Electronic Supplementary Material (ESI) for Dalton Transactions

Controlled Synthesis and Size-Dependent Thermal Conductivity of Fe_3O_4 Magnetic Nanofluids

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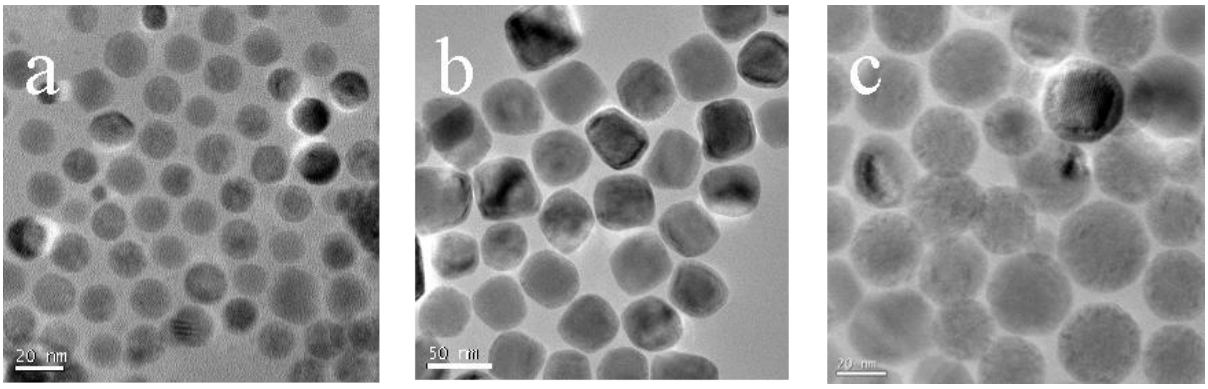

Figure S1. TEM images of Fe_3O_4 NPs: (a) ~16 nm (0.36 g, $Fe(acac)_3$), (b) ~ 38 nm (5.40g, $Fe(acac)_3$), and (c) ~ 30 nm (7.20 g, $Fe(acac)_3$).

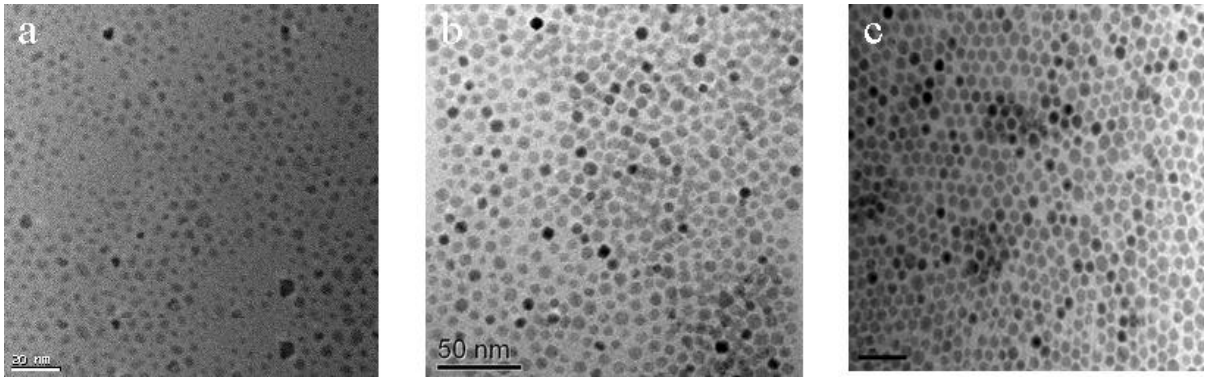

Figure S2. TEM images of Fe_3O_4 NPs: (a) ~4 nm, (b) ~ 6 nm, and (c) ~ 10 nm.

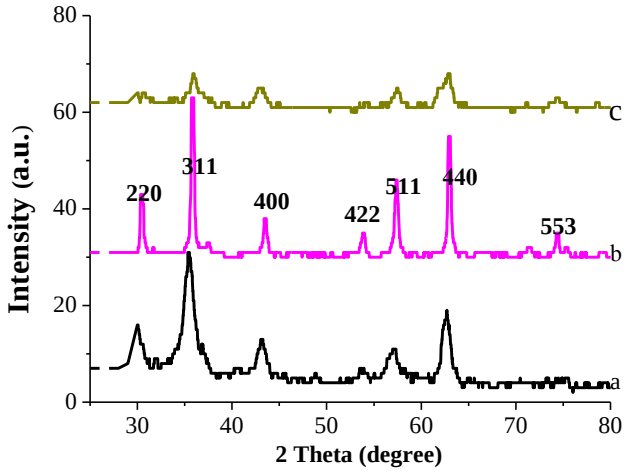

Figure S 3. XRD patterns of Fe_3O_4 NPs: (a) ~16 nm(0.36 g, $Fe(acac)_3$), (b) ~ 38 nm (5.40g, $Fe(acac)_3$) and (c) ~ 30 nm (7.20 g, $Fe(acac)_3$).

