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EDUCATION

University of Pennsylvania, Philadelphia, Pennsylvania
 1975 Ph.D. in Electrical Engineering
 1971 M.S.E.E.
 1970 B.S.E.E., magna cum laude
Massachusetts Institute of Technology, Cambridge, Massachusetts
 1975 – 1976 Postdoctoral Fellow, Department of Materials Science and Engineering

EMPLOYMENT HISTORY

1983 – present	Santa Clara University , Santa Clara, California
1987 –	Professor of Electrical Engineering; Chair (2008-2011)
2007 –	Founding Director, TENT Laboratory
2003 – 2011	Founding Director, Center for Nanostructures
2003 – 2006	Associate Dean, New Initiatives and Partnerships
1985 – 2002	Founding Director, Microelectronics Laboratory
1983 – 1987	American Microsystems, Inc. (AMI) Associate Professor of Electrical Engineering
2015	Hong Kong Polytechnic University Visiting Professor, Department of Applied Physics
2005 – 2006	University of California, San Diego Visiting Professor, Department of Electrical and Computer Engineering
2000 – 2006	Tokyo Institute of Technology , Nagatsuta, Japan Visiting Professor, Department of Advanced Applied Electronics
2000	University of Pennsylvania , Philadelphia, Pennsylvania Visiting Professor, Department of Electrical Engineering
1998 – 2000	National University of Singapore , Singapore Distinguished Visiting Professor, Department of Electrical Engineering
1992 – 1993 &	University of California, Berkeley Visiting Professor, Department of Electrical Engineering and Computer Sciences
1997	University of Tsukuba , Tsukuba, Japan Visiting Professor, Institute of Applied Physics
1989	Hitachi, Ltd. , Tokyo, Japan Visiting Chief Researcher, Central Research Laboratory
1988 – 1991	Consulting Researcher, Hitachi Research Laboratory
1989 – 1991	Surface Analytic Research, Inc. , Mountain View, California President and founder
1979 – 1984	Stanford University , Stanford, California Research Associate, Stanford/NASA Joint Institute for Surface and Microstructure Research
1978 – 1979	NASA-Ames Research Center , Moffett Field, California National Research Council Associate
1976 – 1978	

OTHER APPOINTMENTS

2016 – present	Research Grants Council, Hong Kong , Joint Research Schemes Panel Member
2012 – 2017	Hong Kong University of Science and Technology , Adjunct Professor
2010 – 2014	Research Grants Council, Hong Kong , Engineering Panel Member
2012	Macronix , Hsinchu, Taiwan, Consulting Professor
2008 – 2013	Zhejiang University , Hangzhou, China, Bao Yugang Chair Professor
2001 – 2006	NUS America , Mountain View, California, Consulting Professor and Honorary Advisor
1998 – 2000	National University of Singapore (NUS) , Distinguished Visiting Professor
1994 – 1996	Hewlett-Packard ULSI Research Laboratory , Palo Alto, California, Consultant
1995	MRIT , Tokyo, Japan, Consultant
1993	JETRO , San Francisco, California, Consultant
1990 – 1993	AMAC Corporation , Los Angeles, California, Consultant
1989	Northrop Corporation , Anaheim, California, Consultant
1986 – 1987	Fairchild Research Center , Palo Alto, California, Consultant
1983 – 1986	Gould AMI Semiconductors , Santa Clara, California, Consultant
1984 – 1985	Surface Analytic Research, Inc. , Mountain View, California, Consultant
1982 – 1984	Brookhaven National Laboratory , Upton, New York, Consultant

HONORS AND AWARDS

2016 – present	IEEE Life Fellow
2008 – 2014	Honorary Professor, Institute of Microelectronics, Chinese Academy of Sciences
2005	IEEE Electron Devices Society Distinguished Service Award
2004	IEEE Educational Activities Board Meritorious Achievement Award in Continuing Education, “ <i>for extensive and innovative contributions to the continuing education of working professionals in the field of micro/nanoelectronics</i> ”
1999	IEEE Fellow, “ <i>for contributions to microelectronic education and the understanding of interfacial properties of silicon-based devices</i> ”
1997	University Award for Excellence in Scholarship, Santa Clara University
1994 – present	IEEE Electron Devices Society Distinguished Lecturer
1992	Researcher of the Year, School of Engineering, Santa Clara University
1983	American Microsystems, Inc. (AMI) Professorship, Santa Clara University
1975	University of Pennsylvania Chapter Sigma Xi Prize for excellence in graduate research

JOURNAL EDITORSHIPS

2009 – present	Editor, Journal of Semiconductor Technology and Science
2007 – 2015	Member of Editorial Board, Journal of Nano Education
1997 – 2000	Editor, MOS Devices, IEEE Transactions on Electron Devices

KEY LEADERSHIP POSITIONS IN PROFESSIONAL SOCIETIES

- IEEE Awards Board Vice Chair (2013-2014)
- IEEE Division I Director, Member of the IEEE Board of Directors (2002-2003)
- IEEE Electron Devices Society: President (2000-01); Vice-President (1998-1999); Chair, Fellow Evaluation Committee (2006-2007), Education Award Committee (2006-2008), Distinguished Service Award Committee (2009); Regions/Chapters Chair (1991-1998)

CURRENT AND RECENT RESEARCH TOPICS

- **Silicon Nanoelectronics:** On-chip interconnects and transistors for sub-20nm technology nodes.
- **Nanocarbons:** Fabrication, characterization, and modeling of all-carbon nanomaterials and devices for next-generation integrated circuits, modeling and design of carbon nanotube ultracapacitors.

RECENT RESEARCH AND EDUCATION PARTNERS/SPONSORS (ongoing work in **bold**)

- Advanced Micro Devices – Microelectronics Laboratory sponsorship (1987-2002).
- Agilent Technologies – Electrical Engineering Department undergraduate teaching lab sponsorship (2010-2012).
- Alta Microtec – research collaboration on nanostructure fabrication (2004-2006).
- **Applied Materials – Research sponsorship and collaboration on CNT via interconnects (2011-present).**
- University of California, Berkeley and San Diego – research collaboration on SiGeC/Si Heterostructures (1992-1997).
- University of California, Santa Cruz – research collaboration on CNT interconnects in biological systems, and on thermal characterization of interconnects and thermal interfaces (2003-2008).
- University of California, Riverside – research collaboration on thermal characterization of interconnects and thermal interfaces (2008-2009).
- Epion Corporation – research collaboration on high-k dielectrics (2000-2002).
- Hewlett-Packard Laboratories – technical support for laboratory operation and research collaboration on CMOS reliability studies (1988-1999).
- Hiroshima University – research collaboration on transistor and interconnect compact model development for circuit simulation (2000-2006).
- Hitachi, Ltd. – research collaboration on MOS device and circuit reliability (1988-1998); sponsorship of visiting student researchers at Hitachi research laboratories in Japan (1988-1998); **research collaboration with Hitachi High-Technologies (HTC) on micro/nanostructure characterization, and hosting visiting researchers from HTC (2003-present).**
- **Hong Kong University of Science and Technology – Research collaboration on nanocarbon interconnects (2012-present).**
- **Hong Kong Polytechnic University – Research collaboration on all-carbon 3-D interconnects (2015-present).**
- IISME – joint program for professional development of high school teachers in the area of nanoscience and nanotechnology (2003-2006).
- Intel – Microelectronics Laboratory sponsorship and research collaboration on intermetal dielectrics (1991); strategic partnership on interconnects (2002-2005).

- Korea Advanced Institute of Science and Technology – research collaboration and sponsorship on interconnect modeling (2000-2007).
- Massachusetts Institute of Technology – research collaboration on CMOS reliability studies (1996-1998).
- **National Aeronautics and Space Agency** – research grant (2003-2006); **collaboration with NASA Ames Research Center on nanocarbon fabrication and characterization (2002-present).**
- National Science Foundation – research grant on high-temperature superconducting films on silicon (1989-1995).
- National University of Singapore – research collaboration on SiGeC alloy oxidation (1998-2002), carbon nanotube microelectrode array fabrication (2005-2007).
- University of Pennsylvania – research collaboration on high-k dielectrics (2000-2001).
- Radiance Technologies – collaboration on thermal characterization of test structures for interconnect and thermal interface materials (2007-2011).
- University of Rome, La Sapienza – collaboration on radiation hardness of electrical properties of carbon nanostructures (2005).
- Solectron – Microelectronics Laboratory sponsorship and research collaboration on circuit board components characterization (1986-1995).
- Stanford University – usage of Stanford Nanofabrication Facility under National Nanofabrication Infrastructure Network Grant for research on SiGeC/Si heterostructures and interconnects, and student training (1996-2010).
- **South China University of Technology – collaboration on all-carbon nanostructures for on-chip interconnect applications (2016-present).**
- Tokyo Institute of Technology – research collaboration on SiC/Si heterostructures (1986-1992); sponsorship of TIT researcher visiting Microelectronics Laboratory (1989-1990); consultation on high-k dielectrics (2000-2006).
- Toshiba America – Microelectronics Laboratory sponsorship (1988-2002).
- Tsinghua University – Research collaboration on via interconnects (2012-2016).
- U.S. Department of Defense – Thermal and Electrical Nanoscale Transport (TENT) project, to develop technology for improved electrical and thermal properties of advanced integrated circuits for sensor applications. Total funding amount \$4.5M (2007-2011).
- Winbond – Microelectronics Laboratory sponsorship and research collaboration on MOSFET modeling (1996-2003).
- Zhejiang University – Research collaboration on integrated circuit reliability (2010-2012).

PUBLICATIONS

I. Refereed Journals

1. C. Zhou, S. Raju, B. Li, M. Chan, Y. Chai, and C.Y. Yang, “Self-Driven Metal-Semiconductor-Metal WSe₂ Photodetector with Asymmetric Contact Geometries,” *Advanced Functional Materials* **28**, 1802954 (8 pp) (2018).
2. A.A. Vyas, C. Zhou, and C.Y. Yang, “On-Chip Interconnect Conductor Materials for End-of-Roadmap Technology Nodes,” *IEEE Transactions on Nanotechnology* **17**, 4-10 (2018).
3. Y. Abe, M. Suzuki, A. Vyas, and C.Y. Yang, “Conductive contact area estimation for carbon nanotube via interconnects using secondary-electron imaging,” *Journal of Applied Physics* **123**, 024507 (7 pp) (2018).
4. C. Zhou, R. Senegor, Z. Baron, Y. Chen, S. Raju, A.A. Vyas, M. Chan, Y. Chai, and C.Y. Yang, “Synthesis and interface characterization of CNTs on graphene,” *Nanotechnology* **28**, 054007 (10 pp) (2017).
5. A.A. Vyas, C. Zhou, P. Wang, Y. Chai, and C.Y. Yang. “Effect of Improved Contact on Reliability of Sub-60 nm Carbon Nanotube Vias,” *Nanotechnology* **27**, 375202 (11 pp) (2016).
6. A. Orphanou, T. Yamada, and C.Y. Yang, “Optimization of carbon nanotube ultracapacitor for cell design,” *Journal of Applied Physics* **119**, 214311 (6 pp) (2016).
7. A.A. Vyas, C. Zhou, P. Wilhite, P. Wang, and C.Y. Yang, “Electrical properties of carbon nanotube via interconnects for 30 nm linewidth and beyond,” *Microelectronics Reliability* **61**, 35-42 (2016).
8. S. Kureshi, D. Fabris, S. Tokairin, C.V. Cardena, and C.Y. Yang, “Diffraction model for thermorelectance data,” *Applied Optics* **54**, 5314-5319 (2015).
9. C. Zhou, A.A. Vyas, P. Wilhite, P. Wang, M. Chan, and C.Y. Yang, “Resistance Determination for Sub-100 nm Carbon Nanotube Vias,” *IEEE Electron Device Letters* **36**, 71-73 (2015).
10. P. Wilhite, H.S. Uh, N. Kanzaki, P. Wang, A. Vyas, S. Maeda, T. Yamada, and C.Y. Yang, “Electron-beam and ion-beam-induced deposited tungsten contacts for carbon nanofiber interconnects,” *Nanotechnology* **25**, 375702 (8 pp) (2014).

