

## Supporting Documents

### **Facile Fabrication of Embedded g-C<sub>3</sub>N<sub>4</sub>/MoS<sub>2</sub> Nano-Adsorbent for Removal of Persistent Rhodamine B Contaminant in Aqueous Solution**

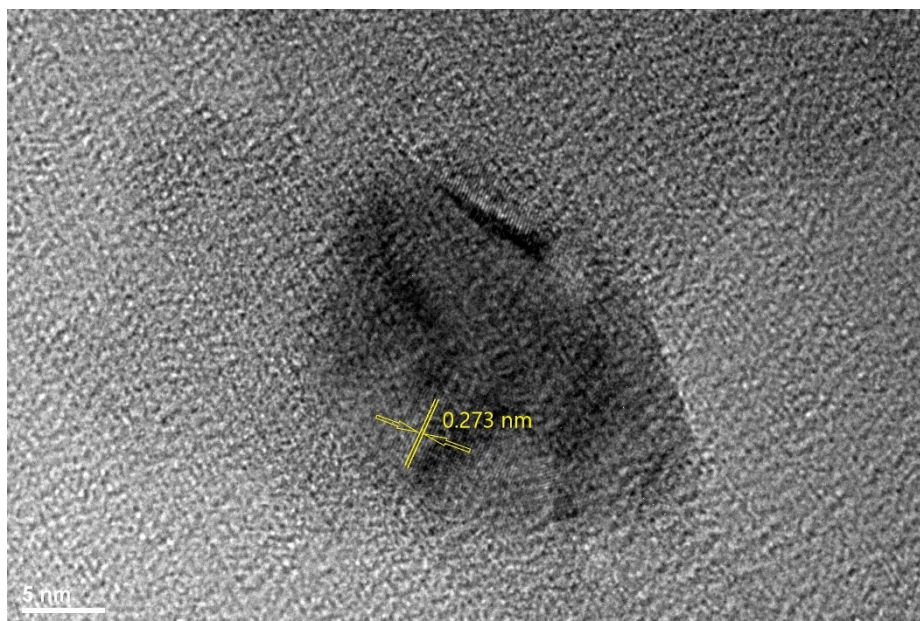
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India

