

CURRICULUM VITAE

Daqing Zhang

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EDUCATION:

M.E.—May 2004: Electric Engineering, University of Idaho.

Ph.D.—May 2002: Physics, University of Idaho.

M.S.— July 1987: Plasma Physics, Institute of Plasma Physics,
Chinese Academy of Sciences, P. R. China.

B.S.— July 1984: Physics, Shandong University, P. R. China.

TEACHING EXPERIENCE:

Aug. 2011—Present: Associate Professor, Department of Physics, CSU Fresno

Courses taught: Phys 2A General Physics, and Phys 2A Lab
Phys 2B General Physics, and Phys 2B Lab
Phys 4A Mechanics and Wave Motion, and Phys 4A Lab
Phys 4B Electricity, Magnetism, and Heat, and Phys 4B Lab
Phys 104 Experimental Techniques in Condensed Matter Physics
Phys 140 Thermodynamics and Kinetic Theory

Aug. 2005—May 2011: Assistant Professor, Department of Physics, CSU Fresno

Courses taught: Phys 2A General Physics, and Phys 2A Lab
Phys 2B General Physics, and Phys 2B Lab
Phys 4B Electricity, Magnetism, and Heat, and Phys 4B Lab
Phys 10L Lab in Conceptual Physics
Phys 104 Experimental Techniques in Condensed Matter Physics
Phys 140 Thermodynamics and Kinetic Theory
Phys 162 Condensed Matter Physics
NSci 1AL Lab in Intsci Phys Chem

Aug. 2002—May 2005: Lecture Instructor, Department of Physics, Univ. of Idaho

Jan. 1997—May 1999: Teaching Assistant, Department of Physics, Univ. of Idaho

WORK EXPERIENCE:

Aug. 2011—Present: Associate Professor, Department of Physics, CSU Fresno

Aug. 2005—May 2011: Assistant Professor, Department of Physics, CSU Fresno

Oct. 2004—July 2005: Research Scientist in Solid State Research Laboratory, Univ. of Idaho

May 2002—Sept.2004: Research Associate in Solid State Research Laboratory, Univ. of Idaho

Jan. 1997—May. 2002: Research Assistant in Solid State Research Laboratory, Univ. of Idaho

Jan. 1996—Dec. 1996: Associate Research Fellow in RF division, Fusion group
General Atomics, San Diego, CA.

Jan. 1989—Dec. 1995: Assistant Research Fellow in the Institute of Plasma Physics,
Chinese Academy of Sciences, P.R. China.

July 1987—Dec. 1988: Assistant Research Fellow in the Institute of Plasma Physics,
Chinese Academy of Sciences, P. R. China.

SYNERGISTIC ACTIVITIES:

- Invited talk at Sonoma State University “Nanostructure materials: synthesis, characterization, and applications”, March 8, 2010.
- Invited talk at California State University - San Marcos “Nanostructure materials: synthesis, characterization, and applications”, November 6, 2008.
- Invited talk at Fresno City College “Nanostructure materials: synthesis, characterization, and applications”, April 18, 2008.
- Invited Speaker at the annual meeting “Particles 2004”, Orlando FL March 6-9, 2004.
- Session chair (Nanotube Synthesis) at the annual meeting “Particles 2004”, Orlando FL March 6-9, 2004.
- Referee for the “Nanotechnology”, “Materials Research Bulletin”, “Journal of the American Chemical Society”, “Journal of Physical Chemistry”, “Journal of Physics D: Applied Physics”, “Journal of Alloys and Compounds”, and “Journal of The Electrochemical Society”.

