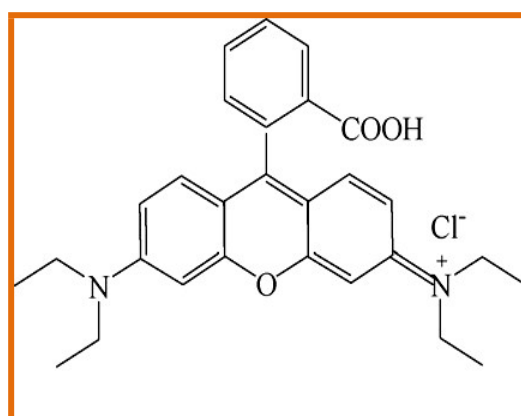


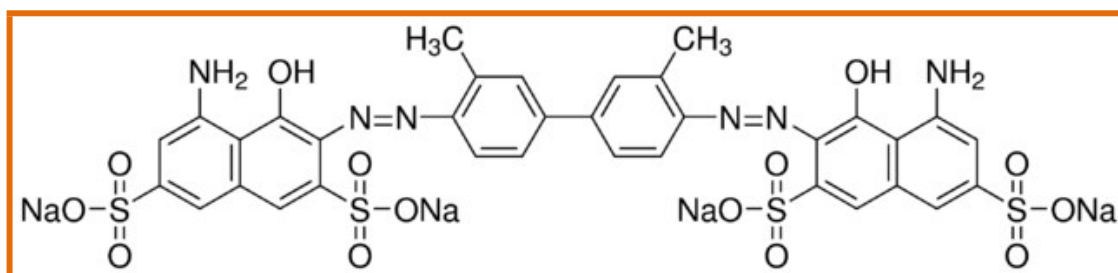
Supporting Information

Hydrothermal fabrication of natural sun light active Dy_2WO_6 doped ZnO and its enhanced Photo – Electrocatalytic activity and Self–Cleaning properties

