Supporting Information

for

Preparation of nickel-bound porous carbon and its application in supercapacitors

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1. Preparation process of the working electrode

The working electrode was obtained by pressing the active material film on the nickel foam (~1 cm^2). The film was created as a result of mixing active material (80 wt%), acetylene black (15 wt%), polytetrafluoroethylene (5 wt%), and a small amount of ethanol followed by grounding and flattening. After the process, the electrode was dried in an oven at 60°C for 2 h before testing

Figure S1

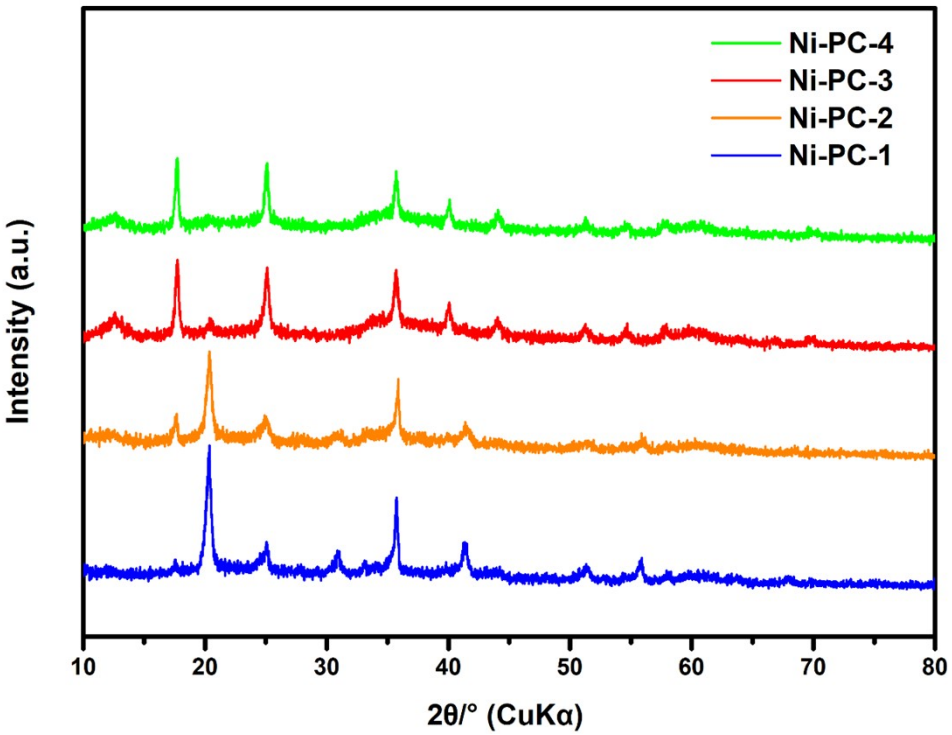

Figure S1. XRD patterns of Ni-PC-1, Ni-PC-2, Ni-PC-3 and Ni-PC-4.