PUBLICATIONS:

REFEREED ARTICLES:

- [27] Comparison of the electronic band profiles and magneto-optic properties of cubic and orthorhombic SrTbO₃, Z. Ali, I. Khan, I. Ahmad, S. Naeem, H. A. Rahnamaye Aliabad, S. Jalali Asadabadi, **D. Zhang**, *Physica B* **423**, 16 (2013)
- [26] Electronic and optical properties of mixed Be-chalcogenides, I. Khan, I. Ahmad, **D. Zhang**, H. A. Rahnamaye Aliabad, S. Jalali Asadabadi, *Journal of Physics and Chemistry of Solids* **74**, 181 (2013)
- [25] The domain formation in Fe/Ni/Fe nanoscale magnetic antidot arrays, R. Cheng, A. Rosenberg, D. N. McIlroy, Z. Holman, **D. Zhang**, and Y. Kranov, *J. Appl. Phys.* **111**, 063902 (2012)
- [24] Investigation of Electrical and Optoelectronic Properties of Zinc Oxide Nanowires, **D. Zhang**, Sung K. Lee, Chris A. Berven, Robert A. Devitt, and Vanvilai Katkanant, *Physica B* **406**, 3768 (2011)
- [23] The magnetic domain configuration in Co/Ni/Co nanoscale antidot arrays, R. Cheng, B. L. Justus, A. Rosenberg, D. N. McIlroy, Z. Holman, **D. Zhang**, and Y. Kranov *J. Appl. Phys.* **108**, 086110 (2010)

- [22] Experimental Study of Electrical Properties of ZnO Nanowire Random Networks for Gas Sensing and Electronic Devices, **D. Zhang**, S. Chava, C. Berven, S. K. Lee, R. Devitt, and Vanvilai Katkanant, *Applied Physics A* **100**, 145 (2010)
- [21] Synthesis and characterization of silica nanosprings by a low temperature chemical vapor deposition, **D. Zhang**, J. Jasinski, M. Dunlap, M. Badal, V. J. Leppert, and V. Katkanant, *Applied Physics A* **92**, 595 (2008)
- [20] Application of channeling-enhanced electron energy-loss spectroscopy for polarity determination on ZnO nanopillars, J. Jasinski, **D. Zhang**, J. Parra, V. Katkanant and V. J. Leppert, *Appl. Phys. Lett.* **92** 093104 (2008).
- [19] High yield synthesis and lithography of silica-based nanospring mats, Lidong Wang, D Major, P Paga, **D Zhang**, M G Norton and D N McIlroy, *Nanotechnology* **17** S298 (2006).
- [18] Fibronectin Bonding to Nanowires and Their Internalization by Epithelial Cells, Miles F. Beaux II, Lidong Wang, **Daqing Zhang**, Devananda Gangadean, David N. McIlroy, Nam Hoon Kwon, Katarzyna Dziewanowska, and Gregory A. Bohach *J. Biomed. Nanotechnol.* **2**, 23 (2006)
- [17] A rapid method for growth of metal nanoparticles on nanowire substrates, A. D. LaLonde, M. Grant Norton, **D. Zhang**, D. Gangadean, A. Alkhateeb, R. Padmanabhan, and D. N. McIlroy, *J. Nanoparticle Res.* **8**, 99 (2006).
- [16] Controlled Growth of Gold Nanoparticles on Silica Nanowires, A.D. LaLonde, M.G. Norton, **D. Zhang**, D. Gangadean, and D.N. McIlroy, *J. Mat. Res.* **20**. 3021 (2005).
- [15] Potassium Chloride Nanowire Formation Inside A Microchannel Glass Array. **D. Zhang**, S. Moore, J. Wei, A. Alkhateeb, D. Gangadean, H. Mahmood, J. Lantrips, D. N. McIlroy, A. D. LaLonde, and M. Grant Norton, *Appl. Phys. Lett.* **86** 263110 (2005).
- [14] Metal coatings on SiC nanowires by plasma-enhanced chemical vapor deposition. A. D. LaLonde, M. Grant Norton, D. N. McIlroy, **D. Zhang**, R. Padmanabhan, A. Alkhateeb, H. Han, N. Lane, and Z. Holman, *J. Mat. Res.* **20**, 549 (2005).
- [13] Observation of a semimetal–semiconductor phase transition in the intermetallic ZrTe₅. D. N. McIlroy, S. Moore, **Daqing Zhang**, J. Wharton, B. Kempton, R. Littleton, M. Wilson, T. M. Tritt, and C. G. Olson, *J. Phys.: Condens. Matter* **16** (2004) L359–L365
- [12] Nanospring formation—unexpected catalyst mediates growth. D. N. McIlroy, A. Alkhateeb, **D. Zhang**, D. Eric Aston, Andrew. C. Marcy, and M. Grant Norton, *J. Phys.: Condens. Matter* **16** R415 (2004).
- [11] Silicon carbide nanosprings. **D. Zhang**, D. A. Alkhateeb, H. Han, H. Mahmood, D. N. McIlroy, and M. G. Norton, *Nano Lett.* **3**, 983 (2003).
- [10] The effects of crystallinity and catalyst dynamics on boron carbide nanospring formation. D. N. McIlroy, **D. Zhang**, Y. Kranov, H. Han, A. Alkhateeb, and M. Grant Norton, *Mat. Res. Soc. Symp. Proc. Vol. 739* (2003) 165.
- [9] Immersion Deposition of Copper Films on Silicon Substrates in Liquid and Supercritical Carbon Dioxide. Xiang R. Ye, Chien M. Wai, **Daqing Zhang**, Yanko Kranov, David N. McIlroy, Y. Lin, M. Engelhard, *Chem. Mater.* **15**, 83 (2003).
- [8] Nanospring. D. N. McIlroy, **D. Zhang**, Y. Kranov, and M. Grant Norton. *Appl. Phys. Lett.* Vol. 79 (2001) 1540.
- [7] The chemical composition of as-grown and surface treated amorphous boron carbon thin films by means of NEXAFS and XPS. **D. Zhang**, D. M. Davalle, W. L. O'Brien, and D. N. McIlroy, *Surface Science* **461** (2000) 16.
- [6] Synthesis and reactivity of Fe nanoparticles embedded in a semi-insulating matrix. D.N.McIlroy, **D. Zhang**, M. Grant Norton, W. L. O'Brien, M. M. Schwickert, and G. P. Harp, *Journal of Applied Physics* Vol. 87 No. 10 (2000) 7213.
- [5] High-resolution angle-resolved photoemission studies of the temperature dependent electronic structure of the pentalluride ZrTe₅. . D.N. McIlroy, **D. Zhang**, Bradley Kempton, J.

