

# JINGCHENG MA

**Assistant Professor**  
**Department of Aerospace and Mechanical Engineering**  
**University of Notre Dame**

300B Cushing Hall of Engineering  
Notre Dame, IN, 46556  
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## EDUCATION

**University of Illinois at Urbana-Champaign**  
Ph.D., Mechanical Engineering  
Advisors: Nenad Miljkovic; David G. Cahill  
Thesis Committee: Paul V. Braun; Anthony M. Jacobi

Urbana-Champaign, IL  
Aug. 2017 – May 2022

**Shanghai Jiao Tong University**  
B.S., Mechanical Engineering

Shanghai, China  
Sep. 2013 – July 2017

## EMPLOYMENT

**University of Notre Dame**  
Assistant Professor  
Department of Aerospace and Mechanical Engineering  
Bioengineering graduate program  
NDnano, Materials Science and Engineering graduate program  
Berthiaume Institute for Precision Health  
Mike and Josie Harper Cancer Research Institute

Notre Dame, IN  
Aug. 2024 – Present

**University of Chicago**  
Postdoctoral Research Associate, The James Franck Institute  
Advisor: Bozhi Tian

Chicago, IL  
June 2022 – June 2024

**University of Illinois at Urbana-Champaign**  
Graduate Research Assistant  
Department of Mechanical Science and Engineering  
Advisors: Nenad Miljkovic; David G. Cahill

Urbana, IL  
Aug. 2017 – May 2022

## AWARDS

2026 Berthiaume Early-Career Investigator Award  
2024 Berthiaume Institute Technology Development Fund  
2022 Stanley I. Weiss Outstanding Dissertation Award  
2020 PPG-MRL Travel Award  
2020 PPG-MRL Graduate Research Fellowship  
2019 AVS Dorothy M. and Earl S. Hoffman Travel Award  
2018 UIUC MechSE Art of Science Award  
2017 Excellent Undergraduate Student in Shanghai  
2015 Undergraduate Research Awards & Grants

## PAPERS IN REFEREED JOURNALS

(\*Equal contribution. †Corresponding author.)

