Electronic Supplementary Material (ESI) for CrystEngComm

Supporting Information

Synthesis and properties of octahedral Co_3O_4 single-crystalline nanoparticles enclosed by (111) facets

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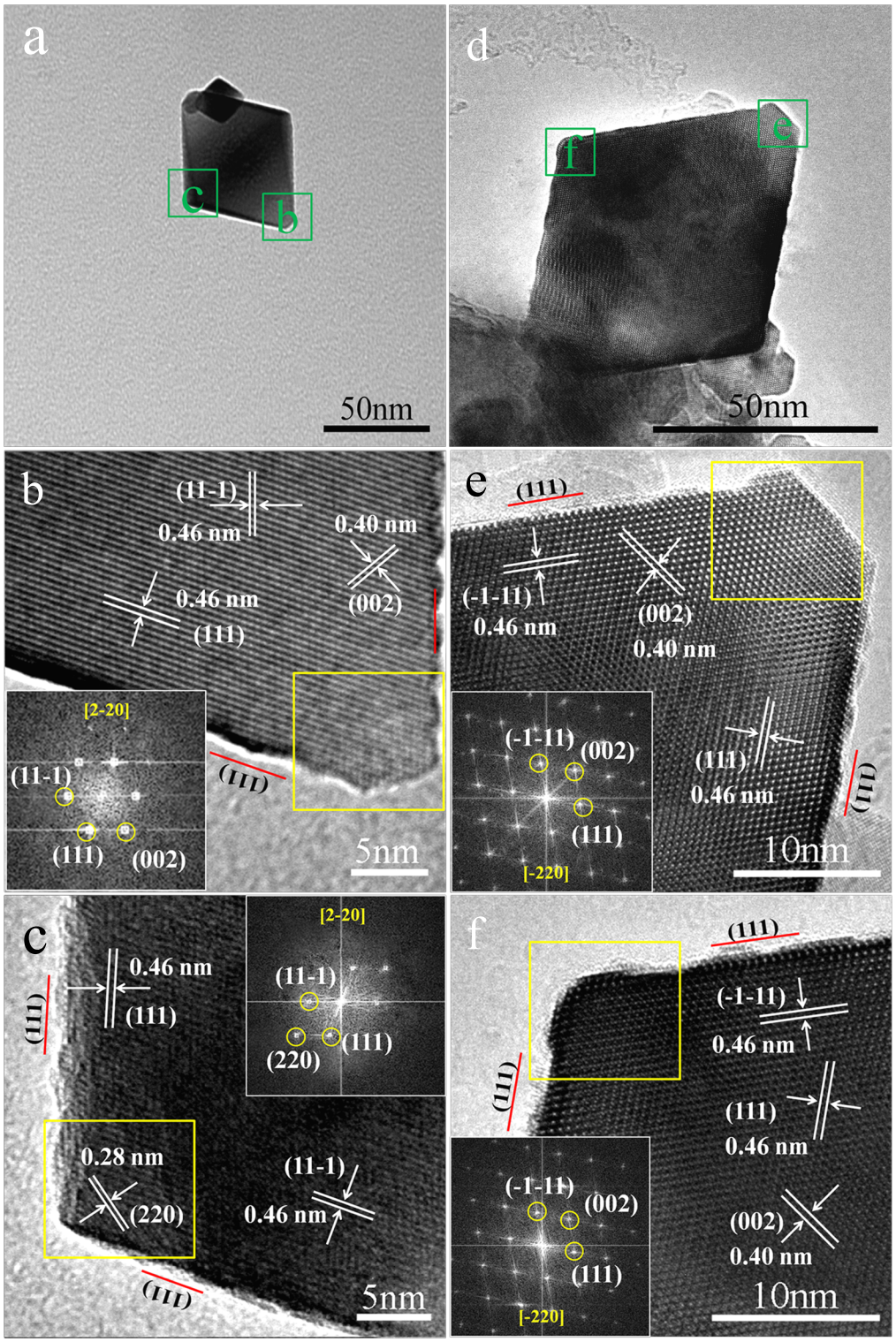

Fig. S1 TEM and HRTEM images of two different octahedral Co_3O_4 nanoparticles: (a) and (d) show the side-view of a single particle, respectively. (b)-(c) show the HRTEM images of regions b and c in (a); (e)-(f) show the HRTEM images of regions e and f in (d). And the insets in (b), (c), (e) and (f) are the corresponding FFT patterns taken from the yellow regions in each of the pictures.