11. P. Wilhite, A.A. Vyas, Jason Tan, Jasper Tan, T. Yamada, P. Wang, J. Park, and C.Y. Yang, "Metal-nanocarbon contacts," *Semiconductor Science and Technology* **29**, 054006 (16 pp) (2014). **(Invited paper in Special Issue on Nanocontacts)**
12. A. Vyas, F. Madriz, N. Kanzaki, P. Wilhite, X. Sun, T. Yamada, and C.Y. Yang, "Carbon Nanofiber Interconnect RF Characteristics Improvement with Deposited Tungsten Contacts," *Journal of Nanoscience and Nanotechnology* **14**, 2683-2686 (2014).
13. C. Zhou, Y. Yang, H. Cai, T.-L. Ren, M. Chan, and C.Y. Yang, "Temperature-Compensated High-Frequency Surface Acoustic Wave Device," *IEEE Electron Device Letters* **34**, 1572-1574 (2013).
14. C. Zhou, Y. Yang, H. Jin, B. Feng, S. Dong, J. Luo, T.-L. Ren, M. Chan, and C.Y. Yang, "Surface acoustic wave resonators based on (002)AlN/Pt/diamond/silicon layered structure," *Thin Solid Films* **548**, 425-428 (2013).
15. C.J. Zhou, Y. Yang, Y. Shu, H.L. Cai, T.L. Ren, M. Chan, J. Zhou, H. Jin, S.R. Dong, and C.Y. Yang, "Visible-light photoresponse of AlN-based film bulk acoustic wave resonator," *Applied Physics Letters* **102**, 191914 (3 pp) (2013).
16. C. Cardenas, D. Fabris, S. Tokairin, F. Madriz, and C.Y. Yang, "Thermoreflectance Measurement of Temperature and Thermal Resistance of Thin Film Gold," *Journal of Heat Transfer* **134**, 111401 (7 pp) (2012).
17. A. Orphanou, T. Yamada, and C.Y. Yang, "Modeling of a carbon nanotube ultracapacitor," *Nanotechnology* **23**, 095401 (7 pp) (2012).
18. H. Jin, J. Zhou, S.R. Dong, B. Feng, J.K. Luo, D.M. Wang, W.I. Milne, and C.Y. Yang, "Deposition of c-axis orientation aluminum nitride films on flexible polymer substrates by reactive direct-current magnetron sputtering," *Thin Solid Films* **520**, 4863-4870 (2012).
19. H. Jin, S. Dong, M. Miao, J.J. Liou, and C.Y. Yang, "Breakdown voltage of ultrathin dielectric film subject to electrostatic discharge stress," *Journal of Applied Physics* **110**, 054516 (4 pp) (2011).
20. N. Kanzaki, S. Maeda, P. Wilhite, T. Yamada, T. Saito, and C.Y. Yang, "E-beam-Deposited Tungsten Contacts for Carbon Nanofiber Interconnect Test Devices," *Microscopy and Microanalysis* **17** (Suppl 2), 1518-1519 (2011).
21. D. Fabris, M. Rosshirt, C. Cardenas, P. Wilhite, T. Yamada, and C.Y. Yang, "Application of Carbon Nanotubes to Thermal Interface Materials," *Journal of Electronic Packaging (Transactions of the ASME)* **133**, 020902 (6 pp) (2011).
22. S. Maeda, P. Wilhite, N. Kanzaki, T. Yamada, and C.Y. Yang, "Change in carbon nanofiber resistance from ambient to vacuum," *AIP Advances* **1**, 022102 (1-6) (2011).
23. K. Li, R. Wu, P. Wilhite, V. Khera, S. Krishnan, X. Sun, and C.Y. Yang, "Extraction of contact resistance in carbon nanofiber via interconnects with varying lengths," *Applied Physics Letters* **97**, 253109 (3 pp) (2010). **(Among the monthly top 20 most down-loaded articles in APL in 2010)**
24. T. Yamada, H. Yabutani, T. Saito, and C.Y. Yang, "Temperature dependence of carbon nanofiber resistance," *Nanotechnology* **21**, 265707 (5 pp) (2010).
25. F. Madriz, T. Yamada, X. Sun, J.G. Nickel, and C.Y. Yang, "Frequency-Independent RC Circuit Model for One-Dimensional Carbon Nanostructures," *IEEE Electron Device Letters* **31**, 263-265 (2010).
26. T. Yamada, T. Saito, M. Suzuki, P. Wilhite, X. Sun, N. Akhavantafti, D. Fabris, and C.Y. Yang, "Tunneling between carbon nanofiber and gold electrodes," *Journal of Applied Physics* **107**, 044304 (5 pp) (2010).
27. X. Sun, K. Li, R. Wu, P. Wilhite, T. Saito, J. Gao, and C.Y. Yang, "The effects of catalysts and underlayer metals on the properties of PECVD-grown carbon nanostructures," *Nanotechnology* **21**, 045201 (6 pp) (2010).
28. T. Yamada, F.R. Madriz, and C.Y. Yang, "Inductance in One-dimensional Nanostructures," *IEEE Transactions on Electron Devices* **56**, 1834-1839 (2009). **(Invited paper in Special Issue on Compact Interconnect Models for Giga Scale Integration)**
29. F.R. Madriz, J.R. Jameson, S. Krishnan, X. Sun, and C. Y. Yang, "Circuit Modeling of High-Frequency Electrical Conduction in Carbon Nanofibers," *IEEE Transactions on Electron Devices* **56**, 1557-1561 (2009).
30. T. Yamada, T. Saito, D. Fabris, and C.Y. Yang, "Electrothermal Analysis of Breakdown in Carbon Nanofiber Interconnects," *IEEE Electron Device Letters* **30**, 469-471 (2009).

31. W. Wu, S. Krishnan, T. Yamada, X. Sun, P. Wilhite, R. Wu, K. Li, and C.Y. Yang, "Contact resistance in carbon nanostructure via interconnects," *Applied Physics Letters* **94**, 163113 (3 pp) (2009).
32. E.D. de Asis Jr., T.D.B. Nguyen-Vu, P.U. Arumugam, H. Chen, A.M. Cassell, R.J. Andrews, C.Y. Yang, and J. Li, "High efficient electrical stimulation of hippocampal slices with vertically aligned carbon nanofiber microbrush array," *Biomed Microdevices*, DOI **10.1007/s10544-009-9295-7** (8 pp) (2009), online at www.Springerlink.com.
33. M. Suzuki, Y. Ominami, T. Sekiguchi, and C.Y. Yang, "Secondary electron imaging of embedded defects in carbon nanofiber via interconnects," *Applied Physics Letters* **93**, 263110 (3 pp) (2008).
34. M. Suzuki, K. Kumagai, T. Sekiguchi, A.M. Cassell, T. Saito, and C.Y. Yang, "Secondary electron emission from freely supported nanowires," *Journal of Applied Physics* **104**, 114306 (6 pp) (2008).
35. T. Saito, T. Yamada, D. Fabris, H. Kitsuki, P. Wilhite, M. Suzuki, and C.Y. Yang, "Improved contact for thermal and electrical transport in carbon nanofiber interconnects," *Applied Physics Letters* **93**, 102108 (3 pp) (2008).
36. Y. Ominami, M. Suzuki, K. Asakura, and C.Y. Yang, "Growth of Carbon Nanofibers on Nanoscale Catalyst Strips Fabricated with a Focused Ion Beam," *Nanotechnology* **19**, 405302 (5 pp) (2008).
37. H. Kitsuki, T. Yamada, D. Fabris, J.R. Jameson, P. Wilhite, M. Suzuki, and C.Y. Yang, "Length dependence of current-induced breakdown in carbon nanofiber interconnects," *Applied Physics Letters* **92**, 173110 (3 pp) (2008).
38. Q. Ngo, T. Yamada, M. Suzuki, Y. Ominami, A. M. Cassell, J. Li, M. Meyyappan, and C.Y. Yang, "Structural and Electrical Characterization of Carbon Nanofibers for Interconnect Via Applications," *IEEE Transactions on Nanotechnology* **6**, 688-695 (2007).
39. M. Suzuki, Q. Ngo, H. Kitsuki, K. Gleason, Y. Ominami, and C.Y. Yang, "Bright-field transmission imaging of carbon nanofibers on bulk substrate using conventional scanning electron microscopy," *Journal of Vacuum Science & Technology* **B25**, 1615-1621 (2007).
40. M. Suzuki, H. Kitsuki, Q. Ngo, T. Yamada, K. Gleason, Y. Ominami, B. Roth, M. Betts, A.M. Cassell, J. Li, and C.Y. Yang, "Image Formation Mechanisms in Scanning Electron Microscopy of Carbon Nanofibers on Substrate," *Microscopy and Microanalysis* **13** (Suppl 2), 580-581 CD (2007).
41. M. Suzuki, Y. Ominami, Q. Ngo, C.Y. Yang, A.M. Cassell, and J. Li, "Current-induced breakdown of carbon nanofibers," *Journal of Applied Physics* **101**, 114307(5 pp) (2007).
42. M. Suzuki, T. Yamada, and C.Y. Yang, "Monte Carlo Simulation of SEM Bright-contrast Images of Suspended Carbon Nanofibers," *Applied Physics Letters* **90**, 083111(3 pp) (2007).
43. Q. Ngo, A.M. Cassell, V. Radmilovic, J. Li, S. Krishnan, M. Meyyappan, and C.Y. Yang, "Palladium catalyzed formation of carbon nanofibers by plasma enhanced chemical vapor deposition," *Carbon* **45**, 424-428 (2007).
44. M. Suzuki, Y. Ominami, Q. Ngo, and C.Y. Yang, T. Yamada, A.M. Cassell, and J. Li, "Bright contrast imaging of carbon nanofiber-substrate interface," *Journal of Applied Physics* **100**, 104305 (5 pp) (2006).
45. Y. Ominami, Q. Ngo, M. Suzuki, A.J. Austin, C.Y. Yang, A.M. Cassell, and J. Li, "Interface Characteristics of vertically Aligned Carbon Nanofibers for Interconnect Applications," *Applied Physics Letters* **89**, 263114 (3 pp) (2006).
46. Y. Ominami, Q. Ngo, N.P. Kobayashi, K. Mcilwrath, K. Jarausch, A. M. Cassell, J. Li, and C.Y. Yang, "Bottom-up sample preparation technique for interfacial characterization of vertically aligned carbon nanofibers," *Ultramicroscopy* **106**, 597-602 (2006).
47. Q. Ngo, A.M. Cassell, A.J. Austin, J. Li, S. Krishnan, M. Meyyappan, and C.Y. Yang, "Characteristics of Aligned Carbon Nanofibers for Interconnect Via Applications," *IEEE Electron Device Letters* **27**, 221-224 (2006).
48. S. Yu, D.M. Petranovic, S. Krishnan, K. Lee, and C.Y. Yang, "Loop-Based Inductance Extraction and Modeling for Multiconductor On-Chip Interconnects," *IEEE Transactions on Electron Devices* **53**, 135-145 (2006).
49. Y. Ominami, Q. Ngo, A.J. Austin, H. Yoong, C.Y. Yang, A.M. Cassell, B.A. Cruden, J. Li, and M. Meyyappan, "Structural Characteristics of Carbon Nanofibers for On-chip Interconnect Applications," *Applied Physics Letters* **87**, 233105 (3 pp) (2005).

