# WME & NAMBE 2025 Program Key

**NAMBE** North American Conference on Molecular Beam Epitaxy
**WME** Workshop on MBE for Emerging Emitter Technologies

# WME & NAMBE 2025 Program Overview

| Room /Time | Tamaya ABC | Tamaya DE |
|---|---|---|
| SaM | WME1-SaM: Photonic-Crystal Surface-Emitting Lasers (PCSELs)<br>WME2-SaM: Emerging Materials and Growth Technologies | |
| SaA | WME1-SaA: Emitters on Silicon<br>WME2-SaA: AI/ML Techniques for MBE | |
| SuM | WME1-SuM: Quantum-Dot based Single Photon Emitters I<br>WME2-SuM: Quantum-Dot based Single Photon Emitters II | |
| MoM | NAMBE1-MoM: Remote and van der Waals Epitaxy<br>NAMBE2-MoM: Bismuth-containing Alloys | |
| MoA | NAMBE1-MoA: Photonic Devices<br>NAMBE2-MoA: Infrared Materials | |
| MoP | | Poster Sessions |
| TuM | NAMBE1-TuM: Quantum Materials<br>NAMBE2-TuM: III-Nitrides | |
| TuA | NAMBE1-TuA: Oxides and Group IV Materials<br>NAMBE2-TuA: Low Dimensional Nanostructures | |
| WeM | NAMBE1-WeM: Heteroepitaxy<br>NAMBE2-WeM: Advanced MBE Techniques | |

# Saturday Morning, August 23, 2025

| | Room Tamaya ABC | |
|---|---|---|
| 8:00am | **WME1-SaM-1** Welcome & Opening Remarks, ***Ganesh Balakrishnan***, University of New Mexico | **Workshop on MBE for Emerging Emitter Technologies**<br>**Session WME1-SaM**<br>**Photonic-Crystal Surface-Emitting Lasers (PCSELs)**<br>**Moderator:**<br>**Ricky Gibson**, Air Force Research Laboratory |
| 8:15am | **INVITED: WME1-SaM-2** Passively Coupled Coherent PCSEL Arrays, *Mingsen Pan,* University of Texas at Arlington*; Chhabindra Gautam,* Semergytech, Inc.*; Thomas Rotter, Ganesh Balakrishnan,* University of New Mexico*; Shanhui Fan,* Stanford University*;* ***Weidong Zhou,*** University of Texas at Arlington | |
| 8:45am | **INVITED: WME1-SaM-4** Molecular Beam Epitaxy Regrowth in InP and GaSb Short-Wave Infrared PCSELs, ***Bradley J. Thompson***, Air Force Research Laboratory | |
| 9:15am | **INVITED: WME1-SaM-6** III-V/Si Bound States in Continuum Lasers with Quantum Well (QW) and Quantum Dot (QD) Gain, ***Ashok Kodigala***, Sandia National Laboratories | |
| 9:45am | **WME1-SaM-8** Panel Discussion | |
| 10:15am | **BREAK** | |
| 10:30am | **INVITED: WME2-SaM-11** Clean Oxides at High Temperatures, ***Joseph Falson***, California Institute of Technology | **Workshop on MBE for Emerging Emitter Technologies**<br>**Session WME2-SaM**<br>**Emerging Materials and Growth Technologies**<br>**Moderator:**<br>**Carolina Adamo**, Northrop Grumman |
| 11:00am | **INVITED: WME2-SaM-13** Dislocation-Tolerant Quantum Dot Light Emitters: From Growth on Silicon to Remote Epitaxy, ***Minjoo Larry Lee***, University of Illinois at Urbana-Champaign | |
| 11:15am | | |
| 11:30am | **INVITED: WME2-SaM-15** Thermal Laser Epitaxy for Emerging Emitter Materials, ***Brendan Faeth***, epiray | |
| 12:00pm | **WME2-SaM-17** Panel Discussion | |

# Saturday Afternoon, August 23, 2025

| | Room Tamaya ABC | |
|---|---|---|
| 1:30pm | **INVITED: WME1-SaA-1** MBE Growth of Interband Antimonide Lasers on Silicon, ***Laurent Cerutti***, *Maëva Fagot, Daniel Díaz-Thomas, Andres Remis,* IES, University of Montpellier, CNRS, France*; Audrey Gilbert,* University of Montpellier, France*; Yves Rouillard, Jean-Baptiste Rodriguez, Eric Tournié,* IES, University of Montpellier, CNRS, France | **Workshop on MBE for Emerging Emitter Technologies**<br>**Session WME1-SaA**<br>**Emitters on Silicon**<br>**Moderator:**<br>**Ganesh Balakrishnan**, University of New Mexico |
| 2:00pm | **INVITED: WME1-SaA-3** Molecular Beam Epitaxy of III-V Infrared Emitters on Silicon, ***Stephanie Tomasulo***, U.S. Naval Research Laboratory | |
| 2:30pm | **INVITED: WME1-SaA-5** High-Quality Epitaxy of SiSn, GeSn, and SiGeSn Alloys Using MBE for Si-Based Optoelectronic Applications, ***Shui-Qing Yu***, *Diandian Zhang, Nirosh Eldose, Dinesh Baral, Hryhorii Stanchu, Fernando Oliveira, Wei Du, Gregory Salamo,* University of Arkansas | |
| 3:00pm | **INVITED: WME1-SaA-7** Quantum Dot Lasers – Old Dog, New Trick, Niche Production to High–Volume Manufacturing, ***Andrew Clark***, *Kathryn E. Sautter, Amy Liu,* IQE Inc. | |
| 3:30pm | **WME1-SaA-9** Panel Discussion | |
| 4:00pm | **BREAK** | |
| 4:15pm | **INVITED: WME2-SaA-12** Basic Machine Learning Techniques for Analyzing Materials Characterization Data, ***Alex Belianinov***, Sandia National Laboratories | **Workshop on MBE for Emerging Emitter Technologies**<br>**Session WME2-SaA**<br>**AI/ML Techniques for MBE**<br>**Moderator:**<br>**Kurt Eyink**, Air Force Research Labs |
| 4:45pm | **INVITED: WME2-SaA-14** Machine Learning Methods for MBE Growth Optimization, *Mingyu Yu,* University of Delaware*; Isaiah Moses,* Pennsylvania State University, United States Minor Outlying Islands (the)*; Ryan Trice, Wesley Reinhart,* ***Stephanie Law***, Pennsylvania State University | |
| 5:15pm | **WME2-SaA-16** Panel Discussion | |

