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Gold-encapsulation of star-shaped FePt nanoparticles

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ELECTRONIC SUPPORTING INFORMATION

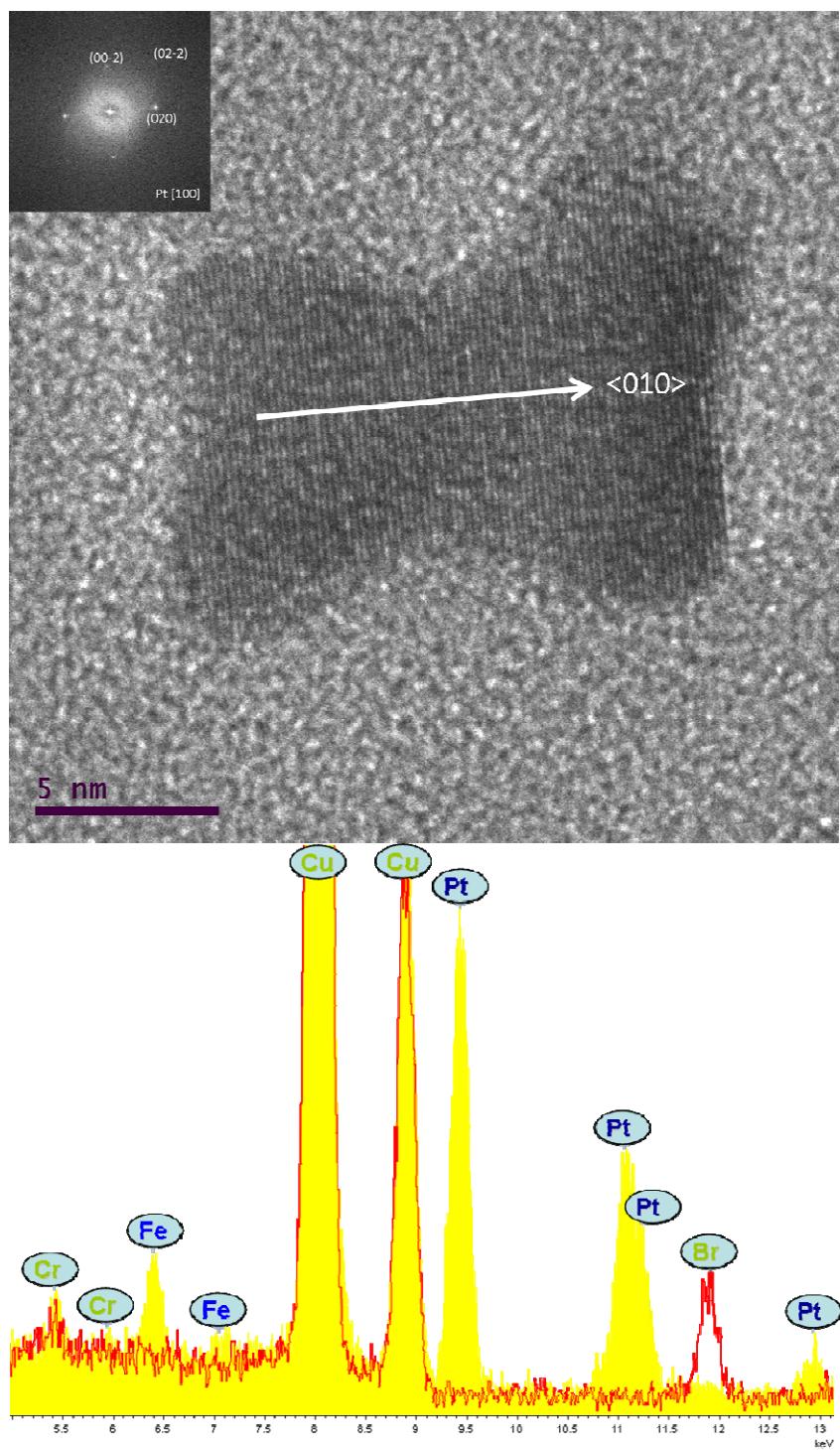


Figure S1. (Top) High-resolution transmission electron micrograph corresponding to an FePt star-shaped nanoparticle with its corresponding fast Fourier transformation (FFT). (Bottom) XEDS energy spectra from a FePt nanostar (yellow) and an empty area on the same formvar-coated copper grid, as a reference (red). The FePt composition of the particle is clearly revealed.

