Curriculum Vitae

Peter John Burke
Department of Electrical and Engineering and Computer Science
University of California, Irvine, Irvine, CA 92617-2625, USA
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Education:

1998	Ph.D. (Physics)	Yale University
1992	B.A. (Physics)	University of Chicago

Positions:

2005-	Associate Professor Electrical Engineering and Computer Science Biomedical Engineering (courtesy) U.C. Irvine
2001-2005	Assistant Professor Electrical Engineering and Computer Science Biomedical Engineering (courtesy) U.C. Irvine
1997 –2001	Sherman Fairchild Postdoctoral Scholar in Physics Department of Physics, California Institute of Technology

Honors and Awards:

2007	Best Presentation Award (Integration for Sensor Architectures), Nano-DDS conference
2005	Maseeh Award for Outstanding Research, School of Engineering, UC Irvine, 2005
2002-2005	Young Investigator Program award, Army Research Office (ARO)
2002-2005	Young Investigator Award, Office of Naval Research (ONR)
2002	Frontiers of Engineering participant, National Academy of Engineering
1997-2000	Caltech Prize Fellowship: Sherman Fairchild Postdoctoral Scholar
1997	Award for Technical Excellence, Jet Propulsion Lab, NASA, 1997
1993-1996	NASA Graduate Student Research Program Fellowship
1993-1996	State of Connecticut High Technology Scholarship
1992	J.W. Gibbs Fellowship, Department of Physics, Yale University
1986	Eagle Scout

Commercialization/Consulting:

2005-	Founder, Director, CTO/Consultant, RF Nano Corporation, Newport Beach, CA

Professional and Honor Societies: (current and former)

American Physical Society, IEEE, American Association for the Advancement of Science**,** Sigma Xi

Peter John Burke

Teaching activities:

Graduate:

EECS 275B: *Lasers and Photonics*

Textbook: Verdeyen, *Laser Electronics*
Winter '02 (20 students); Winter '03 (10 students); Winter '05 (10 students)

EECS 217B: *Advanced Semiconductor Devices* (III-V devices: HEMTs, HBTs)

Textbook: Liu, *Fundamentals of III-V Devices*
Spring '02 (16 students), Spring '06 (12 students), Winter '07 (8 students)

EECS 217C: *Nanotechnology* (new course developed by Burke)

Textbook: Burke's lecture notes (available online at nano.ece.uci.edu)
Spring '03 (20 students), Spring '04 (16 students), Spring '05 (23 students),
Winter '06 (4 students), Winter '08 (25 students)

Undergraduate:

EECS 113A: *Electronics (junior required course)*

Textbook: Pierret, *Semiconductor Device Fundamentals*
Fall '02 (160 students); Fall '03 (180 students), Fall '04 (90 students), Fall '05 (88 students),
Fall '06 (73 students), Fall '07 (23 students)

EECS 70A: *Network Analysis I (sophomore required course)*

Textbook: Alexander & Sadiku, *Fundamentals of Electric Circuits (3rd Edition)*
Spring '07 (81 students), Spring '08 (104 students)

Alumni:

PhD: Sungmu Kang (Ph.D., 2006) (currently postdoc at Catholic University, Washington, D.C.);
Zhen Yu (Ph.D. 2006) (currently engineer at RF Nano Corporation, Newport Beach, CA), Lifeng Zheng (Ph.D. 2007), (currently postdoc at U.C. Irvine)

MS: S. Li (M.S., 2004), C. Rutherglen (M.S., 2005)

Undergraduate: Supervised 10 undergraduates to date at UCI.

