Supporting Information

Fibrous porous silica microspheres decorated with Mn_3O_4 for effective removal of methyl orange from aqueous solution

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1.Fig. S1 Surface characteristic of different materials.

Samples	Surface area (m^2 g^{-1})	Pore volume (cm^3 g^{-1})	Pore size (nm)
Mn_3O_4	33.494	0.17	20.47
KCC-1	333.69	0.71	8.42
M_1	312.32	0.74	9.48
M_2	310.44	0.57	7.29
M_3	223.49	0.55	9.81

2.Adsorption kinetics.

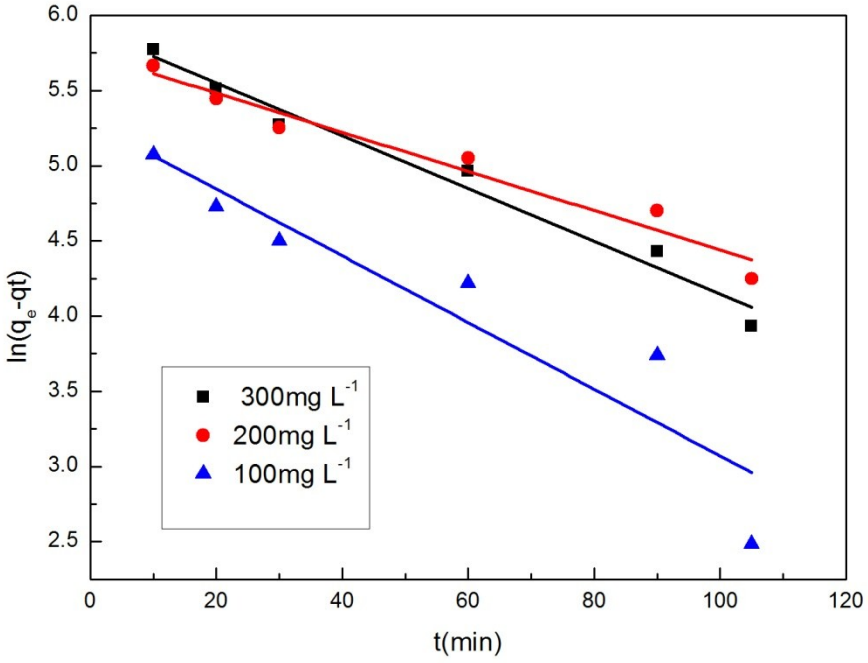

Fig. S2 Plot of the pseudo-first-order kinetic model for MO on Mn_3O_4/KCC-1.

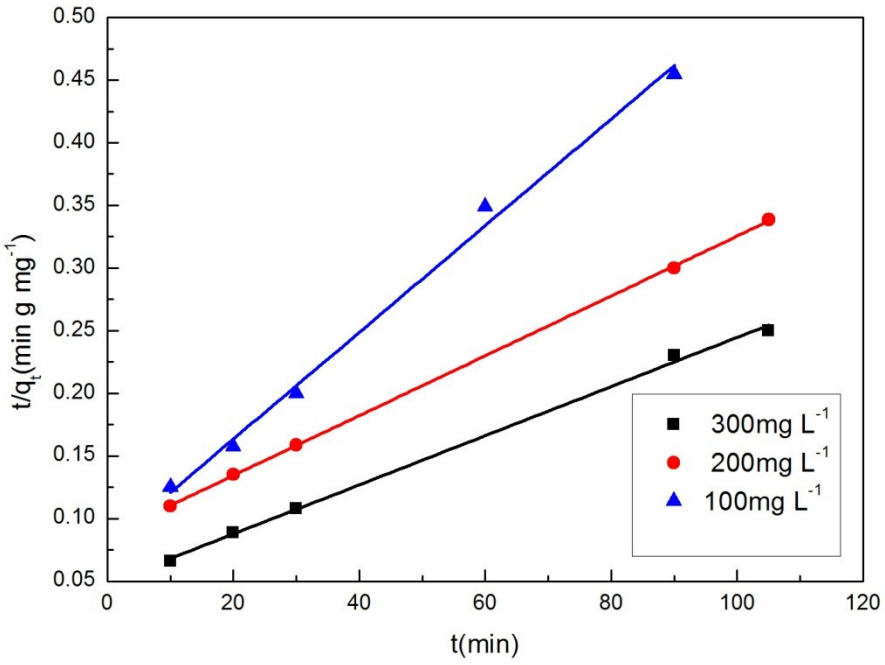

Fig. S3 Plot of the pseudo-second-order kinetic model for MO on Mn_3O_4/KCC-1.