Figure S2

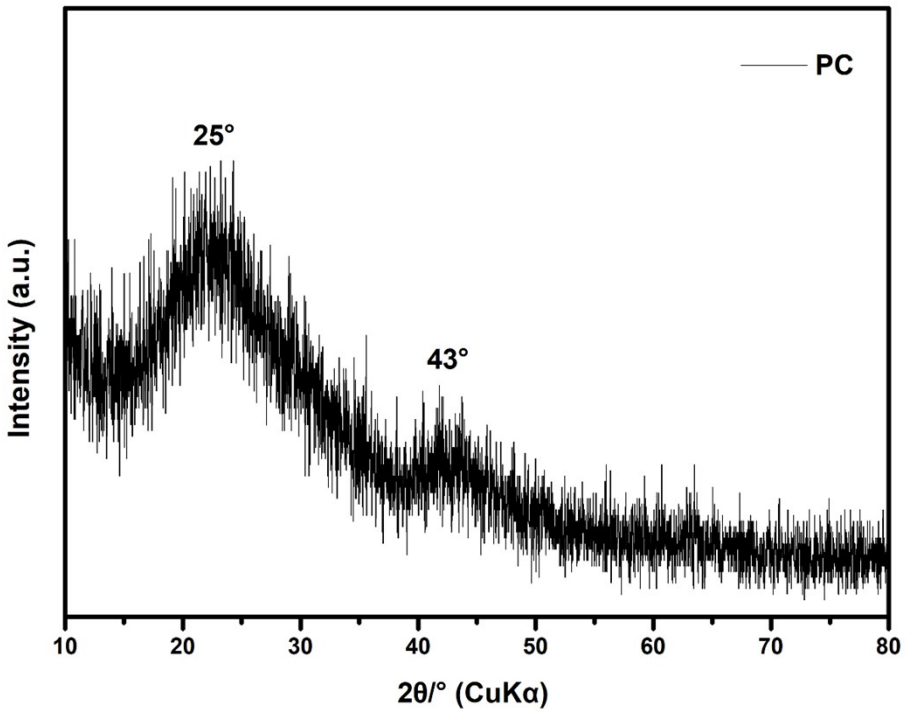

Figure S2. XRD pattern of PC.

Figure S3

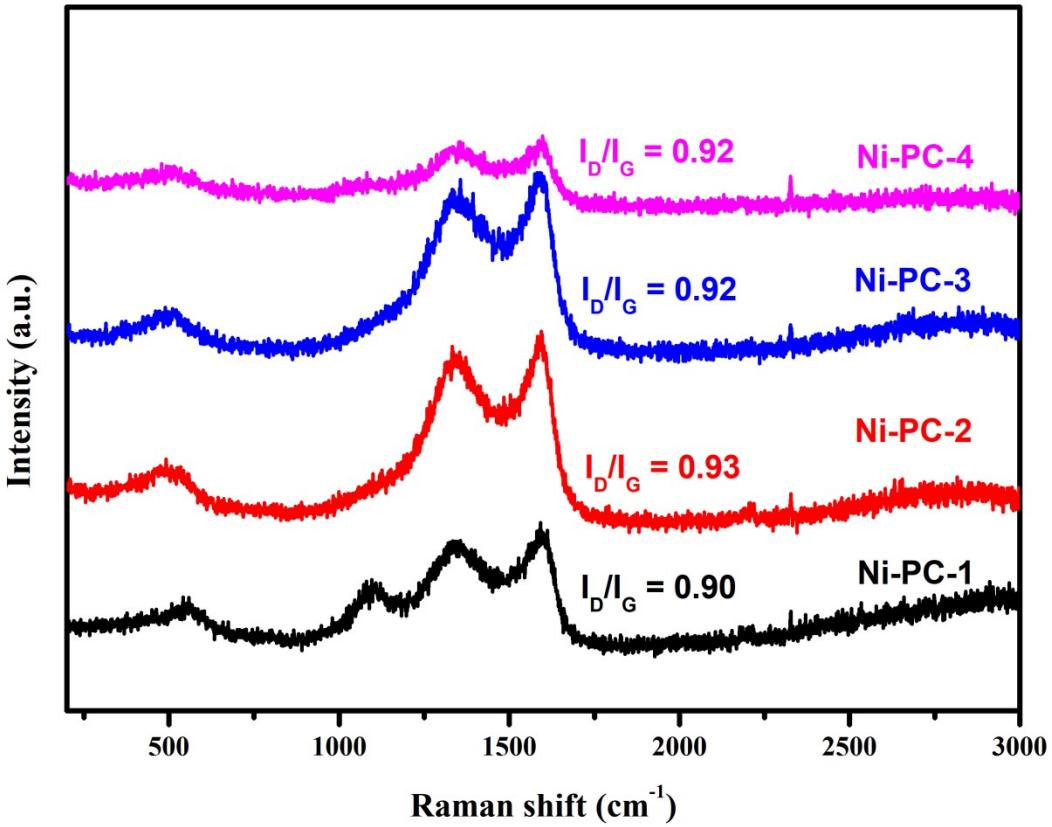

Figure S3. Raman spectra of Ni-PC-1, Ni-PC-2, Ni-PC-3 and Ni-PC-4.