K-12 outreach:

CalNANO (California Nanotechnology and Nanofabrication Outreach Program): outreach program to K-12 students and teachers (2003-2005)

Professional Service:

Manuscript reviewer for the many journals & publishers, including:

- Nature
- Nano Letters
- Journal of the American Chemical Society
- IEEE Transactions on Nanotechnology
- IEEE Transactions on Electron Devices
- IEEE Transactions on Microwave Theory and Techniques
- IEEE Electron Device Letters
- Physical Review Letters
- Applied Physics Letters
- Journal of Applied Physics
- Review of Scientific Instruments
- Journal of Physical Chemistry
- McGraw Hill
- Cambridge University Press
- Prentice Hall Press
- Pearson
- Wiley

Proposal reviewer for the following agencies:

- National Science Foundation (NSF)
- University of California Industry-University Cooperative Research Program
- Army Research Office (ARO)
- National Institutes of Health (NIH)

Editorships:

- Guest editor, 2004, *International Journal of High Speed Electronics and Systems*
  special issue on nanowires and nanotubes

Conference chairmanships:

- Session Chair: "Nanowires and Nanotubes for Sensing", SPIE Conference (Optics East 2004)
- Technical program committee, IEEE Sensors Conference, 2004, and 2006
- Session Chair, Nano-DDS, 2007
- Session Chair, Eastman Conference, 2008

University Service:

Departmental:

- Graduate Admissions Committee, (2002-2006) (evaluated 300 graduate applications/year)
- Graduate Prelimary Exam Chair (2006-)

School:

- Committee on Research/Graduate Programs for the Chancellor's Advisory Council (2004)

University campus wide:

- Faculty Welfare Committee (2006-2007)

State-wide:

- University of California system-wide Research Council member, (2002-2004)

Many additional miscellaneous committees

Fundraising:

Successfully raised and managed over $4M in grants to date (2001-2008).

Peter John Burke

Peer-reviewed Journal Publications:

[J1] "A heterodyne receiver at 533 GHz using a diffusion-cooled superconducting hot-electron bolometer mixer", A. Skalare, W.R. McGrath, B. Bumble, H.G. LeDuc, P.J. Burke, A.A. Verheijen, and D.E. Prober, *IEEE Transactions on Applied Superconductivity*, 5 (2), 2236-2239 (1995).

[J2] "Large bandwidth and low noise in a diffusion-cooled hot-electron bolometer mixer", A. Skalare, W.R. McGrath, B. Bumble, H.G. LeDuc, P.J. Burke, A.A Verheijen, R.J. Schoelkopf, and D.E. Prober, *Applied Physics Letters*, 68 (11), 1558-1560 (1996).

[J3] "Length scaling of bandwidth and noise in hot-electron superconducting mixers", P.J. Burke, R.J. Schoelkopf, D.E. Prober, A. Skalare, W.R. McGrath, B. Bumble, and H.G. LeDuc, *Applied Physics Letters* 68, 3343-3346 (1996).

[J4] "Frequency dependence of shot noise in a diffusive mesoscopic conductor", R.J. Schoelkopf, P.J. Burke, A.A. Kozhevnikov, D.E. Prober, and M.J. Rooks, *Physical Review Letters*, 78 (17), 3370-3373 (1997).

[J5] "Noise bandwidth of diffusion-cooled hot-electron bolometers", R.J. Schoelkopf, P.J. Burke, D.E. Prober, A. Skalare, B.S. Karasik, M.C. Gaidis, W.R. McGrath, B. Bumble, and H.G. LeDuc, *IEEE Transactions on Applied Superconductivity*, 7 (2), 3576-3579 (1997).

[J6] "Spectrum of thermal fluctuation noise in diffusion and phonon cooled hot-electron mixers", P.J. Burke, R.J. Schoelkopf, D.E. Prober, A. Skalare, B.S. Karasik, M.C. Gaidis, W.R. McGrath, B. Bumble, and H.G. LeDuc, *Applied Physics Letters*, 72 (12), 1516-1518 (1998).

[J7] "Mixing and noise in diffusion and phonon cooled superconducting hot-electron bolometers", P.J. Burke, R.J. Schoelkopf, D.E. Prober, A. Skalare, B.S. Karasik, M.C. Gaidis, W.R. McGrath, B. Bumble, and H.G. LeDuc, *Journal of Applied Physics*, 85 (3), 1644-1653 (1999).

[J8] "High frequency conductivity of the high-mobility two-dimensional electron gas", P.J. Burke, I.B. Spielman, J.P. Eisenstein, L.N. Pfeiffer, and K.W. West, *Applied Physics Letters*, 76 (6), 745-747 (2000).

