Surface-modified Pt_1Ni_1–$Ni(OH)_2$ Nanoparticles with Abundant Pt–$Ni(OH)_2$ Interfaces Enhance Electrocatalytic Properties

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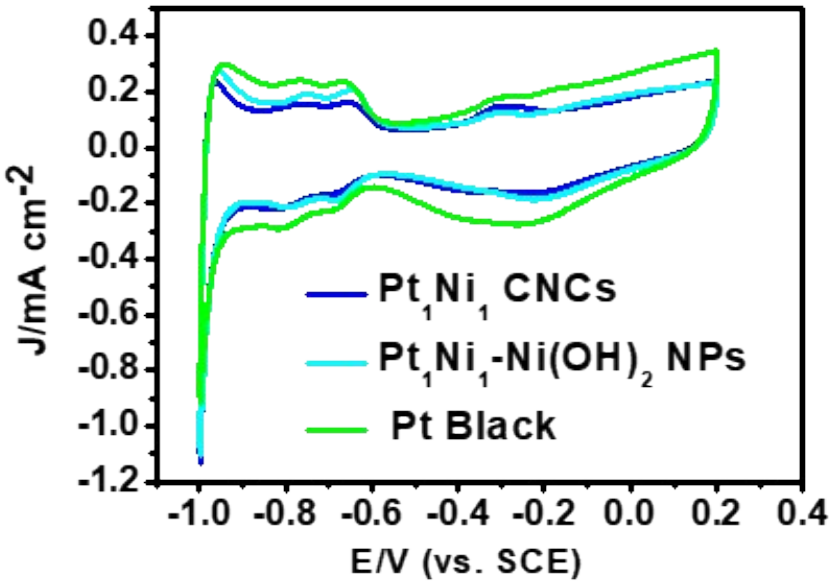


Fig. S1. CV curves of the Pt_1Ni_1 CNCs and Pt_1Ni_1–$Ni(OH)_2$ NPs and Pt Black in a N_2-Purged 0.1M NaOH solution at a scan rate of 50 mV s^{-1}.

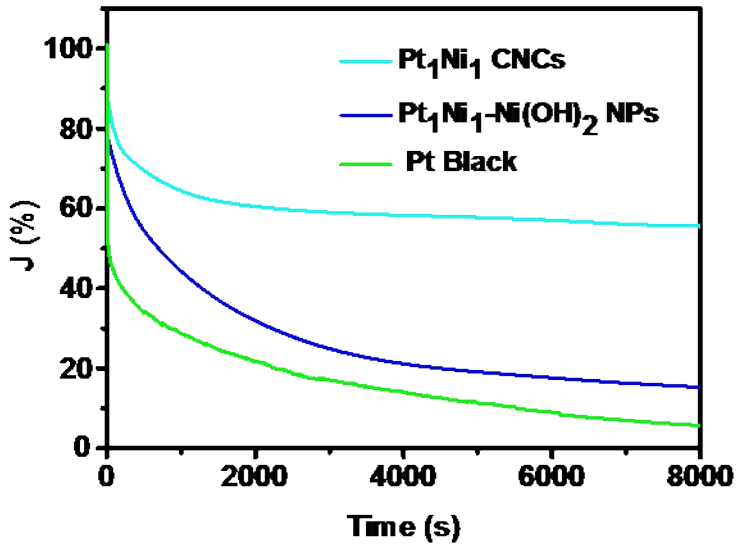


Fig. S2. I-t curves at 0.6 V vs. RHE for methanol electrooxidation in a mixture of 0.1 M NaOH and 1 M CH_3OH of as-prepared Pt_1Ni_1 CNCs, Pt_1Ni_1–$Ni(OH)_2$ NPs and commercial Pt Black.

