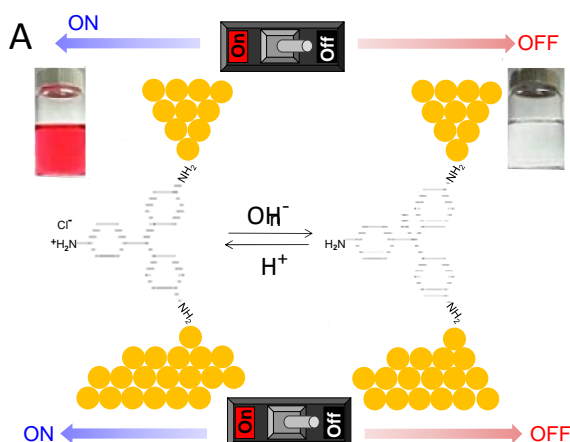


Single Molecule Conductivity and Scanning Probe Microscopy Research internship

Opportunities available in our **Single Molecule Switching** project. The research focus is the electrical conductivity of single molecules, with a special emphasis on the sensitivity of this process to external perturbations that can induce switching. We have collaborations with synthetic groups at Duke University (Theiren), Basel University (Descurtins) and Université Paul Sabatier, Toulouse France (Chauvin) as well theorists at Duke (Beratan) and Northwestern (Ratner).



In 2014, so far, our single molecule work has resulted in two papers in *Angewandte Chemie* and one in *The Journal of the American Chemical Society*

Single-Molecule Sensing of Environmental pH-an STM Break Junction and NEGF-DFT Approach, Zhihai Li, Manuel Smeu, Sepideh A. Mamaghani, Yangjun Xing, Mark A. Ratner and Eric Borguet, *Angewandte Chemie*, 126 (4), 1116-1120 (2014)

Orientation-Controlled Single-Molecule Junctions, Sepideh Afsari, Zhihai Li and Eric Borguet, *Angewandte Chemie International Edition*, 53 (37) 9771-9774, (2014) DOI: 10.1002/anie.201402343

Regulating a Benzodifuran Single Molecule Redox Switch via Electrochemical Gating and Optimization of Molecule/Electrode Coupling, Zhihai Li, Hui Li, Songjie Chen, Toni Froehlich, Christian Schönenberger, Michel Calame, Silvio Decurtins, Shi-Xia Liu and Eric Borguet. *Journal of the American Chemical Society* 136, 25 8867,8870 (2014).

Candidates will use Atomic Force Microscopy (AFM) and/or Scanning Tunneling Microscopy (STM) in ambient and under fluid. They will develop expertise in electrochemistry, preparation of single crystal electrodes, and growth of self-assembled monolayers. Prior experience in these areas is a plus. A strong background in physical chemistry or related discipline is required.

Interested candidates should send a CV to: Dr. Eric BORGUET

Email address: eborguet@temple.edu

Group website: <http://www.temple.edu/borguet/>