

Electronic Supplementary Material (ESI) for Journal of Materials Chemistry
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Electronic Supplementary Material

Self-Assembly of Layered Wurtzite ZnS Nanorods/Nanowires as Highly Efficient Photocatalysts

Yong Liu,^{a, b} Juncheng Hu,^{*a} Tengfei Zhou,^a Renchao Che^b and Jinlin Li^a

^a *Key Laboratory of Catalysis and Materials Science of the State Ethnic Affairs Commission & Ministry of Education, South-Central University for Nationalities, Wuhan, 430074, P.R. China*

^b *Laboratory of Advanced Materials, Fudan University, Shanghai, 200438, P.R. China.*

Email: junchenghuhu@hotmail.com

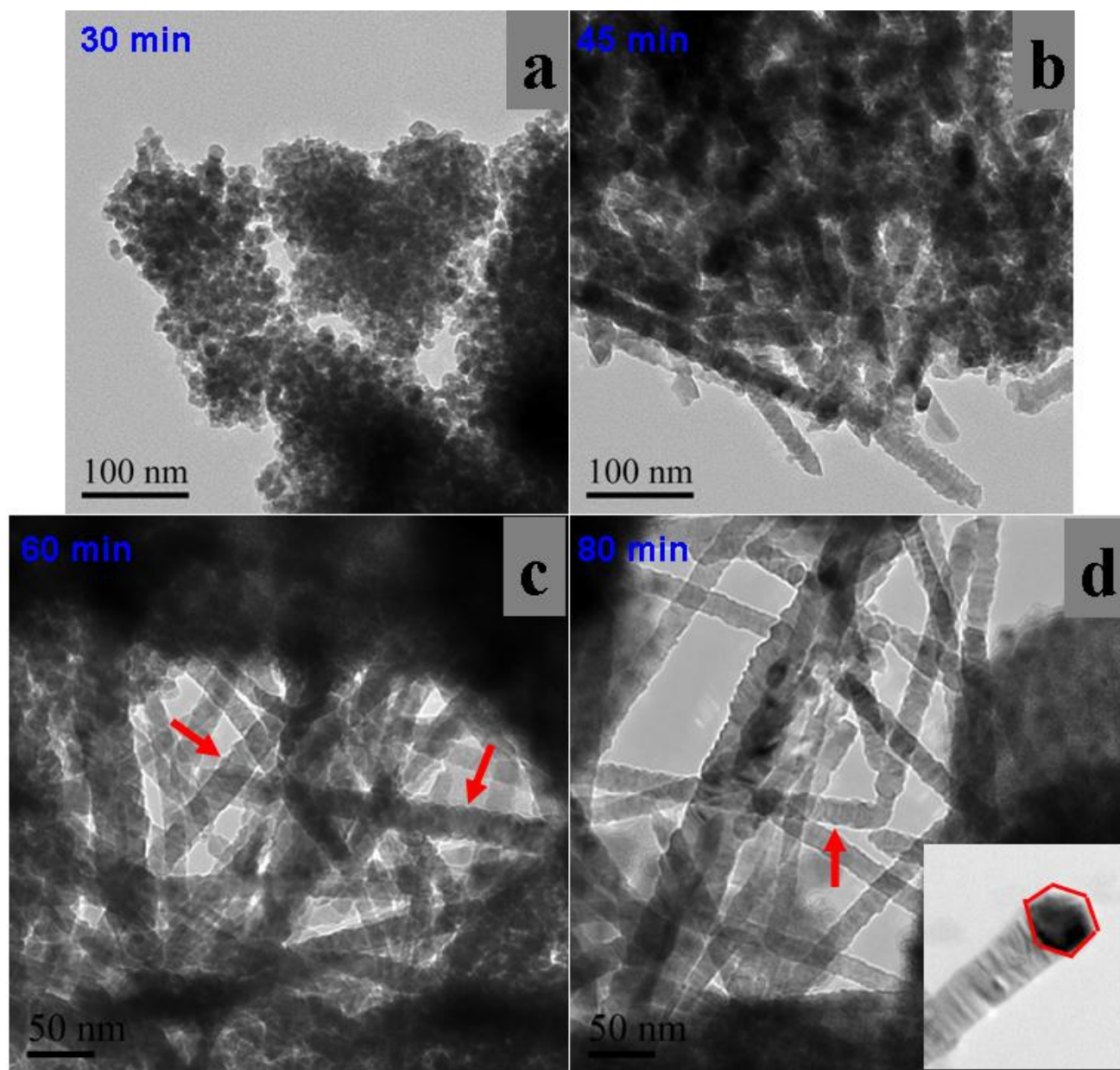


Figure S1 TEM images of intermediate product obtained at 240°C for (a) 30 min ; (b) 45min; (c) 60 min (d) 80 min (inset, the hexagonal cross-section of a single ZnS NRs obtained at 240°C for 1.5 h).