K. Thirumalai, M. Shanthi and M. Swaminathan*

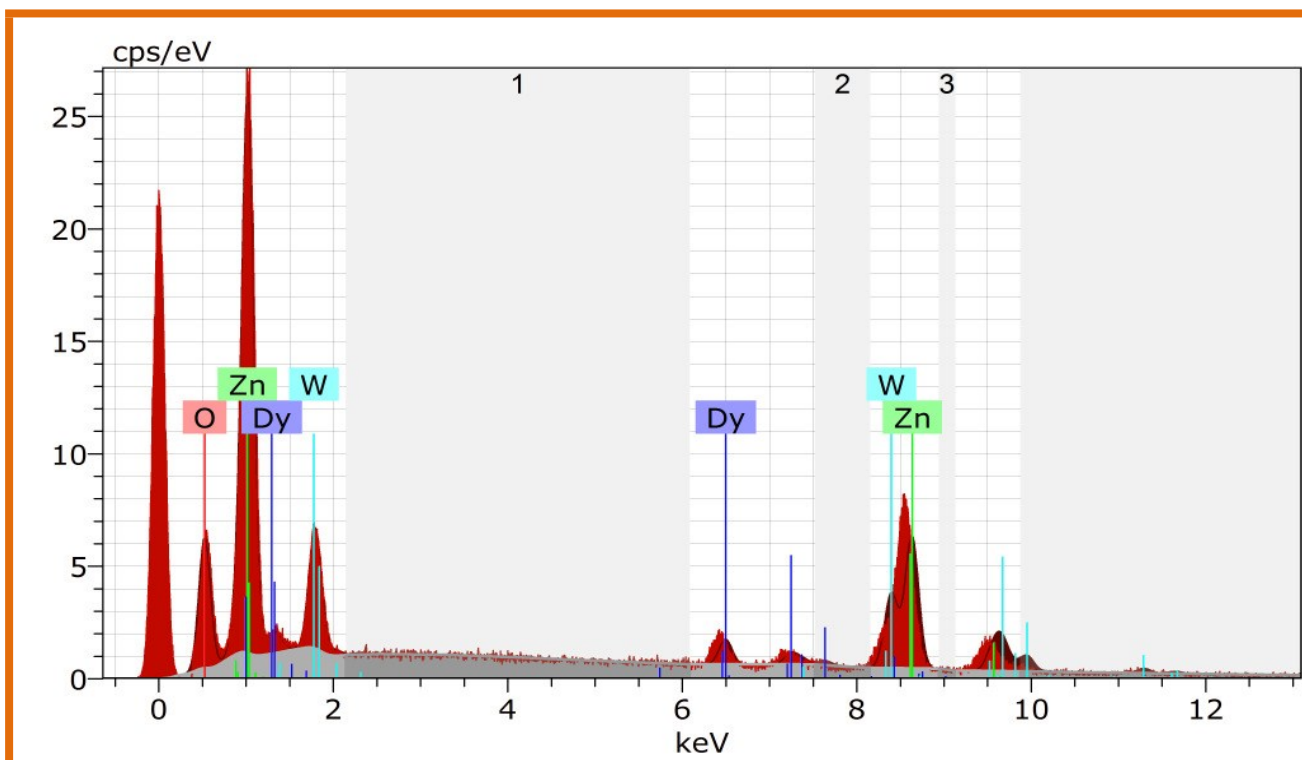


Rhodamine-B



Trypan Blue

Figure.S1 Chemical Structure of dyes



Spectrum: Dy₂WO₆-ZnO

Element	Series	unn. [wt.%]	C norm. [wt.%]	C Atom. [at.%]	C Error (3 Sigma) [wt.%]
Oxygen	K-series	24.47	23.89	68.00	9.94
Zinc	K-series	29.49	28.79	20.05	2.58
Dysprosium	L-series	7.19	7.01	1.97	0.73
Tungsten	L-series	41.29	40.30	9.98	3.63
Total:		102.44	100.00	100.00	