[J9] "An all-cryogenic THz transmission spectrometer", P.J. Burke, J.P. Eisenstein, L.N. Pfeiffer, K.W. West, *Review of Scientific Instruments*, 73(1), 130-135 (2002).

[J10] "Effect of Nyquist noise on the Nyquist dephasing rate in two-dimensional electron systems", P.J. Burke, L.N. Pfeiffer, K.W. West, *Physical Review B Rapid Communications*, 65, 201310 R (2002).
Also appearing the *Virtual Journal of Nanoscale Science & Technology*, June 3, 2002.

[J11] "Terahertz photoconductivity and plasmon modes in double-quantum-well field-effect transistors", X.G. Peralta, S.J. Allen, N.E. Harff, M.C. Wanke, M.P. Lilly, J.A. Simmons, J.L. Reno, P.J. Burke, J.P. Eisenstein, *Applied Physics Letters*, 81 (9), 1627-1629 (2002).

[J12] **INVITED:** "THz Detection by Resonant 2-D Plasmons in Field Effect Devices", X.G. Peralta, S.J. Allen, M.C. Wanke, N.E. Harff, M.P. Lilly, J.A. Simmons, J.L. Reno, P.J. Burke, J.P. Eisenstein, W. Knap, Y. Deng, S. Rumyantsev, J. Lu, M. S. Shur, *International Journal of High Speed Electronics and Systems,* 12(3), 925-937 (2002).

[J13] "Luttinger Liquid Theory as a Model of the GHz Electrical Properties of Carbon Nanotubes", P.J. Burke, *IEEE Transactions on Nanotechnology*, 1(3), 129-144 (2002).

[J14] "An RF Circuit Model for Carbon Nanotubes", P.J. Burke, *IEEE Transactions on Nanotechnology,* 2(1), 55-58 (2003).

[J15] "Carbon Nanotube Transistor Operation at 2.6 GHz", Shengdong Li, Zhen Yu, Sheng-Fen Yeng, W.C. Tang, P.J. Burke, *Nano Letters*, 4(4), 753-756 (2004).

[J16] "Electronic Manipulation of DNA, Proteins, and Nanoparticles for Potential Circuit Assembly", Lifeng Zheng, J.P. Brody, P.J. Burke, *Biosensors & Bioelectronics,* May 24 (2004).

[J17] "Ballistic Transport at GHz Frequencies in Ungated HEMT Structures", Sungmu Kang, P.J. Burke, L.N. Pfeiffer, K.W. West, *Solid State Electronics*, 48(10), 2013-2017 (2004).

[J18] "AC Performance of Nanoelectronics: Towards a Ballistic THz Nanotube Transistor", P.J. Burke, *Solid State Electronics*, 48(10), 1981-2017 (2004).

[J19] "Synthesis of Aligned Arrays of Millimeter Long, Straight Single-Walled Carbon Nanotubes", Zhen Yu, Shengdong Li, P.J. Burke, *Chemistry of Materials*, 16(18), 3414-3416 (2004).

[J20] "Manipulating Nanoparticles in Solution with Electrically Contacted Nanotubes Using Dielectrophoresis", Lifeng Zheng, Shengdong Li, James P. Brody, P.J. Burke, *Langmuir*, 20(20), 8612-8619 (2004).

[J21] "Electrical Properties of 0.4 cm Long Single-Walled Carbon Nanotubes", Shengdong Li, Zhen Yu, Christopher Rutherglen, P.J. Burke, *Nano Letters*, 4(10), 2003-2007 (2004).

[J22] "Quantitative Theory of Nanowire and Nanotube Antenna Performance", P.J. Burke, Shengdong Li, Zhen Yu, *IEEE Transactions on Nanotechnology* 5(4), 314-334 (2006).

[J23] "Silicon Nitride Gate Dielectric for Top-Gated Carbon Nanotube Field Effect Transistors", Shengdong Li, Zhen Yu, P.J. Burke, *Journal of Vacuum Science and Technology B*, 22(6), 3112-3114 (2004).

