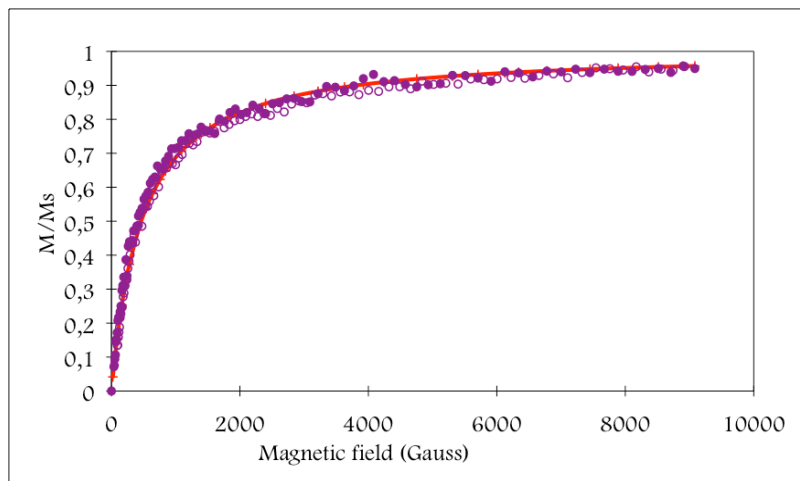
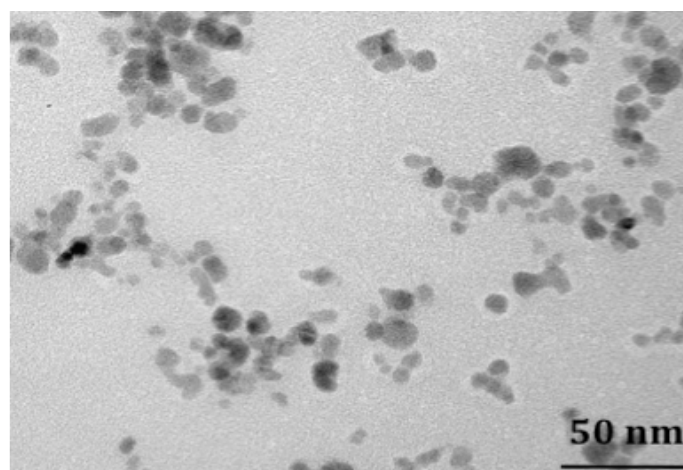


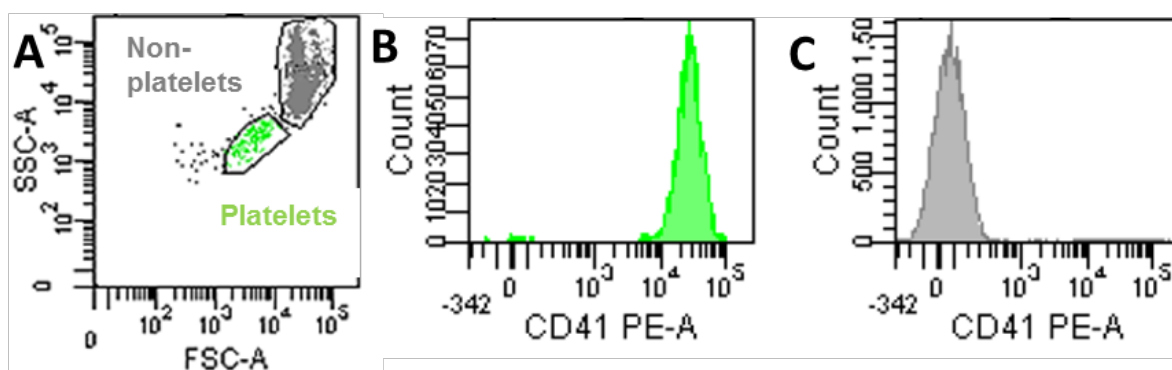
## Electronic supplementary information



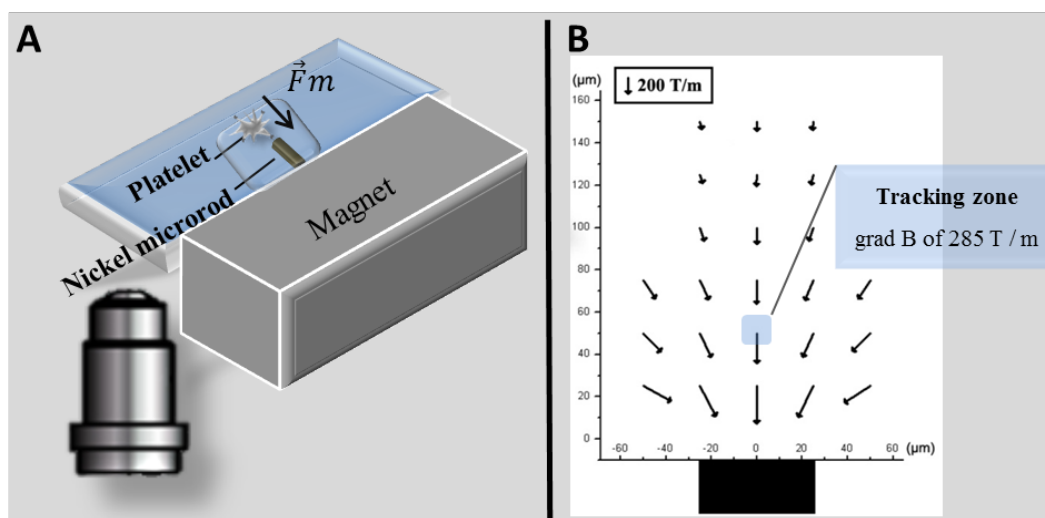
**Figure S1.** Magnetization curve of the starting maghemite USPIOs, full points: increasing magnetic field, empty points decreasing magnetic field



**Figure S2.** TEM micrograph of UCF nanoparticles. The bright circle observed around the nanoparticles is due to the polymer coating on the grid.



**Figure S3.** Morphologic (FSC/SSC) gating of platelets (green) by flow cytometry (A). FSC/SSC gated cells are almost exclusively platelets since most of them are CD41 positive (identified with a PE-conjugated anti-CD41 antibody) (B) while, as expected, the non-platelet cells (grey) were CD41 negative (C).



**Figure S4.** Micromagnetophoresis experimental set up. (A) Platelets are inserted in a glass slide/coverslip chamber integrating a 50  $\mu\text{m}$  diameter nickel rod. Microrod magnetization is provided by a rectangular magnet positioned parallel to the micromagnet. (B) Cartography of the magnetic field lines created by the micromagnet.