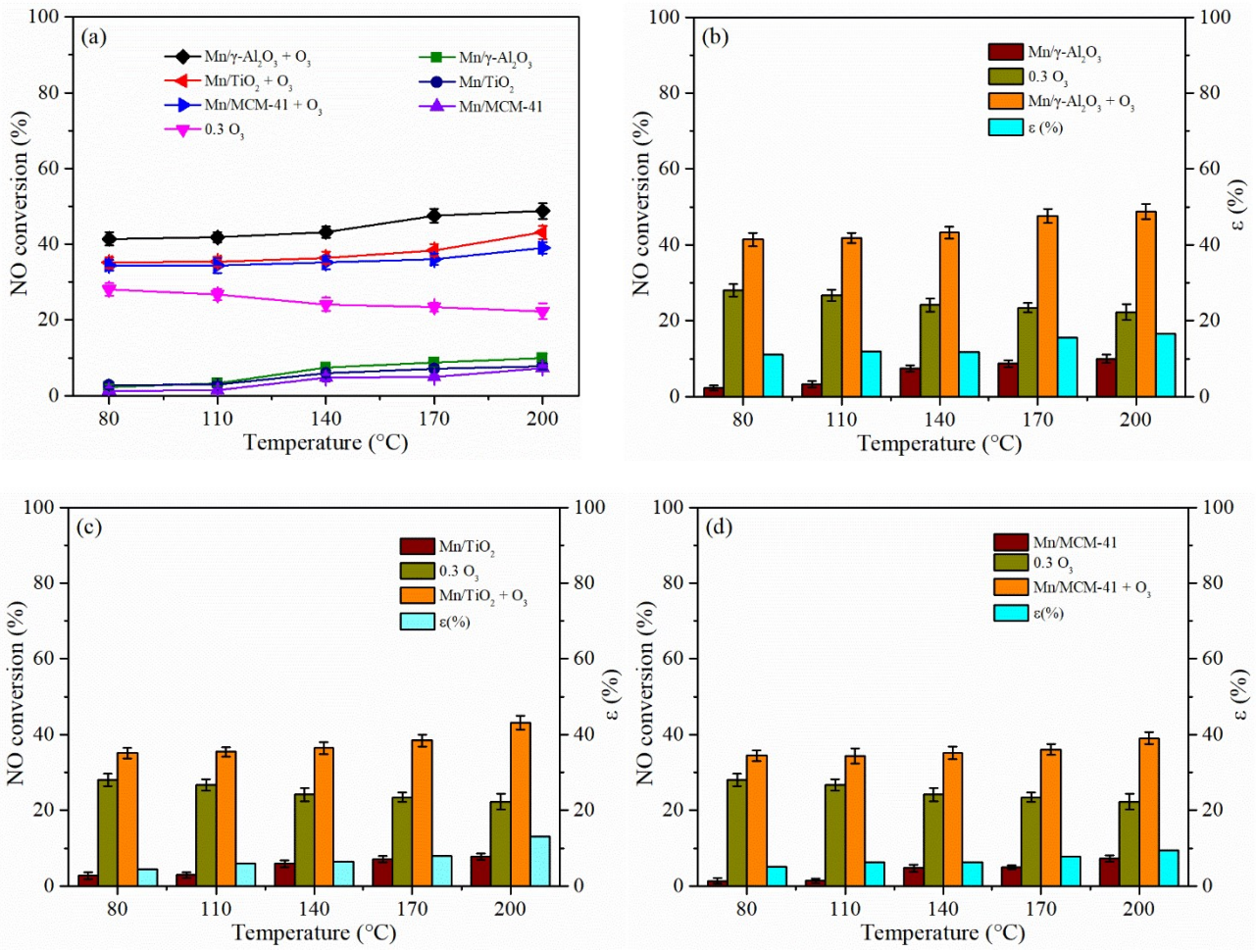
