CURRICULUM VITAE

Ali Javey, Ph.D.

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Citizenship: U.S.
Year of Birth: 1980

Academic Positions

2006 - present — *Assistant Professor*
Electrical Engineering and Computer Sciences
University of California at Berkeley
on leave (2005-2006)

2006 - present — *Faculty Principal Investigator*
Materials Sciences Division (MSD)
Lawrence Berkeley National Laboratory

2008- present — *Co-Director*
Berkeley Sensor and Actuator Center (BSAC) – NSF/industry funded research center at UCB, consisting of ~45 member companies.

2005 - 2006 — *Junior Fellow*
Harvard Society of Fellows
Harvard University
on leave (2006-2007)

Faculty Affiliations

2007 - Applied Science & Technology Graduate Program, UC Berkeley
2006 - Nanoscale Science & Engineering Graduate Group, UC Berkeley

Education

2005 — Ph.D., Physical Chemistry
Stanford University (Palo Alto, CA)

2001 — B.S., Chemistry
Old Dominion University (Norfolk, VA)

Research Interests

high performance nanoelectronics; flexible electronics and sensors; nanofabrication; energy harvesting and conversion; programmable matter

Awards and Honors

- 2009 *Technology Review* TR35
- 2009 *National Academy of Sciences* Award for Initiatives in Research
- 2008 *National Science Foundation* CAREER Award
- 2008 U.S. Frontiers of Engineering Speaker, *National Academy of Engineering*
- 2004 Election to *Harvard Society of Fellows*, Junior Fellow
- 2004 *Materials Research Society* Graduate Student Gold Award
- *2003-2005 Semiconductor Research Corporation* Peter Verhofstadt Fellowship
- 2001 Hampton Roads Section of the *American Chemical Society* (ACS) Award to the Outstanding Graduating Senior in Chemistry
- *1998-2001 Tidewater Builders Association* Scholarship

Book:

1. A. Javey, J. Kong (Eds.), "*Carbon Nanotube Electronics*", (Springer, New York, 2009).

Publications: *(>3,500 journal citations, h-index: 26, ISI Web of Knowledge, 4/2009)*

1. J. C. Ho, A. C. Ford, Y.-L. Chueh, P. Leu, O. Ergen, K. Takei, G. Smith, P. Majhi, J. Bennett, A. Javey. "Nanoscale doping of InAs via sulfur monolayers", *Applied Physics Letters*, 95, 072108, 2009.

2. H. Ko, Z. Zhang, Y.-L. Chueh, J. C. Ho, J. Lee, R. S. Fearing, and A. Javey. "Wet and dry adhesion properties of self-selective nanowire connectors", *Advanced Functional Materials*, in press, 2009.

3. Z. Fan, H. Razavi, J. Do, A. Moriwaki, O. Ergen, Y.-L. Chueh, P. W. Leu, J. C. Ho, T. Takahashi, L. A. Reichertz, S. Neale, K. Yu, M. Wu, J. W. Ager, A. Javey. "Three dimensional nanopillar array photovoltaics on low cost and flexible substrates", *Nature Materials*, 8, 648-653, 2009.

4. Z. Fan, J. C. Ho, T. Takahashi, R. Yerushalmi, K. Takei, A. C. Ford, Y.-L. Chueh, A. Javey. "Towards the Development of Printable Nanowire Electronics and Sensors," *Advanced Materials*, 21, 3730-3743, 2009.

5. R. Kapadia, H. Ko, Y.-L. Chueh, J. C. Ho, T. Takahashi, Z. Zhang, A. Javey. "Hybrid core-multi-shell nanowire forests for electrical connector applications," *Applied Physics Letters*, 94, 263110, 2009.

6. H. Ko, J. Lee, B. E. Schubert, Y.-L. Chueh, P. W. Leu, R. S. Fearing, A. Javey. "Hybrid Core-Shell Nanowire Forests as Self-Selective Chemical Connectors," *Nano Letters*, 9 (5), 2054–2058, 2009.

7. T. Takahashi, K. Takei, J. C. Ho, Y.-L. Chueh, Z. Fan, A. Javey. "Monolayer Resist for Patterned Contact Printing of Aligned Nanowire Arrays." *Journal of the American Chemical Society*, 131 (6), 2102-2103, 2009.