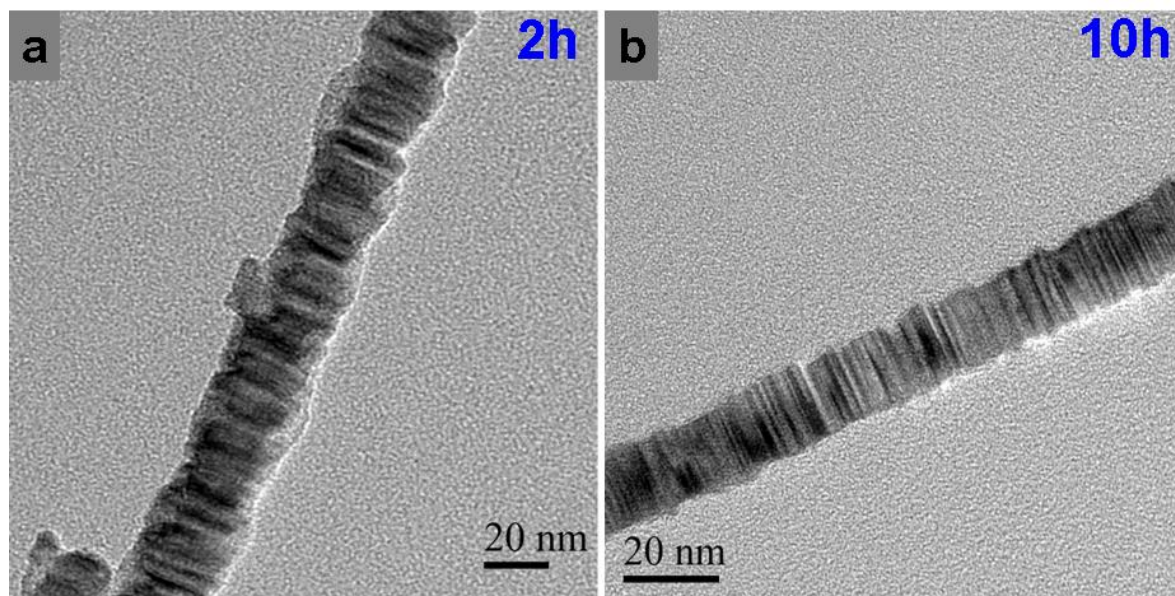


Figure S2 TEM images ZnS NRs prepared at different reaction time: (a) 2h, (b) 10h.

