Electronic Supplementary Material (ESI) for Energy Advances.

Supplementary Information for

Electrocatalytic behavior of amino compounds oxidation on NiCo catalyst and energy conversion

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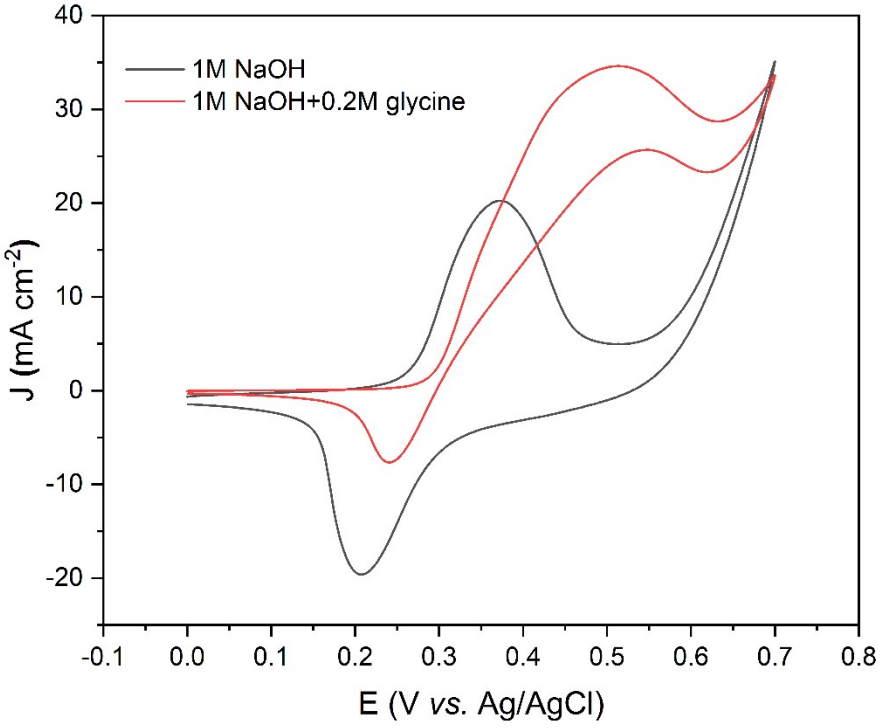
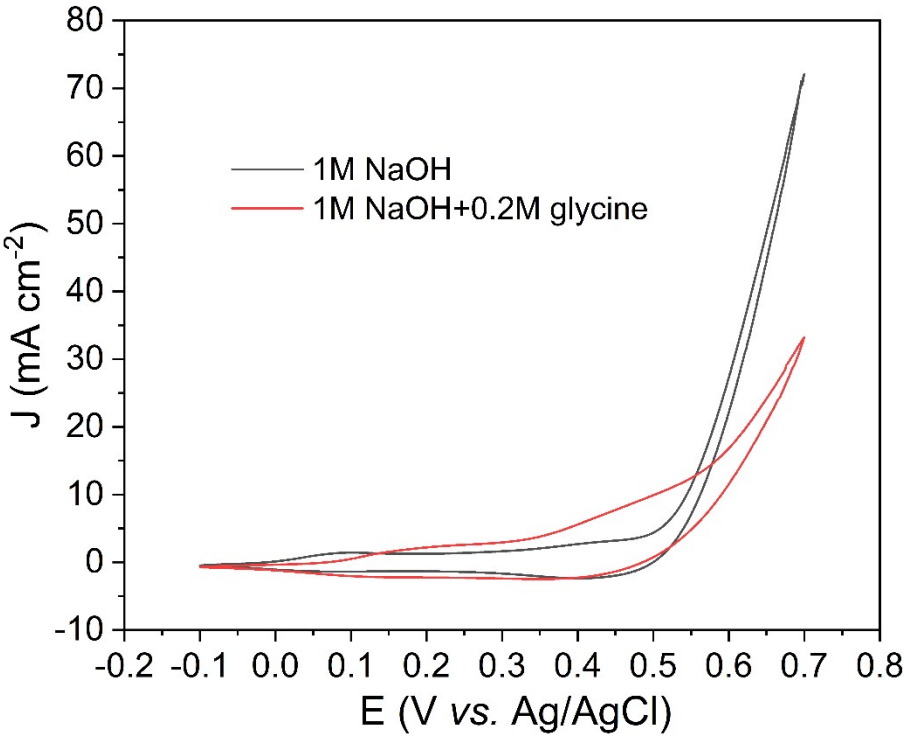
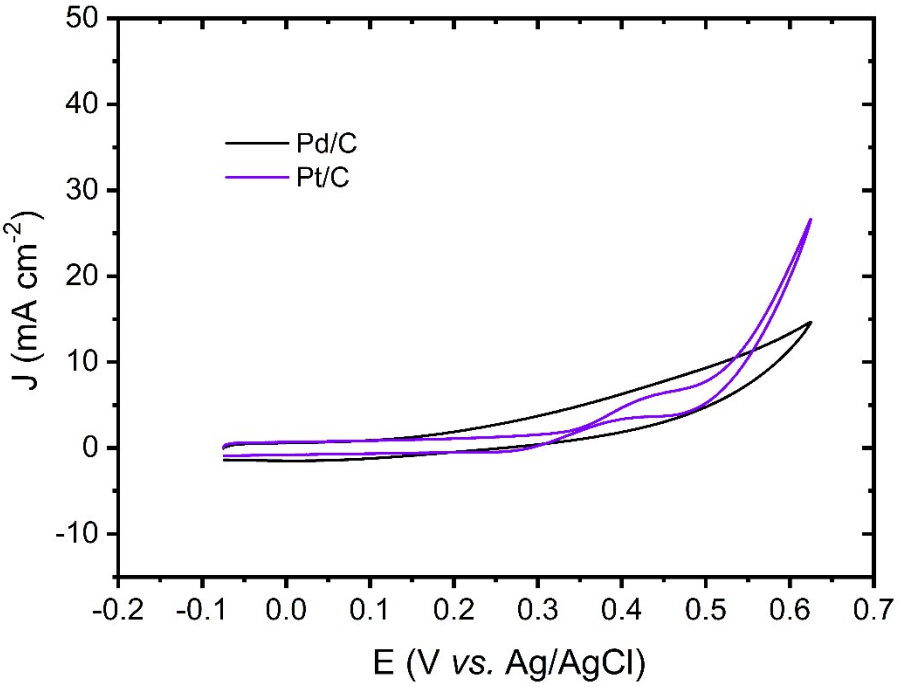