8. J. C. Ho, R. Yerushalmi, G. Smith, P. Majhi, J. Bennett, J. Halim, V. Faifer, A. Javey. "Wafer-Scale, Sub-5 nm Junction Formation by Monolayer Doping and Conventional Spike Annealing", *Nano Letters*, 9 (2), 725–730, 2009.

9. A. C. Ford, J. C. Ho, Y.-L. Chueh, Y.-C. Tseng, Z. Fan, J. Guo, J. Bokor, A. Javey. "Diameter-Dependent Electron Mobility of InAs Nanowires", *Nano Letters*, 9 (1), 360-365, 2009.

10. A. Javey, Z. Fan, J. C. Ho, "Roll Printing of Nanowires for Integrated Device and Sensor Arrays." *National Academy of Engineering, The Bridge*, 38 (4),18-24, 2009. (invited review)

11. Z. Fan, A. Javey. "Solar cells on curtains", *Nature Materials*, 7, 835 - 836, 2008 (news & views).

12. Y.-L. Chueh, A. C. Ford, J. C. Ho, Z. A. Jacobson, Z. Fan, C.-Y. Chen, L.-J. Chou, and A. Javey. "Formation and Characterization of Ni_xInAs/InAs Nanowire Heterostructures by Solid Source Reaction." *Nano Letters*, 8 (12), 4528–4533, 2008.

13. A. Javey. "The 2008 Kavli Prize in Nanoscience: Carbon Nanotubes", *ACS Nano*, 2008, 2, 1329-1335, 2008.

14. Z. Fan, J. C. Ho, Z. A. Jacobson, H. Razavi, A. Javey, "Large Scale, Heterogeneous Integration of Nanowire Arrays for Image Sensor Circuitry", *Proceedings of the National Academy of Sciences (PNAS)*, 105, 11066–11070, 2008.

15. A. C. Ford, J. C. Ho, Z. Fan, O. Ergen, V. Altoe, S. Aloni, H. Razavi, A. Javey, Synthesis, Contact Printing, and Device Characterization of Ni-Catalyzed, Crystalline InAs Nanowires", *Nano Research*, 1, 32-39, 2008.

16. L.-W. Hung, Z. A. Jacobson, Z. Ren, A. Javey, and C. T.-C. Nguyen, "Capacitative Transducer Stretching via ALD-Enabled Partial-Gap Filling", *Proceedings of Hilton Head 2008*.

17. R. Yerushalmi, J. C. Ho, Z. Fan, A. Javey, "Phosphine Oxide Monolayers on SiO_2 Surfaces", *Angew. Chem. Int. Ed.*, 47, 4440-4442, 2008. [selected as a "hot paper" by the editor].

18. J. C. Ho, R. Yerushalmi, Z. A. Jacobson, Z. Fan, R. L. Alley, A. Javey, "Controlled nanoscale doping of semiconductors via molecular monolayers", *Nature Materials*, 7 (1), 62-67, 2008. [featured in C&EN]

19. Z. Fan, J. C. Ho, Z. A. Jacobson, R. Yerushalmi, R. L. Alley, H. Razavi, A. Javey, "Wafer-Scale Assembly of Highly Ordered Semiconductor Nanowire Arrays by Contact Printing", *Nano Letters*, 8(1), 20-25, 2008. [cover article].

20. R. Yerushalmi, Z. A. Jacobson, J. C. Ho, Z. Fan, A. Javey, "Large scale, highly ordered assembly of nanowire parallel arrays by differential roll printing", *Applied Physics Letters*, 91, 203104, 2007. [also, selected for November 26, 2007 issue of Virtual Journal of Nanoscale Science & Technology].

21. R. Yerushalmi, J. Ho, Zachery Jacobson, A. Javey, "Generic Nanomaterial Positioning by Carrier and Stationary Phase Design," *Nano Letters*, 7, 2764-2768, 2007.

22. A. Javey, S. Nam, R. S. Friendman, H. Yan, C. M. Lieber, "Layer-by-Layer Assembly of Nanowires for Three-Dimensional, Multifunctional Electronics", *Nano Letters*, 7, 773 -777, 2007.

23. G. Zhang, X. Wang, X. Li, Y. Lu, A. Javey, H. Dai, "Carbon Nanotubes: From Growth, Placement, and Assembly Control to 60 mV/decade and Sub-60 mV/decade Tunnel Transistors", *IEEE IEDM Technical Digest*, 2006.

