Supporting Information for:

Combining Magnetic Hyperthermia and dual *T1*/*T2* MR Imaging Using Highly Versatile Iron Oxide Nanoparticles

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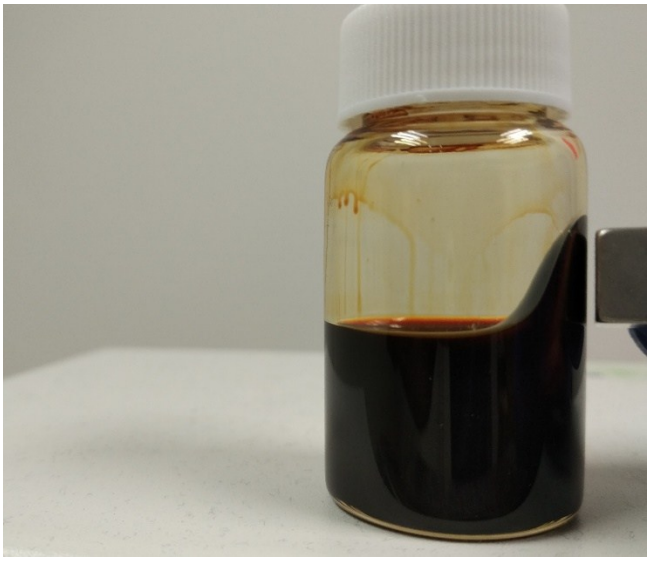

Figure S1: Magnetic colloidal fluid (ferrofluid) composed of oleate-coated USPIONs suspended in chloroform.

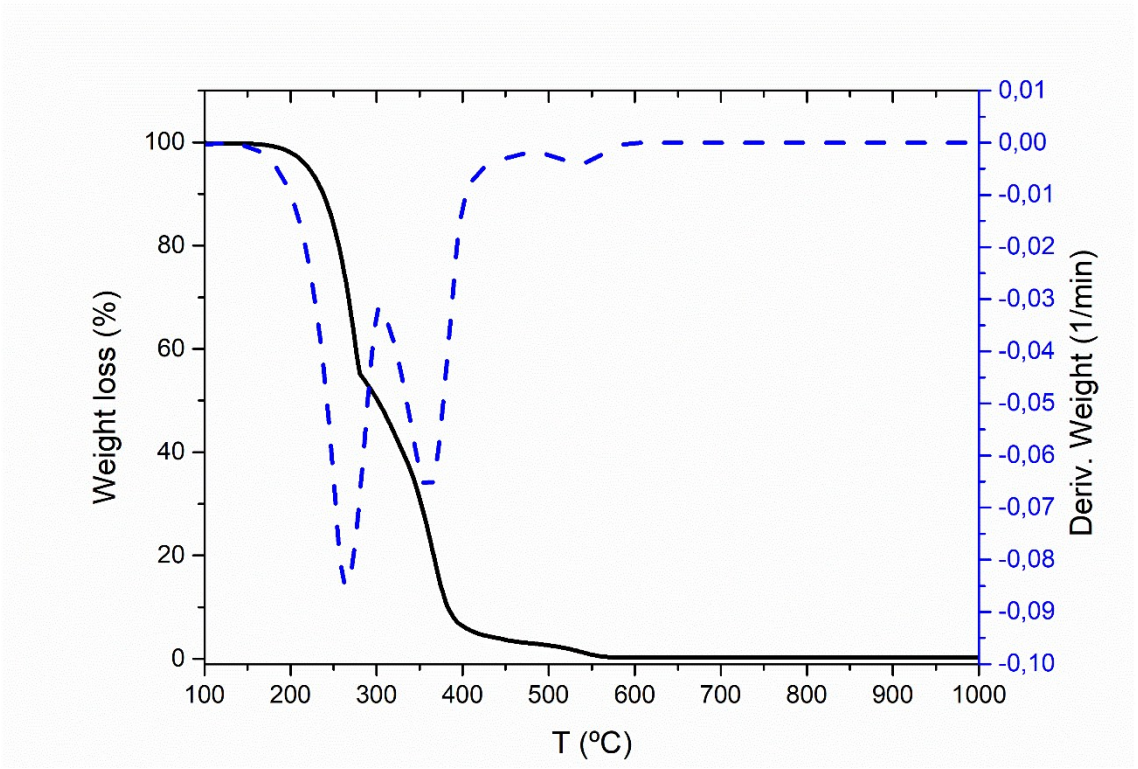

Figure S2: TGA and DGT of pure oleic acid.