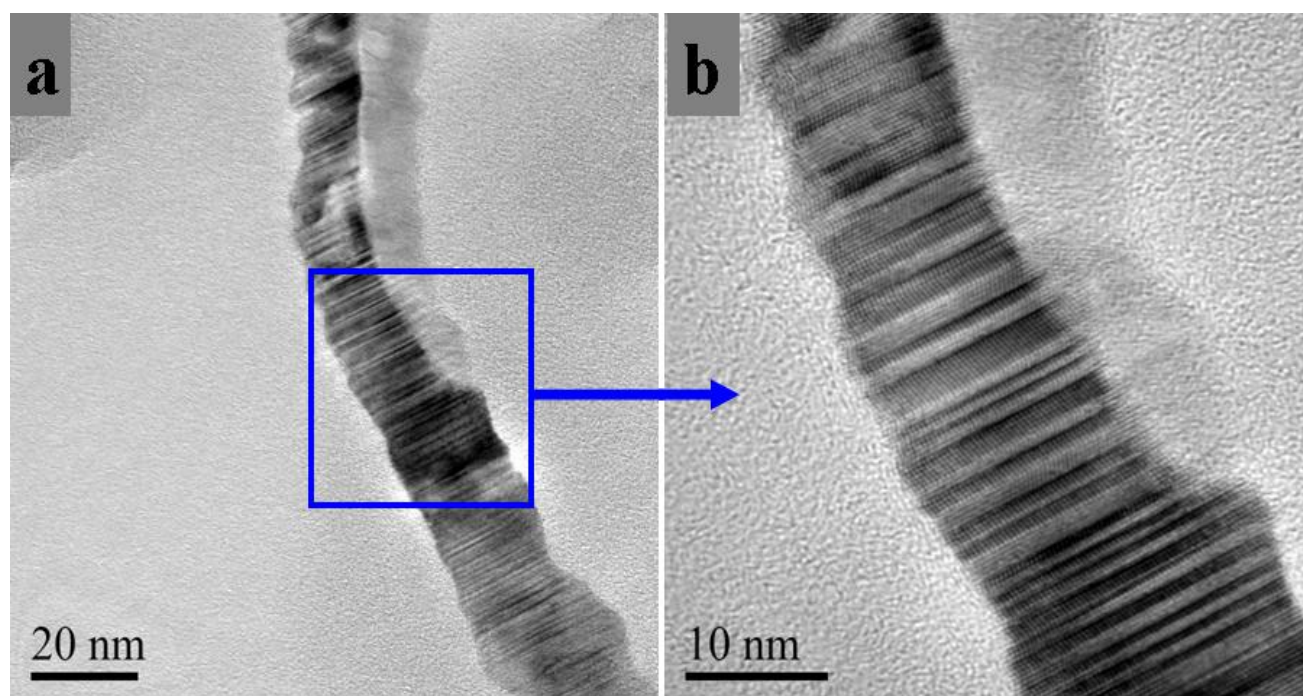


Figure S3 (a) TEM image of a single tower-like layered ZnS nanorod; (b) HRTEM images of the interlayer part of a single tower-like layered ZnS nanorod (marked by a blue rectangle in a)..

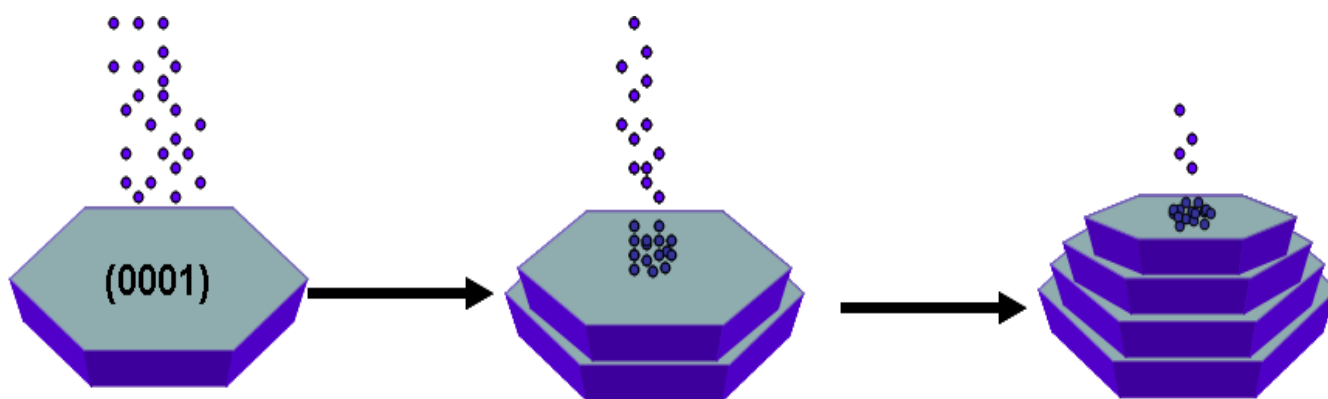


Figure S4 Schematic illustration for the growth mechanism of the extended tower-like layered ZnS NRs.

