

Abstract

This bachelor thesis deals with preparation and study of the aqueous solutions of block polyelectrolyte poly(2-vinylpyridine)-*b*-poly(ethylen oxide), P2VP-PEO with gemini surfactants 6,6'-*(ethan-1,2-diylbis(oxy)) bis(3-dodecylbenzenesulfonate acid)*, 6,6'-*(butan-1,4-diylbis(oxy)) bis(3-dodecylbenzenesulfonate acid)* and 6,6'-*(hexane-1,6-diylbis(oxy)) bis(3-dodecylbenzenesulfonate acid)* complexes and with P2VP-PEO and sodium dodecylsulfate, SDS, complexes, and compares their physico-chemical properties. Formed particles were characterized by static and dynamic light scattering, zeta potential, isothermal titration calorimetry and transmission cryo-electron microscopy. Even small amount of surfactant leads to coassembly of P2VP-PEO with surfactants, formed by PEO shell and P2VP/surfactant core. The nanoparticles of block polyelectrolyte and gemini surfactants in 0.1M HCl are stable and their size depends on the spacer length and the surfactant/polymer ratio.