

Wentao Wang

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Education

Florida State University

Tallahassee, FL
Expected 09/2016

- Ph.D. in Physical Chemistry
- Ocean Optics Young Investigator Award, SPIE Photonics West, 2016
- Chem. and Biochem. Travel Award, FSU, 2014
- FSU Dean Fellowship, 2011

Jilin University

Changchun, China
09/2009 ~ 07/2011

- Master Research in Polymer Chemistry
- CSPC Pharmaceutical Group Fellowship, 2010
- Outstanding Student Prize, 2010
- First-Class Scholarship, 2009 and 2010

Jilin University

Changchun, China
09/2005 ~ 07/2009

- B.S. in Chemistry, graduation with Honors
- First-Class Scholarship, Jilin University, 2008
- The 6th National Undergraduate Chemistry Competition, Second Prize, 2008

Research Experience

➤ **Research Assistant, Florida State University**

2011 ~ Present

- Synthesis of high quality colloidal nanoparticles, including luminescent quantum dots (QDs), magnetic iron oxide nanocrystals, and gold nanocrystals (e.g., nanospheres, nanoshells, and nanorods).
- Synthesis of biocompatible PEG/zwitterion-based molecular and polymeric ligands adapted for surface functionalization of inorganic nanoparticles. .
- Developing novel bio-orthogonal conjugation approaches and optimizing conventional conjugation strategy.
- Conjugation of nanoparticles with biomolecules (e.g., dye, protein, peptide, antibody and drug) and the applications of nanoprobe in biological sensing, imaging and therapy.

➤ **Research Assistant, Jilin University**

2009 ~ 2011

- Surface-patterning and silicon nanofabrication via nanoimprint lithography (NIL), photolithography and reactive-ion etching (RIE).
- Template-assisted self-assembly and surface-patterning of organic semiconductors via vacuum vapor deposition and Langmuir-Blodgett techniques.

➤ **Undergraduate Research Assistant, Jilin University**

2007 ~ 2009

- Synthesis of organometallic compounds (chromium complexes and titanium complexes) for homogeneous catalysis in polymerization

Professional Activities

- Organizer of NanoFlorida 2015 - The 8th Annual Nanoscience Technology Symposium, 2015
- Member of SPIE, 2015
- Member of Material Research Society, 2015
- Member of American Chemical Society, 2014

Patents

- H Mattoussi, **W Wang**, G Palui, "Polymer Ligands for Nanoparticles", US Patent 20,150,284,517, 2015
- H Mattoussi, **W Wang**, G Palui, "Photoligation of an Amphiphilic Polymer with Mixed Coordination Provides Compact and Reactive Quantum Dots", US Patent 20,150,284,493, 2015

Publications

- **Wentao Wang**, Anshika Kapur, Xin Ji, Dinesh Mishra, Hedi Mattoussi, "A Multifunctional, Compact and High Affinity Polymer Ligand that Provides Bioorthogonal Coating of Quantum Dots" submitted, **2016**.
- **Wentao Wang**, Xin Ji, Anshika Kapur, Hedi Mattoussi, "Surface-Functionalizing Metal, Metal Oxide and Semiconductor Nanocrystals with a Multi-coordinating Polymer Platform" *MRS Advances*, ASAP, **2016**.
- **Wentao Wang**, Xin Ji, Hunter Burns, Hedi Mattoussi, "A Multi-coordinating Polymer Ligand Optimized for the Functionalization of Metallic Nanocrystals and Nanorods" *Faraday Discussions*, ASAP, **2016**.
- Xin Ji,* **Wentao Wang**,* Hedi Mattoussi, "Controlling the Spectroscopic Properties of Quantum Dots via Energy Transfer and Charge Transfer Interactions: Concepts and Applications" *Nano Today*, 11, 98–121, **2016**. (contribute equally)
- **Wentao Wang**, Xin Ji, Anshika Kapur, Chengqi Zhang, Hedi Mattoussi, "A Multifunctional Polymer Combining the Imidazole and Zwitterion Motifs as a Biocompatible Compact Coating of Quantum Dots" *J. Am. Chem. Soc.* 137, 14158–14172, **2015**.
- **Wentao Wang**, Anshika Kapur, Xin Ji, Malak Safi, Goutam Palui, Valle Palomo, Philip Dawson, Hedi Mattoussi, "Photoligation of an Amphiphilic Polymer with Mixed Coordination Provides Compact and Reactive Quantum Dots" *J. Am. Chem. Soc.* 137, 5438–5451, **2015**.
- Xin Ji, **Wentao Wang**, Hedi Mattoussi, "Effects of Separation Distance on the Charge Transfer Interactions in Quantum Dot-Dopamine Assemblies" *Phys. Chem. Chem. Phys.* 17, 10108–10117, **2015**.
- Xin Ji, Nikolay S Makarov, **Wentao Wang**, Goutam Palui, Istvan Robel, Hedi Mattoussi, "Tuning the Redox Coupling between Quantum Dots and Dopamine in Hybrid Nanoscale Assemblies" *J. Phys. Chem. C* 119, 3388, **2015**.
- Goutam Palui, Fadi Aldeek, **Wentao Wang**, and Hedi Mattoussi, "Strategies for Interfacing Inorganic Nanocrystals with Biological Systems based on Polymer-Coating" *Chem. Soc. Rev.* 44, 193–227, **2015**.
- **Wentao Wang**, Fadi Aldeek, Xin Ji, Birong Zeng, Hedi Mattoussi, "A Multifunctional Amphiphilic Polymer as a Platform for Surface-Functionalizing Metallic and other Inorganic Nanostructures" *Faraday Discuss.* 175, 137–151, **2014**.
- **Wentao Wang**, Xin Ji, Hyon Bin Na, Malak Safi, Alexandria Smith, Goutam Palui, J.M. Perez, and Hedi Mattoussi, "A Multi-Dopamine-Modified Polymer as a Ligand Optimally Suited for Interfacing Magnetic Nanoparticles with Biological Systems" *Langmuir* 30, 6197–6208, **2014**.
- Yandong Wang, Nan Lu, **Wentao Wang**, Lingxiao Liu, Lei Feng, Zhoufang Zeng, Haibo Li, Weiqing Xu, Zijian Wu, Wei Hu, Yanqing Lu, Lifeng Chi, "Highly effective and reproducible surface-enhanced Raman scattering substrates based on Ag pyramidal arrays" *Nano Res.* 6, 159–166, **2013**.
- **Wentao Wang**, Nan Lu, Juanyuan Hao, Hongbo Xu, and Lifeng Chi, "Self-assembled-monolayer Islands Masked Chemical Etching for Broadband Antireflective Surfaces" *J. Phys. Chem. C* 114, 1989–1995, **2010**.

