

## **SUPPLEMENTARY MATERIAL**

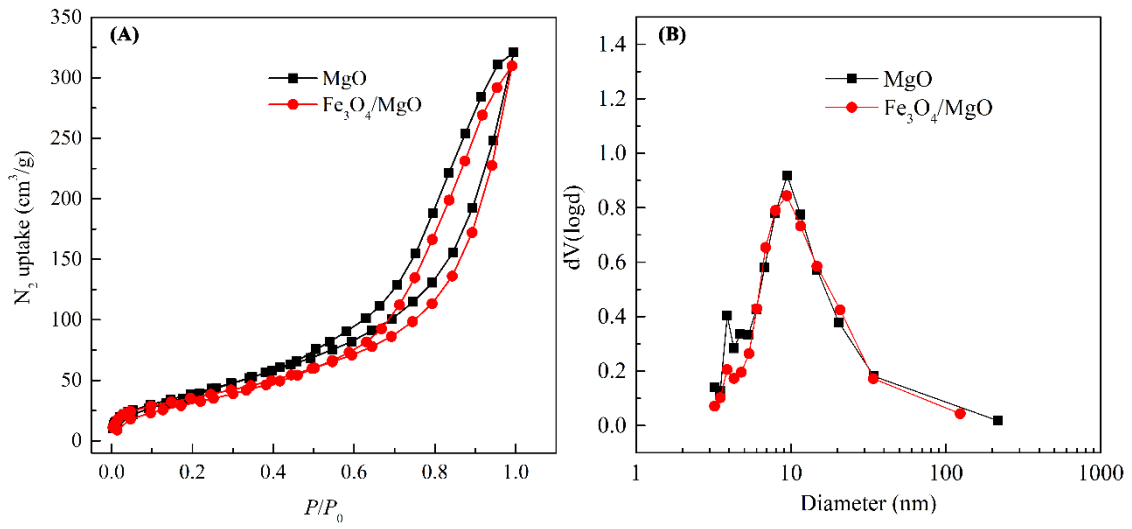
### **Magnetic magnesium oxide composites for rapid removal of polycyclic aromatic hydrocarbons and cadmium ions from water**

Dongqin Tan,<sup>A,B</sup> Jing Jin,<sup>B</sup> Cuicui Guo,<sup>B</sup> Dhanjai<sup>B</sup> and Jiping Chen<sup>B,C</sup>

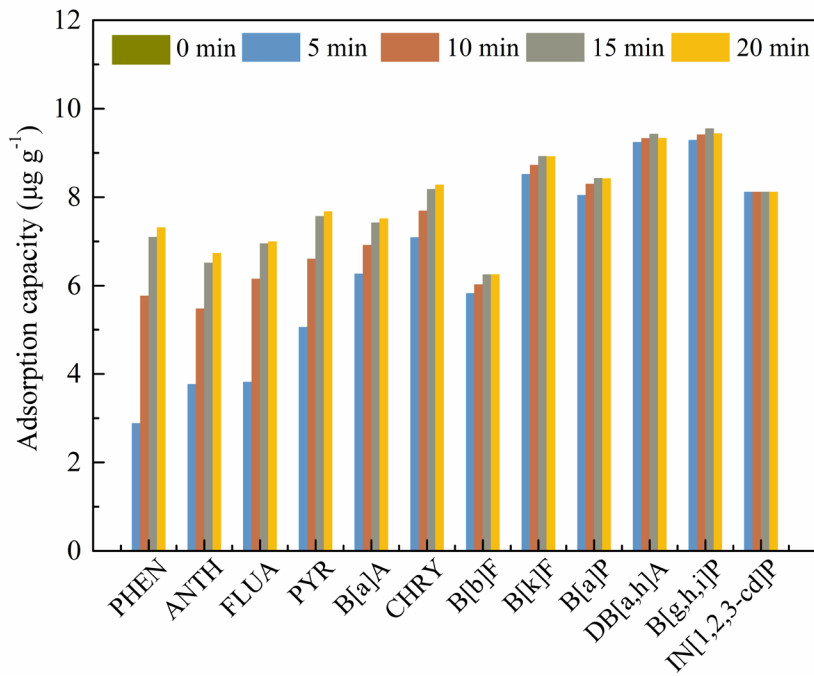
<sup>A</sup>College of Environmental Science and Engineering, Dalian Maritime University, No. 1 Linghai Road, Dalian 116026, China.

<sup>B</sup>CAS Key Laboratory of Separation Science for Analytical Chemistry, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian 116023, China.

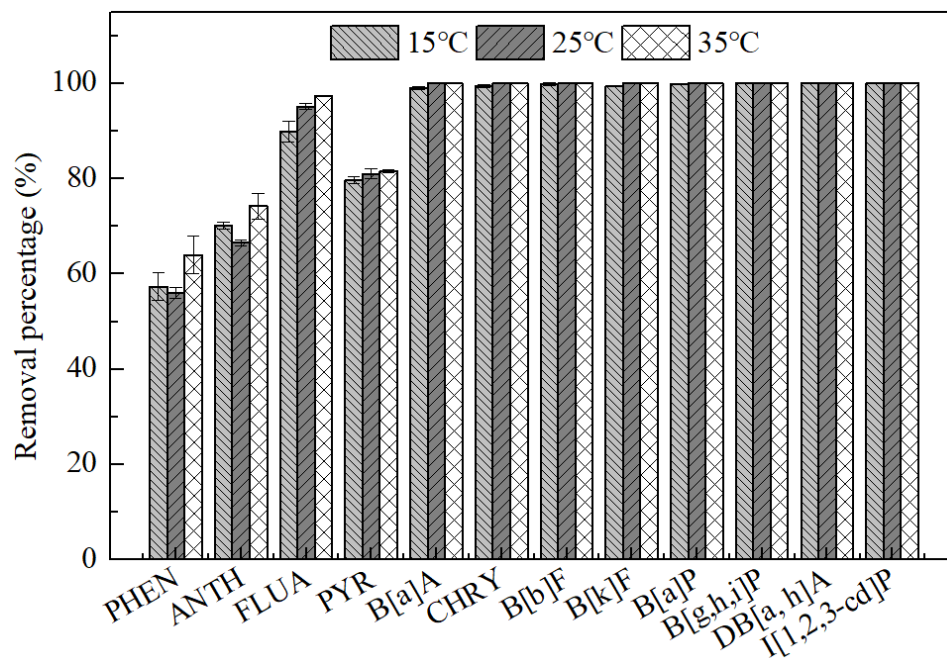
<sup>C</sup>Corresponding author. Email: chenjp@dicp.ac.cn



