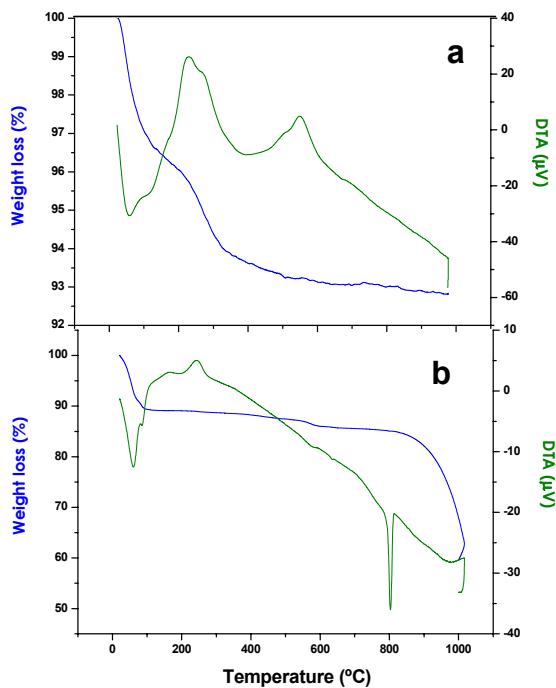
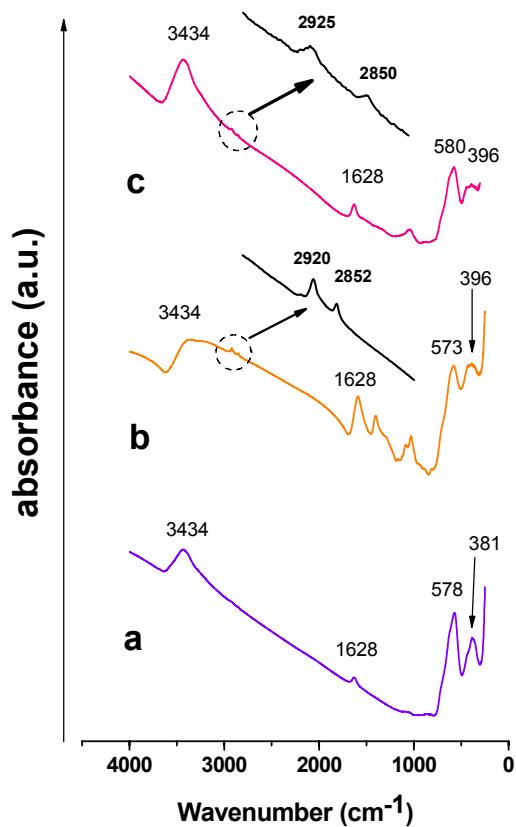


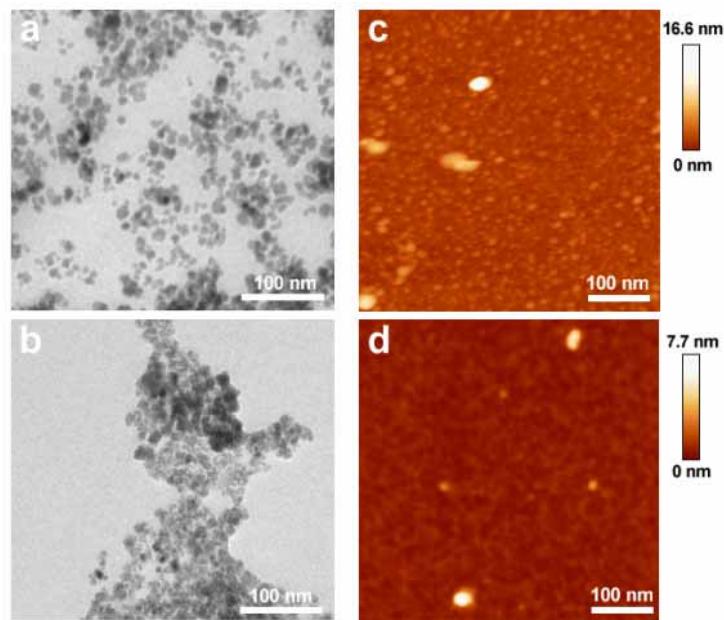
**SUPPORTING INFORMATION**



**Figure S1** DTA and TG curves of (a) LCAS-magnetite nanohybrid, and (b) LCPA-magnetite nanohybrid. All the curves are registered under air-flow conditions, showing the high stability of the hybrid materials due to the surfactant grafting. The organic matter is eliminated from the inorganic moiety by combustion at temperatures higher than 250°C.



**Figure S2** FTIR spectra in the 4000-250  $\text{cm}^{-1}$  region of (a) pristine magnetite, (b) LCAS-magnetite nanohybrid, and (c) LCPC-magnetite nanohybrid, registered from KBr pellets.



**Figure S3.** TEM images of the magnetocerasomes derived from (a) LCAS-magnetite and (b) LCPA-magnetite nanohybrids coupled to PC, and AFM images of the magnetocerasomes derived from (c) LCAS-magnetite and (d) LCPA-magnetite nanohybrids coupled to PC.