Nanoporous PtFe surface alloy architecture for enhanced methanol electro-oxidation

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\begin{tabular}{|l|c|c|}
\hline
Element & Wt.% & At.% \\
\hline
Al & 45.1 & 80.1 \\
Fe & 10.5 & 9.0 \\
Pt & 44.4 & 10.9 \\
\hline
\end{tabular}

\begin{tabular}{|l|c|c|}
\hline
Element & Wt.% & At.% \\
\hline
Al & 0.2 & 1.0 \\
Fe & 18.8 & 44.3 \\
Pt & 81.0 & 54.7 \\
\hline
\end{tabular}

Fig. S-1 EDS results of PtFeAl ternary alloy before and after dealloying in 0.5 M NaOH solution.
Fig. S-2 XRD pattern of the precursor ternary alloy, the sample dealloyed in 0.5 M NaOH solution and the sample dealloyed in 5 M NaOH solution.
Fig. S-3 Large-area HRTEM image of np-PtFe, inset is the corresponding selected-area electron diffraction pattern.
Fig. S-4 SEM images of PtFeAl alloy after dealloying in 0.5 M NaOH aqueous solution for 0 min (a), 15 min (b, c) and 60 min (e, f).
Fig. S-5 SEM image of the sample obtained by dealloying Fe$_{20}$Al$_{80}$ in 5 M NaOH solution for 24 h.

Fig. S-6 XPS spectra of Pt 4f (a) and Fe 2p (b) core levels of np-PtFe surface alloy.
Fig. S-7 SEM image of np-PtFe SA after continuous 5000 CV cycles from 0.6 to 0.9 V in 0.5 M H₂SO₄ solution.