

Controllable synthesis of flower-like MoSe₂ 3D microspheres for highly efficient visible light photocatalyst degrading nitro-aromatic explosives

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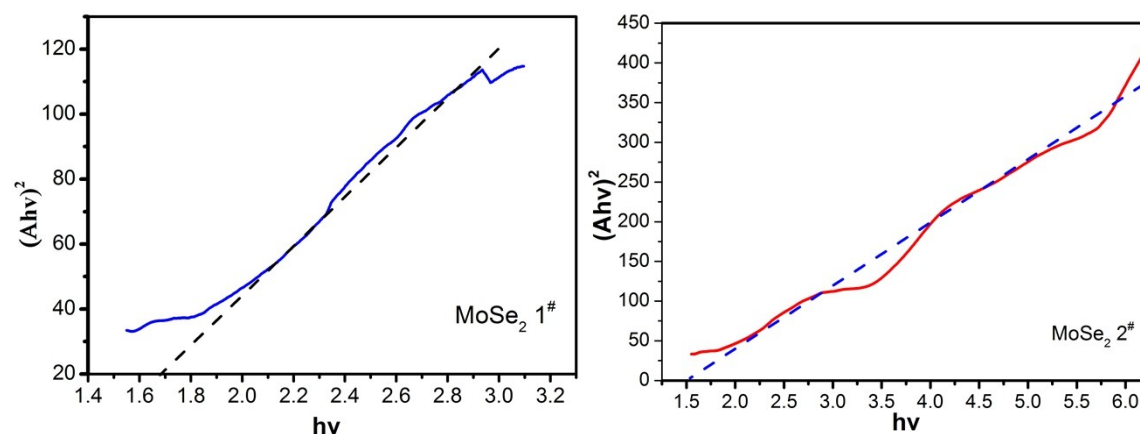


Fig. S1 the curve of $(Ah\nu)^2 - h\nu$ with the MoSe₂ sample 1# and 2# UV-Vis DRS spectrum

Table S1. The multi BET surface area transform data with a range of relative pressure

MoSe ₂ 1 [#]		MoSe ₂ 2 [#]	
BET transform		BET transform	
P/P	$\frac{1}{W(P_0/P-1)}$	P/P0	$\frac{1}{W(P_0/P-1)}$
0.0507	21.8042	0.0507	21.8042
0.09927	37.9237	0.0992	37.9327
0.14854	52.8897	0.1485	52.8897
0.1984	67.6232	0.1984	67.6232
0.2487	82.5602	0.2487	82.5602

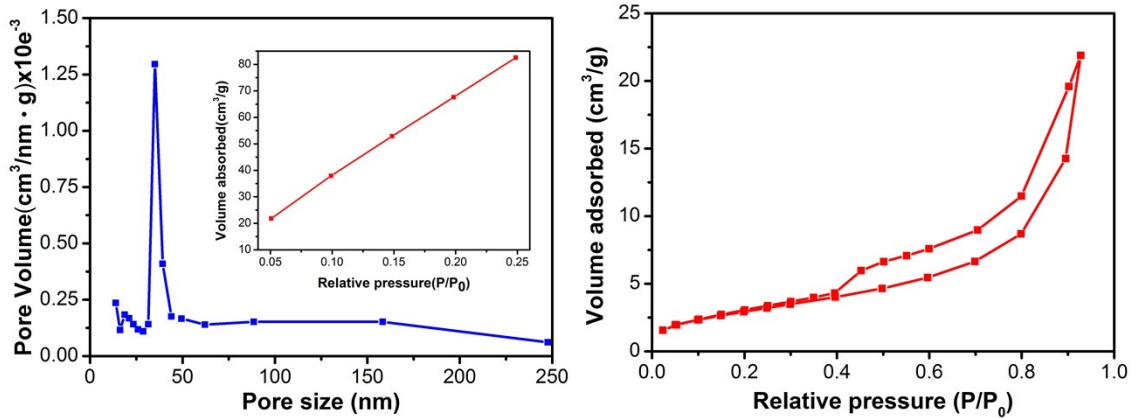


Fig.S2 BET test with MoSe₂ nanospheres(sample2[#]) (a) Pore size distributions (inset) with corresponding surface area transform curve (b) Nitrogen adsorption–desorption isotherm

