

Postdoctoral Research Position in Polymer Chemistry

University of California, San Diego
Food & Fuel for the 21ST Century
California Center for Algae Biotechnology

Post-Doctoral Fellowship in Algae-Derived Renewable Polymers

The available postdoctoral position is to develop enabling technologies that will allow development of high value renewable polymers made from algae oils, for near-term commercial deployment. Developing algae based materials that can be used to replace petroleum-based feedstocks in high value products will enable the development of environmentally favorable polymers and plastics, while allowing commercial products to enter the market in the very near future. These high value products, including rigid and flexible polyurethane materials, can provide immediate economic return, allowing the industry to develop and advance the technologies and efficiencies required to allow eventual large-scale deployment of renewable materials that can compete economically with petroleum. The current project focuses on development of polyurethane precursors by chemical modification of feedstocks extracted from algal biomass to produce renewable polymers and apply them to specific product sectors. By assembling world-class scientists from a range of disciplines, we aim to develop new technologies and materials with the goal of rapid commercial deployment through industrial collaborations.

About The California Center for Algae Biotechnology (Cal-CAB) was formed in 2008 to facilitate collaborations among the many research labs and commercial sector partners that were working in algae biotechnology in California. Located at UC San Diego, the center quickly became a national and international center for algae biotechnology and gained members from throughout California, the US, and internationally. Cal-CAB presently has over 33 algae research faculty from eight California Universities as full members, as well as collaborative partners from other US Universities, Japan, Australia, the United Kingdom, and Europe.

Position Overview

Cal-CAB is seeking a Polymer Chemist or Materials Scientist to support discovery activities for new polymer materials. This position will report to the Associate Director of Cal-CAB. This is a paid, full time, postdoctoral position based at the main campus of University of California, San Diego in La Jolla, CA.

Qualifications

- Ph.D. in Chemistry, Chemical engineering, Polymer science, or Material Science or a related discipline
- Experience developing novel materials, including polymers, formulations, polymeric systems, and related material development a plus.

Relevant Skills and Experience

- This position requires the successful candidate to be an adept, hands-on chemist with experience in materials and polymer, polymer materials modification and characterization, and formulation development.
- Fundamental understanding of material synthesis, characterization, structure-property relationships and utilization towards application development is also desirable.
- The ability to work in a team-oriented, interdisciplinary environment that embraces change, risk, and flexibility is needed.
- This individual must be capable of handling multiple projects/tasks at the same time.

- A demonstrated ability to work independently and within a team with sense of urgency for timelines is needed.
- This individual will have the potential to lead technical aspects within project teams.
- The successful candidate must have excellent verbal and written communication skills.
- A passion and enthusiasm for innovation will be an asset.
- Proven problem solving skills and good interpersonal relationship and people skills will be needed.

Responsibilities

The Postdoctoral Researcher will be responsible for designing and developing new materials from available algae oil feedstocks. Extraction of oils from algae biomass, and chemical conversion to suitable monomers will also be required. This individual will play a key role in a multidisciplinary team of scientists and identify new materials, formulations, and performance targets through collaborations with other research groups and industrial partners to address new opportunities for future applications.

Key responsibilities will include:

- Materials design based on target performance criteria.
- Formulation optimization and analysis.
- Hands-on chemical synthesis, modification and scale-up.
- Development and validation of materials synthesis, characterization, and performance evaluation protocols.
- Design of experiments.
- Critical review of literature to identify state of the art technology applications.
- Collaborate with biomass production members and cross-functional teams.
- Presentation of technology to the laboratory, center, collaborators, and at local and national conferences.
- Prepare manuscripts and patent filings.
- Strong organization skills, attention to detail and analytical skills.
- Excellent communication and interpersonal skills. Eligibility to work in the U.S. is required.

For immediate consideration please send a cover letter and resume to: mburkart@ucsd.edu