

Electronic Supplementary Information

Selective-etching growth of urchin-like Cu₂O architectures

Shaodong Sun, Xiaoping Song, Chuncai Kong and Zhimao Yang*

School of Science, MOE Key Laboratory for Non-Equilibrium Synthesis and Modulation of Condensed Matter, State Key Laboratory for Mechanical Behavior of Materials, Xi'an Jiaotong University, Xi'an 710049, ShaanXi, People's Republic of China

* Corresponding author. E-mail: zmyang@mail.xjtu.edu.cn

Photocatalytic property

The catalytic activity experiments of two kinds of Cu₂O (urchin-like and polyhedral architectures) for the oxidation and decoloration of the methyl orange (MO) dyes were carried out at ambient temperature. The original solution was prepared by adding 50 mL MO solution (5 mg/L), and then 0.08 g Cu₂O powder was added into the solution to form the aqueous dispersion. Before illumination, the solution was magnetically stirred in the dark for 30 min to ensure establishing an adsorption–desorption equilibrium. Afterwards, the dispersion was irradiated by a 500 W xenon lamp equipped with a filter cutoff ($\lambda \geq 420$ nm) under magnetic stirring. At given time intervals, the dispersion was sampled and centrifuged to separate the catalyst. UV-vis absorption spectra were recorded at different intervals to monitor the reaction using a UV/vis/NIR spectrophotometer (Hitachi U-4100).