

Schedule

ASD 2018 - Sunday, April 29, 2018		
5:30 p.m.	Registration	Hallway
5:30 p.m.	Poster set-up begins	Fusion AB
6:00 p.m.- 8:00 p.m.	Welcome Reception	Lookout Patio
ASD 2018 - Monday, April 30, 2018		
7:30 a.m.	Registration and Continental Breakfast	Hallway
8:15 a.m.	Welcome and Introduction	Fusion CD
Overview and Electronic Applications		
8:30 a.m.	INVITED: Area-selective Deposition by Surface Engineering for Applications in Nano-electronics. From Blanket to Confined Dimensions <u>S. Armini</u> , I. Zyulkov, S. Herregods, H. Struyf, Imec, Belgium	Fusion CD
9:00 a.m.	INVITED: Overview of Approaches for Achieving Area-selective ALD, <u>A.J.M. Mackus</u> , Eindhoven Univ. of Technology, The Netherlands	Fusion CD
Polymer Deposition		
9:30 a.m.	INVITED: Topologically and Topographically Controlled Interfaces via Chemical Vapor Deposition Polymerization, <u>Joerg Lahann</u> , Univ. of Michigan, and Institute for Functional Interfaces, Karlsruhe Institute of Technology	Fusion CD
10:00 a.m.	Break and Coffee	Hallway
10:30 a.m.	Selective iCVD pDVB Coatings on SiO ₂ Micropatterned with Resistively Heated Chromium, <u>M. Robinson</u> , D.H. Kim, Massachusetts Institute of Technology, USA; M. Dolejsi, Institute for Molecular Engineering, Univ. of Chicago, USA; J. Zhao, MIT, USA; P. Nealey, Institute for Molecular Engineering, Univ. of Chicago, USA; K. Gleason, Massachusetts Institute of Technology, USA	Fusion CD
Deposition/Etch and Modeling		
10:45 a.m.	INVITED: ASD Process Using ALD, Etching (Plasma or ALE) and Surface Passivation <u>C. Vallée</u> , Univ. Grenoble Alpes, France; R. Vallat, V. Pesce, Univ. Grenoble Alpes, France and CEA, LETI, Minatec Campus, France; N. Posseme, CEA, LETI, Minatec Campus, France; A. Bsiesy, Univ. Grenoble Alpes, France; R. Gassilloud, CEA, LETI, Minatec Campus, France	Fusion CD
11:15 a.m.	Area-Selective TiO ₂ ALD Via Periodic Thermal TiO ₂ ALE, <u>Seung Keun Song</u> , Gregory N. Parsons, North Carolina State Univ., USA	Fusion CD
11:30 a.m.	Nucleation and Growth mode in ALD: an Atomistic Model T. Muneshwar, <u>G Shoute</u> , Synthergy Inc., Canada and Univ. of Alberta, Alberta, Canada; D. Barlage, K. Cadien, Univ. of Alberta, Alberta, Canada	Fusion CD
11:45 a.m.	Lunch	Synergy Ballroom
In-situ Analysis and Metrology		
1:00 p.m.	INVITED: Mechanisms of Selective Deposition Explored by In-situ Spectroscopy A. Dangerfield, F. Pena, R. Rahman, J. Klesko, <u>Y.J. Chabal</u> , Univ. of Texas at Dallas, USA; J. Woodruff, C. Nanayakkara, C. Dezelah, R. Kanjolia, EMD Performance Materials, USA	Fusion CD
1:30 p.m.	Chemically Selective Imaging with nm-scale Spatial Resolution via Photo-Induced Force Microscopy D. Nowak, <u>T.R. Albrecht</u> , S. Park, Molecular Vista, Inc., USA	Fusion CD
1:45 p.m.	Evaluation of Substrate Selectivity During ALD Using Reflection-Absorption Infrared Spectroscopy <u>B. Kalanyan</u> , B.A. Sperling, J.E. Maslar, National Institute of Standards and Technology	Fusion CD
2:00 p.m.	Metrology Panel	Fusion CD
3:00 p.m.	Break and Snack	Hallway

