Depth profiles of molecular orientations determine many film properties but are hard to measure in non-crystalline systems.

- **Polarization dependent Resonant Soft X-Ray Reflectivity:**
  - Enhances scattering contrast for different chemical bonds around their characteristic x-ray resonances.
  - Detects the orientation of specific functional groups through the difference between reflectivity with s- and p-polarized x-rays.
  - Probes depth profiles through thin films in measurements as a function of incidence angle.

- Capability of technique was demonstrated by measurements on liquid crystalline polymer films performed at the Advanced Light Source and ELETTRA Synchrotron Trieste.