

CURRICULUM VITAE

Tianquan Tim Lian

Department of Chemistry
Emory University
Atlanta, Georgia 30322, USA
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Title: Professor of Chemistry

PERSONAL: Born 1967, US Citizen

RESEARCH INTERESTS

Physical chemistry of interface, nanomaterials and solar energy conversion (Ultrafast dynamics in nanomaterials and at solid/liquid interface, Interfacial electron transfer, Photovoltaic and photo-catalytic nanomaterials, Ultrafast, Single molecule, and nonlinear spectroscopy)

EDUCATION

Ph.D. in Physical Chemistry, University of Pennsylvania, December, 1993
M. S. in Chemical Physics, Chinese Academy of Sciences, July, 1988
B. S. in Physics, Xiamen University, China, July, 1985

PROFESSORIAL EXPERIENCE

Professor: September, 2005 – present
William Henry Emerson Professor of Chemistry, Sept. 2008 – present
Winship Distinguished Research Professor of Chemistry, Sept. 2007- Aug. 2008
Associate professor: September, 2002- August, 2005
Assistant professor: August, 1996 – August 2002.
Department of Chemistry, Emory University
Postdoctoral: January, 1994 - July, 1996
Advisor: Charles B. Harris
Department of Chemistry, University of California at Berkeley
and Lawrence Berkeley National Laboratory
Graduate: August, 1988 - December, 1993, Ph.D. in Physical Chemistry,
Advisor: Robin M. Hochstrasser
Department of Chemistry, University of Pennsylvania
September, 1985 - July, 1988, M. S. in Chemical Physics,
Advisor: Hongyuan Shen
Fujian Institute of Research on the Structure of Matter
Chinese Academy of Sciences

MEMBERSHIPS

- American Chemical Society
- Materials Research Society

RECENT PROFESSIONAL ACTIVITIES

- **Journal editorship**
 - Co-editor-in-chiefs: Chemical Physics, 2012- present
- **Journal advisory boards**
 - Advisory Editorial Board: Journal of Physical Chemistry (A,B,C and Lett.), 2014-2016
 - Advisory Editorial Board: Chemical Physics letter, 2012- present
 - Advisory Editorial Board: Spectrochimica Acta A, 2012- present
- **External advisory board for research centers:**
 - **NSF MRSEC, University of Wisconsin Madison, 2013-present**
- **Guest professorship**
 - Department of Chemistry, Xiamen University, July 2008 – 2013
 - Shanghai Institute of Ceramics, Chinese Academic of Sciences, 2009-
- **Symposium Co-Organizer:**
 - Chair: “Time resolved infrared spectroscopy” Annual Meeting of the Optical Society of America (1997)
 - Co-chair: Symposium on “Physical chemistry of nanomaterials and interface-II”, SPIE meeting (2003)
 - Co-chair: “Charge Transfer in Semiconductor and Metal Nanostructures”, 205th Electrochemical Society Meeting, San Antonio, Texas (2004).
 - Co-Chair: “Dynamics and conductance in nanoparticles and assemblies”, 229th national meeting of the American Chemical Society, San Diego, CA, March, 2005
 - Co-Chair: Symposium on “Photovoltaics for the 21st Century (III)”, 208th Electrochemical Society Meeting, October 2005, Los Angeles, CA.
 - Co-Chair: Focus section on “Physical chemistry of nanoscaled systems”, American Physical Society March Meeting (2006).
 - Program committee:
“Physical chemistry of nanomaterials and interface-III”, SPIE meeting (2004-6)
 - Co-Vice-Chair: “Gordon Research conference on Vibrational Spectroscopy”, July 2-6, 2006 and August 3-8, 2008.
 - Co-Chair: Symposium on "Interfacial electron transfer and solar energy conversion: from molecules to nanomaterials", the 235th national meeting of the American Chemical Society, New Orleans, April 6-10, 2008.
 - Co-Chair: “Gordon Research conference on Vibrational Spectroscopy”, August 1-6, 2010
 - Co-Chair: Symposium on "Physical chemistry of solar energy conversion", 246th ACS National Meeting, September 8-12, 2013, Indianapolis, Indiana.
- **Symposium section chair for**
 - PacifiChem 2000
 - South east/south west regional ACS meeting 2000
 - First Gatech nanoscience and nanotechnology conference
 - ECS annual meeting 2001

Gordon Research Conference on chemistry and physics of liquids (2001)
Material research society meeting (Spring, 2002)
GRC on Vibrational spectroscopy (2002).
SPIE meeting (2002)
Optics in southeast (OISE) 2003
Southeastern regional ACS meeting (SERMACS 2003).
SPIE meeting (2005), symposium on physical chemistry of interface and nanomaterials
IV
Symposium on “Photophysics of solar energy conversion”, Optical Society of America
94th annual meeting, Frontier in Optics 2010/Laser Science XXVI, October 27, 2010

- **Panelist** for solar energy workshop organized by Department of Energy, April, 2005

RECENT AWARDS AND HONORS

- 1) NSF CAREER award, 1998-2001
- 2) Alfred P. Sloan Fellowship, 2001-2003.
- 3) O'Malley Visiting Scholar, Department of Chemistry, Boston College, October, 2006
- 4) Winship Distinguished Research Professor, 2007-2008, Emory University
- 5) William Henry Emerson Professor of Chemistry, 2008-present
- 6) Kavli Fellow, 2012-
- 7) Brown & Williamson Distinguished guest speaker, Dept. of Chemistry, University of Louisville, Jan. 25, 2013.

Current grants:

- 1). Title: Colloidal type II nanorod based triad/antenna/plasmonic nanoparticle complexes for solar-fuel conversion
Agency: Department of Energy
Amount: \$498,595
Duration: 9/01/2012 to 08/31/2015
Role: Principle Investigator
- 2) Title: Probing charge transfer dynamics in single QD-molecule complexes using QD or molecule modified AFM tips
Agency: NSF/Chemistry (renewal)
Amount: \$420,000
Duration: 9/1/2013 to 8/31/2016
Role: Principle Investigator
- 3) Title: Solar energy-driven multi-electron-transfer catalysts for water splitting: robust and carbon-free nano-triads
Agency: Department of Energy, BES
Amount: \$983,888 (Lian share \$327,600)
Duration: 9/01/2013 –8/31/2016
- 4) Title: Inverse Design, Development and Characterization of Catalytic Adsorbates at Semiconductor/liquid interfaces
Agency: Air Force Office of Scientific Research
Amount: \$1,322,517, (Lian share \$509,615)
Duration: 1/1/2013 to 12/31/2015
Role: Co-Principle Investigator (PI: Victor Batista, Co-PI Cliff Kubiak)

