunen</i> , Aalto University Aalto School of Chemical Engineering, Finland	INVITED: ALE-MoM2-1 Photon-Activated Metal Ale, <i>X. Yang</i> , <i>B. Coffey</i> , <i>John Ekerdt</i> , University of Texas at Austin, USA
11:00am	AF2-MoM2-2 Ultra-Low Temperature ALD of Pure Antimony for Grain Boundary Engineering of Thermoelectric Materials, <i>Amin Bahrami</i> , <i>S. He</i> , <i>R. He</i> , <i>S. Lehmann</i> , <i>K. Nielsch</i> , Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden e. V., Germany	
11:15am	AF2-MoM2-3 Infilling Macroscopic Nanoparticle Networks via ALD, <i>Benjamin Greenberg</i> , <i>K. Anderson</i> , <i>A. Jacobs</i> , <i>J. Wollmershauser</i> , <i>B. Feigelson</i> , U.S. Naval Research Laboratory, USA	ALE-MoM2-3 Plasma-Assisted Thermal-Cyclic Etching of Silicon Germanium Selective to Germanium, <i>Kazunori Shinoda</i> , Hitachi, Japan; <i>H. Hamamura</i> , Hitachi, Japan; <i>K. Maeda</i> , <i>M. Izawa</i> , Hitachi High-Tech, Japan; <i>T. Nguyen</i> , <i>K. Ishikawa</i> , <i>M. Hori</i> , Nagoya University, Japan
11:30am	AF2-MoM2-4 Zinc Acetylacetonate on Mesoporous Supports by Atomic Layer Deposition, <i>Jihong Yim</i> , <i>E. Haimi</i> , Aalto University, Finland; <i>M. Mäntymäki</i> , University of Helsinki, Finland; <i>V. Kärkäs</i> , Aalto University, Finland; <i>R. Bes</i> , University of Helsinki, Finland; <i>A. Arandia</i> , <i>J. Velasco</i> , <i>T. Viinikainen</i> , Aalto University, Finland; <i>S. Huotari</i> , University of Helsinki, Finland; <i>R. Karinen</i> , Aalto University, Finland; <i>M. Putkonen</i> , University of Helsinki, Finland; <i>R. Puurunen</i> , Aalto University, Finland	ALE-MoM2-4 Thermal Atomic Layer Etching of Cobalt with Chlorine Plasma and Hexafluoroacetylacetone (Hhfac), <i>Yongjae Kim</i> , <i>H. Ha</i> , <i>H. Chae</i> , Sungkyunkwan University (SKKU), Korea (Republic of)
11:45am	AF2-MoM2-5 Synthesis of High Surface Area Metal Oxide Catalyst Supports, <i>Robert Baumgarten</i> , <i>P. Ingale</i> , <i>K. Knemeyer</i> , <i>R. Naumann d'Alnoncourt</i> , <i>M. Driess</i> , BasCat – UniCat BASF JointLab, Technische Universität Berlin, Germany; <i>F. Rosowski</i> , BASF SE, Process Research and Chemical Engineering, Germany	INVITED: ALE-MoM2-5 Thermal-Cyclic Atomic Layer Etching of Cobalt by Plasma Oxidation and Organometallization, <i>Sumiko Fujisaki</i> , Hitachi Ltd., R&D group, Japan; <i>Y. Yamaguchi</i> , Hitachi, Ltd., R&D group, Japan; <i>H. Kobayashi</i> , Hitachi High-Tech, Japan; <i>K. Shinoda</i> , <i>M. Yamada</i> , <i>H. Hamamura</i> , Hitachi, Ltd., R&D group, Japan; <i>K. Kawamura</i> , <i>M. Izawa</i> , Hitachi High-Tech, Japan
12:00pm	AF2-MoM2-6 ALD on Porous Substrates: From General Formulation to Fibrous Substrates and Scaling Laws, <i>Wojciech Szmyt</i> , <i>C. Guerra-Núñez</i> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; <i>L. Huber</i> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Switzerland; <i>C. Dransfeld</i> , TU Delft, Netherlands; <i>I. Utke</i> , Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland	

Monday Afternoon, June 27, 2022

Room Auditorium		
1:30pm	AF1-MoA-1 Atomic Layer Deposition of CsI and CsPbI ₃ , <i>Alexander Weiß</i> , G. Popov, E. Atosuo, P. Jalkanen, A. Vihervaara, M. Vehkamäki, University of Helsinki, Finland; H. Sipilä, A. Niemela, Fenno-Aurum Oy Ltd, Finland; M. Ritala, M. Kemell, University of Helsinki, Finland	ALD Fundamentals Session AF1-MoA New Precursors and Processes II Moderators: Romain Gaillac, Air Liquide, USA, Mikko Ritala, University of Helsinki, Finland
1:45pm	AF1-MoA-2 Co(II) Amide, Pyrrolate, and Aminopyridinate Complexes: Assessment of Structure and Thermal Properties as ALD Precursors, <i>Jorit Obenlühenschloß</i> , D. Zanders, Ruhr University Bochum, Germany; M. Land, S. Barry, Carleton University, Canada; A. Devi, Ruhr University Bochum, Germany	
2:00pm	AF1-MoA-3 SnO Thin Films via Water Based ALD using a Sn(II) Precursor: Precursor Evaluation and ALD Process Development, <i>Niklas Huster</i> , Ruhr University Bochum, Germany; R. Ghiyasi, Aalto University, Finland; D. Zanders, Ruhr University Bochum, Germany; D. Rogalla, RUBION, Ruhr University Bochum, Germany; M. Karppinen, Aalto University, Finland; A. Devi, Ruhr University Bochum, Germany	
2:15pm	AF1-MoA-4 Tuning the Texture of ZnO Thin Films Through the Addition of a Volatile Shape-Directing Agent in the AP-SALD System, C. Crivello, M. Weber, LMGP Grenoble-INP / CNRS, France; T. Jalabert, G. Ardila Rodriguez, IMEP-LaHC UGA/CNRS/Grenoble INP, France; M. Dibenedetto, <i>David Muñoz-Rojas</i> , LMGP Grenoble-INP / CNRS, France	
2:30pm	AF1-MoA-5 Recent Advances in Rare Earth Precursors for ALD, <i>Jean-Pierre Glauber</i> , M. Schmickler, P. Kaur, S. Beer, N. Boysen, Ruhr University Bochum, Germany; A. Devi, Ruhr Universität Bochum, Germany	
2:45pm	AF1-MoA-6 Novel Growth Inhibitor in Atomic Layer Deposition for Conformal Coverage on High Aspect Ratio Trenches, <i>Kok Chew Tan</i> , J. Jung, C. Yeon, S. Lee, J. Kim, J. Nam, T. Park, Y. Park, Soulbrain, Korea (Republic of)	
3:00pm	AF1-MoA-7 Solution ALD: A Versatility Process for the Growth of Sulfides and Selenides, <i>Maissa Barr</i> , B. Zhao, P. Von Grundherr, Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Germany; V. Koch, Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Germany; J. Charvat, University of Pardubice: Pardubice, CZ, Czechia; M. Halik, Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Germany; F. Bureš, University of Pardubice, Czechia; J. Bachmann, Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Germany	ALD Fundamentals Session AF2-MoA Simulation, Modeling, and Theory of ALD I Moderators: Hannah Margavio, North Carolina State University, USA, Bonggeun Shong, Hongik University, Korea (Republic of)
3:15pm	AF1-MoA-8 Flash-Lamp Enabled Atomic Layer Deposition, <i>Martin Knaut</i> , Y. Cui, R. Deltschew, M. Albert, T. Mikolajick, TU Dresden, Germany	
3:30pm	BREAK & EXHIBITS	
4:00pm	INVITED: AF2-MoA-11 A User Experience Feedback on Numerical Simulation for CVD/ALD Precursor Design & Development, <i>Romain Gaillac</i> , Air Liquide, USA	
4:15pm		
4:30pm		
4:45pm	AF2-MoA-14 What Is the Reactivity of a Precursor in ALD? - Simulation of Growth and Etch Rates, <i>Simon D. Elliott</i> , A. Chew, Y. An, Schrödinger, Inc., USA	
5:00pm	AF2-MoA-15 Random Sequential Adsorption and the Consequences for the Growth-Per-Cycle of Atomic Layer Deposition Processes, <i>Ilker Tezsevin</i> , S. Deijkers, M. Merks, E. Kessels, A. Mackus, Eindhoven University of Technology, The Netherlands	
5:15pm	AF2-MoA-16 Machine Learning Based Atomistic Modeling of ALD Processes, J. Schneider, <i>Suresh Kondati Natarajan</i> , V. Arcisauskaitė, U. Martinez, Synopsys Denmark; A. Blom, Synopsys Inc., USA	
5:30pm	AF2-MoA-17 Modelling Ruthenium Deposition in Atomic Layer Deposition of Ru-doped TaN, <i>Rita Mullins</i> , M. Nolan, Tyndall National Institute, Ireland	

Monday Afternoon, June 27, 2022

Room Baekeland		
1:30pm	INVITED: ALE1-MoA-1 Chlorination and Ligand Addition for Thermal ALE of Metals, <i>Jessica Murdzek</i> , University of Colorado Boulder, USA; <i>A. Lii-Rosales</i> , Lam Research Corp, USA; <i>S. George</i> , University of Colorado Boulder, USA	Atomic Layer Etching Session ALE1-MoA Thermal and/or Isotropic ALE II Moderators: Satoshi Hamaguchi, Osaka University, Japan, Adrie Mackus, Eindhoven University, Netherlands
1:45pm		
2:00pm		
2:15pm		
2:30pm		
2:45pm		
3:00pm		
3:15pm		
3:30pm	BREAK & EXHIBITS	Atomic Layer Etching Session ALE2-MoA Plasma and/or Anisotropic ALE I Moderators: Rémi Dussart, GREMI CNRS/Université d'Orléans, France, Geun Young Yeom, Sungkyunkwan University, Korea (Republic of)
3:45pm		
4:00pm	INVITED: ALE2-MoA-11 From Barrel to ALE: A Lifetime in Etch/A Material and System Design Perspective, <i>Mike Cooke</i> , Oxford Instruments , UK	
4:30pm	ALE2-MoA-13 Understanding the Self-limiting Behavior in Atomic Layer Etched HfO ₂ , <i>Souvik Kundu</i> , T. Schram, F. Lazzarino, J. de Marneffe, P. Bezard, S. Decoster, I. Asselberghs, IMEC, Belgium	
4:45pm	ALE2-MoA-14 Area-Selective Atomic Layer Etching of SiO ₂ Using Silane Coupling Agent, <i>A. Osonio</i> , <i>Takayoshi Tsutsumi</i> , Nagoya University, Japan; <i>B. Mukherjee</i> , R. Borude, ASM International, Netherlands; <i>N. Kobayashi</i> , M. Hori, Nagoya University, Japan	
5:00pm	ALE2-MoA-15 Improving SiO ₂ toSiN _x ALE Selectivity with Surface Pre-functionalization for SiO ₂ /SiN _x Stacks, <i>Xue Wang</i> , Colorado School of Mines, USA; <i>R. Gasvoda</i> , P. Kumar, E. Hudson, Lam Research Corporation, USA; <i>S. Agarwal</i> , Colorado School of Mines, USA	
5:15pm	ALE2-MoA-16 Plasma-Assisted Atomic Layer Etching of Silicon Nitride with Unfragmented Fluorocarbons, <i>C.H. Lam</i> , M. Carruth, University of Texas at Austin, USA; <i>Z. Chen</i> , J. Blakeney, P. Ventzek, S. Sridhar, A. Ranjan, Tokyo Electron America Inc.,, USA; <i>John Ekerdt</i> , University of Texas at Austin, USA	
5:30pm	ALE2-MoA-17 Silicon Atomic Layer Etching with Surface Chlorination and Removal with Ar or He Plasma, <i>Namgun Kim</i> , Sungkyunkwan University, Korea (Republic of); <i>D. Shin</i> , J. Kim, C. Lee, K. Yoon, Samsung Electronics, Korea (Republic of); <i>Y. Kim</i> , H. Chae, Sungkyunkwan University, Korea (Republic of)	

Monday Afternoon, June 27, 2022

Room Van Eyck		
1:30pm	INVITED: AF3-MoA-1 Revisited Thermal and Plasma Enhanced Atomic Layer Deposition Processes of Metal Nitrides, <i>Elisabeth Blanquet</i> , SIMaP, CNRS, University Grenoble Alpes, France; <i>A. Mantoux</i> , SIMaP, University Grenoble Alpes, France; <i>F. Mercier</i> , SIMaP, CNRS, University Grenoble Alpes, France; <i>R. Boichot</i> , SIMAP, Grenoble-INP, University Grenoble Alpes, France; <i>I. Nuta</i> , SIMAP, CNRS, University Grenoble Alpes, France; <i>C. Jimenez</i> , LMGP, CNRS, University Grenoble Alpes, France	ALD Fundamentals Session AF3-MoA Plasma Enhanced ALD Moderators: Sumit Agarwal, Colorado School of Mines, USA, Andreas Werbrouck, Ghent University, Belgium
2:00pm	AF3-MoA-3 Plasma-Enhanced Low-Temperature ALD Process for Molybdenum Oxide Thin Films and Its Evaluation as Hydrogen Gas Sensors, <i>Jan-Lucas Wree</i> , J. Klimars, Ruhr University Bochum, Germany; <i>N. Saliha</i> , Heinrich-Heine University Düsseldorf, Germany; <i>D. Rogalla</i> , Ruhr University Bochum, Germany; <i>K. Schierbaum</i> , Heinrich-Heine University Düsseldorf, Germany; <i>A. Devi</i> , Ruhr University Bochum, Germany	
2:15pm	AF3-MoA-4 Low-Temperature Plasma-Enhanced Atomic Layer Deposition of Crystalline Tin Disulfide Thin Films, <i>Femi Mathew</i> , N. Poonkottil, R. Karuparambil Ramachandran, B. Zhao, Z. Hens, C. Detavernier, J. Dendooven, Ghent University, Belgium	
2:30pm	AF3-MoA-5 Leveraging Non-Saturated Oxidation Conditions in Plasma-Enhanced Atomic Layer Deposition for Tuning Functional Properties of CoO _x Catalyst Layers, <i>Matthias Kuhl</i> , A. Henning, L. Haller, L. Wagner, C. Jiang, V. Streibel, I. Sharp, J. Eichhorn, Technical University Munich, Germany	
2:45pm	AF3-MoA-6 Low-temperature HfO ₂ /SiO ₂ Gate Stacked Film Grown by Neutral Beam Enhanced Atomic Layer Deposition, <i>Daisuke Otori</i> , Tohoku University, Japan; <i>B. Ge</i> , Tohoku University, China; <i>Y. Chen</i> , National Yang Ming Chiao Tung University, Taiwan; <i>T. Ozaki</i> , Tohoku University, Japan; <i>K. Endo</i> , National Institute of Advanced Industrial Science and Technology, Japan; <i>Y. Li</i> , J. Tarnag, National Yang Ming Chiao Tung University, Taiwan; <i>S. Samukawa</i> , Tohoku University, Japan	
3:00pm		
3:15pm		
3:30pm	BREAK & EXHIBITS	
4:15pm	AF4-MoA-12 Thickness Matters: Sintering Inhibition of Pt Nanoparticle Catalysts via Sequential Control of MgO Overcoats, <i>Zhiwei Zhang</i> , M. Filez, M. Minjauw, J. Li, C. Detavernier, J. Dendooven, Ghent University, Belgium	ALD Fundamentals Session AF4-MoA Surface Science Moderators: Annelies Delabie, IMEC, Belgium, Virginia Wheeler, U.S. Naval Research Laboratory, USA
4:30pm	AF4-MoA-13 Route to Low Temperature Area-Selective Atomic Layer Deposition of Ni, <i>Himamshu Nallan</i> , X. Yang, J. Ekerdt, The University of Texas at Austin, USA	
4:45pm	AF4-MoA-14 Hydrogen Plasma-Assisted Atomic Layer Deposition of sub-Nanometer AlO _x for Low-Impedance Contacts to GaN, <i>Maximilian Christis</i> , A. Henning, Walter Schottky Institute and Physics Department, Technical University of Munich, Germany; <i>J. Bartl</i> , Walter Schottky Institute, Physics Department, and WACKER-Chair for Macromolecular Chemistry, Department of Chemistry, Technical University of Munich, Germany; <i>A. Zeidler</i> , Walter Schottky Institute and Physics Department, Technical University of Munich, Germany; <i>B. Rieger</i> , Department of Chemistry, WACKER-Chair for Macromolecular Chemistry, Technical University of Munich, Germany; <i>M. Stutzmann</i> , I. Sharp, Technical University of Munich, Germany	
5:00pm	AF4-MoA-15 Tunable Ti ³⁺ -Mediated Charge Carrier Dynamics of Atomic Layer Deposition Grown Amorphous TiO ₂ , <i>Jesse Saari</i> , H. Ali-Löytty, Surface Science Group, Tampere University, Finland; <i>M. Kauppinen</i> , Competence Centre for Catalysis and Department of Physics, Chalmers University of Technology, Sweden; <i>M. Hannula</i> , Surface Science Group, Tampere University, Finland; <i>R. Khan</i> , Photonic Compounds and Nanomaterials group, Tampere University, Finland; <i>K. Lahtonen</i> , Faculty of Engineering and Natural Sciences, Tampere University, Finland; <i>L. Palmolahti</i> , Surface Science Group, Tampere University, Finland; <i>A. Tukiainen</i> , Faculty of Engineering and Natural Sciences, Tampere University, Finland; <i>H. Grönbeck</i> , Competence Centre for Catalysis and Department of Physics, Chalmers University of Technology, Sweden; <i>N. Tkachenko</i> , Photonic Compounds and Nanomaterials group, Tampere University, Finland; <i>M. Valden</i> , Surface Science Group, Tampere University, Finland	
5:15pm	AF4-MoA-16 Temperature-Time-Thickness (Ttt) Topography Maps: A Parameter Space Visualization Approach for ALD Processes, <i>P. Banerjee</i> , N. Berriel, U. Kumar, <i>Corbin Feit</i> , University of Central Florida, USA; <i>A. Arunachalam</i> , K. Basu, University of Texas at Dallas, USA; <i>S. Seal</i> , University of Central Florida, USA	
5:30pm	AF4-MoA-17 <i>in situ</i> TEM Study to Unravel Dynamic Processes during the Synthesis of Ultrathin Crystalline ALD Nanotubes, <i>Lilian Vogl</i> , P. Schweizer, L. Pethö, A. Sharma, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; <i>E. Spiecker</i> , Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Germany; <i>J. Michler</i> , I. Utke, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland	