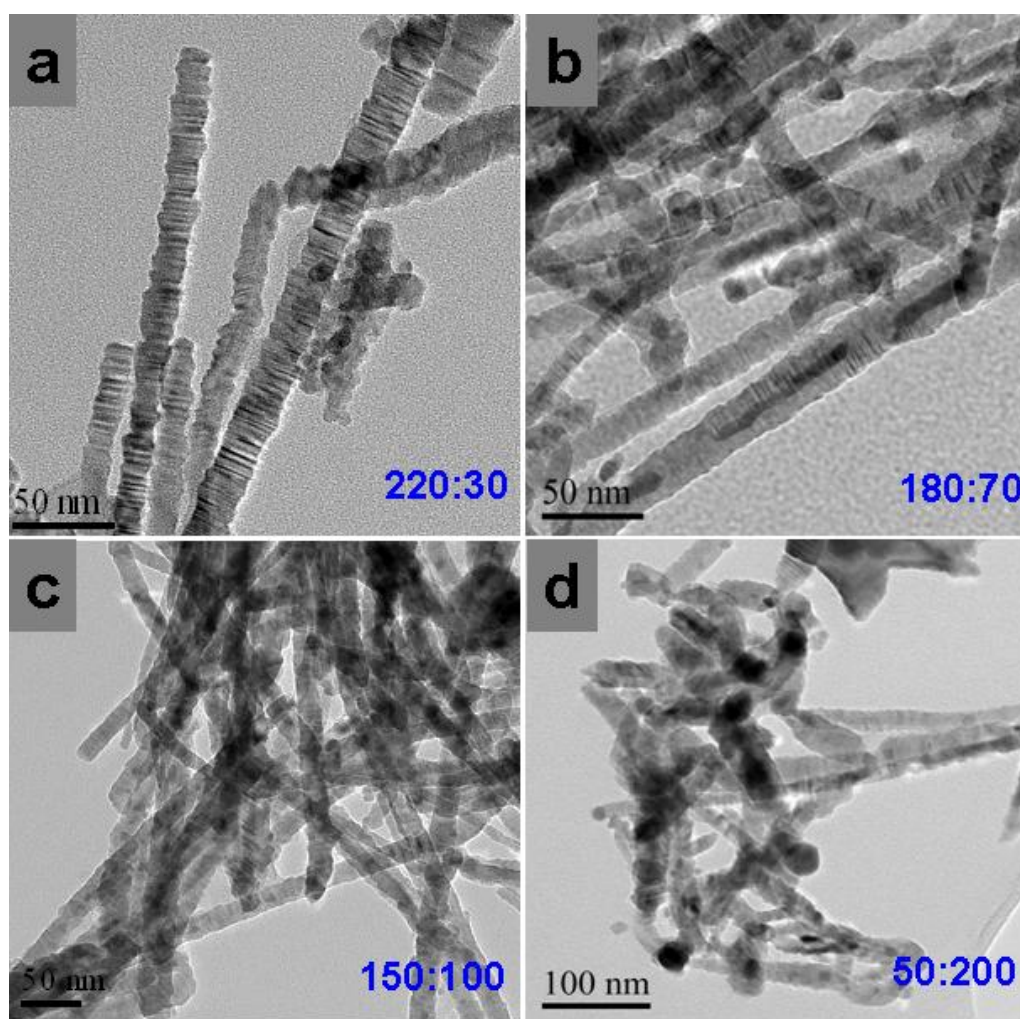


Figure S5 TEM images of ZnS products prepared in different volume ratio between the methanol and benzyl alcohol ($V_{\text{methanol}}:V_{\text{benzyl alcohol}}$)

