

A New Synergetic Nanocomposite for Dye Degradation in Dark and Light

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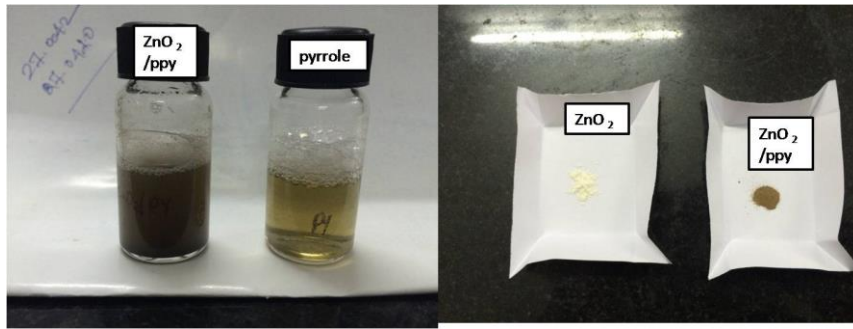


Figure S1: colour of ZnO₂/ ppy composite aqueous suspension after reaction and colour of ZnO₂ and ZnO₂/ ppy powder after centrifugation

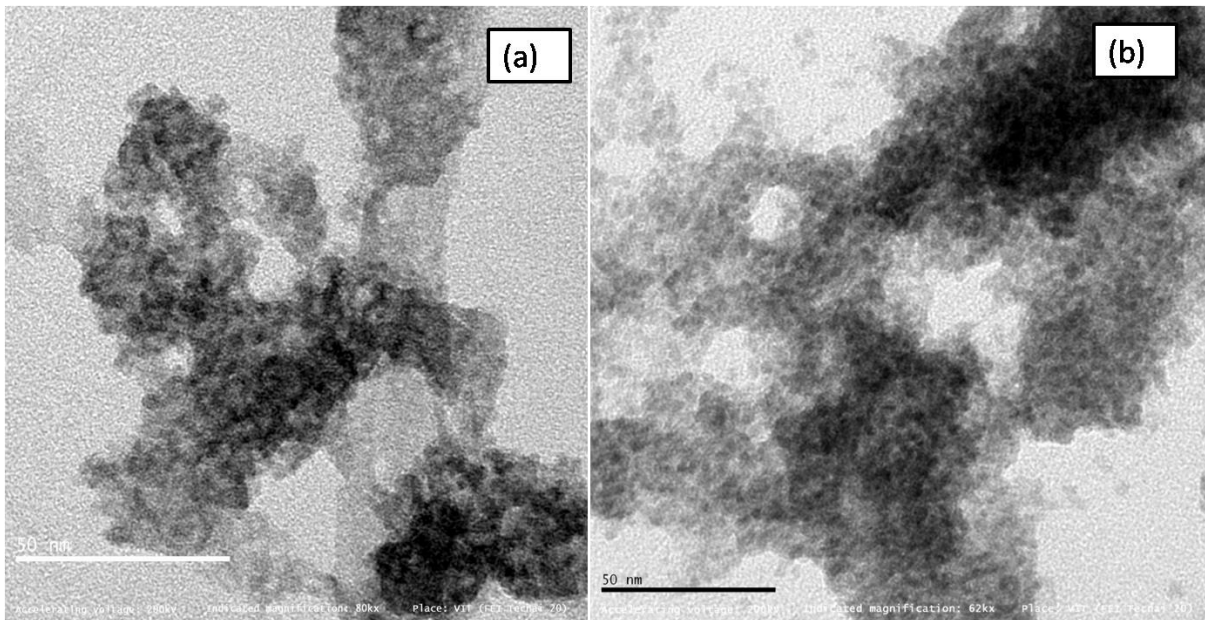


Figure S2: TEM of (a) ZnO₂ (b) ZnO₂/ ppy

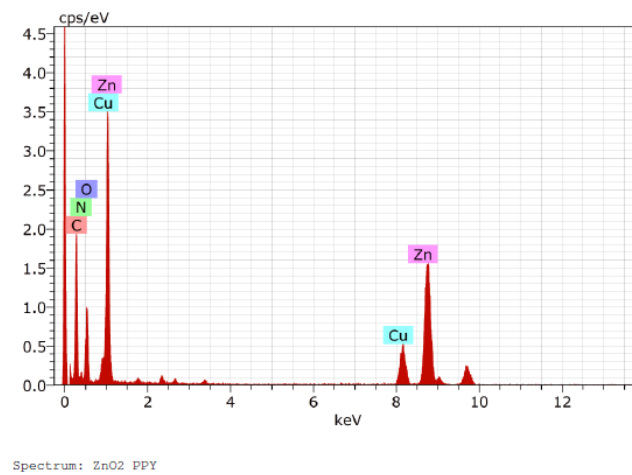


Figure S3: EDAX of ZnO₂ / ppy