# Sunday Morning, August 24, 2025

| | Room Tamaya ABC | |
|---|---|---|
| 8:00am | **WME1-SuM-1** Welcome & Opening Remarks | **Workshop on MBE for Emerging Emitter Technologies**<br>**Session WME1-SuM**<br>**Quantum-Dot based Single Photon Emitters I**<br>**Moderator:**<br>**Richard Mirin**, National Institute of Standards and Technology |
| 8:30am | **INVITED: WME3-SuM-3** Growth and Characterization of Epitaxial InAs Quantum Dots for Efficient and Pure Single Photon Sources, ***Kevin Silverman,*** NIST - Boulder | |
| 9:00am | **INVITED: WME1-SuM-5** Low Noise Epitaxial Quantum Dots for Photonic Quantum Technologies, ***Alisa Javadi,*** University of Oklahoma | |
| 9:30am | **BREAK** | |
| 10:00am | **INVITED: WME2-SuM-9** Quantum Dots Obtained by Droplet Etching Epitaxy for Quantum Science and Technology, ***Armando Rastelli,*** Institute of Semiconductor and Solid State Physics, Johannes Kepler University (JKU) Linz, Austria | **Workshop on MBE for Emerging Emitter Technologies**<br>**Session WME2-SuM**<br>**Quantum-Dot based Single Photon Emitters II**<br>**Moderator:**<br>**Richard Mirin**, National Institute of Standards and Technology |
| 10:30am | **INVITED: WME2-SuM-11** Toward a Scalable Single Photon Platform, ***Chen Shang,*** University of California Santa Barbara*; Sahil Patel, Zihang Wang, Sean Doan, Dirk Bouwmeester, Galan Moody, John Bowers,* University California Santa Barbara | |
| 11:00am | **INVITED: WME2-SuM-13** Automated High-Throughput Single Quantum Dot Photoluminescence Spectroscopy, ***Edward B. Flagg,*** West Virginia University | |
| 11:30am | **WME2-SuM-15** Panel Discussion | |
| 12:00pm | **WME2-SuM-17** Closing Remarks | |

# Monday Morning, August 25, 2025

| | Room Tamaya ABC | |
|---|---|---|
| 8:00am | **NAMBE1-MoM-1** Welcome & Sponsor Thank Yous, | **NAMBE**<br>**Session NAMBE1-MoM**<br>**Remote and van der Waals Epitaxy**<br>**Moderator:**<br>**Justine Koepke**, Sandia National Laboratories |
| 8:15am | **INVITED: NAMBE1-MoM-2** Art Gossard MBE Innovator Awardee Talk: 6.1 Å to 6.5 Å Families: from Type-II superlattice IR lasers and Detectors to Remote-Junction Solar Cells, **Yong-Hang Zhang,** Arizona State University | |
| 8:45am | **NAMBE1-MoM-4** Epitaxy and Magnetotransport of GdAuGe on Gallium-Intercalated Graphene/SiC (0001), ***Zachary LaDuca (Student)***, University of Wisconsin - Madison; *Chengye Dong,* Pennsylvania State University; *Nicholas Hagopian, Paul Voyles,* University of Wisconsin - Madison; *Joshua Robinson,* Pennsylvania State University; *Jason Kawasaki,* University of Wisconsin - Madison | |
| 9:00am | **NAMBE1-MoM-5** Challenges of Remote Epitaxy in Ultra-High Vacuum: Clean Semiconductor-2D Material Stacks, ***Manny de Jesus Lopez (Student)***, *Sadhvikas Addamane, Justine Koepke,* Sandia National Laboratories, USA; *Kevin Jones,* University of Florida, Gainesville; *Scott Schmucker,* Sandia National Laboratories, USA | |
| 9:15am | **NAMBE1-MoM-6** Impact of Graphene-induced Surface Reconstructions on the Mechanisms for Remote and van der Waals Epitaxy of GdAuGe on Graphene/SiC (0001), ***Taehwan Jung (Student)***, *Nicholas Hagopian,* University of Wisconsin - Madison; *Quinn Campbell,* Sandia National Laboratories; *Anshu Sirohi,* University of Wisconsin - Madison; *Chengye Dong,* The Pennsylvania State University; *Sadhvikas Addamane, Justine Koepke,* Sandia National Laboratories; *Joshua Robinson,* The Pennsylvania State University; *Paul Voyles, Jason Kawasaki,* University of Wisconsin - Madison | |
| 9:30am | **NAMBE1-MoM-7** Selective Area Epitaxy of van der Waals Materials, ***Ryan Trice (Student)***, *Stephanie Law,* Penn State University | |
| 9:45am | **NAMBE1-MoM-8** Impact of Point and Extended Defects on the Mechanism for Remote Epitaxy of GaAs on Graphene/Ge, ***Anshu Sirohi***, *Patrick Strohbeen, Sebastian Manzo, Katherine Su, Vivek Saraswat, Nicholas Hagopian, Paul Voyles, Michael Arnold, Jason Kawasaki,* University of Wisconsin - Madison | |
| 10:00am | **BREAK & EXHIBITS** | |
| 10:30am | **NAMBE2-MoM-11** Molecular Beam Epitaxy Growth and Optoelectronic Properties of Droplet-Free Lattice-Matched GaInAsSbBi on GaSb with Photoluminescence Wavelength Exceeding 5 µm, ***Preston T. Webster***, Air Force Research Laboratory, Space Vehicles Directorate; *Rigo A. Carrasco, Alexander T. Newell, Alexander W. Duchane,* Air force Research Laboratory, Space Vehicles Directorate; *Aaron J. Muhowski, Victor J. Patel, Samuel D. Hawkins,* Sandia National Laboratories; *Marko S. Milosavljevic, Shane R. Johnson,* Arizona State University; *Julie V. Logan, Christian P. Morath, Diana Maestas,* Air force Research Laboratory, Space Vehicles Directorate | **NAMBE**<br>**Session NAMBE2-MoM**<br>**Bismuth-containing Alloys**<br>**Moderator:**<br>**Corey White**, University of Illinois at Urbana-Champaign |
| 10:45am | **NAMBE2-MoM-12** Growth of InGaBiAs for Extended Short Wave Infrared Photodetectors, ***Mrudul Parasnis (Student)***, *Md Toriqul Islam, Nuha Ahmed-Babikir, James Bork, Abhilasha Kamboj, Alimur Razi, Jamie Phillips, Joshua Zide,* University of Delaware | |
| 11:00am | **NAMBE2-MoM-13** Performance of Mid-Wave Infrared GaInAsSbBi nBn Photodetectors Before and as a Function of High Energy Proton Exposure, ***Julie Logan***, *Alex Newell, Rigo Carrasco, Christopher Hains, Gamini Ariyawansa, Joshua Duran, Diana Maestas, Christian Morath, Preston Webster,* Air Force Research Lab | |
| 11:15am | **NAMBE2-MoM-14** Improving Bi Incorporation in InSbBi and AlInSbBi, ***Amberly Ricks (Student)***, University of Texas at Austin; *Corey White,* University of Illinois at Urbana Champaign; *Seth Bank,* University of Texas at Austin | |
| 11:30am | **NAMBE2-MoM-15** Impact of Hydrogenation on the Minority Carrier Lifetime of InAsSbBi and the Sensitivity of InAsSbBi nbn Photodetectors, ***Mach Michaels (Student)***, Georgia Institute of Technology; *Mangal Dhoubhadel, Khalid Hossain,* JP Analytical, LLC; *Alexander Duchane, Rigo Carrasco, Luke Helms,* Air Force Research Laboratory; *Christopher Hains,* A-Tech, LLC, a BlueHalo Company (ATA BlueHalo); *Julie Logan, Christian Morath, Diana Maestas, Preston Webster,* Air Force Research Laboratory | |
| 11:45am | **NAMBE2-MoM-16** Synthesis of Epitaxial $Bi_{1-x}Sb_x$ Nanomembranes, ***Saad Mohammad Bhuiya***, University of New Mexico, Bangladesh | |