Pending grants:

Citation report Google Scholar (as of 12/01/2013)

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Five most cited papers

Title / Author	Cited by	Year
<input type="checkbox"/> Ultrafast electron transfer dynamics from molecular adsorbates to semiconductor nanocrystalline thin films JB Asbury, E Hao, Y Wang, HN Ghosh, T Lian The Journal of Physical Chemistry B 105 (20), 4545-4557	418	2001
<input type="checkbox"/> Phenyl-conjugated oligoene sensitizers for TiO₂ solar cells T Kitamura, M Ikeda, K Shigaki, T Inoue, NA Anderson, X Ai, T Lian, S Yanagida Chemistry of Materials 16 (9), 1806-1812	390	2004
<input type="checkbox"/> Femtosecond IR study of excited-state relaxation and electron-injection dynamics of Ru (dcbpy) 2 (NCS) 2 in solution and on nanocrystalline TiO₂ and Al₂O₃ thin films JB Asbury, RJ Ellingson, HN Ghosh, S Ferrere, AJ Nozik, T Lian The Journal of Physical Chemistry B 103 (16), 3110-3119	338	1999
<input type="checkbox"/> Dynamics of Electron Injection in Nanocrystalline Titanium Dioxide Films Sensitized with [Ru (4, 4'-dicarboxy-2, 2'-bipyridine) 2 (NCS) 2] by Infrared Transient Absorption RJ Ellingson, JB Asbury, S Ferrere, HN Ghosh, JR Sprague, T Lian, AJ Nozik The Journal of Physical Chemistry B 102 (34), 6455-6458	277	1998
<input type="checkbox"/> Ultrafast electron transfer at the molecule-semiconductor nanoparticle interface NA Anderson, T Lian Annu. Rev. Phys. Chem. 56, 491-519	238	2005

Citation report Web of Science (as of 11/24/2013)

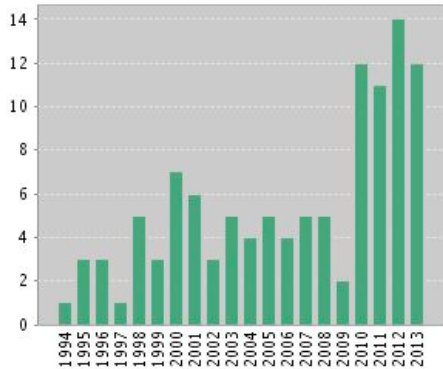
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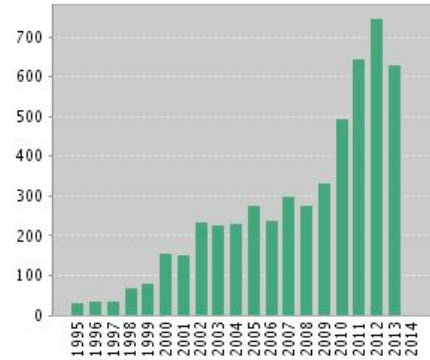
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PUBLICATION LIST

EDITED BOOKS AND PROCEEDINGS

1. Hai-Lung Dai and Tianquan Lian, **SPIE Proceedings**, Symposium of physical of nanomaterials and interface II, 2003.
2. Rumbles, G.; Lian, T.; Murakoshi, K.; **Electron Transfer in Nanomaterials. In: Proc. - Electrochem. Soc., 2006, 2004-22.**

PUBLICATION LIST

1988-1990 (M. S. Study with H. Shen)

1. Liao, H; Shen, H; Zheng, Z.; Lian, T.; Zhou, Y.; Huang, C.; Zheng, R.; and Yu, G., *Accurate values for the index of refraction and optimum phase matching parameters in a flux grown Potassium Titanyl Phosphate(KTP) crystal*, **Opt. Laser Technol.** 20(2), 103-4, 1988.
2. Shen, H.; Lian, T.; Zheng, R.; Zhou, Y.; Yu, G.; Huang, C.; Liao, H.; and Zheng, Z.; *Measurement of the stimulated emission cross section for the $4F_{3/2} - 4I_{13/2}$ transition of Neodymium(3+) in Yttrium Aluminate($YAlO_3$) crystal*, **IEEE J. Q. E.**, 25(2), 144-6, 1989.
3. Shen, H.; Zheng, R.; Zhou, Y.; Yu, G.; Huang, C.; Liao, H.; Zheng, Z.; and Lian.T., *High stability 1.3414 mm TEM₀₀ mode Neodymium(3+)-doped YAP CW laser*, **Zhongguo Jiguang**, 16 (11), 641-3, 1989.
4. Lian, Tianquan, Shen, Hongyuan, *A new method for measurement of laser transition cross section and fluorescence lifetime*, **Zhongguo Jiguang**, 17(1), 5-8, 1990.

1990-1997 (PhD study with R. M. Hochstrasser)

5. P. A. Anfinrud, C. Han, T. Lian and R. M. Hochstrasser, *Evolution of the transient vibrational spectrum following short pulse excitation*, **J. Phys. Chem.** 94, 1180, 1990.
6. P. A. Anfinrud, C. Han, T. Lian and R. M. Hochstrasser, *Subpicosecond infrared spectroscopy: the condensed phase photochemistry of iron carbonyls*, in **Ultrafast Phenomena VII**; eds. C. B. Harris, E. P. Ippen, G. A. Mourou and A. H. Zewail (Springer-Verlag, Berlin-Heidelberg, 1990), p489
7. R. M. Hochstrasser, P. A. Anfinrud, R. Diller, C. Han, M. Iannone, T. Lian and B. Locke, *Femtosecond infrared spectroscopy of complex molecules using CW IR lasers*, in **Ultrafast Phenomena VII**; eds. C. B. Harris, E. P. Ippen, G. A. Mourou and A. H. Zewail, (Springer-verlag, Berlin-Heidelberg, 1990), p429
8. R. M. Hochstrasser, M. A. Pereira, P. E. Share, M. J. Sarisky, Y. R. Kim, S. T. Repinec, R. J. Sension, J. R. G. Thorne, M. Iannone, R. Diller, P. A. Anfinrud, C. Han, T. Lian and B. Locke, *Anisotropy studies of ultrafast dipole reorientations*, **Proc. Indian Acad. Sci. (Chem. Sci.)** 103, 351, 1991.
9. B. Locke, T. Lian and R. M. Hochstrasser, *Determination of Fe-CO geometry and heme rigidity in carbomonoxyhemoglobin using infrared spectroscopy*, **Chem. Phys.**, 184, 368, (1991).
10. P. A. Anfinrud, C. Han, T. Lian and R. M. Hochstrasser, *Femtosecond infrared spectroscopy: the ultrafast photochemistry of iron carbonyls in solution*, **J. Phys. Chem.** 95, 574, 1991.
11. R. Diller, M. Iannone, B. Cowen, S. Maiti, J. Owrutsky, M. Li, M. Sarisky, Y. R. Kim, B. Locke, T. Lian and R. M. Hochstrasser, *Ultrafast infrared spectroscopic studies of protein dynamics*, in **Time-Resolved Vibrational Spectroscopy V**, ed. H. Takahashi, 1991 (Springer Proceedings in Physics, Vol, 68), p6, 1991.

