Electronic Supplementary Material (ESI) for Catalysis Science & Technology.

SUPPLEMENTARY INFORMATION

The effect of phosphorus on the catalytic performance of nickel oxide in ethane oxidative dehydrogenation

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Table S1. Ethane ODH over $Ni_2P_2O_7$.

Reaction temperature (°C)	Ethane conversion (%)	Product selectivities (%)	
		Ethylene	CO_2
550	0.3	22.2	77.8
600	0.6	60.5	39.5
650	2.2	82.4	17.6

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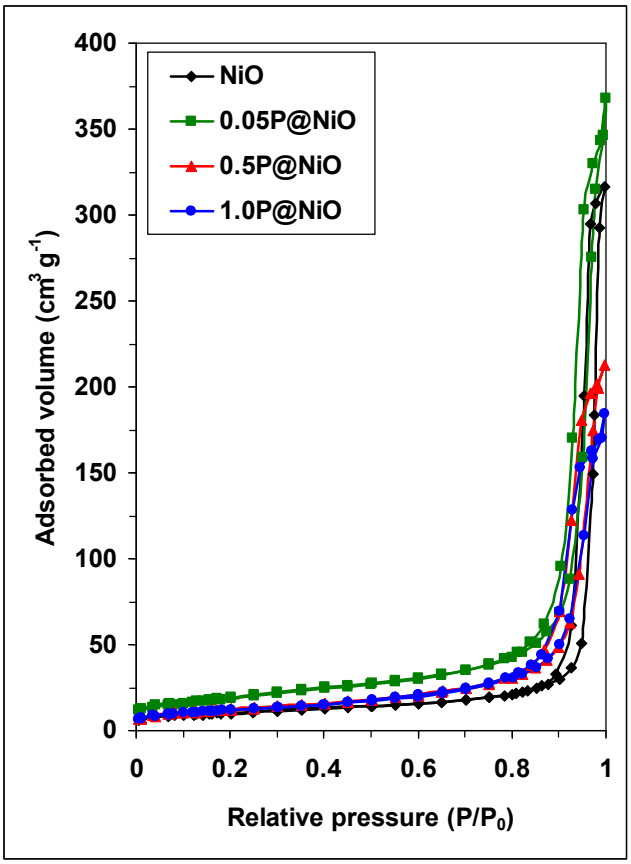

Fig. S1. The adsorption-desorption isotherms of pure NiO and phosphated NiO catalysts.

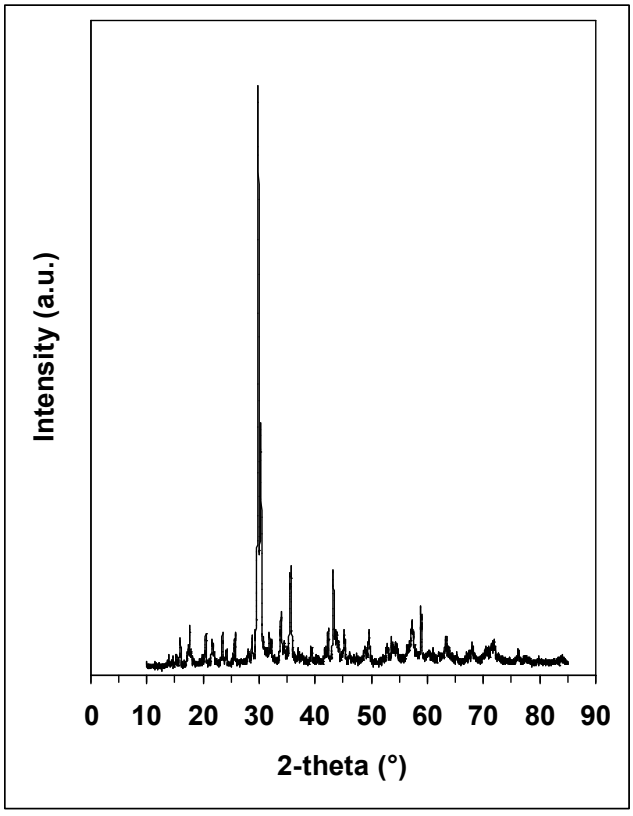

Fig. S2. The XRD pattern of $Ni_2P_2O_7$.

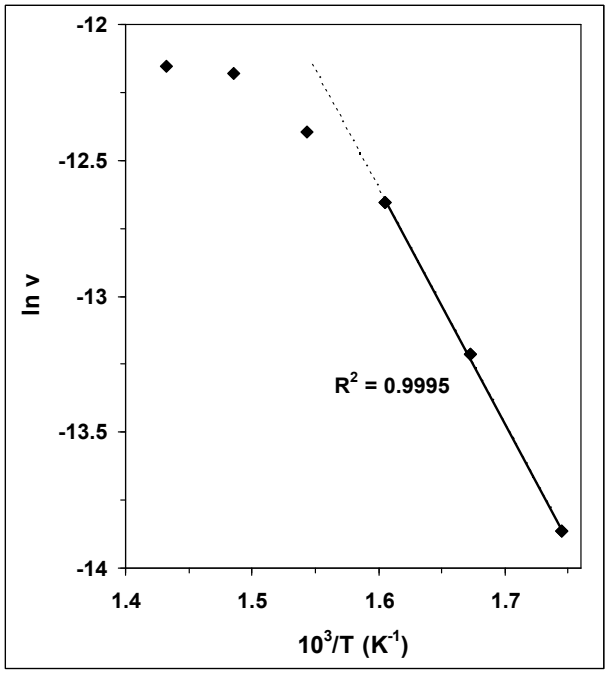

Fig. S3. Arrhenius plot for the ethane conversion over bare NiO catalyst.

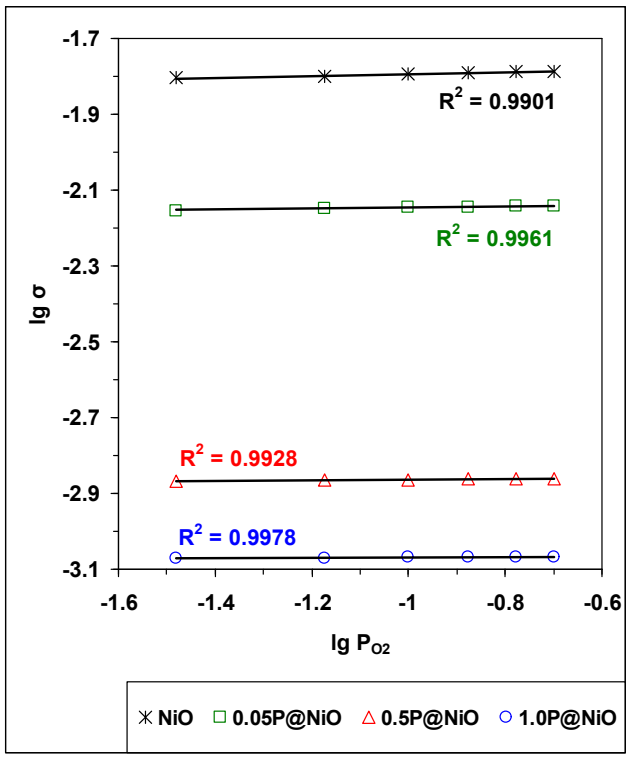

Fig. S4. Variation of σ as a function of the oxygen pressure for NiO and phosphated NiO catalysts at 350 °C in a log–log plot (P_{O_2} in atm; σ in ohm^{-1} cm^{-1}).