Figure S4

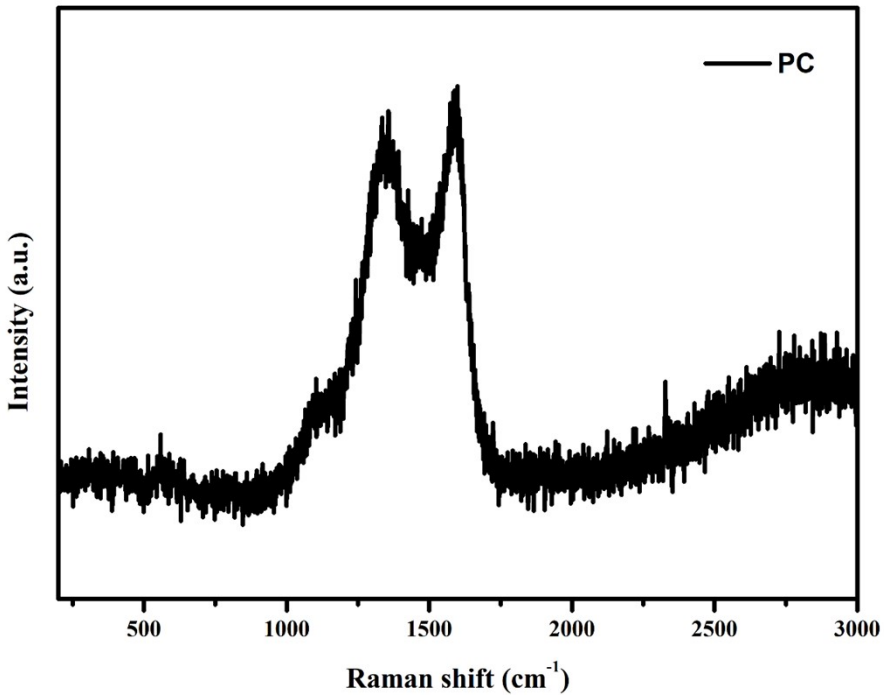

Figure S4. Raman spectrum of PC.

Figure S5

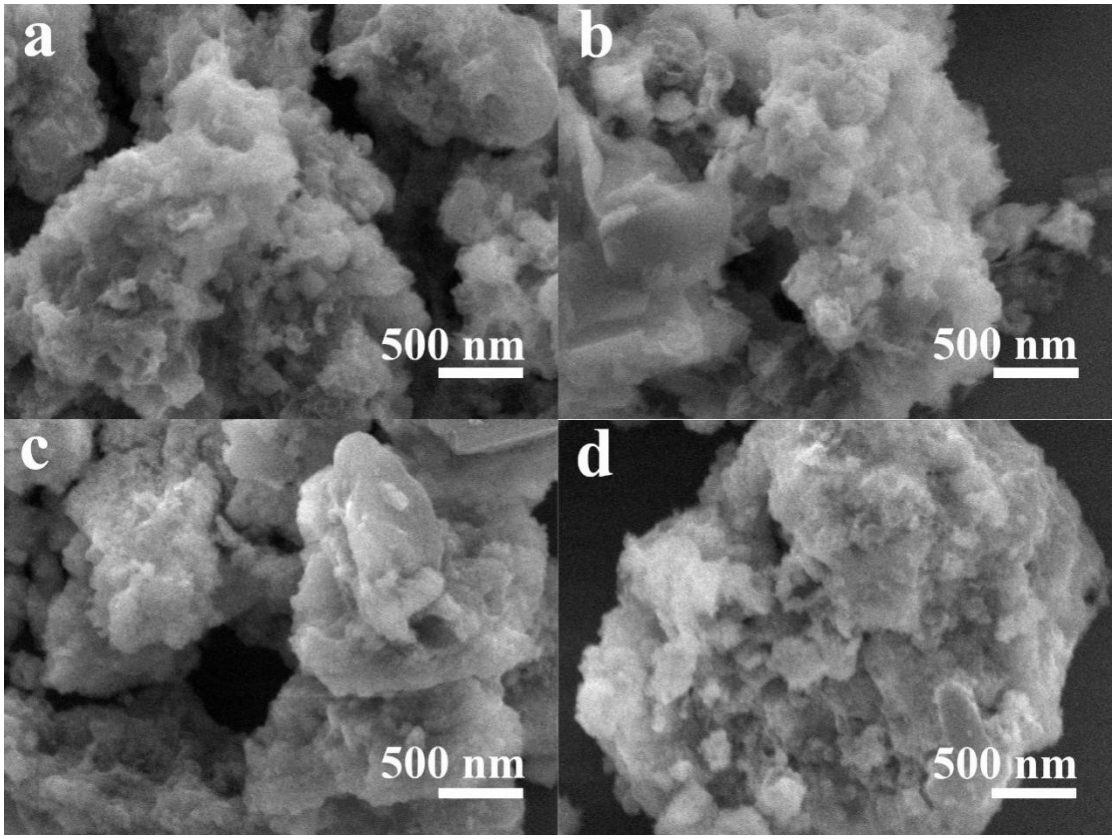

Figure S5. SEM images of Ni-PC-1 (a), Ni-PC-2 (b), Ni-PC-3 (c) and Ni-PC-4 (d).

