Supplements Figure captions:

Fig. SI 1. Absorption and desorption curves of MnO_2 nanotubes (a), $Fe_{0.2\%}MnO_2$ (b), $Fe_{0.5\%}MnO_2$ (c), $Fe_{1\%}MnO_2$ (d) and $Fe_{5\%}MnO_2$ (e) samples.

Fig. SI 2. EDS–mapping from FE–SEM of MnO_2 nanotubes (a), $Fe_{0.5\%}MnO_2$ (b) and $Fe_{5\%}MnO_2$ (c) samples.

Fig. SI 3. EDS–mapping from FE–TEM of MnO_2 nanotubes (a), $Fe_{0.5\%}MnO_2$ (b) and $Fe_{5\%}MnO_2$ (c) samples.

Fig. SI 4. NO_x conversion rates of samples with 0.1 g catalyst, 500 ppmv NO, 500 ppmv NH_3, 5% O_2 and N_2 as the equilibrium gas.

Fig. SI 5. FESEM picture of $Fe_{0.5\%}MnO_2$ sample after compression used in NH_3-SCR experiment.
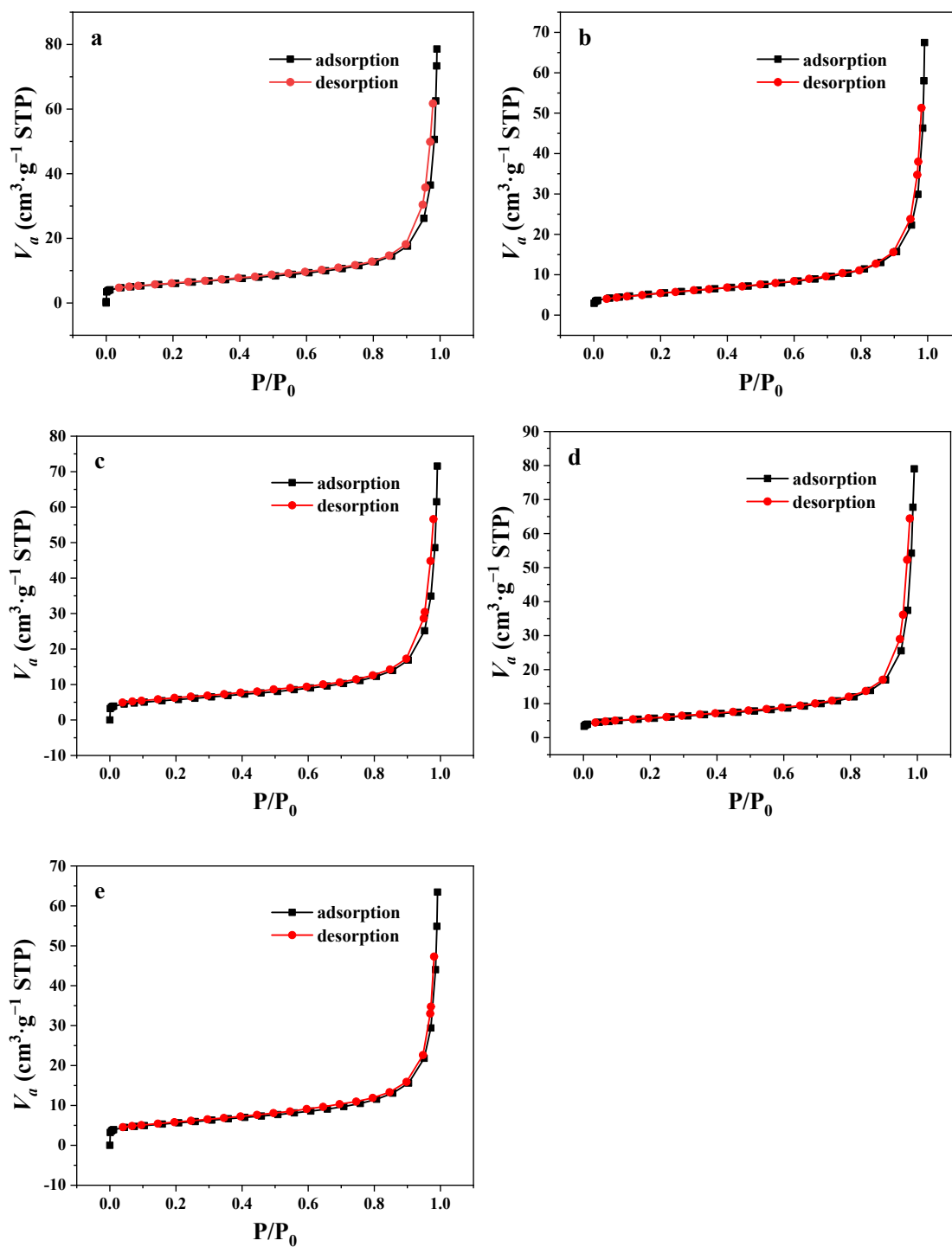
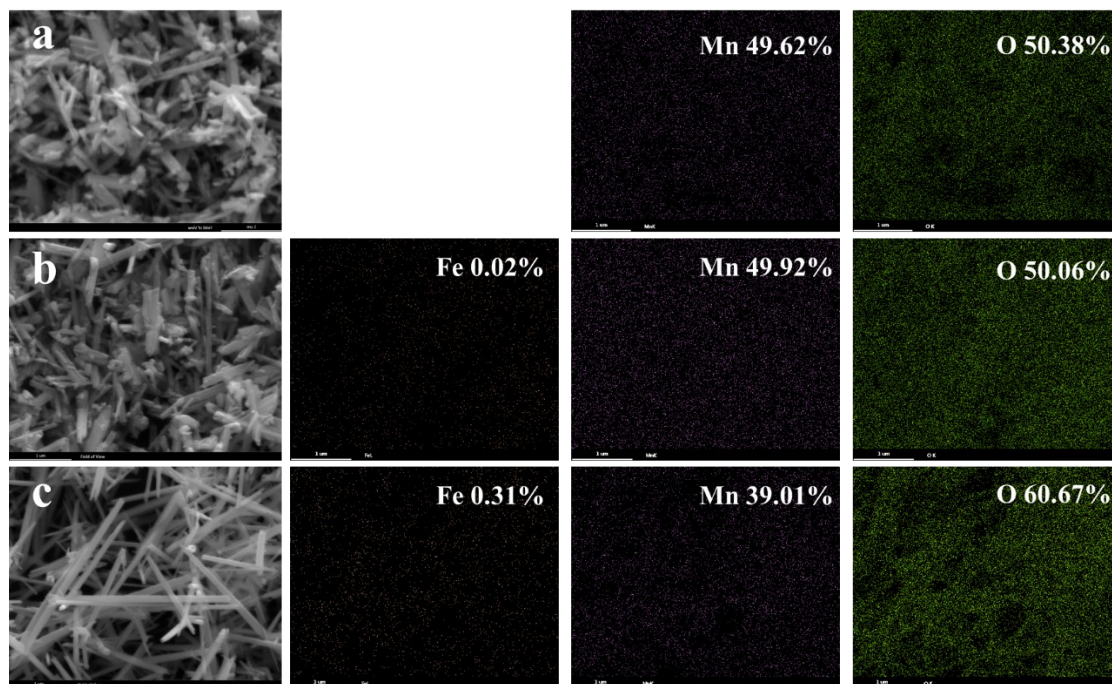Fig. SI 1. Absorption and desorption curves of MnO_2 nanotubes (a), $Fe_{0.2\%}MnO_2$ (b), $Fe_{0.5\%}MnO_2$ (c), $Fe_{1\%}MnO_2$ (d) and $Fe_{5\%}MnO_2$ (e) samples.