24. H. Dai, A. Javey, E. Pop, D. Mann, Y. Lu, "Electrical Transport Properties and Field-Effect Transistors of Carbon Nanotubes", *NANO*, 1, 1-4, 2006. (invited)

25. A. Javey, "Nano for Macro: Integration of Nanomaterials for High Performance and Flexible Macro-Electronics", *Nanotechnology Law & Business*, 3 (1), 2006. (invited)

26. A. Javey, H. Dai, "Carbon nanotube Electronics." *Proceedings of IEEE VLSI Design*, Jan 2006. (invited)

27. A. Javey, H. Dai, "Regular Arrays of 2 nm Metal Nanoparticles for Deterministic Synthesis of Nanomaterials." *Journal of the American Chemical Society*, 127, 11942-11943, 2005.

28. W. Kim, A. Javey, R. Tu, H. Dai, "Electrical Contacts to Carbon Nanotubes Down to 1nm in Diameter", *Applied Physics Letters,* 87, 173101, 2005.

29. G. Zhang, D. Mann, L. Zhang, A. Javey, Y. Li, E. Yenilmez, Q. Wang, J. P. McVittie, Y. Nishi, J. Gibbons, H. Dai. "Ultra-high-yield growth of vertical single-walled carbon nanotubes: Hidden roles of hydrogen and oxygen", *Proceedings of the National Academy of Sciences (PNAS)*, 102 (45), 16141-16145, 2005.

30. J. Guo, S. Hasan, A. Javey, G. Bosman, M. Lundstrom. "Assessment of High-Frequency Performance Potential for Carbon Nanotube Transistors." *IEEE Trans. on Nanotechnology*, 4(6), 1536, 2005.

31. A. Javey. "Electrical Characterization and Applications of Individual Single-Walled Carbon Nanotubes." *Ph.D. Thesis, Stanford University*, 2005.

32. A. Javey, R. Tu, D. Farmer, J. Guo, H. Dai. "High performance nanotube n-FETs with chemically doped contacts." *Nano Letters*, 5, 345-348, 2005.

33. A. Javey, D. Famer, R. Gordon, H. Dai. “Self-aligned 40 nm channel carbon nanotube field-effect transistors with subthreshold swings down to 70 mV/decade.” *Proceedings of SPIE* - The International Society for Optical Engineering (Quantum Sensing and Nanophotonic Devices II, M. Razeghi, G.J. Brown, eds.), 5732, 14-18, 2005.

34. A. Javey, P. Qi, Q. Wang, H. Dai. “Ten- to 50-nm-long quasi-ballistic carbon nanotube devices obtained without complex lithography.” *Proceedings of the National Academy of Sciences (PNAS)*, 101 (37), 13408-13410, 2004.

35. P. Qi, A. Javey, M. Rolandi, Q. Wang, E. Yenilmez, H. Dai. “Miniature Organic Transistors with Carbon Nanotubes as Quasi-One Dimensional Electrodes.” *Journal of the American Chemical Society*, 126 (38), 11774-11775, 2004.

36. J. Guo, A. Javey, H. Dai, M. Lundstrom. “Performance Analysis and Design Optimization of Near Ballistic Carbon Nanotube Field-Effect Transistors.” *IEEE IEDM Technical Digest*, 703, 2004.

37. A. Javey, J. Guo, Q. Wang, D. Mann, M. Lundstrom, H. Dai. “High-Field, Quasi-Ballistic Transport in Short Carbon Nanotubes.” *Physical Review Letters*, 92 (10), 106804, 2004.

38. A. Javey, J. Guo, D. B. Farmer, Q. Wang, E. Yenilmez, R. G. Gordon, M. Lundstrom, H. Dai. “Self-aligned ballistic molecular transistors and electrically parallel nanotube arrays.” *Nano Letters*, 4 (7), 1319-1322, 2004.

39. A. Javey, J. Guo, D. B. Farmer, Q. Wang, D. Wang, R. G. Gordon, M. Lundstrom, H. Dai. “Carbon Nanotube Field-Effect Transistors With Integrated Ohmic Contacts and High-k Gate Dielectrics.” *Nano Letters*, 3 (4), 447-450, 2004.

40. Y. Li, D. Mann, M. Rolandi, W. Kim, A. Ural, S. Hung, A. Javey, J. Cao, D. Wang, E. Yenilmez, Q. Wang, J. F. Gibbons, Y. Nishi and H. Dai. “Preferential growth of semiconducting single-walled carbon nanotubes by a plasma enhanced CVD method.” *Nano Letters,* 4 (2), 317-321, 2004.

