Dean P. Neikirk

Emeritus Professor, Emeritus Cullen Trust for Higher Education Professorship in Engineering
Department of Electrical and Computer Engineering
Cockrell School of Engineering
The University of Texas at Austin
Austin, TX 78712

Education:

Oklahoma State University (Physics and Mathematics; with Honors)	B.S.	1979
California Institute of Technology (Applied Physics)	M.S.	1981
California Institute of Technology (Applied Physics)	Ph.D.	1984

Professional Experience:

Assistant Professor, University of Texas at Austin, Jan. 1984 - Aug. 1988
Associate Professor, University of Texas at Austin, Sept. 1988- Aug. 1992
Full Professor, University of Texas at Austin, Sept. 1992-Jan. 2021
Associate Dean of Graduate Studies, Aug. 2014 – Jan. 2021
Emeritus Professor, Feb. 2021 - present

Honors and Awards:

- 1984 Marconi International Fellowship Young Scientist Award "for contributions to the development of millimeter wave integrated circuits especially in the areas of detectors and imaging arrays."
- Listed in the Second Edition of Who's Who in Frontiers of Science and Technology, 5th Edition of Who's Who in Technology Today, 1994 American Men & Women of Science; 1985 Outstanding Young Man of America, 1989 Outstanding Young Man of America; 7th Edition of Who's Who in Technology.
- 1984-85 Engineering Foundation Faculty Award, University of Texas at Austin Engineering Foundation Advisory Council.
- 1985-90 General Motors Foundation Centennial Teaching Fellowship, University of Texas at Austin.
- 1985-86 IBM Corporation Faculty Development Award
- 1986 National Science Foundation Presidential Young Investigator.

- 1987 Award for Outstanding Engineering Teaching by an Assistant Professor, College of Engineering, University of Texas at Austin.
- 1990-1992 Temple Foundation Endowed Faculty Fellowship (No. 1), University of Texas at Austin.
- 1992-present Cullen Trust for Higher Education Professorship in Engineering (No. 7), University of Texas.
- 1997 College of Engineering Award for Outstanding Teaching in the Department of Electrical and Computer Engineering, University of Texas at Austin.
- 2003 Department of Electrical and Computer Engineering Gordon T. Lepley IV Endowed Memorial Teaching Award, University of Texas at Austin.
- 2007 Lockheed Martin Aeronautics Company Award for Excellence in Engineering Teaching
    - each year since 1956, Lockheed Martin and its predecessor, has sponsored an award for excellence in engineering teaching to reward one College of Engineering faculty member for exceptional teaching. This prestigious award is given to a faculty member dedicating time and energy in abundance to teaching undergraduate and graduate students. As a result, his or her work leaves a mark of excellence on the entire College of Engineering. Nominations for this award are made by The University of Texas at Austin engineering students and faculty. Final selection is made by a committee composed the five most recent faculty recipients of the award and the student presidents of the Student Engineering Council (SEC) and the Graduate Engineering Council (GEC).
- 2015 Civitatis Award: The University of Texas at Austin Civitatis Award was established in 1997 to recognize outstanding faculty citizenship. The Civitatis Award is conferred upon a member of the faculty in recognition of dedicated and meritorious service to the University above and beyond the regular expectations of teaching, research, and writing. The award is made by the President upon the recommendation of the Faculty Council Executive Committee. Prof. Neikirk was nominated for the award for his "extensive, effective and distinguished service record to his department, college and [the] University of Texas."

Vita for Dean P. Neikirk:

Dean P. Neikirk was born in Oklahoma City, Oklahoma, on October 31, 1957. He received the B.S. degree (1979) in physics from Oklahoma State University, and the M.S. (1981) and Ph.D. (1984) degrees in applied physics from the California Institute of Technology. He joined the faculty of The University of Texas at Austin in 1984, and is currently a Professor in the Department of Electrical and Computer Engineering, holding the Cullen Trust for Higher Education Professorship in Engineering (No. 7). Dr. Neikirk developed the first monolithic, high resolution focal plane detector array for use at wavelengths between 0.1 mm and 1 mm, and in 1984 received the Marconi International Fellowship Young Scientist Award "for contributions to the development of millimeter

wave integrated circuits especially in the area of detectors and imaging arrays." He has also been named a 1986 National Science Foundation Presidential Young Investigator.

Dr. Neikirk's research interests concentrate on the fabrication and modeling of electromagnetic and micromachined sensors and actuators. His work also included projects involving integrated circuit processing and the high frequency properties of transmission lines. His work concentrated on the use of advanced fabrication techniques, including silicon micromachining, for new device and sensor development. Dr. Neikirk developed the teaching laboratory for semiconductor device fabrication at The University of Texas at Austin, and was an active member of The University of Texas at Austin Microelectronics Research Center. Recently Dr. Neikirk's research project related to the development of new chemical sensors (an "electronic taste" sensor) was selected for a commercialization venture between the University of Texas and LabNow, Inc. Dr. Neikirk has also served as the Graduate Advisor of the Department of Electrical and Computer Engineering at UT-Austin, an Associate Chairman of the ECE Department, the Chair of the UT-Austin Graduate Assembly, the Chair of the UT-Austin Faculty Council, the Secretary of the General Faculty at UT-Austin, and as an Associate Dean of the University of Texas at Austin Graduate School.

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Professional Societies:

Senior Member, Institute of Electrical and Electronics Engineers
• Associate Editor for Solid State and VLSI Electronics, **IEEE Transactions on Education** (March 1991- Oct. 1994)

Commercialization of Technology:

Two companies have been founded based on technology developed by Dr. Neikirk's research group. In both cases the technology was developed at The University of Texas at Austin and licensed to start-ups.

From a University of Texas news release:
Firm commercializing University of Texas technology rounds up $14 million venture capital investment (October 1, 2004)

AUSTIN, Texas—LabNow Inc. has received $14 million in first-round venture investment for its point-of-care diagnostic system from the Soros Group, Austin Ventures and other investors.

The money will be used to develop the company's technology and to launch its initial product, CD4Now™, a point-of-care diagnostic tool for HIV/AIDS patients.

The device, which is based on technology developed at The University of Texas at Austin, quickly and accurately analyzes complex fluids such as blood.

Patents

1. US Patent 5,080,870: "Sublimating and Cracking Apparatus," Jan. 14, 1992; Inventors: B. G. Streetman, T. J. Mattord, D. P. Neikirk

2. US Patent 5,408,107: "Semiconductor Device Having Multiple Current-Voltage Curves and Zero-Bias Memory," April 18, 1995;
Inventors: Dean P. Neikirk and Kiran Kumar Gullapalli

3. US Patent 6,589,779: "General signaling protocol for chemical receptors in immobilized matrices," July 8, 2003;
Inventors: McDevitt; John T.; Anslyn; Eric V.; Shear; Jason B.; Neikirk; Dean P.
Assignee: Board of Regents, The University of Texas System (Austin, TX)

4. US Patent 6,602,702: "Detection system based on an analyte reactive particle," August 5, 2003
Inventors: McDevitt; John T. (Austin, TX); Anslyn; Eric V. (Austin, TX); Shear; Jason B. (Austin, TX); Neikirk; Dean P. (Austin, TX)

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Assignee: The University of Texas System (Austin, TX)

5. US Patent 6,649,403: "Method of preparing a sensor array," November 18, 2003
Inventors: McDevitt; John T. (Travis, TX); Anslyn; Eric V. (Austin, TX); Shear; Jason B. (Austin, TX); Neikirk; Dean P. (Travis, TX)
Assignee: Board of Regents, The University of Texas Systems (Austin, TX)

6. US Patent 6,680,206, "Sensor arrays for the measurement and identification of multiple analytes in solutions," January 20, 2004
Inventors: McDevitt; John T. (Travis, TX); Anslyn; Eric V. (Austin, TX); Shear; Jason B. (Austin, TX); Neikirk; Dean P. (Travis, TX)
Assignee: Board of Regents, The University of Texas Systems (Austin, TX)

7. US Patent 6,713,298, "Method and apparatus for the delivery of samples to a chemical sensor array, " March 30, 2004
Inventors: McDevitt; John T. (Travis, TX); Anslyn; Eric V. (Travis, TX); Shear; Jason B. (Travis, TX); Neikirk; Dean P. (Travis, TX)
Assignee: Board of Regents, The University of Texas System (Austin, TX)

8. US Patent 6,908,770, "Fluid based analysis of multiple analytes by a sensor array," June 21, 2005
Inventors: McDevitt; John T. (Austin, TX); Anslyn; Eric V. (Austin, TX); Shear; Jason B. (Austin, TX); Neikirk; Dean P. (Austin, TX)
Assignee: Board of Regents, The University of Texas System (Austin, TX)

9. US Patent 7,022,517, "Method and apparatus for the delivery of samples to a chemical sensor array," April 4, 2006, filed: July 14, 2000
Inventors: McDevitt; John T. (Austin, TX); Anslyn; Eric V. (Austin, TX); Shear; Jason B. (Austin, TX); Neikirk; Dean P. (Austin, TX); Borich; Damon V. (Austin, TX)
Assignee: Board of Regents, The University of Texas System (Austin, TX)

10. US Patent 7,316,899, "Portable sensor array system," January 8, 2008, filed: January 31, 2001
Inventors: McDevitt; John T. (Austin, TX); Anslyn; Eric V. (Austin, TX); Shear; Jason B. (Austin, TX); Neikirk; Dean P. (Austin, TX)
Assignee: Board of Regents, The University of Texas System (Austin, TX)

11. US Patent 7,491,552, "Fluid based analysis of multiple analytes by a sensor array," February 17, 2009, filed: January 20, 2005
Inventors: McDevitt; John T. (Austin, TX); Anslyn; Eric V. (Austin, TX); Shear; Jason B. (Austin, TX); Neikirk; Dean P. (Austin, TX)
Assignee: Board of Regents, The University of Texas System (Austin, TX)

12. United States Patent 7,651,868, "Method and system for the analysis of saliva using a sensor array," January 26, 2010, Filed: December 13, 2004

Inventors: McDevitt; John T. (Austin, TX), Anslyn; Eric V. (Austin, TX), Shear; Jason B. (Austin, TX), Neikirk; Dean P. (Austin, TX), Christodoulides; Nick J. (Austin, TX)
Assignee: The Board of Regents of The University of Texas System (Austin, TX)

13. United States Patent 8,101,431, "Integration of fluids and reagents into self-contained cartridges containing sensor elements and reagent delivery systems," January 24, 2012, Filed: December 22, 2004
Inventors: McDevitt; John T. (Austin, TX), Ballard; Karri L. (Pflugerville, TX), Floriano; Pierre N. (Austin, TX), Christodoulides; Nick J. (Austin, TX), Neikirk; Dean (Austin, TX), Anslyn; Eric (Austin, TX), Shear; Jason (Austin, TX)
Assignee: Board of Regents, The University of Texas System (Austin, TX)

14. United States Patent 8,105,849, "Integration of fluids and reagents into self-contained cartridges containing sensor elements," January 31, 2012, Filed: December 22, 2004
Inventors: McDevitt; John T. (Austin, TX), Ballard; Karri L. (Pflugerville, TX), Floriano; Pierre N. (Austin, TX), Christodoulides; Nick J. (Austin, TX), Neikirk; Dean (Austin, TX), Anslyn; Eric (Austin, TX), Shear; Jason (Austin, TX)
Assignee: Board of Regents, The University of Texas System (Austin, TX)

15. United States Patent 8,257,967, "Method and system for the detection of cardiac risk factors," September 4, 2012, Filed: April 28, 2003
Inventors: McDevitt; John T. (Austin, TX), Anslyn; Eric V. (Austin, TX), Shear; Jason B. (Austin, TX), Neikirk; Dean P. (Austin, TX), Christodoulides; Nick J. (Austin, TX)
Assignee: Board of Regents, The University of Texas System (Austin, TX)

16. United States Patent 9,291,586, "Passive wireless self-resonant sensor," March 22, 2016, Filing Date: May 5, 2013
Inventors: Neikirk, Dean P. (Austin, TX, US), Pasupathy, Praveenkumar (Austin, TX, US), Zhang, Sheng (Austin, TX, US), Leonhardt, Brad (Austin, TX, US), Ekerdt, John G. (Austin, TX, US), Korgel, Brian A. (Austin, TX, US), Holmberg, Vincent C. (Seattle, WA, US), Shipman, Catherine D. (Reston, TX, US), Bogart, Timothy D. (Oxford, GB), Chockla, Aaron (Chicago, IL, US)
Assignee: Board of Regents, The University of Texas System (Austin, TX, US)

17. United States Patent 9,581,559, "Corrosion detection sensor embedded within a concrete structure with a diffusion layer placed over the sacrificial transducer," February 28, 2017, Filing Date: August 14, 2014
Inventors: Neikirk; Dean P. (Austin, TX), Wood; Sharon L. (Austin, TX), Pasupathy; Praveenkumar (Austin, TX), Yosef; Ali Abu (Austin, TX)
Assignee: Board of Regents, The University of Texas System (Austin, TX)

Publications:

A: Refereed archival journal publications

1. D. P. Neikirk and R. C. Powell, "Laser Time-Resolved Spectroscopy of Host-Sensitized Energy Transfer in $Bi_4Ge_30_{12}$:Er^{3+} Crystals," **J. Lumin.**, vol. 20, 1979, pp. 261- 270.

2. R. C. Powell, D. P. Neikirk, J. M. Flaherty, and J. G. Gualtieri, "Lifetime Measurements, Infrared and Photoacoustic Spectroscopy of NdP_50_{14}," **J. Phys. Chem. Solids**, vol. 41, 1980, pp. 345-350.

3. R. C. Powell, D. P. Neikirk, and D. Sadar, "Radiationless Decay Processes of Nd^{3+} Ions in Solids," **J. Opt. Soc. Am.**, vol. 70 (5), May 1980, pp. 486-490.

4. D. P. Neikirk, D. B. Rutledge, M. S. Muha, H. Park, and C. X. Yu, "Far-Infrared Imaging Antenna Arrays," **Appl. Phys. Lett.**, vol. 40 (3), l February 1982, pp. 203-205.

5. D. P. Neikirk, D. B. Rutledge, M.S. Muha, H. Park, and C. X. Yu, "Progress in Millimeter-Wave Integrated-Circuit Imaging Antenna Arrays," **Proc. Soc. Photo-Opt. Instr. Eng.**, vol. 317, 1981, pp. 206-211.

6. D. P. Neikirk, D. B. Rutledge, P.P. Tong, H. Park, and P. E. Young, "Imaging Antenna Array at 119µm," **Appl. Phys. Lett.**, vol. (41), 15 August 1982, pp. 329-331.

7. D. P. Neikirk and D. B. Rutledge, "Self-Heated Thermocouples for Far-Infrared Detection," **Appl. Phys. Lett.**, vol. 41, (5), 1 September 1982, pp. 400-402

8. P.P. Tong, D. P. Neikirk, D. Psaltis, D. B. Rutledge, K. Wagner, and P. E. Young, "Tracking Antenna Arrays for Near- Millimeter Waves," **IEEE Trans. Antennas Propagat.**, vol. AP- 31, May, 1983, pp. 512-515.

9. D. P. Neikirk and D. B. Rutledge, "Air-Bridge Microbolometer for Far-Infrared Detection," **Appl. Phys. Lett. 44**,15 Jan. 1984, pp. 153-155.

10. P.P. Tong, D. P. Neikirk, D. B. Rutledge, P. E. Young, W. A. Peebles, N. C. Luhmann, Jr., "Imaging Polarimeter Arrays for Near-Millimeter Waves," **IEEE Trans. Microwave Theory Tech. MTT-32**, March 1984, pp. 507-512.

11. D. P. Neikirk, D. B. Rutledge, and W. Lam, "Far-Infrared Microbolometer Detectors," **Int. J. Infrared and Millimeter Waves 5**, March 1984, pp. 245-277.

12. D. P. Neikirk and D. B. Rutledge, "Far-Infrared Imbedding Impedance Measurements,"

Int. J. Infrared and Millimeter Waves 5, July 1984, pp. 1017-1026.

13. P. E. Young, D. P. Neikirk, P.P. Tong, D. B. Rutledge, and N. C. Luhmann, Jr., "Multichannel far-infrared phase imaging for fusion plasmas," **Rev. Sci. Instrum. 56**, Jan. 1985, pp. 81-89.

14. P. E. Young, N. C. Luhmann, Jr., R. J. Taylor, D. P. Neikirk, and D. B. Rutledge, "Far-infrared imaging of tokamak plasma," **Rev. Sci. Instrum. 56**, May 1985, pp. 903-904.

15. Y. Fukuoka, Q. Zhang, D. Neikirk, and T. Itoh, "Analysis of multilayer interconnection lines for a high speed digital integrated circuit," **IEEE Trans. Microwave Theory Tech. MTT- 33**, June 1985, pp. 527-532.

