

Core / Shell Microgel Particles: Their Characterisation and the Uptake and Release of an Anionic Surfactant

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Abstract

The use of microgel particles for controlled uptake and release of active species has great potential. The compatibility of microgel particles with their environment and the functionality of the particles can be achieved by modification of the core microgel through the addition of a shell. In this work, core-shell microgel particles, with a pH-responsive core (polyvinylpyridine) and temperature-responsive shell (poly-N-isopropylacrylamide), have been prepared and characterised. The uptake and release of an anionic surfactant from the microgels has been investigated as a function of solution pH and temperature. The results indicate that electrostatic attraction between the anionic surfactant and the cationically charged core of the microgel particles is the dominant mechanism for absorption of the surfactant into the core-shell microgel particles.