Fig. S1. XRD patterns of the samples prepared by hydrothermal treatment at 260 °C for 24 h with different organic additives: (a) 1g K$_2$SO$_4$ (b) 1g NaNO$_3$ (c) 1g NaCl (d) 1g Na$_2$SO$_4$

Fig. S2. XRD patterns of the samples prepared by hydrothermal treatment at different reaction temperature
Fig. S3. XRD patterns of the MnNb$_2$O$_6$ samples prepared by hydrothermal treatment at different reaction time.

Fig. S4. The adsorption curve of the MnNb$_2$O$_6$ 3D flower-like nanostructures for 120 min in the dark.
Fig. S5. XRD patterns of the MnNb$_2$O$_6$ 3D flower-like nanostructures before and after photocatalytic reaction.