

## CURRICULUM VITAE

**Tianquan (Tim) Lian**

Department of Chemistry  
Vagelos Institute for Energy Science and Technology  
University of Pennsylvania  
231 South 34 Street  
Philadelphia, PA 19104-6323

**Title:** Professor of Chemistry

**PERSONAL:** Born 1967, US Citizen

### RESEARCH INTERESTS

Physical chemistry of interfaces, nanomaterials and solar energy conversion (Ultrafast dynamics in nanomaterials and at electrode/electrolyte interface; Interfacial electron transfer; Photovoltaic and photo-catalytic nanomaterials; Ultrafast, surface-enhanced, 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

- University of Pennsylvania, September 1, 2025 -
- Emory University
  - Professor: Sept. 2005 – August, 2025
  - William Henry Emerson Professor of Chemistry, Sept. 2008 – present
  - Winship Distinguished Research Professor of Chemistry, Sept. 2007- Aug. 2008
  - Associate professor: Sept. 2002 – Aug. 2005
  - Assistant professor: Aug. 1996 – Aug. 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 PennsylvaniaSeptember 1985 - July 1988, M. S. in Chemical Physics,
  - Advisor: Hongyuan Shen
  - Fujian Institute of Research on the Structure of Matter
  - Chinese Academy of Sciences
- Editor-in-chief, The Journal of Chemical Physics, AIP Publishing, 2019- present

- Editor, Chemical Physics, Elsevier Publishing, 2012- 2018
- Visiting Professor, Department of Chemistry, Xiamen University, 2008 – 2013
- Visiting Professor, Shanghai Institute of Ceramics, 2009-2014
- Visiting Professor, Dalian Institute of Chemical Physics, 2018-2019
- Distinguished Visiting Professor, Kyoto University, 2023

## **MEMBERSHIPS**

- American Chemical Society
- American Physical Society
- Electrochemical Society
- American Association for the Advancement of Science (AAAS)

## **AWARDS AND HONORS**

### **National awards**

- 1) NSF CAREER Award, 1998-2001
- 2) Alfred P. Sloan Fellowship, 2001-2003
- 3) Kavli Frontiers of Science Fellow, 2012-
- 4) American Physical Society fellow, 2015-
- 5) 2022 Award for Senior Experimental Physical Chemistry, Physical Chemistry Division, The American Chemical Society.
- 6) American Association for the Advancement of Science (AAAS) Fellow, 2024-

### **Emory Awards**

- 7) Winship Distinguished Research Professor, 2007-2008, Emory University
- 8) William Henry Emerson Professor of Chemistry, 2008-present
- 9) Albert E. Levy Scientific Research Award, Emory University, 2016.

### **Named Lectureships**

1. O'Malley Visiting Scholar, Department of Chemistry, Boston College, October, 2006
2. Brown & Williamson Distinguished guest speaker, Dept. of Chemistry, University of Louisville, Jan. 25, 2013.
3. "Molecular Science Frontier Lecture", Institute of Chemistry, Chinese Academy of Sciences, June 11, 2018, Peking, China
4. "Future Science and Technology Lecture", Technical Institute of Physics and Chemistry, July 4, 2018, Beijing, China.
5. "Physical Chemistry Chang-Ge Lecture", Department of Chemistry, Peking University, July 5, 2018, Beijing, China.
6. Bryce L. Crawford Memorial Lecture, Department of Chemistry, University of Minnesota, November 12, 2020, USA
7. Moses Gomberg Lecture, Department of Chemistry at the University of Michigan, March 17, 2025
8. "Samuel M. McElvain Academic Lecturer in Physical Chemistry Path", Department of Chemistry, University of Wisconsin–Madison, April 15, 2025

9. [O’Keeffe Lectureship](#), School of Molecular Sciences, Arizona State University, April 18, 2025
10. *Noyes Lectureship*, Department of Chemistry, UT Austin, Feb. 26, 2026
11. *Milton Kahn Lecture* at University of New Mexico, March 13, 2026.
- 12.

## RECENT PROFESSIONAL ACTIVITIES

- **Leadership role in research centers**
  - Technical coordinator, Center for Hybrid Approaches in Solar Energy to Liquid Fuels (CHASE), DOE Solar Fuels Hub., August 2020 -
  - Associate Director and Thrust 2 leader, Center for Soft Photoelectrochemical Systems (SPECS), DOE Energy Frontier Research Center, August 2022-
  - Director, Center for “Molecular-level understanding of structure and dynamics at Electrochemical interface”, AFOSR MURI program, August 2018 – July 2024.
- **Journal editorship**
  - Guest editor, J. Chem. Phys. Special issue on “Interfacial Electrochemistry”, 2017-2018.
  - Editor-in-chief, The Journal of Chemical Physics, AIP Publishing, 2019-
  - Editor, Chemical Physics, Elsevier Publishing, 2012- 2018
- **Journal advisory boards**
  - Advisory Editorial Board: Journal of Physical Chemistry (A, B, C and Lett.), 2014-2016
  - Advisory Editorial Board: Chemical Physics Letter, 2012- 2018
  - Advisory Editorial Board: Spectrochimica Acta A, 2012- 2018
  - Science China, Jan. 2008 – 2012
  -
- **External advisory board for research centers:**
  - NSF MRSEC, University of Wisconsin Madison, 2013-2017
  - LiSA Solar Fuels Hub, California Institute of Technology, October, 2020 -
- **AIP Publishing Committee:**
  - Journal editors conference committee, the American Institute of Physics Publishing – charged to provide strategies and advises for the AIP Board of Managers.  
Committee member: 09/2021-10/2025  
Committee chair: 09/2023-10/2025
  - Chair of a search committee for editor-in-chief for a new AIPP journal, 2021-2022.
- **American Physical Society:** Topical Group on Energy Research and Applications (APS GERA) Fellowship Selection Committee, 2022.
- **Founding member and organizing committee member of the Network for Southeast Ultrafast and Nonlinear Spectroscopy (NSUNS)**
- **Major review panels**
  - Korean Institute of Basic Science Center review panel, January, 2026.

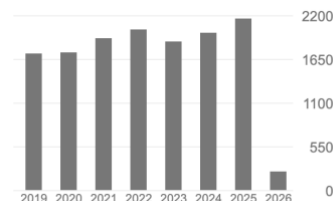
- **Symposia and conferences:**
  - Chair: “Time resolved infrared spectroscopy” Annual Meeting of the Optical Society of America (1997)
  - Co-chair: Symposium on “Physical chemistry of nanomaterials and interface-II”, SPIE meeting (2003)
  - Co-chair: “Charge Transfer in Semiconductor and Metal Nanostructures”, 205<sup>th</sup> Electrochemical Society Meeting, San Antonio, Texas (2004).
  - Co-Chair: “Dynamics and conductance in nanoparticles and assemblies”, 229<sup>th</sup> national meeting of the American Chemical Society, San Diego, CA, March, 2005
  - Co-Chair: Symposium on “Photovoltaics for the 21st Century (III)”, 208<sup>th</sup> Electrochemical Society Meeting, October 2005, Los Angeles, CA.
  - Co-Chair: Focus section on “Physical chemistry of nanoscale 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 235<sup>th</sup> 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", 246<sup>th</sup> ACS National Meeting, September 8-12, 2013, Indianapolis, Indiana.
  - Program Committee for the International Conference on Quantum Dots: 2016- present
  - International Advisory Committee for “International Conference on Time-Resolved Vibrational Spectroscopy”, 2016-present
  - Co-Chair, Symposium on “Fundamental processes in semiconductor nanocrystals”, NanoGe conference, Oct. 22-26, 2018, Torremolinos, Spain.
  - Co-Chair, Symposium on “Photocatalysts, Photoelectrochemical Cells and Solar Fuels 10”, 236 Electrochemical Society Meeting, Oct. 13-17, 2019, Atlanta, Georgia, USA
  - Co-Chair, Symposium I03: “Renewal Fuels via Artificial Photosynthesis and Heterocatalysis 6”, 239 Electrochemical Society Meeting (Virtual meeting), 2021
  - Co-Chair, Symposium I04: “Renewal Fuels via Artificial Photosynthesis and Heterocatalysis 7”, 241<sup>st</sup> ECS Meeting May 29-June 2, 2022 - Vancouver, BC, Canada.
  - Co-Chair, Symposium I02: Renewal Fuels via Artificial Photosynthesis and Heterocatalysis 9, 243ECS Meeting May 28-June 2, 2023 – Boston
  - Co-Chair, Symposium I02: Renewal Fuels via Artificial Photosynthesis and Heterocatalysis 10, 243ECS Meeting May 26-30, 2024 – San Francisco
  - Co-Chair, Symposium on Ultrafast and Nonlinear Spectroscopy, Southeastern American Chemical Society Meeting, October 26, 2023, Durham, North Carolina, USA
  - Co-Chair, Symposium on “Surfaces and Interfaces in Chemical and Biological Systems -- A symposium honoring Hai-Lung Dai”, Division of Colloid & Surface Chemistry (COLL), ACS Fall 2024 meeting, August 18 - 22, 2024, Denver, CO, USA.

- Co-Chair, Symposium on “Plasmon and Nanophotonics for Photo-(electro)chemical Reactions, Sensing, and Medical Therapy”, 248th ECS Meeting on October 12-16, 2025 in Chicago, USA.
- Co-Chair, Symposium on “Photocatalysts, Photoelectrochemical Cells, and Solar Fuels 15”, 248th ECS Meeting on October 12-16, 2025 in Chicago, USA.
- Co-Chair, Symposium on “Molecular level understanding of structure and dynamics at electrochemical interfaces”, **Fall 2025 ACS National Meeting**, Washington DC, August 17 to 21, 2025.
- Co-Chair, Symposium on “I02 - Renewable Fuels via Artificial Photosynthesis or Heterocatalysis 12”, 249th ECS Meeting on May 24-26, 2026 in Seattle, USA.
- Co-Chair, Symposium on “Spectroscopic Insights into Dynamics and Control in Quantum and Energy Materials”, **Fall 2026 ACS National Meeting**, August 23–27, 2026, in Chicago, IL.
- Co-Chair, Gordon Research Conference on “Plasmonically Powered Processes”, July, 2027.

## Citation Report, Google Scholar (04/01/2025)

<https://scholar.google.com/citations?user=Kv8AxG8AAAAJ&hl=en>

| Cited by  | VIEW ALL |            |
|-----------|----------|------------|
|           | All      | Since 2021 |
| Citations | 28728    | 10221      |
| h-index   | 92       | 55         |
| i10-index | 250      | 191        |



## 11 most cited papers

| <input type="checkbox"/> TITLE                                                                                                                                                                                                                                                                                                                                      | CITED BY | YEAR |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|------|
| <input type="checkbox"/> <b>Efficient hot-electron transfer by a plasmon-induced interfacial charge-transfer transition</b><br>K Wu, J Chen, JR McBride, T Lian<br>Science 349 (6248), 632-635                                                                                                                                                                      | 1243     | 2015 |
| <input type="checkbox"/> <b>Polyoxometalate water oxidation catalysts and the production of green fuel</b><br>H Lv, YV Geletii, C Zhao, JW Vickers, G Zhu, Z Luo, J Song, T Lian, ...<br>Chemical Society Reviews 41 (22), 7572-7589                                                                                                                                | 838      | 2012 |
| <input type="checkbox"/> <b>Ultrafast electron transfer dynamics from molecular adsorbates to semiconductor nanocrystalline thin films</b><br>JB Asbury, E Hao, Y Wang, HN Ghosh, T Lian<br>The Journal of Physical Chemistry B 105 (20), 4545-4557                                                                                                                 | 769      | 2001 |
| <input type="checkbox"/> <b>Phenyl-Conjugated Oligoene Sensitizers for TiO<sub>2</sub> Solar Cells</b><br>T Kitamura, M Ikeda, K Shigaki, T Inoue, NA Anderson, X Ai, T Lian, ...<br>Chemistry of Materials 16 (9), 1806-1812                                                                                                                                       | 703      | 2004 |
| <input type="checkbox"/> <b>Ultrafast electron transfer at the molecule-semiconductor nanoparticle interface</b><br>NA Anderson, T Lian<br>Annu. Rev. Phys. Chem. 56 (1), 491-519                                                                                                                                                                                   | 616      | 2005 |
| <input type="checkbox"/> <b>Ultrafast Interfacial Electron and Hole Transfer from CsPbBr<sub>3</sub> Perovskite Quantum Dots</b><br>K Wu, G Liang, Q Shang, Y Ren, D Kong, T Lian<br>Journal of the American Chemical Society 137 (40), 12792-12795                                                                                                                 | 608      | 2015 |
| <input type="checkbox"/> <b>Ultrafast charge separation and long-lived charge separated state in photocatalytic CdS–Pt nanorod heterostructures</b><br>K Wu, H Zhu, Z Liu, W Rodríguez-Córdoba, T Lian<br>Journal of the American Chemical Society 134 (25), 10337-10340                                                                                            | 580      | 2012 |
| <input type="checkbox"/> <b>Controlling charge separation and recombination rates in CdSe/ZnS type I core–shell quantum dots by shell thicknesses</b><br>H Zhu, N Song, T Lian<br>Journal of the American Chemical Society 132 (42), 15038-15045                                                                                                                    | 538      | 2010 |
| <input type="checkbox"/> <b>Femtosecond IR study of excited-state relaxation and electron-injection dynamics of Ru (dcbpy) 2 (NCS) 2 in solution and on nanocrystalline TiO<sub>2</sub> and Al<sub>2</sub>O<sub>3</sub> thin films</b><br>JB Asbury, RJ Ellingson, HN Ghosh, S Ferrere, AJ Nozik, T Lian<br>The Journal of Physical Chemistry B 103 (16), 3110-3119 | 521      | 1999 |
| <input type="checkbox"/> <b>Hole Removal Rate Limits Photodriven H<sub>2</sub> Generation Efficiency in CdS-Pt and CdSe/CdS-Pt Semiconductor Nanorod–Metal Tip Heterostructures</b><br>K Wu, Z Chen, H Lv, H Zhu, CL Hill, T Lian<br>Journal of the American Chemical Society 136 (21), 7708-7716                                                                   | 436      | 2014 |
| <input type="checkbox"/> <b>Homogeneous light-driven water oxidation catalyzed by a tetraruthenium complex with all inorganic ligands</b><br>YV Geletii, Z Huang, Y Hou, DG Musaev, T Lian, CL Hill<br>Journal of the American Chemical Society 131 (22), 7522-7523                                                                                                 | 424      | 2009 |

## 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

(\*invited reviews and book chapters)

#### 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  $\mu$ m TEM<sub>00</sub> 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 student 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. Owruksy, 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)<sub>2</sub>*, **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 TiO<sub>2</sub> 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)<sub>2</sub>(NCS)<sub>2</sub>] 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)<sub>6</sub><sup>4-</sup> and TiO<sub>2</sub> 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 TiO<sub>2</sub> 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 TiO<sub>2</sub> 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)<sub>2</sub>(NCS)<sub>2</sub> in Solution and on Nanocrystalline TiO<sub>2</sub> and Al<sub>2</sub>O<sub>3</sub> 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)<sub>2</sub>(NCS)<sub>2</sub> 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 TiO<sub>2</sub> Nanoparticles to Fe(III)(CN)<sub>6</sub><sup>3-</sup>: 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)<sub>3</sub>Cl(dcbpy) in solution and on nanocrystalline TiO<sub>2</sub> and ZrO<sub>2</sub> 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 TiO<sub>2</sub> 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)<sub>2</sub>*, **J. Am. Chem. Soc.**, **2000**, 122, 12870-12871.
44. \*H. N. Ghosh, J. B. Asbury, and T. Lian, *Ultrafast Electron Transfer Dynamics in Sensitized TiO<sub>2</sub> 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 21<sup>st</sup> 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 (invited 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 TiO<sub>2</sub> 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 SnO<sub>2</sub> 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 TiO<sub>2</sub> 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 SnO<sub>2</sub> 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 TiO<sub>2</sub> 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.
64. Neil Anderson, and Tianquan Lian, “Ultrafast electron injection from transition metal complexes into metal-oxide nanoparticles”, **Coordination chemistry review**, **2004**, 248, 1231-1246 (**Michael Gratzel Festschrift**)
65. Kitamura, Takayuki; Ikeda, Masaaki; Shigaki, Koichiro; Inoue, Teruhisa; Anderson, Neil A.; Ai, Xin; Lian, Tianquan; Yanagida, Shozo. “Phenyl-Conjugated Oligoene Sensitizers for TiO<sub>2</sub> Solar Cells”. **Chemistry of Materials**, **2004**, 16(9), 1806-1812.
66. Victor A. Lenchenkov, Chunxing She and Tianquan Lian, “Solvation induced vibrational peak shift of a Re bipyridyl complex in solution and at nanoporous ZrO<sub>2</sub>/liquid interface”, **J. Phys. Chem. B**, **2004**, 108, 16194-16200.
67. Xin Ai, Jianchang Guo, Neil A. Anderson and Tianquan Lian, “Ultrafast Electron Transfer from Ru Polypyridyl Complexes to Nb<sub>2</sub>O<sub>5</sub> Nanoporous Thin Films”, **J. Phys. Chem. B**, **2004**, 108(34), 12795-12803

## **2005**

68. Xin Ai, Neil A. Anderson, Jianchang Guo and Tianquan Lian, “Electron Injection Dynamics of Ru Polypyridyl Complexes on SnO<sub>2</sub> Nanocrystalline Thin Films” **J. Phys. Chem. B** **2005**, 109, 7088-94.
69. Guo, J.; She, C.; Lian, T. “Ultrafast Electron Transfer between Molecule Adsorbate and Antimony Doped Tin Oxide (ATO) Nanoparticles” **J. Phys. Chem. B**, **2005**, 109, 7095-7102.
70. Chunxing She, Neil A. Anderson, Jianchang Guo, Fang Liu, Wan-Hee Goh, Dai-Tao Chen, Debbie Mohler, Zhong-Qun Tian, Joseph T. Hupp, and Tianquan Lian, “pH dependent electron transfer from molecules to metal oxide nanocrystalline thin films”, **J. Phys. Chem. B**, **2005**, 109, 19345-19355.

71. Gaballah, Samir T.; Hussein, Yasser H. A.; Anderson, Neil; Lian, Tianquan T.; Netzel, Thomas L. "Comparison of Py.bul./dU.bul.- Charge Transfer State Dynamics in 5-(1-pyrenyl)-2'-deoxyuridine Nucleoside Conjugates with Amido-, Ethylenyl-, and Ethynyl Linkers." **J. Phys. Chem. A** (2005), 109, 10832-10845.
72. Hu JW, Zhang Y, Li HV, Liu Z, Ren B, Sun SG, Tian ZQ, Lian T "Synthesis of Au@Pd core-shell nanoparticles with controllable size and their application in surface-enhanced Raman spectroscopy" **Chem. Phys. Lett.** (2005) 408 (4-6): 354-359
73. Wanhee Goh, Jianchang Guo, Rui Yuan, Tianquan Lian, "Single molecule study of Rhodamine/ATO nanoparticle junctions", **Proceedings of the International Society for Optical Engineering**, (Physical Chemistry of Interfaces and Nanomaterials IV), Vol. 5929, (2005)
74. \*Neil Anderson and Tianquan Lian, "Ultrafast electron transfer at molecule semi-conductor nanoparticle interface" **Annual review of physical chemistry**, 2005, 56: 491-519.