1. Low-cost, palm-sized condensation chamber for the detection and preservation of airborne volatiles and particles  
Y. Mansur, A. P. D. Ritwik, C. Meng, J. Wan, B. Faulk, V. Utama, J. Ma<sup>†</sup>  
**Cell Reports Physical Science**. Under review.
2. Microdroplets fail to retain exhaled volatile biomarkers within a single breath  
A. P. D. Ritwik, Y. Mansur, J. Ma<sup>†</sup>  
**Nano Letters**. Under review.
3. Design of a miniature condenser for fast, non-contact glucose detection from exhaled breath  
Y. Lu\*, Y. Mansur\*, S. Peri, J. Wan, A. P. D. Ritwik, E. L. Johnson<sup>†</sup>, J. Ma<sup>†</sup>  
**Advanced Materials Technologies**. Under review.
4. Battery-free digital mask for real-time, sustainable monitoring of exhaled metabolites  
Y. Mansur, J. Ma<sup>†</sup>  
**Nature Sensors**. 2026. DOI: [10.1038/s44460-026-00051-1](https://doi.org/10.1038/s44460-026-00051-1)
5. Dual-stage healing mechanism of dynamic PDMS vitrimer thin films  
I. Zarin\*,<sup>†</sup> G. Arissi\*, J. Ma, C. M. Evans, N. Miljkovic<sup>†</sup>  
**Nano Letters**. 2026. DOI: [10.1021/acs.nanolett.5c04699](https://doi.org/10.1021/acs.nanolett.5c04699)
6. Airborne biomarker localization engine for open air point-of-care detection  
J. Ma<sup>†</sup>, M. Laune, P. Li, J. Lu, J. Yue, Y. Yu, Y. Mansur, A. P. D. Ritwik, S. P. Peri, J. Little, K. Oliphant, Z. Kessler, E. C. Claud<sup>†</sup>, B. Tian<sup>†</sup>.  
**Nature Chemical Engineering**. 2025, 2, 5, 321-333. DOI: [10.1038/s44286-025-00223-9](https://doi.org/10.1038/s44286-025-00223-9)
7. Quantitative analysis of energy dissipation in thin film Si anodes upon lithiation  
Z. Zheng<sup>†</sup>, H. Jeong, N. Fritz, Y. Gurumukhi, J. Ma, N. Miljkovic, J. Cook, P. V. Braun<sup>†</sup>.  
**Journal of Power Sources**. 2025. 631, 236231. DOI: [10.1016/j.jpowsour.2025.236231](https://doi.org/10.1016/j.jpowsour.2025.236231)
8. Sustainable conversion of husk into viscoelastic hydrogels for value-added biomedical applications  
C. Sun, J. Yue, P. Li, W. Li, J. Ma, C. Yang, S. Kim, B. Tian<sup>†</sup>.  
**Matter**. 2025. DOI: [10.1016/j.matt.2025.102002](https://doi.org/10.1016/j.matt.2025.102002)
9. A bioinspired permeable junction approach for sustainable device microfabrication  
C. Yang<sup>†</sup>, P. Li, C. Wei, A. Prominski, J. Yue, J. Ma, J. Zhang, C. Sun, B. Ashwood, W. Li, J. Shi, F. Shi, P. Griffin, L. Jin<sup>†</sup>, B. Tian<sup>†</sup>  
**Nature Sustainability**. 2024. DOI: [10.1038/s41893-024-01389-5](https://doi.org/10.1038/s41893-024-01389-5)
10. A composition-nanoarchitecture-performance analysis of high energy density electrodeposited silicon for lithium-ion battery anodes  
N. J. Fritz, H. Jeong, B. Zahiri, P. Sun, G. Singhal, M. A. Caple, Z. Yang, J. Ma, M. Choi, J. B. Cook, N. Miljkovic, D. G. Cahill, P. V. Braun<sup>†</sup>  
**ACE Applied Energy Materials**. 2024, 7, 14, 5957-5966. DOI: [10.1021/acsaem.4c00941](https://doi.org/10.1021/acsaem.4c00941)

