

Supporting Information for *Industrial & Engineering Chemistry Research*

**Synergistic Combination of a Novel Metal-Free Mesoporous  
Bandgap-modified Carbon Nitride Grafted Polyaniline  
Nanocomposite for Decontamination of Refractory Pollutant**

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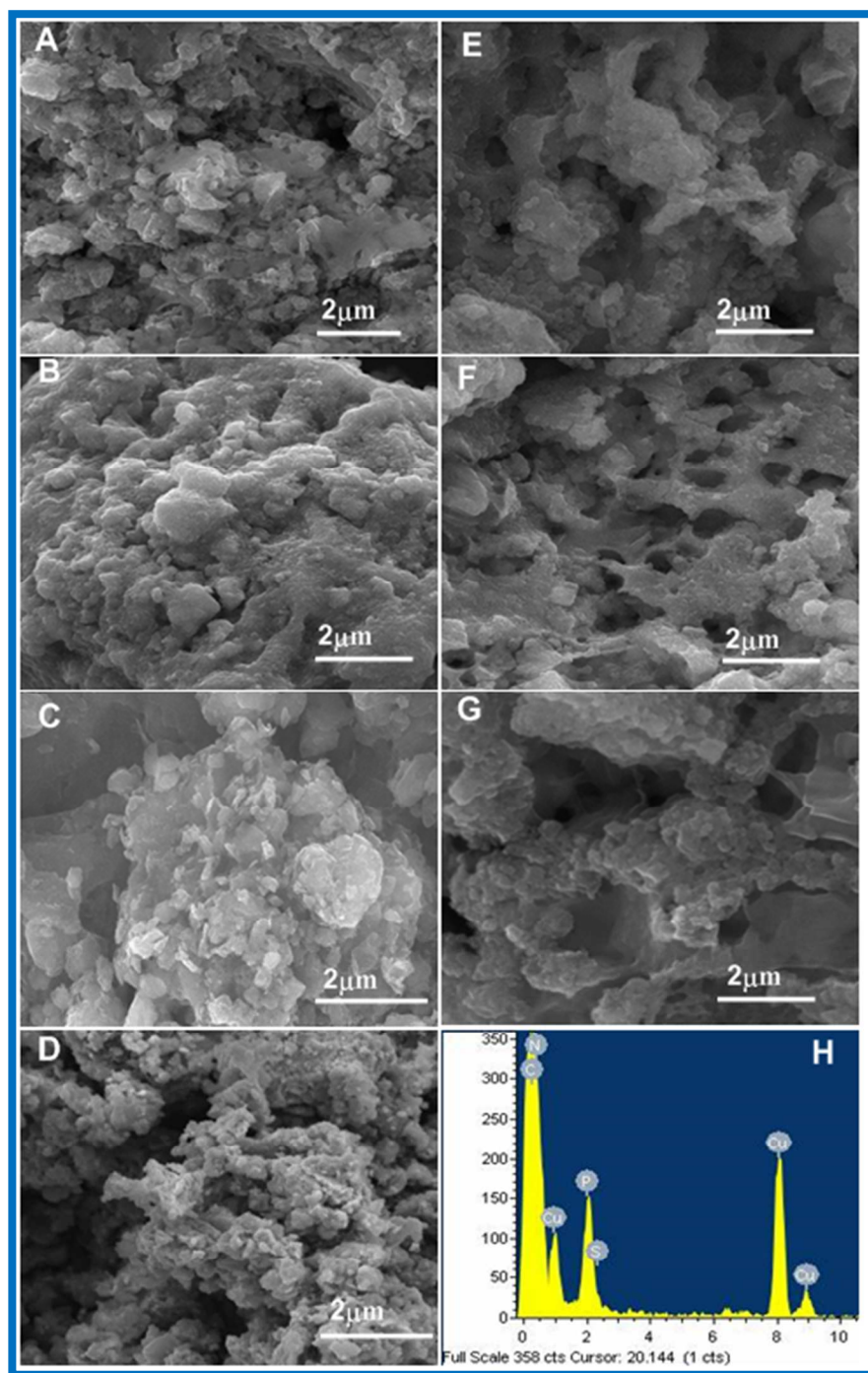
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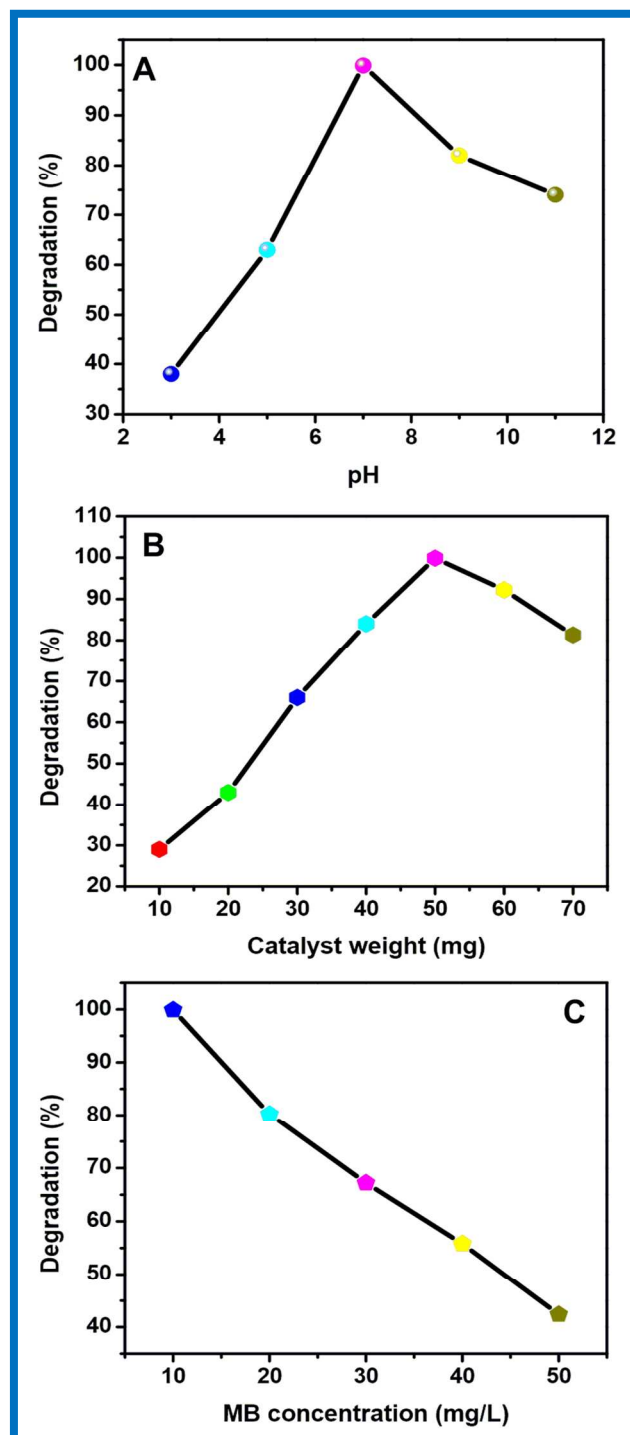
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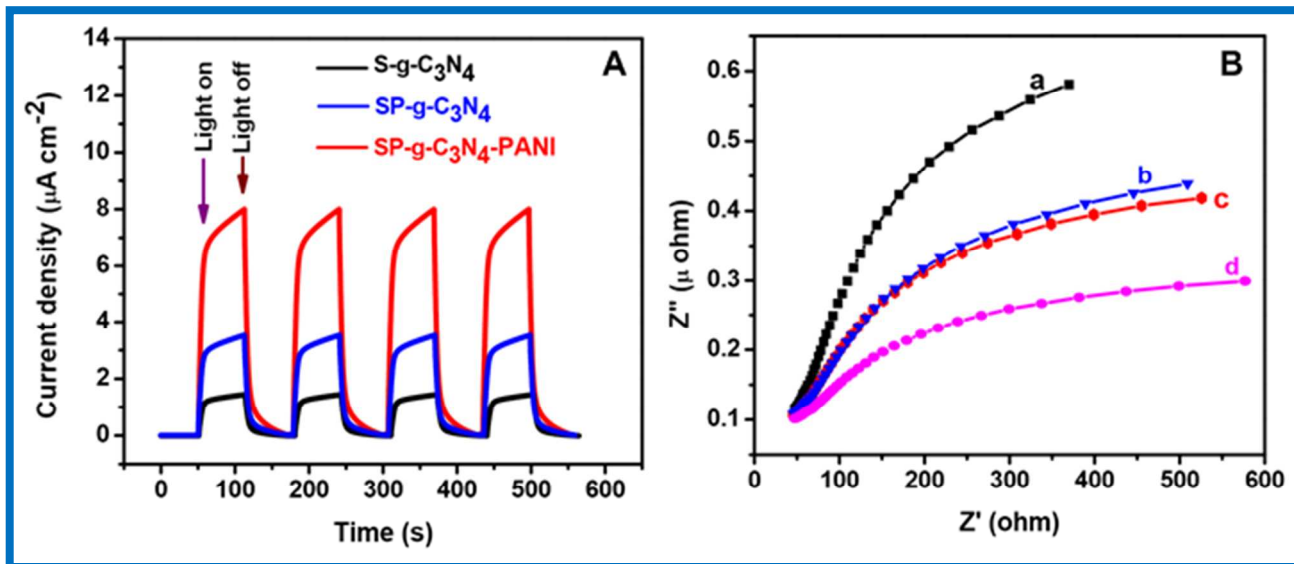
