

Supporting Information (SI)

Reduction degree and property study of graphene nanosheets prepared with different reducing agents and their applicability of being a carrier of **Ru(phen)₃Cl₂ luminescent sensor for DNA detection**

*Hongjuan Li, Jia Wen, Ruijin Yu, Caihui Bai, Yongqian Xu, Shiguo Sun**

College of Science, Northwest A&F University, Yangling, Shaanxi, 712100, P. R. China

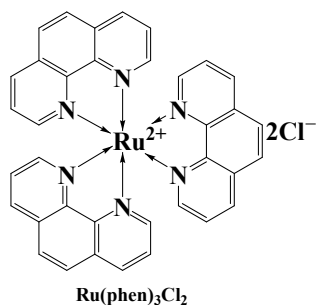


Fig. S1 The structures of Ru(phen)₃Cl₂.

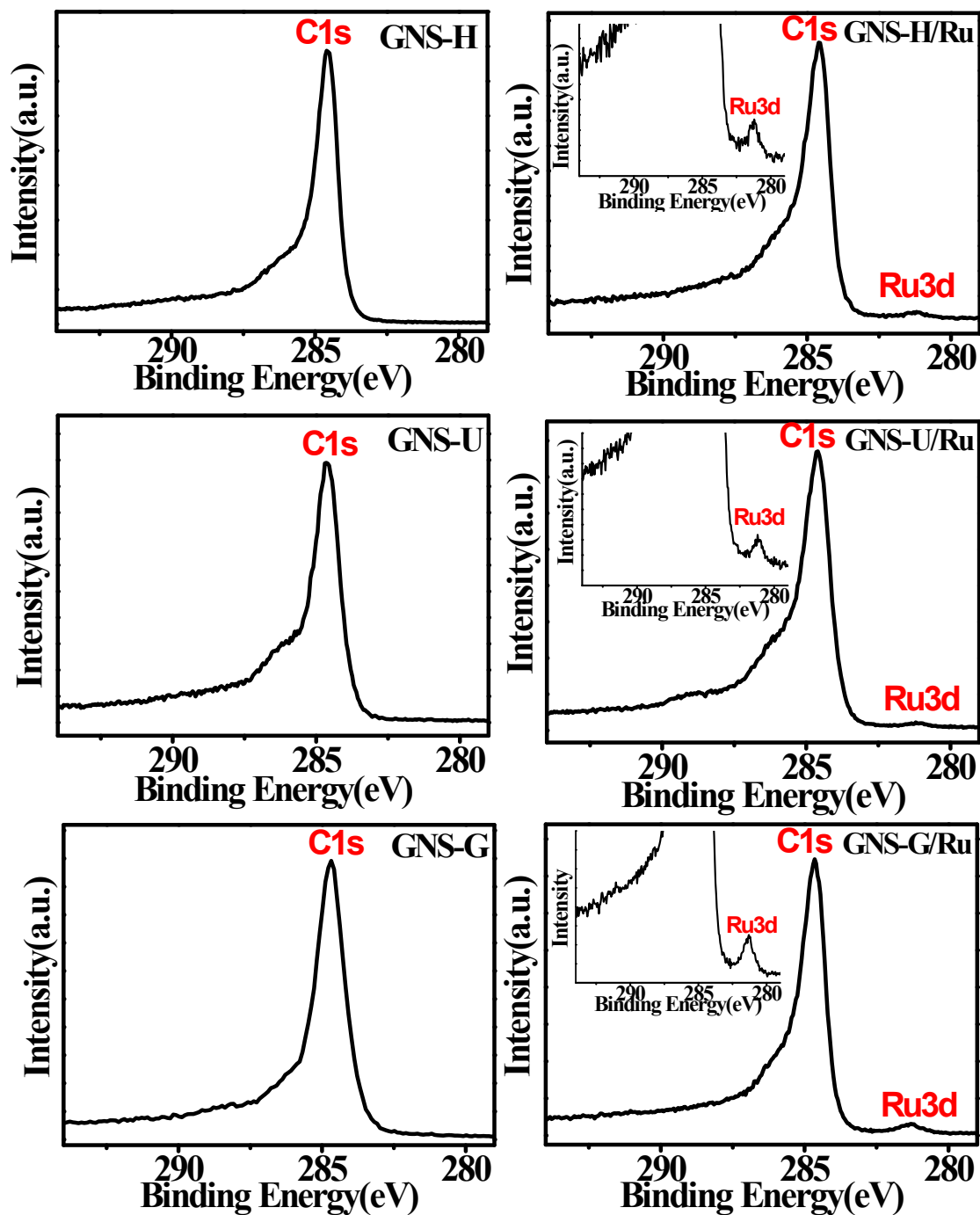


Fig. S2 C1s XPS spectra of the GNS samples and GNS/Ru(phen)₃Cl₂ (Ru). Inset shows the magnification of the Ru3d XPS spectra.

