Supplementary material for: *Thermoresponsive core-shell microgels with silica nanoparticle cores: size, structure, and volume phase transition of the polymer shell*

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Supporting information

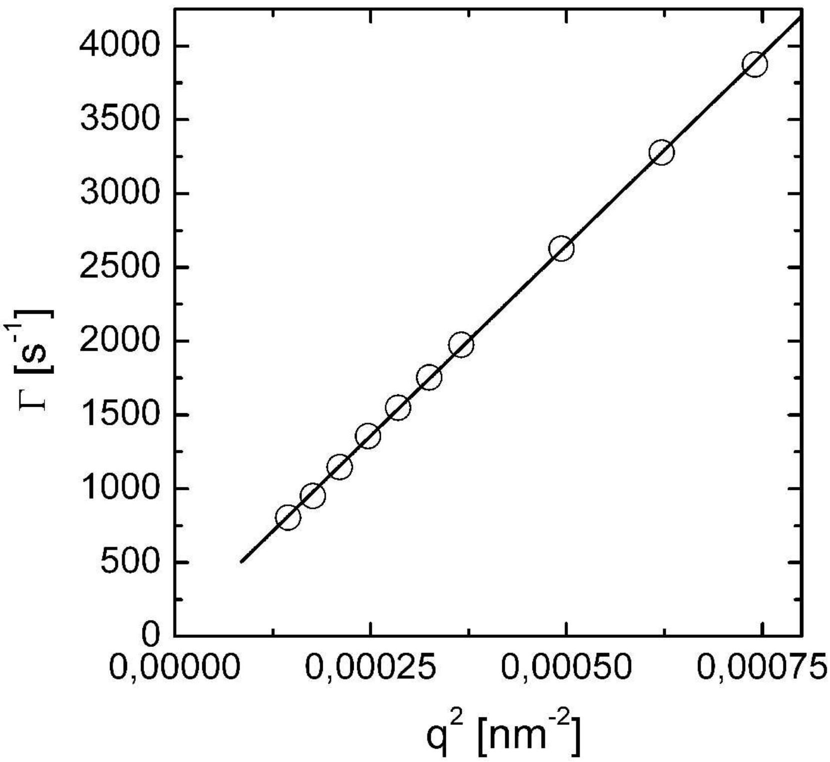

Figure 1: Results of DLS measurements of MPS-functionalized silica nanoparticles in ethanol at 25.0^{o}C. The solid line is a linear fit according to Eq. (11). The slope of the linear fit provides a translational diffusion coefficient D = $5.17 \cdot 10^{6}$ nm^{2}s^{-1}, from which a hydrodynamic radius of $R_{h,core}$ = 33.7 nm can be determined.

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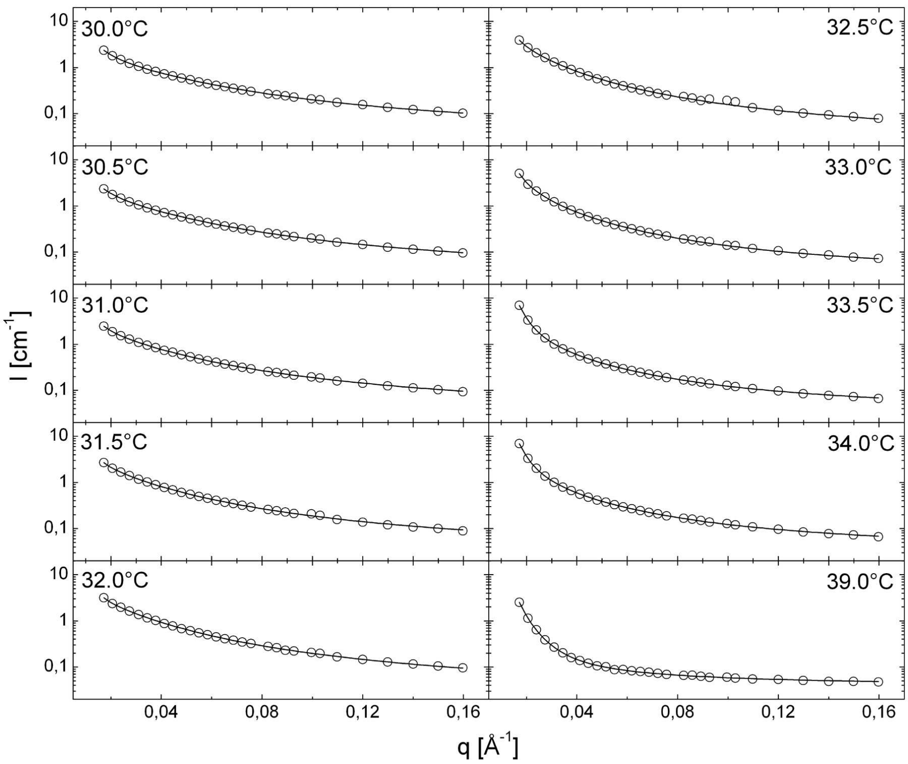

