**Introduction**

Water pollution, including heavy metals, organic dyes and antibiotics, is one of the most concerned environmental problems nowadays. Graphene oxide (GO) has been regarded as promising adsorbent in treating water pollution. However, the high dispersibility of GO makes the separation of adsorbent/pollutant composite from aqueous environment very difficult. Herein, we reported the fabrication of GO/chitosan (CS) composite (GO-CS) for dye removal, where GO-CS was easily separated by filtration or low speed centrifugation.

**Methods**

- GO was mixed with CS under vigorous stirring and followed by aging for 3 h.
- GO-CS was characterized by TEM, SEM, IR and XPS.
- The adsorption capacity of GO-CS was evaluated with MB in batch experiment.

**Results**

**Characterization of GO-CS**

![Figure 1. Characterization of GO-CS. (a) SEM; (b) Photographs of GO and GO-CS during the preparation; (c) C1s XPS spectrum; (d) IR spectra.](image1)

**Adsorption capacity of GO-CS**

![Figure 2. Adsorption capacity of GO-CS. (a) adsorption isotherm. Data are presented as mean ± SD (n=3); (b) Freundlich model; (c) photograph (DC: decoloration) of MB solution before and after the treatment; (d) absorbance curves of MB solution before and after the treatment.](image2)

**Conclusion**

In summary, GO-CS composite was fabricated for dye removal, where GO-CS was stable in water and could be easily separated. GO-CS was good adsorbent of MB with a huge adsorption capacity of $4.68 \times 10^2$ mg/g. The adsorption data of MB on GO-CS were well fitted to the Freundlich model. At initial MB concentration of 100 mg/L, the remnant MB was only 0.02 mg/L in the solution phase, corresponding to a removal efficiency of 99.98%. We believe that our results will benefit the ongoing exploration of the environmental applications of graphene-based materials.

**Acknowledgement**

We thank financial supports from the Fundamental Research Funds for the Central Universities, Southwest University for Nationalities (No. 11NZYBS06).

**References**