50. Y. Ominami, Q. Ngo, H. Yoong, A.J. Austin, A.M. Cassell, B.A. Cruden, J. Li, M. Meyyappan, and C.Y. Yang, "Study of Metal-Carbon Nanofiber Interfaces for On-chip Interconnect Applications," *Microscopy and Microanalysis* **11** (Suppl 2), 1964-1965 (2005).
51. Q. Ngo, B.A. Cruden, A.M. Cassell, G. Sims, M. Meyyappan, J. Li, and C.Y. Yang, "Thermal Interface Properties of Cu-filled Vertically Aligned Carbon Nanofiber Arrays," *Nano Letters* **4**, 2403-2407 (2004).
52. Q. Ngo, D. Petranovic, S. Krishnan, A.M. Cassell, Q. Ye, J. Li, M. Meyyappan, and C.Y. Yang, "Electron Transport through Metal-Multiwall Carbon Nanotube Interfaces," *IEEE Transactions on Nanotechnology* **3**, 311-317 (2004).
53. S.-P. Sim, S. Krishnan, D. Petranovic, N. Arora, K. Lee, and C. Y. Yang, "A Unified RLC Model for High-Speed On-Chip Interconnects," *IEEE Transactions on Electron Devices* **50**, 1501-1510 (2003).
54. S.-P. Sim, K. Lee, and C.Y. Yang, "High-Frequency On-Chip Inductance Model," *IEEE Electron Device Letters* **23**, 740-742 (2002).
55. R. Kariyadan, N.A. Wong, K. Chan, S.P. Sim, and C.Y. Yang, "Modeling Inversion-Layer Carrier Mobilities in All Regions of MOSFET Operation," *Solid-State Electronics* **46**, 153-156 (2002).
56. W. Feng, W. K. Choi, L. K. Bera, J. Mi, and C. Y. Yang, "Optical characterization of as-prepared and rapid thermal oxidized partially strain compensated $Si_{1-x-y}Ge_xCy$ films," *Materials Science in Semiconductor Processing* **4**, 655-659 (2001).
57. W.K. Choi, W. Feng, L.K. Bera, C.Y. Yang, and J. Mi, "Spectroscopic ellipsometry and electrical studies of as-grown and rapid thermal oxidized $Si_{1-x-y}Ge_xCy$ films," *Journal of Applied Physics* **90**, 5814-5824 (2001).
58. M. Miura-Mattausch, H.J. Mattausch, N.D. Arora, and C.Y. Yang, "MOFSET Modeling Gets Physical," *IEEE Circuits and Devices Magazine* **17**, No. 6, 29-36 (2001).
59. L.K. Bera, W.K. Choi, W. Feng, C.Y. Yang, and J. Mi, "Electrical Properties of Rapid Thermal Oxides on $Si_{1-x-y}Ge_xCy$ Films," *Applied Physics Letters* **77**, 256-258 (2000).
60. W.K. Choi, L.K. Bera, J.H. Chen, W. Feng, K.L. Pey, H. Yoong, J. Mi, F. Zhang, and C.Y. Yang, "Structural Characterization of Rapid Thermally Oxidized Silicon-Germanium-Carbon Alloy Films," *Materials Science and Engineering* **B75**, 184-186 (2000).
61. W.K. Choi, J.H. Chen, L.K. Bera, W. Feng, K.L. Pey, J. Mi, C.Y. Yang, A. Ramam, S.J. Chua, J.S. Pan, A.T.S. Wee, and R. Liu, "Structural Characterization of Rapid Thermal Oxidized $Si_{1-x-y}Ge_xCy$ Alloy Films grown by Rapid Thermal Chemical Vapor Deposition," *Journal of Applied Physics* **87**, 192-197 (2000).
62. M. Zamora, G.K. Reeves, G. Gazecki, J. Mi, and C.Y. Yang, "Measurement of Interface States Parameters of $Si_{1-x-y}Ge_xCy / TiW$ Schottky Contacts using Schottky Capacitance Spectroscopy," *Solid-State Electronics* **43**, 801-808 (1999).
63. D.S. Sugiharto, C.Y. Yang, H. Le, and J.E. Chung, "Beating the Heat – Improving CMOS Hot-Carrier Reliability through Analysis, Modeling, and Simulation," *IEEE Circuits and Devices Magazine* **14**, No.5, 43-51 (1998).
64. A. Gupta, D.S. Sugiharto, C.Y. Yang, N. Matsuzaki, M. Minami, T. Yamanaka, and T. Nagano, "Enhanced Degradation During Static Stressing of a Metal Oxide Semiconductor Field Effect Transistor Embedded in a Circuit," *Japanese Journal of Applied Physics* **36**, 4272-4277 (1997).
65. J. Mi, A. Gupta, C.Y. Yang, J. Zhu, P.K.L. Yu, P. Warren, and M. Dutoit, "Properties of Schottky Contacts of Aluminum on Strained $Si_{1-x-y}Ge_xCy$ Layers," *Applied Physics Letters* **69**, 3743-3745 (1996).
66. A.S. Shubat, R. Kazerounian, R. Irani, A. Roy, G.A. Rezvani, B. Eitan, and C.Y. Yang, "A Bipolar Load CMOS SRAM Cell for Embedded Applications," *IEEE Electron Device Letters* **16**, 169-171 (1995).
67. A. Gupta, M.M. Rahman, J. Qiao, C.Y. Yang, S. Im, N.W. Cheung, and P.K.L. Yu, "Donor complex formation due to a high-dose Ge implant into Si," *Journal of Applied Physics* **75**, 4252-4254 (1994).
68. J. Qiao, K. Wang, and C.Y. Yang, "Determination of Density of Trap States at Y_2O_3 -Stabilized ZrO_2/Si Interface of $YBa_2Cu_3O_{7-\delta}/Y_2O_3$ -Stabilized ZrO_2/Si Capacitors", *Applied Physics Letters* **64**, 1732-1734 (1994).
69. C.Y. Yang, J. Qiao, E.M. Ajimine, and P.P. Patel, "Fabrication and Electrical Characterization of Superconductor-on-Si Devices", *Hybrid Circuits* **35**, September 1994, pp. 31-32, 48.

70. E.M. Ajimine, J. Qiao, G.L. Giese, P.P. Patel, M.A. Segovia, C.Y. Yang, and D.K. Fork, "Effects of Bias-Temperature Cycling on Electrical Characteristics of YBCO/YSZ/Si MIS Capacitors," *Journal of Electronic Materials* **22**, 681-684 (1993).
71. A. Gupta, C. Cook, L. Toyoshiba, J. Qiao, and C.Y. Yang, K. Shoji, A. Fukami, T. Nagano, and T. Tokuyama, "Characterization of Germanium Implanted $\text{Si}_{1-x}\text{Ge}_x$ Layer," *Journal of Electronic Materials* **22**, 125-128 (1993).
72. J. Qiao, E.M. Ajimine, P.P. Patel, G.L. Giese, C.Y. Yang, and D.K. Fork, "Thermally Activated Reversible Threshold Shifts in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ /Yttria-Stabilized Zirconia/Si Capacitors," *Applied Physics Letters* **61**, 3184-3186 (1992).
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III. Conference Presentations (not included under II)

243. C.Y. Yang and C. Zhou, "Nanocarbon Interconnects," European Advanced Materials Congress, Stockholm, Sweden, August 20-23, 2018. **(invited presentation)**

244. J. Park, C. Zhou, and C.Y. Yang, "Caron-based Nanostructures for Flexible Electronics," IEEE International Conference on Electron Devices and Solid-State Circuits, Shenzhen, China, June 6-8, 2018. **(invited presentation)**

245. C. Zhou and C.Y. Yang, "All-Carbon Interconnects," IEEE International Conference on Electron Devices and Solid-State Circuits, Shenzhen, China, June 6-8, 2018. **(invited presentation)**

246. R. Senegor, Z. Baron, D. Luo, J. Shaffer, A. Michelmore, and C.Y. Yang, "Fabrication of 3D Nanocarbon Structure for Potential Sensor Applications," Sensors Symposium, 233rd Electrochemical Society Meeting, Seattle, May 13-17, 2018.

247. C.Y. Yang, "All-Carbon Interconnects – from 1D to 3D," Carbon Nanostructures and Devices Symposium, 233rd Electrochemical Society Meeting, Seattle, May 13-17, 2018. **(invited paper)**

248. J. Shaffer, A. Michelmore, R. Senegor, D. Luo, and C.Y. Yang, "Process Optimization for Carbon Nanotubes-on-Graphene Fabrication," 46th Annual Northern California Electronic Materials Symposium, Santa Clara, May 4, 2018.

249. A. Michelmore, J. Shaffer, R. Senegor, D. Luo, and C.Y. Yang, "Process Optimization for Carbon Nanotubes-on-Graphene Fabrication," School of Engineering Research Showcase, poster presentation, Santa Clara University, February 23, 2018.

250. C.Y. Yang, "Nanocarbon Interconnects – from 1D to 3D," 2017 IEEE 12th International Conference on ASIC, Guiyang, China, October 25-28, 2017. **(keynote presentation)**

251. C. Zhou and C.Y. Yang, "All-Carbon Interconnects – From 1D to 3D," IEEE International Conference on Electron Devices and Solid-State Circuits, Hsinchu, Taiwan, October 18-20, 2017. **(invited presentation)**

252. Y. Abe, A.A. Vyas, R. Senegor, and C.Y. Yang, "SEM voltage contrast imaging for contact area measurement of vertical carbon nanotube interconnect," SPIE Advanced Lithography Conference, San Jose, February 26-March 2, 2017, paper 10145-115.

253. Z. Baron, R. Senegor, C. Zhou, and C.Y. Yang, "Process Design for CNT Growth on Graphene," School of Engineering Research Showcase, poster presentation, Santa Clara University, February 24, 2017.

254. C. Zhou, A. Vyas, and C.Y. Yang, "Reliability and Performance of Carbon Nanotube Vias," 13th International Conference on Solid-State and Integrated Circuit Technology, Hangzhou, China, October 25-28, 2016. **(invited presentation)**

255. C. Zhou and C.Y. Yang, "All-Carbon Interconnects – From 1D to 3D," IEEE EDS Mini-Colloquium on Micro & Nanoelectronics Technology, Hangzhou, China, October 24, 2016. **(invited presentation)**

256. C.Y. Yang, "All-Carbon Interconnects – From 1D to 3D," IEEE EDS Mini-Colloquium, Hong Kong, August 2, 2016. **(invited presentation)**

257. A.A. Vyas, C. Zhou, Y. Chai, P. Wang, and C.Y. Yang, "Contact Resistance and Reliability of 40 nm Carbon Nanotube Vias," 44th Annual Northern California Electronic Materials Symposium, San Jose (May 2016).

258. R. Senegor, A. Adesida, C. Zhou, Y. Chen, A.A. Vyas, and C.Y. Yang, "Carbon Nanotubes on Graphene – Interfacial and Electrical Properties," Nanotech 2016 Conference & Expo, Washington, D.C. (May 2016).

259. J. Park and C.Y. Yang, "Metal-CNT Contacts in Flexible Electronics Applications," 2016 Flexible & Printed Electronics Conference & Exhibition, Monterey, California (March 2016).

260. Y. Abe, A. Vyas, R. Senegor, and C.Y. Yang, "Contact Engineering on Carbon Nanotube Interconnect Vias," American Vacuum Society 62nd International Symposium and Exhibition, San Jose (October 2015).

261. Y. Abe, A.A. Vyas, R. Senegor, and C.Y. Yang, "SEM Image Analysis of CNT Interconnect Vias," Microscopy Conference 2015, Göttingen, Germany (September 2015).

262. Y. Abe, A. Vyas, and C.Y. Yang, "SEM Image Analysis of CNT Interconnect Vias," Microscopy & Microanalysis 2015, Portland, Oregon (August 2015).

263. A. Vyas, C. Zhou, P. Wilhite, M. Chan, and C.Y. Yang, "Carbon Nanotube Interconnect Vias," International Conference on Materials for Advanced Technologies, Symposium Y: Reliability and Variability of Devices for Circuits and Systems, Singapore, June 28 - July 3, 2015. **(invited presentation)**

264. A. Vyas, C. Zhou, R. Senegor, A. Adesida, Y. Abe, P. Wang, and C.Y. Yang, "Carbon Nanotube On-chip Interconnect Vias," 43rd Annual Northern California Electronic Materials Symposium, Santa Clara (May 2015).

265. A. Vyas, C. Zhou, R. Senegor, A. Adesida, Y. Abe, P. Wang, and C.Y. Yang, "Carbon Nanotube On-chip Interconnect Vias," IEEE SFBA Nanotechnology Council 11th Annual Symposium, Santa Clara (May 2015).

266. C.Y. Yang, "Carbon Nanotube Interconnect Vias," IEEE EDS Mini-Colloquium, Shenzhen, China, April 18, 2015. **(invited presentation)**

267. A. Vyas, R. Senegor, Y. Abe, A. Adesida, P. Wang, C. Zhou, and C.Y. Yang, "CNT Via Contact Resistance Extraction," Materials Research Society Spring Meeting, Symposium Q: Nano Carbon Materials – 1D to 3D, San Francisco (April 2015).

268. Y. Abe, A. Vyas, C. Zhou, R. Senegor, P. Wilhite, and C.Y. Yang, "Contact Metallization for Carbon Nanotube Interconnect Vias," Materials Research Society Spring Meeting, Symposium BB: Innovative Interconnects/Electrodes for Advanced Devices, Flexible and Green-Energy Electronics, San Francisco (April 2015).

269. Y. Chen, C. Zhou, A. Vyas, M. Chan, and C.Y. Yang, "All-Carbon Interconnects: Fabrication and Integration," Materials Research Society Spring Meeting, Symposium BB: Innovative Interconnects/Electrodes for Advanced Devices, Flexible and Green-Energy Electronics, San Francisco (April 2015).

