

## Multilayered carbon-based soft nanoparticles

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The aim of the present study is to develop procedure for formation of stable and well-characterized carbon-based hybrid nanoparticles. The composite particles are formed through a subsequent layer-by-layer adsorption of oppositely charged polyelectrolytes on ellipsoidal core ( $\beta$ -FeOOH). In order to produce multifunctional nanoparticles, very low concentration of carbon dots were impregnated into the polymer shell. In the present study, *the electro-optic method is applied for first time for characterization of the electrical properties and hydrodynamic size of the carbon-based composite particles*. The overcompensation of the surface charge of the particles and re-stabilization of the system after each deposition step were investigated by using electric light scattering and microelectrophoresis.

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