Making Polyurethane Flexible Foams from Soybean Oil-derived Polyol
Chris Macosko (PI), Ling Zhang
Chemical Engineering & Material Science, University of Minnesota

- Polyurethane Foam Morphology (tapping AFM)
  - Degree of phase separation (qualitative)
  - Phase contrast (hardness difference between phases)
- Small Angle X-ray Scattering (2m-line)
  - Electron density contrast

Petroleum Foam
Soybean Oil Foam

Image size: 500 x 500 nm, phase scale: 25°

- Soybean Oil-based Foam
  - Phase mixing is visible
  - Less phase contrast / hardness difference between phases on average

All work were carried out at Characterization Facility at the University of Minnesota