

Shadi A. DayehDepartment of Electrical and Computer Engineering, UC San Diego,
La Jolla, CA 92093; Tel: (858) 534-5171, e-mail: sdayeh@ece.ucsd.edu**Education & Academic Training**

- 3/2010 – 10/2012 Distinguished J. R. Oppenheimer Postdoctoral Fellow, Los Alamos National Laboratory. Advisor: S. Tom Picraux
- 9/2008 – 3/2010 Director Postdoctoral Fellow, Los Alamos National Laboratory
- 9/2003 – 9/2008 PhD in Electrical and Computer Engineering/Electronic Materials and Devices, University of California San Diego. Advisors: Edward T. Yu and Deli Wang.
- 8/2001 – 8/2003 MS in Electrical Engineering/Circuits and Devices, Southern Methodist University. Advisor: Donald P. Butler.
- 9/1997 - 7/2001 Maitrise-en-Sciences in Physics and Electronics, Lebanese University, Beirut, Lebanon.

Professional Experience

- 11/2012 - current Assistant Professor, Department of Electrical and Computer Engineering, University of California, San Diego.

Academic and Professional Recognitions

- 2014 NSF Early CAREER Award.
- 2009, 2010 & 2011 Los Alamos National Laboratory Achievement Award.
- 2011 Distinguished Postdoctoral Performance Award for FY2010, LANL (for “Innovative research on semiconductive nanowires and their devices”).
- 2010 Distinguished J. Robert Oppenheimer Postdoctoral Fellowship, LANL (one of 2 appointments per year, open to all nationalities. “Candidates for LANL Distinguished Postdoctoral Fellows display extraordinary ability in scientific research and show clear and definite promise of becoming outstanding leaders in the research they pursue”).
- 2008 Director Postdoctoral Fellowship, LANL.
- 2008 Advanced Substrates and Next Generation Semiconductors Workshop, Winner of Student Paper Competition.
- 2007 Spring MRS Meeting Best Poster Award.
- 2007 Spring MRS Meeting Graduate Student Award.
- 2007 34th Conference on Physics and Chemistry of Semiconductor Surfaces and Interfaces (PCSI-34) Young Scientist Award.
- 2007 Summer Teaching Fellow for ECE department, UCSD: Fundamentals of Devices and Materials.
- 2006 Electronic Materials Conference (EMC) Outstanding Oral Presentation.
- 2006 W. S. C. Chang’s Fellowship, ECE department, UCSD.
- 2005 Outstanding Teaching Assistant Award, ECE department, UCSD.

Publications**Journal Papers:**

60. Jinkyoungh Yoo, Binh-Minh Nguyen, Ian H. Campbell, **Shadi A. Dayeh**, Paul Schuele, Davis Evans, and S. T. Picraux, “Si Radial p-i-n Junction Photovoltaic Arrays with Match-Heads for Enhanced Quantum Efficiency,” *submitted for publication, 2014*.

59. Xing Dai, Binh-Minh Nguyen, Yoontae Hwang, Cesare Soci, and **Shadi A. Dayeh** “Novel Heterogeneous Integration Technology of III-V Layers and InGaAs FinFETs to Silicon”, *Advanced Functional Materials* **24**, 4420, 2014.
58. Wei Tang, Binh-Minh Nguyen, Renjie Chen, and **Shadi A. Dayeh** “Solid State Reactions of Nickel Silicide, Germanide, and Alloyed Contacts to Semiconductor Nano-Channels”, *Semiconductor Science and Technology* **29**, 054004, 2014. [Invited Review]
57. Jinkyong Yoo, **Shadi A. Dayeh**, Norman C. Bartelt, Wei Tang, Alp T. Findikoglu, and S. T. Picraux, “Size-Dependent Epitaxy on Mesoscale Silicon Substrates,” submitted for publication, 2014.
56. Lei Yang, Ding Zhong, Jingyu Zhang, Zhiping Yan, Shaofeng Ge, Pingwu Du, Jun Jiang, Dong Sun, Xiaojun Wu, Zhiyong Fan, **Shadi A. Dayeh**, and Bin Xiang, “Optical Properties of Metal-Molybdenum Disulfide Hybrid Nanosheets and Their Application for Enhanced Photocatalytic Hydrogen Evolution”, *ACS Nano* **8**, 6979, 2014.
55. Lei Yang, Xudong Cui, Jingyu Zhang, Kan Wang, Meng Shen, Shuangshuang Zeng, **Shadi A. Dayeh**, Liang Feng, and Bin Xiang, “Lattice Strain Effects on the Optical Properties of MoS₂ Nanosheets,” *Scientific Reports* **4**, 5649, 2014.
54. Peng Zhang, Son T. Le, Xiaoxiao Hou, Alex Zaslavsky, Daniel E. Perea, **Shadi A. Dayeh**, and S. T. Picraux, “Strong Room Temperature Negative Transconductance in Axial Si/Ge Hetero-Nanowire Tunneling Field-Effect Transistor,” *Appl. Phys. Lett.* **105**, 062106, 2014.
53. Binh-Minh Nguyen, Yuan Taur, S. T. Picraux, and **Shadi A. Dayeh** “Diameter-independent Hole Mobility in Ge/Si Core/Shell Nanowire Field Effect Transistors”, *Nano Lett.* **14**, 585, 2013.
52. Yoon Tae Hwang*, Binh-Minh Nguyen*, and **Shadi A. Dayeh** “Atomic Layer Deposition of Platinum with Enhanced Nucleation and Coalescence by Trimethylaluminum pre-Pulsing”, *Appl. Phys. Lett.* **103**, 263115, 2013.
51. Wei Tang, S. Tom Picraux, Jian Yu Huang, Xiaohua Liu, King-Ning Tu, and **Shadi A. Dayeh** “Gold Catalyzed Nickel Disilicide Formation: A New Solid-Liquid-Solid Phase Growth Mechanism”, *Nano Lett.* **13**, 6009, 2013.
50. Yang Liu, Xiao Hua Liu, Binh-Minh Nguyen, Jinkyong Yoo, John P. Sullivan, S. Tom Picraux, Jian Yu Huang, and **Shadi A. Dayeh**, “Tailoring Lithiation Behavior by Interface and Bandgap Engineering at the Nanoscale,” *Nano Lett.* **13**, 4876, 2013.
49. Wei Tang, S. T. Picraux, Andriy M. Gusak, Jian Y. Huang, King N. Tu, and **Shadi A. Dayeh**, “Nucleation and Atomic Layer Reaction in Nickel Silicide for Defect Engineered Si Nanochannels,” *Nano Lett.* **13**, 2748, 2013.
48. Nari Jeon, **Shadi A. Dayeh**, and Lincoln J. Lauhon, “The Origin of Polytype Formation in VLS-Grown Ge Nanowires Through Defect Generation and Nanowire Kinking,” *Nano Lett.* **13**, 3947, 2013.
47. Jinkyong Yoo, **Shadi A. Dayeh**, Wei Tang, and S. T. Picraux, “Epitaxial Growth of Radial Si p-i-n Junctions for Photovoltaic Applications”, *Appl. Phys. Lett.* **102**, 093113, 2013.
46. Shixiong Zhang, **Shadi A. Dayeh**, Yan Li, Scott A. Crooker, Darryl L. Smith, and S. T. Picraux, “Electrical Spin Injection and Detection in Silicon Nanowires Through Oxide Tunnel Barriers,” *Nano Lett.* **13**, 430, 2013.
45. Bin Wang, Xianglong Li, Xianfeng Zhang, Bin Luo, Meihua Jin, Minghui Liang, **Shadi A. Dayeh**, S. T. Picraux, and Linjie Zhi, “Adaptable Silicon-Carbon Nanocables Sandwiched between Reduced Graphene Oxide Sheets as Lithium Ion Battery Anodes,” *ACS Nano*. **7**, 1437, 2013.
44. **Shadi A. Dayeh**, Wei Tang, Francesca Boiolo, Karen L. Kavanagh, He Zheng, Jian Wang, Nathan H. Mack, John Greg Swadener, Jian Yu Huang, Leo Miglio, King-Ning Tu, and S. Tom Picraux, “Direct Measurement of Coherency Limits for Strain Relaxation in Heteroepitaxial Core/Shell Nanowires,” *Nano Lett.* **13**, 1869, 2013. [Cover Article]
43. Min-Ah Seo, Jinkyong Yoo, **Shadi A. Dayeh**, Samuel T. Picraux, Antoinette J. Taylor, and Rohit P. Prasankumar, “Mapping carrier diffusion in single silicon core-shell nanowires with ultrafast optical microscopy”, *Nano Lett.* **12**, 6334, 2012.

