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Hard X-ray nanotomography of colloidal suspensions[1] YESEUL KIM, SU JIN LIM, SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University, JUN LIM, Beamline Division, Pohang Light Source, BYUNG MOOK WEON, School of Advanced Materials Science and Engineering, SKKU Advanced Institute of Nanotechnology (SAINT), Sungkyunkwan University — Colloidal suspensions are complex fluids that include colloidal nanoparticles or microparticles suspended in a liquid medium. In-situ characterizations of colloidal suspensions are necessary in many topics: for instance, wetting properties for colloidal particles on a fluid-fluid interface are essential but hard to be directly taken with conventional imaging techniques. Here we show that hard X-ray nanotomography clearly visualizes individual colloidal particles inside fluids in three dimensions (3D). In particularly, we demonstrate 3D images for colloidal particles adsorbed on water-oil emulsions: contact angle and configuration of colloids could be measured. We believe that hard X-ray nanotomography would be a powerful tool to identify the nature of colloidal particles inside or on fluids.

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