Electronic Supplementary Material (ESI) for CrystEngComm

Supporting Information

Facile synthesis of Ni-coated Ni_2P for supercapacitor applications

Yi Lu,[a] Ji-kang Liu,[a] Xia-yuan Liu,[a] Sen Huang,[a] Ting-qiang Wang,[a] Xiu-li Wang,[a] Chang-dong Gu,[a] Jiang-ping Tu,*[a] and Scott X. Mao[b]

[a] *State Key Laboratory of Silicon Materials, Key Laboratory of Advanced Materials and Applications for Batteries of Zhejiang Provence and Department of Materials Science and Engineering, Zhejiang University, Hangzhou 310027, China*

[b] *Department of Mechanical Engineering and Materials Science, University of Pittsburgh, Pittsburgh, Pennsylvania 15261, USA*

*Corresponding author. E-mail: tujp@zju.edu.cn; tujplab@zju.edu.cn (Jiang-ping Tu)

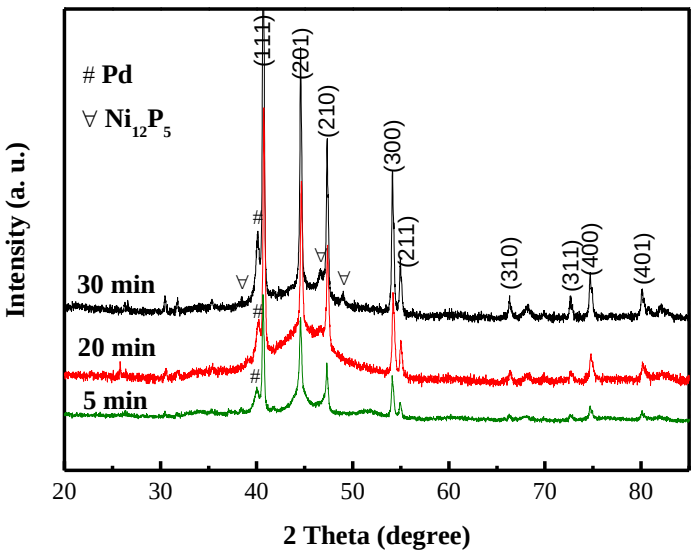


Fig. S1 XRD patterns of Ni-coated nickel phosphides synthesized by different electroless plating times.