12. T. Lian, B. Locke, M. Iannone and R. M. Hochstrasser, *Femtosecond Infrared spectroscopy: The condensed phase photochemistry of metal carbonyl dimmers*, in **Time-Resolved Vibrational Spectroscopy V**, ed. H. Takahashi, (Springer Proceedings in Physics, Vol, 68), p93, 1991.
13. T. Lian, B. Locke and R. M. Hochstrasser, *Ultrafast motion of heme-CO in hemoglobin*, **Biophys. J.** 59, 289a, (1991).
14. J. Owrutsky, R. Diller, M. Iannone, B. Cowen, S. Maiti, M. Li, M. Sarisky, Y. R. Kim, B. Locke, T. Lian and R. M. Hochstrasser, *Ultrafast infrared spectroscopy of molecules in condensed phase*, **Proc. SPIE-Int. Soc. Opt. Eng.** 1599, 52 (1991).
15. T. Lian, B. Locke and R. M. Hochstrasser, *Energy flow in heme proteins probed by femtosecond infrared spectroscopy*, **Biophys. J.** 61, A53, 1992.
16. R. M. Hochstrasser, R. Diller, S. Maiti, T. Lian, B. Locke, C. Moser, P. L. Dutton, B. R. Cowen and G. C. Walker, *Ultrafast infrared spectroscopy of protein dynamics*, in **Ultrafast Phenomena, VIII**, ed, J. L. Martin, A. Migus, G. A. Mourou, A. H. Zewail, 1992. p517.
17. B. Cowen, T. Lian, G. C. Walker, S. Maiti, C.C. Moser, B. R. Locke, P. L. Dutton and R. M. Hochstrasser, *Femtosecond infrared probes of biomolecules*, in **Recent Advances in Photosciences**, eds. M. Yoon & P.-S. Song, proceedings of International Symposium on Photochemistry, Photobiology and Photomedicine, Chungnam National University, Taejon, Korea, 1993.
18. T. Lian, B. Locke, T. Kitagawa, M. Nagai, and R. M. Hochstrasser, *Determination of Fe-CO geometry in the subunits of carbonmonoxy hemoglobin M Boston using femtosecond IR spectroscopy*, **Biochemistry**, 32, 5809, 1993.
19. T. Lian, B. Locke, Y. Kholodenko and R. M. Hochstrasser, *Energy flow from solute to solvent probed by femtosecond IR spectroscopy: malachite green and heme protein solutions*, **J. Phys. Chem.**, 98, 11648-11656, 1994.
20. T. Lian, Y. Kholodenko, R. M. Hochstrasser, *Infrared probe of the solvent response to ultrafast solvation processes*, **J. Phys. Chem.**, 99, 3546-2551, 1995.
21. T. Lian, Y. Kholodenko, B. Locke and R. M. Hochstrasser, *Third order response of liquids studied by femtosecond infrared spectroscopy*, **J. Phys. Chem.**, 99, 7272, 1995.

Postdoctoral fellow (with C. B. Harris)

22. T. Lian, S. E.. Bromberg, H. Yang, G. Proulx, R. G. Bergman, and C. B. Harris, *Femtosecond IR spectroscopic study of the mechanism of C-H bond activation by organometallic complexes*, in **Time-Resolved Vibrational Spectroscopy VII**, eds. R. B. Dyer, M. A. D. Martinez, A. Shreve, and W. H. Woodruff, 1995, P 213.
23. T. Lian, S. E.. Bromberg, H. Yang, , R. G. Bergman, and C. B. Harris, *Femtosecond IR study of Alkane C-H bond activation by organometallic compound*, in **Ultrafast Phenomena X**, Eds. P. F. Barbara, J. G. Fujimoto, W. H. Knox and W. Zinth, Springer, Berlin, 1996, P. 300.
24. T. Lian, H. Yang, M. C. Asplund, S. E. Bromberg, C. B. Harris, *Femtosecond IR studies of solvation by probing the solvent*, , in **Ultrafast Phenomena X**, Eds. P. F. Barbara, J. G. Fujimoto, W. H. Knox and W. Zinth, Springer, Berlin, 1996, P 237
25. S. Bromberg, T. Lian, R. G. Bergman, C. B. Harris, *Ultrafast dynamics of Cp*M(CO)₂ (M=Ir, Rh) in solution: the origin of low quantum yields for C-H bond activation*, **J. Am. Chem. Soc.**, 118, 2069, 1996.
26. T. Lian, S. E.. Bromberg, H. Yang, G. Proulx, R. G. Bergman, and C. B. Harris, *Femtosecond IR spectroscopic study of the mechanism of C-H bond activation by organometallic compounds: Direct observation of reactive intermediates in room temperature alkane solution*, **J. Am. Chem. Soc.**, 118, 3769, 1996.
27. T. Lian, S. E. Bromberg, M. C. Asplund, H. Yang, C. B. Harris, *Femtosecond IR studies of the photodissociation of M(CO)₆ (M = Cr, W, Mo) in solution*, **J. Phys. Chem.**, 100, 11994, 1996.

28. S. E. Bromberg, H. Yang, M. C. Asplund, T. Lian, B. K. McNamara, K. T. Kotz, J. S. Yeston, M. Wilkens, H. Frei, R. G. Bergman, and C. B. Harris, *The Mechanism of a C-H Bond Activation Reaction in Room Temperature Alkane Solution*, **Science**, 278, 260, 1997.