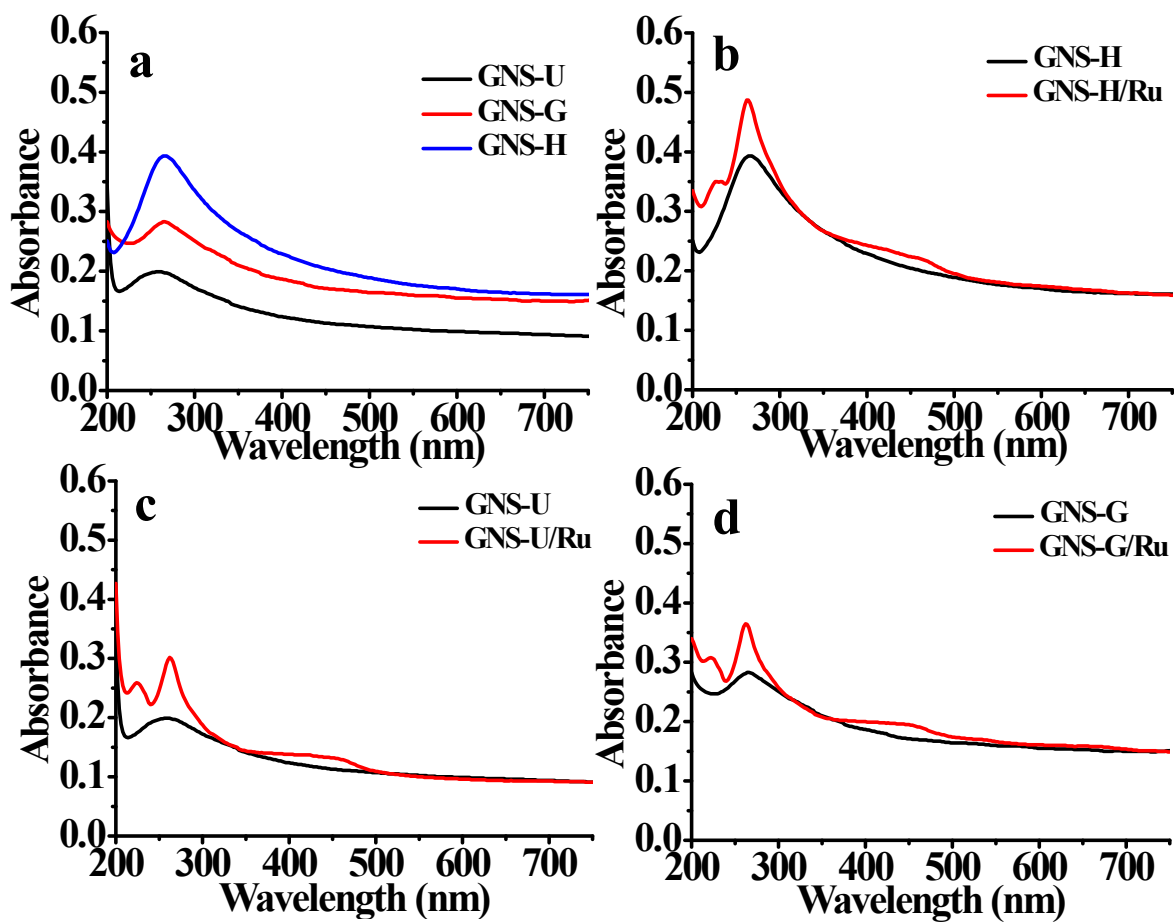


Fig. S3 UV-vis absorption spectra of the GNS samples and GNS/Ru(phen)₃Cl₂ (Ru).

