

SUPPLEMENTARY MATERIALS :

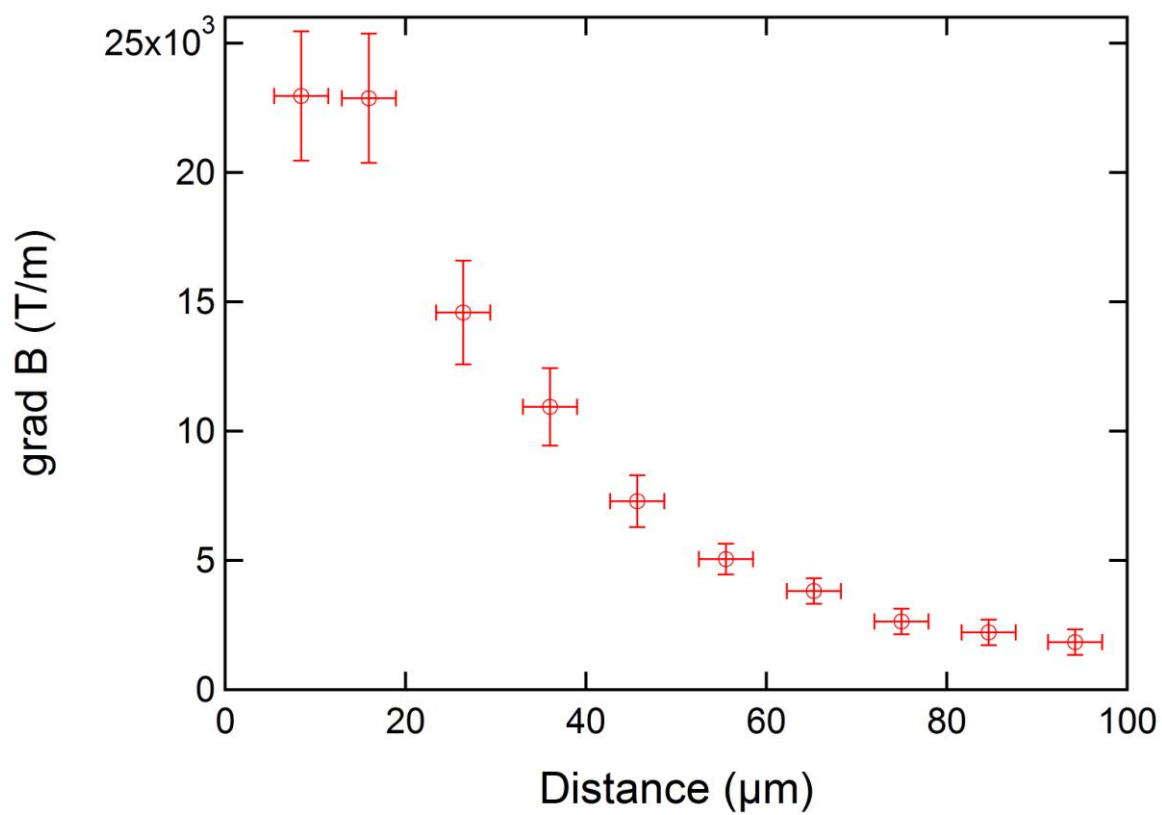


Fig. S1 : Calibration curve of the magnetic device representing the magnetic field gradient as a function of the distance between the tip of the needle and the particle.

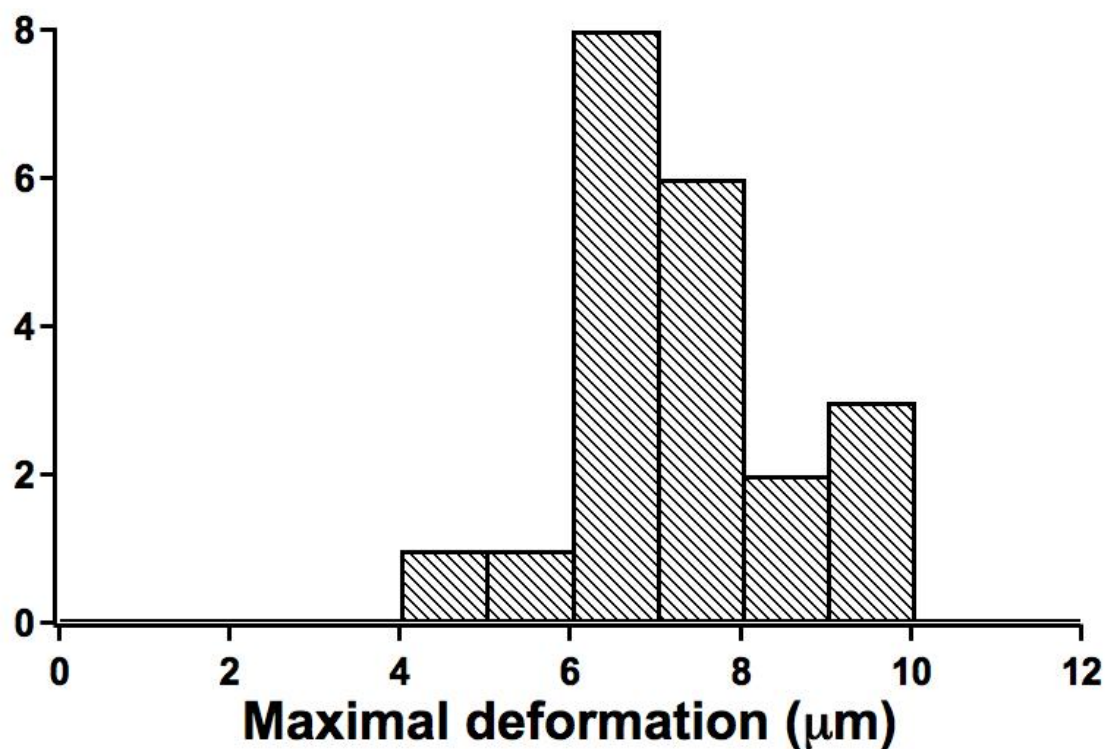


Fig. S2 : Histogram of the maximal deformations of magnetic pillars (diameter = 10 μm) obtained by incorporating ferromagnetic black iron oxide particles with an average size of around 200 nm. The distance between the tip of the needle and the pillar, D , is 50 μm.

Movie 1 : Pillars with a 10 μm diameter and 20 μm height filled with ferromagnetic black iron oxide particles.

Movie 2 : Pillars of 5 μm diameter and 15 μm height with magnetic spherical aggregates of around 250 nm.

Movie 3 : Pillars of 5 μm diameter and 15 μm height with embedded magnetic nanorods.