Figure.S2 EDS spectrum of Dy₂WO₆-ZnO

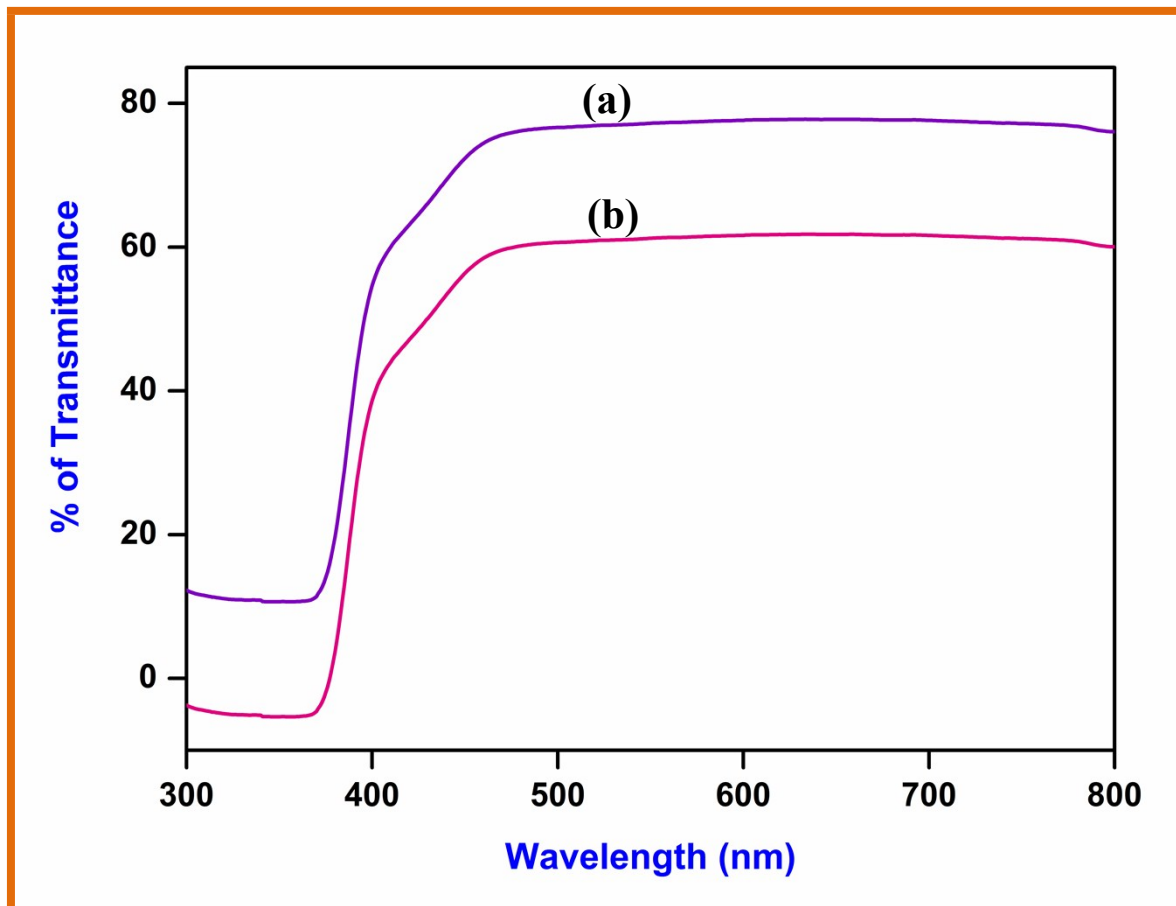


Figure.S3 Diffused reflectance spectrum of Dy₂WO₆-ZnO (a) prepared ZnO and (b) Dy₂WO₆ doped ZnO

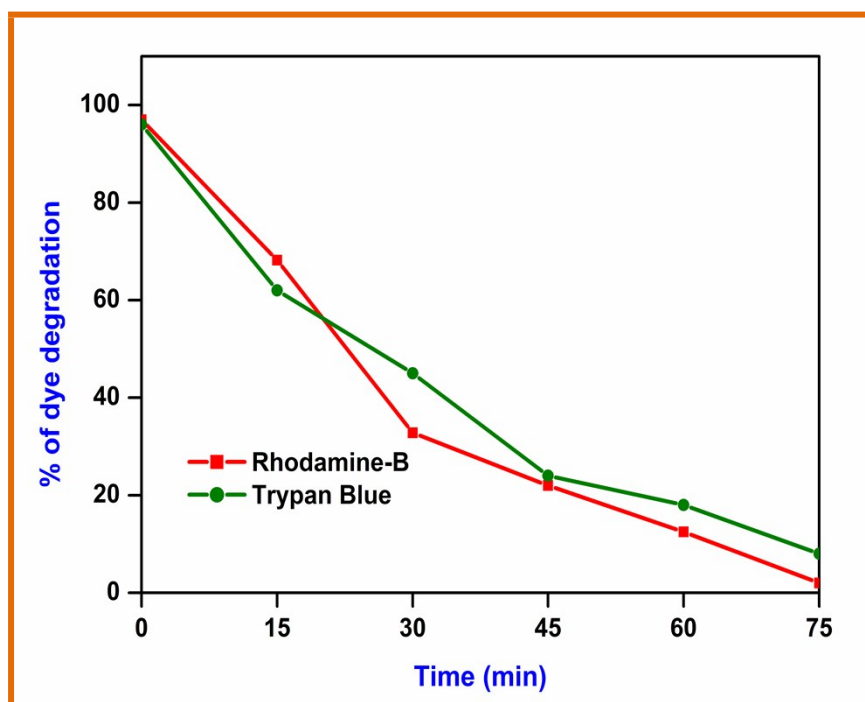


Figure.S4 Photodegradability of Rh-B and TB with $\text{Dy}_2\text{WO}_6\text{-ZnO}$: dye concentration Rh-B = 3×10^{-4} M, catalyst suspended = 3 g L^{-1} , pH = 7, airflow rate = 8.1 mL s^{-1} and irradiation time 75 min, $I_{\text{solar}} = 1250 \times 100 \text{ Lux} \pm 100$ (b) TB dye concentration = 1×10^{-4} M, catalyst suspended = 3 g L^{-1} , pH = 7, airflow rate = 8.1 mL s^{-1} and irradiation time 75 min, $I_{\text{solar}} = 1250 \times 100 \text{ Lux} \pm 100$.

