

# Supplementary Information

## **Synergistically constructed polyamine/nanosilica/graphene composites: preparation, features and removal of Hg<sup>2+</sup> and dyes from contaminated water**

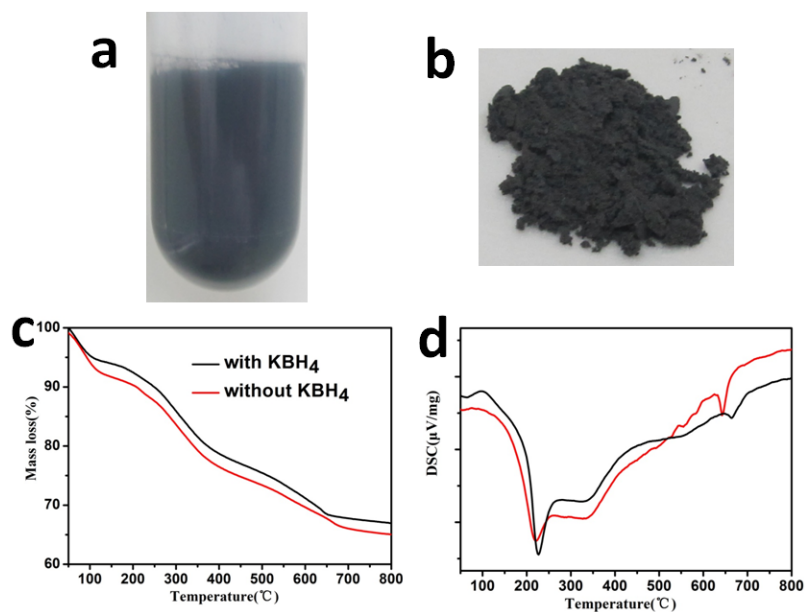
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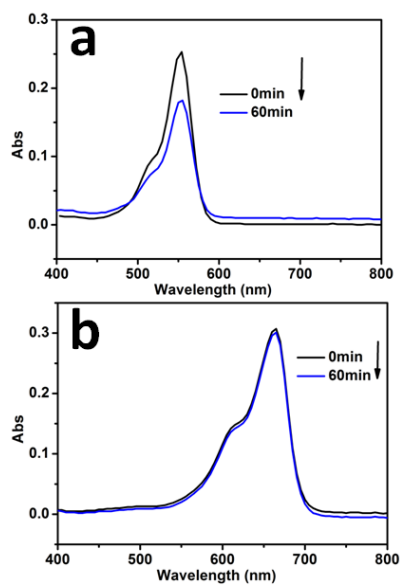
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**Figure S1.** Characterizations on the products of PEI@SiO<sub>2</sub>@rGO obtained with  $\text{KBH}_4$  reductant. a) Suspension containing PEI@SiO<sub>2</sub>, GO and  $\text{KBH}_4$  at 90°C. b) Powder of PEI@SiO<sub>2</sub>@rGO. c) TG curves and d) TG curves of PEI@SiO<sub>2</sub>@rGO obtained with (black lines) and without (red lines)  $\text{KBH}_4$ .



**Figure S2.** Absorption ability of PEI@SiO<sub>2</sub> for organic dyes. a) The time-dependent absorption spectra of a RhB solution after being mixed with PEI@SiO<sub>2</sub>, and b) the time-dependant absorption spectra of MB solution after being mixed with PEI@SiO<sub>2</sub>.