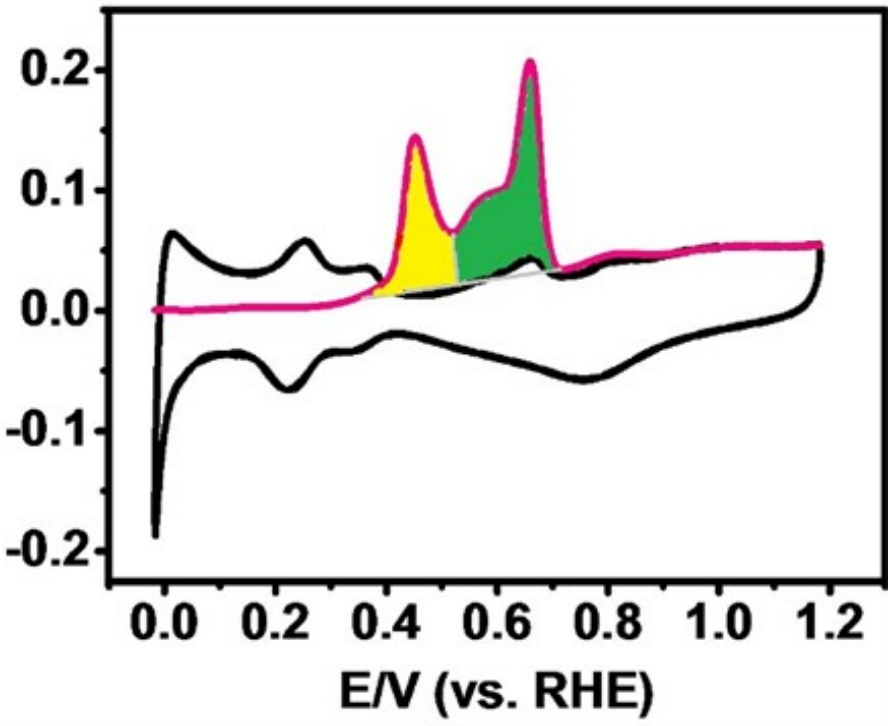


Fig. S3. The integration of CO oxidation peak areas of Pt_1Ni_1–$Ni(OH)_2$ NPs.

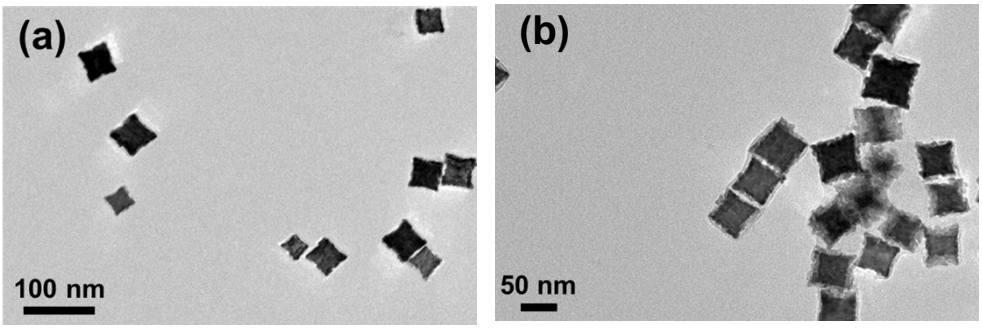


Fig. S4. Representative TEM images of (a) Pt_3Ni CNCs and (b) Pt_3Ni–$Ni(OH)_2$ NPs.

