Job Title	Postdoctoral Associate
PVN ID	RC-2501-006661
Category	Postdoctoral
Location	CUNY-ADVANCED SCIENCE RESEARCH CENTER
Department	Chem. Eng. & Nanoscience Initiative
Status	Full Time
Annual Salary	$64,350.00 - $64,350.00
Hour(s) a Week	35
Closing Date	Apr 30, 2025 (Or Until Filled)

General Description

The Tu lab (rtu.ccny.cuny.edu) and the Chen lab (www.xchenlab.com) in the Chemical Engineering at the City College of New York and Nanoscience Initiate at the CUNY Advanced Science Research Center (asrc.gc.cuny.edu) is seeking a highly motivated and independent postdoctoral scholar to research micro-structural phase separation and confined water properties in regenerated silk fibroin/peptidoglycan composites, following from recent research in this area[1-3]. The proposed research is expected to provide fundamental support for spinning networks of scalable biomacromolecules that function as high-performance water-responsive actuators. The research is cross-disciplinary and combines biopolymer, interfacial physics, spectroscopy, simulations, and various imaging techniques. The postdoc will also coordinate research with collaborators at national labs.

References:

1. Darjan Podbevšek, Yeojin Jung, Maheen K. Khan, Honghui Yu, Raymond S. Tu* and Xi Chen*. The role of water mobility on water-responsive actuation of silk. *Nature Communications* **15**, 8287 (2024).
2. Jacob Kronenberg, Yeojin Jung, Jason Chen, Maria Jinu Kulapurathazhe, Dustin Britton, Seungri Kim, Xi Chen*, Raymond S. Tu*, and Jin Kim Montclare*. Structure-Dependent Water Responsiveness of Protein Block Copolymers. *ACS Applied Bio Materials* **7**, 3714–3720 (2024).
3. Yeojin Jung, Maheen K. Khan, Darjan Podbevšek, Tejaswini Sudhakar, Raymond S. Tu, and Xi Chen. Enhanced water-responsive actuation of porous Bombyx mori silk. *Soft Matter* **19**, 2047-2052 (2023).

Other Duties

In addition to the General Duties, responsibilities include but are not limited to:

- Conducts experimental research in the area of functional biomacromoleculars;
- Prepares papers for publication in peer-reviewed journals and patents and present lectures at

conferences;
- Collaborates with internal and external academic colleagues, and participates in knowledge exchange activities to establish research links with industry;
- Assists in laboratory management, laboratory maintenance, and mentorship of undergraduate and graduate students;
- Conducts individual and/or collaborative research, and contributes to the development of new research methods and ideas, giving direction to the project;
- Assists in the development and planning of research objectives for specific projects, and contributes to the development of research objectives as part of the wider research program within the group, with guidance from the academic supervisor, as appropriate;
- Performs other related duties as assigned.

Qualifications

The applicant should have:

- PhD in chemical engineering, chemistry, materials science, biophysics, and related fields.
- Strong hands-on experience in functional biomaterials, interfacial science, biopolymer, and material characterization techniques, such as FT-IR, Raman, AFM, TGA/DSC, XRD, SEM, and TEM.
- Previous experience in communicating research results at conferences and through publication in quality peer-reviewed journals.