270. C.Y. Yang, "Carbon Nanotube Vias for End-of-Roadmap On-chip Interconnects," NCCAVS Plasma Applications Group Technical Symposium – Semiconductor Technology Beyond 7 nm, September 25, 2014. **(invited presentation)**

271. A. Vyas, F. Madriz, C. Zhou, B. Zheng, J. Koehne, P. Wilhite, J. Gelatos, T-L. Ren, M. Chan, and C.Y. Yang, "Carbon Nanotube Via Interconnects for End-of-Roadmap Technology Nodes," Materials Research Society Spring Meeting, Symposium CC: New Materials and Processes for Interconnects, Novel Memory and Advanced Display Technologies, San Francisco (April 2014).

272. P. Wilhite and C.Y. Yang, "Metal-Carbon Nanotube Contacts," NCCAVS Joint Users Technical Symposium on Nanomaterials for Energy, Biomedical, and Electronic Devices, San Jose, February 20, 2014. **(invited presentation)**

273. A. Vyas, C. Zhou, F. Madriz, J. Koehne, P. Wilhite, T-L. Ren, M. Chan, and C.Y. Yang, "Electrical and Structural Characterization of Sub-100 nm Carbon Nanotube Vias," NCCAVS 35th Annual Equipment Exhibition and Joint Users Group Symposium, 3rd Annual Poster Session, San Jose, February 20, 2014.

274. A. Vyas, F. Madriz, J. Koehne, P. Wilhite, P. Wang, and C.Y. Yang, "Electrical and Structural Characterization of Carbon Nanotube Via Interconnects," 41st Annual Electronic Materials Symposium, Santa Clara (September 2013).

275. C.Y. Yang, "High-Frequency Characteristics of 1-D Nanostructures," IEEE EDS Mini-Colloquium, Seattle, May 14, 2013. **(invited presentation)**

276. A.A. Vyas, C. Zhou, P. Wilhite, J. Koehne, P. Wang, T. Ren, and C.Y. Yang, "Comparative Studies of Cu and CNT as On-Chip Via Interconnect Materials," Materials Research Society Spring Meeting, Symposium AA: Advanced Interconnect for Micro- and Nanoelectronics - Materials, Processes, and Reliability, San Francisco (April 2013).

277. P. Wilhite, A. Vyas, J. Tan, P. Wang, J. Park, H. Ai, M. Narasimhan, and C.Y. Yang, "Analysis of Interfaces between CNT and Metal Underlayers in Via Interconnects," Materials Research Society Spring Meeting, Symposium T: Electrical Contacts to Nanomaterials and Nanodevices, San Francisco (April 2013).

278. C.Y. Yang, "Transport in nanocarbon interconnects," IEEE International Conference on Electron Devices and Solid-State Circuits, Bangkok, Thailand, December 3-5, 2012. **(invited presentation)**

279. A.A. Vyas, N. Kanzaki, P. Wilhite, T. Yamada, and C.Y. Yang, "RF Characteristics of Carbon Nanofiber with Tungsten Electrode Contacts," 40th Annual Electronic Materials Symposium, Santa Clara (April 2012).

280. N. Kanzaki, J. Tan, P. Wilhite, S. Maeda, T. Yamada, and C.Y. Yang, "Integrity of E-beam-induced Deposited Tungsten Contacts for Nanocarbon Interconnects," 40th Annual Electronic Materials Symposium, Santa Clara (April 2012).

281. N. Kanzaki, P. Wilhite, S. Maeda, and C.Y. Yang, "Compositional Analysis of E-beam-induced deposited Tungsten Contacts for Nanocarbon Interconnects," Materials Research Society Spring Meeting, Symposium D: Nanocontacts – Emerging Materials and Processing for Ohmicity and Rectification, San Francisco (April 2012).

282. A.A. Vyas, F. Madriz, P. Wilhite, T. Yamada, and C.Y. Yang, "RF Characteristics of Copper Vias," Materials Research Society Spring Meeting, Symposium C: Interconnect Challenges for CMOS Technology – Materials, Processes, and Reliability for Downscaling Packaging, and 3D Stacking, San Francisco (April 2012).

283. P. Wilhite, A. Vyas, J. Tan, P. Wang, J. Park, M. Jackson, and C.Y. Yang, "Nanostructure Characterization of Carbon Nanotube/Metal Interfaces," Materials Research Society Spring Meeting, Symposium D: Nanocontacts – Emerging Materials and Processing for Ohmicity and Rectification, San Francisco (April 2012).

284. N. Kanzaki, P. Wilhite, S. Maeda, T. Saito, and C.Y. Yang, "Effect of ambient gases on carbon nanofiber resistance," Materials Research Society Fall Meeting, Symposium AA: Carbon Nanotubes, Graphene, and Related Nanostructures, Boston (November 2011).

285. C.Y. Yang, "Carbon Nanostructures as Potential Functional Electronic and Thermal Materials," IEEE EDS Mini-Colloquia, Hangzhou, China, October 25, 2011. **(invited presentation)**

286. N. Kanzaki, S. Maeda, P. Wilhite, T. Yamada, T. Saito, and C.Y. Yang, "E-beam-deposited Tungsten Contacts for Carbon Nanofiber Interconnect Test Devices," Microscopy and Microanalysis 2011, Nashville, Tennessee (August 2011).

287. C.Y. Yang, "High-frequency Characteristics of One-dimensional Nanostructures," International Conference on Materials for Advanced Technologies, Symposium W – Reliability and Variability of Emerging Devices for Future Technologies and ULSI Circuits and Systems, Singapore, June 26 – July 1, 2011. **(invited presentation)**

288. C.Y. Yang, "High-Frequency Characteristics of One-Dimensional Nanostructures," 219th Electrochemical Society Meeting, Symposium E3 – Graphene, Ge/III-V, and Emerging Materials for Post CMOS Applications, Montreal, Canada, May 2-6, 2011. **(invited presentation)**

289. M. Rosshirt, C. Cardenas, P. Wilhite, D. Fabris, and C.Y. Yang, "Performance of Silicone Oil with Carbon Nanotube Inclusions as Thermal Interface Materials," Materials Research Society Spring Meeting, Symposium BB: Nanoscale Heat Transport – From Fundamentals to Devices, San Francisco (April 2011).

290. N. Kanzaki, S. Maeda, P. Wilhite, T. Yamada, and C.Y. Yang, "E-beam Deposited Tungsten Contacts for Nanocarbon Interconnect Test Devices," Materials Research Society Spring Meeting, Symposium O: Materials, Processes, and Reliability for Advanced Interconnects for Micro- and Nanoelectronics, San Francisco (April 2011).

291. A. Orphanou, T. Yamada, and C.Y. Yang, "Modeling of Nanocarbon Ultracapacitor," Materials Research Society Spring Meeting, Symposium M: Nanostructured Materials for Energy Storage, San Francisco (April 2011).

292. A.A. Vyas, F. Madriz, P. Wilhite, and C.Y. Yang, "Extraction of Copper-Via Impedance from RF Measurements," 39th Annual Electronic Materials Symposium, Santa Clara (April 2011).

293. C. Cardenas, D. Fabris, S. Tokairin, J. Tan, and C.Y. Yang, "Temperature Measurements for Gold and Carbon Nanofiber Interconnects," 39th Annual Electronic Materials Symposium, Santa Clara (April 2011).

294. C.Y. Yang, "Compact Circuit Modeling of RF Characteristics of 1-D Nanostructures," 2011 International Symposium on Quality Electronic Design (ISQED), Santa Clara, California, March 14-16, 2011. **(invited presentation)**

295. S. Maeda, T. Yamada, H. Yabutani, T. Saito, and C.Y. Yang, "W-deposited Contacts for Carbon Nanofiber Using Focused Ion and Electron Beams," Materials Research Society Fall Meeting, Symposium B: Carbon-Based Electronic Devices, Boston (December 2010).

296. C.Y. Yang, "Twenty-five years as an IEEE volunteer," 2010 IEEE International Conference on Electron Devices and Solid-State Circuits, Hong Kong, December 15-17, 2010. (**invited presentation**)

297. C.Y. Yang, "High-Frequency Characteristics of One-Dimensional Nanostructures," ICSICT 2010 – EDS Mini-Colloquia, Shanghai, China, November 1, 2010. (**invited presentation**)

298. S. Maeda, T. Yamada, H. Yabutani, T. Saito, and C.Y. Yang, "Temperature Dependence of Carbon Nanofiber Resistance," American Vacuum Society 57th International Symposium and Exhibition, Albuquerque, New Mexico (October 2010).

299. S. Maeda, T. Yamada, P. Wilhite, T. Saito, and C.Y. Yang, "Comparison of Tungsten Contacts formed by FIB and e-beam Depositions," Microscopy and Microanalysis 2010, Portland, Oregon (August 2010).

300. X. Sun, C. Li, J. Gao, and C.Y. Yang, "Rational Growth of 1D Carbon Nanostructures for Via Interconnect Applications," 217th Electrochemical Society Meeting, Symposium E5 – Thermal and Plasma CVD of Nanostructures and their Applications, Vancouver, Canada, April 26-30, 2010. (**invited presentation**)

301. A. Orphanou, T. Yamada, and C.Y. Yang, "Science-based modeling of carbon nanotube ultracapacitor," 38th Annual Electronic Materials Symposium, Santa Clara (April 2010).

302. C. Cardenas, C. Knowles, P. Wilhite, M. Rosshirt, D. Fabris, and C.Y. Yang, "Thermoreflectance Imaging of Gold Nanowires and Carbon Nanostructures," Materials Research Society Spring Meeting, Symposium F: Materials, Processes, Integration, and Reliability in Advanced Interconnects for Micro- and Nanoelectronics, San Francisco (April 2010).

303. M. Rosshirt, C. Cardenas, P. Wilhite, D. Fabris, and C.Y. Yang, "Performance of Commercial Thermal Interface Materials with Multi-Wall Carbon Nanotube Inclusions," Materials Research Society Spring Meeting, Symposium R: Carbon Nanotubes and Related Low-Dimensional Materials, San Francisco (April 2010).

304. H. Nilsson, S. Kaur, G.R. Dholakia, C. Lilley, and C.Y. Yang, "Nanoscale Measurement of Carbon Nanofiber Elasticity," Materials Research Society Spring Meeting, Symposium U: Scanning Probe Microscopy: Frontiers in NanoBio Science, San Francisco (April 2010).

305. X. Sun, K. Li, P. Wilhite, and C.Y. Yang, "Contact Resistances of Vertically Aligned Carbon Nanotubes on Metal Underlayers," Nanocontacts and Nanointerconnects Workshop, San Francisco (April 2010).

306. S. Maeda, H. Yabutani, T. Saito, T. Yamada, and C.Y. Yang, "Change of Carbon Nanofiber Resistance with Joule Heating," Nanocontacts and Nanointerconnects Workshop, San Francisco (April 2010).

307. N. Akhavantafti, T. Yamada, and C.Y. Yang, "Analysis of Carbon Nanoribbons and their FET Applications," Materials Research Society Spring Meeting, Symposium S: Graphene Materials and Devices, San Francisco (April 2010).

308. A. Orphanou, T. Yamada, and C.Y. Yang, "Modeling of 3-D Energy Storage in Carbon Nanotube Ultracapacitor," Materials Research Society Spring Meeting, Symposium Y: Computational Approaches to Materials for Energy, San Francisco (April 2010).

309. H. Yabutani, T. Yamada, T. Saito, and C.Y. Yang, "Temperature Dependence of Carbon Nanofiber Resistance," Materials Research Society Fall Meeting, Symposium K: Nanotubes and Related Nanostructures, Boston (December 2009).

310. P. Wilhite, X. Sun, K. Li, R. Wu, and C.Y. Yang, "Direct Electrical Probing of Individual Carbon Nanotubes," Materials Research Society Fall Meeting, Symposium K: Nanotubes and Related Nanostructures, Boston (December 2009).

311. X. Sun, T. Saito, K. Li, D. Nguyen, and C.Y. Yang, "Effect of Catalyst and Underlayer Metal on Contact Resistance in Carbon Nanotube Via Interconnect," Materials Research Society Fall Meeting, Symposium K: Nanotubes and Related Nanostructures, Boston (December 2009).

312. H. Yabutani, T. Yamada, T. Saito, and C.Y. Yang, "Temperature Dependence of Carbon Nanofiber Resistance," American Vacuum Society 56th International Symposium, San Jose, California (November 2009).

