Electronic Supplementary Material (ESI) for RSC Advances.

Solution Combustion Synthesis of Ni/La_2O_3 Catalysts Promoted with Alkali and Alkaline Earth Metal Oxides for Dry Reforming of Methane

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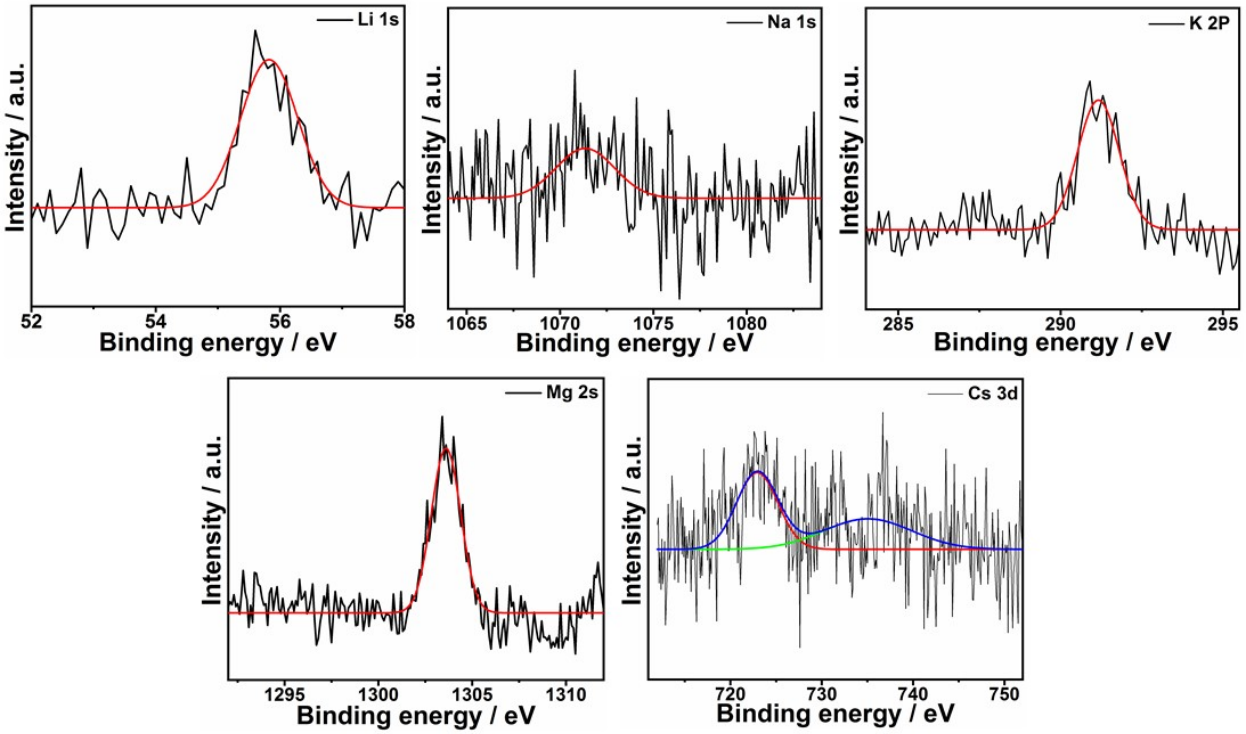

Figure S1. High resolution spectra of promoter species.

