Electronic Supplementary Information

Ni nanocatalysts supported on mesoporous Al_2O_3-CeO_2 for CO_2 methanation at low temperature

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Table S1. Textural properties of Ni/Al$_2$O$_3$-CeO$_2$-x catalysts.

sample	S^a$_{BET}$(m^2·g^{-1})	V^b$_p$(cm^3·g^{-1})	D^c$_p$(nm)
Ni/Al$_2$O$_3$	291	0.35	3.30
Ni/Al$_2$O$_3$-CeO$_2$-10	152	0.35	4.35
Ni/Al$_2$O$_3$-CeO$_2$-5	102	0.22	3.77
Ni/Al$_2$O$_3$-CeO$_2$-2.5	105	0.19	3.66
Ni/Al$_2$O$_3$-CeO$_2$-1	95	0.19	3.72

^{a} Calculated by the BET equation.
^{b} BJH desorption pore volume.
^{c} BJH desorption average pore diameter.

Table S2. The calculated peak area ratio of O1s (O$_A$/O$_T$, %) in Ni/Al$_2$O$_3$-CeO$_2$-x catalysts.

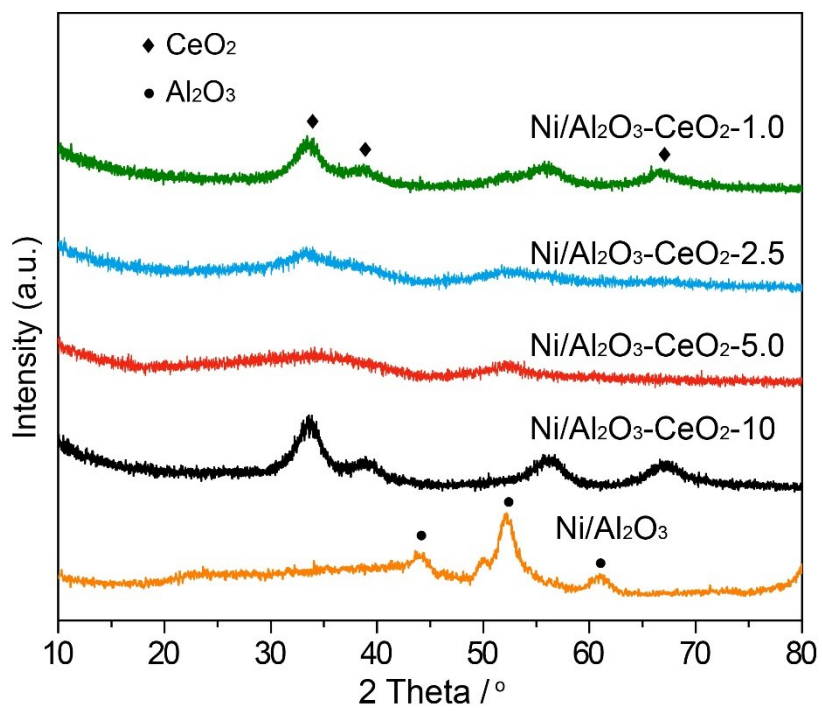| Catalyst	Ni/Al$_2$O$_3$-CeO$_2$-x			
	10	5.0	2.5	1.0
Fresh (O$_A$/O$_T$)	73.06	89.67	87.65	85.98
Spent (O$_A$/O$_T$)	91.35	84.08	85.73	85.26

Fig. S1. PXRD patterns of the spent Ni/Al₂O₃-CeO₂-x catalysts.