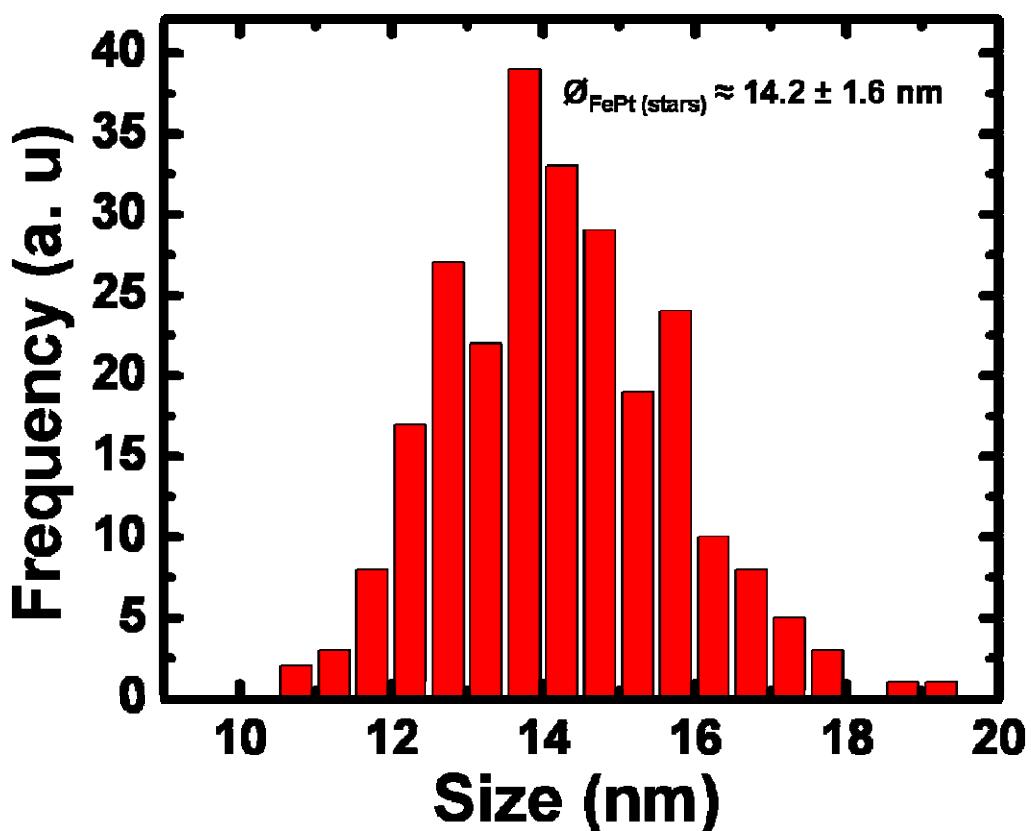


Figure S2. Particle size distribution (250 particles were counted) corresponding to FePt star-shaped nanoparticles with a mean particle diameter of ~14 nm and a standard deviation of ~1.6 nm.

