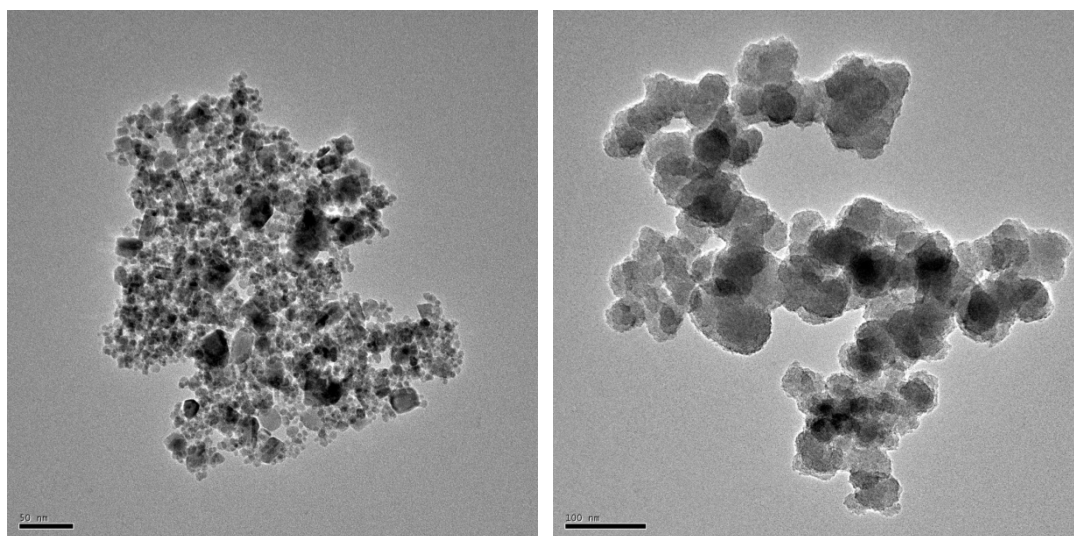
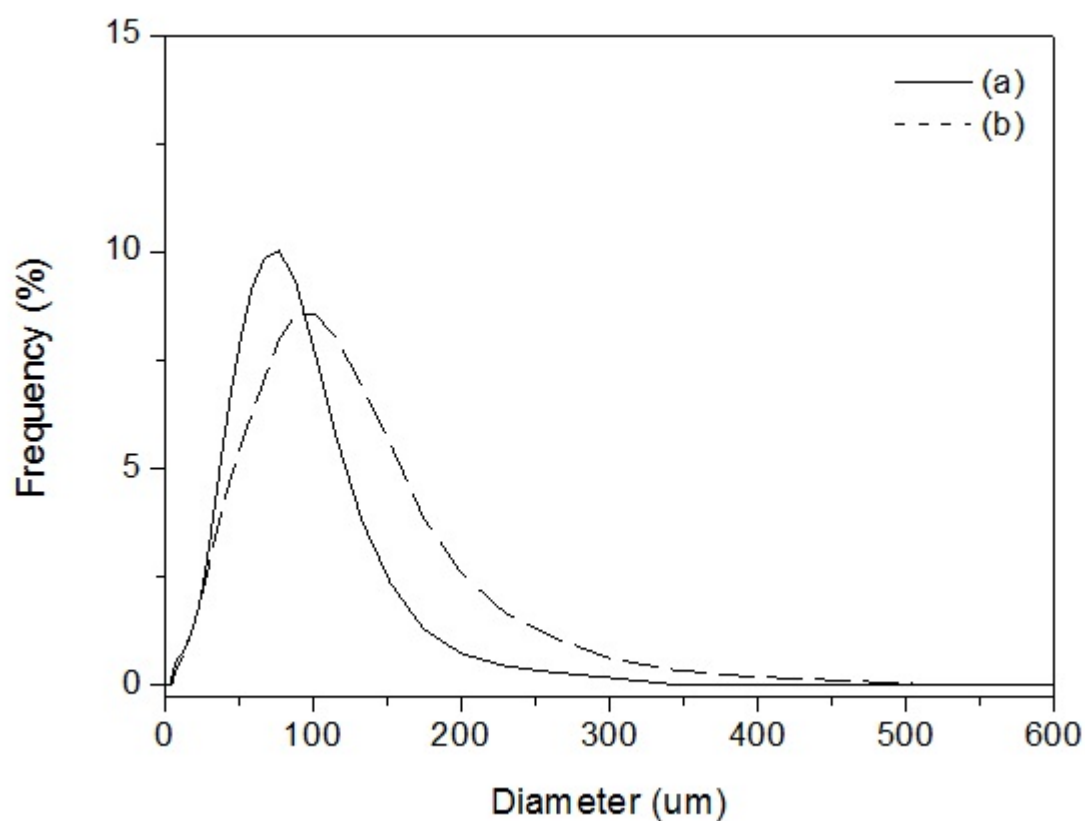


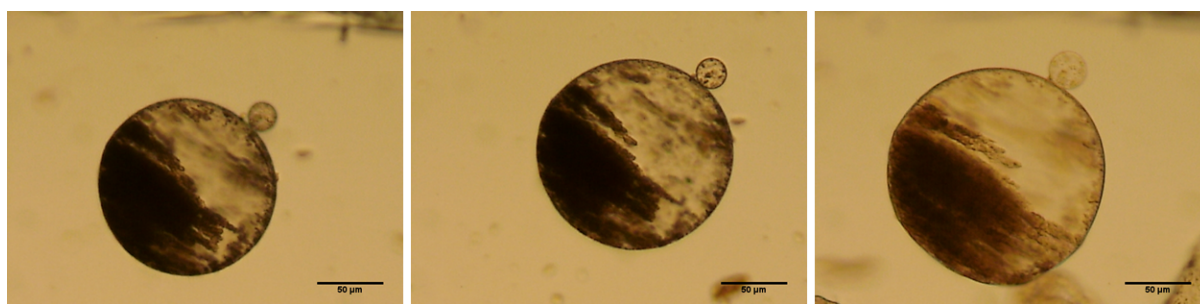
### Supplementary Information



**Fig. S1** TEM images of superparamagnetic iron oxide nanoparticles (left, scale bar 50 nm) and silica nanoparticles (right, scale bar 100 nm).



**Fig. S2** Particle size analysis of microgels (0.73 wt%) as a function of pH: (a) pH 2, (b) pH 7.



a)

b)

c)

**Fig. S3** Optical microscope images of anisotropic microgels as a function of pH. (a) pH 2, (b) pH 7, (c) pH 9.

**Fig. S4** Video clip showing the rotation of anisotropic microgels.