Monday Afternoon, June 27, 2022

Room Van Rysselberghe		
1:30pm	AA1-MoA-1 ALD Preparation of TiO ₂ -MnO _x /SiO ₂ Catalyst for Selective Catalytic Reduction of Nitrogen Oxides, <i>Saeed Saedy</i> , Delft University of Technology, Netherlands; <i>D. Kazimierz</i> , Paul Scherrer Institut, Switzerland; <i>D. Urbanas</i> , Vilnius Gediminas Technical University, Lithuania; <i>D. Ferri</i> , Paul Scherrer Institut, Switzerland; <i>J. van Ommen</i> , Delft University of Technology, Netherlands	ALD Applications Session AA1-MoA ALD for Catalysis Moderators: Ashley R. Bielinski, Argonne National Laboratory, USA,
1:45pm	AA1-MoA-2 Unravelling the Mechanism of Electrochemical Activation of ALD Cobalt Phosphate by Digital Control Over Its Chemical Composition, <i>G. van Straaten</i> , <i>R. Zhang</i> , <i>E. Kessels</i> , Eindhoven University of Technology, The Netherlands; <i>R. van de Sanden</i> , <i>M. Tsampas</i> , Dutch Institute for Fundamental Energy Research, Netherlands; <i>Mariadriana Creatore</i> , Eindhoven University of Technology, The Netherlands	
2:00pm	AA1-MoA-3 Increasing ALD Complexity: How to Transform Ternary Oxide Films Into Tunable Bimetallic Thin Films and Nanoparticles, <i>J. Feng</i> , <i>Matthias Filez</i> , <i>M. Minjauw</i> , <i>E. Solano</i> , <i>C. Detavernier</i> , <i>J. Dendooven</i> , Ghent University, Belgium	
2:15pm	AA1-MoA-4 Tunable TiO ₂ -BN-Pd Nanofibers by Combining Electrospinning and Atomic Layer Deposition to Enhance Photodegradation of Acetaminophen, <i>Syreina Alsayegh</i> , Institut Européen des Membranes, France; <i>M. Bechelany</i> , Institut Européen des Membranes, France; <i>F. TANOS</i> , Institut Européen des membranes, France; <i>A. NADA</i> , <i>G. LESAGE</i> , <i>F. Zaviska</i> , Institut Européen des Membranes, France; <i>M. Weber</i> , Laboratoire des Matériaux et du Génie Physique LMGP, France	
2:30pm	AA1-MoA-5 Ultra-Low Dimensional Ir-Ru Thin-Film by Atomic Layer Deposition on Porous Titanium Felt Substrate for Electrochemical Water Splitting Application, <i>Rahul Ramesh</i> , <i>N. Park</i> , <i>T. Cheon</i> , School of Materials Science and Engineering, Yeungnam University, Korea (Republic of); <i>M. Byeon</i> , <i>T. Hong</i> , Busan Center, Korea Basic Science Institute, Korea (Republic of); <i>S. Kim</i> , School of Materials Science and Engineering, Yeungnam University, Korea (Republic of)	
2:45pm	AA1-MoA-6 Influence of Co/Ni Ratio on OER-catalytic Performance of Atomic Layer Deposited Nickel Cobalt Oxide, <i>Renee van Limpt</i> , Eindhoven University of Technology, Netherlands; <i>M. Lavorenti</i> , <i>M. Tsampas</i> , Dutch Institute for Fundamental Energy Research, Netherlands; <i>A. Creatore</i> , Eindhoven University of Technology, Netherlands	
3:00pm	AA1-MoA-7 Fundamental Studies of s-ALD Grown Iridium Thin Films on Planar Substrates for Acidic Water Splitting, <i>J. Shen</i> , TNO-Holst Centre, Netherlands; <i>P. Shirvanian</i> , TNO-STIP, Netherlands; <i>E. Balder</i> , TNO-Holst Centre, Netherlands; <i>B. van Dijk</i> , TNO-STIP, Netherlands; <i>N. Huijssen</i> , <i>A. Bronneberg</i> , <i>P. Poodt</i> , <i>M. Ameen</i> , <i>Jie Shen</i> , TNO-Holst Centre, Netherlands	
3:15pm	AA1-MoA-8 Functionalization of MoS ₂ With Noble Metal by Atomic Layer Deposition for Hydrogen Evolution Reaction, <i>JungYub Lee</i> , <i>J. Kim</i> , <i>I. Sohn</i> , <i>S. Chung</i> , <i>H. Kim</i> , School of Electrical and Electronic Engineering, Yonsei University, Korea (Republic of)	
3:30pm	BREAK & EXHIBITS	
4:00pm	AA2-MoA-11 Conversion Reactions and Redox Changes on the Surface of Lithium-Ion Battery Cathode Materials during Chemical Vapor Treatment for ALD, <i>P. Darapaneni</i> , <i>A. Mane</i> , <i>Z. Hood</i> , <i>Jeffrey Elam</i> , Argonne National Laboratory, USA	ALD Applications Session AA2-MoA ALD for Energy Storage Moderators: Ageeth Bol, University of Michigan, Ann Arbor, USA, Philippe Vereecken, IMEC, Belgium
4:15pm	AA2-MoA-12 Titanium Carboxylate MLD Hybrid Films as Protective Coatings for Lithium-Ion Batteries, <i>Sofie S. T. Vandenbroucke</i> , <i>L. Henderick</i> , Ghent University, Belgium; <i>L. De Taeye</i> , IMEC, Belgium; <i>J. Li</i> , Ghent University, Belgium; <i>K. Jans</i> , <i>P. Vereecken</i> , IMEC, Belgium; <i>J. Dendooven</i> , <i>C. Detavernier</i> , Ghent University, Belgium	
4:30pm	AA2-MoA-13 Surface Coating and Grain Boundary Engineering of NMC811 Materials for Next-Generation Li-Ion Batteries, <i>Zahra Ahaliabadeh</i> , <i>V. Miikkulainen</i> , Aalto University, Finland; <i>M. Mäntymäki</i> , University of Helsinki, Finland; <i>T. Kallio</i> , Aalto University, Finland	
4:45pm	AA2-MoA-14 Hybrid Inorganic/Organic Polycarbonate Track-Etched Membranes With Tunable Pore Size and Surface Functionality for Redox Flow Batteries, <i>Rajesh Pathak</i> , Applied Materials Division, Argonne National Laboratory, USA; <i>X. Fang</i> , Indiana University–Purdue University Indianapolis, USA; <i>R. Shevate</i> , <i>V. Rozyyev</i> , <i>A. Mane</i> , Applied Materials Division, Argonne National Laboratory, USA; <i>X. Wei</i> , Indiana University–Purdue University Indianapolis, USA; <i>Z. Xia</i> , Argonne Center for Molecular Engineering, Argonne National Laboratory, USA; <i>L. Zhang</i> , Chemical Science and Engineering Division, Argonne National Laboratory, USA; <i>S. Babinec</i> , Argonne Collaborative Center for Energy Storage Science (ACCESS), Argonne National Laboratory, USA; <i>S. Darling</i> , Argonne Center for Molecular Engineering, Argonne National Laboratory, USA; <i>J. Elam</i> , Applied Materials Division, Argonne National Laboratory, USA	
5:00pm	AA2-MoA-15 TiO ₂ ALD Thin Films Characterization for SiC Capacitor, <i>R. César</i> , <i>José Diniz</i> , University of Campinas - UNICAMP, Brazil	
5:15pm	AA2-MoA-16 ALD Can Enable Competitive, U.S.-Sourced Graphite Production, <i>Arrelaine Dameron</i> , <i>D. Higgs</i> , <i>B. Hughes</i> , Forge Nano, USA	
5:30pm	AA2-MoA-17 Plasma-Enhanced Atomic Layer Deposition of Nickel and Cobalt Phosphate for Lithium Ion Batteries, <i>Lowie Henderick</i> , <i>R. Blomme</i> , <i>J. Keukelier</i> , <i>M. Minjauw</i> , Ghent University, Belgium; <i>J. Meersschaut</i> , IMEC, Belgium; <i>J. Dendooven</i> , Ghent University, Belgium; <i>P. Vereecken</i> , IMEC, Belgium; <i>C. Detavernier</i> , Ghent University, Belgium	

ALD Fundamentals

Room Arteveldeforum & Pedro de Gante - Session AF-MoP

ALD Fundamentals Poster Session

5:45pm-7:30pm

AF-MoP-1 Unearthing Ruthenium Diazadienyls as Precursors for the ALD of Ru Thin Films: Precursor Assessment and ALD Process Development, **David Zanders**, J. Obenlueschloss, Ruhr University Bochum, Germany; M. Gock, Heraeus, Germany; A. Devi, Ruhr University Bochum, Germany

AF-MoP-2 Towards Greener ALD Processes: The Precursor Chemistry Is Key, **Matthieu Weber**, LMGP - Grenoble INP, France; O. Graniel, D. Muñoz-Rojas, LMGP - Grenoble INP, France; N. Boysen, A. Devi, Ruhr Universität Bochum, Germany

AF-MoP-3 An IR Spectroscopy Study of the Degradation of Surface Bound Azido-Groups in High Vacuum, **Sofie S. T. Vandenbroucke**, M. Nisula, R. Petit, Ghent University, Belgium; R. Vos, K. Jans, P. Vereecken, IMEC, Belgium; J. Dendooven, C. Detavernier, Ghent University, Belgium

AF-MoP-4 Nucleation of AlOx on ZrOx and ZrOx on AlOx studied by Low Energy Ion Scattering, **Jan Tröger**, Tascon GmbH, Germany; M. Näsi, T. Blomberg, Picosun Oy, Finland; R. ter Veen, Tascon GmbH, Germany

AF-MoP-5 Characteristics Evaluation of SiO₂ Thin Film Deposited by Organic vs Inorganic Precursor in ALD, **Jihyeok An**, I. Yang, S. Yoon, DUKSAN Techopia Co., Ltd, Korea (Republic of); I. Park, Hanyang University, Korea

AF-MoP-6 Microstructure and Electrical Properties of Conductive Nitride Films Grown by Plasma Enhanced Atomic Layer Deposition with Considerable Ion Bombardment, **I. Krylov**, Tower Semiconductor Ltd., Israel; **Valentina Korchnoy**, X. Xu, K. Weinfeld, E. Yalon, D. Ritter, M. Eizenberg, Technion - Israel Institute of Technology, Israel

AF-MoP-8 Simulation of Conformality of ALD Growth Inside Lateral Channels: Comparison between a Diffusion-Reaction Model and a Ballistic Model, **J. Velasco**, Jänis Järvihehto, J. Yim, E. Verkama, R. Puurunen, Aalto University, Finland

AF-MoP-10 Volatile Adducts of Cobalt and Nickel Halides, **Timo Hatanpää**, A. Vihervaara, M. Ritala, University of Helsinki, Finland

AF-MoP-12 On the Underestimation of the Low-Temperature Limit for ALD of MoO_x from Mo(CO)₆ Precursor, **Kees van der Zouw**, T. Aarnink, A. Kovalgin, University of Twente, Netherlands

AF-MoP-13 ZnO_{1-x}S_x Layer Growth and Composition by Thermal and Plasma ALD, **Stefanie Spiering**, D. Bagrowski, T. Magorian Friedlmeier, W. Hempel, T. Wohnhaas, J. Becker, Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (ZSW), Germany

AF-MoP-14 Effect of Precursors on Properties of Atomic Layer Deposited Cr-Ti-O Thin Films, **Mahtab Salari Mehr**, University of Tartu, Institute of Physics, Estonia; L. Aarik, University of Tartu, Institute of Physics, Estonia; T. Jõgiaas, A. Tarre, H. Mändar, University of Tartu, Institute of Physics, Estonia

AF-MoP-15 Ligand Exchange with a Novel Cyclic Alkyl Amido Plumblylene and Transition Metal Complexes, **Kieran Lawford**, G. Bačić, Carleton University, Canada; J. Masuda, St. Mary's University, Canada; S. Barry, Carleton University, Canada

AF-MoP-16 Diaminosilane Precursors for the Atomic Layer Deposition of Iron Metal, **Molly Alderman**, S. Barry, Carleton University, Canada

AF-MoP-18 Higher Effective Dielectric Constant of Hafnium Oxide When Grown with Hydrogen Peroxide Compared to Water Vapor, **Jeffrey Spiegelman**, RASIRC, USA; H. Kashyap, A. Kummel, University of California at San Diego, USA

AF-MoP-19 Atomic Layer Deposition of Low-resistivity Molybdenum Nitride Using F-free Mo Precursors and NH₃ Plasma, **Wangu Kang**, J. Ahn, J. Han, Seoul National University of Science and Technology, Korea (Republic of)

AF-MoP-20 Atomic Layer Deposition of Molybdenum Carbides for Advanced Metallization: The Influences of Mo Precursor and Post-Deposition Annealing, **Ji Sang Ahn**, W. Kang, J. Han, Seoul National University of Science and Technology, Korea (Republic of)

AF-MoP-21 ALD of Niobium Oxide (Nb₂O₅) and Niobium-Doped Titanium Oxide (Nb:TiO₂) for Solar Cell Applications, **Thomas Vincent**, D. Coutancier, P. Dally, IPVF (Institut Photovoltaïque d'Île-de-France), France; M. Bouttemy, M. Frégnaux, ILV (Institut Lavoisier de Versailles) - IPVF (Institut Photovoltaïque d'Île-de-France), France; N. Schneider, CNRS-IPVF, France

AF-MoP-22 Understanding the Grown Mechanism of Al₂O₃ Thin Films Using Plasma-Activated Deionized Water as Oxygen Source on Thermal ALD, **William Chiappini**, Aeronautical Institute of Technology, Brazil; J. Chaves, Aeronautical Institute of Technology, Brazil; B. Botão Neto, L. Gonçalves de Lima, M. Shiotani Marcondes, N. Galvão, A. da Silva Sobrinho, R. Sávio Pessoa, Aeronautical Institute of Technology, Brazil

AF-MoP-23 Atomic Layer Deposition of Titanium Phosphate onto Reinforcing Fibers Using Titanium Chloride, Water, and Tris-(Trimethylsilyl)-Phosphate as Precursor, **Pauline Dill**, X. Ren, H. Hintersatz, University of Technology Chemnitz, Germany; M. Franz, Fraunhofer Institute of Electronic Nano Systems ENAS, Germany; D. Dentel, C. Tegenkamp, S. Ebert, University of Technology Chemnitz, Germany

AF-MoP-24 Amorphous Carbon(a-C) Atomic Layer Deposition using CBr₄ Precursor, **Tae Hyun Kim**, M. Kim, S. Park, S. Chung, H. Kim, Yonsei University, Korea

AF-MoP-26 Study of Atomic Layer Deposition of ZrO₂ Thin Film using Newly Synthesized Precursor with Linked-Cp Ligand, **Hyemi Han**, S. Park, S. Na, S. Chung, H. Kim, Yonsei University, Korea (Republic of)

AF-MoP-27 Thermal Atomic Layer Deposition of In₂O₃ Thin Films Using a Homoleptic Indium Triazenide Precursor and Water, **Pamburayi Mpofu**, Linköping University, Sweden

AF-MoP-28 Nanoindentation of Amorphous Aluminium and Tantalum Oxide Nanolaminates, **Helle-Mai Piirsoo**, T. Jõgiaas, P. Ritslaid, K. Kukli, A. Tamm, University of Tartu, Institute of Physics, Estonia

AF-MoP-29 Experimental and ReaxFF MD Studies for Boron Nitride ALD Growth from BCl₃ and NH₃ Precursors, **Naoya Ueno**, T. Mabuchi, Tohoku University, Japan; M. Zaitzu, Japan Advanced Chemicals Ltd., Japan; Y. Jin, Japan Advanced Chemicals Ltd., Japan, China; S. Yasuhara, Japan Advanced Chemicals Ltd., Japan; A. van Duin, Pennsylvania State University, USA; T. Tokumasu, Tohoku University, Japan

AF-MoP-30 Enhancement of Graphene-Related and Substrate-Related Raman Modes Through Dielectric Layer Deposition, **Karolina Pietak**, Warsaw University of Technology Faculty of Chemistry, Poland; J. Jagiełło, A. Dobrowolski, University of Warsaw Faculty of Physics, Poland; R. Budzich, Warsaw University of Technology Faculty of Chemistry, Poland; A. Wysmolek, University of Warsaw Faculty of Physics, Poland; T. Ciuk, Łukasiewicz Research Network - Institute of Microelectronics and Photonics, Poland

AF-MoP-31 Interface Modification of Thermoelectric Materials with Oxide Compounds by Atomic Layer Deposition, **Shiyang He**, A. Bahrami, K. Nielsch, Leibniz-Institut für Festkörper- und Werkstoffforschung Dresden e.V., Germany

AF-MoP-32 Comparative Study of the Growth Characteristics and Electrical Properties for Atomic Layer Deposited HfO₂ Films Using Cp-Based Hf Precursors, **Seunggyu Na**, S. Park, H. Yoon, Yonsei University, Korea; Y. Lee, Stanford University, USA; S. Chung, H. Kim, Yonsei University, Korea

AF-MoP-33 Role of Ligand Coordination Sphere on the Physico-Chemical Properties of New Mn Precursors: Structural, Thermal and DFT Investigations, **Martin Wilken**, Ruhr-Universität Bochum, Germany; A. Muriqi, M. Nolan, Tyndall National Institute, University College Cork, Ireland; A. Devi, Ruhr Universität Bochum, Germany

AF-MoP-34 Surface Reactions During Nitrogen-Based Plasma Irradiation in Plasma-Enhanced Atomic Layer Deposition (PE-ALD) of Silicon Nitride, **A.Y. Jaber**, Center for Atomic and Molecular Technologies - Osaka University, Japan; M. Isobe, T. Ito, K. Karahashi, **Satoshi Hamaguchi**, Center for Atomic and Molecular Technologies, Osaka University, Japan

AF-MoP-35 Effects of Oxidant and Substrate on Film Properties and Interlayer Formation of Atomic Layer Deposited ZrO₂ Films, **Seonyeong Park**, S. Na, Yonsei University, Korea; Y. Lee, Stanford University, USA; S. Chung, H. Kim, Yonsei University, Korea

AF-MoP-36 Zinc Precursor Development for Future ALD Film Applications, **Atsushi Sakurai**, M. Hatase, M. Enzu, A. Yamashita, Y. Ooe, K. Takeda, R. Fukushima, ADEKA CORPORATION, Japan

AF-MoP-37 Conformal Deposition of B_xC Thin Films from Triethylboron, **Arun Haridas Choolakkal**, H. Högberg, J. Birch, H. Pedersen, Linköping University, Sweden

AF-MoP-38 Effect of Insulator-to-Metal Transition (Imt) in Vo₂ Deposited by ALD, **Aline Jolivet**, J. Cardin, C. Frilay, CIMAP Normandie Université, ENSICAEN, UNICAEN, CEA, CNRS, France; O. Debieu, CIRIMAT-INPT, France; P. Marie, S. Duprey, F. Lemaire, X. Portier, B. Horcholles, CIMAP Normandie Université, ENSICAEN, UNICAEN, CEA, CNRS, France; P. Bazin, LCS Normandie Université, ENSICAEN, France; J. More-Chevalier, Institute of Physics, Czech Academy of Sciences, Czechia; P. Fitl, Institute of Physics, Czech Academy of Sciences, Czechia; S. Cichoň, J. Lančák, Institute of Physics, Czech Academy of Sciences, Czechia; W. Jadwisieniczak, School of Electrical Engineering and Computer Science, Ohio University, USA; D. Ingram, Department of Physics and Astronomy, Ohio University, USA; C. Labbé, CIMAP Normandie Université, ENSICAEN, UNICAEN, CEA, CNRS, France

AF-MoP-39 New ALD Processes for Y₂O₃ Using Molecularly Engineered Yttrium Formamidinates, **S. Beer**, N. Boysen, **Marcel Schmickler**, Ruhr University Bochum, Germany; A. Muriqi, Tyndall National Institute, University College Cork, Ireland; D. Zanders, Ruhr University Bochum, Germany; M. Nolan, Tyndall National Institute, University College Cork, Ireland; A. Devi, Ruhr University Bochum, Germany

AF-MoP-40 Nb/V-Doped Transparent Conductive TiO₂ Films Synthesized by ALD: Effect of Dopant Content and Growing Conditions, *Getaneh Diress Gesesse*, CIMAP ENSICAEN, France; *O. Debieu*, CIRIMAT, Université de Toulouse, CNRS, Université Toulouse, France; *A. Jolivet*, *C. Frilay*, *S. Duprey*, *X. Portier*, *C. Dufour*, *P. Marie*, *C. Labbé*, CIMAP Normandie Université, ENSICAEN, UNICAEN, CEA, CNRS, France; *M. El-Roz*, Laboratoire Catalyse et Spectrochimie, CNRS, ENSICAEN, Université de Caen, France; *J. Cardin*, CIMAP Normandie Université, ENSICAEN, UNICAEN, CEA, CNRS, France

