

RESUME

Gary E. McGuire

Education

Ph.D. Inorganic Chemistry, University of Tennessee, Knoxville, TN, June 1972

B.A. Chemistry, Pfeiffer College, June, 1968.

Professional Work Experience

President, International Technology Center, 2000-present.

Director of Business Development, Electronic Materials and Devices, MCNC, 1999-2000.

Director of Electronic Materials and Devices, MCNC, Center for Microelectronics, 1987-1999.

Tektronix, Inc., Beaverton, Oregon; Manager of Materials Development and Characterization Laboratory, 1982-1987.

Tektronix, Inc. Beaverton, Oregon; Manager of Materials Characterization Laboratory, 1979-1982.

Texas Instruments, Inc., Dallas, Texas. Member of technical staff, 1973-1978.

Oak Ridge National Laboratory, Oak Ridge, TN; Post-graduate research in surface analysis of metals and ceramics.

Memberships

American Vacuum Society, Electrochemical Society, Sigma Xi (past), Society for Information Display (past)

Professional Activities

- Editor, Journal of Vacuum Science and Technology B, published by American Institute of Physics for the American Vacuum Society (1991-present), Associate Editor (1986-1988)
- Editor, Journal of Electron Spectroscopy and Related Phenomena (1984-

1997), Editorial Board (1979-1984)

- Editor, William Andrew Publications (formerly Noyes Publications) Series on Electronic Materials and Processing (over 48 text)
- Editor, Surface Science Spectra (1992-1994)
- Editorial Board, Critical Reviews in Solid State and Materials Science, (1992-present)

• Invited Author, Biennial Application Reviews, "Surface Characterization", Analytical

Chemistry, American Chemical Society, Washington, D.C.

- Editorial Board, Journal of Surface and Interface Analysis, John Wiley and Sons

Publishers, Sussex, England, (1983-1986)

- American Vacuum Society: President(1997), Board of Directors (1989-1990), Board of Trustees (1984-1986), Education Committee (1983-1985), Chair, Membership Committee(1989), Chair, Foreign Interactions Committee (1990-1994), Chair, Elec. Matl.

and Processing Division (1992), Executive Committee Elec. Matl. And Processing Div.

(1985-1988), Program Committee (1984, 1988, 1989, 1990, 1992, 1995, 1996, 2001)

- American Institute of Physics: International Relations (1994-1997), Physics News,

Vacuum Physics Editor (1996), Publishing Policy Subcommittee on Books (1991)

- International Union of Vacuum Science and Technology: Chair, Elec. Matl. and Processing Division (1996-1998), Deputy Councilor for AVS (1996-1998), Organizing

and Program Committee of 13th International Vacuum Congress and 9th International

Conference on Solid Surfaces

- Electrochemical Society: Program Chair (1977) and President (1978) of the North Texas

Chapter; Councilor (1981), and President (1982) Oregon Chapter; Secretary (1982), Chair

(1984) of National ECS Council of Local Sections; Publications Committee (1982-1986); Program Committee (1984); Executive Committee of Electronic Materials Division (1985-1997)

- International Conference on Metallurgical Coatings and Thin Films: Program Committee (1977-1989); Symposium Chair (1986-1988); Program Chair (1989); Proceedings Editor (1990-1996); Short Course Instructor (1996-2001)

- Scanning Electron Microscopy Conference: Program Committee (1979-1988); Proceedings Editor (1983).