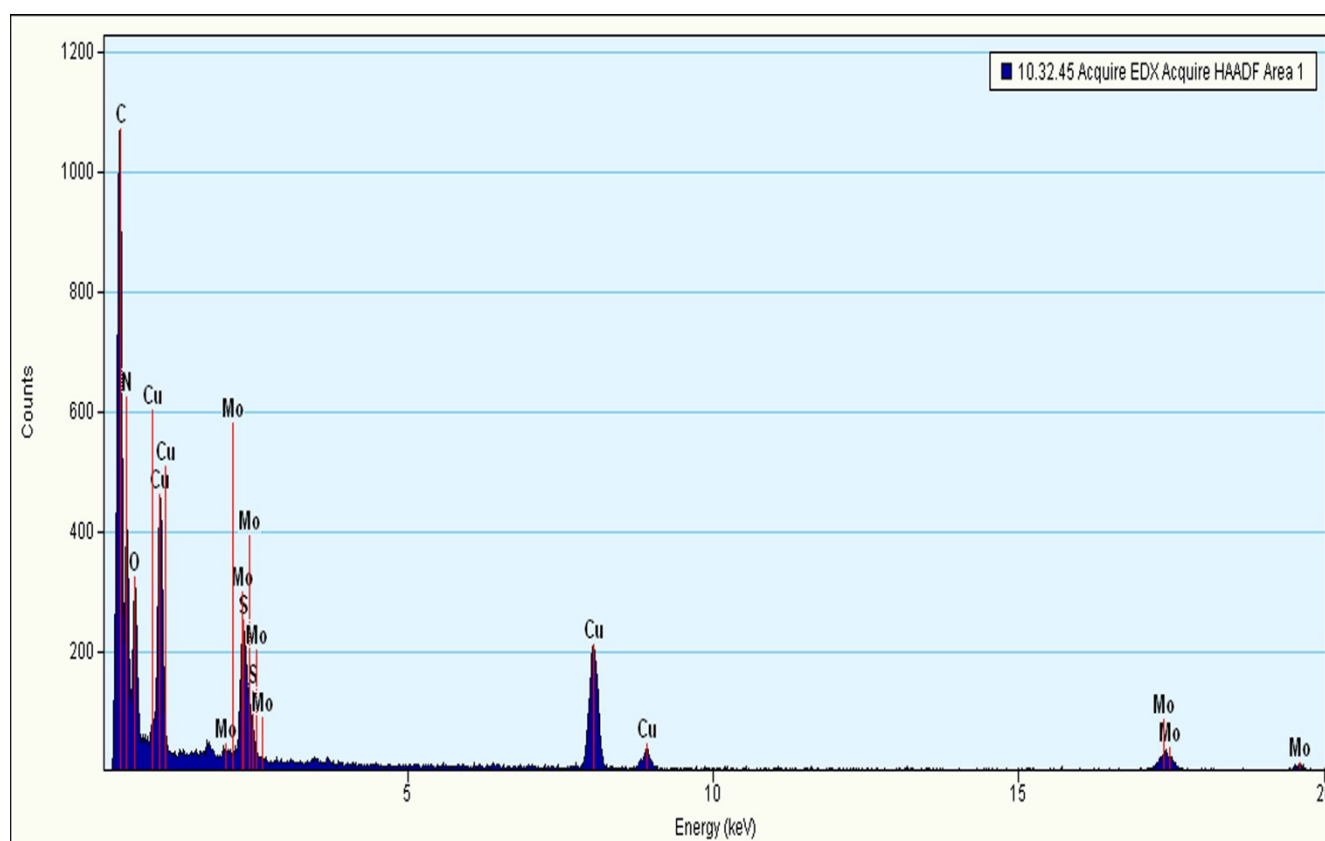
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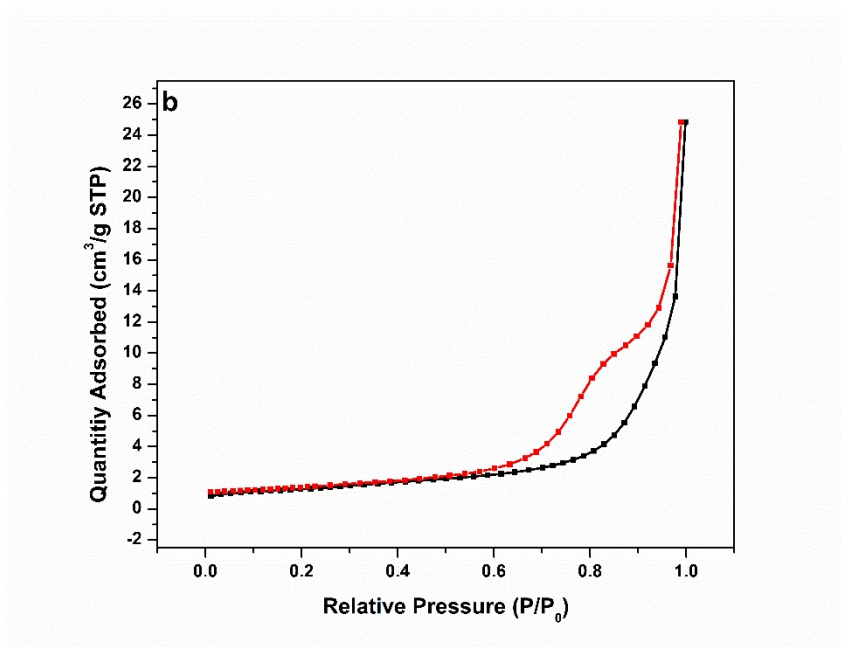
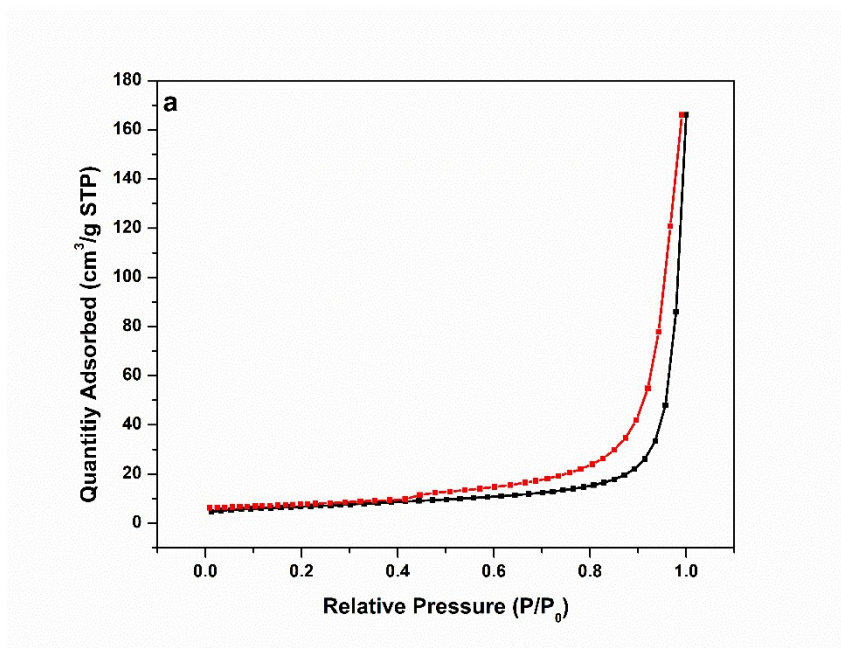
Email: [mkmandal.che@nitdgp.ac.in](mailto:mkmandal.che@nitdgp.ac.in)



