

Electronic Supplementary Information

for

Catalytic application of shape-controlled Cu₂O particles protected by Co₃O₄ nanoparticles for hydrogen evolution from ammonia borane

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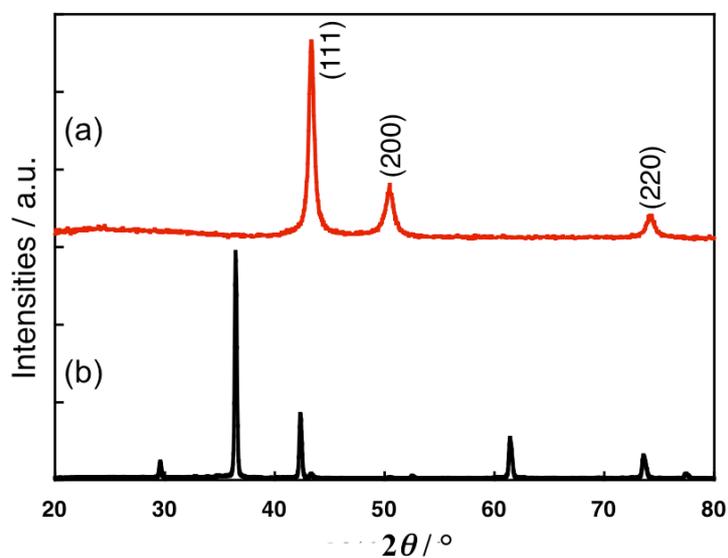


Fig. S1 Powder X-ray diffraction pattern of Cu₂O before and after ammonia borane hydrolysis. (a) after reaction and (b) before reaction. Numbers in parenthesis indicates the (*hkl*) index. After reaction, Cu₂O is reduced to Cu metal.

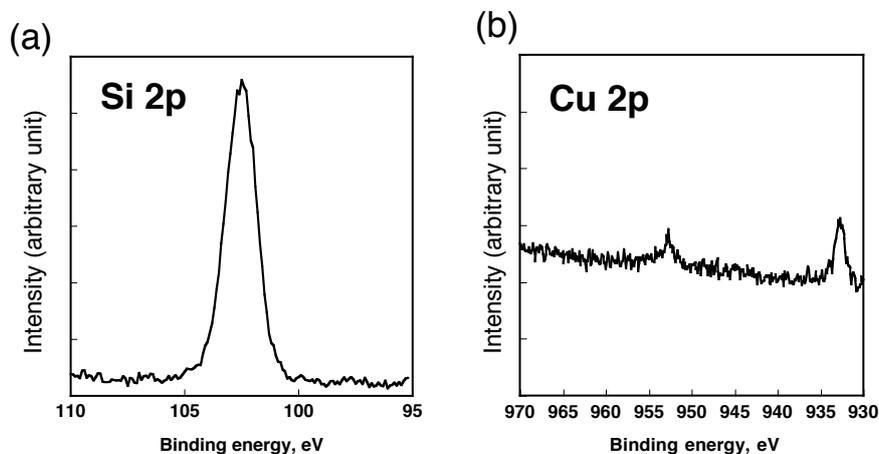


Fig. S2 XPS spectra of Cu₂O@SiO₂. (a) Si 2p region and (b) Cu 2p region. The atomic ratio of Si vs Cu calculated from peak intensities was 94 vs 6. The ratio has not changed before and after reaction.

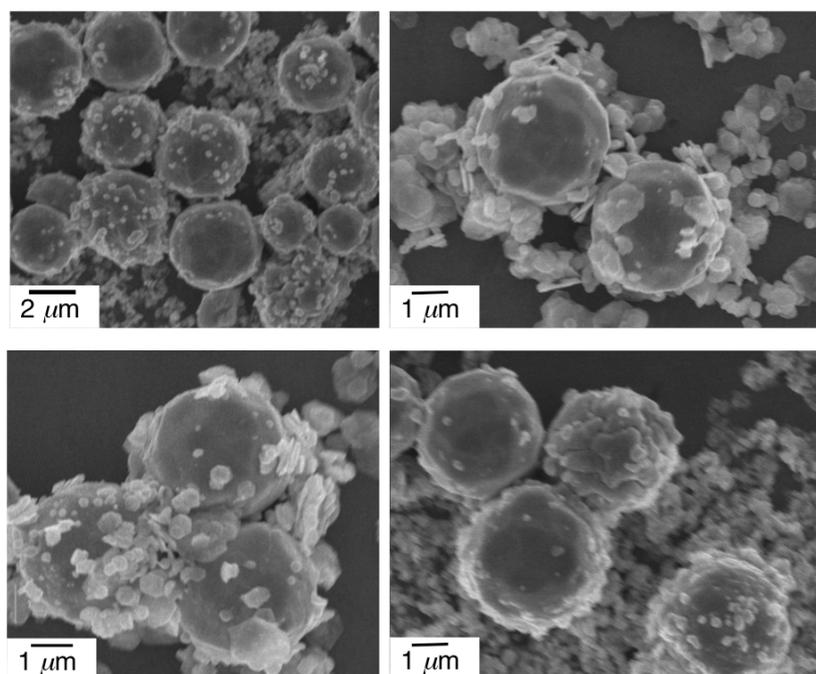


Fig. S3 SEM images of Cu_2O (50 facets)- Co_3O_4 (plate) composites.

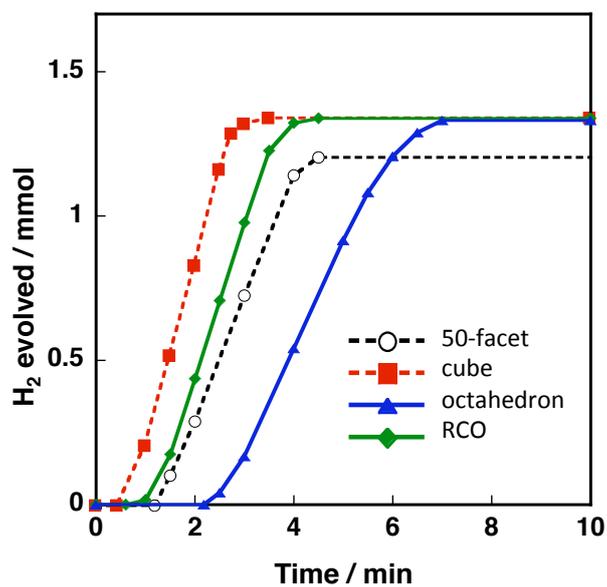


Fig. S4 Time course of hydrogen evolution by ammonia borane hydrolysis with shape-controlled Cu_2O particles decorated with Co_3O_4 rods (black open circle, 50-facet; red closed square, cube; blue closed triangle, octahedron; green closed diamonds, RCO). $[\text{NH}_3\text{BH}_3] = 0.5 \text{ mmol}$, $[\text{Cu}_2\text{O}-\text{Co}_3\text{O}_4] = 1/5 \text{ (w/w)}$ = 12 mg, water = 20 mL, 293 K.