[J24] "Microwave Transport in Metallic Single-Walled Carbon Nanotubes", Zhen Yu, Peter J. Burke, *Nano Letters*, 5, 1403-1406 (2005).

[J25] "Microwave Nanotube Transistor Operation at High Bias", *Applied Physics Letters*, 88, 233115 (2006).

[J26] "AC Ballistic Transport in a Two-Dimensional Electron Gas Measured in GaAs/AlGaAs Heterostructures", *Physical Review B*, 72, 165312 (2005).

[J27] "Resonant Frequency Response of Plasma Wave Detectors", S. Kang, Peter J. Burke, L.N. Pfeiffer, K.W. West, *Applied Physics Letters,* 89, 213512 (2006)

[J28] "Single-walled Carbon Nanotubes: Applications in High Frequency Electronics", P.J. Burke, C. Rutherglen, Z. Yu, *International Journal of High Speed Electronics and Systems,* 16(4), 977-999 (2006)

[J29] "Carbon Nanotube Radio", C. Rutherglen, P.J. Burke, *Nano Letters*, 7(11), 3296-3299 (2007).

[J30] "Ultrahigh Frequency Carbon Nanotube Transistor Based on a Single Nanotube" D. Wang, Z. Yu, S. McKernan, P. J. Burke, *IEEE Transactions on Nanotechnology,* 6(4), 400-402 (2007).

[J31] "Wafer Scale Synthesis of Dense, Aligned Arrays of SWNTs", W.W. Zhou, C. Rutherglen, P.J. Burke, *Nano Research*, 1(2), 158-165 (2008)

[J32] Dwight Woolard, Peiji Zhao, Christopher Rutherglen, Zhen Yu, Peter Burke, Steven Brueck, Andreas Stintz, "Nanoscale Imaging Technology for THz-Frequency Transmission Microscopy", *International Journal of High Speed Electronics and Systems*, 18(1), 205-222 (2008)

[J33] "RF Resistance and Inductance of Massively Parallel Single Walled Carbon Nanotubes: Direct, Broadband Measurements and Near Perfect 50 Ohm Impedance Matching", C. Rutherglen, D.Jain, P.J. Burke, *Applied Physics Letters*, 93, 083119 (2008).

[J34] "An RF Circuit Model for a Quantum Point Contact", S. Kang, C. Rutherglen, N. Rouhi, Peter J. Burke, L.N. Pfeiffer, K.W. West, *IEEE Sensors Journal*, in press (2009)

[J35] "Nano-Electromagnetics: Circuit and Electromagnetic Properties of Carbon Nanotubes", C. Rutherglen, P.J. Burke, *Small*, 5(8), 884-906 (2009)

[J36] "Towards a single-chip, implantable RFID system: is a single-cell radio possible?", P.J. Burke, C. Rutherglen, *Biomedical Microdevices*, in press(2009)

[J37] "Nanotube-Peptide Interactions on a Silicon Chip", L. Zheng, D. Jain, P.J. Burke, Journal of Physical Chemistry C, 113, 3978-3985 (2009).

Patents:

> 10 patents applications pending

Book Chapters:

[BC1] **INVITED:** "THz Detection by Resonant 2-D Plasmons in Field Effect Devices", X.G. Peralta, S.J. Allen, M.C. Wanke, N.E. Harff, M.P. Lilly, J.A. Simmons, J.L. Reno, P.J. Burke, J.P. Eisenstein, W. Knap, Y. Deng, S. Rumyantsev, J. Lu, M. S. Shur, chapter in *Frontiers in Electronics*, editors Y. Park, M. Shur, W. Tang, World Scientific (2002).

[BC2] **INVITED:** "Nano-dielectrophoresis: Electronic Nanotweezers", P.J. Burke, chapter in *Encyclopedia of Nanoscience and Nanotechnology*, editor H.S. Nalwa, Stevenson Ranch, CA, American Scientific Publishers (2004).

[BC3] **INVITED:** "Single-walled Carbon Nanotubes: Applications in High Frequency Electronics"P.J. Burke, C. Rutherglen, Z. Yu, in *Nanotubes and Nanowires*, Editor P.J. Burke, World Scientific, (2007).

