

TING GUO

PROFESSIONAL PREPARATION

Huazhong University of Science and Technology	Optical Eng.	B.S.	1984
Huazhong University of Science and Technology	Laser Physics	M.S.	1987
Rice University, Houston, Texas	Chemistry	Ph.D.	1995
University of California, San Diego, CA	Chemistry	Postdoctoral	1999

APPOINTMENTS

2005 – Present	<u>Associate Professor</u> , University of California at Davis, Department of Chemistry
1999 – 2005	<u>Assistant Professor</u> , University of California at Davis, Department of Chemistry
1995 – 1999	<u>Postdoctoral Chemist</u> , University of California at San Diego, Department of Chemistry and Biochemistry
1990 – 1995	<u>Research Assistant</u> , Rice University, Department of Chemistry

HONORS

1. Weiser Award for Excellence in Chemistry Research, Rice University (1995)
2. Director's Young Scientist Foundation of SIOFM (1989–1990)
3. Camille and Henry Dreyfus New Faculty Award (1999–2004)
4. NSF CAREER Award (2002–2008)
5. The 2010 Chancellor's Achievement Award for Diversity and Community
6. Department of Defense Breast Cancer Research Program Concept Award 2010

THESIS ADVISOR AND POSTGRADUATE-SCHOLAR SPONSOR: (11) Guangjun Cheng (Currently a staff scientist at NIST in Maryland), Fang Shan (Currently a research scientist at New Wave Research, Inc., Fremont, CA), Rhiannon Porter (Graduated, American River College), Joshua D. Carter (currently a researcher in a Naval lab), Vernon Couch (Postdoctoral at UCD), Yongquang Qu (Postdoctoral, UCLA Chemistry Department), Dan Masiel (Lawrence Livermore National Lab, independent contractor), Neal Cheng (current), Erik Busby (currently in another group), Zane Starkewolfe (current), Andrew Davidson (current), Chewei Chang (current), and Arjun Sharmah (current).

CURRENT UNDERGRADUATE STUDENTS: (3) Jennifer Lien (senior), Joyce Wong (Hispanic, junior), Larissa Miyachi (junior), and Chad Sugiyama (freshman), UC Davis

FORMER UNDERGRADUATE STUDENTS: (26) Matthew Auyoung, Larisa Kolmyk, Jasmine Mojica, Patricia Chavez, Evelin Gonzalez, Chenyi Xu, Alex Sutherland, George Suarez, Victoria Hamscho, Ken Smith, Tu Tran Huynh, Zoe Zhou, Zoe Smith, Michael Papadopoulo, Siangyin Wang, Erin Harrington, Mary Zhou, Luke Hoang, Abhi Freyer, Scott Wren, Vicky W. Ng, Marissa Iannarone, Jane Auyeung, Joanna Louie, Ashley Curry, Amy Neurauter.

CURRENT VISITING STUDENTS: (1) Ahmad Kusumaatmaja (Japan), Chengju Lee (South Korea).

PAST VISITING STUDENTS: (3) Yoko Nakano (Japan), Benjamin Delamare (Fance), and Chengju Lee (South Korea).

CURRENT HIGH SCHOOL STUDENTS: None

PAST HIGH SCHOOL STUDENTS: (3) David Gigi (Davis, CA), Rotceh Gonzalez (Sacramento, CA), Connie Zeng (San Jose, CA), and Amanda Chen (Davis, CA), Frances Guo (Mountainview, CA), Patti Chavez (Woodland, CA), Heather Yee (Sacramento, CA), and Jose Robles (Woodland, CA).