Figure S6

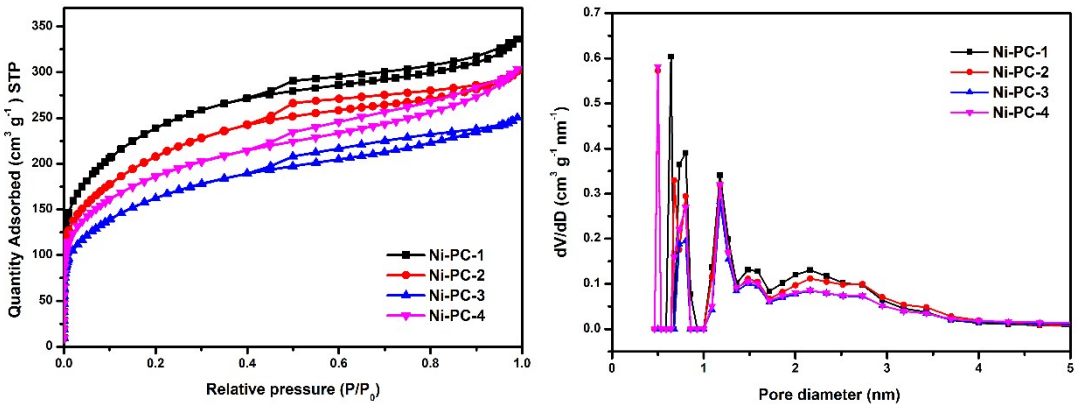

Figure S6. The nitrogen adsorption-desorption curves (a) and the pore size distribution curves (b) of Ni-PC-1, Ni-PC-2, Ni-PC-3 and Ni-PC-4.