# Monday Afternoon, August 25, 2025

| | Room Tamaya ABC | |
|---|---|---|
| 1:30pm | **NAMBE1-MoA-1** ErAs/Semiconductor Nanocomposites for 1.55 µm-Pumped and Hybrid Terahertz Photoconductive Switches, ***Angelique Gordon (Student)***, *Wilder Acuna, Weipeng Wu, James Bork, Matthew Doty, Xi Wang, M. Benjamin Jungfleisch, Lars Gundlach, Joshua Zide,* University of Delaware | **NAMBE**<br>**Session NAMBE1-MoA**<br>**Photonic Devices**<br>**Moderator:**<br>**John McElearney**, Tufts University |
| 1:45pm | **NAMBE1-MoA-2** Regrowth of Gasb Photonic Crystal Surface-Emitting Lasers by Molecular Beam Epitaxy, *Bradley J. Thompson,* Air Force Research Laboratory, Sensors Directorate*; Samuel M. Linser,* KBR & Air Force Research Laboratory, Sensors Directorate*; Sadhvikhas Addamane,* Sandia National Laboratories*; Thomas Rotter, Ganesh Balakrishnan,* University of New Mexico*;* ***Ricky Gibson****,* Air Force Research Laboratory, Sensors Directorate | |
| 2:00pm | **NAMBE1-MoA-3** Growth and Optimization of Opto-electronic performance of InGaAsSb Photodetectors using Molecular Beam Epitaxy, ***Neha Nooman (Student)****, Nathan Gajowski, Punam Murkute, Vinita Rogers, Sanjay Krishna,* The Ohio State University | |
| 2:15pm | **NAMBE1-MoA-4** Growth-Temperature Effect on Group-V Compositions in 'W' Structured GaAsSb/InGaAs/GaAsP Quantum Wells, *Zon Ma****, Charles W. Tu****, National Chung Hsing University, Taiwan* | |
| 2:30pm | **NAMBE1-MoA-5** III-V Quantum Dot Lasers and Photodetectors Monolithically Integrated with Silicon Photonics by Two-Step Growth, ***Alec Skipper****, Rosalyn Koscica,* UC Santa Barbara*; Bei Shi,* Aeluma Inc.*; Gerald Leake, Joshua Herman,* AIM Photonics*; Michael Zylstra,* Analog Photonics*; Kaiyin Feng, Chen Shang,* UC Santa Barbara*; David Harame,* AIM Photonics*; Jonathan Klamkin,* Aeluma Inc.*; John Bowers,* UC Santa Barbara | |
| 2:45pm | **NAMBE1-MoA-6** Optical Enhancement of GaAsP Solar Cells on GaP/Si with Distributed Bragg Reflectors, ***Bora Kim (Student)****, Adrian Birge, Brian Li, Corey White, Devon Lee, Minjoo Larry Lee,* University of Illinois Urbana-Champaign | |
| 3:00pm | **NAMBE1-MoA-7** Interface Fermi-Level Engineering for Selective Hole Extraction Without P-Type Doping in CdTe Solar Cells to Reach High Open Circuit Voltage (>1 V), ***Zheng Ju****, Xin Qi, Xiaoyang Liu,* Arizona State University*; Jiarui Gong,* Texas A&M University*; Razine Hossain, Nathan Rosenblatt, Tyler McCarthy, Allison McMinn, Martha McCartney, David Smith,* Arizona State University*; Zhenqiang Ma,* University of Wisconsin - Madison*; Yong-Hang Zhang,* Arizona State University | |
| 3:15pm | **BREAK & EXHIBITS** | |
| 3:30pm | **INVITED: NAMBE2-MoA-9** James S. Harris MBE Scientific Discovery Awardee Talk: Breaking the Rules: Perturbing Oxides to Unleash Novel Properties, **Darrell Schlom**, Cornell University | **NAMBE**<br>**Session NAMBE2-MoA**<br>**Infrared Materials**<br>**Moderator:**<br>**Aaron J. Muhowski**, Sandia National Laboratories |
| 4:00pm | **NAMBE2-MoA-11** Deep Level Transient Spectroscopy and Time-Resolved Photoluminescence as a Function of Room Temperature 63 MeV Proton Irradiation of Inas Nbn Detectors Grown by Molecular Beam Epitaxy, ***Rigo Carrasco****,* Air Force Research Laboratory, USA*; Christopher Hains, Alexander Newell, Christian Morath, Preston Webster,* Air Force Research Laboratory*; Evan Anderson,* Sandia National Laboratory | |
| 4:15pm | **NAMBE2-MoA-12** Evaluation of the Optical Absorption Properties of MBE Grown InAs/InAsSb and InGaAs/InAsSb Superlattices for Infrared Photodetector Applications, ***Marko Milosavljevic (Student)****,* Arizona State University*; Rigo Carrasco, Alexander Newell,* Air Force Research Laboratory, USA*; Jaden Love, Stefan Zollner,* New Mexico State University*; Christian Morath, Diana Maestas, Preston Webster,* Air Force Research Laboratory, USA*; Shane Johnson,* Arizona State University | |
| 4:30pm | **NAMBE2-MoA-13** Tunable Low-Loss Plasmonic Resonances in Heavily-Doped InAs for Infrared Optoelectronic Devices, *Thomas Shearer, Ethan Caudill, Kiernan Arledge,* ***Tetsuya Mishima****,* University of Oklahoma*; Chadwick Canedy, John Murphy, Jill Nolde, Chase Ellis,* US Naval Research Laboratory*; Priyantha Weerasinghe,* Amethyst Research Inc.*; Michael Lloyd,* NIST-Gaithersburg*; Terry Golding,* Amethyst Research Inc.*; Igor Vurgaftman, Jerry Meyer,* US Naval Research Laboratory*; Michael Santos, Joseph Tischler,* University of Oklahoma | |
| 4:45pm | **NAMBE2-MoA-14** Impact of Uncracked Group V Species on Unintentional Doping in AlInAsSb, ***Ellie Wang (Student)****, J. Andrew McArthur,* University of Texas at Austin*; Hannaneh Karimi, Joe Campbell,* University of Virginia*; Seth Bank,* University of Texas at Austin | |