Emory University

1998-

29. J. B. Asbury, H. N. Ghosh, J. S. Yeston, R. G. Bergman and T. Lian, *Femtosecond IR Study of Reactive Intermediate in an Alkane C-H Bond Activation Reaction by CpRh(CO)₂*, **Organometallics**, **1998**, 17, 3417-19.
30. H. N. Ghosh, J. B. Asbury, and T. Lian, *Direct Observation of Ultrafast Electron Injection From Coumarin 343 to TiO₂ Nanoparticles by Femtosecond Infrared Spectroscopy*, **J. Phys. Chem. B**, **1998**, 102, 6482-6486.
31. R. J. Ellingson, J. B. Asbury, S. Ferrere, H. N. Ghosh, T. Lian, and A. J. Nozik, *Dynamics of Electron Injection in Nanocrystalline Titanium Dioxide Films Sensitized with [Ru(4,4'-dicarboxy-2,2'-bipyridine)₂(NCS)₂] by Infrared Transient Absorption*, **J. Phys. Chem. B**, **1998**, 102, 6455-6458.
32. H. N. Ghosh, J. B. Asbury, Y. Weng, and T. Lian, *Interfacial Electron Transfer between Fe(II)(CN)₆⁴⁻ and TiO₂ Nanoparticles: Direct Electron Injection and Nonexponential Recombination*, **J. Phys. Chem. B**, **1998**, 102, 10208-10215.
33. J. B. Asbury, H. N. Ghosh, R. J. Ellingson, S. Ferrere, A. J. Nozik, and T. Lian, *Femtosecond IR Study of Ru Dye Sensitized Nanocrystalline TiO₂ Thin Films: Ultrafast Electron Injection and Relaxation Dynamics*, Springer Ser. Chem. Phys. (1998), 63 (**Ultrafast Phenomena XI**), 639-641.

1999-

34. R. J. Ellingson, J. B. Asbury, S. Ferrere, H. N. Ghosh, T. Lian, and A. J. Nozik, *Sub-picosecond injection of electrons from excited [Ru(2,2'-bipy-4,4'-dicarboxy)₂(SCN)₂] into TiO₂ using transient mid-infrared spectroscopy*, **Zeitschrift Fur Physikalische Chemie-International Journal of Research in Physical Chemistry & Chemical Physics**, **1999**, V211, PT-1, P77-84.
35. J. B. Asbury, R. J. Ellingson, H. N. Ghosh, S. Ferrere, A. J. Nozik, and T. Lian, *Femtosecond IR Study of Excited State Relaxation and Electron Injection Dynamics of Ru(dcbpy)₂(NCS)₂ in Solution and on Nanocrystalline TiO₂ and Al₂O₃ Thin Films*, **J. Phys. Chem. B**, **1999**, 103, 3110-3119.
36. J. B. Asbury, Yongqiang Wang, and T. Lian, *Ultrafast Multi-exponential Electron Injection in Ru(dcbpy)₂(NCS)₂ Sensitized ZnO nanocrystalline Thin Films*, **J. Phys. Chem. B**, **1999**, 103, 6643-6648

2000-

37. Y. Weng, Y. Wang, J. B. Asbury, H. N. Ghosh, and T. Lian, *Back Electron Transfer From TiO₂ Nanoparticles to Fe(III)(CN)₆³⁻: Origin of Non-single-exponential and Particle Size Independent Dynamics*, **J. Phys. Chem. B**, **2000**, 104, 93-104
38. Y. Wang, J. B. Asbury, and T. Lian, *Ultrafast Excited state dynamics of Re(CO)₃Cl(dcbpy) in solution and on nanocrystalline TiO₂ and ZrO₂ thin films*, **J. Phys. Chem. A**, **2000**, 104, 4291-4299.
39. Encai Hao and Tianquan Lian, *Layer-by-Layer Assembly of CdSe Nanoparticles Based on Hydrogen Bonding*, **Langmuir**, **2000**, 21, 7879-7881
40. Neil A. Anderson, Kun Hang, John B. Asbury, and Tianquan Lian, *Ultrafast Mid-IR detection of a precursor to the presolvated electron following electron ejection from ferrocyanide*, **Chem. Phys. Lett.** **2000**, 329, 386-392.
41. Encai Hao and Tianquan Lian, *Buildup of Polymer/Au Nanoparticle Multilayer thin films Based on Hydrogen Bonding*, **Chem. Mater.** **2000**, 12, 3392-3396.

42. J. B. Asbury, Encai Hao, Yongqiang Wang, and T. Lian, *Bridge length dependent ultrafast Electron injection from Re polypyridal complexes to nanocrystalline TiO₂ thin films studied by femtosecond IR spectroscopy*, **J. Phys. Chem. B**, **2000**, 104, 11957-11964.
43. J. B. Asbury, Kun Hang, J. S. Yeston, R. G. Bergman and T. Lian, *Direct observation of a picosecond Alkane C-H Bond Activation Reaction by CpIr(CO)₂*, **J. Am. Chem. Soc**, **2000**, 122, 12870-12871.
44. H. N. Ghosh, J. B. Asbury, and T. Lian, *Ultrafast Electron Transfer Dynamics in Sensitized TiO₂ Nanoparticle*, Proceedings of the Indian National Science Academy, **PINSA-A: (invited review) Part A**, **2000**, 66, 177-197.

2001-

45. Kun Hang, Neil A. Anderson, John B. Asbury, and Tianquan Lian, *Mid-IR detection of a precursor to the presolvated electron*, Springer Ser. Chem. Phys. **2001**, 66 (**Ultrafast Phenomena XII**), 470-472.
46. Asbury, John B.; Wang, Yongqiang; Lian, Tianquan. *Ultrafast solute vibrational spectral evolution during the solvation process*. Springer Ser. Chem. Phys. 2001, 66 (**Ultrafast Phenomena XII**), 554-556
47. Asbury, John B.; Hao, Encai; Wang, Yongqiang; Lian, Tianquan. *Femtosecond IR study of ultrafast electron injection in nanocrystalline thin film electrodes*. Springer Ser. Chem. Phys. 2001, 66 (**Ultrafast Phenomena XII**), 450-452.
48. Neil A. Anderson, John B. Asbury, Encai Hao, Xin Ai, Tianquan Lian, *Dynamics Of Interfacial Charge Separation In Sensitized Nanocrystalline Semiconductor Thin Films*, in **Photovoltaics for the 21st Century II** (Proceedings of the electrochemical society), 2001, Vol. 2001-10, 97-105.
49. J. B. Asbury, Encai Hao, Yongqiang Wang, H. N. Ghosh, and T. Lian, *Ultrafast electron transfer dynamics from adsorbate molecules to nanocrystalline semiconductor thin films*, **J. Phys. Chem. B (feature article)**, **2001**, 105, 4545-4557.
50. Encai Hao and Tianquan Lian, A hydrogen-bonding based approach to fabricate polymer/inorganic nanoparticle multilayer film. **Materials Research Society Symposium Proceedings (2001)**, 648(Growth, Evolution and Properties of Surfaces, Thin Films and Self-Organized Structures), P6.17/1-P6.17/6.
51. J. B. Asbury, Y.-Q. Wang, E. Hao, H. N. Ghosh, and T. Lian, *Evidences of Hot Excited State Electron Injection from Sensitizer Molecules to TiO₂ nanocrystalline Thin Films*, **Research on Chemical Intermediates**, **2001**, 27, 393-406.
52. N. A. Anderson, E. Hao, X. Ai, G. Hastings, T. Lian, *Ultrafast and long-lived photoinduced charge separation in MEH-PPV/nanoporous semiconductor thin film composites*, **Chem. Phys. Lett.**, **2001**, 347, 304-310.