- American Society for Testing Materials (ASTM): Chair of Secondary Ion

- Mass Spectroscopy Subcommittee E-42 on Surface Analysis (1981).
- University Relations Team, Tektronix, Inc. (1981-1984), Chair (1984-1987)
 - Adjunct Professor, Department of Materials Science and Engineering, North Carolina State University (1988-1995).
 - Member Presidents Council, University of Florida (1983-1986).
 - Member of Industry-University Planning Committee for Materials Science and Engineering, University of Washington
 - Tour speaker for Sigma Pi Sigma, Society of Physics Students (1983-1986)
 - Northwest Regional American Chemical Society: Program Committee (1986).
 - Pacific Northwest Metals and Minerals Conference: Program Committee (1980).
 - International Conference on Materials and Process Characterization, International Advisory Committee, Oct. 21-25, 1991, Shanghai, China.
 - International Workshop on the Measurement and Characterization of Ultra-Shallow Doping Profiles in Semiconductors: Program Committee (1991, 1993, 1995, 1997), Proceedings Editor (1991).
 - 4th Ballistic Electron Emission Microscopy (BEEM) Workshop, Organizing Committee, Jan. 25, 1993, Williamsburg, VA.
 - International Conference on Electron Spectroscopy: Program Committee (1989, 1993); Proceedings Editor (1989).
 - IUVSTA International Workshop on Plasma Sources and Surface Interactions in Materials Processing, Advisory Committee, Sept. 20-22, 1995, Fuji-Yoshida, Japan.
 - N.C. Focus on Fundamental Materials, Processing, and Devices with Applications in Flat Panel Displays, G.E. McGuire, Chair, Nov. 21, 1994, Research Triangle Park, N.C.
 - Advisory Board, Department of Chemistry, University of North Carolina at Charlotte (1995-1998)
 - External Review Panel, Naval Research Laboratory, Basic Research Program, Jan. 16, 1996.

New Product Development

- Proprietary Inks for Tektronix 4692 Ink Jet Color Copier (1984)
- Transparency for Tektronix 4691, 4692, and 4695 Ink Jet Color Copiers (1983)
- Digital Ink Jet Head for Tektronix 4692 Color Copier (1984)
- Media for Tektronix 4691, 4692, and 4695 Ink Jet Color Copiers (1983)
- Touch Panel (Tektouch) (1986)
- Nanodiamond and nano-onions (2004)
- Atmospheric pressure plasma system (2007)

Patents

- 1) "Method of Forming Metal-Disilicide Films from Silicon-on-Insulator Substrates", Tey Y. Tan, Gary E. McGuire, and William T. Lynch; USA Patent

5,449,642, September 12, 1995.

2) "Thin Film Ferroelectric Flat Panel Display Devices, and Methods for Operating and Fabricating Same", Orlando H. Auciello and Gary E. McGuire; USA Patent 5,453,661, September 26, 1995.

3) "Selective Plasma Deposition", Mark A. Ray and Gary E. McGuire;; USA Patent 5,858,471, January 12, 1999.

4) "Enhanced Field Emission from Microtip Structures" Orlando H. Auciello, Alan R. Krauss, Gary E. McGuire and Dieter M. Gruen; USA Patent 5,886,459, March 23, 1999.

5) "Microelectromechanical Flexible Membrane Electrostatic Valve Device and Related Fabrication Methods", Scott H. Goodwin-Johansson and Gary E. McGuire; USA Patent Number 6,590,267, July 8, 2003

6) "Miniature Electrical Relays Using A Piezoelectric Thin Film as an Actuating Element", David E. Dausch and Gary E. McGuire, USA Patent 6,359, 374, March 19, 2002

7) "Electromagnetic Radiation Devices Having a Micromachined Electrostatic Chopper Device," David E. Dausch and Gary E. McGuire; USA Patent 6,586,738, July 1, 2003.

8) "Miniature Electrical Relays Using A Piezoelectric Thin Film as an Actuating Element", David E. Dausch and Gary E. McGuire; USA Patent Number 6,700,309; Continuation of 6,39,374, March 2, 2004.

9) "Phototherapeutic Treatment Methods and Apparatus", Olga A. Shenderova and Gary E. McGuire; USA Patent 6,866,678, March 15, 2005.

10) "Phototherapy Bandage", Paul H. Holloway, Gary E. McGuire, Olga A. Shenderova, John Reynolds, Kirk Schanze, James Boncella, Patent pending

11) "High Resolution Multi-lens Imaging Device", Paul Howard Holloway, Mark R. Davidson, Olga Alexander Shenderova, Gary Elder McGuire, David B. Tanner, and Arthur Hebard; USA Patent No. 6,954,310, October 11, 2005.

12) "Polymer Nanocomposite Structures for Integrated Circuits", Gary Elder McGuire and Olga Alexander Shenderova; U.S. Patent Number 7,224,039, May 29, 2007.