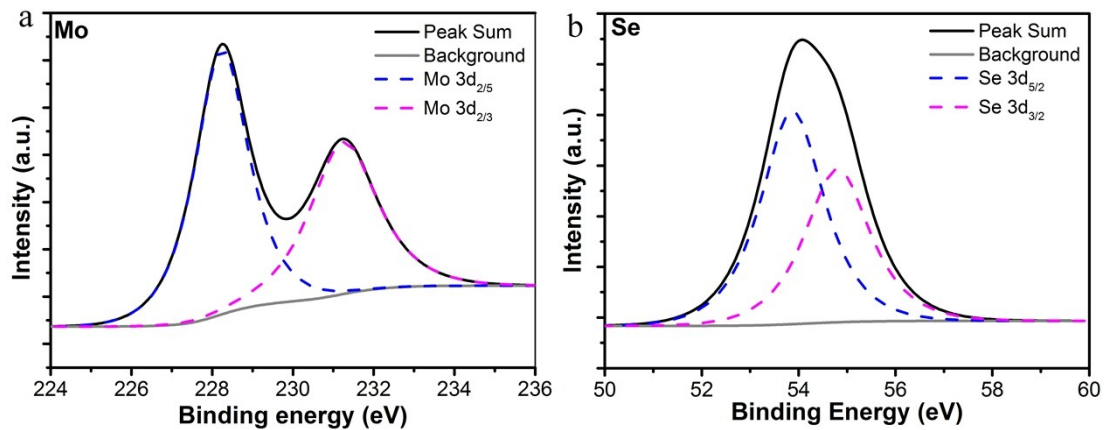


Fig. S3 XPS spectrum of the MoSe₂ nanospheres(sample2[#]) (a)Mo 3d and (b) Se 3d

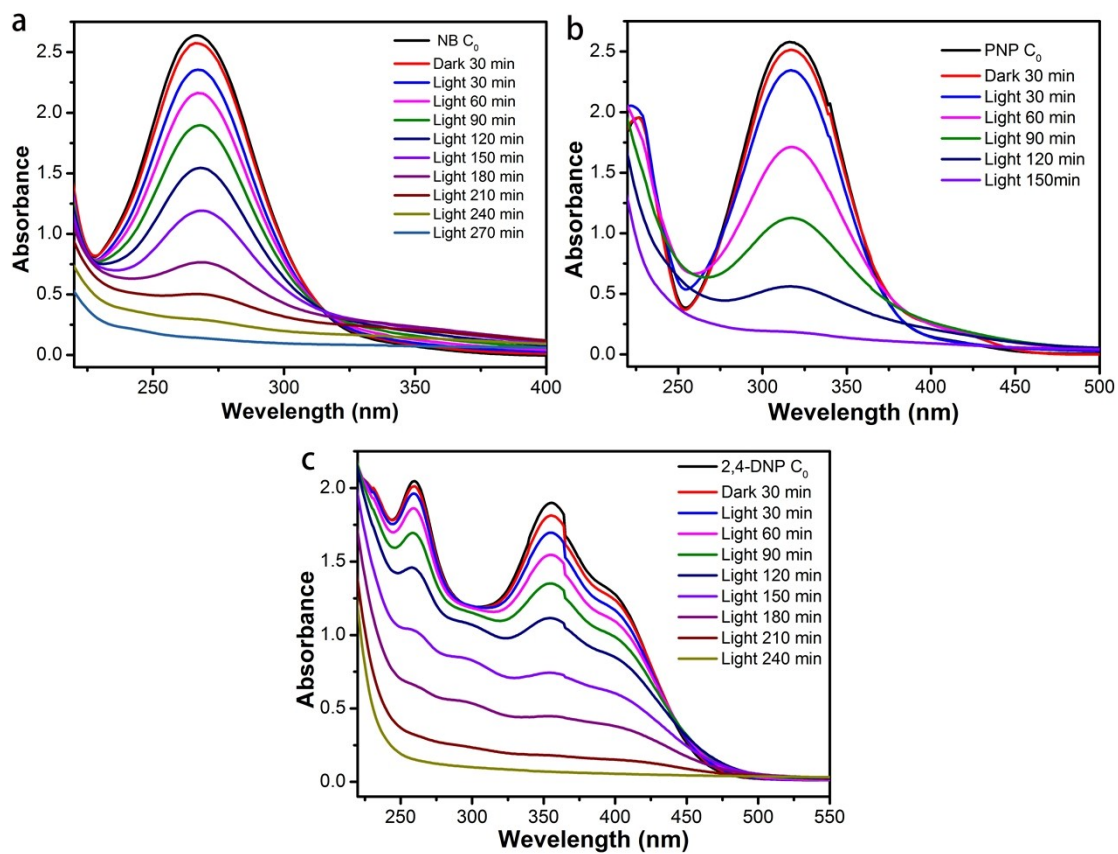


Fig. S4 UV-Vis absorption spectra of the aqueous solution of NB(a), PNP(b) and 2, 4-DNP (c) adding