## Supporting information for

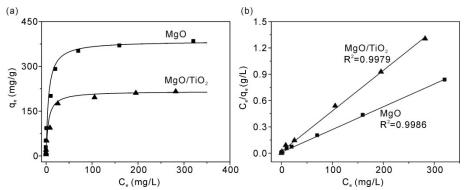
## Comparative study on arsenate removal mechanism of MgO and MgO/TiO<sub>2</sub> composites: FTIR and XPS analysis

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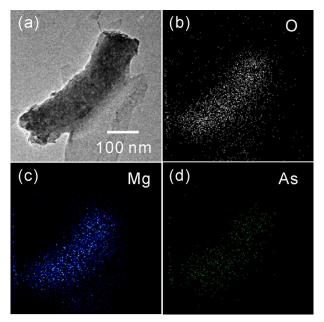
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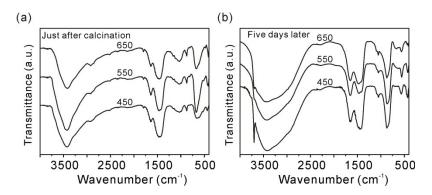
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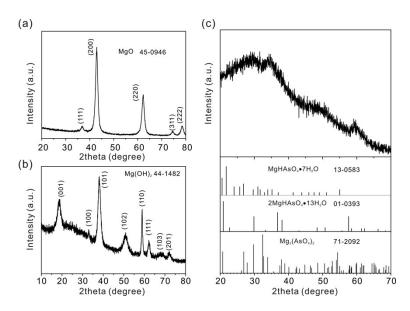
**Fig. S1** Adsorption isotherms (a) and linearized Langmuir isotherms (b) obtained from As(V) adsorption onto the MgO nanowires and MgO/TiO<sub>2</sub> composites.



**Fig. S2** TEM image (a) and elemental mapping images (b–d) of the MgO nanowires after As(V) adsorption.



**Fig. S3** FTIR spectra of the MgO nanowires just after calcination at different temperature (a) and after stored five days later (b).



**Fig. S4** XRD patterns of the MgO nanowires before (a) and after after immersing in water for 24 hours (b), and MgO nanowires after As (V) adsorption (c) with a initial As(V) concentration of 500 mg L<sup>-1</sup>.

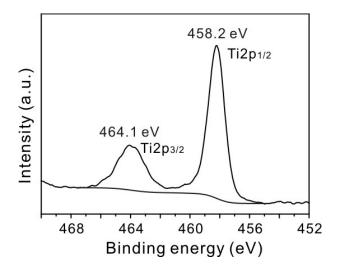


Fig. S5 XPS Ti2p spectrum of  $MgO/TiO_2$  composites after As(V) adsorption.