## NAMBE
## Room Tamaya DE - Session NAMBE-MoP
## NAMBE Poster Session
## 5:00 – 7:00 pm

**NAMBE-MoP-1** A Simple Method of $SrTiO_3$ Growth on GaAs by Molecular Beam Epitaxy, ***Maria Baskin,*** Technion Israel Institute of Technology, Israel*; Sergey Shay Shusterman, Doron Cohen-Elias, Noam Sicron,* The Israel Center for Advanced Photonics, Israel*; Lior Kornblum,* Technion Israel Institute of Technology, Israel

**NAMBE-MoP-2** Computational Design of Metal-Organic Precursors for Controlled Metal Oxide Growth*, Benazir Fazlıoglu,* Harvard University*; Cem Sanga,* Istanbul Technical University, Turkey*; Adri van Duin,* Penn State University*; Roman Engel-Herbert,* ***Nadire Nayir,*** Paul Drude Institute, Germany

**NAMBE-MoP-3** Fully Relaxed, Ultra-Thin (Si)GeSn Epilayers on Insulating Substrates with Large-Scale Direct Transfer Technique*, Suho Park, Haochen Zhao, Chandan Samanta, Tuofu Zhama,* University of Delaware*; Jifeng Liu,* Dartmouth*; Shui-Qing Yu,* University of Arkansas*;* ***Yuping Zeng,*** University of Delaware

**NAMBE-MoP-4** Spectroscopic Ellipsometry and Optical Constants of MBE-Grown Quinary GaInAsSbBi Alloys for Mid-Wavelength Infrared Detectors*,* ***Sonam Yadav (Student),*** New Mexico State University*; Rigo A. Carrasco, Preston T. Webster,* Air Force Research Laboratory*; Stefan Zollner, Jan Hrabovsky,* New Mexico State University

**NAMBE-MoP-5** Optical and Electrical Properties Study of Transferred Ge0.82Sn0.18 Flakes Based on Layer Transfer Process*,* ***Yuping Zeng,*** *Haochen Zhao, Suho Park, Shedrack Dafe, Tuofu Zhama, Chandan Samanta, Zijun Chen,* University of Delaware

**NAMBE-MoP-8** Examining Magnetic Depth Profiles of Oxide MBE Grown PdCoO2 Delafossite Thin Films with Post-Growth Helium Implantation*,* ***Sangsoo Kim,*** Oak Ridge National Laboratory

**NAMBE-MoP-9** Investigation of Interface Electric Fields of GaAs/AlGaAs Quantum Dots Grown by Droplet Epitaxy*,* ***Taein Kang,*** *Jong Su Kim,* Yeungnam University, Republic of Korea*; Sang Jun Lee,* Korea Research Institute of Standards and Science, Republic of Korea*; Jin Dong Song,* Korea Institute of Science and Technology (KIST), Republic of Korea

**NAMBE-MoP-12** Identifying Detector and Material Properties for Optimizing Mid-Wave Infrared Event Based Sensor Performance*,* ***Zinah Alsaad (Student),*** *Julie Logan, Christian Morath, Diana Maestas,* Air Force Research Laboratory*; Payman Zarkesh-Ha,* University of New Mexico*; Preston Webster,* Air Force Research Laboratory

**NAMBE-MoP-13** Temperature-Dependent X-Ray Diffraction of Single-Crystal, Epitaxial Films*,* ***Arnold Kiefer,*** *Charles Reyner,* Air Force Research Laboratory

**NAMBE-MoP-14** Dual Channel 2DEG Micro Hall Effect Sensor*,* ***Satish Shetty (Student),*** *Yuriy I. Mazur, H. Alan Mantooth, Gregory J. Salamo,* University of Arkansas

**NAMBE-MoP-15** Molecular Beam Epitaxy of Uranium Nitrides*, Kevin Vallejo,* Idaho National Laboratory*; Zach Cresswell,* University of Minnesota*; Ahmed Mustakim, Krzystof Gofryk, David Hurley,* ***Brelon May,*** Idaho National Laboratory

**NAMBE-MoP-16** Adsorption-controlled Growth and Influence of Stacking Disorder in van der Waals GaSe Films on GaAs (111)B*,* ***Joshua Eickhoff (Student),*** University of Wisconsin - Madison*; Wendy Sarney, Ibrahim Boulares, Sina Najmaei,* DEVCOM ARL*; Daniel Rhodes, Jason Kawasaki,* University of Wisconsin - Madison

**NAMBE-MoP-17** Thermal Modulation Spectroscopy for Bandgap Determination in PAMBE-Grown AlN*,* ***Edgar Agustin Contreras (Student),*** CINVESTAV-IPN Unidad Zacatenco, Mexico*; Jesus Roberto Millan-Almaraz,* Universidad Autónoma de Sinaloa, Mexico*; Yenny Lucero Casallas-Moreno,* UPIITA-IPN, Mexico*; Salvador Gallardo-Hernandez, Raul Trejo-Hernández,* CINVESTAV-IPN Unidad Zacatenco, Mexico*; Cristo Manuel Yee-Rendón,* Universidad Autónoma de Sinaloa, Mexico*; Máximo López-López,* CINVESTAV-IPN Unidad Zacatenco, Mexico

**NAMBE-MoP-18** Growth, Defect Creation, and Passivation in 2D $MoSe_2$*,* ***Collin Maurtua (Student),*** University of Delaware

**NAMBE-MoP-20** Influence of the Growth Temperature and Surface Reconstruction on the Performance of Intermediate-Band Solar Cells Based on InAs Submonolayer Quantum Dots*,* ***Ahmad Alzeidan,*** *Lucas. A. T de Souza, Alain A. Quivy,* Institute of Physics, University of São Paulo, Brazil

**NAMBE-MoP-21** Influence of Deposition Rate on Twinning in MBE Grown $Bi_2Se_3$ Nucleation Layers*,* ***Trent Johnson,*** Air Force Research Laboratory

**NAMBE-MoP-22** Epitaxial ScAlN/GaN Ferroelectric Transistors with a Subthreshold Sway of <50 mV/dec from 0.0017 to 38 mA/mm for both VGS Scan Directions*,* ***Shizhao Fan,*** Suzhou Institute of Nano-Tech and Nano-Bionics, Chinese Academy of Sciences, China

**NAMBE-MoP-23** Heteroepitaxial Growth of GaN on AlN Towards RF Device Applications*,* ***Haiyang Zhao (Student),*** *Yihao Yin, Zhichao Wang, Shizhao Fan,* Suzhou Institute of Nano-Tech and Nano-Bionics, Chinese Academy of Sciences, China

**NAMBE-MoP-24** Evidence of a Charged Defect Layer in the AlGaAsSb Barrier of MWIR nBn Photodetectors and its Influence on Detector Performance*,* ***Alexander Newell,*** *Rigo Carrasco, Julie Logan,* AFRL*; Chris Hains,* Blue halo*; Diana Maestas,* AFRL*; Darryl Shima, Ganesh Balakrishnan,* UNM*; Christian Morath, Preston Webster,* AFRL

