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SANS Study on the Behaviors of Polymeric Ligands on the Nanoparticle Surfaces SEYONG KIM, Department of Chemical and Biological Engineering, Korea Univ., SOO-HYUNG CHOI, Department of Chemical Engineering, Hongik Univ., JUNE HUH, JOONA BANG, Department of Chemical and Biological Engineering, Korea Univ. — In this work, we employed small angle neutron scattering (SANS) and contrast variation technique to characterize the behaviors of polymer ligands on the nanoparticle (NPs) surfaces. The Janus-type Au NPs were coated with a mixture of two different ligands, PMMA-SH and deuterated PS-SH, and the Au NPs coated only with P(MMA-r-dS)-SH were also prepared for the control case of NPs with homogeneous ligands. From the SANS analysis, it was observed that the ligands become phase separated with increasing the molecular weight of ligands. Furthermore, computational simulation was performed to examine how ligands are phase separated on the curved NPs surfaces.

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