

## Magnetic properties study of iron-oxide nanoparticles/PVA ferrogels with potential biomedical applications

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Transmission Electron Microscopy TEM, JEOL100-CX II-Japan was employed to examine the morphology. Ferrogel samples were cryo-fractured in a cryo-ultramicrotome before testing.

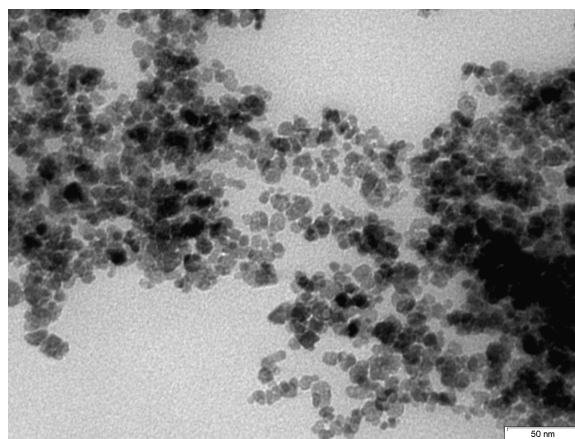
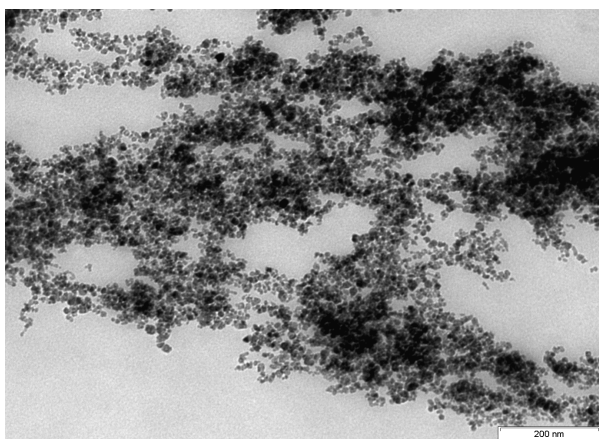


Figure S1. TEM images of GA ferrogel

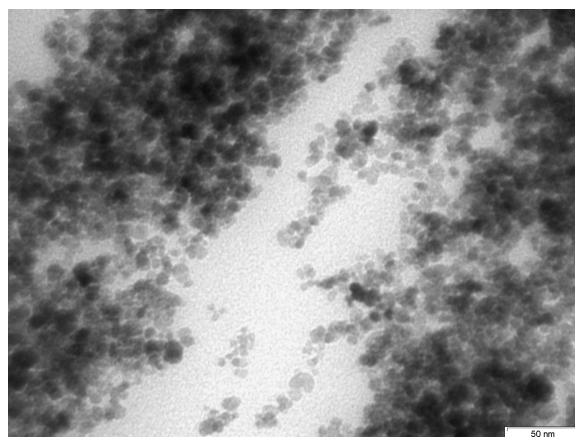
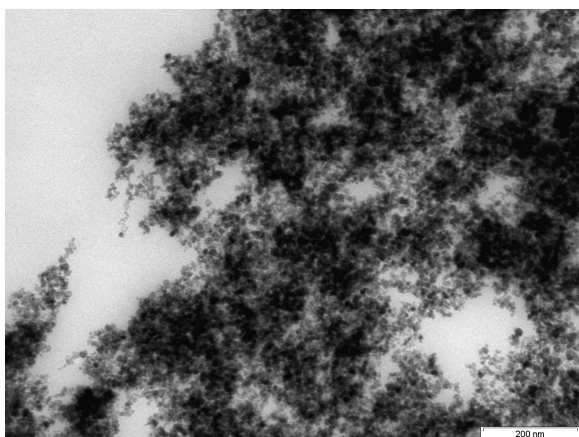


Figure S2. TEM images of FT ferrogel

The histograms of the particle size distribution (number distribution) were determined using several images and employing more than 100 particles/image by the software Image Pro Plus. Since Mössbauer spectroscopy and magnetic properties provide information on the particle size in terms of volume average, it is necessary to convert the number distribution as revealed by TEM into a volume distribution before comparison. The volume distribution function was obtained by weighting the number distribution function with the cube of the particle diameter.

Mean diameter value (and standard deviation) of the volume-weighted distributions are 7.9 nm (0.9 nm) and 8.5 nm (1.9 nm) for FT and GA samples, respectively.

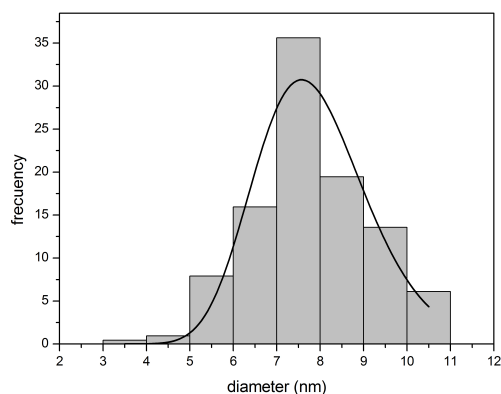


Figure S3. Volume-weighted distributions of the particle size for GA ferrogel as generated from TEM images in Figure 1. The solid line is the fitted curve assuming a log-normal distribution.

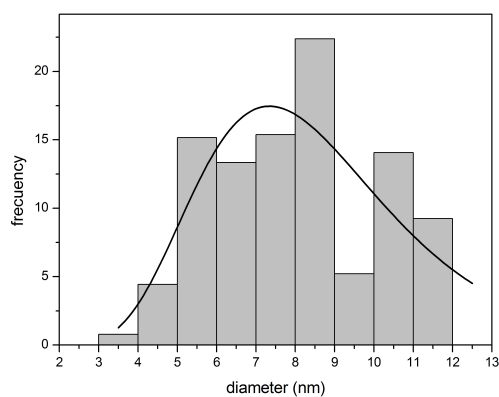


Figure S4. Volume-weighted distributions of the particle size for FT ferrogel as generated from TEM images in Figure 1. The solid line is the fitted curve assuming a log-normal distribution.