PUBLICATION LIST

1. 1990 Guo, T., Z. Wang, and J. Qui. "Study of the kinetics of afterglow He-Kr laser". *Chinese J. of Lasers Physics*, **17**: 449.
2. 1991 Chai, Y., T. Guo, C. Jin, R. E. Haufler, L. P. F. Chibante, J. Fure, L. Wang, J. M. Alford and R. E. Smalley. "Fullerenes with metal inside". *J. Chem. Phys.*, **95**: 7564.
3. 1991 Guo, T., C. Jin and R. E. Smalley. "Doping Bucky: formation and properties of Boron-doped Buckminsterfullerene". *J. Phys. Chem.*, **95**: 4948.
4. 1991 Nygren, M. A., P. E. M. Siegban, C. Jin, T. Guo, and R. E. Smalley. "Electronic shell closings in metal cluster plus adsorbate systems: Cu_7^+CO and Cu_{17}^+CO ". *J. Chem. Phys.*, **95**: 6181.
5. 1992 Alford, J. M., T. Guo, and R. E. Smalley. "Sin(x)/x correction for SWIFT waveforms". *ICR/Ion Trap Newsletter*, **27**:1.
6. 1992 Weaver, J., Y. Chai, G. H. Kroll, C. Jin, T. R. Ohno, R. E. Haufler, T. Guo, J. M. Alford, J. Conceico, L. P. F. Chibante, A. Jain, G. Palmer, and R. E. Smalley. "XPS probes carbon-caged metals". *Chem. Phys. Lett.*, **190**: 460.
7. 1992 Guo, T. and G. E. Scuseria. "Ab initio calculations of tetrahedral hydrogenated Buckminsterfullerenes". *Chem. Phys. Lett.*, **191**: 527.
8. 1992 Guo, T., M. D. Diener, Y. Chai, M. J. Alford, R. E. Haufler, S. M. McClure, T. Ohno, J. H. Weaver, G. E. Scuseria, and R. E. Smalley. "Uranium stabilization of C_{28} : a tetravalent fullerene". *Science*, **257**: 1661.
9. 1993 Qiu, P., T. Guo, and F. Lin, C. Huang, X. Zhao. "Generation of UV ultrashort pulses in the LBO crystals". *Chinese J. of Lasers*, **20**: 150.
10. 1993 Lou, L., T. Guo, R. E. Smalley, and P. Nordlander. "Electronic structure of hollowcage M_8X_{12} clusters". *J. Chem. Phys.*, **99**: 5301.
11. 1993 Wang, L. S., J. M. Alford, Y. Chai, M. Diener, J. Zhang, S. M. McClure, T. Guo, G. E. Scuseria, and R. E. Smalley. "The electronic structure of $Ca@C_{60}$ ". *Chem Phys. Lett.*, **207**: 354.
12. 1993 Guo, T., R. E. Smalley, and G. E. Scuseria. "Ab initio theoretical predictions of C_{28} , $C_{28}H_4$, $C_{28}F_4$, $(Ti@C_{28})H_4$, and $M@C_{28}$ ". *J. Chem. Phys.*, **99**: 352.
13. 1994 Lin, F., S. Mao, Z. Meng, H. Zeng, C. Ye, J. Qiu, Y. Yue and T. Guo. "Fullerene doped glasses". *Appl. Phys. Lett.*, **65** : 2522.
14. 1994 Guo, T., G. E. Scuseria, and R. E. Smalley. "Electronic structure of $Sc@_{60}$: an ab initio theoretical study". *J. Phys. Chem.*, **98**: 7745.
15. 1994 Guo, T. G. Odom, G.E. Scuseria and R. E. Smalley. "The Size and Structural Effects of the Empty Fullerenes on the Binding Energies of the Endohedral Metallofullerenes $Ca@C_n$ ". *Electrochemical Society Proceedings*, **94-24**: 1382.
16. 1995 Guo, T. and R. E. Smalley. "Production of Single-Walled Carbon Nanotubes via Laser Vaporization Technique". *Electrochemical Society Proceedings*, **95-10**: 636.
17. 1995 Conceico, J., R. T. Laaskonen, L. S. Wang, T. Guo, P. Nordlander, and R. E. Smalley "Photoelectron spectroscopy of transition metal clusters: correlation of valence electronic structure to reactivity". *Phys. Rev. B*, **98**: 4668.
18. 1995 Guo, T., P. Nicolaev, A. Thess, D. T. Colbert, and R. E. Smalley. "Catalytic growth of single-walled nanotubes by laser vaporization". *Chem. Phys. Lett.*, **243**: 49.
19. 1995 Guo, T., P. Nicolaev, A. Rinzler, D. Tomanek, D. Colbert, and R. E. Smalley. "Self-assembly of tubular fullerenes" *J. Phys. Chem.*, **99**: 10694.