AF-MoP-44 Monte Carlo Simulation in a Laptop for Understanding Physical Interaction of Atomic Layer Deposition Precursors, *Bonwook Gu*, Incheon National University, Korea (Republic of); *N. Le*, *C. Nguyen*, Incheon National University, Viet Nam; *S. Yasmeen*, Incheon National University, Pakistan; *K. Youngho*, Incheon National University, Korea (Republic of); *H. Lee*, Incheon National University, Korea (Republic of)

AF-MoP-47 A New Low Temperature PEALD Process for HfO₂ Thin Films, *Florian Preischel*, *D. Zanders*, Ruhr University Bochum, Germany; *A. Kostka*, Ruhr University Bochum, Germany; *D. Rogalla*, *A. Devi*, Ruhr University Bochum, Germany

AF-MoP-49 PE-ALD of SiO₂ and Ti-doped SiO₂ in High Aspect Ratio Structures using Low Cost Precursors, *Véronique Cremers*, *G. Rampelberg*, *A. Werbrout*, *J. Dendooven*, *C. Detavernier*, Ghent University, Belgium

AF-MoP-50 Importance of XPS Investigations of ALD Grown 2D Materials, *Jhonatan Rodriguez Pereira*, *R. Zazpe*, *J. Macak*, University of Pardubice, Czechia

AF-MoP-51 Atomic Layer Deposition for Modification of Various 1D Nanomaterials, *Jan Macak*, *R. Zazpe*, *H. Sopha*, University of Pardubice, Czechia; *M. Rihova*, Brno University of Technology, Czechia; *L. Hromadka*, *S. Thalluri*, University of Pardubice, Czechia

AF-MoP-52 Atomic Layer Deposition of Cobalt(II) Fluoride Thin Films, *Elisa Atosuo*, *M. Mäntymäki*, *K. Mizohata*, *M. Chundak*, *M. Leskelä*, *M. Ritala*, University of Helsinki, Finland

AF-MoP-53 Mechanistic Aspects of the Indium Nitride Growth under Atomic Layer Deposition Conditions: A Multiscale Modelling Study, *Giane Damas*, IFM, Sweden; *K. Rönny*, Linköping University, IFM, Sweden; *H. Pedersen*, *L. Ojamäe*, Linköping University, Sweden

AF-MoP-54 Simple Nanoscale Thermal Techniques for the Measurement of ALD Grown Thin Films, *Thomas Pfeifer*, *S. Makarem*, *P. Hopkins*, University of Virginia, USA

AF-MoP-55 Investigation of Tris(trialkylsilyl)Phosphides in Atomic Layer Deposition, *Jaroslav Charvot*, University of Pardubice, Czechia; *M. Barr*, *J. Bachmann*, University of Erlangen-Nürnberg, Germany; *F. Bureš*, University of Pardubice, Czechia

AF-MoP-56 Plasma Enhanced Atomic Layer Deposition of Nickel Oxide from Nickelocene: Growth Characteristics and Photoelectrochemical Performance, *Shane O'Donnell*, *F. Jose*, *M. Snelgrove*, *C. McFeely*, *R. O'Connor*, Dublin City University, Ireland

AF-MoP-57 Computational Investigations of Precursor and Deposition Chemistry in ALD and AS-ALD, *Ralf Tonner-Zech*, Leipzig University, Germany

AF-MoP-59 The Impact of Oxygen Reactants on ALD InOx films using novel dimethyl[N¹-(tert-butyl)-N²,N²-dimethylethane-1,2-diamine]indium precursor, *S.-H. Ryu*, *T. Hong*, *Su-Hwan Choi*, Hanyang University, Korea; *J. Seok*, *J. Park*, Hansol Chemical, Korea (Republic of); *J. Park*, Hanyang University, Korea

AF-MoP-60 Development of an Innovative Method to Find New Efficient Gallium ALD Precursors, *P. Pavard*, CNRS-IPVF, France; *C. Gosmini*, LCM, École Polytechnique CNRS, France; *D. Lincot*, CNRS-IPVF, France; *V. Albin*, *V. Lair*, *A. Ringuède*, Chimie ParisTech, PSL University, CNRS, France; *A. Auffrant*, LCM, École Polytechnique CNRS, France; *Nathanaele Schneider*, CNRS-IPVF, France

AF-MoP-61 Detailed Characterization of Bis(tri-isopropylcyclopentadienyl)-strontium(Sr(iPr₃Cp)₂) for the Understanding of SrTiO₃ Atomic Layer Deposition, *Young Jae Park*, Samsung Advanced Institute of Technology, Korea (Republic of); *J. Park*, Korea Research Institute of Standards and Science, Korea (Republic of); *J. Han*, *J. Lim*, *B. Choi*, Samsung Advanced Institute of Technology, Korea (Republic of); *S. Kang*, Korea Research Institute of Standards and Science, Korea (Republic of); *C. Baik*, Samsung Advanced Institute of Technology, Korea (Republic of)

AF-MoP-62 New Potential Synthesis Route of Molybdenum Nitride Nanosheets by Nitriding Molybdenum Disulphide Deposited by Atomic Layer Deposition (ALD), *Julien Patouillard*, SIMAP, Grenoble-INP, CNRS, France

AF-MoP-64 ALD Process Monitoring and Optimisation by Self-Plasma OES, *Mantas Drazdys*, Centre for Physical Sciences and Technology, Lithuania; *D. Astrauskyė*, Center for Physical Sciences and Technology, Lithuania; *R. Drazdys*, Center for Physical Sciences and Technology, Lithuania; *M. Audronis*, Nova Fabrika Ltd., Lithuania

AF-MoP-65 Growth of Boron Nitride by Atomic Layer Deposition Using the in-Situ Decomposition of Ammonium Carbamate, *Ana Álvarez-Yenes*, *M. Knez*, CIC nanoGUNE, Spain

AF-MoP-66 Modelling Atomic Layer Deposition of Noble Metals, *Sylwia Klejna*, AGH University of Science and Technology, Academic Centre for Materials and Nanotechnology, Poland

AF-MoP-67 Effect of the N-Source on the Growth and Quality of Pe-ALD Tin Thin Films, *Clémence Badie*, Aix-Marseille University, France; *M. Barr*, *J. Bachmann*, Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Germany; *T. Defforge*, *G. Gautier*, GREMAN, CNRS, Univ. Tours, France; *L. Santinacci*, Aix-Marseille University, France

AF-MoP-68 Silicon Nitride Grown by VHF (162 MHz) Plasma Enhanced Atomic Layer Deposition With Floating Multi-Tile Electrodes Using Di(isopropylamino)Silane and N₂ Plasma, *You Jin Ji*, *H. Kim*, *K. Kim*, *J. Kang*, *D. Kim*, Sungkyunkwan University (SKKU), Korea (Republic of); *K. Kim*, Massachusetts Institute of Technology, Korea (Republic of); *D. Kim*, Sungkyunkwan University (SKKU), Korea (Republic of); *A. Ellingboe*, Dublin City University, Ireland; *G. Yeom*, Sungkyunkwan University (SKKU), Korea (Republic of)

AF-MoP-69 Computational Fluid Dynamics Study of ALD Processes: Benchmarking and Validation, *Gizem Ersavas Isitman*, *D. Izbassarov*, *R. L. Puurunen*, *V. Vuorinen*, Aalto University, Finland

AF-MoP-70 Feature-Scale Conformality of Atomic Layer Deposition from Continuum to Free Molecular Flow: How Knudsen Number Influences Thickness Profile Characteristics, *J. Velasco*, *Christine Gonsalves*, *G. Ersavas Isitman*, *J. Yim*, *E. Verkama*, *D. Izbassarov*, *V. Vuorinen*, *R. Puurunen*, Aalto University, Finland

AF-MoP-71 Nucleation Studies of Copper ALD on SiO₂ and Si₃N₄, *Krzysztof Mackosz*, Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland; *A. Szkudlarek*, AGH University of Science and Technology, Academic Centre for Materials and Nanotechnology, Poland; *I. Utke*, Empa - Swiss Federal Laboratories for Materials Science and Technology, Switzerland

AF-MoP-72 Photocatalytic Degradation of Harmful Pollutants to Improve Indoor and Outdoor Air Quality, *Tobias Graumann*, *S. Plegier*, *C. Jacobs*, *C. Beyer*, *V. Sittiger*, Fraunhofer Institute for Surface Engineering and Thin Films IST, Germany

AF-MoP-73 High Vacuum Chemical Vapour Deposition: High Growth Rate ALD-Like Film Synthesis and Epitaxial CVD for Integrated Photonics, *Wojciech Szmyt*, *J. Geler-Kremer*, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; *S. Abel*, Lumiphase AG, Switzerland; *J. Fompeyrine*, Lumiphase, AG, Switzerland; *P. Hoffmann*, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland

Room Arteveldeforum & Pedro de Gante - Session EM-MoP Emerging Materials Poster Session 5:45pm-7:30pm

EM-MoP-2 Calcium and Vanadium Mixed Oxides With ALD, *Fabian Krahl*, *K. Nielsch*, Leibniz Institute for Solid State and Materials Research Dresden, Germany

EM-MoP-3 Atomic Layer Deposition of Highly Pure Metals for Memory Devices Preparation, *Haojie Zhang*, *B. Kalkofen*, *S. Parkin*, Max Planck Institute of Microstructure Physics, Germany

EM-MoP-4 Liquid Atomic Layer Deposition of Cu₂(Bdc)₂ (Dabco) Through 3D-Printed Microfluidic Chips, *Octavio Graniel*, *D. Muñoz-Rojas*, University Grenoble Alpes, CNRS, Grenoble INP, LMGP, France; *J. Puigmartí-Luis*, Departament de Ciència dels Materials i Química Física, Institut de Química Teòrica i Computacional, ICREA, Catalan Institution for Research and Advanced Studies, Spain

EM-MoP-13 ALD of Sulfide- and Selenide-Based Layered 2D Materials, *Samik Mukherjee*, *K. Nielsch*, Leibniz IFW Dresden, Germany

EM-MoP-14 Plasma Enhanced Atomic Layer Deposition of Scandium Nitride, *Thomas Larrabee*, *G. Rayner*, Kurt J. Lesker Company, USA; *N. Strnad*, U.S. Army Research Laboratory, USA; *N. O'Toole*, Kurt J. Lesker Company, USA

EM-MoP-15 Yttrium Fluoride Coatings, *Carlo Waldfried*, Entegris, Inc., USA

Hybrid Materials & Infiltration

Room Arteveldeforum & Pedro de Gante - Session

HM+EM+NS-MoP

Hybrid Materials & Infiltration Poster Session

5:45pm-7:30pm

HM+EM+NS-MoP-2 First Principles Modelling of Growth of Hybrid Organic-Inorganic Films, **Arbresha Muriqi**, *M. Nolan*, Tyndall National Institute, University College Cork, Ireland

HM+EM+NS-MoP-3 Hybrid Organic-Inorganic Isoporous Membranes with Tunable Pore Sizes and Functionalities for Molecular Separation, *Z. Zhang*, Helmholtz-Zentrum hereon GmbH, Germany; **Assaf Simon**, *T. Segal-Peretz*, Technion IIT, Israel; *V. Abetz*, Helmholtz-Zentrum hereon GmbH, Germany

HM+EM+NS-MoP-4 Surface Functionalization of Porous Carbon Fibers by Vapor-Phase Methods for CO₂ Capture, **Stephan Prünfte**, Eindhoven University of Technology, Netherlands; *G. van Straaten*, *D. van Eyck*, *J. van Dijk*, *H. de Neve*, Carbyon, Netherlands; *M. Creatore*, Eindhoven University of Technology, Netherlands

HM+EM+NS-MoP-5 Mechanical Behavior of Hybrid Organic-Inorganic Thin Films Fabricated by Sequential Infiltration Synthesis (SIS), **Shachar Keren**, *T. Segal-Peretz*, *N. Cohen*, Technion, Israel

HM+EM+NS-MoP-6 Plasma Enhanced-MLD Processes of Phosphorus-Containing Thin Films, **Justin Lomax**, University of Western Ontario, Canada; *E. Goodwin*, *P. Gordon*, Carleton University, Canada; *C. McGuinness*, Solvay, Canada; *S. Barry*, Carleton University, Canada; *C. Crudden*, Queen's University, Canada; *P. Ragogna*, University of Western Ontario, Canada

HM+EM+NS-MoP-7 Al₂O₃ Dot and Antidot Arrays Fabricated by Sequential Infiltration Synthesis in Hexagonally Packed PS-*b*-PMMA Block Copolymer Thin Films, **Gabriele Seguíni**, *A. Motta*, *M. Bigatti*, *F. Caligiore*, CNR, Italy; *G. Rademaker*, *A. Gharbi*, *R. Tiron*, CEA/LETI-University Grenoble Alpes, France; *G. Tallarida*, *E. Cianci*, *M. Perego*, CNR, Italy

HM+EM+NS-MoP-8 Flexible and Conductive Zinc oxide – Zincone Nanolaminated Thin Films Deposited using Atomic and Molecular Layer Depositions, **Seung Hak Song**, *B. Choi*, Korea University, Korea (Republic of)

HM+EM+NS-MoP-9 Understanding of Polymer-Precursor Interactions during Sequential Infiltration Synthesis of Al₂O₃ in Polybutylene Succinate Films, **Alessia Motta**, *G. Seguíni*, *C. Wiemer*, IMM-CNR, Italy; *R. Consonni*, *A. Boccia*, SCITEC-CNR, Italy; *G. Ambrosio*, *C. Baratto*, INO-CNR, Italy; *P. Cerruti*, IPCB-CNR, Italy; *S. Tagliabue*, Corapack srl., Italy; *M. Perego*, IMM-CNR, Italy

HM+EM+NS-MoP-10 On the Development and Atomic Structure of ZnO Nanoparticles Grown within Polymers using Sequential Infiltration Synthesis, **Inbal Weisbord**, *M. Barzilay*, Chemical Engineering Department, Technion, Israel; *A. Kuzmin*, *A. Anspoks*, Institute of Solid State Physics, University of Latvia; *T. Segal-Peretz*, Chemical Engineering Department, Technion, Israel

HM+EM+NS-MoP-11 Fabrication of Hafnium Oxide Nanostructures Using Block Copolymer Matrices via Sequential Infiltration Synthesis, **Przemyslaw Pula**, University of Warsaw, Poland

HM+EM+NS-MoP-12 ZIF-based Metal-Organic Frameworks for Cantilever Gas Sensors, **Masoud Akbari**, *C. Crivello*, *O. Graniel*, Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP, France; *M. Defort*, *S. Basrour*, Univ. Grenoble Alpes, CNRS, Grenoble INP, TIMA, France; *K. Musselman*, Department of Mechanical and Mechatronics Engineering, University of Waterloo, Canada; *D. Muñoz-Rojas*, Univ. Grenoble Alpes, CNRS, Grenoble INP, LMGP, France

HM+EM+NS-MoP-13 Tuning the Thermal Properties of Molecular Layer-Deposited Hybrid Metalcone Films via Modulating Metal Mass, *M. Hoque*, University of Virginia, USA; *R. Nye*, North Carolina State University, USA; *J. Tomko*, University of Virginia, USA; *G. Parsons*, North Carolina State University, USA; **Patrick Hopkins**, University of Virginia, USA

HM+EM+NS-MoP-14 Analysis of Rearranged Organic/Inorganic Hybrid 2D Tincone Film via Molecular Layer Deposition, *G.H. Baek*, *S. Lee*, **Hye-Mi Kim**, *S. Choi*, *J. Park*, Hanyang University, Korea

HM-MoP-15 Molecular Layer Deposition (MLD) of Polyamide 6,4, **Marina Borraz Casanova**, CIC nanoGUNE, Spain

Nanostructure Synthesis and Fabrication

Room Arteveldeforum & Pedro de Gante - Session NS-MoP

Nanostructures Synthesis and Fabrication Poster Session

5:45pm-7:30pm

NS-MoP-1 Atmospheric Pressure ALD to Increase Organic Solvent Resistance of PDMS, **Albert Santoso**, *A. Damen*, *S. Khedoe*, *V. van Steijn*, *R. van Ommen*, Delft University of Technology, Netherlands

NS-MoP-2 The Fabrication of Heterojunctions by Atomic Layer Deposition for Gas Sensing Application, *M.H. Raza*, **Nicola Pinna**, Humboldt-Universität zu Berlin, Germany

NS-MoP-4 Combining Initiated Chemical Vapor Deposition and Plasma-Enhanced Atomic Layer Deposition: A Study of Initial Growth and Interface Formation, **Lisanne Demelius**, *K. Unger*, *A. Coclite*, Graz University of Technology, Austria

NS-MoP-11 Synthesis of Novel Composite Thin Film Systems With Outstanding Mechanical Properties, *L. Pethö*, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; *C. Guerra*, Swiss Cluster, Switzerland; *T. Xie*, *T. Edwards*, *J. Michler*, *X. Maeder*, **Ivo Utke**, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland

Tuesday Morning, June 28, 2022

Plenary Session II Room Auditorium - Session PS-TuM1 Moderators: Jean-François de Marneffe, IMEC, Belgium, Erwin Kessels, Eindhoven University of Technology, Netherlands, Harm C.M. Knoops, Oxford Instruments Plasma Technology, Netherlands	
8:30am	Welcome, Introductions and Sponsor Thank Yous
8:45am	INVITED: PS-TuM1-2 Plenary Lecture: Atomic Layer Etching: Real World Utilization and Future Outlook, Angélique Raley , Tokyo Electron America, Inc., USA; <i>H. Masanobu</i> , Tokyo Electron Miyagi, Ltd., Japan; <i>M. Hiromasa</i> , Tokyo Electron Miyagi Ltd., Japan; <i>T. Nishizuka</i> , Tokyo Electron Miyagi, Ltd., Japan; <i>P. Abel</i> , <i>J. Bannister</i> , Tokyo Electron America, Inc., USA; <i>P. Biolsi</i> , TEL Technology Center, America, LLC, USA; <i>A. Ranjan</i> , <i>O. Zandi</i> , Tokyo Electron America, Inc., USA; <i>K. Subhadeep</i> , TEL Technology Center, America, LLC, USA; <i>T. Hurd</i> , <i>Q. Wang</i> , <i>C. Netzband</i> , <i>S. Voronin</i> , <i>S. Arkalgud</i> , Tokyo Electron America, Inc., USA
9:30am	INVITED: PS-TuM1-5 ALD 2021 Innovator Awardee Talk: Up, Down and All Around: Controlling Atomic Placement in ALD, Stacey Bent , Stanford University, USA
10:00am	PS-TuM1-7 ALE Student Award Finalist Talk: Direct Integration of HfO ₂ ALD and Surface Selective ALE for Controlled HfO ₂ Film Growth, Landon Keller , <i>S. Song</i> , <i>G. Parsons</i> , North Carolina State University, USA
10:15am	PS-TuM1-8 ALE Student Award Finalist Talk: First-principles Insight into Non-equilibrium Chemistry in PEALE of Silicon Nitride with Hydrofluorocarbons, Erik Cheng , <i>G. Hwang</i> , University of Texas at Austin, USA; <i>P. Ventzek</i> , <i>Z. Chen</i> , <i>S. Sridhar</i> , <i>A. Ranjan</i> , Tokyo Electron America
10:30am	BREAK & EXHIBITS