Figure 2: SANS curves for a SiO_2-poly-NIPAM core-shell microgel with silica cores of 70 nm in diameter for different temperatures around the volume phase transition. The solid lines represent fits according to Eq. (2) (Porod contribution plus Ornstein-Zernicke contribution).

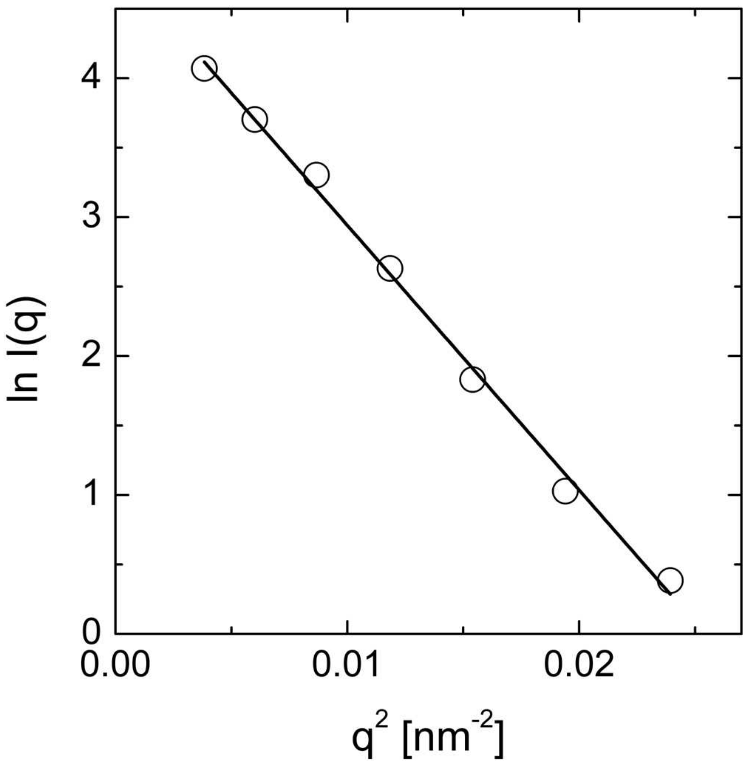

Figure 3: Guinier analysis of the small angle neutron scattering curve in the contrast matched state. The obtained Guinier radius is 24 nm.

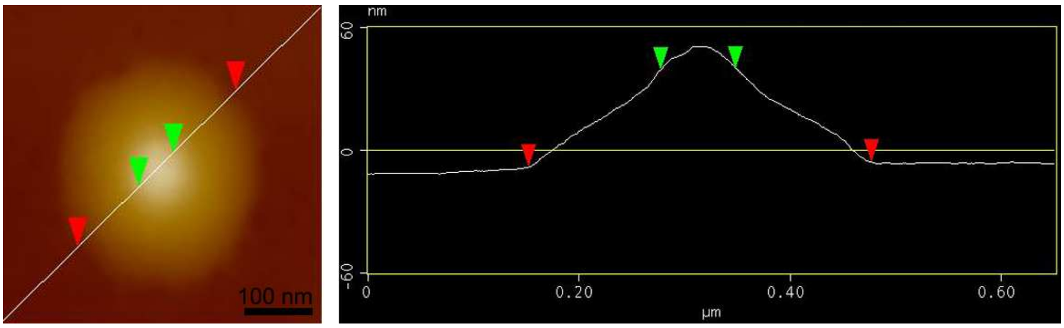

Figure 4: More detailed analysis the height profile of a single core shell particle. AFM would lead to core radius of approximately 39 nm. This is sigificantly larger than the value found using SANS because the polymer also contributes to what the AFM "sees" as core.