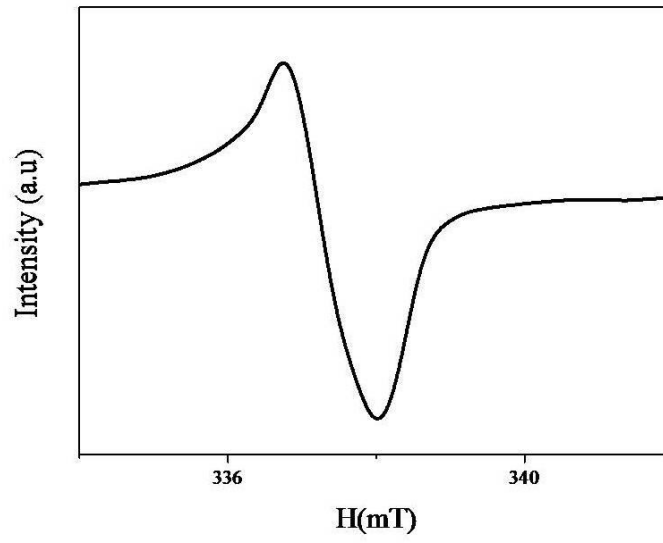


Figure S4: EPR of ZnO₂

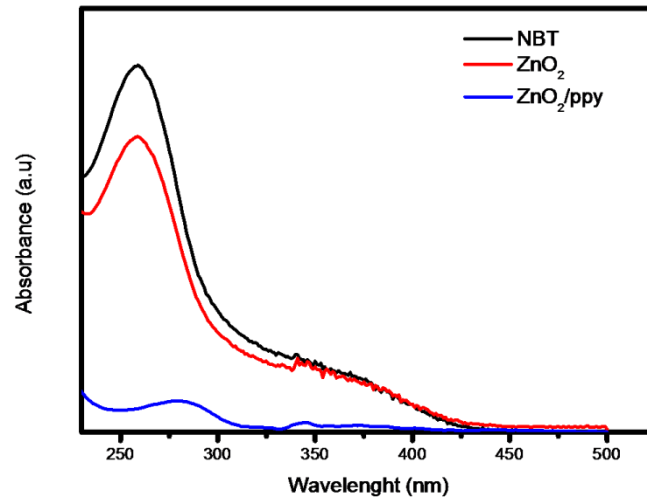


Figure S5: Degradation of NBT by ZnO₂ and ZnO₂ / ppy after 2h

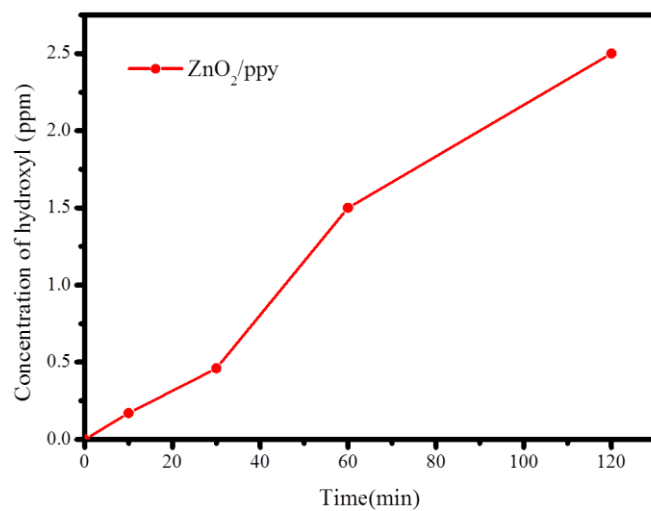


Figure S6: Kinetics of hydroxyl production in dark

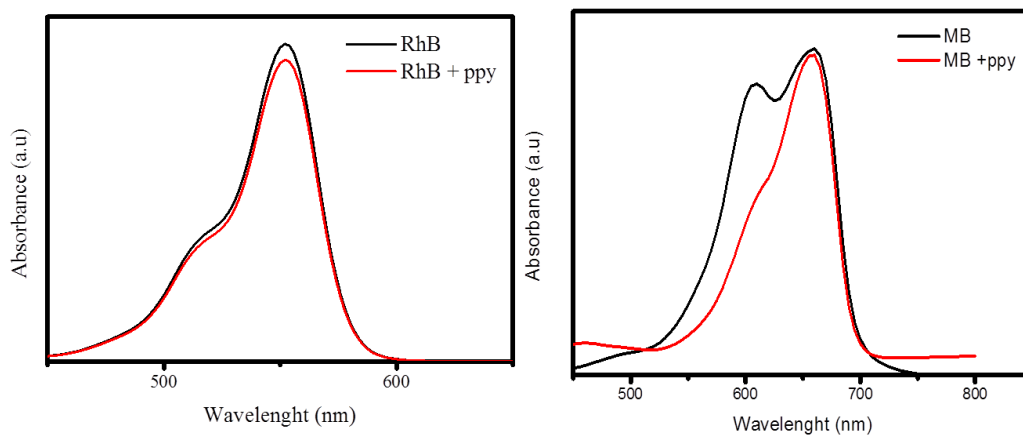


Figure S7: UV vis spectroscopy of RhB and MB in the presence of polypyrrole

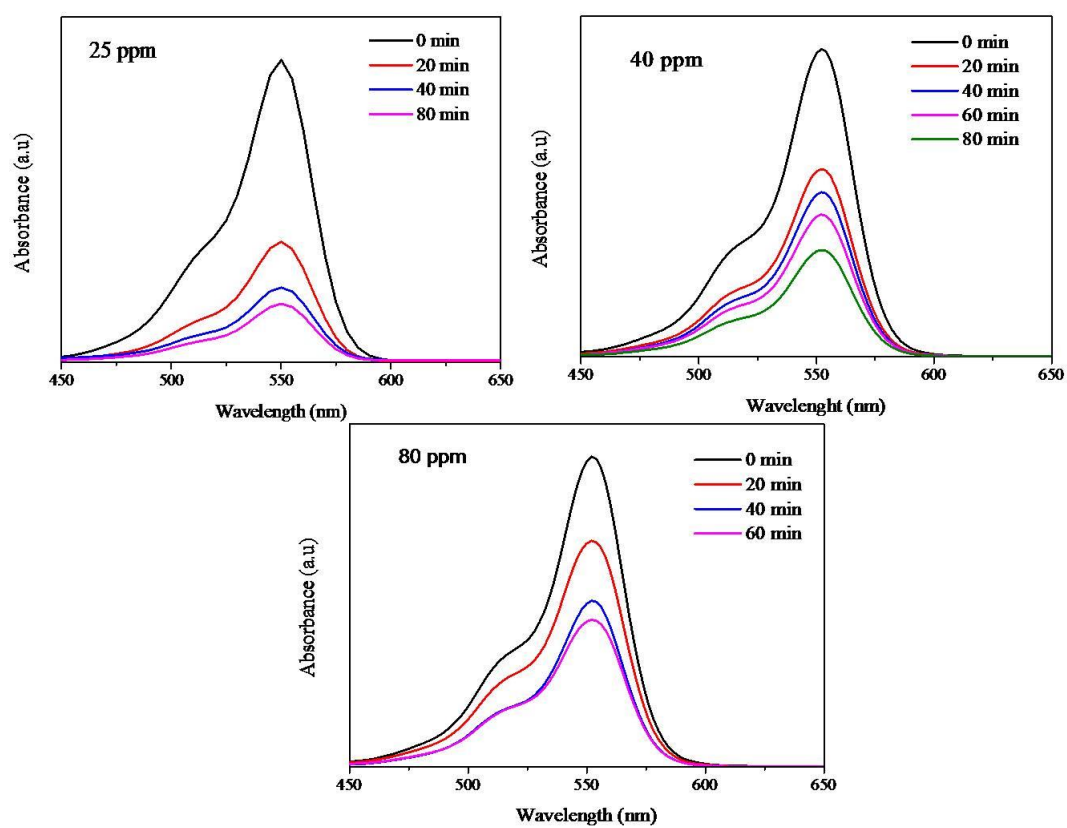