16. N. Song, D. P. Neikirk, and T. Itoh, "Modeling of Ion-implanted GaAs MESFETs by the Finite Element Method," **IEEE Electron Device Lett. EDL-7**, April 1986, pp. 208-210.

17. V. P. Kesan, D. P. Neikirk, B. G. Streetman, and P. A. Blakey, "A New Transit Time Device Using Quantum Well Injection," **IEEE Electron Device Lett. EDL-8**, April 1987, pp. 129-131.

18. A. C. Cambell, V. P. Kesan, G. E. Crook, C. M. Maziar, D. P. Neikirk, and B. G. Streetman, "Impedance Switching Effects in GaAs/AlAs Barrier Structures," **Electronics Letters 23**, Aug 27, 1987, pp. 926-927.

19. Y. D. Lin, D. P. Neikirk, and T. Itoh, "Coplanar Waveguide Phase Shifter Controlled by a Spatially Periodic Optical Illumination," **Int. J. Infrared and Millimeter Waves 8**, Sept. 1987, pp. 1027-1036.

20. C. W. Farley, G. E. Crook, V. P. Kesan, T. R. Block, H. A. Stevens, T. J. Mattord, D. P. Neikirk, and B. G. Streetman, "Substrate Rotation and Carbon Generation in a Molecular Beam Epitaxy System," **J. Vac. Science Tech. B**, Sept./Oct. 1987, pp. 1374-1376.

21. V. P. Kesan, D. P. Neikirk, T. D. Linton, P. A. Blakey, and B. G. Streetman, "Influence of Transit Time Effects on the Optimum Design and Maximum Oscillation Frequency of Quantum Well Oscillators," **IEEE Trans. Electron Devices ED-35**, April 1988, pp. 405-413.

22. A. C. Campbell, V. P. Kesan, G. E. Crook, C. M. Maziar, D. P. Neikirk, and B. G. Streetman, "Capacitive Hysteresis Effects in 5.0 nm Single and Double Barrier AlAs Tunneling Structures Grown by MBE," **J. Vac. Science Tech. B 6**, Mar/Apr 1988, pp. 651-656.

23. V. P. Kesan, A. Mortazawi, D. P. Neikirk, and T. Itoh, "Monolithic Millimeter-Wave Oscillator using a Transmission Line Periodically Loaded by QWITT Diodes," **Electronics Letters** , May 26, 1988, pp. 666-667.

24. T. J. Mattord, V. P. Kesan, G. E. Crook, T. R. Block, A. C. Campbell, D. P. Neikirk, and B. G. Streetman, "Baffle-free Refractory Dimer Source for Molecular Beam Epitaxy," **J. Vac Sci. Technol. B 6**, Nov./Dec. 1988, pp. 1667-1670.

25. V. P. Kesan, A. Dodabalapur, D. P. Neikirk, and B. G. Streetman, "Growth and Rapid Thermal Annealing of AlGaAs/InGaAs Pseudomorphic Modulation-doped Structures," **Appl. Phys. Lett. 53**, 22 Aug. 1988, pp. 681-683.

26. T. J. Mattord, V. P. Kesan, D. P. Neikirk, and B. G. Streetman, "A Single-filament Effusion Cell with Reduced Thermal Gradient for Molecular Beam Epitaxy," **J. Vac Sci. Technol. B 7**, Mar/Apr 1989, pp. 214-216.

27. A. Dodabalapur, V. P. Kesan, T. R. Block, D. P. Neikirk, and B. G. Streetman, "Optical and Electrical Characterization of Pseudomorphic AlGaAs/InGaAs/GaAs Modulation-doped Structures Processed by Rapid Thermal Annealing," **J. Vac Sci. Technol. B 7**, March/April 1989, pp. 380-383.

28. V. P. Kesan, A. Mortazawi, D. R. Miller, T. Itoh, B. G. Streetman, and D. P. Neikirk, "Microwave Frequency Operation of the Quantum Well Injection Transit Time (QWITT) Diode," **Electronics Letters 24**, 24 Nov. 1988, pp. 1473-1474.

29. C. S. Kyono, V. P. Kesan, D. P. Neikirk, C. M. Maziar, and B. G. Streetman, "Dependence of Apparent Barrier Height on Barrier Thickness for Perpendicular Transport in AlAs/GaAs Single Barrier Structures Grown by MBE," **Appl. Phys. Lett. 54**, 6 Feb. 1989, pp. 549-551.

30. R. L. Rogers and D. P. Neikirk, "Use of Broadside Twin Element Antennas to Increase Efficiency on Electrically Thick Dielectric Substrates," **Int. J. Infrared and Millimeter Waves 9**, Nov. 1988, pp. 949-969.

31. R. L. Rogers and D. P. Neikirk, "Radiation Properties of Slot and Dipole Elements on Layered Substrates," **Int. J. Infrared and Millimeter Waves 10**, June 1989, pp. 697-728.

32. A. Dodabalapur, V. P. Kesan, D. R. Hinson, D. P. Neikirk, and B. G. Streetman, "Photoluminescence Studies of Pseudomorphic modulation-doped AlGaAs/ InGaAs/ GaAs Quantum Wells," **Appl. Phys. Lett. 54**, 24 April 1989, pp. 1675-1677.

33. A. C. Campbell, V. P. Kesan, T. R. Block, G. E. Crook, D. P. Neikirk, and B. G. Streetman, "Influence of MBE Growth Temperature on GaAs/AlAs Resonant Tunneling Structures," **Journal of Electronic Materials 18**, 1989, pp. 585-588.

34. S. M. Wentworth, D. P. Neikirk, and C. R. Brahce, "The High Frequency Characteristics of Tape Automated Bonding (TAB) Interconnects," **IEEE. Trans. Components, Hybrids, and Manufacturing Tech. 12**, Sept. 1989, pp. 340-347.

35. V. P. Kesan, A. Mortazawi, D. R. Miller, V. K. Reddy, D. P. Neikirk, and T. Itoh, "Microwave and Millimeter Wave QWITT Diode Oscillators," **IEEE Trans. Microwave Theory Tech. MTT-37** , Dec. 1989, pp. 1933-1941.

36. P. Cheung, D. P. Neikirk, and T. Itoh, "A Schottky-Biased, Optically-Controlled Coplanar Waveguide Phase Shifter," **Electronics Letters 25**, Sept. 14, 1989, pp. 1301-1302.

37. S. M. Wentworth and D. P. Neikirk, "Far Infrared Microbolometers made with Tellurium and Bismuth," **Electronics Letters 25**, Nov. 9, 1989, pp. 1558-1560.

38. A. Dodabalapur, V. P. Kesan, D. P. Neikirk, and B. G. Streetman, "Photoluminescence and Electroreflectance Studies of Modulation-Doped Pseudomorphic AlGaAs/ InGaAs/ GaAs Quantum Wells," **Journal of Electronic Materials 19**, 1990, pp. 265-270.

39. P. Cheung, D. P. Neikirk, and T. Itoh, "Optically Controlled Coplanar Waveguide Phase Shifters," **IEEE Trans. Microwave Theory Tech. MTT-38** , May 1990, pp. 586-595.

40. S. M. Wentworth, R. L. Rogers, J. G. Heston, D. P. Neikirk, and T. Itoh, "Millimeter Wave Twin Slot Antennas on Layered Substrates," **Int. J. Infrared and Millimeter Waves 11**, Feb. 1990, pp. 111-131.

41. J. G. Heston, J. M. Lewis, S. M. Wentworth, and D. P. Neikirk, "Twin slot antenna structures integrated with microbolometer detectors for 94 GHz imaging," **Microwave and Optical Technology Letters 4**, no. 1, Jan. 5, 1991, pp. 15-19.

42. R. L Rogers, S. M. Wentworth, D. P. Neikirk, and T. Itoh, "A twin slot antenna on a layered substrate coupled to a microstrip feed line," **Int. J. Infrared and Millimeter Waves 11**, no. 10, October 1990, pp. 1225-1249.

43. T. Y. Chu, D. P. Neikirk, and B. G. Streetman, "Properties and Applications of $Al_xGa_{1-x}As$ Grown at Low Temperatures," **J. Crystal Growth 111**, 1991, pp. 26-29.

44. V. K. Reddy, A. J. Tsao, and D. P. Neikirk, "High Peak-to-Valley Current Ratio AlGaAs/AlAs/GaAs Double Barrier Resonant Tunneling Diodes," **Electronics Letters 26**, Oct. 11, 1990, pp. 1742-1744.

45. A. J. Tsao, V. K. Reddy, and D. P. Neikirk, "Epitaxial Liftoff of AlAs/GaAs Double Barrier Resonant Tunneling Diodes," **Electronics Letters 27**, March 14, 1991, pp. 484-486.

46. D. R. Miller and D. P. Neikirk, "Simulation of Intervalley Mixing in Double Barrier Diodes Using the Lattice Wigner Function," **Appl. Phys. Lett. 58**, 17 June 1991, pp. 2803-2805.

47. M.S. Islam, A. J. Tsao, V. K. Reddy, and D. P. Neikirk, "GaAs on Quartz Coplanar Waveguide Phase Shifter," **IEEE Microwave and Guided Wave Letters 1**, Nov. 1991, pp. 328-330.

48. S. M. Wentworth and D. P. Neikirk, "Composite Microbolometers with Tellurium Detector Elements," **IEEE Trans. Microwave Theory Tech. MTT-40**, no. 2, Feb. 1992, pp. 196-201.

49. T. D. Linton, Jr., P.A. Blakey, and D. P. Neikirk, "The impact of three-dimensional effects on EEPROM cell performance," **IEEE Trans. Electron Devices 39**, April 1992, pp. 843-850.

50. V. K. Reddy and D. P. Neikirk, "Influence of Growth Interruption on I - V Characteristics of AlAs/GaAs Double Barrier Resonant Tunneling Diodes," **J. Vac. Sci. Technol. B 10**, Mar/Apr 1992, pp. 1045-1047.

51. A. J. Tsao, V. K. Reddy, D. R. Miller, K. K. Gullapalli, and D. P. Neikirk, "The effect of barrier thickness asymmetries on the electrical characteristics of AlAs/GaAs double barrier resonant tunneling diodes," **J. Vac. Sci. Technol. B 10**, Mar/Apr 1992, pp. 1042-1044.

52. T. R. Block, D. P. Neikirk, and B. G. Streetman, "Photoluminescence study of the effects of growth interruption on integer and fractional monolayer AlGaAs/GaAs quantum wells," **J. Vac. Sci. Technol. B 10**, Mar/Apr 1992, pp. 832-834.

53. Emre Tuncer and Dean P. Neikirk, "Highly Accurate Quasi-Static Modeling of Microstrip Lines Over Lossy Substrates," **IEEE Microwave and Guided Wave Letters 2**, Oct. 1992, pp. 409-411.

54. S. Javalagi, V. Reddy, K. Gullapalli, and D. Neikirk, "High efficiency microwave diode oscillators," **Electronics Letters 28**, 27 August 1992, pp. 1699-1701.

55. K. K. Gullapalli, A. J. Tsao, and D. P. Neikirk, "Multiple self-consistent solutions at zero bias and multiple conduction curves in quantum tunneling diodes containing N^- - N^+ - N^- spacer layers," **Appl. Phys. Lett. 62**, 7 June 1993, pp. 2971-2973.

56. K. K. Gullapalli, A. J. Tsao, and D. P. Neikirk, "Experimental observation of multiple current - voltage curves and zero-bias memory in quantum well diodes with N^- - N^+ - N^- spacer layers," **Appl. Phys. Lett. 62**, 31 May 1993, pp. 2856-2858.

57. V. K. Reddy and D. P. Neikirk, "High breakdown voltage AlAs/InGaAs quantum barrier varactor diodes," **Electronics Letters 29**, 4 March 1993, pp. 464-466.

58. T. R. Block, D. P. Neikirk, and B. G. Streetman, "Molecular-beam epitaxial growth condition dependence of reflection high-energy electron diffraction dampening and quantum well photoluminescence," **J. Vac. Sci. Technol. B 11**, May/June 1993, pp. 791-

794.

59. Y. C. Albert Shih, D. P. Neikirk, B. G. Streetman, and C. W. Magee "Effects of As flux on Si δ-doped GaAs," **J. Vac. Sci. Technol. B 11**, May/June 1993, pp. 905-907.

60. T. J. Mattord, K. Sadra, A. Srinivasan, A. Tang, T. R. Block, Y. C. Albert Shih, D. P. Neikirk, and B. G. Streetman, "Real-time flux monitoring and feedback control of a valved arsenic source," **J. Vac. Sci. Technol. B 11**, May/June 1993, pp. 1050-1052.

61. M. Saiful Islam, Emre Tuncer and Dean P. Neikirk, "Calculation of Conductor Loss in Coplanar Waveguide using Conformal Mapping," **Electronics Letters 29**, 24 June 1993, pp. 1189-1191.

62. Emre Tuncer and Dean P. Neikirk, "Efficient Calculation of Surface Impedance for Rectangular Conductors," **Electronics Letters 29**, 25 Nov. 1993, pp. 2127-2128.

63. K. Sadra, A. Srinivasan, D. P. Neikirk, and B. G. Streetman, "Speed and Efficiency in Multiple p-i-n Photodetectors," **IEEE J. Lightwave Technol. 11**, December 1993, pp. 2052-2056.

64. K. K. Gullapalli, D. R. Miller, and D. P. Neikirk, "Simulation of quantum transport in memory-switching double-barrier quantum-well diodes," **Phys. Rev. B (Condensed Matter) 49**, 15 January 1994, pp. 2622-2628.

65. M. Saiful Islam, Emre Tuncer and Dean P. Neikirk, "Accurate Model for Schottky-Contacted Coplanar Waveguide Including Finite Epilayer Resistance Effects," **Electronics Letters 30**, 28 April 1994, pp. 712-713.

66. Emre Tuncer, B.-T. Lee, M. S. Islam, and D. P. Neikirk, "Quasi-Static Conductor Loss Calculations in Transmission Lines using a New Conformal Mapping Technique," **IEEE Trans. Microwave Theory Tech. 42**, September 1994, pp. 1807-1815.

67. Youngmin Kim and D. P. Neikirk, "Micromachined Fabry-Perot Cavity Pressure Transducer," **IEEE Photonics Technology Letters 7**, Dec. 1995, pp. 1471-1473.

68. Youngmin Kim and Dean P. Neikirk, "Design for Manufacture of Micro Fabry-Perot Cavity-based Sensors," **Sensors and Actuators A 50**, Jan. 1996, pp. 141-146.

69. I. Busch-Vishniac, C. S. Chu, S. Flagg, V. Gupta, C. Hearn, Y. Kim, P. Koeneman, W. Maddox, D. Masser, D. Neikirk, W. Weldon, H. Wells, and K. Wood, "Smart Hydrodynamic Bearings with Embedded MEMS Devices," Journal of Tribology, submitted 3/96, 1996.

70. John J. Lavigne, Steve Savoy, Marvin B. Clevenger, Jason E. Richie, Bridget McDoniel, Seung-Jin Yoo, Eric V. Anslyn, John T. McDevitt, Jason B. Shear, and Dean Neikirk, "Solution-Based Analysis of Multiple Analytes by a Sensor Array: Toward the

Development of an 'Electronic Tongue'," *Journal of the American Chemical Society*, vol. 120, July, 1998, pp. 6429-6430.

71. K. L. Wood, D. Neikirk, I. Busch-Vishniac, W. Weldon, C.-S. Chu, Y. Kim, V. Gupta, W. Maddox, and D. Masser, "MEMs hydrodynamic bearings: Applications to and implications for machine failure prevention," *TriboTest*, vol. 4, pp. 275-288, 1998.

72. R. J. Friar and D. P. Neikirk, "Limitations on the Extraction of Loss Tangent from Submicron Transmission Line Test Structures," *IEEE TRANSACTIONS ON ADVANCED PACKAGING*, vol. 23, p. 393, August 2000.

73. T. Curey, A. Goodey, A. Tsao, J. Lavigne, Y. Sohn, J. McDevitt, E. Anslyn, D. Neikirk, and J. Shear, "Characterization of multicomponent monosaccharide solutions using an enzyme-based sensor array," *ANALYTICAL BIOCHEMISTRY*, vol. 293, June 15, pp. 178-184, 2001.

74. Goodey, Adrian; Lavigne, John J.; Savoy, Steve M.; Rodriguez, Marc D.; Curey, Theodore; Tsao, Andrew; Simmons, Glen; Wright, John; Yoo, Seung-Jin; Sohn, Youngsoo; Anslyn, Eric V.; Shear, Jason B.; Neikirk, Dean P.; McDevitt, John T., "Development of multianalyte sensor arrays composed of chemically derivatized polymeric microspheres localized in micromachined cavities," JOURNAL OF THE AMERICAN CHEMICAL SOCIETY 123 (11): pp. 2559-2570 MAR 21 2001.

