Supporting Informations

Graphene Oxide Nanocomposite Magnetic Microbeads for the Remediation of Positively Charged Aromatic Compounds

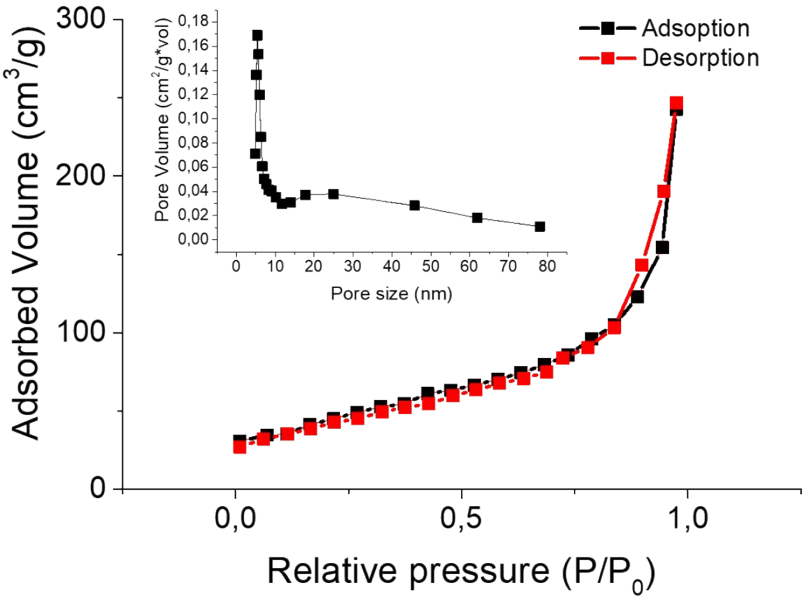

Fig. S1 MaGO beads N_2 adsorption-desorption isotherm and pore size distribution.

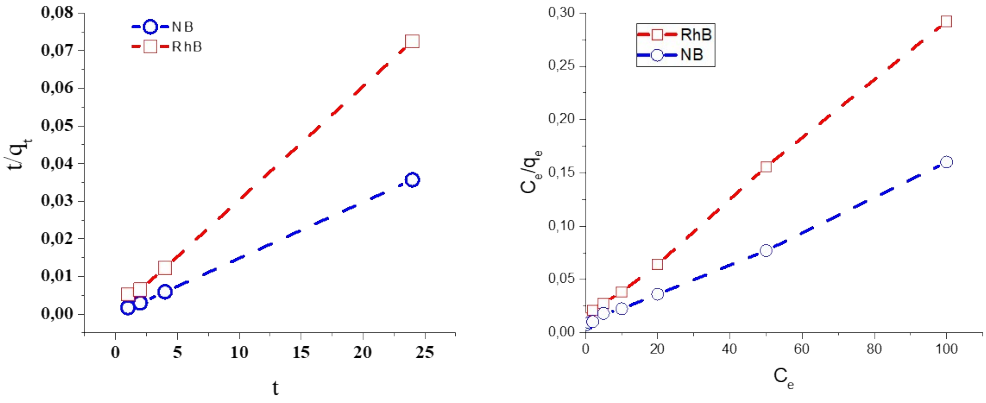

Fig. S2. pseudo-second-order kinetic models (left) and adsorption isotherm (right) for NB (blue line) and RhB (red line).

Dye	Parameters	MaGO	GO
NB	q_{eq} (mg/g)	663.45	897.56
	K_L (L/mg)	0.205	0.375
	R^2	0.997	0.896
RhB	q_{eq} (mg/g)	357.14	568.45
	K_L (L/mg)	0.23	0.296
	R^2	0.993	0.846

Table S1 Kinetic parameters of NB and RhB adsorption on MaGO and GO at 298 K. q_{eq} is the amount of dye adsorbed per unit weight of GO at equilibrium concentration (mg/g), while K_L is the Langmuir constant.