Books:

[B1] Nanotubes and Nanowires, Editor P.J. Burke, World Scientific, (2007).

Conference Publications:

[C1] "Superconducting terahertz mixer using a transition edge microbolometer", D.E. Prober, P. J. Burke, B. Bumble, and H.G. LeDuc, *Proceedings of the International Semiconductor Device Research Symposium*, University of Virginia, 479 (1993).

[C2] "A superconducting receiver at 533 GHz using a diffusion-cooled superconducting hot electron bolometer mixer", A. Skalare, W.R. McGrath, B. Bumble, H.G. LeDuc, P.J. Burke, A.A. Verheijen, and D.E. Prober, *Proceedings of the 5th International Symposium on Space Terahertz Technology*, University of Michigan, Ann Arbor, MI, 157-168 (1994).

[C3] "Noise temperature and IF bandwidth of a 530 GHz diffusion-cooled hot-electron bolometer", A. Skalare, W.R. McGrath, B. Bumble, H.G. LeDuc, P.J. Burke, A.A. Verheijen, and D.E. Prober, *Proceedings of the 6th International Symposium on Space Terahertz Technology*, California Institute of Technology, Pasadena, CA, 262-267 (1995).

[C4] "Spectrum of output noise in diffusion and phonon cooled hot electron superconducting mixers", R.J. Schoelkopf, P.J. Burke, D.E. Prober, A. Skalare, W.R. McGrath, B. Bumble, and H.G. LeDuc, *Proceedings of the 7th International Symposium on Space Terahertz Technology*, Univ. of Virginia, Charlottesville, VA, 318-330 (1996).

[C5] "Noise performance of diffusion cooled hot-electron bolometers: theory vs. experiment", P.J. Burke, R.J. Schoelkopf, I. Siddiqi, D. E. Prober, A. Skalare, B.S. Karasik, M.C. Gaidis, W.R. McGrath, B. Bumble, and H.G. LeDuc, *Proceedings of the 9th International Symposium on Space Terahertz Technology*, Pasadena, CA, 17-34 (1998).

[C6] "Low-noise and wideband hot-electron superconductive mixer for THz frequencies", B.S. Karasik, A. Skalare, W.R. McGrath, B. Bumble, H.G. LeDuc, J.B. Barner, and A.W. Kleinsasser, P.J. Burke, R.J. Schoelkopf, D.E. Prober, *Proceedings of the SPIE*, (4th International Conference on Millimeter and Sub-millimeter Waves), 3465, 170-179 (1998).

[C7] "Nanobiotechnology: Electronic Control of Biochemical Reactions at the Nanoscale", Sunan Liu, P.J. Burke, James P. Brody, poster presentation at the *First Annual Research Review*, The Henry Samueli School of Engineering, March 14, 2002, U.C. Irvine, CA.

[C8] "High Mobility 2DEGs", Sungmu Kang, P.J. Burke, L.N. Pfeiffer, K.W. West, Roger Tsai, poster presentation at the *First Annual Research Review*, The Henry Samueli School of Engineering, March 14, 2002, U.C. Irvine, CA.

[C9] "In-plane magneto-plasmons in grating gated double quantum well field effect transistors", X.G. Peralta, S.J. Allen, M.C. Wanke, J.A. Simmons, M.P. Lilly, J.L. Reno, P.J. Burke, J.P. Eisenstein, *Proceedings of the 26th International Conference on the Physics of Semiconductors*, Edinburgh, England (2002).

[C10] "An RF Circuit Model for Carbon Nanotubes", P.J. Burke, *Proceedings of the 2nd IEEE Conference on Nanotechnology*, 393-396 (2002).

[C11] "Carbon Nanotube Growth for GHz Devices", S. Li, Z. Yu, G. Gadde, P.J. Burke, W.C. Tang, *Proceedings of the 3rd IEEE Conference on Nanotechnology*, 1, 256-259 (2003).