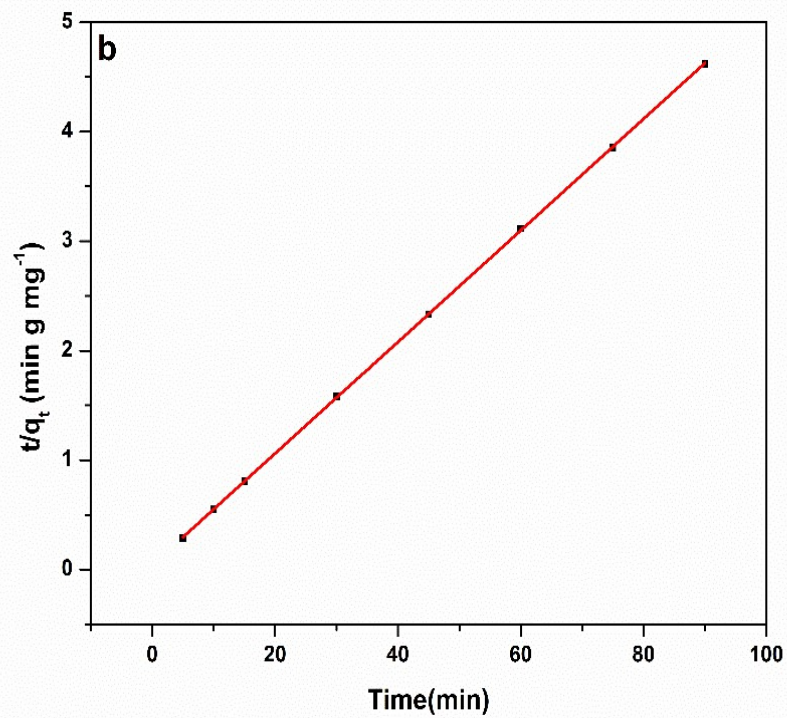
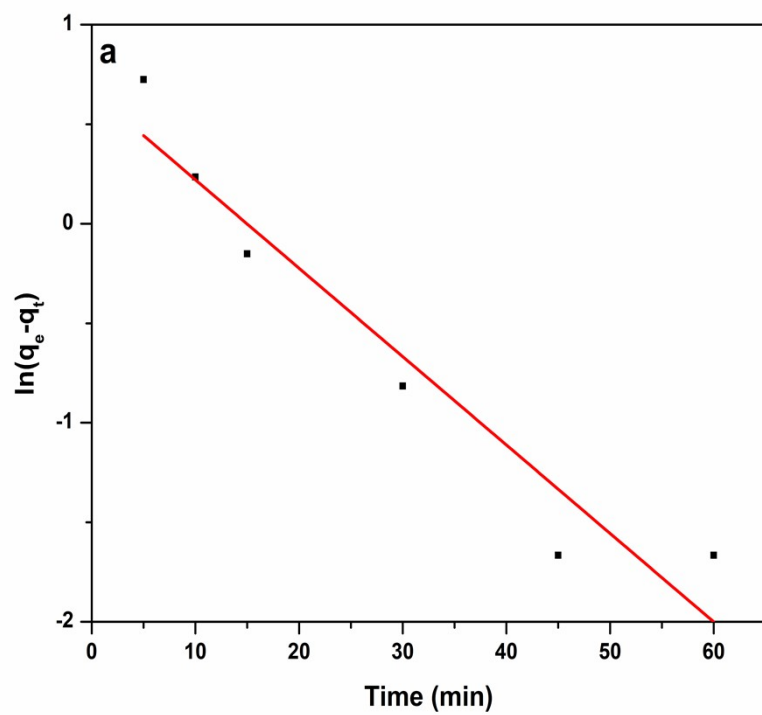
**Fig. S1** High resolution TEM image of g-C<sub>3</sub>N<sub>4</sub>/MoS<sub>2</sub> composite