3. Adsorption isotherms.

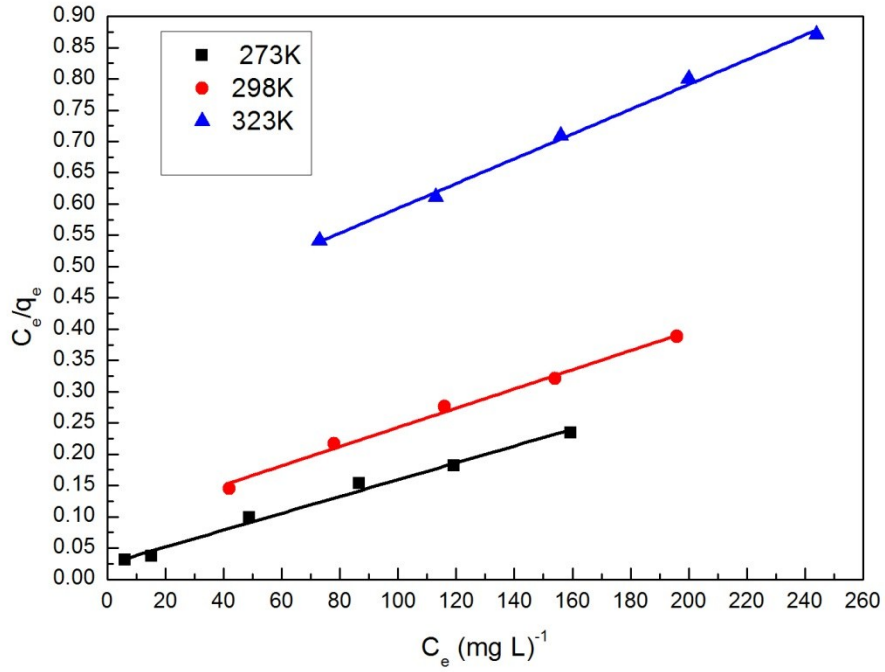

Fig. S4 Langmuir isotherms for MO adsorption onto Mn_3O_4/KCC-1 at different temperatures.

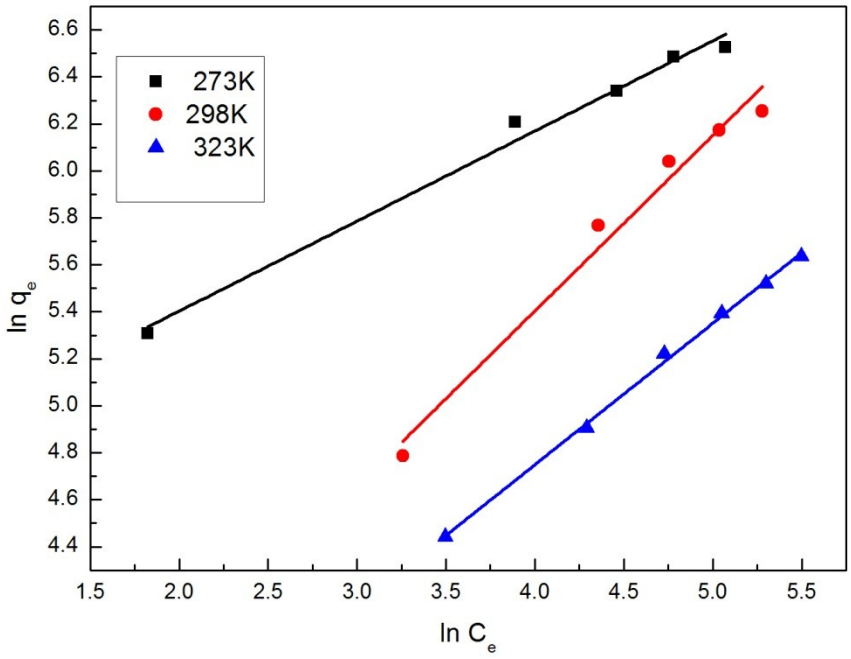

Fig. S5 Freundlich isotherms for MO adsorption onto Mn_3O_4/KCC-1 at different temperatures.