11. Monolithic-to-focal morphing biointerfaces in tissue regeneration and bioelectronics  
J. Shi\*, Y. Lin\*, P. Li, P. Mickel, C. Sun, K. Parekh, J. Ma, S. Kim, B. Ashwood, L. Meng, Y. Luo, S. Chen, H. Tsai, C. M. Cham, J. Zhang, Z. Cheng, E. B. Chang, P. Král†, J. Yue†, B. Tian†  
**Nature Chemical Engineering**. 2024, 1, 73-86. [DOI: 10.1038/s44286-023-00008-y](https://doi.org/10.1038/s44286-023-00008-y)
12. Bridging the gap - Thermofluidic designs for precision bioelectronics  
J. Ma\*†, A. Majmudar\*, B. Tian†  
**Advanced Healthcare Materials**. 2023, 2302431. [DOI: 10.1002/adhm.202302431](https://doi.org/10.1002/adhm.202302431)
13. Characterization of nanoscale pinhole defects in hydrophobic coatings using copper electrodeposition  
I. Zarin, G. Arissi, E. Barias, J. Ma, K. F. Rabbi, N. Miljkovic†  
**Applied Physics Letters**. 2023, 123, 231602. [DOI: 10.1063/5.0172805](https://doi.org/10.1063/5.0172805)
14. Resilient multi-layer fluorinated diamond like carbon hydrophobic surfaces  
M. J. Hoque\*, L. Li\*, J. Ma\*, H. Cha, S. Sett, X. Yan, K. Suwala, N. Miljkovic†  
**Nature Communications**. 2023, 14, 4902. [DOI: 10.1038/s41467-023-40229-6](https://doi.org/10.1038/s41467-023-40229-6)
15. Perspectives on superhydrophobic surface durability  
M. J. Hoque, J. Ma, K. F. Rabbi, X. Yan, B. P. Singh, N. V. Upot, W. Fu, J. Kohler, T. S. Thukral, S. Dewanjee, N. Miljkovic†  
**Applied Physics Letters**. 2023, 123, 110501. [DOI: 10.1063/5.0164927](https://doi.org/10.1063/5.0164927)
16. Defect-density-controlled phase-change phenomena  
M. J. Hoque, X. Yan, H. Qiu, Y. Feng, J. Ma, J. Li, X. Du, M. Linjawi, S. Agarwala, N. Miljkovic†  
**ACS Applied Materials & Interfaces**. 2023, 15(11). [DOI: 10.1021/acsami.2c20938](https://doi.org/10.1021/acsami.2c20938)
17. Direct measurement of solid-liquid interfacial energy using a meniscus  
J. Ma†, I. Zarin, N. Miljkovic†.  
**Physical Review Letters**. 2022, 129 (24), 246802. [DOI: 10.1103/PhysRevLett.129.246802](https://doi.org/10.1103/PhysRevLett.129.246802).
18. Slippery omniphobic covalently attached liquid coatings mitigate carbon deposition by autoxidation of jet fuel  
S. Khodakarami, H. Zhao, K. F. Rabbi, Q. Wu, J. Ma, N. Miljkovic†  
**Cell Reports Physical Science**. 2022, 100859. [DOI: 10.1016/j.xcrp.2022.100859](https://doi.org/10.1016/j.xcrp.2022.100859)
19. Ultra-low ice-substrate adhesion and self-deicing during droplet impact freezing  
P. Jin, X. Yan, M. J. Hoque K. F. Rabbi, S. Sett, J. Ma, J. Carpenter, S. Cai, W. Tao†, N. Miljkovic†  
**Cell Reports Physical Science**. 2022, 100859. [DOI: 10.1016/j.xcrp.2022.100894](https://doi.org/10.1016/j.xcrp.2022.100894)
20. A lipid-inspired highly adhesive interface for durable superhydrophobicity in wet environments and stable jumping droplet condensation  
J. Ma\*†, Z. Zheng\*, M. J. Hoque, L. Li, P. V. Braun, P. Wang, N. Miljkovic†  
**ACS Nano**. 2022, 16(3), 4251–4262. [DOI: doi.org/10.1021/acsnano.1c10250](https://doi.org/10.1021/acsnano.1c10250)
21. High-efficiency cooling via the monolithic integration of copper on electronic devices  
T. Gebrael, J. Li, A. Gamboa, J. Ma, J. Schaadt, L. Horowitz, R. Pilawa-Podgurski†, N. Miljkovic†  
**Nature Electronics**. 2022, 5, 394 - 402. [DOI: 10.1038/s41928-022-00748-4](https://doi.org/10.1038/s41928-022-00748-4)

