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Dispersion of carbon nanotubes by (in) gemini surfactants solution

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In our work, we focused on noncovalent modification of the carbon surface in aqueous solution. The use of surfactants to stabilize mentioned nanomaterials in suspension is one of the efficient approaches. Several works have been reported on dispersing of multi-wall carbon nanotubes by conventional single chain surfactants, like SDS, CTAB or DTAP. The aim of this study was to evaluate the possibility of the use of cationic gemini surfactants, with different length of spacer group, as the efficient systems for dispersion of nanostructures in aqueous solutions. In present studies, the varieties of dimeric surfactants with imidazolium and tetrasolium groups were used. The stability of the CN suspensions was investigated using UV/VIS and also AFM method to evaluate surfactant stabilization efficiency. The microstructure of the stable, concentrated, redispersed suspensions of carbon nanomaterials was investigated using high-resolution transmission electron microscopy. In addition, NMRD (nuclear magnetic resonance dispersion) profiles and FTIR studies were applied in order to check quality of selected suspensions.

Biography

Michalina Skupin is currently a PhD student at Adam Mickiewicz University in Poland. She has completed her Master's degree in Biophysics. She is an active Member of Biophysical Society and Polish Synchrotron Society since 2014.

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