

A SAXS/WAXS Study: Structural Reconstruction and Evolution of Nanoparticle Assemblies

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Nanoparticles, like building blocks, can assemble into large-scale crystalline assemblies with periodic structure. This bottom-up strategy provides almost unlimited possibilities to design and construct materials with properties beyond individual nanoparticles. To unveil the understand the structure-property, it's critical to fully understand the hierarchical structure from atomic level to nanometer scales or micron scales. In this presentation, I will present the crystallographic solution to reconstruct the structure of nanoparticle assemblies by combining Small- and Wide Angle Scattering techniques. I will also discuss the development of environment control for SAXS/WAXS experiments in order to monitor the structural evolution of the nanoparticle assemblies.