75. N. Christodoulides, M. Tran, P. Floriano, N. Pierre, M. Rodriguez, A. Goodey, M. Ali, D. Neikirk, and J, McDevitt, "A novel Microchip-based Multi-Analyte Assay System for the Assessment of Cardiac Risk," Analytical Chemistry 74 (13), July 1, 2002, pp. 3030-3036.

76. L. Vardapetyan, L. Demkowicz, and D. Neikirk, "hp-Vector finite element method for eigenmode analysis of waveguides," *Comput. Methods Appl. Mech. Engrg.*, vol. 192, Jan. 3, 2003, pp. 185–201.

77. Ali, Mehnaaz F.; Kirby, Romy; Goodey, Adrian P.; Rodriguez, Marc D.; Ellington, Andrew D.; Neikirk, Dean P.; McDevitt, John T.; "DNA hybridization and discrimination of single-nucleotide mismatches using chip-based microbead arrays," Analytical Chemistry, v 75, n 18, Sep 15, 2003, p 4732-4739.

78. Sohn, Young- Soo; Goodey, Adrian; Anslyn, Eric V.; McDevitt, John T.; Shear, Jason B.; Neikirk, Dean P., "A micromachined fluidic structure for capillary-based sample introduction into a microbead array chemical sensor," Sensor Letters, vol. 2, No. 1, March 1, 2004, pp. 69-72.

79.. Kirby, Romy; Cho, Eun Jeong; Gehrke, Brian; Bayer, Travis; Park, Yoon Sok; Neikirk, Dean P.; McDevitt, John T.; Ellington, Andrew D.; "Aptamer-based sensor arrays for the detection and quantitation of proteins," Analytical Chemistry, v 76, n 14, Jul 15, 2004, p 4066-4075.

80. Sang-Wook Han, Jun-Wan Kim, Young-Soo Sohn, and Dean P. Neikirk "Design of Infrared Wavelength-Selective Microbolometers Using Planar Multimode Detectors," IEE Electronics Letters, vol. 40, No. 22, October 28, 2004, pp. 1410-1411.

81. Young-Soo Sohn, Adrian Goodey, Eric V. Anslyn, John T. McDevitt, Jason B. Shear and Dean P. Neikirk, "A microbead array chemical sensor using capillary-based sample introduction: toward the development of an 'electronic tongue'," Biosensors and Bioelectronics, Vol. 21, Aug. 8, 2005, pp. 303-312. (http://www.sciencedirect.com/science/article/B6TFC-4DXT7XR-2/2/63c4b30ed5019368cbf0daa18e961915).

82. Shifeng Li, Pierre N. Floriano, Nicolaos Christodoulides, David Y. Fozdar, Dongbing Shao, Mehnaaz F. Ali, Priya Dharshan, Sanghamitra Mohanty, Dean Neikirk, John T. McDevitt and Shaochen Chen, "Disposable polydimethylsiloxane/silicon hybrid chips for protein detection," Biosensors and Bioelectronics, Vol. 21, No. 4, Oct. 15, 2005, pp. 574-580. (http://www.sciencedirect.com/science/article/B6TFC-4F9MTDX-1/2/8723de52f98adaf1e55f417c04de29cb)

83. Han, S. W., Park, Y. S., Neikirk, D. P., "Broadband infrared detection using Jaumann absorbers with genetic algorithm," Electronics Letters, v 41, n 24, Nov 24, 2005, pp. 1307-1308.

84. Abu Yousef, A., Wood, S.L., Pasupathy, P., and Neikirk, D.P., "Resonant Sensors for Detecting Corrosion in Concrete Bridges," *Transportation Research Record*, Transportation Research Board, No. 2201, December 2010, pp. 19-26.

85. Sheng Zhang, Praveenkumar Pasupathy, and Dean Neikirk, "Microfabricated self-resonant structure as a passive wireless dielectric constant and conductivity sensor," *Microsystem Technologies*, Springer Berlin / Heidelberg, Issn: 0946-7076, pp. 1-7, http://dx.doi.org/10.1007/s00542-011-1403-y , Doi: 10.1007/s00542-011-1403-y.

86. Jong Yeon Park, Praveen Pasupathy and Dean P. Neikirk, "Wavelength Selective Microbolometers with Low Deformation Membranes Using a Planar Self-aligned Process," submitted to be considered for publication in the Journal of Micro/Nanolithography, MEMS, and MOEMS (JM3), April 2012.

87. Jeremiah Fasl, Todd Helwig, Sharon L. Wood, Praveen Pasupathy, Dean P. Neikirk, Frank Raffaeli, "Factors Affecting Wireless Network Communication in Monitoring Systems for Steel Bridges," Journal of Civil Structural Health Monitoring, Volume 2, Issue 2, September 2012, pp. 87-95.

88. Joo-Yun Jung, Jong Yeon Park, Sangwook Han, Aniruddha Weling, and Dean P Neikirk, "Wavelength-selective infrared Salisbury screen absorber," APPLIED OPTICS, Vol. 53, No. 11,10 April 2014, pp. 2431-2436

89. Ignacio F. Gallardo, Praveenkumar Pasupathy, Maxwell Brown, Carol M. Manhart, Dean P. Neikirk, Eric Alani, and Ilya J. Finkelstein, "High-Throughput Universal DNA Curtain Arrays for Single-Molecule Fluorescence Imaging," Langmuir, Vol. 31 (37), pp 10310–10317, Sept. 1, 2015. doi: 10.1021/acs.langmuir.5b02416.

90. Shixuan Yang, Ying-Chen Chen, Luke Nicolini, Praveenkumar Pasupathy, Jacob Sacks, Su Becky, Russell Yang, Sanchez Daniel, Yao-Feng Chang, Pulin Wang, David Schnyer, Dean Neikirk and Nanshu Lu, " 'Cut-and-Paste' Manufacture of Multiparametric Epidermal Sensor Systems," Advanced Materials, Vol. 27, No. 41, 11/1/2015, pp. 6423-6430.

91. Praveen Pasupathy, Tanuj Trivedi, Brad Leonhardt, Sheng Zhang, John G. Ekerdt, and Dean P. Neikirk, "Miniature Passive Wireless Resonant Platform for Chemical Memory based Threshold Sensing," IEEE Sensors Journal, Volume: 17, Issue: 5, March 1, 1 2017, pp. 1209 - 1210; DOI: 10.1109/JSEN.2016.2646686

92. Jung, Joo-Yun; Song, Kyungjun; Choi, Jun-Hyuk; Lee, Jihye; Choi, Dae-Geun; Jeong, Jun-Ho; Neikirk, Dean P., "Infrared broadband metasurface absorber for reducing the thermal mass of a microbolometer," Scientific Reports, Vol. 7, No. 430, March 27, 2017, 8 pages, 10.1038/s41598-017-00586-x.

93. Tanuj Trivedi, Anupam Roy, Hema C. P. Movva, Emily S. Walker, Seth R. Bank, Dean P. Neikirk, and Sanjay K. Banerjee, "Versatile Large-Area Custom-Feature van der Waals Epitaxy of Topological Insulators," ACS Nano, 2017, 11 (7), pp 7457–7467, DOI: 10.1021/acsnano.7b03894, Publication Date (Web): July 10, 2017.

94. Brad Leonhardt, Praveen Pasupathy, Tanuj Trivedi, Sheng Zhang, Dean P. Neikirk, and John G. Ekerdt, "Functionalized Polycyclic Aromatic Polymers for High Temperature Wireless Chemical Memory Threshold Sensors," submitted to ACS Ind. Eng. Chem. Res., 2017, 56 (19), pp 5479–5482, DOI: 10.1021/acs.iecr.6b04541, Publication Date (Web): May 2, 2017.

95. Tanuj Trivedi, Ye Chen, Ian A. D. Williamson, Praveen Pasupathy, and Dean P. Neikirk, "Group Velocity Estimation and Defect Localization in Magneto-inductive Waveguides," to be published in the IEEE Transactions on Microwave Theory and Techniques, Volume 6, April 2021, DOI: 10.1109/TMTT.2021.3055350, pp. 2072-2077.

Praveen Pasupathy, Vivek Subramanian, Ali Abu-Yousef, Sharon Wood, and Dean Neikirk, "Phase Detection of Passive Inductively Coupled Resonant Sensors," to be submitted to IEEE Sensors Letters.

Jong Yeon Park, Praveen Pasupathy and Dean P. Neikirk, "Wavelength Selective Microbolometers with Low Deformation Membranes Using a Planar Self-aligned Process," in preparation.

Sheng Zhang, Praveen Pasupathy, Dean Neikirk, “Extension of Interdigitated Capacitor Sensor Model for Conductive Material Measurement,” in preparation.

Sheng Zhang, Praveen Pasupathy, Dean Neikirk, “Circuit model for estimating resonant frequency of inductively coupled self resonant sensor,” in preparation.

B. Refereed Conference Proceedings

1. D. P. Neikirk, D. B. Rutledge, M.S. Muha, H. Park, and C.-X. Yu, "Progress in Millimeter-Wave Integrated-Circuit Imaging Arrays," SPIE Conf. on Integrated Optics and Millimeter and Microwave Integrated Circuits, Huntsville, Alabama, November, 1981.

2. D. P. Neikirk, D. B. Rutledge, M.S. Muha, H. Park, and C.-X. Yu, "Imaging Antenna Arrays," 6th Int. Conf. on Inf. and Millimeter Waves, Miami Beach, Florida, December, 1981, p. Th-4-1.

3. D. P. Neikirk, D. B. Rutledge, H. Park, C.-X. Yu, W. A. Peebles and N. C. Luhmann, Jr., "Development of Imaging Arrays for Poloidal Field Determination and Holographic Imaging of Plasmas," Proc. of U.S.A. - Japan Workshop on Submillimeter Diagnostic Techniques, Nagoya, US-J FRC-006, p. 60, January, 1982.

4. D. P. Neikirk, D. B. Rutledge, P. E. Young, N. C. Luhmann, Jr., H. Park, W. A. Peebles, and C.-X. Yu, "Far-Infrared Imaging Systems for the Determination of Fusion Plasma Density and Magnetic Field Distributions," Department of Energy Workshop on Magnetic Field Measurements, Oak Ridge, Tennessee, April, 1982.

5. P. Young, Q.-X. Yu, W. A. Peebles, N. C. Luhmann, Jr., D. P. Neikirk, D. B. Rutledge, and P. Tong, "Far-Infrared Imaging," Digest 7th Int. Conf. on Inf. and Millimeter Waves, Marseille, France, February, 1983, p. J3-4.

6. D. P. Neikirk, P.P. Tong, D. B. Rutledge, and P. E. Young, "Progress in Far-Infrared Imaging Arrays," 7th Int. Conf. on Inf. and Millimeter Waves, Marseille, France, February, 1983, p. J3-3.

7. P. E. Young, W. A. Peebles, N. C. Luhmann, Jr., R. J. Taylor, D. P. Neikirk, D. B. Rutledge, and P.P. Tong, "Simultaneous FIR Interferometry/Polarimetry in the UCLA Microtor Plasma," 8th Int. Conf. on Infrared and Millimeter Waves, Miami, Florida, December, 1983.

8. P. E. Young, W. A. Peebles, N. C. Luhmann, Jr., D. P. Neikirk, D. B. Rutledge, and P.P. Tong, "Interferometric FIR Phase Imaging of a Tokamak Plasma," 8th Int. Conf. on Infrared and Millimeter Waves, Miami, Florida, December, 1983.

9. D. P. Neikirk and D. B. Rutledge, "Advances in Microbolometers," 8th Int. Conf. on Infrared and Millimeter Waves, Miami, Florida, December, 1983.

10. P.P. Tong, D. B. Rutledge, and D. P. Neikirk, "Polarization- sensitive imaging arrays," IEEE MTT-S International Microwave Symposium, San Francisco, Ca., May 29- June 1, 1984, pp. 542-544.

11. Y. Fukuaka, Q. Zhang, D. Neikirk, and T. Itoh, "Analysis of multilayer interconnection lines for a high speed digital integrated circuit," IEEE VLSI Multilevel Interconnection Conference, June 21-22, 1984, pp. 246-251.

12. P. Young, D. Neikirk, C. Domier, P. Tong, W. Peebles, D. Rutledge, and N. Luhmann, "Near-millimeter wave imaging," 9th Int. Conf. on Infrared and Millimeter Waves, Takarazuka, Japan, Oct. 22-26, 1984, pp. 250-251.

13. P. Cheung, D. Fun, D. Miller, C.-K. C. Tzuang, D. P. Neikirk, and T. Itoh, "Optically Controlled Coplanar Waveguide Millimeter Wave Phase Shifter," Tenth International Conference on Infrared and Millimeter Waves, Lake Buena Vista, FL, Dec. 9-13, 1985, pp. 303-304.

14. N. U. Song, D. P. Neikirk, and T. Itoh, "Device Modeling and Characterization of Ion-Implanted GaAs MESFET's by the Finite Element Method," 8th Colloquium on Microwave Communication, Budapest, Hungary, August 26-29, 1986.

15. C.-K. Tzuang, P. Cheung, D. P. Neikirk, and T. Itoh, "Analysis of an Optically Controlled CPW Phase Shifter Containing Laterally Non-uniform Lossy Layers, Eleventh International Conference on Infrared and Millimeter Waves, Pisa, Italy, Dec., 1986, pp. 127-129.

16. V. Kesan, D. P. Neikirk, and B G. Streetman, "A Proposed Quantum Well Injection Transit Time Device (QWITT)," Second Topical Meeting on Picosecond Electronics and Optoelectronics, Jan., 1987, pp. 66-68.

17. C.-K. Tzuang, D. Miller, T.-H. Wang, D. P. Neikirk, T. Itoh, P. Williams, and M. Downer, "Picosecond Response of an Optically Controlled Millimeterwave Phase Shifter," Second Topical Meeting on Picosecond Electronics and Optoelectronics, Jan., 1987, pp. 182-184.

18. Y.-D. Lin, D. P. Neikirk, and T. Itoh, "Periodically Illuminated CPW Phase Shifter," 12th International Conference on Infrared and Millimeter Waves, Dec. 14-18, 1987, pp. 93-94.

19. V. P. Kesan, D. P. Neikirk, T. D. Linton, P.A. Blakey, and B. G. Streetman, "Influence of Transit Time Effects on the Optimum Design and Maximum Oscillation Frequency of Quantum Well Oscillators," 12th International Conference on Infrared and Millimeter Waves, Dec. 14-18, 1987, pp. 12-13.

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20. P. Cheung, D. P. Neikirk, and T. Itoh, "Measurements of an Optically Controlled Coplanar Waveguide Phase-Shifter," 12th International Conference on Infrared and Millimeter Waves, Dec. 14-18, 1987, pp. 91-92.

21. R. L. Rogers, D. P. Neikirk, and H. Ling, "Planar Matching of Antennas on Electrically Thick Dielectric Substrates," 12th International Conference on Infrared and Millimeter Waves, Dec. 14-18, 1987, pp. 288-289.

22. V. P. Kesan, T. D. Linton, C. M. Maziar, D. P. Neikirk, P.A. Blakey, and B. G. Streetman, "Power-optimized design of quantum well oscillators," 1987 IEEE International Electron Devices Meeting, Dec. 6-9, 1987, pp. 62-65.

23. S. M. Wentworth, D. P. Neikirk, and C. R. Brahce, "High Frequency Characterization of Tape-Automated Bonding (TAB) Interconnects," SPIE Advances in Semiconductors and Superconductors: Physics and Device Applications, Conf. 947: Interconnection of High Speed and High Frequency Devices and Systems, Newport Beach, CA, March 13-18, 1988. pp. 81-84.

24. D. R. Miller, V. P. Kesan, R. L. Rogers, C. M. Maziar, and D. P. Neikirk, "Time Dependent Simulation of the Quantum Well Injection Transit Time Diode," 13th International Conference on Infrared and Millimeter Waves, R. J. Temkin, Editor, SPIE Vol. 1039, Dec. 5-9, 1988, pp. 5-6.

25. P. Cheung, D. P. Neikirk, and T. Itoh, "Experimental Performance of a Periodically Illuminated Optically Controlled Coplanar Waveguide Phase Shifter," 13th International Conference on Infrared and Millimeter Waves, R.J. Temkin, Editor, SPIE Vol. 1039, Dec. 5-9, 1988, pp. 63-64.

26. R. L. Rogers, D. P. Neikirk, H. Ling, and T. Itoh, "Antennas on Electrically Thick Multilayered Substrates," 13th International Conference on Infrared and Millimeter Waves, R. J. Temkin, Editor, SPIE Vol. 1039, Dec. 5-9, 1988, pp. 33-34.

