Department of
Mechanical Engineering

THE UNIVERSITY OF MAINE

Ferland EEDC, Room 237
Orono, Maine 04469-5711
Tel: 207.581.2120
umaine.edu/MechEng/

Postdoctoral Researcher Position
(Immediate Opening)

Position Summary

Wettability and Interfacial Surface Engineering (WISE) Lab led by Dr. Xiaoxiao Zhao in the Department of Mechanical Engineering at the University of Maine invites applications for one fully funded postdoctoral researcher position. This position is supported by an externally funded research project developing durable, PFAS-free, liquid-repellent surface finishes for next-generation chemical, biological, radiological, and nuclear (CBRN) protective clothing.

Compensation and Appointment

The annual salary is $60,000 plus benefits. The initial appointment is for one year, with the possibility of renewal contingent upon satisfactory performance.

Responsibilities

- Lead experimental research on coating/grafting studies, analyze data, and prepare manuscripts for peer-reviewed journals.
- Assist the PI with grant proposal development, technical reports, and project review materials.
- Present research progress in group meetings, conferences, and project review meetings.
- Assist with mentoring graduate and undergraduate students in the lab.

Qualifications

- PhD in Mechanical Engineering, Materials Science, Chemical Engineering, Polymer Science, Textile Engineering, Chemistry, or a closely related field.
- Strong background in surface modification, polymer coatings, interfacial science, wettability, textile finishing, or materials characterization.
- Preferred experience includes silane/sol-gel chemistry, polymer coatings, XPS/FTIR/AFM/SEM, contact angle analysis, abrasion testing, or protective textile evaluation.
- Demonstrated ability to publish in peer-reviewed journals.

Application Materials

Applicants should email Dr. Xiaoxiao Zhao (xiaoxiao.zhao@maine.edu) with the subject line "**Postdoc Application - Your Name**" and include:

(1) cover letter describing research interests and relevant experience;
(2) curriculum vitae;
(3) contact information for 2-3 references;
(4) 1-2 representative/related publications.

Review of applications will continue until the position is filled. Preference may be given to applicants who are currently residing in the United States; however, all qualified applicants will be considered.

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Funded PhD Student Position
(Starting Fall 2026 or Spring 2027)

Position Summary

Wettability and Interfacial Surface Engineering (WISE) Lab led by Dr. Xiaoxiao Zhao in the Department of Mechanical Engineering at the University of Maine invites applications for one fully funded PhD student position. This position is supported by an externally funded research project developing durable, PFAS-free, liquid-repellent surface finishes for next-generation chemical, biological, radiological, and nuclear (CBRN) protective clothing.

Responsibilities

- Conduct experimental research on surface modification and protective textile functionalization.
- Prepare textile samples, conduct coating experiments, and perform surface characterization.
- Analyze data and participate in manuscript preparation, technical reporting, and conference presentations.
- Collaborate with group members and external researchers across mechanical engineering, materials science, chemistry, and textile-related fields.

Qualifications

- B.S. or M.S. degree in Mechanical Engineering, Materials Science, Chemical Engineering, Polymer Science, Textile Engineering, Chemistry, or a related field.
- Strong interest in surface engineering, polymer coatings, wettability, sustainable materials, protective textiles, or materials characterization.
- Prior research experience in coatings, plasma treatment, polymer chemistry, contact angle measurement, microscopy, spectroscopy, or textile testing is preferred but not required.
- For international applicants, English proficiency scores should meet University of Maine graduate admission requirements.

Application Materials

Applicants should email Dr. Xiaoxiao Zhao (xiaoxiao.zhao@maine.edu) with the subject line "**PhD Application - Your Name**" and include:

(1) cover letter or brief statement describing research interests and future career goals;
(2) curriculum vitae;
(3) unofficial transcripts;
(4) contact information for 2-3 references;
(5) representative/related publications, if available.

Review of applications will continue until the position is filled. Preference may be given to applicants who are currently residing in the United States; however, all qualified applicants will be considered.

About UMaine and Mechanical Engineering

The University of Maine is a Carnegie R1 research institution and the flagship institution of the University of Maine System. UMaine is a land, sea, and space grant university. The Department of Mechanical Engineering offers BS, MS, and PhD programs and is housed in the Ferland Engineering Education and Design Center on the Orono campus.