## **2006**

75. Ai, Xin; Guo, Jianchang; Anderson, Neil A.; Lian, Tianquan. **Semiconductor-dependent interfacial electron transfer studied by ultrafast infrared spectroscopy.** Proceedings - Electrochemical Society (2006), 2004-22 (Electron Transfer in Nanomaterials), 38-48.
76. Joseph J. Shiang, Allwyn G. Cole, and Roseanne J. Sension, Kun Hang, Yuxiang Weng, Jenna S. Trommel, Luigi G. Marzilli and Tianquan Lian, "Ultrafast Excited State Dynamics in Vitamin B<sub>12</sub> and Related Cob(III)alamins", **J. Am. Chem. Soc.** (2006), 128(3), 801-808.
77. Yasser H. A. Hussein, Neil Anderson, Tianquan T. Lian, Ibrahim Abdou, Lucjan Strekowski, Victor A. Timoshchuk, Morteza M. Vaghefi, and Thomas L. Netzel, "Solvent and Linker Influences on AQ<sup>•-</sup>/dA<sup>•+</sup> Charge-Transfer State Energetics and Dynamics in Anthraquinonyl-Linker-Deoxyadenosine Conjugates", **J. Phys. Chem. A** (2006), 110(13), 4320-4328
78. Jianchang Guo, David Stockwell, Xin Ai, Chunxing She, Neil A. Anderson, Tianquan Lian, "Electron Transfer Dynamics from Ru Polypyridyl Complexes to In<sub>2</sub>O<sub>3</sub> Nanocrystalline Thin Films", **J. Phys. Chem. B**, 2006, 110(11), 5238-5244
79. Victor Lenchenkov, Chunxing She, Tianquan Lian "Vibrational Relaxation of CN stretch of Pseudo-halide Anions (OCN<sup>-</sup>, SCN<sup>-</sup> and SeCN<sup>-</sup>) in Polar Solvents", **J. Phys. Chem. B**, 2006, (2006), 110(40), 19990-19997 (**Charles Harris Festschrift**).
80. Xin Ai, Neil Anderson, Jianchang Guo, Janusz Kowalik, Laren M. Tolbert and Tianquan Lian, "Ultrafast Photoinduced Charge Separation Dynamics in Polythiophene/SnO<sub>2</sub> Nanocomposites", **J. Phys. Chem. B**, (2006), 110(50), 25496-25503 (**Arthur Nozik Festschrift**).
81. \*Xin Ai and Tianquan Lian, "Ultrafast photoinduced interfacial electron transfer dynamics in molecule-inorganic semiconductor nanocomposites", in **"Functional Nanomaterials"**, edited by Kurt E. Geckeler and Edward Rosenberg, American Scientific Publisher, 2006, P301-316.

## **2007**

82. Guo, Jianchang; She, Chunxing; Lian, Tianquan. "Effect of Insulating Oxide Overlayers on Electron Injection Dynamics in Dye-Sensitized Nanocrystalline Thin Films" **J. Phys. Chem. C** (2007), 111(25), 8979-8987. (**Kent Eisenthal Festschrift**)
83. She, Chunxing; Guo, Jianchang; Lian, Tianquan. "Comparison of Electron Injection Dynamics from Re-bipyridyl Complexes to TiO<sub>2</sub> Nanocrystalline Thin Films in Different Solvent Environments" **J. Phys. Chem. B** (2007), 111(24), 6903-6912. (**Norman Sutin Festschrift**)
84. She, Chunxing; Guo, Jianchang; Irle, Stephan; Morokuma, Keiji; Mohler, Debra L.; Zabri, Herve; Odobel, Fabrice; Youm, Kyoung-Tae; Liu, Fang; Hupp, Joseph T.; Lian, Tianquan. "Comparison of Interfacial Electron Transfer through Carboxylate and Phosphonate Anchoring Groups" **J. Phys. Chem. A** (2007), 111(29), 6832-6842. (**MingChang Lin Festschrift**).
85. Coralie Houarner-Rassin, Frédérique Chaignon, Chunxing She, Dave Stockwell, Errol Blart, Pierrick Buvat, Tianquan Lian and Fabrice Odobel, "Synthesis and photoelectrochemical properties

- of ruthenium bisterpyridine sensitizers functionalized with a thienyl phosphonic acid moiety", **J Photochemistry and photobiology, A chemistry** (2007) 193, 56.
86. Abdelaziz Boulesbaa, Abey Issac, Dave Stockwell, Zhuangqun Huang, Jier Huang, Jianchang Guo and Tianquan Lian "Ultrafast Charge Separation at CdS Quantum Dot/Rhodamine B Molecule Interface", **J. Am. Chem. Soc.** (2007) 129, 15132.
- 2008**
87. Jier Huang, David Stockwell, Abdelaziz Boulesbaa, Jianchang Guo and Tianquan Lian\* "Comparison of Electron Injection Kinetics from Rhodamine B to In<sub>2</sub>O<sub>3</sub>, SnO<sub>2</sub> and ZnO Nanocrystalline Thin Films" **J. Phys. Chem. C**, (2008), 112, 5203.
  88. Jianchang Guo, Chunxing She, Tianquan Lian, "Ultrafast electron transfer from conjugated polymers to Antimony Doped Tin Oxide (ATO) nanoparticles " **J. Phys. Chem. C**, (2008), 112, 4761.
  89. \*Xin Ai and Tianquna Lian, "Measurement of Charge-Separation Dynamics At The Molecule-Semiconductor Interface" Series on Photo-conversion of solar energy, Volume III, **Solar Photon Conversion In Nanostructured And Photoelectrochemical Systems** ed. M. D. Archer and A. J. Nozik, Imperial College Press, 2008, 633-659.
  90. Jier Huang, Dave Stockwell, Zhuangqun Huang, Debra L. Mohler, Tianquan Lian, " Photoinduced Ultrafast Electron Transfer from CdSe Quantum Dots to Re-bipyridyl Complexes", **J. Am. Chem. Soc.**, (2008) 130, 5682.
  91. Abey Issac, Shengye Jin and Tianquan Lian, "Intermittent Electron Transfer Activity from Single CdSe/ZnS QDs", **J. Am. Chem. Soc.**, (2008) 130, 11280.
  92. Jier Huang, Zhuangqun Huang, Shengye Jin, Tianquan Lian, "Exciton Dissociation in CdSe Quantum Dots by Hole Transfer to Phenothiazine", **J. Phys. Chem. C** (2008), 112, 19734.
- 2009**
93. Yurii V. Geletii, Zhuangqun Huang, Yu Hou, Djamaladdin G. Musaev, Tianquan Lian, and Craig L. Hill "Homogeneous Light-Driven Water Oxidation Catalyzed by an Organic-Structure-Free Tetra ruthenium Complex", **J. Am. Chem. Soc.**, (2009) 131(22), 7522-7523
  94. Shengye Jin and Tianquan Lian "Electron Transfer Dynamics from Single CdSe/ZnS Quantum Dots to TiO<sub>2</sub> Nanoparticles", **Nano Letters** (2009), 9, 2248.
  95. Robert C. Snoberger III, Tianquan Lian and Victor S. Batista "The Influence of Surface Hydration on the Interfacial Electron Transfer Dynamics from Rhodamine B into SnO<sub>2</sub>", SPIE proceeding, 2009, 7396, 739604.
- 2010**
96. Alexey L. Kaledin, Zhuangqun Huang, Yurii V. Geletii, Tianquan Lian, Craig L. Hill, and Djamaladdin G. Musaev, "Insights into Photoinduced Electron Transfer between [Ru(bpy)<sub>3</sub>]<sup>2+</sup> and S<sub>2</sub>O<sub>8</sub><sup>2-</sup> in Water: Computational and Experimental Studies", **J. Phys. Chem. A**, (2010), 114 (1), 73-80.
  97. Abdelaziz Boulesbaa, Zhuangqun Huang, David Wu, Tianquan Lian, "Competition between Energy and Electron Transfer from CdSe QDs to Adsorbed Rhodamine B", **J. Phys. Chem. C** (2010), 114, 962-969.
  98. Jin, Shengye; Song, Nianhui; Lian, Tianquan. "Suppressed Blinking Dynamics of Single QDs on ITO". **ACS Nano** (2010), 4(3), 1545-1552.
  99. Huang, Jier; Yang, Ye; Zhu, Haiming; Huang, Zhuangqun; Lian, Tianquan. Multiple exciton dissociation in quantum dots. **PMSE Preprints** (2010),
  100. Huang, Jier; Huang, Zhuangqun; Yang, Ye; Zhu, Haiming; Lian, Tianquan. Multiple Exciton Dissociation in CdSe Quantum Dots by Ultrafast Electron Transfer to Adsorbed Methylene Blue. **J. Am. Chem. Soc.** (2010), 132(13), 4858-4864.

101. Jin, Shengye; Snoeberger, Robert C., III; Issac, Abey; Stockwell, David; Batista, Victor S.; Lian, Tianquan. Single-Molecule Interfacial Electron Transfer in Donor-Bridge-Nanoparticle Acceptor Complexes. **J. Phys. Chem. B** (2010), 114, 14309-14319.
102. Stockwell, David; Yang, Ye; Huang, Jier; Anfuso, Chantelle; Huang, Zhuangqun; Lian, Tianquan. Comparison of Electron-Transfer Dynamics from Coumarin 343 to TiO<sub>2</sub>, SnO<sub>2</sub>, and ZnO Nanocrystalline Thin Films: Role of Interface-Bound Charge-Separated Pairs. **J. Phys. Chem. C** (2010), 114(14), 6560-6566.
103. Besson, Claire; Huang, Zhuangqun; Geletii, Yurii V.; Lense, Sheri; Hardcastle, Kenneth I.; Musaev, Djamaladdin G.; Lian, Tianquan; Proust, Anna; Hill, Craig L. Cs<sub>9</sub>[(.gamma.-PW10O36)2Ru4O5(OH)(H2O)4], a new all-inorganic, soluble catalyst for the efficient visible-light-driven oxidation of water. **Chem. Comm.** (Cambridge, United Kingdom) (2010), 46(16), 2784-2786.
104. Shengye Jin, Jung-Cheng Hsiang, Haiming Zhu, Nianhui Song, Robert M. Dickson and Tianquan Lian, "Correlated Single Quantum Dot Blinking and Interfacial Electron Transfer Dynamics", **Chem. Sci.** (2010), 1(4), 519-526.
105. Haiming Zhu, Nianhui Song, Tianquan Lian, "Controlling charge separation and recombination rates in CdSe/ZnS type I core-shell quantum dots by shell thicknesses", **J. Am. Chem. Soc.** (2010), 132(42), 15038-15045
106. Jie Song, Zhen Luo, Haiming Zhu, Zhuangqun Huang, Tianquan Lian, Alexey L. Kaledin, Djamaladdin G. Musaev, Sheri Lense, Kenneth I. Hardcastle, Craig L. Hill " Synthesis, structure, and characterization of two polyoxometalate–photosensitizer hybrid materials", **Inorganica Chimica Acta** (2010) 363, 4381–4386.

## **2011**

107. Nianhui Song, Haiming Zhu, Shengye Jin, Wei Zhan, and Tianquan Lian "Poisson-Distributed Electron-Transfer Dynamics from Single Quantum Dots to C60 Molecules", **ACS Nano** (2011), 5, 613-621
108. Huang, Zhuangqun; Luo, Zhen; Geletii, Yurii; Vickers, James; Yin, Qiushi; Wu, David; Hou, Yu; Ding, Yong; Song, Jie; Musaev, Djamaladdin; Hill, Craig; Lian, Tianquan, "Efficient Light-Driven Carbon-Free Cobalt-Based Molecular Catalyst for Water Oxidation" **J. Am. Chem. Soc.** (2011), 133, 2068-2071.
109. Geletii, Y. V.; Yin, Q.; Hou, Y.; Huang, Z.; Ma, H.; Song, J.; Besson, C.; Luo, Z.; Cao, R.; O'Halloran, K. P.; Zhu, G.; Zhao, C.; Vickers, J. W.; Ding, Y.; Mohebbi, S.; Kuznetsov, A. E.; Musaev, D. G.; Lian, T.; Hill, C. L. **Isr. J. Chem.** (2011), 51, 238.
110. Anfuso, C. L.; Snoeberger, R. C., III; Ricks, A. M.; Liu, W.; Xiao, D.; Batista, V. S.; Lian, T. Covalent Attachment of a Rhenium Bipyridyl CO<sub>2</sub> Reduction Catalyst to Rutile TiO<sub>2</sub>. **J. Am. Chem. Soc.** (2011), 133, 6922-6925.
111. Zhu, Haiming; Song, Nianhui; Lian, Tianquan, "Wave function engineering for ultrafast charge separation and slow charge recombination in type II core/shell quantum dots", **J. Am. Chem. Soc.** (2011), 133, 8762-8771.
112. Ye Yang, William Rodríguez-Córdoba, Tianquan Lian, " Ultrafast charge separation and recombination dynamics in lead sulfide quantum dot-methylene blue complexes probed by electron and hole intraband transitions", **J. Am. Chem. Soc.** (2011), 133, 9246–9249.
113. Haiming Zhu, Ye Yang, Nianhui Song, William Rodríguez-Cordoba, Tianquan Lian , "Wave Function Engineering to Control Charge Separation and Recombination Dynamics in QD-acceptor Complexes" **SPIE proceedings**, (2011) 8098(Physical Chemistry of Interfaces and Nanomaterials X), 8098, 809802/809801-809802/809808
114. Zhuangqun Huang, Yurii V. Geletii, David Wu, Chantelle L. Anfuso, Djamaladdin G. Musaev, Craig L. Hill, Tianquan Lian, "Interfacial charge transfer dynamics in TiO<sub>2</sub>-Sensitizer-Ru4POM photocatalytic systems for water oxidation", **SPIE proceedings**, (2011) 8109(Solar Hydrogen and Nanotechnology VI), 810903-810903-10.

115. Shengye Jin, Tianquan Lian, "Electron transfer dynamics of single quantum dots on the (110) surface of a rutile TiO<sub>2</sub> single crystal", **Science China: Chemistry**, (2011) 54, 1898-1902.
116. Nianhui Song, Haiming Zhu, Shengye Jin, Tianquan Lian, "Hole Transfer from Single Quantum Dots", **ACS Nano** (2011), 5, 8750-8759.
117. Chongchao Zhao, Zhuangqun Huang, William Rodríguez-Córdoba, Choon Sung Kambara, Kevin P. O'Halloran, Ken I. Hardcastle, Djamaladdin G. Musaev, Tianquan Lian, Craig L. Hill, "Synthesis and Characterization of a Metal-to-Polyoxometalate Charge Transfer Molecular Chromophore", **J. Am. Chem. Soc.** (2011) 133, 20134-20137

## **2012**

118. Zhu, H.; Song, N.; Rodriguez-Cordoba, W.; Lian, T. Wave Function Engineering for Efficient Extraction of up to Nineteen Electrons from One CdSe/CdS Quasi-Type II Quantum Dot. **J. Am. Chem. Soc.** **2012**, *134*, 4250-4257.
119. Zhu, H.; Song, N.; Lv, H.; Hill, C. L.; Lian, T. Near Unity Quantum Yield of Light-Driven Redox Mediator Reduction and Efficient H<sub>2</sub> Generation Using Colloidal Nanorod Heterostructures. **J. Am. Chem. Soc.** **2012**, *134*, 11701-11708.
120. \*Zhu, H.; Lian, T. Wavefunction engineering in quantum confined semiconductor nanoheterostructures for efficient charge separation and solar energy conversion. **Energy & Environmental Science** **2012**, *5*, 9406-9418.
121. Zhu, H.; Lian, T. Enhanced Multiple Exciton Dissociation from CdSe Quantum Rods: The Effect of Nanocrystal Shape. **J. Am. Chem. Soc.** **2012**, *134*, 11289-11297.
122. Yang, Y.; Rodriguez-Cordoba, W.; Xiang, X.; Lian, T. Strong Electronic Coupling and Ultrafast Electron Transfer between PbS Quantum Dots and TiO<sub>2</sub> Nanocrystalline Films. **Nano Lett.** **2012**, *12*, 303-309.
123. Yang, Y.; Rodriguez-Cordoba, W.; Lian, T. Multiple Exciton Generation and Dissociation in PbS Quantum Dot-Electron Acceptor Complexes. **Nano Lett.** **2012**, *12*, 4235-4241.
124. Wu, K.; Zhu, H.; Liu, Z.; Rodriguez-Cordoba, W.; Lian, T. Ultrafast Charge Separation and Long-Lived Charge Separated State in Photocatalytic CdS-Pt Nanorod Heterostructures. **J. Am. Chem. Soc.** **2012**, *134*, 10337-10340.
125. Lv, H.; Geletii, Y. V.; Zhao, C.; Vickers, J. W.; Zhu, G.; Luo, Z.; Song, J.; Lian, T.; Musaev, D. G.; Hill, C. L. Polyoxometalate water oxidation catalysts and the production of green fuel. **Chem. Soc. Rev.** **2012**, *41*, 7572-7589.
126. Kaledin, A. L.; Lian, T.; Hill, C. L.; Musaev, D. G. Structural Modification of TiO<sub>2</sub> Surfaces in Bulk Water and Binding Motifs of a Functionalized C<sub>60</sub> on TiO<sub>2</sub> Anatase and Rutile Surfaces in Vacuo and in Water: Molecular Dynamics Studies. **J. Phys. Chem. C** **2012**, *116*, 20937-20948.
127. Huang, Z., Lin, Y., Xiang, X., Rodriguez-Cordoba, W., McDonald, K. J., Hagen, K. S., Choi, K.-S., Brunschwig, B. S., Musaev, D. G., Hill, C. L., Wang, D. and Lian, T. In situ probe of photocarrier dynamics in water-splitting hematite ( $\alpha$ -Fe<sub>2</sub>O<sub>3</sub>) electrodes. **Energy Environ. Sci.** **2012**, *5*, 8923-8926.
128. Huang, Z.; Geletii, Y. V.; Musaev, D. G.; Hill, C. L.; Lian, T. Spectroscopic Studies of Light-driven Water Oxidation Catalyzed by Polyoxometalates. **Ind. Eng. Chem. Res.** **2012**, *51*, 11850-11859.
129. Hill, G. L., Lv, H., Song, J., Zhao, C., Geletii, Y. V., Zhu, G., Musaev, D., Vickers, J. W., Zhang, N., Luo, Z., Huang, Z. and Lian, T. Multi-electron-transfer catalysts needed for solar fuel production. **Prepr. Symp. - Am. Chem. Soc., Div. Fuel Chem.** **2012**, *57*, 33.
130. Burai, T. N.; Panay, A. J.; Zhu, H.; Lian, T.; Lutz, S. Light-Driven, Quantum Dot-Mediated Regeneration of FMN To Drive Reduction of Ketoisophorone by Old Yellow Enzyme. **ACS Catal.** **2012**, *2*, 667-670.
131. Anfuso, C. L.; Xiao, D.; Ricks, A. M.; Negre, C. F. A.; Batista, V. S.; Lian, T. Orientation of a Series of CO<sub>2</sub> Reduction Catalysts on Single Crystal TiO<sub>2</sub> Probed by Phase-Sensitive Vibrational

