VITA
1/10

Name: Michael R. Melloch

Personal

Date of Birth:	April 27, 1953
Place of Birth:	Hammond, IN
Citizenship:	U.S.A.
Marital Status:	Married
Wife's Name	Marilyn

Education

Degree	*Date*	*School*
BSEE	1975	Purdue University
MSEE	1976	Purdue University
Ph.D.	1981	Purdue University

Thesis:

"Zinc Oxide on Silicon Surface Acoustic Wave Devices"

Honorary Society Memberships

Tau Beta Pi
Phi Kappa Phi
Sigma Pi Sigma

Professional Experience

June 1976–Aug. 1978	Design Engineer, Intel Corporation, Santa Clara, CA
Feb. 1982–July 1984	Member of Technical Staff, Central Research Laboratories, Texas Instruments, Dallas, TX
Aug. 1984–Aug. 1988	Assistant Professor, School of Electrical Engineering, Purdue University West Lafayette, IN 47907
Aug. 1988–Aug. 1992	Associate Professor, School of Electrical Engineering, Purdue University West Lafayette, IN 47907
December 1993–December 2000	Vice-president, MellWood Laboratories, Inc.
Jan. 1994–Jan 1996	Assistant Dean, Schools of Engineering, Purdue University, West Lafayette, IN 47907-1280

Aug. 1992–present	Professor, School of Electrical Engineering, Purdue University West Lafayette, IN 47907-1285
January 1999– December 2000	Director, NSF Materials Research Science and Engineering Center (MRSEC) for "Technology-Enabling Heterostructure Materials"
August 2002 – August 2007	Education and Outreach Director for NASA Institute for Nanotechnology and Computing
August 2002 — August 2007	Education and Outreach co-Director for NSF Network for Computational Nantechnology
May 2004 — November 2007	Director of Graduate Admission for ECE
August 2007 — present	Associate Head of ECE

Awards

Elected Fellow of the American Physical Society, November 10, 1996

1996 National Technological University Outstanding Instructor Award

1998 National Technological University Outstanding Instructor Award

Elected Fellow of the Institute of Electrical and Electronics Engineers, January 1999

Elected Fellow of the American Vacuum Society, June 1999

Elected Fellow of the Optical Society of America, February 2000

2002 National Technological University Outstanding Instructor Award

2005 Purdue University Seed for Success Award

2008 Motorola Excellence in Teaching Award

2009 Wilfred Hesselberth Award for Teaching Excellence

2009 Beta Chapter of HKN Outstanding Teacher Award

Biography Listings

American Men and Women of Science
Who's Who in Technology
Who's Who in Science and Technology

Research Grants and Contracts Received

1. M.S. Lundstrom (PI) and M.R. Melloch (co-PI), Solar Energy Research Institute (SERI) subcontract no. XL-5-05018-1 , "Basic Studies of III-V High Efficiency Cell Components," $504,261, for August 15, 1985 to August 31, 1988.
2. M.R. Melloch (PI) and J.A. Cooper, Jr.(co-PI), Office of Naval Research (ONR), contract no. N00014-86-K-0350, "GaAs Gate Dynamic Memory Technology," $271,928 for July 1,1986 to June 30, 1989.
3. J.A. Cooper, Jr.(Participant), M.S. Lundstrom(Participant), R.F. Pierret(Participant), and M.R. Melloch(Participant), Indiana Corporation for Science and Technology, "High Speed III-V Semiconductor Devices," thrust of the Optoelectronics Center, $886,000 for June 1986 to June 1989.
4. J.A. Cooper, Jr.(PI), R.F. Pierret(co-PI), and M.R. Melloch(Participant), National Science Foundation (NSF) contract no. ECS-8412919, "A Study of Long Term Retention of Minority Carriers at the AlGaAs/GaAs Interface," $65,520 for June 15, 1987 to Sept. 14, 1988.
5. M.R. Melloch(PI), R.L. Gunshor(co-PI), L.A. Kolodziejski(co-PI), J.A. Cooper, Jr.(co-PI), and R. F. Pierret(co-PI), ONR contract no. N00014-87-K-0522, "Pseudomorphic Interfaces," $248,000 for June 15, 1987 to Sept. 30, 1988.
6. S. Datta(PI), M.S. Lundstrom(co-PI), M.R. Melloch(co-PI), and R.Reifenberger(co-PI), ONR contract no. N00014-87-K-0693, "Quantum Interference Devices," $74,100 for July 1, 1987 to December 31, 1988.
7. M.R. Melloch(PI) and J.A. Cooper, Jr.(co-PI), AT&T Foundation, "Acquisition of a Molecular Beam Epitaxy (MBE) Machine for Research into III-V Semiconductor Materials and Devices," $25,000, September 1987.
8. M.R. Melloch, Varian Corporation, "Acquisition of a Molecular Beam Epitaxy System," $209,940, September 1987.
9. M.S. Lundstrom (PI) and M.R. Melloch(co-PI), Solar Energy Research Institute (SERI) subcontract no. XL-5-05018-1, "Basic Studies of III-V High Efficiency Cell Components," $206,183, for September 1, 1988 to August 31, 1989.
10. M.R. Melloch, NSF Grant No. ECS-8805571, "Engineering Research Equipment Grant: Suss MJB 3 UV 400 Mask Aligner," $46,570 for September 15, 1988 to February 28, 1990.
11. J.A. Cooper, Jr.(PI), M.R. Melloch(co-PI), and G.W. Neudeck(co-PI), Subcontract from North Carolina State University No. 88-0805-1 under SDIO/IST grant no. N00014-88-K-0527, "Development of a GaAs Dynamic Content Addressable Memory," $461,643 for July 15, 1988 to December 31, 1990.
12. M.S. Lundstrom (PI) and M.R. Melloch(co-PI), NSF Grant No. ECS-89016398, "Minority Carrier Transport in Heavily Doped GaAs," $227,185 for June 1, 1989 to July 31, 1992.
13. M.R. Melloch (PI) and J.A. Cooper, Jr.(co-PI), ONR Grant No. N00014-89-J-1864, "GaAs Dynamic Memory Technology," $305,000 for February 1, 1989 to December 31, 1991.
14. S. Datta(PI), M.S. Lundstrom(co-PI), and M.R. Melloch(co-PI), ONR Grant No. N00014-89-J-1876, "Quantum Interference Devices," $77,591 for March 1, 1989 to February 28, 1990.

