Supporting Information for

Porous Nickel Electrodes with Controlled Texture for Hydrogen Evolution Reaction and Sodium Borohydride Electrooxidation

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Notes

The authors declare no competing financial interest.

5 pages: page I - V

6 figures: figure S1-S6

1 table: table S1

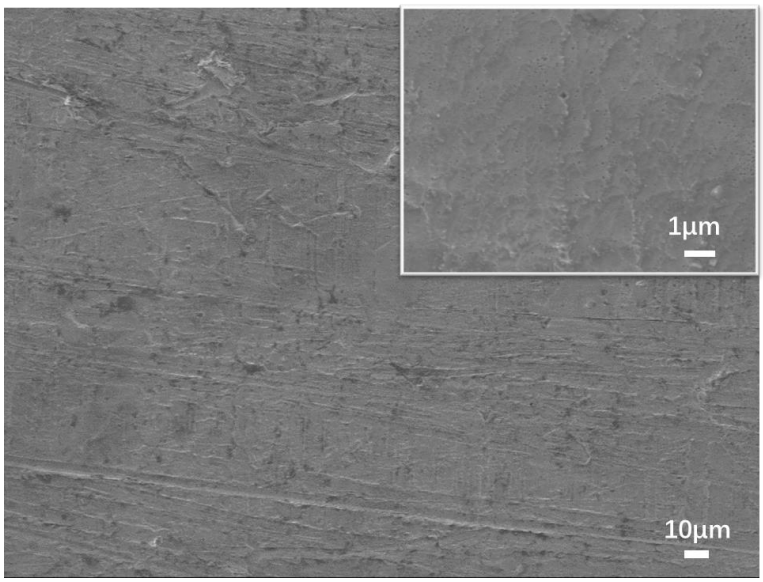

Figure S1. SEM image of the Ni substrate.

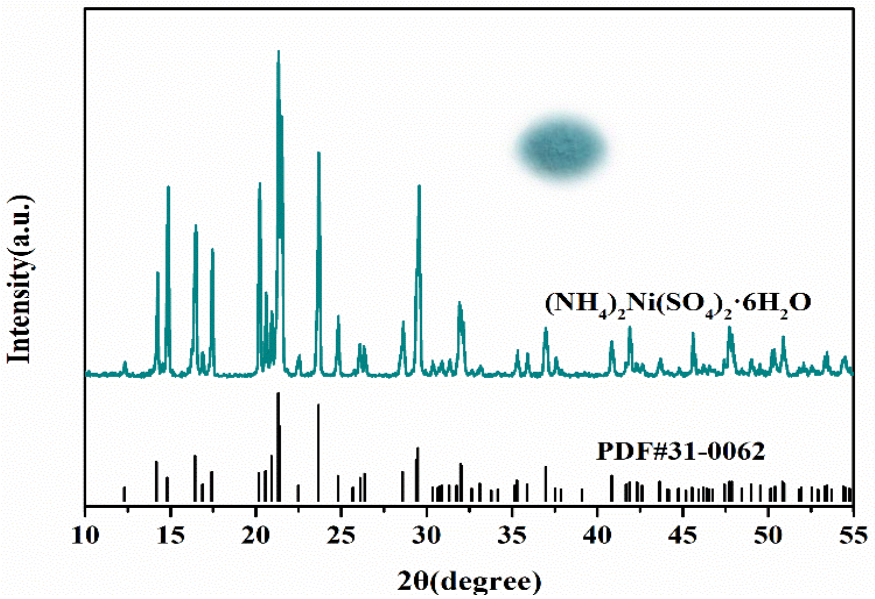

Figure S2. XRD pattern of the precipitates in solution when $(NH_4)_2SO_4$ concentration over 0.5M.