27. A. Mortazawi, V. P. Kesan, D. P. Neikirk, and T. Itoh, "Periodic Monolithic Millimeter-Wave Quantum Well Oscillator," 13th International Conference on Infrared and Millimeter Waves, R. J. Temkin, Editor, SPIE Vol. 1039, Dec. 5-9, 1988, pp. 47-48.

28. V. P. Kesan, A. Mortazawi, D. P. Neikirk, and T. Itoh, "Microwave and Millimeterwave QWITT Diode Oscillator," IEEE MTT-S International Microwave Symposium Digest, Vol. 1, June 13-15, 1989, pp. 487-489.

29. P Cheung, D. P. Neikirk, and T. Itoh, "An Optically Controlled Coplanar Waveguide Phase-Shifter," IEEE MTT-S International Microwave Symposium Digest, Vol. 1, June 13-15, 1989, pp. 307-309.

30. A. Mortazawi, V. P. Kesan, D. P. Neikirk, and T. Itoh, "A Self Oscillating QWITT

Diode Mixer," 19th European Microwave Conference, London, Engl., Sept. 4-7, 1989, pp. 715-718.

31. R. L. Rogers, D. P. Neikirk, and T. Itoh, "Impedance Measurements and Calculations of a Microstrip-fed Slot Antenna on a Multilayered Electrically Thick Dielectric Substrate," 19th European Microwave Conference, London, Engl., Sept. 4-7, 1989, pp. 167-171.

32. S. M Wentworth, R. L. Rogers, D. P. Neikirk, and T. Itoh, "A Twin Slot Antenna Structure on a Layered Substrate for Millimeter Wave Imaging Arrays," 14th International Conference on Infrared and Millimeter Waves, M. von Ortenberg, Editor, SPIE Vol. 1240, Oct. 2-6, 1989, pp. 399-400.

33. S. M. Wentworth, R. L. Rogers, J. G. Heston, and D. P. Neikirk, "Twin-slot multi-layer substrate-supported antennas and detectors for terahertz imaging," First International Symposium on Space Terahertz Technology, University of Michigan, Ann Arbor, Mich., March 5-6, 1990, pp. 201-213.

34. D. R. Miller, V. K. Reddy, and D. P. Neikirk, "Realistic Band Structure Effects of GaAs/AlAs Quantum Well Diodes: Theory and Experiment," Proceedings of the SPIE Symposium on Advances in Semiconductors and Superconductors: High Speed Electronics and Device Scaling, SPIE Vol. 1288, San Diego, CA, March 17-21, 1990, pp. 167-176.

35. P. Cheung, M.S. Islam, D. P. Neikirk, and T. Itoh, "Circuit Model of Coplanar Waveguide Phase Shifters on GaAs Substrates," Gallium Arsenide Applications Symposium '90, Rome, Italy, April 19-20, 1990.

36. P. Cheung, D. P. Neikirk, and T. Itoh, "Measurements of an Optically Controlled Co-Planar Waveguide Phase Shifter," Microwaves and Optronics Conference and Exhibition on Ultra High Frequency Engineering (MIOP 90), Stuttgart, West Germany, April 24-26, 1990.

37. S. M. Wentworth and D. P. Neikirk, "A Transition Edge Microbolometer (TREMBOL) for Far-Infrared Detection," SPIE Conference on Superconductivity Applications for Infrared and Microwave Devices, SPIE Proceedings Vol. 1292, Orlando, FL, April 19-20, 1990.

38. M.S. Islam, P. Cheung, C.-Y. Chang, D. P. Neikirk, and T. Itoh, "Optically-Controlled Tunable CPW Resonators," IEEE MTT-S International Microwave Symposium Digest, Vol. II, May 8-10, 1990, pp. 949-950.

39. S. M. Wentworth and D. P. Neikirk, "Far-Infrared Composite Microbolometers," IEEE MTT-S International Microwave Symposium Digest, Vol. III, May 8-10, 1990, pp. 1309-1310.

FORCEMOS EX. 2013, Pg. 19
Inergy v ForceMOS, IPR2024-00093

40. J. G. Heston, S. M. Wentworth, R. L. Rogers, D. P. Neikirk, and T. Itoh, "MM Wave /FIR Twin Slot Antenna Structures," AP-S International Symposium and URSI Radio Science Meeting, May, 1990.

41. T. Y. Chu, D. P. Neikirk, and B. G. Streetman, "Properties and Applications of $Al_xGa_{1-x}As$ Grown at Low Temperatures," Proceedings of the Sixth International Conference on Molecular Beam Epitaxy, Aug. 27-31, 1990, La Jolla, CA, Journal of Crystal Growth, vol. 111, n 1-4, May 2, 1991..

42. A. Mortazawi, D. Miller, D. P. Neikirk, and T. Itoh, "Small Signal Measurements of the Microwave Impedance of QWITT Diodes," 20th European Microwave Conference, Budapest, Hungary, Sept. 10-14, 1990, pp. 715-718.

43. V. K. Reddy, A. J. Tsao, S. Javalagi, D. R. Miller, and D. P. Neikirk, "Quantum Well Injection Transit Time (QWITT) Diode Oscillators," 15th International Conference on Infrared and Millimeter Waves, Richard J. Temkin, Editor, SPIE vol. 1514, Dec. 10-14, 1990, pp. 88-90.

44. M. S. Islam, P. Cheung, D. P. Neikirk, and T. Itoh, "Microwave response of a coplanar waveguide phase shifter to pulsed optical illumination," 15th International Conference on Infrared and Millimeter Waves, Richard J. Temkin, Editor, SPIE vol. 1514, Dec. 10-14, 1990, pp. 484-486.

45. J. M. Lewis, D. P. Neikirk, and S. M. Wentworth, "Low growth temperature GaAs microbolometers," 15th International Conference on Infrared and Millimeter Waves, Richard J. Temkin, Editor, SPIE vol. 1514, Dec. 10-14, 1990, pp. 398-400.

46. C. S. Kyono, P. Cheung, C. J. Pinzone, N. D. Gerrard, T. Bustami, C.M. Maziar, D. P. Neikirk, and R.D. Dupuis, "High gain, high speed InGaAs/InP heterojunction bipolar transistors," 1990 IEEE International Electron Devices Meeting, San Francisco, CA, Dec. 9-12,1990, pp. 677-680.

47. Nanda Gopal, Dean P. Neikirk, and Lawrence T. Pillage, "Evaluating RC-Interconnect using Moment-Matching Approximations," 1991 IEEE International Conference on Computer-Aided Design Digest of Technical Papers, Conference on Computer-Aided Design - ICCAD-91, Santa Clara, CA, Nov. 10-14, 1991, pp. 74-77.

48. K. K. Gullapalli, D. R. Miller, and D. P. Neikirk, "Hybrid Boltzmann Transport - Schrödinger Equation Model for Quantum Well Injection Transit (QWITT) Diodes," 1991 IEEE International Electron Devices Meeting, Washington, DC, Dec. 8-11, 1991, pp. 18.5.1-18.5.4.

49. Douglas R. Miller and D. P. Neikirk, "Lattice Wigner simulations of double barrier resonant tunneling devices," Third International Symposium on Space Terahertz Technology, The University of Michigan, Ann Arbor, Mich., March 24-26, 1992, pp. 560-574.

FORCEMOS EX. 2013, Pg. 20
Inergy v ForceMOS, IPR2024-00093

50. Youngmin Kim, Wanjun Wang, Dean P. Neikirk, and Ilene J. Busch-Vishniac, "Fabrication and characterization of a clover type position sensitive photodetector," IEEE Instrumentation / Measurement Technology Conference, New York NY, May 12-14, 1992.

51. Nanda Gopal, Emre Tuncer, Dean P. Neikirk, and Lawrence T. Pillage, "Non-uniform lumping models for transmission line analysis," IEEE Topical Meeting on Electrical Performance of Electronic Packaging, Tucson, AZ, April 22-24, 1992, pp. 119-121.

52. K. K. Gullapalli and D. P. Neikirk, "Evaluating space charge resistance in resonant tunneling diodes," 11th Annual Symposium on Electronic Materials, Processing, and Characterization, Richardson, TX, June 1-2, 1992.

53. D. R. Miller and D. P. Neikirk, "Realistic Lattice Wigner simulations of double barrier resonant tunneling devices," 11th Annual Symposium on Electronic Materials, Processing, and Characterization, Richardson, TX, June 1-2, 1992.

54. V. K. Reddy, S. Javalagi, and D. P. Neikirk, "Molecular beam epitaxial growth and characterization of double barrier resonant tunneling diodes for microwave oscillator applications," 11th Annual Symposium on Electronic Materials, Processing, and Characterization, Richardson, TX, June 1-2, 1992.

55. Alwin J. Tsao, M. S. Islam, and D. P. Neikirk, "Epitaxial liftoff of GaAs/AlGaAs thin film device structures for hybrid integration on silicon and quartz substrates," 11th Annual Symposium on Electronic Materials, Processing, and Characterization, Richardson, TX, June 1-2, 1992 (Best Student Paper Award).

56. A. J. Tsao, K. K. Gullapalli, and D. P. Neikirk, "Effect of barrier asymmetries in AlAs/GaAs double barrier resonant tunneling diodes: experiment and numerical simulation," 11th Annual Symposium on Electronic Materials, Processing, and Characterization, Richardson, TX, June 1-2, 1992.

57. K. K. Gullapalli, A. J. Tsao, and D. P. Neikirk, "Observation of zero-bias multi-state behavior in selectively doped two-terminal quantum tunneling devices," 1992 IEEE International Electron Devices Meeting, San Francisco, CA, Dec. 13-16, 1992, pp. 479-482.

58. D. R. Miller and D. P. Neikirk, "Lattice Wigner Simulations of Quantum Devices," 1992 IEEE International Electron Devices Meeting, San Francisco, CA, Dec. 13-16, 1992, pp. 561-564.

59. J. M. Lewis and D. P. Neikirk, "HiTc composite microbolometers using YBCO," 17th International Conference on Infrared and Millimeter Waves, Richard J. Temkin, Editor, SPIE vol. 1929, Dec. 14-17, 1992, pp. 202-203.

60. V. K. Reddy and D. P. Neikirk, "AlAs/InAs heterojunction barrier varactors," 17th

International Conference on Infrared and Millimeter Waves, Richard J. Temkin, Editor, SPIE vol. 1929, Dec. 14-17, 1992, pp. 358-359.

61. A. J. Tsao, M. Saiful Islam, and D. P. Neikirk, "Hybrid integration of millimeter wave devices using the epitaxial lift-off (ELO) technique," 17th International Conference on Infrared and Millimeter Waves, Richard J. Temkin, Editor, SPIE vol. 1929, Dec. 14-17, 1992, pp. 421-422.

62. M. Saiful Islam, Emre Tuncer and Dean P. Neikirk, "Accurate Quasi-Static Model for Conductor Loss in Coplanar Waveguide," 1993 IEEE MTT-S International Microwave Symposium Digest, Vol. II, pp. 959-962.

63. V. K. Reddy, S. Javalagi, and D. P. Neikirk, "AlAs/InGaAs Single Barrier Diodes," 12th Annual Symposium on Electronic Materials, Processing, and Characterization, Austin, TX, June 7-8, 1993.

64. Y. Kim and D. P. Neikirk, "Monolithically integrated optical pressure microsensor," 12th Annual Symposium on Electronic Materials, Processing, and Characterization, Austin, TX, June 7-8, 1993.

65. K. K. Gullapalli and D. P. Neikirk, "Memory Switching Phenomena in Quantum Well Diodes," 12th Annual Symposium on Electronic Materials, Processing, and Characterization, Austin, TX, June 7-8, 1993.

66. E. Tuncer, S. Y. Kim, L. T. Pillage and D. P. Neikirk, "A new, efficient circuit model for microstrip lines including both current crowding and skin depth effects" IEEE 2nd Topical Meeting on Electrical Performance of Electronic Packaging, Monterey, CA, Oct. 20-22, 1993, pp. 85-88.

67. S. Y. Kim, E. Tuncer, R. Gupta, B. Krauter, D. P. Neikirk, and L. T. Pillage, "An Efficient Methodology for Extraction and Simulation of Transmission Lines for Application Specific Electronic Modules," IEEE/ACM International Conference on Computer-Aided Design - 93, Santa Clara, CA, Nov. 7-11, 1993, pp. 58-65.

68. K. K. Gullapalli, D. R. Miller, and D. P. Neikirk, "Wigner-Poisson simulation of memory switching heterostructure tunneling diodes," 1993 IEEE International Electron Devices Meeting, Washington, DC, Dec. 5-8, 1993, pp. 109-112.

69. T. R. Block, K. G. Eyink, D. P. Neikirk, and B. G. Streetman, "Diffraction condition dependence of RHEED dampening during MBE growth," Epitaxial Growth Processes, Proc. SPIE Conf. on Optics, Electro-optics, and Laser Applications, SPIE Vol. 2140, Los Angeles, CA, Jan. 26-27, 1994, pp. 10-24.

70. K. K. Gullapalli and D. P. Neikirk, "Incorporating spatially varying effective-mass in the Wigner-Poisson model for AlAs/GaAs resonant-tunneling diodes," Proceedings of the Third Annual International Workshop on Computational Electronics, Portland, OR, May

18-20, 1994, pp. 171-174.

71. E. Tuncer, Beom-Taek Lee, and D. P. Neikirk, "Interconnect Series Impedance Determination Using a Surface Ribbon Method" IEEE 3rd Topical Meeting on Electrical Performance of Electronic Packaging, Monterey, CA, Nov. 2-4, 1994, pp. 250-252.

72. C. Hearn, W. Maddox, Y. Kim, V. Gupta, D. Masser, P. Koeneman, C. S. Chu, I. Busch-Vishniac, D. Neikirk, W. Weldon, and K. Wood, "Smart Mechanical Bearings Using MEMS Technology," ASME Energy and Environment EXPO '95: Tribology Symposium 1995, editor: H. Masudi, Houston, TX, Jan. 29 - Feb. 1, 1995, pp. 1-10.

73. Y. Kim and D. P. Neikirk, "Fabry Perot Pressure Sensor," *AVS 14th Annual Symposium on Electronic Materials, Processing, and Characterization*, Austin, Texas, June 6-7, 1995.

74. O. Hartin and D. P. Neikirk, "Memory Switching in RTDs," *AVS 14th Annual Symposium on Electronic Materials, Processing, and Characterization*, Austin, Texas, June 6-7, 1995.

75. V. Gupta and D. P. Neikirk, "Design and Fabrication of an Inductive Proximity Sensor using a Two-Coil Planar Transformer on a Micromachined Membrane," *AVS 14th Annual Symposium on Electronic Materials, Processing, and Characterization*, Austin, Texas, June 6-7, 1995.

76. D. P. Neikirk, E. Tuncer, and B.-T. Lee, "The Use of Effective Internal Impedance Approximations in Lossy Transmission Line Modeling," *Progress in Electromagnetics Research Symposium PIERS 95*, The Universtity of Washington, Seattle, Washington, July 24-28, 1995, p. 955.

77. D. P. Neikirk, M. S. Islam, and E. Tuncer, "Accurate Quasi-Static Modeling of Transmission Lines on Semiconducting Substrates," *Progress in Electromagnetics Research Symposium PIERS 95*, The Universtity of Washington, Seattle, Washington, July 24-28, 1995, p. 929.

78. B. Krauter, D. P. Neikirk, and L. T. Pillage, "Sparse Partial Inductance Matrix Formulation," *Progress in Electromagnetics Research Symposium PIERS 95*, The University of Washington, Seattle, Washington, July 24-28, 1995, p. 957.

79. O. Hartin, D. P. Neikirk, A. Anselm, and B. Streetman, "Design and Fabrication of a Three Terminal Quantum Storage Device," Proceedings of the 1995 IEEE/Cornell Conference on Advanced Concepts in High Speed Semiconductor Devices and Circuits, Cornell University, Ithaca, NY, USA, August 7-9, 1995, p. 209-218.

80. K. L. Wood, I. Busch-Vishniac, D. Neikirk, and W. Weldon, "Smart Hydrodynamic Bearing Applications of Micro-Electro-Mechanical Systems," *American Society of Mechanical Engineers' 1995 International Mechanical Engineering Congress and*

FORCEMOS EX. 2013, Pg. 23
Inergy v ForceMOS, IPR2024-00093

Exposition, San Francisco, Nov. 12-17, 1995.

81. B.-T. Lee, E. Tuncer, and D. P. Neikirk, "Efficient 3-D Series Impedance Extraction using Effective Internal Impedance," *IEEE 4th Topical Meeting on Electrical Performance of Electronic Packaging*, Portland, OR, October 1-4, 1995, pp. 220-222.

