

February 24, Oral presentations 8:30AM- 5:10PM, Poster Session 5:25- 6:00PM, Informal Mixer with Wine and Beer will be held in the Hospitality Suite, Room 112, sponsored by Thermionics Laboratory, Inc.

Morning session chair: *Nate Newman*, Arizona State University

7:30- 8:30 AM - Hot Entrée & Continental Breakfast Served in Meeting Room (*Superstition Room*)

8:30 - 8:40 AM Welcome by *Monte Lawrence*

8:40 - 8:45 AM Opening remarks by *Nate Newman*

8:45- 9:30 AM Lars Samuelson, Epitaxial nanowires for electronics & photonics applications, Lund University

9: 30 -10:15 AM Shuji Nakamura, Hiroaki Ohta, LED materials fundamentals & current challenges, UCSB

10:15 - 10:30 AM Break

10:30 - 11:15 AM Russell Dupuis, Recent advances in MOCVD growth of III-N semiconductors, Georgia Tech

11:15 - 11:35 AM Atomic force microscope spatially controlled CVD, *M. Rolandi*, J. Torrey, S. Vasko, and Robert Hanlen, University of Washington, Seattle (P)

11:35 - 11:55 AM In-situ observations of endotaxial growth of CoSi₂ nanowires on Si (110) using ultrahigh vacuum transmission electron microscopy, *P.A. Bennett*, Zhian He and F. M. Ross, ASU and IBM T. J. Watson Research Center

11:55 - 12:15 PM Effect of stress on phase separation in In_xGa_{1-x}N/GaN multiple quantum wells, *Q. L. Zheng*, F. Y. Meng, P. A. Crozier and S. Mahajan

12:15 - 1:45 PM Lunch (*Pinon Grill Terrace*)

Afternoon session chair: *Subhash Mahajan*, Arizona State University

1:45 - 2:30 PM Uli Dahmen, Advances in aberration-corrected microscopy, Lawrence Berkeley National Labs

2: 30 - 3:15 PM David Muller, Atomic-scale imaging of the physical and electronic structure of interfaces and defects, Cornell University

3:15 - 3:45 PM Break

3:45 - 4:05 PM *TBD*

4:05 - 4:25 PM Monitoring thin film composition and morphology of MBE grown III-nitrides, employing RHEED and REELS in-situ in the low energy loss regime, *B. Strawbridge* and N. Newman, ASU

4:25 - 4:45 PM Transmission electron microscopy investigation of acceptor-doped InN, *Zuzanna Liliental-Weber*, Lawrence Berkeley Labs (P)

4:45 - 5:05 PM Epitaxial film analysis using extended X-ray rocking curve theory, *Aya Takase*, Rigaku (P)

5:05 -5:25 PM Spatial Composition Graded Alloy Nanowires with Bandedge Emission Spanning Entire Visible Spectrum, A. L. Pan, M.H. Sun, R.B. Liu, *C.Z. Ning*, Arizona State University

Poster session: 5:25 - 6:00 PM

- Photoluminescence properties of InAs nanowires grown on GaAs and Si substrates *M.H. Sun*, E.S.P. Leong, A.H. Chin, and C.Z. Ning

- Growth and Characterization of PbS Nanowires, *Patricia Nichols*, Minghua Sun, Srivatsa Aithal, C.Z. Ning, Arizona State University

- Thermochemistry of MgB₂ Thin Film Synthesis, *Rakesh K. Singh*, Jihoon Kim, Yi Shen, Nathan Newman, and John M. Rowell

- Epitaxy growth of perovskite Ba (Zn_{1/3}Ta_{2/3})O₃ thin films by Pulsed Laser Deposition(PLD), *Z.Z. Tang*, L.T. Liu, S. Bandyopadhyay, R.K. Singh and N. Newman

- The growth of epitaxial Nb films for superconducting tunneling devices, *Mengchu Huang*, Rakesh Singh, Lei Zhang, Yi Shen and N. Newman

- Epitaxial Growth and Crystalline Defects Engineering, *N. Faleev* and C. Honsberg

- Growth of Wide Band-gap Complex Oxides on GaN by Molecular-Beam Epitaxy, *Jon F. Ihlefeld*, Tassilo Heeg, June-Hyuk Lee, Rammamoorthy Ramesh, and Darrell G. Schlom

- Device-scale Thermal Insulating Layers via Epitaxy, *Mark Zurbuchen*

- Physical properties of InAs QDs on GaAsSb barrier layers, *K-Y. Ban*, N. Faleev and C. Honsberg

February 25th, Oral presentations 8:30 AM- 6:00PM, Banquet 7:00- 9:00PM

Morning session chair: *Mac Robinson*, Lawrence Semiconductor Research Laboratory

7:30- 8:30 AM - Hot Entrée & Continental Breakfast Served in Meeting Room (Lakeside Pavilion)

8:30 - 9:15 AM *David Haramé*, High speed silicon germanium electronics, IBM

9: 15 - 10:00 AM *John Bowers*, Microwave hybrid InGaAlAs-silicon photonics, UCSB

