

Electronic Supplementary Information

Nanotwins in polycrystalline Cu₇S₄ cages: high active architectures for enhancing photocatalytic activities

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Synthesis of 26-facet Cu₂O templates. All chemicals used in our experiment were of analytical grade and used without further purification. Aqueous solutions were prepared using ultrapure water. In a typical procedure, Cu(CH₃COO)₂ (2.9946 g) was dissolved in deionized water (50 mL) using a beaker under a constant stirring at 70 °C for 2 min. A dark precipitate was produced when a sodium hydroxide solution (3.6 g, 30 mL H₂O) was added dropwise to the above solution. After being stirred for 5 min, D-(+)-glucose powder (0.6 g) was added into the dark precursor with a constant stirring for another 20 min at 70 °C. The dark precipitate immediately turned brown red, and gradually turned dark red at 70 °C, and then was allowed to cool to room temperature naturally. Afterward, the obtained particles were centrifuged at 5000 rpm for 1min (XIANYI TG16-WS centrifuge). The precipitates were centrifuged twice more in deionized water and anhydrous ethanol, respectively. And finally were dried at 70 °C for 12 hours in a vacuum oven.

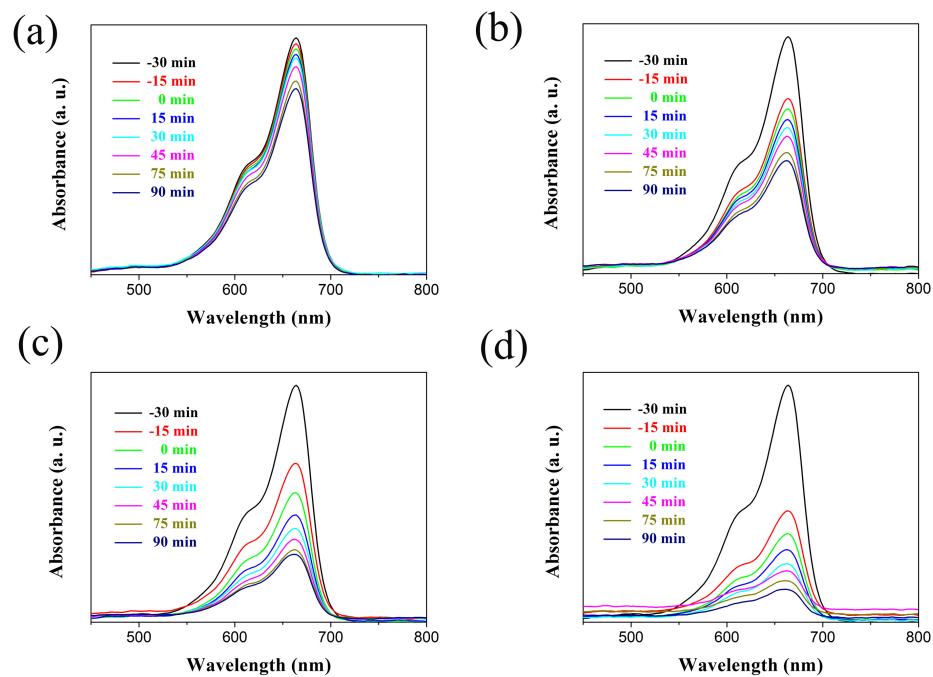


Fig.S1 (a) Absorption spectra of a solution of MB solution without any catalysts; (b) Absorption spectra of a solution of MB solution in the presence of commercial copper sulfides powders; (c) Absorption spectra of a solution of MB solution in the presence of nanotwinned polyhedral 26-facet Cu_7S_4 microcages enclosed with single crystalline-like shells; (d) Absorption spectra of a solution of MB solution in the presence of the as-prepared nanotwinned polyhedral 26-facet Cu_7S_4 microcages enclosed with polycrystalline shells.