

Updates on the Partnership for eXtreme Xtallography (PX²) Project

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Partnership for eXtreme Xtallography (PX²) is providing new capabilities for high-pressure diamond anvil cell research at the GSECARS APS beamline. The PX² project is a collaboration between the University of Hawaii and GSECARS, supported by COMPRES and hosted by GSECARS at experimental station 13-BM-C. This beamline provides focused x-rays at two fixed energies: 15 and 29 keV and a unique 6-circle heavy duty diffractometer, optimized for a variety of advanced crystallography experiments including interface studies, powder and single crystal structure determination, equation of state studies and thermal diffuse scattering. A compact optical platform has been installed, providing capabilities of ruby fluorescence, Raman spectroscopy and laser heating. Low temperature setup has been tested down to 200 K, and a new time-resolved area detector is under commissioning. These new capabilities are available to all researchers interested in studying deep earth materials through the APS General User Proposal system.