

Enhanced Frank Elasticity and Storage Modulus in a Diamagnetic Liquid Crystalline Ferrogel

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Supplementary Information

PLC (commercially available as BLO36 through Merck Ltd., Poole, GB) used in the study consists of

1. 6.75% of 4-ethyl-4'-cyanobiphenyl
2. 18.76% of 4-pentoxy-4'-cyanobiphenyl
3. 8.75% of 4-hexoxy-4'-cyanobiphenyl
4. 10.01% of 4-(trans-4-pentylcyclohexyl)-4'-cyanobiphenyl
5. 4.97% of 4-pentyl-4''-cyanoterphenyl
6. 30.00% of 4-pentyl-4'-cyanobiphenyl
7. 18.76% of 4-(4-propylphenyl)-3-fluoro-4'-cyanobiphenyl

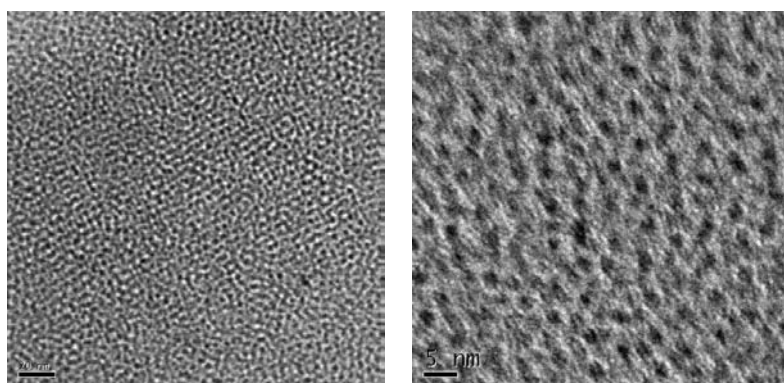


Figure SI-1: TEM images of the *as-prepared* FePt particles. The scale bar measures 20nm and 5 nm in the left and the right micrographs respectively.

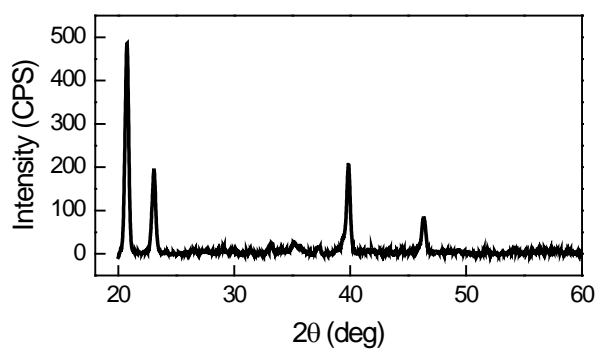


Figure SI-2: XRD data of annealed FePt nanoparticles obtained at 25 °C.

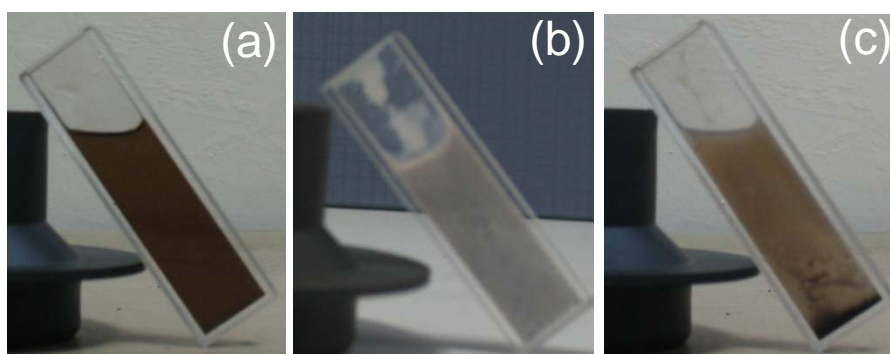


Figure SI-3: Photographs to show the uniform dispersion of FePt nanoparticles in the (a) isotropic (b) gel states of FG₁₀. In contrast, (c) the particles show sedimentation when the material is held in the N phase for a few hours.

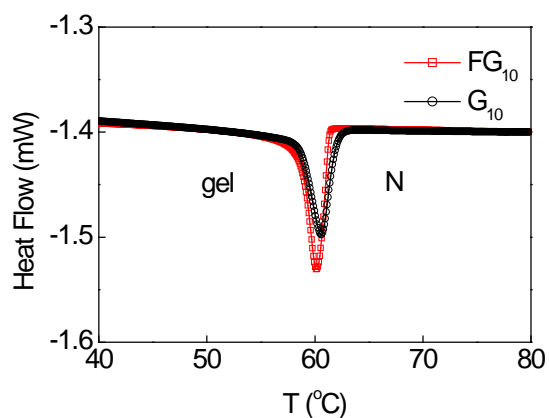


Figure SI-4: DSC profiles across N to gel transition in FG₁₀ and G₁₀, the gels with and without FePt nanoparticles respectively.

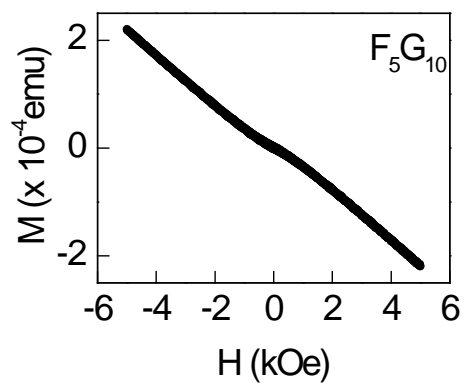


Figure SI-5: VSM measurements for F_5G_{10} gel containing 5% FePt nanoparticles.