20. 1995 Barty, C.P. J., T. Guo, C. LeBlanc, F. Raksi, C. Rose-Petruck, J. A. Squier, K. R. Wilson, V. V. Yakovlev, and K. Yamakawa. "Generation of 18-fs, Multiterawatt Pulses Using Regenerative Pulse Shaping and Chirped Pulse Amplification". *Optics Letters*, **21**: 668.
21. 1996 Barty, C. P. J., T. Guo, C. LeBlanc, F. Raksi, C. Rose-Petruck, J. A. Squier, K. R. Wilson, V. V. Yakovlev, and K. Yamakawa, "Ultrashort pulse, ultrahigh peak power Ti: Sapphire lasers". *Proceedings of SPIE*, **2701**: 84.
22. 1996 Yamakawa, K., T. Guo, C. LeBlanc, G. Korn, F. Raksi, C. Rose-Petruck, J. A. Squier, K. R. Wilson, V.V. Yakovlev, and C. P. J. Barty, "Techniques for controlling gain narrowing during ultrashort pulse amplification". *Proceedings of SPIE*, **2701**: 198.
23. 1996 Barty, C.P.J., T. Guo, C. LeBlanc, C. Rose-Petruck, F. Raksi, J.A. Squier, B. Walker, K.R. Wilson, V.V. Yakovlev, and K. Yamakawa, "Sub-20-fs multiterawatt laser and ultrashort X-ray source". *Proceedings of SPIE*, **2701**: 84.
24. 1996 Squier, J.A., T. Guo, C. LeBlanc, C. Rose-Petruck, F. Raksi, J.A. Squier, B. Walker, K.R. Wilson, V.V. Yakovlev, and C.P.J. Barty, "Regenerative pulse shaping: a new technique for ultrabroadband amplification". *Ultrafast Phenomena X*, eds. P. F. Barbara, J. G. Fujimoto, W.H. Knox, and W. Zinth, p87.
25. 1996 Barty, C.P.J., J. Che, T. Guo, B. Kohler, C. LeBlanc, M. Messina, F. Raksi, C. Rose-Petruck, J.A. Squier, K.R. Wilson, V.V. Yakovlev, K. Yamakawa, Z. Jiang, A. Ikhlef, C.Y. Cote, and J.C. Kieffer. "Seeing into Matter with x-rays and Controlling its Evolution with Light". *Feemtochemistry, Ultrafast Chemical and Physical Processes in Molecular Systems*, ed. Majed Chergui, World Scientific, Singapore, p348.
26. 1997 Nikolaev, P., A. Thess, T. Guo, D.T. Colbert, and R.E. Smalley. "Fullerene nanowires". *Pure and Applied Chemistry*, **69**: 31.
27. 1997 Guo, T., Christoph Rose-Petruck, Ralph Jimenez, Ferenc Raksi, Jeff Squier, Barry Walker, Kent Wilson and C.P.J. Barty. "Picosecond-milliangstrom resolution dynamics by ultrafast x-ray diffraction". *Proceedings of SPIE*, **3157**: 84.
28. 1997 Barty, C.P.J., M. Ben-Nun, T. Guo, F. Raksi, C. Rose-Petruck, J.A. Squier, K.R. Wilson, V.V. Yakovlev, P.M. Weber, Z. Jian, A. Ikhlef and J-C Kieffer. "Ultrafast X-ray Diffraction and Absorption". *Time Resolved Electron and X-ray Diffraction*, eds. P. M. Rentzepis and J. Hellierwell Oxford University Press, New York, p44.
29. 1998 Guo, T., C. Rose-Petruck, R.X. Jimenez, J.A. Squier, B. C. Walker, K.R. Wilson, C.P.J. Barty. "X-ray Diffraction Study of Laser-Material Interactions with an Ultrafast Table-Top X-ray Source, Mat". *Res. Soc. Symp. Proc.* **502**: 77.
30. 1998 Jimenez, R., C. Rose-Petruck, T. Guo, K.R. Wilson, and C.J.P. Barty. "Time-resolved X-ray diffraction of GaAs with a 20-fs, laser-driven plasma source". *Ultrafast Phenomena XI*, eds. T. Elsaesser, J. G. Fujimoto, D.A. Wiersma, and W. Zinth, p404.
31. 1999 Walker, B.C., C. Toth, D. N. Fittinghoff, T. Guo, D.E. Kim, C. Rose-Petruck, J.A. Squier K. Yamakawa, K.R. Wilson, C.P.J. Barty, "A 50-EW cm⁻² Ti: sapphire laser system for studying relativistic light-matter interactions", *Optics Express*, **5**: 196.
32. 1999 Siders, C.W., A. Cavalleri, K. Sokolowski-Tinten, C. Toth, T. Guo, M. Kammler, M.H. von Hoegen, K.R. Wilson, D von der Linde and C. P.J. Barty, "Detection of nonthermal molting by ultrafast X-ray diffraction", *Science*, **286**: 1340.
33. 1999 Rose-Petruck, C., R. Jimenez, T. Guo, A. Cavalleri, C. W. Siders, F. Raksi, J.A. Squier, B.C. Walker, K.R. Wilson, C.P.J. Barty, "Picosecond-milliangstrom lattice dynamics measured by ultrafast X-ray diffraction", *Nature*, **398**: 310.
34. 2000 Walker, B.C., C. Toth, D. Fittinghoff and T. Guo, "Theoretical and experimental spectral phase error analysis for pulse laser fields", *Journal of the Optical Society of America B-Optical Physics*, **16**: 1292.
35. 2000 Toth, C., D. Kim, B.C. Walker, T. Guo; S.H. Son, C. W. Siders, A. Cavalleri and C.P.J. Barty, "Ultrafast coherent and incoherent X-ray generation by inner-shell atomic processes induced by <25 fs,>1 J pulses of high power CPA lasers", *Laser Physics*, **10**: 513.

