

Supporting Information

Citric acid-assisted deposition strategy to synthesize mesoporous
SiO₂-confined highly dispersed LaMnO₃ perovskite nanoparticles for
n-butylamine catalytic oxidation

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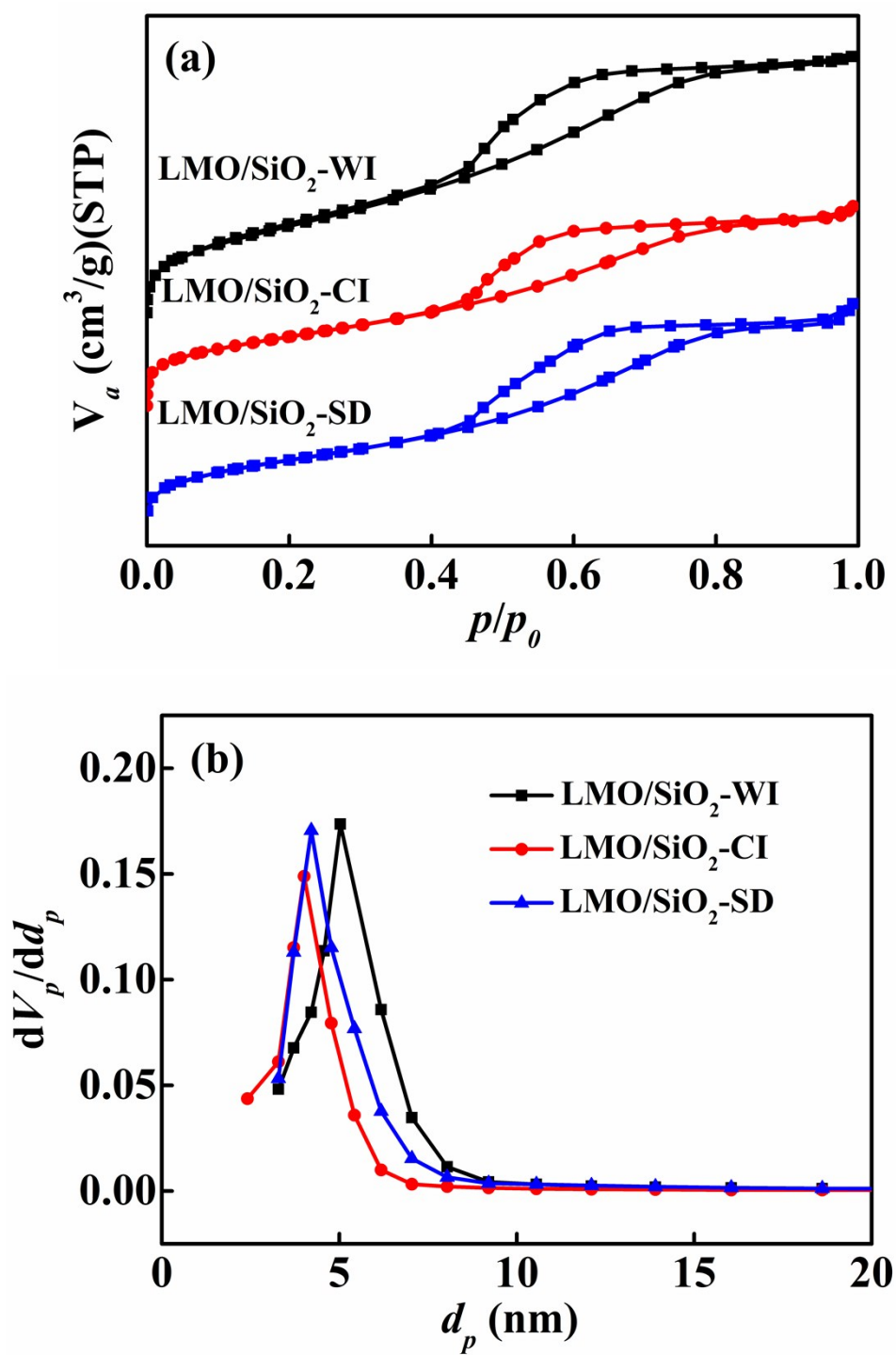
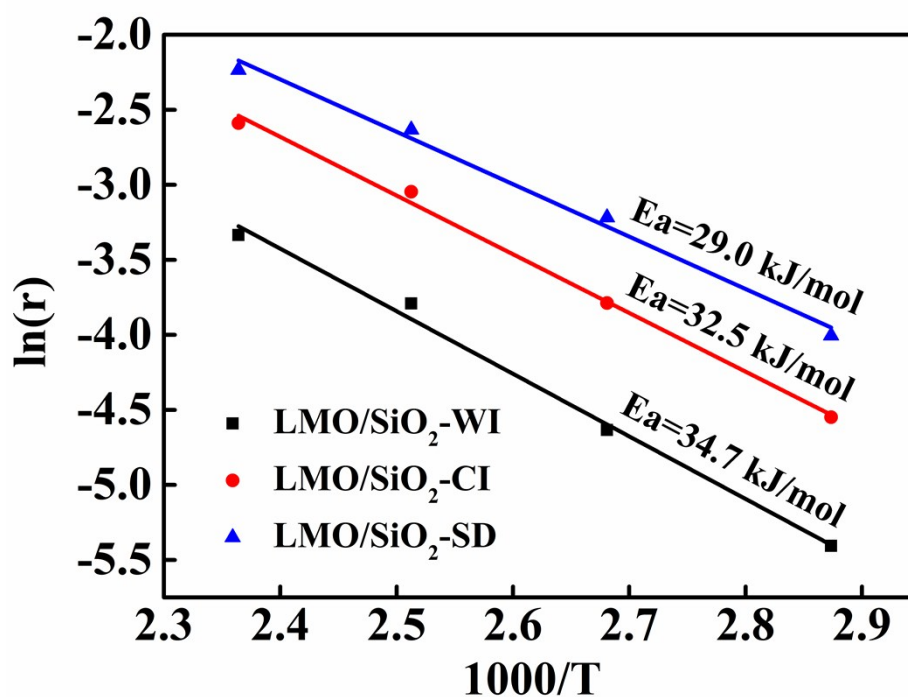


Fig. S1 (a)N₂ adsorption-desorption isotherms and (b)pore size distribution of LMO/SiO₂ catalysts.

