



**AIMES**<sup>TM</sup> **2018**  
AMERICAS INTERNATIONAL MEETING ON  
ELECTROCHEMISTRY AND SOLID STATE SCIENCE



**MEETING NETWORK**

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# 2018 ECS and SMEQ Joint International Meeting



## CANCUN MEXICO

September 30-October 4, 2018

Moon Palace Resort

## Meeting Program



234th Meeting of  
The Electrochemical  
Society



XXXIII Congreso de la  
Sociedad Mexicana  
de Electroquímica

11th Meeting of the Mexico Section of The Electrochemical Society

*with the Technical Co-Sponsorship of Sociedade Brasileira de Eletroquímica e Eletroanalítica (SBEE), Sociedad Iberoamericana de Electroquímica (SIBAE), and the Asociación Colombiana de Electroquímica (ACEQ)*

- 10:40 **984** Inherent Area-Selective Growth and Nucleation Enhancement during Ru ALD Using the RuO<sub>4</sub>-Precursor and H<sub>2</sub>-Gas – M. Minjauw (Department of Solid State Sciences, Ghent University), H. Rijckaert, I. Van Driessche (Department of Chemistry, Ghent University), C. Detavernier, and J. Dendooven (Department of Solid State Sciences, Ghent University)
- 11:00 **985** New Process Concepts Towards Area-Selective Atomic Layer Deposition and Atomic Layer Etching of Zinc Oxide – A. Mameli (Eindhoven University of Technology), M. A. Verheijen (Philips Innovation Services), B. Karasulu (Eindhoven University of Technology, University of Cambridge), A. J. M. Mackus, W. M. M. Kessels, and F. Roozeboom (Eindhoven University of Technology)
- 11:20 **986** *(Invited)* Precursor Innovations Directed Toward the Area Selective, Thermal Atomic Layer Deposition of Electropositive Metal Thin Films – C. H. Winter (Wayne State University)

**History of Atomic Layer Deposition – 12:00 – 12:40****Co-Chairs: Chanyuan Liu and Fred Roozeboom**

- 12:00 **987** *(Invited)* Learnings from an Open Science Effort: Virtual Project on the History of ALD – R. L. Puurunen (Aalto University School of Chemical Engineering)

**Atomic Layer Deposition Materials – 14:00 – 15:20****Co-Chairs: O. van der Straten and Stefan De Gendt**

- 14:00 **988** *(Invited)* A Comparative Study of Low-Temperature III-V Nitrides ALD in Thermal and Radical-Enhanced Modes – A. Y. Kovalgin (MESA+ Institute for Nanotechnology, University of Twente)
- 14:40 **989** Ferroelectricity of Hf<sub>x</sub>Zr<sub>1-x</sub>O<sub>2</sub> Thin Films Fabricated Using TiN Stressor Layer and ZrO<sub>2</sub> Nucleation Layer – T. Onaya (Meiji University, National Institute for Materials Science), T. Nabatame (National Institute for Materials Science), N. Sawamoto (Meiji University), K. Kurishima (Meiji University, National Institute for Materials Science), A. Ohi, N. Ikeda, T. Nagata (National Institute for Materials Science), and A. Ogura (Meiji University)
- 15:00 **990** Optical, Structural, and Resistive Switching Characteristics of Atomic-Layer-Deposited ZnO Films with Their Thickness Variation – T. Lee, Y. Jung, S. Seong, S. Y. Kim, I. S. Park, and J. H. Ahn (Hanyang University)

**Emerging Atomic Layer Deposition Applications – 15:20 – 16:00****Co-Chairs: Jolien Dendooven and O. van der Straten**

- 15:20 **991** *(Invited)* Atomic Layer Deposition in Life Science Applications – G. Sundaram (Veeco-CNT)

**G03****SiGe, Ge, and Related Compounds: Materials, Processing, and Devices 8**Electronics and Photonics  
Universal 13, Expo Center**Optoelectronics 3 – 08:00 – 09:40****Co-Chair: Gianlorenzo Masini**

- 08:00 **1021** *(Invited)* Development of Si-Based Sigesin Technique Towards Short-Wave and Mid-Infrared Applications – S. Q. Yu (University of Arkansas), W. Du (Wilkes University), S. A. Ghetmiri (University of Arkansas), A. Mosleh (University of Arkansas at Pine Bluff), J. Margetis, J. Tolle (ASM America), J. Liu (Dartmouth College), M. Mortazavi (University of Arkansas at Pine Bluff), G. Sun, R. Soref (University of Massachusetts Boston), and B. Li (Arktonics, LLC)
- 08:30 **1022** *(Invited)* Heterogeneous Integration of III-V Semiconductors on Si Photonics Platform – T. Hiraki, T. Aihara, K. Hasebe, T. Fujii, K. Takeda, H. Nishi, T. Tsuchizawa, T. Kakitsuka, H. Fukuda, and S. Matsuo (NTT Corporation)
- 09:00 **1023** IR-Photodetector Fabrication on Suspended GeSn Thin Layers – A. Abedin, K. Garidis, P. E. Hellström (KTH Royal Institute of Technology), and M. Ostling (KTH)
- 09:20 **1024** Structure and Optoelectronic Properties of Atomically Random Sn-Rich GeSn Semiconductors – S. Assali, J. Nicolas (École Polytechnique de Montréal), S. Mukherjee (École Polytechnique de Montréal), É. Bouthillier, A. Attiaoui, and O. Moutanabbir (École Polytechnique de Montréal)

**G03 Plenary – 10:00 – 11:40****Co-Chair: David L. Harame**

- 10:00 **1025** *(Keynote)* Contemporary and Future Logic Devices – W. P. Maszara (GLOBALFOUNDRIES)
- 10:50 **1026** *(Keynote)* Silicon-Germanium: Enabler of Moore's Law – T. J. K. Liu and F. Ding (University of California, Berkeley)

**Related Compounds – 13:00 – 14:30****Co-Chair: Matty Caymax**

- 13:00 **1027** *(Invited)* 2D Materials for Electronic and Optoelectronic Applications: Growth and Device Integration – G. Bacher (University Duisburg-Essen)
- 13:30 **1028** *(Invited)* Atomic Layer Deposition for the Synthesis and Integration of 2D Materials for Nanoelectronics – A. A. Bol (Eindhoven University of Technology)
- 14:00 **1029** *(Invited)* Scalable, Layer-Controlled Synthesis of 2D Semiconductors – D. Chiappe (imec, Belgium), S. El Kazzi (IMEC), V. Afanasiev (KU Leuven, Belgium), A. Leonhardt, J. Ludwig (imec, Belgium), U. Celano (imec), S. Brems (imec vzw), G. Pourtois (University of Antwerp, Belgium), M. Caymax, T. Schram (imec, Belgium), C. Huyghebaert (imec vzw), I. Asselberghs (imec, Belgium), S. De Gendt (imec), and I. Radu (imec, Belgium)