36. 2001 Guo, T., Ch. Spielmann, B.C. Walker, and C.P.J. Barty, "Ultrafast Hard X-ray Generation", *Review Scientific Instruments*, **72**: 41.
37. 2001 Cheng, G., Shan, F., Freyer, A., and Guo, T., "Ultrafast X-ray Absorption Spectroscopy using Laser-Driven Electron X-ray Sources (LEXS)", *SPIE*, **4504**: 1. (Invited)
38. 2002 Cheng, G. and Guo, T., "Surface Segregation of Ni/Co Bimetallic Nanoparticles Produced in Single-Walled Carbon Nanotube Synthesis". *J. Phys. Chem.*, **106**: 5833.
39. 2002 Cheng, G., Shan, F., Freyer, A., and Guo, T., "Compact 50-Hz Terawatt Ti: Sapphire Laser for X-ray and Nonlinear Optical Spectroscopy". *Applied Optics*, **41**: 5148.
40. 2004 Guo, T. "Multifunctional Catalysts for Singlewall Carbon Nanotube Synthesis". *Nanotechnology in Catalysis*, Edt. Zhou, B., Hermans, S. and Somojai, G. A., **1**: 137.
41. 2004 Shan, F., Carter, J.D., Ng, V. and Guo, T., "Ultrafast Selected Energy X-ray Absorption Spectroscopy (USEXAS) with a Laser-Driven X-ray Sources". *SPIE*, **5340**: 113.
42. 2004 Osterloh, F., Hiramatsu, H., Porter, R., and Guo, T., "Alkanethiol-Induced Structural Rearrangements in Silica-Gold Core-Shell-type Nanoparticle Clusters: An Opportunity for Chemical Sensor Engineering". *Langmuir*, **20**: 5553.
43. 2004 Carter, J.D., Cheng, G. and Guo, T., "Growth of Self-Aligned Crystalline Cobalt Silicide Nanostructures from Co Nanoparticles". *J. Phys. Chem. B*, **108**: 6901. (Communication)
44. 2004 Cheng, G., Carter, J.D. and Guo, T., "Investigation of Co Nanoparticles with EXAFS and XANES". *Chem. Phys. Lett.*, **400**: 122.
45. 2005 Carter, J.D., Shan, F. and Guo, T., "Determination of CoSi₂ Self-Aligned Nanostructures (SAN) with Grazing Incidence X-ray Absorption Spectroscopy". *J. Phys. Chem. A*, **109**: 4118.
46. 2005 Shan, F.; J.D. Carter; V. Ng; and T. Guo. "Laser-driven hard x-ray generation based on ultrafast selected energy x-ray absorption spectroscopy measurements of Ni compounds". *Phys. Rev. E*, Rapid Communication, **71**: 025401 (R)
47. 2005 Porter, R., F. Shan and T. Guo, "CARS Microscopy with Spectrally-Tailored Ultrafast Pulses". *Rev. Sci. Instrum.*, **76**: 043108
48. 2005 Foley, E.A., J.D. Carter, F. Shan and T. Guo. "Enhanced Relaxation of Nanoparticle-Bound Supercoiled DNA in X-ray Radiation". *Chem. Commun.* 3192-3194
49. 2005 Cheng, G., V.F. Puntes and Guo, T., "Synthesis and Self-Assembled Ring Structures of Ni Nanocrystals". *J. Colloid and Interface Science*, **293**: 430
50. 2005 Shan, F, Couch, V. and Guo, T. "Atomic Tungsten for Ultrafast Hard X-ray Generation." *J. Phys. Chem. A*. **109**: 4216
51. 2005 Carter, J.D., Y. Qu, R. Porter, L. Hoang, D. Masiel, and T. Guo, "Silicon-Based Nanowires from Silicon Wafers Catalyzed by Cobalt Nanoparticles in a Hydrogen Environment." *Chem. Commun.*, 2274.
52. 2005 Fang, S. and Guo, T., "Ultrafast Selected Energy X-ray Absorption Spectroscopy Investigations of Ni and Zn Species". *J. Chem. Phys.*, **122**: 244710.
53. 2005 Condon, C.L., R. Porter, T. Guo, and S.M. Kauzlarich, "Crystal structures, Raman spectroscopy, and magnetic properties of Ba_{7.5}Al₁₃Si₂₉ and Eu_{0.27}Ba_{7.22}Al₁₃Si₂₉", *Inorg. Chem.*, **44**: 9185.
54. 2006 Qu, Y., C., J.D. Carter, and, T. Guo; "Silica Nanocoils," *J. Phys. Chem. B*, **110**: 8296.
55. 2006 Qu, Y., R. Porter, F. Shan, J.D. Carter and T. Guo; "Synthesis of Tubular Gold and Silver Nanoshells using Silica Nanowire Templates," *Langmuir*, **22**: 6367.
56. 2006 Qu, Y., J. D. Carter, A. Sutherland and T. Guo; "Surface Modification of Gold Nanotubules via Microwave Radiation, Sonication and Chemical Etching," *Chem. Phys. Lett.*, **432**: 195.
57. 2006 Shan, F., V.A. Couch, W.H. Fink, and T. Guo, "Determination of charge state of tungsten during ultrafast x-ray generation," *Femtochemistry VII: Fundamental Ultrafast*