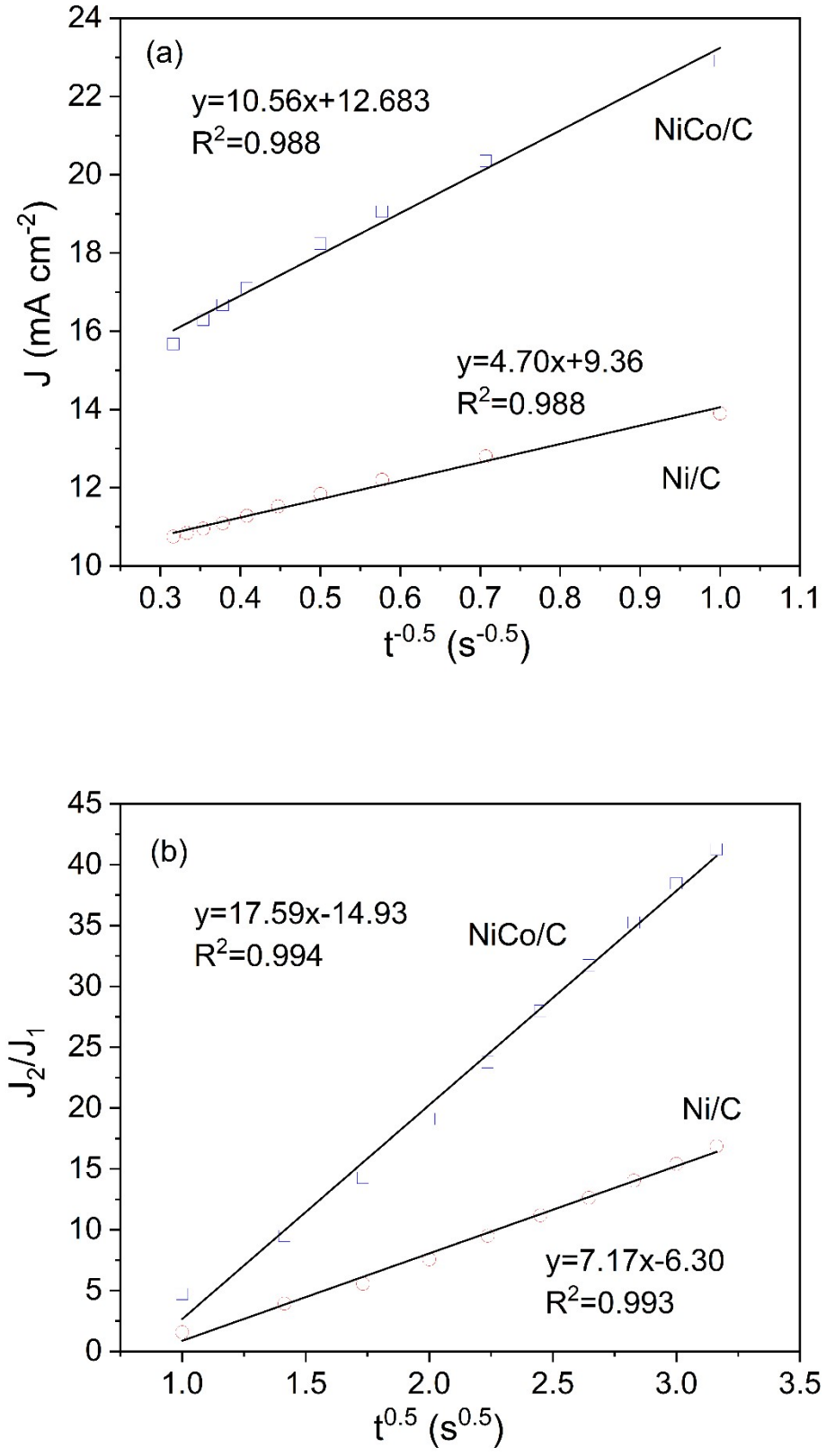
Supplementary Figure S1 CVs of NiCo/C catalysts in 1 M NaOH electrolyte with absence and presence of 0.2 M glycine at scan rate of 50 mV s^{-1}.



