Composite Nanoplatelets Combining Soft-Magnetic Iron-Oxide with Hard-Magnetic Barium Hexaferrite
(Supplementary Information #2)

Supplementary Information # 2: Properties of barium hexaferrite core nanoparticles

Nanoparticles BaM\textsubscript{10-70}

The BaM\textsubscript{10-70} nanoparticles displayed a bimodal size distribution (Figures 1 (a) and (b)). While the majority of the nanoparticles are in the form of ultrafine discoid nanoparticles, up to 10 nm wide but only approximately 3 nm thick, larger platelet crystals, up to 100 nm wide and approximately 4 nm thick, were also present.

Nanoparticles BaM\textsubscript{10}

The ultrafine, discoid nanoparticles BaM\textsubscript{10} were up to 10 nm wide and approximately 3 nm thick (Figures S2 (c) and (d))

Nanoparticles BaM\textsubscript{100}

The largest nanoparticles BaM\textsubscript{100} were hexagonal platelets with relatively uniform sizes, ~100 nm wide and ~8 nm thick (Figures S2 (e) and (f)).
Figure S2: Ba-hexaferrite core nanoparticles BaM$_{10-70}$ (TEM image (a) and HREM image of larger platelet nanoparticle oriented with the large surfaces parallel to the electron beam (b)), nanoparticles BaM$_{10}$ (TEM image (c) and HREM image (d)), and nanoparticles BaM$_{100}$ (TEM image (e) and HREM image (f)).