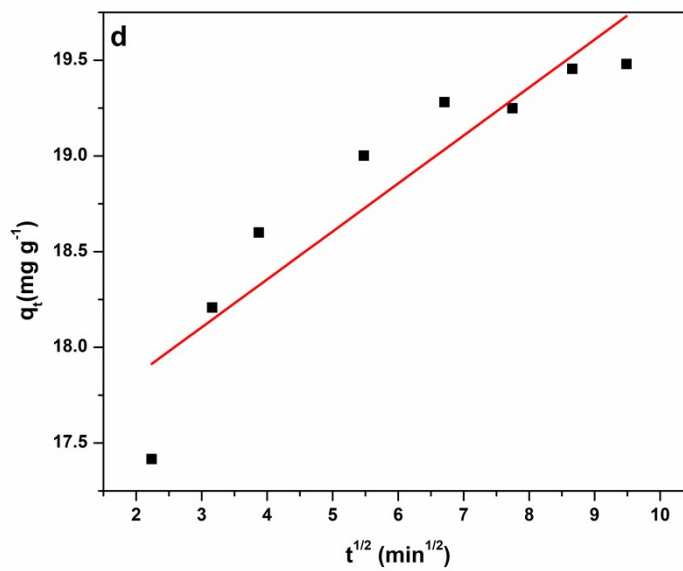
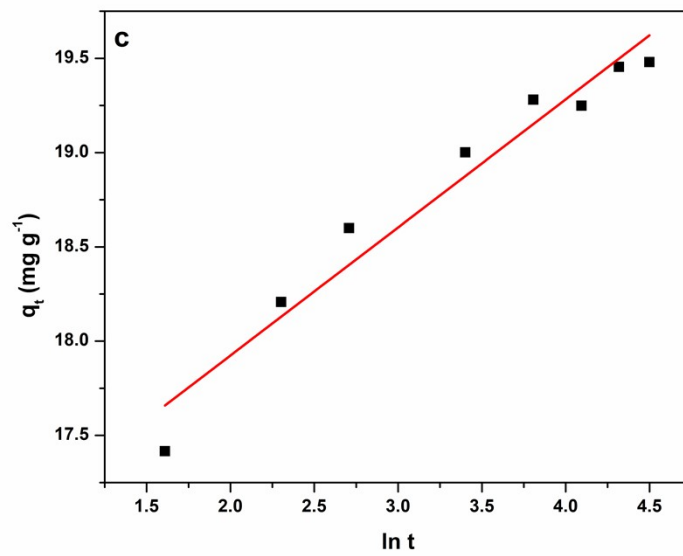