22. Biphilic jumping-droplet condensation  
M. J. Hoque, S. Chavan, R. Lundy, L. Li, J. Ma, S. Lei, N. Miljkovic<sup>†</sup>, R. Enright<sup>†</sup>  
**Cell Reports Physical Science**. 2022, 3(4), 100823. [DOI: 10.1016/j.xcrp.2022.100823](https://doi.org/10.1016/j.xcrp.2022.100823)
23. Scalable siloxane-silane surfaces enable dropwise condensation of low surface tension liquids  
K. F. Rabbi, J. Y. Ho, X. Yan, J. Ma, S. Sett, M. J. Hoque, N. Miljkovic<sup>†</sup>  
**Advanced Functional Materials**. 2022, 202112837. [DOI: 10.1002/adfm.202112837](https://doi.org/10.1002/adfm.202112837)
24. Opportunities in nanoengineered surface designs for enhanced condensation heat and mass transfer (invited review)  
J. Y. Ho, S. Khodakarami, K. F. Rabbi, J. Ma, K. Boyina, N. Miljkovic<sup>†</sup>  
**Journal of Heat Transfer**. 2022, 144(5): 050801. [DOI: 10.1115/1.4053454](https://doi.org/10.1115/1.4053454)
25. Role of thin film adhesion on capillary peeling  
J. Ma<sup>†</sup>, J. M. Kim, M. J. Hoque, K. Thompson, S. Nam, D. G. Cahill, N. Miljkovic<sup>†</sup>  
**Nano Letters**. 2021, 21(23), 9983–9989. [DOI: 10.1021/acs.nanolett.1c03494](https://doi.org/10.1021/acs.nanolett.1c03494)
26. Superior anti-degeneration hierarchical nanoengineered wicking surfaces for boiling enhancement  
J. Li, Y. Zhao, J. Ma, W. Fu, X. Yan, K. F. Rabbi, N. Miljkovic<sup>†</sup>  
**Advanced Functional Materials**. 2021, 202108836. [DOI: 10.1002/adfm.202108836](https://doi.org/10.1002/adfm.202108836)
27. Ultra-thin self-healing vitrimer coatings for durable hydrophobicity  
J. Ma<sup>\*</sup>, L. E. Porath<sup>\*</sup>, M. F. Haque, S. Sett, K. F. Rabbi, S. Nam, N. Miljkovic<sup>†</sup>, C. M. Evans<sup>†</sup>  
**Nature Communications**. 2021, 12, 5210. [DOI: 10.1038/s41467-021-25508-4](https://doi.org/10.1038/s41467-021-25508-4)  
Top 25 Chemistry and Materials Sciences Articles in 2021
28. Fabrication optimization of ultra-scalable nanostructured aluminum-alloy surfaces  
L. Li, Y. Lin, K. F. Rabbi, J. Ma, Z. Chen, A. Patel, W. Su, X. Ma, K. Boyina, S. Sett, D. Mondal, N. Tomohiro, F. Hirokazu, N. Miljkovic<sup>†</sup>  
**ACS Applied Materials & Interfaces**. 2021, 13(36). [DOI: 10.1021/acsami.1c08051](https://doi.org/10.1021/acsami.1c08051)
29. Scalable slippery omniphobic covalently attached liquid coatings for flow fouling reduction  
H. Zhao, S. Khodakarami, C. Anand, J. Ma, Q. Wu, S. Sett, N. Miljkovic<sup>†</sup>  
**ACS Applied Materials & Interfaces**. 2021, 13(32). [DOI: 10.1021/acsami.1c08845](https://doi.org/10.1021/acsami.1c08845)
30. Recent developments, challenges, and pathways to stable dropwise condensation: a perspective (invited perspective paper)  
J. Ma, S. Sett, H. Cha, X. Yan, N. Miljkovic<sup>†</sup>  
**Applied Physics Letters**. 2020, 116, 260501. [DOI: 10.1063/5.0011642](https://doi.org/10.1063/5.0011642)  
Top 20 Applied Physics Letters Articles in 2020
31. Condensation induced blistering as a measurement technique for the adhesion energy of nanoscale polymer films  
J. Ma<sup>†</sup>, D. G. Cahill, N. Miljkovic<sup>†</sup>  
**Nano Letters**. 2020, 20(5), 3918–3924. [DOI: 10.1021/acs.nanolett.0c01086](https://doi.org/10.1021/acs.nanolett.0c01086)
32. Condensation induced delamination of nanoscale hydrophobic films  
J. Ma<sup>†</sup>, H. Cha, M. Kim, D. G. Cahill, N. Miljkovic<sup>†</sup>  
**Advanced Functional Materials**. 2019, 29(43), 1905222. [DOI: 10.1002/adfm.201905222](https://doi.org/10.1002/adfm.201905222)

33. In-situ droplet microgoniometry using optical microscopy  
H. Cha, J. Ma, YS. Kim, L. Li, L. Sun, J. Tong, N. Miljkovic<sup>†</sup>  
**ACS Nano**. 2019, 13 (11), 13343-13353. [DOI: 10.1021/acsnano.9b06687](https://doi.org/10.1021/acsnano.9b06687)
34. Controlling the contact times of bouncing droplets: droplet impact on vibrating surfaces  
P. B. Weisensee, J. Ma, N. Miljkovic<sup>†</sup>, W. P. King<sup>†</sup>  
**Journal of Heat Transfer**. 2018, 140(3): 030901. [DOI: 10.1115/1.4039166](https://doi.org/10.1115/1.4039166)
35. Droplet impact on vibrating superhydrophobic surfaces  
P. B. Weisensee\*, J. Ma\*, Y. H. Shin, Y. Chang, J. Tian, W. P. King<sup>†</sup>, N. Miljkovic<sup>†</sup>  
**Physical Review Fluids**. 2017, 2(10), 103601. [DOI: 10.1103/PhysRevFluids.2.103601](https://doi.org/10.1103/PhysRevFluids.2.103601)
36. Entropy generation of supercritical water in a vertical tube with concentrated incident solar heat flux on one side  
G. Zhang, Y. Li, J. Ma, R. Wang<sup>†</sup>  
**Int. J. Heat Mass Transfer**. 2017, 108, 172-180. [DOI: 10.1016/j.ijhmt.2016.12.010](https://doi.org/10.1016/j.ijhmt.2016.12.010)