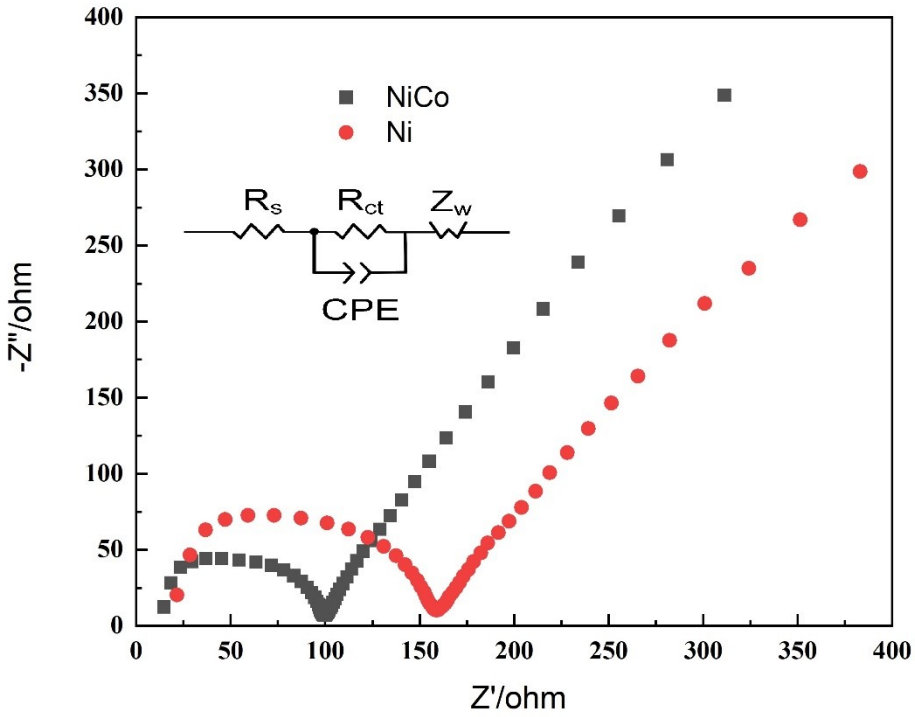
Supplementary Figure S2 CVs of Co/C catalyst in 1 M NaOH electrolyte with absence and presence of 0.2 M glycine at scan rate of 50 mV s^{-1}.