**Fig. S2** EDX spectra of g-C<sub>3</sub>N<sub>4</sub>/MoS<sub>2</sub> composite

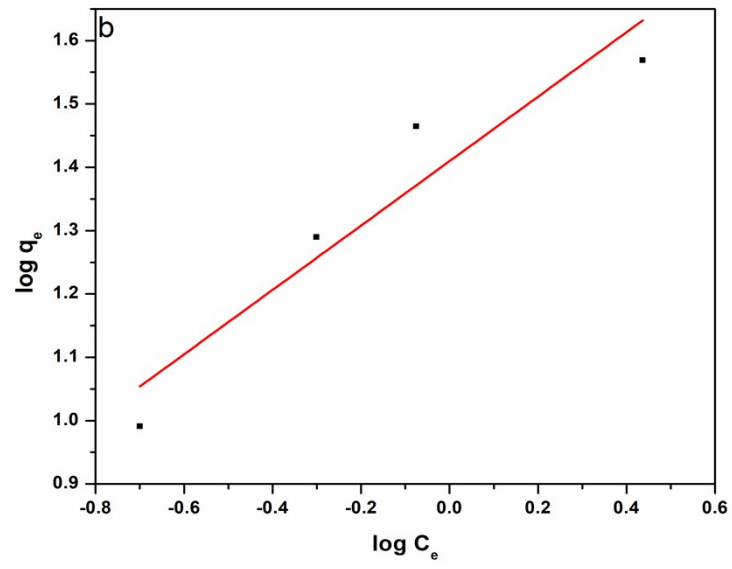
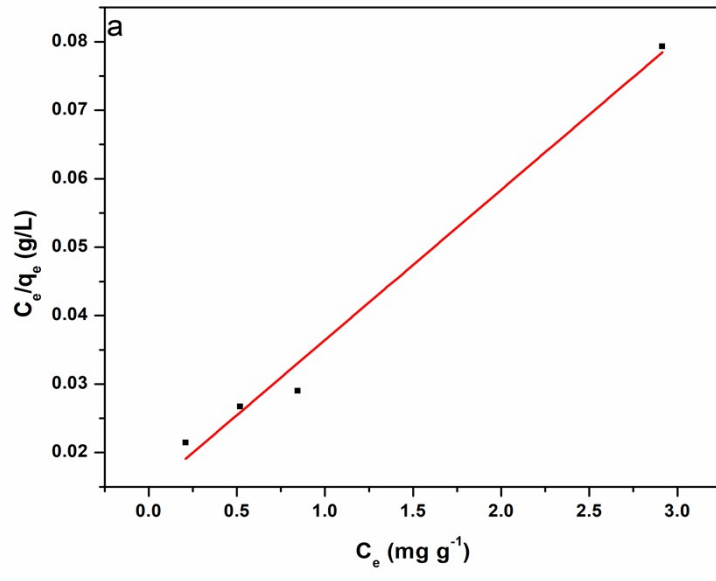