42. Son T. Le, P. Jannaty, X. Luo, A. Zaslavsky, Daniel E. Perea, **Shadi A. Dayeh**, and S. T. Picraux, "Axial SiGe Heteronanowire Tunneling Field-Effect Transistors," *Nano Lett.* **12**, 5850, 2012.
41. Xiao Hua Liu, Jiang Wei Wang, Hui Yang, Shan Huang, Feifei Fan, Xu Huang, Yang Liu, Sergiy Krylyuk, Jinkyong Yoo, **Shadi A. Dayeh**, Albert Davydov, Scott X. Mao, S. Tom Picraux, Sulin Zhang, Ju Li, Ting Zhu, and Jian Yu Huang, "In situ atomic scale imaging of electrochemical lithiation of Si," *Nature Nanotechnology* **7**, 749, 2012.
40. **Shadi A. Dayeh**, Xiao Hua Liu, Xing Dai, JianYu Huang, Samuel T. Picraux, and Cesare Soci, "Rocking Chair Defect Multiplication in Nanowire Growth", *Appl. Phys. Lett.*, **101**, 053121, 2012.
39. Wei Tang, **Shadi A. Dayeh**, S. T. Picraux, Jianyu Huang, and King-Ning Tu, "Ultrashort Schottky Barrier Silicon Nanowire Transistor with intruded silicide source/drain," *Nano Lett.* **12**, 3979, 2012.
38. Xianglong Li, Jeong-Hyun Cho, Nan Li, Yingying Zhang, Darrick Williams, **Shadi A. Dayeh**, and S. T. Picraux "Carbon Nanotube-Enhanced Growth of Silicon Nanowires as an Anode for High-Performance Lithium Ion Batteries," *Advanced Energy Materials* **2**, 87, 2012.
37. MinAh Seo, **Shadi A. Dayeh**, Prashanth Upadhy, Julio Martinez, Brian S. Swartzentruber, S. T. Picraux, Antoinette J Taylor, and Rohit P. Prasankumar, "Understanding ultrafast carrier dynamics in single quasi-one-dimensional Si nanowires," *Appl. Phys. Lett.* **100**, 071104, 2012.
36. Aditya Mohite, Daniel E. Perea, S. Singh, **Shadi A. Dayeh**, Ian H. Campbell, S. T. Picraux, and Han Htoon, "Highly Efficient Charge Separation and Collection Across in-situ Doped Axial VLS-grown Si Nanowire p-n Junctions," *Nano Lett.* **12**, 1965, 2012.
35. **Shadi A. Dayeh**, Jian Wang, Nan Li, Jian Yu Huang, Aaron V. Gin, and S. Tom Picraux, "Growth, Defect Formation and Morphology Control of Germanium-Silicon Semiconductor Nanowire Heterostructures," *Nano Lett.* **11**, 4200, 2011.
34. **Shadi A. Dayeh**, Robert M. Dickerson, and S. Tom Picraux, "Axial Bandgap Engineering in Germanium-Silicon Heterostructured Nanowires," *Appl. Phys. Lett.* **99**, 113105, 2011.
33. **Shadi A. Dayeh**, Nathan H. Mack, Jian Yu Huang, and S. T. Picraux, "Advanced core/multi-shell Germanium/Silicon Nanowire Heterostructures: The Au Diffusion Bottleneck," *Appl. Phys. Lett.* **99**, 023102, 2011. [Cover Article]
32. **Shadi A. Dayeh**, Aaron V. Gin, and S. T. Picraux, "Advanced core/multi-shell Germanium/Silicon Nanowire Heterostructures: Morphology and Transport," *Appl. Phys. Lett.* **98**, 163112, 2011.
31. Xing Dai, **Shadi A. Dayeh**, Vaithianathan Veeramuthu, Alexandre Larrue, Jian Wang, Haibin Su, and Cesare Soci, "Tailoring the Vapor-Liquid-Solid Growth Towards Self-Assembled GaAs Nanowire Junctions," *Nano Lett.* **11**, 4947, 2011.
30. Xiao Hua Liu, He Zheng, Li Zhong, Shan Huang, Khim Karki, Li Qiang Zhang, Yang Liu, Akihiro Kushima, Wen Tao Liang, Jiang Wei Wang, Jeong-Hyun Cho, Eric Epstein, **Shadi A. Dayeh**, S. Tom Picraux, Ting Zhu, Ju Li, John P Sullivan, John Cumings, Chunsheng Wang, Scott Mao, Zhizhen Ye, Sulin Zhang, and Jian Yu Huang, "Anisotropic swelling and fracture of silicon nanowires during lithiation," *Nano Lett.* **11**, 3312, 2011.
29. Xiao Hua Liu, Li Qiang Zhang, Li Zhong, Yang Liu, He Zheng, Jiang Wei Wang, Jeong-Hyun Cho, **Shadi A. Dayeh**, S. Tom Picraux, John P. Sullivan, Scott X. Mao, Zhi Zhen Ye, and Jian Yu Huang, "Ultrafast Electrochemical Lithiation of Individual Si Nanowire Anodes," *Nano Lett.* **11**, 2251, 2011.
28. Ayan Kar, Prashanth C. Upadhy, **Shadi A. Dayeh**, S. T. Picraux, Antoinette J. Taylor and Rohit P. Prasankumar, "Probing Ultrafast Carrier Dynamics in Silicon Nanowires," *IEEE Journal of Selected Topics on Quantum Electronics* **17**, 889, 2011.
27. **Shadi A. Dayeh**, and S. T. Picraux, "Direct Observation of the Nanoscale Size Effects in Ge Semiconductor Nanowires," *Nano Lett.* **10**, 4032-4039, 2010.
26. Son T. Le, Pouya Jannaty, Alex Zaslavsky, **Shadi A. Dayeh**, and S. T. Picraux, "Growth, Electrical Rectification, and Gate Control in axial In Situ doped p-n Junction Germanium Nanowires," *Appl. Phys. Lett.* **96**, 262102, 2010.
25. Yajaira Sierra-Sastre, **Shadi A. Dayeh**, S. T. Picraux, and Carl A. Batt, "Epitaxy of Ge Nanowires from Biotemplated Au Nanoparticle Catalysts," *ACS Nano* **4**, 1209, 2010.

24. S. T. Picraux, **Shadi A. Dayeh**, Pradeep Manandhar, Daniel E. Perea, and Sukgeun G. Choi, "Silicon and Germanium Nanowires: Growth, Properties, and Integration," *JOM* **62**, 35, 2010. [Invited Review, Cover Article]
23. **Shadi A. Dayeh**, "Electron Transport in Indium Arsenide Nanowires," *Invited Topical Review, Semiconductor Science and Technology* **25**, 024004, 2010. (Top 10 most read articles Feb-Aug 2010, source: SST journal website)
22. **Shadi A. Dayeh**, Edward T. Yu, and Deli Wang, "Surface Diffusion and Substrate – Nanowire Adatom Exchange in InAs Nanowire Growth," *Nano Letters* **9**, 1967, 2009.
21. **Shadi A. Dayeh**, Darija Susac, Karen L. Kavanagh, Edward T. Yu, and Deli Wang, "Structural and Electrical Properties of Zincblende and Wurtzite InAs Nanowires," *Adv. Func. Mat.* **19**, 2102, 2009.
20. **Shadi A. Dayeh**, Cesare Soci, Xinyu Bao, and Deli Wang, "Advances in the Synthesis of InAs and GaAs Nanowires for Electronic Applications," *Nano Today* **4**, 347, 2009. [Invited Review]
19. **Shadi A. Dayeh**, Edward T. Yu and Deli Wang, "Transport Coefficients of InAs Nanowires as a Function of Diameter," *Small* **5**, 77, 2009.
18. Sourabh Raychaudhuri, **Shadi A. Dayeh**, Deli Wang and Edward T. Yu, "Precise Semiconductor Nanowire Placement through Dielectrophoresis," *Nano Letters* **9**, 2260, 2009.
17. Jeremy Law, **Shadi A. Dayeh**, Deli Wang, and Edward T. Yu, "Scanning Capacitance Characterization of Potential Screening in InAs Nanowires," *J. Appl. Phys.* **105**, 014306, 2009.
16. **Shadi A. Dayeh**, Peng Chen, Yi Jing, Edward T. Yu, Deli Wang, and S. S. Lau, "Integration of Vertical InAs Nanowire Arrays on Insulator-on-Si for Electrical Isolation," *Appl. Phys. Lett.* **93**, 203109, 2008.
15. **Shadi A. Dayeh**, Darija Susac, Karen L. Kavanagh, Edward T. Yu and Deli Wang, "Field Dependent Transport Properties in InAs Nanowire Field Effect Transistors," *Nano Lett.* **8**, 3114, 2008.
14. Xinyu Bao, Cesare Soci, Darija Susac, John Bratvold, David P. R. Aplin, Wei Wei, C.-Y. Chen, **Shadi A. Dayeh**, Karen L. Kavanagh, and Deli Wang, "Heteroepitaxial Growth of Vertical GaAs Nanowires on Si(111) Substrates by Metal Organic Chemical Vapor Deposition," *Nano Lett.* **8**, 3755, 2008.
13. **Shadi A. Dayeh**, Cesare Soci, Edward T. Yu and Deli Wang, "Transport Properties of InAs Nanowire Field Effect Transistors: Effects of Surface States," *J. Vac. Sci. Tech. B* **25**, 1432, 2007. (Top 10 most read articles, Aug 2007, source: JVSTB website)
12. **Shadi A. Dayeh**, Edward T. Yu and Deli Wang, "III-V Nanowire Growth Mechanism: V/III Ratio and Temperature Effects," *Nano Lett.* **7**, 2486, 2007.
11. **Shadi A. Dayeh**, Edward T. Yu and Deli Wang, "Growth of InAs Nanowire on SiO₂ substrates: Nucleation, Evolution, and Role of Au Nanoparticles," *Journal of Phys. Chem. C* **111**, 13331, 2007.
10. **Shadi A. Dayeh**, Edward T. Yu and Deli Wang, "Excess Indium and Substrate Effects on the Growth of InAs Nanowires," *Small* **3**, 1683, 2007.
9. **Shadi A. Dayeh**, David Aplin, Xiaotian Zhou, Paul K. L. Yu, Edward T. Yu, and Deli Wang, "High Electron Mobility Indium Arsenide Nanowire Field Effect Transistors," *Small* **3**, 326, 2007.
8. **Shadi A. Dayeh**, Cesare Soci, Paul K. L. Yu, Edward T. Yu, and Deli Wang, "Influence of Surface States on the Extraction of Transport Parameters from InAs Nanowire Field Effect Transistors," *Appl. Phys. Lett.* **90**, 162112, 2007.
7. Cesare Soci, Arthur Zhang, Bin Xiang, **Shadi A. Dayeh**, David Aplin, Jung Park, Xinyu Bao, Yu-Hwa Lo, Deli Wang, "ZnO Nanowire UV Photodetectors with High Internal Gain," *Nano Lett.* **7**, 1003, 2007.
6. Xiaotian Zhou, **Shadi A. Dayeh**, Deli Wang and Edward T. Yu, "Scanning Gate Microscopy of InAs Nanowires," *Appl. Phys. Lett.* **90**, 233118, 2007.
5. Bin Xiang, Pengwei Wang, Xingzheng Zhang, **Shadi A. Dayeh**, David P. R. Aplin, Cesare Soci, Dapeng Yu, and Deli Wang, "Rational Synthesis of P-type ZnO Nanowire Arrays using Simple Chemical Vapor Deposition," *Nano Lett.* **7**, 323, 2007.