4. Thermdynamic studies.

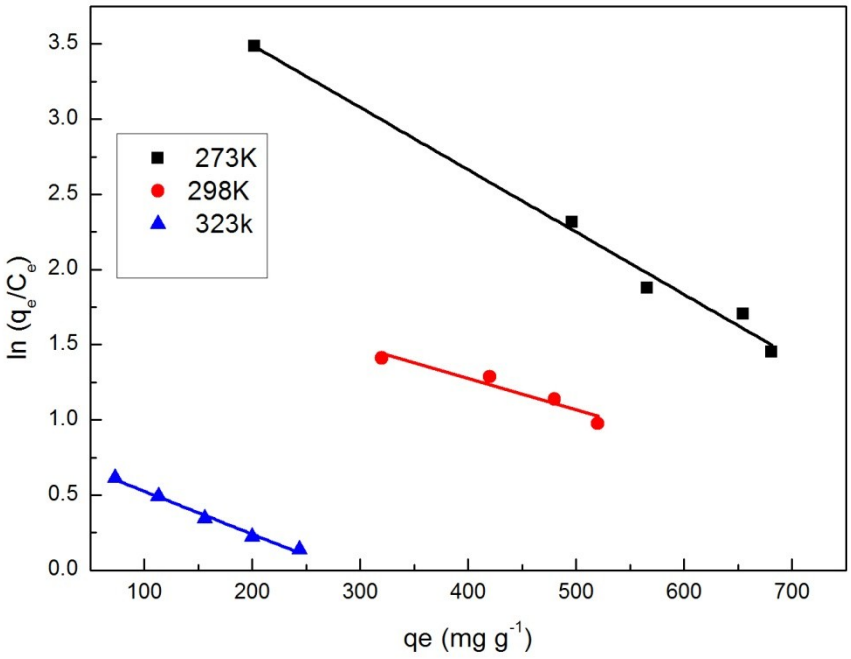

Fig. S6 Plots of ln q_e/C_e *vs* q_e for calculation of thermodynamic parameters.

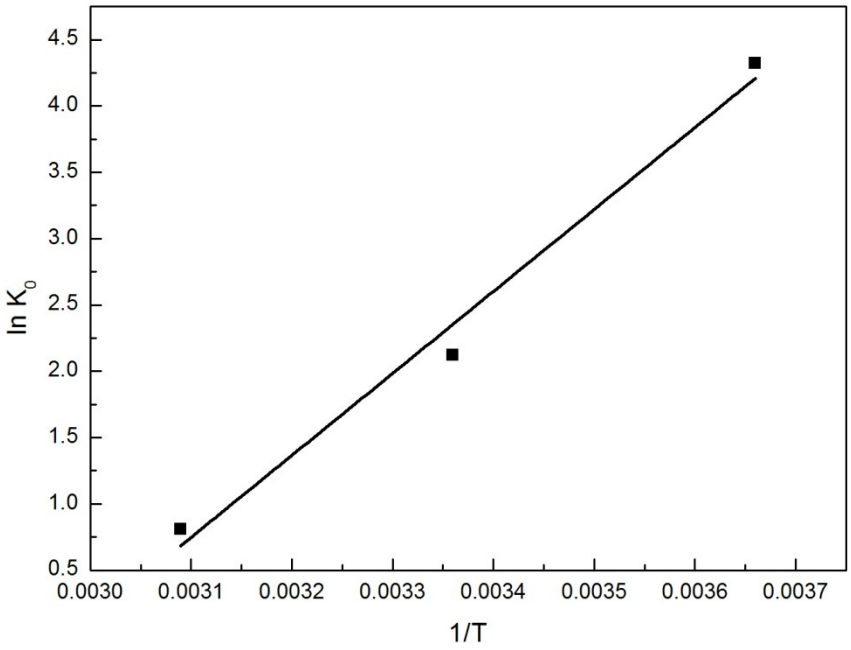

Fig. S7 Van't Hoff plot for the adsorption of MO onto Mn_3O_4/KCC-1.

5. Adsorption sepectra.

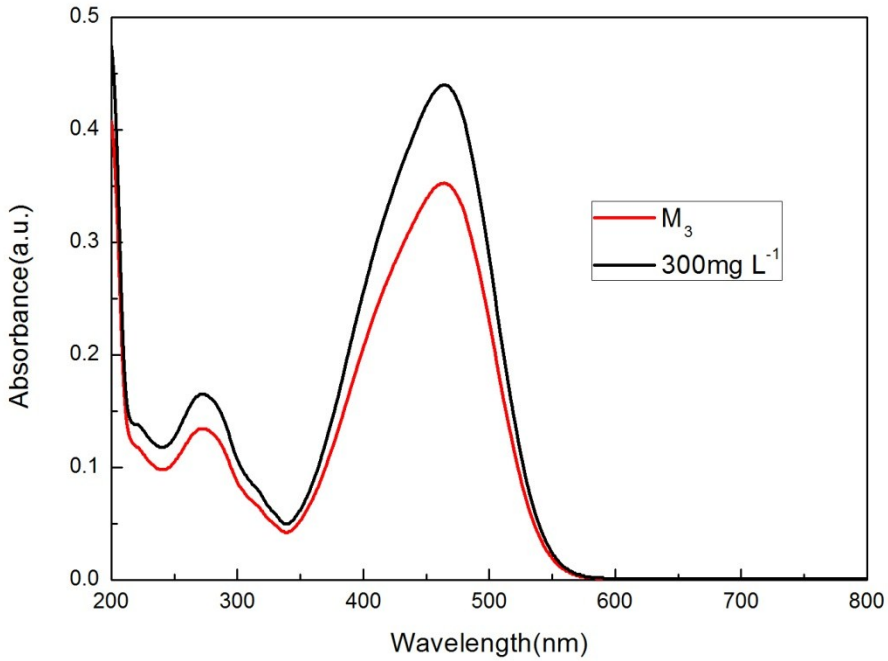

Fig. S8 The absorption spectra of methyl orange in the presence of M_3, All the samples of MO solution was diluted before measurement.