82. V. Gupta and D. P. Neikirk, "Design of an Eddy-Current Proximity Sensor using a Two-Coil Planar Transformer," in Micromachined Devices and Components, Ray Roop, Kevin Chau, Editors, Proc. SPIE 2642, pp. 173-182, Austin, Texas, USA, 23-24 October, 1995.

83. Y. Kim and D. P. Neikirk, "Micromachined Fabry-Perot Pressure Transducer with Optical Fiber Interconnects," in Micromachined Devices and Components, Ray Roop, Kevin Chau, Editors, Proc. SPIE 2642, pp. 242-249, Austin, Texas, USA, 23-24 October, 1995.

84. Kristin L. Wood, Dean Neikirk, Ilene Busch-Vishniac, and William Weldon, "MEMS Hydrodynamic Bearings: Applications and Implications to Machine-Failure Prevention," Proceedings of a Joint Conference on Integrated Monitoring, Diagnostics and Failure Prevention, Joint Oil Analysis program Technical Support Center, University of Wales, Swansea, Mobile, AL, April 22-26, 1996, pp. 363-372.

85. S. Kim and D. P. Neikirk, “Compact Equivalent Circuit Model for the Skin Effect,” 1996 IEEE-MTT-S International Microwave Symposium, San Francisco, California, June 17-21, 1996, pp. 1815-1818.

86. J. Han, D. P. Neikirk, M. Clevenger, and J. T. McDevitt, “Fabrication and characterization of a Fabry-Perot based chemical sensor,” SPIE Microelectronic Structures and MEMS for Optical Processing II, M. E. Motamedi and W. Bailey, editors, Proc. SPIE 2881, Austin, Texas, USA, 14-15 October, 1996, pp. 171-178.

87. J. Han and D. P. Neikirk, “Deflection behavior of Fabry-Perot pressure sensors having planar and corrugated membrane,” SPIE's Micromachining and Microfabrication '96 Symposium: Micromachined Devices and Components II, R. Roop and K. Chau, Proc. SPIE 2882, Austin, Texas, USA, 14-15 October, 1996, pp. 79-90.

88. B.-T. Lee and D. P. Neikirk, "Minimum Segmentation in the Surface Ribbon Method for Series Impedance Calculations of Microstrip Lines," *IEEE 5th Topical Meeting on Electrical Performance of Electronic Packaging*, Napa, CA, October 28-30, 1996, pp. 233-235.

89. S. -J. Yoo, J. Lavigne, S. Savoy, J. B. McDoniel, E. V. Anslyn, J. T. McDevitt, D. P. Neikirk, J. B. Shear, “Micromachined storage wells for chemical sensing beads in an ‘artificial tongue’,” SPIE's Micromachining and Microfabrication '96 Symposium: Micromachined Devices and Components III, K. Chau and P. J. French, editors, Proc. SPIE 3224, Austin, Texas, USA, 29-30 September, 1997.

90. Sangwoo Kim and Dean P. Neikirk, "Time Domain Multiconductor Transmission Line Analysis Using Effective Internal Impedance," *IEEE 6th Topical Meeting on Electrical Performance of Electronic Packaging*, San Jose, CA, October 27 - 29, 1997, pp 255-258.

91. S.-J. Yoo, R. Friar, and D. P. Neikirk, "Analytic modeling of monolithic inductors on semiconductor substrates," IEEE Topical Meeting on Electrical Performance of Electronic Packaging, , Oct 26-28, 1998, pp. 219-222.

92. S. Savoy, J. J. Lavigne, J. S.-J. Yoo, J. Wright, M. Rodriguez, A. Goodey, B. McDoniel, J. T. McDevitt, E. V. Anslyn, J. B. Shear, A. Ellington, and D. P. Neikirk, "Solution-based analysis of multiple analytes by a sensor array: toward the development of an electronic tongue," SPIE Chemical Microsensors and Applications, Vol. 3539, Boston, MA, Nov. 4, 1998, pp. 17-26.

93. J. J. Lavigne, A. Metzger, K. Niikura, L. A. Cabell, S. M. Savoy, J. S. Yoo, J. T. McDevitt, D. P. Neikirk, J. B. Shear, and E. V. Anslyn, "Single-analyte to multianalyte fluorescence sensors," SPIE Advances in Fluorescence Sensing Technology IV, S. A. Soper and R. B. Thompson, Vol. 3602, Boston, MA, May, 1999, pp. 220-231.

94. R. J. Friar and D. P. Neikirk, "Experimental Determination of the Importance of Inductance in Sub-Micron Microstrip Lines," IEEE 1999 International Interconnect Technology Conference, San Francisco, May 24-26, 1999, pp. 176-177.

95. Eames, Sara J.; Yoo, J. Seung-Jin; Warner, John C.; Neikirk, Dean P.; McDevitt, John Thomas, "Lithographically patterned superconductor bolometer detectors for visible and near-infrared radiation incorporating wavelength-selective light-absorbing elements," Proc. SPIE-Int. Soc. Opt. Eng. (1999), 3790 (Engineered Nanostructural Films and Materials), pp. 160-168, July 23, 1999.

96. R. Friar and D. P. Neikirk, "Limitations due to systematic phase errors on the extraction of loss tangent from micron-sized transmission line test structures," IEEE Topical Meeting on Electrical Performance of Electronic Packaging, San Diego, CA, October 25-27, 1999, p. 67-70.

97. Youngsoo Sohn, John Levigne, Dr. Yi Deng, Adrian Goodey, Marc Rodriquez, Andrew Tsao, Theodore E. Curey, Dean P. Neikirk, Eric Anslyn, John McDevitt, and Jason Shear, "Micromachined multi-analyte sensors: towards an 'electronic tongue'," NASA NanoSpace 2000, International Conference on Integrated Nano/Microtechnology for Space Applications, League City, TX, Jan. 23-28, 2000.

98. Y.-S. Sohn, A. Tsao, E. Anslyn, J. McDevitt, J. B. Shear, and D. P. Neikirk, "Liquid Flow through an Array-based Chemical Sensing System," Proc. SPIE-Int. Soc. Opt. Eng. (2000), 4177 (Microfluidic Devices and Systems III), Sept. 18-21, 2000, pp. 212-219.

99. Young-Soo Sohn, Adrian P. Goodey, Eric V. Anslyn, John T. McDevitt, Jason B. Shear, and Dean P. Neikirk, “MEMS Based Microfluidic Structure for Biological and Chemical Sensor Array,” TEX MEMS III, Dallas, TX, June 7, 2001, p. 23.

100. S. C. McCleskey, A. P. Goodey, M. D. Rodriguez, J. T. McDevitt, E. V. Anslyn, and D. P. Neikirk, "Development of a multi-component sensor array for the simultaneous detection of various analytes in solution," presented at 222nd ACS National Meeting,, Chicago, IL, 2001.

101. D. Neikirk, Y. Sohn, S. Yoo, B. Park, Y. Park, B. Woo, and S. Wood, "From medical to structural health monitoring: electronic taste chips to electronic structural surveillance tags," presented at International Sensor Conference 2001 (ISC 2001), Seoul, Korea, 2001.

102. Y.-S. Sohn, A. P. Goodey, E. Anslyn, J. McDevitt, J. Shear, and D. P. Neikirk, "Development of a Micromachined Fluidic Structure for a Biological and Chemical Sensor Array," presented at Fifth International Conference on Miniaturized Chemical and Biochemical Analysis Systems, µTAS 2001, Monterey, California, 2001.

103. S. Wood and D. Neikirk, "Development of a passive sensor to detect cracks in welded steel construction," presented at US-Japan Joint Workshop and Third Grantees Meeting, US-Japan Cooperative Research in Urban Earthquake Disaster Mitigation, Seattle, 2001.

104. T. Postlethwaite, T. Spain-Santanta, P. Zhang, R. Priest, J. McDevitt, J. Shear, D. Neikirk, E. Anslyn, S. McCleskey, and P. Floriano, "Electronic taste chip sensor for the detection of chemical and biological targets," presented at SPIE AeroSense 2002: Conference 4722 Chemical and Biological Sensing III, Orlando, Florida, 2002.

105. Wiskur, Sheryl L.; Metzger, Axel; Lavigne, John J.; Schneider, Stephen E.; Anslyn, Eric V.; McDevitt, John T.; Neikirk, Dean; Shear, Jason B.; “Mimicking the mammalian sense of taste through single-component and multicomponent analyte sensors,” ACS Symposium Series, v 825, 2002, p 276-288.

106. Novak, Lisa J.; Grizzle, Kristi M.; Wood, Sharon L.; Neikirk, Dean P., "Development of state sensors for civil engineering structures," Proceedings of SPIE's Vol. 5057 8th Annual International Symposium on NDE for Health Monitoring and Diagnostics: Smart Systems and NDE for Civil Infrastructures, March 3-6, 2003, pp. 358-363.

107. J. W. Kim and D. P. Neikirk, "Infrared wavelength selective micromachined microbolometers," Proceedings of SPIE Vol. 5116 Smart Sensors, Actuators, and MEMS, SPIE's First International Symposium on Microtechnologies for the New Millennium 2003, Maspalomas, Gran Canaria (Canary Islands), Spain, May 19-21, 2003, pp. 514-522.

108. B. H. Park, Y. S. Park, Y.-S. Sohn, and D. P. Neikirk, "Fabrication of bead size sorting chip for chemical array sensor," Proceedings of SPIE Vol. 5116 Smart Sensors, Actuators, and MEMS, SPIE's First International Symposium on Microtechnologies for the New Millennium 2003, Maspalomas, Gran Canaria (Canary Islands), Spain, May 19-21, 2003, pp. 303-313.

109. B. H. Park, Y.-S. Sohn, and D. P. Neikirk, "Development of micro bead size selection chip for a chemical array sensor," µTAS2003 / microTAS2003: The 7th International Conference on Miniaturized Chemical and BioChemical Analysis Systems, Squaw Valley, California USA, October 5-9 2003, pp. 631-634.

110. Jooyong Kim; Neikirk, D.P.; "Experimental characterization of copper/low-k transmission line interconnects through microwave measurements," IEEE Electrical Performance of Electrical Packaging (IEEE Cat. No. 03TH8710), Princeton, NJ, USA, Oct. 27-29, 2003, p. 93-96.

111. J. T. Simonen, M. M. Andringa, K. M. Grizzle, S. L. Wood, and D. P. Neikirk, "Wireless sensors for monitoring corrosion in reinforced concrete members," Proceedings of SPIE Smart Structures/NDE Joint Conference Vol. #5391, 15-18 March 2004, San Diego, CA, 2004, pp. 587-596.

112. M. M. Andringa, D. P. Neikirk, and S. L. Wood, "Unpowered wireless analog resistance sensor," Proceedings of SPIE Smart Structures/NDE Joint Conference Vol. 5391, 15-18 March 2004, San Diego, CA, 2004, pp. 356-367.

113. Shifeng Li, David Fozdar, Dongbing Shao, Shaochen Chen, Pierre N. Floriano, Nicolaos Christodoulides, Mehnaaz F. Ali, Priya Dharshan, John T McDevitt, Dean Neikirk, "Disposable Polydimethylsiloxane/Silicon Hybrid Chips for Protein Detection," IMECE2004-62170, Proceedings of IMECE: International Mechanical Engineering Congress and Exposition, November 13-19, 2004, Anaheim, California

114. J. W. Kim, Y. Sohn, and D. P. Neikirk, "Microfabrication of a multichannel microfluidic system for use with microbead reagent sources and detectors," SPIE MOEMS-MEMS 2005, MICROFLUIDICS, BIOMEMS AND MEDICAL MICROSYSTEMS III, Proceedings of SPIE Vol. #5718, 25-27 January 2005, pp. 265-271.

115. Nathan P. Dickerson, Jarkko T. Simonen, Matthew M. Andringa, Sharon L. Wood, and Dean P. Neikirk, "Wireless low-cost corrosion sensors for reinforced concrete structures," SPIE: Smart Structures/NDE Joint Conference, Proceedings of SPIE Vol. 5765, 7-10 March 2005, pp. 493-503.

116. S.-W. Han and D. P. Neikirk, "Design of infrared wavelength-selective microbolometers using planar multimode detectors," presented at Proceedings of the SPIE Vol. 5836 Smart Sensors, Actuators, and MEMS II, Microtechnologies for the New Millennium 2005, Seville, Spain, May 9-11, 2005, pp. 549-557.

117. B. Park, Y. S. Park, J. W. Kim, Y.-S. Sohn, and D. P. Neikirk, "MEMS-based method of polymer bead handling for chemical array sensors," Proceedings of the SPIE Vol. 5836 Smart Sensors, Actuators, and MEMS II, Microtechnologies for the New Millennium 2005, Seville, Spain, May 9-11, 2005, pp. 625-633.

118. Sang-Wook Han and D. P. Neikirk, "Design of broadband or wavelength selective planar multi-mode microbolometer infrared detectors," The Joint 30th International Conference on Infrared and Millimeter Waves and 13th International Conference on Terahertz Electronics, IRMMW-THz 2005 Volume 2, 19-23 Sept. 2005, pp. 650 – 651.

119. Sang-Wook Han, Yoon Sok Park, and D. P. Neikirk, "Multilayer Fabry-Perot microbolometers for infrared detection," The Joint 30th International Conference on Infrared and Millimeter Waves and 13th International Conference on Terahertz Electronics, IRMMW-THz 2005 Volume 2, 19-23 Sept. 2005, pp. 646 - 647.

120. Matthew M. Andringa, Dean P. Neikirk, Nathan P. Dickerson, Sharon L. Wood, "Unpowered wireless corrosion sensor for steel reinforced concrete", 4th IEEE International Conference on Sensors, Irvine, Ca, Nov. 1-3, 2005, pp. 155-158.

121. Andringa, Matthew M.; Puryear, John M.; Neikirk, Dean P.; Wood, Sharon L., "Low-cost wireless corrosion and conductivity sensors," Proceedings of SPIE - The International Society for Optical Engineering, v 6174 I, Smart Structures and Materials 2006 - Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems, March 2006, p 61740X.

122. Byungki Woo, Matthew Andringa, Sharon Wood, and Dean P. Neikirk, "Development of a Resonant Repeater Tag for the Enhancement of Sensitivity and Specificity in a Wireless Eddy Current Sensing Scheme" Proceedings of SPIE - The International Society for Optical Engineering, v 6174 I, Smart Structures and Materials 2006 - Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems, March 2006 [6176-54].

123. Dickerson, Nathan P., Andringa, Matthew M.; Puryear, John M.; Wood, Sharon L.; Neikirk, Dean P., "Wireless threshold sensors for detecting corrosion in reinforced concrete structures," Proceedings of SPIE - The International Society for Optical Engineering, v 6174 I, Smart Structures and Materials 2006 - Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems, March 2006, p 61741L.

124. Sangwook Han, Jooyong Kim, and Dean P. Neikirk, "RF Measurement, Characterization, and Verification of Cu/low-k Transmission Line Interconnects," IEEE International Conference on Microelectronic Test Structures, March 6-9, 2006 Hyatt Regency on Town Lake Austin, Texas USA.

125. S. Han and D. P. Neikirk, "Multilayer Fabry-Perot microbolometers for 2-color infrared detection," Proceedings of SPIE - The International Society for Optical

Engineering, v 6206 I, Infrared Technology and Applications XXXII, Orlando, Florida, April 17-21, 2006, p 62061G.

126. A. Weling, P. F. Henning, D. P. Neikirk, and S. Han, "Antenna-coupled microbolometers for multispectral infrared imaging," Proceedings of SPIE - The International Society for Optical Engineering, v 6206 I, Infrared Technology and Applications XXXII, , Orlando, Florida, April 17-21, 2006, p 62061F

127. Dean P. Neikirk, Archie Holmes, Eric V. Anslyn, "Point and Stand-off Sensors for Explosives Detection," The 7th International Symposium on Technology and the Mine Problem, Naval Postgraduate School, Monterey, CA, May 2-5, 2006.

128. Sangwook Han, Rubin Sidhu, Archie Holmes, and Dean P. Neikirk, "Wavelength selective mid and long wave infrared sensor design," 2006 International Symposium on Spectral Sensing Research (ISSSR-2006), organized by the US Army Edgewood Chemical & Biological Center, Bar Harbor, Maine, 29 May – June 2, 2006.

129. Yoon Park, Dean P. Neikirk, and Eric V. Anslyn, "Micromachined Chemiluminescent System for Explosives Detection," Proceedings of SPIE Vol. 6398, Optically-Based Biological and Chemical Detection for Defence III, Monday-Wednesday 11-13 September 2006, Stockholm.

130. Michael D. Engelhardt, Sharon L. Wood, and Dean P. Neikirk, "Challenges for Performance-Based Fire Safety Design of Steel Structures and Opportunities for Sensor Technologies," US-Korea Workshop on Smart Structures Technology for Steel Structures, Prima Hotel, Seoul, Korea, 16-18 November 2006.

