

Abstract Submitted
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Size Distribution of Superparamagnetic Particles Determined by Magnetic Sedimentation JEAN-FRANCOIS BERRET, CNRS — We report on the use of magnetic sedimentation as a means to determine the size distribution of dispersed magnetic particles. The particles investigated here are i) single anionic and cationic nanoparticles of diameter $D \sim 7$ nm and ii) nanoparticle clusters resulting from electrostatic complexation with polyelectrolytes and polyelectrolyte-neutral copolymers. A theoretical expression of the sedimentation concentration profiles at the steady state is proposed and it is found to describe accurately the experimental data. When compared to dynamic light scattering, vibrating sample magnetometry and cryogenic transmission electron microscopy, magnetic sedimentation exhibits a unique property : it provides the core size and core size distribution of nanoparticle aggregates

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