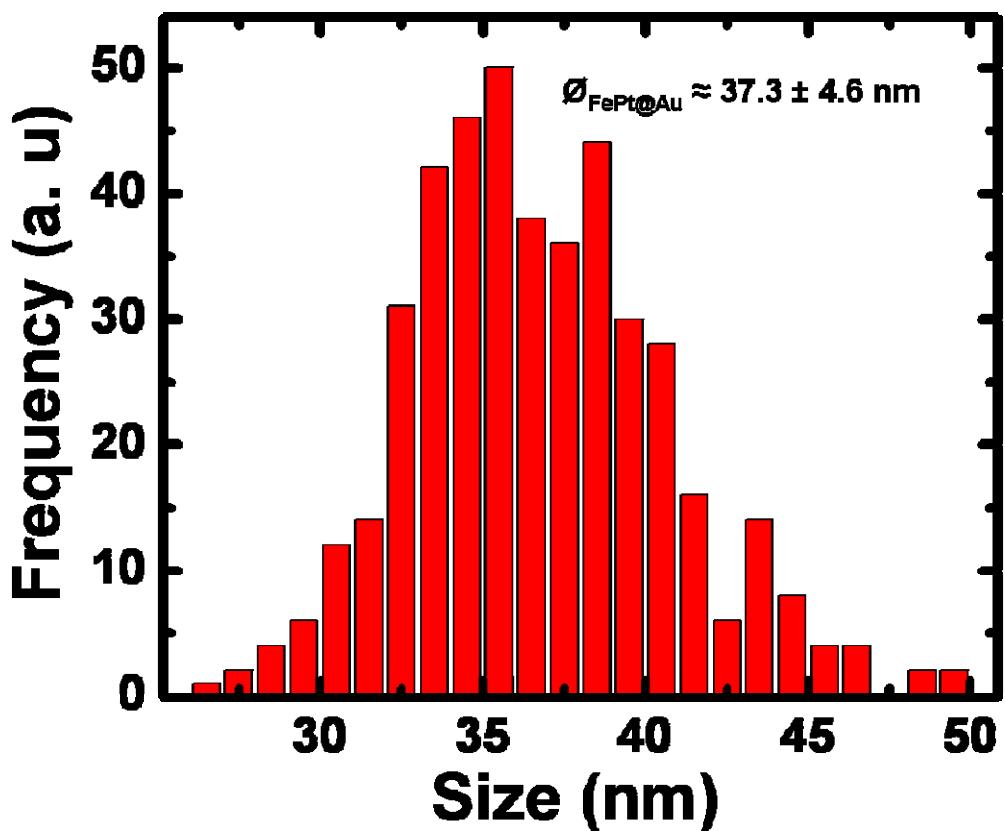


Figure S3. Particle size distribution corresponding to FePt@Au core-shell nanoparticles (437 particles were counted) with a mean particle diameter of ~37 nm and a standard deviation of ~4.6 nm.

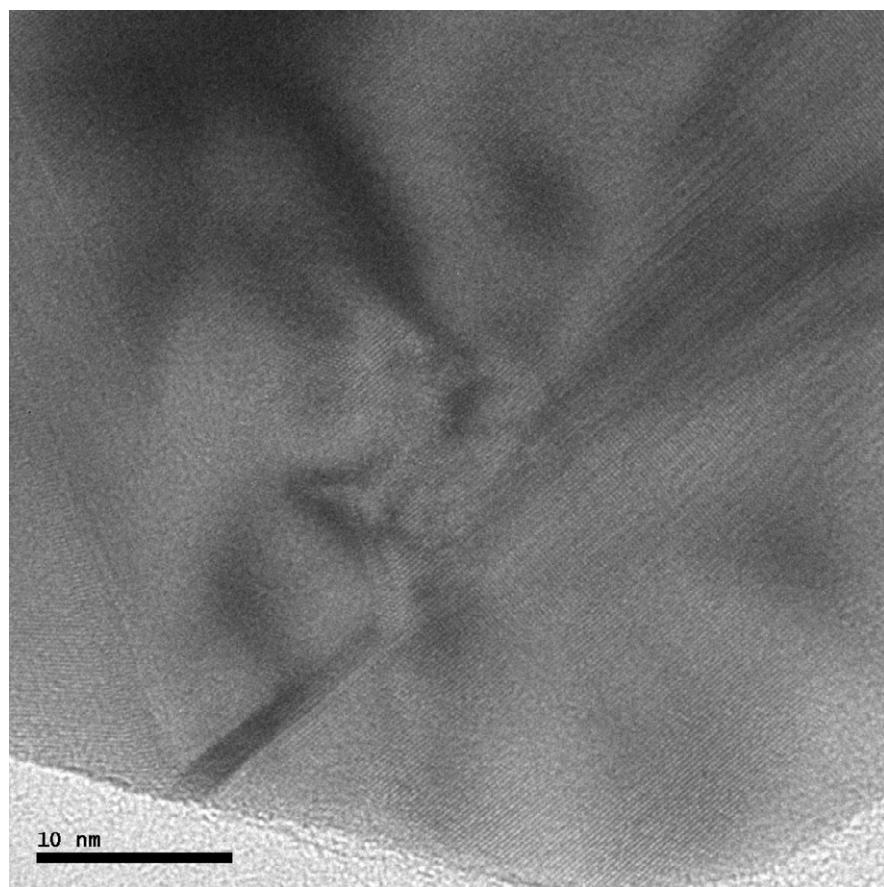


Figure S4. (Top) High-resolution transmission electron micrograph corresponding to an FePt@Au nanoparticle. Contrast differences can be distinguished in the area containing more platinum. It has been observed that these particles are in general polycrystalline.

