

2018 LAWRENCE SYMPOSIUM ON EPITAXY, FEBRUARY 18-21, 2018
McCormick Resort Conference Center, Scottsdale

Sunday February 18th, 6:00-9:00 PM Registration and Welcoming Wine Reception

Monday February 19th, Session 8:00 AM- 5:30 PM, Hosted Dinner 6:10—7:30 PM

Hosted Breakfast 8:00 – 9:00 AM served in meeting room

Morning Session Chair: Nate Newman, Arizona State Univ.

- 9:00-9:05 AM** Welcome by Monte Lawrence
9:05–9:10 AM Opening remarks by Nate Newman
9:10-9:55 AM **Richard Lunt**, *Understanding Organic Quasi-Epitaxy*, Michigan State Univ.
9:55 -10:40 AM **Jeehwan Kim**, *New epitaxy paradigm: Remote epitaxy for 2D material based layer transfer*, Massachusetts Institute of Tech.

Break: 10:40 – 10:55 AM

- 10:55-11:20 AM** **Protik Das**, **Darshana Wickramaratne** and **Roger K. Lake**, *Growth of Monolayer h-BN on Metal Substrates*, Univ. of Calif, Riverside and Univ. of Calif., Santa Barbara
11:20–12:05 AM **Oussama Moutanabbir**, *Atomistic studies of epitaxial group IV semiconductors*, École Polytechnique de Montréal

Hosted Lunch 12:05—1:20 PM

Afternoon Session Chair: Jim Huffman, Lawrence Semiconductor Research Laboratory

- 1:20-2:05 PM** **Carlos Augusto**, *Novel group-IV superlattices & their applications*, Quantum Semiconductor, San Jose, CA.
2:05-2:50 PM **Andrew Hikavvy**, *Application of Group IV epitaxy in advanced CMOS fabrication*, IMEC Belgium
2:50—3:35 PM **John Kouvetakis**, *Development of Si-Ge-Sn semiconductors and related $(\text{Si,Ge})_{5-2y}(\text{III-V})_y$ systems*, Arizona State Univ.

Break: 3:35-3:50 PM

- 3:50-4:35 PM** **Eric Pop**, *Growth, Electrical, & Thermal Applications of 2D Materials*, Stanford Univ.
4:35-5:05 PM **Meng Tao**, *Removal of Surface States on Si(100) by Valence-Mending Passivation*, Arizona State Univ.
5:05-5:30 PM Introduction & then three minute rapid-fire presentations by our industrial sponsors

6:10—7:30 PM **Hosted Dinner**

Tuesday February 20th, Session 8:00 AM- 5:00 PM, Banquet dinner 6:00- 8:30 PM

Morning Session Chair: Mac Robinson, Lawrence Semiconductor Research Laboratory

Hosted Breakfast 8:00 – 9:00 AM served in meeting room

- 9:00-9:45 AM **Roman Engel-Herbert, *Progress in the growth of complex oxide materials towards electronic applications*, Penn State**
- 9:45-10:30 AM **Kookrin Char, *Progress in BaSnO₃ based materials and devices*, Seoul National Univ.**

Break: 10:30 – 10:45 AM

- 10:45-11:30 AM **Bharat Jalan, *Novel Radical-based Hybrid Molecular Beam Epitaxy for Stannate Films and Heterostructures*, Univ. of Minnesota.**
- 11:30-11:55 AM **Tiffany C. Kaspar, Peter V. Sushko, Steven R. Spurgeon, Mark E. Bowden, Ryan B. Comes, David J. Keavney, Scott A. Chambers, *Band offset and built-in potential at LaMnO₃ / SrTiO₃ polar/non-polar heterojunctions*, Pacific Northwest National Laboratory, Auburn Univ., and Advanced Photon Source, Argonne National Laboratory.**

Hosted Lunch 11:55– 1:20 PM

Afternoon Session Chair: Robin Scott, Lawrence Semiconductor Research Laboratory

- 1:20-2:05 PM **Christopher B Lirakis, *Potential of Quantum information technology*, IBM**
- 2:05-2:50 PM **David Shahin, Kiran Kovi, Aayush Thapa, Yizhou Lu, Ilya Ponomarev, James Butler, and Aris Christou, *Diamond Electronics with 2-D Transport Channel*, Univ. of Maryland and Euclid TechLabs, Gaithersburg, MD.**