4. Xiaotian Zhou, **Shadi A. Dayeh**, Edward T. Yu and Deli Wang “Analysis of Carrier Modulation in InAs Nanowires by Scanning Gate Microscopy,” *J. Vac. Sci. Tech. B* **25**, 1427, 2007.
3. Xiaotian Zhou^(*), **Shadi A. Dayeh**^(*), David Aplin, Deli Wang, and Edward T. Yu, “Scanned Electrical Probe Characterization of carrier transport behavior in InAs Nanowires,” *J. Vac. Sci. Tech. B* **24**, 2036, 2006. ^(*) Equal contribution.
2. Xiaotian Zhou, **Shadi A. Dayeh**, David Aplin, Deli Wang, and Edward T. Yu, “Direct Observation of Ballistic and Drift Carrier Transport in InAs Nanowires,” *Appl. Phys. Lett.* **89**, 053113, 2006.
1. **Shadi A. Dayeh**, Donald P. Butler, and Zeynep Çelik-Butler, “Micromachined Infrared Bolometers on Flexible Polyimide Substrate,” *Sensors and Actuators (Physical A)* **118**, 49, 2005.

Book Chapters:

1. Shadi A. Dayeh, S. T. Picraux, “Growth of Germanium, Silicon, and Ge/Si Heterostructure Nanowires” in ‘Processing, Properties, and Applications of Nanowires of Silicon and Silicides’, Pan Sanford, editors King Ning Tu and Yu Huang, chapter 4, pp. 23 – 58, 2013; **Book Cover**.
2. Binh-Minh Nguyen, Jinkyong Yoo, Shadi A. Dayeh, Paul Schuele, David Evans, and S. T. Picraux, “Design of Radial p-i-n Si Nanowires for High Performance Solar Cells,” *The Wonder of Nanotechnology: Present and future of Optoelectronics Quantum Devices and their applications for Environment*, edited by Manijeh Razeghi, Leo Esaki, and Klaus von Klitzing pp. 823-842, 2013.
3. Xing Dai, Aurélien Olivier, Christophe Wilhelm, Shadi A. Dayeh, and Cesare Soci, “Advanced Group III-V Nanowire Growth Toward Large-Scale Integration,” *submitted*, 2014.
4. J. Wan, S. Cristoloveanu, S. T. Le, A. Zaslavsky, C. L. Royer, S. A. Dayeh, D. E. Perea, and S. T. Picraux, “Sharp-Switching CMOS-Compatible Devices with High Current Drive,” in *Future Trends in Microelectronics: Frontiers and Innovations*, John Wiley and Sons, editors: Serge Luryi, Jimmy Xu, and Alexander Zaslavsky, pp. 81-92, 2013.
5. S.T. Picraux, Jinkyong Yoo, Ian H. Campbell, Shadi A. Dayeh, Daniel E. Perea, “Semiconductor Nanowires for Solar Cells,” in ‘Semiconductor Nanostructures for Optoelectronic Devices’, Springer-Verlag Berlin Heidelberg, editor Gyu-Chul Yi, pp. 297-328, 2011.

Conference Proceedings:

1. W. Tang, S. T. Picraux, X. Liu, K. N. Tu, and S. A. Dayeh, “In-situ TEM Study of on Au Mediated Growth of NiSi₂ in Si Nanowire: A Vapor-Liquid-Solid Analogy” Oct. 7, 2013, 226th ECS Meeting.
2. W. Tang, S. T. Picraux, A. M. Gusak, K. N. Tu, and S. A. Dayeh, “Dynamical Imaging of Nickel Disilicide Nucleation and Step Flow Propagation in Defect-Engineered Si Nanowires” Oct. 7, 2013, 226th ECS Meeting.
3. Shadi Dayeh, Wei Tang, Binh-Minh Nguyen, Xing Dai, Yang Liu, Yoontae Hwang, X.-H. Liu, and Renjie Chen, “Nanoscale Heterogeneous Reactions and Interfaces in Ge/Si and for III-V on Si Integrated Devices,” *Oct. 28, 2013. ECS Transactions* 58, pp. 115-125, 2013. *[invited paper]*
4. Binh-Minh Nguyen, Yang Liu, Wei Tang, S. Tom Picraux, and Shadi A. Dayeh, “Ultra-short channel field effect transistors based on Ge/Si core/shell nanowires,” February 4, 2013. *Proceedings of SPIE* 8631, 863118-1-863118-10. *[invited paper]*
5. A. Zaslavsky, Jing Wan, Son T. Le, P. Jannaty, S. Cristoloveanu, C. Le Royer, D. E. Perea, S. A. Dayeh, and S. T. Picraux, “Sharp-Switching High-Current Tunneling Devices,” *May 13, 2013. ECS Transactions* 53, pp 63-74. *[invited paper]*
6. Shadi A. Dayeh, “One Dimensional Semiconductor Heterostructures: Challenges and Opportunities,” October 9, 2012. *ECS Transactions* 50, pp 55-60. *[invited paper]*
7. MinAh Seo, Jinkyong Yoo, Daniel E. Perea, Shadi A. Dayeh, S. T. Picraux, Antoinette J. Taylor, and Rohit P. Prasankumar, “Tracking Ultrafast Carrier Dynamics in Single Semiconductor Nanowire

- Heterostructures,” July 8-13, 2012. XVIIIth International Conference on Ultrafast Phenomena, EPJ Web of Conferences 41, 04030-1-04030-2.
8. MinAh Seo, Jinkyong Yoo, Shadi A. Dayeh, S. T. Picraux, A. J. Taylor, Rohit P. Prasankumar, “Tracking Charge Carriers through Space and Time in Single Silicon Core-Shell Nanowires,” May 6-11, 2012. 2012 Conference on Lasers and Electro-Optics, pp 1-2.
 9. MinAh Seo, Shadi A. Dayeh, Prashanth Upadhyay, Julio Martinez, Brian S. Swartzentruber, S. T. Picraux, Antoinette J. Taylor, and Rohit P. Prasankumar, May 3-5, 2011. 2011 Conference on Lasers and Electro-Optics, pp 1-2.
 10. Shadi A. Dayeh, and S. T. Picraux, “Ge/Si Core/Multi-shell Heterostructure FETs,” *October 10-15, ECS Transactions 33, pp 681-686.*
 11. Shadi A. Dayeh, and S. T. Picraux, “Axial Ge/Si Nanowire Heterostructure Tunnel FETs,” *October 10-15, ECS Transactions 33, pp 373-378.*
 12. Shadi A. Dayeh, Jian Yu Huang, Aaron V. Gin, and S. T. Picraux, “Synthesis, Fabrication, and Characterization of Ge/Si Axial Nanowire Heterostructure Tunnel FETs,” *Proceedings of the 10th IEEE Conference on Nanotechnology, pp 238-241.*
 13. Shadi A. Dayeh, Darija Susac, Peng Chen, Yi Jing, Karen L. Kavanagh, S. S. Lau, Edward T. Yu, Deli Wang, “Optimal Control over the InAs Nanowire Growth for System Integration and their Structural and Transport Properties,” *August 18-21, 2008. Proceedings of the 8th IEEE Conference on Nanotechnology, pp 576-579.*
 14. Jeremy Law, Shadi A. Dayeh, Deli Wang, Edward T. Yu, “Scanning Capacitance Characterization of Potential Screening in InAs Nanowire Devices,” *August 18-21, 2008. Proceedings of the 8th IEEE Conference on Nanotechnology, pp 569-572.*
 15. Shadi A. Dayeh, Donald P. Butler, Zeynep Çelik-Butler and P. Wisian-Neilson, “Uncooled micromachined bolometer arrays on flexible substrates,” *September 30, 2003. Proceedings of SPIE 5074, pp. 537-547.*
 16. Amer Mahmood, Shadi A. Dayeh, Donald P. Butler, Zeynep Celik-Butler, “Micromachined Infrared Sensor Arrays on Flexible Polyimide Substrates,” *October 22, 2003. Proceedings of IEEE 2, 777-782.*

Invited Talks:

1. “Heterointegration Technologies for Advanced 3D Neural Interfaces,” *226th Electrochemical Society Meeting*, Cancun, Mexico, Oct. 5-10, 2014.
2. “Nickel Compound and Alloy Contacts to Nanoscale Si, Ge, and InGaAs Channels,” *Solid State Devices and Materials (SSDM2014)*, Tsukuba, Japan, Sept. 8-11, 2014.
3. “Compound and Alloyed Contacts to Ge/Si and InGaAs Nanowires and FinFETs,” *SPIE Meeting*, San Diego, CA, Aug. 17-21, 2014.
4. “Material Heterointegration at Multiple Scales for Energy and Bio-Applications,” *Amrita University, India*, Distinguished Online Lecture, Aug. 6, 2014.
5. “Material Heterointegration at Multiple Scales for Energy and Bio-Applications,” *King Abdullah University of Science and Technology (KAUST)*, Jeddah, Saudi Arabia, July 13, 2014.
6. “Bio- and CMOS-compatible 3D Platforms for Neural Interfaces,” *CMOS Emerging Technologies Research*, Grenoble, France, July 8, 2014.
7. “Material Heterointegration at Multiple Scales for Energy Applications,” *Engineers for a Sustainable World Annual Meeting*, San Diego, CA, April 9, 2014.
8. “Nanoscale Heterogeneous Reactions and Interfaces in Ge/Si and for III-V on Si Integrated Devices,” *IBM Watson Research Center*, NY, Dec. 18, 2013.
9. “Nanoscale Heterogeneous Reactions and Interfaces in Ge/Si and for III-V on Si Integrated Devices”, *224th ECS Meeting*, San Francisco, CA Oct. 27 – Nov. 1st, 2013.

