

Electronic Supplementary Information

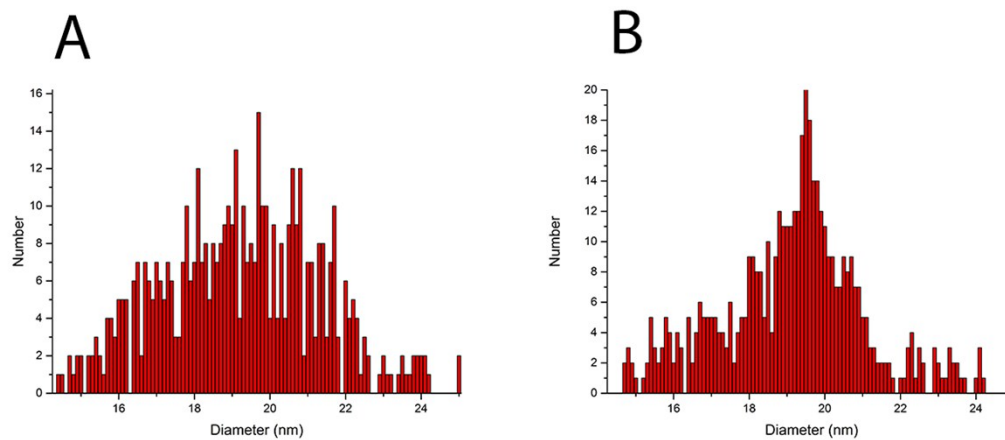
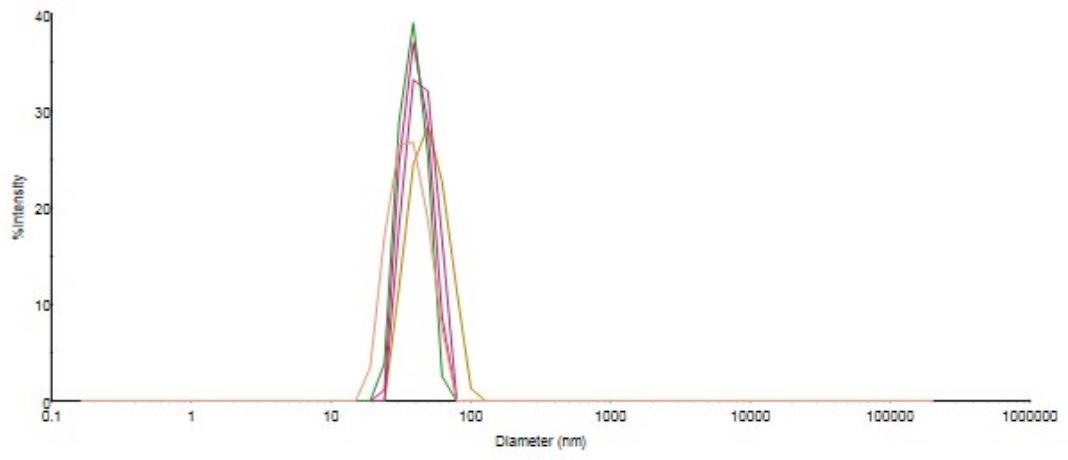


Figure S1: Size distribution obtain by TEM images analysis for samples A1 (A) and A2 (B)