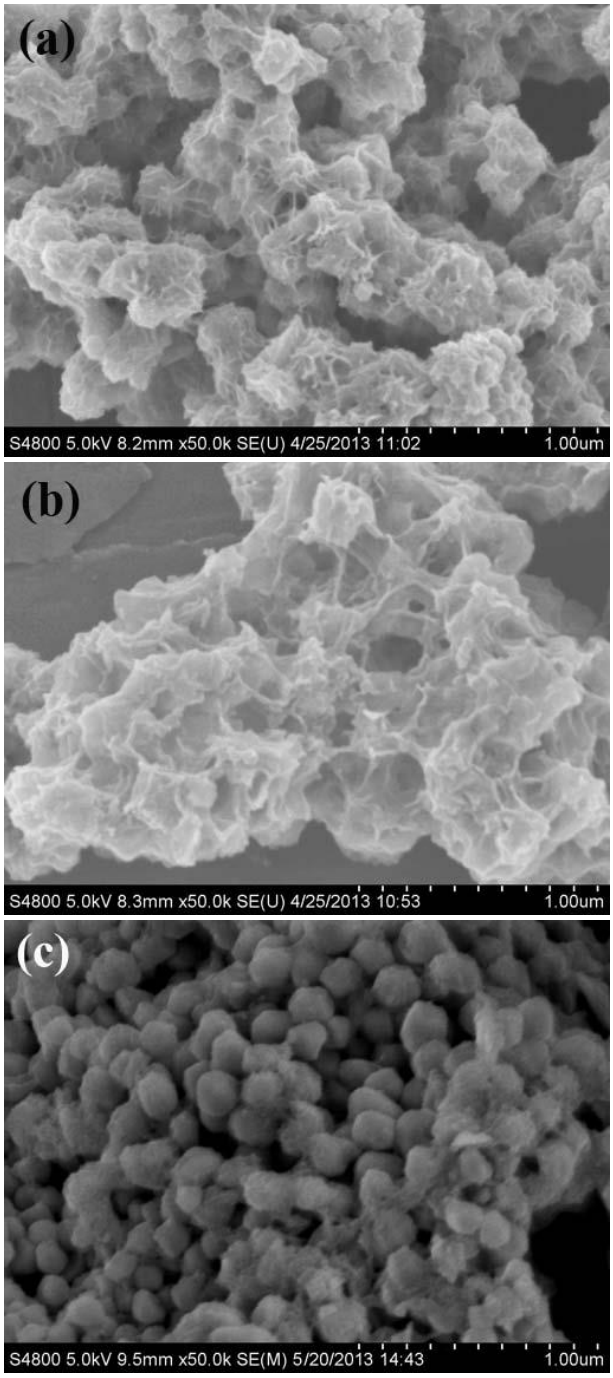


Fig. S2 SEM images of Ni-coated nickel phosphides synthesized by different electroless plating times: (a) 20 min; (b) 30 min; (c) 5 min.

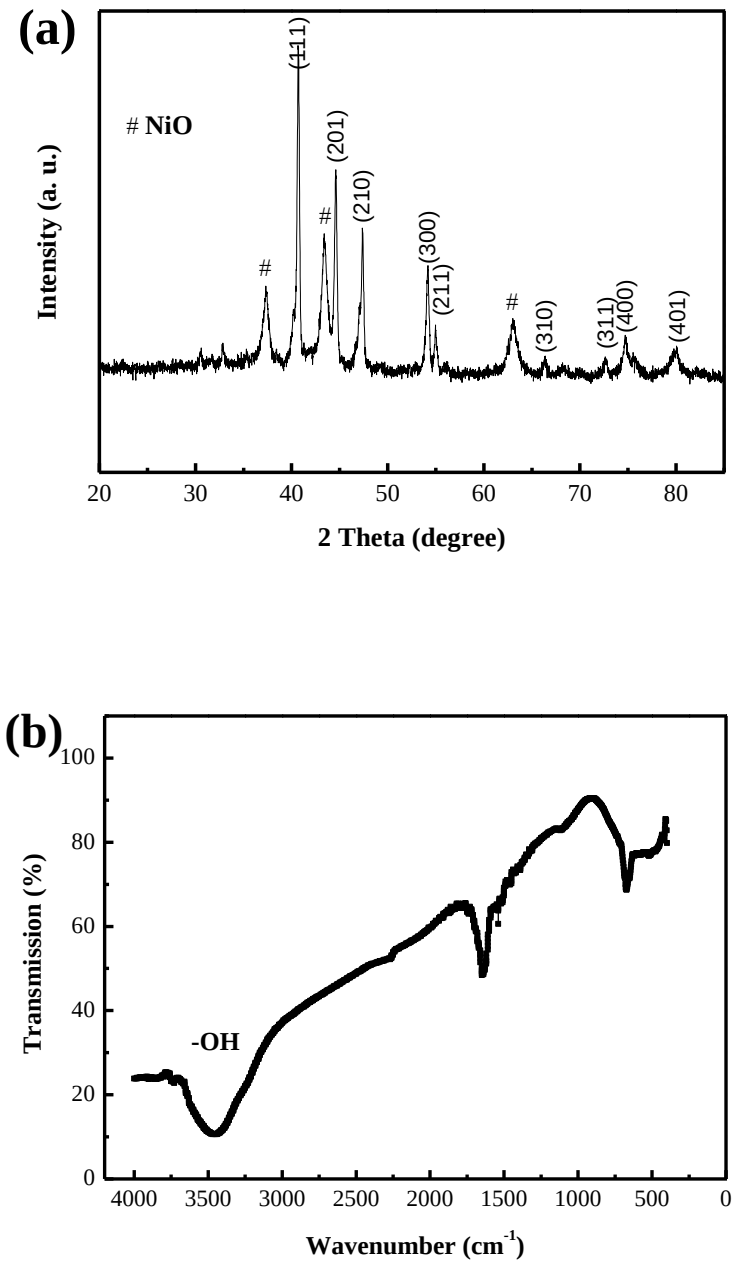


Fig. S3 (a) XRD pattern of the annealed Ni-coated nickel phosphides at 500 °C for 1 h under flowing argon; (b) FTIR spectra of Ni-coated nickel phosphides before annealing.