Tuesday Morning, June 28, 2022

ALD Applications Room Auditorium - Session AA1-TuM2 ALD for Medical Applications Moderators: Mato Knez, CIC nanoGUNE, Spain,		ALD Applications Room Van Rysselberghe - Session AA2-TuM2 ALD for FEOL Moderators: Cheol Seong Hwang, Seoul National Univ., Korea (Republic of), Jonas Sundqvist, BALD Engineering AB, Sweden	
10:45am		INVITED: AA2-TuM2-1 High ALD Equipment and Precursor Demand and 5-Year Forecast Due to Continued Semiconductor Device Scaling and Fab Expansions, <i>Jonas Sundqvist</i> , Stockholm, Sweden	
11:00am	AA1-TuM2-2 Plasma-assisted ALD of IrO ₂ for Neuroelectronic Applications, <i>Valerio Di Palma</i> , A. Pianalto, University of Milano Bicocca, Department of Materials Science, Italy; <i>M. Perego</i> , G. Tallarida, CNR-IMM, Unit of Agrate Brianza, Italy; <i>M. Fanciulli</i> , University of Milano Bicocca, Department of Materials Science. CNR-IMM, Unit of Agrate Brianza, Italy		
11:15am	AA1-TuM2-3 Atomic Layer Deposition (ALD) on 5-Aminosalicylic Acid for Delayed and Targeted Drug Release Treatment of Inflammatory Bowel Disease, <i>Jaynlynn Sosa</i> , University of Central Florida, USA; <i>P. Banerjee</i> , University of Central Florida, USA		AA2-TuM2-3 High-k Gate Dielectrics for SCAIN Barrier HEMT Structures, <i>Neeraj Nepal</i> , V. Wheeler, U.S. Naval Research Laboratory, USA; <i>B P. Downey</i> , U.S. Army Research Laboratory, USA; <i>M.J. Hardy</i> , D. Meyer, U.S. Naval Research Laboratory, USA
11:30am	INVITED: AA1-TuM2-4 Atomic Layer Deposition Enables Dimensionless, Biocompatible Encasings for Medical Implants Pro-Longing Their Lifetime, <i>Juhani Taskinen</i> , R. Ritasalo, M. Pudas, T. Blomberg, M. Matvejeff, Picosun Oy, Finland		AA2-TuM2-4 Ultra-thin High-κ Dielectrics Growth by ALD on MoS ₂ , <i>Emanuela Schilirò</i> , R. Lo Nigro, CNR-IMM, Italy; <i>S. Panasci</i> , CNR-IMM, Department of Physics-University of Catania, Italy; <i>A. Mio</i> , CNR-IMM, Italy; <i>S. Agnello</i> , F. Gelardi, Department of Physics and Chemistry, University of Palermo, Italy; <i>F. Roccaforte</i> , F. Giannazzo, CNR-IMM, Italy
11:45am			AA2-TuM2-5 Fabrication of a MOSFET Based on ZnO Using an Atomic Layer 3D-printer, <i>Sonja Stefanovic</i> , N. Gheshlaghi, Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Germany; <i>I. Kundrata</i> , Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Dominica; <i>D. Zanders</i> , Ruhr Universität Bochum, Germany; <i>J. Bachmann</i> , Friedrich-Alexander-University Erlangen-Nürnberg (FAU), Germany

Tuesday Morning, June 28, 2022

ALD Fundamentals Room Van Eyck - Session AF-TuM2 Simulation, Modeling, and Theory of ALD II Moderators: Simon Elliot, Schrödinger, Inc., USA, Michael Nolan, University College Cork, Ireland		Atomic Layer Etching Room Baekeland - Session ALE-TuM2 Atomic Layer Cleaning (ALC), ALE Integrated with ALD, and Alternative ALE Approaches Moderators: Jessica Murdzek, Univ. of Colorado Boulder, USA, Fred Roozeboom, University of Twente & LionVolt B.V., Netherlands
10:45am	INVITED: AF-TuM2-1 Theoretical Understanding on the Chemical Principles of Atomic Layer Deposition, Bonggeun Shong , Hongik University, Korea (Republic of)	INVITED: ALE-TuM2-1 Atomic Layer Processing Approach for Achieving Abrupt Epitaxial Interfaces on AlN, Virginia Wheeler , D. Boris, A. Lang, G. Jernigan, N. Nepal, S. Walton, Naval Research Laboratory, USA
11:15am	AF-TuM2-3 A Study of Area-Selective TiO ₂ Deposition Using First Principles Based Thermodynamic Simulations, Yukio Kaneda , Sony Semiconductor Solutions Corporation, Belgium; E. Marques , Katholieke Universiteit Leuven, Belgium; S. Armini , A. Delabie, M. Setten, G. Pourtois, IMEC, Belgium	ALE-TuM2-3 Surface Modification for Atomic Layer Etching of TiAlC Using Floating Wire-Assisted Liquid Vapor Plasma at Medium Pressure, Thi-Thuy-Nga Nguyen , Nagoya University, Japan; K. Shinoda , H. Hamamura, Hitachi, Japan; K. Maeda , K. Yokogawa, M. Izawa, Hitachi High-Tech, Japan; K. Ishikawa , M. Hori, Nagoya University, Japan
11:30am	AF-TuM2-4 Chemistry of Plasma Enhanced Atomic Layer Deposition of Co using CoCp ₂ and Nitrogen/Hydrogen Plasma, Ji Liu , M. Nolan, Tyndall National Institute, University College Cork, Ireland	
11:45am	AF-TuM2-5 Adsorption Mechanics of Trimethyl Metal Precursors on AlN, GaN and InN, Karl Rönneby , H. Pedersen, L. Ojamäe, Linköping University, Sweden	

Tuesday Afternoon, June 28, 2022

Room Auditorium		
1:30pm	AM1-TuA-1 Atomic Layer Deposition Equipment Used in Industrial Production of More Than Moore Devices, <i>Taguhi Yeghoyan</i> , Yole Développement, France	ALD for Manufacturing Session AM1-TuA ALD for Manufacturing I Moderators: Hardik Jain, TNO/Holst Center, Netherlands, Maksym Plakhotnyuk, ATLANT 3D Nanosystems , USA
1:45pm	AM1-TuA-2 Spatial ALD on Large-Area Porous Substrates: How to Avoid Supply Limitation and Maximize Precursor Efficiency?, <i>Paul Poedt</i> , SALDtech B.V., Netherlands	
2:00pm	AM1-TuA-3 Atmospheric-Pressure Plasma-Assisted Spatial Atomic Layer Deposition of Silicon Nitride, <i>Jie Shen</i> , TNO-Holst Centre, Netherlands; <i>F. Roozeboom</i> , University of Twente, Netherlands; <i>A. Mameli</i> , TNO-Holst Centre, Netherlands	
2:15pm	AM1-TuA-4 Production-Suitable 200 Mm Batch ALD/MLD Thin Film Encapsulation Toward Flexible OLED Manufacturing, <i>Jesse Kalliomäki</i> , <i>E. Rimpilä</i> , <i>R. Ritasalo</i> , <i>T. Sarnet</i> , Picosun Oy, Finland	
2:30 pm	AM1-TuA-5 Roll-to-Roll ALD Coatings for Battery Cell Interfaces at Production Scale, <i>Andrew Cook</i> , Beneq, Finland	
2:45pm	AM1-TuA-6 An Innovative Method for in Situ Calorimetry of ALD/ALE Surface Reactions, <i>Anil Mane</i> , <i>J. Elam</i> , Argonne National Laboratory, USA	
3:00pm		
3:15pm		
3:30pm	BREAK & EXHIBITS	
4:00pm	AM2-TuA-11 High-Throughput Nanocoating Technology for Energy Applications, <i>Dmitrii Osadchii</i> , Delft IMP B.V., Netherlands	ALD for Manufacturing Session AM2-TuA ALD for Manufacturing II Moderator: Ruud van Ommen, Delft University of Technology, Netherlands
4:15pm	AM2-TuA-12 Optimizing Vapor Delivery of Transition-Metal Diazadienyl Complexes for ALD Processes, <i>James Maslar</i> , <i>B. Kalanyan</i> , NIST-Gaithersburg, USA; <i>V. Dwivedi</i> , NASA Goddard Space Flight Center, USA; <i>D. Moser</i> , Merck KGaA, Darmstadt, Germany	
4:30pm	INVITED: AM2-TuA-13 Inherently Selective Atomic Layer Process based on spatial micronozzles: microreactor Selective Area Direct Atomic Processing (μ SADALP), <i>Maksym Plakhotnyuk</i> , ATLANT 3D Nanosystems, Denmark; <i>I. Kundrata</i> , ATLANT 3D Nanosystems, Germany; <i>J. Bachmann</i> , Friedrich-Alexander-University Erlangen-Nürnberg (FAU), ATLANT 3D Nanosystems, Germany	
4:45pm		
5:00pm	AM2-TuA-15 Atomic Layer Rastering, <i>Ivan Kundrata</i> , ATLANT 3D Nanosystems ApS, Slovakia	
5:15pm	AM2-TuA-16 Maskless Localized Atomic Layer Deposition: Surface Structuration and Functionalization, <i>L. Midani</i> , <i>W. Ben-Yahia</i> , <i>V. Salles</i> , Université Lyon 1, France; <i>Catherine Marichy</i> , CNRS-LMI, France	
5:30pm	AM2-TuA-17 New Spatial ALD/CVD Approaches for Area-Selective Deposition, <i>David Muñoz-Rojas</i> , CNRS-LMGP, Université Grenoble Alpes, France; <i>C. Masse de la Huerta</i> , LMGP, France; <i>V. Nguyen</i> , phenikaa University, Viet Nam; <i>A. Sekkat</i> , <i>C. Crivello</i> , <i>F. Toldrà-Reig</i> , <i>C. Jimenez</i> , <i>O. Graniel</i> , <i>M. Dibenedetto</i> , LMGP, France	

Tuesday Afternoon, June 28, 2022

Room Baekeland		
1:30pm	INVITED: ALE1-TuA-1 Surface Reaction Mechanisms by Metal-Organic Compound Formations in Atomic Layer Etching Processes, <i>T. Ito</i> , Osaka University, Japan; <i>A. Basher</i> , King Abdullah University of Science and Technology, Saudi Arabia; <i>K. Karahashi</i> , Satoshi Hamaguchi , Osaka University, Japan	Atomic Layer Etching Session ALE1-TuA In situ Studies, Mechanisms and Modeling of ALE Moderators: Sumit Agarwal, Colorado School of Mines, USA, Dmitry Suyatin, Lund University, Sweden
2:00pm	ALE1-TuA-3 Atomic Layer Etching of Al ₂ O ₃ on Metallic Substrates Using <i>in situ</i> Auger Electron Spectroscopy, Andrew Cavanagh , <i>S. George</i> , University of Colorado at Boulder, USA	
2:15pm	ALE1-TuA-4 In-situ Optical Emission Spectroscopy as a Tool to Characterize Cyclic Quasi-Atomic Layer Etching, Yoana Ilarionova , Lund University, Sweden; <i>M. Karimi</i> , AlixLabs, Sweden; <i>D. Lishan</i> , <i>D. Geerpuram</i> , Plasma-Therm LLC, USA; <i>R. Jafari Jam</i> , <i>D. Suyatin</i> , <i>J. Sundqvist</i> , AlixLabs, Sweden; <i>I. Maximov</i> , Lund University, Sweden	
2:30pm	ALE1-TuA-5 Atomic Layer Etching of CAR/SOG in EUV Patterning of 300 Mm Wafers - Selectivity and Roughness Mechanisms, Francois Loyer , <i>P. Bezard</i> , <i>R. Blanc</i> , <i>F. Lazzarino</i> , <i>S. De Gendt</i> , IMEC, Belgium	
2:45pm	ALE1-TuA-6 Ab Initio Calculations on the Thermal Atomic Layer Etching of Copper, Xiao Hu , <i>J. Schuster</i> , Chemnitz University of Technology, Fraunhofer Institute for Electronic Nano Systems, Center for Materials, Architectures and Integration of Nanomembranes (MAIN), Research Fab Microelectronics Germany., Germany	
3:00pm	ALE1-TuA-7 Damage Formation in the Underlying Silicon after the Removal of Silicon Nitride by Atomic Layer Etching: A Molecular Dynamics Study, Jomar Tercero , Osaka University, Japan; <i>A. Hirata</i> , Sony Semiconductor Solutions Corporation, Japan; <i>M. Isobe</i> , <i>K. Karahashi</i> , Osaka University, Japan; <i>M. Fukasawa</i> , Sony Semiconductor Solutions Corporation, Japan; <i>S. Hamaguchi</i> , Osaka University, Japan	
3:15pm		
3:30pm	BREAK & EXHIBITS	Atomic Layer Etching Session ALE2-TuA Plasma and/or Anisotropic ALE II Moderators: Ankur Agarwal, KLA-Tencor, USA,
4:00pm	INVITED: ALE2-TuA-11 Plasma Processes for Isotropic and Anisotropic Atomic Layer Etching, Adrie Mackus , Eindhoven University of Technology, Netherlands	
4:30pm	ALE2-TuA-13 SF ₆ and Ar Plasma Based Atomic Layer Etching of Gallium Nitride (GaN), Lamia Hamraoui , <i>T. Tillocher</i> , <i>P. Lefauchaux</i> , GREMI CNRS/Université d'Orléans, France; <i>M. Boufnichel</i> , STMicroelectronics Tours, France; <i>R. Dussart</i> , gremi CNRS/Université d'Orléans, France	
4:45pm	ALE2-TuA-14 SF ₆ Physisorption based Cryo-ALE of Silicon, Jack Nos , <i>G. Antoun</i> , <i>T. Tillocher</i> , <i>P. Lefauchaux</i> , GREMI CNRS/Université d'Orléans, France; <i>A. Girard</i> , <i>C. Cardinaud</i> , IMN CNRS/Université de Nantes, France; <i>R. Dussart</i> , GREMI CNRS/Université d'Orléans, France	
5:00pm	ALE2-TuA-15 Precision and Repeatability of ALE Process in AlGaN/GaN Layer by in-Situ Etch Depth Monitoring, Sungjin Cho , Oxford Instruments Plasma Technology, UK; <i>M. Loveday</i> , 1Oxford Instruments Plasma Technology, UK; <i>A. Newton</i> , Oxford Instruments Plasma Technology, UK; <i>D. Cornwell</i> , <i>M. Binetti</i> , <i>T. Zettler</i> , Laytec AG, Germany	
5:15pm	ALE2-TuA-16 Investigation of Self-Limiting Sputtering of Fluorinated Al ₂ O ₃ and HfO ₂ : Where's the Limit?, Nicholas Chittock , <i>W. Hoek</i> , <i>S. Balasubramanyam</i> , Eindhoven University of Technology, The Netherlands; <i>J. Escandon Lopez</i> , <i>K. Buskes</i> , ProDrive Technologies, Netherlands; <i>H. Knoops</i> , Oxford Instruments Plasma Technology, UK; <i>E. Kessels</i> , <i>A. Mackus</i> , Eindhoven University of Technology, The Netherlands	
5:30pm	ALE2-TuA-17 Isotropic Plasma ALE of Al ₂ O ₃ using F-based Plasma and AIMes: Key Parameters, Upscaling and Applications, <i>Y. Shu</i> , Oxford Instruments Plasma Technology, UK; <i>N. Chittock</i> , <i>E. Kessels</i> , <i>A. Mackus</i> , Eindhoven University of Technology, Netherlands; <i>A. O'Mahony</i> , Oxford Instruments Plasma Technology, UK; Harm Knoops , Oxford Instruments Plasma Technology, Netherlands	

Tuesday Afternoon, June 28, 2022

Room Van Eyck		
1:30pm	AF1-TuA-1 Reaction Mechanisms of ALD of Transition Metal Oxides from Metal Amido Complexes and Water, <i>Giulio D'Acunto, R. Timm, J. Schnadt</i> , Lund University, Sweden	ALD Fundamentals Session AF1-TuA Characterization I Moderators: Jan-Willem Clerix, Imec, Belgium, Aile Tamm, University of Tartu, Estonia
1:45pm	AF1-TuA-2 An <i>in-Vacuo</i> X-Ray Photoelectron Spectroscopy Study of the Reaction of Trimethylaluminum With Water, Oxygen and Argon Plasma for Low Temperature Atomic Layer Deposition, <i>L. Cao, Jin Li, M. Minjaaw, J. Dendooven, C. Detavernier</i> , Department of Solid State Sciences, Ghent University, Belgium	
2:00pm	AF1-TuA-3 <i>In Vacuo</i> Cluster Tool for Studying Reaction Mechanisms in ALD and ALE Processes, <i>Heta-Elisa Nieminen, M. Chundak, M. Putkonen, M. Ritala</i> , University of Helsinki, Finland	
2:15pm	AF1-TuA-4 Watching the ALD of Pt Films in Real-Time, <i>Esko Kokkonen</i> , Max IV Laboratory, Sweden; <i>M. Kaipio, H. Nieminen</i> , University of Helsinki, Finland; <i>F. Rehman</i> , Lund University, Sweden; <i>V. Miikkulainen</i> , Aalto University, Finland; <i>M. Putkonen, M. Ritala, S. Huotari</i> , University of Helsinki, Finland; <i>J. Schnadt</i> , Lund University, Sweden; <i>S. Urpelainen</i> , University of Oulu, Finland	
2:30pm	AF1-TuA-5 In Situ X-Ray Studies of Lamellar Dichalcogenides Prepared by Molecular Layer Deposition and Thermal Annealing, <i>Petros Abi Younes</i> , CEA/LETI-University Grenoble Alpes, France; <i>E. Skopin</i> , LTM - MINATEC - CEA/LETI, France; <i>M. Zhukush, C. Camp</i> , Univ. Lyon, CNRS-UCB Lyon 1, France; <i>N. Aubert, G. Ciatto</i> , Synchrotron SOLEIL Beamline SIRIUS, France; <i>N. Schneider</i> , UMR-IPVF, CNRS, France; <i>M. Richard</i> , ESRF, France; <i>N. Gauthier</i> , CEA/LETI-University Grenoble Alpes, France; <i>E. Quadrelli</i> , Univ. Lyon, CNRS, France; <i>D. Rouchon</i> , CEA/LETI-University Grenoble Alpes, France; <i>H. Renevier</i> , Laboratoire des Matériaux et du Génie Physique, France	
2:45pm	AF1-TuA-6 Effect of O ₂ Plasma Exposure Time During Atomic Layer Deposition of Amorphous Gallium Oxide, <i>Florian Maudet</i> , Helmholtz Zentrum Berlin, Germany; <i>H. Kröncke, S. Banerjee, K. Nair, C. Van Dijk</i> , Helmholtz-Zentrum Berlin, Germany; <i>S. Wiesner, J. Albert, V. Deshpande</i> , Helmholtz Zentrum Berlin, Germany; <i>C. Dubourdieu</i> , Helmholtz-	
3:00pm	INVITED: AF1-TuA-7 Pyroelectric Calorimetry: Measuring the Time-Resolved Heat of ALD Half Reactions, <i>Ashley R. Bielinski, A. Martinson</i> , Argonne National Laboratory, USA	ALD Fundamentals Session AF2-TuA Characterization II Moderators: Bart Macco, Eindhoven University of Technology, Netherlands, Juan Santo-Domingo Peñaranda, Ghent University, Belgium
3:30pm	BREAK & EXHIBITS	
4:00pm	INVITED: AF2-TuA-11 Get the Full Picture: Full-Range Time-Resolved In Situ Mass Spectrometry During ALD, <i>Andreas Werbrouck, J. Dendooven, C. Detavernier</i> , Ghent University, Belgium	
4:30pm	AF2-TuA-13 Strategies to Produce Boron-Containing ALD Thin Films Using Trimethyl Borate Precursor: From Thermal to Plasma to Combined-Plasma Approach, <i>Arpan Dhara, A. Werbrouck, J. Li, J. Dendooven, C. Detavernier</i> , Ghent University, Belgium	
4:45pm	AF2-TuA-14 Examining Large Grain Growth and Low Temperature Crystallization Kinetics for TiO ₂ Thin Films Prepared by Atomic Layer Deposition (ALD), <i>Jamie Wooding, K. Kalaitzidou, M. Losego</i> , Georgia Institute of Technology, USA	
5:00pm	AF2-TuA-15 Deposition and Characterization of Hafnium Dioxide Films Embedding Nickel Nanoparticles, <i>Markus Otsus, J. Merisalu, T. Viskus, T. Kahro, A. Tarre, K. Kalam, A. Kasikov, P. Ritslaid, J. Kozlova, K. Kukli, A. Tamm</i> , University of Tartu, Estonia	
5:15pm	AF2-TuA-16 Biased QCM for Studies of Reductive Surface Chemistry Induced by Plasma Electrons, <i>Pentti Niiranen, H. Nardhom, D. Lundin, H. Pedersen</i> , Linköping University, IFM, Sweden	
5:30pm	AF2-TuA-17 NHC Monolayer Growth Behaviour and Film Durability Measured by QCM, <i>Eden Goodwin</i> , Carleton University, Canada; <i>A. Veinot, I. Singh</i> , Queens University, Canada; <i>P. Ragogna</i> , Western University, Canada; <i>C. Crudden</i> , Queens University, Canada; <i>S. Barry</i> , Carleton University, Canada	