313. T. Yamada, T. Saito, D. Fabris, and C.Y. Yang, "Transport in carbon nanostructures," 2009 IEEE International Integrated Reliability Workshop, S. Lake Tahoe, California, October 18-22, 2009. (**invited presentation**)

314. J.R. Jameson, F. Madriz, T. Yamada, and C.Y. Yang, "Carbon nanofibers as interconnects in CMOS technology," *Nanotech 2009*, Houston, Texas (May 2009).

315. T. Yamada, T. Saito, D. Fabris P. Wilhite, and C.Y. Yang, "Modeling of Electrothermal Performance for Carbon Nanofibers," 6th Taiwan/U.S. Air Force Nanoscience Workshop, San Francisco, April 20-21, 2009. **(invited presentation)**

316. A. Orphanou, T. Yamada, and C.Y. Yang, "Modeling of 3-D energy storage in carbon nanotube ultracapacitor," Materials Research Society Spring Meeting, Symposium P: Three-dimensional Architecture for Energy Generation and Storage, San Francisco (April 2009).

317. T. Yamada, T. Saito, D. Fabris, P. Wilhite, and C.Y. Yang, "Modeling of Heat Transport along Horizontal Carbon Nanofiber Bridging Two Electrodes," Materials Research Society Spring Meeting, Symposium T: Nanoscale Heat Transport – From Fundamentals to Devices, San Francisco (April 2009).

318. K. Li, X. Sun, R. Wu, W. Wu, S. Krishnan, and C.Y. Yang, "Contact Resistance in Carbon Nanotube Interconnect Vias," Materials Research Society Spring Meeting, Symposium D: Materials, Processes, and Reliability for Advanced Interconnects for Micro- and Nano-Electronics, San Francisco (April 2009).

319. X. Sun, T. Saito, K. Li, D. Nguyen, and C.Y. Yang, "Rational carbon nanotube growth for interconnect via fabrication," Materials Research Society Spring Meeting, Symposium D: Materials, Processes, and Reliability for Advanced Interconnects for Micro- and Nano-Electronics, San Francisco (April 2009).

320. T. Saito, T. Yamada, D. Fabris, H. Kitsuki, P. Wilhite, and C.Y. Yang, "Improved Contact for Thermal and Electrical Transport in Carbon Nanofiber Interconnects," Materials Research Society Fall Meeting, Symposium JJ: Nanotubes and Related Nanostructures, Boston (December 2008).

321. T. Yamada, T. Saito, P. Wilhite, X. Sun, D. Fabris, and C.Y. Yang, "Tunneling Transport for Metal-Carbon Nanofiber-Metal Structures," Materials Research Society Fall Meeting, Symposium JJ: Nanotubes and Related Nanostructures, Boston (December 2008).

322. W. Wu, X. Sun, J. Jameson, D. Nguyen, P. Wilhite, S. Krishnan, and C.Y. Yang, "Electrical Properties of Carbon Nanofiber Interconnect Vias," Materials Research Society Fall Meeting, Symposium JJ: Nanotubes and Related Nanostructures, Boston (December 2008).

323. C.Y. Yang, "Carbon-based Electrical Interconnect and Thermal Interface Materials," 2008 IEEE International Conference on Semiconductor Electronics, Johor Bahru, Malaysia, November 25-27, 2008. **(plenary presentation)**

324. C.Y. Yang, "Carbon Nanofibers for On-chip Interconnects," 2008 International Workshop on Next Generation Electronics," Tainan, Taiwan, November 20-21, 2008. **(invited presentation)**

325. T. Saito, T. Yamada, H. Kitsuki, P. Wilhite, D. Fabris, and C.Y. Yang, "Improved contacts for thermal and electrical transport in carbon nanofiber interconnects," Microscopy and Microanalysis 2008, Albuquerque, New Mexico (August 2008).

326. C.Y. Yang, "Carbon Nanostructures as On-chip Interconnects," 26th IEEE VLSI Test Symposium, San Diego, California, April 27-May 1, 2008. **(invited presentation)**

327. C.Y. Yang, "Carbon-based Electrical Interconnect and Thermal Interface Materials," IEEE Workshop on Microelectronics and Electron Devices," Boise, Idaho, April 18, 2008. **(invited presentation)**

328. C.Y. Yang, "Failure Mechanisms in Carbon Nanofiber Interconnects," IEEE EDS Mini-Colloquium, Hangzhou, China, March 28, 2008. **(invited presentation)**

329. T. Yamada, D. Fabris, J. Gonzalez, and C.Y. Yang, "Thermoelectric effects in electron tunneling between nanofiber and gold," Materials Research Society Spring Meeting, Symposium P: Carbon Nanotubes and Related Low-dimensional Materials, San Francisco (March 2008).

330. H. Kitsuki, T. Saito, P. Wilhite, T. Yamada, and C.Y. Yang, "Carbon Nanofibers under High-Current and Thermal Stress," Materials Research Society Spring Meeting, Symposium P: Carbon Nanotubes and Related Low-dimensional Materials, San Francisco (March 2008).

331. F. Madriz, J.R. Jameson, S. Krishnan, K. Gleason, X. Sun, and C.Y. Yang, "Measurement and circuit model of carbon nanofibers at radio frequencies," Materials Research Society Spring Meeting, Symposium P: Carbon Nanotubes and Related Low-dimensional Materials, San Francisco (March 2008).

332. X. Sun, F. Madriz, W. Wu, J.R. Jameson, S. Krishnan, and C.Y. Yang, "Test structure for measurement of high-frequency behavior of one-dimensional on-chip interconnect materials," Materials Research Society Spring Meeting, Symposium N: Materials and Processes for Advanced Interconnects for Microelectronics, San Francisco (March 2008).

333. C.Y. Yang, "Carbon-based Electrical Interconnect and Thermal Interface Materials," 3rd Shanghai International Nanotechnology Cooperation Symposium, Shanghai, China, November 21-22, 2007. (**keynote presentation**)

334. B. Sadrabadi, T. Yamada, D. Fabris, J. Gonzalez, P. Wilhite, and C. Y. Yang, "Electrothermal Characterization of Metal-Carbon Nanofiber Junctions for Interconnect Applications," Materials Research Society Fall Meeting, Symposium II: Nanotubes and Related Nanostructures, Boston (November 2007).

335. K. Gleason, Q. Ngo, T. Yamada, A.M. Cassell, J. Li, and C. Y. Yang, "Temperature-Dependent Carbon Nanofiber Conductance Model," Materials Research Society Fall Meeting, Symposium II: Nanotubes and Related Nanostructures, Boston (November 2007).

336. H. Kitsuki, M. Suzuki, K. Gleason, P. Wilhite, Q. Ngo, A.M. Cassell, J. Li, and C. Y. Yang, "Characteristics of Carbon Nanofibers Under High-Current Stress," Materials Research Society Fall Meeting, Symposium II: Nanotubes and Related Nanostructures, Boston (November 2007).

337. C. Y. Yang, "Carbon Nanofiber Interconnects," VLSI Multilevel Interconnection State-of-the-Art Seminar, Fremont, California, September 24, 2007. (**invited presentation**)

338. M. Suzuki, T. Ogashiwa, S. Takeuchi, M. Sato, Q. Ngo, T. Yamada, A. M. Cassell, J. Li, and C. Y. Yang, "Structural Characterization of Carbon Nanofibers using Scanning Electron Microscopy," European Materials Research Society Fall Meeting, Symposium J: Microscopy and spectroscopy techniques in advanced materials characterization, Warsaw, Poland (September 2007).

339. M. Suzuki, H. Kitsuki, Q. Ngo, T. Yamada, K. Gleason, Y. Ominami, B. Roth, M. Betts, A.M. Cassell, J. Li, and C.Y. Yang, "Image Formation Mechanisms in Scanning Electron Microscopy of Carbon Nanofibers on Substrate," Microscopy and Microanalysis 2007, Fort Lauderdale, Florida (August 2007).

340. Quoc Ngo, Toshishige Yamada, Kris Gleason, Alan M. Cassell, and Cary Y. Yang, "Transport Studies of Carbon Nanostructures," 14th International Symposium on Intercalation Compounds, Seoul, Korea (June 2007).

341. C. Y. Yang, "Electrothermal Transport in Carbon Nanostructures," IEEE EDS Mini-Colloquium on Nanometer CMOS Technology, Shanghai, China, June 8, 2007. (**invited presentation**)

342. Jun Li, T.D. Barbara Nguyen-Vu, Edward de Asis, Hua Chen, Alan Cassell, Russell Andrews, and Cary Y. Yang, "Vertically-Aligned Carbon Nanofiber Array as a 3D Multifunctional Material for Neural Electrical Interfaces," Materials Research Society Spring Meeting, Symposium U: Advanced Materials for Neuroprosthetic Interfaces, San Francisco (April 2007).

343. Quoc Ngo, Toshishige Yamada, Behrouz Sadrabadi, Kristofer Gleason, Alan M. Cassell, Jun Li, and Cary Y. Yang, "Electrothermal contact characterization of metal-carbon nanofiber junctions for interconnect applications," Materials Research Society Spring Meeting, Symposium EE: Applications of Nanotubes and Nanowires, San Francisco (April 2007).

344. M. Suzuki, Y. Ominami, Q. Ngo, A.M. Cassell, J. Li, and C.Y. Yang, "In situ Electron Microscopy Study of Current-induced Damage of Carbon Nanofibers," Microscopy and Microanalysis 2006, Chicago, Illinois (August 2006).

345. Q. Ngo, B. Cruden, Y. Zhang, J. Li, M. Meyyappan, and C.Y. Yang, "Aligned Carbon Nanofiber-Copper Composite for Thermal Interface Applications," 14th International Conference on Composites and Nano-engineering, Boulder, Colorado (July 2006).

346. C.Y. Yang, "Carbon Nanofibers as On-chip Interconnect and Thermal Interface Materials," Workshop and IEEE EDS Mini-colloquium on Nanometer CMOS Technology, Singapore, July 4, 2006. (**invited presentation**)

347. Y. Ominami, M. Suzuki, Q. Ngo, K. Mcilwrath, K. Jarausch, A.M. Cassell, J. Li, and C.Y. Yang, "Interface Structure Characterization of Vertically Aligned Carbon Nanofibers," Materials Research Society Spring Meeting, Symposium T: Nanomanufacturing, San Francisco (April 2006).

348. C. Y. Yang, "Nanostructures in Carbon Nanotube and Nanofiber Interconnects," Hitachi Nanotechnology Seminars, University of California, Santa Cruz, October 21, 2005. (**invited presentation**)

349. Q. Ngo, J. Li, A.M. Cassell, S. Krishnan, M. Meyyappan, and C.Y. Yang, "Electrical Characterization of Carbon Nanofiber Arrays for On-chip Interconnect Applications," Conference on Trends in Nanotechnology (TNT 2005), Oviedo, Spain (August 2005).

350. Y. Ominami, Q. Ngo, A.J. Austin, H. Yoong, C.Y. Yang, A.M. Cassell, B.A. Cruden, J. Li, and M. Meyyappan, "Structural Characteristics of Carbon Nanofibers for On-chip Interconnect Applications," Microscopy and Microanalysis 2005, Honolulu, Hawaii (August 2005).

351. H. Yoong, Y. Ominami, N. Kobayashi, K. McIlwrath, Q. Ngo, A.M. Cassell, J. Li, and C.Y. Yang, "Transmission Electron Microscopy of interfaces between carbon nanofibers and metal thin films," Materials Research Society Spring Meeting, Symposium U, San Francisco (March 2005).

352. Q. Ngo, Y. Ominami, H. Yoong, A.J. Austin, A.M. Cassell, B.A. Cruden, J. Li, M. Meyyappan, and C.Y. Yang, "Electrical and Structural Characterization of Vertically Aligned Carbon Nanofibers Synthesized by Plasma-enhanced CVD," Quantum Science Research/HP Labs Nanotechnology Symposium, Palo Alto, California (March 2005).

353. C. Y. Yang, "Carbon Nanotubes as On-chip Interconnects," Workshop and IEEE EDS Mini-Colloquium on Nanometer CMOS Technology, Singapore, July 12, 2004. (**invited presentation**)

354. S. Yu, S. Krishnan, and C.Y. Yang, "Interconnect Modeling for Frequency-Dependent Crosstalk Noise Analysis," Symposium on Compact Modeling, IEEE Electron Device Society Santa Clara Valley Chapter, Santa Clara, California, May 7, 2004. (**invited presentation**)

355. W.K. Choi, L.K. Bera, J.H. Chen, W. Feng, K.L. Pey, H. Yoong, J. Mi, F. Zhang, and C.Y. Yang, "Structural Characterization of Rapid Thermal Oxidized Silicon-Germanium-Carbon Alloy Films," 5th International Conference on Advanced Materials, Beijing, China (June 1999).

