Electronic Supplementary Material (ESI) for CrystEngComm.

Supporting Information

Synthesis of hollow ZnSe nanospheres with high photocatalytic activity: synergetic effect of cation exchange and selective $Cu_{2-x}Se$ template etching

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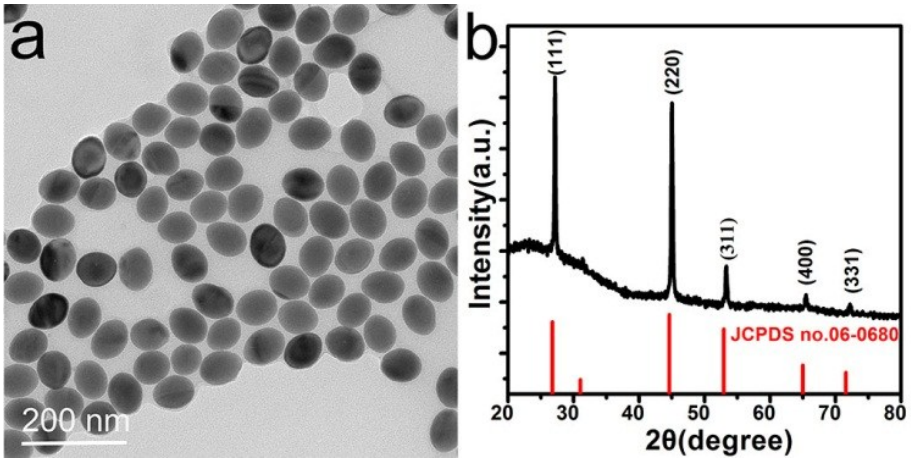

Fig. S1 TEM image (a) and XRD pattern (b) of the template $Cu_{2-x}Se$ nanoparticles.

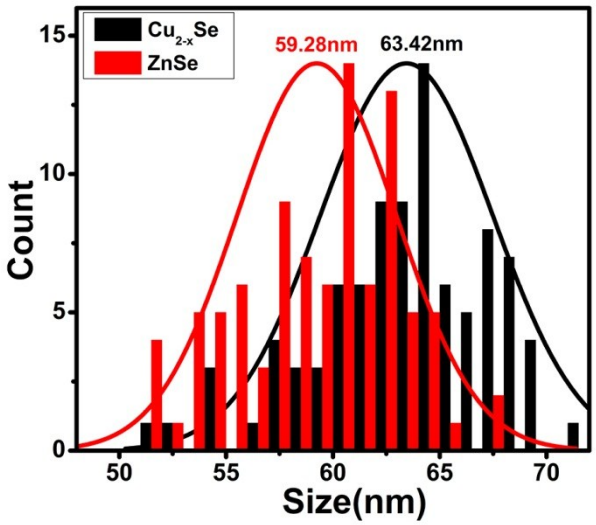

Fig. S2 Size comparision between hollow ZnSe nanospheres and original $Cu_{2-x}Se$ templates.

Fig. S3 The photograph of $Cu_{2-x}Se$ methanol dispersion before (a) and after (b) addition of TBP in air.

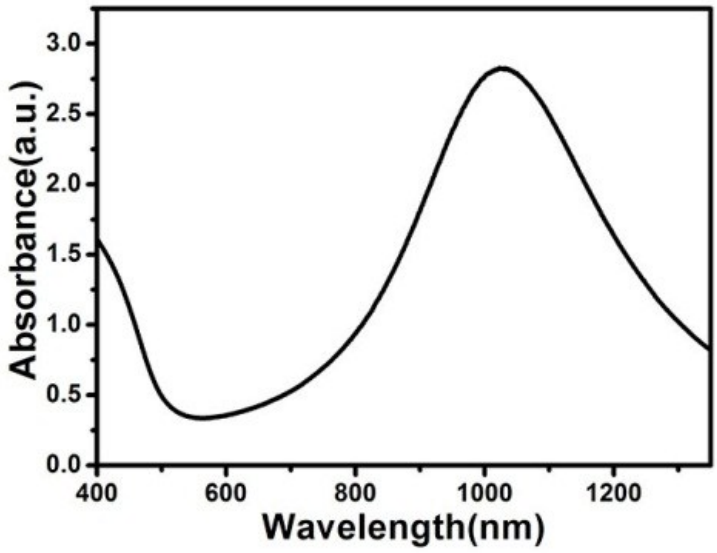

Fig. S4. The UV-vis-NIR absorption spectrum of $Cu_{2-x}Se$ nanospheres.