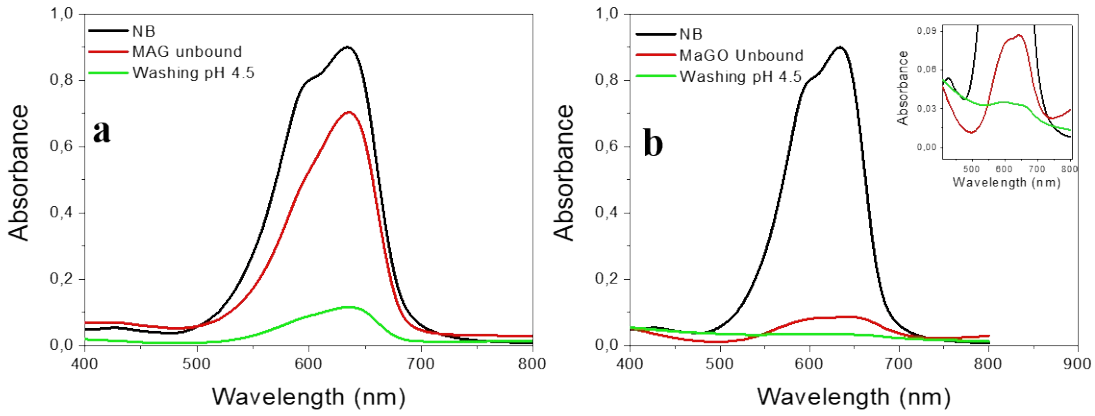

Fig. S3. UV-Vis spectra of NB solution and supernatants after absorption for 1 minute with equal quantities of MAG (**a**) and MaGO (**b**) and subsequent washing of the particles with solution at pH 4.5 for 10 minutes. Inset: zoom of the spectra shown in Fig. S2b.

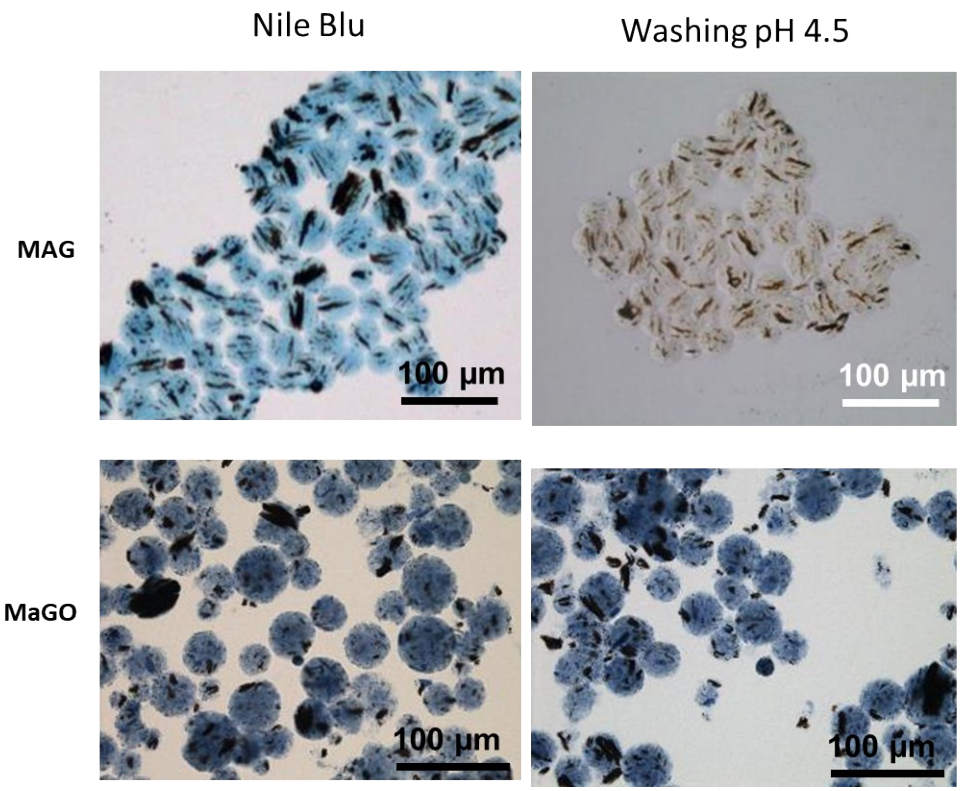

Fig. S4. Images of MAG (**up left**) and MaGO (**down left**) incubated with NB and the same beads after washing with water at pH 4.5 (**right images**).