More than 50 additional patent disclosure publications

Patent Committee: Tektronix Inc. (1982-1986), MCNC (1987-1996)

Recognition: 1994 Semiconductor Research Corporation Recognition Award for Patent "Method of Forming Metal-Disilicide Films from Silicon-on-Insulator Substrates"

Teaching

American Vacuum Society Short Courses

"Surface Preparation for Thin Film Deposition"

"Surface Analysis Techniques

"Auger Electron Spectroscopy"

"X-ray Photoelectron Spectroscopy"

"Characterization of Surface Engineered Coatings"

Continuing Education Institute - Europe Short Courses

For twenty years an annual summer short course program was organized in Europe. G.E. McGuire was responsible for the organization of the curriculum on semiconductor materials and processing, optoelectronics, storage media and techniques, and yield and failure analysis. As many as ten courses were offered annually with over forty internationally recognized experts teaching in these one to two week intensive courses. In addition, he served as a instructor in the following courses.

"Characterization of Surfaces and Interfaces, Extended Defects and Trace Analysis"

"Field Emitter Displays"

"Dielectrics in Multilayered Structures

"Characterization of Multilevel Metallization Schemes

"Defect and Failure Analysis

Research Funding

An average of greater than \$10M per year for the past five years has been generated for multi-university teams. Research has been conducted with over 30

universities and medical schools as well as with major industrial partners such as Raytheon, Lockheed-Martin and L-3 Communication and with start-up companies. Initiation of projects involves interactions with faculty members and all levels of administration up to and including Chancellors. Selection and identification of projects involves visits and interaction with program managers at many funding agencies including the Defense Advanced Research Projects Agency, the Department of Energy, and NASA, National Science Foundation, Army Research Laboratory, Office of Naval Research and Air Force Research Laboratory. The research has been carried out in a collaborative environment and direct supervision of numerous graduate and undergraduate students has been provided. The research has covered a broad range of topics including materials science, physics, chemistry, semiconductor technology, optics, and biochemistry. In almost all cases, the opportunity to commercialize any technology that results from the research has been transferred to the International Technology Center even though ITC is a non-profit research Center. The model is for the technology to become the nucleus of a new company. This is a model that is suitable for any university or non-profit research corporation.

Books and Book Chapters

- 1) Auger Electron Spectroscopy Reference Manual, G.E. McGuire, Plenum Press, New York, 1979.
- 2) Applications of Auger Spectroscopy in Materials Analysis, G.E. McGuire and P.H. Holloway in Electron Spectroscopy: Theory, Techniques, and Applications, Vol. 4, C.R. Brundle and A.D. Baker, Editors, Academic Press, London, 1981.
- 3) Characterization of Thin Films, G.E. McGuire, in Deposition Technologies and Applications, R.F. Bunshah, Editor, Noyes Publications, Park Ridge, New Jersey, 1982.
- 4) Instrumental Methods in ESCA, G.E. McGuire, in Applied Electron Spectroscopy for Chemical Analysis, H. Windawi and F.L. Ho, Editors, John Wiley and Sons Publishers, New York, 1982.
- 5) Problems and Prospects of Instrumental Surface Analysis of Electronic Materials, Mary A. Ryan and G.E. McGuire, in Industrial Applications of Surface Analysis, L.A. Casper and C.J. Powell, Editors, Amer. Chem. Soc., Washington, D.C., 1982.
- 6) Microstructural Characterization of Coatings, Birgit E. Jacobson and G.E. McGuire, Coatings for High Temperature Applications, E. Lang, Editor, Applied Science Publishers, London, 1983.