Nucleation and Precursors		
3:30 p.m.	Selective Deposition at the Single-Molecule Limit <u>J. Lake</u> , J.H.G. Owen, J. Ballard, R. Santini, J.N. Randall and J. Von Ehr, Zyvex Labs LLC, USA	Fusion CD
3:45 p.m.	INVITED: Can "Solution" Thinking Resolve Surface Problems? A.V. Teplyakov, Univ. of Delaware; F. Zaera, Univ. of Calif, Riverside; <u>S. Barry</u> , Carleton Univ., Canada	Fusion CD
4:15 p.m.	Area-Selective Atomic Layer Deposition of TiN, TiO ₂ , and HfO ₂ for Advanced Thin Film Patterning by Delayed Nucleation on Plasma-Treated Amorphous Carbon <u>Eric Stevens</u> , Imec, Belgium, North Carolina State Univ., USA, and KU Leuven, Belgium; Yoann Tomczak, BT Chan, Efrain Altamirano Sanchez, Imec, Belgium; Gregory Parsons, North Carolina State Univ., USA; Annelies Delabie Imec, Belgium and KU Leuven (Univ. of Leuven), Belgium	Fusion CD
4:30 p.m.	Reactions of Sc(MeCp) ₂ (Me ₂ pz) with Oxide Surfaces <u>R. Rahman</u> , J. P. Klesko, A. Dangerfield, Y.J. Chabal, Univ. of Texas at Dallas, USA	Fusion CD
4:45 p.m.	Area Selective Deposition from an Aqueous Fog Nishit M. Murari, Ryan H. Mansergh, Yu Huang, Douglas A. Keszler, <u>John F. Conley Jr.</u> , Oregon State Univ., USA	Fusion CD
5:00 p.m.	Poster Session and Reception	Fusion AB
P1	Silver Deposition Selectively Directed to Protein's Surface: Methodology and BioMedical Applications, Y. Dror, H. Dagan-Moscovich, C. Ophir-Porata, Y. Shacham-Diamand, <u>A. Freeman</u> , Tel Aviv University	
P2	Thermal Selective Etching on Metal Oxide and Nitride Films <u>Jinhyung Park</u> , Air Liquide Laboratories, South Korea	
P3	Area Selective Deposition of III-V's on oxides for Neuromorphic Synapses <u>D. Sarkar</u> , J. Tao, R. Kapadia, Univ. of Southern California, Los Angeles, USA	
P4	Pulse Gas Delivery for ALD and ALE Processes <u>Josh Ding</u> , MKS Instruments, Inc., USA	
P5	1D TiO ₂ Nanotube Layers: Excellent Platform for Area-Selective ALD R. Zazpe, J. Prikryl, M. Krbal, <u>J.M. Macak</u> , Univ. of Pardubice, Czech Republic	
P6	Multilayered Graphene Blocking/Lift-off Layers Towards Selective Plasma-ALD of III-nitride Films P. Deminsky, Bilkent Univ., Turkey and NASU, Inst. of Microdevices, Dept. of Technol. & Analytical Res., Ukrain; E. Kovalska, A. Haidera, Bilkent Univ., Turkey; <u>N. Biyikli</u> , Univ. of Connecticut, USA	
P7	Alkali Interactions in Thermal ALE for Selective Area Etching and Deposition of Aluminum Oxide <u>J. Hennessy</u> , A.D. Jewell, S. Nikzad, Jet Propulsion Laboratory, California Institute of Technology, USA	
P8	Investigation of Solution Phase and Vapor Phase Self-Assembled Monolayers for Area-Selective Atomic Layer Deposition of Hafnium Dioxide <u>C. Nanayakkara</u> , J. Eldo, EMD Performance Materials, USA; A. Dangerfield, J. Klesko, R. Rahman, Y. Chabal, The Univ. of Texas at Dallas, USA; C. Dezelah, S. Hong, J. Woodruff, R. Kanjolia EMD Performance Materials, USA	
P9	Atomic Layer Etching of Silica and Alumina Films <u>R. Rahman</u> , J.P. Klesko, A. Dangerfield, Univ. of Texas at Dallas, USA; S. Rivillon-Amy, Electronic Fluorocarbons, LLC; Y.J. Chabal, Univ. of Texas at Dallas, USA	
P10	Anhydrous Hydrogen Peroxide Surface Preparation and High Nucleation for ASD D. Alvarez, Jr., <u>J. Spiegelman</u> , RASIRC, USA	
P11	In-situ RAIRS investigation of the Oxidation and Reduction of Cu using UV/O ₃ and Ethanol <u>Luis Fabián Peña</u> , The Univ. of Texas at Dallas, USA; Michael A. Todd, Versum Materials, Inc., USA; Yves J. Chabal, The Univ. of Texas at Dallas	
P12	Study on Silicon-nitride ALD Process at Low Temperature by a High Density Multiple-ICP Source <u>H.H. Song</u> , H.Y. Chang, KAIST (Korea Advanced Institute of Science and Technology), South Korea	

P13	Development of Advanced Precursors for Selective Deposition of Cobalt Films <u>A. Alan Cooper</u> , B. Sergei Ivanov, Versum Materials, USA; C. Se-Won Lee, Versum Materials, USA, South Korea; D. Moo-Sung Kim, E. Agnes Derecskei, Versum Materials, USA	
P14	Selective ALD for Plasmonic Metallic Nanostructures <u>Chengwu Zhang</u> , Qi Jie, Tuo Gao, Brian Willis, University of Connecticut, USA	
P15	Resonant Scattering as a Rapid and Site-Specific Spatiochemical Probe of Patterned Interfaces <u>I. Cordova</u> , G. Freychet, G. Su, C. Wang, LBNL Advanced Light Source, Berkeley, CA	
6:00 p.m.	Buffet Dinner	Synergy Ballroom