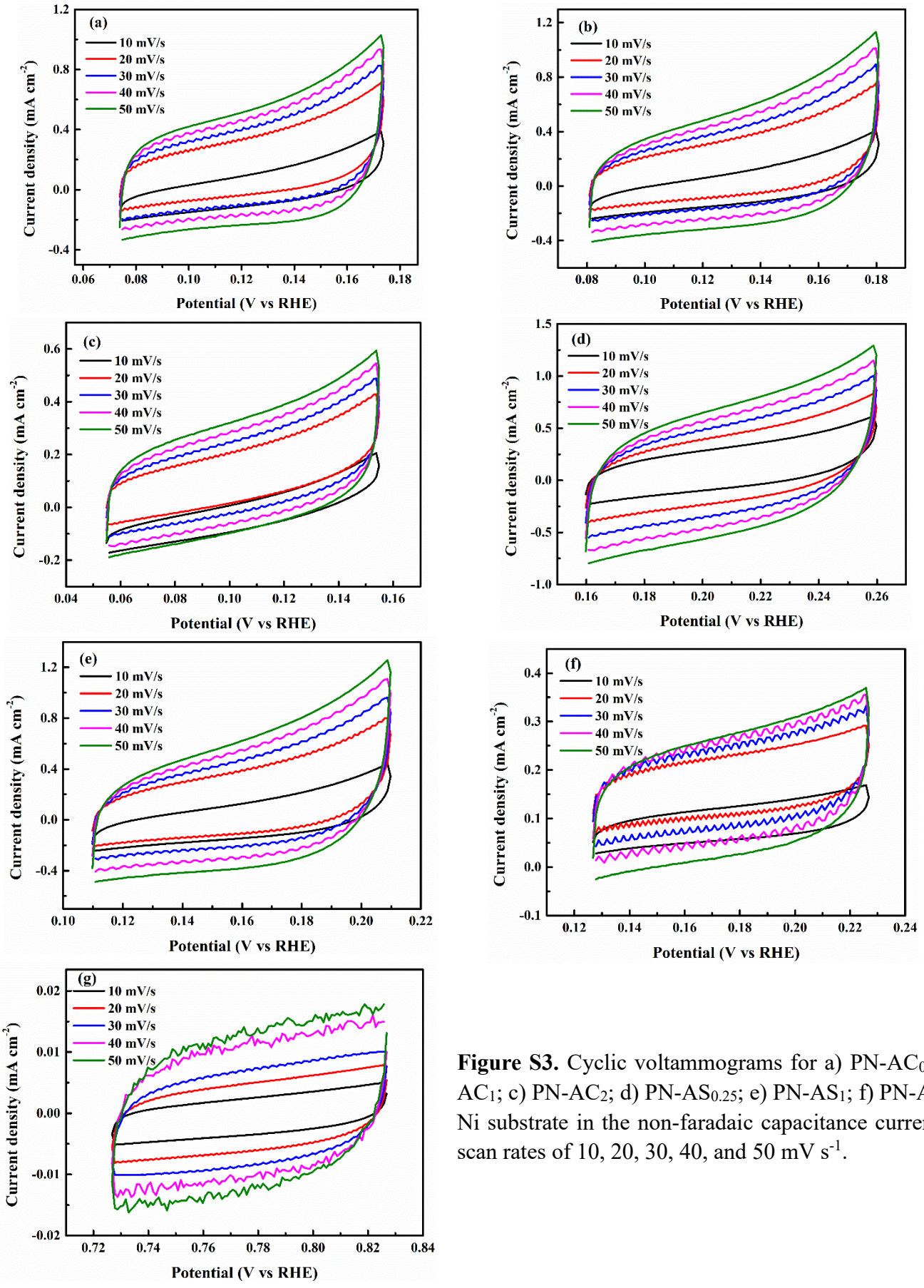

Figure S3. Cyclic voltammograms for a) PN-$AC_{0.25}$; b) PN-AC_1; c) PN-AC_2; d) PN-$AS_{0.25}$; e) PN-AS_1; f) PN-AS_2; and g) Ni substrate in the non-faradaic capacitance current range at scan rates of 10, 20, 30, 40, and 50 mV s^{-1}.

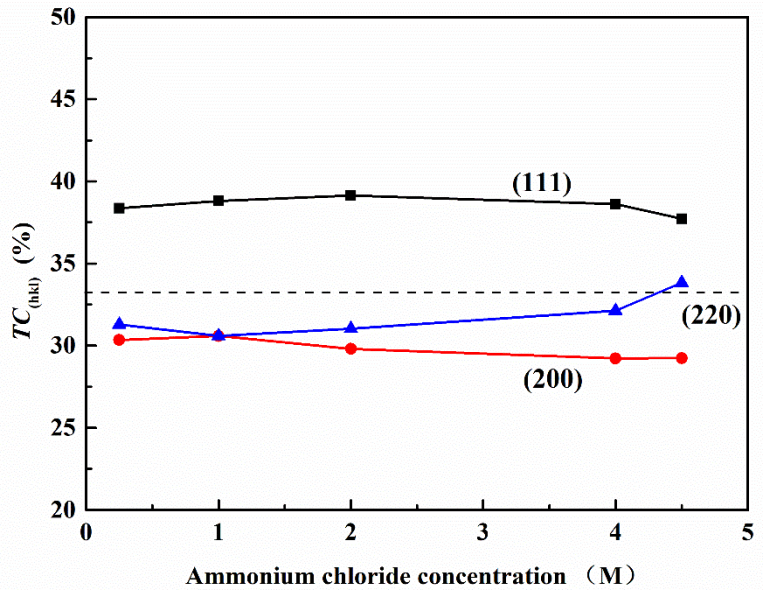

Figure S4. Relationship between texture of porous Ni electrodes and concentration of NH_4Cl.