Figure S8: Degradation of RhB by ZnO_2/ppy at different concentration

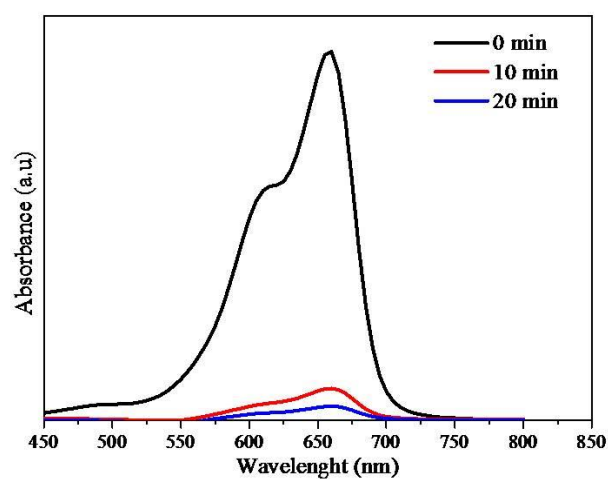


Figure S9: Degradation of MB (5 ppm) by ZnO_2/ppy under visible light

Table S1: kinetics of degradation of RhB with concentration of ZnO₂/ ppy in dark

| Concentration of dye (ppm) | % of degradation | k(min ⁻¹) X 10 ⁻² |
|----------------------------|------------------|---|
| 10 | 100 | 35.6 |
| 25 | 81 | 4.9 |
| 40 | 65 | 2.8 |
| 80 | 54 | 2.0 |