356. H. Yoong, J. Mi, F. Zhang, C.Y. Yang, J.H. Chen, and W.K. Choi, "Characterization of Oxides and Interfaces Resulting from Rapid Thermal Oxidation of Silicon-Germanium-Carbon Alloy Films," American Physical Society Meeting, Atlanta, Georgia (March 1999); abstract in Bulletin of the APS 44, 1779 (1999).

357. C.Y. Yang, "Electrical Properties of Metal Contacts with $Si_{1-x-y}Ge_xC_y/Si$ Heterostructures," Conferencia de Ingenieria Electrica, CIE-97, Mexico City, Mexico (September 17-19, 1997). (**plenary presentation**)

358. Y. Zhang, J. Mi, A. Gupta, and C.Y. Yang, "Effects of Thermal Stress of Strained $Si_{1-x-y}Ge_xC_y$ Layers on Their Electrical Properties," 19th Surface/Interface Research Meeting of the NCCAVS, Stanford, California (September 1996).

359. J. Mi, A. Gupta, C.Y. Yang, P. Warren, and M. Dutoit, " $Si_{1-x-y}Ge_xC_y/Si$ Hetero-Structures Grown by Rapid Thermal Chemical Vapor Deposition," 1996 Materials Research Society Spring Meeting, Symposium F, San Francisco (April 1996).

360. K.P.S. Tan, C.Y. Yang, and N. Biunno, "High-frequency Characteristics of Annular Buried Resistors in Printed Circuit Boards," International Symposium on Advanced Packaging Materials, Atlanta, Georgia (March 1996).

361. F.E. Pagaduan, J. Qiao, R.Y. Li, K.P.S. Tan, M.M. Rahman, and C.Y. Yang, "Study of Interfaces in YBCO/YSZ/Si Structures," 18th Surface/Interface Research Meeting of the NCCAVS, Santa Clara University (June 1995).

362. R.Y. Li, F.E. Pagaduan, J. Qiao, and C.Y. Yang, "Interface Properties of High T_c -Superconductor-on Buffered-Si FET," 1995 Materials Research Society Spring Meeting, Symposium K, San Francisco (April 1995).

363. M.M. Rahman, C.Y. Yang, J. Qiao, and F.E. Pagaduan, "Superconducting-Gate Silicon Field Effect Transistors," 1994 First Annual Hong Kong Electron Devices Meeting, Hong Kong University of Science and Technology, Hong Kong (July 1994).

364. F.E. Pagaduan, J. Qiao, M.M. Rahman, and C.Y. Yang, "Determination of the Density of States at YSZ/Si Interface in YBCO-on-Buffered Silicon Systems," 17th Surface/Interface Meeting of NCCAVS, Livermore, California (June 1994).

365. K.P.S. Tan, J. Qiao, F.E. Pagaduan, M.M. Rahman, and C.Y. Yang, "Temperature Dependence of Al/n+-Si Contact Resistance," 17th Surface/Interface Meeting of NCCAVS, Livermore, California (June 1994).

366. K.P.S. Tan, J. Qiao, F.E. Pagaduan, and C.Y. Yang, "Fabrication of YBCO-YSZ-Si Field Effect Transistors", Student Poster Session of The Electrochemical Society Meeting, San Francisco (May 1994).

367. F.E. Pagaduan, J. Qiao, K. Wang, and C.Y. Yang, "Determination of Density of States in YBCO-YSZ-Si Field Effect Transistors," Student Poster Session of The Electrochemical Society Meeting, San Francisco (May 1994).

368. J. Qiao, K. Wang, F.E. Pagaduan, M.M. Rahman, and C.Y. Yang, "Fabrication and Electrical Characterization of YBCO-On-Buffered Silicon Devices," 1994 Materials Research Society Spring Meeting, Symposium S, San Francisco (April 1994).

369. K. Wang, J. Qiao, E.A. Ajimine, Q. Pan, P.P. Patel, C.Y. Yang, and D.K. Fork, "Structural and Electrical Characterization of Superconducting YBCO/YSZ/Si Capacitors," 16th Surface/Interface Meeting of NCCAVS, San Jose, California (June 1993).

370. P. Patel, E.M. Ajimine, Q. Pan, J. Qiao, K. Wang, C.Y. Yang, and D.K. Fork, "Electrical Characterization of Interfaces in YBCO/YSZ/Si Devices," Student Poster Session of The Electrochemical Society San Francisco Section Solid State Science and Technology Subsection, Palo Alto, California (April 1993).

371. Y.-W. Cheng, A. Gupta, J. Qiao, M. M. Rahman, C.Y. Yang, S. Im, and N.W. Cheung, "Characterization of $Si_{1-x}Ge_x$ and $Si_{1-y-z}Ge_yC_z$ Layers Formed by High Dose Germanium and Carbon Implantation," Student Poster Session of The Electrochemical Society San Francisco Section Solid State Science and Technology Subsection, Palo Alto, California (April 1993).

372. P.P. Patel, E.M. Ajimine, E.A. Maitre, Q. Pan, J. Qiao, C.Y. Yang, and D.K. Fork, "Effects of Trapped Charges at the SiO_x/Si Interface on Electrical Properties of YBCO/YSZ/Si MIS Capacitors," 1993 Materials Research Society Spring Meeting, Symposium T, San Francisco (April 1993).

373. C.Y. Yang, "High-T_c Superconductor-on-Silicon Structures," First International Conference on Nanostructured Materials, Cancun, Mexico (September 1992).

374. E.M. Ajimine, J. Qiao, P.P. Patel, M.A. Segovia, C.Y. Yang, D.K. Fork, F.A. Ponce, and J.C. Tramontana, "Effects of Bias-temperature Cycling on Electrical Characteristics of YBCO/YSZ/Si MIS Capacitors," Electronic Materials Conference, Cambridge, Massachusetts (June 1992).

375. P.P. Patel, E.M. Ajimine, G.L. Giese, J. Qiao, M.A. Segovia, and C.Y. Yang, "YSZ/Si Interface Characterization," 15th Surface/Interface Research Meeting of NCCAVS, Berkeley, California (June 1992).

376. A. Fukami, K. Shoji, T. Nagano, T. Tokuyama, and C.Y. Yang, "Graded-bandgap SiGe Bipolar Transistor Fabricated with Germanium Ion Implantation," 1991 ESSDERC, Lausanne, Switzerland (September 1991).

377. E.M. Ajimine, H. Inokawa, F.E. Pagaduan, M.M. Rahman, C.Y. Yang, D.K. Fork, and T.H. Geballe, "Fabrication and Electrical Characterization of YBCO/YSZ/Si Structures and Their Interfaces," 14th Surface/Interface Research Meeting of NCCAVS, Stanford, California (June 1991).

378. C. Cook, A. Gupta, C.Y. Yang, A. Fukami, K. Shoji, and T. Nagano, "Electrical Characterization of SiGe and SiGeC Diodes Formed by Ge⁺ and C⁺ Implantations," 14th Surface/Interface Research Meeting of NCCAVS, Stanford, California (June 1991).

379. C.Y. Yang, "Ge and C Implant for HBT," Mini-Conference on Ion Implantation Technology, Berkeley, California (May 1991). **(invited presentation)**

380. E.M. Ajimine, H. Inokawa, Z.K. Matsumoto, F.E. Pagaduan, C.Y. Yang, D.K. Fork, and T.H. Geballe, "Fabrication and Characterization of YBCO/YSZ/Si MIS Structures," Symposium on Interfaces in High Temperature Superconducting Systems, Materials Research Society Meeting, Anaheim, California (April 1991).

381. H. Inokawa, E.M. Ajimine, and C.Y. Yang, "Recovery of MOSFET Stressed with FN Gate Current," 1991 Japan Society of Applied Physics Spring Meeting, Kanagawa, Japan (March 1991).

382. A. Fukami, K. Shoji, T. Nagano, and C.Y. Yang, "Modification of SiGe Heterostructure with Carbon Ion Implantation," 1990 IEEE Semiconductor Interface Specialists Conference, San Diego, California (December 1990).

383. T. Harjono, K.H. Lui, F.E. Pagaduan, H. Inokawa, M.M. Rahman, and C.Y. Yang, "Effect of a-SiC:H Deposition on Surface of Silicon Substrate," 13th Surface/Interface Research Meeting of NCCAVS, Menlo Park, California (June 1990).

384. K. Tran, T. Asano, A. Byrne, M.M. Rahman, and C.Y. Yang, "Study of the Y-Ba-Cu-O/Al-buffered Si Substrate Interface," 12th Surface/Interface Research Meeting of NCCAVS, Stanford, California (June 1989).

385. D. Sugiarto, M. Ju, T. Asano, M.M. Rahman, and C.Y. Yang, "Effects of DC Field on Properties of RF PECVD a-SiC:H Films," 12th Surface/Interface Research Meeting of NCCAVS, Stanford, California (June 1989).

386. D. Sugiarto, M. Ju, T. Asano, M.M. Rahman, and C.Y. Yang, "Growth Kinetics of Amorphous Silicon Carbide Films," Symposium on State-of-the-Art Program on Compound Semiconductors, Electrochemical Society Meeting, Los Angeles, California (May 1989).

387. A.S. Byrne, W.F. Stickle, K.D. Bomben, and C.Y. Yang, "Characterization of the Ceramic-Substrate Interface of Plasma-Sprayed High-Temperature Superconductors by Photoelectron and Auger Electron Spectroscopies," 1988 Pacific Conference (ACS), San Francisco (October 1988).

388. A.S. Byrne, C.Y. Yang, M.M. Rahman, M. Gao, W.F. Stickle, D.W. Harris, and S.H. Chiao, "XPS Analysis of Plasma-sprayed Yttrium Barium Copper Oxide," American Vacuum Society Topical Conference on Quantitative Surface Analysis, Monterey, California (October 1987).

389. C.Y. Yang, "Plasma-sprayed Ceramics Films and other Superconductor Efforts at Santa Clara University," Superconductor Workshop, Northrop Corporation, Anaheim, California (October 1987). (**invited presentation**)

390. C.Y. Yang, "Scanning Electron Microscopy in the Engineering Laboratory," Workshop on Modern Technology in the Microwave Classroom and Laboratory, Santa Clara University (July 1987). (**invited presentation**)

391. R. Arratia-Perez and C.Y. Yang, "Electronic Structure of Transition Metal Hexacarbonyls," Sixth Annual West Coast Theoretical Chemistry Conference, Los Alamos, New Mexico (April 1984).

392. J.P. Lopez, C.R. Helms, and C.Y. Yang, "Bonding Characteristics in Silica," Fifth Annual West Coast Theoretical Chemistry Conference, Menlo Park, California (April 1983).

393. S. Rabii and C.Y. Yang, "Relativistic Electronic Structure of Diatomic Molecules of Silver and Gold," American Physical Society Meeting, Philadelphia, Pennsylvania (November 1982); abstract in Bulletin of the APS 27, 864 (1982).

394. J.P. Lopez, C.Y. Yang, and D.A. Case, "Bonding Characteristics in Tetracyanoplatinate Complexes," American Chemical Society Meeting, Kansas City, Missouri (September 1982).

395. J.P. Lopez, C.Y. Yang, and D.A. Case, "SCF-X α -DSW Calculations for Tetracyanoplatinate Complexes," American Physical Society Meeting Post-deadline paper, Dallas, Texas (March 1982).

396. C.Y. Yang and D.A. Case, "CO Chemisorption on Pd and Pt Particles: Relativistic Cluster Studies," American Physical Society Meeting Post-deadline paper, Dallas, Texas (March 1982).

397. J.P. Lopez, C.Y. Yang, and R. Rosser, "MINDO/3 and MNDO Calculations on Polyperfluoroalkyl Compounds," Third Annual West Coast Theoretical Chemistry Conference, Moffett Field, California (April 1981).

398. C.Y. Yang, "Electronic Structure of Tetrahedral Clusters X₄, X=Pd, Ag, Pt, and Au," Third Annual West Coast Theoretical Chemistry Conference, Moffett Field, California (April 1981).

399. C.Y. Yang, D.L. Doering, J.T. Dickinson, and H. Poppa, "Site Determination for CO Chemisorption on Ni and Pd Particles," American Physical Society Meeting, Phoenix, Arizona (March 1981); abstract in Bulletin of the APS 26, 289 (1981).

400. C.Y. Yang, "The Bonding of CO to a Platinum Surface: Relativistic Cluster Studies," Second International Meeting on the Small Particles and Inorganic Clusters, Lausanne, Switzerland (September 1980).