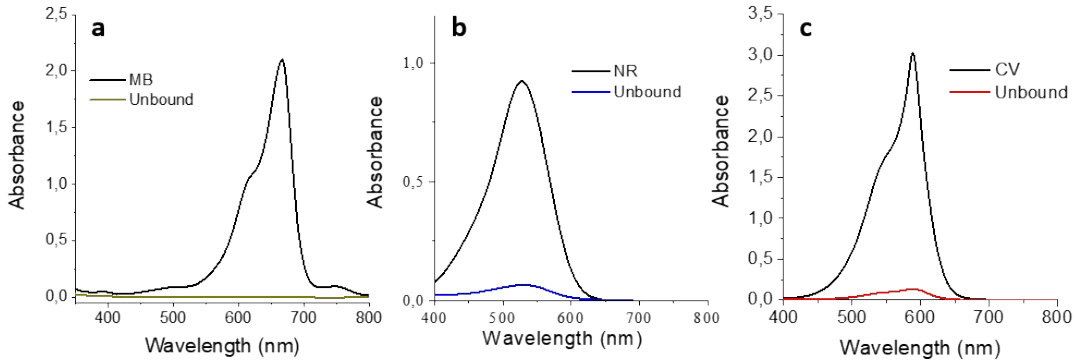

Fig. S5. UV-visible spectroscopy of the Methylene Blue (MB), Neutral Red (NR) and Crystal Violet (CV) before and after 1 minute incubation with MaGO

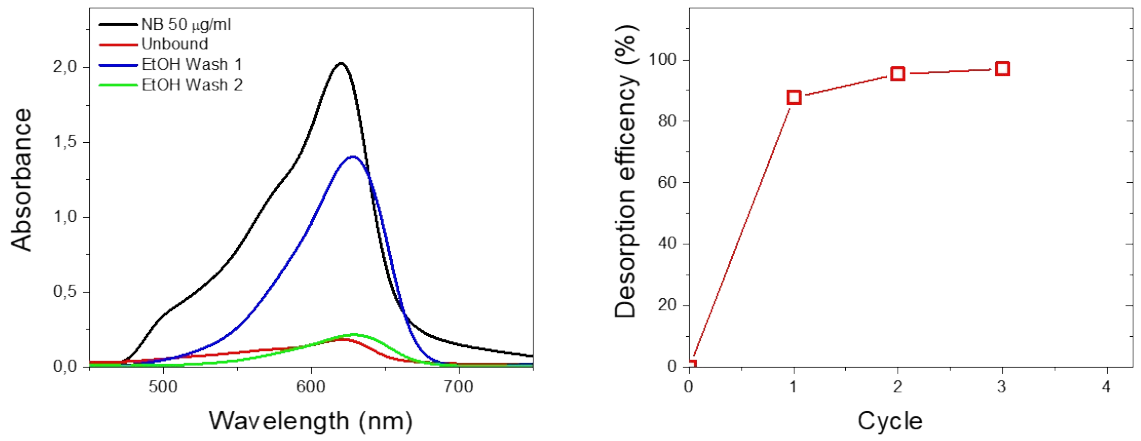

Fig. S6. Left. UV-visible spectroscopy of the NB solution in $CHCl_3$ (black line), the supernatant after absorption for 1 minute with MAGO (red line) and subsequent washing of the particles with Ethanol solution for 1 minute (blue and green lines). **Right:** Plot of the NB desorption efficiency vs cycle wash (each cycle is 1 minute).

