## Supplementary materials

## Enhancing mechanism of arsenic(III) adsorption by MnO<sub>2</sub>loaded calcined MgFe layered double hydroxide

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Fig. S1. Kinetic models of two composites for As(III): pseudo first-order model for  $MnO_2/MgFe-LDH(a)$ ; pseudo-first-order model for  $MnO_2/MgFe-LDO_{400^\circ C}(b)$ ; pseudo-second-order model for  $MnO_2/MgFe-LDH(c)$ ; pseudo second-order model for  $MnO_2/MgFe-LDO_{400^\circ C}$  secondary kinetic model(d).



Fig. S2. Isothermal model for the adsorption of As(III) by two adsorbents. Isothermal model for the adsorption of  $MnO_2/MgFe-LDH(a)$ ; Isothermal model for the adsorption of  $MnO_2/MgFe-LDO_{400^{\circ}C}$  (b).