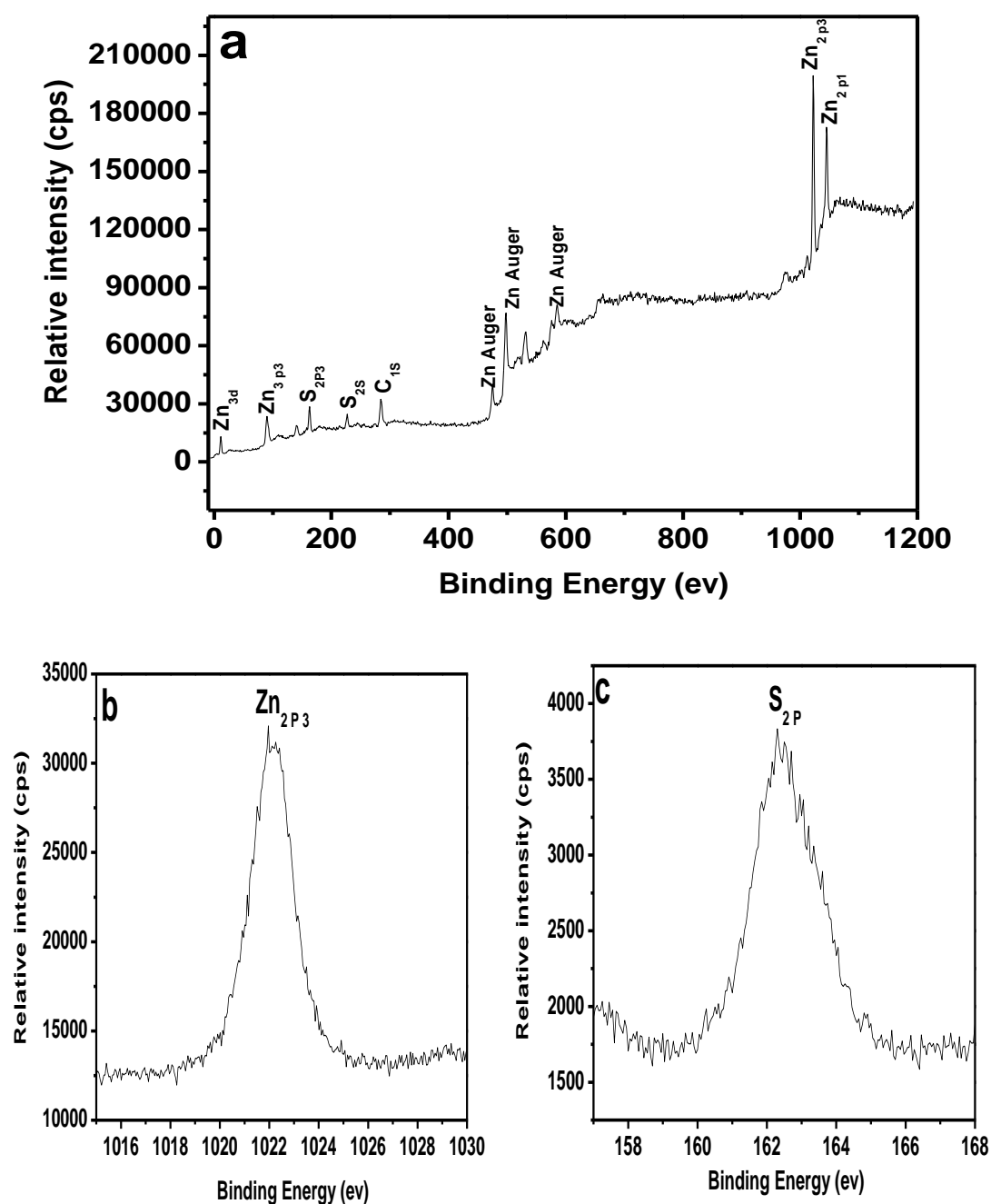


Figure S6 The typical XPS spectrums of the synthesized layered ZnS nanorod: (a) survey spectrum, (b) Zn $2p_3$ region spectrum and (c) S $2p$ region spectrum

The components of the ZnS nanorods are characterized by XPS technique, as indicated in Figure S2. The results show that the products are composed of Zn and S in ratios of 0.89:1, which is inconsistent with the results of EDS.

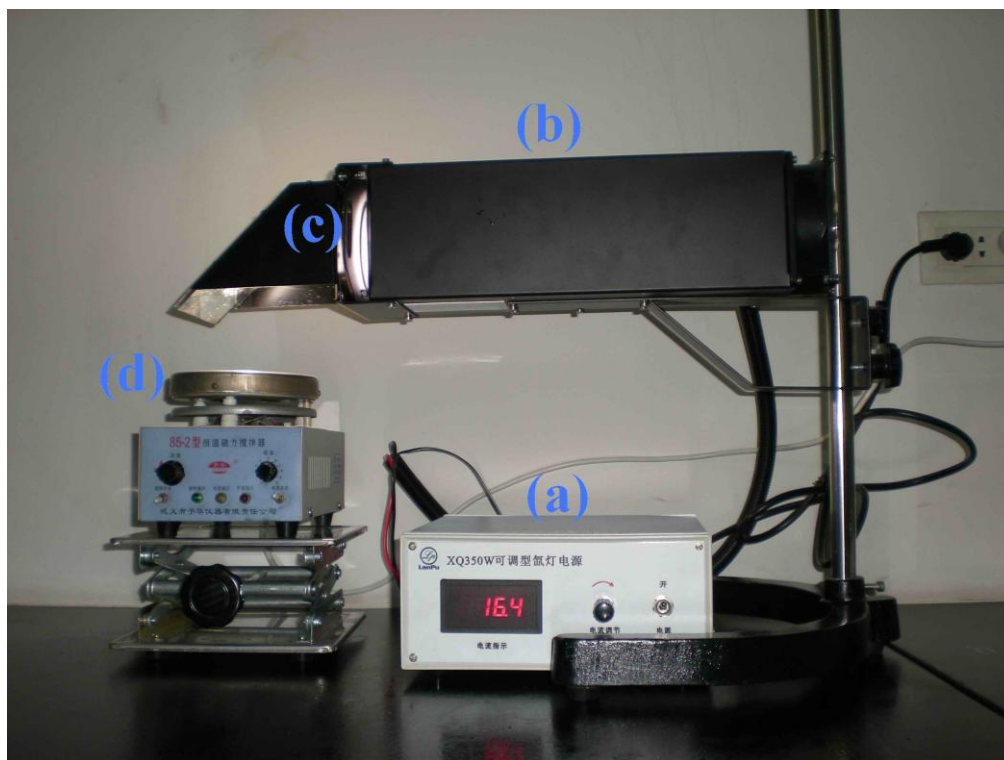


Figure S7. The installation of photocatalytic reactor: (a) The controllable electric source. (b) The homothermal reactor equipped with Xenon lamp (XQ 350W). (c) Cut-off filters (d) Magnetic stirring.