10. “Engineered Substrates for Electronics and Bio-Interfaces”, ECE 296 Seminar, UC San Diego, Nov. 16, 2012.
11. “One Dimensional Semiconductor Heterostructures for Electronics and Biosensors”, 8th Annual Fall Symposium, Nanovation: From Science to Startups, UC Berkeley, Oct. 27, 2012.
12. “One Dimensional Semiconductor Heterostructures: Challenges and Opportunities”, *Electrochemical Society Meeting*, Honolulu, Hawaii, Oct. 7 – 12, 2012.
13. “One Dimensional Semiconductor Heterostructures: Challenges and Opportunities”, *Qualcomm*, San Diego, CA, Aug. 14, 2012.
14. “Defects and Charge Transport in Nanowire Heterostructures” 6th Nanowire Growth Workshop, St. Petersburg, Russia, June 4 – 6, 2012.
15. “Axial and Radial Semiconductor Nanowire Heterostructures: Fault Nucleation, Coherency Limits and Bandgap Engineered Devices” *9th International Workshop on Epitaxial Semiconductors on Patterned Substrates and Novel Index Surfaces (ESPS-NIS) 2012*, Eindhoven Technical University, Netherlands, May 7 -11, 2012.
16. “Defect, Interface Engineering, and Structure-Transport Correlation in InAs and Ge/Si Semiconductor Nanowires” *2012 TMS Annual Meeting & Exhibition*, Orlando, FL, March 11-15, 2012.
17. “Understanding Fault Nucleation and Propagation in Axial and Radial Heterostructure Nanowires” *International Symposium on Plasticity and Its Current Applications*, San Juan, Porto Rico, Jan. 3-8, 2012.
18. “Synthesis and Defect Control in Bandgap Engineered Ge/Si Nanowire Devices” *Molecular Foundry, Lawrence Berkeley National Laboratory*, Oct. 31st, 2011.
19. “Synthesis and Defect Control in Bandgap Engineered Ge/Si Nanowire Devices” *Materials Science and Engineering, Stanford University*, Oct. 24th, 2011.
20. “Axial and Radial Semiconductor Heterostructure Nanowires: Fault Nucleation, Coherency Limits and Bandgap Engineered Devices” *ECE Department, National University of Singapore, Singapore*, Aug. 18th, 2011.
21. “Axial and Radial Semiconductor Heterostructure Nanowires: Fault Nucleation, Coherency Limits and Bandgap Engineered Devices” *School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore*, Aug. 15th, 2011.
22. “Defect, Interface and Bandgap Engineering in Ge/Si Axial Nanowire Heterostructures” *38th Conference on the Physics and Chemistry of Semiconductor Surfaces and Interfaces (PCSI-38)*, San Diego, California, Jan. 16th, 2011.
23. “Synthesis and Bandgap Engineering in Ge/Si Nanowire Heterostructures” *SKKU Advanced Institute of Nanotechnology, Sungkyunkwan University, Suwon, South Korea*, Aug. 23rd, 2010.
24. “Synthesis and Bandgap Engineering in Ge/Si Nanowire Heterostructures” *Physics Department, Seoul National University, Seoul, South Korea*, Aug. 16th, 2010.
25. “Fundamentals of Nanoepitaxy in groups IV and III-V Semiconductors”, *SPIE 2010 Meeting*, San Diego Convention Center, San Diego, CA, 08 1-5, 2010. Conference Tutorial.
26. “Advances in the Growth and Characterization of InAs Nanowires” ELEN 200, Graduate Engineering Seminar Series, *Santa Clara University*, Santa Clara, CA, 11, 05, 2009. *IEEE EDS Ambassador Lecture*.
27. “IEEE, the Institute and its Electron Device Society” *Center for High Technology Materials, University of New Mexico, Albuquerque, NM*, 12, 07, 2009. *IEEE EDS Ambassador Lecture*.
28. “Advances in the Growth and Characterization of InAs Nanowires” *SPIE 2009 Meeting*, San Diego Convention Center, San Diego, CA, Aug. 4th, 2009.
29. “Synthesis, Characterization, and Transport Properties of III-V and Si/Ge Heterostructure Nanowires” *Stanford University*, Stanford, CA, Nov. 4th, 2009.

30. "Synthesis, Characterization, and Transport Properties of III-V and Si/Ge Heterostructure Nanowires" *Applied Materials and Technology*, San Jose, CA, Nov. 4th, 2009.
31. "Synthesis, Characterization, and Transport Properties of III-V and Si/Ge Heterostructure Nanowires" *Center for High Technology Materials, University of New Mexico*, Albuquerque, NM, Dec. 7th, 2009.
32. "Synthesis, Characterization, and Transport Properties of III-V and Si/Ge Heterostructure Nanowires: A Tutorial", Graduate Seminar, Lebanese University, Faculty of Sciences-I, Beirut, Lebanon, June 1st, 2009.
33. "Synthesis and Fabrication of III-V Semiconductor Nanowires for Electronic Applications" *Los Alamos National Laboratory*, Los Alamos, New Mexico, April 7th, 2008.
34. "Controlling the Growth and Transport Properties of III-V Semiconductor Nanowires" *International Microelectronics and Packaging Society Monthly Meeting*, San Diego Chapter, San Diego, April 24th, 2007.

Conference Presentations/Abstracts:

1. Shadi Dayeh, Donald P. Butler, Zeynep Çelik-Butler, and Ali Yildiz, "Uncooled Semiconducting YBaCuO Microbolometers on Rough Substrates," *TEXMEMSIV*, Lubbock, Texas, July 11th, 2002.
2. Shadi A. Dayeh, Zeynep Çelik-Butler and Donald P. Butler, "Micromachined Infrared Microsensors on Flexible Substrate," *TEXMEMSV*, Automation and Robotics Institute, Fort-Worth, Texas, May 6, 2003.
3. Amer Mahmood, Shadi Dayeh, Donald P. Butler, and Zeynep Çelik-Butler, "Micromachined Infrared Sensor Arrays on Flexible Polyimide Substrates," *IEEE Emerging Telecommunication Technologies Symposium*, Richardson, TX, 26-27 Sept. 2003.
4. Amer Mahmood, Shadi A. Dayeh, Donald P. Butler, Zeynep Çelik-Butler and Patty Wisian-Neilson, "Micromachined Infrared Sensor Arrays on Flexible Polyimide Substrates," *IEEE International Conference on Sensors*, Toronto, Canada, *Proceedings of IEEE* 2, 22-24 Oct. 2003.
5. Shadi A. Dayeh, Donald P. Butler, Zeynep Çelik-Butler and P. Wisian-Neilson, "Uncooled micromachined bolometer arrays on flexible substrates," *SPIE Proceedings* 5074, pp. 537-547, 2003.
6. Shadi A. Dayeh, David Aplin, Xiaotian Zhou, Paul K. K. Yu, Edward T. Yu, and Deli Wang, "Synthesis and Characterization of InAs Nanowires," *Electronic Materials Conference* 2005, UCSB, Santa Barbara, CA.
7. X. Zhou, S. A. Dayeh, D. Aplin, D. Wang, and E. T. Yu, "Scanned Probe Electrical Characterization of Carrier Transport Behavior in InAs Nanowires." 33rd Conference on the Physics And Chemistry Of Semiconductor Interfaces (PCSI-33), Cocoa Beach, Florida, 15-19 January 2006.
8. Deli Wang, Bin Xiang, Shadi Dayeh, and David Aplin, "Hierarchical 3D ZnO Nanowire Networks," *MRS Spring Meeting*, San Francisco, California, 18-21 April, 2006.
9. Fengyan Zhang, Shadi Dayeh, Robert Barrowcliff, Sheng-Teng Hsu and Deli Wang, "Iridium Oxide Nanotubes as high Sensitivity Chemo/Bio Sensors," *MRS Spring Meeting*, San Francisco, California, 18-21 April, 2006. **(Invited)**
10. Shadi A. Dayeh, David Aplin, Edward T. Yu, Paul K.L. Yu, and Deli Wang, "Growth Mechanism and Optimization of InAs Nanowires Synthesized by OMVPE," *Electronic Materials Conference*, Pennsylvania State University, Pennsylvania, 2006. **Outstanding Student Oral Presentation.**
11. Xiaotian Zhou, Shadi A. Dayeh, Deli Wang, and Edward T. Yu, "Scanning Gate Microscopy Characterization of InAs Nanowires," *34th Conference on the Physics And Chemistry Of Semiconductor Interfaces (PCSI-34)*, Salt Lake City Marriot, Utah, 14-18 January 2007.
12. Shadi A. Dayeh, Cesare Soci, Paul K. L. Yu, Deli Wang and Edward T. Yu, "Interface State Effects on the Transport Properties of InAs Nanowire Field Effect Transistors," *34th Conference on the Physics And Chemistry Of Semiconductor Interfaces (PCSI-34)*, Salt Lake City Marriot, Utah, 14-18 January 2007. **PCSI-34 Young Scientist Award.**