[C12] "Resonant Terahertz Photoconductance of Grating Gated Double Quantum Well Field Effect Transistors", X.G. Peralta, S.J. Allen, M.C. Wanke, N.E. Harff, J.A. Simmons, M.P. Lilly, J.L. Reno, W.E. Baca, P.J. Burke, J.P. Eisenstein, *Proceedings Far-IR, Sub-mm & mm Detector Technology Workshop*, Wolf J., Farhoomand J. and McCreight C.R. (eds.), NASA/CP-211408, (2002).

[C13] "Towards Single Molecule Manipulation with Dielectrophoresis Using Nanoelectrodes", L. Zheng, S. Li, P.J. Burke, James P. Brody, *Proceedings of the 3rd IEEE Conference on Nanotechnology*, 1, 437-440 (2003).

[C14] "Crossover from Diffusive to Ballistic Transport as a Function of Frequency in a Two Dimensional Electron Gas", S.Kang, P.J. Burke, L.N. Pfeiffer, K.West, *Proceedings of the 2003 International Semiconductor Device Research Symposium*, (2003).

[C15] **INVITED**: "Carbon Nanotube Devices for GHz to THz Applications", P.J. Burke, *Proceedings of the 2003 International Semiconductor Device Research Symposium*, (2003).

[C16] "Electronic manipulation of DNA and proteins for potential nano-bio circuit assembly", Lifeng Zheng, P.J. Burke, and James P. Brody, *Proc. of SPIE* 5331, 126 (2004).

[C17] "Electrochemiluminescence as a tool for microscopy at the nanoscale", Alan Lee, P.J. Burke, and James P. Brody, *Proc. of SPIE* 5331, 13 (2004).

[C18] "GHz Electrical Properties of Carbon Nanotubes on Silicon Dioxide Micro Bridges", S.F. Yen, H. Lais, Z. Yu, S. Li, W.C. Tang, P.J. Burke, *Proc. of Nanotech2004*, Singapore (2004).

[C19] "Self-Assembled Gold Nanowires from Nanoparticles: An Electronic Route Towards DNA Nanosensors", Lifeng Zheng, Shengdong Li, Peter J. Burke, *Proc. of SPIE*, 5515, 117 (2004).

[C20] "Carbon nanotube devices for GHz to THz applications", Peter J. Burke, *Proc. SPIE Int. Soc. Opt. Eng.*, 5593, 52 (2004).

[C21] "Aligned Array FETs as a Route Towards THz Nanotube Transistors", Zhen Yu, Peter J. Burke, *Proc. SPIE Int. Soc. Opt. Eng.*, 5790, 246 (2005).

[C22] "Using ultra-long nanotubes to make identical CNT FETs", Zhen Yu, C. Rutherglen, S. Li, Peter J. Burke, *NTSI-Nanotech 2005 Proceedings*, 3, 123 (2005).

[C23] "Nanotube Technology for Microwave Applications" (invited), Peter J. Burke, Zhen Yu, S. Li, C. Rutherglen, *Proc. of IEEE MTT International Microwave Symposium 2005,* (2005).

[C24] "Nanotubes for RF and Microwaves" (invited plenary talk), Peter J. Burke, Zhen Yu, S. Li, C. Rutherglen, *Proc. of European Microwave Week 2005*, 1-5 (2005).

[C25] "Carbon Nanotube Antennas", Peter J. Burke, C. Rutherglen, Zhen Yu, *Proc. of 9th International Conference on Electromagnetics in Advanced Applications*, 937 (2005).

[C26] "Design, fabrication, and impedance of plasma wave detectors", Sungmu Kang, Peter J. Burke, L. N. Pfeiffer, and K. W. West, *Proc. SPIE Int. Soc. Opt. Eng.* 5995, 59950M (2005).

[C27] "Scaling of the microwave and dc conductance of metallic single-walled carbon nanotubes", Zhen Yu, Chris Rutherglen, and Peter J. Burke, *Proc. SPIE Int. Soc. Opt. Eng.* 6003, 60030Q (2005).

[C28] **INVITED:** "Carbon Nanotube Antennas", Peter J. Burke, Chris Rutherglen, and Zhen Yu, *Proc. SPIE Int. Soc. Opt. Eng.* 6328, 632806-1 (2006).