41. Y.C. Tseng, P.Q. Xuan, A. Javey, R. Malloy, Q. Wang, J. Bokor, H. Dai, “Monolithic integration of carbon nanotube devices with silicon MOS technology.” *Nano Letters*, 4 (1), 123-127, 2004.

42. D. Mann, A. Javey, J. Kong, Q. Wang, H. Dai. “Ballistic Transport in Metallic Nanotubes With Reliable Ohmic Contacts,” *Nano Letters*, 3(11), 1541-1544, 2003.

43. A. Javey, Q. Wang, W. Kim, H. Dai. “Advancements in Complementary Carbon Nanotube Field-Effect Transistors,” *IEDM Technical Digest*, 2003.

44. A. Javey, J. Guo, Q. Wang, M. Lundstrom, and H. Dai. “Ballistic Carbon Nanotube Transistors,” *Nature*, 4(24), 654-657, 2003.

45. D. Wang, Q. Wang, A. Javey, R. Tu, H. Dai, H. Kim, T. Krishnamohan, P. McIntyre, and K. Saraswat, “Germanium nanowire field-effect transistors with SiO_2 and high-k HfO_2 gate dielectrics.” *Applied Physics Letters*, 83(12), 2432-2434, 2003.

46. H. C. Choi, S. Kundaria, D. Wang, A. Javey, Q. Wang, M. Rolandi, and H. Dai. “Efficient Formation of Iron Nanoparticle Catalysts on Silicon Oxide by Hydroxylamine for Carbon Nanotube Synthesis and Electronics.” *Nano Letters*, 3(2), 157-161, 2003.

47. W. Kim, A. Javey, O. Vermesh, Q. Wang, Y. Li, and H. Dai. “Hysteresis caused by water molecules in carbon nanotube field-effect transistors.” *Nano Letters*, 3 (2), 193-198, 2003.

48. P. Qi, O. Vermesh, M. Grecu, A. Javey, Q. Wang, H. Dai, S. Peng, KJ Cho. “Toward large arrays of multiplex functionalized carbon nanotube sensors for highly sensitive and selective molecular detection,” *Nano Letters,* 3(3), 347-35, 2003.

49. A. Javey, H. Kim, M. Brink, Q. Wang, A. Ural, J. Guo, P. McIntyre, P. McEuen, M. Lundstrom, and H. Dai. “High κ dielectrics for advanced carbon nanotube transistors and logic.” *Nature Materials,* 1 (4), 241-246, 2002.

50. A. Javey, Q. Wang, A. Ural, Y. Li, H. Dai. “Carbon nanotube transistor arrays for multistage complementary logic and ring oscillators.” *Nano Letters*, 2(9), 929-932, 2002.

51. J. Guo, S. Datta, M. Lundstrom, M. Brink, P. McEuen, A. Javey, H. Dai, H. Kim, P. McIntyre. “Assessment of Silicon MOS and Carbon Nanotube FET Performance Using a General Theory of Ballistic Transistors.” *IEDM Technical Digest*, 2002.

52. A. Javey, M. Shim, and H. Dai, “Electrical properties and devices of large-diameter single-walled carbon nanotubes.” *Applied Physics Letters,* 80(6), 1064-1066, 2002.

53. N. R. Franklin, Q. Wang, T. W. Tombler, A. Javey, M. Shim, H. Dai. “Integration of suspended carbon nanotube arrays into electronic devices and electromechanical systems.” *Applied Physics Letters,* 81(5), 913-915, 2002.

54. N. R. Franklin, Y. Li, R. J. Chen, A. Javey, and H. Dai, “Patterned growth of single-walled carbon nanotubes on full 4-inch wafers.” *Applied Physics Letters,* 79(27), 4571-4573, 2001.

55. M. Shim, A. Javey, N. Kam, H. Dai, “Polymer functionalization for air-stable n-type carbon nanotube field effect transistors.” *Journal of the American Chemical Society*, 123(46), 11512-11513, 2001.

56. X. Zheng, W. Fu, S. Albin, K. L. Wise, A. Javey, J. B. Cooper, “Self-referencing Raman probes for quantitative analysis.” *Applied Spectroscopy*, 55(4), 382-388, 2001.

Patents:

1. “Regular Arrays of Down to 2nm Nanoparticles.” U.S. Patent Appl. Filed 5/19/2006; status: pending.