15. M.S. Lundstrom (PI) and M.R. Melloch(co-PI), Solar Energy Research Institute (SERI) subcontract no. XL-5-05018-1, "Basic Studies of III-V High Efficiency Cell Components," $208,000, for August 15, 1990 to August 31, 1990.
16. M.S. Lundstrom (PI) and M.R. Melloch(co-PI), SERI subcontract No. XM-0-19142-1, "New III-V Cell Design Approaches for Very High-Efficiency," $660,087 for August 1, 1990 to September 30, 1994.
17. M.R. Melloch, NSF Grant No. MSS-9006068, "Engineering Research Equipment Grant: Reactive Ion Etching System," $35,550 for August 15, 1990 to July 31, 1992.
18. J.A. Cooper, Jr. (PI) and M.R. Melloch(co-PI), Subcontract from North Carolina State University No.91-0936-02 under SDIO/IST grant no. N00014-91-J-1545, "Development of a Novel Bipolar-FET (BIFET) Dynamic Content-Addressable Memory in GaAs," $112,751 for April 1, 1991 to May 31, 1992.
19. M.S. Lundstrom (PI) and M.R. Melloch(co-PI), Department of Energy University Research Instrumentation Program, "High Speed Laser Laboratory for Semiconductor Materials Characterization," $179,935, September 30, 1991 to September 29, 1993.
20. J.A. Cooper, Jr., (PI) and M.R. Melloch (co-PI), ONR Grant Number N00014-92-J-1609, "Investigation of Novel Devices in Wide Bandgap Semiconductors," $430,000 for May 1, 1992 to April 30, 1994.
21. M.S. Lundstrom (PI) and M.R. Melloch(co-PI), supplement to NSF Grant No. ECS-89016398, "Minority Carrier Transport in Heavily Doped GaAs," $6,214 for June 1, 1992 to November 30, 1992.
22. M.R. Melloch (PI) and N. Otsuka (co-PI), AFOSR Grant Number F49620-93-1-0031, "Arsenic Cluster Engineering," $310,551 for December 1, 1992 to March 30, 1996.
23. J.A. Cooper, Jr. (PI) and M.R. Melloch (co-PI), Subcontract from Cree Research, Inc. under SDIO/IST grant no. No.N00014-93-C-0071, "Development of High-Speed Nonvolatile Semiconductor Memories in 6H Silicon Carbide," $903,809 for March 29, 1993 to March 31, 1995.
24. M.R. Melloch, AFOSR grant no. F49620-93-1-0388, "Arsenic Cluster Engineering for High-Speed Photoconductors," $104,167 for 6/1/93 to12/31/96.
25. M.R. Melloch (PI), J.A. Cooper, Jr. (co-PI), and J.M. Woodall (co-PI), NSF Grant No. ECS-9310852, "Engineering Research Equipment Grant: Chemical Vapor Deposition System," $132,000 for September 1, 1993 to February 28, 1996.
26. J.A. Cooper, Jr. (PI) and M.R. Melloch (co-PI), Semiconductor Research Corporation Contract no. 94-SJ-378, "Development of Fabrication Technology for Power Devices in Silicon Carbide," $75,000 for 1/1/94 to 12/31/94.
27. D.D. Nolte (PI) and M.R. Melloch (co-PI), "Fabry-Perot Photorefractive Quantum Well Structures for Adaptive Processing," Rome Laboratory contract no. F30602-94-C-0002, $50,887 for Feb. 17, 1993 to Feb. 16, 1994.
28. D.D. Nolte(PI), M.R. Melloch(co-PI), and Andrew M. Weiner (co-PI), "Photorefractive Quantum Wells for Lightwave Technology," National Science Foundation Grant No. ECS-9414800, $378,083 for Jan. 1, 1995–Dec. 31, 1997.
29. J.M. Woodall (PI) and M.R. Melloch (co-PI), "Materials Research Science and Engineering Center," National Science Foundation Grant No. DMR-9400415, $4,910,000 for September 1, 1994 to May 31, 1999.
30. J.A. Cooper, Jr. (PI) and M.R. Melloch (co-PI), Semiconductor Research Corporation Contract no. 95-SJ-378, "Development of Fabrication Technology for Power Devices in Silicon Carbide," $58,000 for 1/1/95 to 12/31/95.

31. D.D. Nolte (PI) and M.R. Melloch (co-PI), "Beam Control in Diffractive Short-Cavity Quantum Well Fabry-Perots for Adaptive Processing," Rome Laboratory contract no. F30602-95-C-0016, $62,762 for 2/15/95–2/15/96.
32. J.A. Cooper, Jr. (PI) and M.R. Melloch (co-PI), "High-Field and High-Temperature Reliability of Gate Insulators for Silicon Carbide MIS Devices," Ballistic Missile Defense Office/Office of Naval Research Contract No. N00014-95-1-1042, $160,000 for 6/1/95–5/31/98.
33. A.M. Weiner (PI), D.D. Nolte (co-PI), and M.R. Melloch (co-PI), "Holographic Processing of High-Speed Lightwave Signals for the Time-Division Multiplexing," Rome Laboratory Contract No. F30602-95-C-0137, $71,642for 7/31/95–7/13/96.
34. J.A. Cooper, Jr. (PI), M.R. Melloch (co-PI), and J.M. Woodall (co-PI), "Manufacturable Power Switching Devices," Office of Naval Research, Contract No. N00014-95-1-1302, $6,270,000 for 9/29/95–9/29/98
35. A.M. Weiner (PI), J.M. Woodall (co-PI), D.D. Nolte (co-PI), M.R. Melloch (co-PI), and M.R.Bell (co-PI), "Spectral Methods for High-Speed Optical Transmultiplexing and Coding," Air Force Office of Scientific Research, Contract No. F49620-95-1-0533, $500,000 for 9/30/95–9/29/96.
36. U. Sivan (PI, Technion), P.M. Solomon (co-PI, IBM T.J. Watson Research Center), and M.R. Melloch (co-PI), "Transport and Thermodynamic Properties of Coulomb Coupled, Spatially Separated Electron and Hole Gases," United States-Israel Binational Science Foundation Grant No. 9400235, $40,000 for 10/1/95–9/30/98.
37. M.R. Melloch, "Dielectric Properties of Ordered and Disordered Particulates in Semiconductor Matrices," Air Force Office of Scientific Research Grant No. F49620-96-1-0234A, $ 544,343 for 5/31/96–5/30/99.
38. M.R. Melloch, "Time of Flight Instrumentation," Defense University Research Instrumentation Program (DURIP) FY 1996 Grant No. N00014-96-1-1089, $163,650 for 6/1/96–5/31/97.
39. J.A. Cooper (PI), M.R. Melloch (co-PI), and K.J. Webb (co-PI), "Silicon Carbide Devices for Innovative Microwave Power Amplifiers," subcontract from UCSB on Office of Naval Research Grant N00014-96-1-1215, $1,500,000 for 8/31/96-8/30/01.
40. M.R. Melloch, "Photo-Hall Characterization of Ordered and Disordered Particulates in Semiconductor Matrices," Air Force Office of Scientific Research Grant No. F49620-97-0377, $ 131,028 for 9/1/97–8/31/01.
41. D.D. Nolte (PI), M.R. Melloch (co-PI), and A.M. Weiner (co-PI), "Photorefractive Quantum Well Devices and Applications for Optical Scanning and Femtosecond Pulse Processing," National Science Foundation Grant No. ECS-9708230, $407,285 for 8/15/97–7/31/98.
42. M.R. Melloch, "Thin-Film SiC rf Power Device and Process Development," Motorola, Inc., $169,170 for 4/10/98–5/1/01.
43 M.R. Melloch, "Heteroepitaxial Growth of Wide Bandgap, High Lattice Mismatched Compound Semiconductors on Si," Motorola, Inc., $22,731 for 9/1/98–5/31/99.
44. M.A. Capano, J.A. Cooper, Jr., and M.R. Melloch, "A Proposal for a High-Temperature, Controlled-Ambient Annealing System for Silicon Carbide," Office of Naval Research Grant, $192,000.
45. M.R. Melloch, "Scanning Prove Microscope," Air Force Office of Scientific Research Grant, $175,000.
46. J.A. Cooper, M.R. Melloch, and M.A. Capano, "Exploratory Study of Integrating SiC with Silicon." Lucent Technologies, January 1, 2000 – May 31, 2001, $171,937.

47. M.A. Capano, J.A. Cooper, and M.R. Melloch, "Epitaxial Growth System for Silicon Carbide and III-Nitride Semiconductors," Office of Naval Research, March 31, 2000 – March 30, 2001.
48. M.R. Melloch, M.A. Capano, and J.A. Cooper, Jr., "3C-SiC Electrical Properties Evaluation," DOW Corning Corporation, October 1, 2000 – April 1, 2001, $56,235.
49. M.R. Melloch, "Plasmonic Nanophotonics and Optoelectronics," National Science Foundation Grant 0210445-ECS, July 1, 2002 – June 30, 2006.