131. Yoon S. Park, Matthew M. Andringa, Dean P. Neikirk, Himali S. Hewage, and Eric V. Anslyn, "Smart microplates: integrated photodiodes for detecting bead-based chemiluminescent reactions," 5th IEEE International Conference on Sensors, paper # B1L-E-4, Daegu, Korea, October 22 – 25, 2006.

132. M. M. Andringa, J. M. Puryear, D. P. Neikirk, S. L. Wood, "In situ measurement of conductivity and temperature during concrete curing using passive wireless sensors," SPIE's 14th Annual International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring, Proceedings of SPIE vol 6529 Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems, March 2007.

133. J. M. Puryear, M. M. Andringa, S. L. Wood, D. P. Neikirk, "Low-cost wireless sensors for civil infrastructure," SPIE's 14th Annual International Symposium on Smart Structures and Materials & Nondestructive Evaluation and Health Monitoring, Proceedings of SPIE vol 6529 Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems, March 2007.

134. J. Jung, S. Han, D. P. Neikirk, A. S. Weling, J. H. Goldie, P. D. Willson, “Wavelength-selective infrared detectors based on patterned resistive sheets,” SPIE Defense and Security Symposium 2007, Conference 6542, Infrared Technology and Applications XXXIII, April 9-13, 2007, paper [6542-47].

135. Y. S. Park, H. S. Hewage, D. P. Neikirk, E. V. Anslyn, “Micromachined microfluidic chemiluminescent system for explosives detection,” SPIE Defense and Security Symposium 2007, Conference 6554, Chemical and Biological Sensing VIII, April 11-12, 2007, paper [6554-02].

136. Yoon S. Park, P. Pasupathy, and Dean P. Neikirk, “Resonant chemical surveillance tags,” SPIE Europe Symposium on Security and Defence, Florence, Italy, 17 - 20 September 2007, Proceedings of SPIE vol. 6739, Electro-Optical Remote Sensing, Detection, and Photonic Technologies and Their Applications, 2007, p. 673916, paper [6739B-43].

137. Joo-Yun Jung, Sangwook Han, Dean P. Neikirk, “Wavelength-selective infrared detectors,” SPIE Europe Symposium on Security and Defence, Florence, Italy, 17 - 20 September 2007, Proceedings of SPIE vol. 6737, Electro-Optical and Infrared Systems: Technology and Applications IV, 2007, p. 67370Z, paper [6737-35].

138. Y. Park, M. Andringa, D. Neikirk, H. Hewage, and E. Anslyn, “Smart microplates: Photodiode Within Silicon Pyramidal Cavity for Detecting Bead-Based Chemiluminescence and AC Characterization for RFID-Type Readout,” 6th IEEE Conference on Sensors, Atlanta, Georgia, Oct 28-31, 2007, pp. 1189-1192.

139. P. Pasupathy, Dean P. Neikirk, and Sharon L. Wood, “Improved reading techniques for electronic structural surveillance tags,” Proc. SPIE Volume 6932 / Wireless Sensors/Networks, Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems, March 2008, San Diego, California, USA, 2008693214 (2008), DOI:10.1117/12.776522.

140. Yoon Seok Park, Praveenkumar Pasupathy, Dean P. Neikirk, Eric V. Anslyn, “Micromachined platform for chemiluminescent and phosphorescent vapor detection” (Invited Paper), SPIE Europe Symposium on Security and Defence, Cardiff, Wales, 15 - 18 September 2008, Proceedings of SPIE vol. 7116, Optically Based Biological and Chemical Detection for Defence, paper [7116-27].

141. Puryear, J.M.H., Dickerson, N.P., Wood, S.L., and Neikirk, D.P., “Low-Cost Wireless Sensors for Concrete Bridges,” NDE/NDT for Highways and Bridges: Structural Materials Technology, American Society for Nondestructive Testing, Oakland, CA, September 2008.

142. Pasupathy, P., Zhuzhou, M., Neikirk, D.P., Wood, S.L., "Unpowered resonant wireless sensor nets for structural health monitoring," 2008 IEEE Conference on Sensors, Lecce, Italy, Oct 26-29, 2008, pp. 697-700, ISBN: 978-1-4244-2580-8.

143. Wood, S.L. and Neikirk, D.P., "Passive Sensors for Infrastructure Monitoring," Proc. of SPIE Vol. 7292, keynote paper, Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems 2009, International Society for Optical Engineering, San Diego, California, 9 March 2009, pp. 729202-1 to 729202-11.

144. Joo-Yun Jung, Jong Yeon Park, and Dean P. Neikirk, "Wavelength-selective infrared detectors based on cross patterned resistive sheets," Proc. SPIE 7298, 72980L (2009), DOI:10.1117/12.818638, SPIE Defense and Security Symposium 2009, Infrared Technology and Applications XXXV, April 13-17, 2009.

145. Praveen Pasupathy, Shasi Munukutla, Dean P. Neikirk, and Sharon L. Wood, "Versatile wireless sacrificial transducers for electronic structural surveillance sensors," 2009 IEEE Conference on Sensors, Christchurch, New Zealand, Oct 25-28, 2009, paper B3L-C2, Oct. 27, IEEE Catalog Number: CFP09SEN-CDR, ISBN: 978-1-4244-5335-1, pp. 979-983.

146. Jun Wan Kim, Praveen Pasupathy, Sheng Zhang, and Dean P. Neikirk, "Measurement of liquid complex dielectric constants using non-contact sensors," 2009 IEEE Conference on Sensors, Christchurch, New Zealand, Oct 25-28, 2009, paper C5L-C5, Oct. 28, IEEE Catalog Number: CFP09SEN-CDR, ISBN: 978-1-4244-5335-1, pp. 2017-2020.

147. Ali Abu Yousef, Praveenkumar Pasupathy, Sharon L. Wood, and Dean P. Neikirk, "Embedded Passive Sensors for Detecting Corrosion in Concrete Bridge Decks," 89th Annual Meeting, Transportation Research Board, Washington, DC, January 2010, Paper #10-3483.

147. Ye Chen, Praveenkumar Pasupathy, Dean P. Neikirk, Sharon L. Wood, "Magneto-inductive waveguide as a passive wireless sensor nets for structural health monitoring," Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems, Conference 7647 - Proceedings of SPIE Volume 7647, Date: Thursday 11 March, 2010, San Diego, California, USA.

148. Joo-Yun Jung, Jong Yeon Park, Dean P. Neikirk, Aniruddha S. Weling, William T. Hafer, James H. Goldie, Paul D. Willson, "Skin depth effects in wavelength-selective infrared microbolometers based on lossy frequency selective surfaces," Proceedings of SPIE, Vol. 7660, Infrared Technology and Applications XXXVI, Orlando, Florida, Monday-Friday 5-9 April 2010, paper number 7660-38.

149. Jong Yeon Park, Joo-Yun Jung, Dean P. Neikirk, Aniruddha S. Weling, William T. Hafer, James H. Goldie, Paul D. Willson, "Fabrication of wavelength selective germanium dielectric supported microbolometers," Proceedings of SPIE, Vol. 7660, Infrared Technology and Applications XXXVI, Orlando, Florida, Monday-Friday 5-9 April 2010, paper number 7660-139.

150. Ali Abu Yousef, Praveenkumar Pasupathy, Sharon L. Wood, and Dean P. Neikirk, "Passive Sensors for Detecting Corrosion in Concrete Structures," 3rd Congress of the International Federation for Structural Concrete, Washington, DC, May 2010.

151. Ali Abu Yousef, Praveenkumar Pasupathy, Sharon L. Wood, and Dean P. Neikirk, "Passive Sensors for Detecting Corrosion in Concrete Structures," 5th International Conference on Bridge Maintenance, Safety and Management, Philadelphia, PA, July 2010.

152. Ali Abu Yousef, Praveenkumar Pasupathy, Sharon L. Wood, and Dean P. Neikirk, "Passive Sensors for Detecting Corrosion in Concrete Bridge Decks," 7th International Bridge Engineering Conference Improving Reliability and Safety - Restoration, Renewal and Replacement, San Antonio, Texas, December 2010.

153. JinYoung Kim, Praveenkumar Pasupathy, Chih-Chieh Chou, Sharon L. Wood, and Dean P. Neikirk, "Embedded passive wireless sensors for detecting conductivity within RC structures," Proc. SPIE 7983, 79832L (2011); doi:10.1117/12.880412, SPIE Conference on Nondestructive Characterization for Composite Materials, Aerospace Engineering, Civil Infrastructure, and Homeland Security 2011Monday 7 March 2011, San Diego, California.

154. Ali E. Abu-Yousef, Praveenkumar Pasupathy, Sharon L. Wood, and Dean P. Neikirk, "Low-Cost, Passive Sensors for Monitoring Corrosion in Concrete Structures," Proc. SPIE 7983, 79831Q (2011); doi:10.1117/12.879893, SPIE Conference on Nondestructive Characterization for Composite Materials, Aerospace Engineering, Civil Infrastructure, and Homeland Security 2011Monday 7 March 2011, San Diego, California.

155. P. Pasupathy, A. Abu Yousef, D. P. Neikirk, and S. L. Wood, "Wireless Electronic Structural Surveillance Sensors Using Inductively Coupled Sacrificial Transducers," Progress in Electromagnetics Research Symposium, PIERS 2011, Marrakesh. Morocco, March 20-23, 2011, PIERS Online Vol. 7 No. 6 2011 pp: 511-515

156. Ye Chen, Praveen Pasupathy, and Dean P. Neikirk, "The Effects of Defects on Magneto-inductive Waveguide," Progress in Electromagnetics Research Symposium, PIERS 2011, Marrakesh. Morocco, March 20-23, 2011, PIERS Online Vol. 7 No. 6 2011 pp: 506-510

157. Sheng P. Zhang, Praveenkumar Pasupathy, Dean P. Neikirk, "Microfabricated self-resonant structure as a passive wireless chemical sensor," Proc. SPIE 8066, 80661L (2011); doi:10.1117/12.886895, SPIE International Symposium on Microtechnolgies, Conference 8066 Smart Sensors, Actuators and MEMS (EMT101), Prague, Czech Republic, 18-20 April 2011, Paper 8066-57.

158. Joo-Yun Jung, Jong Yeon Park, Dean P. Neikirk, Aniruddha S. Weling, Will Hafer, James H. Goldie, and Paul D. Willson, "Experimental LWIR spectral characterization of

wavelength selective microbolometers," SPIE Defense, Security, and Sensing, Infrared Technology and Applications XXXVII Proceedings of SPIE, paper number 8012-38, 25-29 April 2011, Orlando, Florida.

159. Jong Yeon Park, James E. Gardner, Praveen Pasupathy, Ji Won Suk, Rodney S. Ruoff, and Dean P. Neikirk, "Fabrication and Characterization of Wavelength Selective Microbolometers using a Planar Self-aligned Process for Low Deformation Membranes," in MOEMS and Miniaturized Systems XI, part of SPIE MOEMS-MEMS, San Francisco, California, 25 Jan 2012, SPIE Paper Number 8252-33, Proc. SPIE 8252, 82520Y (2012); http://dx.doi.org/10.1117/12.906290 , 7 pages.

160. Ye Chen, Praveen Pasupathy, Tanuj Trivedi, Dean P. Neikirk and Sharon L. Wood, "Improved magneto-inductive waveguide as wireless sensor net for structural health monitoring," Nondestructive Characterization for Composite Materials, Aerospace Engineering, Civil Infrastructure, and Homeland Security 2012, San Diego, California, USA, Proc. SPIE 8347, 83472H (2012); http://dx.doi.org/10.1117/12.915227, Monday 12 March 2012, 8 pages.

161. Ali E. Abu-Yosef, Praveen Pasupathy, Sharon L. Wood and Dean P. Neikirk, "Detection of multiple corrosion thresholds in reinforced concrete structures using passive sensors," Nondestructive Characterization for Composite Materials, Aerospace Engineering, Civil Infrastructure, and Homeland Security 2012, San Diego, California, USA, Proc. SPIE 8347, 83470J (2012); http://dx.doi.org/10.1117/12.915164 , Monday 12 March 2012, 7 pages.

162. JinYoung Kim, Praveenkumar Pasupathy, Sharon L. Wood and Dean P. Neikirk, "Enhanced resolution of passive wireless conductivity sensors," Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems 2012, San Diego, California, USA, Proc. SPIE 8345, 83451B (2012); http://dx.doi.org/10.1117/12.916754 , Monday 12 March 2012, 7 pages.

163. Tanuj Trivedi, Frank Raffaeli, Praveen Pasupathy, Ali E. Abu-Yousef, Ye Chen, Dean Neikirk and Sharon Wood, "A reflectometer-based reader for passive wireless structural surveillance sensors," Nondestructive Characterization for Composite Materials, Aerospace Engineering, Civil Infrastructure, and Homeland Security 2012, San Diego, California, USA, Proc. SPIE 8347, 83470I (2012); http://dx.doi.org/10.1117/12.915223 Monday 12 March 2012, 7 pages.

164. Hoo Kim and Dean P. Neikirk, "Three Dimensional Dual-band Stacked Microbolometer Design using resistive dipoles and slots," SPIE Infrared Technology and Applications XXXIX, edited by Bjørn F. Andresen, Gabor F. Fulop, Charles M. Hanson, Paul R. Norton, Proc. of SPIE Vol. 8704, 870419, 11 June 2013.

165. Dean P. Neikirk, Hoo Kim, Jong Yeon Park, Joo-Yun Jung, "Patterned resistive sheets for use in infrared microbolometers," SPIE Security + Defence, 25 Sep 2013 4:00 PM - 4:20 PM.

C. Published Abstracts

1. P.E. Young, Q.-X. Yu, W. A. Peebles, N.C. Luhmann, Jr., D. P. Neikirk, and D. B. Rutledge, "Application of Far-Infrared Imaging Arrays to Plasma Density and Magnetic Field Measurements," 4th APS Topical Conference on High Temperature, 1982.

2. P.E. Young, Q.-X. Yu, W.A. Peebles, N.C. Luhmann, Jr., D. P. Neikirk, and D. B. Rutledge, "Demonstration of Far-Infrared Phase Imaging," 24th Annual Meeting, Division of Plasma Physics, New Orleans, La., November, 1982.

3. P. E. Young, W.A. Peebles, N.C. Luhmann, Jr., R.J. Taylor, D. B. Rutledge, D. P. Neikirk, and P.P. Tong, "Current Profile Measurements in a Tokamak Plasma," 25th Ann. APS Meeting, Div. of Plasma Physics, Nov., 1983.

4. D. B. Rutledge, D. P. Neikirk, P.P. Tong, P.E. Young, W.A. Peebles, N.C. Luhmann, Jr., and R.J. Taylor, "Demonstration of a FIR Imaging System as a Multi-Channel Interferometer," 25th Ann. APS Meeting, Div. of Plasma Physics, Nov., 1983.

5. P.E. Young, N.C. Luhmann, Jr., R.J. Taylor, D. P. Neikirk, and D. B. Rutledge, 26th Annual Meeting of the Division of Plasma Physics, Boston, MA, Oct 29- Nov 2, 1984.

6. D.L. Brower, W.A. Peebles, S. Kim, R.L. Savage, Jr., T. Lehecka, N.C. Luhmann, Jr., J. Wagner, D. B. Rutledge, D. P. Neikirk, P.E. Young, and H.K. Park, "Recent advances in multichannel far-infrared collective scattering and interferometry systems," Eleventh Symposium on Fusion Engineering, Austin, TX, Nov. 18-22, 1985.

7. A.C. Campbell, V.P. Kesan, G.E. Crook, C.M. Maziar, D. P. Neikirk, and B. G. Streetman, "Capacitive Hysteresis Effects in 5.0nm single and double barrier AlAs Tunneling Structures," 8th Molecular Beam Epitaxy Workshop, Los Angeles CA, September 9-11, 1987.

8. A.C. Campbell, V.P. Kesan, G.E. Crook, D. P. Neikirk, and B. G. Streetman, "Capacitance Transient Analysis of GaAs/AlAs Tunneling Structures," 1988 Electronics Materials Conference, University of Colorado, Boulder, Colorado, June 22-24, 1988.

9. V.P. Kesan, A. Dodabalapur, D. P. Neikirk, and B. G. Streetman, "Influence of MBE Growth and Rapid Thermal Annealing Conditions on the Electrical Properties of Normal and Inverted AlGaAs/InGaAs Pseudomorphic HEMT Structures," IEEE 46th Annual Device Research Conference, June 20-22, 1988, Boulder, CO.

10. A. Dodabalapur, V.P. Kesan, T.R. Block, D. P. Neikirk, and B. G. Streetman, "Optical and Electrical Characteristics of Normal and Inverted AlGaAs/InGaAs Pseudomorphic HEMT Structures Processed by RTA," 9th Molecular Beam Epitaxy Workshop, West Lafayette, Indiana, September 21-23, 1988.