Figure S7

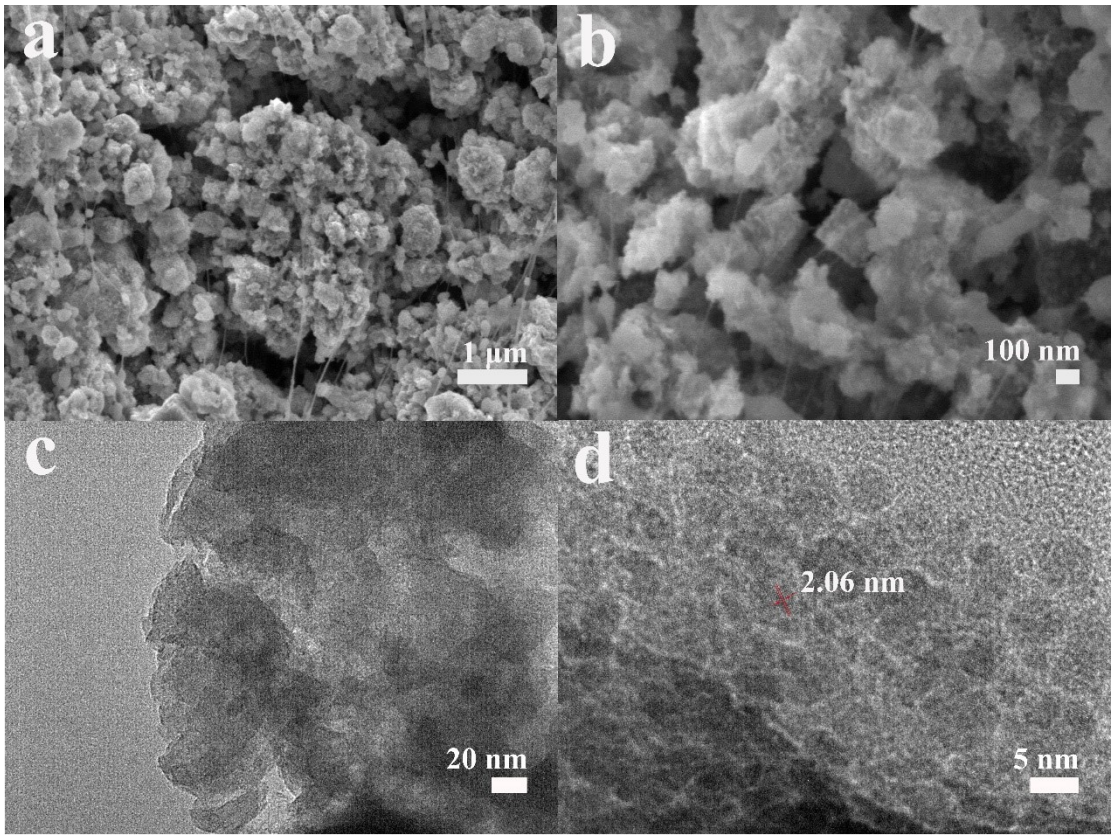

Figure S7. SEM (a, d), TEM (c), and HRTEM (d) images of Ni-PC-2 after the after the electrochemical experiment.

Figure S8

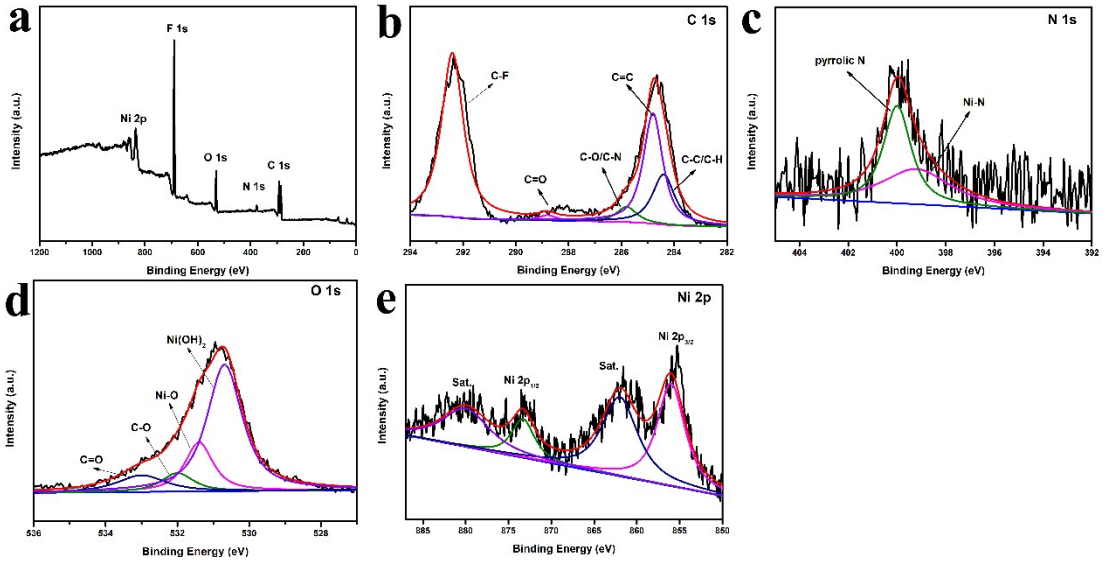

Figure S8. XPS spectra of Ni-PC-2 after the electrochemical experiment: (a) Survey XPS; (b–e) High-resolution XPS spectra of C_{1s}, N_{1s}, O_{1s}, and Ni_{2p}, respectively.

Figure S9

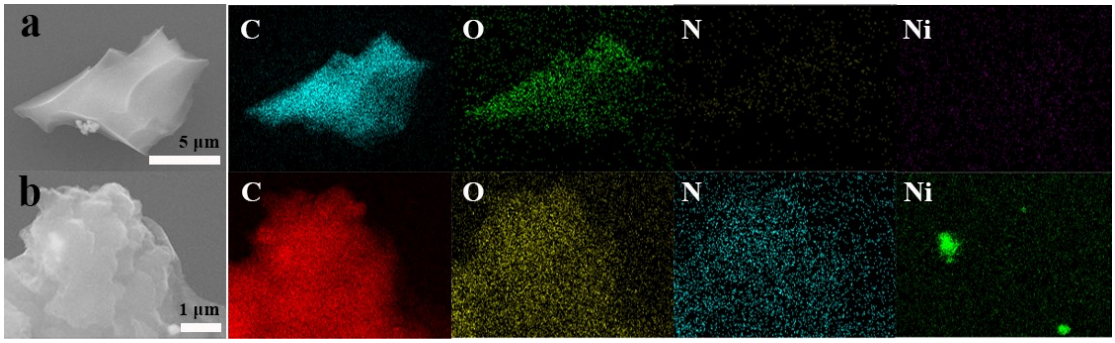

Figure S9. The SEM image and corresponding elemental mapping images of C, O, N, and Ni for Ni-PC-s-4 (a) and Ni-PC-p-16 (b).