Professional Society Activities

Organization:	IEEE
Activity:	Student Member, 1974 to 1976 and 1978 to 1981 Member, 1976 to 1978 and 1981 to 1991 Senior Member, March 1991 to December 1998 elected Fellow, January 1999 to present
Organization:	American Physical Society
Activity:	Member, 1988 to 1996 elected Fellow in 1996
Organization:	Materials Research Society
Activity:	Member, December 1991 to December 1993
Organization:	Electronic Materials Committee
Activity:	Member, July 1993 to present, Elected Secretary for July 1995–June 1997 Elected Vice-Chairman for July 1997-June 1998
Organization:	The Minerals, Metals, & Materials Society (TMS)
Activity:	Member, December 1993 to present
Organization:	American Vacuum Society
Activity:	Member, January 1994 to June 1999 Elected Fellow June 1999 to present Elected Member of Executive Committee of Electronic Materials and Processing Division (EMPD), 1997–1998.
Organization:	Optical Society of America
Activity:	Member, July 1994 to present Elected Fellow February 2000 to present.

Post-Doctoral Supervision

Name	Dates

Michael S. Carpenter	August 1990–December 1990
Jessica Chang	March 1994–August 1995
Eric S. Harmon	May 1994–May 1995

Ph.D. Thesis Supervision Completed

Name	Date	Thesis Title
Thomas E. Dungan	August 1989	"Dynamic Memories for Gallium Arsenide"
Martin Klausmeier-Brown	December 1989	"Measurement of the np Product and Minority Carrier Mobility in Heavily Doped p-Type GaAs," (co-supervised with M.S. Lundstrom)
Hak Lay Chuang	August 1990	"Experimental Studies and Fabrication Process Development of AlGaAs/GaAs Heterojunction Bipolar Transistors"
Michael S. Carpenter	August 1990	"Chemical Passivation of GaAs Surfaces and Devices"
Michael L. Lovejoy	May 1992	"Minority Carrier Diffusivity Measurements in III-V Semiconductors by the Zero-Field Time-of-Flight Technique" (co-supervised with M.S. Lundstrom)
Theresa Stellwag Mayer	December 1993	"The Design and Development of a Vertically Integrated Gallium Arsenide Bipolar Dynamic Memory"
Eric S. Harmon	May 1994	"Determination of Transport Properties in Gallium Arsenide and Related Compound Semiconductors"
Scott Sheppard	August 1995	"Development and Operation of Buried Channel Charge Coupled Devices in 6H Silicon Carbide"
Jayarama N. Shenoy	December 1996	"Basic MOS Studies for Silicon Carbide Power Devices"
Jason P. Henning	August 1999	"The Design and Development of High Frequency, High Power Static Induction Transistors in 4H-Silicon Carbide"

Rui Zhu	December 2000	"Metal-Mirrored Resonant Cavity Light-Emitting Diodes for Fiber-Optic Communications"
Luo Yuan	December 2000	"Development of Silicon Carbide IMPATT Oscillators"
Jan Spitz	May 2001	"Lateral Power MOSFETs in Silicon Carbide"
Rajesh Venugopal	December 2001	"Growth and Characterizatio of Aluminum Gallium Nitride/Gallium Nitride Heterostructures on Si(111) Wafers Using Various Buffer Layers"
Jong-Hyeok Jeon	May 2002	"A Study Of InAs-Based Schottky Barrier Diodes"
Ivan Milosavjevic	May 2002	"The Design and Demonstartion of Microwave Band Silicon Carbide Static Induction Transistors for Power Applications"
Jianwei Wan	August 2002	"Heteroepitaxy of Wide Band Gap Semiconductors on Silicon Substrates,"
Vijay Krishnamurthy	December 2002	"Design and Optimization of High Speed Large-Area Intermediate-Temperature Grown GaAs Metal-Semiconducdtor-Metal Photodetectors"

M.S. Thesis Supervision Completed

Name	date	Thesis Title
Christian Paul McMahon	August 1986	"A Quantum Efficiency Device for Solar Cells"
Robert E. Noren	August 1986	"MBE Growth and Characterization of GaAs Heteroface Solar Cells"
Thomas E. Dungan	August 1986	"Lateral Quantum Interference Devices in Semiconductors" (co-supervised with S. Datta)
Michael S. Carpenter	December 1987	"Characterization and Passivation of Gallium Arsenide Surfaces"

John Pabst	August 1989	"Ion Implanting for DRAM Applications"
Theresa B. Stellwag	December 1989	"A Study of Recombination Mechanisms in Gallium Arsenide p^+/N Diodes"
Eric S. Harmon	December 1990	"Experimental Determination of the Effects of Band-Gap Shrinkage and Degenerate Fermi Statistics on Minority Carrier Transport in Heavily Doped p-GaAs"
Scott T. Sheppard	August 1991	"Characterization of Generation Mechanisms in Gallium Arsenide PiN Diodes"
Chester Thad Gardner	December 1991	"Electrical-Characterization of NIPIN Structures in 6H-SiC"
Shanthi Kalpat	August 1993	"Reactive Ion Etching of SiC"
Nabeel Atique	December 1994	"Electrical and Structural Properties of Be- and Si-Doped Low-Temperature-Grown GaAs"
Anthony J. Lochtefeld	August 1996	"Carrier Lifetimes in Non-Stoichiometric Gallium Arsenide Grown by Molecular Beam Epitaxy"
Steven Carin	December 1996	"The Study of the Screening Effect of Arsenic Precipitates in Annealed LTG-GaAs Via Measurements of Capacitance"
Charles Han	December 1996	"Optimization of an ASIC Die Size Through a Thermal Model"
Jason Patrick Henning	May 1997	"Study of the Electronic Properties of Polycrystalline Silicon on 4H Silicon Carbide"
Sandeep D'Souza	August 1997	"Minority Carrier Mobility Measurement Using a Magneto Transport Method"
Abdul Mubin Ahmed	December 1997	"A New Laser System for Lifetime Measurement of Semiconductor Materials and Devices"

Arasanipalai Vasudevan	May 1998	"Screening Effect of Arsenic Precipitates in Annealed LTG-GaAs"
Shibly Ahmed	May 1999	"Fabrication and Analysis of Low Temperature Grown GaAs Tunnel Junction"
Rajkumar Santhakumar	December 1999	"A Study of Sheet Resistance of Ion Implanted 4H Silicon Carbide"
Linda Tinoco	May 2001	"The Characterization of Chemical Mechanical Planarization of Shallow Trench Isolation using Response Surface Methodology for a Multi-Response System"

School Committee Activities

Solid-State Devices and Materials Area, Chairman, 1985–1987 and 2002–2004, Member 1984–present.

Fields and Optics Area, Member 1985–present.

Curriculum Committee, School of Electrical Engineering, Purdue University, Member 1986–1989.

Ad Hoc Committee on Graduate Admissions and Recruiting, School of Electrical Engineering, Purdue University, Member Fall 1987.

Ad Hoc Committee on Academic Dishonesty, School of Electrical Engineering, Purdue University, Summer 1988.

Laboratory Coordinator for the Solid State Area, August 1989–1993

Graduate Committee, School of Electrical Engineering, Purdue University, Member 1990–1993, 2004 – present.

Hazard Management Committee, August 1991–present.

Coordinator, Fall 1992 PEEII Workshop.

1997 – 1999 ECE Graduate Admissions Committee

1997–1999 QE Commitee, Solid State Area Representative

August 2000 – August 2002 Turner Chair Search Committee

2001 – 2002 ECE Graduate Admissions Committee

2004 – present ECE Graduate Committee

2007 – precent ECE Curriculum Committee

2007 – present ECE Senior Design Committee

University-Wide Committee Activities

Committee: Academic Personal Grievance Committee
Activity: Member, 1987–1989

Committee: Campus Grievance Committee
Activity: Alternate Member, June 1, 1988–May 31, 1989
Member, June 1, 1989–May 31, 1990

Committee: Campus Communications System Group
Activity: Member, January 1994–January 1995

Committee: Industrial Research Activities Group
Activity: Member, 1994–present

Committee: Administrative Computing Advisory Committee
Activity: Member, January 1994–December 1996

Committee: Technical Assistance Program Industrial Council
Activity: Member, January 1994–December 1995

Committee: Engineering TV Industrial Advisory Group
Activity: Member, January 1994–December 1995

Committee: Engineering Alumni Board of Directors
Activity: Member, January 1994–December 1995

Committee: Faculty Business Developement Committee
Activity: Member, July 1994–December 1995

Committee: Ad-Hoc PRF Grant Competitions Review Committee
Activity: Member, Spring 1995

Committee: Engineering Library Advisory Committee
Activity: Member, January 1995–December 1995.