Tuesday Afternoon, June 28, 2022

Room Van Rysselberghe		
1:30pm		ALD Applications Session AA1-TuA ALD for Display Applications Moderators: Jin-Seong Park, Hanyang University, Korea (Republic of), Ganesh Sundaram, Veeco-CNT, USA
2:00pm		
2:15pm	AA1-TuA-4 High-Stability and High-Performance PEALD-IZO/IGZO Top-Gate Thin-Film Transistor via Nano-Scale Thickness Control, <i>J. Park, Yoon-Seo Kim, W. Lee, H. Oh, T. Hong</i> , Hanyang University, Korea	
2:30pm	AA1-TuA-5 Impacts of Deposition Temperatures on Insulation Properties of Atmospheric Pressure Spatial ALD Al ₂ O ₃ Thin Films for Flexible PEALD IGZO TFT, <i>Dong-Gyu Kim, K. Yoo, S. Lee, W. Lee, J. Park</i> , Hanyang University, Korea	
2:45pm	AA1-TuA-6 Enhanced Crystallinity Using in-Situ Atomic Layer Deposition Process of Al ₂ O ₃ on P-Type SnO Thin Film and the Associated Device Applications, <i>Hye-Mi Kim, S. Choi, J. Park</i> , Hanyang University, Korea	
3:00pm	AA1-TuA-7 Oxidant- and Temperature-Dependent Growth Behavior of ALD-Processed ZnO Thin Films and their Applications in Transistors, <i>J. Yang, A. Bahrami, Sebastian Lehmann, S. He, N. Kornelius</i> , Leibniz Institute for Solid State and Materials Research, Germany	
3:15pm	AA1-TuA-8 Facile Control of p-type SnO TFT Performance with Restraining Redox Reaction by ITO Interlayers, <i>Su-Hwan Choi, H. Kim, J. Park</i> , Hanyang University, Korea (Republic of)	
3:30pm	BREAK & EXHIBITS	
4:00pm	AA2-TuA-11 Electron-Enhanced Atomic Layer Deposition (EE-ALD) of Titanium Nitride Using Ammonia Reactive Background Gas, <i>Zachary Sobell, S. George</i> , University of Colorado at Boulder, USA	ALD Applications Session AA2-TuA ALD for BEOL Moderators: Scott Clendenning, Intel Corporation, USA, John Conley, Oregon State University, USA
4:15pm	AA2-TuA-12 Atomic Layer Deposition of MoNx Thin Film Using New Synthesized Liquid Mo Precursor, <i>Byungkuk Kim, T. Kang, S. Kim, H. Jeon</i> , Hanyang University, Korea	
4:30pm	AA2-TuA-13 Atomic Layer Deposition of Tungsten Nitride Thin Film using WCl ₅ as a Fluorine-free W Precursor and its Application into the Diffusion Barrier for Cu and Ru Interconnects, <i>Kang-Min Seo, G. Bea, S. Kim</i> , School of Materials Science and Engineering, Yeungnam University, Korea (Republic of)	
4:45pm	AA2-TuA-14 Thermal Atomic Layer Deposition of Ru With H ₂ Molecules for Emerging Ru Interconnects, <i>Yohei Kotsugi</i> , Chemical Materials Development Department, TANAKA Precious Metals, Japan; <i>Y. Kim, T. Cheon, S. Kim</i> , School of Materials Science and Engineering, Yeungnam University, Korea (Republic of)	
5:00pm	AA2-TuA-15 The Oxygen-Free Thermal ALD and Area Selective ALD of Ruthenium Film, <i>I. Liu, J. Chiu</i> , SAFC HITECH TAIWAN CO., LTD., Taiwan; <i>Bhushan Zope, G. Liu, J. Woodruff</i> , Merck KGaA, Darmstadt, Germany	
5:15pm	AA2-TuA-16 ALD-Prepared 2D Transition Metal Dichalcogenides as Diffusion Barriers in Interconnects, <i>Sanne Deijkers, A. de Jong</i> , Eindhoven University of Technology, The Netherlands; <i>H. Sprey, J. Maes</i> , ASM Belgium; <i>E. Kessels, A. Bol, A. Mackus</i> , Eindhoven University of Technology, The Netherlands	
5:30pm	AA2-TuA-17 Evolution of Structural and Electrical Properties of Molecular Layer Deposited Hafniconic Films after Thermal Processing for Applications in Low-K Etch Stops, <i>Vamseedhara Vemuri</i> , Lehigh University, USA; <i>S. King</i> , Intel, USA; <i>N. Strandwitz</i> , Lehigh University, USA	

ALD Applications

Room Arteveldeforum & Pedro de Gante - Session AA-TuP

ALD Applications Poster Session

5:45pm – 7:30pm

AA-TuP-1 Atomic Layer Deposition of MoS₂ Decorated TiO₂ Nanotubes for Photoelectrochemical Water Splitting, **Chengxu Shen**, E. Wierzbicka, Institut für Chemie and IRIS Adlershof, Humboldt-Universität zu Berlin, Germany; T. Schultz, R. Wang, N. Koch, Institut für Physik and IRIS Adlershof, Humboldt-Universität zu Berlin, Germany; N. Pinna, Institut für Chemie and IRIS Adlershof, Humboldt-Universität zu Berlin, Germany

AA-TuP-2 Impact of ALD-TiO₂ Overlay on Hematite Nanorod Arrays for the Photoelectrochemical Water Splitting, **Jiao Wang**, Humboldt University Berlin, Germany; L. Liccardo, Ca' Foscari University of Venice, Italy; H. Habibimarkani, E. Moretti, Ca' Foscari University of Venice, Italy; N. Pinna, Humboldt University Berlin, Germany

AA-TuP-3 Improvement of the Performance of III-IV Multi-Junction Solar Cells Using Atomic Layer Deposited Antireflective Coatings, **Mantas Drazdys**, D. Astrauskyė, R. Drazdys, T. Paulauskas, Center for Physical Sciences and Technology, Lithuania

AA-TuP-4 Li-Nb-O Protection Layer for Li-ion Battery Electrodes via Atomic Layer-Deposition, **Dae Woong Kim**, W. Hong, J. Park, Hyundai Motor Company, Korea (Republic of); S. Oh, Hyundai Motor Comp, Korea (Republic of); M. Lee, S. Noh, T. Park, Hanyang University, Korea

AA-TuP-5 ALD Ge-Se-S Amorphous Chalcogenide Alloys via Post Plasma Sulfurization for OTS Applications, **Myoungsub Kim**, S. Park, T. Kim, S. Seo, M. Lee, S. Chung, T. Lee, H. Kim, Yonsei University, Korea

AA-TuP-6 Low-Temperature ALD for Electronic Applications, **Jun Yang**, A. Bahrami, S. Mukherjee, S. He, S. Lehmann, K. Nielsch, Institute for Metallic Materials, Leibniz Institute of Solid State and Materials Science Dresden, Germany

AA-TuP-7 Atomic Layer Deposition, Annealing and Characterization of FeS_x Layers, **Zsófia Baji**, I. Cora, Z. Fogarassy, B. Pécz, Centre for Energy Research, Hungary

AA-TuP-8 N-Doped TiO₂ Nanotubes Synthesized by Atomic Layer Deposition for the Degradation of Acetaminophen, **Syreina Alsayegh**, Institut Européen des Membranes, France; M. Bechelany, Institut Européen des membranes, France; M. ABID, F. TANOS, Institut Européen des Membranes, France; G. LESAGE, F. Záviska, Institut Européen des membranes, France

AA-TuP-9 Iron-Nickel Oxide and Iron-Nickel Sulfide Deposited by Atomic Layer Deposition for the Oxygen Evolution Reaction in Alkaline Media, **Estelle Jozwiak**, Humboldt University Berlin, Germany; N. Pinna, Humboldt University Berlin, Germany

AA-TuP-10 Forming-Free Non-Linear Resistive Switching Memory Devices With ALD-Grown HfO_x/TaO_x Bilayers, **Mari Napari**, F. Simanjuntak, S. Stathopoulos, T. Prodromakis, University of Southampton, UK

AA-TuP-11 Film Properties of Al₂O₃ on Si and Graphene substrates deposited by UV Enhanced Atomic Layer Deposition, **Geonwoo Park**, J. Shin, D. Go, J. An, Seoul National University of Science and Technology, Korea (Republic of)

AA-TuP-12 Atomic Layer Deposition of Ruthenium Using a Zero-Valent Precursor, **Ella Rimpila**, J. Hamalainen, P. King, Picosun Oy, Finland

AA-TuP-13 Wake-Up-Free Metal-Ferroelectric-Metal Capacitor Consisted of Hf_{0.5}Zr_{0.5}O₂ and Tin(200) Bottom Electrode, **Dong Hee Han**, A. Lee, M. Nam, Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, Korea (Republic of); T. Moon, Inorganic Material Lab, Material Research Center, Samsung Advanced Institute of Technology, Korea (Republic of); W. Jeon, Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, Korea (Republic of)

AA-TuP-14 Investigating the Y-Doped HfO₂ Thin Film for the Metal-Insulator-Metal Capacitor Application Using a Cocktail Precursor, **Younguk Ryu**, H. Seol, Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, Korea (Republic of); H. Oh, I. Hwang, Y. Park, SK trichem Co. Ltd., Korea (Republic of); W. Jeon, Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, Korea (Republic of)

AA-TuP-15 Atomic-layer-deposited Molybdenum Dioxide Thin Films as Promising Electrode Candidates for Application to Next-generation-dynamic-random-access-memory Devices, **Yewon Kim**, A. Lee, D. Han, S. Moon, T. Youn, M. Lee, W. Jeon, Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, Korea (Republic of)

AA-TuP-16 Improving Properties of Atomic-layer deposited ZrO₂ Thin Film by Employing the Discrete Feeding Method with Various Zr-based Precursors, **Aejin Lee**, M. Nam, Y. Kim, W. Jeon, Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, Korea (Republic of)

Tuesday Afternoon, June 28, 2022

AA-TuP-17 Atomic Layer Deposition of AlN Films With and Without Plasma Piezoelectric Effect, **Noureddine Adjeroud**, Luxembourg Institute of Science and Technology (LIST), Luxembourg

AA-TuP-18 Growth of Rutile TiO₂ on VO₂ by Atomic Layer Deposition for DRAM Capacitor Application, **Seungwoo Lee**, D. Han, M. Nam, Y. Kim, Kyung Hee University, Korea (Republic of); D. Kim, K. Kim, Y. Park, SK Trichem Co. Ltd., Korea (Republic of); W. Jeon, Kyung Hee University, Korea (Republic of)

AA-TuP-19 Superconducting Nbn: Sputtered Versus Plasma ALD With Bias, **Tania Hemakumara**, Y. Shu, Oxford Instruments Plasma Technology, UK; H. Knoops, Oxford Instruments Plasma Technology, Netherlands; R. Renzas, Oxford Instruments Plasma Technology, USA; V. Gauthier, V. Giglia, S. Nicolay, Université de Sherbrooke, Canada; M. Weides, University of Glasgow, UK; M. Piara-Ladrière, D. Drouin, Université de Sherbrooke, Canada; R. Sundaram, Oxford Instruments Plasma Technology, UK

AA-TuP-20 Membrane Design by ALD/MLD for Hydrogen Sensing, **S. Sayegh**, M. Drobek, A. Julbe, **Mikhael Bechelany**, European Institute of Membranes, France

AA-TuP-21 Schottky Diodes to Gallium Nitride Prepared by Plasma-Enhanced Atomic Layer Deposition, **Suzanne Mohnney**, I. Campbell, A. Molina, A. Agyapong, M. Thomas, Penn State University, USA

AA-TuP-22 Development of High-k Gate Insulator Deposition Process for Next-Generation Thin Film Transistor Using Atomic Layer Deposition, **Min Kyeong Nam**, A. Lee, D. Han, S. Lee, W. Jeon, Department of Advanced Materials Engineering for Information and Electronics, Kyung Hee University, Korea (Republic of)

AA-TuP-23 Co-Coated Si X-Ray Optics With Atomic Layer Deposition, **Yukine Tsuji**, A. Fukushima, D. Ishi, Y. Ezoe, K. Ishikawa, M. Numazawa, T. Uchino, S. Sakuda, A. Inagaki, Y. Ueda, H. Morishita, L. Sekiguchi, T. Murakawa, Tokyo Metropolitan University, Japan; K. Mitsuda, National Astronomical Observatory of Japan

AA-TuP-24 Optimization of High-Performance P-Channel Sno Thin Film Transistor Using Atomic Layer Deposition, **Myeong Gil Chae**, J. Kim, Seoul National University of Science and Technology, Korea (Republic of); B. Park, T. Chung, Korea Research Institute of Chemical Technology (KRICT), Korea (Republic of); S. Kim, Korea Institute of Science and Technology (KIST), Korea (Republic of); J. Han, Seoul National University of Science and Technology, Korea (Republic of)

AA-TuP-25 Intense Pulsed Light Annealing of Low-temperature Atomic-layer-deposited SnO Thin Films for P-channel Thin Film Transistor, **Jina Kim**, M. Chae, Seoul National University of Science and Technology, Korea (Republic of); B. Park, T. Chung, Korea Research Institute of Chemical Technology (KRICT), Korea (Republic of); J. Choi, K. Cho, Korea institute of industrial technology (KITECH), Korea (Republic of); W. Lee, Myongji University, Korea (Republic of); J. Han, Seoul National University of Science and Technology, Korea (Republic of)

AA-TuP-26 Hafnium Zirconium Oxide-Based Ferroelectric Field Effect Transistor With Atomic-Layer-Deposited Indium Gallium Tin Oxide Channel Layer, **Hyeonhui Jo**, J. Won, P. Youn, J. Kim, H. Jang, W. Jo, J. Han, Department of Materials Science and Engineering, Seoul National University of Science and Technology, Korea (Republic of)

AA-TuP-27 Interface and Electrolyte Design to Enable Stable Zn Metal Anode for Aqueous Zn-ion Batteries, **Jian Liu**, University of British Columbia, Canada

AA-TuP-28 ALD-Coated Mesoporous Films for Electrocatalysis, **Nicola Pinna**, M. Raza, Institut für Chemie and IRIS Adlershof, Humboldt-Universität zu Berlin, Germany; M. Frisch, R. Krähnert, Department of Chemistry, Technische Universität Berlin, Germany

AA-TuP-29 Nanoscale Energy Transport Processes in Chalcogenide-Based Phase Change Materials, **Kiumars Aryana**, P. Hopkins, University of Virginia, USA

AA-TuP-30 Comparison of the Insulating Properties of Aluminum Oxide (Al₂O₃) High-K Layers at the Early Growth Stages of by Thermal- and Plasma-Enhanced Atomic Layer Deposition on AlGaIn/GaN Heterostructures, **Raffaella Lo Nigro**, E. Schilirò, P. Fiorenza, G. Greco, F. Giannazzo, F. Roccaforte, CNR-IMM, Italy

AA-TuP-31 Amorphous ALD Alumina On a Quartz Plate Enables Significant Cost of Ownership (CoO) Reduction in Metal Plasma Etch Chambers, **Jeff Young**, Intel Corporation, USA; G. Mata-Osoro, P. Spring, INFICON Ltd., Liechtenstein; J. Delle Donne, Ultra Clean Technologies (UCT), USA; R. Parise, Ultra Clean Technologies, USA; V. Venkatesan, Ultra Clean Technologies (UCT), USA

AA-TuP-32 Application of Powder Atomic Layer Deposition to Solid Oxide Fuel Cell Electrodes, **Sung Eun Jo**, H. Kim, B. Yang, J. An, Seoul National University of Science and Technology, Korea (Republic of)

AA-TuP-33 Evaluation of Temporal vs. Spatial Atomic Layer Deposition Techniques for the Production of Ceramic Nanofiltration Membranes, **J. Peper**, University of Twente, Netherlands; H. Jain, TNO/Holst Cent, Netherlands; M. Nijboer, A. Nijmeijer, F. Roozeboom, A. Kovalgin, **Mieke Luiten-Olieman**, University of Twente, Netherlands

AA-TuP-34 Robust YF₃ Batch ALD Process With a Novel Precursor for Plasma Etch Tool Component Protection, *Jesse Kalliomäki, E. Manninen, J. Mariam, P. King, R. Ritasalo*, Picosun Oy, Finland

AA-TuP-36 Developing ALD RuO_x Process for Coating Porous Current Collectors for Supercapacitor Applications, *Sakeb Hasan Choudhury*, LAAS-CNRS, France; *G. Vignaud*, Université Bretagne Sud, France; *P. Dubreuil, D. Pech*, LAAS-CNRS, France

AA-TuP-37 Defect Engineering in Corrosion Protected Semiconductor Photoanodes by Atomic Layer Deposition of Titania, *Oliver Bienek, B. Fuchs, M. Kuhl, D. Silva, T. Rieth, A. Henning, I. Sharp*, Walter Schottky Institut and Physics Department, Technische Universität München, Germany

AA-TuP-38 Film Characteristics of Lanthanide Oxide Thin Film by Using Atomic Layer Deposition Method, *S. Kim, M. Kim*, Merck KGaA, Korea (Republic of); *Sergei Ivanov*, Merck KGaA, Darmstadt, Germany

AA-TuP-39 Advanced 3D Mxene ALD Assembly Through Precious Metal Conformal Coating for Clean Energy Applications, *Debananda Mohapatra, Y. Kim, Y. Park, S. Kim*, Yeungnam University, Korea (Republic of)

AA-TuP-40 Toward a Rational Surface Texture Design of FBR-ALD Pt/CCatalyst to Enhance PEMFC Performance, *Ji-Hu Baek, S. Kwon, S. Lee*, Pusan National University, Korea (Republic of)

AA-TuP-41 Plasma Enhanced Atomic Layer Deposition (PEALD) of Silicon Nitride for FEOL Applications, *M. Lisker, Mamathamba Kalishettyhally Mahadevaiah*, IHP Frankfurt (Oder), Germany

AA-TuP-42 Mechanical and Optical Properties of Alumina Doped Hafnia Deposited by Plasma Assisted Atomic Layer Deposition, *Taivo Jägiaas*, University of Tartu, Estonia

AA-TuP-44 H₂ Separative Membrane Fabricated by Thermal Atomic Layer Deposition, *Clémence Badie*, Aix-Marseille University, France; *M. Drobek*, CNRS- Univ. Montpellier, France; *M. Bechelany*, CNRS/Univ. Montpellier, France; *J. Decams*, Annealsys, France; *L. Santinacci*, Aix-Marseille University, France

AA-TuP-46 Synthesis of Noble Metal Nanoparticles by ALD for Electrocatalysis, *Sitaramanjaneya Mouli Thalluri, R. Zazpe, H. Sopha, J. Macak*, University of Pardubice, Czechia