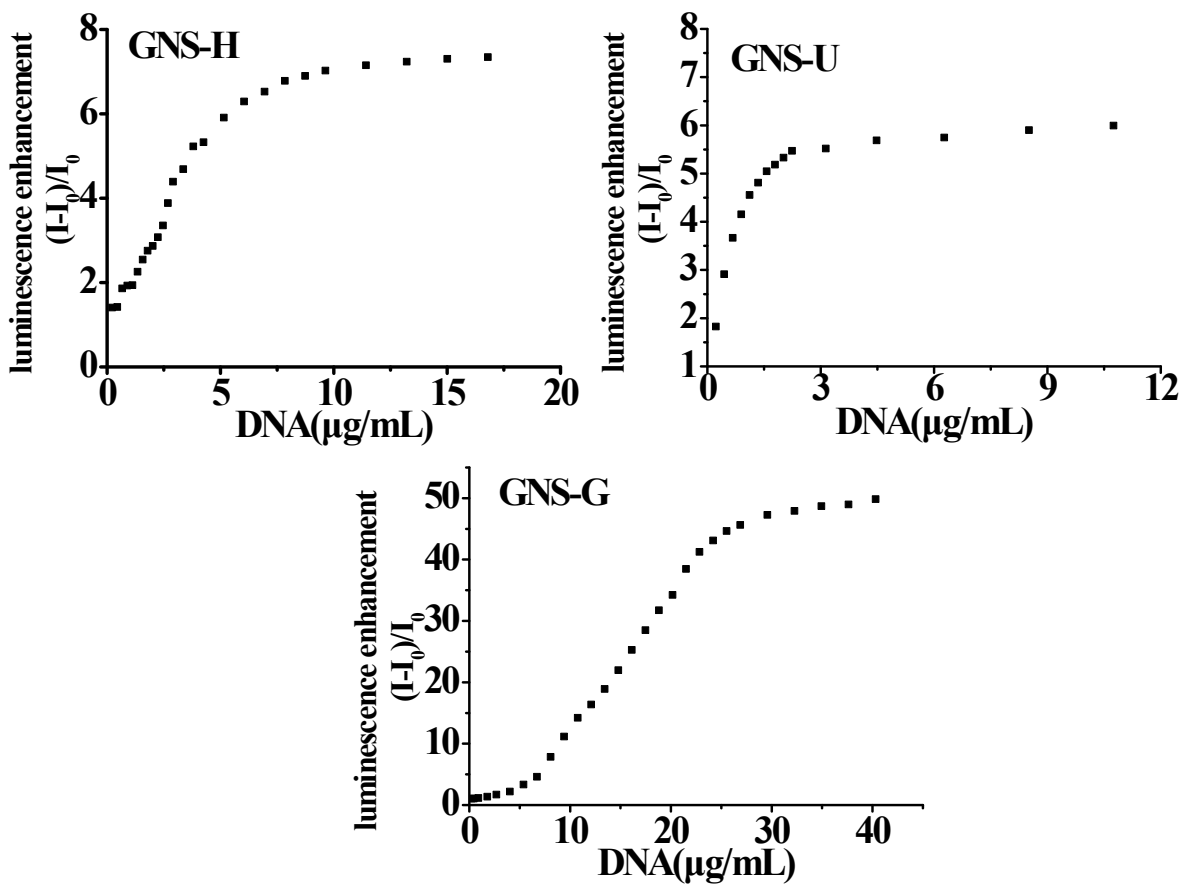


Fig. S4 Luminescence response of the $\text{Ru}(\text{phen})_3\text{Cl}_2$ sensor upon addition of different concentration of CT DNA in the presence of a certain concentration of GNS (6.9 $\mu\text{g}/\text{mL}$ GNS-H, 5.6 $\mu\text{g}/\text{mL}$ GNS-U, 5.3 $\mu\text{g}/\text{mL}$ GNS-G), $\text{Ex}=464$ nm.

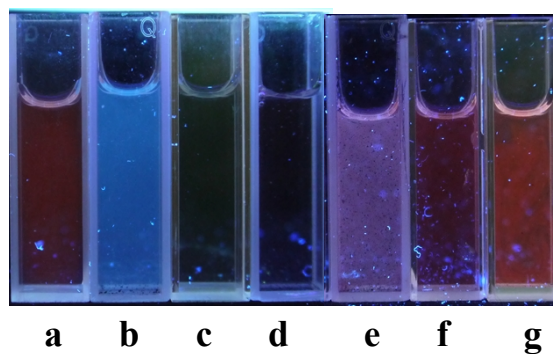


Fig. S5 Optical image of (a) $0.49 \mu\text{M Ru}(\text{phen})_3\text{Cl}_2$ (Ru); (b) Ru+ $5.3 \mu\text{g/mL GNS-G}$; (c) Ru+ $6.9 \mu\text{g/mL GNS-H}$; (d) Ru+ $5.6 \mu\text{g/mL GNS-U}$; (e) Ru+ $5.3 \mu\text{g/mL GNS-G}$ + $40.3 \mu\text{g/mL DNA}$; (f) Ru+ $6.9 \mu\text{g/mL GNS-H}$ + $16.8 \mu\text{g/mL DNA}$; (g) Ru+ $5.6 \mu\text{g/mL GNS-U}$ + $10.7 \mu\text{g/mL DNA}$. All the photos were taken under a hand-held UV lamp.