Committee: Engineering Librarian Search Committee

Activity: March 1995–1997

Committee: Search Committee for Director of Office of Technology Commercialization
Activity: September 1999 – January 2000.

Other University Activities

Mentor, Purdue University Access Internally for Minorities (AIM) Program, Summer 1991.

Serial Journal Publications

1. M.R. Melloch, R.L. Gunshor, C.L. Liu, and R.F. Pierret, "Interface Transduction in the ZnO-SiO_2-Si Surface Acoustic Device Configuration," Appl. Phys. Lett. 37, 147(1980).
2. M.R. Melloch, R.L. Gunshor, and R.F. Pierret, "Sezawa to Rayleigh Mode Conversion in the ZnO-on-Si Surface Acoustic Wave Device Configuration," Appl. Phys. Lett. 39, 476(1981).
3. M.R. Melloch, R.L. Gunshor, and R.F. Pierret, "High Frequency ZnO-SiO_2-Si Surface Acoustic Wave Convolvers," Electronic Letters 17, 827(1981).
4. M.R. Melloch, R.L. Gunshor, and R.F. Pierret, "Single Phase and Balanced Separate Comb Transducer Configurations in a ZnO/Si SAW Structure," IEEE Trans. on Sonics and Ultrason. 29, 55(1982).
5. M.R. Melloch, R.S. Wagers, and R.E. Williams, "Surface Acoustic Wave Memory Correlator on Semi-insulating GaAs," Appl. Phys. Lett. 42, 228(1983).
6. M.R. Melloch and R.S. Wagers, "Wide-band Monolithic GaAs Convolver and Memory Correlator," Appl. Phys. Lett. 43, 48(1983).
7. S.J. Martin, R.L. Gunshor, M.R. Melloch, S. Datta, and R.F. Pierret, "Surface Acoustic Wave Mode Conversion Resonator," Appl. Phys. Lett. 43, 238(1983).
8. M.R. Melloch and R.S. Wagers, "Propagation Loss of the Acoustic Pseudosurface Wave on (ZXt)45° GaAs," Appl. Phys. Lett. 43, 1008(1983).
9. M.R. Melloch and R.S. Wagers, "Controlled Diode Profiling for GaAs Strip-Coupled Correlators," IEEE Electron Device Lett. EDL-5, 136(1984).
10. S. Datta, M.R. Melloch, and R.L. Gunshor, "Possibility of an Excitonic Ground State in Quantum Wells," Phys. Rev. B 32, 2607(1985).
11. S. Datta, M.R. Melloch, S. Bandyopadhyay, R. Noren, M. Vaziri, M. Miller, and R. Reifenberger, "Novel Interference Effects Between Parallel Quantum Wells," Phys. Rev. Lett. 55, 2344(1985).

12. J.A. Cooper, Jr., Q-D. Qian, and M.R. Melloch, "Capacitance-Voltage and Current-Voltage Characteristics of Molecular Beam Epitaxially Grown p^+ GaAs/AlAs/n-GaAs Heterostructures," Appl. Phys. Lett. 48, 365(1986).
13. K.L. Tan, M.S. Lundstrom, and M.R. Melloch, "Effect of Impurity Trapping on the Capacitance-Voltage Characteristics of n-GaAs/N-AlGaAs Heterojunctions," Appl. Phys. Lett. 48, 428(1986).
14. S. Datta, M.R. Melloch, S. Bandyopadhyay, and M.S. Lundstrom, "Proposed Structure for Large Quantum Interference Effects," Appl. Phys. Lett. 48, 487 (1986).
15. Q-D. Qian, M.R. Melloch, and J.A. Cooper, Jr., "Photosensitive Capacitance-Voltage Characteristics of Molecular Beam Epitaxially Grown GaAs/AlGaAs/GaAs Heterostructures," Appl. Phys. Lett. 48, 638(1986).
16. James A. Cooper, Jr., Q-D. Qian, and Michael R. Melloch, "Evidence of Long-Term Storage of Minority Carriers in N^+-GaAs/AlGaAs/P-GaAs MIS Capacitors," IEEE Electron Device Lett., EDL-7, 374(1986).
17. M.R. Melloch, C.P. McMahon, M.S. Lundstrom, J.A. Cooper, Jr., and Q-D. Qian, "Photocollection Efficiency of GaAs/AlAs/GaAs p^+in and n^+ip Photodiodes," Solar Cells 21, 233(1987).
18. S. Datta, M.R. Melloch, R. Reifenberger, M. Miller, M. Vaziri, T. Dungan, M. Cahay, and R. Noren, "Aharonov-Bohm Oscillations due to Quantum Interference Between Parallel Quantum Wells," Surface Science 174, 439(1986).
19. Q-D. Qian, M.R. Melloch, and J.A. Cooper, Jr., "Multi-Day Dynamic Storage of Holes at the AlAs/GaAs Interface," IEEE Elec. Dev. Lett. EDL-7, 607(1986).
20. M.R. Melloch, Q-D. Qian, and J.A. Cooper, Jr., "Long Term Storage of Inversion Holes at a superlattice/GaAs Interface," Appl. Phys. Lett. 49, 1471(1986).
21. S. Bandyopadhyay, S. Datta, and M.R. Melloch, "Aharonov-Bohm Effect in Semiconductor Microstructures: Novel Device Possibilities," Superlattices and Microstructures 2, 539(1986).
22. M.R. Melloch, C.P. McMahon, M.S. Lundstrom, J.A. Cooper, Jr., Q-D. Qian, and S. Bandyopadhyay, "Bias-Dependent Photoresponse of p^+in GaAs/AlAs/GaAs Diodes," Appl. Phys. Lett. 50, 161(1987).
23. R.L. Gunshor, L.A. Kolodziejski, M.R. Melloch, M. Vaziri, C. Choi, and N. Otsuka, "Nucleation and Characterization of Pseudomorphic ZnSe Grown on Molecular Beam Epitaxially-Grown GaAs Epilayers," Appl. Phys. Lett. 50, 200(1987).
24. M.R. Melloch, J.A. Cooper, Jr., and Q-D. Qian, "Investigations of Minority Carrier Retention Behind AlAs Barriers," Journal of Vac. Sci. and Tech. B5, 766(1987).
25. T.E. Dungan, J.A. Cooper, Jr., and M.R. Melloch, "A Thermal-Generation-Limited Buried-Well Structure for Room Temperature GaAs Dynamic Memories," IEEE Elec. Dev. Lett. EDL-8, 243(1987).
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317. Jason P. Henning, Andreas Przadka, Michael R. Melloch, and James A. Cooper, Jr., "Design and Demonstration of C-Band Static Induction Transistors in 4H Silicon Carbide," 57th Device Research Conference, Santa Barbara, CA, June 28–30, 1999.
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321. Mrinal Das, Michael A. Capano, James A. Cooper, and Michael R. Melloch, "Effect of Implant Activation Annealing Conditions on the Inversion Channel Mobility in 4H- and 6H-Sic MOSFETs," 41st Electronic Materials Conference, Santa Barbara, CA, June 30–July 2, 1999.
322. Vijay Krishnamurthy, Marian C. Hargis, and Michael R. Melloch, "Transit Time and Light Absorption Effects in ITG-GaAs and Applications to MSM-Photodetectors," 41st Electronic Materials Conference, Santa Barbara, CA, June 30–July 2, 1999.
323. D.B. Janes, R.P. Andres, E.H. Chen, J. Dicke, V.R. Kolagunta, T. Lee, J. Liu, M.R. Melloch, E.L. Peckham, T. Pletcher, R. Reifenberger, B.L. Walsh, J.M. Woodall, C.P. Kubiak, and B. Kasibhatia, "Self-Assembly Based Approaches for Metal/Molecule/Semiconductor Nanoelectronic Circuits," Ninth Great Lakes Sypmposium on VLSI, Proceedings pages 114–117, 1999.
324. A.M. Weiner, S.-G. Park, M.R. Melloch, A.J. Taylor, C.W. Siders, J.L. Siders, "Enhancement of Narrowband THz Radiation via Femtosecond Pulse Shaping," Nonlinear Optics and Excitation Kinetics in Semiconductors, Marburg, Germany, April 10-13, 2000.
325. I. J. Maasilta, S. Chakraborty, S. Urazhdin, S. H. Tessmer, and M. R. Melloch, "Imaging of Subsurface Tunneling into a 2D Electron System," March Meeting of the American Physical Society, Minneapolis, MN, March 20–24, 2000.
326. H. B. Chan, R. C. Ashoori, and M. L. Melloch, "Measurement of the Coulomb anomaly for tunneling into a 2D system beyond the diffusive limit," March Meeting of the American Physical Society, Minneapolis, MN, March 20–24, 2000.
327. G. Finkelstein, P.I. Glicofridis, S.H. Tessmer, R.C. Ashoori, and M.R. Melloch, "Imaging of low compressibility strips in the quantum Hall liquid," March Meeting of the American Physical Society, Minneapolis, MN, March 20–24, 2000.