13. Bin Xiang, Pengwei Wang, Xingzheng Zhang, Shadi. A. Dayeh, David P. R. Aplin, Cesare Soci, Dapeng Yu, and Deli Wang, "Rational Synthesis of P-type ZnO Nanowire Arrays," *MRS Spring Meeting*, Moscone West, San Francisco, CA, 9-13 April, 2007.
14. Cesare Soci, Bin Xiang, Arthur Zhang, Jung Park, Shadi Dayeh, Xinyu Bao, YuHwa Lo and Deli Wang, "Ultrahigh Sensitivity ZnO UV Detectors," *MRS Spring Meeting*, Moscone West, San Francisco, CA, 9-13 April, 2007.
15. Shadi A. Dayeh, Paul K. L. Yu, Edward T. Yu, and Deli Wang, "Field-, Diameter-, and Surface State-Dependent Transport Behavior in Semiconductor Nanowires," *MRS Spring Meeting*, Moscone West, San Francisco, CA, 9-13 April, 2007. **Best Poster Award.**
16. Shadi A. Dayeh, "Synthesis and Fabrication of Compound Semiconductor Nanowires and Devices for Novel Electronics" *MRS Spring Meeting*, Moscone West, San Francisco, CA, 9-13 April, 2007 (Award Session). **MRS Graduate Student Award: Silver Medal.**
17. Shadi A. Dayeh, Paul K. L. Yu, Edward T. Yu, and Deli Wang, "III-V Nanowire Growth Mechanism: VLS or VSS," *Electronic Materials Conference*, University of Notre Dame, Indiana, June 20-22nd, 2007.
18. Bin Xiang, Pengwei Wang, Xingzheng Zhang, Shadi. A. Dayeh, David P. R. Aplin, Cesare Soci, Dapeng Yu, and Deli Wang,, "Rational Synthesis of P-type ZnO Nanowire Arrays," *NSTI Nanotech 2007*, Santa Clara Convention Center, Santa Clara, California, May 20-24, 2007.
19. Cesare Soci, Arthur Zhang, Bin Xiang, Shadi A. Dayeh, David P. R. Aplin, Xinyu Bao, Yu-Hwa Lo, and Deli Wang, "Ultrahigh sensitivity Nanowire Photodetectors," *SPIE Optics and Photonics*, San Diego Convention Center, San Diego, CA, 26-30 August 2007
20. Cesare Soci, Arthur Zhang, Bin Xiang, Jung Park, Shadi A. Dayeh, Xinyu Bao, Yu-Hwa Lo, and Deli Wang, "Ultrahigh sensitivity Nanowire Photodetectors," *NSTI Nanotech 2007*, Santa Clara Convention Center, Santa Clara, California, May 20-24, 2007.
21. Shadi A. Dayeh, Edward T. Yu, and Deli Wang, "Optimum Control over the Vapor-Liquid-Solid Nanowire Morphology through Surface Kinetics," *MRS Fall Meeting*, Hynes Convention Center, Boston, MA, November 27-29, 2007.
22. Shadi A. Dayeh, Edward T. Yu, and Deli Wang, "Transport Properties of InAs Nanowires," *MRS Fall Meeting*, Hynes Convention Center, Boston, MA, November 27-29, 2007.
23. Shadi A. Dayeh, Edward T. Yu, and Deli Wang, "Mechanistic Studies and Precise Control of III-V Nanowire Growth," *35th Conference on the Physics And Chemistry Of Semiconductor Interfaces (PCSI-35)*, La Fonda Hotel, Santa Fe, New Mexico, January 13-17, 2008.
24. Shadi A. Dayeh, Sarah Eichfeld, Yi Jing, Peng Chen, Edward T. Yu, Deli Wang, Joan M. Redwing, and S. S. Lau, "Vertically-Aligned Si Nanowires on Silicon on Insulator," *MRS Spring Meeting*, Moscone West, San Francisco, CA, 9-13 April, 2008.
25. Shadi A. Dayeh, Yi Jing, Peng Chen, Edward T. Yu, Deli Wang, and S. S. Lau "Integration of Vertical and Electrically-Isolated III-V Nanowires on Insulator on Silicon," *MRS Spring Meeting*, Moscone West, San Francisco, CA, 24-28 March, 2008.
26. Shadi A. Dayeh, Darija Susac, Karen L. Kavanagh, Edward T. Yu, and Deli Wang, "Structural and Electrical Properties of Zincblende and Wurtzite InAs Nanowires," *Electronic Materials Conference*, University of California-Santa Barbara, Santa Barbara, CA 25-27 June, 2008.
27. Jeremy J. M. Law, Shadi A. Dayeh, Deli Wang, and Edward T. Yu, "Scanning Capacitance Characterization of Potential Screening in InAs Nanowires," *Electronic Materials Conference*, University of California-Santa Barbara, Santa Barbara, CA 25-27 June, 2008.
28. Shadi A. Dayeh, Yi Jing, Peng Chen, Edward T. Yu, Deli Wang, and S. S. Lau "Integration of Vertical and Electrically-Isolated III-V Nanowires on Insulator on Silicon," *Advanced Substrates and Next Generation Semiconductors Workshop*, The Conference Center at the Maritime Institute, Baltimore, Maryland, April 30- May 1, 2008. **Winner Student Paper Competition.**
29. Shadi A. Dayeh, Darija Susac, Peng Chen, Yi Jing, Karen L. Kavanagh, S. S. Lau, Edward T. Yu, and Deli Wang, "Optimal Control over the InAs Nanowire Growth for System Integration and their

- Structural and Transport Properties,” *8th IEEE Conference on Nanotechnology*, Arlington Convention Center, Arlington, Texas, Aug. 18 – 21, 2008. *Finalist for best paper award.*
30. Jeremy J. M. Law, Shadi A. Dayeh, Deli Wang, and Edward T. Yu, “Scanning capacitance characterization of Potential Screening in InAs Nanowires,” *8th IEEE Conference on Nanotechnology*, Arlington Convention Center, Arlington, Texas, Aug. 18 – 21, 2008.
 31. Cesare Soci, Arthur Zhang, Bin Xiang, Shadi Dayeh, David Aplin, Xinyu Bao, Yu-Hwa Lo, and Deli Wang, “Ultrahigh Sensitivity UV Photodetectors,” *Electronic Materials Conference*, University of California-Santa Barbara, Santa Barbara, CA 25-27 June, 2008.
 32. Xinyu Bao, Cesare Soci, Darija Susac, John Bratvold, David P. R. Aplin, Wei Wei, C.-Y. Chen, Shadi A. Dayeh, Karen L. Kavanagh, and Deli Wang, “Heteroepitaxial Growth of Vertical GaAs Nanowires on Si(111) Substrates by Metal Organic Chemical Vapor Deposition,” *MRS Fall Meeting*, Hynes Convention Center, Boston, MA, December 1-5, 2008.
 33. S. T. Picraux, Pradeep Manandhar, and Shadi A. Dayeh, “Si/Ge Nanowires: Vertical Synthesis and Integration,” *MRS Spring Meeting*, Moscone West, San Francisco, CA, April 13 – 17, 2009. **(Invited)**
 34. S. T. Picraux, Pradeep Manandhar, and Shadi A. Dayeh, “Synthesis, Properties, and Integration of Si/Ge Nanowire Electronics,” *Nano and Giga Challenges in Electronics, Photonics, and Renewable Energy*, Hamilton, Ontario, Canada, Aug. 10 – 14, 2009. **(Invited)**
 35. S. A. Dayeh, C. Soci, X. Bao, W. Wei, D. Aplin, and D. Wang, “Rational Synthesis of III-N Nanowires Using MOCVD,” *The 36th International Symposium on Compound Semiconductors*, UC Santa Barbara, Aug. 30 – Sept. 2, 2009.
 36. Son T. Le, Shadi A. Dayeh, S. T. Picraux and Alexander Zaslavsky, “Growth and Transport Properties of axial p-n Junction Germanium Nanowires,” *The Second International Workshop on Nanotechnology and Application – IWNA 2009*, Vietnam National University, HoChiMinh City, Vietnam, Nov. 12 – 14, 2009.
 37. Shadi A. Dayeh, Eli Sutter, S. T. Picraux, “Direct Observation and Analysis in the Gibbs-Thomson Effect in Germanium Nanowires,” *37th Conference on the Physics And Chemistry Of Semiconductor Interfaces (PCSI-37)*, La Fonda Hotel, Santa Fe, New Mexico, January 10-14, 2010.
 38. Shadi A. Dayeh, Ian H. Campbell, Jianyu Huang, Aaron Gin, and S. T. Picraux, “Uniqueness of the Vapor-Liquid-Solid Mechanism for Novel Axial and Radial Ge/Si Heterostructure Materials and Devices,” *37th Conference on the Physics And Chemistry Of Semiconductor Interfaces (PCSI-37)*, La Fonda Hotel, Santa Fe, New Mexico, January 10-14, 2010.
 39. Praveen K. Sekhar, Shadi A. Dayeh, Katherine L. Page, David Kuiper, Amanda Klingensmith, Sridhar Balasubramanian, and Mary Anne With, “Combinatorial Strategies Adopted by Los Alamos Postdoc Association (LAPA) for Personal and Professional Growth of Postdocs,” *8th National Postdoc Association Meeting*, U Penn, Philadelphia, Pennsylvania, March 12 – 14, 2010. *This poster led to the third place of the Best Poster Award Competition at the NPA meeting. Dayeh developed poster and co-presented it with Sekhar.*
 40. Shadi A. Dayeh, Eli Sutter, and S. T. Picraux, “Direct Observation and Analysis in the Gibbs-Thomson Effect in Germanium Nanowires,” *MRS Spring Meeting*, Moscone West, San Francisco, CA, April 5 – 9, 2010.
 41. Shadi A. Dayeh, Jianyu Huang, Aaron Gin and S. T. Picraux, “Unique Axial Ge/Si Heterostructure Nanowire Materials and Devices,” *MRS Spring Meeting*, Moscone West, San Francisco, CA, April 5 – 9, 2010.
 42. Son T. Le, Shadi A. Dayeh, S. T. Picraux and Alexander Zaslavsky, “Electrical rectification in axial *in-situ* doped Ge nanowire *pn* junctions,” *APS March Meeting 2010*, Portland, Oregon, March 15 – 19, 2010.
 43. Shadi A. Dayeh, Ian H. Campbell, Jianyu Huang, Aaron Gin, and S. T. Picraux, “Elimination of Au Diffusion in Ge-based Core/Shell Nanowires for High Performance Photodetectors and FETs,” *MRS Spring Meeting*, Moscone West, San Francisco, CA, April 5 – 10, 2010.