- Juanyuan Hao, Nan Lu, Hongbo Xu, **Wentao Wang**, Liguao Gao, Lifeng Chi, “Langmuir-Blodgett Monolayer Masked Chemical Etching: An Approach to Broadband Antireflective Surfaces” *Chem. Mater.* 21, 1802–1805, 2009.

Proceedings and Book Chapters

- **Wentao Wang**, Xin Ji, Anshika Kapur, Hedi Mattoussi “Design of a multi-coordinating polymer as a platform for functionalizing metal, metal oxide and semiconductor nanocrystals” *SPIE BIOS* 9722–2, 2016.
- Xin Ji, Nikolay S Makarov, **Wentao Wang**, Goutam Palui, Istvan Robel, Hedi Mattoussi, “Understanding the Redox Coupling between Quantum Dots and Neurotransmitter Dopamine in Hybrid Self-Assemblies” *SPIE BIOS* 93380N-93380N-8, 2015.
- **Wentao Wang**, Goutam Palui, Xin Ji, Fadi Aldeek, Hedi Mattoussi, “Multidentate oligomeric ligands to enhance the biocompatibility of iron oxide and other metal nanoparticles” *SPIE BIOS* 8955–10, 2013.
- Goutam Palui, **Wentao Wang**, Fadi Aldeek, Hedi Mattoussi, “Polymers for Surface-Functionalization and Biocompatibility of Inorganic Nanocrystals” Encyclopedia of Polymer Science and Technology John Wiley & Sons, Inc, 2013

Conferences and Presentations

- **W. Wang**, X. Ji, A. Kapur, H. Mattoussi, “Optimizing the bio-nano interface via a multi-coordinating polymer coating” 252nd ACS National Meeting, Philadelphia, PA, August 21-25, 2016 (*Oral presentation*)
- **W. Wang**, X. Ji, A. Kapur, H. Mattoussi, “Functionalization of metal, metal oxide and semiconductor nanocrystals using a multi-coordinating polymer” 251th ACS Meeting, San Diego, CA, March 13-17, 2016 (*Oral Presentation*)
- **W. Wang**, A. Kapur, X. Ji, H. Mattoussi, “Design of a multi-coordinating polymer as a platform for functionalizing metal, metal oxide and semiconductor nanocrystals” SPIE Photonics West, San Francisco, CA, February 13-18, 2016 (*Oral presentation*)
- **W. Wang**, A. Kapur, X. Ji, H. Mattoussi, “Surface-Functionalizing Metal, Metal Oxide and Semiconductor Nanocrystals with a Multi-Coordinating Polymer Platform” MRS Fall Meeting, Boston, MA, Nov. 29- Dec. 4, 2015 (*Oral Presentation*)
- **W. Wang**, A. Kapur, X. Ji, G. Palui, and H. Mattoussi, “Multi-coordinating Amphiphilic Polymers Provide Compact, Highly Stable and Reactive Semiconductor and Metal Oxide Nanocrystal-Conjugates,” 249th ACS Meeting, Denver, CO, March 22-26, 2015.
- **W. Wang**, Xin Ji, Anshika Kapur, Goutam Palui, Hedi Mattoussi, “Combining Multi-Coordinating Amphiphilic Polymer Design with a Mild Photoligation Strategy Provides Compact, Highly Stable and Reactive Quantum Dots” MRS Fall Meeting, No. III11.09, Boston, Massachusetts, 2014
- **W. Wang**, F. Aldeek, X. Ji, G. Palui, and H. Mattoussi, “A Multifunctional Amphiphilic Polymer as a Platform for Interfacing Metal and Metal Oxide Nanocrystals with Biological Systems,” Faraday Discussion 175, University of Bristol, UK, September 17-19, 2014
- **W. Wang**, X. Ji, G. Palui, F. Aldeek and H. Mattoussi, “Design of a Multidentate Oligomeric Platform for Biocompatible Magnetic, Metallic and Semiconductor Nanocrystals,” 247th ACS Meeting, Dallas TX, March 16-20, 2014.
- **W. Wang**, G. Palui, X. Ji, F. H. Aldeek, H. Mattoussi, “Multidentate oligomeric ligands to enhance the biocompatibility of iron oxide and semiconductor nanoparticles,” Colloidal Nanoparticles for Biomedical Applications IX, 2014 SPIE Photonics West, San Francisco, CA, February 1-6, 2014.