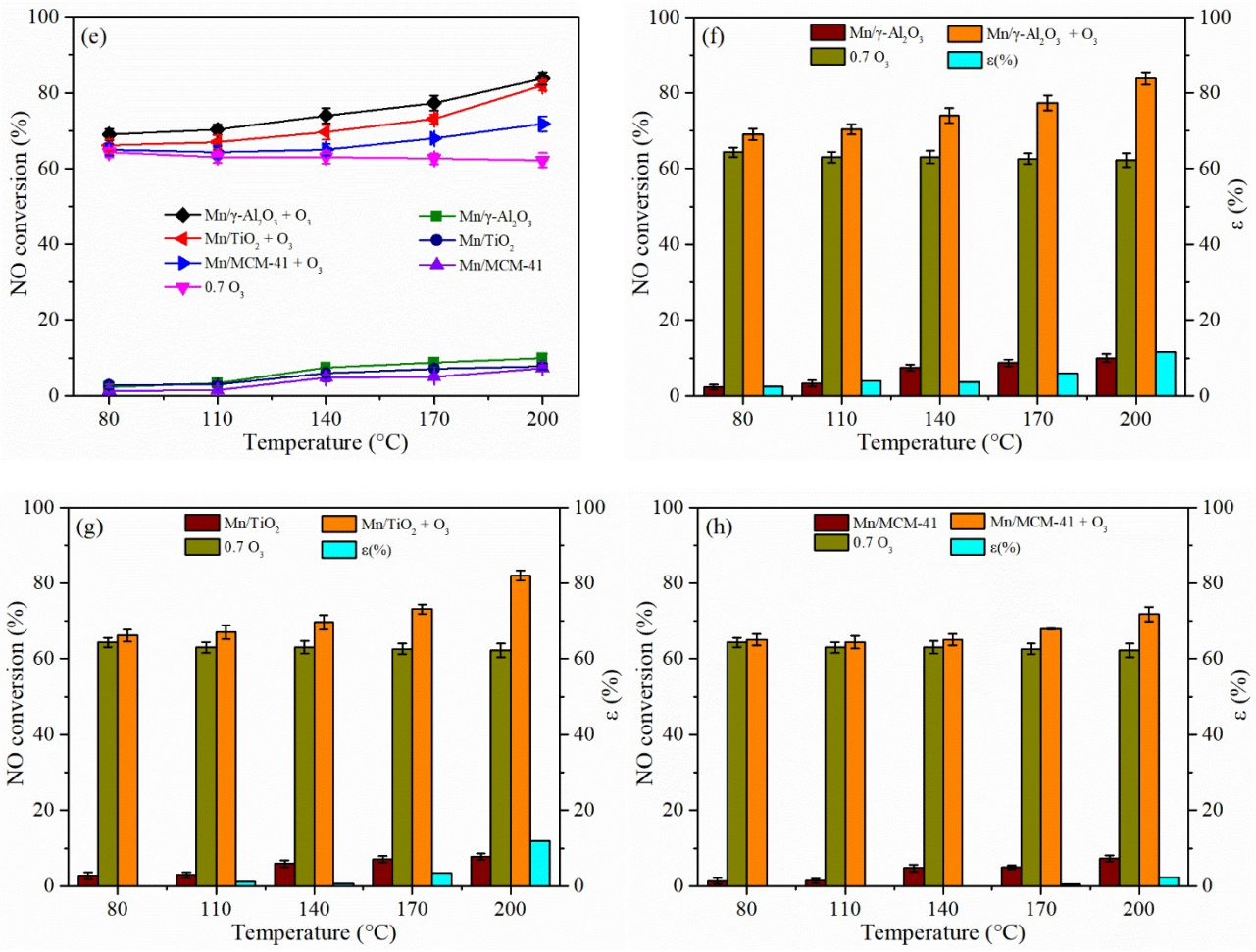