44. E. Sutter, S. A. Dayeh, S. T. Picraux, and P. Sutter, "Size Dependent Phase Diagram of Nanoscale Alloy Drops: Understanding Nanowire Growth at the Ultimate Size Limit," *E-MRS*, Strasbourg, France, June 7 – 11, 2010.
45. Shadi A. Dayeh, Jian Yu Huang, Aaron V. Gin, and S. T. Picraux, "Elimination of Gold Diffusion in the Heterostructure Core/Shell growth of High Performance Ge/Si Nanowire HFETs," *IEEE NANO'10* Aug. 17-20, 2010.
46. Shadi A. Dayeh, Jian Yu Huang, Aaron V. Gin, and S. T. Picraux, "Synthesis, Fabrication, and Characterization of Ge/Si Axial Nanowire Heterostructure Tunnel FETs," *IEEE NANO'10* Aug. 17-20, 2010.
47. Shadi A. Dayeh, Greg Swadener, and S. T. Picraux, "Synthesis and Properties of Ge and Ge/Si Heterostructured Nanowires," *2010 International Symposium on Materials for Enabling Nanodevices*, California Nano-Systems Institute at UCLA, Sept. 8-10, 2010. **(Invited)**
48. Shadi A. Dayeh, and S. T. Picraux, "Ge/Si Core/Multi-shell Heterostructure FETs," *218th ECS Meeting*, Las Vegas, Nevada, Oct. 10-15, 2010.
49. Shadi A. Dayeh, and S. T. Picraux, "Axial Ge/Si Nanowire Heterostructure Tunnel FETs," *218th ECS Meeting*, Oct. 10-15, Las Vegas, Nevada, 2010.
50. Shadi A. Dayeh, Jianyu Huang, Aaron Gin and S. T. Picraux, "Axial Ge/Si Nanowire Heterostructures: Synthesis and Asymmetric Band-gap Engineered Tunnel FETs," *AVS International Symposium*, Albuquerque, NM, Oct. 17-22, 2010.
51. Shadi A. Dayeh, and S. T. Picraux, "Size effects in the synthesis of Ge and Ge/Si nanowire heterostructures," *AVS International Symposium*, Albuquerque, NM, Oct. 17-22, 2010.
52. Aditya D. Mohite, Shadi A. Dayeh, Wei Tang, Gregory J. Swadener, S. T. Picraux, and Han Htoon, "Direct Measurement of Strain in Germanium-Silicon Core-Shell Nanowires," *MRS Fall Meeting*, Boston, Massachusetts, Nov. 29 – Dec. 2, 2010.
53. Aaron V. Gin, Shadi A. Dayeh, S. Tom Picraux, Nikolai Kalugin, Stephen Howell, Dan Ward, Doug Naterlson, and Igal Brener, "Nanofabrication of Graphene, Semiconductor Nanowire, and Plasmonic Devices at the Center for Integrated Nanotechnologies," *2010 Workshop on Innovative Devices and Systems (WINDS)*, Hapuna Beach Prince Hotel, Kohala Coast, Big Island of Hawai'i, Dec. 5-10, 2010. **(Invited)**
54. MinAh Seo, Shadi A. Dayeh, Prashanth Upadhyaya, Julio Martinez, Brian S. Swartzentruber, S. T. Picraux, Antoinette. J Taylor, and Rohit P. Prasankumar, "Polarization dependence of ultrafast dynamics in single Si nanowires," *APS March Meeting*, Dallas, TX, March 21-25, 2011.
55. Aditya D. Mohite, Daniel E. Perea, Sanjeev Singh, Shadi A. Dayeh, Samuel T. Picraux and Han Htoon, "Measurement of Minority Carrier Diffusion Lengths in VLS-grown p-n Junction Silicon Nanowires," *MRS Spring Meeting*, San Francisco, CA, April 25 – 29, 2011.
56. Wei Tang, Shadi Dayeh, Tom Picraux, and King-Ning Tu, "Silicide/Silicon/Silicide Heterostructures with Ultra-Thin Silicon Gap and Realization of FET Device," *Electronic Materials Conference*, UCSB, Santa Barbara, CA, June 22-24, 2011.
57. Xing Dai, Vaithianathan Veeramuthu, Alexander Larrue, Shadi A. Dayeh, Haibin Su, and Cesare Soci, "Y-Junction GaAs nanowires by a Novel VLS Growth Mechanism," *International Conference on Materials for Advanced Technologies (ICMAT)*, June 26 – July 1, 2011.
58. Minah Seo, Shadi A Dayeh, Prashanth Upadhyaya, S. T. Picraux, Julio Martinez, Brian Swartzentruber, Antoinette Taylor, Rohit Prasankumar, "Polarization anisotropy of transient carrier dynamics in single Si Nanowires," *CLEO*, Baltimore, MA, May 1-6, 2011.
59. Shadi A. Dayeh, Jian Wang, Wei Tang, Karen L. Kavanagh, and S. T. Picraux, "Two Coherent Limits in Core/Shell Semiconductor Nanowires," *MRS Fall Meeting*, Boston, Massachusetts, Nov. 28 – Dec. 2, 2011.
60. Xiaohua Liu, Li Qiang Zhang, Li Zhong, Yang Liu, He Zheng, Jiang Wei Wang, Jeong-Hyun Cho, Shadi A. Dayeh, Tom Picraux, John P. Sullivan, Scott X. Mao and Jian Yu Huang, "Ultrafast

- Electrochemical Lithiation of Individual Si Nanowire Anodes,” *MRS Fall Meeting*, Boston, Massachusetts, Nov. 28 – Dec. 2, 2011.
61. Jinkyong Yoo, Shadi A. Dayeh, S. T. Picraux and Ian H. Campbell, “Single Crystalline Radial P-N Junction Si Nanopillars for Photovoltaic Applications,” *MRS Fall Meeting*, Boston, Massachusetts, Nov. 28 – Dec. 2, 2011.
 62. Wei Tang, Shadi Dayeh, Tom Picraux, and King-Ning Tu, “Silicide/Silicon/Silicide Nanowire Heterostructures and FET Devices with Ultra-Short Channel Length,” *MRS Fall Meeting*, Boston, Massachusetts, Nov. 28 – Dec. 2, 2011.
 63. Shadi A. Dayeh, Jian Wang, Nan Li, Jian-Yu Hwang, and S. Tom Picraux, “Atomic Level Understanding of Defect Nucleation and Kinking Using Semiconductor Heterostructure Nanowires,” *MRS Fall Meeting*, Boston, Massachusetts, Nov. 28 – Dec. 2, 2011.
 64. Xing Dai, Shadi A. Dayeh, Nan Meng, Alexandre Larrue, Haibin Su and Cesare Soci, “Self Assembled GaAs Nanowire Junctions,” *MRS Fall Meeting*, Boston, Massachusetts, Nov. 28 – Dec. 2, 2011.
 65. Xing Dai, Shadi A. Dayeh, Nan Meng, Alexandre Larrue, Haibin Su and Cesare Soci, “Self Assembly and Electrical Properties of GaAs Nanowire Junctions,” Intitute of Physics Singapore (IPS) Meeting, Singapore, Feb. 23 – 24, 2012.
 66. M. A. Seo, J. Yoo, D. E. Perea, S. A. Dayeh, S. T. Picraux, A. J. Taylor, and R. P. Prasankumar, “Tracking Ultrafast Carrier Dynamics in Single Semiconductor Nanowire Heterostructures,” XVIIIth International Conference on Ultrafast Phenomena, Lausanne, Switzerland, 8 - 13 July 2012.
 67. Wei Tang, Shadi Dayeh, Tom Picraux, Xiaohua Liu, Jianyu Huang, and King-Ning Tu, “Gold Catalyzed Ni Disilicide Formation in Si Nanowires: A New Solid-Liquid-Solid (SLS) Phase Growth Mechanism,” *MRS Spring Meeting*, San Francisco, CA, April 9 – 13, 2012.
 68. Tailoring Radial Si Nanowire Growth for Single Crystal Photovoltaic Arrays, “Jinkyong Yoo, Shadi A. Dayeh, Wei Tang, Ian H. Campbell, S. T. Picraux, Paul Schuele, and David Evans. *MRS Spring Meeting*, San Francisco, CA, April 9 – 13, 2012.
 69. Son T. Le, Danuel Perea, Pooya Jannaty, Aditya Mohite, Shadi Dayeh, Alexander Zaslavsky, and S. Tom Picraux, “Axial Si/Ge Hetero-nanowire for Tunneling Transistors and Photovoltaics”, *MRS Spring Meeting*, San Francisco, CA, April 9 – 13, 2012.
 70. Daniel E. Perea, Jinkyong Yoo, Shadi A. Dayeh, Daniel K. Shreiber, S. T. Picraux, and Theva Thevuthasan, “Controlling axial p-n heterojunction abruptness through catalyst allowing in vapor-liquid-solid- grown semiconductor nanowires, *MSA Microscopy and Microanalysis*, Phoenix, AZ, July 29 – August 2, 2012.
 71. Yoontae Hwang and Shadi A. Dayeh, “An All-solid Nickel Silicide Wafer Bonding with Wide Thermal Budget”, Electronic Materials Conference, Penn. State Univ., June 20 – 22, 2012.
 72. Son T. Le, D. Perea, P. Jannaty, Xu Lou, S. A. Dayeh, A. Zaslavsky, and S. T. Picraux, “Axial Si/Ge hetero-nanowires for gate-all-around tunneling transistors” Lester Eastman Conference on High Performance Devices, Brown University, RI, Aug. 7-9, 2012.
 73. Son T. Le, Pei Liu, D. Perea, Aditya Mohite, P. Jannaty, J. Faucher, Xu Luo, S. A. Dayeh, D. Pacifici, A. Zaslavsky, and S. T. Picraux. “Axial Si/Ge heteronanowires for photovoltaic applications,” Lester Eastman Conference on High Performance Devices, Brown University, RI, Aug. 7-9, 2012.
 74. Yoontae Hwang, Jennifer Schei, S. Tom Picraux, John S. George, and Shadi A. Dayeh, “High-density electrically isolated capacitive pillar arrays for high fidelity neural sensors,” *Neuroscience Meeting, Novel Electrophysiological Methods II*, New Orleans, LA, Oct. 13-17, 2012.
 75. Son T. Le, Binh-Minh Nguyen, Danny Perea, Aditya Mohite, Pooya Jannaty, Xu Luo, Pei Liu, Joseph Faucher, Shadi A. Dayeh, Domenico Pacifici, Alexander Zaslavsky, and Tom Picraux “Design, Fabrication and Charaterization of Axial Si/Ge Heteronanowires for Optoelectronics and Photovoltaic Applications” *MRS Fall meeting*, Hynes Convention Center, Boston, MA, Nov. 25- 30, 2012.