[C29] **INVITED:** "A Possible Architecture for Wirelessly Integrated RF Nanosystems", P.J. Burke, C. Rutherglen, *Technical Program & Abstract Digest for the 2007 Nanoelectronic Devices for Defense & Security (Nano-DDS) Conference*, (2007).

[C30] "Carbon Nanotube Radio: Demonstration of a CNT Based AM Demodulator", C. Rutherglen, P.J. Burke, *Technical Program & Abstract Digest for the 2007 Nanoelectronic Devices for Defense & Security (Nano-DDS) Conference*, (2007).

[C31] "THz Spectral Sensing with Nanotechnology: An Overview", P.J. Burke, Chris Rutherglen, Nima Rouhi, *Technical Program & Abstract Digest for the 2008 International Symposium on Spectral Sensing Research*, (2008).

[C32] "RF Circuit Model of a Quantum Point Contact", Sungmu Kang, Chris Rutherglen, Nima Rouhi, P.J. Burke, L.N. Pfeiffer, K.W. West, *Technical Program & Abstract Digest for the 2008 International Symposium on Spectral Sensing Research*, (2008).

[C33] "Nanotube Array Synthesis for Microwave Applications", W.W. Zhou, C. Rutherglen, P.J. Burke, *Proc. IEEE International Symposium on Antennas & Propagation*, (2008).

University, Industry, and Government Presentations:

[S1] **INVITED**: "High frequency probes of collective modes and quantum coherence in semiconductor nanostructures", November 29, 2001, ECE Department Seminar, UCSB.

[S2] **INVITED**: "Effect of Nyquist Noise on the Nyquist Dephasing Rate in 2d Electron Systems", Solid State Physics Seminar, University of Maryland, May 3, 2002.

[S3] **INVITED:** "Nanotechnology and Biotechnology: Applications for the Future", March 15, 2004, Physics Colloquium, Cal State, Long Beach.

[S4] **INVITED:** "Carbon nanotube high frequency applications", October 22, 2004, ECE Colloquium, University of California, San Diego.

[S5] **INVITED:** "Carbon nanotube high frequency applications", November 11, 2004, ECE Colloquium, University of Southern California.

[S6] **INVITED:** "AC performance of nanoelectronics", Purdue University, Indiana, May 26, 2005.

[S7] **INVITED:** "Carbon Nanotubes: Potential Use as Interconnects (Short Course)", Electronic Components and Technology Conference, San Diego, CA, June, 2006.

[S8] **INVITED:** "Nanotubes for RF", DARPA Nano-electronics workshop, Napa Valley, CA, February, 2006.

[S9] **INVITED:** "Carbon Nanotubes as Microwave Devices", Nanotechnology Productization: Status and Trends, Motorola Labs Workshop Seminar, Tempe, AZ, May, 2006.

[S10] **INVITED:** "Carbon Nanotube RF Devices", DARPA Workshop on Carbon Electronics, Washington, D.C., February, 2007.

[S11] **INVITED:** "Carbon Nanotubes: Potential Use as Interconnects", Electronic Components and Technology Conference, Reno, NV, May, 2007.

[S12] **INVITED:** "Energy Sources and Communication Protocols for Nano-Devices", TATRC (U.S. Army) Nanotechnology Solutions for long-term implantable Devices, University of Texas Health Science Center, Rice University, Houston, TX, September, 2007.

[S13] **INVITED:** "Future Directions for THz Nanoelectronics", Army Research Office workshop on nano-electronics, N.C. State, December, 2007.

[S14] **INVITED:** "RF Applications of Nanotubes", Nanoelectronics for RF and Electronics Applications DARPA-ARL-AMRDEC Workshop, Adelphi, MD, August, 2008.

[S15] **INVITED:** "RF Applications of Nanotubes", EE Colloquium, UC Riverside, October, 2008.

Professional Conference presentations:

[CP1] **INVITED**: "Nanotechnology: Nanoelectronics, Nanomechanics, and Nanobiotechnology", *Taiwan-American Aerospace Technology Conference*, June 8, 2002, Anaheim, CA (http://www.taasa-web.org/taastc2002.htm).

