

Ediger Lab Postdoctoral Research Associate Positions at University of Wisconsin-Madison:

The Organization: The University of Wisconsin-Madison is a top US research university located in Madison, WI. The Department of Chemistry is a top-ranked department that provides a stimulating atmosphere for postgraduate research and supports an inclusive and diverse environment. UW-Madison and the Department of Chemistry are committed to increasing diversity and inclusion in STEM (<https://diversity.wisc.edu>) and we particularly welcome applicants from underrepresented groups.

The Opportunity: The Ediger group at UW-Madison, an international leader in the chemistry and physics of glassy materials, has three postdoctoral positions available:

1) We have recently shown that glasses with anisotropic structures can be prepared by physical vapor deposition, e.g., a molecule with no known liquid crystal phases can be vapor-deposited into a glass with order similar to an aligned smectic liquid crystal (PNAS 43, 21421, 2019). With support from the University of Wisconsin MRSEC, we will explore the range of ordered glass structures that can be prepared by vapor deposition. The experiments envisioned involve physical vapor deposition, 4D scanning transmission electron microscopy, ellipsometry, and synchrotron x-ray scattering.

2) Vapor-deposited organic semiconductors are the active layers in OLEDs and have potential for other areas of organic electronics. Our recent work has advanced understanding of the structure of single-component PVD glasses (Acc. Chem. Res. 52, 407, 2019; Chem. Mater. 32, 6295, 2020). With support from DOE, we aim to control phase segregation in two-component PVD glasses. The experiments envisioned involve physical vapor deposition, GISAXS, p-RSoXS, electron microscopy, and ellipsometry.

3) Deformation of polymer glasses changes dynamics and structure, and these changes have an important influence on the utility of polymer materials. Our recent work has investigated the balance between rejuvenation and overaging in deformation (Macromolecules 53, 8467, 2020). With support from NSF, we are extending this work to make contact with simulation and theory. The experiments envisioned involve confocal microscopy during active deformation.

Qualifications: Candidates should have a PhD in chemistry, physics, chemical engineering, or another relevant discipline. They should also have a successful record as an experimentalist, and a desire to develop innovative research advances. Good communications skills and the ability to work with a diverse research team are essential. Prior experience with glasses or relevant techniques is useful but not required.

To Apply: Please contact Mark Ediger to apply (please send cover letter and CV) or for further information about these positions: ediger@chem.wisc.edu