**NAMBE-MoP-25** Real-Time Multi-Wavelength Edge Detection Using Mbe-Grown Gaas/Alas Thin Films*,* ***Sina Mohammadi (Student),*** City College of New York, City University of New York*; Matthew Markowitz Markowitz,* Queens College of the City University of New York*; Francesco Monticone,* Cornell University*; Mohammad Ali Miri,* Queens College of the City University of New York*; Maria Tamargo,* City College of New York, City University of New York

**NAMBE-MoP-27** Growth of Ge-Sn Digital Alloys Towards Group-IV Topological Materials*,* ***Adelaide Bradicich,*** Sandia National Laboratories*; Ram Joshi,* University of Arkansas*; Yunfan Liang,* Rensselaer Polytechnic Institute*; Shui-Qing Yu,* University of Arkansas*; Jifeng Liu,* Dartmouth*; Damien West, Shengbai Zhang,* Rensselaer Polytechnic Institute*; Hiro Nakamura,* University of Arkansas*; Ezra Bussmann,* Sandia National Laboratories

**NAMBE-MoP-28** Continuum Model of Self-Organizing Epitaxial Structures Through Augmented Cahn–Hilliard Equations*,* ***Lawrence Qiu (Student),*** Tufts University*; Arkadz Kirshtein,* Texas A&M University*; T. Pan Menasuta, Chanita Tubthong, Thomas E. Vandervelde,* Tufts University

**NAMBE-MoP-29** Wafer-Scale Etch-Free Transfer of Carbon Nanostructures from Metal Thin Films to Diverse Substrates*,* ***Kentaro Yumigeta,*** *Muhammed Yusufoglu,* University of Arizona*; Mamun Sarker,* University of Nebraska-Lincoln*; Franco Daluisio, Richard Holloway, Howard Yawit, Thomas Sweepe, Julian Battaglia, Shelby Janssen, Alex Welch,* University of Arizona*; Alexander Sinitskii,* University of Nebraska-Lincoln*; Zafer Mutlu,* University of Arizona

**NAMBE-MoP-30** Molecular Beam Epitaxy Growth of InAs/Nb Heterostructures*, Ido Levy,* ***Jacob Issokson,*** *Patrick Strohbeen, Tyler Cowan, Krishna Dindial, William Strickland, Lukas Baker, Melissa Mikalsen,* New York University*; Salva Salmani-Rezaie,* The Ohio State University*; Javad Shabani,* New York University

**NAMBE-MoP-31** Scanning Tunneling Microscopy for the Exploration of the SRO in GeSn Grown on Ge(001) using MBE*,* ***Dinesh Baral,*** *Nirosh M. Eldose, Ram Joshi, Diandian Zhang, Hryhorii Stanchu, Fernando Maia de Oliveira, Wei Du, Hiroyuki Nakamura, Shui-Qing Yu, Gregory J. Salamo,* University of Arkansas

**NAMBE-MoP-32** Development of High-Quality SiSn and SiGeSn Alloys for Optoelectronic and Photonic Applications*,* ***Diandian Zhang,*** *NIROSH ELDOSE, Dinesh Baral, Hryhorii Stanchu, Fernando Oliveira, Wei Du, Gregory Salamo, Shui-Qing Yu,* University of Arkansas

**NAMBE-MoP-33** Templated Growth of Screw Dislocations in Epitaxial Nanomembranes*,* ***Ruhin Chowdhury (Student),*** *Emma J. Renteria,* University of New Mexico*; Sadhivakas J. Addame,* Sandia National Laboratories*; Darryl M. Shima, Divya J. Prakash, Jordan P. Neely, Francesca Cavallo,* University of New Mexico

**NAMBE-MoP-34** Synthesis and Nitrogen-Vacancy Magnetometry of ferromagnetic MnSb*,* ***Nurul Azam,*** *Jeff Rable, Syed M. Shahed,* Northeastern University*; Sugata Chowdhury,* Howard University*; Alberto De la Torre,* Northeastern University

**NAMBE-MoP-35** Metamorphic InAs 2DEGs for Quantum Computation Platforms*,* ***Giorgio Biasiol,*** *Davide Curcio, Oyut Batchuluun, Luca Sbuelz, Magdhi Kirti,* CNR IOM, Italy*; Mate Suto, Endre Tóvári, Peter Makk, Tamas Prok, Szabolcs Csonka,* Budapest University of Technology and Economics, Hungary

**NAMBE-MoP-36** Atomically Precise Graphene Nanoribbon Transistors with Long-Term Stability and Reliability*,* ***Muhammed Yusufoglu (Student),*** *Zafer Mutlu,* University of Arizona

**NAMBE-MoP-37** Growth of InSb Quantum Dots in InAs Matrix for Infrared Emitters*,* ***Molly McDonough (Student),*** *Eric Welp, Qihua Zhang, Stephanie Law,* Pennsylvania State University

**NAMBE-MoP-38** AlInN/AlN Quantum Wells Grown on Si(111) Substrates by Metal Modulated Epitaxy*,* ***Luis Vargas Hernández (Student),*** CINVESTAV-IPN Unidad Zacatenco, Mexico*; Jorge Ivan Hernández Martinez,* CINVESTAV-IPN Unidad Guadalajara, Mexico., Mexico*; Mario Alberto Zambrano Serrano,* CINVESTAV-IPN Unidad Zacatenco, Mexico*; Yenny Lucero Casallas Moreno,* UPIITA - IPN, Mexico*; Salvador Gallardo Hernández, Máximo López López,* ***Edgar Agustin Contreras,*** CINVESTAV-IPN Unidad Zacatenco, Mexico

**NAMBE-MoP-39** Quantum and Classical Supervised Learning–Based Design Rules for Radio Frequency Nitrogen Plasma, ***Andrew Messecar (Student)***, *Clifford Aidoo-Mensah,* Western Michigan University*; Steven Durbin,* University of Hawai'i at Mānoa*; Robert Makin,* Western Michigan University

**NAMBE-MoP-40** Modeling Processing Spaces of Epitaxially Grown Nitrides with Quantum and Classical Machine Learning Algorithms, *Andrew Messecar* ***(Student)***, Western Michigan University*;* ***Kevin Vallejo***, Idaho National Laboratory*; Steven Durbin,* University of Hawai'i at Mānoa*; Brelon May,* Idaho National Laboratory*; Robert Makin,* Western Michigan University

**NAMBE-MoP-42** High-Performance Core–Shell GaAsSb Nanowires on Functionalized Graphene via MBE for NIR Photodetection, ***Yugwini Deshmukh (Student)***, *Hirandeep Reddy Kuchoor, Rashmita Baruah, Joshua White, Jia Li, Shanthi Iyer,* North Carolina A&T State University

**NAMBE-MoP-43** Low Temperature Growth of Ultra-Thin CdSe/ZnSe Quantum Wells, *Yang A. Vázquez-Soto, Jorge Pérez-Saavedra, Frantisek Sutara,* ***Isaac Hernández-Calderón,*** CINVESTAV, Mexico; ***Masakazu Kobayashi,*** Waseda University, Japan