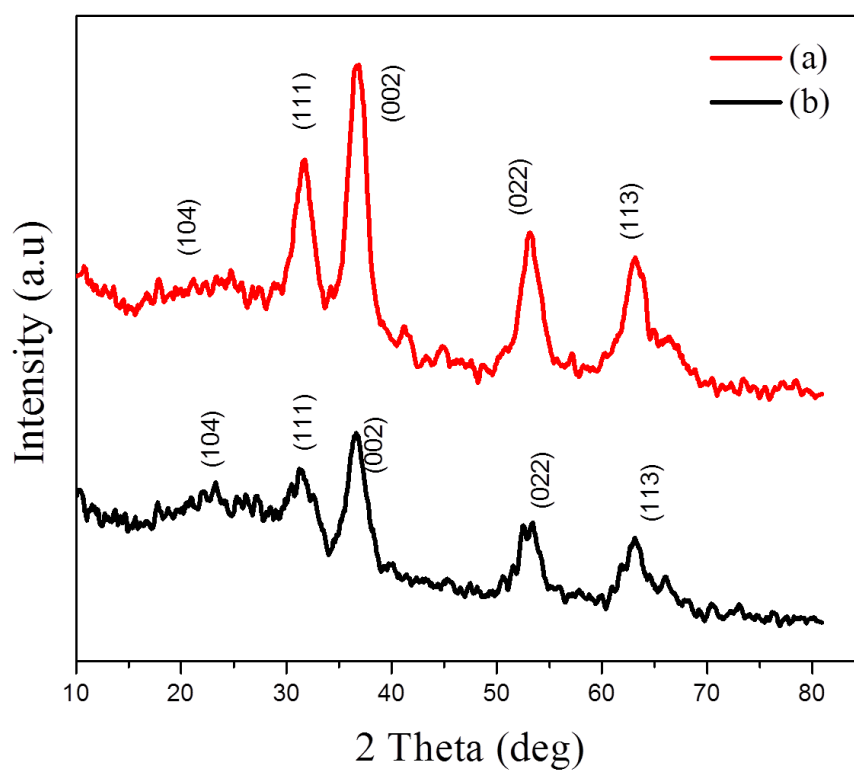
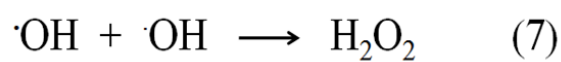
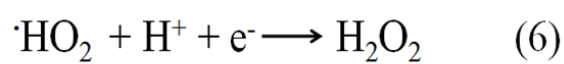
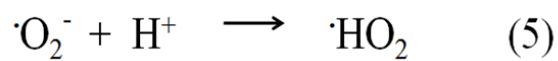
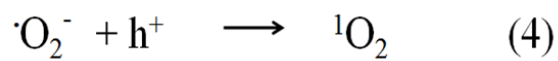
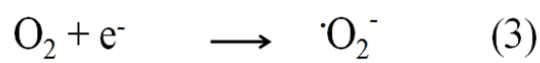
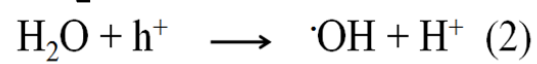
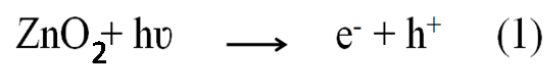


Fig. S10: XRD patterns of ZnO₂/ ppy after dye degradation in (a) Dark (b) visible light



Scheme S1 : Mechanism of ROS generation under UV irradiation