- Sum Frequency Generation Spectroscopy (PS-VSFG). *J. Phys. Chem. C* **2012**, 116(45), 24107-24114.
132. Anfuso, C. L.; Ricks, A. M.; Rodriguez-Cordoba, W.; Lian, T. Ultrafast Vibrational Relaxation Dynamics of a Rhenium Bipyridyl CO<sub>2</sub>-Reduction Catalyst at a Au Electrode Surface Probed by Time-Resolved Vibrational Sum Frequency Generation Spectroscopy. *J. Phys. Chem. C* **2012**, 116, 26377-26384.
- 2013**
133. Zhao, C.; Kambara, C. S.; Yang, Y.; Kaledin, A. L.; Musaev, D. G.; Lian, T.; Hill, C. L. Synthesis, Structures, and Photochemistry of Tricarbonyl Metal Polyoxoanion Complexes, [X<sub>2</sub>W<sub>2</sub>O<sub>7</sub>{M(CO)<sub>3</sub>}<sub>2</sub>]<sub>12</sub>- (X = Sb, Bi and M = Re, Mn). *Inorg. Chem.* **2013**, 52, 671-678.
  134. \*Zhu, H.; Yang, Y.; Lian, T. Multiexciton Annihilation and Dissociation in Quantum Confined Semiconductor Nanocrystals. *Acc. Chem. Res.* **2013**, 46, 1270-1279. DOI: 10.1021/ar300202d.
  135. Xiang, X.; Fielden, J.; Rodriguez-Cordoba, W.; Huang, Z.; Zhang, N.; Luo, Z.; Musaev, D. G.; Lian, T.; Hill, C. L. Electron Transfer Dynamics in Semiconductor-Chromophore-Polyoxometalate Catalyst Photoanodes. *J. Phys. Chem. C* **2013**, 117, 918-926.
  136. Song, N.; Zhu, H.; Liu, Z.; Huang, Z.; Wu, D.; Lian, T. Unraveling the Exciton Quenching Mechanism of Quantum Dots on Antimony-Doped SnO<sub>2</sub> Films by Transient Absorption and Single Dot Fluorescence Spectroscopy. *ACS Nano* **2013**, 7 (2), 1599-1608.
  137. Matt, B., Xiang, X., Kaledin, A. L., Han, N., Moussa, J., Amouri, H., Alves, S., Hill, C. L., Lian, T., Musaev, D. G., Izzet, G. and Proust, A. Long lived charge separation in iridium(iii)-photosensitized polyoxometalates: synthesis, photophysical and computational studies of organometallic-redox tunable oxide assemblies. *Chem. Sci.* **2013**, 4, 1737-1745.
  138. Allen M. Ricks, Chantelle L. Anfuso, William Rodríguez-Córdoba and Tianquan Lian, "Vibrational relaxation dynamics of catalysts on TiO<sub>2</sub> Rutile (1 1 0) single crystal surfaces and anatase nanoporous thin films", *Chem. Phys.* **2013**, 422, 264-271 (*special issue for Robin Hochstrasser*).
  139. Wu, K.; Song, N.; Liu, Z.; Zhu, H.; Rodriguez-Cordoba, W.; Lian, T. Interfacial Charge Separation and Recombination in InP and Quasi-Type II InP/CdS Core/Shell Quantum Dot-Molecular Acceptor Complexes. *J. Phys. Chem. A* (**2013**) , 117 (32), 7561-7570. (**Joel Bowman Festschrift**). DOI: 10.1021/jp402425w
  140. Kaifeng Wu, Zheng Liu, Haiming Zhu, and Tianquan Lian, "Exciton Annihilation and Dissociation Dynamics in Group II-V Cd<sub>3</sub>P<sub>2</sub> Quantum Dots" *J. Phys. Chem. A* (**2013**) , 117(29), 6362-6372 (**John C. Wright Festschrift**). DOI: 10.1021/jp402511m
  141. Ye Yang, Zheng Liu, and Tianquan, "Bulk Transport and Interfacial Transfer of Photogenerated Charge Carriers in Quantum Dot Solid Electrodes", *Nano Lett.* (**2013**), 13(8),3678-3683, DOI: 10.1021/nl401573x
  142. Zheng Liu, Allen M. Ricks, Haining Wang, Nianhui Song, Fengru Fan, Shengli Zou, and Tianquan Lian, "High-resolution imaging of electric field enhancement of a single silver nanowire using QD modified AFM tips", *JPC Lett.* (**2013**) 4, 2284-2291 DOI: 10.1021/jz401051s
  143. Haiming Zhu, Nianhui Song, and Tianquan Lian, "Charging of Quantum Dots by Sulfide Redox Electrolytes Reduces Electron Injection Efficiency in Quantum Dot Sensitized Solar Cells", *JACS* (**2013**) 135, 11461-4, DOI: 10.1021/ja405026x
  144. Kaifeng Wu, William Rodríguez-Córdoba, Zheng Liu, Haiming Zhu, and Tianquan Lian, "Beyond Band Alignment: Hole Localization Driven Formation of Three Spatially Separated Long-lived Exciton States in CdSe/CdS Quasi-type II Dot-in-rod Nanorods", *ACS Nano* (**2013**) 7(8),7173-7185, DOI: 10.1021/nn402597p

145. Kaifeng Wu, William E. Rodríguez-Córdoba, Ye Yang, and Tianquan Lian, "Plasmon-Induced Hot Electron Transfer from the Au Tip to CdS Rod in CdS-Au Nanoheterostructures", *Nano Lett.* (2013), 13(11), 5255-5263. DOI: 10.1021/nl402730m
146. Zheng Liu, Haiming Zhu, Nianhui Song, and Tianquan Lian, "Probing Spatially Dependent Photoinduced Charge Transfer Dynamics to TiO<sub>2</sub> Nanoparticles Using Single Quantum Dot Modified AFM Tips", *Nano Lett.* (2013), 13(11), 5563-5569. DOI: 10.1021/nl403181k
147. C. Zhao, W. Rodriguez-Cordoba, A. L. Kaledin, Y. Yang, Y. V. Geletii, T. Lian, D. G. Musaev and C. L. Hill, "An Inorganic Chromophore Based on a Molecular Oxide Supported Metal Carbonyl Cluster: [P<sub>2</sub>W<sub>17</sub>O<sub>61</sub>{Re(CO)<sub>3</sub>}{ORb(H<sub>2</sub>O)}(μ<sub>3</sub>-OH)]<sup>9-</sup>", *Inorg. Chem.* (2013), ASAP. DOI: 10.1021/ic4018823.
148. Hongjin Lv, Jie Song, Haiming Zhu, Yurii V Geletii, John Bacsá, Chongchao Zhao, Tianquan Lian, Djamaladdin G Musaev, Craig L Hill, "Visible-light-driven hydrogen evolution from water using a noble-metal-free polyoxometalate catalyst", *J. Catalysis* (2013), 307, 48-54.

## 2014

149. Ye Yang, Tianquan Lian, "Multiple exciton dissociation and hot electron extraction by ultrafast interfacial electron transfer from PbS QDs", *Coord. Chem. Rev.* (2014), 263, 229-238.
150. Haiming Zhu, Ye Yang, Kim Hyeon-Deuk, Marco Califano, Nianhui Song, Youwei Wang, Wenqing Zhang, Oleg V Prezhdo, Tianquan Lian, "Auger-Assisted Electron Transfer from Photoexcited Semiconductor Quantum Dots". *Nano Letters* (2014), 14(3), 1263-1269. DOI: 10.1021/nl4041687.
151. Tao Jiang, Chunfu Xu, Yang Liu, Zheng Liu, Joseph S Wall, Xiaobing Zuo, Tianquan Lian, Khalid Salaita, Chaoying Ni, Darrin Pochan, Vincent P Conticello, "Structurally Defined Nanoscale Sheets from Self-Assembly of Collagen-Mimetic Peptides", *J. AM. Chem. Soc.* (2014), 136, 4300-4308.
152. Kaifeng Wu, Zheyuan Chen, Hongjin Lv, Haiming Zhu, Craig L Hill, Tianquan Lian, "Hole Removal Rate Limits Photo-driven H<sub>2</sub> Generation Efficiency in CdS-Pt and CdSe/CdS-Pt Semiconductor Nanorod-metal tip Heterostructures", *J. AM. Chem. Soc.* (2014), 136, 7708-7716, DOI: 10.1021/ja5023893.
153. Haiming Zhu, Zheyuan Chen, Kaifeng Wu, and Tianquan Lian, Wavelength Dependent Efficient Photoreduction of Redox Mediators Using Type II ZnSe/CdS Nanorod Heterostructures", *Chem. Sci.* (2014), 5, 3905-3914. DOI: 10.1039/C4SC01549E
154. Kaifeng Wu, William Rodríguez-Córdoba and Tinaquan Lian, "Exciton Localization and Dissociation Dynamics in CdS and CdS-Pt Quantum Confined Nanorods: Effect of Non-uniform Rod Diameters", *J. Phys. Chem. B* (2014), 118, 14062-14069 (DOI: 10.1021/jp504703)
155. Elliot N Glass, John Fielden, Alexey L Kaledin, Djamaladdin G Musaev, Tianquan Lian, Craig L Hill, "Extending Metal-to-Polyoxometalate Charge Transfer Lifetimes: The Effect of Heterometal Location", *Chemistry a Europe Journal* (2014), 20, 4297-4307.
156. Alexey Leonid Kaledin, Tianquan Lian, Craig L Hill, Djamaladdin G Musaev, "An infinite order discrete variable representation of an effective mass Hamiltonian: Application to exciton wavefunctions in quantum confined nanostructures", *J. Chem. Theor. Comp.* (2014), 10, 3409-3416.
157. Chongchao Zhao, Elliot N Glass, Bryant Chica, Djamaladdin G Musaev, Jordan M Sumliner, R Brian Dyer, Tianquan Lian, Craig L Hill, "All-inorganic Networks and Tetramer based on Tin (II)-containing Polyoxometalates: Tuning Structural and Spectral Properties with Lone Pairs", *J. Am. Chem. Soc.* (2014), 136, 12085-12091
158. Lucas A Lane, Andrew M Smith, Tianquan Lian, Shuming Nie, "Compact and Blinking-Suppressed Quantum Dots for Single-Particle Tracking in Live Cells", *J. Phys. Chem. B* (2014), 118, 14140-14147, (DOI: 10.1021/jp5064325).
159. Hongjin Lv, Weiwei Guo, Kaifeng Wu, Zheyuan Chen, John Bacsá, Djamaladdin G Musaev, Yurii V Geletii, Sarah M Lauinger, Tianquan Lian, Craig L Hill, "A Noble-Metal-Free, Tetra-nickel

Polyoxotungstate Catalyst for Efficient Photocatalytic Hydrogen Evolution”, *J. Am. Chem. Soc.* (2014), 136, 14015-14018 (DOI: 10.1021/ja5084078).

## 2015

160. Jing Gu, Yong Yan, Brian J Helbig, Zhuangqun Huang, Tianquan Lian, Russell H Schmehl, “The influence of ligand localized excited states on the photophysics of second row and third row transition metal terpyridyl complexes: Recent examples and a case study”, *Coord. Chem. Rev.* (2015), 282, 100-109, doi:10.1016/j.ccr.2014.06.028
161. Kaifeng Wu, Qiuyang Li, Yongling Du, Zheyuan Chen, Tianquan Lian, “Ultrafast exciton quenching by energy and electron transfer in colloidal CdSe nanosheet–Pt heterostructures”, *Chem. Sci.* (2015), 6, 1049-1054.
162. Kaifeng Wu, Qiuyang Li, Yanyan Jia, James R. McBride, Zhao-Xiong Xie, Tianquan Lian, “Efficient and Ultrafast Formation of Long-Lived Charge-Transfer Exciton State in Atomically Thin Cadmium Selenide/Cadmium Telluride Type-II Heteronanoseeds”, *ACS Nano* (2015), 9, 961-968 DOI: 10.1021/nn506796m.
163. Kaifeng Wu, Haiming Zhu, Tianquan Lian, “Ultrafast Exciton Dynamics and Light-driven H<sub>2</sub> Evolution in Colloidal Semiconductor Nanorods and Pt-tipped Nanorods”, *Acc. Chem. Res.* (2015), 48, 851-859. DOI: 10.1021/ar500398g.
164. Alexey L. Kaledin, Tianquan Lian, Craig L. Hill, and Djamaladdin G. Musaev, “A Hybrid Quantum Mechanical Approach: Intimate Details of Electron Transfer Between Type I CdSe/ZnS Quantum Dots and an Anthraquinone Molecule”, *J. Phys. Chem. B* (2015), 119, 7651-58 (Marshall Newton and John Miller Festschrift).
165. Kaifeng Wu, Lawrence J Hill, Jinqian Chen, James R McBride, Nicholas G Pavlopoulos, Nathaniel E Richey, Jeffrey Pyun, Tianquan Lian, “Universal Length-Dependence of Rod-to-Seed Exciton Localization Efficiency in Type I and Quasi Type II CdSe@ CdS Nanorods”, *ACS Nano* (2015), 9, 4591-4599, DOI: 10.1021/acsnano.5b01245.
166. Kaifeng Wu, Yongling Du, Hua Tang, Zheyuan Chen, Tianquan Lian, “Efficient Extraction of Trapped Holes from Colloidal CdS Nanorods”, *J. Am. Chem. Soc.* (2015), 137 (32), pp 10224–10230, DOI: 10.1021/jacs.5b04564
167. Kaifeng Wu, Jinqian Chen, James R. McBride, Tianquan Lian, “Efficient hot-electron transfer by a plasmon-induced interfacial charge-transfer transition”, *Science* (2015), 349 (6248): 632 DOI: 10.1126/science.aac5443
168. Sarah M Lauinger, Jordan M Sumliner, Qiushi Yin, Zihao Xu, Guijie Liang, Elliot N Glass, Tianquan Lian, Craig L Hill, “ High Stability of Immobilized Polyoxometalates on TiO<sub>2</sub> Nanoparticles and Nanoporous Films for Robust, Light-Induced Water Oxidation”, *Chem. Mater.* (2015), 27, 5886–5891, DOI: 10.1021/acs.chemmater.5b01248
169. John Fielden, Jordan M. Sumliner, Nannan Han, Yurii V. Geletii, Xu Xiang, Djamaladdin G. Musaev, Tianquan Lian and Craig L. Hill, “Water splitting with polyoxometalate-treated photoanodes: enhancing performance through sensitizer design”, *Chem. Sci.*, 2015, 6, 5531-5543. DOI: 10.1039/C5SC01439E (Edge Article)
170. Hongjin Lv, Yingnan Chi, Jan van Leusen, Paul Kögerler, Zheyuan Chen, John Bacsá, Yurii V Geletii, Weiwei Guo, Tianquan Lian, Craig L Hill, “[{Ni<sub>4</sub>(OH)<sub>3</sub>AsO<sub>4</sub>}<sub>4</sub>(B-α-PW<sub>9</sub>O<sub>34</sub>)<sub>4</sub>]<sub>28</sub>—: A New Polyoxometalate Structural Family with Catalytic Hydrogen Evolution Activity”, *Chemistry-A European Journal* (2015), 21, 17363-17370.
171. Kaifeng Wu, Guijie Liang, Qiongyi Shang, Yueping Ren, Degui Kong, and Tianquan Lian, “Ultrafast Interfacial Electron and Hole Transfer from CsPbBr<sub>3</sub> Perovskite Quantum Dots”, *J. Am. Chem. Soc.* (2015), 137 (40), p 12792–12795, DOI: 10.1021/jacs.5b08520