**NAMBE-MoP-44** Caltech Thermal Laser Evaporation System: Design and Capabilities, ***David Catherall,*** Caltech

# Tuesday Morning, August 26, 2025

| | Room Tamaya ABC | |
|---|---|---|
| 8:00am | **INVITED: NAMBE1-TuM-1** NAMBE Young Investigator Awardee Talk: Problem? Add an Element! The Series of Events that brought us to GaInAsSbBi. **Preston Webster,** Air Force Research Laboratory | **NAMBE**<br>**Session NAMBE1-TuM**<br>**Quantum Materials**<br>**Moderator:**<br>**Matthew Brahlek**, Oak Ridge National Laboratory |
| 8:30am | **NAMBE1-TuM-3** Exploring MBE Deposited Superconductor Bilayers to Control Qubit Base Material Properties, ***Kevin Grossklaus***, *Felipe Contipelli, Kunal Tiwari, Duncan Miller,* MIT Lincoln Laboratory*; Serra Erdamar,* Washington University, St. Louis*; Luke Burkhart, Michael Gingras, Bethany Niedzielski, Christopher O'Connell, Hannah Stickler, Dan Calawa, David Kim,* MIT Lincoln Laboratory*; Aranya Goswami, William Oliver,* Massachusetts Institute of Technology*; Mollie Schwartz, Kyle Serniak,* MIT Lincoln Laboratory | |
| 8:45am | **NAMBE1-TuM-4** Exploring Arsenic Flux-Induced Surface Morphology Control in InAs/GaInSb Quantum Wells for Spintronic and Quantum Applications, ***Jimmy Rushing (Student)***, Tufts University | |
| 9:00am | **NAMBE1-TuM-5** Molecular Beam Epitaxy Growth of $InAs_{1-x}Bi_x$ on GaSb for Topological Insulating States, ***Merve Baksi***, *James Rushing, Xikae Xie, Avery Hanna, Larry Qui, Ekow Williams, Paul J. Simmonds,* Tufts University | |
| 9:15am | **NAMBE1-TuM-6** Group IV Superconductor-Semiconductor Epitaxy for Integrated Quantum Electronics, ***Jakob Issokson,*** ,*Patrick Strohbeen,* New York University*; Julian Steele, Carla Verdi, Ardeshir Baktash,* University of Queensland, Australia*; Alisa Danilenko,* New York University*; Yi-Hsun Chen,* University of Queensland, Australia*; Jechiel van Dijk,* New York University*; Lianzhou Wang,* University of Queensland, Australia*; Eugene Demler,* ETH Zurich, Switzerland*; Salva Salmani-Rezaie,* Ohio State University*; Peter Jacobson,* University of Queensland, Australia*; Javad Shabani,* New York University | |
| 9:30am | **NAMBE1-TuM-7** Characterization and Thermal Behavior of Epitaxial Aluminum Films on InGaAs for Topological Qubits, *Ahmed Elbaroudy, Francois Sfigakis, Sandra Gibson, Peyton Shi, Jonathan Baugh,* ***Zbigniew Wasilewski***, University of Waterloo, Canada | |
| 9:45am | **NAMBE1-TuM-8** Synthesis and Temperature-Dependent Momentum Microscopy of Type-II Dirac Semimetal $NiTe_2$, ***Nurul Azam***, *Syed Mohammad Shahed,* Northeastern University, Quantum Materials and Sensing Institute*; Imrankhan Mulani,* Howard University, Quantum Materials and Sensing Institute*; Sugata Chowdhury,* Howard University*; Alberto De la Torre, Arun Bansil, Swastik Kar,* Northeastern University, Quantum Materials and Sensing Institute | |
| 10:00am | **BREAK & EXHIBITS** | |
| 10:30am | **NAMBE2-TuM-11** Kilo-Volt Class Lateral $NiO_x$/GaN Super-Heterojunction Diode via Ammonia Molecular Beam Epitaxy ($NH_3$-MBE), ***Yizheng Liu (Student)***, University of California at Santa Barbara*; Zachary Biegler,* University of California Santa Barbara*; Ashley Wissel-Garcia, James Speck, Sriram Krishnamoorthy,* University of California at Santa Barbara | **NAMBE**<br>**Session NAMBE2-TuM**<br>**III-Nitrides**<br>**Moderator:**<br>**Brelon May**, Idaho National Laboratory |
| 10:45am | **NAMBE2-TuM-12** Limitations and Effects of Heavy Metal Doping in GaN, *J. Pierce Fix,* Montana State University*; Kevin Vallejo,* Idaho National Laboratory*; Nicholas Borys,* Montana State University*;* ***Brelon May***, Idaho National Laboratory | |
| 11:00am | **NAMBE2-TuM-13** Investigation of Composition Fluctuations and Band Tail States in Plasma Assisted MBE-Grown High Al-Fraction AlGaN, *David Storm, Yuanping Chen, LeighAnn Larkin, Mihee Ji, Gregory Garrett, Anand Sampath, Michael Wraback,* Army Research Laboratory*;* ***Jonathan Pratt***, *Agnes Xavier, Siddharth Rajan,* Ohio State University | |
| 11:15am | **NAMBE2-TuM-14** Sc-Rich Monocrystalline ScGaN Grown by MBE Exhibits Attractive Ferroelectric Properties, ***Samuel Yang (Student)***, *Shubham Mondal, Jae Hun Kim, Zetian Mi,* University of Michigan, Ann Arbor | |
| 11:30am | **NAMBE2-TuM-15** Towards High Wall-Plug Efficiency Nanowire-based Red Micro-LEDs, ***Yifu Guo (Student)***, *Ayush Pandey, Reddeppa Maddaka, Yixin Xiao, Yakshita Malhotra, Jiangnan Liu, Yuanpeng Wu, Kai Sun, Zetian Mi,* University of Michigan, Ann Arbor | |
| 11:45am | **NAMBE2-TuM-16** High Permittivity Epitaxial $BaTiO_3$ Thin Films on AlGaN/GaN Heterostructures for RF Electronics, ***Eric Jin***, *Vikrant Gokhale, James Champlain,* US Naval Research Laboratory*; James Hart,* NOVA Research, Inc.*; Andrew Lang, Matthew Hardy, Neeraj Nepal, D. Scott Katzer, Brian Downey, Virginia Wheeler,* US Naval Research Laboratory | |

