Supporting Information

Synthesis of Hybrid Nanocomposites of ZIF-8 with Two-dimensional Black Phosphorus for Photocatalysis

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Figures:

![Figure S1](image1.png)

**Figure S1** SEM image of the as-synthesized ZIF-8.

![Figure S2](image2.png)

**Figure S2** SEM images of (a) PVP-BP and (b) PVP-BP-Zn$^{2+}$. 
Figure S3 EDX of ZIF-8/BP.

Figure S4 XPS of ZIF-8/BP.
Figure S5 AFM image of as-exfoliated FL-BP.
Figure S6 SEM images of ZIF-8/BP synthesized with (a) 0 mg/mL of PVP, (b) 2 mg/mL of PVP and (c) 10 mg/ml of PVP.

Figure S7 SEM images of ZIF-8/BP synthesized with (a) 0.5 mg/mL Zn(NO$_3$)$_2$•6H$_2$O and (b) 3 mg/mL Zn(NO$_3$)$_2$•6H$_2$O.
Figure S8 SEM images of ZIF-8/BP synthesized with growth time of (a) 30 min, (b) 1 h and (c) 24 h.
Figure S9 Schematic mechanism of enhanced charge separation and transfer for photodegradation of MB with ZIF-8/BP nanocomposites.

Figure S10 (a) Time dependent fluorescence spectra of terephthalic acid solution (4 × 10^{-4} M) containing (a) ZIF-8/BP, and (b) ZIF-8 (every 10min, up to 50min).
Figure S11 (a) Degradation plot of MB with ZIF-8/BP synthesized from different amount of PVP, (b) Degradation plot of MB with ZIF-8/BP synthesized with different amount of Zn(NO$_3$)$_2$•6H$_2$O.

References