Supplementary Information for

Design and Synthesis of Cu@CuS Yolk-Shell Structures with Enhanced Photocatalytic Activity

Qiuyan Li[1, #], Fan Wang[1, #], Linqiang Sun[1], Zhe Jiang[1], Tingting Ye[1], Meng Chen[1], Qiang Bai[2], Chao Wang[1], Xiguang Han[1, *]

[1]Jiangsu Key Laboratory of Green Synthetic Chemistry for Functional Materials, Department of Chemistry, School of Chemistry and Chemical Engineering, Jiangsu Normal University, Xuzhou 221116, People's Republic of China

[2]College of Materials Science and Engineering, Qingdao University of Science and Technology, Qingdao 266042, People's Republic of China

E-mail: xghan@jsnu.edu.cn

[#]These authors contributed equally.

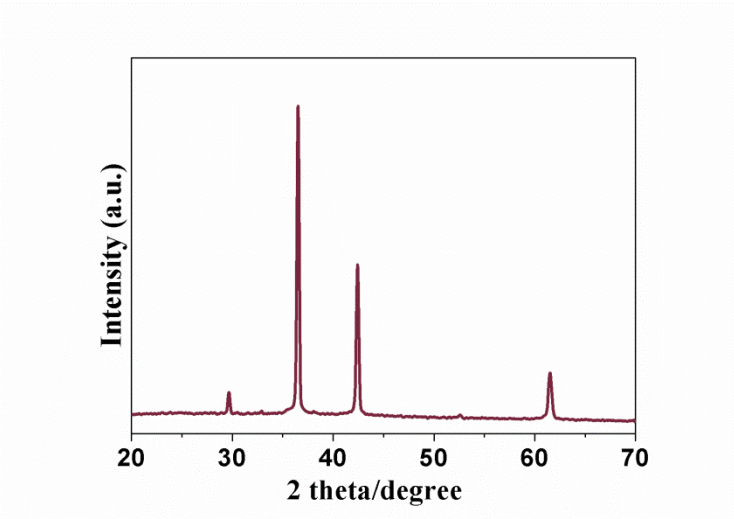

Fig. S1 XRD pattern of the as-prepared Cu_2O cubes

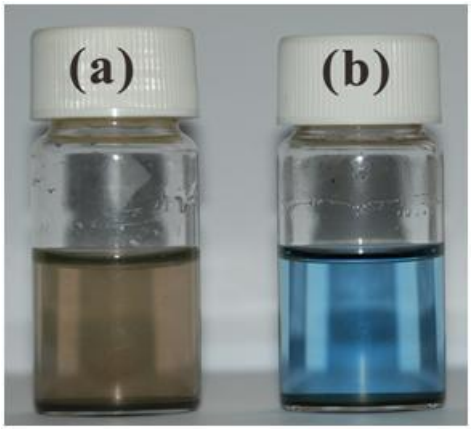

Fig. S2 Photographs of Cu_2O@CuS cubes solution **a** before and **b** after disproportionation reaction

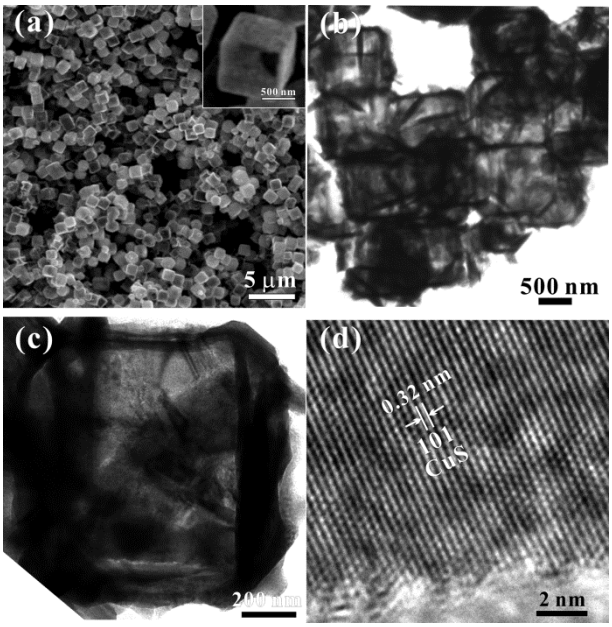

Fig. S3 a SEM image CuS hollow boxes synthesized by ammonia complexation reaction. **b, c** The corresponding TEM images. **d** HRTEM image

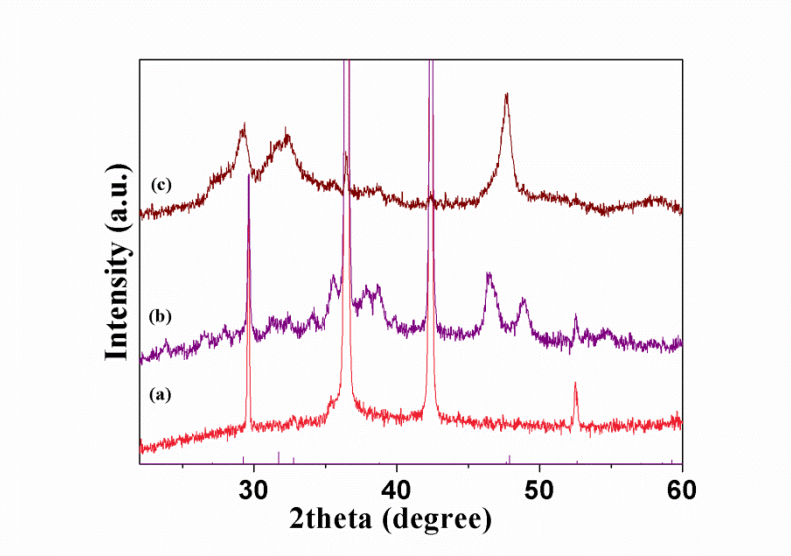

Fig. S4 XRD patterns of **a** octahedral Cu_2O, **b** octahedral Cu_2O@CuS, and **c** octahedral Cu@CuS after hydrochloric acid reaction

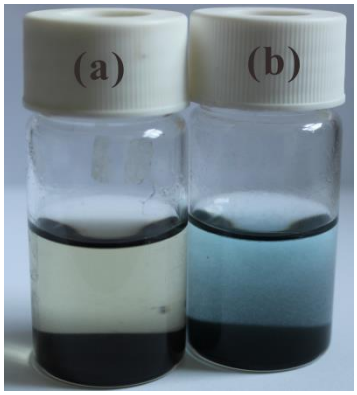

Fig. S5 Photographs of Cu_2O@CuS octahedron solution **a** before and **b** after disproportionation reaction