AA-TuP-47 Protection of Platinum Electrocatalysts for Water Electrolysis Using Atomic Layer Deposited Silicon Dioxide, *Ming Li, R. Kortlever, R. van Ommen*, Delft University of Technology, Netherlands

AA-TuP-48 ALD-Deposition of Cathodic Materials for 3D Li-Ion Micro Batteries - Ongoing Results, *Antoine Peisert, G. Lamblin, D. Lenoble, N. Adjero, Luxembourg* Institute of Science and Technology (LIST), Luxembourg

AA-TuP-50 Vapor Phase Infiltration (VPI) on Polymers Fibers and Fabrics for Multifunctional and Antimicrobial Textile, *Natalia Chamorro, M. Knez*, CIC nanoGUNE, Spain

AA-TuP-51 Impact of Substrate Bias on the Wear Rate of Plasma Enhanced Atomic Layer Deposited TiVN, *Mark Sowa*, Veeco ALD, USA; *M. Chowdhury*, Department of Materials Science and Engineering, Lehigh University, USA; *K. Van Meter, T. Babuska*, Department of Mechanical Engineering, Florida State University, USA; *A. Kozen*, Department of Materials Science & Engineering, University of Maryland, College Park, USA; *N. Strandwitz*, Department of Materials Science and Engineering, Lehigh University, USA; *B. Krick*, Department of Mechanical Engineering, Florida State University, USA

AA-TuP-52 Thermal and Aqueous Media Stability of Sr₂MgSi₂O₇:Eu²⁺, Dy³⁺ Phosphors Encapsulated by Al₂O₃ Using Atomic Layer Deposition (ALD), *Erkul Karacaoglu*, Karamanoglu Mehmetbey University, Turkey; *A. Okyay*, Okyay Technologies and with the Stanford University, USA; *H. Yurdakul*, Kutahya Dumlupinar University, Turkey; *M. Losego*, Georgia Institute of Technology, USA

AA-TuP-53 Fabrication of High-Quality Titanium Nitride Thin Film as a Cu Diffusion Barrier Layer by Hollow Cathode Plasma Atomic Layer Deposition at Low Temperature, *Ha Young Lee, J. Han, B. Choi*, Seoul National University of Science and Technology, Korea (Republic of)

AA-TuP-55 Pt-coated Si X-ray Optics with Plasma Atomic Layer Deposition for GEO-X Mission, *Masaki Numazawa, D. Ishi, A. Fukushima, Y. Ezoe, K. Ishikawa, S. Sakuda, T. Uchino, A. Inagaki, H. Morishita, Y. Ueda, T. Murakawa, Y. Tsuji, L. Sekiguchi*, Tokyo Metropolitan University, Japan; *K. Mitsuda*, National Astronomical Observatory of Japan

AA-TuP-56 Structural and Optical Properties of Atomically Engineered Ir/Al₂O₃ Heterostructures, *Pallabi Paul, P. Schmitt*, Friedrich Schiller University Jena, Germany; *Z. Wang, W. Li, M. Kling*, Ludwig-Maximilians-University of Munich, Max Planck Institute of Quantum Optics, Germany; *A. Tünnermann*, Fraunhofer Institute for Applied Optics and Precision Engineering IOF, Germany; *A. Szeghalmi*, Fraunhofer Institute for Applied Optics and Precision Engineering, Germany

AA-TuP-57 Broadband Absorbers by ALD: An Opportunity for Solar-Driven Applications, *Mario Ziegler, V. Ripka*, Leibniz Institute of Photonic Technology, Germany; *P. Cheng*, TU Ilmenau, Germany; *K. Kc, H. Wagner, U. Huebner*, Leibniz Institute of Photonic Technology, Germany; *D. Wang, P. Schaaf*, TU Ilmenau, Germany

AA-TuP-59 Bipolar and Unipolar Resistive Switching in HfO₂ Based Films Embedding Ni Particles, *Joonas Merisalu, M. Otsus, T. Viskus, T. Kahro, A. Tarre, A. Kasikov, P. Ritslaid, J. Kozlova, J. Aarik, K. Kukli, A. Tamm*, University of Tartu, Estonia

AA-TuP-60 Novel Sulfide and Nitride Materials by Plasma Enhanced Atomic Layer Deposition, *Jakob Zessin*, SENTECH Instruments GmbH, Germany; *M. Hagel, T. Reindl*, SF Nanostructuring Lab, Max Planck Institute for Solid State Research, Germany; *K. Küster*, SF Interface Analysis, Max Planck Institute for Solid State Research, Germany; *P. Plate*, SENTECH Instruments GmbH, Germany

AA-TuP-61 Atomic Layer Deposition of Epsilon Near Zero Transparent Conducting Oxides, *Emily Duggan*, Tyndall National Institute, University College Cork, Ireland; *D. Ghindani*, Tampere University, Finland; *J. Lin*, Tyndall National Institute, University College Cork, Ireland; *H. Caglayan*, Tampere University, Finland; *I. Povey*, Tyndall National Institute, University College Cork, Ireland

AA-TuP-62 Magnetic Domain Creation by Local Reduction of Nickel Oxide Films, *Gabriele Botta*, BRTA CIC nanoGUNE, Italy; *M. Knez*, Nanomaterials Senior Scientists Ikerbasque professor in BRTA CIC nanoGUNE, Croatia

AA-TuP-63 Optical and Electrical Device Properties of Plasma-Ald Grown β-Ga₂O₃, *A. Rezk*, Khalifa University of Science, Technology & Research, United Arab Emirates; *I. Saidjafarzoda*, University of Connecticut, USA; *Ali Kemal Okyay*, Stanford University, USA; *A. Nayfeh*, Khalifa University of Science, Technology & Research, United Arab Emirates; *N. Biryikli*, University of Connecticut, USA

AA-TuP-65 Enhanced Self-Assembled Monolayer Surface Coverage by ALD NiO in P-I-N Perovskite Solar Cells, *N. Phung, M. Verheijen, A. Tadinova, K. Datta, M. Verhage*, Eindhoven University of Technology, Netherlands; *A. Al-Ashouri, H. Köbler, X. Li, A. Abate, S. Albrecht*, Helmholtz Zentrum Berlin, Germany; *Mariadriana Creatore*, Eindhoven University of Technology, Netherlands

AA-TuP-66 Direct Chemical Vapour Deposition of Graphene on Atomic Layer Deposited Functional Nickel Oxide, *Geedhika Poduval, D. Ji, S. Bremner, R. Joshi, B. Hoex*, UNSW Sydney, Australia

AA-TuP-67 The Role of Defects in Tuning the Properties of Highly Conductive Cuprous Oxide Thin Films Revealed Through Positron Annihilation Spectroscopy, *Abderrahime Sekkat*, LMGP/IMEP-LAHC/SIMAP, France; *M. Oskar Liedke*, HZDR, Germany; *V. Huong Nguyen*, Phenikaa, Viet Nam; *M. Butterling*, HZDR, Germany; *F. Baiutti, J. de Dios Sirvent*, IREC, Spain; *M. Weber, L. Rapenne, D. Bellet*, LMGP, France; *G. Chichignoud*, SIMAP, Grenoble-INP, CNRS, France; *A. Kaminski-Chapcho*, IMEP-LAHC, France; *E. Hirschmann, A. Wagner*, HZDR, Germany; *D. Muñoz-Rojas*, LMGP, France

AA-TuP-68 Highly Conformal CoO_x Layer Formed by Atomic Layer Deposition for High Performance Supercapacitors, *S. Adhikari, G. Noh*, Chonnam National University, Korea (Republic of); *do heyoung kim*, 5-404, Engineering Building 5., Korea (Republic of)

AA-TuP-69 Ultra-low Resistivity Molybdenum Carbide Thin Films Deposited by Plasma-Enhanced Atomic Layer Deposition Using a Cyclopentadienyl-based Precursor, *Min-Ji Ha, J. Choi, J. Ahn*, Hanyang University, Korea (Republic of)

AA-TuP-70 A Simple Strategy to Realize Super Stable Ferroelectric Capacitor via Interface Engineering, *Hyo-Bae Kim*, Hanyang University, Korea (Republic of); *K. Dae, J. Jang*, Korea Basic Science Institute (KBSI), Korea (Republic of); *J. Ahn*, Hanyang University, Korea (Republic of)

AA-TuP-71 Area-Selective Atomic Layer Deposition Brings Plasmonic Biosensors Into the Electronic Age, *Corbin Feit*, University of Central Florida, USA; *P. Rath, S. Singamaneni*, Washington University in St. Louis, USA; *P. Banerjee*, University of Central Florida, USA

AA-TuP-73 Annealed ALD TiN_x Layers for Through-Silicon Superconducting Interconnects, *Kestutis Grigorius, P. Eskelinen*, VTT Technical Research Centre of Finland, Ltd, Finland; *M. Caputo*, VTT Technical Research Centre of Finland, Ltd, Finland; *D. Datta*, VTT Technical Research Centre of Finland, LTD, Finland; *A. Ronzani*, VTT Technical Research Centre of Finland, Ltd, Finland; *E. Mannila, J. Govenius*, VTT Technical Research Centre of Finland, LTD, Finland

AA-TuP-75 Surface Modification of Atomic Layer Deposited Metal Oxides: Vapor-Phase Grafting of Functional Silanes, *V. Rozyyev*, University of Chicago; *R. Pathak*, *R. Shevate*, Argonne National Laboratory, USA; *J. Murphy*, University of Chicago; *A. Mane*, Argonne National Laboratory, USA; *S. Sibener*, University of Chicago; *Jeff Elam*, Argonne National Laboratory, USA

ALD for Manufacturing

Room Arteveldeforum & Pedro de Gante - Session AM-TuP ALD for Manufacturing Poster Session

5:45pm-7:30pm

AM-TuP-1 Atmospheric Pressure Plasma Enhanced Spatial ALD for Energy Applications, *Corne Frijters*, *V. Tielen*, *R. Pals*, *J. Smeltink*, *K. Driessen*, *H. Heezen*, *P. Poodt*, SALDtech B.V., Netherlands

AM-TuP-4 Effect of Surface Treatment of Tan for Rapid Nucleation and Growth of ALD Ru Films, *C. Feit*, *U. Kumar*, *L. Tomar*, *Z. Caribe*, *N. Berriel*, *S. Seal*, *Parag Banerjee*, University of Central Florida, USA

AM-TuP-5 How to Improve ALD Process Consistency with Optimized Process Valves and Pneumatic Control Systems, *Masroor Malik*, *J. Butler*, Swagelok Company, USA

AM-TuP-6 Spatial Atomic Layer Deposition for the Coating of Tubular Membranes, *F. Toldra-Reig*, Laboratoire des Matériaux et du Génie Physique, LMGP-CNRS, France; *Clément Lausecker*, Institut Européen des Membranes, IEM-CNRS / Laboratoire des Matériaux et du Génie Physique, LMGP-CNRS, France; *M. Weber*, *D. Muñoz-Rojas*, Laboratoire des Matériaux et du Génie Physique, LMGP-CNRS, France, *M. Bechelany*, Institut Européen des Membranes, IEM-CNRS, D. Muñoz-Rojas, Laboratoire des Matériaux et du Génie Physique, LMGP-CNRS, France

AM-TuP-7 Hybrid PEALD/PECVD Reactor Design for Depositing Thick GaN Films on Si, *Biral Kuyel*, *J. Marshall*, *A. Alphonse*, NANO-MASTER, Inc., USA

AM-TuP-8 Deposition of CeO_{2-δ} Thin Films by Atmospheric-Pressure Spatial Atomic Layer Deposition, *Ozden Celikbilek*, Univ. Grenoble Alpes, CNRS, France; *M. Bianchini*, Catalonia Institute for Energy Research (IREC), Spain; *F. Toldra-Reid*, Univ. Grenoble Alpes, CNRS, Spain; *A. Sekkat*, Univ. Grenoble Alpes, CNRS, France; *N. Alayo*, *A. Tarancón*, Catalonia Institute for Energy Research (IREC), Spain; *D. Muñoz-Rojas*, Univ. Grenoble Alpes, CNRS, France

AM-TuP-9 Thermoelectric Performance Improvement by Interface Engineering With Atomic-Layer-Deposited ZnO Thin Films on Snse Powders, *Myeong Jun Jung*, *Y. Weon*, *J. Park*, *Y. Yun*, *J. Byun*, *B. Choi*, Seoul National University of Science and Technology, Korea (Republic of)

AM-TuP-10 Mechanical Properties of Atomic-Layer-Deposited Al₂O₃/Y₂O₃ Nanolaminate Films on Aluminum Towards Protective Coatings, *B. Putz*, *J. Niemelä*, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland; *G. Mata-Osoro*, INFICON Ltd., Liechtenstein, Switzerland; *C. Guerra-Nunez*, SwissCluster, Switzerland; *K. Mackosz*, *Ivo Utke*, Empa, Swiss Federal Laboratories for Materials Science and Technology, Thun, Switzerland

AM-TuP-11 How to Improve Control of Plasma-Assisted Ald/Ale Processes by Accurate Measurement of Ion Flux, Ion Energy Distributions, and Ion-Neutral Ratios in Commercial Plasma Tools Using RFEAs, *A. Rawat*, *Chanel Linnane*, *S. Knott*, *T. Gilmore*, Impedans Ltd, Ireland

Area Selective ALD

Room Arteveldeforum & Pedro de Gante - Session AS-TuP Area Selective ALD Poster Session

5:45pm-7:30pm

AS-TuP-1 Thermally Assisted Area Selective Atomic Layer Deposition, *Bart de Braaf*, TU / Eindhoven, Netherlands

AS-TuP-2 An Approach to the Prevention of Chemical Deterioration of Surfaces During Ex-Situ Patterning Steps, *B. van der Wel*, *Kees van der Zouw*, *T. Aarnink*, *A. Kovalgin*, University of Twente, the Netherlands

AS-TuP-3 Surface Dependence and Selectivity During Atomic Layer Deposition of Ge₂Sb₂Te₅, *Jyoti Sinha*, *L. Gallis*, *J. Clerix*, KU Leuven, IMEC Belgium, Belgium; *L. Nyens*, IMEC Belgium, Belgium; *A. Delabie*, KU Leuven, IMEC Belgium, Belgium

AS-TuP-4 In-situ Surface Cleaning and Area Selective Deposition of SiO_xN_y film on Cu patterns using Anhydrous N₂H₄, *Su Min Hwang*, *J. Kim*, *D. Le*, *Y. Jung*, *K. Tan*, *J. Veyan*, University of Texas at Dallas, USA; *D. Alvarez*, *J. Spiegelman*, RASIRC, USA; *J. Kim*, University of Texas at Dallas, USA

AS-TuP-5 Inherently Area-Selective Atomic Layer Deposition of SiO₂ through Chemoselective Adsorption of an Aminodisilane Precursor on Oxide versus Nitride Substrates, *Jeong-Min Lee*, *J. Lee*, Hanyang University, Korea (Republic of); *H. Oh*, *B. Shong*, Hongik University, Korea (Republic of); *T. Park*, *W. Kim*, Hanyang University, Korea (Republic of)

AS-TuP-6 Organothioli Inhibitor Instigated Area Selective Deposition of HfO₂, *Summal Zoha*, *B. Gu*, Incheon National University, Korea (Republic of); *F. Pieck*, *R. Tonner*, Universität Leipzig, Germany; *H. Lee*, Incheon National University, Korea (Republic of)

Wednesday Morning, June 29, 2022

Plenary Session III Room Auditorium - Session PS-WeM1 Moderators: Jolien Dendooven, Ghent University, Belgium, Christophe Detavernier, Ghent University, Belgium, Paul Poodt, Holst Centre / TNO, Netherlands	
8:30am	Welcome, Introductions and Sponsor Thank Yous
8:45am	INVITED: PS-WeM1-2 ALD 2022 Innovator Awardee Talk: Prospects of Atomic Layer Deposition for Cell-Stacking Technology of Semiconductor Memory Devices, Cheol Seong Hwang , Seoul National University, Korea (Republic of)
9:15am	PS-WeM1-4 ALD Student Award Finalist Talk: Improving Self-Aligned Atomic Layer Deposited Gate Stacks for Electronic Applications, Amy Brummer , D. Aziz, M. Filler, E. Vogel, Georgia Institute of Technology, USA
9:30am	PS-WeM1-5 ALD Student Award Finalist Talk: Towards High Throughput Molecular Layer Deposition of Alucone Films, Hardik Jain , Holst Centre / TNO, Netherlands; M. Creatore, Eindhoven University of Technology, The Netherlands; P. Poodt, Holst Centre / TNO, Netherlands
9:45am	PS-WeM1-6 ALD Student Award Finalist Talk: In-situ FTIR Analysis of Selectivity Loss Mechanism of TiO ₂ Atomic Layer Deposition on Aminosilane-Passivated SiO ₂ and H-terminated Si, Jan-Wilem Clerix , KU Leuven, NCSU, Imec, Belgium; G. Dianat, NCSU, USA; A. Delabie, Imec, KU Leuven, Belgium; G. Parsons, NCSU, USA
10:00am	PS-WeM1-7 ALD Student Award Finalist Talk: Sacrificial Etching Kinetics Control Extent of Pattern Alignment in Area-Selective Atomic Layer Deposition (AS-ALD) via Simultaneous Deposition and Etching, Hannah Margavio , J. Kim, North Carolina State University, USA; N. Arellano, IBM Almaden Research Center, USA; G. Parsons, North Carolina State University, USA
10:15am	PS-WeM1-8 ALD Student Award Finalist Talk: Depositing Metal Oxides on Metalcones: Enhancing Initial Growth Through O ₂ Plasma Densification, Juan Santo Domingo Peñaranda , M. Minjauw, J. Li, S. Vandenbroucke, J. Dendooven, C. Detavernier, Ghent University, Belgium
10:30am	BREAK & EXHIBITS

Wednesday Morning, June 29, 2022

	ALD Applications Room Baekeland - Session AA1-WeM2 ALD for Optical Applications Moderators: Parag Banerjee, University of Central Florida, USA, Matti Putkonen, University of Helsinki, Finland	ALD Applications Room Van Rysselberghe - Session AA2-WeM2 ALD for Memory Applications I Moderators: Robert Clark, TEL Technology Center, America, LLC, USA, Charles Dezelah, ASM, Finland
10:45am	AA1-WeM2-1 Atomic Layer Deposition of Perovskite $K(Ta_xNb_{1-x})O_3$ films on Silicon for Integrated Photonics via KOTBu and H_2O , Eric Martin , Ohio State University, USA; J. Bickford , Army Research Laboratory, USA; H. Sønsteby , University of Oslo, Norway; R. Hoffman , Army Research Laboratory, USA; R. Reano , Ohio State University, USA	AA2-WeM2-1 Sub 10-nm Ferroelectric HfO_2 Capacitors Doped with Gd, Evgeniy Skopin , N. Guillaume, L. Alrifai, A. Bsiesy, LTM - MINATEC - CEA/LETI, France
11:00am	AA1-WeM2-2 Low-temperature ALD Sb_2Te_3 for Self-powered Broad-band Photodetector, Jun Yang , A. Bahrami, S. Mukherjee, S. He, S. Lehmann, K. Nielsch, Institute for Metallic Materials, Leibniz Institute of Solid State and Materials Science Dresden, Germany	AA2-WeM2-2 Controlling Stochastic Resistive Switching in Organic-Inorganic Hybrid Memristor by Vapor-Phase Infiltration, A. Subramanian, Stony Brook University, USA; N. Tiwale, K. Kisslinger, Chang-Yong Nam , Brookhaven National Laboratory, USA
11:15am	AA1-WeM2-3 Preparation of High Mobility Indium Hydroxide Doped by Atomic Layer Deposition and Study on Photoelectric Properties, Liangge Xu , Harbin Institute of Technology, China	AA2-WeM2-3 Atomic Layer Deposited Vanadium Oxide Thin Films for Thermochromic and Microelectronic Applications, Zsafia Baji , J. Volk, L. Pósa, G. Molnár, Centre for Energy Research, Hungary; A. Surca, G. Drazic, National Institute of Chemistry, Slovenia
11:30am	AA1-WeM2-4 ALD MgF_2 Using $(EtCp)_2Mg$ and SF_6 Remote Plasma Source, Hoon Kim , . Huang, . Allen, E. Pierce, , J. Wang, Corning Inc., USA	INVITED: AA2-WeM2-4 Brain-Based Inspiration: Towards Neuromorphic Computing With ALD Based Memristive Devices, E. Perez, M. Kalishettyhalli Mahadevaiah, E. Perez-Bosch Quesada, IHP - Leibniz Institut fuer innovative Mikroelektronik, Germany; T. Rizzi, IHP - Leibniz-Institut fuer innovative Mikroelektronik, Germany; Christian Wenger , IHP - Leibniz Institut fuer innovative Mikroelektronik, Germany
11:45am	AA1-WeM2-5 Moisture Sensitivity of ALD Metal Fluorides for Far UV Optical Coatings, Robin Rodríguez , J. Hennessy, A. Jewell, S. Nikzad, Jet Propulsion Laboratory (NASA/JPL), USA	

