

Supplementary Information

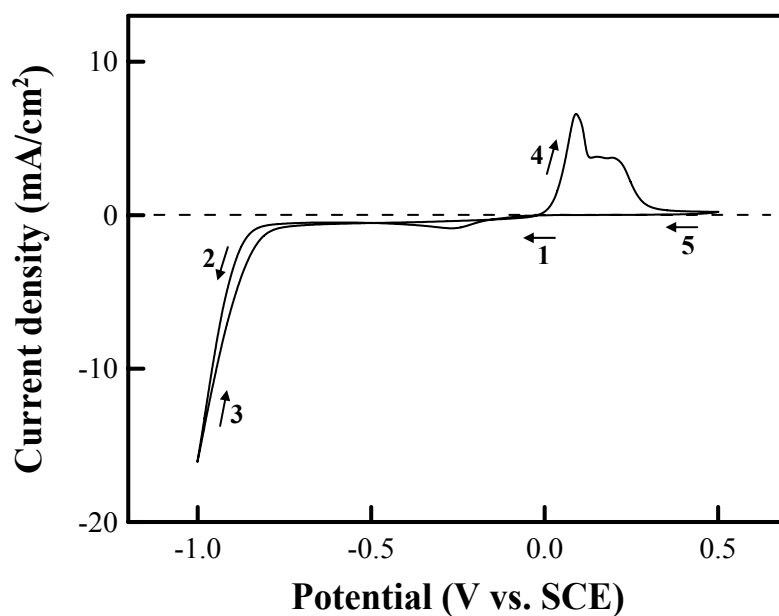


Fig. S11. Cyclic voltammogram of Ni foil recorded in 1 M NiSO₄, 0.01 M CuSO₄, and 0.5 M H₃BO₃ mixed solution with a potential sweep rate of 10 mV/s.

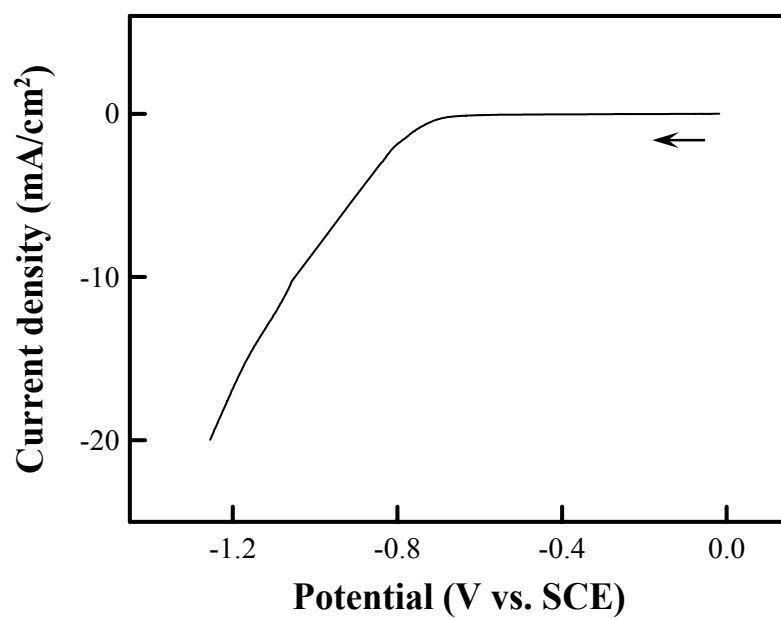


Fig. S12. Linear sweep voltammogram of a porous Ni electrode recorded in 0.1 M $\text{Co}(\text{CH}_3\text{COO})_2$ aqueous solution with a potential sweep rate of 1 mV/s.

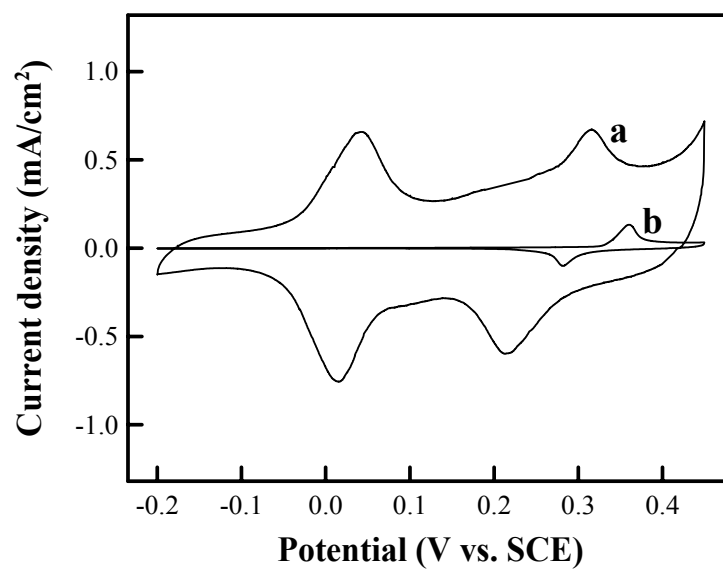


Fig. S13. Cyclic voltammograms of the nano-structured $\text{Co}(\text{OH})_2$ electrode with a Ni-4C substrate (curve a) and the bare Ni-4C electrode (curve b) recorded in 1 M KOH solution with a potential sweep rate of 5 mV/s.

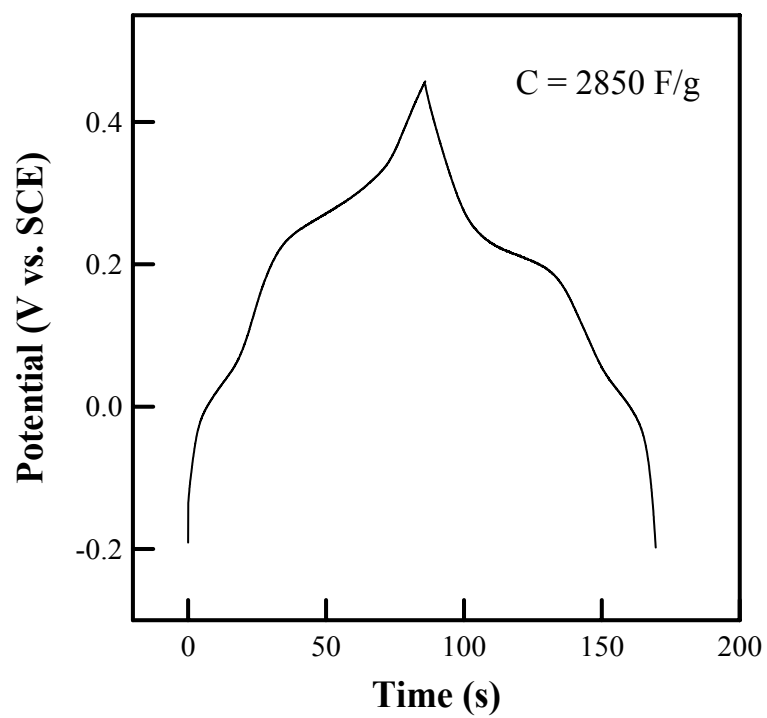


Fig. SI4. Chronopotentiogram of the nano-structured $\text{Co}(\text{OH})_2$ electrode with a Ni-4C substrate at the 2000th charge–discharge cycle. The measurement was performed with a constant current density of $\pm 0.5 \text{ mA/cm}^2$ in 1 M KOH solution.