Break 2:50- 3:20 PM

- 3:20-3:40 PM **Nalin S. Fernando, Rigo A. Carrasco, Ryan Hickey, John Hart, Ramsey Hazbun, James Kolodzey, and Stefan Zollner, *Optical and structural characterization of pseudomorphic and relaxed Ge_{1-y}Sn_y alloys (y<18.5%) grown on Ge by MBE, New Mexico State Univ. and the Univ. of Delaware.***
- 3:40 – 4:25 PM **Jian-Min Zuo and Honggyu Kim, *Progress in aberration corrected electron microscopy for interfacial strain and point defects characterization*, Univ. of Illinois, Urbana**
- 4:25 – 5:00 PM **Alex Dommann and Antonia Neels, *Complete X-Ray analysis to control SiGe growth Center for X-Ray Analytics*, Empa, Swiss Federal Laboratories for Materials Science and Technology, Dübendorf, Switzerland**
- 6:00- 8:30 PM **Hosted Dinner Banquet, with speaker Prof Frank Wilczek, M.I.T. Shanghai Jiao Tong Univ., Arizona State Univ., Stockholm Univ., *Fourteen questions about time***

Wednesday February 21st, Session 8:00 AM-12:10 PM, box lunch provided at 12:10 PM

Morning Session Chair: Rakesh Singh, Arizona State Univ.

Hosted Breakfast 8:00 – 9:00 AM served in meeting room

- 9:00–9:45 AM **Daehwan Jung, Robert Herrick, Justin Norman, Catherine Jan, Neil Caranto, Arthur C. Gossard, and John E. Bowers, *High efficiency 1.3 μm quantum dot lasers epitaxially grown on Si with excellent reliability*, U.C. Santa Barbara, Intel Corporation, Santa Clara, CA.**
- 9:45 – 10:00 AM **Stephen T. Schaefer, Rajeev R. Kosireddy, Arvind J. Shalindar, Preston T. Webster, Shane R. Johnson, *Photoluminescence study of the optical properties of InAsSbBi grown by molecular beam epitaxy*, Arizona State Univ. and Air Force Research Laboratory, Space Vehicles Directorate RVSWS, Kirtland Air Force Base, Albuquerque, NM, USA.**
- 10:00 – 10:15 AM **Rajeev R. Kosireddy, Stephen T. Schaefer, Arvind J. Shalindar, Preston T. Webster, Shane R. Johnson, *Influence of molecular beam epitaxy growth conditions on the microstructure of pseudomorphic InAsSbBi on GaSb*” Arizona State Univ. and Air Force Research Laboratory, Space Vehicles Directorate RVSWS, Kirtland Air Force Base, Albuquerque, NM, USA.**

Break 10:15-10:40 AM

- 10:40 -11:10 AM **Lili Wang, Pei Chen, Non Thongprong, Margaret Young, Padmanaban S. Kuttipillai, Chuanpeng Jiang, Pengpeng Zhang, Kai Sun, Phillip M. Duxbury, Richard R. Lunt, *Unlocking the Single-Domain Epitaxy of Halide Perovskites*, Department of Chemical Engin. and Materials Science, Michigan State Univ. and Univ. of Michigan.**
- 11:10- 11:40 PM **Yifan Nie and Kyeongjae Cho, *First Principles kinetic Monte Carlo simulation study on van der Waals epitaxy of transition metal dichalcogenides*, The Univ. of Texas at Dallas.**
- 11:40–12:10 PM **Jingyue (Jimmy) Liu, Jia Xu and Yafeng Cai, *Facet-selective Self-assembly of Aligned Iridium Single-atom Chains on ZnO Nanowires*, Arizona State Univ.**
- 12:10 PM **Closing remarks by Nate Newman, Close of Symposium**

Hosted Box lunch served 12:10 PM