2. “Nanoscale wire methods and devices.” U.S. Provisional Application. Filed 04/07/2006; status: pending.

3. “Roll printing of nanowire arrays.” U.S. Provisional Application. Filed 10/2007; status: pending.

4. “Controlled nanoscale doping of semiconductors by molecular monolayers.” U.S. Provisional Application. Filed 10/2007.

5. “Low Cost and Flexible Solar Cells Based on High Density Single Crystalline Nanopillar Arrays.” U.S. Provisional Application. Filed 6/2009.

Invited Talks & Lectures:

- “Nanoscale Semiconductor Materials: Challenges and Opportunities”, Boston College, Department of Chemistry, September 25, 2009.
- “Nanoscale Semiconductor Materials: Challenges and Opportunities”, MIT, MNSS, September 24, 2009.
- “Nanoscale Semiconductor Materials: Challenges and Opportunities”, Korea University, South Korea, August 17, 2009.
- “Nanoscale Semiconductor Materials: Challenges and Opportunities”, Seoul National University, South Korea, August 14, 2009.
- “Nanoscale Semiconductor Materials: Challenges and Opportunities”, KSSU, South Korea, August 14, 2009.
- “Printed Nanowire Electronics”, Printed Electronics Forum, Suncheon, August 13, 2009.
- “Nanoscale Semiconductor Materials: Challenges and Opportunities”, GIST, South Korea, August 10, 2009.
- “Nanoscale Semiconductor Materials: Challenges and Opportunities”, KAIST, South Korea, August 6, 2009.
- “Nanowire Electronics and Nanoscale Manufacturing”, Intel Corporation, Portland, May 29.
- “Nanotube and Nanowire Electronics”, International Rectifier, Los Angeles, May 28.
- “Semiconductor Nanowires: From Science to Technology”, University of Southern California, EE, May 27, 2009.
- “Nanowire Electronics”, ICICDT, Austin, May 20, 2009.
- “Printable Nanowire Sensors and Electronics”, HRL, Los Angeles, March 16, 2009.
- “Semiconductor Nanowires: From Science to Technology”, MRS Spring Meeting, San Francisco, April 17.
- “Integrated Nanowire Electronics and Sensors”, CMOS Emerging Technologies Workshop, Canada, Feb. 2009.

- "Semiconductor Nanowires: From Science to Technology", Stanford University, EE department, Feb. 3, 2009.
- "III-V TFETs", DARPA STEEP PI Meeting, San Francisco, Dec. 2008.
- "Assembly, doping, and electron transport properties of semiconductor nanowires", MRS Fall Meeting, Boston, MA, Dec. 2008.
- "Roll printing of semiconductor nanowires for flexible macroelectronics", MRS Fall Meeting, Boston, MA, Dec. 2008.
- "Monolayer doping for ultrashallow junction formation", ITRS Emerging Research Materials (ERM) e-workshop on emerging doping methods, Nov. 2008.
- "Semiconductor Nanowires: From Science to Technology", NSF-MEXT Young Researchers Exchange Program. University of Tokyo, Oct. 6, 2008.
- "Roll Printing of Nanowires for Integrated Sensors and Electronics", U.S. Frontiers of Engineering, National Academy of Engineering, Albuquerque, NM, Sept. 18, 2008.
- "Challenges Facing Nanotube Electronics." ITRS Emerging Research Devices workshop on "Beyond CMOS" Technology Maturity Evaluation, San Francisco, CA, July 12, 2008.
- "Roll Printing of Nanomaterials for Electronic and Sensor Applications." *EIPBN*, May 30, 2008, Portland, OR.
- "Printed Nanowire Arrays for Electronic and Sensor Applications." *NSF-MEXT Young Researchers Exchange Program*. Northwestern University, March 11, 2008.
- "Nanomaterials for Novel Technological Applications*." DARPA/MTO workshop on NEMS/MEMS Materials*. Miami, Jan. 8, 2008.
- "Contact Printing of Nanowires for High Performance Devices." *FENA-ONAMI workshop*, UCLA, November 19, 2007.
- "Nano-enabled Electronic Applications." *Honeywell*, Plymouth MN, November 16, 2007.
- "The role of nanotechnology in the future of electronics." *Electrochemical Society*, San Francisco, June 20 2007.
- "Synthetic Nanomaterials for Novel Electronic Applications." *CITRIS-ITRI meeting*, Berkeley, June 11, 2007.
- "How do we get to the end of scaling and beyond?" *Intel Corporation*, Hillsboro, OR, June 5, 2007 (invited panelist).
- "Nanotubes and Nanowires for Novel Electronic Applications." *International Conference on IC Design & Technology*, Austin, May 30, 2007.
- "Synthetic Nanomaterials for Novel Electronic Applications." *Hitachi Global Research Technologies*, San Jose, May 23, 2007.
- "Carbon Nanotube Based Electronics." *MARCO MSD/IFC Joint Workshop*, Boston, March 23 2007.
- "Nanotechnology for Advanced Electronics." *UC Berkeley, Nano Seminar Series*, March 16, 2007.
- "Synthetic Nanomaterials for Novel Electronics Concepts." *UC Berkeley*, *BSAC*, March 7, 2007.
- "The role of nanotechnology in the future of electronics." *UC Berkeley, Department of Chemistry*, January 23, 2007.
- "Synthetic Nanomaterials for Novel Electronics Concepts." *Analog Devices*, December 7, 2006.
- "The role of nanotechnology in the future of electronics." *CITRIS-ITRI meeting*, October 11, 2006.