Fig. SI 2. EDS–mapping from FE–SEM of MnO_2 nanotubes (a), $Fe_{0.5\%}MnO_2$ (b) and $Fe_{5\%}MnO_2$ (c) samples.

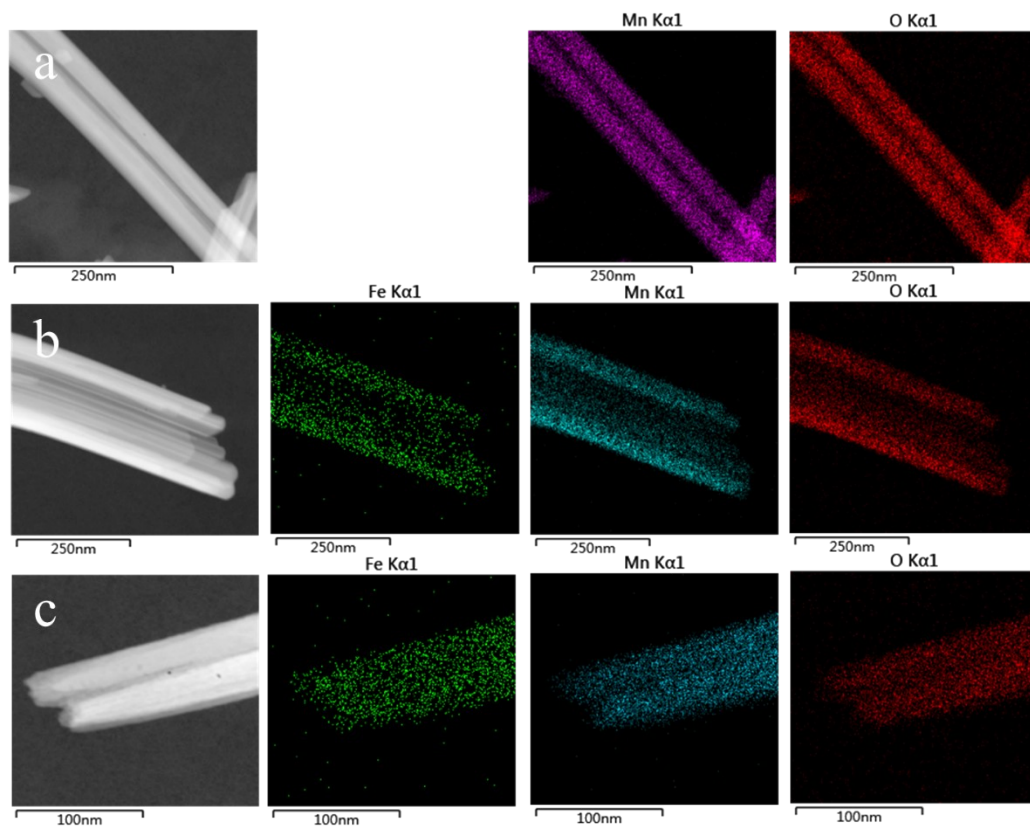Fig. SI 3. EDS–mapping from FE–TEM of MnO_2 nanotubes (a), $Fe_{0.5\%}MnO_2$ (b) and $Fe_{5\%}MnO_2$ (c) samples.
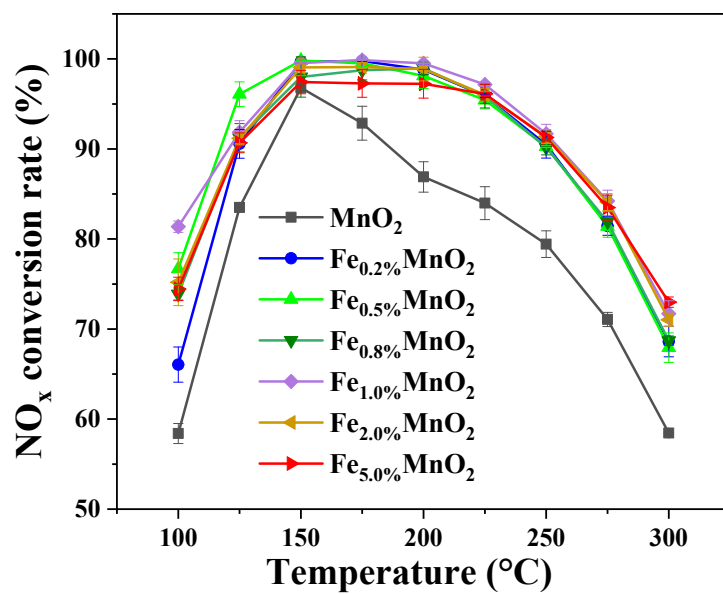
Fig. SI 4. NO$_x$ conversion rates of samples with 0.1 g catalyst, 500 ppmv NO, 500 ppmv NH$_3$, 5% O$_2$ and N$_2$ as the equilibrium gas.
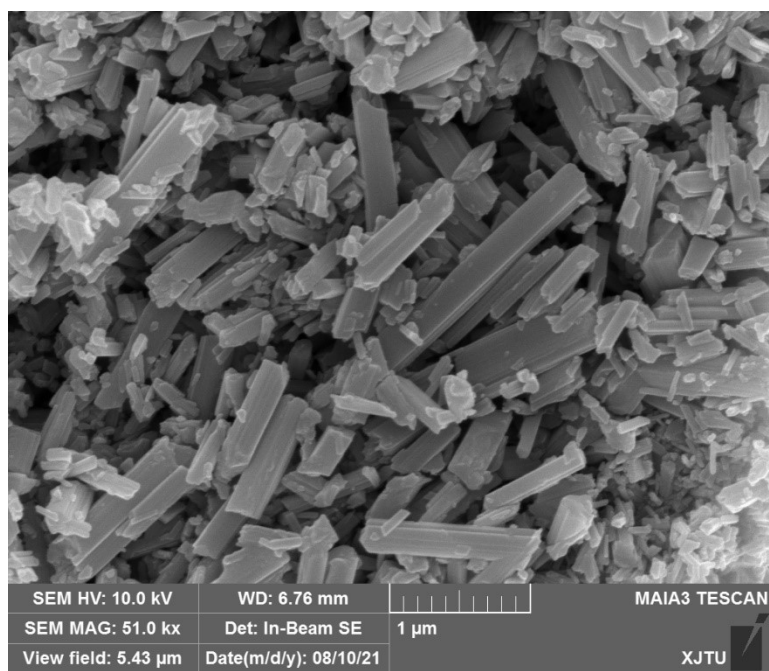
Fig. SI 5. FESEM picture of $Fe_{0.5\%}MnO_2$ sample after compression used in NH_3-SCR experiment.