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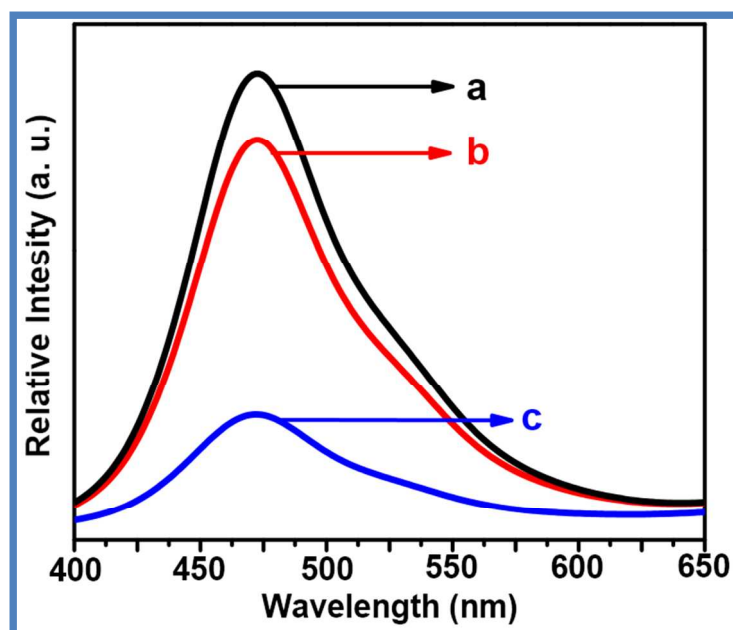
**Figure. S1** SEM images of PANI (A), S-g-C<sub>3</sub>N<sub>4</sub> (B), SP- g-C<sub>3</sub>N<sub>4</sub> (C), SP- g-C<sub>3</sub>N<sub>4</sub>-PANI (1) (D), SP- g-C<sub>3</sub>N<sub>4</sub>-PANI (2) (E), SP- g-C<sub>3</sub>N<sub>4</sub>-PANI (3) (F), SP- g-C<sub>3</sub>N<sub>4</sub>-PANI (4) (G) and EDX spectrum of SP- g-C<sub>3</sub>N<sub>4</sub>-PANI (3) (H)



