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Electronic Supplementary Information

Elucidating a twin-dependent chemical activity of hierarchical copper sulfide nanocages

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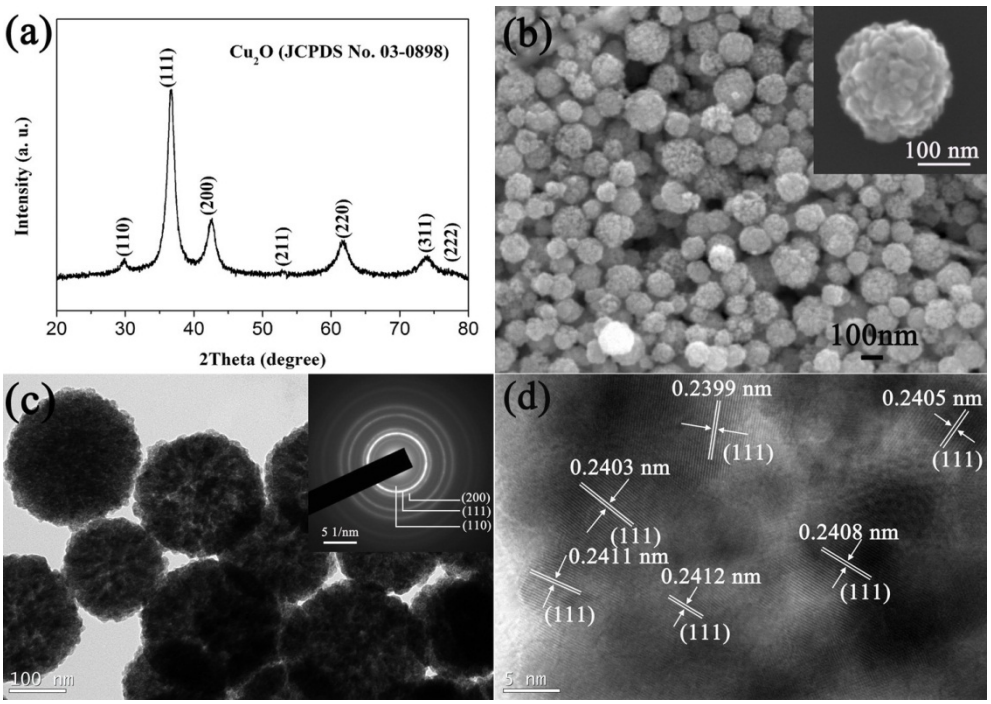

Fig. S1 (a) XRD pattern of the hierarchical Cu_2O templates; (b) FESEM image of the hierarchical Cu_2O nanospheres, and the inset is a typical FESEM image of an individual particle; (c) TEM image of the hierarchical Cu_2O nanospheres, and the inset is the corresponding SAED pattern; (d) HETEM image of the hierarchical Cu_2O nanosphere.

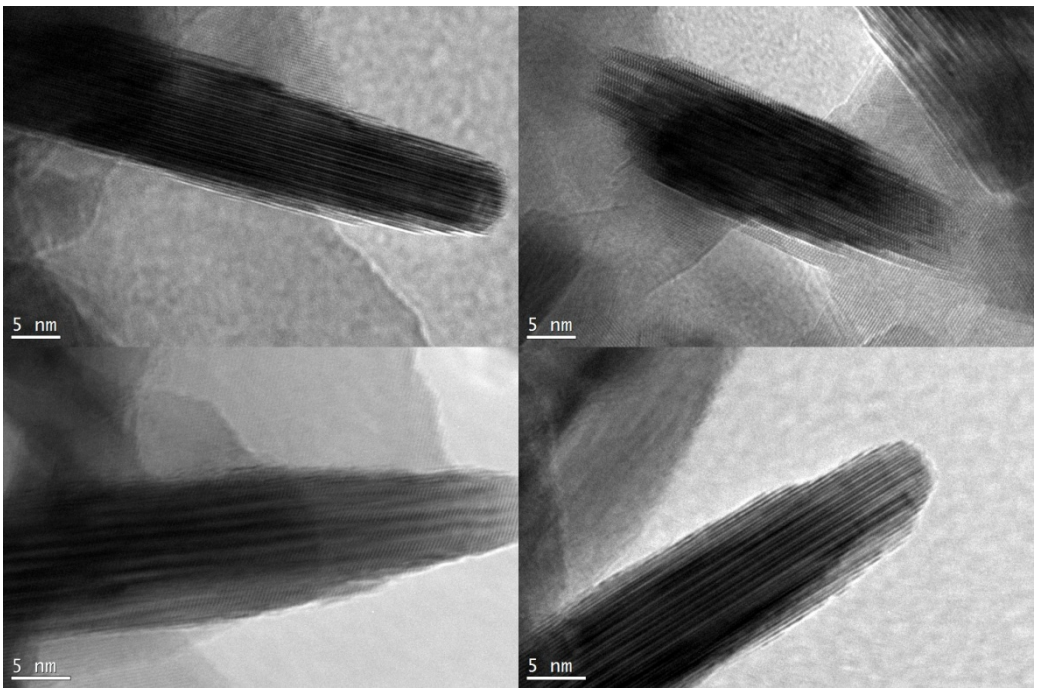

Fig. S2 HRTEM images of other four nanoplates of the as-prepared hierarchical Cu_7S_4 hollow nanocage assembly of twinned nanoplate building blocks.