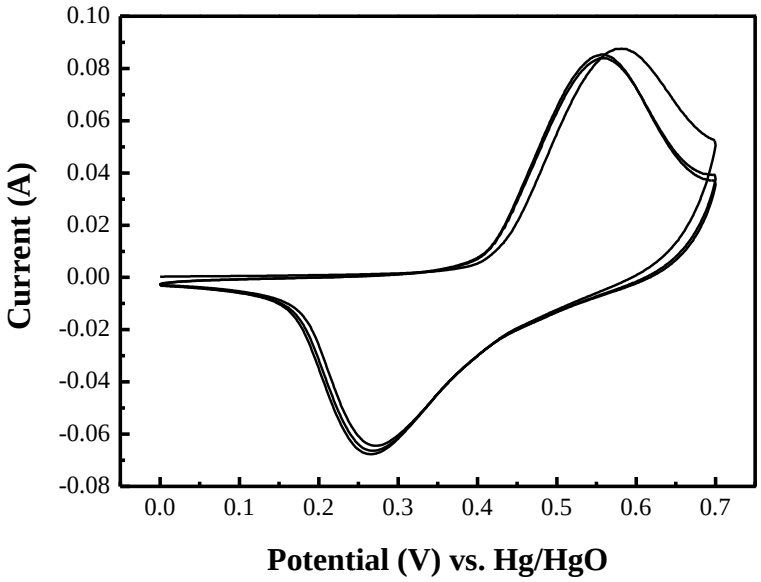
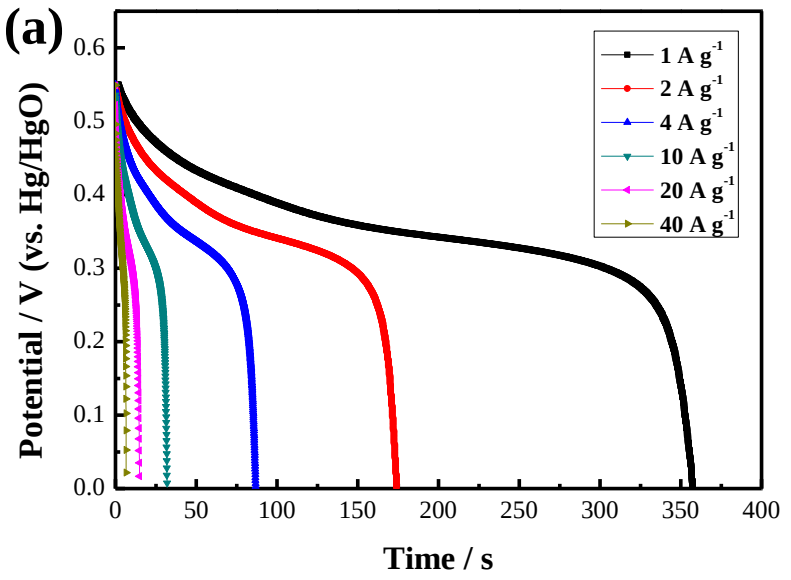
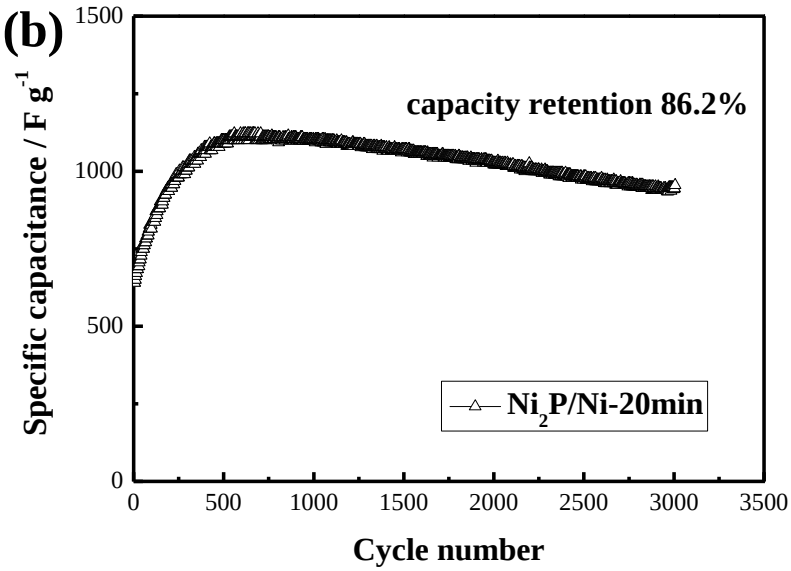
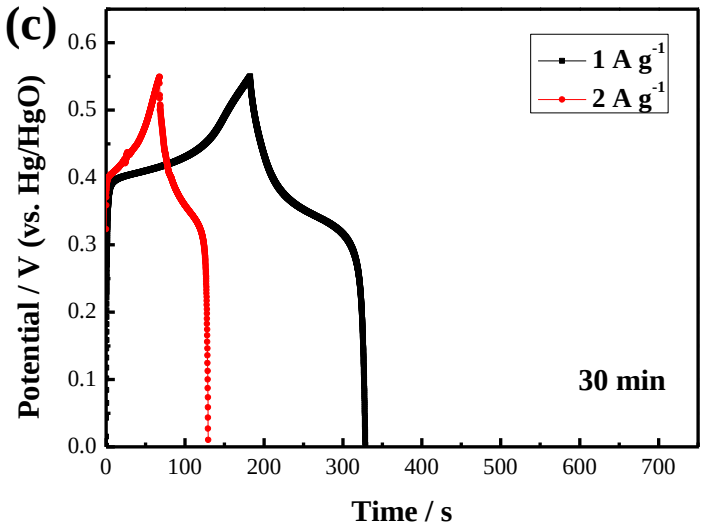
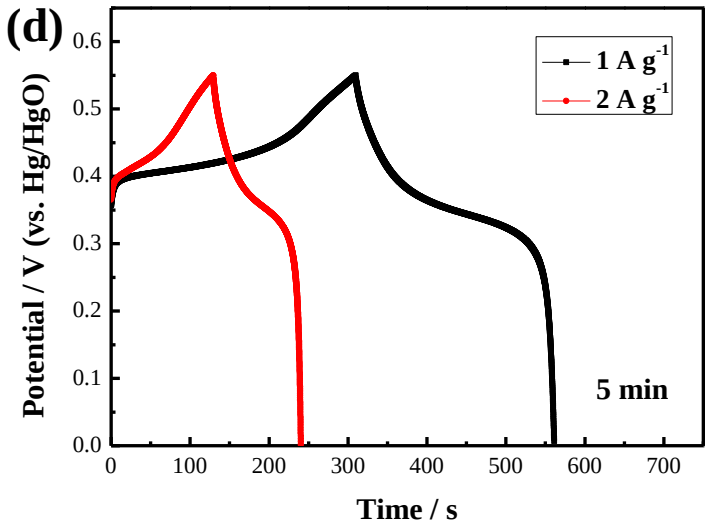