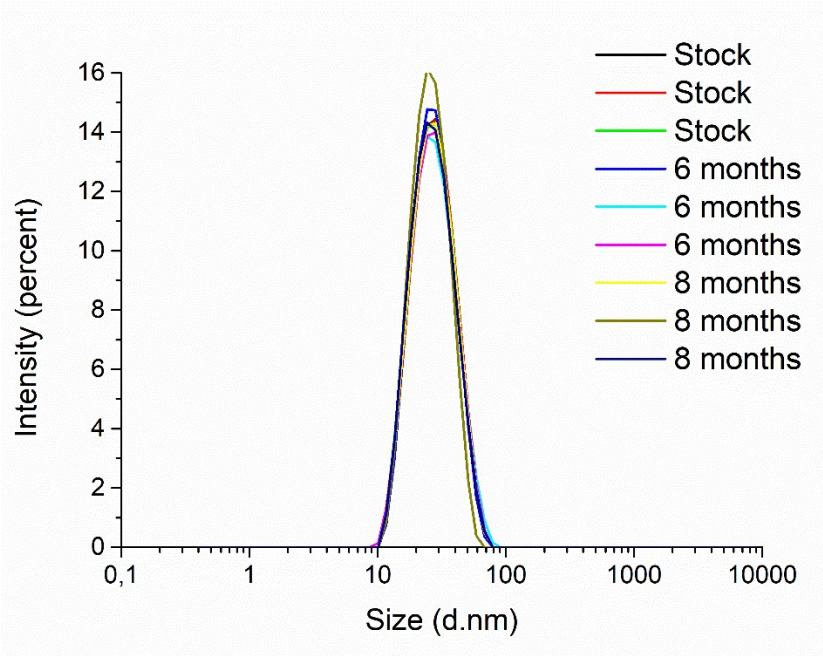

Figure S3: Intensity-weighted hydrodynamic size distributions of the ferrofluid over time. Each measurement was repeated three times.

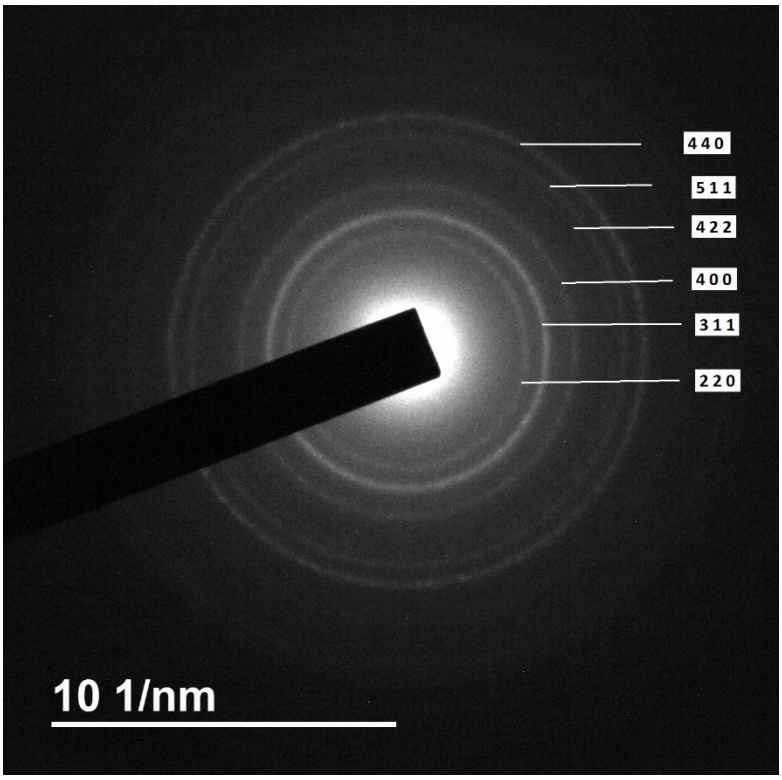

Figure S4: SAED image of oleate-coated USPIONs taken 8 months after the preparation of the ferrofluid. The diffraction rings match the main diffraction planes of magnetite (JCPDS file no. 19-0629)

