

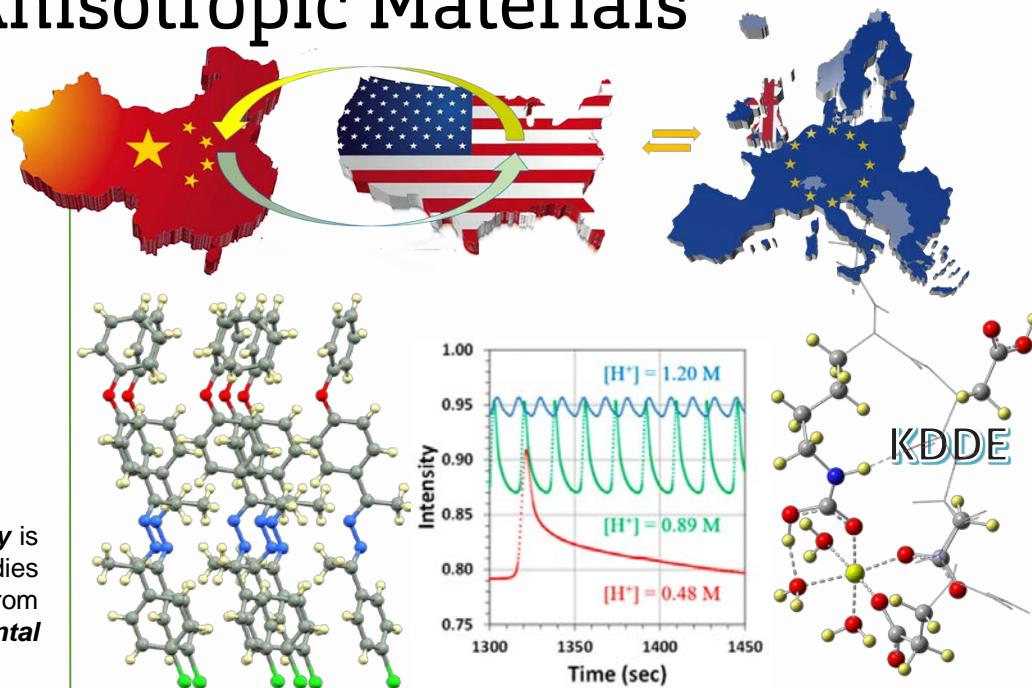
Chemistry of Anisotropic Materials

Research Topics

- Rubisco biomimetics for CO₂ capture from air
- Ferroelectrical materials for nonlinear optics
- Oscillating chemical reactions: Video-based kinetic analysis and simulation by dynamic methods
- Layer models of enzyme activity: P450, Rubisco
- STEM Education: Scientific writing, peer review, science communication, science globalization

Key Words

From *Electronic Structure Theory to New Concepts in Chemistry* is the guiding principle of our research. This principle is applied to studies of *Chemistry in Anisotropic Media*, and all efforts are benefitting from the *Synergy of Tightly Coupled Theoretical and Experimental Studies*. **Organic • Physical • Theoretical • Materials • Education**



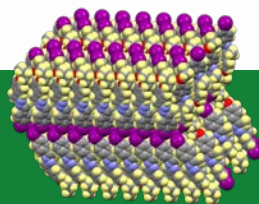
Contact Information

- **Rainer E. Glaser**, Dipl.-Chem., M.S., Ph.D.
- Professor and Chair
- Department of Chemistry
- 104B Schrenk Hall
- Email: glaser@mst.edu



Funding (after 2013)

- NSF, CHE: Biomimetic CO₂ Capture from Air
- NSF, MRI: Nonlinear Optical Materials
- ACS, PRF (ND): Polymerization Catalysts
- NSF, PRISM: Mathematics & Life Sciences



Selected Publications

Editor's Pick: Enhanced Piezoresponse and Nonlinear Optical Properties of Fluorinated Self-Assembled Peptide Nanotubes. Khanra, S.; Vassiliades, S. V.; Alves, W. A.; Yang, K.; Glaser, R.; Ghosh, K.; Yu, P.; Guha, S., *AIP Advances* **2019**, 9, 115202-6. [10.1063/1.5220662](https://doi.org/10.1063/1.5220662).

Measurement and Simulations of the Acidity Dependence of the Kinetics of the Iron-Catalyzed Belousov-Zhabotinsky Reaction. Zars, E.; Glaser, R.; Downing, M.; Chicone, C. *J. Phys. Chem. A* **2018**, 122, 6183-6195. [10.1021/acs.jpca.8b05015](https://doi.org/10.1021/acs.jpca.8b05015)

Challenges of Globalization and Successful Adaptation Strategies in Implementing a 'Scientific Writing and Authoring' Course in China. Yang, K.; Guo, C.-Y.; Glaser, R. *J. Chem. Educ.* **2018**, in press. [10.1021/acs.jchemed.8b00384](https://doi.org/10.1021/acs.jchemed.8b00384)

Simultaneous Determination of All Species Concentrations in Multi-Equilibria for Aqueous Solutions of Dihydrogen Phosphate Considering Debye-Hückel Theory. Schell, J.; Zars, E.; Chicone, C.; Glaser, R. *J. Chem. Eng. Data* **2018**, 63, 2151-2161. [10.1021/acs.jced.8b00146](https://doi.org/10.1021/acs.jced.8b00146)