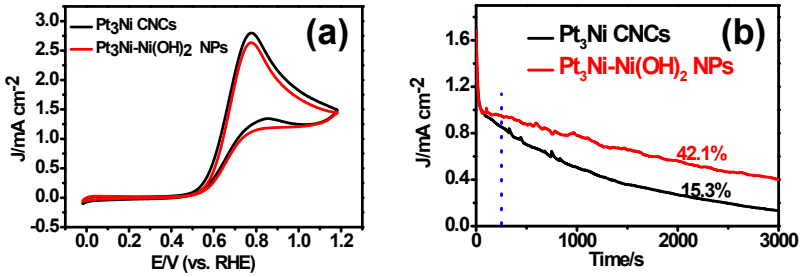
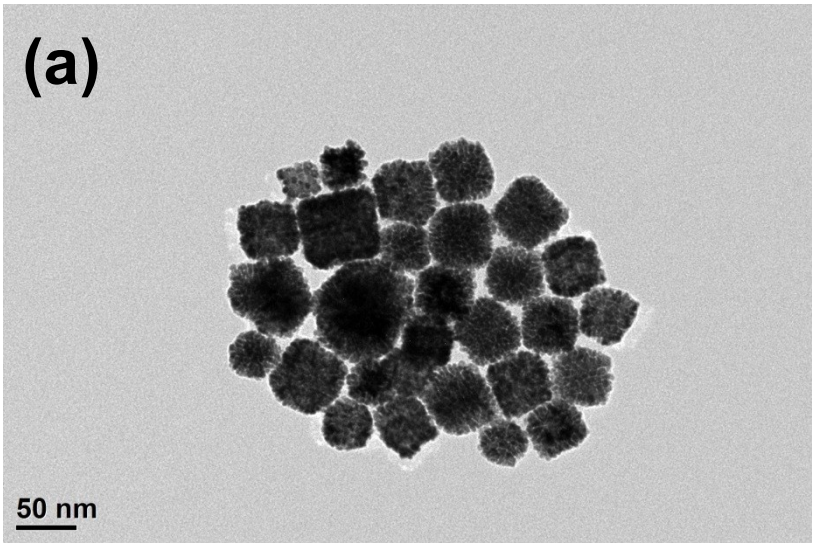


Fig. S5. (a) Cyclic voltammograms and (b) i-t curves (at 0.6 V vs. RHE) of as-prepared Pt_3Ni CNCs and Pt_3Ni–$Ni(OH)_2$ CNCs of methanol electrooxidation in a mixture of 0.1 M NaOH and 1 M CH_3OH at a scan rate of 50 mV s^{-1}.

Table S1. The components of as-prepared catalysis measured by ICP-OES

Samples	Pt/Ni molar ratio
Pt_1Ni_1-$Ni(OH)_2$ NPs	62.7/37.3
Pt_3Ni-$Ni(OH)_2$ NPs	81.4/18.6



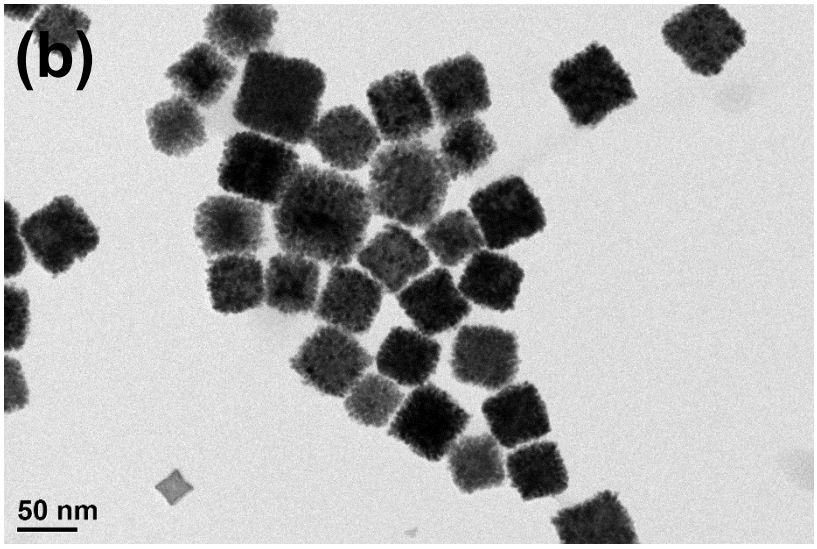


Fig. S6. (a) and (b) TEM images of $PtNi_3$ NPs.