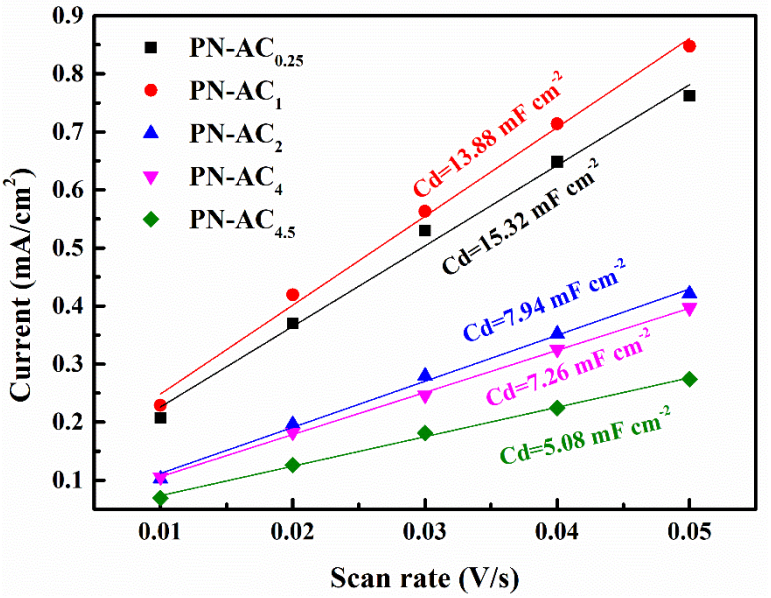

Figure S5. Corresponding capacitive currents at the specific potential vs Hg/HgO as a function of scan rate (10, 20, 30, 40, and 50 mV s^{-1}).

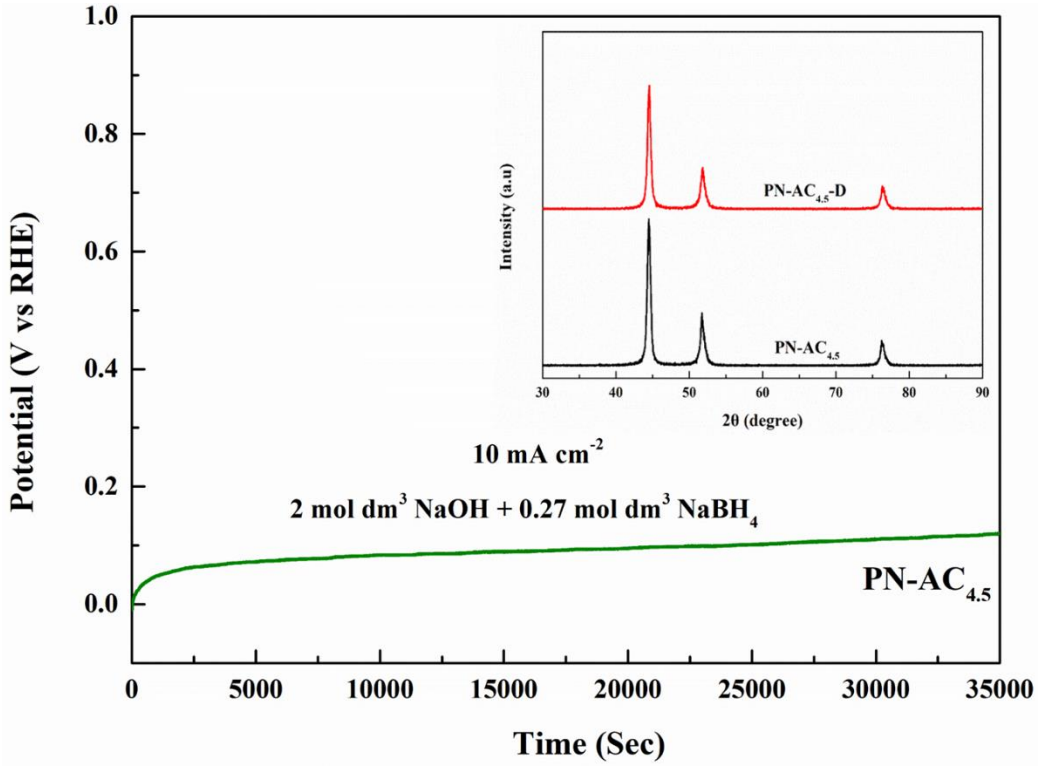

Figure S6. Chronopotentiometry curves of $NaBH_4$ oxidation on PN-$AC_{4.5}$ at 25 °C in 0.27 M $NaBH_4$ + 2 M NaOH solution. Embedded: XRD patterns of PN-$AC_{4.5}$ and PN-$AC_{4.5}$-D (PN-$AC_{4.5}$ after the long-stability test).

Table S1. The C_{dl} and ECSA of Ni electrodes.

	C_{dl} (mF cm^{-2})	ECSA (cm^2)
PN-$AC_{0.25}$	13.88	555.2
PN-AC_1	15.32	612.8
PN-AC_2	7.94	317.6
PN-$AS_{0.25}$	21.01	840.4
PN-AS_1	18.06	722.4
PN-AS_2	4.55	182
Ni substrate	0.49	19.6