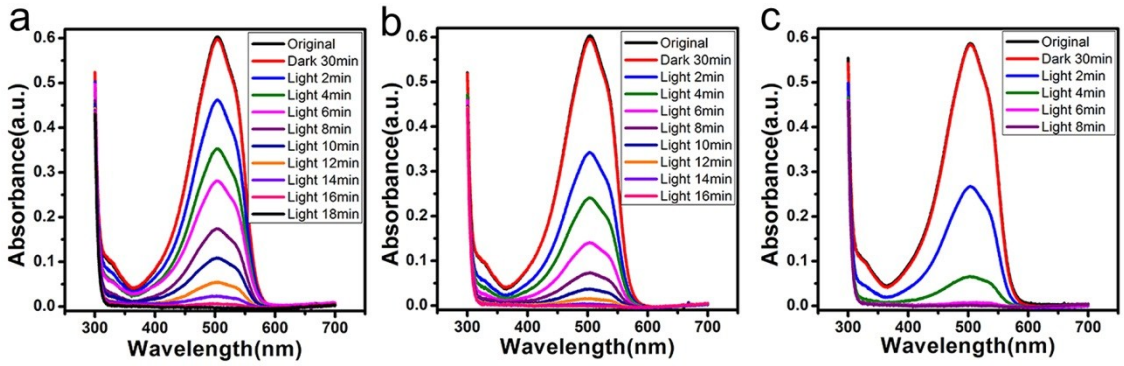

Fig. S5 The time-dependent absorption spectra of MO solution containing P25 (a), bulk ZnSe (b) and hollow ZnSe (c) of the same weight under light irradiation produced by a 300 W Xe lamp with wavelength coverage from 320 nm to 780 nm.

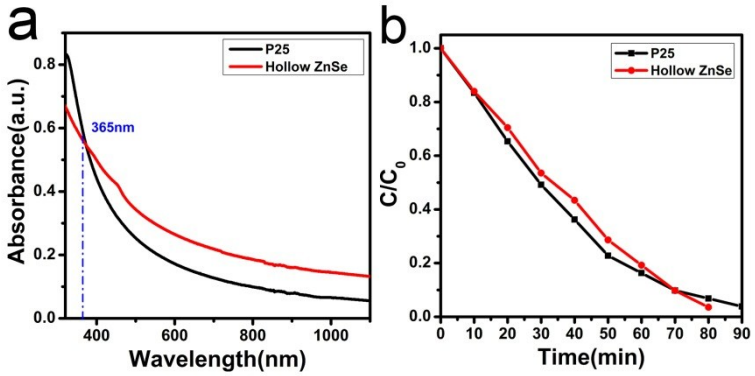

Fig. S6 (a) Absorption spectra of ZnSe hollow nanospheres and TiO_2 aqueous dispersion with the same optical density at 365 nm; (b) Comparision of photocatalytic degradation kinetics of methyl orange solution under 365 nm UV lamp excitation in presence of ZnSe hollow nanospheres and TiO_2 with same optical density at 365 nm.

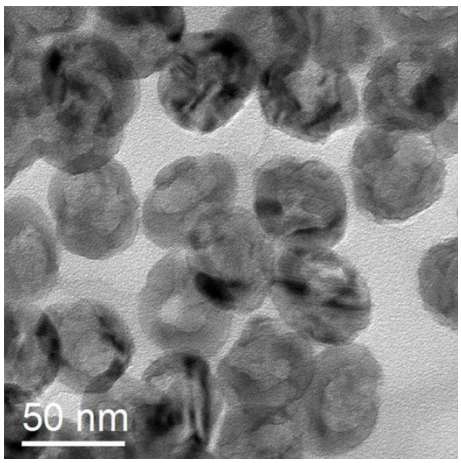

Fig. S7 TEM image of the hollow ZnSe nanospheres after photocatalytic degradation of MO.