- Wharton, R. T. Littleton, T. M. Tritt, and C. G. Olson, *Mat. Res. Soc. Symp. Proc.* Vol. 590 (2000) 57.
- [4] Growth and characterization of boron carbide nanowires. **D. Zhang**, D. N. McIlroy, Y. Geng, and M. G. Norton, *Journal of Materials Science Letters* 18 (1999) 349.
- [3] Electronic and dynamic studies of boron carbide nanowires. D. N. McIlroy, **D. Zhang**, Robert M. Cohen, J. Wharton, Yongjun Geng, M. Grant Norton, Gelsomina De Stasio, B. Gilbert, L. Perfetti, J. H. Streiff, B. Brooks, and Jeanne L. McHale, *Physical Review B*. Vol. 60 No. 7 (1999) 4874.
- [2] Synthesis of boron carbide nanowires and nanocrystal arrays by plasma enhanced chemical vapor deposition. **D. Zhang**, B. G. Kempton, D. N. McIlroy, Yongjun Geng, and M. Grant Norton, *Mat. Res. Soc. Symp. Proc.* Vol. 536 (1999) 323.
- [1] The chemical and morphological properties of boron carbon alloys grown by plasma enhanced chemical vapor deposition. **D. Zhang**, D. N. McIlroy, W. L. O'Brien, and G. De Stasio, *Journal of Materials Science* 33 (1998) 4911.