Fig. S4 First three CV profiles of the Ni_2P/Ni composite obtained by 10 min of electroless plating time in the potential region of 0−0.7 V at a scan rate of 50 mV s^{-1}.









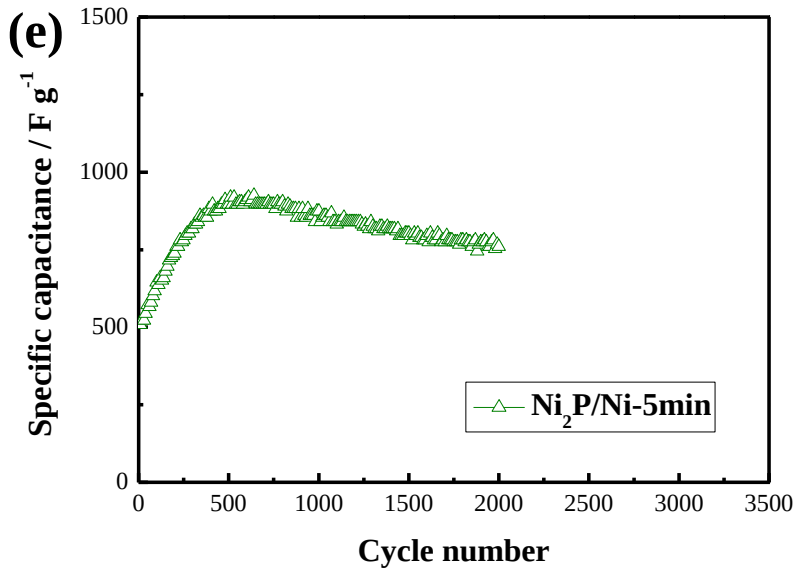


Fig. S5 (a) Galvanostatic discharge curves and (b) discharge specific capacitance of the Ni-coated Ni_2P synthesized by electroless plating for 20 min; galvanostatic discharge curves of the Ni-coated Ni_2P synthesized by electroless plating for (c) 30 min; (d) 5 min; (e) discharge specific capacitance of the Ni-coated Ni_2P synthesized by electroless plating for 5 min.