Highly Oriented Crystals Based High Performance Composite Materials

Project Description:
Light-mechanical responsive materials are materials that can undergo deformation under light stimulation, directly converting light energy into mechanical energy. They have broad applications in fields such as artificial muscles, sensors, and soft robotics. This project aims to utilize various fabrication techniques (such as spinning, 3D printing, etc.) to achieve high orientation of light-responsive molecules within flexible polymer matrices, thereby enhancing the light-to-mechanical energy conversion efficiency, strain rate, and work density of the light-mechanical composite materials.

Position Overview:
The Polymer Materials Laboratory at the SCUPI is recruiting a Research Assistant. The project focuses on the fabrication and development of high-performance light-driven materials. Applicants with experience in fiber spinning, polymer 3D printing (nozzle-type), organic field-effect transistors, or liquid crystal elastomers are preferred. Applicants should be adept at conducting and summarizing SCI (Science Citation Index) literature reviews, as well as effective in team communication and problem-solving. The project's goal is to publish high-impact academic papers or apply for related patents, laying a solid foundation for the applicant’s future academic pursuits (such as studying abroad) or career development in industry.

Position Requirements:
Applicants should have an academic background related to Chemistry, Polymer Materials Science, Applied Physics, Materials Engineering, Crystallography, or other relevant fields, and must hold a bachelor's or master’s degree in a related discipline.

The project is primarily experimental. Applicants should be proficient in operating various common instruments used in materials science research (such as SEM, optical microscopy, UV-Vis absorption spectroscopy, thermal analysis instruments) and analysis software (such as Origin, ImageJ, Matlab, etc.).

Principal Investigator: Wenwen Xu, Assistant Professor at Sichuan University Pittsburgh institute. Research field: stimuli responsive polymeric materials. The PI has been published papers in renowned journals such as *Nature Materials*, *ACS Applied Materials & Interfaces*, *Advanced Optical Materials*, etc.