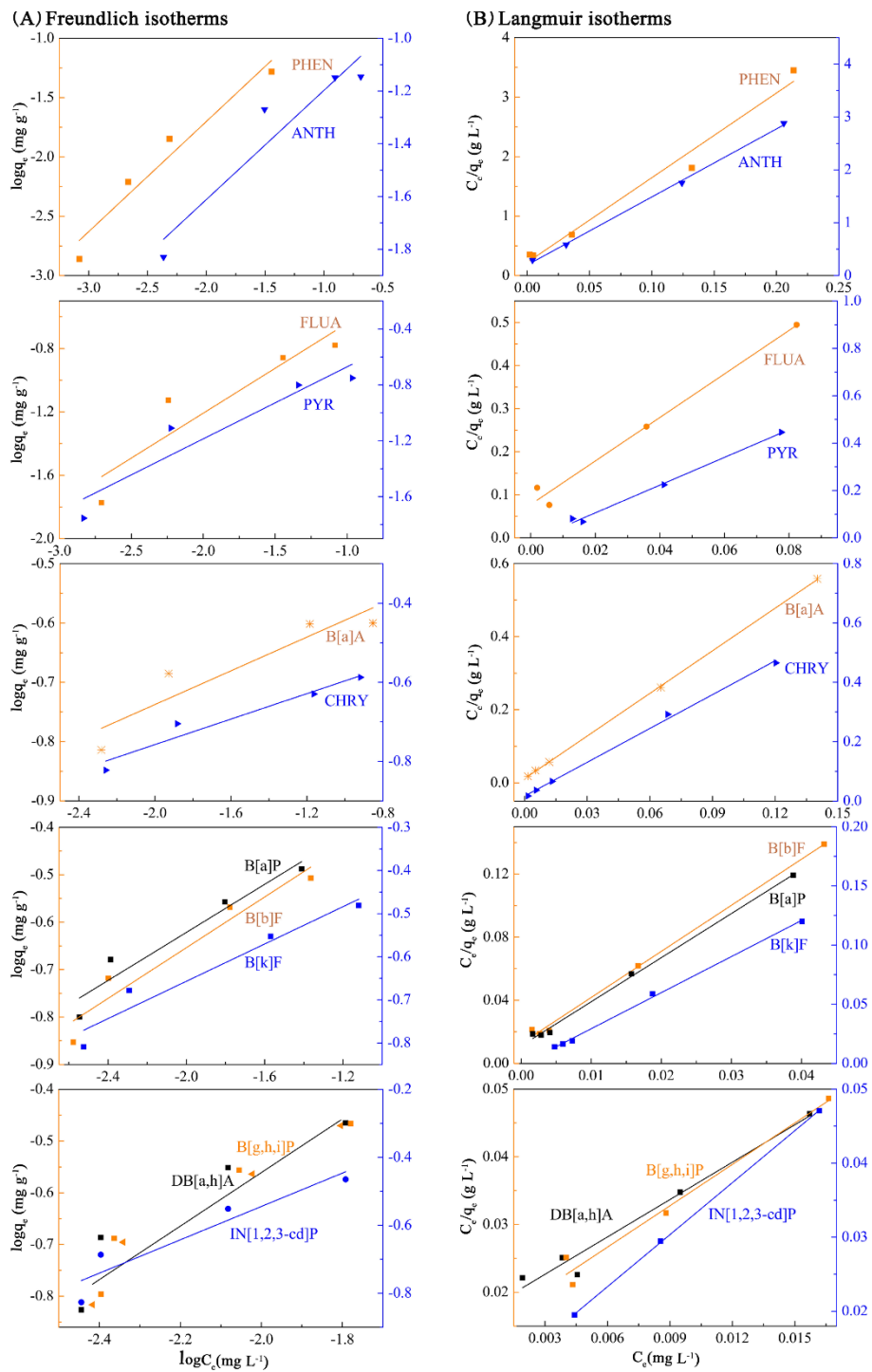
**Fig. S1** (A) Nitrogen adsorption and desorption isotherm at 273.0 K and pore size distribution (B) for MgO and  $Fe_3O_4/MgO$ .



**Fig. S2** Adsorption capacity of  $Fe_3O_4/MgO$  for 12 PAHs in aqueous water.



**Fig. S3** PAHs adsorption in different temperature (15, 25 and 35°C) (conditions: pH, 6.5; dosage of the sorbent, 10 mg; contact time, 15 min).



**Fig. S4** Freundlich and Langmuir isotherms for PAHs adsorption (conditions: pH, 6.5; dosage of the sorbent, 10 mg; temperature, 25 °C).