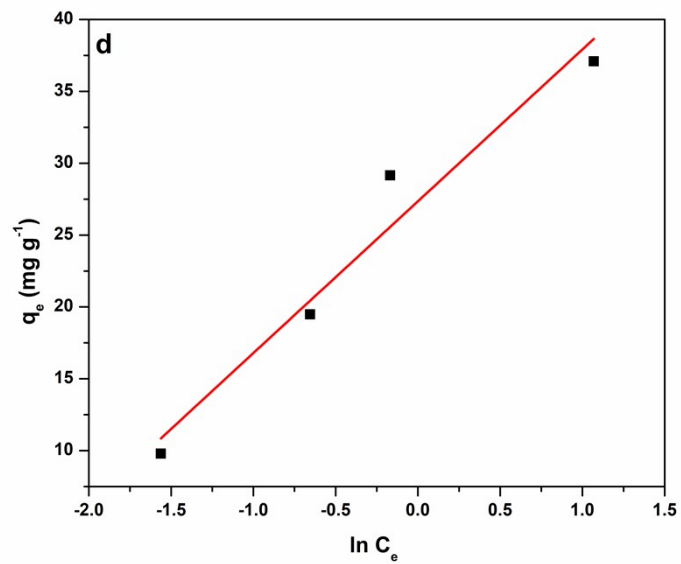
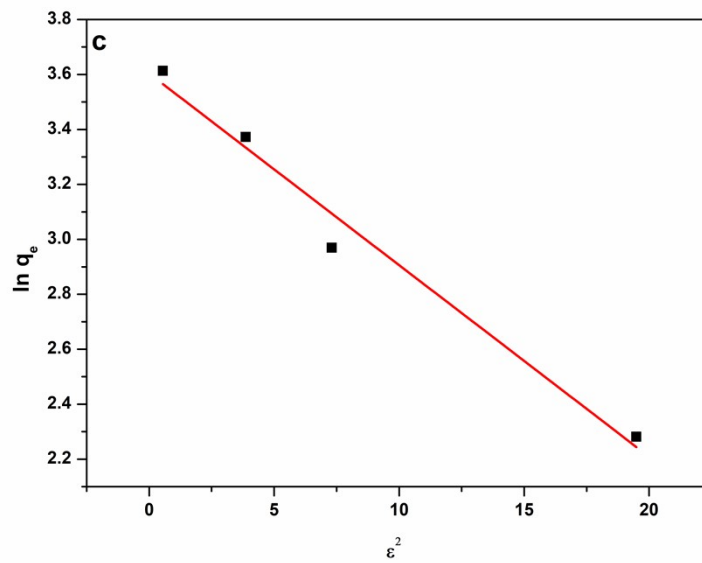
**Fig. S3** (a) N<sub>2</sub> sorption isotherms of pristine g-C<sub>3</sub>N<sub>4</sub> and (b) N<sub>2</sub> sorption isotherms of pristine MoS<sub>2</sub>



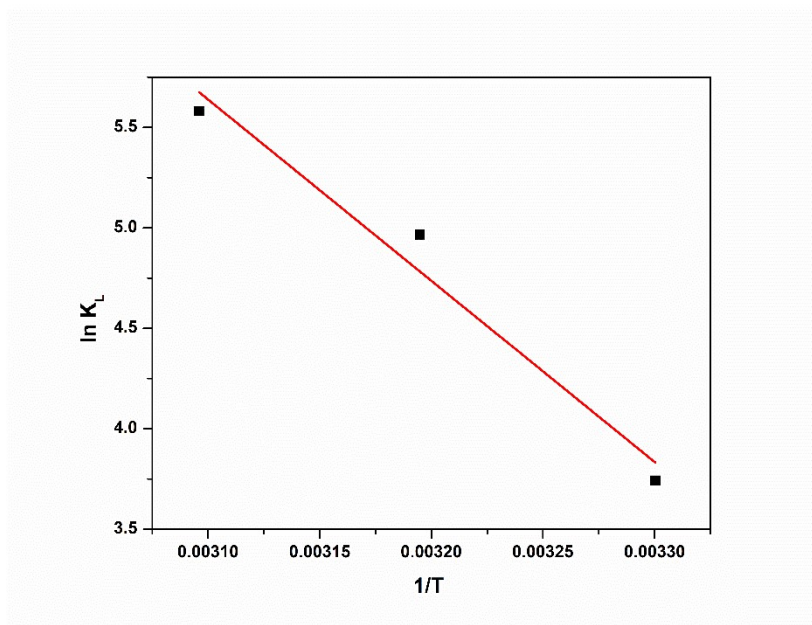


**Fig.S4** (a) Linear fitted pseudo-first-order kinetic model (b) Linear fitted pseudo-second-order kinetic model (c) Elovich Model and (d) Intraparticle diffusion model (20 ppm initial dye concentration, pH 7 and 1.0 g/L adsorbent dosage)