328. Heejun Jeong, A.M. Chang, M.R. Melloch, T.Y. Chang, "Even-Odd Effect in a Small Quantum Dot," March Meeting of the American Physical Society, Minneapolis, MN, March 20–24, 2000.
329. M.R. Melloch, "Silicon Carbide Power Devices," March Meeting of the American Physical Society, Minneapolis, MN, March 20–24, 2000. (INVITED)
330. Seres-Rodriguez, R. Dominguez-Cruz, R. Ramos-Garcia, S.I. Stepanov, D.D. Nolte, and M.R. Melloch, "Periodic Excited Photo-EMF Signals in GaAs Multiple-Quantum Wells,"Conference on Lasers and Electro-Optics (CLEO) 2000, San Francisco, CA, May 7–12, 2000.
331. R. Zhu, M.C. Hargis, and M.R. Melloch, "Design and Fabrication of Resonant Cavity Enhanced Light-Emitting Diodes Using a Tunnel Diode Contact," Conference on Lasers and Electro-Optics (CLEO) 2000, San Francisco, CA, May 7–12, 2000.
332. Mehmetcan Akbulut, M. Hargis, A.M. Weiner, M.R. Melloch, C.H. Chen, and J.M. Woodall, "Digital Communications Using 890 nm Surface Emitting Light-Emitting Diodes Above 1 Gb/s," Conference on Lasers and Electro-Optics (CLEO) 2000, San Francisco, CA, May 7–12, 2000.
333. J. Spitz, M.R. Melloch, J.A. Cooper, Jr., G. Melnychuk, and S.E. Saddow, "2.7 kV Epitaxial Lateral Power DMOSFETs in 4H-SiC," 58th Device Research Conference, University of Denver, Denver, CO, June 19–21, 2000.
334. M.V. Batistuta, N.P. Chen, D.B. Janes, M.R. Melloch, R. Reifenberger, and Stephen W. Howell, "Time Evolution Studies of the Surface Potential on LTG:GaAs Using Electrostatic Force Microscopy," 42nd Electronic Materials Conference, University of Denver, Denver, CO, June 21–23, 2000.
335. Nien-Po Chen, Takhee Lee, D.B. Janes, R. Reifenberger, J.M. Woodall, and M.R. Melloch, "A Physically Based Conduction Model for Ohmic Nancontacts to GaAs Utilizing Low-Temperature-Grown GaAs," 42nd Electronic Materials Conference, University of Denver, Denver, CO, June 21–23, 2000.
336. I. J. Maasilta, S. Chakraborty, S. H. Tessmer, and M. R. Melloch, "Magnetic structure of a disordered two-dimensional electron system studied by charge accumulation imaging," March Meeting of the American Physical Society, Seattle, 12, March 20–16, 2001.
337. S. Chakraborty, I. J. Maasilta, S. H. Tessmer, and M. R. Melloch, "Resolving the Disorder of a Two-Dimensional Electron System using Charge Accumulation Imaging," March Meeting of the American Physical Society, Seattle, 12, March 20–16, 2001.
338. Heejun Jeong, A.M. Chang, and M.R. Melloch, "Series-Coupled Small Quantum Dots," March Meeting of the American Physical Society, Seattle, 12, March 20–16, 2001.
339. F. Altomare, A. M. Chang, and M. R. Melloch, "Fabrication of small nanowire," March Meeting of the American Physical Society, Seattle, 12, March 20–16, 2001.
340. Y. Gu, Z. Ansari, D. Parsons-Karavassilis, M. Tziraki, R. Jones, K. Dowling, P.M.W. French, D.D. Nolte, and M.R. Melloch, "High Speed 3-D Imagina Using Photorefractive Holography With Novel Low Coherence Interferomneters," Conference on Lasers and Electro-Optics (CLEO) 2001, Baltimore Convention Center, Baltimore, MD, May 6–11, 2001.
341. P. Yu, D.D. Nolte, and M.R. Melloch, "Coherence-Gated Ultrasound Detection Through Turbid Medium," Conference on Lasers and Electro-Optics (CLEO) 2001, Baltimore Convention Center, Baltimore, MD, May 6–11, 2001.

342. Z. Ansari, V. Gu, J. Siegel, R. Jones, P.M.W. French, D.D. Nolte, and M.R. Melloch, "Real-time 3-d Imaging Using Structured Illumination and Photorefractive Holography, Including With Fluoresence," Conference on Lasers and Electro-Optics (CLEO) 2001, Baltimore Convention Center, Baltimore, MD, May 6–11, 2001.
343. B.S. Williams, H. Callebaut, Q. Hu, M.R. Melloch, and J.L. Reno, "Terahertz Intersubband Emission in Structures With and Without LO-phonon Assisted Depopulation," 6th International Conference on Intersubband Tansistions in Quantum Wells (ITQW'01), Monterey, CA, September 2001.
344. P. Yu, D. D. Nolte and M. R. Melloch, Application of laser-based ultrasound detection in turbid media, Photonics West, San Jose, CA, Jan. 20-25 (2002)
345. Y. Gu, A. Ansari, C. Dunsby, M. Itoh, D. Parsons-Karavassilis, J. Siegel, S. Iwamoto, D. D. Nolte, M. R. Melloch, P. M. French, Low-coherence photorefractive holography for highspeed 3D imaging including through turbid media, Photonics West, San Jose, CA, Jan. 2025 (2002)
346. S. Chakraborty, I. Kuljanishvili, S. H. Tessmer, M. R. Melloch, "Capacitance Characteristics of a Two-Dimensional Electron System Measured by Charge Accumulation Imaging," March Meeting of the American Physical Society, Indianapolis, IN, March 18–22, 2002.
347. I. J. Maasilta, S. Chakraborty, S. H. Tessmer, M. R. Melloch, "Capacitance Accumulation Imaging of a Two-Dimensional Electron System in a Quantizing Magnetic Field: Observation of Anisotropic Structure," March Meeting of the American Physical Society, Indianapolis, IN, March 18–22, 2002.
348. J. Wan, M.A. Capano, M.R. Melloch, and J.A. Cooper, Jr., "N-Channel 3C-SiC MOSFET's on Silicon Substrate," late news paper, 44th Electronic Materials Conference, Santa Barbara, CA, June 26–28, 2002.
349. P. Yu, D. D. Nolte, J. Turek, M. R. Melloch, C. Dunsby, Y. Gu and P.M.W. French, Imaging of Internal Tumor Necroses using Full-Frame Optical Coherence Imaging, Biological Optics Symposium, Photonics West, San Jose Jan27-31 (2003)
350. C. W. Dunsby, Y. Gu, P. M. W. French, D. D. Nolte and M. R. Melloch, Wide-field Coherence Gated Imaging: Photorefractive Holography and Wide-field coherent Heterodyne, Biological Optics Symposium, Photonics West, San Jose Jan27-31 (2003)
351. P. Yu and D. D. Nolte, J. J. Turek and M. R. Melloch, Shimmering Holograms and the Measure of Life in Optical Coherence Imaging of Tumor Spheroids, Conf. Lasers and Electro-Optics, Baltimore June 2-6 (2003).
352. S. Balasubramanian, M. R. Melloch, and D. D. Nolte , Degenerate Four-Wave Mixing in an Optically-Pumped Holographic Vertical Cavity Surface Emitting Laser (HVCSEL), Conf. Lasers and Electro-Optics, Baltimore June 2-6 (2003).
353. P. Yu, J. R. Turek, P. M. W. French, M. R. Melloch and D. D. Nolte, Shimmering Holograms and the Measure of Health inside Rat Tumors, Ninth International Conference on Photorefractive Effects, Materials, and Devices: Self-developing and dynamic holographic materials, La Colle sur Loup, Nice, France, June 17 - June 21 (2003).
354. C. Dunsby, D. Mayorga-Cruz, Y. Gu, Z. Ansari and P.M.W. French, P. Yu, D. D. Nolte and M. R. Melloch, Wide-field coherence gated imaging: photorefractive holography and single shot CCD based techniques, European Conf. Biolog. Opt., Munich, Germany June 21-23 (2003).
355. M.R. Melloch and J. Lax, "Nanotechnology Summer Undergraduate Research Intern Program: Comprehensive Introduction to Life as a Researcher, Symposium on