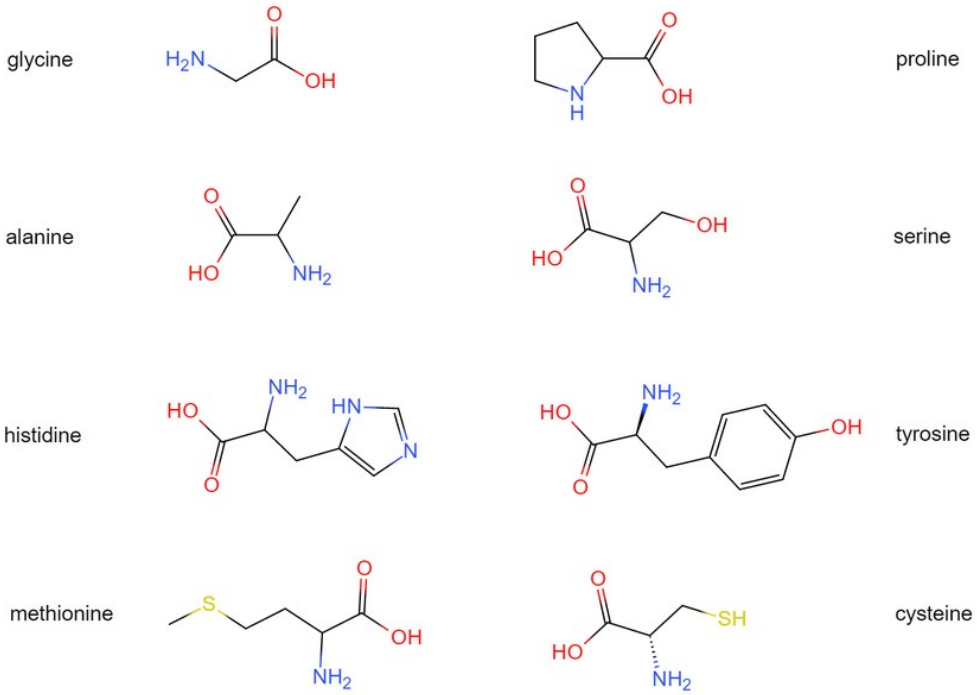
Supplementary Figure S3 Cyclic voltammetry of commercial 20 wt% Pt/C and 20 wt% Pd/C in 1 M NaOH with 0.2 M Gly at a scan rate of 50 mV s^{-1}. The loadings of Pd and Pt on GCE were both about 0.18 mg cm^{-2}.