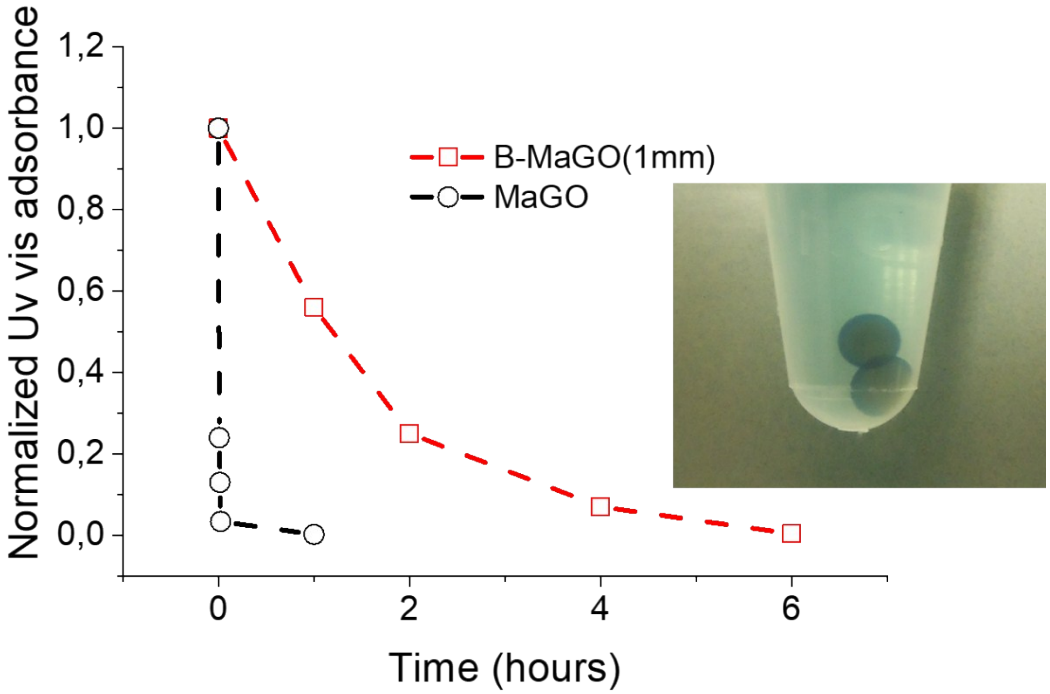

Fig. S7. Time course measurements of 10 µg/ml MB decolorization by 1mm MaGO beads (red line) and MaGO beads (black line).

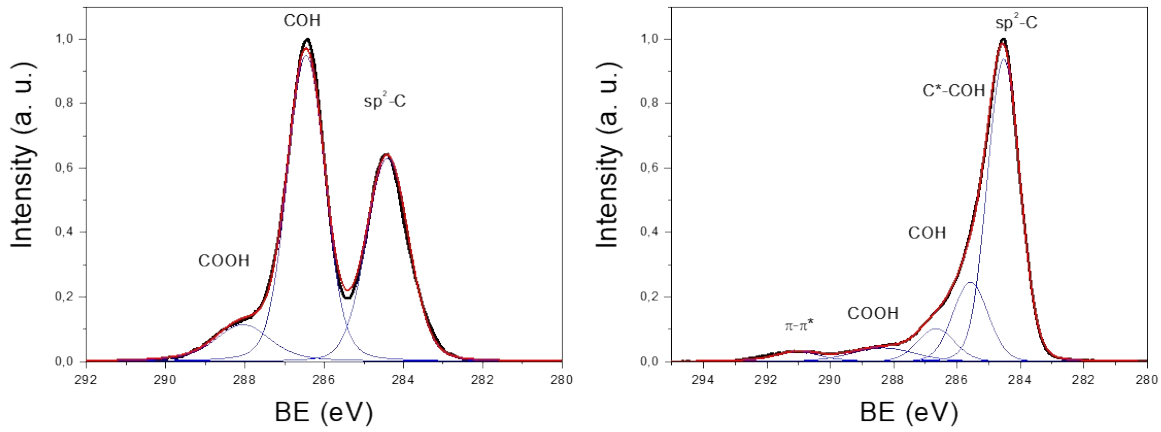

Fig. S8. X-ray photoelectron spectroscopy C1s core line peak fitting of GO (left) and rGO (right).