## 2016

172. Kaifeng Wu, Guijie Liang, Degui Kong, Jinqun Chen, Zheyuan Chen, Xinhe Shan, James R. McBride, and Tianquan Lian, "Quasi-Type II CuInS<sub>2</sub>/CdS Core/Shell Quantum Dots", **Chem. Sci.** (2016), 7, 1238-1244, DOI: 10.1039/c5sc03715h.
173. Youwei Wang, Yubo Zhang, Haiming Zhu, Jianjun Liu, Tianquan Lian and Wenqing Zhang, "Geometry strategy for engineering the recombination possibility of excitons in nanowires", **Nanoscale** (2016), 8, 7318
174. Yanyan Jia, Jinqun Chen, Kaifeng Wu, Alex Kaledin, Jamal Musaev, Zhaoxiong Xie, and Tianquan Lian, "Enhancing Photo-reduction Quantum Efficiency Using Quasi-Type II Core/Shell Quantum Dots", **Chem. Sci.** (2016), 7, 4125; DOI: 10.1039/C6SC00192K.
175. Weiwei Guo, Hongjin Lv, Zheyuan Chen, Kevin P. Sullivan, Sarah M. Lauinger, Yingnan Chi, Jordan M. Sumliner, Tianquan Lian and Craig L. Hill, "Self-assembly of polyoxometalates, Pt nanoparticles and metal-organic frameworks into a hybrid material for synergistic hydrogen evolution", **J. Materials Chem.** (2016), 4, 5952
176. Kaifeng Wu, Tianqun Lian, "Quantum Confined Colloidal Nanorod Heterostructures for Solar-to-Fuel Conversion", **Chem. Soc. Rev.** (2016), 45, 3781-3810 (DOI: 10.1039/C5CS00472A)
177. Jinqun Chen, Kaifeng Wu, Benjamin Rudshiteyn, Yanyan Jia, Wendu Ding, Zhao-xiong Xie, Victor S. Batista, and Tianquan Lian, "Ultrafast Photo-induced Interfacial Proton Coupled Electron Transfer from CdSe Quantum Dots to 4,4'-bipyridine", **JACS** (2016), 138, 884-892.
178. Melissa L. Clark, Benjamin Rudshiteyn, Aimin Ge, Steven A. Chabolla, Charles W. Machan, Brian T. Psciuk, Jia Song, Gabriele Canzi, Tianquan Lian, Victor S. Batista, and Clifford P. Kubiak, "Orientation of Cyano-Substituted Bipyridine Re(I) fac-Tricarbonyl Electrocatalysts Bound to Conducting Au Surfaces", **J. Phys. Chem. C** (2016), 120 (3), pp 1657–1665, DOI: 10.1021/acs.jpcc.5b10912
179. Qiuyang Li, Kaifeng Wu, Jinqun Chen, Zheyuan Chen, James R. McBride, Tianquan Lian, Qiuyang Li, "Size-Independent Exciton Localization Efficiency in Colloidal CdSe/CdS Core/crown Nanosheet Type-I Heterostructures", **ACS Nano** (2016) 10, 3843, DOI: 10.1021/acsnano.6b00787.
180. Elliot N. Glass, John Fielden, Zhuangqun Huang, Xu Xiang, Djamaladdin G. Musaev, Tianquan Lian, and Craig L. Hill, "Transition Metal Substitution Effects on Metal-to-Polyoxometalate Charge Transfer", **Inorg. Chem.** (2016), 55, 4308.
181. Ye Yang, Kaifeng Wu, A. Shabaev, Al. L. Efros, Tianquan Lian, and Matthew C. Beard, "Direct Observation of Photo-Excited Hole Localization in CdSe Nanorods", **ACS Energy Letters**, (2016) 1, 76-81.
182. Haiming Zhu, Ye Yang, Kaifeng Wu and Tianquan Lian, "Charge Transfer Dynamics from Photoexcited Semiconductor Quantum Dots", **Annu. Rev. Phys. Chem.** (2016) 67:11.11-11.23.
183. Aimin Ge, Benjamin Rudshiteyn, Brian T Psciuk, Dequan Xiao, Jia Song, Chantelle Lindsay Anfusio, Allen M Ricks, Victor S Batista, Tianquan Lian, "Surface-Induced Anisotropic Binding of a Rhenium CO<sub>2</sub>-Reduction Catalyst on Rutile TiO<sub>2</sub> (110) Surfaces", **J. Phys. Chem. C** (2016), DOI: 10.1021/acs.jpcc.6b03165
184. Ye Yang, PhD; Kaifeng Wu; Zheyuan Chen, PhD; Ban-Seok Jeong; Tianquan Lian, "Competition of Branch-to-core Exciton Localization and Interfacial Electron Transfer in CdSe Tetrapods", **Chem. Phys.** (2016) 47, 32-38, doi:10.1016/j.chemphys.2015.08.011 (Special issue on Quantum Dots).
185. Mingming Wang, Jinqun Chen, Tianquan Lian, Wei Zhan, "Mimicking Photosynthesis with Supercomplexed Lipid Nanoassemblies: Design, Performance, and Enhancement Role of Cholesterol", **Langmuir** (2016), 32, 7326-38.
186. Wenming Tian, Rongrong Cui, Jing Leng, Junxue Liu, Yajuan Li, Chunyi Zhao, Jun Zhang, Weiqiao Deng, Tianquan Lian,\* Shengye Jin\* "Heterogeneous Carrier Extraction Limits Perovskite Solar Cell Performance", **Angewandte Chemie** (2016) 128, 13261-13265
187. Elizabeth L. Magnotti, Spencer A. Hughes, Lillian Hough, Rebecca S. Dillard, Arshad Karumbamkandathil, Tianquan Lian, Joseph S. Wall, Xiaobing Zuo, Elizabeth R. Wright, Vincent

P. Conticello, "Self-assembly of an  $\alpha$ -Helical Peptide into a Crystalline Two-Dimensional Nanoporous Framework", *J. Am. Chem. Soc.* (2016), 138, 16274-16282

## 2017

188. Qiuyang Li, Boyang Zhou, James R. McBride, Tianquan Lian, "Efficient Diffusive Transport of Hot and Cold Excitons in Colloidal Type II CdSe/CdTe Core/Crown Quantum Well Heterostructures", *ACS Energy Letters* (2017), 2, 174-181.
189. Qiuyang Li, Zihao Xu, James R. McBride, Tianquan Lian, "Low Threshold Multiexciton Optical Gain in Colloidal CdSe/CdTe Core/Crown Type-II Nanoplatelet Heterostructures", *ACS Nano* (2017), 11, 2545
190. Burak Guzelturk, Yusuf Kelestemur, Murat Olutas, Qiuyang Li, Tianquan Lian and Hilmi Volkan Demir, "High-Efficiency Optical Gain in Type-II Semiconductor Nanocrystals of Alloyed Colloidal Quantum Wells", *J. Phys. Chem. Letter* (2017), 8, 5317-5324.
191. Sooho Lee, Yimeng Wang, Yawei Liu, Dongkyu Lee, Kangha Lee, Doh C. Lee, Tianquan Lian, "Exciton Dynamics within Cation-exchanged CdSe/PbSe Nanorods: The Role of Defects", *Chem. Phys. Lett.* (2017), 683, 342-346 (Invited submission for Special Issue for Ahmed Zewail).
192. Bryant Chica, Chang-Hao Wu, Yuhgene Liu, Michael W.W. Adams, Tianquan Lian, and R. Brian Dyer, "Balancing electron transfer rate and driving force for efficient photocatalytic hydrogen production in CdSe/CdS nanorod-[NiFe] hydrogenase assemblies" , *Ene. Env. Sci.* (2017), 10, 2245.
193. Nicholas G. Pavlopoulos, Yawei Liu, Jeffrey T. Dubose, Nicola Pinna, Marc-Georg Willinger, Kookheon Char, Tianquan Lian, and Jeffrey Pyun, "Type I vs Type II Modulation in CdSe@CdS Tetrapods: Ramifications for Noble Metal Tipping", *CrystEngComm* (2017), 19, 6443-6453.
194. Qiuyang Liu, Tianquan Lian, "Area and Thickness Dependent Bi-Exciton Auger Recombination in Colloidal CdSe Nanoplatelets: Breaking the Universal Volume Scaling Law", *Nano Letters* (2017), 11, 2545-2553.
195. Aimin Ge, Pablo E. Videla, Gwendolynne L. Lee, Benjamin Rudsteyn, Jia Song, Clifford P. Kubiak, Victor S. Batista, Tianquan Lian "Interfacial Structure and Electric Field Probed by in situ Electrochemical Vibrational Stark Effect Spectroscopy and Computational Modeling", *J. Phys. Chem. C* (2017), 121, 18674-82. DOI: 10.1021/acs.jpcc.7b05563.
196. Z Huang, Z Xu, M Mahboub, X Li, J Taylor, H Harman, T Lian, ML Tang, "PbS/CdS Core-Shell Quantum Dots Suppress Charge Transfer and Enhance Triplet Transfer", *Angew. Chemie, Inter. Ed.* (2017), 129(52), p16810-16814, DOI: 10.1002/anie.201710224

## 2018

197. Qiuyang Li, Tianquan Lian, "A model for optical gain in colloidal nanoplatelets", *Chem. Sci.* (2018), 9, 728-734; DOI: 10.1039/C7SC04294A (Edge Article), Advance Article
198. Sullivan KP, Yin Q, Collins-Wildman DL, Tao M, Geletii YV, Musaev DG, Lian T, Hill CL. "Multi-tasking POM Systems", *Front Chem.* (2018), 6:365. doi: 10.3389/fchem.2018.00365.
199. Ge, Aimin; Rudsteyn, Benjamin; Zhu, Jingyi; Maurer, Reinhard; Batista, Victor; Lian, Tianquan. "Electron-Hole-Pair-Induced Vibrational Energy Relaxation of Rhenium Catalysts on Gold Surfaces", *J. Phys. Chem. Lett.* (2018), 9, 406-412. DOI: 10.1021/acs.jpcclett.7b02885.
200. Mohammad Taghinejad, Hossein Taghinejad, Zihao Xu, Yawei Liu, Sean P. Rodrigues, Kyu-Tae Lee, Tianquan Lian, Ali Adibi, and Wenshan Cai, "Hot-Electron Assisted Femtosecond All-Optical Modulation in Plasmonics", *Advanced Materials* (2018), 30, 1704915; DOI: 10.1002/adma.201704915
201. Qiuyang Li, Tianquan Lian, "Exciton dissociation dynamics and light-driven H<sub>2</sub> generation in colloidal 2D cadmium chalcogenide nanoplatelet heterostructures", *Nano Res.* (2018), 1-19; <https://doi.org/10.1007/s12274-018-2024-x>

202. Aimin Ge, Pablo E. Videla, Benjamin Rudshiteyn, Qiliang Liu, Victor S. Batista, and Tianquan Lian, "Dopant-Dependent SFG Response of Rhenium CO<sub>2</sub> Reduction Catalysts Chemisorbed on SrTiO<sub>3</sub> (100) Single Crystals", *J. Phys. Chem. C* (2018), ASAP, DOI: 10.1021/acs.jpcc.8b01123
203. Degui Kong, Yanyan Jia, Yueping Ren, Zhaoxiong Xie, Kaifeng Wu, and Tianquan Lian, "Shell Thickness Dependent Bi-exciton Lifetime in Type I and Quasi-type II CdSe@CdS Core/Shell Quantum Dots", *J. Phys. Chem. C* (2018), 122, 25, 14091-98; DOI: 10.1021/acs.jpcc.8b01234
204. Jia Song, Aimin Ge, Brandon Piercy, Mark D Losego, Tianquan Lian, "Effects of Al<sub>2</sub>O<sub>3</sub> Atomic Layer Deposition on Interfacial Structure and Electron Transfer Dynamics at Re-Bipyridyl Complex/TiO<sub>2</sub> Interfaces", *Chem. Phys.* (2018) 512, 68-74; <https://doi.org/10.1016/j.chemphys.2018.03.033>
205. Fengjiao Zhao, Qiuyang Li, Keli Han, and Tianquan Lian, "Mechanism of Efficient Viologen Radical Generation by Ultrafast Electron Transfer from CdS Quantum Dots", *J. Phys. Chem. C* (2018), 122, 17136-42; DOI: 10.1021/acs.jpcc.8b06551.
206. Kaledin, Alexey; Kong, Degui; Wu, Kaifeng; Lian, Tianquan; Musaev, Djamaladdin, "Quantum Confinement Theory of Auger-Assisted Biexciton Recombination Dynamics in Type-I and Quasi Type-II Quantum Dots", *J. Phys. Chem. C* (2018), 122, 18742-50.
207. Mohammad Taghinejad, Hossein Taghinejad, Zihao Xu, Kyu-Tae Lee, Sean P. Rodrigues, Jiahao Yan, Ali Adibi, Tianquan Lian, and Wenshan Cai, "Ultrafast Control of Phase and Polarization of Light Expedited by Hot Electrons", *Nano Lett* (2018), 18, 5544-51 (DOI: 10.1021/acs.nanolett.8b01946).
208. Qiuyang Li, Fengjiao Zhao, Chen Qu, Qiongyi Shang, Zihao Xu, Li Yu, Tianquan Lian, "2D Morphology Enhances Light-driven H<sub>2</sub> Generation Efficiency in CdS Nanoplatelet-Pt Heterostructures", *J. Am. Chem. Soc.* (2018), 140, 11726-11734; 10.1021/jacs.8b06100
209. Taghinejad, Mohammad; Taghinejad, Hossein; Malak, Sidney; Moradinejad, Hesam; Xu, Zihao; Liu, Yawei; Woods, Eric; Eftekhari, Ali ; Lian, Tianquan; Tsukruk, Vladimir; Adibi, Ali, "Sharp and Tunable Crystal/Fano-Type Resonances Enabled by Out-of-Plane Dipolar Coupling in Plasmonic Nanopatch Arrays", *Annalen der Physik* (2018), 530, 1700395; <https://doi.org/10.1002/andp.201700395>
210. Huang, Yiming; Xu, Zihao; Jin, Shijian; Li, Chenyang; Warncke, Kurt; Evangelista, Francesco; Lian, Tianquan; Egap, Eilaf "Conjugated Oligomers with Stable Radical Substituents: Synthesis, Single Crystal Structures, Electronic Structure and Excited State Dynamics", *Chem. Mater.* (2018), 30, 7840-51, DOI: 10.1021/acs.chemmater.8b03366
211. Melissa L. Clark, Aimin Ge, Pablo E. Videla, Benjamin Rudshiteyn, Christopher J. Miller, Jia Song, Victor S. Batista, Tianquan Lian, and Clifford P. Kubiak, "CO<sub>2</sub> Reduction Catalysts on Gold Electrode Surfaces Influenced by Large Electric Field", *J. Am. Chem. Soc.* (2018), 140, 17643-17655, DOI 10.1021/jacs.8b09852

## 2019

212. AL Kaledin, CL Hill, T Lian, DG Musaev A bulk adjusted linear combination of atomic orbitals (BA-LCAO) approach for nanoparticles, *Journal of Computational Chemistry* (2019), 40, 212-22; <https://doi.org/10.1002/jcc.25373>
213. Qiuyang Li, Tianquan Lian, "Ultrafast Charge Separation in Two-Dimensional CsPbBr<sub>3</sub> Perovskite Nanoplatelets", *J. Phys. Chem. Lett* (2019), 10, 566-573. DOI: 10.1021/acs.jpcclett.8b03610
214. T. Lian, MTM Koper, K Reuter, JE Subotnik, "Special Topic on Interfacial Electrochemistry and Photo (electro) catalysis", *J. Chem. Phys.* (2019), 150 (4), 041401.
215. Qiuyang Li, Richard D. Schaller, Tianquan Lian, "Reducing Optical Gain Threshold in Two-Dimensional CdSe Nanoplatelets by Giant Oscillator Strength Transition Effect", *J. Phys. Chem. Lett.* (2019), 10, 1624-32. DOI: 10.1021/acs.jpcclett.9b00759
216. Tianquan Lian, "Leading JCP into the future", *J. Chem. Phys.* (2019), 150, 010401.

217. Alexey L Kaledin, Craig L Hill, Tianquan Lian, Djamaladdin G Musaev, "Modulating electronic coupling at the quantum dot/molecule interface by wavefunction engineering", *J. Chem. Phys.* (2019), 150, 124704.
218. Aimin Ge, Benjamin Rudshiteyn, Pablo E. Videla, Christopher J. Miller, Clifford P. Kubiak, Victor S. Batista, and Tianquan Lian, "Heterogenized Molecular Catalysts: Vibrational Sum-Frequency Spectroscopic, Electrochemical, and Theoretical Investigations", *Acc. Chem. Res.* (2019). 52, 1289-1300 (DOI: 10.1021/acs.accounts.9b00001)
219. Zihao Xu, Tao Jin, Yiming Huang, Karimulla Mulla, Francesco A. Evangelista, Eilaf Egap, Tianquan Lian, "Direct Triplet Sensitization of Oligothiophene by Quantum Dots", *Chem. Sci.* (2019), 10, 6120. DOI: [10.1039/C9SC01648A](https://doi.org/10.1039/C9SC01648A)
220. Zhiyuan Huang, Zihao Xu, Melika Mahboub, Zhiming Liang, Paulina Jaimes, Kenneth R. Graham, Ming L. Tang, and Tianquan Lian, "Enhanced near-infrared-to-visible upconversion by synthetic control of PbS nanocrystal triplet photosensitizers", *J. Am. Chem. Soc.* (2019), 141, 9769-72 (<https://doi.org/10.1021/jacs.9b03385>).
221. Maxim R. Shcherbakov, Robert Lemasters, Zhiyuan Fan, Jia Song, Tianquan Lian, Hayk Harutyunyan, Gennady Shvets, "Time-variant metasurfaces enable tunable spectral bands of negative extinction", *Optica* (2019) 11, 1441-1442, <https://doi.org/10.1364/OPTICA.6.001441>.
222. Li, Qiuyang; Lian, Tianquan "Exciton Spatial Coherence and Optical Gain in Colloidal Two-Dimensional Cadmium Chalcogenide Nanoplatelets", *Account of Chemical Research*, (2019), 52, 2684, <https://doi.org/10.1021/acs.accounts.9b00252>.
223. Qiongyi Shang, Alexey Kaledin, Qiuyang Li, and Tianquan Lian, "Size Dependent Charge Separation and Recombination in CsPbI<sub>3</sub> Perovskite Quantum Dots", *J. Chem. Phys.* (2019), 151, 074705. <https://doi.org/10.1063/1.5109894>.
224. Qiongyi Shang, Brandon D. Piercy, Mark D. Losego, Tianquan Lian, "Effect of Surface Ligand on Charge Separation and Recombination at CsPbI<sub>3</sub> Perovskite Quantum Dot/TiO<sub>2</sub> Interfaces", *J. Phys. Chem. C* (2019), 123, 21415-21. <https://doi.org/10.1021/acs.jpcc.9b06725>.
225. Li, Qiuyang; Yang, Yawei; Que Wenxiu; Lian, Tianquan, "Size- and Morphology- Dependent Auger Recombination in CsPbBr<sub>3</sub> Perovskite 2D Nanoplatelets and 1D Nanorods", *Nano Lett.* (2019), 19, 5620-27. <https://doi.org/10.1021/acs.nanolett.9b02145>.
226. Tao Jin, Natalie Uhlikova, Zihao Xu, Yifan Zhu, Yiming Huang, Eilaf Egap, Tianquan Lian, "Enhanced Triplet State Generation through Spin-Correlated Radical Pair Intermediate in BODIPY-Quantum Dot Complexes", *J. Chem. Phys.* (2019), 151, 241101. (<https://doi.org/10.1063/1.5136045>)

## 2020

227. Taghinejad, M., Xu, Z., Lee, K. T., Lian, T., & Cai, W. Transient second-order nonlinear media: Breaking the spatial symmetry in the time domain via hot-electron transfer. *Phys. Rev. Lett* (2020), 124, 013901. <https://doi.org/10.1103/PhysRevLett.124.013901>.
228. Taghinejad, M., Xu, Z., Lee, K. T., Lian, T., & Cai, W. Photocarrier-Induced Active Control of Second-Order Optical Nonlinearity in Monolayer MoS<sub>2</sub>. *Small* (2020), 16 1906347 (<https://doi.org/10.1002/sml.201906347>)
229. Qiuyang Li, Wenxing Yang, Tianquan Lian, "Exciton Transport and Interfacial Charge Transfer in Semiconductor Nanocrystals and Heterostructures ", *Springer Verlag Handbook on Photochemistry* (2020), *accepted*
230. De Roo, J., Huang, Z., Schuster, N., Hamachi, L., Congreve, D., Xu, Z., Fishman, D., Lian, T., Owen, J., Tang, M. Anthracene Diphosphate Ligands for CdSe Quantum Dots; Molecular Design for Efficient Upconversion. *Chem. Mat.* (2020), 32, 1461. (<https://doi.org/10.1021/acs.chemmater.9b04294>)
231. Mauricio Cattaneo, Facheng Guo, H Kelly, Pablo E Videla, Laura Kiefer, Sara Gebre, Aimin Ge, Qiliang Liu, Shaoxiong Wu, Tianquan Lian, Víctor S Batista, "Robust Binding of Disulfide-