MoSe₂ sample 2[#] catalyst under visible light irradiation.

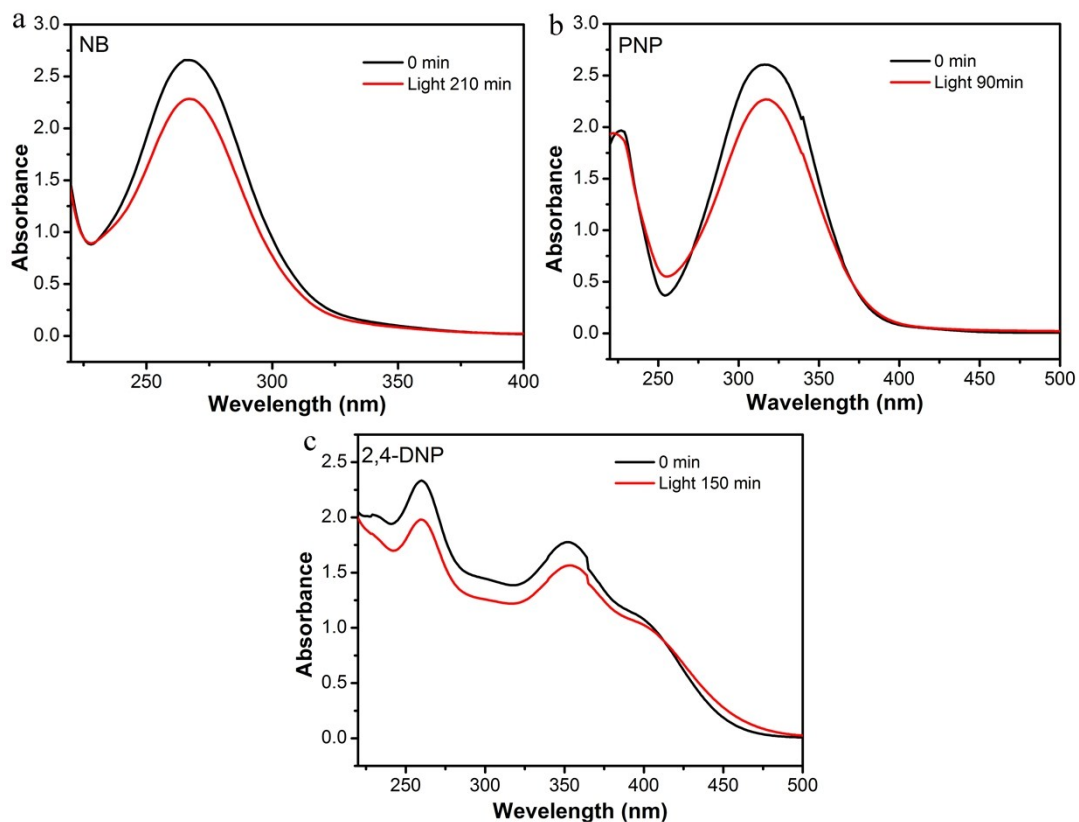


Fig. S5 UV-Vis absorption spectra of the aqueous solution of NB(a), PNP(b) and 2,4-DNP(c) in absence of the MoSe₂ catalyst under visible light irradiation.