- 7) Scanning Electron Microscopy- Related Techniques and Applications, Vol I, N.J. Zaluzec, M.H. Barrows, and G.E. McGuire, Guest Editors, Scanning Electron Microscopy, Inc., AMF O'Hare, Illinois, 1983.
- 8) VLSI Science and Technology/1984: Materials for High Speed and High Density Applications, Kenneth E. Bean and George A. Rozgonyi, Editors, G.E. McGuire et al. Assistant Editors, The Electrochemical Society, Pennington, New Jersey, 1984.
- 9) Semiconductor Materials and Process Technology, G.E. McGuire, Editor, Noyes Publications, Park Ridge, New Jersey, 1988.
- 10) Characterization of Semiconductor Materials- Principles and Methods, G.E. McGuire, Noyes Publications, Park Ridge, New Jersey, 1989.
- 11) A Study of Ultra Shallow Junctions by Diffusion from Self-Aligned Silicides, H. Jiang, C.M. Osburn, Z.G. Xiao, P. Smith, G.E. McGuire, and G.A. Rozgonyi, in Proceedings 19th European Solid State Device Research Conference, Belin.
- 12) Proceeding Fourth International Conference on Electron Spectroscopy, University of Hawaii, July 10-14, 1989, Honolulu, Hawaii, C.R. Brundle, G.E. McGuire, and J.J. Pireaux, Editors, Elsevier Science Publishers, Amsterdam, The Netherlands, 1990.
- 13) Metallurgical Coatings and Thin Films 1991, G.E. McGuire, D.C. McIntyre and S. Hofmann, Editors, Elsevier Science Publishers, Amsterdam, The Netherlands, 1991.
- 14) Proceedings First International Workshop on the Measurement and Characterization of Ultra-Shallow Doping Profiles in Semiconductors, March 18-21, 1991, Research Triangle Park, N.C., C.M. Osburn and G.E. McGuire, Editors, J. Vac. Sci. Technol.B, Vol. 10(1), 1992.
- 15) Metallurgical Coatings and Thin Films 1992, B.D. Sartwell, G.E. McGuire, S. Hofmann, Editors, Elsevier Science Publishers, Amsterdam, The Netherlands, 1992.
- 16) Metallurgical Coatings and Thin Films, 1993, G.E. McGuire, A. Matthews, and H. Jehn, Editors, Elsevier Science Publishers, Amsterdam, The Netherlands, 1993.
- 17) Characterization of Silicon Processing, Yale E. Strausser, C.R. Brundle, G.E. McGuire, Lee E. Fitzpatrick, Editors, Butterworth-Heinemann Publishers, Greenwich, CT

- 18) Auger Electron Spectroscopy, G.E. McGuire, in The Encyclopedia of Analytical Science, Alan Townshend, Editor-in-Chief, Academic Press, London, England, 1994.
- 19) Metallurgical Coatings and Thin Films, 1994, H. Jehn, G.E. McGuire, and B.D. Sartwell, Editors, Elsevier Science Publishers, Amsterdam, The Netherlands, 1994.
- 20) Testing and Characterization of Coatings and Thin Films, G.E. McGuire, Section Editor, Sections 7A-7K, ASM Handbook, Volume 5, Surface Engineering, F.A. Smidt, J.A. Sprague, and C.M. Cotell, Editors, ASM International, Newbury, Ohio, 1994
- 21) Characterization in Compound Semiconductor Processing, Yale E. Strausser and G.E. McGuire, Editors, Butterworth-Heinemann Publishers, Greenwich, CT.
- 22) High Resolution Auger Spectroscopy of Gases, G.E. McGuire, Editor, Special Issue of the Journal of Electron Spectroscopy and Related Phenomena in honor of Dr. Thomas A. Carlson, 67 (1994), Elsevier Science Publishers, Amsterdam, The Netherlands.
- 23) Metallurgical Coatings and Thin Films, 1995, H. Jehn, A. Matthews, G.E. McGuire and I. Petrov, Editors, Elsevier Science Publishers, Amsterdam, The Netherlands, 1995.
- 24) Proceedings of the 13th International Vacuum Congress and the 9th International Conference on Solid Surfaces, Yokohama, Japan, Sept. 25-29, 1995, R. Shimizu, H. Oechsner, G.E. McGuire, and Y. Yasuda, Editors, Applied Surface Science, Vol. 100/101, July, 1996, Elsevier Science Publishers, Amsterdam, The Netherlands
- 25) Applied Surface Science and Electronic Materials and Processing, Proceedings, H. Oechsner, R. Shimizu, G.E. McGuire, and Y. Yasuda, Volume 1 and 2 Editors, 13th International Vacuum Congress and the 9th International Congress on Solid Surfaces, A. Yoshimori, A. Hiraki, and M. Kobayashi, General Editors, Yokohama, Japan, September 25-29, 1995, Elsevier, Amsterdam, 1996.
- 26) Metallurgical Coatings and Thin Films 1996, H. Jehn, G.E. McGuire, I. Petrov, B. Sartwell, Editors, Elsevier Science Publishers, Amsterdam, The Netherlands, 1996.
- 27) Proceedings Third International Workshop on the Measurement and Characterization of Ultra-Shallow Doping Profiles in Semiconductors, March 20-22, 1995, Research Triangle Park, N.C., James Ehrstein, Rajiv Mathur, and G.E. McGuire, Editors, J. Vac. Sci. Technol. B, Vol, 1996.