CONTRIBUTED PAPERS:

- [29] Experimental study of structural, electrical, and optoelectronic properties of zinc oxide nanostructures, S. Lee, **D. Zhang**, C. Berven, R. Devitt and V. Katkanant, *Mat. Res. Soc. Spring Meeting*, April 5-9, 2010, San Francisco, CA
- [28] Fabrication and Electrical Characterization of Zinc Oxide Nanowires, **Daqing Zhang**, Chun-Hong Lee, Chris Berven, and Vanvilai Katkanant, *Am. Phys. Soc. March Meeting*, March 16-19, 2009, Pittsburgh, PA
- [27] CO Gas Sensing with ZnO Nanowire Mat, S. CHAVA, C. BERVEN, **D. ZHANG**, *Am. Phys. Soc. March Meeting*, March 16-19, 2009, Pittsburgh, PA
- [26] Experimental Study of Electrical Properties of ZnO Nanowire Random Networks for Gas Sensing and Electronic Devices, **Daqing Zhang**, Sirisha Chava, Chris Berven, Anirbaan Mukherjee, and Vanvilai Katkanant, *Am. Phys. Soc. March Meeting*, March 10-14, 2008, New Orleans, LA
- [25] CO Gas Sensing with ZnO Nanowire Mat, Sirisha Chava, **Daqing Zhang**, and Chris Berven, *Am. Phys. Soc. March Meeting*, March 10-14, 2008, New Orleans, LA
- [24] Synthesis and growth polarity of ZnO nanostructures, J. Parra, J. Jasinski, V. Leppert, V. Katkanant, and **D. Zhang**, *Am. Phys. Soc. March Meeting*, March 5-9, 2007, Denver, CO.
- [23] Structure and Polarity of ZnO Nanopillars, J. Jasinski, **D. Zhang**, J. Parra, V. Leppert, V. Katkanant, *Mat. Res. Soc. Spring Meeting*, April 9-13, 2006, San Francisco, CA
- [22] Polarity Determination of ZnO Nanopillars. J. Jasinski, **D. Zhang**, and V. J. Leppert. *Microscopy & Microanalysis 2006 Meeting*, July 30-Aug.3, 2006, Chicago, Illinois
- [21] Fibronectin Coated Silica Nanowires for Introducing Compound into Mammalian Cells. **D. Zhang**, L. Wang, M. Beaux, D. Gangadean, K. Dziewanowska, G. A. Bohach and D. McIlroy. *Mat. Res. Soc. Spring Meeting*, Mar.17-22, 2006, San Francisco, CA.
- [20] Endocytosis of SiO₂ Nanowires and Interfacial Chemistry. L. Wang, **D. Zhang**, K. Dziewanowska, G. A. Bohach, C. Berven and D. N. McIlroy. *Mat. Res. Soc. Fall Meeting*, Nov.28-Dec.2, 2005, Boston, MA
- [19] Digital Pulse Force Microscopy Study Of Suspended SiC Nanowires. A. Alkhateeb, D. Gangadean, **D. Zhang**, D. McIlroy, and D. Eric Aston. *Am. Phys. Soc. March Meeting*, March 21-25, 2005, Los Angeles, CA
- [18] Nanosprings, another piece of the nanotechnology puzzle. **D. Zhang**, A. Alkhateeb, and D. McIlroy. *Particles 2004*, March 6-9, 2004, Orlando FL
- [17] Complex Nanomaterials: Multilayer Coating of Nanowires. H. Han, **D. Zhang**, A. Alkhateeb, J. Wei, R. Padmanabhan, A. D. LaLonde, M. G. Norton, D. N. McIlroy. *Am. Phys. Soc. March meeting*, March 22-26, 2004, Montreal, Canada.