ASD 2018 - Tuesday, May 1, 2018		
7:30 a.m.	Registration and Continental Breakfast	Hallway
Catalysis and Metals		
8:30 a.m.	INVITED: Bottom-up Engineering Catalyst Nanostructures using Area-Selective Atomic Layer Deposition <u>Junling Lu</u> , Hefei National Laboratory for Physical Sciences at the Microscale, iChEM and CAS Key Laboratory of Materials for Energy Conversion, Univ. of Science and Technology of China, China	Fusion CD
9:00 a.m.	INVITED: Inherently Selective Thermal Atomic Layer Deposition of Electropositive Metal Films <u>Charles H. Winter</u> , Wayne State Univ., USA	Fusion CD
9:30 a.m.	Diffusion-mediated Nucleation Behaviour of Ruthenium Atomic Layer Deposition on Dielectrics Job Soethoudt, KU Leuven (Univ. of Leuven, Belgium) and Imec, Belgium; Yoann Tomczak, Imec, Belgium; Fabio Grillo, J. Ruud van Ommen, Delft Univ. of Technology, The Netherlands; Efrain Altamirano Sanchez, Imec, Belgium; <u>Annelies Delabie</u> , KU Leuven (Univ. of Leuven, Belgium) and Imec, Belgium	Fusion CD
9:45 a.m.	Selective Thermal Atomic Layer Etching of Metallic Tungsten Using WF ₆ and O ₂ <u>Wenyi Xie</u> , Paul C. Lemaire, Gregory N. Parsons, North Carolina State Univ.	Fusion CD
10:00 a.m.	Break and Coffee	Hallway
10:30 a.m.	Area Selective CVD of Metallic Films from Carbonyl Precursors: Mechanism of Growth Inhibition on Oxide Surfaces <u>Z.V. Zhang</u> , E. Mohimi, G.S. Girolami, J.R. Abelson, Univ. of Illinois at Urbana-Champaign, USA	Fusion CD
Passivating Agents: SAMS and Growth Inhibitors		
10:45 a.m.	INVITED: A Tale of Two Coordination Modes: Diaminoalkylsilane Adsorption on Dielectric and Silicon Substrates <u>J. Kachian</u> , J. Tanskanen, Applied Materials, USA	Fusion CD
11:15 a.m.	Toward Area Selective ALD on Metal/SiO ₂ Substrates Using Self Assembled Monolayers: Comparison of Cu, Co, W and Ru <u>Dara Bobb-Semple</u> , Stacey F. Bent, Stanford Univ., USA	Fusion CD
11:30 a.m.	Insight into Blocking Precursor Adsorption by Inhibitors in ABC-type ALD of SiO ₂ from <i>In-situ</i> Infrared Spectroscopy <u>M.J.M. Merks</u> , R.G.J. Jongen, A. Mameli, Eindhoven Univ. of Technology, The Netherlands; D.M. Hausmann, Lam Research Corporation, USA; W.M.M. Kessels, A.J.M. Mack, Eindhoven Univ. of Technology, The Netherlands	Fusion CD
11:45 a.m.	Lunch	Synergy Ballroom
Advanced Materials and Processes		
1:00 p.m.	INVITED: Electrochemical Atomic Layer Deposition Enabling the Atomically-Precise and Selective Deposition of Metals Kailash Venkatraman, <u>Rohan Akolkar</u> , Case Western Reserve Univ., USA	Fusion CD
1:30 p.m.	Area-selective Deposition of Metal Oxides and Atomic Deuterium Reduction to Produce Patterned Metal Films Zizhuo Zhang, <u>John G. Ekerdt</u> , Univ. of Texas at Austin, USA	Fusion CD

1:45 p.m.	Substrate dependency in Atomic Layer Deposition of 2-dimensional SnS Thin Films In-hwan Baek, Korea Institute of Science and Technology, South Korea and Seoul National Univ., South Korea; Jung Joon Pyeon, Korea Institute of Science and Technology, South Korea and Korea Univ., South Korea; Taek-Mo Chung, Korea Research Institute of Chemical Technology, South Korea; Jeong Hwan Han, Seoul National Univ. of Science and Technology, South Korea; Cheol Seong Hwang, Seoul National University, South Korea; <u>Seong Keun Kim</u> , Korea Institute of Science and Technology, South Korea	Fusion CD
2:00 p.m.	Area Selective Deposition of Crystalline Semiconductors on Non-epitaxial Substrates, D. Sarkar, <u>R. Kapadia</u> , Univ. of Southern California, Los Angeles, USA	Fusion CD
2:15 p.m.	Employing Atmospheric Pressure Micro-plasma Printer for Area-selective ALD of TiO ₂ Thin Films M. Aghaee, M. Mione, F. Elam, Eindhoven Univ. of Technology, The Netherlands; J. Verheijen, A.A.E. Stevens, Eindhoven Univ. of Technology, The Netherlands and InnoPhysics B.V., The Netherlands; <u>W.M.M. Kessels</u> , M. Creatore, Eindhoven Univ. of Technology, The Netherlands	Fusion CD
2:30 p.m.	INVITED: Area Selective Deposition Using Electron Enhanced ALD J.K. Sprenger, H. Sun, A.S. Cavanagh and <u>S.M. George</u> , Univ. of Colorado, Boulder, USA	Fusion CD
3:00 p.m.	Summary and Adjourn	Fusion CD