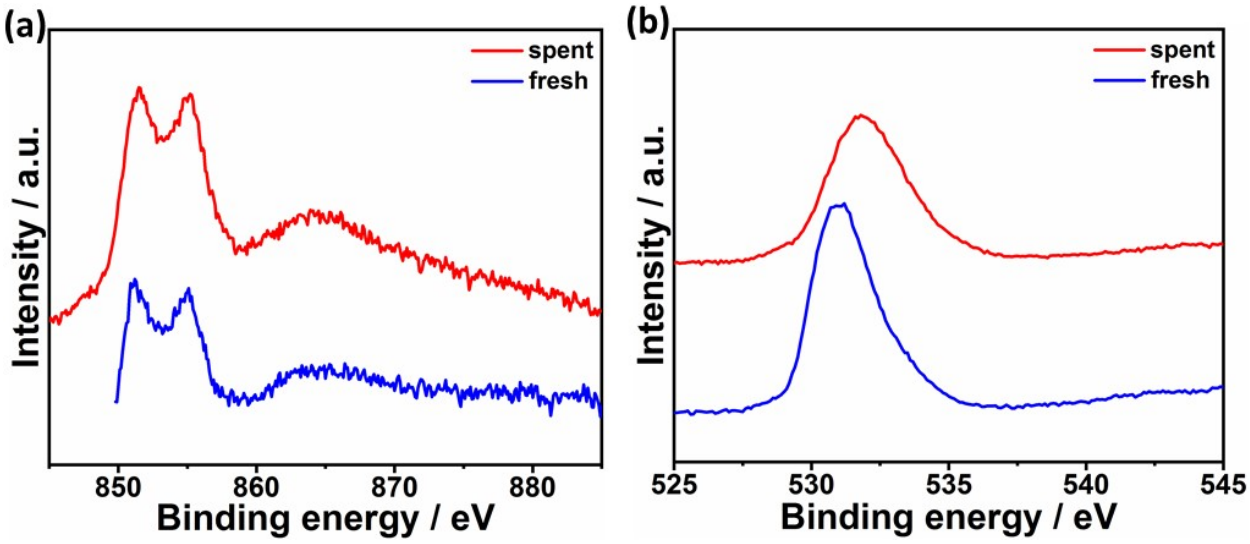

Figure S2. High resolution spectra of (a) Ni 2p and (b) O 1s in freshly reduced and spent Mg-Ni-La_2O_3.

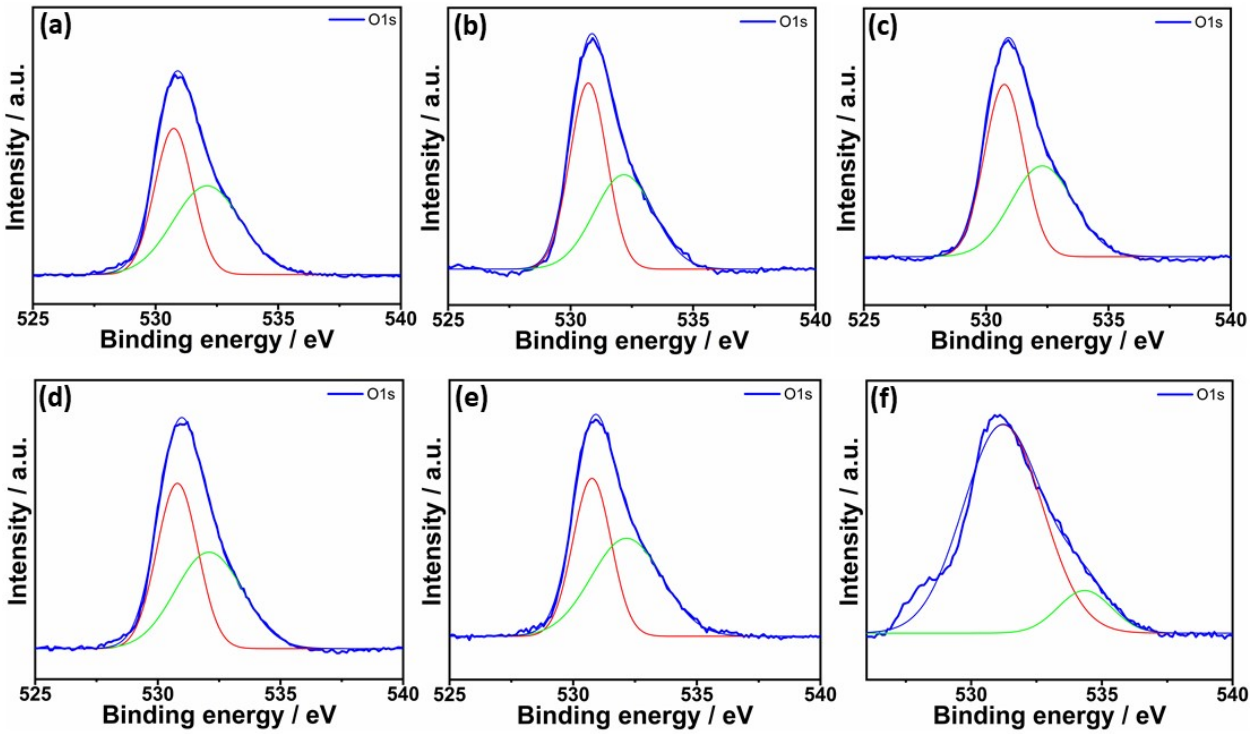

Figure S3. Deconvoluted O 1s spectra of reduced (a) Li-Ni-La_2O_3, (b) Na-Ni-La_2O_3, (c) K-Ni-La_2O_3, (d) Mg-Ni-La_2O_3, (e) Cs-Ni-La_2O_3, and (f) Ni-La_2O_3.