2002-

53. Neil A. Anderson, Xin Ai, Encai Hao, Tianquan Lian " Subpicosecond photoinduced electron transfer from a conjugated polymer to SnO₂ semiconductor nanocrystals" special issue on "Nanostructures in Photovoltaics", **Physica E (Low Dimensional Structures)**, **2002**, 14, 215.
54. John B. Asbury, Yongqiang Wang and Tianquan Lian, " Dynamic vibration peak-shift during solvation: Theory and Experiment", **Bulletin of the Chemical Society of Japan**, **2002**, 75, 973-983
55. Encai Hao, Neil A. Anderson, John B. Asbury, and Tianquan Lian "The Effect of Trap States on Interfacial Electron Transfer between Molecular Absorbates and Semiconductor Nanoparticles", **J. Phys. Chem. B**, **2002**, 106, 10191.

2003-

56. John B. Asbury, Neil A. Anderson, Encai Hao, Xin Ai, and Tianquan Lian "Parameters affecting electron injection dynamics from Ru dyes to TiO₂ nanocrystalline thin film", **J. Phys. Chem. B**, **2003**, 107, 7376-7386.(**Arnim Henglein Festschrift**)

57. Yuhuang Wang, Kun Hang, and Tianquan Lian “Comparison of Electron Transfer Dynamics in intramolecular and molecule-to-nanoparticle charge transfer complexes”, **J. Phys. Chem. B**, **2003**, 107, 9434-9440
58. Neil A. Anderson, Xin Ai, Daitao Chen, Debra L. Mohler, Tianquan Lian, “Bridget assisted ultrafast interfacial electron transfer to nanocrystalline SnO₂ thin films”, **J. Phys. Chem. B**, **2003**, 107, 14231.
59. N. Anderson, Xin Ai, and T. Lian, “Electron injection dynamics in dye-sensitized ZnO nanocrystalline thin films”, **J. Phys. Chem. B**, **2003**, 107, 14414.
60. Neil A. Anderson, Xin Ai, Tianquan Lian, *Ultrafast interfacial electron transfer from conjugated polymers to inorganic semiconductor nanoparticles*, Springer Ser. Chem. Phys. (**Ultrafast Phenomena XIII**), 2003, eds. R. D. Miller, M. M. Murnane, N. F. Scherer, and A. N. Weiner, P325
61. Prokes, S. M.; Carlos, W. E.; Gole, James L.; She, Chunxing; Lian, T.. **Surface modification and optical behavior of TiO₂ nanostructures**. Materials Research Society Symposium Proceedings (2003), 738(Spatially Resolved Characterization of Local Phenomena in Materials and Nanostructures), 239-244.
62. Ai, Xin; Anderson, Neil A.; Asbury, John B.; Hao, Encai; Lian, Tianquan. **Ultrafast electron transfer dynamics from molecular adsorbate to semiconductor nanoparticles**. Proceedings of SPIE-The International Society for Optical Engineering (2003), 5223 (Physical Chemistry of Interfaces and Nanomaterials II), 147-158.

2004-

63. Jiangchang Guo, Encai Hao, and Tianquan Lian, “Layer-by-Layer assembly of thin films of mixed nanoparticles”, **Encyclopedia of Nanoscience and Nanotechnology**, Marcel Dekker, Inc., New York, New York, **2004**, p1623 – 1633.
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INVITED TALKS SINCE 1997

1997

1. **Symposium on Frontier of Chemistry** and World-Wide Conference of Young Chinese Chemists, the Hong Kong University of Science and Technology, Hong Kong, December, 1997.

1998

2. **Gordon Research Conference on Molecular Dynamics and Vibrational Spectroscopy**, July 26-31, 1998, Plymouth, New Hampshire.
3. **Gordon Research Conference on Electron Donor Acceptor Interaction**, August 9-15, 1998, Newport, Rhode Island.

1999

4. **Ultrafast Dynamics Symposium in Georgia Institute of Technology**, Atlanta, GA, January, 1999.
5. **APS Annual Meeting** in Atlanta, GA, March, 1999.
6. Symposium on “Dynamics/Structure at the Electrochemical Interfaces by New Spectroscopic Probes and Approaches”, in **ACS Meeting** in Anaheim, CA, March, 1999.
7. Chemistry Department of **Univ. of California at Santa Cruz**, June 3, 1999.
8. Chemistry Department of the **Univ. of Alabama** at Tuscaloosa, September 17, 1999.
9. Atlanta & Athens area chemical physics seminar series, Chemistry department, **Emory University**, November 1, 1999.
10. Physics department (PMACS program), **Emory University**, November 2, 1999.

2000

11. Symposium on photon and electron induced processes on surface, **PacifiChem 2000**, December 14-19, 2000 Hawaii.
12. Symposium on “Advances in Physical Chemistry of Nanostructured Materials” in **Southeast and Southwest regional ACS meeting**, December 9, 2000, New Orleans.
13. Department of Chemistry, **State University of West Georgia**, October 6, 2000.
14. The **Federation of Analytical Chemistry and Spectroscopy Societies (FACSS) 2000**, September 28, 2000, Nashville.
15. Symposium on “Nanostructured Materials in Electrochemistry and Photoelectrochemistry”, 197th meeting of **the Electrochemical Society** in Toronto, Canada, May 17, 2000.
16. Department of Physics, **University of Toronto**, Toronto, Canada, May 16, 2000.
17. Department of Chemistry, **University of Michigan**, April 27, 2000.
18. Department of Chemistry, **University of Pittsburgh**, April 20, 2000.
19. Department of Chemistry, **Northwestern University**, April 14, 2000.
20. Department of Chemistry, **University of Notre Dame**, April 13, 2000.
21. Symposium on nanocrystals from Scaling Laws to Applications in **American Physical Society Annual Meeting** in Minneapolis, Minnesota, March 2000.
22. Department of Chemistry, **Clemson University**, March 16, 2000.
23. Department of Physics, **Georgia State University**, March 3, 2000.