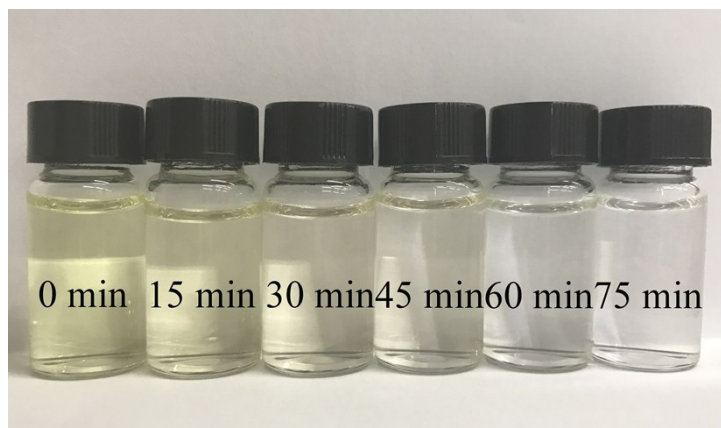


Fig. S6 the chromatic changes of the PNP for each 15 min under the visible light irradiation with the MoSe₂ catalyst

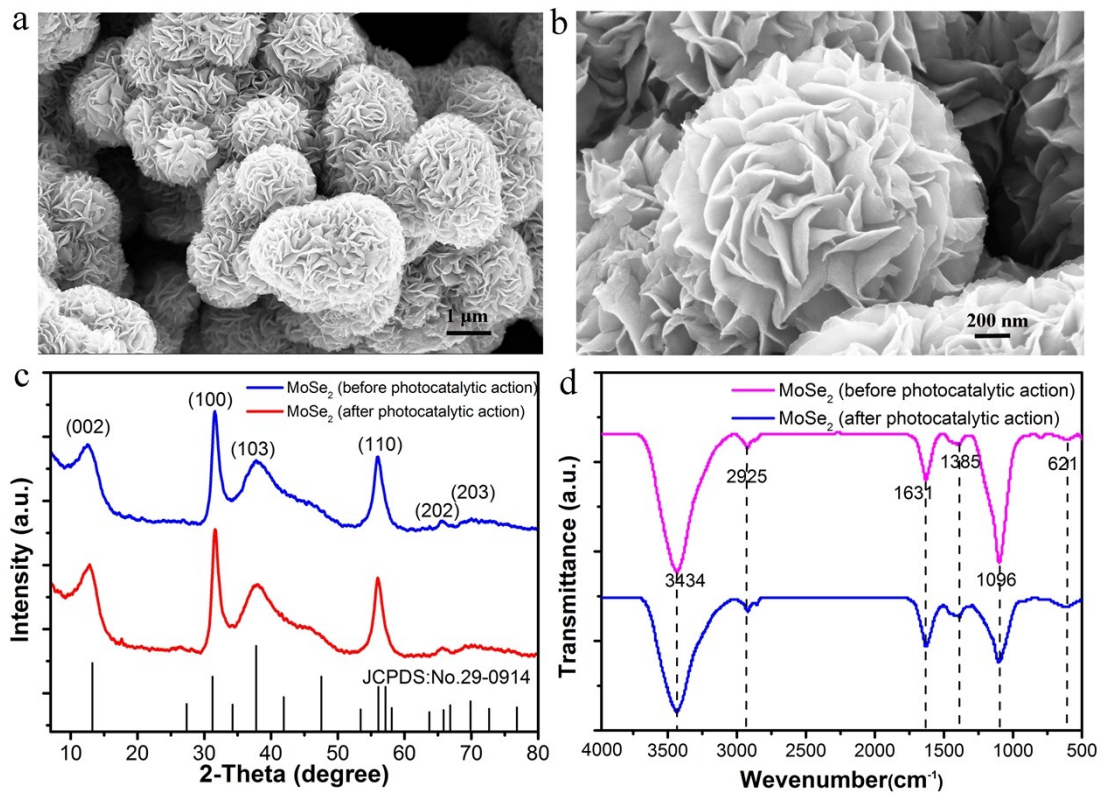


Fig. S7 morphology and structure characterization of the flower-like MoSe₂ microspheres (sample 1[#]) before