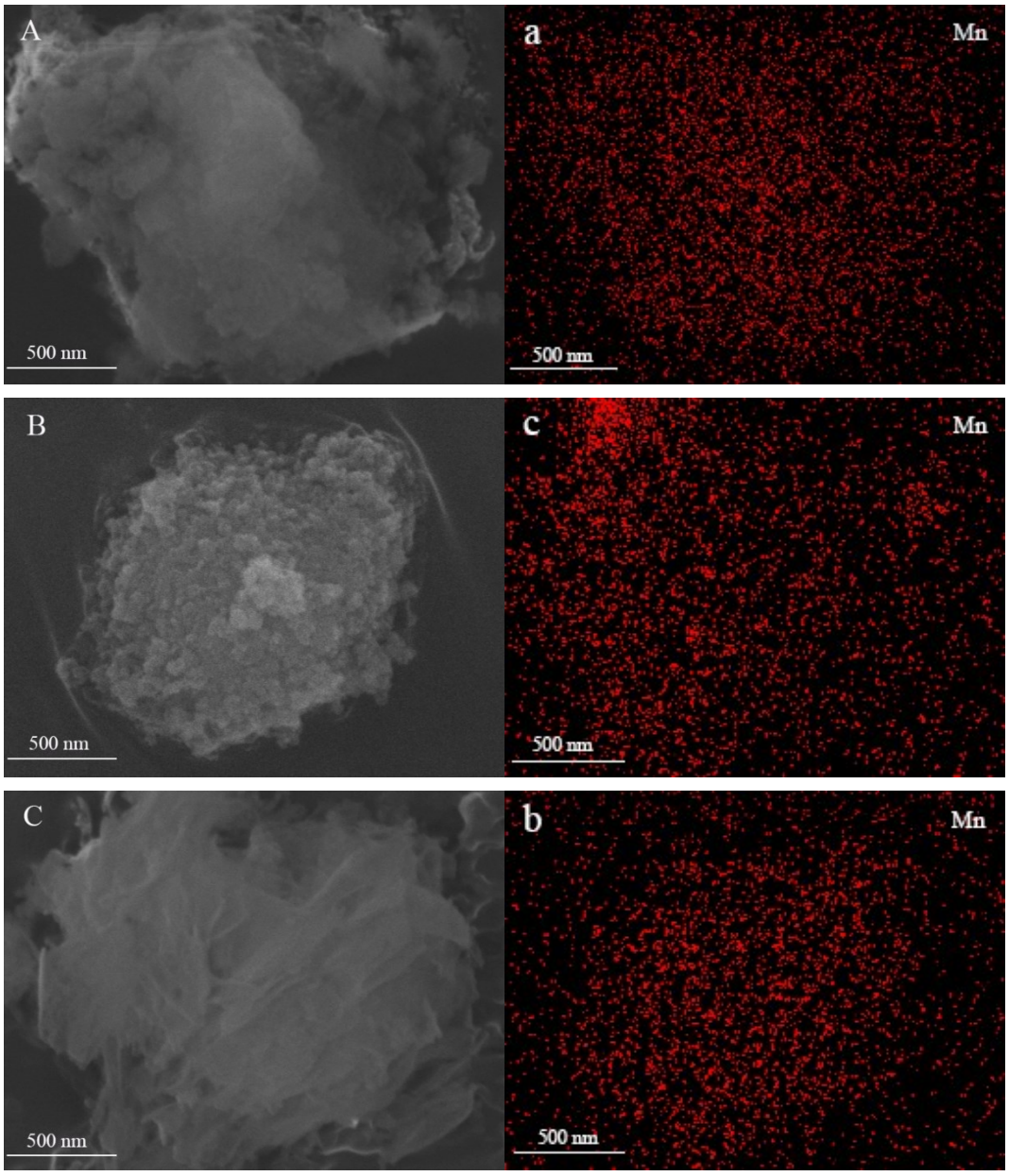
# *Supporting Information*