24. Department of Chemistry, **University of North Carolina** at Chapel Hill, February 10, 2000.
25. “**Fifth Trombay Symposium on Radiation & Photochemistry**” (TSRP 2000), Mumbai, **India**, January 12-17, 2000.
26. Department of Chemistry, **Xiamen University, China**, January 11, 2000.

2001

27. Department of Chemistry, **Boston University**, December 7, 2001.
28. Department of Chemistry, **Virginia Commonwealth University**, November 16, 2001.
29. Ames laboratory, **Iowa State University**, September 28, 2001.
30. Symposium on nanocrystal materials, in South-East Regional **ACS meeting**, Savannah, September 23-26, 2001.
31. Symposium on “The Interaction Between Ab Initio Computation and Experiment”, South-East Regional **ACS meeting**, Savannah, September 23-26, 2001.
32. **ACS national meeting**, Chicago, August 26-30, 2001.
33. Symposium on “The state of the art: semiconductor and metal nanoparticles for light Energy conversion”, **ACS national meeting**, Chicago, August 26-30, 2001.
34. First International conference on Semiconductor photochemistry, **Glasgow, United Kingdom**, July 22-25, 2001.
35. 24th DOE Solar Photochemistry Research Conference, **Lake Tahoe**, California, June 3-8, 2001.
36. Zhong-Guang-Chun Forum, **Institute of Physics, Chinese Academy of Sciences**, Beijing, China, May 29, 2001.
37. Department of Material and Life Science, **Osaka University**, Osaka, Japan, May 25, 2001
38. The **Tenth international conference on time-resolved vibrational spectroscopy**, in Okazaki, Japan, May 21-25, 2001
39. Department of Chemistry, **University of Pennsylvania**, April 19, 2001.
40. Symposium on “Metal and Semiconductor Nanoclusters”, 199th meeting of the **Electrochemical Society**, Washington DC, March 26, 2001.
41. Symposium on “Photovoltaic Technology of the 21th Century”, 199th meeting of the **Electrochemical Society**, Washington DC, March 26, 2001.
42. Department of Chemistry, **Fudan University, China**, March 7, 2001.
43. Department of Chemistry, **University of Illinois at Urbana Champaign**, February 21, 2001.
44. **Gordon Research conference on Molecular Energy transfer**, January 14-19, 2001, Ventura, California.

2002

45. **European Science Foundation ESF-ULTRA workshop** on the "Ultrafast Time Domain of Organic Semiconductor and Supramolecular Functions", November 23-26, 2002, Örenäs Castle, Lund, Sweden.
46. Department of Chemistry, **University of Florida**, November 19, 2002.
47. 11th annual meeting of **Southeast consortium for nano-structured materials**, Atlanta, Georgia, Oct. 17-18, 2002.
48. International Workshop on Electron-Phonon Effects in Nanosystems (EPENS'02) Long Island, New York, September 23-25, 2002

49. Symposium on "Physical Chemistry of Interfaces and Nanomaterials", **SPIE conference**, July 7 to 12, 2002, Seattle.
50. Symposium on "Photoreaction Control and Photofunctional Materials (PCPM)", **National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan**, March 18-20, 2002.
51. **National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan**, March 15, 2002.
52. Department of Chemistry, **University of Washington at Seattle**, February 27, 2002.
53. Department of Chemistry, **Colorado State University**, February 1, 2002.
54. Department of Chemistry, **University of Colorado**, January 31, 2002.
55. **National Renewable Energy Laboratory**, January 30, 2002.
56. Department of Chemistry, **Ohio State University**, January 29, 2002.

2003

57. **Southeast regional ACS meeting (Sermacs) 2003**, November 16-19, 2003
58. **Spelman College** Atlanta, Georgia, November 13, 2003.
59. **Optics in the Southeast** conference, Orlando, November 12, 2003.
60. **College of Charleston**, Charleston, South Carolina, November 6, 2003.
61. Johnston Symposium, Department of Chemistry, **Emory University**, Oct. 17, 2003.
62. Symposium on "semiconductor interfaces", Division of colloid science and surface chemistry, Fall **ACS annual meeting**, September 7-11, 2003, New York, New York.
63. Symposium on "the conduction band in liquids and disordered solids", Division of physical chemistry, Fall **ACS annual meeting**, September 7-11, 2003, New York, New York.
64. Symposium on "Physical Chemistry of Interfaces and Nanomaterials", **SPIE meeting**, August 3 to 8, 2003, San Diego.
65. **Twenty-sixth DOE solar photochemistry research conference**, June 8-12, 2003, Lake Tahoe, California, USA.

2004

66. Department of Chemistry, **University of Georgia**, November 19, 2004.
67. Department of Chemistry, **Wayne State University**, November 10, 2004.
68. Department of Chemistry, **Eastern Tennessee State University**, October 8, 2004.
69. **Brookhaven National Laboratory**, September 22, 2004.
70. Department of Chemistry, **University of Georgia**, September 17, 2004.
71. Southeast Multiphoton Confocal Users Group Meeting, Atlanta, Georgia, August 20, 2004
72. Symposium on "Physical Chemistry of Nanomaterials and Interface", **SPIE meeting**, Denver Colorado, August 2004
73. 205th meeting of **Electrochemical Society**, San Antonio, Texas, May 2004

2005

74. Department of Chemistry, **Yale University**, Oct. 10, 2005
75. Department of Chemistry, **Washington State University at Pullman**, September 27, 2005.
76. **PNNL**, September 26, 2005.
77. Symposium on "Electron Transfer Processes: Making Connections" **Fall ACS National Meeting**, Washington D.C August 28 - September 1, 2005.

