

### **Graduate Assistantship at the School of Forest Resources, University of Maine**

A graduate research assistantship is available at the School of Forest Resources (SFR), the University of Maine in the area of sustainable bioenergy systems to support one (1) highly qualified M.Sc. or Ph.D. student to start in Spring 2019. The research will focus on developing advanced membrane separation technology to harvest heat energy stored in water vapor of exhausted hot and humid air during wood drying process. Research may be conducted at the Energy Testing Lab of SFR and the Advanced Structures and Composites Center at UMaine.

#### **Responsibilities:**

The graduate assistant will be responsible for conducting the research activities below:

- 1) Fabricate a water-vapor selective membrane made of polymeric composites;
- 2) Characterize its selectivity for water-vapor over the air;
- 3) Design, fabricate and test a prototype membrane-based energy recovery system that would be installed in lumber dry kiln by collaborating with experienced engineers; and
- 4) Evaluate the energy efficiency/saving of this system by developing an energy consumption model.

#### **Qualifications:**

Students with a background in one of the following disciplines are encouraged to apply: 1) Wood science/Technology/Engineering; 2) Chemical Engineering; 3) Environmental Engineering; 4) Materials/Chemical/Polymer Science; 5) Chemistry; or 6) A related subject with strong materials chemistry content. The ideal candidate for the membrane research is expected to have knowledge in polymer science, thermodynamics, and mass transfer in porous media. In addition, the ideal applicant is a team worker, has a high level of intellectual curiosity, and can work independently.

For the Master's student, a B.Sc. degree in one of the above disciplines is required. For the Ph.D. student, an additional M.Sc. degree in one of the above areas is required. Excellent written and verbal communication skills are required. GRE scores are required. International students must have acceptable TOEFL scores or equivalent.

#### **Assistantship:**

This 2-year assistantship provides a competitive 12-month stipend (~\$30,000/year) plus half the Annual Health Insurance fee with an expected 20 hours per week appointment. Operating funds for conducting research and travel for attending the conference will also be available. This position is renewable based on satisfactory progress.

#### **About the University of Maine School of Forest Resources (SFR, <http://forest.umaine.edu>):**

With almost 90% of the state covered by forest, forest resources are central to Maine's quality of life and economy. The SFR provides essential forestry education and research and is a signature area of the

University of Maine. Over 40 graduate students are currently enrolled in M.F., M.S., and Ph.D. programs within the SFR. The University has over 12,000 students and is the state's flagship research institution.

**About the Advanced Structures and Composites Center (ASCC, <https://composites.umaine.edu>):**

The University of Maine's Advanced Structures and Composites Center is a world-leading, interdisciplinary center for research, education, and economic development encompassing material sciences, manufacturing, and engineering of composites and structures. The Center is housed in a 100,000 ft<sup>2</sup> ISO 17025-accredited testing laboratory with more than 150 full and part-time personnel.

**How to apply:**

Interested candidates should send a copy of their statement of purpose, CV, contact information of three references, transcripts and TOEFL/GRE scores to Dr. Ling Li at [ling.li@maine.edu](mailto:ling.li@maine.edu).