## PATENTS

1. Hydrophobic, self-Healing coating and coated substrate, and fabrication method  
N. Miljkovic, C. M. Evans, J. Ma, L. E. Porath.  
Application #: US 63/263,551
2. Nanostructured surfaces for collecting exhaled breath condensate for biosensing, and fabrication method  
B. Tian, J. Ma, P. Li, Z Kessler.  
U.S. Provisional application Ser. No. 63/483,806.
3. A portable condensation-based system for collection and analysis of foodborne volatile compounds  
Y. Mansur, J. Ma.  
U.S. Provisional application Ser. No. 63/968,383.
4. Self-powered anti-scaling system for solar thermal collectors  
J. Ma, Z. Zhang, Z. Zhao, R. Wang. CN104913533B (2017)

## CONFERENCES & PRESENTATIONS

1. ASME Summer Heat Transfer Conference, SHTC 2026, Bellevue, USA, July 26-29, 2026  
[Talk] A. P. D. Ritwik, J. Ma: Revealing the myth of VOC metabolites condensability and stability in exhaled breath condensates
2. ASME Summer Heat Transfer Conference, SHTC 2026, Bellevue, USA, July 26-29, 2026  
[Poster] Y. Mansur, A. P. D. Ritwik, C. Meng, J. Wan, J. Ma: Miniaturized Airborne Particle Localization Engine for enriching, preservation, and detection of airborne particles and VOCs
3. ASME Summer Heat Transfer Conference, SHTC 2026, Bellevue, USA, July 26-29, 2026  
[Poster] Y. Lu, S. Peri, Y. Mansur, E. Johnson, J. Ma: Parametric design of a healthcare condenser

for rapid, non-contact glucose detection from human exhaled breath

4. ASME Summer Heat Transfer Conference, SHTC 2026, Bellevue, USA, July 26-29, 2026  
[Poster] A. P. D. Ritwik, Y. Mansur, J. Ma: Revealing the myth of VOC metabolites condensability and stability in exhaled breath condensates
5. 18<sup>th</sup> U.S. National Congress on Computational Mechanics, Chicago, USA, July 20-24, 2025  
[Talk] Y. Lu, S. Peri, J. Ma, E. Johnson: Parametric modeling of healthcare condensers for precision biosensing
6. ASME Summer Heat Transfer Conference, SHTC 2025, Denver, USA, July 8-10, 2025  
[Talk] J. Ma: Airborne Biomarker Localization Engine (ABLE) for open air point-of-care detection
7. Gordon Research Conference. Micro and Nanoscale Phase Change Heat Transfer - Phase Change Phenomena in a Decarbonizing World, Pomona, California, USA, January 12-17, 2025  
[Poster] J. Ma: Airborne Biomarker Localization Engine (ABLE) for open air point-of-care detection
8. 2023 MRS Fall Meeting & Exhibit – Meet the New Faculty Candidate Poster Session. Massachusetts, USA, Nov 29, 2023.  
[Poster] J. Ma: Precise bioelectronics by synergetic thermofluidic designs
9. 2023 MRS Fall Meeting & Exhibit – CH01: Advanced Characterization Methods of Energy Material Applications. Massachusetts, USA, Nov 28, 2023.  
[Talk] I. Zarin, J. Ma, N. Miljkovic: Direct measurement of solid-liquid interfacial energy using a meniscus
10. Micro Flow and Interfacial Phenomena ( $\mu$ FIP) Conference, Illinois, USA, June 20, 2023.  
[Poster] J. Ma, I. Zarin, N. Miljkovic: Direct measurement of solid-liquid interfacial energy using a meniscus
11. 2021 MRS Fall Meeting & Exhibit - EN03: Thermal Materials, Modeling and Technoeconomic Impacts for Thermal Management and Energy Application. Massachusetts, USA, Dec 6, 2021  
[Talk] J. Ma, Z. Zheng, P. V. Braun, P. Wang, N. Miljkovic: Achieving long-term dropwise condensation with cell-inspired interfaces
12. 2021 MRS Spring Meeting & Exhibit - SM05: Progress in Multimaterials and Multiphase-Based Multifunctional Materials, Online, Apr 17-23, 2021  
[Talk] J. Ma, L. Porath, C. Evans, N. Miljkovic: Self-healing vitrimer coating for robust hydrophobicity
13. 2021 MRS Spring Meeting & Exhibit - ST02: In Situ Mechanical Testing of Materials at Small Length Scales, Modeling and Data Analysis, Online, Apr 17-23, 2021  
[Talk] J. Ma, D. Cahill, N. Miljkovic: Condensation induced blistering as a measurement technique for adhesion energy of nanoscale polymer films
14. NSF Workshop: New Frontiers of Thermal Transport - Thermal Management, Dec 15, 2020  
[Poster] S. Sett, J. Ma, K. F. Rabbi, J. Y. Ho, X. Yan, N. V. Upot, N. Miljkovic: Surface