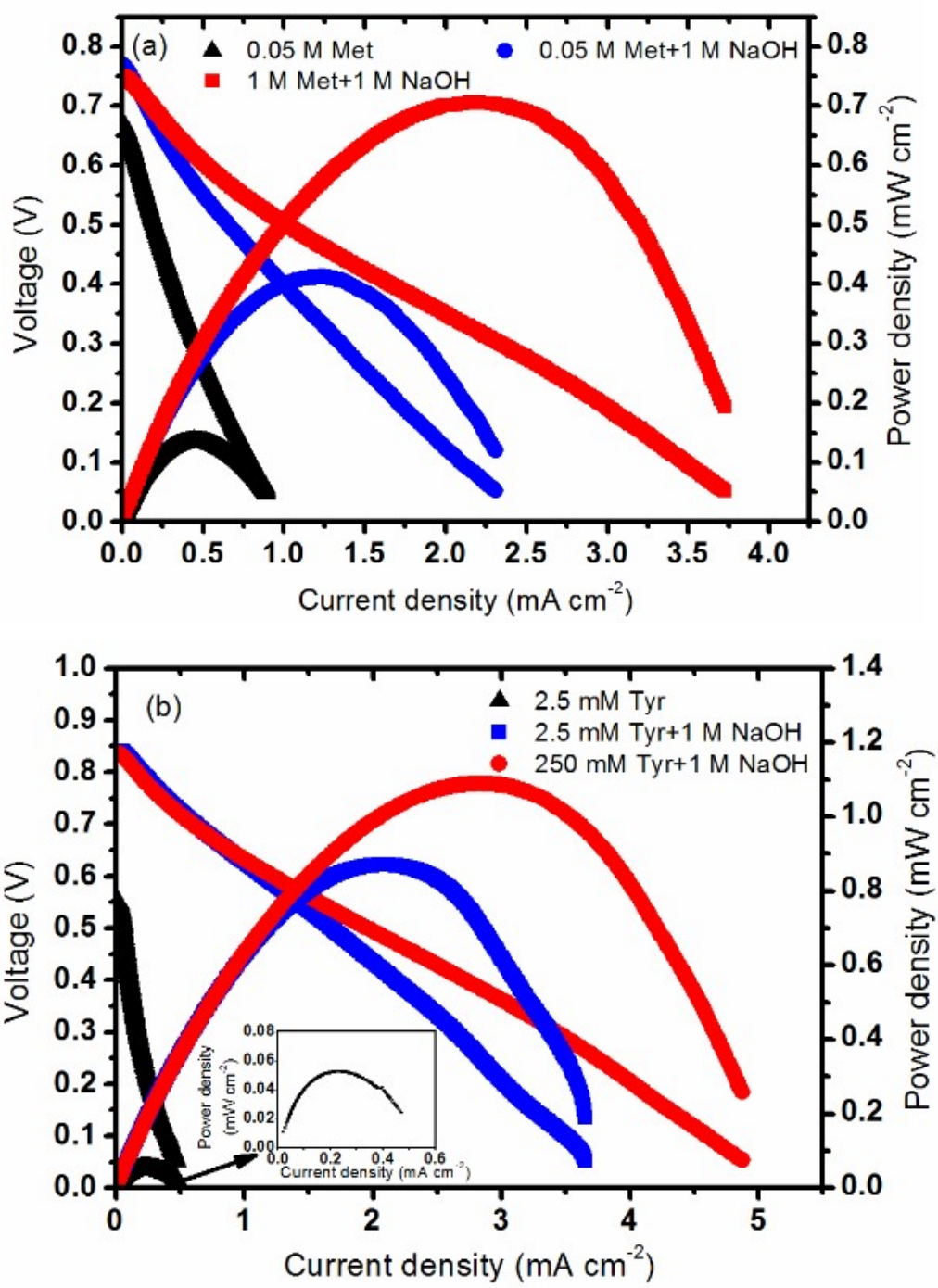
Supplementary Figure S4 (a) Dependence of current density (J) on $t^{-1/2}$ in 1 M NaOH with 0.2 M glycine. (b) Dependence of J_2/J_1 on $t^{1/2}$. Data are from chronoamperograms plots in Figure 4b.



Supplementary Figure S5. Nyquist diagrams of Ni and NiCo on glassy carbon electrode recorded at 0.45 V vs. Ag/AgCl in 1M NaOH solution with 0.2 M glycine. Inset scheme of an equivalent circuit model to mimic the electrochemical reaction.



Supplementary Scheme S6 Structures of some amino acids studied in this work



Supplementary Figure S7 Polarization and power density plots of AAFC with NiCo/C as anode catalysts at 30 °C by using (a) 0.05 M methionine; 0.05 M methionine + 1 M NaOH; 1 M methionine + 1 M NaOH and (b) 0.05 M tyrosine; 0.05 M tyrosine +1 M NaOH; 1 M tyrosine +1 M NaOH as fuels respectively.