76. Andrew D. Gamalski, Daniel E. Perea, Jinkyoungh Yoo, Shadi A. Dayeh, Nan Li, Caterina Ducati, Amit Misra, S. Thomas Picraux, and Stephan Hofmann, "The Kinetics of Ge-Si Heterostructure Nanowire Synthesis with AuGa Catalysts," *MRS Fall meeting*, Hynes Convention Center, Boston, MA, Nov. 25- 30, 2012.
77. Jinkyoungh Yoo, Binh Minh Nguyen, Shadi Dayeh, Aditya Mohite, Tom Picraux, Paul Schuele, David Evans, "Design Rules for High-performance Photovoltaic Applications Based on Si Radial p-i-n Junction Nanowire Arrays," *MRS Fall meeting*, Hynes Convention Center, Boston, MA, Nov. 25-30, 2012.
78. Yoontae Hwang, Jennifer L. Schei, John S. George, Tom Picraux, Shadi A. Dayeh, "High-density Capacitive Pillar Arrays for High Fidelity Neural Sensors," *MRS Fall meeting*, Hynes Convention Center, Boston, MA, Nov. 25- 30, 2012.
79. Yang Liu, Xiao Hua Liu, Shadi A Dayeh, John P Sullivan, and Jian Yu Huang, "Controlling the Lithiation Behavior of Ge Nanowires via Surface Modifications: An in-situ Transmission Electron Microscopy Study," *MRS Fall meeting*, Hynes Convention Center, Boston, MA, Nov. 25- 30, 2012.
80. Xiaohua Liu, He Zhang, Li Zhong, Shan Huang, Khim Karki, Li Q. Zhang, Yang Liu, Akihiro Kushima, Wen T. Liang, Jiang W. Wang, Jeong H. Cho, Eric Epstein, S. A. Dayeh et al. "Anisotropic Swelling of Si Nanowires and Size Dependent Fracture of Si Nanoparticles During Lithiation," *2012 TMS Annual Meeting & Exhibition*, Orlando, FL, March 11-15, 2012.
81. Xing Dai, Binh-Minh Nguyen, Yoontae Hwang, Cesare Soci, and Shadi A. Dayeh, "A Novel Approach for High Performance InAs FinFETs on Silicon," *The Physics and Chemistry of Semiconductor Surfaces and Interfaces (PCSI-40)*, Walkoloa, Hawaii, Jan. 20 – 24.
82. Shixiong Zhang, Shadi Dayeh, Yan Li, Scott A. Crooker, Darryl L. Smith, S. Tom Picraux, "Electrical Spin Injection and Detection in Si Nanowires," *APS March Meeting*, March 18 - 22, 2013.
83. Xing Dai, Binh-Minh Nguyen, Yoontae Hwang, Cesare Soci and Shadi A. Dayeh "A Novel Approach for High Performance InAs FINFETs on Silicon", *Institute of Physics Singapore (IPS) Meeting*, March 4-6, 2013, Singapore,
84. Jinkyoungh Yoo, Shadi A. Dayeh, Wei Tang, Alp Findikoglu, and S. T. Picraux, "Novel Observation in Nanoscale Radial Epitaxial Growth," *MRS Spring Meeting*, San Francisco, CA, April 1-5, 2013.
85. Wei Tang, S. T. Picraux, Jianyu Huang, Andriy Gusak, King-Ning Tu, and Shadi A. Dayeh, "Imaging Silicide Nucleation and Atomic Step Flow at Defect-engineered Nanoscale Si Channels," *MRS Spring Meeting*, San Francisco, CA, April 1-5, 2013.
86. Binh-Minh Nguyen, Yang Liu, Wei Tang, and Shadi A. Dayeh, "Tailoring Si-Ge/Si Core/Shell Reaction Rates through in-situ Microscopy for Ultra-short Channel Nanowire Field Effect Transistors," *MRS Spring Meeting*, San Francisco, CA, April 1-5, 2013.
87. Son Le, Daniel Perea, Pooya Jannaty, Xu Luo, Shadi Dayeh, Alexander Zaslavsky, and Thomas Picraux, "Axial Si/Ge Hetero-nanowires for Tunneling Transistors," *APS March Meeting*, Baltimore, Maryland, March 18-22, 2013.
88. A. Zaslavsky, Jing Wan, Son T. Le, P. Jannaty, S. Cristoloveanu, C. Le Royer, D. E. Perea, S. A. Dayeh, S. T. Picraux, "Sharp-Switching High Current Tunneling Devices," *223rd ECS Meeting*, Toronto, Canada, May 12 – 16, 2013.
89. Yang Liu, Xiaohua Liu, Katherine L. Jungjohann, Shadi A. Dayeh, Sulin Zhang, Ju Li, and Ting Zhu, "In-situ Lithiation Behavior of Diverse Si Nanostructures for Li Ion Battery," *MRS Fall Meeting* Hynes Convention Center, Boston, MA, Dec. 1- 6, 2013.
90. Jinkyoungh Yoo, Binh-Minh Nguyen, Shadi A. Dayeh, Tom Picraux, Paul Schuele, David Evans, "High-Performance Crystalline Si Radial p-i-n Junction Nanowire Photovoltaic Applications," *MRS Fall Meeting* Hynes Convention Center, Boston, MA, Dec. 1- 6, 2013.
91. Binh-Minh Nguyen, Shadi A. Dayeh, "Single Crystalline Si/Ge/Si Core-Multiple Shell Nanowires for Advanced Cylindrical Well Field Effect Transistors," *MRS Fall Meeting* Hynes Convention Center, Boston, MA, Dec. 1- 6, 2013.

92. Jinkyong Yoo, Shadi A. Dayeh, Wei Tang, Tom Picraux, "Universal Growth Mechanism of Si Nanoscale Three-Dimensional Epitaxy," *MRS Fall Meeting Hynes Convention Center, Boston, MA*, Dec. 1- 6, 2013.
93. S. T. Picraux, J. Yoo, D. E. Perea, and S. A. Dayeh, "Si/Ge Nanowires: Nanoscale Growth, Heterostructuring, and Energy Conversion" *Nanowires 2013*, Weizmann Institute of Science, Israel, Nov. 12-15, 2013. **(Invited)**
94. Minah Seo, Jinkyong Yoo, Shadi A. Dayeh, Samuel T. Picraux, Antoinette J. Taylor, Rohit Prasankumar, "Ultrafast Optical Microscopy on Single Semiconductor Nanowires," *SPIE Photonics West*, San Francisco, CA, February 2 – 5, 2014. **(Invited)**
95. Wei Tang, Tom Picraux, Xiaohua Liu, King-Ning Tu, and Shadi Dayeh, "Phase Stability, Phase Transformations, and Reactive Phase Formation in Electronic Materials," *2014 TMS Annual Meeting & Exhibition*, San Diego CA Feb. 16 – 20, 2014.
96. D. K. Patil, Z. Su, B. Tian, M. Nguyen, J. Yoo, S. A. Dayeh, and S. Frolov, "Quasiballistic Hole Transport in Ge/Si Core/Shell Nanowires," American Physical Society March Meeting, Denver, Colorado, March 3-7, 2014.
97. Jinkyong Yoo, Daniel E. Perea, Shadi A. Dayeh, Paul Schuele, David Evans, and S. T. Picraux, "Si Radial p-i-n Junction Nanowires on Stainless Steel Substrate for Photovoltaic Applications," *MRS Spring Meeting*, San Francisco, CA, April 21 – 25, 2014.
98. Yang Liu, Xiao Hua Liu, Binh-Minh Nguyen, Jinkyong Yoo, John P. Sullivan, S. T. Picraux, and Shadi A. Dayeh, "Lithium Ion Transport in Si-Ge Heterostructures: An in-situ TEM study in nano-ionics," *MRS Spring Meeting*, San Francisco, CA, April 21 – 25, 2014.
99. Shadi A. Dayeh, Wei Tang, and Binh-Minh Nguyen, "Heterogeneous Reactions and Interfaces at Nanoscale Dimensions," *Nanotech Advanced Materials and Applications*, Washington DC, June 15-18, 2014.
100. Renjie Chen, and Shadi A. Dayeh, "Kinetics of Nickelide Contact Formation to InGaAs Fin Channels," *Electronic Materials Conference*, Santa Barbara, CA, June 25-27, 2014.
101. Yang Liu, Xiao Hua Liu, Binh-Minh Nguyen, Jinkyong Yoo, John P. Sullivan, S. T. Picraux, and Shadi A. Dayeh, "In-situ Transmission Electron Microscopy (TEM) Study on the Lithium Ion Transport in Si-Ge Heterostructures," *Microscopy and Microanalysis*, Hartford, CT, Aug. 3-7, 2014.
102. Jinkyong Yoo, Shadi A. Dayeh, Norman Bartelt, and S. T. Picraux, Silicon Epitaxy in Nanoscale for Photovoltaic Applications," *SPIE Meeting*, San Diego, CA, Aug. 19-21, 2014. **(Invited)**
103. Jinkyong Yoo, Shadi A. Dayeh, Norman Bartelt, and S. T. Picraux, "Radial Epitaxy of Silicon for Optoelectronic Applications," *226th Electrochemical Society Meeting*, Cancun, Mexico, Oct. 5-10, 2014. **(Invited)**
104. Minah Seo, Jinkyong Yoo, Shadi A. Dayeh, Samuel Tom Picraux, Antoinette J. Taylor, and Rohit P. Prasankumar, "Tracking Carriers Through Space and Time in Single Silicon Nanowires Using Ultrafast Optical Microscopy," *MRS Fall Meeting*, Boston, Nov. 30 – Dec. 5th.
105. Renjie Chen and Shadi A. Dayeh, "Kinetics and Structure of Nickelide Contact Formation to InGaAs Fin Channels," *226th Electrochemical Society Meeting*, Cancun, Mexico, Oct. 5-10, 2014.

Group Members:

Current PhD students:

- Renjie Chen, (MS, Nanyang Technological University-Singapore, started June 2013): Nanoscale reactions, contact issues and novel devices in III-V semiconductors. Novel Si neural probes.
- Atsunori Tanaka (BS, Keio University-Japan, started July 2013): MOCVD growth of thick GaN layers on Si for high power applications.
- Yun Goo Ro, (BS, Hokkaido University-Japan, started July 2013): Novel approaches for MOCVD growth of III-V materials on Si.

- Sang Heon Lee (BS, University of Illinois Urbana Champaign, started July 2014): Multi-modal neural probes, nanoscale neural probes for in-vivo applications.
- Ren Liu, (MS, Peking University, started July 2014): Multi-modal neural probes and various solid-state devices.

Former Group Members:

- Binh-Minh Nguyen, (primary advisor, Feb. 2012 – May 2014, Director Postdoctoral Fellow, LANL & UC San Diego). Currently Technical Staff Member at Hughes Research Labs.
- Yoon Tae Hwang (primary advisor, Dec. 2011 – Sept. 2013, LANL and UC San Diego). Currently senior Engineer at Samsung Electronics.
- Jinkyong Yoo (co-mentor with S. T. Picraux, Nov. 2010 – Mar. 2013, LANL). currently CINT Scientist, Los Alamos National Laboratory.
- Wei Tang (Primary mentor as a 3 year group visitor; 2010 – 2013, LANL & UC San Diego). Currently Technical Staff Member at Lam Research Labs.
- Xing Dai (co-advised with Prof. Cesare Soci at Nanyang Technological University, 2011 – 2013), defended PhD in July 2014.
- Cory Heath, (2012 – 2014, undergrad and Frieda Daum Urey Academic Fellowship). Currently MS student at ECE-UCSD.
- Michael Mullins-Jensen, (2013-2014, undergrad ECE-UCSD). Currently graduate student at Stanford University.