engineering for next-generation phase-change heat transfer

15. AVS International Symposium and Exhibition, Thin Film Division. Colorado, USA, Oct 25, 2020  
[Talk. Cancelled due to COVID-19 pandemic] J. Ma, N. Miljkovic: High spatial and temporal resolution characterization of polymer thin film adhesion using condensation induced blistering
16. AVS International Symposium and Exhibition, Thin Film Division. Ohio, USA, Oct 20-25, 2019  
[Talk] J. Ma, N. Miljkovic: The origins of condensation-driven degradation of hydrophobic thin films
17. Gordon Research Conference. Micro and Nanoscale Phase Change Heat Transfer - The Effects of Hydrodynamic, Interfacial and Intermolecular Forces on Phase Change, Italy, February 3-8, 2019  
[Poster] J. Ma, H. Cha, M. Kim, D. G. Cahill, N. Miljkovic: The origins of condensation-driven degradation of hydrophobic thin films
18. Proceedings of the 3rd International Conference on Droplets, UCLA, USA, July 24 -26, 2017  
[Talk] P. B. Weisensee, J. Ma, J. Tian, W. P. King, N. Miljkovic: Water droplet impact dynamics on active and passive vibrating surfaces
19. ASME Summer Heat Transfer Conference, SHTC 2017, Washington, USA, July 9-14, 2017  
[Talk] P. B. Weisensee, J. Ma, Y. H. Shin, Y. Chang, J. Tian, W. P. King, N. Miljkovic: Controlling the contact times of bouncing droplets: droplet impact on vibrating surfaces

## TEACHING EXPERIENCE

1. AME 70671 – Thermofluids Designs in Biomedicine, Fall 2024, **University of Notre Dame**.  
Course evaluation: 5.0/5.0.
2. ENGP 3120 – Materials Science & Engineering, Spring 2024. **Tulane University**. Guest Lecture.
3. AME 30331 – Fluid Mechanics, Fall 2025. **University of Notre Dame**.  
Course evaluation: 5.0/5.0.
4. AME 70671 – Thermofluids Designs in Biomedicine, Spring 2026, **University of Notre Dame**.

