Nano-structural effects on Hematite ($\alpha$-Fe$_2$O$_3$) Nanoparticle Radiofrequency Heating

Supplemental Information

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| Sample Names  | Avg. Size (nm) |
|---------------|----------------|
| nanorods      | 31             |
| nanosheets    | 9              |
| nanodiamonds  | 15             |
| nanospheres   | 21             |
| rugby balls   | 23             |

Table S2: Crystallinity of the Hematite Particles

| Sample     | Crystallinity      |
|------------|--------------------|
| nanorods   | Polycrystalline$^2$|
| nanosheets | Polycrystalline$^2$|
| nanodiamonds | Single crystal$^1$ |
| nanosphere | Polycrystalline$^1$|
| rugby balls | Polycrystalline$^1$|
Figure S1: Particle size histograms of $\alpha$-Fe$_2$O$_3$ nanomaterials.

Figure S2: SEM image of the nanosheet morphology, scale bar: 1 $\mu$m.
Figure S3: Magnetization curves at 300K from 0 kOe to 50 kOe for the hematite nanorods (grey squares), nanosheets (green asterisks), nanodiamonds (yellow diamonds), nanospheres (blue spheres), and rugby balls (red triangles) shaped particles.

Figure S4: SAR values for the hematite solutions of varying concentrations; 4 mg/mL (red diagonal stripes) and 1 mg/mL (solid grey).
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3 S. Tong, C. A. Quinto, L. Zhang, P. Mohindra and G. Bao, *ACS Nano*, 2017, **11**, 6808–6816.