Probing Dynamic Processes at Interfaces

**Objective:**
- Understand the striking different dynamic response displayed by confined mesoscopic fluids under shear.
- Better understanding of tribology at the nanometer scale.

**Impact:**
- Help developing novel engine lubricants, and protective films for defense.
- Improve reliability of micro-electro mechanical system (MEMS) devices.

**Collaborators:**
M. Yan (PSU, Chemistry Department)
R. Nordstrom (PSU, Mechanical and Materials Engineering Department)

The sound of shear-forces. While the tip first approaches, gets immersed into the fluid layer and then retracts, the shear-interaction effects on the probe (signal-1) and on the mesoscopic fluid (signal-2) are acquired simultaneously.