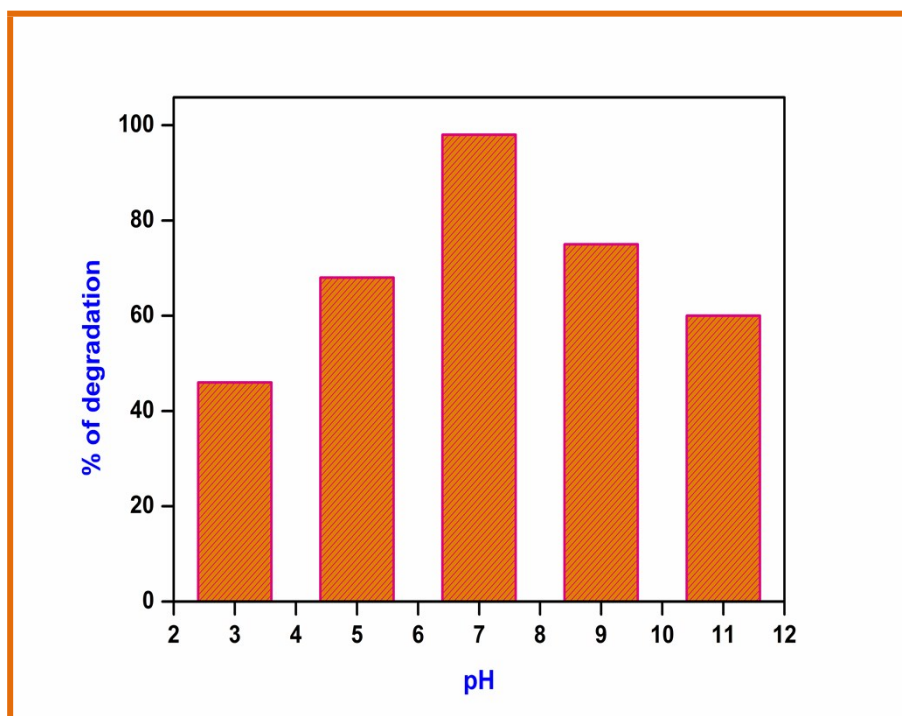


Figure.S5 Effect of pH on degradation of Rh-B dye

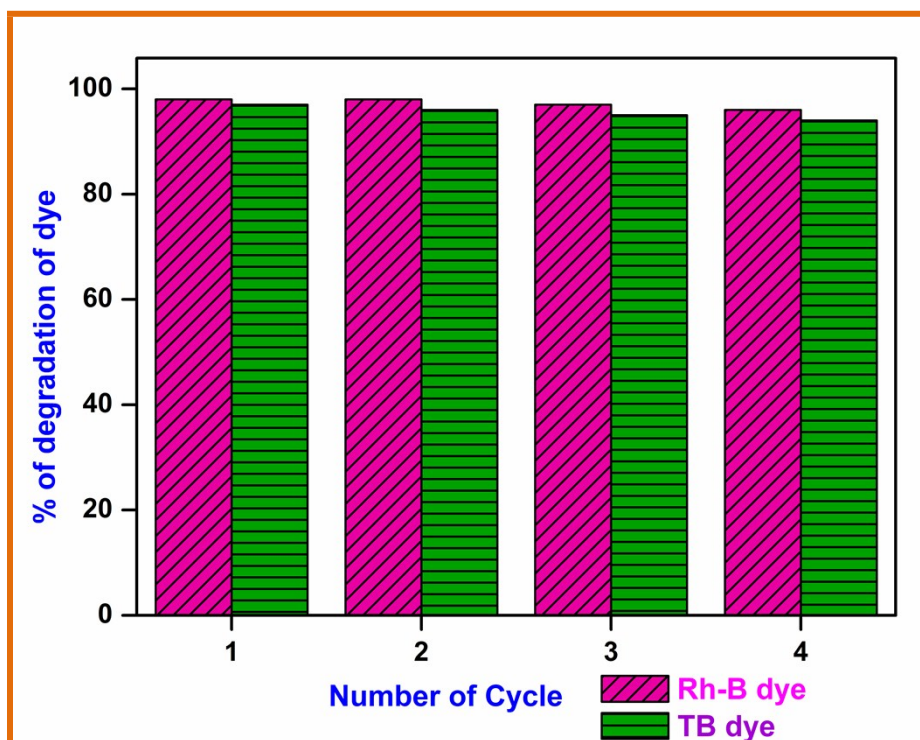


Figure.S6 Reusability of $\text{Dy}_2\text{WO}_6\text{-ZnO}$ on Rh-B degradation dye concentration = 3×10^{-4} M, catalyst suspended = 3 g L^{-1} , pH = 7, airflow rate = 8.1 mL s^{-1} and irradiation