Wednesday Morning, June 29, 2022

	Emerging Materials Room Van Eyck - Session EM-WeM2 Molecular Layer Deposition Moderators: Arrelaine Dameron, Forge Nano, USA, Ola Nilsen, University of Oslo, Norway	Nanostructure Synthesis and Fabrication Room Auditorium - Session NS-WeM2 2D Materials I Moderators: Gregory N. Parsons, North Carolina State University, USA, Henrik Pedersen, Linköping University, Sweden
10:45am	EM-WeM2-1 Deposition of Copper-based Metal-Organic Framework Thin Film by Molecular Layer Deposition, Ben Gikonyo , <i>C. Journet-Gautier, A. Fateeva, C. Marichy</i> , Université Claude Bernard Lyon 1, France	INVITED: NS-WeM2-1 Atomic Layer Deposition of Layered Chalcogenides, Suzanne Mohney , <i>J. Carter, I. Campbell, A. Agyapong</i> , Penn State University, USA
11:00am	EM-WeM2-2 ALD-Grown ZIF-8 Thin Films : Mechanism Insight Leads to Push Beyond the Current Thickness Limit, <i>V. Perrot</i> , Univ. Grenoble Alpes, CEA, LETI, France; <i>A. Roussey</i> , Univ. Grenoble Alpes, CEA, LITEN, France; <i>M. Veillerot</i> , <i>A. Benayad</i> , <i>D. Mariolle</i> , <i>F. Ricoul</i> , <i>V. Jousseau</i> , Univ. Grenoble Alpes, CEA, LETI, France; Elsje Alessandra Quadrelli , CNRS, Univ Lyon IRCELYON , France	
11:15am	EM-WeM2-3 Molecular Layer Deposition of Zeolitic Imidazolate Framework 8 Thin Films, Jorid Smets , <i>A. Cruz, R. Ameloot</i> , KU Leuven, Belgium	NS-WeM2-3 2D Alloys of WS ₂ and NbS ₂ by PEALD, Jeff Schulp , <i>C. Lam</i> , Eindhoven University of Technology, The Netherlands; <i>E. Coleman, F. Gity</i> , Tyndall National Institute, University College Cork, Ireland; <i>M. Mattinen, M. Verheijen, E. Kessels</i> , Eindhoven University of Technology, The Netherlands; <i>R. Duffy</i> , Tyndall National Institute, University College Cork, Ireland; <i>A. Bol</i> , Eindhoven University of Technology, The Netherlands
11:30am	EM-WeM2-4 Mid of Phosphane-Ene Polymer Thin Films: Bringing Solution Polymer Chemistry to a Gas Phase Process, <i>J. Lomax</i> , The University of Western Ontario, Canada; <i>E. Goodwin, P. Gordon</i> , Carleton University, Canada; <i>C. McGuinness</i> , Solvay, USA; <i>C. Crudden</i> , Queen's University, Canada; <i>S. Barry</i> , Carleton University, Canada; Paul J. Ragogna , The University of Western Ontario, Canada	NS-WeM2-4 2D Molybdenum Dichalcogenides by Atomic Layer Deposition, Raul Zazpe , <i>J. Charvot, L. Hromadko, H. Sopha, J. Rodriguez Pereira, F. Bures, J. Macak</i> , University of Pardubice, Czechia
11:45am	EM-WeM2-5 Molecular Atomic Layer Deposition of Inorganic-Organic Hybrid Dry Resist for EUV Application, Su Min Hwang , <i>D. Le, Y. Jung, J. Veyan</i> , University of Texas at Dallas, USA; <i>A. Subramanian, W. Lee</i> , Stony Brook University/Brookhaven National Laboratory, USA; <i>N. Tiwale</i> , Brookhaven National Laboratory, USA; <i>C. Nam</i> , Stony Brook University/Brookhaven National Laboratory, USA; <i>M. Sung, J. Ahn</i> , Hanyang University, Korea (Republic of); <i>J. Kim</i> , University of Texas at Dallas, USA	NS-WeM2-5 Plasma-enhanced Atomic Layer Deposition of Crystalline MoS ₂ Thin Films Using a Novel Precursor, Jeong-Hun Choi , <i>M. Ha, D. Kim, J. Ahn</i> , Hanyang University, Korea (Republic of)

Wednesday Afternoon, June 29, 2022

Room Auditorium		
1:30pm		Emerging Materials Session EM1-WeA Emerging Materials Moderators: Nathanaelle Schneider, CNRS-IPVF, France,
1:45pm	EM1-WeA-2 ALD of $\text{In}_{1-x}\text{Ga}_x\text{N}$, <i>Henrik Pedersen</i> , <i>P. Rouf</i> , <i>C. Hsu</i> , Linköping University, IFM, Sweden	
2:00pm	EM1-WeA-3 Silicon-Based Polymer-Derived Ceramic Coatings by Post-Processing of Pre-Ceramic MLD Thin Films, <i>Kristina Ashurbekova</i> , <i>M. Knez</i> , CIC nanoGUNE, Spain	
2:15pm	EM1-WeA-4 Closing in on Room-Temperature Metal-Insulator-Transitions for Next Generation Electronics by Epitaxial Nickelate ALD, <i>Linn Rykkje</i> , <i>H. Sønsteby</i> , <i>O. Nilsen</i> , University of Oslo, Norway	
2:30pm	EM1-WeA-5 Plasma-Enhanced Atomic Layer Deposition of Spinel Ferrite CoFe_2O_4 and NiFe_2O_4 Thin Films, <i>Mari Napari</i> , University of Southampton, UK; <i>M. Heikkilä</i> , University of Helsinki, Finland; <i>S. Kinnunen</i> , <i>J. Julin</i> , University of Jyväskylä, Finland; <i>T. Prodromakis</i> , University of Southampton, UK	
2:45pm	EM1-WeA-6 Engineering Maxwell-Wagner Polarization in $\text{Al}_2\text{O}_3/\text{TiO}_2/\text{Al}_2\text{O}_3$ Nanolaminates Grown by Atomic Layer Deposition, <i>Partha Sarathi Padhi</i> , Raja Ramanna Centre for Advanced Technology, India; <i>R. Ajimsha</i> , <i>S. Rai</i> , <i>P. Misra</i> , Raja Ramanna Centre for Advanced Technology, India	
3:00pm		
3:15pm		
3:30pm	BREAK	
4:00pm	NS-WeA2-11 Controlled Encapsulation of Monolayer MoS_2 with Ultrathin Aluminum Oxide for Low Resistance Tunnel Contact Formation, <i>Alex Henning</i> , <i>S. Levashov</i> , <i>J. Primbs</i> , <i>M. Bissolo</i> , <i>T. Grünleitner</i> , <i>C. Qian</i> , <i>J. Finley</i> , <i>I. Sharp</i> , Walter Schottky Institute and Physics Department, Technical University of Munich, Germany	Nanostructure Synthesis and Fabrication Session NS-WeA2 2D Materials II Moderators: Suzanne Mohny, Penn State University, USA, Riikka Puurunen, Aalto University, Finland
4:15pm	NS-WeA2-12 Synthesis of Crystalline Tungsten Disulfide Using Atomic Layer Deposition and Post-Deposition Sulfur Annealing, <i>K. Mullanpudi</i> , <i>R. Addou</i> , Oregon State University, USA; <i>C. Dezelah</i> , <i>D. Moser</i> , <i>J. Woodruff</i> , <i>R. Kanjolia</i> , Merck KGaA, Darmstadt, Germany; <i>John Conley Jr.</i> , Oregon State University, USA	
4:30pm	NS-WeA2-13 In-Situ-Prepared Protective Seed Layer by Plasma ALD on Graphene, <i>S. Riazimehr</i> , Oxford Instruments Plasma Technology, Germany; <i>A. Esteki</i> , RWTH Aachen University, Germany; <i>M. Powell</i> , Oxford Instruments Plasma Technology, UK; <i>M. Otto</i> , <i>G. Rinke</i> , <i>Z. Wang</i> , AMO GmbH, Germany; <i>A. Omahony</i> , Oxford Instruments Plasma Technology, UK; <i>M. Lemme</i> , RWTH Aachen University, Germany and AMO GmbH, Germany; <i>R. Sundaram</i> , Oxford Instruments Plasma Technology, UK; <i>Harm Knoops</i> , Oxford Instruments Plasma Technology, Netherlands	
4:45pm	NS-WeA2-14 Polycrystalline MoS_2 Thin Films at 100 °C by Plasma-Enhanced Atomic Layer Deposition, <i>Mika Mattinen</i> , <i>M. Verheijen</i> , Eindhoven University of Technology, The Netherlands; <i>F. Gity</i> , <i>E. Coleman</i> , <i>R. Duffy</i> , Tyndall National Institute, University College Cork, Ireland; <i>E. Kessels</i> , Eindhoven University of Technology, The Netherlands; <i>A. Bol</i> , University of Michigan, Ann Arbor and Eindhoven University of Technology, USA	
5:00pm	NS-WeA2-15 Selectively Decorated Pt Nanoparticle on WS_2 by Atomic Layer Deposition for High-Performance Gas Sensor, <i>Dain Shin</i> , School of Electrical and Electronic Engineering, Yonsei University, Korea (Republic of); <i>T. Nakazawa</i> , TANAKA Kikinzoku Kogyo K.K., Isehara Technical Center, Japan; <i>I. Sohn</i> , <i>S. Chung</i> , <i>H. Kim</i> , School of Electrical and Electronic Engineering, Yonsei University, Korea (Republic of)	
5:30pm	Closing Remarks and Thank You	

Wednesday Afternoon, June 29, 2022

Room Baekeland		
1:30pm	AS1-WeA-1 Polystyrene Brush Deactivation Layers for Area Selective Atomic Layer Deposition, <i>Caitlin McFeely</i> , <i>M. Snelgrove</i> , <i>K. Shiel</i> , <i>G. Hughes</i> , School of Physical Sciences, Dublin City University, Ireland; <i>P. Yadav</i> , <i>M. Morris</i> , AMBER Research Centre and School of Chemistry, Trinity College Dublin, Ireland; <i>E. McGlynn</i> , <i>R. O'Connor</i> , School of Physical Sciences, Dublin City University, Ireland	Area Selective ALD Session AS1-WeA Area Selective Deposition I Moderators: Amy Brummer, Georgia Institute of Technology, USA, Il-Kwon Oh, Ajou University, Korea (Republic of)
1:45pm	AS1-WeA-2 Area Selective Deposition of Ruthenium using a W Precursor Inhibitor, <i>Chi Thang Nguyen</i> , <i>N. Trinh</i> , <i>M. Lee</i> , <i>H. Lee</i> , Department of Materials Science and Engineering, Incheon National University, Korea (Republic of)	
2:00pm	AS1-WeA-3 Electron-beam Functional Group Patterning on HOPG for Area-Selective Atomic Layer Deposition, <i>Matthias Young</i> , <i>G. Koerner</i> , <i>Q. Wyatt</i> , University of Missouri, USA; <i>B. Bateman</i> , Berea College, USA; <i>C. Boyle</i> , <i>M. Maschmann</i> , University of Missouri, USA	
2:15pm	AS1-WeA-4 Inhibitor Adsorption During Area-Selective ALD: Do Mixtures of Adsorption Configurations Lead to a Loss of Selectivity?, <i>Marc Merckx</i> , <i>I. Tezsevin</i> , <i>P. Yu</i> , <i>J. Li</i> , <i>R. Lengers</i> , <i>E. Kessels</i> , Eindhoven University of Technology, Netherlands; <i>T. Sandoval</i> , Universidad Técnica Federico Santa María, Chile; <i>A. Mackus</i> , Eindhoven University of Technology, Netherlands	
2:30pm	AS1-WeA-5 Area Selective Deposition for ZnO Hard Mask by 2D-like Carbon fabricated by Molecular Layer Deposition, <i>S. Lee</i> , <i>G. Baek</i> , <i>Hae-Lin Yang</i> , Hanyang University, Korea; <i>T. Van</i> , <i>B. Shong</i> , Hongik University, Korea (Republic of); <i>J. Park</i> , Hanyang University, Korea	
2:45pm	AS1-WeA-6 Bifunctionality of Si Precursors to Enable Area Selective Deposition of Ru and Atomic Layer Deposition of SiO ₂ , <i>Sumaira Yasmeen</i> , <i>B. Gu</i> , <i>Y. Kang</i> , <i>H. Lee</i> , Incheon National University, Korea (Republic of)	
3:00pm	INVITED: AS1-WeA-7 TiO ₂ Area-Selective Deposition: Using Selectivity Loss Mechanisms to Advance Applications in Nanopatterns and EUV Resist Materials, <i>Rachel Nye</i> , North Carolina State University, USA; <i>K. Van Dongen</i> , KU Leuven, Belgium; <i>D. De Simone</i> , <i>J. de Marneffe</i> , <i>H. Oka</i> , IMEC, Belgium; <i>G. Parsons</i> , North Carolina State University, USA; <i>A. Delabie</i> , IMEC, Belgium	
3:30pm	BREAK	
4:00pm	AS2-WeA-11 Intrinsic Area-Selective Atomic Layer Deposition of Aluminium Nitride, <i>B. van der Wel</i> , <i>Kees van der Zouw</i> , <i>T. Aarnink</i> , <i>A. Kovalgin</i> , University of Twente, the Netherlands	Area Selective ALD Session AS2-WeA Area Selective Deposition II Moderators: Stacey Bent, Stanford University, USA, Rachel Nye, North Carolina State University, USA
4:15pm	AS2-WeA-12 Surface-Diffusion Control Enables Tailored-Aspect-Ratio Nanostructures in Area-Selective Atomic Layer Deposition, <i>Philip Klement</i> , <i>D. Anders</i> , <i>L. Gümbel</i> , <i>M. Bastianello</i> , <i>F. Michel</i> , <i>J. Schörmann</i> , <i>M. Elm</i> , Institute of Experimental Physics I & Center for Materials Research (ZfM), Justus Liebig University Giessen, Giessen, Germany; <i>C. Heiliger</i> , Institute of Theoretical Physics & Center for Materials Research (ZfM), Justus Liebig University Giessen, Giessen, Germany; <i>S. Chatterjee</i> , Institute of Experimental Physics I & Center for Materials Research (ZfM), Justus Liebig University Giessen, Giessen, Germany	
4:30pm	INVITED: AS2-WeA-13 Study on Area-Selective Atomic Layer Deposition of Al ₂ O ₃ with a Series of Al Precursors, <i>Il-Kwon Oh</i> , Ajou University, Korea (Republic of)	
5:00pm	AS2-WeA-15 Selective Hydration of TiO ₂ and In ₂ O ₃ : A Strategy for Site-Selective Atomic Layer Deposition at Surface Defects, <i>A. Martinson</i> , <i>E. Kamphaus</i> , <i>J. Jones</i> , <i>N. Shan</i> , Argonne National Laboratory, USA; <i>C. Luo</i> , <i>A. Hock</i> , Illinois Institute of Technology, USA; <i>L. Cheng</i> , <i>Ashley R. Bielinski</i> , Argonne National Laboratory, USA	
5:15pm	AS2-WeA-16 Self-Assembled Monolayer and “Click” Chemistry Deposition Treatments for Area-Specific Processing, <i>Chad Brick</i> , <i>R. Liberatore</i> , Gelest, Inc, USA; <i>B. Arkles</i> , Department of Chemistry, Temple University, USA; <i>J. Goff</i> , Gelest, Inc, USA	

Wednesday Afternoon, June 29, 2022

Room Van Eyck		
1:30pm	INVITED: EM2-WeA-1 Vapor Phase Infiltration of Polymers for the Synthesis of Organic-Inorganic Hybrid Materials: Process Kinetics, Chemical Pathways, and Final Hybrid Structure, Mark Losego , Georgia Institute of Technology, USA	Emerging Materials Session EM2-WeA Vapor Phase Infiltration Moderators: Anjana Devi, Ruhr University Bochum, Germany, Maarit Karppinen, Aalto University, Finland
2:00pm	EM2-WeA-3 Atomic Layer Deposition on Polymer Thin Films: On the Role of Precursor Infiltration and Reactivity, Robin Petit , J. Li, B. Van de Voorde, S. Van Vlierberghe, P. Smet, C. Detavernier, Ghent University, Belgium	
2:15pm	EM2-WeA-4 Obtaining Robust Hydrophilic Surface on Soft Polymer Through Atmospheric Pressure ALD, Albert Santoso , B. van der Berg, V. van Steijn, R. van Ommen, Delft University of Technology, Netherlands	
2:30pm	EM2-WeA-5 Modified 3D Printed Architectures: Effects of Infiltration by Alumina on ABS, Atilla Varga , S. Barry, Carleton University, Canada	
2:45pm	EM2-WeA-6 Polymer-Inorganic Hybrids for Inducing Self-Healing Functionality in Metal Oxides, O. Yurkevich, E. Modin, CIC nanoGUNE, Spain; I. Šarić, M. Petravić, University of Rijeka, Croatia; Mato Knez , CIC nanoGUNE, Spain	
3:00pm	EM2-WeA-7 Tailoring the Interfacial Interactions of Porous Polymer Membranes to Accelerate Atomic Layer Deposition: The Latent Path to Antifouling Membranes, R. Shevate, V. Rozyyev, R. Pathak, Anil Mane , S. Darling, J. Elam, Argonne National Laboratory, USA	
3:15pm	EM2-WeA-8 Ruthenium Nanostructures via Sequential Infiltration Synthesis in Self-Assembled Diblock Copolymer Thin Films, Nithin Poankottil , Ghent University, Belgium; E. Solano, ALBA Synchrotron, Spain; A. Muriqi, M. Nolan, Tyndall National Institute, University College Cork, Ireland; C. Detavernier, J. Dendooven, Ghent University, Belgium	
3:30pm	BREAK	
4:00pm	INVITED: EM3-WeA-11 Photoactive Hybrid Materials by MLD, Ola Nilsen , P. Hansen, University of Oslo, Norway	Emerging Materials Session EM3-WeA Hybrid Coatings Moderators: Christophe Detavernier, Ghent University, Belgium, Mark Losego, Georgia Institute of Technology, USA
4:30pm	EM3-WeA-13 Cerium (III) based Hybrid Inorganic-Organic Thin Films by ALD/MLD, Parmish Kaur , Ruhr University Bochum, Germany; A. Muriqi, Tyndall National Institute, University College Cork, Ireland; J. Wree, Ruhr University Bochum, Germany; R. Ghiasi, M. Safdar, Aalto University, Finland; M. Nolan, Tyndall National Institute, University College Cork, Ireland; M. Karppinen, Aalto University, Finland; A. Devi, Ruhr University Bochum, Germany	
4:45pm	EM3-WeA-14 Modifying the Physico-Chemical Properties of Polymer Nanofiltration Membranes with Metal Oxide ALD, Kirti Sankhala , T. Segal-Peretz, Technion, Israel	
5:00pm	EM3-WeA-15 Modelling of the Growth of Al ₂ O ₃ -Based Hybrid Films: Role of Terminal Groups in Aromatic Molecules, Arbresha Muriqi , Tyndall National Institute, University College Cork, Ireland; M. Karppinen, Aalto University, Finland; M. Nolan, Tyndall National Institute, University College Cork, Ireland	
5:15pm	EM3-WeA-16 Engineering Biomimetic Biocompatible and Selectively Antibacterial Ultrathin Films by Vapor Phase Chemistry, Karina Ashurbekova , K. Ashurbekova, CIC nanoGUNE, Spain; A. Muriqi, Tyndall National Institute, University College Cork, Ireland; L. Barandiaran, B. Alonso-Lerma, CIC nanoGUNE, Spain; I. Šarić, University of Rijeka, Croatia; E. Modin, R. Perez-Jimenez, CIC nanoGUNE, Spain; M. Petravić, University of Rijeka, Croatia; M. Nolan, Tyndall National Institute, University College Cork, Ireland; M. Knez, CIC nanoGUNE, Spain	