Academic Services at UCSD:

Classes taught at UCSD

Spring 2013	ECE135B: Electronic Devices. <i>In depth treatment of basic semiconductor devices including solar cells, MISFETs and BJTs.</i> <i>CAPE (Course and Professor Evaluation) Rating:</i> Recommend professor (100%); Recommend course (100%).
Fall 2013	ECE103: Fundamentals of Devices and Materials. <i>Introduction to electronic materials, current transport, and basic semiconductor device operation.</i> <i>CAPE (Course and Professor Evaluation) Rating:</i> Recommend professor (76%); Recommend course 67%).
Winter 2014	ECE136L: Microelectronics Laboratory; co-taught with S.S. Lau. <i>Principles of semiconductor device processing, the fabrication and characterization of Si-based diodes, MOSFETs, MOS Caps, and III-V LEDs.</i> <i>CAPE (Course and Professor Evaluation) Rating:</i> Recommend professor (100%); Recommend course (100%).
Spring 2014	ECE135B: Electronic Devices. <i>In depth treatment of basic semiconductor devices including solar cells, MISFETs and BJTs.</i> <i>CAPE (Course and Professor Evaluation) Rating:</i> Recommend professor (83.3%); Recommend course (100%).

Committee Service

Fall 2012 – current Depth advisor for the Electronic Materials and Devices.

Fall 2012 – 2014	Admissions committee
Summer 2014	Ad-hoc committee, co-chair of EDM faculty-hire focus group
Fall 2014 – current	Course director, ECE103/107
Fall 2014 – current	Faculty affair committee

Prior Academic Services

07-08/2007	Instructor for ECE103, UCSD: Fundamentals of Devices and Materials. <i>CAPE (Course and Professor Evaluation) Rating:</i> Recommend professor (91%); Recommend course (86%).
9/2003-12/2005	Teaching Assistant, ECE, UCSD for: (1) Fundamentals of Devices and Materials (ECE103: Summer04, Fall04, Winter05, Summer05), (2) Microelectronics Laboratory (ECE136L: Fall05), (3) Introduction to Electrical Engineering I (ECE20A: Spring04, Fall04). (4) Fundamentals of Electrical Engineering. (ECE53A&B: Fall03, Winter04, Spring05).
04/2005-12/2006	Lead teaching assistant consultant (TAC) for Sciences and Engineering, Center of Teaching and Development, UCSD.
05/31/2006	Guest speaker for ECE87 (Micro/Nano Electronics Seminar) “Graduate school, things to consider”.
02/21/2007	Guest speaker for ECE87 (Micro/Nano Electronics Seminar) “Graduate school, things to consider”.
09/2006-08/2008	Head Teaching Assistant for ECE, UCSD.
09/2006-08/2008	Member of the Academic Dishonesty Hearing Board, UCSD: Representative of the Jacobs School of Engineering and Graduate Student Association.
03/15/2008	Keynote graduate student speaker in <i>ECE</i> graduate student recruitment dinner.

Research Grants

Active:

1. “High Density Bio-Compatible Electro-Fluidic Neural Interfaces for Mapping the Brain,” S. A. Dayeh (P.I.) NSF Early CAREER Award, \$400,000, Jan. 1, 2014.
2. “Multi-contact multimodality 3D micropillar arrays”, S. A. Dayeh (P.I.), Yuhwa Lo, Shaochen Chen & Eric Halgren, \$30K, 12/1/2013-11/30/2014, Center for Brain Activity Mapping, UCSD.
3. “Active Biocompatible Multifunctional and Implantable Neural Probes,” \$30K, S. A. Dayeh (P.I.) Vikash Gilja, and Massoud Khraiche, 7/1/2014-6/30/2015, Center for Brain Activity Mapping, UCSD.
4. “High Density, Flexible, and Bio-Compatible 3D Optogenetic Neural Interfaces,” S.A. Dayeh (P.I.) and Paul K. L. Yu, \$50K, 7/16/2014-7/5/2015, Calit2 Strategic Research Opportunities (CSRO) program, UCSD.

Completed:

5. “Minority carrier devices based on concentric nanowires: Theory and Experiment”, S. A. Dayeh (P.I.), Awarded ~ \$300K in 2012 for sponsoring Postdoc Director Fellow Binh Minh Nguyen.
6. “High Density Neural Recording Using Nanowire Capacitor Sensors” S. A. Dayeh (P.I.), John S. George (Co-PI), S. T. Picraux, Andrew Dattelbaum, Michael Ham, and Beth Perry. Three years term LDRD ER project. Awarded \$1,074,000 in 2010.
7. “Electron spin injection, transport, and detection in semiconductor nanowires” S. T. Picraux, D. L. Smith, S. A. Crooker, and S. A. Dayeh. S. A. Dayeh wrote proposal. Three years term LDRD ER project: \$1,025,000; awarded in 2009.

8. “One dimensional nanomaterials for enhanced solar conversion” S. T. Picraux, I. H. Campbell, D. L. Smith, and S. A. Dayeh. Three years term LDRD ER project: \$1,025,000; awarded in 2009.
9. “Assessment of silicon nanowire architecture for PV application” S. T. Picraux, I. H. Campbell, S. A. Dayeh, and P. Schuele (Sharp Labs of America). DOE EERE project: \$1,049,443; awarded in 2009.

Selected press highlights

- October 1, 2013: [Band-Gap Engineering of Nanowires Could Boost Batteries](#). IEEE Spectrum.
- October 1, 2013: [Nano Scale Electrode Architectures for Lithium Ion Batteries](#). New Energy and Fuel.
- September 27, 2013: [Improving Lithium-Ion Batteries with Nanoscale Research Between UC San Diego and the National Labs](#). Jacobs School of Engineering Research News.
- August 7, 2013: [New Electron Beam Writer Enables Next-Gen Biomedical and Information Technologies](#). Jacobs School News, Pule Magazine.
- April 21, 2011: [Postdoc Highlight – Shadi Dayeh](#). CINT 2010 Annual Report.
- March 2010: Listed as a tri-Lab (LANL, Sandia, LLNL) Rising Star on LDRD website.
- Mar. 23, 2011: [Shadi Dayeh and Cristiano Nisoli receive Postdoctoral Distinguished Performance Awards](#). LANL PADSTE Science Highlights.
- Feb 3, 2010: [Lab selects Distinguished Postdoctoral Fellows](#). LANL newsletter.
- Feb 1, 2010: [CINT Postdoc receives Prestigious Fellowship](#). CINT website.
- July 6, 2007: [IEEE Member Recognitions](#). IEEE The Institute newsletter.
- May 21, 2007: [Grad Student Recognized for Nanowire Work](#). Photonics Today.
- May 14, 2007: [UC San Diego Electrical Engineering Grad Student Racks up Awards](#). Eurekaalert.

Professional Leadership and Services

2012 – current	Editor, Journal of Nanomaterials
2010 May-Nov	President of the Los Alamos Postdoc Association (>400 postdocs; Treasurer May-Nov '09 & Vice President Nov'09-May'10)
2009-2010	IEEE EDS Student/GOLD Ambassador/Lecturer for the North America West Region.
2007-2008	Chapter Leader, International Microelectronics and Packaging Society (iMAPS), UCSD.

Session Chair:

- 226th ECS Meeting, 2014: Symposium on “Semiconductors, Dielectrics, and Metals for Nanoelectronics 12”.
- 56th Electronics Materials Conference, 2014: Symposium on “Contacts for Semiconductor Devices”.
- 224th ECS Meeting, 2013: Symposium on “Semiconductors, Dielectrics, and Metals for Nanoelectronics”.
- 222nd ECS Meeting, 2012: Symposium on “Low-Dimensional Nanoscale Electronic and Photonic Devices”.
- 9th International Workshop on Epitaxial Semiconductors and Novel Index Surfaces 2012: Transport session.
- SPIE 2010: “Nanoepitaxy/Nanoheteroepitaxy: Novel characterization of materials and growth properties”.
- SPIE 2009: “Toward single photon and single electron nanodevices”.
- 218th ECS Meeting, 2010: Symposium on “SiGe, Ge, and related compounds: materials, processing, and devices”.

Program Committee Member & Symposium Organizer:

SPIE 2010, 2011, 2012, 2013, 2014: “Nano Epitaxy symposium”.
ECS Symposium on Semiconductors, Dielectrics, and Metals for Nanoelectronics, 2014.

Journal Reviewer:

ACS Nano, Advanced Materials, Advanced Energy Materials, Advanced Functional Materials, Applied Physics Letters, Applied Surface Science, European Physics Letters, IEEE Electron Device Letters, IEEE Transactions on Electron Devices, IEEE Transactions on Nanotechnology, IET Circuits Devices & Systems, Journal of Applied Physics, Journal of Electronic Materials, Journal of Materials Research, Journal of Physical Chemistry (one of top 20 % reviewers for 2009), Journal of Physical Chemistry Letters, Journal of Vacuum Science and Technology, Langmuir, Materials Chemistry and Physics, Materials Research Letters, Materials Science and Engineering B, Microporous and Mesoporous Materials, Nano Letters, Nanoscale, Nature Communications, Nature Nanotechnology, Nature Photonics, Photonics Technology Letters, Small.

Grant And Facility User Proposal Reviewer:

Department of Energy, Basic Energy Sciences program.
NASA Postdoctoral Fellowship program.
Kuwait-MIT Center for Natural Resources and the Environment
Center for Integrated Nanotechnologies, Los Alamos and Sandia National Laboratories

Member:

Compound Semiconductor Devices and Circuits Committee, IEEE Electron Device Society (EDS).
IEEE Council on Electronic Design Automation (CEDA) as an Electron Devices Society (EDS) representative.
Member of Graduate of the Last Decade (GOLD) Committee, IEEE EDS.
Member of Career Assistance Committee, IEEE EDS.
Material Research Society (2006-current), Lebanese Syndicate of Engineering (2006-current), American Physical Society (2005-current), National Scholar’s Honor Society (2004-current), IEEE (2002-current).