78. Symposium on "Physical Chemistry of Nanomaterials and Interface IV", **SPIE meeting**, San Diego, August, 2005.
79. Department of Chemistry, **Xiamen University**, Xiamen, China, May 24, 2005.
80. **Institute of Chemistry**, Chinese Academy of sciences, Beijing, China, May 19, 2005.
81. Department of Chemistry, **Beijing University**, Beijing, China, May 18, 2005.
82. Symposium on "Charge Transfer at Interfaces" at the **Spring ACS National Meeting**, San Diego, March 13-17, 2005.
83. **SANKEN** (The institute of Scientific and Industrial Research, ISIR, Osaka University) **International Symposium on "Chemistry, Biology, and Material Science towards Creating New Science and Industry based on Inter-Nanoscience"**, Ibaraki, Osaka, February 22-23, 2005
84. **Coherent southeast ultrafast and high-resolution spectroscopy conference**, Atlanta, Georgia, January 13-14, 2005.

2006

85. Department of Chemistry/Chemical Engineering (IGERT seminar series), **University of Minnesota**, November 10, 2006.
86. Department of Chemistry, **Clark-Atlanta University**, Oct. 24, 2006
87. Department of Chemistry, **Boston College (O'Malley Visiting Scholar)**, Oct. 5, 2006
88. **Gordon Conference on Electron Donor Acceptor Interaction**, Newport, RI, August 14-18, 2006.
89. **28th DOE solar photochemistry research conference**, Warrenton, Virginia, June 4-7, 2006.
90. Department of Chemistry, **Boston College**, March 23, 2006

2007

91. School of Sciences, the **University of Tokyo**, Tokyo, Japan, November 15, 2007.
92. **2007 National Meeting of The Spectroscopy Society of Japan**, Tokyo Institute of Technology, Tokyo, Japan, November 12 - 14, 2007.
93. Symposium on Advances in nanomaterials, the 59th annual **South East Regional Meeting of American Chemical Society**, Oct. 24-26, 2007.
94. Department of Chemistry, **Rutgers University** at Newark, Oct. 5, 2007.
95. Symposium on "Nanomaterials for Photovoltaic Applications" **Fall ACS national meeting**, Boston, August, 19-23, 2007
96. Symposium on "Dynamics on the Nanoscale" **Spring ACS National Meeting**, Chicago, March 25-29, 2007.
97. Department of Chemistry, **University of Arkansas**, February 29, 2007

2008

98. Symposium on Nanocrystals and Nanoclusters, SERMACS, November 12-15, 2008, Nashville, Tennessee.
99. Photovoltaic workshop 2008, Research Corporation and Arizona Research Institute for Solar Energy, October 28-31, 2008, Rio Rico, Arizona.
100. Department of Chemistry, Carnegie Mellon University, October 14, 2008
101. IGERT seminar, University of Massachusetts, October 9, 2008
102. Department of Chemistry, Brown University, September 12, 2008

103. Symposium on Spectroscopic Probes of Chemical Dynamics in Gaseous and Condensed Phase, **Fall ACS national meeting**, Philadelphia (August 17-21, 2008)
104. Telluride Science Research Conference (TSRC) Workshop on *Nonlinear Optics at Interfaces*, Telluride, CO. USA, June 23 -27, 2008.
105. Shanghai Institute of Ceramics, Shanghai, China, May 26, 2008.
106. Department of Chemistry, State Key Laboratory for Solid Surfaces, Xiamen University, China, May 22, 2008
107. Department of Chemistry, Nankai University, China, May 19, 2008
108. Department of Chemistry, **University of Pennsylvania**, February 14, 2008.
109. Department of Chemistry, **Brown University**, February 4, 2008.
110. **Global Education and Research Center for Bio-Environmental Chemistry**, Osaka University, Osaka, Japan, January 27-29, 2008.

2009

111. Coherent Southeast Ultrafast Spectroscopy Meeting, Duke University, Raleigh-Durham, NC, December 16, 2009.
112. Symposium on “Colloidal Nanoparticles for Electronic Applications: Applications in Light Emission, Detection, Photovoltaics, and Transport”, Fall MRS meeting, November 30-December 4, Boston, USA
113. Department of Physics, University of Georgia, Athen, GA, November 5, 2009
114. Department of Chemistry, U. Wisconsin at Madison, Oct. 28, 2009
115. SERMACs, San Juan, Puertal Rico, October 23. 2009
116. Department of Chemistry, Auburn University, Oct. 9, 2009
117. International Conference on Femtochemistry, Femtobiology, and Femtophysics - Frontiers in Ultrafast Science and Technology (Femtochemistry IX), August 8-13, 2009, Beijing, China,
118. The 6th Joint Meeting of Chinese Physicists Worldwide International Conference on Physics Education and Frontier Physics August 6, 2009, Lanzhou, China.
119. Department of Chemistry, Lanzhou University, August 5, 2009, Lanzhou, China.
120. “Probing interfacial electron transfer dynamics in photovoltaic and photocatalytic Nanomaterials”, Department of Chemistry, State Key Laboratory for Solid Surfaces, Xiamen University, August 3, 2009, Xiamen, China.
121. “Multi-Exciton Dissociation Dynamics in Semiconductor Quantum Dots”, Department of Chemistry, State Key Laboratory for Solid Surfaces, Xiamen University, July 29, 2009, Xiamen, China.
122. Department of Physics, Nanjing University, July 21, 2009, Nanjing, China.
123. Dalian Institute of Chemical Physics, July 20, 2009, Dalian, China.
124. 31st DOE Solar Photochemistry Research Conference, June 7-10, 2009, Annapolis, MD.

2010

125. Pittcon 2010, Orlando, Florida, February 28 - March 5, 2010
126. 2010 ACS Spring meeting, Symposium on "Nanostructured Materials for Photovoltaics and Solar Electric Power: Synthesis, Characterization and Device Fabrication", March 21-25, 2010, San Francisco.
127. Shanghai Institute of Ceramic, Shanghai, China, May 27, 2010

128. Fujian Institute of Research on the Structure of Matter, Fuzhou, China, June 2, 2010
129. Institute of Chemistry, Beijing, China, June 3,
130. 2nd International Symposium on Advancing the Chemical Sciences (ISACS): "Challenges in Physical Chemistry and Nanoscience", in Budapest, Hungary, July 14-16, 2010
131. Seventh International Symposium on Ultrafast Surface Dynamics-USD7, Congress Centre, Brijuni National Park (Croatia), 22-26 August 2010.
132. Francis Marion University, September 23, 2010
133. Department of Chemistry, University of New Mexico, Nov. 12, 2010
134. Department of Chemistry, Tulane University, Oct. 11, 2010
135. Symposium on "Photophysics of solar energy conversion", Optical Society of America 94th annual meeting, Frontier in Optics 2010/Laser Science XXVI, October 27, 2010
136. Solar Photochemistry Zing Conference, December 1-4, 2010
137. University of Texas Austin, December 9, 2010