# Tuesday Afternoon, August 26, 2025

| | Room Tamaya ABC | |
|---|---|---|
| 1:30pm | **NAMBE1-TuA-1** Development of Erbium Doped Epitaxial Scheelite Thin Films for Quantum Communication Applications, ***Ignas Masiulionis (Student)***, University of Chicago; *Bonnie Lin,* Massachusetts Institute of Technology; *Gregory D. Grant,* University of Chicago; *Junghwa Kim,* Massachusetts Institute of Technology; *Jiefei Zhang,* Argonne National Laboratory; *James M. LeBeau,* Massachusetts Institute of Technology; *David D. Awschalom, Supratik Guha,* University of Chicago | **NAMBE**<br>**Session NAMBE1-TuA**<br>**Oxides and Group IV Materials**<br>**Moderators:**<br>**Ezra Bussman**, Sandia National Laboratories,<br>**Sriram Krishnamoorthy**, University of California at Santa Barbara |
| 1:45pm | **NAMBE1-TuA-2** Rapid Exploration of Oxide Growth Space through *in situ* Growth and Etching, *Stephen Schaefer, Davi Febba,* National Renewable Energy Laboratory; *Michelle Smeaton, Kingsley Egbo, Glenn Teeter, Syed Hasan, William Callahan, Andriy Zakutayev,* national renewable Energy Laboratory; ***M. Brooks Tellekamp***, National Renewable Energy Laboratory | |
| 2:00pm | **NAMBE1-TuA-3** Metastable Iron-Oxide Phases by Epitaxial Matching to 4H-SiC (0001), ***Alexandra Fonseca Montenegro***, *Faisal Kimbugwe Kimbugwe, Marzieh Baan, Sevim Polat Genlik, Maryam Ghazisaeidi, Tyler Grassman, Roberto Myers,* The Ohio State University | |
| 2:15pm | **NAMBE1-TuA-4** SiGe/SnGe Superlattices Grown Using Molecular Beam Epitaxy, ***Allison McMinn (Student)***, *Tyler McCarthy,* Arizona State University; *Yicheng Wang,* Dartmouth; *Xiaoyang Liu, Razine Hossain, Xin Qi, Zheng Ju,* Arizona State University; *David Jaeger,* University of North Texas; *Jifeng Liu,* Dartmouth; *David Smith, Yong-Hang Zhang,* Arizona State University | |
| 2:30pm | **NAMBE1-TuA-5** Intervalence Band Transitions of α-Sn Films on InSb Substrates with Different Surface Reconstructions, *Jaden Love, Jan Hrabovsky, Carlos A. Armenta,* New Mexico State University; *Aaron N. Engel, Chris Palmstrom,* University of California at Santa Barbara; ***Stefan Zollner***, New Mexico State University | |
| 2:45pm | **NAMBE1-TuA-6** Epitaxial Growth and Optical Properties of GeSn Alloys on Ge (100) and Si (100) via Molecular Beam Epitaxy, ***Nirosh Meckamalil Eldose***, *Diandian Zhang, Dinesh Baral, Hryhorii Stanchu, Fernando Maia de Oliveira, Sudip Acharya, Wei Du, Fisher Yu, Gregory J Salamo,* University of Arkansas | |
| 3:00pm | **BREAK & EXHIBITS** | |
| 3:30pm | **NAMBE2-TuA-9** Optical and Structural Investigations of Antimonide-Exposed InAs/GaAs Quantum Dots in an InGaAs Quantum Well Matrix for 1380 nm Photoluminescent Emission , ***Bhavya Kondapavuluri (Student)***, *Kai-Yang Hsu, Pin-Chih Liu,* Yuan Ze University, Taiwan; *Wei-Sheng Liu,* Yuan Ye University, Taiwan; *Ba Laji,* Yuan Ze University, Taiwan; *Jen-Inn Chyi,* National Central University, Taiwan | **NAMBE**<br>**Session NAMBE2-TuA**<br>**Low Dimensional Nanostructures**<br>**Moderator:**<br>**Thaddeus Asel**, Air Force Research Laboratory |
| 3:45pm | **NAMBE2-TuA-10** Photonic Crystal Surface Emitting Lasers (PCSELs) based on InAs Quantum Dots-in-a-Well, ***Thomas Rotter***, *Subhashree Seth, Mega Frost, Andrei Sharma, Carter Heinrich, Samiha Nuzhat,* Center for High Technology Materials, UNM; *Chhabindra Gautam,* University of Texas at Arlington; *Sadhvikas Addamane,* Center for Integrated Nanotechnologies, Sandia National Laboratories; *Weidong Zhou,* University of Texas at Arlington; *Ganesh Balakrishnan*, Center for High Technology Materials, UNM | |
| 4:00pm | **NAMBE2-TuA-11** Spatial and Spectral Control Over MBE Grown InAs/GaAs Quantum Dots for Device Platforms, ***Nazifa Tasnim Arony (Student)***, University of Delaware; *Lauren N. McCabe,* University of Delaware (Now working at Yale University); *Joshya Rajagopal, Lan Mai, Lottie Murray, Prashant Ramesh, Matthew Doty, Joshua Zide,* University of Delaware | |
| 4:15pm | **NAMBE2-TuA-12** 2D-Assisted Nanoscale Nucleation for Selective III-V on Silicon Heteroepitaxy, ***Corey White***, University of Illinois Urbana-Champaign; *Yiteng Wang,* University of Illinois at Urbana-Champaign; *Archishman Saha, Soo Ho Choi,* University of Illinois Urbana-Champaign; *Kuangye Lu, Ne Myo Han,* Massachusetts Institute of Technology; *Ze-Wei Chen,* University of Illinois Urbana-Champaign; *Doa Kwon, Jeehwan Kim,* Massachusetts Institute of Technology; *Hyunseok Kim,* University of Illinois at Urbana-Champaign; *Minjoo Larry Lee,* University of Illinois Urbana-Champaign | |
| 4:30pm | **NAMBE2-TuA-13** Production Processing of 300mm BTO Films on Silicon, for Photonic Applications, ***Sabina Hatch***, DCA Instruments, Finland | |
| 4:45pm | **NAMBE2-TuA-14** MBE of Epitaxial Al/Ge Quantum Wells for Quantum Computing, ***Jason Dong***, *Joshua Thompson, Bernardo Langa Jr., Chomani Gaspe, Riis Card,* Laboratory for Physical Sciences; *Brycelynn Bailey, Shiva Davari Dolatabadi, Hugh Churchill,* University of Arkansas; *Thomas Hazard, Kyle Serniak,* MIT Lincoln Laboratory; *Kasra Sardashti, Christopher Richardson,* Laboratory for Physical Sciences | |
| 5:00pm | **NAMBE2-TuA-15** Reducing Contact Resistance of Ultra-thin High Al-content AlGaN PolFETs Grown by $NH_3$-MBE, ***Ashley Wissel-Garcia (Student)***, University of California at Santa Barbara; *Yinxuan Zhu, Siddharth Rajan,* The Ohio State University; *James Speck,* University of California at Santa Barbara | |
| 5:15pm | **NAMBE2-TuA-16** Molecular Beam Epitaxy Growth and X-Ray Analysis of α and γ MnTe, ***Candice R. Forrester (Student)***, *Sina Mohammadi, Aran Barton, Jisoo Moon,* The City University of New York; *Rei Miyazawa, Masakazu Kobayashi,* Waseda University, Japan; *Maria C. Tamargo,* The City University of New York | |

