

## Supporting Information

### **Spiky TiO<sub>2</sub>/Au nanorod nanohybrids for enhanced hydrogen evolution and photocurrent generation**

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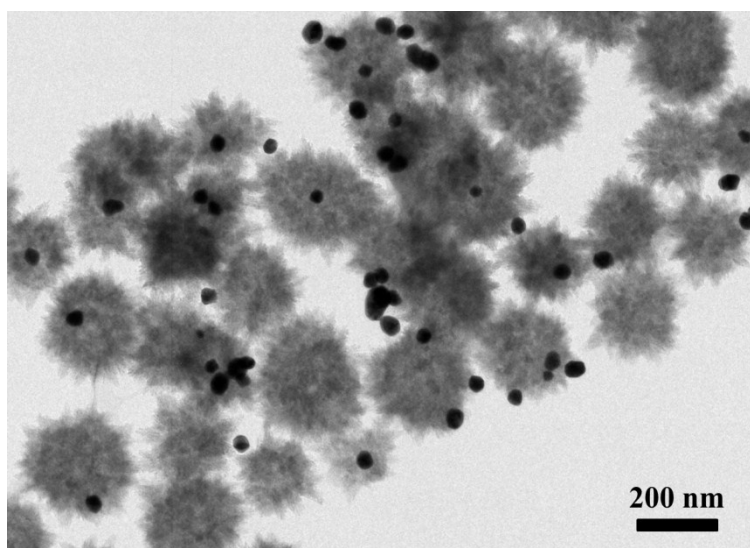
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### Preparation of spiky TiO<sub>2</sub>/AuNS nanohybrids

AuNSs were used in place of AuNRs to prepare spiky TiO<sub>2</sub>/AuNS nanohybrids under otherwise identical conditions. Specifically, the as-prepared citrate-stabilized AuNSs solution (30 nm, 16 mL) was concentrated by centrifugation at 6000 rpm for 8 min to remove the aqueous supernatant. Subsequently, the concentrated AuNSs were added into 8 mL CTAB (0.1 mM) to exchange with citrate. After 24 h incubation, the obtained AuNSs were concentrated by centrifugation and used to prepare spiky TiO<sub>2</sub>/AuNS nanohybrids following the same steps as that of spiky TiO<sub>2</sub>/AuNR nanohybrids.



**Fig. S1** TEM image of spiky TiO<sub>2</sub>/AuNS nanohybrids.