28) Handbook of Compound Semiconductor Materials and Process Technology, P.H. Holloway and G.E. McGuire, Eds. Noyes Publications, Park Ridge, NJ, 1996.

29) Surface Analysis Techniques, G.E. McGuire, in Handbook of Analytical Chemistry, Frank Settle, Editor, Prentice-Hall Publishers, Upper Saddle River, N.J., 1997.

30) Secondary Ion Mass Spectroscopy, M.A. Ray, E.A. Hirsch, and G.E. McGuire, in Handbook of Analytical Chemistry, Frank Settle, Editor, Prentice-Hall Publishers, Upper Saddle River, N.J., 1997.

31) Surfaces, G.E. McGuire, Section Editor, Encyclopedia of Analytical Chemistry: Instrumentation and Applications, Robert A. Meyers, Editor-in-Chief, John Wiley & Sons, Sussex, England

32) Electronic Materials and Processing, R.B. Jackman, G.E. McGuire, Y. Yasuda, Section Editors, R.B. Jackman and M. Petty, General Editors, Proceedings 14th International Vacuum Congress and 10th International Conference on Solid Surfaces, August 31-September 4, 1998, Birmingham, England, Thin Solid Films, 1999, Elsevier, Amsterdam, The Netherlands.

33) Methods and Applications of Electron Spectroscopies: An Overview, P.S. Bagus, C.S. Fadley, and G.E. McGuire, Editors, A special issue of The Journal in honor of C.R. Brundle on the completion of his 25 year as Editor, Journal of Electron Spectroscopy and Related Phenomena 98-99 (1999), Elsevier Science B.V., Amsterdam, The Netherlands

34) Nanocrystalline Diamond, Olga Shenderova and G.E. McGuire, Chapter 7 in Nanomaterials Handbook, Y. Gogotsi, Editor, CRC Press, Boca Raton, FL., 2006

35) Types of Nanodiamond, Olga Shenderova and G.E. McGuire, Ultra-Nanocrystalline Diamond: Syntheses, Properties and Applications, O. Shenderova and D. Gruen, Editors, William-Andrew Publisher, Norwich, NY, 2006

Recent Publications

From list of over 120

R. Chapman, M. Kellam, S. Goodwin-Johansson, J. Russ, G. McGuire, and K. Kjoller, "Modeling and Simulation of Scanning Tunneling Microscope Tip/Semiconductor Interactions in pn Junction Delineation", J. Vac. Sci. Tech. B!0(1) 502-507 (1992).

S.W. Gaarenstroom, R.N. Lee, C.E. Bryson, III, G.E. McGuire, J.R. Noonan, and M.H. Hecht, "An Electron Spectroscopy Data Dictionary for Surface Science Spectral Databases, Surface Science Spectra 2 #4, v-xxii, 1993.

M.A. Ray, J. Durate, and G. E. McGuire, "Selective Plasma Deposition", Thin Solid Films, 236, 274-280 (1993).

C.M. Osburn, S. Chevacharoenkul, Q.F. Wang, K. Markus, G.E. McGuire and P.L. Smith, "Materials and Device Issues in the Formation of Sub-100nm Junctions", Nuclear Instruments and Methods in Physics Research B74 53-59 (1993).

W.D. Palmer, J.E. Mancusi, C.A. Ball, W. Joines, G.E. McGuire, D. Temple, D. Vellenga, and L.N. Yadon, "Measured DC Performance of Large Arrays of Silicon Field Emitters", IEEE Trans. Electron Dev. 41 1886 (1994).

D. Temple, H.F. Gray, C.A. Ball, J.E. Mancusi, W.D. Palmer, G.E. McGuire, and J.L. Shaw, "Fabrication and Electrical Performance of High Aspect Ratio Gated Silicon Field Emission Arrays", J. Vac. Sci. Technol. B 13(1) 150-157 (1995).

W.D. Palmer, H.F. Gray, J.E. Mancusi, D. Temple, C.A. Ball, J.L. Shaw, and G.E. McGuire, "Low Capacitance, High Transconductance Silicon FEAs for Microwave Amplifier Applications", J. Vac. Sci. and Technol. B13 576 (1995).