and after photocatalytic action (a,b) FETSEM images with different magnification (c) XRD spectra (d) FT- IR spectra

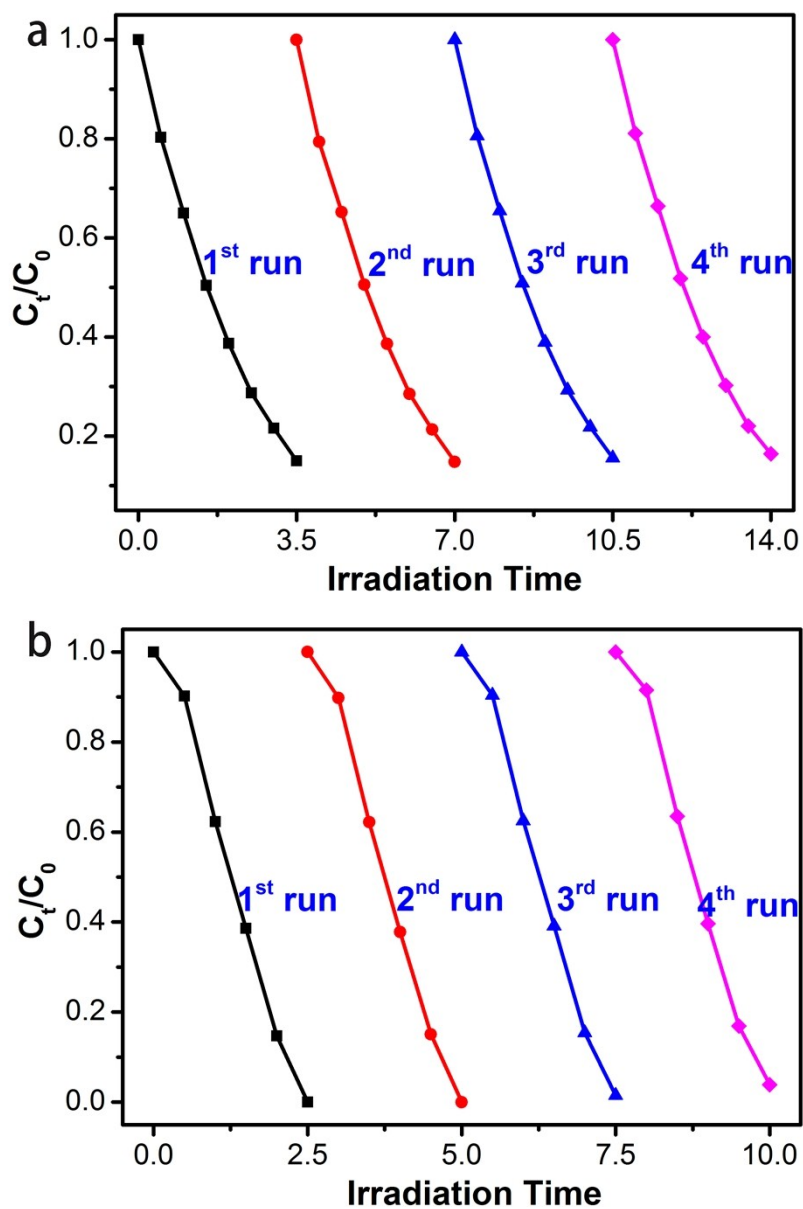


Fig. S8 stability test for MoSe₂ microspheres (sample 1[#]) for photocatalytic degradation under visible light irradiation (a) NB and (b) 2,4-DNP