Synthesis of Co_3O_4 Nanocubes

For the preparation of Co_3O_4 nanocubes, a typical synthesis process was as follows: 2 mM of NaSCN and 2 mM of $Co(CH_3COO)_2 \cdot 4H_2O$ were dissolved in 80 mL of distilled water under ultrasonic radiation, and then 0.003 mM PVP (K30) was added into the above mixture under ultrasonic radiation. The as-formed solution was sealed in a Teflon-lined autoclave of 150 mL capacity, and maintained at 120 ^oC for 36 h. After cooling to room temperature, the products were collected by centrifugation, and washed with distilled water three times and absolute ethanol twice to remove impurities. The final products were dried in air at 80 ^oC for 6 h.

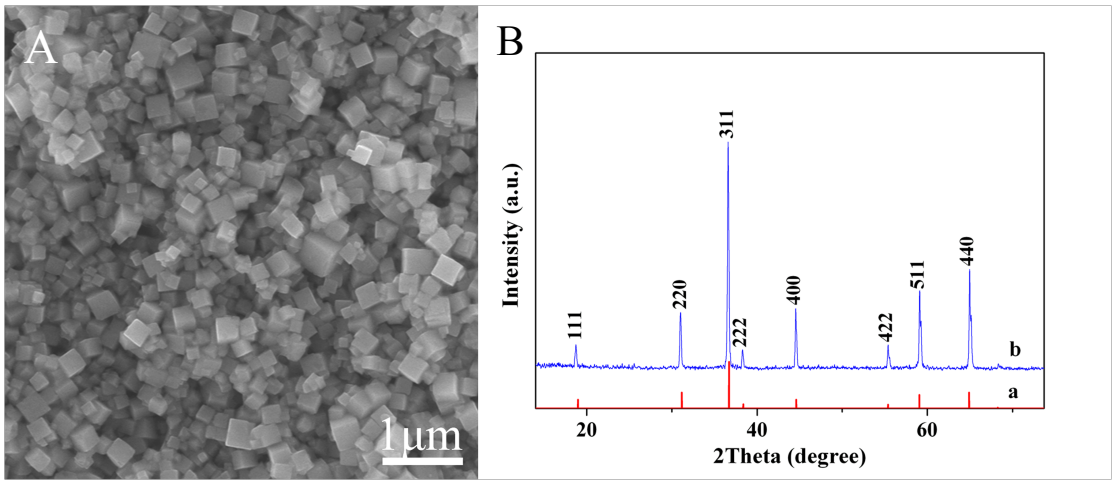

Fig. S2 SEM image (A) and XRD patterns (B) for Co_3O_4 nanocubes. And (a) and (b) in Figure (B) are the XRD patterns for JCPDS 42-1467 and Co_3O_4 nanocubes, respectively.

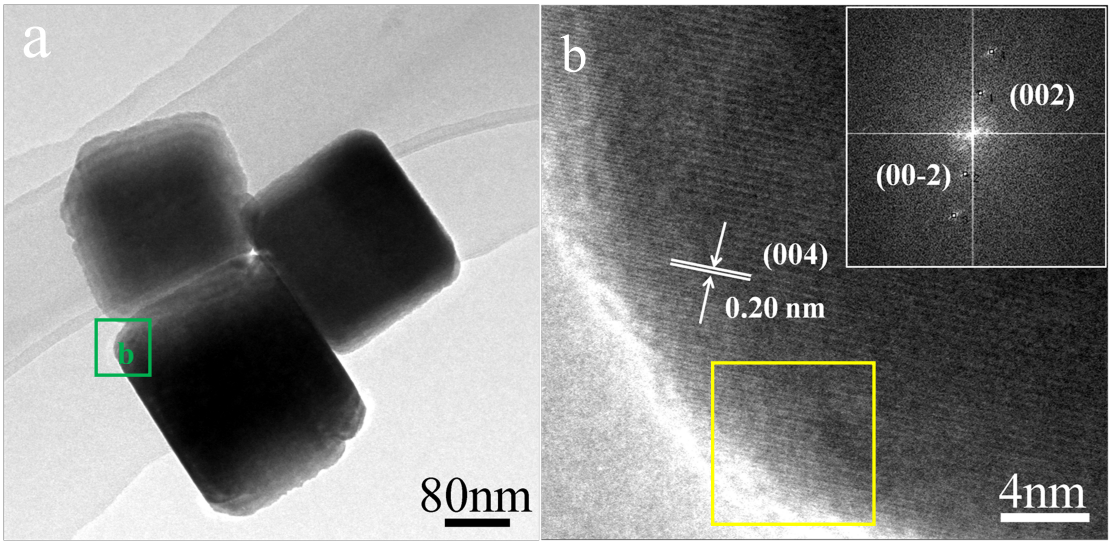

Fig. S3 TEM and HRTEM images of Co_3O_4 nanocubes: (a) the overview of some typical cubes, (b) shows the HRTEM image of region b in (a). The inset of (b) is the corresponding FFT pattern taken from the yellow region of picture.