

Research Associate in Energy Engineering Modeling (MS
or PhD)
University of Massachusetts Lowell

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Posted Mar. 6, 2025, set to expire Jul. 8, 2025

Job Title	Research Associate in Energy Engineering Modeling (MS or PhD)
Department	Mechanical & Industrial Engineering
Institution	University of Massachusetts Lowell Lowell, Massachusetts
Date Posted	Mar. 6, 2025
Application Deadline	Open until filled
Position Start Date	Available immediately
Job Categories	Research Scientist/Associate
Academic Field(s)	Industrial & Systems Engineering Energy Technology Electrical and/or Electronics Computer Engineering Computer Science Civil Engineering
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Job Description

The Research Associate in Energy Engineering Modeling (MS or PhD) will research, design, and develop a modular techno-economic energy system software modeling capability. This candidate will employ the modeling tool to conduct several case-studies of coupled renewable (wind and solar) energy production and hydrogen energy storage systems. Dissemination of this research will include

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the development of an interactive graphical dashboard/web-app/app. The successful candidate will also assist in writing scholarly articles and research proposals, help to manage and educate graduate or undergraduate students, and assist in the successful operation of the laboratories and facilities. The initial appointment will be for 1 year with the possibility of renewal based on productivity and performance and the availability of funding.

Essential Job Duties:

1. Conduct analytical simulation research under the supervision of the Principal Investigator (PI). This specifically involves:

- Research, design, and develop a modular software modeling tool for techno-economic analysis of renewable energy systems with integrated storage systems. Specific modules related to wind and solar energy conversion, hydrogen storage systems, and offshore energy concepts will be explored. Develop a dashboard/web-app/app to share the results of this research.
- Conduct research related to a variety of environmental conditions, locations, and operations of the installed energy storage and power generation systems.
- Ensure all project-related activities are conducted on time and to the highest standard.
- Prepare status reports and deliverables in collaboration with and under the direction of the PI.
- Serve as a liaison between PI and collaborating research partners.

2. Assist supervisor in writing scholarly articles and proposals for grant funding.

- The successful candidate will be expected to publish at two academic articles per year in peer-reviewed scientific journals based on the research conducted. Papers and presentations in scientific conferences will also be required. Development of patentable technologies over the course of the project will also be encouraged.
- The successful candidate will be expected to initiate and assist in the formulation and writing of externally funded research proposals. This effort will include finding appropriate opportunities, finding collaborative partners, generating preliminary data, and proposal writing/submission.
- Assist in preparing programmatic reports and making presentations to the sponsor/funding agencies.

3. Attend Meetings related to the research projects.

- Conduct weekly meetings between PI, Co-PI, and other group members (e.g., other Post-docs, graduate students, undergraduate students).
- Disseminate knowledge by attending technical meetings and conferences nationally and internationally when required

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4. Supervision of Undergraduate and Graduate Students:

- Meet weekly with each student to review their research project, progress, and papers and to develop a path forward.
- Provide mentorship or training to graduate and undergraduate students involved in the project.

Minimum Qualifications (Required):

Education:

- MS or PhD in Mechanical Engineering, Industrial/Systems Engineering, Civil Engineering, Electrical Engineering, Computer Engineering/Science, Physics, Applied Physics, Chemistry, or related scientific degree.

Experience:

- Minimum four years of experience (including MS and/or PhD research experience) in research related to simulation and/or modeling, and in particular experience in conducting analytical research, software design/development, coding, and development of modeling/simulation tools.

Skills:

- Ability to work as a team player
- Outstanding technical report writing and communication skills
- Experience in the development of computer algorithms and models for mechanical, electrical, and/or energy systems
- Experience in computer code/software development (e.g., MATLAB, Python, C/C++, or similar)
- Strong analytical skills, creative, and attention to detail

Preferred Qualifications:

- Publications in the relevant field
- Experience with multi-objective optimization
- Interactive dashboard/web-app/app design experience is a plus (e.g., Plotly, Dash, etc.).
- Proficiency with operation of computers, programming languages, and Microsoft Office Suite
- Excellent Communication skills: E-mail, verbal, written, oral presentations, highly responsive
- Ability to work independently, with limited direction, as well as within a team environment
- Ability to mentor and inspire students with limited research experience

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Special Instructions to Applicants:

Only current UML Employees within the Grants & Contracts (MTA/GRACE) bargaining unit will be considered during the first 10 business days of the posting. All other candidates will be considered after that period.

This is a Grants & Contracts (MTA/GRACE) Union position, Grade P16.

Initial review of applications will begin immediately and continue until the position is filled. However, the position may close when an adequate number of qualified applications is received.

This position is contingent upon funding. The initial appointment will be for 1 year with the possibility of renewal based on productivity and performance and the availability of funding.

Please include a resume and cover letter with your application. Names and contact information of three references will be required during the application process.

EEO/AA Policy

The University of Massachusetts Lowell is an Equal Opportunity/Affirmative Action, Title IX employer. All qualified applicants will receive consideration for employment without regard to race, sex, color, religion, national origin, ancestry, age over 40, protected veteran status, disability, sexual orientation, gender identity/expression, marital status, or other protected class.

Contact Information

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

Contact

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