Processes in Chemistry, Physics, and Biology, A. W. Castleman Jr. and M.L. Kimble, Eds., Elsevier. Amsterdam, **8**: 53.

58. 2007 Guo, T., "Dual Catalytic Role of Co Nanoparticles in Bulk Synthesis of Si-based Nanowires," *Nanotechnology in Catalysis*, eds. B. Zhou, S. Hermans, and G.A. Somorjai, **3**: 153.

59. 2007 Shan, F., R. Porter, N. Cheng, D.J. Masiel, and T. Guo; "Imaging Plume Dynamics with Ultrafast Hard X-rays," *Ultrafast Phenomena XV*, Series: Springer Verlag Series in Chemical Physics, Vol. **88**, Corkum, P.; Jonas, D.; Miller, D.; Weiner, A.M. (Eds.), 728.

60. 2007 Shan, F., J.D. Carter and T. Guo; "DNA Strand Breaks by a Laser-Driven Electron X-ray source (LEXS)," *Ultrafast Phenomena XV*, Series: Springer Verlag Series in Chemical Physics, Vol. **88**, Corkum, P.; Jonas, D.; Miller, D.; Weiner, A.M. (Eds.), 734.

61. 2007 Shan, F., J. D. Carter, and T. Guo; "Damage of supercoiled DNA by an ultrafast laser-driven electron x-ray source," *Opt. Express*, **15**: 754.

62. 2007 Shan, F., R. Porter, N.N. Cheng, D.J. Masiel and T. Guo; "Investigations of Laser Evaporation in Ambient Pressure Helium with Ultrafast Hard X-ray Pulses," *J. Phys. Chem. C*, **111**: 4643.

63. 2007 Carter, J.D., Qu, Y., Cheng, N.N. and T. Guo; "Nanoscale Energy Deposition by X-ray Absorbing Nanostructures," *J. Phys. Chem. B. (Letters)* **111**: 11622.

64. 2007 Qu, Y., A. M. Sutherland and T. Guo; "Nanowires for Solar Energy and Hydrogen Production," *SPIE*, **6650**: 10

65. 2008 Qu, Y., A.M.Sutherland and T. Guo; "Carbon Dioxide Reforming of Methane by Ni/Co Nanoparticle Catalysts Immobilized on Single-Walled Carbon Nanotubes," *Energy & Fuels*, **22(4)** 2183-2187

66. 2008 Qu, Y., D.J. Masiel, N.N. Cheng, A.M.Sutherland, J.D. Carter, N.D. Browning, and T. Guo; "Recognition of Melting of Nanoparticle Catalysts with Cubically Shaped Co₃O₄ Nanoparticles," *Journal of Colloid and Interface Science*, **321** 251

67. 2009 Qu, Y., J. Lien, and T. Guo; "Synthesis of Symmetric and Asymmetric Nanosilica for Materials, Optical and Medical Applications," *Nanomaterials for Life Sciences Vol.2: Nanostructured Oxides*, 55

68. 2009 Guo, T.; "More Power to X-rays: New Developments in X-ray Spectroscopy," *Laser & Photonics Reviews*, **3**, 591-622

69. 2010 Qu, Y., Sutherland, A.M., J. Lien, G.D. Suarez, and T. Guo; "Probing Site Activity of Monodisperse Pt Nanoparticles using Steam Reforming of Methane," *Journal of Physical Chemistry Letters*, **1**, 254

70. 2010 Masiel, D., B.W. Reed, T.B. Lagrange, G.H. Campbell, T. Guo, and N. Browning; "Time-Resolved Annular Field Imaging of Catalyst Nanoparticles," *Chem. Phys. Chem.*, (Commun) 2010, **11**, 2088 – 2090

71. 2011 Yongquan Qu, Jingwei Bai, Lei Liao,[†] Rui Cheng, Yung-Chen Lin, Yu Huang, Ting Guo, Xiangfeng Duan; "Synthesis and Electronic Properties of Dicobalt Silicide Nanobelts," *Chem. Comm.*, **47**, 1255

72. 2011 Madl, A. K., S. V. Teague, Y. Qu, D. Masiel, T. Guo, and K. E. Pinkerton; "Novel Aerosolization System for Experimental Inhalation Studies of Nanoparticles," Accepted by *Aerosol Science & Technology*.