Table S1 Surface atomic concentration and catalytic activities of LMO/SiO₂ catalysts

Catalysts	Surface atomic concentration (%)				Surface atomic ratio (%)	
	Mn	La	O	Si	Mn ⁴⁺ / (Mn ⁴⁺ +Mn ³⁺)	O _S / (O _S +O _L)
LMO/SiO ₂ -WI	2.07	1.09	68.16	28.68	29.47	27.74
LMO/SiO ₂ -CI	2.13	2.00	66.03	29.84	34.54	32.16
LMO/SiO ₂ -SD-fresh	2.41	2.30	66.53	28.76	41.64	38.72
LMO/SiO ₂ -SD-used	2.82	3.68	66.85	26.65	40.58	38.23

**Fig. S2** Fitting lines of arrhenius plots for LMO/SiO₂ catalysts.

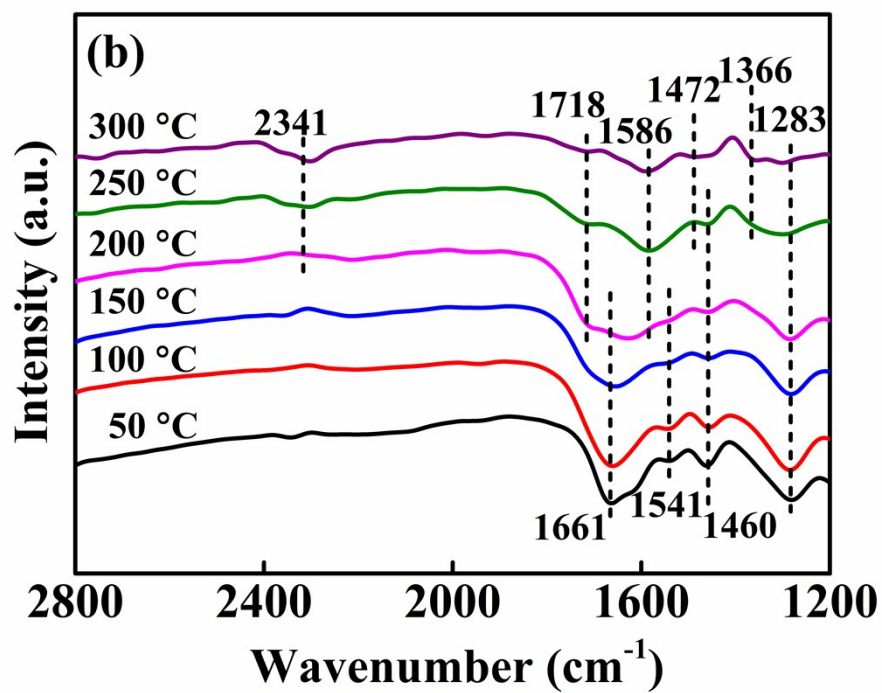
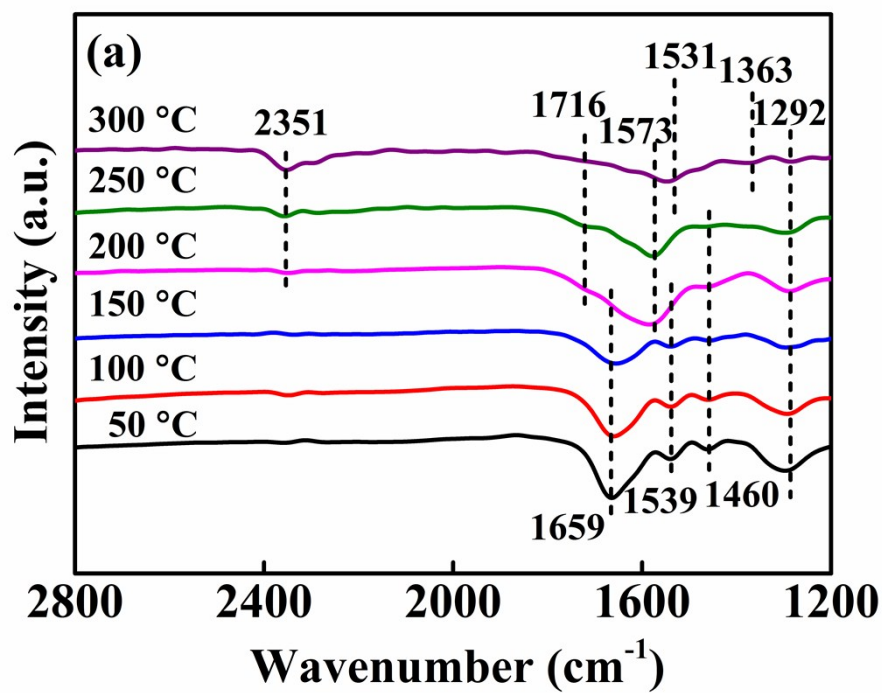


Fig. S3 *In-situ* FTIR spectra of catalytic oxidation of n-butylamine over (a)LaMnO₃/SiO₂-WI and (b)LaMnO₃/SiO₂-CI catalysts.