2011

138. Department of Chemistry, **University of Toronto**, March 1, 2011.
139. EFRC seminar series, **Los Alamos National Laboratory**, March 9, 2011
140. **APS meeting**, March 21-25, 2011, Dallas, USA
141. Workshop on "Photoinduced charge transfer in nanostructures", Center for Nanoscale Materials (CNM) Users Meeting at **Argonne National Laboratory**, May 4, 2011.
142. TRVS, Switzerland, June 19-24, 2011
143. Shanghai Institute of Ceramic, Shanghai, China, May 26, 2011
144. Xiamen University, China, July 27, 2011.
145. Chemical Physics Division of OCPA7 (the 7th biennial world conference of **overseas Chinese physics associations**), August 1-5, 2011, Kaohsiung, Taiwan.
146. Symposium on "Physical Chemistry of Interfaces and Nanomaterials", **SPIE NanoScience and Engineering conference** in San Diego, CA, August 21 - 25, 2011.
147. Symposium on "Solar Hydrogen and Nanotechnology VI (OP202)", **SPIE NanoScience and Engineering conference** in San Diego, CA, August 21 - 25, 2011
148. Symposium on "Modeling of photocatalysis and photovoltaics", Computers in Chemistry (COMP) Division, 2011 Fall (242) ACS meeting, Denver, CO, August 28-Sept. 1, 2011.
149. Department of Chemistry, University of Southern Carolina, September, Sept. 9, 2011
150. Department of Chemistry, Rochester University, October 17, 2011.
151. University of California at Los Angeles, Nov. 21, 2011
152. Symposium I, "Fundamental Processes of Solar Harvesting in Excitonic Solar Cells", **MRS Fall meeting**, Nov. 28 - Dec. 2, 2011, Boston
153. University of Colorado at Boulder, Dec. 9, 2011.

2012

154. Texas A&M University, February 21, 2012
155. 34th Department of Energy Solar Photochemistry Research Conference, June 3-6, Annapolis, MD, USA
156. Vibration Spectroscopy Gordon Research Conference, August 5-10.
157. National Taiwan Chiao Tung University, September 28, 2012, Tsing-Chu, Taiwan
158. Institute of Atomic and Molecular Science, October 1-2, 2012, Taipei, Taiwan

159. 2012 RCAS-ANNA Symposium on “Recent Development in Nanomaterials: Structure, Dynamics & Applications”, October 4-5, 2012, Taipei, Taiwan.
160. 59th American Vacuum Society International Symposium on “Charge Transfer/Transport in Nanomaterials for Energy Applications”, October 29, 2012, Tempa, Florida.
161. Atlanta Area Physical Chemistry Seminar (AACP), Department of Chemistry, Georgia Institute of Technology, October 30, 2012, Atlanta, Georgia.

2013 (Delivered and planned)

162. Southeast Ultrafast Spectroscopy Conference, Georgia Institute of Technology, Jan. 11, 2012
163. Department of Chemistry, University of Louisville, Jan. 25, 2013
164. Department of Chemistry, Rice University, February 28, 2013
165. Department of Chemistry, University of Alabama, March 7, 2013
166. Oakridge National Laboratory, March 15, 2013
167. MRS spring meeting, “Symposium Q: Surfaces of Nanoscale Semiconductors”, 3/31-4/5, 2013, San Francisco, California
168. Spring ACS meeting, symposium on “Ultrafast Excited-state Processes in Transition Metal-containing Systems” (Inorganic division), April 7-11, 2013, New Orleans, LA
169. Brookhaven National Laboratory, April 16, 2013
170. Solar Fuels Conference, June 12-14, Spain
171. Center for Advanced Solar Photophysics Workshop, July 30, 2013, Los Alamos, NM.
172. GRC on “Clusters, Nanocrystals and Nanostructures”, August 4-9, 2013
173. Symposium on “Computational Photocatalysis”, Computation Chemistry Division, 246th (Fall) ACS meeting, Sept. 8-12, 2013, Indianapolis.
174. Symposium on "Solar Energy Conversion and Utilization", Energy and Fuel Division, 246th (Fall) ACS meeting, Sept. 8-12, 2013, Indianapolis.
175. EFRC seminar, Columbia University, Nov. 6, 2013
176. Fall MRS meeting, Symposium Y, "Physics of organic and hybrid organic-inorganic solar cells", December 1-6, 2013, Boston
177. AFOSR MURI Review Workshop on CO₂ reduction, December 9, 2013, San Diego
178. Department seminar, Department of Chemistry, Fudan University, Shanghai, China, Dec.12, 2013
179. Departmental Seminar, Department of Chemistry, ZheJiang University, Hanzhou, China, Dec. 13, 2013
180. 4th Asian Spectroscopy Conference, Singapore, December 15-18, 2013.
181. Departmental seminar, Department of Chemistry, National Singapore University, December 18, 2013.
182. Departmental seminar, Department of Chemistry, Xiamen University, China, December 20, 2013.

2014 (invitations accepted)

183. 61st annual Pacific Conference on Spectroscopy and Dynamics (formerly the Western Spectroscopy Association Conference), Asilomar Conference Center in Pacific Grove, California, Jan. 30 – Feb. 2, 2014.
184. Fusion Solar Fuel conference, Feb. 6-9, 2014, Cancun, Mexico.

185. "Symposium on Charge and Energy Transfer for Renewable Energy", APS meeting, Denver, March 2-7, 2014.
186. Department of Chemistry, Michigan State University, March 13, 2014.
187. Symposium on "Nanomaterials for Energy Capture, Conversion, and Storage", Inorganic Chemistry Division, Spring ACS meeting, Dallas, TX, March 16-20, 2014.
188. Symposium on "Physical Chemistry of Low Dimensional Nanomaterials", Physical Chemistry Division, Spring ACS meeting, Dallas, TX, March 16-20, 2014.
189. Symposium on "Nanostructured Materials for Solar Energy Conversion and Storage", Fuels and Energy Division, Spring ACS meeting, Dallas, TX, March 16-20, 2014.
190. Symposium on "Established and Emerging Nanocolloids: from Synthesis and Characterization to Applications", Spring 2014 European Materials Research Society Meeting, May 26-30, Lille, France.
- 191.