time 75 min, $I_{\text{solar}} = 1250 \times 100 \text{ Lux} \pm 100$.

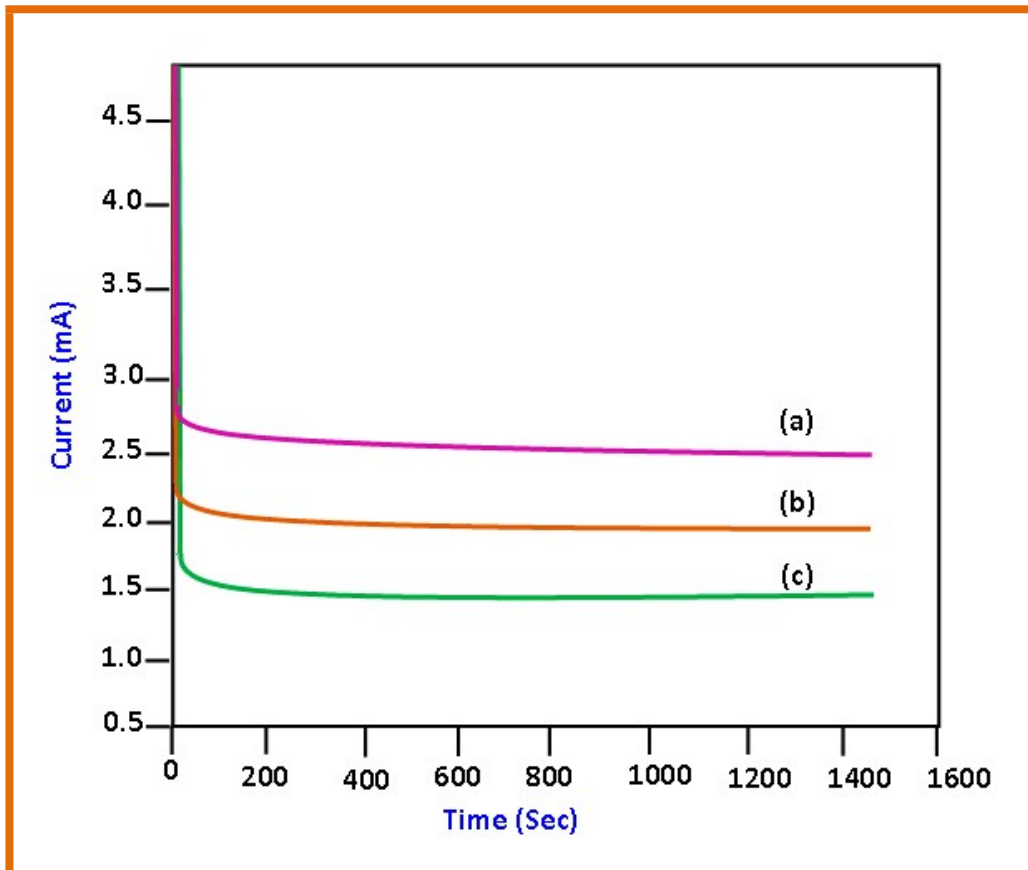


Figure.S7 Chronoamperometry curves of (a) $\text{Dy}_2\text{WO}_6\text{-ZnO}$ (b) Dy_2WO_6 and (c) Prepared ZnO in N_2 and saturated 0.5 M NaOH + 0.5 M CH_3OH solution at an operation potential of 0.1 V at 25° C.