Supplementary Data

Electrocatalytic Performance of Pt–Ni Nanoparticles Supported on Activated Graphite Electrode for Ethanol and 2-Propanol Oxidation

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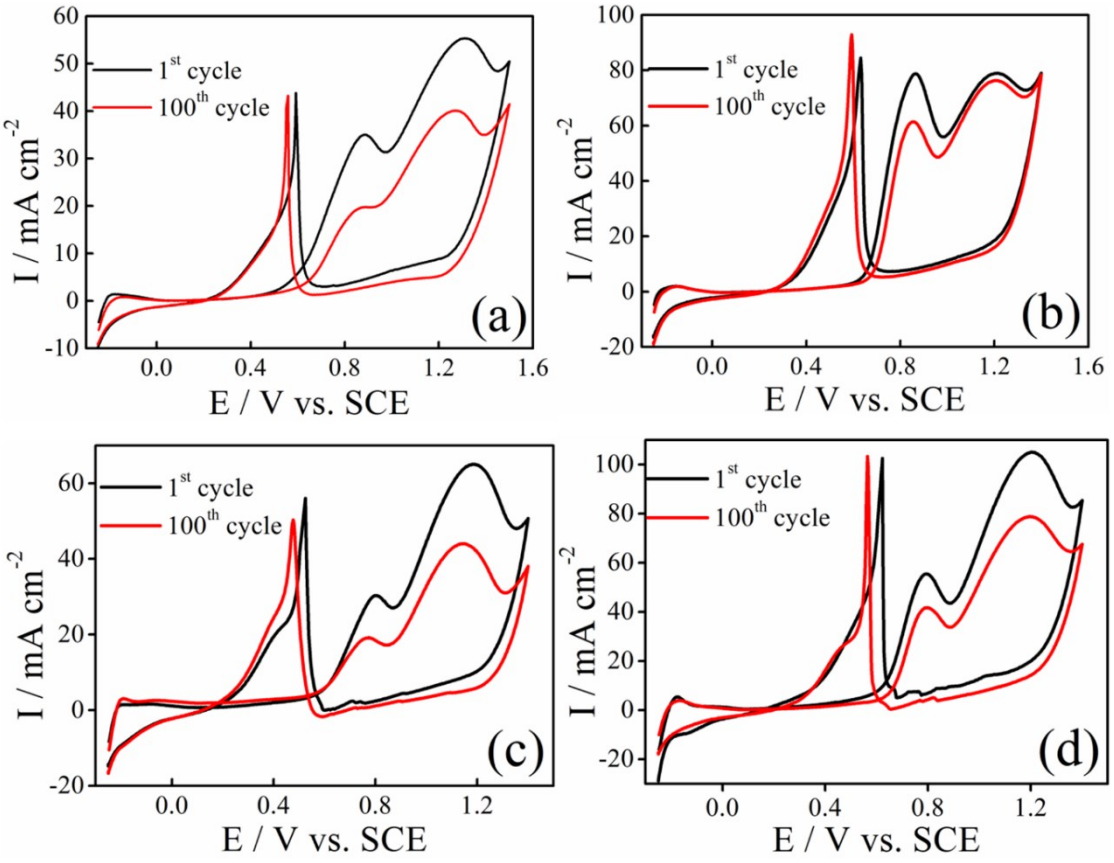

Fig. 1S Repeated cyclic voltammograms for ethanol and 2-propanol electrooxidation on Pt/C (a and c), and Pt–Ni/C (b and d). Scan rate of 50 mV s-1.

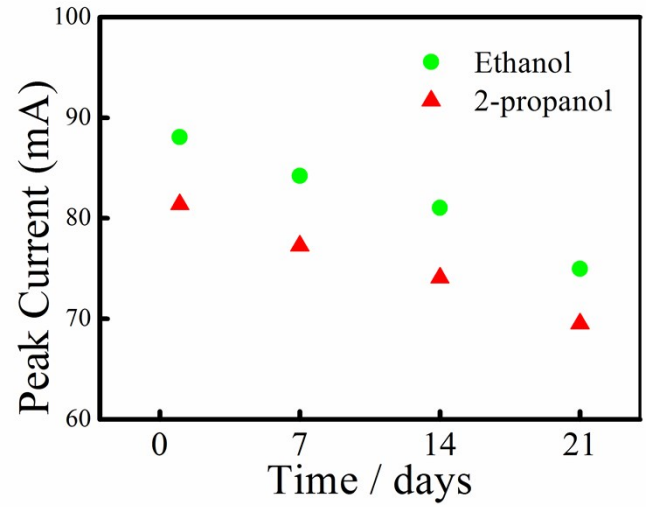

Fig. 2S The electrocatalyst stability of the proposed electrode for ethanol and 2-propanol tested at intervals of seven days for twenty one days.

Table 1S Electrocatalytic performances of the some electrocatalysts prepared with different methods in the oxidation of ethanol and 2-propanol

Electrocatalyst	Preparation method	Electrolytes	Onset Potential (V/SCE)	Current density (mA cm^2)	Peak potential (V/SCE)	Ref.
PtRh/C	Electrochemical method	0.1 M H_2SO_4 + 1.0 M CH_3CH_2OH	0.308	43.88	0.68	[19]
PtSnNi/C	Impregnation/reduction method	0.5 M H_2SO_4 + 1.0 M CH_3CH_2OH	0.310	60.28	0.781	[34]
Pt-Ni/CCE	Electrochemical method	0.1 M H_2SO_4 + 0.15 M CH_3CH_2OH	0.318	145.23	0.75	[15]
Pt–Ru–Ni/C	Chemical reduction method	0.5 M H_2SO_4 + 0.5 M CH_3CH_2OH	0.358	14.52	0.688	[35]
Pt/SiC/EG	Carbo-thermal reduction method	0.5 M H_2SO_4 + 0.5 M CH_3CH_2OH	0.245	15	0.63	[36]
Pt-Ni/CCE	Electrochemical method	0.1 M H_2SO_4 + 0.15 M $CH_3CHOHCH_3$	-0.1	43.61	0.52	[17]
Pt-Ni/C	Electrochemical method	0.1 M H_2SO_4 + 1 M CH_3CH_2OH	0.54	61.68	0.81	This work
Pt-Ni/C	Electrochemical method	0.1 M H_2SO_4 + 1.0 M $CH_3CHOHCH_3$	0.1	28.26	0.71	This work