Educating Tomorrow's Materials Scientists and Engineers, 2004 Spring Meeting of the MRS, April 13-14, 2004, San Francisco, CA.

356. Andrei Kogan, Tai-Min Liu, Steven Herbert, and Michel Melloch, "A Magnetic Field-Induced Crossover to a Non-Universal Regime in a Kondo Dot," 2009 APS March Meeting, March 16—20, 2009, Pittsburg, PA.
357. Tia-Min Liu, Bryan Hemingway, Andrei Kogan Sreven Herbert, and Michael Melloch, "Magnetic Splitting of the Zero Bias Peak in a Quantum Point Contact with a Variable Aspect Ratio," 2009 APS March Meeting, March 16—20, 2009, Pittsburg, PA.
358. Bryan Hemingway, Tai-Min Liu, Andrei Kogan, Steven Herbert, and Michael Melloch, "Low-bias Transport Features in a Quantum Point Contact with a Variable Aspect Ratio," 2009 APS March Meeting, March 16—20, 2009, Pittsburg, PA.
359. Tai-Min Liu, Anh T. Ngo, Bryan Hemingway, Sergio Uloa, Michael Melloch, Steven Herbert, and Andrei Kogan, "A Quantitative Sstudy of Spin-Flip Cotunneling Transport in a Quantum Dot," 2010 APS March Meeting, March 15–19, 2010, Portland, Oregon.

* Invited Talks

Book Chapters

1. D.D. Nolte and M.R. Melloch, "Photorefractive Quantum Wells and Thin Films," Chapter 8 in *Photorefractive Effects and Materials*, Kluwar Academic Publishers, Dordvecht, 1995.
2. M.R. Melloch, J.M. Woodall, E.S. Harmon, N. Otsuka, F.H. Pollak, R.M. Feenstra, and M.A. Lutz, "Low Temperature Grown III-V Materials," in Volume 25 of *Annual Review of Materials Science*, Annual Reviews, Inc. publisher, 1995, pp 547–600.
3. E.S. Harmon, M.L. Lovejoy, M.S. Lundstrom, and M.R. Melloch, "Minority Electron Mobility in Doped GaAs," in *Properties of Gallium Arsenide*, third edition, edited by M.R. Brozel and G.E. Stillman, INSPEC publisher, 1997.
4. M.L. Lovejoy, M.R. Melloch, and M.S. Lundstrom, "Minority Hole Mobility in GaAs," in *Properties of Gallium Arsenide*, third edition, edited by M.R. Brozel and G.E. Stillman, INSPEC publisher, 1997.
5. G.B. Lush, M.R. Melloch, and M.S. Lundstrom, "Hole Lifetimes in n-type GaAs," in *Properties of Gallium Arsenide*, third edition, edited by M.R. Brozel and G.E. Stillman, INSPEC publisher, 1997.
6. D.D. Nolte, M.R. Melloch, Y. Ding, M. Dinu, K.M. Kwolek, and I. Lahiri, "Photorefractive Semiconductor Nanostructures" in the *Handbook of Nanostructured Materials and Nantechnology*, H. S. Nalwa, ed. (Academic Press, 1998), Vol. 4 , pp. 1-80.
7. Bin Xu, Qing Hu, and Michael R. Melloch, "Intersubband THz Emission in Mulitple Quantum Wells," in *Long-Wavelength Infrared Emitters Based on Quantum Wells and Superlattices*, Taylor & Francis publisher, 1999.
8. D. D. Nolte, M. R. Melloch, Y. Ding, M. Dinu, K. M. Kwolek and I. Lahiri, "Photorefractive Semiconductor Nanostructures", in Nanostructured Materials and Nanotechnology, H. S. Nalwa, ed. (Academic Press, 2002), Vol. 4 , pp. 484-562.

Invited Lectures

1. "Formation of Arsenic Precipitates in GaAs Buffer Layers Grown at Low Substrate Temperatures and Subsequent Optoelectronic Applications," IBM Distinguished Lecture, Department of Electrical Engineering, University of Notre Dame, Notre Dame, IN, November 16, 1990.
2. "Optoelectronic Applications of GaAs Epilayers with Arsenic Precipitates," E.L. Ginzton Laboratory, Stanford University, July 31, 1991.
3. "Novel Properties of Arsenic Nano-Clusters in GaAs," Department of Physics, Purdue University, April 10, 1992.
4. "Electro-Optics of Metal Semiconductor Composites," IBM T.J. Watson Research Center, September 10, 1992.
5. "Novel Properties of Arsenic Nano-Clusters in GaAs," Department of Materials Science and Engineering, University of Wisconsin, Madison, Wisconsin, October 1, 1992.
6. "Novel Properties of Arsenic Nano-Clusters in GaAs," Department of Physics, University of Notre Dame, Notre Dame, IN, October 30, 1992.
7. "Novel Properties of Arsenic Nano-Clusters in GaAs," Heterostructure Device Seminar Series, Department of Electrical Engineering, MIT, Cambridge, MA, March 29, 1993.
8. "Molecular Beam Epitaxy and Semiconductor Microstructures," Undergraduate seminar, Physics Department, Purdue University, April 20, 1993.
9. "Novel Properties of Arsenic Nano-Clusters in GaAs," Fraunhofer Institute for Applied Solid State Physics, Freiburg, Germany, May 3, 1993.
10. "GaAs Epilayers Containing As Clusters: a Semimetal/Semiconductor Composite," CCSM Seminar Series in Microelectronics, University of Illinois, Urbana, IL, Oct. 6, 1993.
11. "GaAs Epilayers Containing As Clusters: Metal/Semiconductor Composite," Spire Corporation, Bedford, MA, April 8, 1994.
12. "Optoelectronic Composites: GaAs with Metallic Inclusions," Wright Laboratory, Wright-Patterson Air Force Base, OH, Nov. 9, 1994.
13. "Optoelectronic Composites: GaAs with Metallic Inclusions," Arizona State University, March 28, 1996.
14. "SiC Power Devices," Motorola, Mesa, AZ, Nov. 18, 1997.
15. "SiC Power Devices," Center for Fundamental Materials Research colloquium at Michagan State University, Dec. 4, 1998.
16. "SiC Power Devices," The Ohio State University, November 9, 1999.