- Substituted Rhenium Bipyridyl Complexes for CO<sub>2</sub> Reduction on Gold Electrodes”, **Frontiers (2020)**, 8, 86, <https://doi.org/10.3389/fchem.2020.00086>
232. A. Ge, G. Kastlunger, J. Meng, P. Lindgren, J. Song, Q. Liu, A. Zaslavsky, T. Lian, A. A. Peterson, “On the Coupling of Electron Transfer to Proton Transfer at Electrified Interfaces”, **J. Am. Chem. Soc. (2020)**, 142, 11829-11834
  233. Yawei Liu, Qiaoli Chen, David Cullen, Zhaoxiong Xie, and Tianquan Lian, “Size Dependent Hot Electron Transfer in CdS Nanorod-Au Heterostructures”, **Nano Letters (2020)**, 20 (6), 4322, <http://dx.doi.org/10.1021/acs.nanolett.0c01050>
  234. Wenxing Yang, Alexey L. Kaledin, Yawei Yang, Sheng He, Tao Jin, James R. McBride and Tianquan Lian, “Surface Passivation Extends Single and Biexciton Lifetimes of InP Quantum Dots”, **Chemical Science (2020)**, 11, 5779-5789
  235. Meng Zhang, Meidan Ye, Wenlong Wang, Chunyuan Ma, Shun Wang, Qiliang Liu, Tianquan Lian, Jinsong Huang, and Zhiquan Lin, “Synergistic Cascade Carrier Extraction via Dual Interfacial Positioning of Ambipolar Black Phosphorene for High-Efficiency Perovskite Solar Cells”, **Advanced Materials (2020)**, 32, 2000999. (<https://doi.org/10.1002/adma.202000999>)
  236. Tao Jin, Natalie Uhlikova, Zihao Xu, Yifan Zhu, Yiming Huang, Eilaf Egap, Tianquan Lian, “Competition of Forster Energy Transfer, Charge Transfer and Dexter Energy Transfer in Hybrid Quantum dot/Organic molecule complexes”, **J. Chem. Phys (2020)**, 152 (21), 214720
  237. Qiuyang Li, Sheng He, Tianquan Lian\*, “How Exciton and Single Carriers Block the Excitonic Transition in Two-Dimensional Cadmium Chalcogenide Nanoplatelets”, **Nano Letters (2020)**, 20, 8, 6162-6169 (<https://doi.org/10.1021/acs.nanolett.0c02461>)
  238. Tao Jin, Tianquan Lian, “Trap state mediated triplet energy transfer from CdSe quantum dots to molecular acceptors”, **J. Chem. Phys. (2020)**, 153 (7), 074703
  239. Wenxing Yang, Gregory E. Vansuch, Yawei Liu, Jin Tao, Qiliang Liu, Aimin Ge, Monica L. K. Sanchez, Michael W. W. Adams, R. Brian Dyer, and Tianquan Lian, “Surface ligand “liquid” to “crystalline” phase transition modulates the solar H<sub>2</sub> production quantum efficiency of CdS nanorod/mediator/Hydrogenases assemblies”, **ACS AMI (2020)**, 13 (32), 36558-36567, <https://doi.org/10.1021/acsami.0c07820>
  240. Zihao Xu, Zhiyuan Huang, Chenyang Li, Tingting Huang, Francesco A. Evangelista, Ming L. Tang, and Tianquan Lian, “Tuning QD/Mediator interface for Optimal Efficiency of Quantum Dot Sensitized Near Infrared to Visible Photon Upconversion Systems”, **ACS AMI (2020)**, 12 (31), 35614-35625, DOI: 10.1021/acsami.0c10269
  241. Xu Guo, Qiuyang Li, Yawei Liu, Tao Jin, Yubin Chen, Liejin Guo and Tianquan Lian “Enhanced Light-Driven Charge Separation and H<sub>2</sub> Generation Efficiency in WSe<sub>2</sub> Nanosheet-Semiconductor Nanocrystal Heterostructures”, **ACS AMI (2020)** 12, 44769 (<https://doi.org/10.1021/acsami.0c12931>)
  242. Zihao Xu, Yiming Huang, Yulei Cao, Tao Jin, Kristen Miller, Alexey L. Kaledin, Djamaladdin G. Musaev, Tianquan Lian, Eilaf Egap “Enhanced Intersystem Crossing of Boron Dipyrromethene by TEMPO Radical”, **J. Chem. Phys. (2020)**, 153, 154201. <https://doi.org/10.1063/5.0025972>
  243. Zhiyuan Huang, Zihao Xu, Tingting Huang, Victor Gray, Kasper Moth-Poulsen, Tianquan Lian, Ming Lee Tang, “Evolution from tunneling to hopping mediated triplet energy transfer from quantum dots to molecules”, **JACS (2020)** 142,41,17581. <https://doi.org/10.1021/jacs.0c07727>
  244. AL Kaledin, Q Yin, CL Hill, T Lian, DG Musaev “Ion-pairing in polyoxometalate chemistry: impact of fully hydrated alkali metal cations on properties of the keggins [PW<sub>12</sub>O<sub>40</sub>]<sup>3-</sup> anion” **Dalton Transactions (2020)**, 49 (32), 11170-11178
- 2021**
245. Zihao Xu, Zhiyuan Huang, Tao Jina, Tianquan Lian, Ming L. Tang, “Mechanistic Understanding and Rational Design of Quantum Dot/Mediator Interfaces for Efficient Photon Upconversion” **Account of Chemical Research (2021)**, 54, 70-80, <https://doi.org/10.1021/acs.accounts.0c00526>

246. Wenxing Yang, Yawei Liu, James R. McBride, Tianquan Lian, “Ultrafast and long-lived transient heating of surface adsorbates on plasmonic semiconductor nanocrystals”, *Nano Lett.*(2021), 21, 453. <https://doi.org/10.1021/acs.nanolett.0c03911>
  247. Sean S. E. Collins, Emily K. Searles, Lawrence J. Tauzin, Minhan Lou, Luca Bursi, Yawei Liu, Jia Song, Charlotte Flatebo, Rashad Baiyasi, Yi-Yu Cai, Benjamin Foerster, Tianquan Lian, Peter Nordlander, Stephan Link, and Christy F. Landes, “Plasmon Energy Transfer in Hybrid Nanoantennas”, *ACS Nano* (2021) **15**, 9522-30 (<https://doi.org/10.1021/acsnano.0c08982>)
  248. Qiushi Yin, Zihao Xu, Tianquan Lian, Djamaladdin G. Musaev, Craig L. Hill, Yurii V. Geletii, Tafel slope analyses for homogeneous catalytic reactions, *Catalysis* (2021), 11(1), 87. DOI:10.3390/catal11010087
  249. W. Yang, Y. Liu, D.A. Cullen, J.R. McBride, T. Lian, “Harvesting Sub-bandgap IR Photons by Photothermionic Hot Electron Transfer in a Plasmonic p-n Junction, *Nano Letters* (2021), 21, 9, 4036. <https://doi.org/10.1021/acs.nanolett.1c00932>
  250. J. Song, J. Long, Y. Liu, Z. Xu, A. Ge, B.D. Piercy, D.A. Cullen, I. N. Ivanov, M. D. Losego, T. Lian, “Highly Efficient Plasmon Induced Hot-Electron Transfer at Ag/TiO<sub>2</sub> interface”, *ACS Photonics* (2021), 8, 1497, <https://doi.org/10.1021/acsp Photonics.1c00321>
  251. Yifan Zhu, Tao Jin, Tianquan Lian, Eilaf Egap, “Enhancing the efficiency of semiconducting quantum dot photocatalyzed atom transfer radical polymerization by ligand shell engineering”, *J. Chem. Phys.* (2021), 154, 204903, <https://doi.org/10.1063/5.0051893>
  252. A. L. Kaledin, T. Lian, C. L. Hill, D. G. Musaev, “An All-atom Theory of Electron Transfer at the Nanocrystal/Molecule Interfaces: A Hybrid LCAO/DFT Approach”, *J. Phys. Chem. C* (2021), 125, 5116. <https://pubs.acs.org/10.1021/acs.jpcc.0c11572>
  253. R. Lemasters, M. R. Shcherbakov, G. Yang, J. Song, T. Lian, H. Harutyunyan, and G. Shvets, "Deep Optical Switching on Subpicosecond Timescales in an Amorphous Ge Metasurface", *Advanced Optical Materials* (2021), 2100240, <https://doi.org/10.1002/adom.202100240>
  254. Wenxing Yang, Yawei Liu, Tomas Edvinsson, Ashleigh Castner, Shihuai Wang, Sheng He, Sascha Ott, Leif Hammarström, and Tianquan Lian, Photoinduced Fano Resonances between Quantum Confined Nanocrystals and Adsorbed Molecular Catalysts, *Nano Lett* (2021), 21, 5813. <https://doi.org/10.1021/acs.nanolett.1c01739>
  255. Dhritiman Bhattacharyya, Pablo E. Videla, Mauricio Cattaneo, Victor S Batista, Tianquan Lian and Clifford P. Kubiak, “Vibrational Stark Shift Spectroscopy of Catalysts under the Influence of Electric Fields at Electrode-Solution Interfaces”, *Chem. Sci.* (2021), <https://doi.org/10.1039/D1SC01876K>
  256. Zihao Xu, Bingya Hou, Fengyi Zhao, Zhi Cai, Haotian Shi, Yawei Liu, Craig L. Hill, Djamaladdin G. Musaev, Matthew Mecklenburg, Stephen B. Cronin, and Tianquan Lian, “Nanoscale TiO<sub>2</sub> Protection Layer Enhances the Built-in Field and Charge Separation Performance of GaP Photoelectrodes”, *Nano Letter* (2021), 21, 8017. <https://doi.org/10.1021/acs.nanolett.1c02257>
  257. [Degao Wang, Zihao Xu, Matthew V. Sheridan, Javier Concepcion, Fei Li, Tianquan Lian, Thomas J. Meyer, “Water photo-oxidation initiated by a surface bound-chromophore-donor-catalyst assembly”, \*Chem. Sci.\* \(2021\), 12, 14441-14450 \(DOI: 10.1039/D1SC03896F \)](#)
  258. Yawei Liu, David A. Cullen, and Tianquan Lian, “Slow Auger Recombination of Trapped Excitons Enables Efficient Multiple Charge Separation in 1D CdS-Pt Heterostructure”, *JACS* (2021), **143**, 20264 (<https://doi.org/10.1021/jacs.1c09125>)
  259. CM Hendy, GC Smith, Z Xu, T Lian, NT Jui, “Radical Chain Reduction via Carbon Dioxide Radical Anion (CO<sub>2</sub>•-)”, *Journal of the American Chemical Society* (2021) **143** (24), 8987-8992
- 2022**
260. Q. Yin, Y.V. Geletii, T. Lian, D.G. Musaev, C.L. Hill, “Polyoxometalate systems to probe catalyst environment and structure in water oxidation catalysis”, *Advances in Inorganic Chemistry* ( 2022), **79**, 355 (<https://doi.org/10.1016/bs.adioch.2021.12.009> )

261. Liu, Yawei; Yang, Wenxing; Chen, Qiaoli; Cullen, David; Xie, Zhaoxiong; Lian, Tianquan, "Pt particle size affects both the charge separation and water reduction efficiencies of CdS-Pt nanorod photocatalysts for light-driven H<sub>2</sub> generation", *JACS* (2022), <https://doi.org/10.1021/jacs.1c11745>
262. Sheng He, Qiuyang Li, Tao Jin, and Tianquan Lian, "Contributions of exciton fine structure and hole trapping on the hole state filling effect in the transient absorption spectra of CdSe quantum dots", *Journal of Chemical Physics* (2022), 156, 054704.
263. Tsumugi Miyashita, Paulina Jaimes, Ming Lee Tang, Tianquan Lian and Zihao Xu "Quantifying the Ligand-Induced Triplet Energy Transfer Barrier in a Quantum Dot-Based Upconversion System", *JPC. Lett.* (2022), 13, 3002097 (<https://doi.org/10.1021/acs.jpcllett.2c00514>)
264. Jin, Tao; He, Sheng; Zhu, Yifan; Egap, Eilaf; Lian, Tianquan, "Bright State Sensitized Triplet Energy Transfer from Quantum Dot to Molecular Acceptor Revealed by Temperature Dependent Energy Transfer Dynamics" *Nano Lett.* (2022), 22, 10, 3897-3903 (<https://doi.org/10.1021/acs.nanolett.2c00017>)
265. Bo Shang, Fengyi Zhao, Chungseok Choi, Xiaofan Jia, Magnus Pauly, Yueshen Wu, Zixu Tao, Yiren Zhong, Nia Harmon, Paul A. Maggard, Tianquan Lian, Nilay Hazari, and Hailiang Wang, "Monolayer Molecular Functionalization Enabled by Acid-Base Interaction for High-Performance Photochemical CO<sub>2</sub> Reduction", *ACS Energy Lett.* (2022), 7, 7, 2265-2272 (<https://doi.org/10.1021/acsenergylett.2c01147>)
266. Shuang Liang, Sheng He, Mingyue Zhang, Yan Yan, Tao Jin, Tianquan Lian, Zhiqun Lin, "Tailoring Charge Separation at Meticulously Engineered Conjugated Polymer/Perovskite Quantum Dot Interface for Photocatalyzing Atom Transfer Radical Polymerization", *J. Am. Chem. Soc.* (2022), 144, 28, 12901 (<https://doi.org/10.1021/jacs.2c04680>)
267. Meilin Tao, Qiushi Yin, Alexey L Kaledin, Natalie Uhlikova, Xinlin Lu, Ting Cheng, Yu-Sheng Chen, Tianquan Lian, Yurii V Geletii, Djamaladdin G Musaev, John Bacsá, Craig L Hill, "Structurally Precise Two-Transition-Metal Water Oxidation Catalysts: Quantifying Adjacent 3d Metals by Synchrotron X-Radiation Anomalous Dispersion Scattering" *Inorg. Chem.* (2022), 61, 16, 6252–6262 (<https://doi.org/10.1021/acs.inorgchem.2c00446>)
268. Dhritiman Bhattacharyya, Pablo E Videla, Joseph M Palasz, Isaac Tangen, Jinhui Meng, Clifford P Kubiak, Victor S Batista, Tianquan Lian, "Sub-Nanometer Mapping of the Interfacial Electric Field Profile Using a Vibrational Stark Shift Ruler", *J. Am. Chem. Soc.* (2022), 144, 31, 14330–14338 (<https://doi.org/10.1021/jacs.2c05563>).
269. Zihao Xu, Bingya Hou, Fengyi Zhao, Zhi Cai, Yawei Liu, Craig L Hill, Djamaladdin G Musaev, Matthew Mecklenburg, Stephen B Cronin, Tianquan Lian, "Correction to Nanoscale TiO<sub>2</sub> Protection Layer Enhances the Built-In Field and Charge Separation Performance of GaP Photoelectrodes", *Nano Lett.* 2021, 21 (19), 8017–8024 (DOI: 10.1021/acs.nanolett.1c02257).
270. Chao-Yu Li, Ming Chen, Shuai Liu, Xinyao Lu, Jinhui Meng, Jiawei Yan, Héctor D. Abruña, Guang Feng, Tianquan Lian, "Unconventional interfacial water structure of highly concentrated aqueous electrolytes at negative electrode polarizations" *Nature Comm.* (2022), 13, 5330, <https://doi.org/10.1038/s41467-022-33129-8>
271. Qiuyang Li, Wenxing Yang, Tianquan Lian, "Exciton Transport and Interfacial Charge Transfer in Semiconductor Nanocrystals and Heterostructures ", *Springer Verlag Handbook on Photochemistry* (2022), [https://doi.org/10.1007/978-3-030-63713-2\\_33](https://doi.org/10.1007/978-3-030-63713-2_33)

## 2023

272. Jia-Wei Wang, Fan Ma, Tao Jin, Piao He, Zhi-Mei Luo, Stephan Kupfer, Michael Karnahl, Fengyi Zhao, Zihao Xu, Tao Jin, Tianquan Lian, Yong-Liang Huang, Long Jiang, Li-Zhi Fu, Gangfeng Ouyang, Xiao-Yi Yi, "Homoleptic Al(III) Photosensitizers for Durable CO<sub>2</sub> Photoreduction", *J. Am. Chem. Soc.* (2023), 145, 676–688. <https://doi.org/10.1021/jacs.2c11740>
273. Sara T Gebre, Laura M Kiefer, Facheng Guo, Ke R Yang, Christopher Miller, Yawei Liu, Clifford P Kubiak, Victor S Batista, Tianquan Lian, "Amine Hole Scavengers Facilitate Both Electron and