## INVITED TALKS

1. “Leveraging phase-change physics for gas sensing and non-invasive healthcare”, Fall meeting of the Center for Bioanalytic Metrology (CBM), **Indiana University**, IN, Nov 18, 2025.
2. “Leveraging phase-change physics for gas sensing and non-invasive healthcare”, BIPH Research/Theme Leadership Presentations, **University of Notre Dame**, IN, Oct 13, 2025.
3. “Detecting airborne biomarkers using phase change heat transfer”, Department of Biomedical Engineering, **Wichita State University**, KA, March 28, 2025.
4. “What is in the air: Detecting dilute airborne biomarkers using phase change heat transfer”, Bioengineering seminar, **University of Notre Dame**, IN, March 5, 2025.
5. “Airborne Biomarker Localization Engine for open-air point-of-care detection”, Indiana Clinical and Translational Sciences Institute, **Purdue University**, IN, February 28, 2025.

6. “From Heat to Health: Surface engineering of complex phase transition”, Department of Physics, **Tulane University**, NO, March 14, 2024.
7. “From Heat to Health: Surface engineering of complex phase transition”, Department of Aerospace and Mechanical Engineering, **University of Notre Dame**, IN, February 1, 2024.
8. “Precise bioelectronics by synergetic thermofluidic designs”, Department of Mechanical Engineering, **University of Kansas**, KA, December 18, 2023.
9. “Precise bioelectronics by synergetic thermofluidic designs”, Department of Mechanical Engineering & Materials Science, **Washington University at St. Louis**, MO, November 2, 2023.
10. “KABOOM in a drying gel bead”, Department of Physics Baglunch, **University of Chicago**, IL, USA, Nov 17, 2022.
11. “Towards a clean energy future using thin and durable water-repellent coatings”, PPG-MRL joint conference, **University of Illinois Urbana Champaign**, IL, USA, April 6, 2022.

## PROFESSIONAL ACTIVITIES

### Session Chair for:

- EN03.14: Phonon Dynamics and Thermal Transport. **MRS Fall Meeting**, 2021, Boston, MA, USA.

### Grant Reviews for:

- Interfacial Engineering program. Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET). **National Science Foundation**. March, 2024.
- Petroleum Research Fund. **American Chemical Society**. August, 2024; January, 2026.
- Notre Dame-DCU Inaugural Seed Grant in Precision Biomedical Technologies. **University of Notre Dame Berthiaume Institute for Precision Health**. October, 2024.
- Earth and Space Science and Technology (FINESST) program. **NASA**. August 2025.
- Extramural Competency Investments Division, **Army Research Office**. December 2025.

### Committee Member for:

- America Society of Mechanical Engineer K17 Biotransport Committee Member. August, 2025.
- ND Bioengineering & Life Science Forum Planning Committee. November, 2024.
- ND Bioengineering Qualifying Exam Committee (Student: Cameron Godin). January, 2025.
- ND AME Thesis Committee (Student: Md Omarsany Bappy). April, 2025.
- ND AME Thesis Committee (Student: Jiahang Zhou). May, 2025.
- ND Chemistry & Biochemistry Thesis Committee (Student: Junming Huang). June, 2025.
- ND AME Qualifying Exam Committee (Student: Ben-Chi Ma). August, 2025.
- ND AME Qualifying Exam Committee (Student: Md Rashed Nizam). January, 2026.
- ND AME Qualifying Exam Committee (Student: Debasish Panda). January, 2026.
- ND AME Qualifying Exam Committee (Student: Nadeem Azad). January, 2026.

### Referee For:

- ACS Nano (2018, 2019, 2025, 2025)
- ACS Omega (2021, 2021)

- Physical Review Letters (2019, 2021)
- International Journal of Heat and Mass Transfer (2021, 2021, 2022, 2025, 2025, 2025, 2026)
- International Communications of Heat and Mass Transfer (2022, 2023, 2023, 2023)
- Applied Thermal Engineering (2019, 2024)
- Cell Reports Physical Science (2021)
- Proceedings of the National Academy of Sciences (2021, 2026)
- Chemical Society Reviews (2022)
- Langmuir (2022, 2023)
- Advanced Materials Interfaces (2023)
- Nature Communications (2023, 2023)
- Chemical Reviews (2023)
- Nature (2024)
- Advanced Functional Materials (2025)
- Droplet (2025)
- Nature Sensors (2025)
- Sensors and Actuators Reports (2025)
- Science Advances (2026, 2026)
- Newton (2026)
- Chemie Ingenieur Technik (2026)