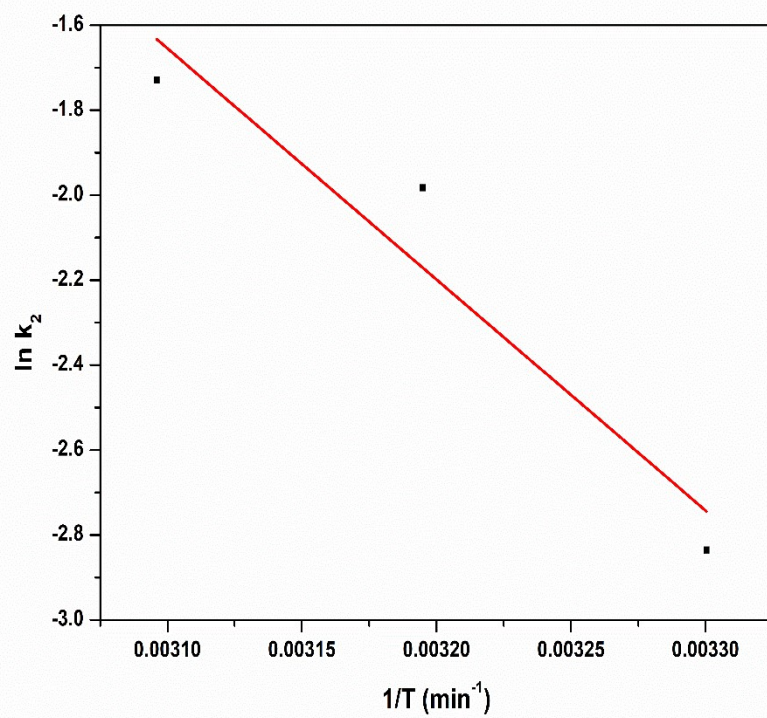


**Fig.S5** (a) Langmuir isotherm plot and (b) Freundlich isotherm plot for adsorption of RhB on  $g\text{-C}_3\text{N}_4/\text{MoS}_2$  adsorbent (c) D-R isotherm model and (d) Tempkin model (20 ppm initial dye concentration, pH 7 and 1.0 g/L adsorbent dosage)

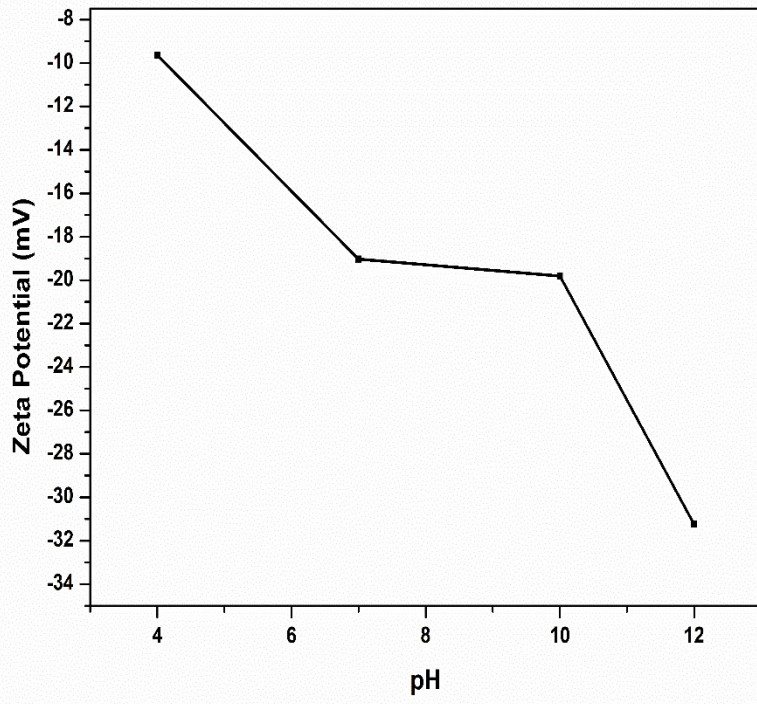


**Fig.S6** Thermodynamic plot for RhB adsorption (20 ppm initial dye concentration, pH 7, and 1.0 g/L adsorbent dosage)





**Fig. S7** Activation energy determination



**Fig. S8** Plot between pH vs Zeta potential of CNM composite