L.N. Yadon, D. Temple, W.D. Palmer, C.A. Ball, G.E. McGuire, C.M. Tang, and T.A. Swyden, "Mini-Column Silicon Field Emission Arrays", J. Vac. Sci. Technol. B13 580 (1995).

G.E. McGuire and D. Temple, "Fabrication of Silicon-based Field Emitter Arrays", in Surfaces, Vacuum, and Their Applications, Cancun, Mexico, September 1994, Editors, Isaac Hernandez-Calderon and Rene Asomoza, AIP Conference Proceedings 378, American Institute of Physics, Woodbury, New York, 1996.

O. Auciello, A.R. Krauss, J. Im, D.M. Gruen, E.A. Irene, R.P.H. Chang, and G.E. McGuire, "Studies of Film Growth Processes and Surface Structural Characterization of Ferroelectric Memory-Compatible SrBi₂Ta₂O₉ Layered Perovskites Via In-Situ, Real-time Ion Beam Analysis", Applied Physics Letters,

G.E. McGuire, P.S. Weiss, J.G. Kushmerick, J.A. Johnson, S. J. Simko, R.J. Nemanich, N.R. Parikh, and D.R. Chopra, Anal. Chem. 69 #12, 231R-250R (1997).

D. Temple, W.D. Palmer, L.N. Yadon, J.E. Mancusi, D. Vellenga and G.E.

McGuire "Silicon Field Emitter Arrays -Fabrication, Performance and Applications", J. Vac. Sci. & Technol. A 16(3) 1980-1990 (1998)

Scott Goodwin-Johansson, Paul H. Holloway, Gary McGuire, Leonard Buckley, Robert Cozzens, Robert Schwartz, and Gregory Exarhos, "Artificial Eyelid for Protection of Optical Sensors", Proceedings of SPIE Smart Structures and Materials 2000: Electroactive Polymer Actuators and Devices, Vol. 3987, pp. 225-231, 2000 (SPIE, Bellingham, WA)

Scott Goodwin-Johansson, Mark Davidson, Greg Exarhos, Paul H. Holloway, Gary McGuire, Robert Cozzens and Robert Schwartz, "High Contrast Artificial Eyelid for Protection of Optical Sensors," *Proceedings of SPIE: Smart Structures and Materials 2001: Electroactive Polymer Actuators and Devices*, Ed. Y. Bar-Cohen, Vol. 4329, pp. 421-427 (SPIE, Bellingham, WA, 2001).

David Dausch, Scott Goodwin-Johansson, Gary McGuire, Les Kramer and Mark Davidson, "Electrostatic Flexible Film Actuators as IR Choppers for Pyroelectric Detectors or Microbolometers", *Proceedings of SPIE: Infrared Technology and Applications XXVII*, Eds. B. F. Andresen, G. F. Fulop and M. Strojnik, Vol. 4369, pp. 372-379 (SPIE, Bellingham, WA, 2001).

S. Goodwin-Johansson, M. Davidson, D. Dausch, P. Holloway, and G. McGuire, "High Speed, Large Motion Electrostatic Artificial Eyelid", Technical Digest MEMS 2002, IEEE, pp. 610-613, Las Vegas NV, January 2002.

Scott Goodwin-Johansson, Mark Davidson, David Dausch, Paul Holloway, Gary McGuire, "Reduced Voltage Artificial Eyelid for Protection of Optical Sensors", *Proceedings of SPIE: Smart Structures and Materials 2002: Electroactive Polymer Actuators and Devices*, Ed. Y. Bar-Cohen, Vol. 4695, in press (SPIE, Bellingham, WA, 2002).

J.M. Lannon, Jr., D. Temple, G.E. McGuire, C.C. Pace, A.F. Hebard, "Ion Beam Deposited GMR Materials", Spintronics Symposium Proceedings, 2001 Materials Research Society Fall Meeting, November 26-30, 2001, Boston, Massachusetts.

Scott Goodwin-Johansson, Mark Davidson, David Dausch, Paul Holloway, Gary McGuire, "High Speed, Large Motion, Electrostatic Artificial Eyelid", *Technical Digest of MEMS 2002 Conference*, pp. 610-613, 2002.