401. C.Y. Yang, "Chemisorption on Small Particles," Solid State Symposium, Galindo, Mexico (July 1980). (**invited presentation**)

402. C.F. Hansen, T.E. Thompson, and C.Y. Yang, "Properties and Modeling of Carbon Fibers and Their Intercalation Compounds," Second International Conference on Intercalation Compounds of Graphite, Provincetown, Massachusetts (May 1980).

403. A.M. Butkus and C.Y. Yang, "Electronic Structure of Clusters Modeling PAN Fibers," Second International Conference on Intercalation Compounds of Graphite, Provincetown, Massachusetts (May 1980).

404. C.Y. Yang, "The Bonding of CO to a Platinum Surface: Relativistic Cluster Studies," California Catalysis Society Spring Meeting, Berkeley, California (March 1980).

405. C.Y. Yang, "Structure of Surfaces of Small Particles," Fourth Annual Solid State Meeting, Pakatoa Island, New Zealand (February 1980).

406. C.Y. Yang, H.L. Yu, and D.A. Case, "Relativistic SCF-X α -SW Calculations for CO on a Pt Surface," First Annual West Coast Theoretical Chemistry Conference, San Jose, California (May 1979).

407. C.Y. Yang, H.L. Yu, and T. Halicioglu, "SCF-X α -SW Studies of CO Adsorption on Pt(001) Surface," American Chemical Society (ACS) Meeting, Honolulu, Hawaii (April 1979).

408. C.Y. Yang, "Structural Stability of Small Metal Particles and Electronic Structure of Their Surfaces," Oaxtepec Meeting on Surfaces, Oaxtepec, Mexico (January 1979). **(invited presentation)**

409. C.Y. Yang, K. Heinemann, and M.J. Yacaman, "Structural Analysis of Small Vapor Deposited 'Multiply Twinned' Gold Particles," Fourth International Thin Films Congress, Loughborough, England (September 1978).

410. C.Y. Yang and T. Halicioglu, "Atomistic Studies of the Structural Stability of Isolated Small Particles," Fourth International Thin Films Congress, Loughborough, England (September 1978).

411. C.Y. Yang and G. Bambakidis, "Stability of Multiply Twinned Metal Clusters," American Physical Society Meeting, San Diego, California (March 1977); abstract in Bulletin of the APS 22, 285 (1977).

412. C.Y. Yang, K.H. Johnson, and J.A. Horsley, "Relativistic SCF-X α -SW Studies of Uranium Compounds," American Physical Society Meeting, Atlanta, Georgia (March 1976); abstract in Bulletin of the APS 21, 227 (1976).

413. C.Y. Yang, K.H. Johnson, and R.P. Messmer, "Relativistic SCF-X α -SW Studies of Small Metal Clusters," American Physical Society Meeting, Atlanta, Georgia (March 1976); abstract in Bulletin of the APS 21, 382 (1976).

414. C.Y. Yang, "Hydrogen Effects in PbSe," International Symposium on Atomic, Molecular, and Solid State Theory, Sanibel Island, Florida (January 1976).

415. C.Y. Yang, "The Truncated Sphere Model as a Non-Muffin-Tin Correction," International Symposium on Atomic, Molecular, and Solid State Theory, Sanibel Island, Florida (January 1976).

416. A.K. Sood, C.Y. Yang, and J.E. Fischer, "Effect of Cl₂ Exposure on Thermorelectance of Pb-chalcogenide Films," American Physical Society Meeting, Philadelphia, Pennsylvania (March 1974); abstract in Bulletin of the APS 19, 249 (1974).

417. F.J. Bogacki, A.K. Sood, C.Y. Yang, S. Rabii, and J.E. Fischer, "Thermorelectance of IV-VI Compounds," First International Conference on Modulation Spectroscopy, Tucson, Arizona (November 1972).

IV. Books, Edited Volumes, and Chapters in Books

418. E. Takeda, C.Y. Yang, and A. Miura-Hamada, *Hot-Carrier Effects in MOS Devices*, Academic Press (1995). This book was the result of many years of collaboration with Hitachi researchers at the Central Research Laboratory, the leading industrial R&D center in Japan. It has been adopted as a text or reference book at institutions world-wide for their advanced graduate courses on semiconductor devices, as well as used by many researchers in the field.

419. J. Qiao and C.Y. Yang, "High-Temperature Superconductors on Buffered Silicon: Materials Properties and Device Applications," *Materials Science & Engineering* R14, Elsevier (1995), pp. 157-201. **(invited review paper)**

420. C.Y. Yang, M.M. Rahman, and G.L. Harris (eds.), *Amorphous and Crystalline Silicon Carbide IV*, Springer Proc. Phys. Vol. 71, Springer-Verlag Berlin Heidelberg (1992).

421. G.L. Harris, M.G. Spencer, and C.Y. Yang (eds.), *Amorphous and Crystalline Silicon Carbide III*, Springer Proc. Phys. Vol. 56, Springer-Verlag Berlin Heidelberg (1992).

422. M.M. Rahman, C.Y. Yang, and G.L. Harris (eds.), *Amorphous and Crystalline Silicon Carbide II - Recent Developments*, Springer Proc. Phys. Vol. 43, Springer-Verlag Berlin Heidelberg (1989).

423. G. L. Harris and C. Y. Yang (eds.), *Amorphous and Crystalline Silicon Carbide*, Springer Proc. Phys. Vol. 34, Springer-Verlag Berlin Heidelberg (1989).

424. C. Y. Yang and D. A. Case, "Dirac Scattered-Wave Calculations," in *Local Density Approximations in Quantum Chemistry and Solid State Physics*, J. P. Dahl and J. Avery (eds.), Plenum Press (1984), pp. 643-664.

V. Book Review

425. C.Y. Yang, Review of "Ionizing Radiation Effects on MOS Devices and Circuits," edited by T.P. Ma and P.V. Dressendorfer (Wiley 1989), in *IEEE Circuits and Devices Magazine* 7, No. 2, 67-68 (1991).

VI. Doctoral Dissertation

426. "Relativistic Scattered-Wave Method and Its Applications to Molecules and Clusters in Solids," University of Pennsylvania, December 1975. Advisor: S. Rabii.

PROFESSIONAL SERVICE

- IEEE Electron Devices Society Representative on IEEE Transactions on Applied Superconductivity Editorial Board, 2016-present.
- IEEE Awards Board, Vice Chair, January 2013-December 2014; Member, Awards Planning and Policy Committee, January 2015-December 2017.
- International Advisory Committee, International Conference on Solid-State and Integrated-Circuit Technology, 2004-present, China.
- International Advisory Committee, International Conference on Semiconductor Electronics, 1992-present, Malaysia.
- International Advisory Committee, IEEE International Conference on Electron Devices and Solid-State Circuits, June 2013, Hong Kong; June 2014, Chengdu, China; August 2016, Hong Kong; October 2017, Hsinchu, Taiwan; June 2018, Shenzhen, China.
- International Advisory Committee, IEEE NANO 2010, 10th International Conference on Nanotechnology, August 2010, Seoul, Korea.
- IEEE Teaching Award Committee (2003-07). This committee evaluates nominations for the IEEE-wide Graduate and Undergraduate Teaching Awards.
- IEEE Electron Devices Society Distinguished Service Award Committee, 2006-08; Chair, 2009.
- Chair, IEEE Electron Devices Society Education Award Committee, 2006-08.
- Chair, IEEE Electron Devices Society Fellow Evaluation Committee, 2006-07.
- Blue Ribbon Task Force on Nanotechnology, appointed by U.S. Representative Mike Honda and California State Controller Steve Westly, December 2004-December 2005.
- IEEE Board of Directors, Division I Director, January 2002-December 2003.
- Program Committee, IEEE NANO 2002, Second IEEE Conference on Nanotechnology, August 2002, Washington, D.C.
- General Co-Chair, Sixth International Conference on Solid-State and Integrated-Circuit Technology, October 2001, Shanghai, China.
- Program Committee, IEEE NANO 2001, First IEEE Conference on Nanotechnology, October 2001, Maui, Hawaii.
- Vice Chair, Nanotechnology Committee, IEEE Technical Activities Board, November 2000-February 2002.
- Leader, Electron Devices Delegation to the People's Republic of China, organized by People to People Ambassadors Program, September 2001, Beijing, Xi'an, and Shanghai.
- International Advisory Committee, 8th International Symposium on Physical and Failure Analysis of Integrated Circuits, July 2001, Singapore.
- Jury of Award, Eta Kappa Nu C. Holms MacDonald Outstanding Teaching Award, 1999.
- IEEE Electron Devices Society, Regions/Chapters Chairman, October 1991-98; Elected AdCom Member, 1993-98; Vice President, January 1998-December 1999; President, January 2000-December 2001.
- International Advisory Committee, 7th International Symposium on Physical and Failure Analysis of Integrated Circuits, July 1999, Singapore.
- Technical Program Committee, 1999 International Symposium on VLSI Technology, Systems, and Applications, June 1999, Taiwan.
- Program Committee, 1997 International Electron Devices Meeting, December 1997, Washington, D.C.
- Program Committee, 1997 International Conference on Solid State Devices and Materials, September 1997, Hamamatsu, Japan.
- International Advisory Committee, 6th International Symposium on Physical and Failure Analysis of Integrated Circuits, July 1997, Singapore.
- Technical Program Committee, 1997 International Symposium on VLSI Technology, Systems, and Applications, June, 1997, Taiwan.
- Program Committee, 1996 International Electron Devices Meeting, December 1996, San Francisco.
- Program Committee, 1996 International Conference on Solid State Devices and Materials, August 1996, Yokohama, Japan.

- International Advisory Committee, 5th International Symposium on the Physical and Failure Analysis of Integrated Circuits, November 1995, Singapore.
- International Advisory Committee, IEEE TENCON '95, November 1995, Hong Kong.
- Program Committee, Fourth International Conference on Solid State and Integrated Circuit Technology, October 1995, Beijing, China.
- Program Committee, 1995 International Conference on Solid State Devices and Materials, August 1995, Osaka, Japan.
- Program Committee, 1994 International Conference on Solid State Devices and Materials, August 1994, Yokohama, Japan.
- Program Committee, 1993 International Conference on Solid State Devices and Materials, August 1993, Chiba, Japan.
- Program Committee and Panel Session Chairman, Third International Conference on Solid State and Integrated Circuit Technology, October 1992, Beijing, China.
- Technical Program Committee, 1992 International Conference on Solid State Devices and Materials, August 1992, Tsukuba, Japan.
- Technical Program Committee and Session Chairman, 1992 VLSI Technology Symposium, Seattle, Washington, June 1992.
- Technical Program Committee, 1992 International Reliability Physics Symposium, April 1992, San Diego, California.
- Member, Focus Group on Graduate Programs, Applied Technology Institute for Microelectronics (ATIM), 1991-93, San Jose State University.
- General Chairman, Fourth International Conference on Amorphous and Crystalline Silicon Carbide and other IV-IV Materials, October 1991, Santa Clara University.
- Technical Program Committee, 1991 International Conference on Solid State Devices and Materials, August 1991, Yokohama, Japan.
- Technical Program Committee, Session Co-Chairman, and Rump Session Co-moderator, 1991 VLSI Technology Symposium, May 1991, Oiso, Japan.
- Publicity Committee, 1991 International Reliability Physics Symposium, April 1991, Las Vegas, Nevada.
- Symposium Committee, IEEE/TMS Electronic Materials Symposium, April 1991, Santa Clara, California.
- Session Chairman, International Electron Devices and Materials Symposium, November 1990, Hsinchu, Taiwan.
- Technical Program Committee, 1990 International Conference on Solid State Devices and Materials, August 1990, Sendai, Japan.
- Technical Program Committee and Session Chairman, 1990 VLSI Technology Symposium, June 1990, Honolulu, Hawaii.
- Organizing Committee, IEEE Symposium on Memory Technologies, May 1990, Santa Clara University.
- Co-chairman, Third International Conference on Amorphous and Crystalline Silicon Carbide and Other Group IV-IV Materials, April 1990, Howard University, Washington, D.C. Sponsored by National Science Foundation and Office of Naval Research.
- Symposium Committee, IEEE/TMS Electronic Materials Symposium, March 1990, Santa Clara, California.
- Technical Program and Publicity Committees and Session Chairman, 1990 International Reliability Physics Symposium, March 1990, New Orleans, Louisiana.
- Program Committee, Second International Conference on Solid State and Integrated Circuit Technology, October 1989, Beijing, China.
- Technical Program Committee and Session Chairman, 1989 VLSI Technology Symposium, May 1989, Kyoto, Japan.
- Program Committee, International Semiconductor Manufacturing Science Symposium 89, May 1989, San Mateo, California.
- Organizing Committee, IEEE Symposium on BiCMOS and other Emerging Technologies, May 1989, San Jose State University.
- Technical Program Committee and Session Chairman, 1989 International Reliability Physics Symposium, April 1989, Phoenix, Arizona.
- Symposium Committee and Session Chairman, IEEE/TMS Electronic Materials Symposium, March 1989, Santa Clara, California.
- Organizing Committee, Second International Conference on Amorphous and Crystalline Silicon Carbide and Related Materials, December 1988, Santa Clara University. Sponsored by National Science Foundation.
- Session Chairman, Symposium on Reliability of Semiconductor Devices and Interconnection, Electrochemical Society Meeting, October 1988, Chicago, Illinois.
- Session Chairman, 1988 International Conference on Solid State Devices and Materials, August 1988, Tokyo, Japan.
- Organizing Committee and Session Chairman, IEEE Symposium on Submicron I.C. Technologies, May 1988, Santa Clara University.
- Co-chairman, First International Conference on Amorphous and Crystalline Silicon Carbide and Related Materials, December 1987, Howard University, Washington, D.C. Sponsored by National Science Foundation.
- Co-organizer, Semiconductor Manufacturing Workshop, November 1987, Santa Clara University.
- SEMATECH Planning Workshop on Fab Facility of the Future, August 1987, Albuquerque, New Mexico.