- Hole Transfer in a Nanocrystal/Molecular Hybrid Photocatalyst”, *J. Am. Chem. Soc.* (2023), 145, 5, 3238–3247. <https://doi.org/10.1021/jacs.2c13464>
274. Zihao Xu, Bingya Hou, Fengyi Zhao, Sa Suo, Yawei Liu, Haotian Shi, Zhi Cai, Craig L Hill, Djameladdin G Musaev, Matthew Mecklenburg, Stephen B Cronin, Tianquan Lian, “Direct In Situ Measurement of Quantum Efficiencies of Charge Separation and Proton Reduction at TiO<sub>2</sub>-Protected GaP Photocathodes”, *J. Am. Chem. Soc.* (2023), 145, 5, 2860–2869, <https://doi.org/10.1021/jacs.2c10578>
  275. Sheng He, Tao Jin, Anji Ni, Tianquan Lian, “Electron Trapping Prolongs the Lifetime of Charge-Separated States in 2D Perovskite Nanoplatelet-Hole Acceptor Complexes”, *J. Phys. Chem. Lett.* (2023), 14, 2241, <https://doi.org/10.1021/acs.jpclett.2c03815>
  276. H. Ray Kelly, Pablo E. Videla, Clifford P. Kubiak, Tianquan Lian, and Victor S. Batista, “Controlling Hydricity of Adsorbed Catalysts with Applied Electric Fields”, *J. Phys. Chem. C* (2023), 127, 14, 6733–6743, <https://doi.org/10.1021/acs.jpcc.3c00829>
  277. Daniel Chabeda, Dhritiman Bhattacharyya, H. Ray Kelly, Sara T. Gebre, Isaac Tangen, Clifford P. Kubiak, Victor S. Batista, and Tianquan Lian, “Unlocking the Facet-Dependent Ligand Exchange on Rutile TiO<sub>2</sub> of a Rhenium Bipyridyl Catalyst for CO<sub>2</sub> Reduction”, *J. Phys. Chem. C* 2023, 127, 17, 8126–8135, <https://doi.org/10.1021/acs.jpcc.3c00491>
  278. Chungseok Choi, Fengyi Zhao, James L Hart, Yuanzuo Gao, Fabian Menges, Conor L. Rooney, Nia Harmon, Bo Shang, Zihao Xu, Sa Suo, Quynh Sam, Judy J. Cha, Tianquan Lian, and Hailiang Wang, “Synergizing Electron and Heat Flows in Photocatalyst for Direct Conversion of Captured CO<sub>2</sub>”, *Angew. Chem., Int. Ed.*, 2023, 62, e202302152, <http://doi.org/10.1002/anie.202302152>
  279. Shuang Liang, Mingyue Zhang, Sheng He, Mengkun Tian, Woosung Choi, Tianquan Lian & Zhiqun Lin, “Metal halide perovskite nanorods with tailored dimensions, compositions and stabilities”, *Nature Synthesis* (2023), <https://doi.org/10.1038/s44160-023-00307-5>
  280. Li Zhai, Sara T. Gebre, Bo Chen, Dan Xu, Junze Chen, Zijian Li, Yawei Liu, Hua Yang, Chongyi Ling, Yiyao Ge, Wei Zhai, Changsheng Chen, Lu Ma, Qinghua Zhang, Xuefei Li, Yujie Yan, Xinyu Huang, Lujiang Li, Zhiqiang Guan, Chen-lei Tao, Zhiqi Huang, Hongyi Wang, Jinze Liang, Ye Zhu, Chun-Sing Lee, Peng Wang, Chunfeng Zhang, Lin Gu, Yonghua Du, Tianquan Lian, Xue-Jun Wu, Hua Zhang, “Epitaxial Growth of Highly Symmetrical Branched Noble Metal-Semiconductor Heterostructures with Efficient Plasmon-Induced Hot-Electron Transfer”. *Nature Communication* (2023), <https://doi.org/10.1038/s41467-023-38237-7>.
  281. Sa Suo, Colton Sheehan, Fengyi Zhao, Langqiu Xiao, Zihao Xu, Jinhui Meng, Thomas E. Mallouk, and Tianquan Lian, Direct Vibrational Stark Shift Probe of Quasi-Fermi Level Alignment in Metal Nanoparticle Catalyst-Based Metal–Insulator–Semiconductor Junction Photoelectrodes, *J. Am. Chem. Soc.* (2023), <https://doi.org/10.1021/jacs.3c02333>
  282. Liu, Yawei; Yang, Wenxing; Chen, Qiaoli; Xie, Zhaoxiong; Lian, Tianquan, “Nanorod length-dependent photodriven H<sub>2</sub> production in 1D CdS-Pt heterostructures”, *J. Chem. Phys.* 159, 104706 (2023), <https://doi.org/10.1063/5.0157927>
  283. William R. Lake, Jinhui Meng, Jahan M. Dawlaty, Tianquan Lian, Sharon Hammes-Schiffer, “Electro-inductive Effect Dominates Vibrational Frequency Shifts of Conjugated Probes on Gold Electrodes”, *JACS* (2023), <https://doi.org/10.1021/jacs.3c07489>
  284. McGuigan, S.; Tereniak, S.; Donley, C.; Smith, A.; Jeon, S.; Zhao, F.; Sampaio, R.; Pauly, M.; Keller, L.; Collins, L.; Parsons, G.; Lian, T.; Stach, E.; Maggard, P., "Discovery of a Hybrid System for Photocatalytic CO<sub>2</sub> Reduction via Attachment of a Molecular Cobalt-Quaterpyridine Complex to a Crystalline Carbon Nitride", *ACS Appl. Energy Mater.* (2023), 6, 10532-10553, <https://doi.org/10.1021/acsaem.3c01670>
- 2024**
285. Zhao, F. Y.; Xu, Z. H.; Suo, S.; Lin, L.; Hill, C. L.; Musaev, D. G.; Lian, T. Q. A contactless in situ EFISH method for measuring electrostatic potential profile of semiconductor/electrolyte junctions. *J Chem Phys* **2024**, 161 (9). DOI: 10.1063/5.0226128.

286. Zhao, F. Y.; Cheng, T.; Lu, X. L.; Ghorai, N.; Yang, Y. W.; Geletii, Y. V.; Musaev, D. G.; Hill, C. L.; Lian, T. Q. Charge Transfer Mechanism on a Cobalt-Polyoxometalate-TiO<sub>2</sub> Photoanode for Water Oxidation in Acid. *J. Am. Chem. Soc.* **2024**, *146* (21), 14600-14609. DOI: 10.1021/jacs.4c01441.
287. Zeng, R.; Li, H. Q.; Shi, Z. X.; Xu, L.; Meng, J. H.; Xu, W. X.; Wang, H. S.; Li, Q. H.; Pollock, C. J.; Lian, T. Q.; et al. Origins of enhanced oxygen reduction activity of transition metal nitrides. *Nature Materials* **2024**, *23* (12). DOI: 10.1038/s41563-024-01998-7.
288. Wang, J. W.; Zhao, F. Y.; Velasco, L.; Sauvan, M.; Moonshiram, D.; Salati, M.; Luo, Z. M.; He, S.; Jin, T.; Mu, Y. F.; et al. Molecular catalyst coordinatively bonded to organic semiconductors for selective light-driven CO<sub>2</sub> reduction in water. *Nature Communications* **2024**, *15* (1). DOI: 10.1038/s41467-024-54026-2.
289. Shang, B.; Zhao, F. Y.; Suo, S.; Gao, Y. Z.; Sheehan, C.; Jeon, S.; Li, J.; Rooney, C. L.; Leitner, O.; Xiao, L. Q.; et al. Tailoring Interfaces for Enhanced Methanol Production from Photoelectrochemical CO<sub>2</sub> Reduction. *J. Am. Chem. Soc.* **2024**, *146* (3), 2267-2274. DOI: 10.1021/jacs.3c13540.
290. Palasz, J. M.; Long, Z. R.; Meng, J. H.; Videla, P. E.; Kelly, H. R.; Lian, T. Q.; Batista, V. S.; Kubiak, C. P. A Resilient Platform for the Discrete Functionalization of Gold Surfaces Based on N-Heterocyclic Carbene Self-Assembled Monolayers. *J. Am. Chem. Soc.* **2024**, *146* (15), 10489-10497. DOI: 10.1021/jacs.3c14113.
291. Miyashita, T.; He, S.; Jaimes, P.; Kaledin, A. L.; Fumanal, M.; Lian, T. Q.; Tang, M. L. Oligoyne bridges enable strong through-bond coupling and efficient triplet transfer from CdSe QD trap excitons for photon upconversion. *J Chem Phys* **2024**, *161* (9). DOI: 10.1063/5.0223478.
292. Li, Q. Y.; Wu, K. F.; Zhu, H. M.; Yang, Y.; He, S.; Lian, T. Q. Charge Transfer from Quantum-Confinement 0D, 1D, and 2D Nanocrystals. *Chem. Rev.* **2024**, *124* (9), 5695-5763. DOI: 10.1021/acs.chemrev.3c00742.
293. Lake, W. R.; Meng, J. H.; Dawlaty, J. M.; Lian, T. Q.; Hammes-Schiffer, S. Electro-inductive Effects and Molecular Polarizability for Vibrational Probes on Electrode Surfaces. *Journal of Physical Chemistry Letters* **2024**, *15* (35), 9100-9104. DOI: 10.1021/acs.jpclett.4c02183.
294. Huang, T. T.; He, S.; Ni, A. J.; Lian, T. Q.; Tang, M. L. Triplet energy transfer from quantum dots increases Ln(III) photoluminescence, enabling excitation at visible wavelengths. *Chemical Science* **2024**, *15* (12), 4556-4563. DOI: 10.1039/d3sc05408j.
295. He, S.; Ni, A. J.; Gebre, S. T.; Hang, R.; McBride, J. R.; Kaledin, A. L.; Yang, W. X.; Lian, T. Q. Doping of Colloidal Nanocrystals for Optimizing Interfacial Charge Transfer: A Double-Edged Sword. *J. Am. Chem. Soc.* **2024**, *146* (36), 24925-24934. DOI: 10.1021/jacs.4c06110.

## **2025**

296. Zhao, F. Y.; Xu, Z. H.; Suo, S.; Xu, Y. X.; Hill, C. L.; Musaev, D. G.; Lian, T. Q. Operando Contactless EFISH Study of the Rate-Determining Step of Light-Driven Water Oxidation on TiO<sub>2</sub> Photoanodes. *J. Am. Chem. Soc.* **2025**, *147* (22), 18712-18722. DOI: 10.1021/jacs.5c01836.
297. Yang, Z. C.; Ghorai, N.; Wu, S. X.; He, S.; Lian, T. Q. Direct and Indirect Interfacial Electron Transfer at a Plasmonic p-Cu<sub>7</sub>S<sub>4</sub>/CdS Heterojunction. *ACS Nano* **2025**, *19* (1), 1547-1556. DOI: 10.1021/acsnano.4c14556.
298. Sheehan, C. J.; Suo, S.; Jeon, S.; Zheng, Y. C. X.; Meng, J. H.; Zhao, F. Y.; Yang, Z. C.; Xiao, L. Q.; Venkatesan, S.; Metlay, A. S.; et al. Electron Transfer Energetics in Photoelectrochemical CO<sub>2</sub> Reduction at Viologen Redox Polymer-Modified p-Si Electrodes. *J. Am. Chem. Soc.* **2025**, *147* (11), 9629-9639. DOI: 10.1021/jacs.4c17762.
299. Qi, Y. F.; Zhang, Q. Q.; Aguinaga, J.; Qiu, C. C.; Hang, R.; He, S.; Upreti, S.; Maurya, A.; Pradhan, N.; Ray, P. C.; et al. Engineering Inorganic Perovskite Films by X Values of DMAPbIx toward Large Area Photovoltaic Devices by Slot-Die Coating. *SMALL* **2025**. DOI: 10.1002/smll.202503825.

300. Long, Z. R.; Meng, J. H.; Weddle, L. R.; Videla, P. E.; Menzel, J. P.; Cabral, D. G. A.; Liu, J. C.; Qiu, T. Y.; Palasz, J. M.; Bhattacharyya, D.; et al. The Impact of Electric Fields on Processes at Electrode Interfaces. *Chem. Rev.* **2025**, *125* (3), 1604-1628. DOI: 10.1021/acs.chemrev.4c00487.
301. Long, Z. R.; Kelly, H. R.; Videla, P. E.; Menzel, J. P.; Lian, T. Q.; Kubiak, C. P.; Batista, V. S. Control of Reversible Oxidative Addition/Reductive Elimination of Surface-Attached Catalysts by External Electric Fields. *Journal of Physical Chemistry Letters* **2025**. DOI: 10.1021/acs.jpcllett.5c00215.
302. Jin, T.; Zhang, Z. D.; He, S.; Kaledin, A. L.; Xu, Z. H.; Liu, Y. W.; Zhang, P.; Beratan, D. N.; Lian, T. Q. Shell Thickness and Heterogeneity Dependence of Triplet Energy Transfer between Core-Shell Quantum Dots and Adsorbed Molecules. *J. Am. Chem. Soc.* **2025**, *147* (19), 16282-16292. DOI: 10.1021/jacs.5c01838.
303. He, S.; Ghorai, N.; Ashokan, A.; Gebre, S. T.; Yang, Z. C.; Lian, T. Q. In Situ Studies of Multi-Carrier Dynamics in Electrochemically-Charged Colloidal CdSe/CdS Core/Shell Quantum Dots. *ANGEWANDTE CHEMIE-INTERNATIONAL EDITION* **2025**. DOI: 10.1002/anie.202503972.
304. Ghorai, N.; Yang, Z. C.; Gebre, S. T.; Wu, S. X.; Zhao, F. Y.; Ivanov, I. N.; Lian, T. Q. Efficient Size-Dependent Hot Electron Transfer from Au to TiO<sub>2</sub> Nanoparticles. *Nano. Lett.* **2025**, *25* (8), 3253-3258. DOI: 10.1021/acs.nanolett.4c06154.
305. Gebre, S. T.; Martinez-Gomez, L.; Miller, C. R.; Kubiak, C. P.; Ribeiro, R. F.; Lian, T. Q. Fano Resonance in CO<sub>2</sub> Reduction Catalyst Functionalized Quantum Dots. *J. Am. Chem. Soc.* **2025**. DOI: 10.1021/jacs.4c14499.
306. Scott McGuigan , Stephen Tereniak , Avery Smith , Subhendu Jana , Carrie Donley , Leonard Collins , Nandan Ghorai , Yixuan Xu , Emmanuel Adu Fosu , Simon Suhr , Hannah R.M. Margavio , Hyuenwoo Yang , Gregory N. Parsons , Patrick L. Holland , Elena Jakubikova , Tianquan Lian and Paul Maggard, "Illuminating the Mechanistic Impacts of an Fe-Quaterpyridine Functionalized Crystalline Poly(triazine imide) Semiconductor for Photocatalytic CO<sub>2</sub> Reduction" *Inorg. Chem. Front.*, **2025**, Accepted Manuscript DOI: [10.1039/D5QI00859J](https://doi.org/10.1039/D5QI00859J)
307. Jinhui Meng, Jessica Freeze, Linsey Nowack, Chaoyu Li, Hongsen Wang, Héctor D. Abruña, Adam P. Willard, Victor S. Batista, and Tianquan Lian, "Competitive Carbonate Binding Hinders Electrochemical CO<sub>2</sub> Reduction to CO on Cu Surfaces at Low Overpotentials", *J. Am. Chem. Soc.* (2025),
308. Sara T. Gebre, Luis Martinez-Gomez, Sheng He, Zhicheng Yang, Mauricio Cattaneo, Raphael F. Ribeiro, Tianquan Lian, "Shell-thickness dependent Fano resonance in molecular catalyst functionalized CdSe/ZnS core/shell QDs", *J. Chem. Phys.*(2025), *163*, 084713, <https://doi.org/10.1063/5.0276905>
309. William P. Kopcha, Aiswarya Abhisek Mohapatra, Casey M. Davis, Jonathan R. Thurston, Eui Hyun Suh, Bo Dong, Megan R. Brown, Aniruddha Basu, Zejie Chen, Shane Ardo, Chad M. Risko, Tianquan Lian, Erin L. Ratcliff, Stephen Barlow, Seth R. Marder, Michael F. Toney, Melissa K. Gish, Andrew J. Ferguson, Obadiah G. Reid, "Electrolyte Immersion Increases Photoconductivity in a Model Polymer Photocathode", *ACS Energy Lett.* **2025**, *10*, *8*, 4019–4026, <https://doi.org/10.1021/acsenergylett.5c01809>
310. Tao Jin, Sara T Gebre, Christopher J. Miller, Clifford P. Kubiak, Raphael Florentino Ribeiro, Tianquan Lian, "Excited State Dynamics of CO<sub>2</sub> Reduction Catalyst under Vibrational Strong Coupling", *J. Am. Chem. Soc.*, (2025), accepted.

**INVITED TALKS SINCE 1997**  
**(\*Plenary or keynote lectures)**

**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. Symposium on Ultrafast Dynamics, 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”, ACS Meeting in Anaheim, CA, March, 1999.
7. Department of Chemistry Department of Univ. of California at Santa Cruz, June 3, 1999.
8. Department of Chemistry, Univ. of Alabama at Tuscaloosa, September 17, 1999.
9. Atlanta Area Chemical Physics seminar series, Chemistry department, Emory University, November 1, 1999.
10. PMACS seminar series, Department of Physics, 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”, 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), September 28, 2000, Nashville.
15. Symposium on “Nanostructured Materials in Electrochemistry and Photoelectrochemistry”, 197<sup>th</sup> Electrochemical Society meeting, 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”, 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. The “Fifth Trombay Symposium on Radiation & Photochemistry” (TSRP 2000), Mumbai, India, January 12-17, 2000.
26. State Key Laboratory of Physical Chemistry of Solid Surface, Xiamen University, China, January 11, 2000.

**2001**

27. Department of Chemistry, Boston College, 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", 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", in ACS national meeting, Chicago, August 26-30, 2001.
34. First International conference on Semiconductor photochemistry, Glasgow, United Kingdom, July 22-25, 2001.
35. 24<sup>th</sup> 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", 199<sup>th</sup> meeting of the Electrochemical Society, Washington DC, March 26, 2001.
41. Symposium on "Photovoltaic Technology of the 21<sup>st</sup> Century", 199<sup>th</sup> 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", Örenäs Castle, Lund, Sweden, November, 23<sup>rd</sup>-26<sup>th</sup>, 2002.
46. Department of Chemistry, University of Florida, November 19, 2002.
47. 11<sup>th</sup> 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, the 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, 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. The 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. Chemistry Division, Brookhaven National Laboratory, September 22, 2004.
70. Department of Chemistry, University of Georgia, September 17, 2004.
71. Coherent 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. 28<sup>th</sup> 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 59<sup>th</sup> annual Southeastern 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. Department of Chemistry, State Key Laboratory for Solid Surfaces, Xiamen University, August 3, 2009, Xiamen, China.

121. 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. 31<sup>st</sup> DOE Solar Photochemistry Research Conference, June 7-10, 2009, Annapolis, MD.

## **2010**

125. Pittcon 2010, Orlando, Florida, February 28 - March 5, 2010
126. Symposium on "Nanostructured Materials for Photovoltaics and Solar Electric Power: Synthesis, Characterization and Device Fabrication", ACS Spring meeting, 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, 2010.
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 94<sup>th</sup> annual meeting, Frontier in Optics 2010/Laser Science XXVI, October 27, 2010
136. Solar Photochemistry Zing Conference, December 1-4, 2010
137. Department of Chemistry, 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. Department of Chemistry, Texas A&M University, February 21, 2012

155. 34<sup>th</sup> Department of Energy Solar Photochemistry Research Conference, June 3-6, Annapolis, MD, USA
156. Gordon Research Conference on Vibration Spectroscopy, August 5-10.
157. National Taiwan ChiaoTung 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. Symposium on "Charge Transfer/Transport in Nanomaterials for Energy Applications", 59<sup>th</sup> American Vacuum Society International Meeting, 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**

162. Southeast Ultrafast Spectroscopy Conference, Georgia Institute of Technology, Jan. 11, 2013
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 nanocrystals, August 4-9, 2013
173. Symposium on "Computational Photocatalysis", Computation Chemistry Division, 246<sup>th</sup> (Fall) ACS meeting, Sept. 8-12, 2013, Indianapolis.
174. Symposium on "Solar Energy Conversion and Utilization", Energy and Fuel Division, 246<sup>th</sup> (Fall) ACS meeting, Sept. 8-12, 2013, Indianapolis.
175. Energy Frontier Research Center (EFRC) Seminar Series, 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 "Novel Catalytic Mechanisms for the Chemical Reduction of Carbon Dioxide to Energy-Dense Liquids", December 9, 2013, San Diego
178. Departmental Seminar, Department of Chemistry, ZheJiang University, Hanzhou, China, Dec. 13, 2013
179. 4<sup>th</sup> Asian Spectroscopy Conference, Singapore, China, December 15-18, 2013.
180. Departmental seminar, Department of Chemistry, National Singapore University, December 18, 2013.
181. Departmental seminar, Department of Chemistry, Xiamen University, China, December 20, 2013.

### **2014**

182. Fusion conference on "Molecules and Materials for Artificial Photosynthesis", Feb. 6-9, 2014, Cancun, Mexico.
183. "Symposium on Charge and Energy Transfer for Renewable Energy", APS meeting, Denver, March 2-7, 2014.
184. Department of Chemistry, Michigan State University, March 13, 2014.
185. Symposium on "Nanomaterials for Energy Capture, Conversion, and Storage", Inorganic Chemistry Division, 247<sup>th</sup> (Spring) ACS meeting, Dallas, TX, March 16-20, 2014.
186. Symposium on "Physical Chemistry of Low Dimensional Nanomaterials", Physical Chemistry Division, 247<sup>th</sup> (Spring) ACS meeting, Dallas, TX, March 16-20, 2014.