73.* 2011 Carter, J.D., N.N. Cheng, Y. Qu, G.D. Suarez, C.J. Lee, and T. Guo; "Enhanced Single Strand Breaks of Supercoiled DNA in a Matrix of Gold Nanotubes in X-ray Radiation," To be submitted to *JPC/B*.

74.* 2011 Cheng, N.N., Starkewolfe, Z., A. Sharmah, R. A. Davidsion, C.J. Lee, J. Lien, and T. Guo; "A New Property of Nanomaterials: Chemically Enhanced Conversion of Ionizing Radiation Produced Intermediates," To be submitted to *Nature*.

75.* 2011 C.J. Lee, R.A. Davidsion, G.D. Suarez, and T. Guo; "X-ray Emission Spectroscopy Investigation of Magnetic Field Guided Electrons Produced in Laser-Driven Ultrafast X-ray Sources," To be submitted to *Phys. Rev. E*.

76.* 2011 Lee, C.J., N.N. Cheng, and T. Guo; "Optimization of Nanoscale Energy Deposition from X-rays in Water using Nanostructures," To be submitted to *ACS Nano*.

GRANTS AND CONTRACTS

Current (Total: \$4,510,486)

1. Department of Defense, \$108,550, 2010-2011

Title: *Nanostructure-Enabled Precision Activation of Chemotherapeutic Drugs by X-ray Radiation for Breast Cancer Treatment*

Role: PI

2. National Science Foundation, \$289,717, 2010-2012

Title: *Generation and Detection of Chemically Active Species with Nanometer Precision around Nanostructures in Aqueous Solution*

Role: PI

3. American Chemical Society, \$100,000, 2009-2011

Title: *Chemical Imaging of the Catalytic Processes of CO₂ Reforming of Methane using Laser Vaporization Generated Ni Nanoparticles and Time-Resolved X-ray Spectroscopy*

Role: PI

4. National Institute of Health, \$997,688, 2009-2011

Title: *Novel approaches to evaluate carbon nanotube health impacts*

Role: Co-PI

5. National Institute of Health, \$2,579,716, 2010-2014

Title: *Engineered Nanomaterials: Linking Physical and Chemical Properties to Biology*

Role: Co-PI

6. National Science Foundation DMR-MRI, \$434,815, 2007-2011

Title: *MRI: Development of a New Paradigm for Apertureless Near-field Scanning Optical Microscope*

Role: Co-PI

Completed (Total: \$2,021,233)

1. National Science Foundation CAREER CHE, \$463,997, 2002-2008

Title: *Investigation of atomic motion in ultrafast reactions of metal complexes with ultra-fast x-ray pulses and remotely accessible real-time experiments for high school students*

Role: PI

2. Environment Protection Agency 2004, \$349,999, 2004-2008

Title: *2003-STAR-Impact of Manufactured Nanomaterials on Human Health and the Environment*

Role: Co-PI

3. National Science Foundation 2003 CHE, \$392,237, 2004-2007

Title: *Acquisition of an Ultrahigh-Resolution Vacuum Ultraviolet Laser System*

Role: Co-PI

4. DOE-National Nuclear Safety Agency, \$750,000, 2005-2008

Title: *Enhanced Functionality for Materials Analysis in the DTEM*

Role: Co-PI

5. Camille and Dreyfus Foundation New Faculty Awards, \$40,000, 1999-2004

Title: *New Tools for Probing Ultrafast Phenomena in Nanoscaled Materials and Biological Processes*

Role: PI

6. ACS-PRF, \$25,000, 2000-2002

Title: *Correlation between ultrafast electronic and crystallographic phase transitions in crystalline oxides*

