Supporting Information

Aligned nanoporous PtNi nanorod-like structure for electrocatalysis and sensing

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Element	Wt%	At%
Al	39	78
Ni	9	8
Pt	52	14

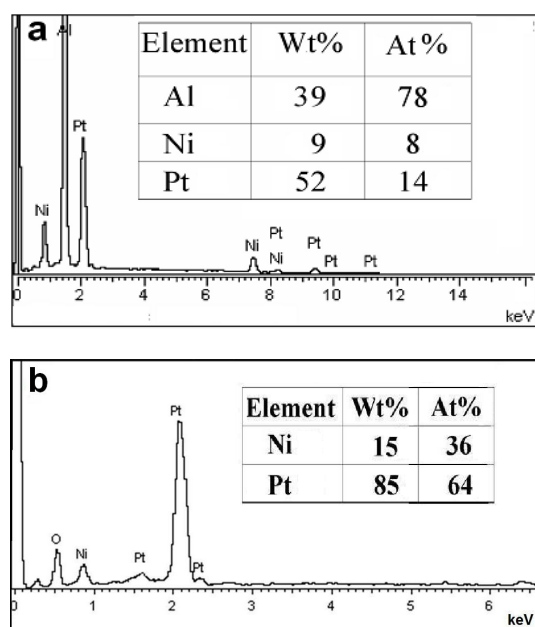| Element	Wt%	At%
Ni	15	36
Pt	85	64

Fig. S-1 EDS spectra of the precursor PtNiAl ternary alloy (a) and the resulted PtNi alloy by dealloying (b).
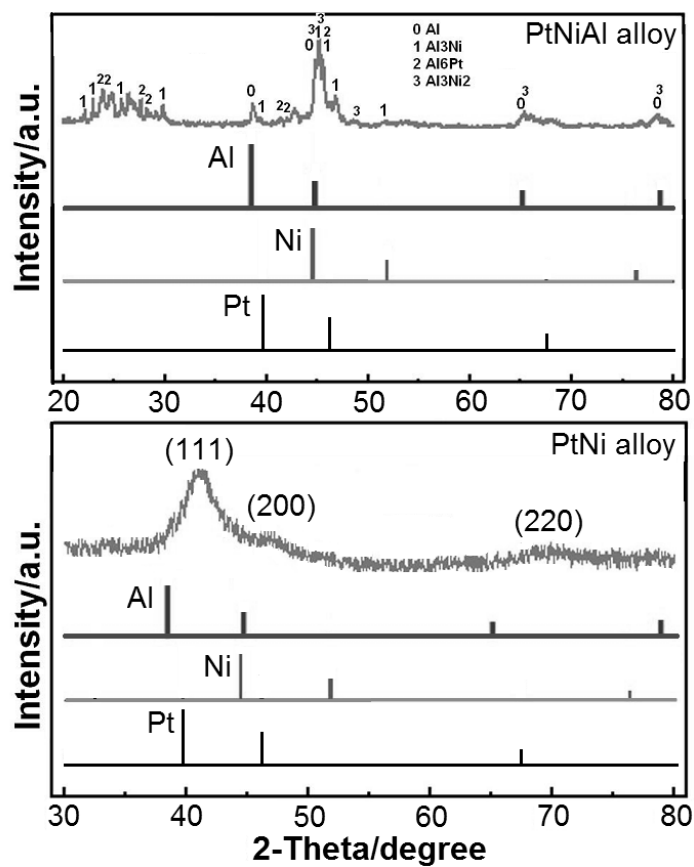
Fig. S-2 XRD patterns of the precursor PtNiAl alloy and the resulted PtNi alloy, the standard patterns of pure Pt, Ni and Al are attached for comparison.
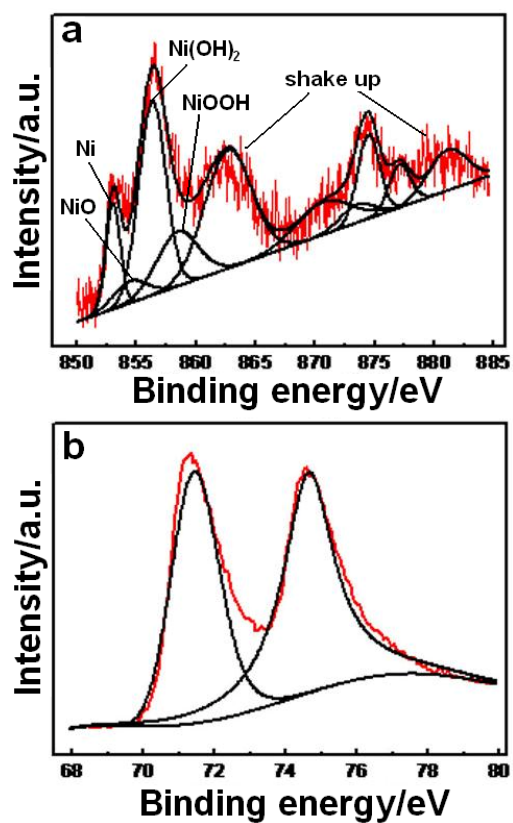
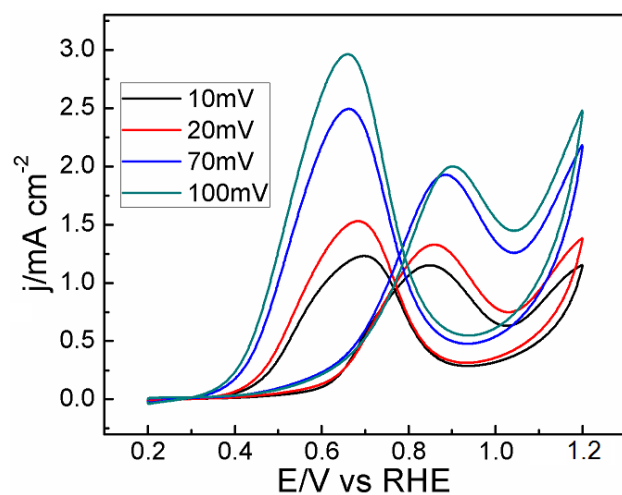Fig. S-3 XPS spectra of Ni 2p (a) and Pt 4f (b) of nanoporous PtNi alloy.

