# Amorphous Materials under Pressure

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Without the rigid symmetry constraints of crystalline solids, amorphous materials (*AM*) may have more versatile changes and richer physics and chemistry under high pressure (*HP*). Recent integration of the state-of-the-art synchrotron X-ray techniques with the *HP* environment has opened a full range of new amorphous materials investigations. They include *HP micro-nano X-ray diffraction* which detects pressure-induced amorphization, crystallization, and polyamorphism in submicron samples, *HP X-ray micro-nano tomography* which enables volume determinations of *AM* rivalling the accuracy of crystalline diffraction, *HP X-ray absorption spectroscopy* which analyzes the pre-, near, or extended *K*- or *L*-absorption edge spectra to delineate *HP* electronic, magnetic, and structural changes, and *HP X-ray Raman spectroscopy* which opens a new field of *HP* chemical bonding studies of light elements. Examples are given on pressure-induced electronic, bonding, coordination, and structural transitions in amorphous selenium, amorphous $GeO_2$, amorphous borates, and bulk metallic glasses.