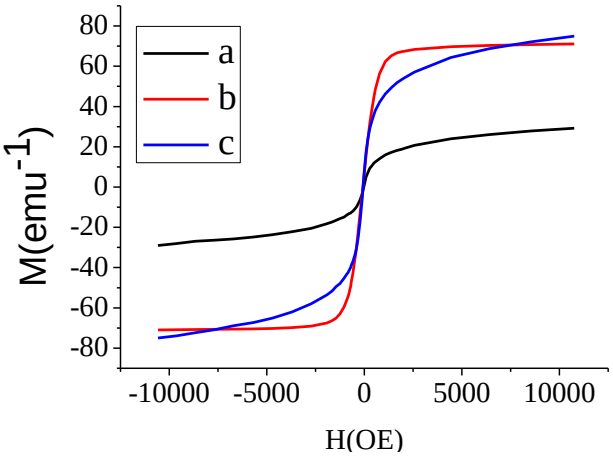

Figure S4. Magnetic hysteresis loops of (**a**) ~16 nm, (**b**) ~38 nm, and (**c**) ~30 nm Fe_3O_4 NPs measured at 298 K.

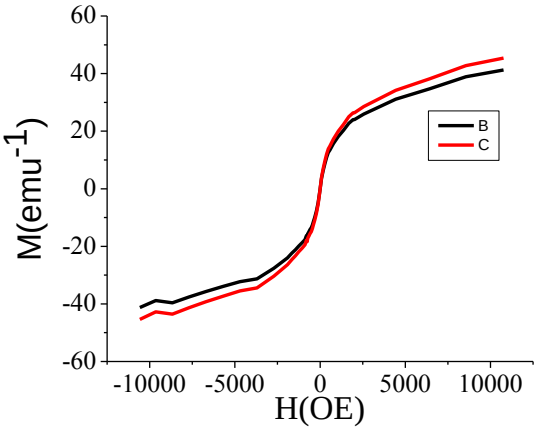

Figure S5. Magnetic hysteresis loops of ~16 nm Fe_3O_4 NPs (**B**) before heated (**C**) after heated at 100^0C measured at 298 K.

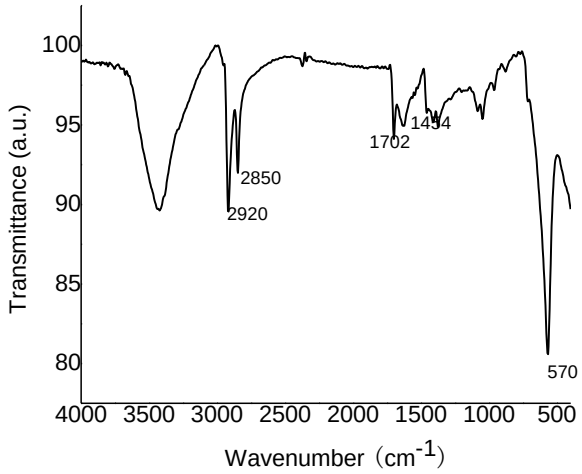

Figure S6. FT-IR spectra of the as-synthesized Fe_3O_4 nanoparticles.

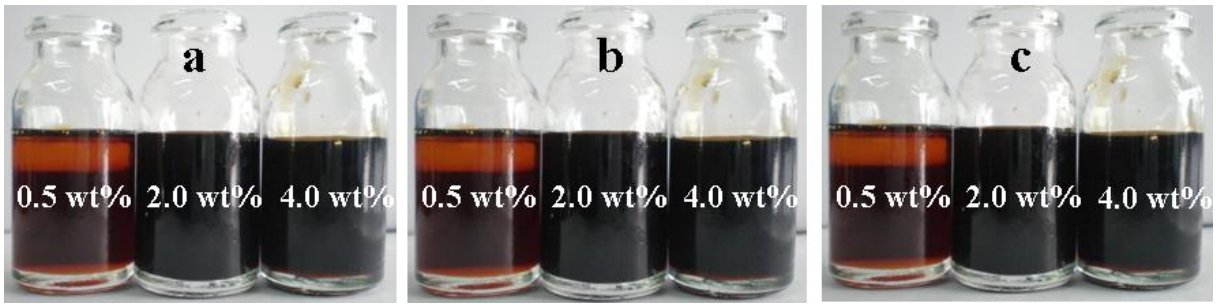

Figure S7. Stability of nanofluids containing Fe_3O_4 NPs: (a) stay 1 month, (b) stay 2 months and (b) stay 5 months.