S. Burkett, C. Craigie, X. Qiao, D. Temple, B. Stoner, G.E. McGuire, "Processing Techniques for 3-D Integration Techniques", *Superficies y Vacio*, Vol 13, 2001.

S.L. Burkett, X. Qiao, D. Temple, B. Stoner, G. McGuire, J. Vac. Sci. Tech. B 22(1) 248-256 (2004)

V. P. Mammanna, D. Jaeger, O. Shenderova, G. E. McGuire, "Field Emission Device with Back-Gated Structure", J. Vac. Sci. Tech. B 22(4) 1455-1460 (2004).

Sigen Wang, Jianjun Wang, Peter Miraldo, Mingyao Zhu, Ronald Outlaw, Kun Hou, Xin Zhao, Brian C. Holloway, Dennis Manos, Talmage Tyler, Olga Shenderova, Mark Ray, Jay Dalton, and Gary E. McGuire, "High Field Emission Reproducibility and Stability of Carbon Nanosheet-based Backgated Triode Emission Devices", Applied Physics Letters, 89, 183103 (2006).

I. Petrov, O. Shenderova, V. Grishko, V. Grichko, T. Tyler, G. Cunningham, G. McGuire, "Detonation Nanodiamonds Simultaneously Purified and Modified by Gas Treatment", Submitted to Diam. Rel. Materials

Talmage Tyler, Olga Shenderova, Jamie Walsh, Gary Cunningham, J. Drobnik, Gary McGuire "Thermal Transport Properties of Diamond Based Nanofluids and Nanocomposites", Diamond and Related Materials, 15 2078-2081 (2006)

M.A. Ray, O. Shenderova, W. Hook, A. Martin, V. Grishko, T. Tyler, G. Cunningham, and G. McGuire, "Cool Plasma Functionalization of Nanodiamond Particles", Diamond and Related Materials 15 1809-1812 (2006)

O. Shenderova, T. Tyler, G. Cunningham, M. Ray, J. Walsh, M. Casulli, S. Hens, G. McGuire, V. Kuznetsov, S. Lipa, "Nanodiamond and Onion-like Carbon Polymer Nanocomposites, Diamond and Related Materials, 16 1213-1217 (2007)

O. Shenderova, M. Ray, W. Hooke, A. Martin, V. I. Grishko, T. Tyler, G. Cunningham, G.E. McGuire, "Altering Surface Chemistry of Nanodiamond Particulate Using Atmospheric Pressure Plasma", submitted Appl. Phys. Letters.

T. Tyler, O. Shenderova, M. Ray, J. Dalton, J. Wang, R. Outlaw, M. Zhu, X. Zhao, G. McGuire, B.C. Holloway, "Back-Gated Milliamp-Class Field Emission Device Based on Carbon Nanosheets", submitted J. Vac. Sci. Tech. B

Invited Talks

Over 100 invited talks

References

Dr. Bruce E. Gnade
Vice President for Research and Economic Development
University of Texas, Dallas
P.O. Box 830688 EC33
Richardson, Texas 75083
Tel: 972-883-6636

E-mail: gnade@utdallas.edu

Dr. Mark E. Welker
Associate Provost and Professor of Chemistry
Wake Forest University
P.O. Box 7486
Winston-Salem, NC 27109-7486
Tel: 336-758-5758
Fax: 336-758-4321
E-mail: welker@wfu.edu

Dr. Tim Anderson
Associate Dean of Research and Graduate Programs
College of Engineering
University of Florida
PO Box 116550
Gainesville, FL 32611-6550
Tel: 352-392-0946
Fax: 352-392-9513
E-mail: tim@ufl.edu

Professor Paul H. Holloway
Distinguished Professor
Ellis D. Verink Jr. Professor
Department of Materials Science and Engineering
University of Florida
P.O. Box 116400
Gainesville, Florida 32611-6400
Tel: 352-846-3330
Fax: 352-392-4911 or 6359
E-mail: pholl@mse.ufl.edu

Professor Richard B. Fair
Duke University
Department of Electrical Engineering and Computer Science
3519 Fitzpatrick Center
P.O. Box 90291
Durham, NC 27708
Tel: 919-660-5277
Fax: 919-660-5293
E-mail: rfair@ee.duke.edu