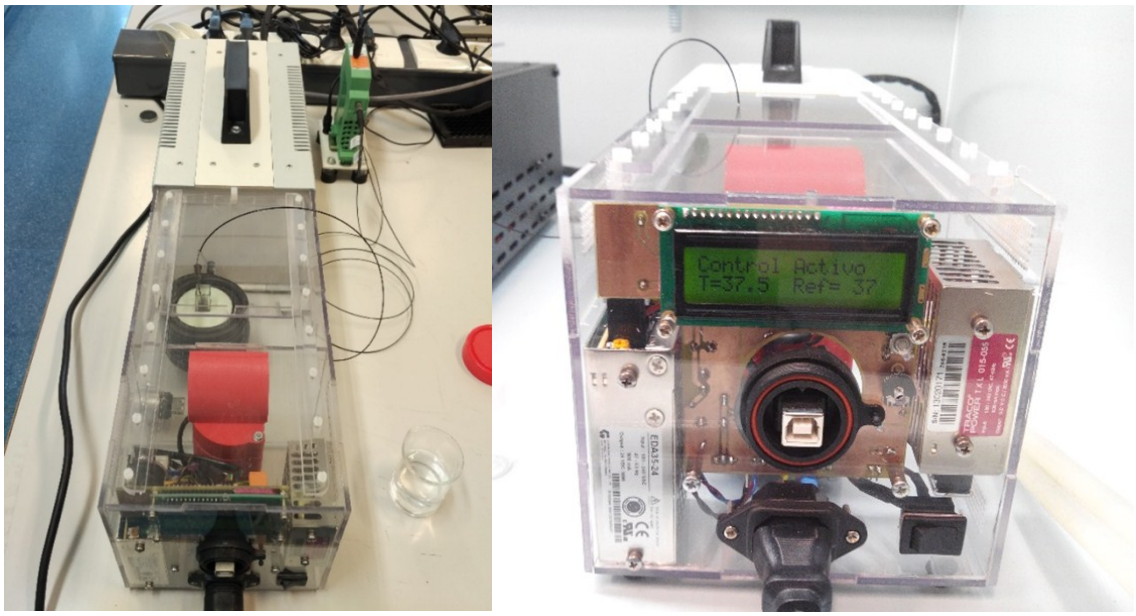

Figure S5: Experimental setup for hyperthermia calorimetric experiments (left). Both the sample and the magnetic induction coil were placed inside a thermostatic chamber with an automated temperature regulator (right).

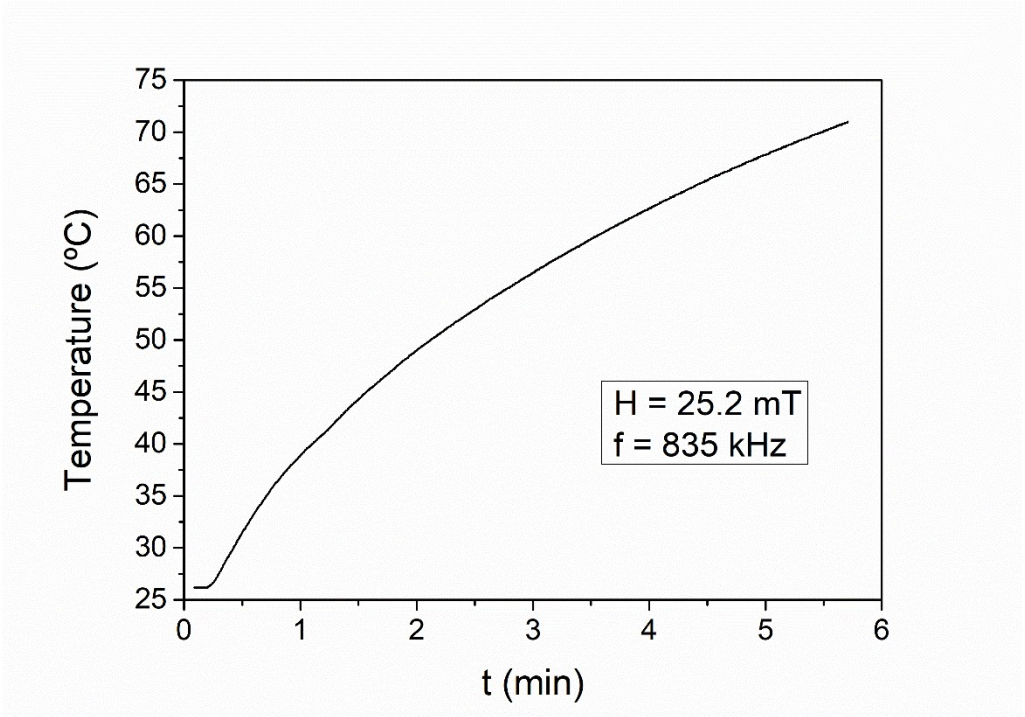

Figure S6: Heating curve of sample *d* (4.5 mg NPs/ml) measured in the commercial hyperthermia equipment at H=25.2 mT and f=835 kHz.

Supplementary Calculations: Ligand density

The average volume of a single magnetite nanoparticle (V_{NP} = *572.15 nm*³) was obtained from equation (S1), where *R* is the average nanoparticle radius obtained from TEM image analysis (*R* = *5.15 nm*):

$$V_{NP} = \frac{4}{3}\pi R^3 \qquad (S1)$$

The average mass of a single nanoparticle (m_{NP} = *2.96 · 10*$^{-18}$ *g*) was calculated from equation (S2), where *d* is the density of magnetite (d = 5.18 g/cm³):

$$m_{NP} = d \cdot V_{NP} \qquad (S2)$$

If we consider 1 g of oleate-coated USPIONs, the amount of oleate (m_o) and magnetite ($m_{USPIONs}$) can be estimated using the results from the TGA analysis: 20.5 % (w/w). The ligand density (l_d = *1635* oleate molecules/nanoparticle), can be obtained from equation (S3) using the molecular weight of oleate (M_w = *281.46 g/mol*) and the Avogadro's number (N_A = *6.022·10*^{23}):

$$l_d = \frac{(m_o / Mw) \cdot N_A}{m_{USPIONs} / m_{NP}} \qquad (S3)$$