A



B

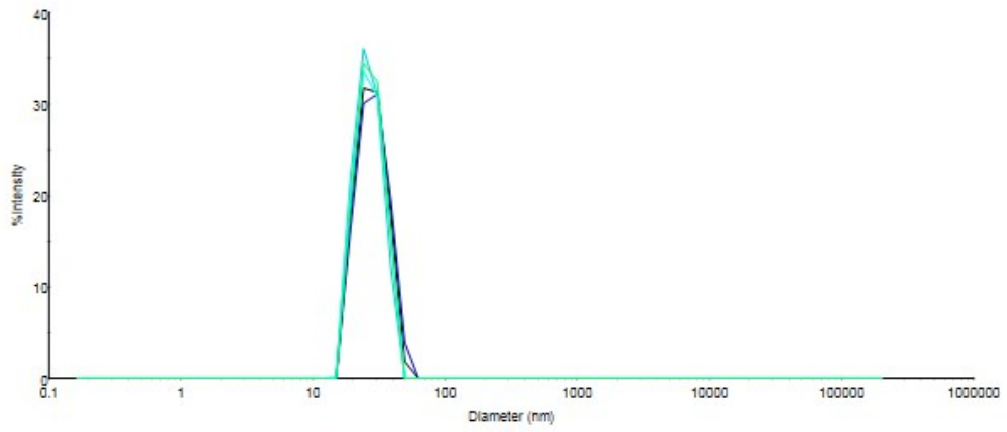


Figure S2: DLS size distribution for sample A1 (A) and A2 (B), repeated over weeks.

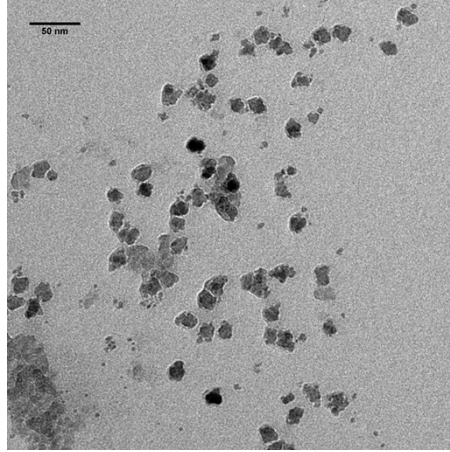


Figure S3: TEM image of Sample S2, obtained by deposition of the water suspension on the TEM grid.

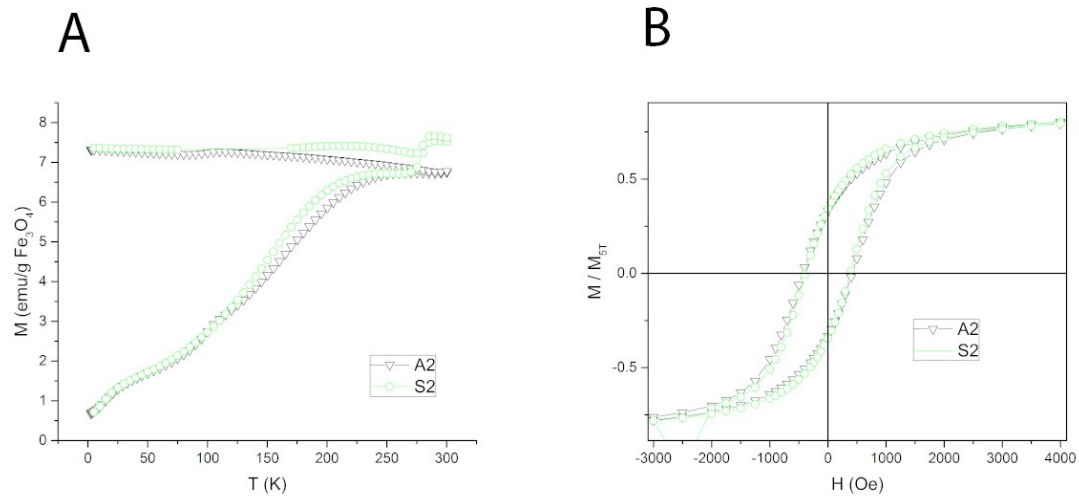


Figure S4: A) ZFC and FC magnetization curves acquired by applying a 5mT probing field, and B) hysteresis cycles at $T=2.5\text{K}$ for samples A1 (dry powder) and S2 (solution; All the data are reported per gram of magnetic material, Fe_3O_4 , evaluated from ICP-MS data.