11. A. Sharif, D. P. Neikirk, and D.R. Diller, "Design and Fabrication of a Multi-Sensor Cryomicroscope Stage using VLSI Technology," Cryo 89, Charleston, SC, June 1989, published in **Physics in Medicine and Biology 33.**

12. A. Dodabalapur, V.P. Kesan, D. P. Neikirk, B. G. Streetman, M.H. Herman, and I.D. Ward, "Photoluminescence and Electroreflectance Characterization of Modulation-Doped Quantum Wells," Journal of Electronic Materials 18, July 1989, p. 51.

13. V.K. Reddy and D. P. Neikirk, "Influence of Growth Interruption on I - V Characteristics of AlAs/GaAs Double Barrier Resonant Tunneling Diodes," 11th Annual Molecular Beam Epitaxy Workshop, Austin TX, Sept. 16-18, 1991.

14. A.J. Tsao, V.K. Reddy, D.R.Miller, K.K. Gullapalli, and D. P. Neikirk, "The effect of barrier thickness asymmetries on the electrical characteristics of AlAs/GaAs double barrier resonant tunneling diodes," 11th Annual Molecular Beam Epitaxy Workshop, Austin TX, Sept. 16-18 1991.

15. T.R. Block, D. P. Neikirk, and B. G. Streetman, "MBE growth condition dependence of RHEED dampening and QW photoluminescence," Twelfth North American Conference on Molecular Beam Epitaxy, Ottawa, Canada, Oct. 12-14, 1992.

16. T.J. Mattord, D. P. Neikirk, A. Srinivasan, A. Tang, K. Sadra, Y.C. Shih, and B. G. Streetman, "Real time flux monitoring and feedback control of a valved arsenic source" Twelfth North American Conference on Molecular Beam Epitaxy, Ottawa, Canada, Oct. 12-14, 1992.

17. Y.C. Shih, D. P. Neikirk, and B. G. Streetman, "Effects of As flux on Si δ-doped GaAs," Twelfth North American Conference on Molecular Beam Epitaxy, Ottawa, Canada, Oct. 12-14, 1992.

18. Y. Kim and D. P. Neikirk, "Monolithically integrated optically interrogated pressure microsensor," **J. Acoust. Soc. Am.**, Vol. 92, No. 4 (pt. 2), October 1992, p. 2353.

19. O. Hartin, D. P. Neikirk, A. Anselm, and B. Streetman, "Memory Switching Simulation in Resonant Tunneling Devices," 1997 American Physical Society March Meeting, Kansas City, MO, March 17-21, Bulletin of the American Physical Society, Vol. 42, No. 1, 1997, p. 548.

20. O. Hartin and D. P. Neikirk, "Tight Binding Simulation of Memory Switching in Resonant Tunneling Devices," 1997 American Physical Society International Conference on Computational Physics, University of California, Santa Cruz, Aug. 25, 1997.

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21. D. Neikirk, "Embedded Passive Sensors for State Monitoring," presented at NSF Workshop on Exploring the Uses of Autoadaptive Media in Geotechnical Earthquake Engineering, Austin, TX, January 10-12 2001.

22. Lavigne, John J.; Savoy, Steve; Best, Michael; Anslyn, Eric V.; Shear, Jason B.; McDevitt, John T.; Neikirk, Dean, "Toward the development of an 'electronic tongue'," Book of Abstracts, 219th ACS National Meeting, San Francisco, CA, March 26-30, 2000 (2000), AGFD-193.

23. Wood, Sharon; Neikirk, Dean, "Development of a passive sensor to detect cracks in welded steel construction," US-Japan Joint Workshop and Third Grantees Meeting, US-Japan Cooperative Research in Urban Earthquake Disaster Mitigation, Monbu-Kgagku-sho and The National Science Foundation, Seattle, August 15-16, 2001.

24. McCleskey, Shawn C.; Goodey, Adrian P.; Rodriguez, Marc D.; McDevitt, John T.; Anslyn, Eric V.; Neikirk, Dean P., "Development of a multi-component sensor array for the simultaneous detection of various analytes in solution," Abstracts of Papers, 222nd ACS National Meeting, Chicago, IL, United States, August 26-30, 2001.

D. Other Major Publications

V. Kesan and D. P. Neikirk, "Quantum Well Devices," **Microwaves and RF**, vol. 25, July 1986, pp. 93-97.

D. P. Neikirk, P. Cheung, M.S. Islam, and T. Itoh, "Optically Controlled Coplanar Waveguide Phase Shifters," **Microwave Journal**, Dec. 1989, pp. 77-88.

D. P. Neikirk, "Quantum Wells and Other Deep Subjects," **Discovery**, Vol. 11, No. 3, 1989, pp. 5-8.

S. M. Wentworth, J. M. Lewis, and D. P. Neikirk, "Antenna-Coupled Thermal Detectors of mm-Wave Radiation," **Microwave Journal**, Jan. 1993, pp. 94-103.

E. Book Chapter

D. B. Rutledge, D. P. Neikirk, and D. Kasilingam "Integrated- Circuit Antennas," in **Infrared and Millimeter Waves**, vol. 11, editor K.J. Button, 1984.

Nicolaos Christodoulides, Priya Dharshan, Jorge Wong, Pierre N. Floriano, Dean Neikirk and John T. McDevitt, "A Microchip-Based Assay for Interleukin-6," In: Methods in Molecular Biology, Volume 385: Microchip-Based Assay Systems, Humana Press, ISBN 978-1-58829-588-0 (Print) 978-1-59745-426-1 (Online), Copyright 2008, pages 131-144.

F. Technical Reports

C-K Tzuang, D. P. Neikirk, and T. Itoh, "Finite Element Analysis of Slow-Wave Schottky Contact Printed Lines," Microwave Laboratory Report No. 87-P-2, AFOSR Grant 86-0036, Feb., 1987.

D. P. Neikirk and T. Itoh, "Monolithic Phase Shifter Study," Microwave Laboratory Report No. 87-P-3, AFOSR Grant 86-0036, Jan., 1987.

V. P. Kesan and D. P. Neikirk, "Quantum Well Devices," Electrical Engineering Research Laboratory Report No. 87-P-8, Joint Services Electronics Program Research Contract AFOSR F49620-86-C-0045, August 7, 1987.

Stuart M. Wentworth and D. P. Neikirk, "High Frequency Characteristics of Tape Automated Bonding (TAB) Interconnects," Microwave Laboratory Report No. 87-P-7, August 26, 1987.

Stuart M. Wentworth and D. P. Neikirk, "Characterization of Tape Automated Bonding (TAB) Interconnects at High Frequency ," Microwave Laboratory Report No. 87-P-9, October 23, 1987.

D. P. Neikirk and T. Itoh, "Monolithic Phase Shifter Study," Microwave Laboratory Report No. 90-P-1, Final Technical Report for AFOSR Grant 86-0036, Feb., 1990.

A. Mortazawi, D. Neikirk, and T. Itoh, "Microwave and millimeter wave oscillators and planar power combining structures for QWITT and Gunn diodes," Microwave Laboratory Report No. 90-P-4, Technical Report for ARO Grant DAAL03-88-K-0005 and JSEP Grant F49620-89-0044, Aug., 1990.

<u>Oral Presentations</u>

A. Professional Society Presentation

D. B. Rutledge and D. P. Neikirk, "Imaging Antenna Arrays," Invited Keynote Speakers, Sixth International Conference on Infrared and Millimeter Waves, Miami. Fl., Dec. 7-12, 1981.

D. P. Neikirk and D. B. Rutledge, "Advances in Microbolometers," Invited Keynote Speakers, Eighth International Conference on Infrared and Millimeter Waves, Miami, Fl., Dec. 12-17, 1983.

D. P. Neikirk, "Optically Controlled Coplanar Waveguide Millimeter Wave Phase Shifter," Tenth International Conference on Infrared and Millimeter Waves, Lake Buena Vista, Fl., Dec. 9-13, 1985.

D. P. Neikirk, "Picosecond Response of an Optically Controlled Millimeterwave Phase Shifter," Second Topical Meeting on Picosecond Electronics and Optoelectronics, Jan., 1987.

D. P. Neikirk, "Influence of Transit Time Effects on the Optimum Design and Maximum Oscillation Frequency of Quantum Well Oscillators," 12th International Conference on Infrared and Millimeter Waves, Dec. 14-18, 1987.

D. P. Neikirk, "Measurements of an Optically Controlled Coplanar Waveguide Phase-Shifter," 12th International Conference on Infrared and Millimeter Waves, Dec. 14-18, 1987.

D. P. Neikirk, "High Frequency Characterization of Tape-Automated Bonding Interconnects," 5th Annual Texas Regional Symposium, International Society of Hybrid Manufacturing, April 11, 1988.

D. P. Neikirk, "Time Dependent Simulation of the Quantum Well Injection Transit Time Diode," 13th International Conference on Infrared and Millimeter Waves, Dec. 5-9, 1988.

D. P. Neikirk, "Experimental Performance of a Periodically Illuminated Optically Controlled Coplanar Waveguide Phase Shifter," 13th International Conference on Infrared and Millimeter Waves, Dec. 5-9, 1988.

B. Invited Lectures

1. D. P. Neikirk, "Exotic Heterojunction Devices for Microwave Circuits," NSF Workshop on Future Research Opportunities in Electromagnetics, Arlington, TX., January 29-31, 1986.

2. D. P. Neikirk, "Optical Control of a Monolithic Millimeter Phase Shifter," ARO Workshop on Fundamental Issues in Millimeter and Submillimeter Waves, Los Angeles, Ca., Sept. 15-16, 1986.

3. Dean P. Neikirk, "Quantum Well Oscillators for Millimeter Wave Applications," 1987 Workshop on Compound Semiconductor Microwave Materials and Devices (WOCSEMMAD), Hilton Head Island, S.C., March 2-4, 1987.

4. S.M. Wentworth and D. P. Neikirk, "High Frequency Tape-Automated Bonding (TAB) Interconnect Characterization," IEEE 6th Annual VLSI and GaAs Packaging Workshop, Sept. 14-16, 1987.

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5. D. P. Neikirk, "The quantum well injection transit time diode," Engineering Foundation Conference on Advanced Heterostructure Transistors, Keauhou-Kona, Hawaii, Dec. 5-10, 1988.

6. D. P. Neikirk, ""The High Frequency Characteristics of Tape Automated Bonding (TAB) Interconnects," presented to the Microelectronics and Computer Technology Corporation, April 19, 1989.

7. Dean P. Neikirk, "Impedance measurements of quantum well diodes for millimeter wave applications," 1990 Workshop on Compound Semiconductor Microwave Materials and Devices (WOCSEMMAD), San Francisco, CA., Feb. 12-14, 1990.

8. Dean P. Neikirk, "Twin-slot multi-layer substrate-supported antennas and detectors for terahertz imaging," First International Symposium on Space Terahertz Technology, University of Michigan, Ann Arbor, Mich., March 5-6, 1990.

9. Dean P. Neikirk, "Microwave and Millimeterwave Oscillators using Quantum Well Diodes," Joint IEEE MTT/ED Dallas Chapter meeting, Sept. 27, 1990.

10. Dean P. Neikirk, "Quantum Transport Simulations of Resonant Tunneling Diodes," 1991 Workshop on Compound Semiconductor Microwave Materials and Devices (WOCSEMMAD), Ft. Lauderdale, FL., Feb. 18-20, 1991.

11. Dean P. Neikirk, “The Application of Physics in Electrical Engineering (or is it Engineering in Physics?): Electromagnetics in Very High Frequency Semiconductor Devices,” Physics Colloquium, Oklahoma State University, March 5, 1992.

12. D. P. Neikirk and B. G. Streetman, "MBE growth of multilayer heterostructures for photonic and high-speed electronic devices," Engineering Foundation Conference on High Speed Optoelectronic Devices and Circuits II, Banff, Alberta, Canada, Aug. 9-13, 1992.

13. L. T. Pillage, D. P. Neikirk, and R. Mercer, "Design automation techniques and algorithms for application specific electronic modules (ASEMs)," ARPA Electronic Packaging & Interconnect Principle Investigator Meeting, Marina del Ray, CA, Feb. 14-18, 1994.

14. D. P. Neikirk, "Micro-sensors - What happens when you make classical devices small?: Integrated Bolometric Radiation Detectors," Texas Instruments, Dallas, Texas, Oct. 20, 1994.

15. Dean P. Neikirk, "Micromachined sensors," Motorola Sensors Steering Committee, Albuquerque, New Mexico, March 28, 1995.

16. D. P. Neikirk, E. Tuncer, and B.-T. Lee, "The Use of Effective Internal Impedance Approximations in Lossy Transmission Line Modeling," *Progress in Electromagnetics*

Research Symposium PIERS 95, The Universtity of Washington, Seattle, Washington, July 28, 1995.

17. D. P. Neikirk, M. S. Islam, and E. Tuncer, "Accurate Quasi-Static Modeling of Transmission Lines on Semiconducting Substrates," *Progress in Electromagnetics Research Symposium PIERS 95*, The Universtity of Washington, Seattle, Washington, July 28, 1995.

18. D. P. Neikirk, "Impact of Finite Metal Conductivity on Inductance Extraction of Interconnects and Packages," Sematech meeting on Electrical Modeling Challenges Faced by Packaging Designers, Austin, Texas, Nov. 19, 1995.

19. D. P. Neikirk, "Micromachined Fabry-Perot Pressure Transducers," Hughes Research Laboratory, Malibu, California, Nov. 21, 1995.

20. D. P. Neikirk, "Classical Devices Made Small; or 'What's the big deal about little machines?'", Manufacturing 2000, University of Texas at Austin, Feb. 23, 1996.

21. D. P. Neikirk, "Interconnect Inductance Modeling from DC to the Skin Effect Limit," Quad Designs, Camarillo, CA, July 10. 1996.

22. D. P. Neikirk, "Efficient Conductor Boundary Conditions in the dc to Skin Effect Limit," DARPA MAFET Program Review, Fairfax, VA, Oct. 27-31, 1997.

23. Micromachined Array-based Multi-analyte Chemical Sensors: Towards the Fabrication of an "Electronic Tongue" South, Texas Local Section of The Electrochemical Society Meeting, April 17, 1999.

24. D. P. Neikirk, “Resonant Chemical Surveillance Tags,” IEEE Electron Device Chapter, Central Texas Section, September 25, 2008.

25. D.P. Neikirk, “Near Borehole Condition Sensing,” Nanotechnology Conference and Trade Show - Nanotech 2009, Houston, TX May 3-7, 2009, Nanotech & Cleantech for Oil & Gas Session, (Session chair: Sean Murphy, Advanced Energy Consortium), May 5, 2009.

26. D.P. Neikirk, “Integrated Threshold Nanosensor Systems,” Advanced Oil Consortium Microfabricated Sensors Workshop, Houston Research Center, Bureau of Economic Geology, University of Texas at Austin, September 8th-9th, 2010.

27. D. P. Neikirk, “Sensing systems for “harsh” environments,” Engineering Challenges for Deepwater Drilling at the “U.S. Offshore Oil Exploration: Managing Risks to Move Forward,” James A. Baker III Institute for Public Policy and PFC Energy, Rice University, Houston, TX, February 11, 2011.

C. Other Conference Presentations

Praveen Pasupathy, Mingxiang Zhuzhou, Shasi K. Munukutla, Dean P. Neikirk, and Sharon L. Wood, "Resonant Wireless Sensor Nets for Civil Infrastructure Health Monitoring," 2009 National Science Foundation Division of Civil, Mechanical and Manufacturing Innovation (CMMI) Engineering Research and Innovation Conference, Honolulu, Hawaii, June 22-25, 2009.