187. Symposium on “Nanostructured Materials for Solar Energy Conversion and Storage”, Fuels and Energy Division, 247<sup>th</sup> (Spring) ACS meeting, Dallas, TX, March 16-20, 2014.
188. AFOSR “Molecular Dynamics and Theoretical Chemistry” contractor meeting, May 19-21, Arlington, Virginia, USA.
189. Symposium on “Established and Emerging Nanocolloids: from Synthesis and Characterization to Applications”, Spring 2014 European Materials Research Society Meeting, May 26-30, Lille, France.
190. 36<sup>th</sup> Department of Energy Solar Photochemistry Research Conference, June 3-6, Annapolis, MD, USA
191. Sixth International Conference on “Excited State Processes in Electronic and Bio Nanomaterials”, June 9-12, 2014, Santa Fe, New Mexico, USA.
192. State Key Laboratory of Chemical Resource Engineering, Beijing University of Chemical Technology, July 11, Beijing, China.
193. Department of Electronics, Xiamen University, July 16, Xiamen, China.
194. Hefei National Laboratory for Physical Sciences at the Microscale, University of Science and Technology, July 18, 2014, Hefei, China.
195. The Second Chinese Ultrafast Spectroscopy Workshop, July 18-20, 2014, Beijing, China.
196. Institute of Chemistry, Chinese Academy of Sciences, July 21, 2014, Beijing, China
197. 1st United States-China Symposium on Energy, Division of Energy and Fuels, Fall ACS meeting, August 10-14, San Francisco, California, USA.
198. Department of Chemistry, Georgia State University, September 5, 2014, Atlanta, Georgia, USA.
199. Symposium “A8 - Solar Fuels and Photocatalysts 4”, 226<sup>th</sup> ECS Meeting in Cancun, Oct. 5-10, 2014, Cancun Mexico. **(canceled due to health reason)**
200. Nano@Tech seminar series, Institute of Electronics and Nanotechnology, Georgia Institute of Technology, Oct. 15, 2014, Atlanta, Georgia
201. Department of Chemistry, Temple University, Oct. 23, 2014, Philadelphia, Pennsylvania
202. Department of Chemistry, University of North Carolina at Chapel Hill, Nov. 19, 2014, Chapel Hill, NC.
203. Symposium V on "Sustainable Solar Energy Conversion Using Earth-Abundant Materials" MRS Fall meeting in Boston, Nov. 30-Dec. 5, 2014, Boston, Massachusetts.
204. Department of Chemistry and Biochemistry, the Ohio State University, December 11, Columbus, OH.

## **2015**

205. Symposium on “Quantum Plasmonics and Hot Electron Applications in Science and Technology”, PQE 2015, Snowbird, Utah January 4-8, 2015.
206. AFOSR MURI Review Workshop on “Novel Catalytic Mechanisms for the Chemical Reduction of Carbon Dioxide to Energy-Dense Liquids”, January 20, 2015, San Diego, California.
207. 61<sup>st</sup> annual Pacific Conference on Spectroscopy and Dynamics (formerly the Western Spectroscopy Association Conference), Asilomar Conference Center in Pacific Grove, California, Jan. 30 – Feb. 2, 2015.
208. Department of Chemistry, University of Wisconsin at Madison, Madison, Wisconsin, March 5, 2015.
209. Symposium on “Probing Nano-Plasmonic Phenomena at the Single Molecule, Single Electron, and Single Photon Level”, Physical Chemistry Division, 249<sup>th</sup> (Spring) ACS meeting, March 22-26, 2015, Denver, Colorado.
210. Symposium on “Plasmonic Catalysis and Sensing”, Surface and Colloids Division, 249<sup>th</sup> (Spring) ACS meeting, March 22-26, 2015, Denver, Colorado.
211. Symposium on “Nanostructured Materials for Solar Energy Conversion and Storage”, Energy and Fuel (ENFL) division, 249<sup>th</sup> (Spring) ACS meeting, March 22-26, 2015, Denver, Colorado.
212. Department of Chemistry, UC Berkeley, April 21, 2015
213. Symposium on “Photoactive Nanoparticles and Nanostructures”, Spring MRS meeting, April 6-10, 2015, San Francisco, California, USA.
214. 37<sup>th</sup> DOE Solar Photochemistry Meeting, Gaithersburg, MD, May 31- June 3, 2015

215. The XVIIth International Conference on Time-Resolved Vibrational Spectroscopy (TRVS 2015), June 21-26, 2015, Madison, Wisconsin.
216. Dalian Institute of Chemical Physics, July 28, 2015
217. Symposium on “Structure and dynamics in complex chemical systems: Gaining new insights through recent advances in time-resolved spectroscopies”, Physical Chemistry Division, 250<sup>th</sup> (Fall) ACS meeting, August 16-20, 2015, Boston, Massachusetts, USA
218. International Workshop "Nanoscale Assemblies of Semiconductor Nanocrystals, Metal Nanoparticles and Single Molecules: Theory, Experiment and Application" (NANOSA15), Max-Planck-Institute for the Physics of Complex Systems, Dresden, August 24 - 28, 2015.
219. International conference on "Charge Transfer and Transport at the Nanoscale", September 13-15, 2015, Santiago de Compostela, Spain.
220. Emerson symposium, Oct. 5, 2015, Emory University
221. Department of Chemistry, Colorado State University, Nov. 5, 2015, Fort Collins, CO.
222. Symposium on "Applications of Coherent Multidimensional Spectroscopy to Chemistry, Biology, and Materials", Pacificchem Congress, Honolulu, Hawaii, December 15-20, 2015.
223. Symposium on ‘Dynamical Processes of Light Harvesting Surfaces’, Pacificchem Congress, Honolulu, Hawaii, December 15-20, 2015.
224. Symposium on ‘Luminescent Nanomaterials: Properties, Mechanisms, and Applications (#101)’, Pacificchem Congress, Honolulu, Hawaii, December 15-20, 2015.

## **2016**

225. Symposium on “Quantum Plasmonics and Hot Electron Applications in Science and Technology”, PQE 2016, Snowbird, Utah January 3-8, 2016.
226. AFOSR MURI Review Workshop on “Novel Catalytic Mechanisms for the Chemical Reduction of Carbon Dioxide to Energy-Dense Liquids”, January 25, 2016, San Diego, California.
227. Fusion conference on “Molecules and Materials for Artificial Photosynthesis”, Feb. 25-28, 2016, Cancun, Mexico.
228. UNAM-Emory Symposium, Emory University, March 1-4, 2016, Atlanta, GA.
229. Department of Chemistry, University of Pennsylvania, March 7, 2016
230. Department of Chemistry, Princeton University, March 8, 2016
231. Session on “Physics of Emerging Materials for Solar Energy Applications” (organizers: Victor Klimov, Alexander Efros, and Masaru Kuno), APS March Meeting, March 14-18, 2016, Baltimore, MD
232. “Status and Prognosis of Future Generation Photoconversion to Photovoltaics and Solar Fuels: A two---day symposium in recognition of the scientific contributions of Professor Art Nozik”, University of Colorado Boulder, March 24-25, 2016
233. School of Materials Science and Engineering, Hubei University, April 1, 2016.
234. \*Second International Symposium on Energy and Environmental Photocatalytic Materials (EPPM2), Wuhan University of Technology, China, April 1 to 4, 2016.
235. \*International Workshop on “Chemical Reactions under External Fields” in Xiamen, China from Apr. 2 to 5, 2016.
236. “ANSER Center’s annual symposium: Solar Fuels”, Northwestern University, April 28-29, Evanston, IL.
237. AFOSR “Molecular Dynamics and Theoretical Chemistry” contractor meeting, May 23-26, Arlington, Virginia, USA.
238. 38<sup>th</sup> DOE Solar Photochemistry Meeting, Gaithersburg, MD, June 6-9, 2016
239. \*SLAC workshop on applications of ultrafast X-ray in solar energy research, June 16-17, SLAC, Stanford University
240. Plasmonics and Nanophotonics Gordon Research Conference, Sunday River Resort, Newry, Maine, July 10-16, 2016

241. Discussion leader and session chair "Energy and Materials" in 2016 Vibrational Spectroscopy Gordon Research Conference, University of New England (Biddeford, Maine), July 17-22, 2016.
242. Electron Donor Acceptor Interactions Gordon Research Conference, Salve Regina, Newport, Rhode Island, Aug 7-12, 2016.
243. Symposium on "Solar Fuels: Power to the People", 252<sup>nd</sup> ACS National Meeting, Philadelphia, PA, August 21-25, 2016.
244. Department of Chemistry, University of Houston, October 13, 2016.
245. Joint ECE/ IEEE Photonics Houston Chapter seminar, Rice University, October 14, 2016.
246. "Energy Storage: Fundamental to Applied", the Solar Energy Research Frontier Center of the University of North Carolina at Chapel Hill, October 20-21, 2016.
247. Symposium on "structure-property relationship of nanoscale materials", ACS Southeastern Regional Meeting (SERMACS), in Columbia, South Carolina, October 23-26, 2016.
248. Session on "Photocatalysis and Photochemistry at Surfaces", 63rd Annual AVS International Symposium and Exhibition (AVS 63), Nov. 6-11, 2016, Nashville TN.
249. State Key Laboratory of Photocatalysis on Energy and Environment, Fuzhou University, Fuzhou China, Nov. 17, 2016.
250. International Conference on Next Generation Solar Cells and Solar Energy Conversion", November 21-24, 2016, National Chiao-Tung University, Hsinchu, Taiwan
251. Naval Research Laboratory, Washington DC, December 7, 2016.

## **2017**

252. Symposium on Frontiers of Plasmonics, PQE 2017, Snowbird, Utah, January 8-13, 2017.
253. "Frontiers at Interfaces: Probing the Mechanisms of Interfacial Carriers Dynamics and Surface Reactions", March APS meeting, March 13-17, 2017, New Orleans, LA.
254. Department of Chemistry and Center for Photochemical Science, Bowling Green State University, Bowling Green, Ohio, March 22, 2017.
255. Department of Chemistry, Purdue University, March 29, 2017
256. Symposium on "Spectroscopy of Complex Systems", the 253rd ACS National Meeting in San Francisco, CA (April 2-6, 2017)
257. Symposium on "Coherent Multidimensional Spectroscopy in Materials Science", the 253rd ACS National Meeting in San Francisco, CA (April 2-6, 2017)
258. The 12<sup>th</sup> Sino-US Nano Symposium, Beijing, China, May 26-28, 2017, Beijing China
259. Institute of Physics, Chinese Academy of Sciences, May 29, 2017, Beijing China
260. 39<sup>th</sup> DOE Solar Photochemistry Meeting, Gaithersburg, MD, June 5-8, 2017
261. Fujian Institute on the Structure of Matter, Chinese Academy of Sciences, Fuzhou, China July 18, 2017.
262. International Workshop on Nonlinear Optics at Interfaces, Dalian, China, July 24-28, 2017.
263. Femtochemistry (FEMTO13) Conference, Cancun, Mexico, from August 13th to 17th, 2017.
264. Penn Conference on Theoretical Chemistry (PCTC): Interfacial Electrochemistry, Philadelphia, USA, August 17-19, 2017.
265. Symposium on "Colloidal Metal and Semiconductor Nanostructures: Theory, Synthesis, and Application", Colloid Division, 254<sup>th</sup> ACS National Meeting, Washington DC, August 20-24, 2017.
266. "International Conference on SERS", Xiamen University, Xiamen, China December 5-9, 2017.

## **2018**

267. Symposium on "Frontiers of Plasmonics", PQE 2018, Snowbird, Utah January 7-13, 2018.
268. Workshop on "Hybrid Photonic-Plasmonic Materials: Toward Ultimate Control Over the Generation and Fate of Photons", Center for Nonlinear Studies (CNLS), Los Alamos National Laboratory (LANL), NM, March 1-2, 2018.
269. Department of Chemical Physics, Lund University, Lund, Sweden, March 16, 2018.

270. Symposium on “Energy and Charge Transfer at Nanoscale Interfaces”, Physical Chemistry division, Spring 2018 ACS Meeting, March 18-22, 2018 in New Orleans, LA.
271. Symposium on “Ultrafast Spectroscopy Meets Chemistry, Materials and Biology”, Analytical Chemistry division, Spring 2018 ACS Meeting, March 18-22, 2018 in New Orleans, LA.
272. Department of Chemistry and Biochemistry, University of California at San Diego, April 17, 2018.
273. Symposium (I05) on “Renewable Fuels via Artificial Photosynthesis or Heterocatalysis”, 233<sup>rd</sup> Electrochemical Society (ECS) Meeting, Seattle, WA, May 13-17, 2018
274. Symposium (B07) on “Inorganic/Organic Nanohybrids for Energy Conversion”, 233<sup>rd</sup> Electrochemical Society (ECS) Meeting, Seattle, WA, May 13-17, 2018
275. 40<sup>th</sup> DOE Solar Photochemistry Meeting, Gaithersburg, MD, June 4-7, 2018.
276. \* “Molecular Science Frontier Lecture”, Institute of Chemistry, Chinese Academy of Sciences, June 11, 2018, Peking, China.
277. International Research Center for Renewable Energy (IRCRe), State Key Laboratory of Multiphase Flow in Power Engineering, School of Energy & Power Engineering, Xi’an Jiaotong University, June 22, 2018, Xi’an, China.
278. Department of Electronic Science and Technology, Xi’an Jiaotong University, June 25, 2018, Xi’an, China.
279. “Roundtable discussion on fundamental nanomaterials research”, The 13th Sino-US Nano Symposium, Chengdu, China, June 29-July 2, 2018.
280. \* “Future Science and Technology Lecture”, Technical Institute of Physics and Chemistry, July 4, 2018, Peking China.
281. \* “Physical Chemistry Chang-Ge Lecture”, Department of Chemistry, Peking University, July 5, 2018, Peking, China.
282. 2018 Gordon Research Conference on Colloidal Semiconductor Nanocrystals, July 15-20, 2018, Smithfield, Rhode Island.
283. Symposium on “Gerischer Electrochemistry Today-2018”, August 14-16, 2018, Renewable and Sustainable Energy Institute (RASEI), University of Colorado in Boulder, Colorado.
284. Symposium on “Novel Catalytic Materials”, ENFL division, Fall 2018 ACS National Meeting, Boston, August 19-23, 2018.
285. Symposium on "Computational Photocatalysis: Modeling of Photophysics & Photochemistry at Interfaces", COMP Division, Fall 2018 ACS National Meeting, Boston, August 19-23, 2018.
286. Ahmed Zewail Memorial Symposium, Fall 2018 ACS National Meeting, Boston, August 19-23, 2018.
287. Symposium on “Spectroscopy and Dynamics”, SERMACS, the southeastern regional ACS meeting, Oct 31st-Nov 3rd, 2018, Augusta, GA
288. Symposium on “Nanophotonics and Plasmonics”, SERMACS, the southeastern regional ACS meeting, Oct 31st-Nov 3rd, 2018, Augusta, GA
289. Department of Chemistry, Vanderbilt University, Nov. 7, 2018.
290. Department of Chemistry, Duke University, Nov. 8, 2018.
291. “Molecular-level understanding of electrochemical chemical interfaces”, MURI workshop, Nov. 20, 2018, Washington DC.

## **2019**

292. Graduates in Nanotechnology Seminar series, Georgia Institute of Technology, March 28, 2019.
293. Symposium on “Light-Driven Chemistry: Photoelectrochemistry and Photocatalysis”, Catalysis Science and Technology Division, Spring 2019 ACS meeting, Orlando, Florida, March 31-April 4, 2019.
294. Symposium on “Surface Chemistry of Colloidal Nanocrystals”, Surface and Colloids Chemistry Division, Spring 2019 ACS meeting, Orlando, Florida, March 31-April 4, 2019.
295. Symposium on “From Lab Book to Journal Article”, Spring 2019 ACS meeting, Orlando, Florida, March 31-April 4, 2019.
296. Materials Science Colloquium, Hamburg University of Technology, Germany, April 17, 2019.

