



X-DLVO Interactions between Nanocolloidal Magnetic Particles: The Quantitative Interpretation of the pH-Dependent Phase Diagram of EDL-MF

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The phase behavior of acidic samples of EDL-MF based on cobalt ferrite nanoparticles with controlled mean sizes was investigated at constant temperature and in absence of magnetic field. By monitoring the nanoparticle charge by pH adjustments, we constructed an experimental pH-dependent phase diagram for all samples that revealed sol, gel thixotropic or coagulated phases in different pH regions. Then, by using an extended DLVO potential we analyzed quantitatively the observed phase diagram in function of pH and nanoparticle mean size.

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