

Jieming (Jimmy) Yan

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Education:

University of Texas at Austin, Austin, TX. 01/2020-Present
Ph.D in Materials Science and Engineering (In progress)

- Dissertation Title: Design of Ionic Liquid-Based Additives for Integration with Modern Lubrication Systems

University of California, San Diego, La Jolla, CA. 09/2015-06/2019
B.S *cum laude* in NanoEngineering (Materials Science Focus)

Research Experience:

Texas Materials Institute, University of Texas at Austin 01/2020-Present
Graduate Research Assistant
Principal Investigator: Filippo Mangolini

- Study the interactions between ionic liquids, polymer composite particles, and surfaces under friction.
- Perform synthesis and characterization of ionic liquids and polymer composite particles.
- Conduct tribological testing of materials to evaluate friction and wear behavior.
- Examine physical and chemical properties of surfaces via microscopy and spectroscopic analysis.

Department of Nanoengineering, University of California, San Diego 01/2018-07/2019
Undergraduate Research Assistant
Principal Investigator: Joseph Wang

- Assist in the design and fabrication of catalytic micromotors and related materials.
- Record, analyze, and process data for publication.
- Introduced and implemented lab-wide protocols for digital media processing.

Awards:

Professional Development Award, UT Graduate School 12/ 2023

- To support attendance of the 2023 STLE Tribology Frontiers Conference

Publications:

1. Yan, J.; Mangolini, F. *Polymer-Encapsulated Ionic Liquids as Lubricant Additives*. **J. Mol. Liq.** 383, 122089, **2023**
2. Yan, J.; Lien, H. M.; Mangolini, F. *Linking Molecular Structure and Lubrication Mechanisms in Tetraalkylammonium Orthoborate Ionic Liquids*. **Tribol. Lett.** 71 (2), 1–14, **2023**
3. Yan, J.; Li, Z.; Ye, J. Z.; Mangolini, F. *Bioinert Conversion Coating of Stainless Steel via Deposition of Thin ZnO Layer*, **Manuscript submitted for publication**
4. Li, Z.; Ye, J. Z.; Yan, J.; Molina, N.; Lien, H. M.; Chrostowski, R.; Jaye, C.; Fischer, D. A.; Lin, J.; Mangolini, F. *Effect of Tribologically-Induced Changes in Surface Termination of Silicon-Containing Diamond-like Carbon Coatings on the Resistance to Biomolecule Adsorption*. **Carbon** N. Y. 199, 132–140, **2022**
5. Yan, J.; Mangolini, F. *Tailoring Encapsulated Ionic Liquids for Next-Generation Applications*, **RSC Advances**, 11, 36273-36288, **2021**
6. Karshalev, E.; Silva-Lopez, C.; Chan, K.; Yan, J.; Sandraz, E.; Gallot, M.; Nourhani, A.; Garay, J.; Wang, J. *Swimmers Heal on the Move Following Catastrophic Damage*. **Nano Lett.** 21 (5), 2240–2247, **2021**
7. Karshalev, E.; Yan, J.; Campos, I.; Sandraz, E.; Li, J.; Wang, J. *Small-Scale Propellers Deliver Miniature Versions of Themselves*. **Small**, 16 (17), **2020**

Conference Presentations:

Oral Presentations:

- "Encapsulated Ionic Liquids as Lubricant Additives", *STLE Tribology Frontiers*, Cleveland, OH. *In preparation*
- "Tribological Performance of Ammonium Orthoborate Ionic Liquids", *Gordon Research Conference on Tribology*, Lewiston, ME. June 2022

Posters:

- "Encapsulation of Ionic Liquids for Tribological Applications", *Gordon Research Seminar on Tribology*, Lewiston, ME. June 2022

Teaching and Service:

University of Texas at Austin, Austin, TX.

Research Experience for Teachers Program

Graduate Student Mentor

06/2022-07/2022,

06/2023-07/2023

- Mentor two K-12 teachers over 6 weeks to gain hands-on experience and develop classroom modules based on research.

Undergraduate Materials Science Lab

Teaching Assistant

08/2020-05/2021

- Assisted sections of 15+ students over 2 virtual semesters