



TIA S. LEE, PH.D.

- Chemist with a broad, interdisciplinary research experiences •
- Intend to take USPTO registration exam in 2022 •

- Boston, MA
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Educataion

USPTO Exam Prep Course

Practicing Law Institute
2022 • Home study program

Ph.D., Chemistry

Princeton University
2015 - 2019 • Princeton, NJ

M.A., Chemistry

Princeton University
2014 - 2015 • Princeton, NJ

B.Sc., Chemical Physics (hons.)

University of Toronto
2007 - 2011 • Toronto, ON

B.Sc., Mathematics (hons.)

University of Toronto
2007 - 2011 • Toronto, ON

Expertises

Physical Chemistry • Photochemistry
• Spectroscopy • Optics • Organic
Material Chemistry • Nanotechnology
• Computational Chemistry • LEDs •
Photocatalytic Chemistry • Solar Cells
• Small Molecules • Semiconductors •
CO₂ Reduction • Transition Metal
Chemistry

Languages

English • Korean

Strengths

Scientific Communication (writing,
editing & speaking) • Collaborative •
Attention to Detail • Growth Oriented
• Critical Analysis • Mentorship •
Organization • Interdisciplinary
Research • Constructive Feedback •
Project Management

Recent Positions Held

Postdoctoral Research Scholar • North Carolina State University • 2019 - 2021

Investigated photochemistry & photophysics of organic, inorganic complexes, hybrid-semiconductors (quantum dots) • Directed & edited manuscripts for graduate students

Graduate Research Assistant • Princeton University • 2014 - 2019

Discovered energy transfer mechanism in singlet fission of nano- and polycrystalline acenes • Explored manganese complexes for photo-induced CO₂ reduction • Coordinated interdisciplinary research projects with chemists, physicists and engineers • Designed and built instrumentations • Trained and mentored students

Graduate Teaching Assistant • Princeton University • 2014 - 2018

Planned, organized, created and led weekly lectures for undergraduate class • Supervised teaching laboratory • created and delivered effective training sessions for graduate teaching assistants

Selected Publications & Presentations

13 Published • 1 Under Revision • 1 Ph.D. Thesis

- Long-lived photoluminescence of molecular group 14 compounds through thermally activated delayed fluorescence. *Inorg. Chem.* **2022**, 61, 7338.
- Vibronic and excitonic dynamics in perylene diimide dimers and tetramer. *J. Chem. Phys.* **2020**, 224101
- Energy migration processes in Re(I) MLCT complexes featuring a chromophoric ancillary ligand. *Inorg. Chem.* **2020**, 59, 8259.
- Delayed fluorescence from a zirconium(IV) photosensitizer with ligand-to-metal charge transfer excited states. *Nature Chemistry.* **2020**, 12, 345.
- A cyanide-bridged di-manganese carbonyl complex that photochemically reduces CO₂ to CO. *Dalton Transactions.* **2019**, 48, 1226.
- Improved H evolution in quaternary SCIGS calcopyrite semiconductors. *J. Phys. Chem. C.* **2018**, 122, 24512.
- Triplet energy transfer governs dissociation of correlated triplet pair generated by singlet fission in polycrystalline TIPS-pentacene film. *J. Phys. Chem. Lett.*, **2018**, 9, 4087.
- Exciton delocalization derives rapid singlet fission in nanoparticles of acene derivatives. *J. Am. Chem. Soc.*, **2015**, 137, 6790.
- Ultrafast triplet formation in thionated perylene diimides. *J. Phys. Chem. C.*, **2014**, 118, 9996.

Presentations

- "Two regimes of triplet transfer in correlated triplet pair dissociation in singlet fission", *Material Research Society*, **2019**.
- "Singlet fission in pentacene derivative nanoparticles using two-dimensional electronic spectroscopy", *Canadian Society for Chemistry*, **2014**.

Leadership & Mentorship

Mentorship Undergraduate Students

Teaching General Chemistry •
Material Chemistry Laboratory •
Quantum Mechanics • Thermodynamics

McGraw Fellow Leading Orientations • Inclusive Committee • Panel discussions

Recognitions

Edward C. Taylor Fellowship
Chemistry Teaching Service Award
Princeton Graduate Teaching Award
Pickering Teaching Award
University of Toronto Scholars