10:00 - 10:20 AM Memristor-CMOS hybrid integrated circuits for reconfigurable logic, Qiangfei Xia, Warren Robinett, Michael W. Cumbie, Neel Banerjee, Thomas J. Cardinali, J. Joshua Yang, Wei Wu, Xuema Li, William Tong, Dmitri B. Strukov, Gregory S. Snider, *Gilberto Medeiros-Ribeiro* and R. Stanley Williams, Hewlett-Packard

10:20 - 10:50 AM Break

10:50 - 11:10 AM Predicting optimal conditions for growth of select materials which grow under meta-stable conditions, *Timothy J. Peshek*, Nathan Newman, Zhizhong Tang and Mark van Schilfgaarde, ASU and National Renewable Energy Laboratory

11:10 - 11:30 AM MBE Growth and optical properties of long-wavelength GaAs_{1-x}Bi_x alloys, *Xianfeng Lu*, C. Gogineni, N. Riordan, S. R. Johnson, T. Tiedje and Y. -H. Zhang, ASU and University of Victoria, BC Canada

11:30 - 11:50 AM Growth of single crystal rare earth oxide/silicon multilayer structures on Si (111) by solid source epitaxy, F. Erdem Arkun, Robin Smith, Gary Vosters and *Andrew Clark*, Translucent Inc.

11:50 - 1:35 PM Lunch (*Pinon Grill Terrace*)

Afternoon session chair: *Art Gossard*, University of California, Santa Barbara

1:35 - 2:20 PM *Frances M Ross*, Controlling Si/Ge heterojunction nanowires through real-time growth studies, IBM

2: 20 - 3:05 PM *Scott A Chambers*, Challenges in interface characterization for oxide heteroepitaxy, Pacific Northwest National Laboratory

3:05 - 3:50 PM *Vladimir Matias*, Ion-beam aligned templates as a new paradigm for epitaxial film growth, Los Alamos National Laboratory

3:50 - 4:10 PM Break

4:10 - 4:30 PM Epitaxial growth of Si/Ge and Si/Ge/Si axial heterojunction nanowire synthesis, C. -Y. Wen, M. C. Reuter, J. Bruley, J. Tersoff, S. Kodoambaka, E. A. Stach and F. M. Ross, Purdue

4:30 - 4:50 PM Electrically-induced boundary migration in titanium dioxide memristors, Matthew D. Pickett, John Paul Strachan, J. Joshua Yang, Andreas Scholl, David Kilcoyne, Shaul Aloni, *Gilberto Medeiros-Ribeiro* and R. Stanley Williams, Hewlett-Packard and Lawrence Berkeley Laboratory

4:50 - 5:10 PM Understanding AFM nanoscale CVD, *Stephanie Vasko*, Jessica Torrey, Robert Hanlen, Renyu Chen, Wenjun Jiang, Scott Dunham, and Marco Rolandi, University of Washington, Seattle

5:10 - 5:30 PM Au on vapor-liquid-solid grown Si nanowires: spreading of the liquid metal seed, Eric Dailey, Prashanth Madras and *Jeff Drucker*, Arizona State University

5:30 - 5:45 PM Silicon Epitaxy by hot-wire chemical vapor deposition at glass compatible temperatures: growth rate and material quality optimization, *Ina Martin*

5:45 - 6:00 PM Influence of substrate temperature and post-deposition anneal on material properties of Ga-doped ZnO prepared by pulsed laser deposition, *Robin Scott*

Banquet 7:00 - 9:00PM (Lakeside Pavilion)

Evening session host: *Michael Richardson*, Silicon Quest International

Marlene Bourne, *Exciting recent advances in micro & nanotechnology*, Bourne Research LLC

February 26th, Oral presentations 8:30 AM-noon, with box lunch

Morning session chair: *Chris Palmstrom*, University of California, Santa Barbara

7:30- 8:30 AM - Hot Entrée & Continental Breakfast Served in Meeting Room (*Lakeside Pavilion*)

8:30 - 9:15 AM *Martin Green*, Si solar cell development, University of New South Wales

9: 15 - 10:00 AM *Art Gossard*, Fast photodectors, University of California, Santa Barbara

10:00 - 10:45 AM *Walter de Heer*, Epitaxial graphene for electronics, Georgia Tech

10:45 - 11:00 AM Break

11:00 - 11:20 AM (ZnCd)(SeTe) Grown on GaSb substrates by molecular beam epitaxy for solar cell applications, *D. Ding*, *S. Wang*, *X.-F. Lu*, *S. R. Johnson*, *Y. -H. Zhang*, *X. -N. Wu*, *X. Zhang*, *J. Fan*, *D. J. Smith*, *X. Liu*, *J. K. Furdyna*, ASU and University of Notre Dame

11:20 - 11:40 AM Topotactic Anion Exchange, A route to Epitaxial Oxides *M. A. Zurbuchen*, *T. Yeoh*, *A. Chermatynskiy*, *P. Shukla*, *S. R. Phillpot*, *C. H. Lee*, *D. G. Schlom* and *D. G. Cahill*, The Aerospace Corporation, Cornell University, University of Florida, University of Illinois, Urbana

11:40 - 12:00 PM Direct observation of nucleation and early stages of growth of GaN nanowires, *Rosa E. Diaz*, *R. Sharma* and *S. Mahajan*, ASU



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