Exsolved $LaNiRuO_3$ perovskite-based catalysts for CO_2 methanation reaction

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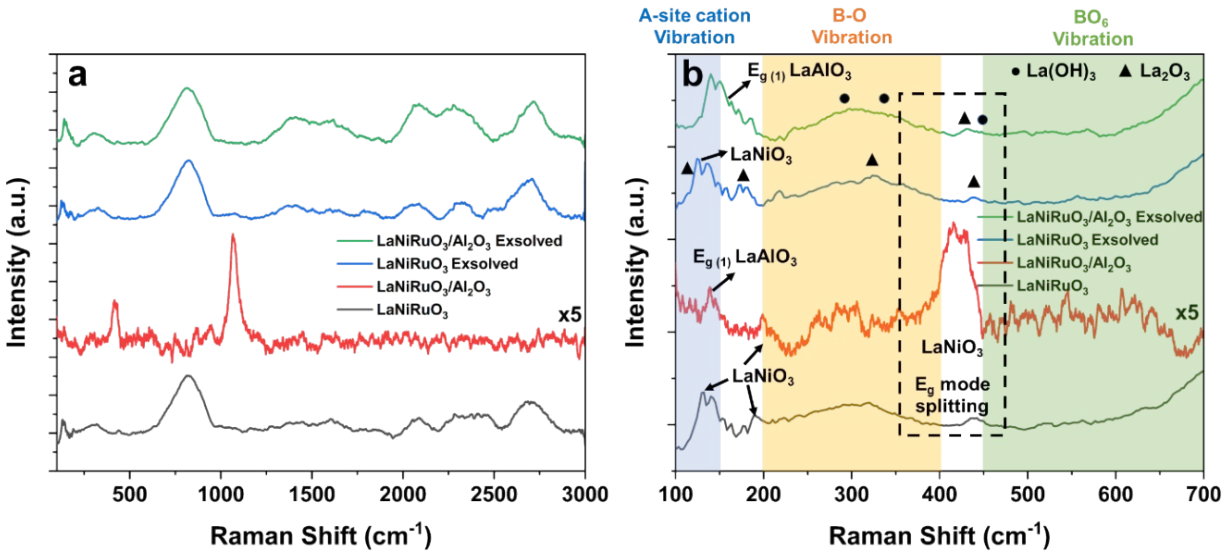

Figure S1. Raman Spectra of calcined and exsolved $LaNiRuO_3$ and $LaNiRuO_3/Al_2O_3$ catalysts **(a)** 100-3000 cm^{-1} and **(b)** 100-700 cm^{-1}.

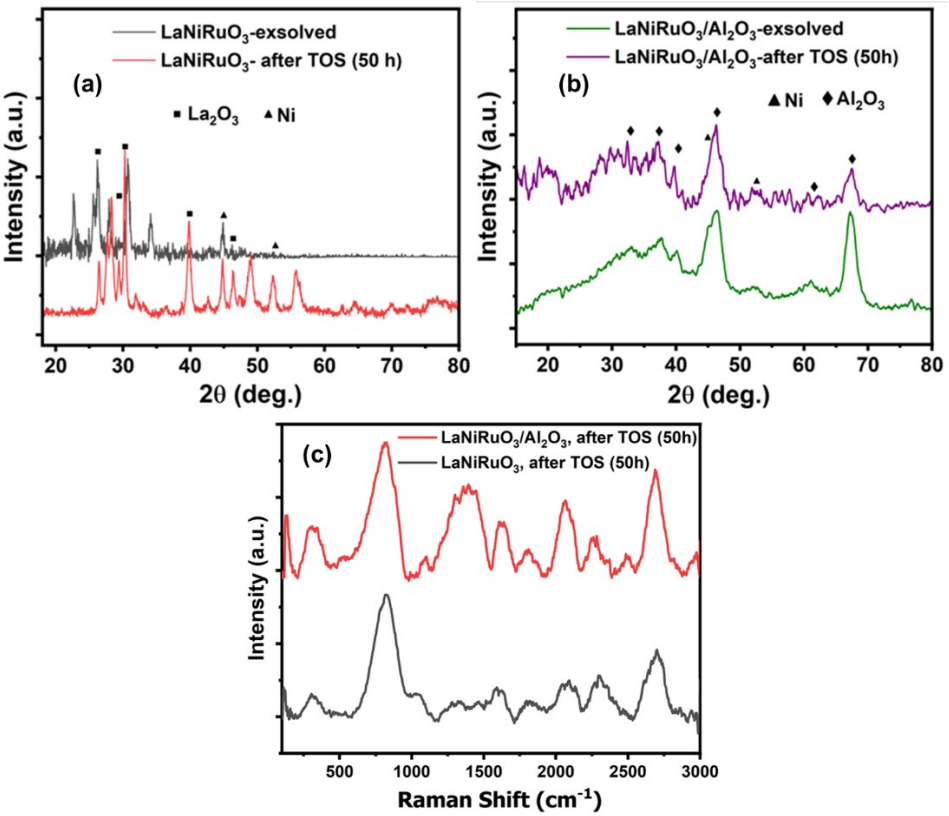

Figure S2. XRD diffractograms of (a) $LaNiRuO_3$ and (b) $LaNiRuO_3/Al_2O_3$ after TOS of 50 h; Raman profile of $LaNiRuO_3$ and $LaNiRuO_3/Al_2O_3$ after TOS of 50 h (c).

Table S1 Metal content of $LaNiRuO_3$ and $LaNiRuO_3/Al_2O_3$) determined by ICP-OES

Sample	**Metal**	**Nominal** (%)	**ICP-OES (%)**
$LaNiRuO_3$	La	56.6	57.1
	Ni	21.5	22.1
	Ru	2.4	1.02
$LaNiRuO_3/Al_2O_3$	La	17	14.4
	Ni	6.5	5.31
	Ru	0.7	0.22
	Al	37	34.3