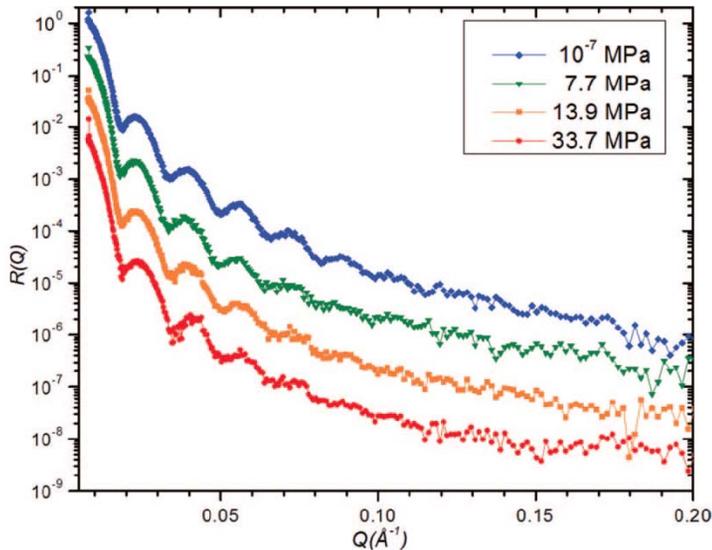




New high-pressure neutron reflectometry cell for measurements of fluid nano-structures at mineral surfaces



- The nanometer-scale density and composition profiles of pure and binary compressed fluids at mineral surfaces are largely unknown
- A neutron cell for measurements at high pressure (up to 500 bar) and temperatures up to 150°C was built and tested
- The cell features a new windowless design with excellent neutron characteristics and requires only very small amounts of sample
- New cell will be used for studies of CO₂-water-salt mixtures near quartz and other mineral surfaces, which play an important role in subsurface carbon storage



J. R. Carmichael, G. Rother, J. F. Browning, J. F. Ankner, J. L. Banuelos, L. M. Anovitz, D. J. Wesolowski, D. R. Cole, *Rev. Sci. Instrum.* **83**, 045108, (2012)