Tia S. Lee, Ph.D.

• Chemist with broad, interdisciplanary research experience •
• Intend to take USPTO registration exam in 2022 •

scan to view comprehensive curriculum vitae

Boston, MA
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Educataion

USPTO Exam Prep Course
Practicing Law Institute
2022 • Home study program

Ph.D., Chemitry
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 • Compuational Chemistry • LEDs • Photocatalytic Chemstry • Solar Cells • Small Molecules • Semiconductors • CO_2 Reducion • Transition Metal Chemistry

Languages

English • Korean

Strengths

Scientific Communication (writing, editing & speaking) • Collaborative • Attention to Detail• Growth Oriented • Critical Analysis • Mentorship • Organization • Interdisciplanary 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 CO_2 reduction • Coordinated interdisciplanary 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 course • 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 perylenediimide 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 CO_2 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 Fellowhip
Chemistry Teaching Service Award
Princeton Graduate Teaching Award
Pickering Teaching Award
University of Toronto Scholars