# Wednesday Morning, August 27, 2025

| | Room Tamaya ABC | |
|---|---|---|
| 8:00am | **NAMBE1-WeM-1** Heteroepitaxial Growth of Highly Anisotropic $Sb_2Se_3$ Films on GaAs, ***Kelly Xiao (Student)***, Stanford University; *Virat Tara,* University of Washington; *Pooja Reddy, Jarod Meyer,* Stanford University; *Alec Skipper,* University of California Santa Barbara; *Rui Chen,* University of Washington; *Leland Nordin,* University of Central Florida; *Arka Majumdar,* University of Washington; *Kunal Mukherjee,* Stanford University | **NAMBE**<br>**Session NAMBE1-WeM**<br>**Heteroepitaxy**<br>**Moderator:**<br>**Seth Bank**, University of Texas at Austin |
| 8:15am | **NAMBE1-WeM-2** Evaluating Dopant Candidates for N-Type SnTe Films Grown by Molecular Beam Epitaxy, ***Qihua Zhang***, *Mary Kathleen Caucci, Maria Hilse, Susan Sinnot, Stephanie Law,* The Pennsylvania State University | |
| 8:30am | **NAMBE1-WeM-3** Tunable Electrical Conductivity in Ferromagnetic Semiconductor Samarium Nitride, ***Kevin Vallejo***, Idaho National Laboratory | |
| 8:45am | **NAMBE1-WeM-4** Formation of [111]-Ge Domains in Layered α-FeGe2 by MBE and Solid Phase Epitaxy, ***Moritz Hansemann (Student)***, *Michael Hanke, Achim Trampert, Jens Herfort,* Paul-Drude-Institut für Festkörperelektronik Leibniz-Institut im Forschungsverbund Berlin, Germany | |
| 9:00am | **NAMBE1-WeM-5** Twin-free $(MnSb_2Te_4)_x(Sb_2Te_3)_{1-x}$ Growth on $In_2Se_3$/InP(111):B Substrates by Molecular Beam Epitaxy, ***Jisoo Moon***, *Candice R. Forrester,* City College of New York; *Sina Mohammadi,* City College of New York, City University of New York; *Lia Krusin-Elbaum, Maria C. Tamargo,* City College of New York | |
| 9:15am | **NAMBE1-WeM-6** Epitaxial Growth of SnGeSe Ternary Alloys on GaAs Substrates, ***Kira Martin (Student)***, *Pooja D. Reddy, Jarod E. Meyer, Kelly Xiao, Tri Nguyen, Kunal Mukherjee,* Stanford University | |
| 9:30am | **NAMBE1-WeM-7** Controlling Antiphase Twins in $Bi_2Se_3$ via Step-Terminated $Al_2O_3$ Substrates, ***Matthew Brahlek***, *Jane Chen,* Oak Ridge National Laboratory; *Rob Moore,* Oak Ridge Nation; *Alessandro R. Mazza,* Oak Ridge National Laboratory | |
| 9:45am | **NAMBE1-WeM-8** "Kinetic Roughening" in Low-temperature MBE Growth of III-As Heterostructures on InP(111)B, ***Esperanza Luna***, Paul-Drude-Institut für Festkörperelektronik Leibniz-Institut im Forschungsverbund Berlin, Germany; *Seyed Ali Hosseini Farahabadi, Milad Entezami, Man Chun Alan Tam, Zbigniew Roman Wasilewski,* University of Waterloo, Canada | |
| 10:00am | **BREAK & EXHIBITS** | |
| 10:30am | **NAMBE2-WeM-11** Artificial Intelligence for on-the-Fly Analysis and Control During Oxide Molecular Beam Epitaxy, ***Tiffany Kaspar***, *Emily Saldanha, Henry Sprueill, Jenna Pope, Sarah Akers, Derek Hopkins, Ethan King,* Pacific Northwest National Laboratory | **NAMBE**<br>**Session NAMBE2-WeM**<br>**Advanced MBE Techniques**<br>**Moderator:**<br>**Stephanie Law**, Penn State University<br>**Qihua (David) Zhang**, Penn State University |
| 10:45am | **NAMBE2-WeM-12** A Novel Approach for P-Type Doping in Semiconductor Heterostructures: Interface Fermi-Level Position Engineering, ***Xiaoyang Liu (Student)***, *Xin Qi, Zheng Ju, Nathan Rosenblatt, Razine Hossain, Yong-Hang Zhang,* Arizona State University | |
| 11:00am | **NAMBE2-WeM-13** GaP Planar Coalescence Over Embedded Dielectric Gratings by Molecular Beam Epitaxy, ***Ashlee Garcia***, *Will Doyle,* University of Texas at Austin; *Yiteng Wang, Corey White,* University of Illinois at Urbana-Champaign; *Byron Aguilar,* University of Texas at Austin; *Minjoo Lee,* University of Illinois at Urbana-Champaign; *Daniel Wasserman, Seth Bank,* University of Texas at Austin | |
| 11:15am | **NAMBE2-WeM-14** High-Efficiency Entangled Photon Sources Using (111)-Oriented Quantum Optical Metasurfaces, *Trevor Blaiki*, University of Waterloo, Canada; *Simon Stich,* Walter Schottky Institut, Technische Universität München, Germany; *Vitaliy Sultanov,* Max-Planck Institute for the Science of Light, Germany; *Maria Chekhova,* Max Planck Institute for the Science of Light, Germany; *Mikhail Belkin,* Walter Schottky Institut, Technische Universität München, Germany; ***Zbig Wasilewski***, University of Waterloo, Canada | |
| 11:30am | **NAMBE2-WeM-15** Crystalline Direction and Shadowing Effect on Overgrowth of Patterned Features on GaAs (001), ***Xizheng Fang (Student)***, *Yiteng Wang, Adrian Birge, Minjoo Lee,* University of Illinois Urbana-Champaign | |
| 11:45am | **NAMBE2-WeM-16** Thermal Laser Epitaxy System for Synthesis of Thin Films Containing Refractory Elements, ***David Catherall (Student)***, *Yifei Yan, Fin Donachie, Austin Minnich,* California Institute of Technology | |
| 12:00pm | **NAMBE2-WeM-17** Rolled-Up Metamaterials (RUMMS) for Infrared Imaging, ***Gokul Nanda Gopakumar (Student)***, *Stephanie Law,* Pennsylvania State University | |
| 12:15pm | **NAMBE2-WeM-18** Spectroscopic Ellipsometry as an in Situ Technique to Control MBE Growth, *Jackson Niedel, Owen Peterson, Hatim Saeed,* Kenyon College; *Qihua Zhang, Stephanie Law, Maria Hilse,* Penn State University; ***Frank Peiris***, Kenyon College | |
| 12:30pm | **NAMBE2-WeM-19** Closing Remarks & Thank Yous | |

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