## **MENTORING EXPERIENCE**

### **At the University of Notre Dame:**

#### **Graduate Students**

1. Yamin Mansur (Bangladesh University of Engineering and Technology B.S. Student) – AME Ph.D. student joined my lab in Spring 2025.
2. Amio Pronoy Das Ritwik (Bangladesh University of Engineering and Technology B.S. Student) – AME Ph.D. student joined my lab in Spring 2025.
3. Ziting Tan – MSE Interdisciplinary Ph.D. student in Fall 2025 (co-advised with Dr. Sima Asadi in the Department of Chemical and Biomolecular Engineering).
4. Junming Huang – MSE Interdisciplinary Ph.D. student in Fall 2025 (co-advised with Dr. Kaiyu Fu in the Department in Chemistry).
5. Sai Prashanth Peri (Arizona State University M.S. Student) – AME Ph.D. student joined my lab in Spring 2025.
6. Thomas Yiming Lu (Duke University M.S. Student) – AME Ph.D. student joined my lab in Fall 2025 (co-advised with Dr. Emily Johnson).
7. Chenghan Meng (Hefei University of Technology Chemistry B.S. Student) – AME Ph.D. student joined my lab in Fall 2026.

#### **Undergraduate Students**

8. Diego Gonz'alez Zavala (Tec De Monterrey Mechanical Engineering B.S. Student) – Undergraduate Research Fellow joined my lab in Fall 2026.
9. Claire Tam (Notre Dame Mechanical Engineering B.S. Student) – Undergraduate researcher joined my lab in Summer 2026.
10. Xiang Li (Sichuan University Material Science B.S. Student) – iSURE Undergraduate Research Fellow joined my lab in Summer 2026.
11. Jiangyuan Wan (Zhejiang University Mechanical Engineering B.S. Student) – iSURE Undergraduate Research Fellow joined my lab in Summer 2025.
12. Chenghan Meng (Hefei University of Technology Chemistry B.S. Student) – iSURE Undergraduate Research Fellow joined my lab in Summer 2025.
13. Linzhinan Luo (Southern University of Science and Technology Mechanical Engineering B.S. Student) – iSURE Undergraduate Research Fellow joined my lab in Summer 2025.
14. Vanessa Utama (Notre Dame Electrical Engineering & ACMS B.S. Student) – NDnano Undergraduate Research Fellow joined my lab in Summer 2025 (co-advised with Dr. Kaiyu Fu in the Department in Chemistry).
15. Brigid Faulk (Notre Dame Chemical Engineering B.S. Student) – Undergraduate researcher joined my lab in Spring 2025.
16. Toby Shimabukuro (Notre Dame Mechanical Engineering B.S. Student) – Undergraduate researcher joined my lab in Spring 2025.
17. Tomas Londoño Lacouture (Notre Dame Chemical Engineering B.S. Student) – Undergraduate researcher joined my lab in Spring 2025.
18. Aidan Francfort (Notre Dame Mechanical Engineering B.S. Student) – Undergraduate researcher joined my lab in Spring 2025.

### **High School Students**

19. Ethan Abbott (Marian High School) – Research Cures Cancer Crops Research Fellow joined my lab in Summer 2025.

### **Before the University of Notre Dame:**

20. Megan Laune (U. Chicago. Rotational Ph.D. student) - Supervising summer graduate research. Recruited as a Ph.D. student in my postdoc research group at the University of Chicago.
21. Aman Majmudar (U. Chicago. B.S. Student) - Supervising undergraduate research.
22. Ishrat Zarin (Univ. Illinois. Ph.D. Student) - Supervised graduate research. Recruited as a Ph.D. student in my Ph.D. research group at UIUC.
23. Kamila Thompson (Ohio State Univ. B.S. Student) - Supervised undergraduate research. Kamila was enrolled in the NSF REU program in 2021. Kamila is currently pursuing her Ph.D. in Electrical Engineering at Stanford University.

24. Yoshinori Furukawa (Kyushu Univ. B.S. Student) - Supervised undergraduate research.
25. Nicole Jeon (Univ. Illinois. B.S. Student) - Supervised and advised on undergraduate research.