Fig. S-4 CVs of np-PtNi electrode in 0.5 M H_2SO_4 + 1.0 M C_2H_5OH solution at different scan rates.
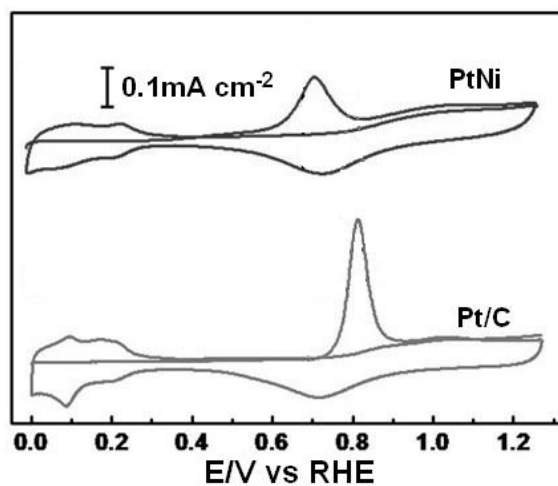
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Fig. S-5 Electrochemical CO-stripping curves for nanoporous PtNi and Pt/C catalysts in 0.5 M H_2SO_4. Scan rate: 50 mV s^{-1}.
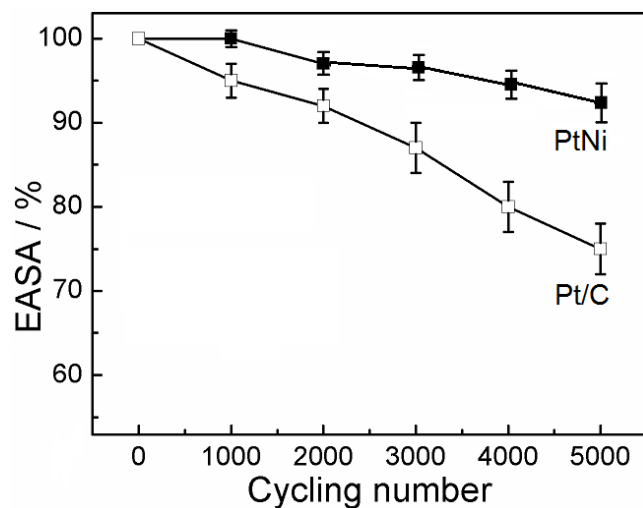

Fig. S-6 EASAs of nanoporous PtNi and Pt/C after treated with different CV scan cycles from 0.6 to 0.9 V in 0.5 M H_2SO_4 solution.

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Table S-1. Determination of real samples by the present nanoporous PtNi-based

biosensor

Real sample [a]	Nominal concentration (mM)	This biosensor (mM) (RSD)[b]
Ethanol 1	2.5	2.6 (4.0%)
2	5.0	5.0 (3.7%)
Glucose 1	2.5	2.7 (4.2%)
2	5.0	5.1 (3.5%)

[a]The real samples are diluted Chinese liquors and glucose injections (both are

domestic products).

[b]RSD is calculated from 5 separate experiments.