297. Symposium QN08 "Colloidal Nanoparticles: from Synthesis to Applications" MRS Spring Meeting April 22-26, 2019, Phoenix, Arizona, USA.
298. Modern Molecular Electrochemistry MURI Annual Review and Workshop, Atlanta, GA, April 29-30, 2019.
299. Department of Chemistry, Cornell University, May 16, 2019.
300. AFOSR "Molecular Dynamics and Theoretical Chemistry" contractor meeting, May 21-23, 2019, Arlington, Virginia, USA.
301. International Workshop on Nonlinear Optics at Interfaces, Shanghai, China, June 10-14, 2019
302. State Key Laboratory of Photocatalysis on Energy and Environment, Fuzhou University, Fuzhou China, June 18, 2019.
303. Department of Chemistry, Fuzhou University, Fuzhou China, June 18, 2019.
304. Symposium on "Chemical mechanism in energy conversion materials", State Key Laboratory of Structure Chemistry, Fujian Institute of Research on the Structure of Matters, Chinese Academy of Sciences, Fuzhou, China, June 19, 2019.
305. (Keynote) Symposium on "Photochemistry using nanostructures with enhanced optoelectronic properties." the 29th Annual International Conference on Photochemistry, Boulder, CO, July 21-26, 2019.
306. Gordon Research Conference (GRC) on "Plasmonically Powered Processes", Hong Kong, China, July 28-Aug 2, 2019.
307. "3rd Symposium of Advanced Lectures on Fundamentals for Solar Energy Conversion: Theory and Experiment", Dalian Institute of Chemical Physics, Dalian, China, August 21-25, 2019.
308. Symposium "Getting to the bottom: optical and electron imaging of reactive chemical systems," Physical Chemistry Division, Fall ACS meeting, San Diego, CA, on August 25-29, 2019.
309. Symposium on "Photocatalysts, Photoelectrochemical Cells and Solar Fuels 10", 236 Electrochemical Society Meeting, Oct. 13-17, 2019, Atlanta, Georgia, USA

## **2020**

310. Department of Chemistry, University of Connecticut, March 5, 2020, USA(Cancelled)
311. Department of Chemistry, Brown University, March 6, 2020, USA(Cancelled)
312. Department of Chemistry, University of Texas at Austin, May 14, 2020, Austin, Texas, USA (Cancelled)
313. AFOSR "Molecular Dynamics and Theoretical Chemistry" contractor meeting, May 19-21, 2018, Arlington, Virginia, USA. (Cancelled)
314. 41<sup>th</sup> DOE Solar Photochemistry Meeting, Gaithersburg, MD, June 1-3, 2020. (Cancelled)
315. "Excited State Processes in Electronic and Bio Nanomaterials" (ESP-2020), June 8-11, Santa Fe, New Mexico, USA (Cancelled)
316. MURI Program Review, Department of Defense, July 7-8, 2020, ZOOM
317. Annual review and workshop of Molecular Electrochemistry MURI, August 10-11, 2020, ZOOM
318. "Advances in Nonlinear Optics at Interfaces". Fall 2020 ACS meeting, San Francisco (Cancelled)
319. Department of Chemistry, University of Illinois at Urbana Champaign, September 9, 2020, USA
320. Symposium on the "Fundamental Processes in Semiconductor Nanocrystals", NanoGe Fall Meeting 2020, Barcelona, Spain, Oct. 19-23, 2020.
321. Symposium on "Solution-based two-dimensional nanomaterials Sol2D", NanoGe Fall Meeting 2020, Barcelona, Spain, Oct. 19-23, 2020.
322. Bryce L. Crawford Memorial Lecture, Department of Chemistry, University of Minnesota, November 12, 2020, USA
323. Symposium "Recent Advances in Coherent Multidimensional Spectroscopy", 2020 International Chemical Congress of Pacific Basin Societies (Pacifichem2020), December 15th - 20th, 2020. (Cancelled)

324. Symposium on "Trends in Plasmonic Photochemistry", 2020 International Chemical Congress of Pacific Basin Societies (Pacifichem2020), December 15th - 20th, 2020.(Cancelled)

## **2021**

325. Department of Materials Engineering, Georgia Institute of Technology, April 5, 2021.
326. Exciton workshops, Initiatives for Theoretical Sciences, CUNY Graduate Center, April 16, 2021.
327. Symposium I04 – “Renewable Fuels via Artificial Photosynthesis or Heterocatalysis”, 239<sup>th</sup> ECS meeting, Chicago, Illinois, May 20-June 3, 2021.
328. Symposium B07: “Light Energy Conversion with Metal Halide Perovskites, Semiconductor Nanostructures, and Inorganic/Organic Hybrid Materials”, 239th Meeting of the Electrochemical Society, Chicago, IL, May 30-June 3, 2021.
329. **Time Resolved Vibrational Spectroscopy (TRVS), June 13-18, 2021**
330. Colloquium within the CRC 1242 "Non-Equilibrium dynamics of condensed matter in the time domain", Universität Duisburg-Essen, Germany, June 22, 2021.
331. Symposium on “Physical Chemistry of Interfaces and Nanomaterials XX Conference”, SPIE Optics + Photonics 2021, August, 1-5, San Diego, US. (withdrawn)
332. Annual review and workshop of Molecular Electrochemistry MURI, August 10-11, 2021, ZOOM
333. Symposium on “*Advances in Nonlinear Optics at Interfaces*”, PHYS division, Fall 2021 ACS meeting, August 22 - 26, 2021, Atlanta, GA
334. Symposium on “*Advances in Applied Nonlinear Spectroscopy*”, ANYL division, Fall 2021 National ACS meeting, August 22 - 26, 2021, Atlanta, GA
335. Symposium on “*Vibrational Spectroscopy for Probing Surfaces in Complex Chemical Environments*”, CATL division, Fall 2021 National ACS meeting, August 22 - 26, 2021, Atlanta, GA
336. *Symposium 20: “Recent Development in Spectroscopy, Microscopy and Theory for Atomic/Molecular Level Understanding of Electrochemical Interfaces”*, 72th ISE Annual meeting in Jeju island in Korea (29 August - 3 September of 2021).
337. Department of Chemistry, Cornell University, October 6, 2021, USA
338. “*3rd Moscow Autumn Perovskite Photovoltaics International Conference (MAPPIC-2021)*”, Moscow, Russia, October 11-13, 2021
339. Symposium on “*Photocatalysis and Electrocatalysts and Electrochemistry Methods for Clean Energy Harvesting, Conversion, and Storage*”, SERMACS meeting, November 10-13, 2021, Sheraton Downtown, Birmingham, AL.
340. Department of Chemistry, University of Connecticut, December 2, 2021, USA
341. International Workshop on Solar Fuel (IWSF), Holiday Inn Wuhan Riverside, Wuhan, China on December 10-13, 2021.
342. Symposium "Recent Advances in Coherent Multidimensional Spectroscopy", 2020 International Chemical Congress of Pacific Basin Societies (Pacifichem2020), December 15th - 20th, 2021(withdrawn).
343. Symposium on "Trends in Plasmonic Photochemistry", 2020 International Chemical Congress of Pacific Basin Societies (Pacifichem2020), December 15th - 20th, 2021(withdrawn).

## **2022**

344. Frontiers of Chemistry Seminar, Department of Chemistry, Wayne State University, March 7, 2022.
345. Symposium on “Energy and Charge Transfer at Nanoscale Interfaces”, Physical Chemistry Division, Spring 2022 ACS Meeting, March 20-24, 2022, San Diego, CA.
346. Symposium on “Optical Spectroscopy of Nanoscale Surfaces, Interfaces and Structures”, Analytical Chemistry Division, 2022 Spring ACS Meeting, CA, March 20-24, 2022, San Diego, CA
347. Emerson Symposium, April 21, 2022, Emory University, Atlanta, Georgia, USA

348. Gordon Research Conference on Renewable Energy: Solar Fuels, May 8-13, 2022, Renaissance Tuscany Il Ciocco in Lucca (Barga), Italy
349. AFOSR "Molecular Dynamics and Theoretical Chemistry" meeting, May 24-26, 2022, Online.
350. Symposium on "Light Energy Conversion with Metal Halide Perovskites, Semiconductor and Organic Nanostructures, Inorganic/Organic Hybrid Materials, and Dynamic Exciton" 241st Meeting of the Electrochemical Society, Vancouver, Canada, May 29-June 2, 2022.
351. Symposium on "Artificial Photosynthesis or Heterocatalysis 8" 241st Meeting of the Electrochemical Society, Vancouver, Canada, May 29-June 2, 2022.
352. Annual review and workshop of Molecular Electrochemistry MURI, August 9-10, 2022, Massachusetts Institute of Technology, Boston, USA.
353. Physical Chemistry Division Award Symposium, Physical Chemistry division, Fall 2022 ACS meeting, August 21 - 25, 2022, Chicago, IL.
354. Symposium on "Advances in Single-Particle Imaging: From Single Molecules to Nanomaterials", Physical Chemistry division, Fall 2022 ACS meeting, August 21 - 25, 2022, Chicago, IL.
355. AFOSR Ionic Liquid Working Group monthly meeting, August 17, 2022, Zoom Meeting.
356. Department of Chemistry, University of Toronto, September 7, 2022.
357. "Triplet energy transfer from quantum dots: role of bright, dark and trap states", Symposium on "Quantum Dot Science and Technology 2" 242nd Meeting of the Electrochemical Society, Atlanta, Georgia, USA, Oct. 9-13, 2022.
358. Symposium I04: "Photocatalysts, Photoelectrochemical Cells, and Solar Fuels 12", 242<sup>nd</sup> ECS Meeting October 9-13, 2022, Atlanta, Georgia, USA
359. Department of Chemistry, Wake Forest University, Nov. 2, 2022.
360. Department of Chemistry, University of North Carolina at Chapel Hill, Nov. 3, 2022.
361. News in Nanocrystal online seminar series, Nov. 9, 2022.
362. Department of Chemistry, Auburn University, Nov. 10, 2022.

## **2023**

363. Symposium on "Frontiers and Challenges in Nanoparticles-Mediated Chemical Transformations," Division of Colloid & Surface Chemistry, ACS Spring Meeting, March 26 - 30, 2023, Indianapolis, IN. (cancelled)
364. Virtual Workshop on "Nanomaterials Interfaces: from Fundamentals to Applications", APS/CNM 2023 Users Meeting, Argonne National Laboratory, USA.
365. Japan Gateway: Kyoto University Top Global Program Lecture series (Five invited lectures), May 1-13, 2023, Kyoto University (Katsura Campus), Kyoto, Japan
  - 1) Probing Interfacial Catalyst Microenvironments by In Situ Surface Enhanced/Selective Vibrational Spectroscopy
  - 2) In Situ Probe of Structure and Dynamics at Metal electrode/Electrolyte Interface by Electrochemical Surface Enhanced/Selective Vibrational Spectroscopic Methods
  - 3) Efficient Hot Electron Transfer by Plasmon-induced Interfacial Charge Transfer Transition
  - 4) Charge and Triplet Energy Transfer from Quantum Dots
  - 5) Exciton Dynamics and Light Driven H<sub>2</sub> Generation in 1D and 2D Nano-heterostructures
366. Institute for Chemical Research, Kyoto University (Ujin Campus), May 8, 2023, Kyoto, Japan
367. Institute of Post-LED photonics, Tokushima University, May 2, 2023, Tokushima, Japan
368. Symposium B07 "Light Energy Conversion with Metal Halide Perovskites, Semiconductor and Organic Nanostructures, Inorganic/Organic Hybrid Materials, and Dynamic Exciton", 243rd Meeting of the Electrochemical Society, Boston, USA, May 28-June 2, 2023.
369. Symposium I02 "Renewable Fuels via Artificial Photosynthesis or Heterocatalysis 9", 243rd Meeting of the Electrochemical Society, Boston, USA, May 28-June 2, 2023.
370. 2023 International Conference on "Nonlinear Optics at Interfaces" Rome, Italy, June 5-9, 2023.

371. Plenary speaker, 31<sup>st</sup> International Conference on Photochemistry (ICP2023)", Sapporo, Japan, July 23-28, 2023.
372. Annual Review of MURI on Molecular level understanding of electrochemical processes, August 07-08, Yale University.
373. *Symposium on "Accelerating Materials Development for Photocatalysis and Photoelectrocatalysis"*, Division of Energy and Fuels (ENFL), **ACS Fall 2023** meeting, San Francisco, USA, August 13 – 17, 2023.
374. *Symposium on "CATL010: Molecular and Heterogeneous Photocatalysts: Advances in Experiments and Theory"*, Division of Catalysis Science & Technology (CATL), **ACS Fall 2023** meeting, San Francisco, USA, August 13 – 17, 2023.
375. keynote speaker at the second annual symposium on "Light for driving and monitoring chemical reactions" at AMOLF in Amsterdam on Friday, September 8<sup>th</sup>, 2023.
376. Wintergreen Physical Chemistry Meeting, 2023, September 23-27, Wintergreen, Virginia.
377. Symposium on "Ultrafast and Nonlinear Spectroscopy", SERMACS 2023, Durham, North Carolina
378. Department of Chemistry, Zhejiang University, November 1<sup>st</sup> 2023, Hangzhou, China
379. The West Lake Master Lecture Series, Westlake University, November 2<sup>nd</sup>, 2023, Hangzhou, China
380. The Chemistry Frontiers Symposium, West Lake Forum, an international conference organized by Westlake University, November 3 – 4 2023, Hangzhou, China
381. College of Electrical Engineering, Xiamen University, Nov. 7, 2023
382. College of Chemistry and Chemical Engineering, Xiamen University, Nov. 8, 2023
383. Fujian Institute of Research on the Structure of Matter, Fuzhou, China, Nov. 9, 2023
384. Department of Chemistry, Peking University, November 13, 2023
385. State Key Laboratory of Precision Spectroscopy, Eastern China Normal University, Nov. 15, 2023
386. College of Science, Southern University of Science and Technology of China, Nov. 17, 2023.
387. Department of Chemistry, University of Pennsylvania, December 7, 2023, Philadelphia, USA
388. Department of Chemistry, Yale University, December 15, 2023, New Haven, USA

#### **2024 Invitation Accepted**

389. Symposium on "Informed Design of Quantum Dots and Quantum Dot Assemblies for Energy Applications", Phys. Chem. Division, ACS Spring National Meeting, March 17-21, 2024, New Orleans.
390. "Henry Storch Award Symposium", ENFL Division, ACS Spring National Meeting, March 17-21, 2024, New Orleans.
391. Department of Chemistry, Northwestern University, May 1, 2024.
392. Symposium on "Applications of Laser Spectroscopy in Biology, Chemistry and Materials Studies", May 9-12, 2024, Guilin, Guangxi Province, China.
393. AFOSR "Molecular Dynamics and Theoretical Chemistry" meeting, May 21-23, 2024
394. Symposium I02 "Renewable Fuels via Artificial Photosynthesis or Heterocatalysis 10", 245<sup>th</sup> Meeting of the Electrochemical Society, San Francisco, USA, May 26-30, 2024.
395. Symposium B07 "Light Energy Conversion with Metal Halide Perovskites, Semiconductor and Organic Nanostructures, Inorganic/Organic Hybrid Materials, and Dynamic Exciton", 245<sup>th</sup> Meeting of the Electrochemical Society, San Francisco, USA, May 26-30, 2024.
396. Symposium D04 "Quantum Dot Science and Technology 3", 245<sup>th</sup> Meeting of the Electrochemical Society, San Francisco, USA, May 26-30, 2024.
397. 45th Department of Energy Solar Photochemistry PI meeting, June 3-5, 2024, DoubleTree by Hilton Washington DC North / Gaithersburg MD.
398. Noble Metal Nanoparticles Gordon Research Conference, June 16-21, 2024, Mount Holyoke College, USA
399. Colloidal Semiconductor Nanocrystals Gordon Research Seminar, June 29-30, 2024, Les Diablerets, Switzerland

400. Discussion leader, Colloidal Semiconductor Nanocrystals Gordon Research Conference, June 30-July 5, 2024, Les Diablerets, Switzerland
401. “The 2nd Gerischer Electrochemistry Today Symposium”, Colorado State University, Aug 6th-8th 2024
402. Symposium on “Energy Applications of Ultrafast Science,” Phys. Chem. Division, ACS Fall National Meeting, August 18-22, 2024, Denver, Colorado.
403. Symposium on “Frontiers and Challenges in Nanoparticles-Mediated Chemical Transformations,” Division of Colloid & Surface Chemistry (COLL), ACS Fall 2024 meeting, August 18 - 22, 2024, Denver, CO, USA.
404. Co-Chair, Symposium on “Surfaces and Interfaces in Chemical and Biological Systems --A symposium honoring Hai-Lung Dai”, Division of Colloid & Surface Chemistry (COLL), ACS Fall 2024 meeting, August 18 - 22, 2024, Denver, CO, USA.
405. Department of Chemistry, Georgia State University, Atlanta, GA, Sept. 13, 2024
406. Symposium on “Ultrafast and Nonlinear Spectroscopy”, SERMACS 2024, October 23-26, Atlanta, Georgia
407. Department of Chemistry, University of Washington, October 30, 2024, Seattle, USA
408. EN01 symposium “Light-Harvesting Materials for Efficient and Stable Solar Fuels Production”, 2024 Materials Research Society (MRS) Fall Meeting, Boston, Massachusetts, Dec. 1 – 6, 2024.

## **2025**

409. \*\*Moses Gomberg Lecture, Department of Chemistry at the University of Michigan, March 17, 2025
410. Symposium on “Advances in Electrochemistry”, ANYL Division, ACS Fall 2025, March 23 to 27, 2025, San Diego, USA.
411. Symposium “*The Role of Fundamental Interfacial Processes in Electrocatalysis* (CATL Division)”, ACS Fall 2025, March 23 to 27, 2025, San Diego, USA.
412. \*\*“Samuel M. McElvain Academic Lecturer in Physical Chemistry Path”, Department of Chemistry, University of Wisconsin–Madison, April 15, 2025
413. \*\*[O’Keeffe Lectureship](#), School of Molecular Sciences, Arizona State University, April 18, 2025
414. Department of Chemical Engineering, University of Massachusetts Amherst, April 24, 2025
415. Department of Chemistry, Amherst College, April 25, 2025
416. “Hierarchical Molecular Dynamics”, TRVS Satellite Meeting, Institute of Molecular Sciences, Okazaki, Japan, May 31-June 1, 2025.
417. Gordon Research Conference on “Plasmonically Powered Processes”, Ventura, California, June 8-13, 2025.
418. Gordon Research Conference on “Dynamics at Surfaces”, Holderness School, NH, USA, July 20-25, 2025.
419. Symposium on “Plasmon and Nanophotonics for Photo-(electro)chemical Reactions, Sensing, and Medical Therapy”, 248th ECS Meeting on October 12-16, 2025 in Chicago, USA.
420. Symposium on “Photocatalysts, Photoelectrochemical Cells, and Solar Fuels 15”, 248th ECS Meeting on October 12-16, 2025 in Chicago, USA.
421. Symposium on Ultrafast and Nonlinear Spectroscopy, SERMACS 2025, Orlando, Oct. 26-29, 2025.
422. Department of Chemistry, University of Illinois at Urbana Champagne, Nov. 5, 2025
423. Department of Chemistry & Biochemistry, Florida State University, Tallahassee, FL, Nov. 7, 2025

424. Department of Chemistry, Boston University, Nov. 10, 2025
425. "Emerging Frontiers in Surface Spectroscopy and Microscopy", Pacificchem 2025, Honolulu, Hawaii, USA, December 15-20, 2025.
426. "Environment- and energy-related interfacial phenomena by advanced nonlinear spectroscopy", Pacificchem 2025, Honolulu, Hawaii, USA, December 15-20, 2025.
427. " *Emerging Frontiers in Plasmonic Chemistry*", Pacificchem 2025, Honolulu, Hawaii, USA, December 15-20, 2025.

**2026 invitation delivered and accepted**

428. Department of Chemistry, Seoul National University, Seoul, Korea, Jan. 29, 2026.
429. Department of Chemistry, Ewha Womans University, Seoul, Korea, Jan. 20, 2026.
430. *\*\*Noyes Lectureship*, Department of Chemistry, UT Austin, Feb. 26, 2026
431. *\*\*Milton Kahn Lecture* at University of New Mexico, March 13, 2026.
432. Symposium on "Electric field effect in Vibrational Spectroscopy, Phys. Division, ACS Spring Meeting, March 22-26, 2026, Atlanta, GA.
433. Symposium "*Photon-Induced Catalysis: Advances in Photocatalysis & Photoelectrocatalysis*" at **ACS Spring 2026** meeting, ENFL Division, **Atlanta**, CA, USA, March 22-26, 2026.
434. Department of Chemistry, MIT, April 14, 2026
435. Department of Chemistry, Rutgers University at Newark, April 17, 2026
436. Department of Chemistry, Temple University, April 20, 2026.
437. Department of Chemistry, University of Illinois at Urbana Champagne, April 22, 2026
438. Department of Chemistry, Stanford University, April 28, 2026.
439. Gordon Research Conference on "Molecular Processes at Surfaces and Interfaces", Stonehill College, Easton, Massachusetts, USA, June 28 -July 3, 2026.
440. Gordon Research Conference on Vibrational Spectroscopy, Southern New Hampshire University, August 2-7, 2026.
441. Symposium "Frontiers and Challenges in Nanoparticles-Mediated Chemical Transformations," at **ACS Fall 2026** meeting, Colloids Division, **Chicago**, IL, USA, August 23-27, 2026.
442. Department of Chemistry, Boston University, Oct. 12, 2026