- "Synthetic Nano-materials for Novel Electronic Components." *UC Berkeley, Solid State Technology and Devices Seminar*, September 1, 2006.
- "Integration of Synthetic Nano-materials for Nano- and Macro- Electronics." *MIT, Department of Electrical Engineering and Computer Science*, May 9, 2006.
- "Synthetic Nano-materials for Novel Electronic Concepts." *CITRIS in Asia*, Tokyo, Japan, April 10, 2006.
- "Advancements in Carbon Nanotube Electronics." *VLSI Design 2006*, Hyderabad, India.
- "Carbon Nanotube Electronics." *Caltech, Department of Electrical Engineering,* Oct 2005.
- "Advancements in Carbon Nanotube Electronics." *Intel*, Hillsboro, OR, Aug 2005.
- "Carbon Nanotube Transistors." *MARCO Focus Center Research Program "Live-Meeting"*, Feb 2005.
- "Ballistic self-aligned carbon nanotube field-effect transistors." Quantum *Sensing and Nanophotonic Devices II, SPIE* 2005, San Jose, CA.
- "Self-Aligned Ballistic Carbon Nanotube FETs." *SRC Graduate Fellowship Conference*, 2004, Burlingame, CA.
- "Electron transport in short macromolecular carbon nanotubes." *American Chemical Society National Meeting*, 2004, Anaheim, CA.
- "Carbon Nanotube Electronics." *CNT Workshop*, May 2003, Chicago.

Professional Activities:

Journal Reviewer: *Science*, *Nature, Nature Materials*, *Nature Nanotechnology*, *Proceedings of the National Academy of Sciences*, *Journal of the American Chemical Society*, *Nano Letters*, *Chemical Communications*, IEEE *Transactions on Electron Devices*, IEEE *Transactions on Nanotechnology*, IEEE *Transactions on VLSI Systems*, IEEE *Electron Device Letters*, *Applied Physics Letters*, *Journal of Applied Physics*, *Small*, *NANO*, *Nano Research*, *Advanced Materials*, *ACS Nano*, *Nanotechnology*, *The Journal of Chemical Physics*, *Journal of Physics D: Applied Physics, Surface Science,*

Grant/Proposal Reviewer: National Science Foundation, Science Foundation Ireland, U.S.-Israel Binational Science Foundation, US-Korea Foundation, W. M. Keck Foundation, Defense Threat Reduction Agency

US Team representative for the NSF-MEXT Young Researchers Exchange Program, 2008.

Judge for Graduate Student Awards, Materials Research Society Fall 2008 Meeting

Invited Speaker, 2008 U.S. Frontiers of Engineering Symposium, National Academy of Engineering

Member of the ITRS Emerging Research Devices (Logic section) working group, 2007.

Member of the *IEEE International Electron Device Meeting* (IEDM) Solid-State and Nanoelectronic Device subcommittee for 2005-2006 and 2009.

Session co-chair: *IEEE International Electron Device Meeting* (IEDM), Dec. 2005

Session co-chair: *IEEE International Electron Device Meeting* (IEDM), Dec. 2006

Session chair: *Device Research Conference* (DRC), June 2005

Session chair: *MRS Spring Meeting*, 2005