## Mn-based catalysts supported on γ-$Al_2O_3$, $TiO_2$ and MCM-41: a comparison for low-temperature NO oxidation with low ratio of $O_3$/NO

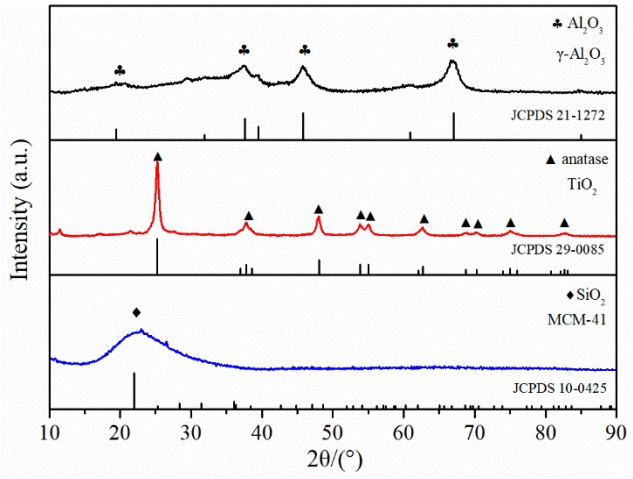




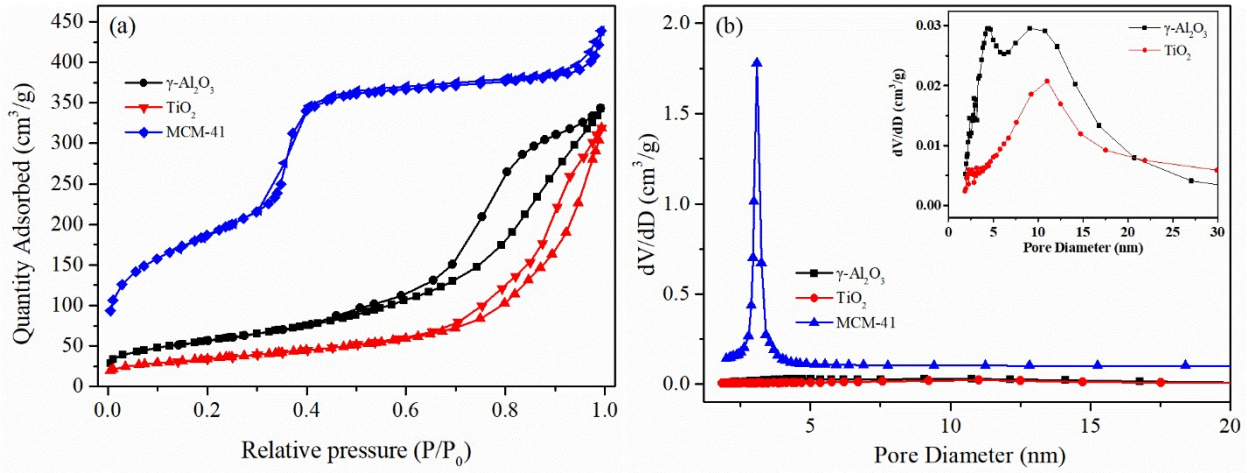

**Figs. 1.** NO conversion over 0.3 $O_3$ (the molar ratio of $O_3$/NO = 0.3), Mn/γ-$Al_2O_3$, Mn/$TiO_2$, and Mn/MCM-41 catalysts and the catalyst-$O_3$ combination (a); Synergistic effect of Mn/γ-$Al_2O_3$ and 0.3 $O_3$ (b); Synergistic effect of Mn/$TiO_2$ and 0.3 $O_3$ (c); Synergistic effect of Mn/MCM-41 and 0.3 $O_3$ (d). NO conversion over 0.7 $O_3$ (the molar ratio of $O_3$/NO = 0.7), Mn/γ-$Al_2O_3$, Mn/$TiO_2$, and Mn/MCM-41 catalysts and the catalyst-$O_3$ combination (e); Synergistic effect of Mn/γ-$Al_2O_3$ and 0.7 $O_3$ (f); Synergistic effect of Mn/$TiO_2$ and 0.7 $O_3$ (g); Synergistic effect of Mn/MCM-41 and 0.7 $O_3$ (h). Other reaction conditions were as follows: NO = 500 ppm, $O_2$ = 5 vol.%, GHSV = 24,000 $h^{-1}$, T = 140 °C.




**Figs. 2.** EDS mappings of Mn/γ-$Al_2O_3$ (a), Mn/$TiO_2$ (b), and Mn/MCM-41 (c)




**Figs. 3.** XRD profiles of γ-$Al_2O_3$, $TiO_2$ and MCM-41




**Figs. 4.** $N_2$ adsorption-desorption isotherms and pore size distribution curves of γ-$Al_2O_3$, $TiO_2$ and MCM-41.