Electronic Supplementary Data

Synthesis and characterization of gadolinium tungstate doped zinc oxide photocatalyst

Kuppulingam Thirumalaí², Manohar Shanthi² & Meenakshisundaram Swaminathan* ¾ a, b
²Photocatalysis Laboratory, Department of Chemistry, Annamalai University, Annamalai Nagar 608 002, Tamil Nadu, India
¾Department of Chemistry, International Research Centre, Kalasalingam University, Krishnan Kovil 626 126, India
Email: chemres50@gmail.com; m.swaminathan@klu.ac.in

No.  Contents                                                                                     Pg No.
1    Fig. S1 – Chemical structure of dyes                                                           2
2    Fig. S2 – K-M bandgap plot of (a) prepared ZnO and (b) Gd₂WO₆-ZnO                           3
3    Fig. S3 – Changes in UV–vis spectra of Rh–B                                                  4
4    Fig. S4 – Changes in UV–vis spectra of TB                                                    5
5    Fig. S5 – Effect of pH on degradation of dyes Rh–B and TB dyes                               6
6    Fig. S6 – Reusability of Gd₂WO₆–ZnO on degradation of dyes Rh–B and TB                   7
Rhodamine-B

Trypan Blue

Fig.S1 Chemical Structure of dyes
Fig. S2 K–M band gap plot of (a) prepared ZnO and (b) Gd$_2$WO$_6$-ZnO
Fig. S3 Changes in UV–vis spectra of Rh-B on irradiation with UV-A light in the presence of Gd2WO6-ZnO: [Rh-B] = 3× 10^{-4} M; pH = 7; catalyst suspended = 3 g L^{-1}; airflow rate = 8.1 mL s^{-1}; I_{UV} = 1.381 × 10^{-6} einstein L^{-1} s^{-1}.
Fig. S4 Changes in UV–vis spectra of TB on irradiation with UV-A light in the presence of Gd₂WO₆–ZnO: [TB] = 1 × 10⁻⁴ M; pH = 7; catalyst suspended = 3 g L⁻¹; airflow rate = 8.1 mL s⁻¹; $I_{UV} = 1.381 \times 10^{-6}$ einstein L⁻¹ s⁻¹.
Fig. S5 Effect of pH on dye adsorption.
Fig. S6 Reusability of Gd₂WO₆–ZnO on Rh-B degradation: dye concentration = 3×10⁻⁴M, catalyst suspended = 3 g L⁻¹, pH = 7, airflow rate = 8.1 mL s⁻¹, $I_{UV} = 1.381 \times 10^{-6}$ einstein L⁻¹ s⁻¹.