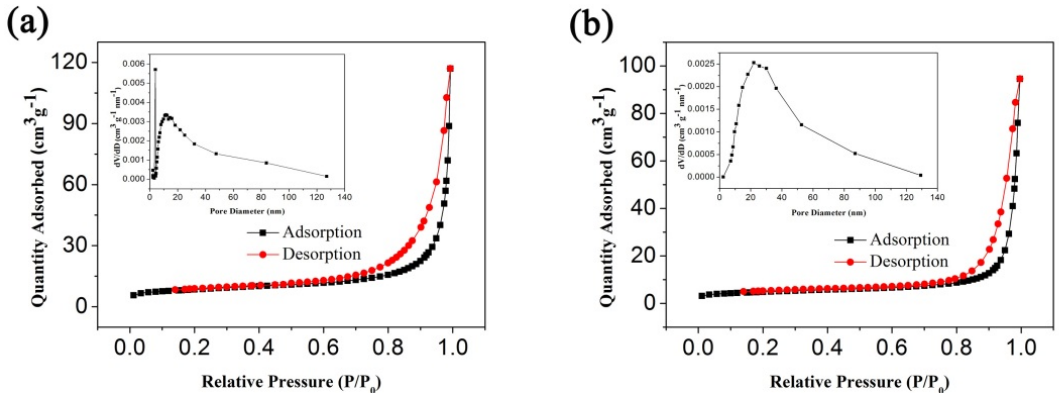

Fig. S3 Typical nitrogen gas adsorption-desorption isotherms and pore size distribution curves (insets) of the hierarchical Cu_7S_4 nanocages: (a) the hierarchical Cu_7S_4 hollow nanocages with twinned nanoplate building blocks; (b) the hierarchical Cu_7S_4 hollow nanocages with nanoparticle building blocks.

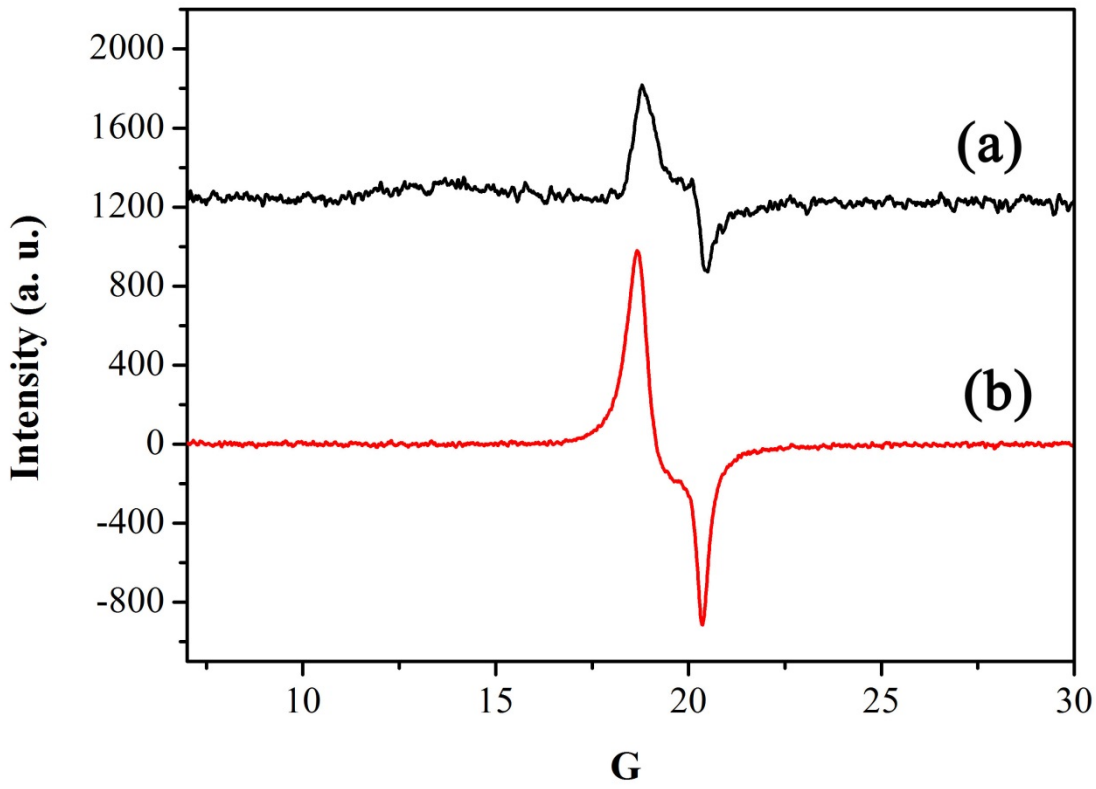

Fig. S4 Experimental ESR spectrum of the as-prepared two Cu_7S_4 nanocages. (a) the hierarchical Cu_7S_4 hollow nanocages with nanoparticle building blocks; (b) the hierarchical Cu_7S_4 hollow nanocages with twinned nanoplate building blocks.