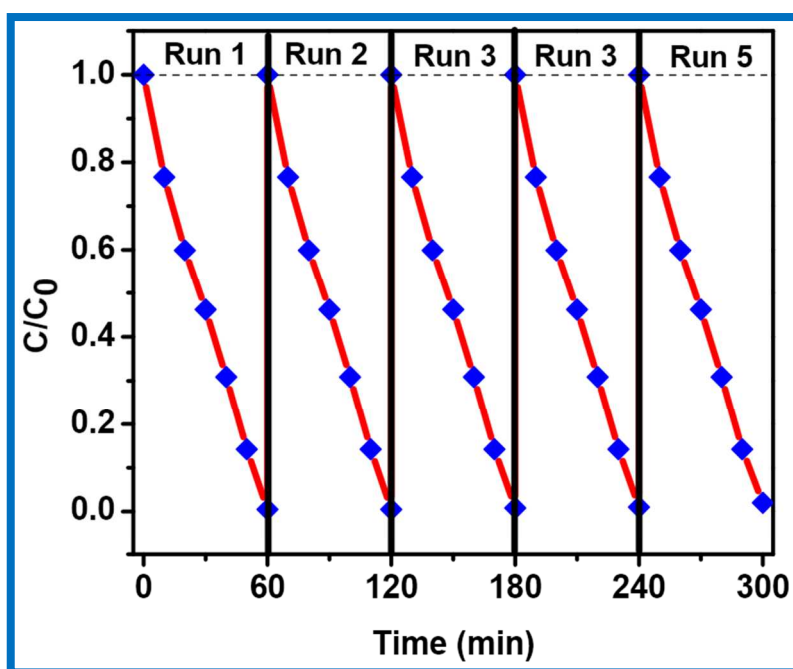
**Figure. S2** Effect of pH (A), catalyst concentration (B) and MB concentration (C)



**Figure. S3** (A) Photocurrent of S-g-C<sub>3</sub>N<sub>4</sub>, SP-g-C<sub>3</sub>N<sub>4</sub> and SP-g-C<sub>3</sub>N<sub>4</sub>-PANI (3) under visible light irradiation and (B) The electrochemical impedance properties of PANI (curve a), S-g-C<sub>3</sub>N<sub>4</sub> (curve b), SP-g-C<sub>3</sub>N<sub>4</sub> (curve c) and SP-g-C<sub>3</sub>N<sub>4</sub>-PANI (3) (curve d), electrodes under visible light irradiation



**Figure. S4** Photoluminescence spectra of S-g-C<sub>3</sub>N<sub>4</sub> (curve a), SP-g-C<sub>3</sub>N<sub>4</sub> (curve b) and SP-g-C<sub>3</sub>N<sub>4</sub>-PANI (3) (curve c)



**Figure. S5** The repeated photocatalytic reduction experiments in the presence of 10 mg/L MB and 50mg/100ml of SP-g-C<sub>3</sub>N<sub>4</sub>-PANI (3) catalyst under visible-light irradiation