

Site-selective growth of silicone oil and surface modification toward colloidal patchy particles

김승현, Stefano Sacanna¹, 이기라[†]

Department of Chemical Engineering, Sungkyunkwan University; ¹Department of Chemistry, New York University
(yigira@skku.edu[†])

We have prepared colloidal patchy particles by the site-selective growth of silicon oil and surface modification. Polystyrene particles with low molecular weight were prepared by dispersion polymerization and then reactive silicone oil (3-methacryloxypropyltrimethoxysilane, TPM) was grown on the particles as described in previous report [1]. On polystyrene particles with two TPM lobes, triblock copolymer of ethylene oxide and propylene oxide(F108, BASF) were coated on the surface of PS particles. Then, by removing excess amount of surfactants and TPM, colloidal particles with two hydrophobic patches on outside were produced which formed chains due to the hydrophobic interaction.

[1] Nature Communications 4, 1688 (2013)