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Technical Consulting

Teltech Resource Network (1985-1993)
Ardex, Inc. (1986-88)
University and Polytechnic Grants Committee, Consultancy to examine Equipment Requirements for the Hong Kong University of Science and Technology, July, 1989
E. P. Hamilton Associates, (1987-90)
Burnett Company, Microwave Heating for Secondary Oil Recovery, July, 1990
Microelectronics and Computer Technology Corporation, June, 1990
Microelectronics and Computer Technology Corporation, Oct., 1994 - Sept., 1996
Baker-Hughes

University Committee Assignments

Departmental:

Graduate Student Financial Aid, Sept. 1984- Sept. 1987
Faculty Recruiting, Sept. 1984- Aug. 1985
Microelectronics Jr. Faculty Recruiting, Sept. 1985- Sept. 1987 (chairman)
ECE Safety Committee, Sept. 1985- Aug. 1993 (chairman, 1985-89)
ECE Electronics Shop Coordinating Committee, March 1986- Aug. 1993
Solid State Electronics Area Graduate Advisor, Aug. 1986- Aug. 89
ECE Space Allocation Committee, Sept. 1989-Aug. 1993 (chairman)
ECE Facilities Committee, Sept. 1993- Aug. 1996 (chairman)
ECE Areas Committee, Electromagnetics/Acoustics, Sept. 1993-present
ECE Ad Hoc Committee to Review the Undergraduate Curriculum, Jan. 1995-Aug. 1995
ECE World Wide Web Home Page Committee, Sept. 1995-Aug. 1996
ECE Ad Hoc Committee to Review the Undergraduate Curriculum, Jan. 1997-Aug. 1997
ECE Areas Committee, Materials and Quantum Electronics, Sept. 1993-present; chairman, Sept. 1996-present
Chair of ECE Graduate Studies Committee, May 1998-August 2006
ECE Chair's council, November 1999-2010
ECE Graduate Advisor, Sept. 1999- 2010
ECE Associate Chair, Sept. 2001-Dec. 2010
ECE peer Faculty Annual Review Committee, Sept. 2012-Aug. 2013

College:

Engineering Scholastic Appeals, Sept. 1984- Aug. 1985
Engineering Safety Committee, Sept. 1985- Aug. 1994 (chairman, Sept. 1989-Aug. 1994)

Aerospace Engineering Machine Shop, Sept. 1989-Aug. 1993
College Annual Report Quality Team, Jan. 1994- Aug. 1994
College Multimedia Committee, Sept. 1995-Aug. 2000
Equal Opportunity in Engineering (EOE) Program, 1995-Dec. 1996
Graduate Fellowship Review Committee, Sept. 2011-Aug. 2013

University:

Presidential Ad Hoc Committee on Research Infrastructure Enhancement, Jan. 1988 - Aug. 1994
Research Safety Advisory Committee, Oct. 1991-present (chairman, Sept. 1996-1999)
Ad Hoc Consultative Committee for the Selection of a Dean of the College of Engineering, Nov. 1995-May 1996
Faculty Building Advisory Committee, Sept. 1995-Aug. 2000; Aug. 2003-Aug. 2004
Ad Hoc Project Committee for Parking Garage # 4A, Sept. 1996-Aug. 2000
Faculty Council, Sept. 1996-Aug. 2000; Sept. 2002 - Aug. 2004
Faculty Advisory Committee on the Budget, Sept. 99 - Aug. 2000; Sept. 2008 – Aug. 2011 (vice chair Sept. 2009- Aug. 2010)
Graduate Assembly, April 1997- Aug. 2000; Sept. 2001 - Aug. 2008
Administrative sub-committee of GA, Sept. 1997-Aug. 1998; Sept. 2006-Aug. 2007
Academic sub-committee of GA, Sept. 1998-Aug. 2000; Sept. 2001-Aug. 2006; Sept. 2007-Aug. 2008
Chair, Graduate Assembly, 2004-2005
Academy of Distinguished Teachers selection committee, academic year 1999-2000
Outstanding Graduate Adviser selection committee, academic year 1999-2000
Outstanding Graduate Coordinator selection committee, academic year 1999-2000
Faculty Council, Sept. 2008 – Aug. 2012; Chair-elect Sept. 2009- Aug. 2010; Chair Sept. 2010- Aug. 2011; past chair: Sept. 2011-Aug. 2012
Faculty Council Executive Committee, Sept. 2009 – Aug. 2012
General Faculty Rules and Governance Committee, Sept. 2010 – Aug. 2015 (Chair, Sept. 2011 – Aug. 2013)
Ad Hoc Consultative Committee for the Selection of a Dean of the Graduate School, Nov. 2012 – Sept. 2012
Secretary of the General Faculty and Faculty Council, Sept. 2013 – Aug. 2015
Committee on Undergraduate Degree Program review, Sept. 2013 – Aug. 2015
Faculty Council Executive Committee, Sept. 2013 – Aug. 2015
Faculty Committee on Committees, *ex officio* member, Sept. 2013 – Aug. 2015

UT System:

Task Force on Doctoral Programs and Post-Doctoral Experience, Spring-Fall 2006

University of Texas System Faculty Advisory Council, Sept. 2009- Aug. 2011

State of Texas:

Texas Higher Education Coordinating Board Graduate Education Advisory Committee (GEAC), September 1, 2015 - August 31, 2018.

Evidence of Teaching Effectiveness

Senior Design Projects:

Umer Yousafzai and Venuka Jayatilaka, Spring 1994

Chris Eiting and Sonny Gonzalez, Spring 1994

David Lee and David Onsongo, Fall 1996

Dave Pyle and Aruna Murthy, Spring 1999

Hitesh Mehta and Edward Zhu, Spring 1999, "Giving the electronic tongue a sense of good taste: image analysis tools and GUI"

Gus Espinosa and Donnie Garcia, Spring 1999, "Design and Implementation of a Computer Interfacing Circuit to Control LED's for use with a Chemical Sensor"

Natthanant Pon Skulkaew and Prem Nainani, Spring 2001, "PC-based data acquisition and wireless transmission system"

Matthew Andringa and Allen Hall, Spring 2001, "Non-Invasive RFID Weld Inspection"

Michael Amalfitano and Sapun Parekh, Spring 2002, "Output circuitry for a transmitter used in an Electronic Structural Surveillance system"

Kunal Patel and Jacy Little, Spring 2002, "Swept, high frequency oscillator to work in an Electronic Structural Surveillance (ESS) system"

Dong Pak, Spring 2002, "Automated image-processing software of an electronic chemical sensor"

Rajesh Nerlikar, Jonathan Solomon, Spring 2003, "Wireless Data Acquisition System for Bluetooth-enabled RFID Readers"

Nola Li, Judith Chen, Maria Huang, Fall 2003, "Design and build a tuning network for a swept frequency reader used in structural health analysis"

Tuenlap (Daniel) Chan, Imranul Islam, Derek Choi, Spring 2004, "Design and build an RFID Interrogator Receiver"

John McKee and Terence Man, Spring 2007, "Improved Corrosion Sensors"

Abdulaziz Beayeyz , Sravan Bhagavatula, Rahul Mitra, Shasi Munukutla, Spyder Spann, Fall 2009, "Portable Corrosion Detector"

Jonathan Pham, Po-Han Wu, Josh Schulte, Pritesh Solanki, Mesele Bedasa, Spring 2011- Fall 2011, "Multi-Sensor Robotics Platform"

Raymund Lee, Simon Chow, Connor Landy, Kevin Woo, and Anirudh Kashyap, Fall 2012-Spring 2013, "Variable Frequency RFID Tag and Reader"

Javier Chacon, Joshua Poncik, Joshua Orozco, Sebastian Salomon, Yongcong Zou, Fall 2013-Spring 2014, "Environmental Sensor Monitoring Network"

Organized Classes Taught:

EE 363M Introduction to Microwaves, Spring 1984, # 16455
EE 396K VLSI Fabrication Techniques, Fall 1984, # 16255
EE 379K Integrated Circuit Fabrication, Spring 1985, # 16055
EE 396K VLSI Fabrication Techniques, Fall 1985, # 16275
EE 379K Integrated Circuit Fabrication, Fall 1985, # 16070
EE 396K VLSI Fabrication Techniques, Spring 1986, # 17680
EE 379K Integrated Circuit Fabrication, Spring 1986, # 17450
EE 396K VLSI Fabrication Techniques, Fall 1986, # 15245
EE 379K Integrated Circuit Fabrication, Fall 1986, # 15020
EE 396K VLSI Fabrication Techniques, Spring 1987, # 15205
EE 379K Integrated Circuit Fabrication, Spring 1987, # 14970
EE 396K VLSI Fabrication Techniques, Fall 1987, # 15010
EE 440 Integrated Circuit Fabrication, Fall 1987, # 14545
EE 363M Introduction to Microwaves, Spring 1988, # 14535
EE 396K VLSI Fabrication Techniques, Spring 1988, # 14865
EE 440 Integrated Circuit Fabrication, Spring 1988, # 14390
EE 396K VLSI Fabrication Techniques, Fall 1988, # 15165
EE 440 Integrated Circuit Fabrication, Fall 1988, # 14705
EE 363M Introduction to Microwaves, Spring 1989, # 14525
EE 396K VLSI Fabrication Techniques, Spring 1989, # 14855
EE 396K VLSI Fabrication Techniques, Fall 1989, # 15165
EE 440 Integrated Circuit Fabrication, Fall 1989, # 14705
EE 363M Introduction to Microwaves, Spring 1990, # 14050
EE 396K VLSI Fabrication Techniques, Spring 1990, # 14355, 14360
EE 440 Integrated Circuit Fabrication, Spring 1990, # 13915, 13920
EE 396K VLSI Fabrication Techniques, Fall 1990, # 14630, 14635
EE 440 Integrated Circuit Fabrication, Fall 1990, # 14200, 14205
EE 363M Introduction to Microwaves, Spring 1991, # 14365
EE 396K VLSI Fabrication Techniques, Spring 1991, # 14660, 14665, 14670
EE 440 Integrated Circuit Fabrication, Spring 1991, # 14220, 14225, 14230
EE 396K VLSI Fabrication Techniques, Fall 1991, # 14865, 14860
EE 440 Integrated Circuit Fabrication, Fall 1991, # 14425, 14430
EE 363M Introduction to Microwaves, Spring 1992, # 14270
EE 396K VLSI Fabrication Techniques, Spring 1992, # 14545, 14550, 14555
EE 440 Integrated Circuit Fabrication, Spring 1992, # 14130, 14135
EE 396K VLSI Fabrication Techniques, Fall 1992, # 15095, 15100, 15105
EE 440 Integrated Circuit Fabrication, Fall 1992, # 14670, 14675
EE 397K Microwave Devices, Spring 1993, # 14805
EE 396K VLSI Fabrication Techniques, Fall 1993, # 14800, 14805, 14810
EE 440 Integrated Circuit Fabrication, Fall 1993, # 14385, 14390
EE 363M Introduction to Microwaves, Spring 1994, # 14370
EE 396K VLSI Fabrication Techniques, Fall 1994, # 14365

EE 440 Integrated Circuit Fabrication, Fall 1994, # 13870
EE 397K Electromagnetics in Packaging, Spring 1995, # 14555
EE 396K VLSI Fabrication Techniques, Fall 1995, # 14765
EE 440 Integrated Circuit Fabrication, Fall 1995, # 14260
EE 397K Electromagnetics in Packaging, Spring 1996, # 14695
EE 382M Simulation Methods in CAD/VLSI, Spring 1996, # 14500
EE 396K VLSI Fabrication Techniques, Fall 1996, # 14535
EE 440 Integrated Circuit Fabrication, Fall 1996, # 14090
EE 382M Simulation Methods in CAD/VLSI, Spring 1997, # 14325
EE 363M Introduction to Microwaves, Spring 1997, # 14120
EE 396K VLSI Fabrication Techniques, Fall 1997, # 15315
EE 440 Integrated Circuit Fabrication, Fall 1997, # 14820
EE 363M Introduction to Microwaves, Spring 1998, # 14530
EE 397K Microwave Devices, Spring 1998, # 14950
EE 396K VLSI Fabrication Techniques, Fall 1998, # 15475
EE 440 Integrated Circuit Fabrication, Fall 1998, # 14965
EE 363M Introduction to Microwaves, Spring 1999, # 14825
EE 397K Microwave Devices, Spring 1999, # 15260
EE 396K VLSI Fabrication Techniques, Fall 1999, # 15340
EE 440 Integrated Circuit Fabrication, Fall 1999, # 14820
EE 363M Introduction to Microwaves, Spring 2000, # 14755
EE 396K VLSI Fabrication Techniques, Fall 2000, # 15600
EE 440 Integrated Circuit Fabrication, Fall 2000, # 15100
EE 397K Micro-electromechanical Systems (MEMS), Spring 2001, #15170
EE 396K VLSI Fabrication Techniques, Fall 2001, # 15725
EE 440 Integrated Circuit Fabrication, Fall 2001, # 15230
EE 397K Micro-electromechanical Systems (MEMS), Spring 2002, #15330
EE 396K VLSI Fabrication Techniques, Fall 2002, # 16050
EE 440 Integrated Circuit Fabrication, Fall 2002, # 15485
EE 397K Microwave Devices, Spring 2003, # 15110
EE 396K VLSI Fabrication Techniques, Fall 2003, # 15580
EE 440 Integrated Circuit Fabrication, Fall 2003, # 15095
EE 325 Electromagnetic Engineering, Spring 2004, # 14345
EE 396K VLSI Fabrication Techniques, Fall 2004, # 16250
EE 440 Integrated Circuit Fabrication, Fall 2004, # 15715
EE 396K 26-Microelectromechanical Systems, Spring 2005, # 15690
EE 396K VLSI Fabrication Techniques, Fall 2005, # 16455
EE 440 Integrated Circuit Fabrication, Fall 2005, # 15930
EE 396K VLSI Fabrication Techniques, Fall 2006, # 17040
EE 440 Integrated Circuit Fabrication, Fall 2006, # 16430
EE 325 Electromagnetic Engineering, Spring 2007, # 15765
EE 396K VLSI Fabrication Techniques, Fall 2007, # 17425
EE 440 Integrated Circuit Fabrication, Fall 2007, # 16770
EE 396K-26 Microelectromechanical Systems, Spring 2008, # 16815
EE 396K VLSI Fabrication Techniques, Fall 2008, # 17380
EE 325 Electromagnetic Engineering, Spring 2009, # 16000

EE 396K-24 Microwave Devices, Spring 2010, # 16975
EE 396K VLSI Fabrication Techniques, Fall 2010, # 17075, 17080, 17085, 17090
EE 440 Integrated Circuit Fabrication, Fall 2010, # 16540, 16545, 16550, 16555
EE 396K VLSI Fabrication Techniques, Fall 2011, # 17295, 17300, 17305, 17310
EE 440 Integrated Circuit Fabrication, Fall 2011# 16760, 16765, 16770, 16775
EE 396K 26-Microelectromechanical Systems, Spring 2012, #17070
EE 396K VLSI Fabrication Techniques, Fall 2012, # 17185, 17190, 17195, 17200
EE 440 Integrated Circuit Fabrication, Fall 2012, # 16640, 16645, 16650, 16665
EE 363M Introduction to Microwaves, Spring 2013, # 16605
EE 396K Ultra Large Scale Integrated Circuit Fabrication Techniques, Fall 2013, # 17425, 17430, 17435, 17440
EE 440 Integrated Circuit Nanomanufacturing Techniques, Fall 2013, # 16790, 16795, 16800, 16805
EE 396K-24 Microwave Devices. Spring 2014, #17440
EE 396K Ultra Large Scale Integrated Circuit Fabrication Techniques, Fall 2014, #17525, 17530, 17535, 17540
EE 440 Integrated Circuit Nanomanufacturing Techniques, Fall 2014, #16960, 16965, 16970, 16975
EE 363M Microwave and Radio Frequency Engineering, Spring 2015, #16355
EE 396K Ultra Large Scale Integrated Circuit Fabrication Techniques, Fall 2015, #16965, 16970, 16975
EE 440 Integrated Circuit Nanomanufacturing Techniques, Fall 2015, #16480, 16485, 16490
EE 363M Microwave and Radio Frequency Engineering, Spring 2016, #16550
EE 396K Ultra Large Scale Integrated Circuit Fabrication Techniques, Fall 2016
EE 440 Integrated Circuit Nanomanufacturing Techniques, Fall 2016
EE 396K 26-Microelectromechanical Systems, Spring 2017
EE 363M Microwave and Radio Frequency Engineering, Spring 2018, #15890
EE 363M Microwave and Radio Frequency Engineering, Spring 2019, #16625
EE 363M Microwave and Radio Frequency Engineering, Spring 2020, #16695

Continuing Education Courses Taught

"Microelectronics Fabrication - Chemical Aspects," with Isaac Trachtenberg, Continuing Engineering Studies, College of Engineering, The University of Texas at Austin, June 1-4, 1987.
"Integrated Circuit Process & Design," with M. R. Mercer, Motorola short course, Continuing Engineering Studies, College of Engineering, The University of

Texas at Austin:
- Aug.-Sept., 1987
- Nov.-Dec., 1987
- Nov.-Dec., 1988
- March-April, 1989
- Aug.-Sept., 1989
- Nov.-Dec., 1989
- Feb.-March, 1990
- April, 1990
- Aug., 1990

"Integrated Circuit Processing and Design," with L. T. Pillage, Advanced Micro Devices short course, Continuing Engineering Studies, College of Engineering, The University of Texas at Austin:
- Oct.-Nov., 1990
- June-July, 1991

"Microelectronics Fabrication," for the Fellows of the Senior Service College Fellowship Program, Continuing Engineering Studies, College of Engineering, The University of Texas at Austin, yearly 1993-2003.