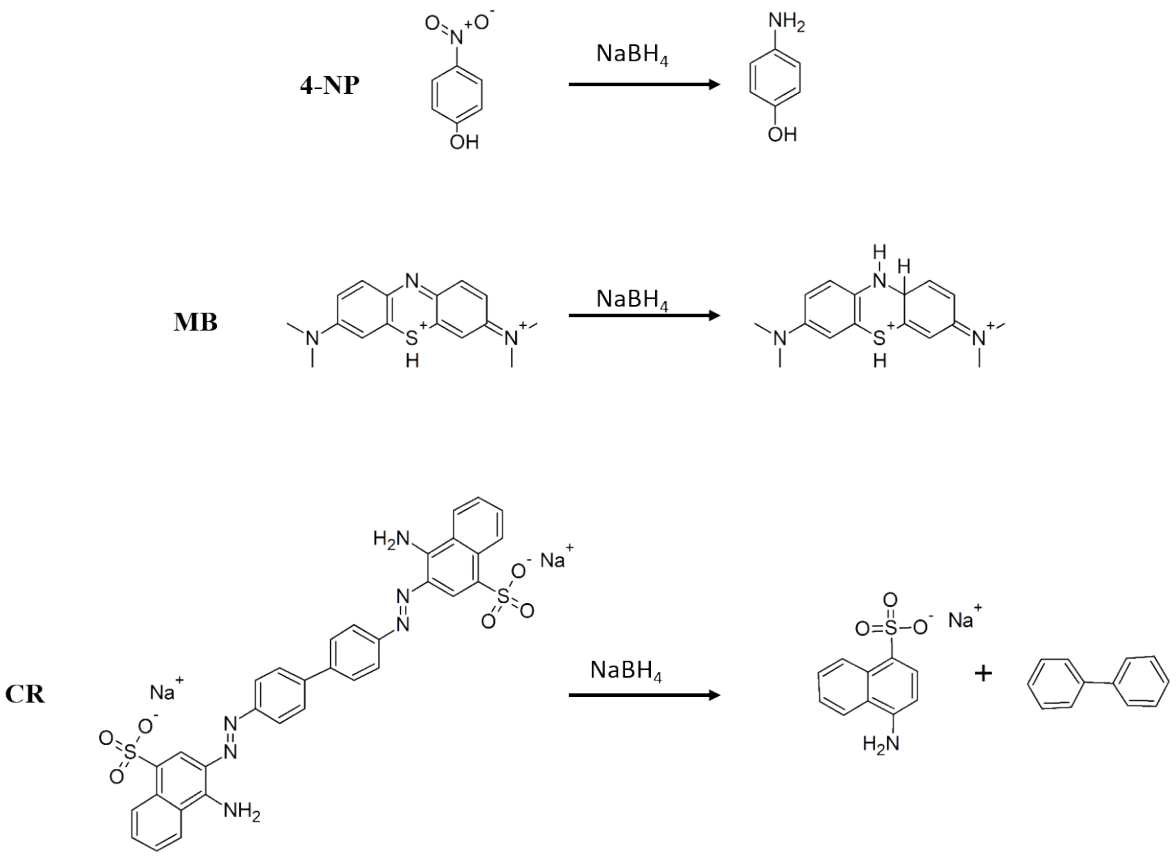

Fig. S9. Schemes of the reduction reaction of 4-NP, MB and CR by $NaBH_4$ catalysed by Pd^0.

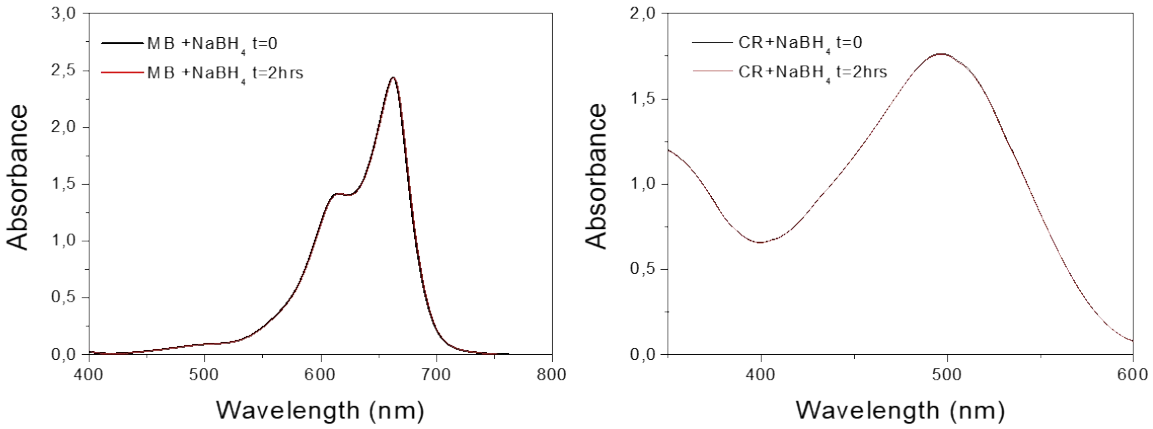

Fig. S10. UV-visible spectroscopy of the MB and CR solutions incubated with $NaBH_4$ for 2hrs.