PhD Position in Mechanical Engineering
University at Buffalo, The State University of New York

Job Title	PhD Position in Mechanical Engineering
Department	Mechanical and Aerospace Engineering
	https://sail-yong.github.io/
Institution	University at Buffalo, The State University of New York
	Buffalo, New York
Date Posted	Sep. 3, 2025
Application Deadline	Open until filled
Position Start Date	Available immediately
Job Categories	Graduate Student
Academic Field(s)	Mechanical Engineering
Apply By Email	xinyong@buffalo.edu

Job Description

The Soft Matter and Interfacial Phenomena Laboratory (SaIL) in the Department of Mechanical and Aerospace Engineering at the University at Buffalo is recruiting a fully funded PhD student to join us in Spring/Fall 2026.

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Our team takes a transdisciplinary approach to uncovering new physics and mechanics in soft materials and biological systems, with the goal of advancing material design and manufacturing for novel products and industries. Our research combines theoretical analysis, computational simulations, data-driven modeling, and experimental investigations to explore complex transport phenomena at material interfaces, establish process-structure-property relationships, and design new functional materials. We focus on applications in advanced manufacturing, health care, and environmental sustainability. Our lab has a strong record of preparing researchers for academic careers, with alumni securing tenure-track positions at top research universities like the University of Alabama and Hong Kong University of Science and Technology. Current research topics include but are not limited to

- Membrane biomechanics and biophysics
- Colloidal assembly and transport in complex environments
- Biological locomotion and active matter
- Electrospray deposition

Qualifications

- Interested in fundamental research in soft matter. Be passionate and self-motivated to venture into new areas and do important/revolutionary work.
- B.S. or M.S. in mechanical engineering, chemical engineering, biomedical engineering, or biomolecular engineering. M.S. with project/research experience and a publication record is strongly preferred.
- Strong background in applied math and physics. Knowledge of colloid science, multiphase flow, biophysics, and soft matter physics is beneficial.
- Good programming skills in C/C++, Python, or MATLAB are required.
- Experience with microfluidics, microscopy, image analysis, or all-atom molecular dynamics simulations and software (specifically GROMACS, AMBER, or NAMD) is preferred.
- Communicate well and are open to collaboration. Proficiency in the English language with a minimum speaking sub-score: TOEFL IBT Speaking 25, IELTS Speaking 7.5, or Duolingo Speaking 145.

How to Apply

Interested candidates are invited to email Dr. Xin Yong (xinyong@buffalo.edu) a CV with English test scores, unofficial B.S. (and M.S.) transcripts, contact information of 2-3 references, and a brief description of your research experience and motivation. More information about admissions and applications can be found at: https://engineering.buffalo.edu/mechanical-

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aerospace/graduate/admissions.html.

EEO/AA Policy

The University at Buffalo is committed to ensuring equal employment and educational opportunity, as well as equal access to services, programs, and activities without regard to an individual's race, color, national origin, sex, religion, age, disability, gender, pregnancy, gender identity, gender expression, sexual orientation, predisposing genetic characteristics, marital status, familial status, veteran status, military status, domestic violence victim status, reproductive health care choices or criminal conviction status.

Contact Information

Please reference Academickeys in your cover letter when applying for or inquiring about this job announcement.

Contact Xin Yong
Mechanical and Aerospace Engineering
University at Buffalo, the State University of New York
Buffalo, NY

Contact E-mail xinyong@buffalo.edu