

Postdoctoral Fellow in Reactor Design and Optimization for Chemical Deconstruction of Waste Plastics

Description:

The Ong Lab at Michigan Technological University (<https://pages.mtu.edu/~rgong1>) is accepting applications for a postdoctoral fellow for the study of chemical deconstruction of waste plastics prior to microbial upgrading.

This project is part of a funded multidisciplinary project (BioPROTEIN: Biological Plastic Reuse by Olefin and Ester Transforming Engineered Isolates and Natural Consortia) that is focused on biologically converting waste plastics into higher value products. For this project, the research will focus on construction of novel chemical deconstruction reactors and process configurations and optimization of processing conditions. Long term, the results from this project will provide new approaches to deal with our global waste plastic crisis. This multidisciplinary project will provide significant opportunities for collaboration and close communication with researchers from multiple disciplines, including biology, bioengineering, chemical engineering, and materials science.

Essential Duties:

- Design and construct custom reactors for deconstructing waste plastics
- Analyze reaction products using HPLC/GC-MS/etc.
- Optimize reactor design and processing conditions for target outputs
- Publish research results in peer-reviewed scientific or technical journals
- Collaborate with other team members and mentor undergraduate and graduate students

Essential Qualifications:

The ideal candidate will have:

- Ph.D. in engineering or a related field (chemical engineering, mechanical engineering, or other related fields will be considered)
- Significant prior background and expertise in reactor/equipment construction and process optimization
- Demonstrated initiative and ability to develop and conduct independent research projects
- Demonstrated proficient communication skills (spoken and written English)
- Demonstrated ability to collaborate effectively as part of a team and mentor students

Desired Qualifications:

- Additional experience with fluid dynamic modeling or microbial culturing is a plus, but not required

Timeline:

The start date for this project is as soon as possible, but the timeline can be adjusted for exceptional candidates.

Because of the urgent timeline, review of applications will begin immediately. Interested applicants should submit the following to Dr. Rebecca Ong (Email: rgong1 at mtu dot edu):

- A detailed CV with full publication list
- A cover letter describing your relevant qualifications and interest in the project
- Contact information for at least three references