[CP2] **INVITED**: "Nanotechnology: Nanoelectronics, Nanomechanics, and Nanobiotechnology", *First Annual Research Review*, The Henry Samueli School of Engineering, May 14, 2002, U.C. Irvine.

[CP3] "A technique to search for Luttinger liquid behavior in Carbon nanotubes at GHz frequencies", *International Conference on the Science and Applications of Nanotubes*, July 6, 2002, Boston College, MA.

[CP4] **INVITED**: Panelist on "Nano-biotechnology", *The Nano-Republic Conference*, UCLA, July 17, 2002 (www.larta.org/NanoRepublic).

[CP5] **INVITED**: "The Promise and Challenges of Nanotechnology", *US / Taiwan 1st Summit Conference on SOC and Nano Technology*, September 14, 2002, Caltech, CA. (www.tessa-usa.org).

[CP6] "A nano-electronic RF resonator based on a single walled carbon nanotube", *2nd IEEE Conference on Nanotechnology* (IEEE-NANO 2002), August 28, 2002, Washington, DC.

[CP7] **INVITED:** "Carbon Nanotube Devices for GHz to THz Applications", *International Semiconductor Device Research Symposium*, December 12, 2003, Washington, D.C.

[CP8] "Measurements of the GHz Electrical Properties of Individual Carbon Nanotubes", *GoMacTech Govermment Technology Conference,* March, 2004, Monterey, CA.

[CP9] **INVITED:** "Nanoelectronics: Challenges and Solutions", *WESCON Nanoworld,* September 21, 2004, Anaheim, CA.

[CP10] **INVITED:** "High frequency nanotubes for the roadmap", *International Technology Roadmap for Semiconductors (ITRS) workshop,* September 24, 2004, Leuven, Belgium.

[CP11] **INVITED:** "Carbon Nanotube High Frequency Devices", *SPIE Optics East,* October, 2004, Pittsburg, PA.

[CP12] **INVITED:** "Nanoelectronic Devices", *DesignCon 2004,* January 31, 2005, Santa Clara, CA.

[CP13] **INVITED:** "Electrical transport in ultra-long carbon nanotubes", *Foundations of Nanoscience: Self-assembled structures and Devices,* April, 2005, Snowbird, UT.

[CP14] **INVITED:** "High frequency properties of carbon nanotubes", *March Meeting of the American Physical Society,* March, 2005, LA, CA.

[CP15] **INVITED:** "Carbon Nanotube Devices for GHz to THz Applications", *IEEE International Microwave Symposium (IMS) 2005,* June, 2005, Long Beach, CA.

[CP16] **INVITED:** "Carbon Nanotube Antennas", *9th International Conference on Electromagnetics in Advanced Applications*, September, 2005, Turin, Italy.

[CP17] **INVITED:** "Potentialities of Carbon Nanotubes for RF Electronics", Plenary Lecture, European Microwave Week 2005, October, 2005, Paris, France.

[CP18] **INVITED:** "Carbon Nanotubes as Microwave Devices" IEEE Radio & Wireless Symposium, San Diego, CA, January 2006.

[CP19] **INVITED:** "THz Performance of Nanoelectronics", Gomactech, March 2006, San Diego, CA, September 2006.

[CP20] **INVITED**: "Carbon Nanotube Antennas", IEEE International Microwave Symposium, Honolulu, HW, June 2007

[CP21] **INVITED:** "Towards Wirelessly Integrated RF Nanosystems", Nanoelectronic Devices for Defense and Security Conference (Nano-DDS), Washington, D.C., June 2007

[CP22] **INVITED:** "Theory and Measurements of the RF Impedance of Individual and Massively Parallel Single Walled Carbon Nanotubes", MRS (Material Research Society), Boston, MA, November, 2007

[CP23] **INVITED:** "Broadband RF Measurements on Nanodevices", 2008 Conference on Precision Electromagnetic Measurements, NIST, Boulder, CO, June 2008.

[CP24] **"**THz Spectral Sensing with Nanotechnology: An Overview", *International Symposium on Spectral Sensing Research*, New Jersey, June 2008.