Technical Reports

1. M.R. Melloch, R.L. Gunshor, R.F. Pierret, and R.D. Cherne, "Zinc Oxide on SIlicon Surface Acoustic Wave Devices," TR-EE 82-6, School of Electrical Engineering, Purdue University, February, 1982.
2. R.S. Wagers and M.R. Melloch, "Development of SAW Monolithic Memory Correlators for Adaptive Coherent Receivers," Final Technical Report on DARPA Contract No. N00014-81-C-0566, March 1984.
3. Qi-De Qian, James A. Cooper, Jr., and M.R. Melloch, "Measurements of Minority Carrier Retention Time at the $Al_XGa_{1-X}As$ Interface," TR-EE 86-16, School of Electrical Engineering, Purdue University, June 1986.

4. M.S. Lundstrom, M.R. Melloch, C.S. Kyono, C.P. McMahon, R.E. Noren, and D.P. Rancour, "Basic Studies of III-V High Efficiency Cell Components, "TR-EE 86-35, School of Electrical Engineering, Purdue University, August 1986.
5. M.S. Lundstrom, M.R. Melloch, R.F. Pierret, P.D. DeMoulin, D.P. Rancour, C.S. Kyono, and M.S. Carpenter, "Basic Studies of III-V High Efficiency Cell Components, "TR-EE 87-33, School of Electrical Engineering, Purdue University, September 1987.
6. Philip G. Neudeck, M.R. Melloch, and J.A. Cooper, Jr., "Experiments in Interrupted Growth Molecular Beam Epitaxy Technology," TR-EE 88-3, School of Electrical Engineering, Purdue University, January 1988.
7. George D. Studtmann, Robert L. Gunshor, Leslie A. Kolodziejski, Michael R. Melloch, James A. Cooper, Jr., and Robert F. Pierret, "Molecular Beam Epitaxy of ZnSe on GaAs Epilayers for Use in MIS Devices," TR-EE 88-21, School of Electrical Engineering, Purdue University, May 1988.
8. M.S. Lundstrom, M.R. Melloch, R.F. Pierret, M.S. Carpenter, H.L. Chuang, P.D. DeMoulin, M.E. Klausmeier-Brown, G.B. Lush, and D.P. Rancour, "Basic Studies of III-V High Efficiency Cell Components," TR-EE 88-57, School of Electrical Engineering, Purdue University, December 1988.
9. M.R. Melloch, R.L. Gunshor, L.A. Kolodziejski, J.A. Cooper, Jr., and R. F. Pierret, "Pseudomorphic Interfaces," Final Report for Office of Naval Research Contract No. N00014-86-K-0522.
10. M.S. Lundstrom, M.R. Melloch, R.F. Pierret, M.S. Carpenter, H.L. Chuang, A. Keshavarzi, M.E. Klausmeier-Brown, G.B. Lush, J.M. Morgan, and T.B. Stellwag, "Basic Studies of III-V High Efficiency Cell Components," TR-EE 89-39, School of Electrical Engineering, Purdue University, August 1989.
11. Michael R. Melloch, James A. Cooper, Jr., Thomas E. Dungan, Philip G. Neudeck, and John W. Pabst, "GaAs Gate Dynamic Memory Technology," TR-EE 89-47, School of Electrical Engineering, Purdue University, August 1989.
12. P.G. Neudeck, J.A. Cooper, Jr., and M.R. Melloch, "Development, Demonstration, and Device Physics of FET-Accessed One-Transistor GaAs Dynamic Memory Technologies," TR-EE 91-21, School of Electrical Engineering, Purdue University, May 1991.
13. Chester T. Gardner, James A. Cooper, Jr., Michael R. Melloch, John W. Palmour, and Calvin H. Carter, Jr., "Electrical Characterization of NIPIN Structures in 6H-SiC," TR-EE-92-6, School of Electrical Engineering, January 1992.
14. Scott T. Sheppard, Michael R. Melloch, and James A. Cooper, Jr., "Development and Operation of Buried Channel Charge Coupled Devices in 6H Silicon Carbide," TR-ECE 96-8, School of Electrical and Computer Engineering, May 1996.

Patents

Robert L. Gunshor, Robert F. Pierret, and Michael R. Melloch, "ZnO SAW Device Having Separate Comb Transducer," No. 4,437,031, March 13, 1984.

Edward C. Jelks and Michael R. Melloch, "Photochemical Patterning," No. 4,612,085, September 1986.

J. A. Cooper, Jr., M. R. Melloch, and T. B. Stellwag, "Dynamic Random Access Memory Device," No. 5,365,477, November 15, 1994.

Jeremy Burroughes, Rodney R. Hodgson, David T. McInturff, Michael R. Melloch, Nobuo Otsuka, Paul M. Soloman, Alan C. Warren, and J.M. Woodall, "Compound Semiconductor Having Metallic Inclusions and Devices Fabricated Therefrom," No. 5,371,399, Dec. 6, 1994.

John L. Freeouf, Rodney T. Hodgson, Peter D. Kirchner, Michael R. Melloch, Jerry M. Woodall, and David D. Nolte, "LTG AlGaAs Non-Linear Optical Materials and Devices Fabricated Therefrom," No. 5,508,829, April 16, 1996.

Kipp J. Schoen, Jason P. Henning, Jerry M. Woodall, James A. Cooper, Jr., and Michael R. Melloch, "Dual-Metal-Trench Silicon Carbide Schottky Pinch Rectifier," No. 6,362,495, March 26, 2002.

James A. Cooper, Jr., Michael R. Melloch, Jayarama Shenoy, and Jan Spitz, "Power Devices in Wide Bandgap Semiconductors," No. 6,515,302, Feb. 4, 2003.

Activities as a Referee

IEEE Transactions on Sonics and Ultrasonics, 1982–1984.
Journal of Vacuum Science and Technology, 1985–1993, 1995, 1997, 1999.
IEEE Transactions on Electron Devices, 1984, 1991, 1993, 1996–1997.
IEEE Electron Device Letters, 1987–1991,1994–1998.
Applied Physics Letters, 1990–1999.
Journal of Crystal Growth, 1990, 1995, 1997–1998.
Philosophical Magazine, 1991.
National Science Foundation Proposals, 1988–1996, 1998.
Textbooks for Prentice-Hall, 1988.
Solid State Electronics, 1991, 1993, 1994, 1998.
1991 Fall Meeting of the Materials Research Society Proceedings Articles, 1991.
Journal of Applied Physics, 1992, 1995–1997.
IEE Proceedings, 1992.
IEE Electronics Letters, 1992–1998.
IEEE Trans. on Computer-Aided Design of Integrated Circuits and Systems, 1992.
NATO International Scientific Exchange Progammes Collaborative Research Grant, 1993.
Journal of Electronic Materials, 1994–1998.
NASA proposal, 1996.
IEEE Journal of Selected Topics in Quantum Electronics, 1996.
The Ohio Board of Regents 1997 Investment Fund Competition Proposal, 1997.
Optics Letters, 1997.
Superlattices and Microstructrures, 1997.
IEEE Photonics Technology Letters, 1998.

Editorships

Co-editor for November 1993 special issue of the Journal of Electronic Materials on "Low Temperature Grown and Highly Non-Stoichiometric GaAs and Related Materials."

Editor for the Proceedings of the 1993 North American Molecular Beam Epitaxy Conference, in the March/April 1994 issue of the Journal of Vacuum Science and Technology B.

Co-editor for April 1995 special issue of the Journal of Electronic Materials on "III-V Nitrides and Silicon Carbide."

Co-editor for May 1996 special issue of the Journal of Electronic Materials on "III-V Nitrides and Silicon Carbide."