Figure S10

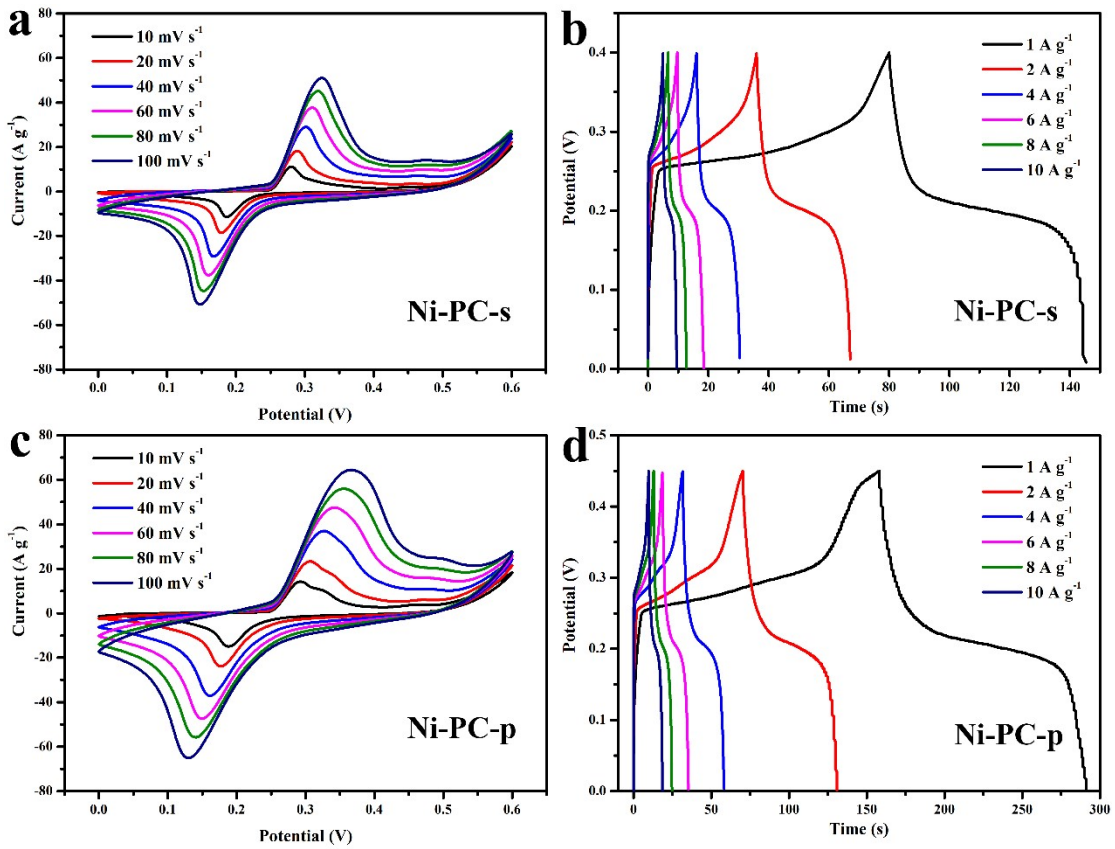

Figure S10. (a) CV and (b) GCD curves of Ni-PC-s; (c) CV and (d) GCD curves of Ni-PC-p.

Table S1. The specific capacitance and cyclic stability of Ni-PC-1, Ni-PC-2, Ni-PC-3,

and Ni-PC-4.

	Capacitance ($F\ g^{-1}$)	Cycling capability (after 10000 cycles)
Ni-PC-1	**522.5**	**111.5%**
Ni-PC-2	**565**	**105.8%**
Ni-PC-3	**427.5**	**69.3%**
Ni-PC-4	**285.0**	**95.4%**
Ni-PC-s-x	**163.5**	**98.8%**
Ni-PC-p-4	**178.9**	**83.3%**
Ni-PC-p-8	**198.4**	**106.7%**
Ni-PC-p-16	**295.6**	**120.7%**
Ni-PC-p-32	**282.4**	**150.4%**