Role: PI

SEMINARS AND TALKS

Name(s)	Title	Location	Date of Event
Ting Guo	Ultrafast X-ray Movies of Atomic Motion	OSA Annual Meeting San Francisco, CA	November 1999
Ting Guo (Invited)	New Instruments and their Applications	University of Idaho, Department of Chemistry	November 10, 2000
Ting Guo	EXAFS Investigation of Ni/Co Catalysts for the Production of Single-Walled Carbon Nanotubes	Bulletin of the American Physical Society, Seattle, WA	March 12-16, 2001
Ting Guo	Exafs Investigation of Bimetallic Materials for the Synthesis of Single-Walled Carbon Nanotubes	American Chemical Society, 221 st National Meeting, San Diego, CA	April 1-5, 2001
Ting Guo	X-ray Absorption Spectroscopy and Diffraction Using Laser-Driven Electron X-ray Sources (LEX)	The International Symposium on Optical Science and Technology, San Diego, CA	July 29-August 3, 2001
Ting Guo	Surface Segregation of Ni/Co Bimetallic Nanoparticles Produced in Single-Walled Carbon Nanotube Synthesis	Bulletin of the American Physical Society, Indianapolis, IN	March 18-22, 2002
Ting Guo	New Techniques, Applications and Instruments in X-ray Absorption Spectroscopy I	Bulletin of the American Physical Society, Indianapolis, IN	March 18-22, 2002
Ting Guo (Invited)	X-ray vision to observe chemical reactions: metals complexes, nanoparticles, and thin films	California State University at Fresno, Dept of Chemistry	March 2002
Ting Guo	Synthesis of Nanotubes and Nanoparticles	Bulletin of the American Physics Society, Austin, TX	March 3-7, 2003
Ting Guo	Broadband Coherent Raman Spectroscopy and Microscopy	Bulletin of the American Physics Society, Austin, TX	March 3-7, 2003
Ting Guo	Ultrafast Selected Energy X-ray Absorption Spectroscopy (USEXAS) Using Laser-Driven X-ray Source	Bulletin of the American Physics Society, Austin, TX	March 3-7, 2003
Ting Guo	Ultrafast Selected Energy X-ray Absorption Spectroscopy (USEXAS) Using a Laser Driven X-ray Source	Photonics West, Showing the Age of Light, San Jose, CA	January 24-29, 2004
Ting Guo	From Nanoparticles to Self-Aligned Nanostructures (SAN)	227 th ACS National Meeting, Anaheim, CA	March 28-April 1, 2004
Ting Guo	Ultrafast Selected Energy	227 th ACS National	March 28-April 1,

	X-ray Absorption Spectroscopy (USEXAS) for Chemical Dynamics Studies	Meeting, Anaheim, CA	2004
T. Guo (Invited)	USEXAS: Principle and Applications in Chemistry and Biology	Urbana Champaign University of Illinois, Dept. of Chemistry	April 7, 2004
T. Guo (Invited)	Ultrafast Selected Energy X-ray Absorption Spectroscopy (USEXAS): Principle and Applications	Ultrafast X-Rays 2004 2004 Workshop on Ultrafast X-Ray Science, San Diego, CA	April 28-May 1, 2004
T. Guo (Invited)	Controlling the Growth of Self-Aligned Nanostructures (SAN)	ACS, National Meeting Technical Program, CATL Philadelphia	August 22-26, 2004
T. Guo	Nanoparticle Enhanced X-Ray Therapy	ACS, National Meeting Technical Program, IORG, Philadelphia	August 22-26, 2004
T. Guo	USEXAS Studies of NiOETPP in Solid and Solvated Forms	ACS, National Meeting Technical Program, NCUL, Philadelphia	August 22-26, 2004
T. Guo (Invited)	Gold nanoparticles-DNA complexes in X-ray radiation	230th ACS National Meeting, in Washington, DC	Aug 28-Sept 1, 2005
T. Guo (Invited)	Colloidal nanoparticles as fundamental building blocks and catalysts	230th ACS National Meeting, in Washington, DC	Aug 28-Sept 1, 2005
T. Guo (Invited)	More Power to X-rays: From Studying Nanostructures to Enhanced DNA Damage	Department of Bioengineering, Texas A&M University, College Station, TX	September 21, 2005
T. Guo, S. Teague, J. Carter and K. Pinkerton	Making SWNT Aerosols for Inhalation Studies	EPA Workshop, Washington, DC	October 26-28, 2005
T. Guo and Carter, J.D. (Invited)	Gold nanostructures for DNA conjugation and radiation enhancement	The American Chemical Society Annual Meeting, Atlanta, GA	March 26-30, 2006
T. Guo, Qu, Y., Porter, R., Shan, F. and Masiel, D.J. (Invited)	Solution synthesis of complex nanostructures from silica nanowires templates	The American Chemical Society Annual Meeting, Atlanta, GA	March 26-30, 2006
T. Guo, Teague, S., Carter, J.D. and Pinkerton, K. (Invited)	Comparison of two apparatuses for aerosol generation from single-walled carbon nanotubes	The American Chemical Society Annual Meeting, Atlanta, GA	March 26-30, 2006
T. Guo, Qu, Y. and Carter, J.D. (Invited)	Size is not everything: Catalytic synthesis of hybrid silica nanowires	The American Chemical Society Annual Meeting, Atlanta, GA	March 26-30, 2006
T. Guo (Invited)	More Power to X-rays: From DNA Damage to Ultrafast X-ray Imaging	Department of Chemistry, University of California, Riverside	April 17, 2006
T. Guo, Fang Shan and Rhiannon Porter	Investigation of Plume Dynamics with Ultrafast Hard X-Ray Absorption Spectroscopy	15th International Conference on Ultrafast Phenomena, Pacific Grove, CA	July 31-August 4, 2006

