

School of Forest Resources, University of Maine, Orono, ME

Postdoctoral Research Associate Position Announcement

Position Title: Postdoctoral Research Associate

Department: School of Forest Resources of the University of Maine

Reports to: Dr. Mehdi Tajvidi

Bargaining Unit: UMPSA

Purpose: To provide an individual who has recently been awarded a doctorate to undertake the responsibilities and development of a researcher. Coordinate, manage, and conduct research to serve the needs of the University of Maine.

Annual salary: \$40,000 plus standard benefits according to the UMPSA agreement

Synopsis:

The School of Forest Resources at the University of Maine is seeking applicants for a one-year postdoctoral Research Associate Position to work on a recently funded project to develop fire resistant adhesive-free fiberboard panels made with cellulose nanofibrils (CNF) made from whole wood. This position will conduct an initial range of experiments necessary to develop fundamental knowledge needed to produce fiberboard panels that could compete with or replace urea-formaldehyde resin treated panels by using CNF obtained through minimum pre-processing. The work relies on promising preliminary results obtained at the University of Maine making particleboard panels using CNF. In this system, CNF is the sole adhesive binder of the composite panel providing strong, stiff and at the same time fully recyclable interior type panels. Various production techniques and property evaluation methodologies will be investigated.

ESSENTIAL DUTIES/RESPONSIBILITIES:

1. Initial exploratory processing and fabrication of panels to gain basic experience in processing, forming, and pressing the material into a panel product with acceptable properties.
2. Produce CNF from whole wood by mechanical fibrillation.
3. Perform standard fiberboard testing according to ASTM D1037 specification and ANSI 208.2 for flexural properties (MOR and MOE), internal bond, screw withdrawal resistance, water absorption/thickness swelling and linear expansion with change in moisture content.
4. Perform fire resistance tests according to ASTM E1354.
5. Perform statistical analysis to compare obtained results with those of commercial fiberboard.
6. Research and recommend purchase for equipment, materials and supplies for use in all cellulose nanocomposites research projects.
7. Represent U of Maine at an appropriate national conference.

8. Engage clientele in commercialization of developed nanocomposite technologies.
9. Perform other reasonably related duties as assigned.
10. Assist in preparation of an appropriate peer reviewed paper.

KNOWLEDGE AND SKILL QUALIFICATIONS:

- Ph.D. in Chemistry, Polymer, Wood, Materials Science or related engineering discipline required.
- Wood composite materials processing/production experience required.
- Hands-on experience with fiberboard or other fiber-based wood composites production and testing is required.
- Experience with cellulose nano fiber production and modification is highly desired.
- Demonstrated excellent organizational, written and oral communication skills are required.
- Ability to work independently as well as in a team environment.
- Applicants must be eligible to accept employment in the United States at the time the appointment is made.

Supervisory Responsibility: None.

Work Environment: Work will take place at the University of Maine, Orono, ME, U.S.A. Employee could potentially be exposed to biosafety levels II (BSL II) pathogens and toxins. The employee will be expected to work collaboratively to develop methodologies and conduct experiments, responding flexibly and creatively to input from the Project Director and researchers.

Work Year: Full-time, one fiscal year appointment.

Work Schedule: Normal UMaine business hours are Monday through Friday 8:00 a.m. to 4:30 p.m. Due to the nature of the position, work beyond regular hours (to include evenings and weekends) will be necessary to meet the requirements of the position. The employee shall establish regular office hours and in consultation with the supervisor, adjust the work schedule as appropriate.

Position Type: In accordance with Procedures for Appointing Postdoctoral Research Associates: initial appointment may be up to one year with renewal contingent upon funding and performance. Maximum duration of this appointment is 2 years.

Schedule for Evaluation: In the initial six months of employment and annually thereafter in accordance with the UMPSA agreement.

Appropriate background checks are required.

All UMS employees are required to comply with applicable policies and procedures, as well as to complete applicable workplace related screenings, and required employee trainings, such as Information Security, Safety Training, Workplace Violence, and Sexual Harassment.

How to apply:

Interested applicants are requested to compile the following documents in a single PDF file and send the application package to Project Director (Dr. Mehdi Tajvidi) via email at mehdi.tajvidi@maine.edu. Materials to be submitted are: 1) a cover letter, 2) a resume/curriculum vitae which fully describes your qualifications and experiences and provides contact information for three professional references, 3) academic transcripts, and 4) statement of professional philosophy. Any questions regarding the position should be forwarded to Dr. Mehdi Tajvidi. **Incomplete application materials cannot be considered. Review of applications will begin immediately and will continue until a suitable pool of candidates is found.**

The University of Maine is an EEO/AA Employer. All qualified applicants will receive consideration for employment without regard to race, color, religion, sex, national origin, sexual orientation, age, disability, protected veteran status, or any other characteristic protected by law.