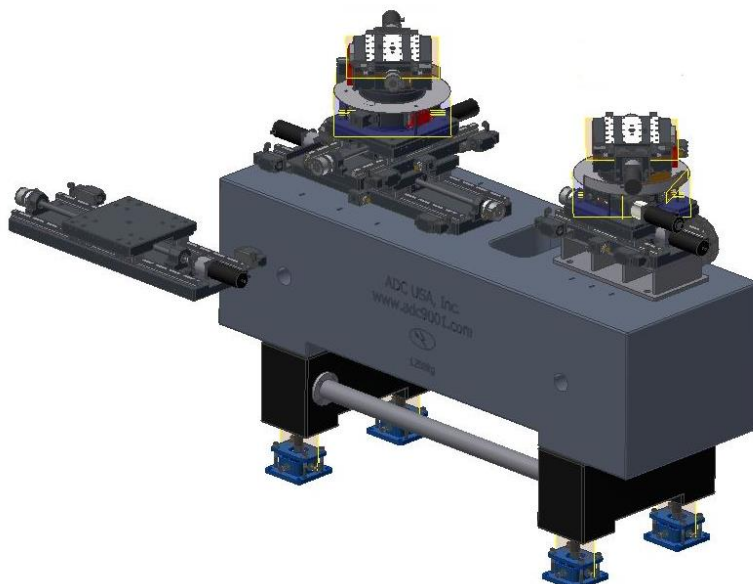


# Ultra-Small-Angle Neutron Scattering Instrument



## Customer:

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Ultra-small-angle neutron scattering (USANS) is a method for studying structures in the 100 nm to 10  $\mu\text{m}$  range by diffraction. USANS uses a neutron beam with an extremely sharp angular profile which can be obtained by diffraction from a perfect crystal ("Bonse-Hart" technique). USANS has all the normal advantages of neutron; contrast different to that of x-rays, ability to vary contrast using deuteration, sensitivity to magnetism, and penetration into macroscopic samples. Thus, USANS is useful for studies of pores and cracks in rocks, cement or engineering materials, very large biological or polymer molecules or macromolecular assemblies, and mesoscopic magnetic particles. The range of interest includes bacteria, blood, cements, clays, clusters in metals, coals, colloids, complex fluids, emulsions, foams, food, gels, granular materials, hydrogels, membranes, micellar systems, minerals and mineral processing, nanocomposites, nanotechnology, phase transitions, polymer blends, polymers, porous materials, powders, precipitates, proteins, rocks, thin metallic or organic films, and viruses.