Wednesday Afternoon, June 29, 2022

Room Van Rysselberghe		
1:30pm		ALD Applications Session AA1-WeA ALD for Memory Applications II Moderators: Noureddine Adjeroud, Luxembourg Institute of Science and Technology (LIST), , Luxembourg, Christian Wenger, IHP - Leibniz Institut fuer innovative Mikroelektronik, Germany
1:45pm	AA1-WeA-2 Effects of Ultra-thin Atomic Layer Deposited MgO Buffer Layer on Structural and Electrical Properties of BeO and HfO ₂ Films for Dynamic Random Access Memory Capacitors, Bo Wen Wang , H. Song, S. Byun, D. Kwon, J. Lim, H. Seo, T. Kim, H. Paik, J. Shin, C. Hwang, Seoul National University, Korea (Republic of)	
2:00pm	AA1-WeA-3 Atomic Layer Deposition of Ternary Germanium-Sulfur-Selenium and Its Application for Ovonic Threshold Switching, Seungwon Park , M. Kim, T. Kim, S. Chung, H. Kim, School of Electrical & Electronic Engineering, Yonsei University, Korea (Republic of)	
2:15pm	AA1-WeA-4 Scaling Down to sub-5 nm Ferroelectric Hf _{0.5} Zr _{0.5} O ₂ Thin Films with Anhydrous H ₂ O ₂ ALD Oxidant, Yang Chan Jung , J. Kim, H. Hernandez-Arriaga, D. Le, S. Hwang, University of Texas at Dallas, USA; D. Alvarez, J. Spiegelman, RASIRC, USA; T. Onaya, National Institute of Advanced Industrial Science and Technology (AIST), Japan; C. Nam, Y. Zhang, Brookhaven National Laboratory, USA; S. Kim, Kangwon National University, Korea (Republic of); J. Kim, University of Texas at Dallas, USA	
2:30pm	AA1-WeA-5 Engineering the Ferroelectric Properties in Hafnium Oxide by Co-Doping during Atomic Layer Deposition, Kati Kühnel , M. Lederer, A. Pourjafar, K. Mertens, F. Schöne, M. Neuber, L. Roy, T. Kämpfe, K. Seidel, M. Czernohorsky, Fraunhofer IPMS, Center Nanoelectronic Technologies, Germany	
2:45pm	AA1-WeA-6 Magnetic and Electric Properties of Atomic Layer Deposited HfO ₂ -Fe ₂ O ₃ Thin Films, Kristjan Kalam , M. Otsus, R. Rammula, University of Tartu, Estonia; J. Link, National institute of chemical physics and biophysics, Estonia; R. Stern, National Institute of Chemical Physics and Biophysics, Estonia; G. Vinuesa, S. Duenas, H. Castan, University of Valladolid, Spain; K. Kukli, A. Tamm, University of Tartu, Estonia	
3:00pm	AA1-WeA-7 Atomic Layer Deposition of Antiferroelectric Perovskite Lead Hafnate Using O ₂ -Gas-Only as the Oxygen Precursor, Nicholas Strnad , W. Sarney, Army Research Laboratory, USA; G. Fox, Fox Materials Consulting, LLC, USA; B. Hanrahan, Army Research Laboratory, USA; B. Rayner, Kurt J. Lesker Company, USA; R. Rudy, J. Puskamp, Army Research Laboratory, USA	
3:15pm	AA1-WeA-8 <i>In-situ</i> Half-Cycle Study of High Purity H ₂ O ₂ -based HfO ₂ Atomic Layer Deposition for Hf based Ferroelectric Devices Applications, Jinhyun Kim , Y. Jung, S. Hwang, D. Le, H. Hernandez-Arriaga, K. Tan, University of Texas at Dallas, USA; D. Alvarez, J. Spiegelman, RASIRC, USA; S. Kim, Kangwon University, USA; J. Kim, University of Texas at Dallas, USA	
3:30pm	BREAK	
4:00pm	AA2-WeA-11 Superconducting Tantalum Nitride Prepared by Plasma ALD With RF Biasing for Quantum Applications, Silke Peeters , Eindhoven University of Technology, Netherlands; C. Lennon, R. Hadfield, University of Glasgow, UK; E. Kessels, H. Knoops, Eindhoven University of Technology, Netherlands	ALD Applications Session AA2-WeA Emerging Applications of ALD Moderators: Giuseppe Alessio Verni, ASM, USA, Adrie Mackus, Eindhoven University, Netherlands
4:15pm	AA2-WeA-12 Membrane Design by ALD for Hydrogen Purification, L. Badouric, M. Drobek, A. Julbe, Mikhael Bechelany , European Institute of Membranes, France	
4:30pm	INVITED: AA2-WeA-13 Mechanical Properties of ALD Coatings, Aile Tamm , University of Tartu, Estonia; H. Piirsoo, University of Tartu,, Estonia; J. Kozlova, T. Jõgiaas, University of Tartu, Estonia	
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 Plate, P.: AA-TuP-60, 25
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 Pohl, D.: EM-MoP-7, 15
 Poodt, P.: AA1-MoA-7, 12; AM1-TuA-2, **20**; AM-TuP-1, 26; PS-WeM1-5, 27
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 Prünte, S.: HM+EM+NS-MoP-4, **15**
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 Qian, C.: NS-WeA2-11, 30
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 — R —
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 Rai, S.: EM1-WeA-6, 30
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 Rudy, R.: AA1-WeA-7, 33
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 Ryu, Y.: AA-TuP-14, **24**
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 Schuster, J.: ALE1-TuA-6, 21
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- Segal-Peretz, T.: HM+EM+NS-MoP-1, **15**;
HM+EM+NS-MoP-10, **15**; HM+EM+NS-MoP-
3, **15**
- Seguini, G.: HM+EM+NS-MoP-7, **15**;
HM+EM+NS-MoP-9, **15**
- Seidel, K.: AA1-WeA-5, **33**
- Sekiguchi, L.: AA-TuP-23, **24**; AA-TuP-55, **25**
- Sekkat, A.: AM-TuP-8, **26**
- Sekkat, A.: AA-TuP-67, **26**; AM2-TuA-17, **20**
- Seo, H.: AA1-WeA-1, **33**
- Seo, K.: AA2-TuA-13, **23**
- Seo, S.: AA-TuP-5, **24**; AM-TuP-2, **26**
- Seok, J.: AF-MoP-59, **14**
- Seol, H.: AA-TuP-14, **24**
- Seong, I.: ALE-SuP-2, **4**; ALE-SuP-6, **4**
- Setten, M.: AF-TuM2-3, **19**
- Shan, N.: AS2-WeA-15, **31**
- Sharma, A.: AF4-MoA-17, **11**
- Sharma, S.: ALE1-MoA-5, **9**
- Sharp, I.: AA-TuP-37, **25**; AF3-MoA-5, **10**; AF4-
MoA-14, **10**; NS-WeA2-11, **30**
- Shen, J.: AA1-MoA-7, **12**
- Shen, C.: AA-TuP-1, **24**
- Shen, J.: AM1-TuA-3, **20**
- Shevate, R.: AA2-MoA-14, **12**; AA-TuP-35, **25**;
EM2-WeA-7, **32**
- Shiel, K.: AS1-WeA-1, **31**
- Shim, D.: ALE-SuP-3, **4**; ALE-SuP-4, **4**
- Shin, D.: ALE2-MoA-17, **9**; AM-TuP-2, **26**; NS-
WeA2-15, **30**
- Shin, J.: AA1-WeA-1, **33**; AA-TuP-11, **24**; AF3-
MoA-6, **10**
- Shinoda, K.: ALE-MoM2-3, **7**; ALE-MoM2-5, **7**;
ALE-TuM2-3, **19**
- Shiotani Marcondes, M.: AF-MoP-22, **13**
- Shirvanian, P.: AA1-MoA-7, **12**
- Shong, B.: AF-MoP-45, **14**; AF-TuM2-1, **19**;
AS1-WeA-5, **31**; AS-TuP-5, **26**
- Shu, Y.: AA-TuP-19, **24**; ALE2-TuA-17, **21**
- Shukla, D.: AF-MoP-17, **13**; EM1-WeA-1, **30**;
EM1-WeA-3, **30**
- Sibener, S.: AA-TuP-35, **25**
- Siegl, L.: EM-MoP-7, **15**
- Silva, D.: AA-TuP-37, **25**
- Simanjuntak, F.: AA-TuP-10, **24**
- Simon, A.: HM+EM+NS-MoP-3, **15**
- Sims, J.: ALE1-TuA-7, **21**
- Singamaneni, S.: AA-TuP-71, **26**
- Singh, I.: AF2-TuA-17, **22**
- Sinha, J.: AS-TuP-3, **26**
- Sipilä, H.: AF1-MoA-1, **8**
- Sittinger, V.: AF-MoP-72, **15**
- Skopin, E.: AA2-WeM2-1, **28**; AF1-TuA-5, **22**
- Smeltink, J.: AM-TuP-1, **26**
- Smet, P.: EM2-WeA-3, **32**
- Smets, J.: EM-WeM2-3, **29**
- Snelgrove, M.: AF-MoP-56, **14**; AS1-WeA-1,
31
- Sobell, Z.: AA2-TuA-11, **23**
- Soeya, S.: AF-MoP-58, **14**
- Sohn, I.: AA1-MoA-8, **12**; NS-WeA2-15, **30**
- Solano, E.: AA1-MoA-3, **12**; EM2-WeA-8, **32**
- Son, H.: AF-MoP-48, **14**; AF-MoP-9, **13**
- Song, H.: AA1-WeA-1, **33**
- Song, S.: HM+EM+NS-MoP-8, **15**; PS-TuM1-7,
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- Sønsteby, H.: AA1-WeM2-1, **28**; AF1-MoM2-
3, **6**; EM1-WeA-4, **30**
- Sopha, H.: AA-TuP-46, **25**; AF-MoP-51, **14**;
NS-WeM2-4, **29**
- Sosa, J.: AA1-TuM2-3, **18**
- Sowa, M.: AA-TuP-51, **25**
- Spiecker, E.: AF4-MoA-17, **11**
- Spiegelman, J.: AA1-WeA-4, **33**; AA1-WeA-8,
33; AF-MoP-18, **13**; AS-TuP-4, **26**
- Spiering, S.: AF-MoP-13, **13**
- Sprey, H.: AA2-TuA-16, **23**
- Spring, P.: AA-TuP-31, **24**
- Sridhar, S.: ALE2-MoA-16, **9**; ALE-SuP-5, **4**; PS-
TuM1-8, **17**
- Stathopoulos, S.: AA-TuP-10, **24**
- Steen, S.: PS-MoM1-2, **5**
- Stefanovic, S.: AA2-TuM2-5, **18**
- Stern, R.: AA1-WeA-6, **33**
- Strandwitz, N.: AA2-TuA-17, **23**; AA-TuP-51,
25
- Streibel, V.: AF3-MoA-5, **10**
- Strnad, N.: AA1-WeA-7, **33**; EM-MoP-14, **15**
- Stutzmann, M.: AF4-MoA-14, **10**
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- Subhadeep, K.: PS-TuM1-2, **17**
- Subramanian, A.: AA2-WeM2-2, **28**; EM3-
WeA-14, **32**
- Sundaram, R.: AA-TuP-19, **24**; NS-WeA2-13,
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- Sundqvist, J.: AA2-TuM2-1, **18**; ALE1-TuA-4,
21
- Sung, M.: EM3-WeA-14, **32**
- Surca, A.: AA2-WeM2-3, **28**
- Suyatin, D.: ALE1-TuA-4, **21**
- Swekis, P.: EM-MoP-7, **15**
- Szeghalmi, A.: AA-TuP-56, **25**
- Szkudlarek, A.: AF-MoP-71, **15**
- Szmyt, W.: AF2-MoM2-6, **7**; AF-MoP-73, **15**
- T —
- Tagliabue, S.: HM+EM+NS-MoP-9, **15**
- Takahashi, M.: AF-MoP-58, **14**
- Takahashi, N.: AF-MoP-42, **14**; AF-MoP-43, **14**
- Takeda, K.: AF-MoP-36, **14**
- Tallarida, G.: AA1-TuM2-1, **18**; HM+EM+NS-
MoP-7, **15**
- Tamm, A.: AA1-WeA-6, **33**; AA2-WeA-11, **33**;
AA-TuP-59, **25**; AF2-TuA-15, **22**; AF-MoP-28,
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- Tan, K.: AA1-WeA-8, **33**; AF1-MoA-6, **8**; AS-
TuP-4, **26**
- TANOS, F.: AA1-MoA-4, **12**; AA-TuP-8, **24**
- Tarancón, A.: AM-TuP-8, **26**
- Tarng, J.: AF3-MoA-8, **10**
- Tarre, A.: AA-TuP-59, **25**; AF2-TuA-15, **22**; AF-
MoP-14, **13**
- Taskinen, J.: AA1-TuM2-4, **18**
- Tegenkamp, C.: AF-MoP-23, **13**
- Tepljakov, A.: ALE1-MoA-4, **9**
- Teppe, N.: ALE1-MoA-3, **9**
- ter Veen, R.: AF-MoP-4, **13**
- Tercero, J.: ALE1-TuA-8, **21**
- Tezsevin, I.: AF2-MoA-15, **8**; AS1-WeA-4, **31**
- Thalluri, S.: AA-TuP-46, **25**; AF-MoP-51, **14**
- Theirich, D.: EM1-WeA-7, **30**
- Thomas, A.: EM-MoP-7, **15**
- Thomas, M.: AA-TuP-21, **24**
- Tielen, V.: AM-TuP-1, **26**
- Tillocher, T.: ALE2-TuA-13, **21**; ALE2-TuA-14,
21
- Timm, R.: AF1-TuA-1, **22**
- Tiron, R.: HM+EM+NS-MoP-7, **15**
- Tiwale, N.: AA2-WeM2-2, **28**; EM3-WeA-14,
32
- Tkachenko, N.: AF4-MoA-15, **10**
- Todinova, A.: AA-TuP-65, **25**
- Tokumasu, T.: AF-MoP-29, **13**
- Toldra-Reid, F.: AM-TuP-8, **26**
- Toldra-Reig, F.: AM-TuP-6, **26**
- Toldrá-Reig, F.: AM2-TuA-17, **20**
- Tomar, L.: AM-TuP-4, **26**
- Tomko, J.: HM+EM+NS-MoP-13, **16**
- Tonner, R.: AS-TuP-6, **26**
- Tonner-Zech, R.: AF-MoP-57, **14**
- Trinh, N.: AS1-WeA-2, **31**
- Tröger, J.: AF-MoP-4, **13**
- Tsai, E.: AA1-WeA-2, **33**
- Tsai, T.: AA-TuP-43, **25**
- Tsampas, M.: AA1-MoA-2, **12**; AA1-MoA-6, **12**
- Tsuji, Y.: AA-TuP-23, **24**; AA-TuP-55, **25**
- Tsukagoshi, K.: AF-MoP-58, **14**
- Tsutsumi, T.: ALE2-MoA-14, **9**
- Tu, H.: AA-TuP-43, **25**
- Tukiainen, A.: AF4-MoA-15, **10**
- Tünnermann, A.: AA-TuP-56, **25**
- U —
- Uchino, T.: AA-TuP-23, **24**; AA-TuP-55, **25**
- Ueda, S.: AA1-WeA-2, **33**
- Ueda, Y.: AA-TuP-23, **24**; AA-TuP-55, **25**
- Uene, N.: AF-MoP-29, **13**
- Unger, K.: NS-MoP-4, **16**
- Urbanas, D.: AA1-MoA-1, **12**
- Urpelainen, S.: AF1-TuA-4, **22**
- Utke, I.: AF2-MoM2-6, **7**; AF4-MoA-17, **11**;
AF-MoP-71, **15**; AM-TuP-10, **26**; NS-MoP-
11, **16**
- Utriainen, M.: AF2-MoM2-1, **7**
- V —
- Vahlas, C.: AA2-WeA-13, **33**
- Valden, M.: AF4-MoA-15, **10**
- Vallee, C.: ALE-TuM2-1, **19**
- van de Sanden, R.: AA1-MoA-2, **12**
- Van de Voorde, B.: EM2-WeA-3, **32**
- van der Berg, B.: EM2-WeA-4, **32**
- van der Wel, B.: AS2-WeA-11, **31**; AS-TuP-2,
26
- van der Zouw, K.: AF-MoP-12, **13**
- Van Dijk, C.: AF1-MoM2-4, **6**; AF3-MoA-7, **10**
- van Dijk, J.: HM+EM+NS-MoP-4, **15**
- van Dijk, B.: AA1-MoA-7, **12**
- Van Dongen, K.: AS1-WeA-7, **31**
- van Duin, A.: AF-MoP-29, **13**
- van Eyck, D.: HM+EM+NS-MoP-4, **15**
- van Limpt, R.: AA1-MoA-6, **12**
- Van Meter, K.: AA-TuP-51, **25**
- van Ommen, J.: AA1-MoA-1, **12**
- van Ommen, R.: AA-TuP-47, **25**; EM2-WeA-4,
32; NS-MoP-1, **16**
- van Steijn, V.: EM2-WeA-4, **32**; NS-MoP-1, **16**
- van Straaten, G.: AA1-MoA-2, **12**;
HM+EM+NS-MoP-4, **15**
- Van Vlierberghe, S.: EM2-WeA-3, **32**
- Van, T.: AS1-WeA-5, **31**
- Vandenbroucke, S.: AA2-MoA-12, **12**; AF-
MoP-3, **13**; PS-WeM1-8, **27**
- Varga, A.: EM2-WeA-5, **32**
- Vehkamäki, M.: AF1-MoA-1, **8**
- Veillerot, M.: EM-WeM2-2, **29**
- Veinot, A.: AF2-TuA-17, **22**
- Velasco, J.: AF2-MoM2-4, **7**; AF-MoP-70, **15**;
AF-MoP-8, **13**
- Vemuri, V.: AA2-TuA-17, **23**
- Venkatesan, V.: AA-TuP-31, **24**
- Ventzek, P.: AF-MoP-41, **14**; ALE2-MoA-16, **9**;
ALE-SuP-5, **4**; PS-TuM1-8, **17**
- Vereecken, P.: AA2-MoA-12, **12**; AA2-MoA-
17, **12**; AF-MoP-3, **13**; TS-SuA-16, **3**
- Vergnes, H.: AA2-WeA-13, **33**
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