

Establishment of innovative evaluation for microstructural characterization of foam formed by polyoxyethylene type nonionic surfactant

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Small-angle neutron scattering, which has not been extensively utilized for foam characterization, can provide important insights into the microstructure of surfactant-stabilized foam. Small-angle neutron scattering in combination with several other techniques was herein employed to determine the microstructure of foams stabilized by homogeneous polyoxypropylene-polyoxyethylene alkyl ether type nonionic surfactants ($C_{12}EO_8PO_y$, $y = 1, 2, 3$), alkoxy-group-modified homogeneous polyoxyethylene alkyl ether nonionic surfactants ($C_{12}E-O_xOR$, $R = OCH_3, OC_2H_5$) and homogeneous polyoxyethylene alkyl ether sulfate sodium salt anionic surfactants ($C_{12}EO_xSO_4Na$, $x = 2, 4, 6, 8$).