# Supporting Information

## Hollow $PbWO_4$ Nanospindles via a Facile Sonochemical Route

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### 1. Comparative experimental results under vigorous electric stirring

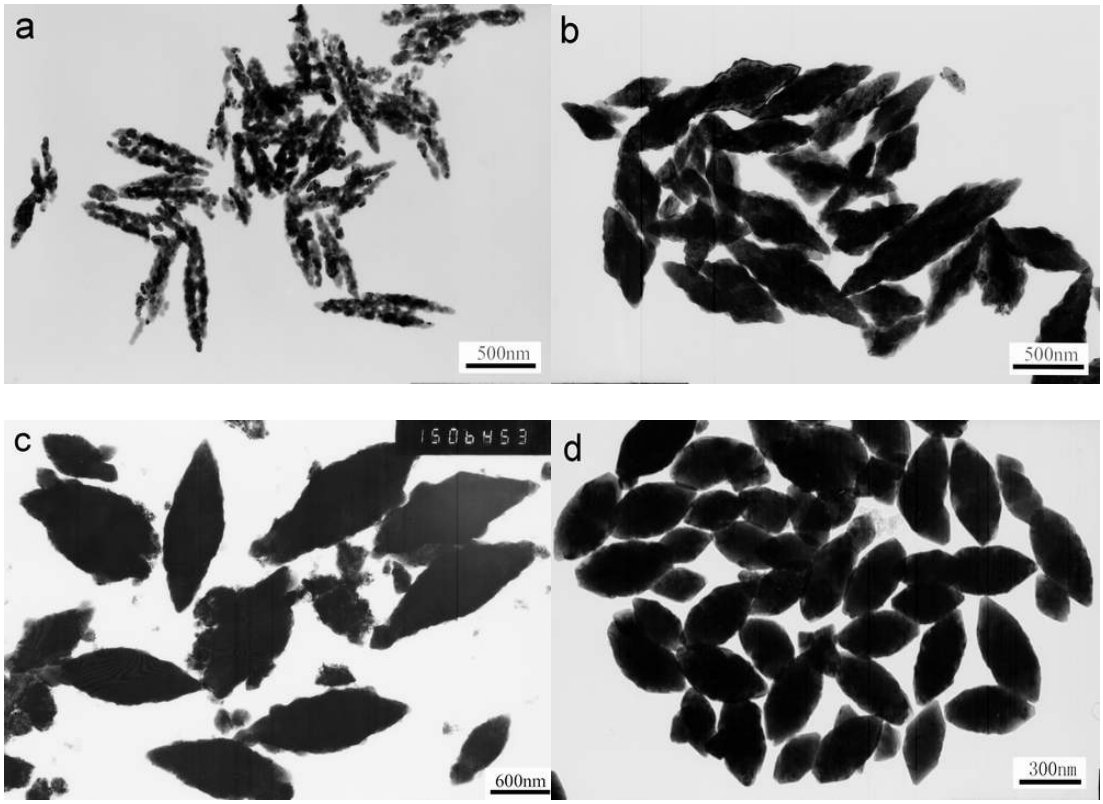


Figure S1. TEM images of $PbWO_4$ sample prepared under vigorous electric stirring in different P123 concentration systems: (a) 2 $g \cdot L^{-1}$, (b) 3 $g \cdot L^{-1}$, (c) 4 $g \cdot L^{-1}$, and (d) 5 $g \cdot L^{-1}$.

### 2. Effect of sonication time on the final products

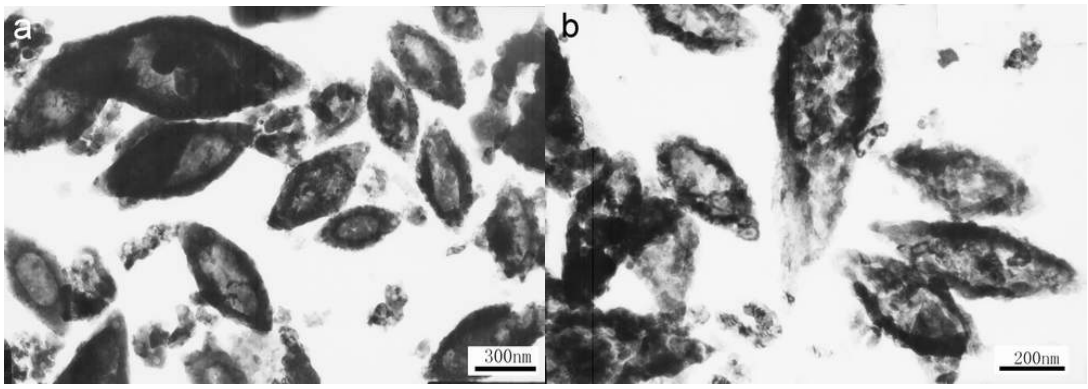


Figure S2. TEM images of samples obtained after sonication for (a) 60 min, and (b) 120 min.

### 3. Effect of concentrations of $Pb(CH_3COO)_2$ and $Na_2WO_4$

The experimental results show that the uniform hollow spindles could only be obtained at the concentration of 0.5-1 M. When the concentration of $Pb(CH_3COO)_2$ and $Na_2WO_4$ were changed to 0.1 M (1/5 of optimal concentration), the product was a mixture of hollow spindles and nanorods, and the yield was much lower (Figure S3a). When the concentration of $Pb(CH_3COO)_2$ and $Na_2WO_4$ were changed to 2 M (4 times of optimal concentration), the morphology changed to be small nanoparticles together with irregular aggregation (Figure S3b). We think when the concentrations of $Pb(CH_3COO)_2$ and $Na_2WO_4$ were relatively low (the P123 concentration was relatively higher), the copolymer might also work as capping reagent to restrict the growth of $PbWO_4$ crystals resulting the formation of nanorods. While under higher reactant concentration, nucleation occurred at an outburst speed right after the reaction solutions were mixed, leading to a large quantity of $PbWO_4$ precipitation, so small nanoparticles with their aggregation were obtained under this situation.

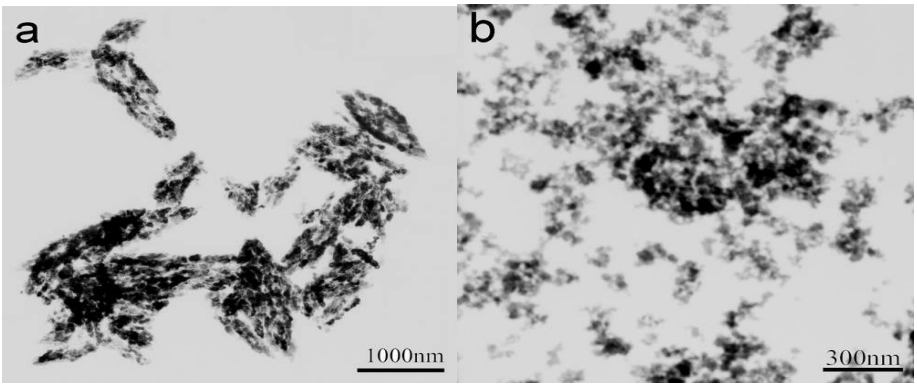


Figure S3. TEM images of samples obtained with the concentration of $Pb(CH_3COO)_2$ and $Na_2WO_4$ of (a) 0.1 M, and (b) 2 M.