Co-editor for March 1997 special issue of the Journal of Electronic Materials on "III-V Nitrides and Silicon Carbide."

Co-editor for March 1998 special issue of the Journal of Electronic Materials on "III-V Nitrides and Silicon Carbide."

Co-editor, Proceedings of the IEEE Twenty-Fourth International Symposium on Compound Semiconductors held in San Diego, California, 8-11 September 1997, Institute of Physics Conference Series Number 156.

Co-editor for March 1999 special issue of the Journal of Electronic Materials on "III-V Nitrides and Silicon Carbide."

Co-Editor of Materials Research Society Symposium Proceedings Volume 572 on "Wide-Bandgap Semiconductors for High-Power, High-Frequency, and High-Temperature Applications—1999."

Co-editor, Proceedings of the 2000 IEEE International Symposium on Compound Semiconductors held in Monterey, CA, October 2–5, 2000.

Co-editor, Proceedings of the 2003 IEEE International Symposium on Compound Semiconductors held in San Diego, CA, August 25–27, 2003.

Conference Activities

Organizing Committee, Ninth Molecular Beam Epitaxy Workshop, Purdue University, September 21–23, 1988.

Technical reviewer, 22nd IEEE Photovoltaic Specialist Conference, October 7–11, 1991.

Session Organizer, Program Committee Member, and Session Co-chairman, 1992 Electronic Materials Conference, Massachusetts Institute of Technology, Cambridge, Massachusetts, June 24–26, 1992.

Co-Organizer for Symposium on Low Temperature Grown and Highly Non-Stoichiometric GaAs and Related Materials at the 1993 Spring Meeting of the Material Research Society, San Francisco, CA, April 12–16, 1993.

Session Organizer, Program Committee Member, and Session Co-chairman, 1993 Electronic Materials Conference, University of California at Santa Barbara, Santa Barbara, CA, June 23–25, 1993.

Program Committee Member, 13th Molecular Beam Epitaxy Workshop, Stanford, CA, September 13–15, 1993.

Session Chairman, 8th Conference on Semi-Insulating III-V Materials, Warsaw, Poland, June 6–10, 1994

Session Organizer, Program Committee Member, and Session Co-chairman, 1994 Electronic Materials Conference, University of Colorado at Boulder, Boulder, CO, June 22–24, 1994.

Program Committee Member, 1994 International Symposium on Compound Semiconductors, San Diego, CA, September 18–24, 1994.

Program Chairman, 1994 North American Molecular Beam Epitaxy Conference, Urbana, IL, Oct. 10–12.

Technical reviewer, First World Conference on Photovoltaic Energy Conversion, December, 1994.

Session Chairperson, "High Power, High Temperature Semiconductor Devices II," 1994 International Symposium on Compound Semiconductors, San Diego, CA, September 18–24, 1994.

Co-organizer, Air Force Office of Scientific Research Contractors' Workshop on Non-Stoichiometric GaAs and Related Materials, New Orleans, Louisiana, February 23–24, 1995.

Session Organizer, Program Committee Member, and Session Co-chairman, 1995 Electronic Materials Conference, University of Virginia, Charlottesville, VA, June 21–23, 1995.

Co-Organizer and Program Committee Member, Eight International Conference on Superlattices, Microstructures, and Microdevices, Cincinnati, OH, August 21–25, 1995.

Program Committee Member, 1995 North American Molecular Beam Epitaxy Conference, College Park, MD, Sept. 17–20, 1995.

Session Chair, Eight International Conference on Superlattices, Microstructures, and Microdevices, Cincinnati, OH, August 21–25, 1995.

Session Chair, 1995 North American Molecular Beam Epitaxy Conference, College Park, MD, Sept. 17–20, 1995.

Session Chair, The Electrochemical Society 188th Meeting, Chicago, IL, October 8–13, 1995.

Organizing Committee, 1996 Workshop on Compound Semiconductor Manterials and Devices (WOCSEMMAD'96), Sante Fe, NM, February 19–21, 1996.

Session Chair, Device Research 54th Conference, Santa Barbara, CA, June 24–26, 1996.

Session Organizer, Program Committee Member, and Session Co-chairman, 1996 Electronic Materials Conference, University of California at Santa Barbara, Santa Barbara, CA, June 26–28, 1996.

Organizing Committee, 1997 Workshop on Compound Semiconductor Manterials and Devices (WOCSEMMAD'97), San Antonio, TX, February 15–17, 1997.

Co-Organizer for Division of Material Physics Focused Session on "Wide-Band-Gap Semiconductors," at the 1997 March Meeting of the American Physical Society, Kansas City, MO, March 17–21, 1997.

Session Chair for Session I26 "Wide-Band-Gap Semiconductors V: SiC" at the 1997 March Meeting of the American Physical Society, Kansas City, MO, March 17–21, 1997.

Session Chair for session on "Device Physics" at the International Conference on Silicon Carbide, III-nitrides and Related Materials, Stockholm, Sweden. August 31–Sept. 5, 1997.

Associate Program Chair, 1997 International Symposium on Compound Semiconductors, San Diego, CA, September 7–11, 1997.

Program Committee Member, 1997 North American Molecular Beam Epitaxy Conference, Univ. of Michigan, Ann Arbor, Michigan, Oct. 5–7, 1997.

Program Chair, 1998 Electronic Materials Conference, University of Virginia, Charlottesville, VA, June 24–26, 1998.

Program Committee Member, American Vacuum Society 45th International Symposium, Baltimore, Maryland, November 2–6, 1998.

Session Chair for session on "Critical Issues in Widebandgap Semiconductors," American Vacuum Society 45th International Symposium, Baltimore, Maryland, November 2–6, 1998.

Program Chair, 1999 Electronic Materials Conference, University of California at Santa Barbara, Santa Barbara, CA, June 1999.

Program Committee Member, American Vacuum Society 46th International Symposium, Seattle, Washington, October 25–29, 1999.

Session Chair for session on "Nitride Epitaxy," American Vacuum Society 46th International Symposium, Seattle, Washington, October 25–29, 1999.

Co-Organizer for Symposium on "Wide-Bandgap Semiconductors for High-Power, High-Frequency, and High-Temperature Applications" at the 1999 Spring Meeting of the Material Research Society, San Francisco, CA, April 5–9, 1999.

General Chair, 2000 Electronic Materials Conference, University of Denver, Denver, CO, June 2000.

Program Chair, 2000 International Symposium on Compound Semiconductors, Monterey, CA, October 2–5, 2000.

General Chair, 2001 Electronic Materials Conference, University of Notre Dame, Notre Dame, IN, June 2001.

General Chair, 2003 International Symposium on Compound Semiconductors, San Diego, CA, August 25–27, 2003.

Other Activities

Member of Materials and Devices/Systems Technical Review Subpanel for the National Renewable Energy Laboratory, July 1992.

Member of National Science Foundation Solid State & Microstructures review panel, May 24, 1994.

Elected Secretary of the Electronic Materials Committee for June 1995–June 1997.

Review of the Electrical Engineering Ph.D. program at the University of Cincinnati, Aug. 2, 1995.

Review of the quality of the journals *Semiconductors* and *Physics of the Solid State*, two Russian translation journals, for the American Institute of Physics.

Elected Vice-Chairman of the Electronic Materials Committee for July 1997–June 1999.

1997–1999 member of the IEEE Electron Devices Society's Technical Committee on Power Devices and Integrated Circuits.

IEEE Electron Devices Society Representative to the Journal of Electronic Materials Editorial Oversight Board, July 1998–June 2004.

Appointed Associate Editor and Member of the Oversight Committee for the Journal of Vacuum Science and Technology, January 1999–December 2002.

Elected Chairman of the Electronic Materials Committee for July 1999–June 2001.

Member of the Awards Committee for the selection of the 2005 Welker Award, the Fujitsu Quantum Devices Award, and the ISCS Young Scientist Award.