T. Guo and F. Shan and Carter, J.D.	Damaging DNA with Ultrafast Hard X-Rays	15th International Conference on Ultrafast Phenomena, Pacific Grove, CA	July 31-August 4, 2006
Carter, J.D. and Guo, T.	Effects of ionizing radiation on gold nanoparticle-DNA conjugates	232nd ACS National Meeting, San Francisco, CA,	September 10-14, 2006
T. Guo, Fang Shan and Rhiannon Porter	Investigation of Plume Dynamics with Ultrafast Hard X-Ray Absorption Spectroscopy	15th International Conference on Ultrafast Phenomena, Pacific Grove, CA	July 31-August 4, 2006
T. Guo (Invited)	Nanowires for Solar Energy and Hydrogen Production	SPIE, San Diego, CA	July 31-August 4, 2007
T. Guo (Invited)	More Power to X-rays	Frontiers in Optics, San Jose, CA	September 10-14, 2007
T. Guo	Hydrogen Generation from CO ₂ and CH ₄ using Solar Energy	SPIE, San Diego, CA	August 14, 2008
T. Guo (Invited)	Two Novel Nanoscale Phenomena	FACSS, Reno, NV	September 30, 2008
T. Guo (Invited)	Effects of ionizing radiation on gold nanoparticle-DNA conjugates	232nd ACS National Meeting, Salt Lake City, UT	March 10-14, 2009
T. Guo (Invited)	Novel Phenomena in Small Nanoparticles	Ohio State University, OH	February 10, 2009
T. Guo (Invited)	Novel Phenomena in Small Nanoparticles	Center for Biophotonics Science and Technology, UC Davis, CA	March 3, 2009
T. Guo (Invited)	Novel Phenomena in Small Nanoparticles	10+10 Workshop, Davis, CA	August 27, 2009
T. Guo (Invited)	Nanochemistry: Synthesis, Size, Surface, and Beyond	NIST, Biophysical Seminar Series, MA	September 29, 2009
T. Guo (Invited)	X-ray Enabled Nanochemistry: New Materials, Phenomena, and Applications	10+10, Nanjing University, Nanjing, China	May 11, 2010
T. Guo (Invited)	X-ray Enabled Nanochemistry: New Materials, Phenomena, and Applications	10+10, Peking University, Beijing, China	May 13, 2010

PATENTS ISSUED:

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6,183,714; February 6, 2001

SERVICES

2005-2008 (Member) Committee of Undergraduate Scholarships, Honors and Prizes
2005-Present (Member) Nanotechnology Steering Committee
2004-2007 (Member) Technical Support
2006-2007, 2010-2011 (Chair) Webpage and Outreach
2007 (member) Faculty Search Committee (Energy)
2005-2010 (member, chair) Seminar Committee
2009 (member) Graduate Admission Committee
Mentor for students in Young Scholar Programs at UC Davis
Coordinator of the ACS SEED Project for UC Davis (2005-Current)
Mentor for students in COSMO program at UC Davis
Member of American Chemical Society
Member of Optical Society of America
Participated in Organization and Planning for:
Workshop for the 10+10 between Peking University and UC Davis, 2010
SPIE, San Diego, CA, August, 2007.
OSA, San Jose, CA, September, 2007.
CLEO/QELS, Anaheim, CA, May, 2006.
Manuscript Reviews:
Journal of Physical Chemistry
Chemical Physical Letters
Nature
Small
Journal of American Chemical Society
Journal of Solid State Chemistry
Journal of Materials Research
Journal of Colloid and Interface Science
Langmuir
Proceedings of the National Academy of Sciences
International Journal of Nanoscience
Proposals Reviews and Panel Services:
National Science Foundation
American Chemical Society-PRF
Environmental Protection Agency (EPA)
EPA review panels 2005 to 2010 (at least one panel per year)
Davidson Institute for Talent Development