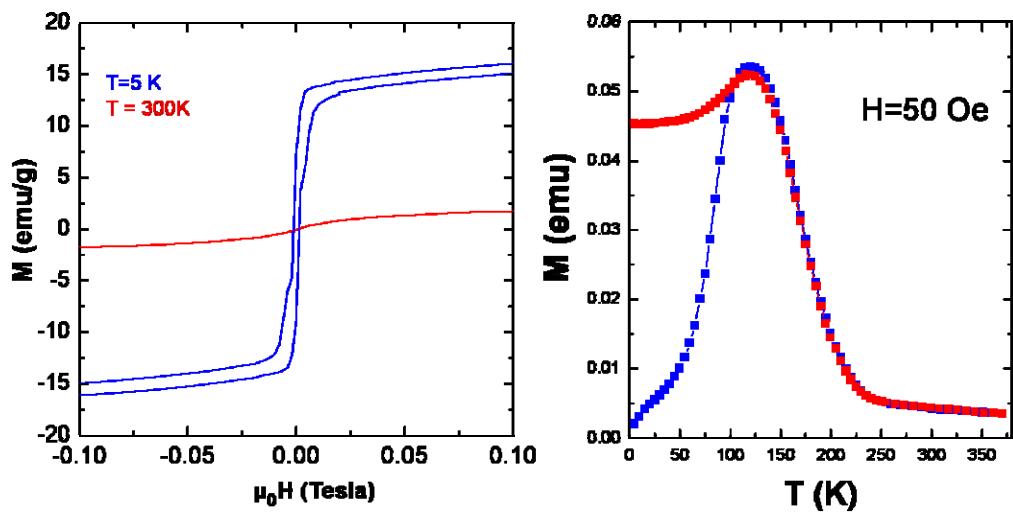


Figure S5. Hysteresis loop (left) and zero field cooling-field cooling (ZFC-FC) plots (right) at low (blue) and high (red) temperature, corresponding to FePt star-shaped nanoparticles.

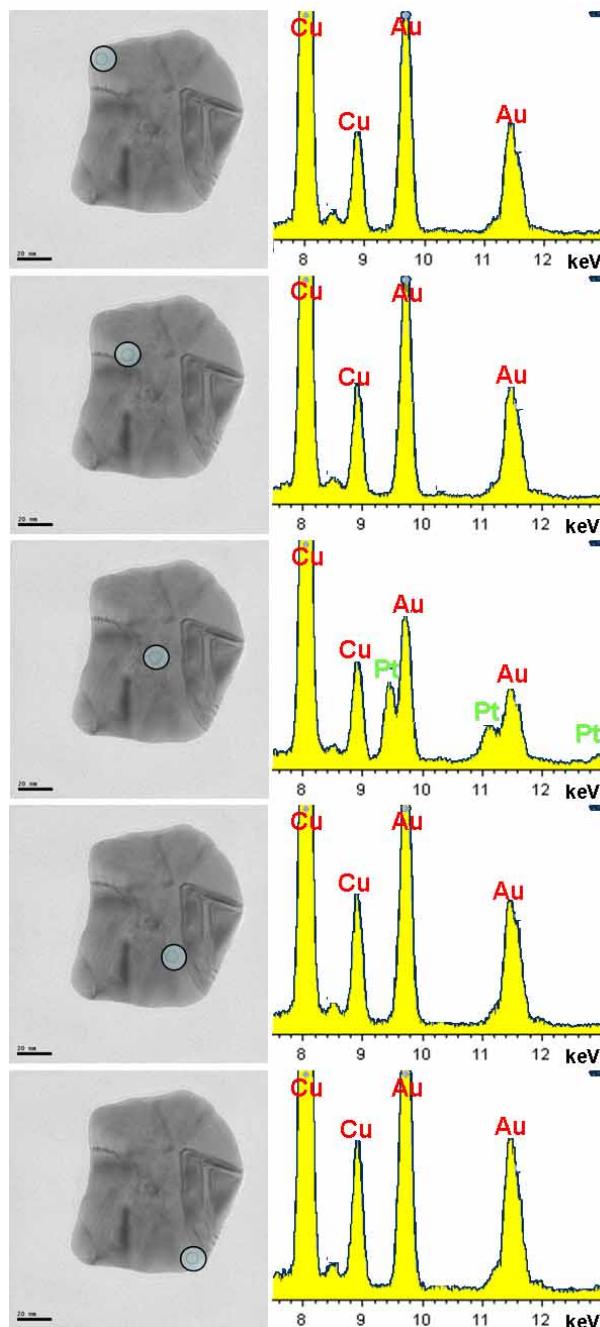


Figure S5. XEDS energy spectra acquired from 5 different points within the same core-shell nanoparticle, following a straight line across the centre. The Pt peaks (from FePt) are only visible at the particle centre.