Table S1. Ratio of adsorbed oxygen species in reduced catalysts

Catalyst	Percentage of adsorbed oxygen (%)
Li-Ni-La_2O_3	52.0
Na-Ni-La_2O_3	44.8
K-Ni-La_2O_3	45.0
Mg-Ni-La_2O_3	48.9
Cs-Ni-La_2O_3	53.5
Ni-La_2O_3	12.0

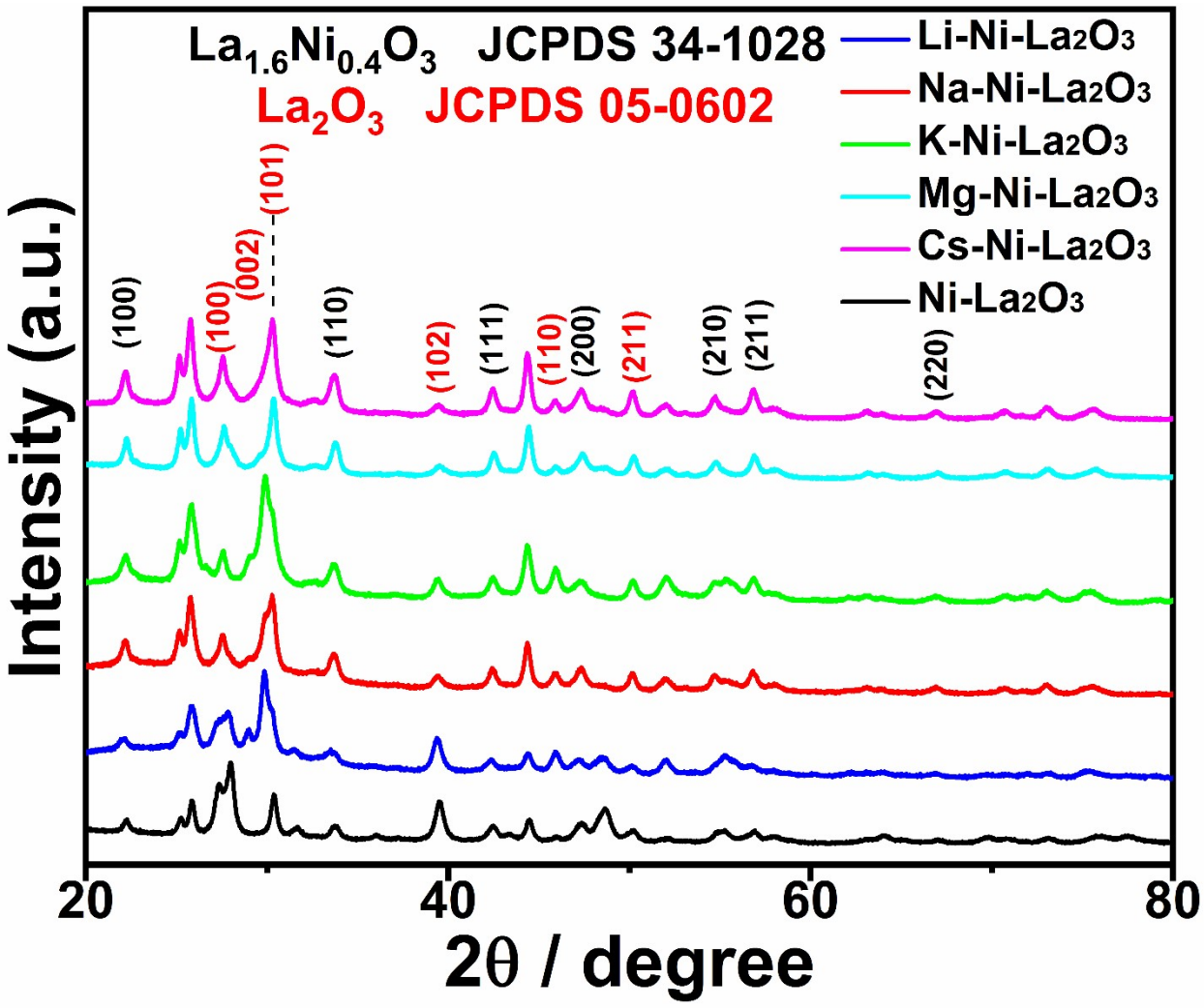

Figure S4. XRD patterns of as-prepared catalysts.