- [16] Tantalum oxide nanoislands and continuous films grown by atomic layer deposition. **D. Zhang**, J. Wei, S. Moore, X. Chen, L. Bergman, D. E. Aston, P. Petic, and D. N. McIlroy. *Bull. Am. Phys. Soc.* Vol. 48, No.1 (2003) 1058.
- [15] The effects of the catalyst dynamics and composition on nanospring formation. A. Alkhateeb, **D. Zhang**, D. N. McIlroy. *Bull. Am. Phys. Soc.* Vol. 48, No.1 (2003) 1260.
- [14] Growth and characterization of silicon carbide nanowires and nanosprings. **D. Zhang**, A. Alkhateeb, S. Wright, Y. Zhou, L. Bergman, D. N. McIlroy, and M. Grant Norton. *Bull. Am. Phys. Soc.* Vol. 47, No.1 (2002) 1226.
- [13] Growth and modeling of boron carbide nanosprings. **D. Zhang**, Y. Kranov, D. N. McIlroy, and M. Grant Norton. *Bull. Am. Phys. Soc.* Vol. 46, No.1 (2001) 340.
- [12] The characterization of boron carbide nanowires grown by PECVD and CVD. A. Alkhateeb, **D. Zhang**, D. N. McIlroy, and M. Grant Norton. *Bull. Am. Phys. Soc.* Vol. 46, No.1 (2001) 340.
- [11] High-resolution angle-resolved photoemission studies of the temperature dependent electronic structure of the pentalluride ZrTe₅. **D. Zhang**, D. McIlroy, B. Kempton, T. Tritt, R. Littleton, and C. Olson. *Bull. Am. Phys. Soc.* Vol. 45, No.1 (2000) 83.
- [10] Promotion of the growth of boron carbide nanowires. Yanko Kranov, **Daqing Zhang**, D. McIlroy, and M. Norton. *Bull. Am. Phys. Soc.* Vol. 45, No.1 (2000) 627.
- [9] The Temperature Dependent Electronic Structure of Pentatellurides. B. Kempton, **D. Zhang**, D. N. McIlroy, T. M. Tritt, R. T. Littleton, C. G. Olson, *Mat. Sci. Soc.* (2000) 383.
- [8] Growth of iron nanoparticles by plasma enhanced chemical vapor deposition. Yang-Ki Hong, **D. Zhang**, Y. Kranov, D. N. McIlroy, and M. Grant Norton, 44th annual conference on Magnetism & Magnetic Materials, CR-02. Nov. 15-18, San Jose (1999).
- [7] Growth and characterization of boron carbide nanostructures. **D. Zhang**, D. N. McIlroy, J. H. Streff, B. Brooks, J. L. McHale, Yongjun Geng, and M. Grant Norton. *Bull. Am. Phys. Soc.* Vol. 44, No.1 (1999) 1582.
- [6] Temperature dependent photoemission studies of pentatelluride thermoelectric materials. D. N. McIlroy, **D. Zhang**, J. Wharton, T. M. Tritt, M. Wilson, R. T. Littleton, J. Kolis, S. J. Chafe, and C. G. Olson. *Bull. Am. Phys. Soc.* Vol. 44, No.1 (1999) 226.
- [5] The optical properties of Fe-doped boron-carbon alloys as determined by variable wavelength ellipsometry and reflectivity. D. Davalle, **D. Zhang**, D. N. McIlroy, *Bull. Am. Phys. Soc.* Vol. 44, No.1 (1999) 1767.
- [4] High Resolution Angle Resolved Photoemission Studies of the Temperature Dependent Electronic Structure of Thermoelectric Materials. D.N. McIlroy, **D. Zhang**, Y. Kranov, B. Kempton, T.M. Tritt, R.T. Littleton, C.G. Olson, *Mat. Sci. Soc. Abs.*, (1999) 298.
- [3] The chemical and morphological properties of boron carbon alloys. **D. Zhang**, D. N. McIlroy, W. L. O'Brien, and Gelsomina De Stasio, *Bull. Am. Phys. Soc.* Vol. 43, No.1 (1998) 279.
- [2] The Growth and Characterization of boron-carbon nanotubes. D. N. McIlroy, **Daqing Zhang**, J. H. Streiff, B. Brooks, Jeanne L. McHale, B. Gilbert, Luca Perfetti, and Gelsomina De Stasio. *Bull. Am. Phys. Soc.* Vol. 43, No.1 (1998) 217.
- [1] Growth of boron carbide nanowires and nanocrystal arrays by PECVD. D. N. McIlroy, **D. Zhang**, Y. Geng, M. Grant. Norton, J. H. Streiff, B. Brooks, Jeanne L. McHale, B, and Gelsomina De Stasio. *Mat. Sci. Soc.* (1998) 121.

MEMBERSHIP IN PROFESSIONAL AND SCHOLARLY ORGANIZATIONS:

Member of American Physical Society (American Institute of Physics).

Member of Materials Research Society.

Member of American Chemical Society.