- Organizing Committee and Session Chairman, IEEE Symposium on Bipolar and BiCMOS VLSI Technologies, April 1987, Santa Clara University.
- Director and Coordinator, Microelectronics Laboratory Short Course, Thin Dielectrics for VLSI, July 1986, Santa Clara University.
- Symposium Chairman, IEEE Symposium on The Future of Microelectronics in Silicon Valley, June 1986, Santa Clara University.
- Coordinator of Microelectronics Laboratory Short Course, Process and Analytical Equipment in the VLSI Era, January 1986, Santa Clara University.
- Session Chairman, The Future of Microstructure Technology, October 1985, Seabrook, South Carolina.
- Organizing Committee and Session Chairman, IEEE Symposium on Advanced CMOS Technology, May 1985, Santa Clara University.
- Symposium Director, IEEE Symposium on Interconnect, Gate, and Dielectric Materials, October 1984, Santa Clara University.
- Semiconductor Manufacturing Society Steering Committee (1987-88).
- IEEE-Electron Devices Society Santa Clara Section, Vice Chairman (1985-86), Chairman (1986-87), AdCom (1984-88).
- IEEE-Components, Hybrids, and Manufacturing Technology Society Santa Clara Section, AdCom (1987-90).
- National Science Foundation Proposal Reviewer and Site Visitor.
- Referee, Physical Review B, Physical Review Letters, Applied Physics Letters, Journal of Applied Physics, Nano Letters, Journal of Physical Chemistry, IEEE Transactions on Electron Devices, IEEE Electron Device Letters, and Journal of Materials Research.

COURSES TAUGHT

I. Santa Clara University (1983-present)

Undergraduate:

- Electric Circuits I & II (sophomore/junior-level introductory courses)
- Electronic Circuits I (junior-level introductory course)
- Semiconductor Devices I & II (junior/senior-level introductory courses to device physics and process technology)
- Electromagnetics I & II (junior-level introductory courses)
- Emerging Areas in Electrical Engineering (freshman-level introductory course)

Graduate:

- Nanoscale Science and Technology (first-year graduate level)
- Fundamentals of Semiconductor Physics (first-year graduate level)
- Semiconductor Device Theory I & II (first and second-year graduate level)
- Integrated Circuit Fabrication Processes I (first-year graduate level)
- Semiconductor Surfaces and Interfaces (advanced graduate level)
- Topics in Micro/Nanoelectronics (multiple offerings on various topics at advanced graduate level)
- VLSI Device Theory (advanced graduate level)
- VLSI Device Modeling (advanced graduate level)

II. University of California, San Diego (2005)

Undergraduate:

- Fundamentals of Electrical Engineering I (sophomore/junior level for computer science majors)

III. University of California, Berkeley (1992-1997)

Undergraduate:

- Introduction to Electrical Engineering (sophomore/junior-level)
- Integrated-Circuit Devices (junior/senior-level introductory course to device electronics)

IV. Semiconductor Equipment Manufacturing Institute (SEMI) (1996-1998)

Professional Training Program:

- Overview of Semiconductor Technology

OTHER ACADEMIC EXPERIENCE

I. Santa Clara University

Administrative:

2003 – 2006 **Associate Dean for New Initiatives and Partnership, School of Engineering.** Responsible for all external development activities including research and education partnerships, alumni relations and major gifts. In 2003-04, received cash donations totaling \$1.5M to establish the Center for Nanostructures.

	Initiated interdisciplinary programs on entrepreneurship with Schools of Law and Business.
2008 – 2011	Chair, Department of Electrical Engineering. Administrative oversight of all education programs, faculty and student activities, budgets and operations, and faculty recruitment and retention within the department. In 2010, led successful effort to obtain a perfect evaluation score on BSEE program from ABET (degree accreditation agency).
2007 – present	Founding Director, TENT Laboratory. Establishment of laboratory located inside NASA Ames Research Center to support the DoD-funded Thermal and Electrical Nanoscale Transport (TENT) project. Laboratory dedicated to research on development of next-generation integrated circuit interconnect technology.
2003 – 2011	Founding Director, Center for Nanostructures. Development and oversight of the interdisciplinary research and education center consisting of students, faculty, and staff from School of Engineering and College of Arts and Sciences.
1985 – 2002	Founding Director, Microelectronics Laboratory. Design and development of device and circuit fabrication facility for research and teaching, including a class 100 clean room for 4" Si wafer processing.
1983 – present	Coordinator of undergraduate and graduate courses in Micro/nanoelectronics and Nanotechnology. Instructor assignment, class scheduling, and textbook selection. Currently responsible for 20 courses.
1988 – 1991	Professor-in-charge of graduate admission for electrical engineering.
1983 – 1988	Ph.D. Preliminary Examination Coordinator.
1984 – 1985	Electrical and Computer Engineering Graduate Seminar Coordinator. Also in 2003-04.

Curriculum Development:

1983 – present	Development of integrated circuit design, device, and fabrication courses, both undergraduate and graduate. Development of new courses in nanoscience and nanotechnology.
1986 – 1987	Initiator and co-developer of master of science program in materials science and engineering.
1987	Initiator and developer of master of science program in microelectronics manufacturing science and technology.

Current and Past Research Students Supervised:

54 bachelor's, 44 master's, 3 engineer's degree, and 12 doctoral students; 17 postdoctoral fellows.

II. University of California, San Diego

2005	Electrical and Computer Engineering Graduate Seminar Coordinator.
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ACADEMIC AND COMMUNITY SERVICES

I. Santa Clara University

EE Department

- Member, Committee on Total Unit Requirement for B.S. Degree, April 1983.
- Chairman, Faculty Search Committee, May-June 1983.
- Member, Laboratory Facilities Committee, May-June 1983.
- Chairman, Undergraduate Laboratory Committee, August 1983-January 1984.
- Chairman, Faculty Search Committee, July 1984-April 1986.
- Member, Ph.D. Preliminary Exam Committee, October 1985-April 1986.
- Member, Curriculum Committee, May 1987-June 1992.
- Member, Long-range Planning Committee, September 1987-June 1989.
- Chairman, Laboratory Committee, November 1987-June 1989.
- Member, Departmental Steering Committee, November 1994-June 1996.
- Coordinator, Graduate Program, 2003.
- Coordinator, Electronics Curriculum, 2006-2008.
- Ph.D. Program Coordinator, 2013-2014.
- Member, Tenure-track Faculty Search Committee, October 2017-May 2018.
- Coordinator, Electrical Engineering Advisory Board, 2014-present.

School of Engineering

- Member, Semiconductor Laboratory Committee, September-December 1983.
- Member, Undergraduate EE Core Committee, March-May 1984.
- Chairman, Microelectronics Laboratory Advisory Committee, December 1984-2002.
- Member, Materials Science and Engineering Advisory Committee, May 1985-June 1987.
- Member, Ad hoc Committee on Research in Engineering, January 1986-June 1987.
- Member, David Packard Fellow Search Committees, January-June 1986, January-May 1987.
- Member, Dean Search Committee, May 1988-April 1989.
- Member, Graduate Programs Committee, September 1988-August 1991.

- Member, Rank and Tenure Committee, September 1988-August 1991.
- Member, Engineering Safety Committee, September 1991-August 1993.
- Member, Engineering Grievance Committee, February 1992-December 1994, January 2005-December 2007.
- Member, *Researcher of the Year* Award Committee, August 1993-June 1995.
- Member, Engineering Dean's Evaluation Committee, 1999.
- Member, Graduate Program Leadership Council, 2007-2008.

University

- Member, University Development Committee, September 1984-August 1986; Chairman, February-August 1986.
- Member, Committee on Research, September 1984-August 1986; Chairman, September 1986-June 1988.
- Member, Planning Committee, Institute on Technology and Society, January 1985-April 1986.
- Member, Technology Integration Science and Engineering Subcommittee, February-June 1986.
- Member, Committee on Faculty Salaries, January 1989-December 1990.
- Member, Faculty Affairs Board, January 1990-December 1992, January 1995-December 1997.
- Member, Screening Committee for Associate/Assistant Vice Presidents for Academic Affairs, May-June 1990.
- Member, University Rank and Tenure Committee, September 1991-August 1993, September 2000-August 2003; Chair, September 1993-August 1994, September 2002-August 2003.
- Board Member, Competitive Manufacturing Institute, September 1991-August 1996.
- Member, Ethnic Studies Faculty Advisory Committee, September 1994-June 1996.
- Member, Sabbatical Review Committee, December 1996.
- Member, Asian Pacific American Faculty/Staff Association Steering Committee, September 1996-June 1998.
- Member, Multicultural Work Group, June-October 1997.
- Member, University Planning Council, September 1997-June 2002.
- Member, Steering Committee, Center for Science, Technology, and Society, September 1997-June 2002.
- Member, Search Committee, Executive Director, Center for Science, Technology, and Society, November 2003-June 2004.
- Member, Benefits Committee, 2008.
- Member, University Research Committee, September 2013-June 2016.
- Member, Voluntary Retirement Support Program Task Force, January 2016-December 2017.

II. Community Service

- Coordinator, "Technology and Society Paper Competition for High School Students," sponsored by the School of Engineering and the Institute on Technology and Society, Santa Clara University, May 1985-February 1986.
- Session Moderator, "Conference on Competition and Cooperation with Japan in High Technology," sponsored by the Institute on Technology and Society, the International Business Program, and the MBA Association, Santa Clara University, March 1986.
- Discussion Leader, Faculty Development Workshop on "Teaching the Human Person," Santa Clara University, March 1986.
- Member, City of Santa Clara Stephen G. Wozniak Achievement Award Committee, August-September 1986.
- "Open House" and Review Day Lectures, "The Basics of an Engineering Education," Santa Clara University, October 1987 and April 1988.
- Faculty Advisor, Association of Graduate Engineering Students (AGES), Santa Clara University, October 1987-December 1991.
- Panelist, "What's it like to be a faculty member at Santa Clara?" New Faculty Orientation, Santa Clara University, September 1988.
- Co-organizer and Panelist, High School Science Advisors Day Workshop, Santa Clara University, October 1988.
- Panelist, High School Science Advisors Day Workshop, Cupertino, California, November 1989.
- Faculty Coordinator, Academic Enrichment Seminars (ACES) on Microelectronics, for under-represented high school students, Santa Clara University, March 1991 and May 1992.
- Board Member, Silicon Valley Chinese American Semiconductor Professionals Association, 1991-1994.
- Expert Witness, Santa Clara County District Attorney's Office, February-June 1993.
- Faculty advisor, Asian Pacific Students Union, Santa Clara University, 1994-1997.
- Advisory Board Member, International Technological University, Santa Clara, California, 1997-2002.
- Board Member, Community Health Awareness Council, Mountain View, California, 1998-2002.
- Board Member, Chinese Cultural Foundation, San Francisco, 2002-2005.
- Advisory Board Member, Electrical Engineering Department, University of California Santa Cruz, 2004-2009.