Supporting Information

Fabrication of 2D NiO porous nanosheets with superior lithium storage performance via a facile thermal-decomposition method

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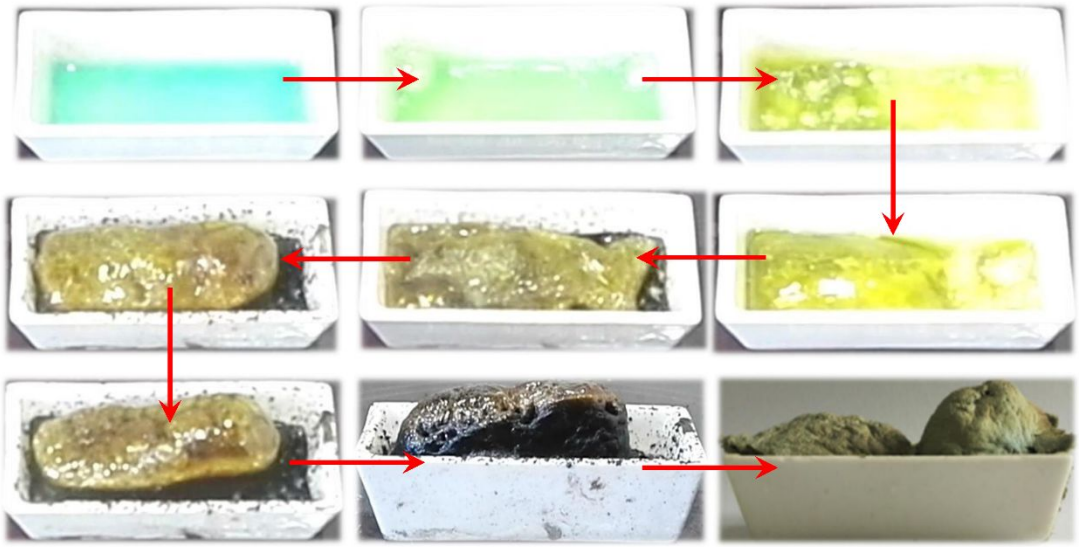

Figure S1. The series of changes of the mixed solution during the preparation process of the 2D NiO porous nanosheets.

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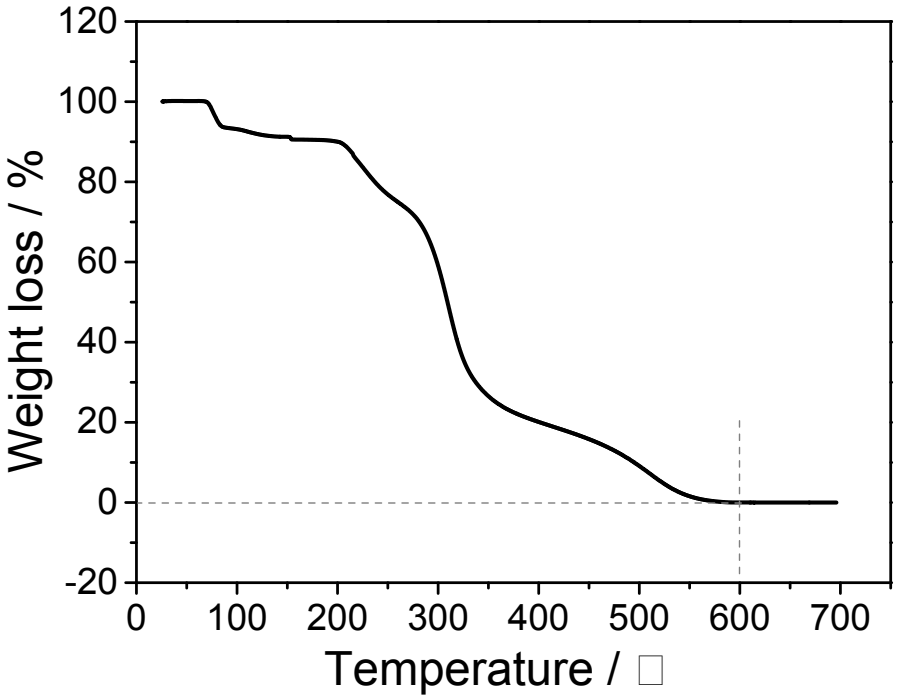

Figure S2. TGA plot of glucose heated in air atmosphere.

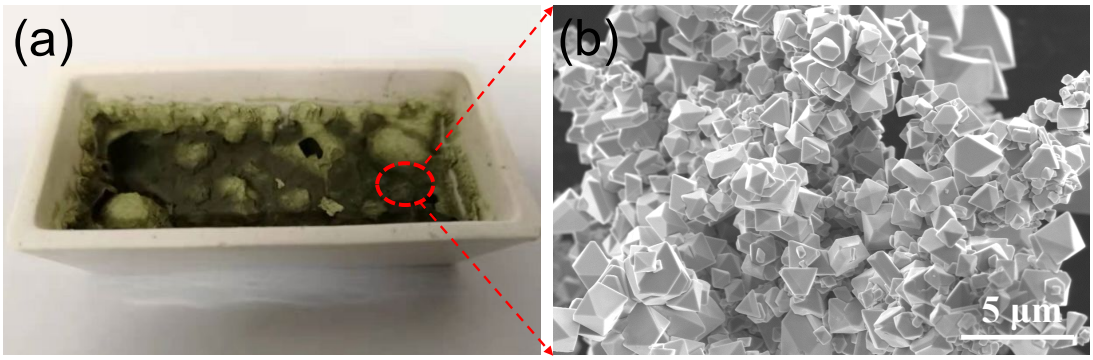

Figure S3. (a) The photo and (b) SEM image of the products with the same reaction conditions as that of 2D NiO porous nanosheets except the use of 0 mg of glucose.

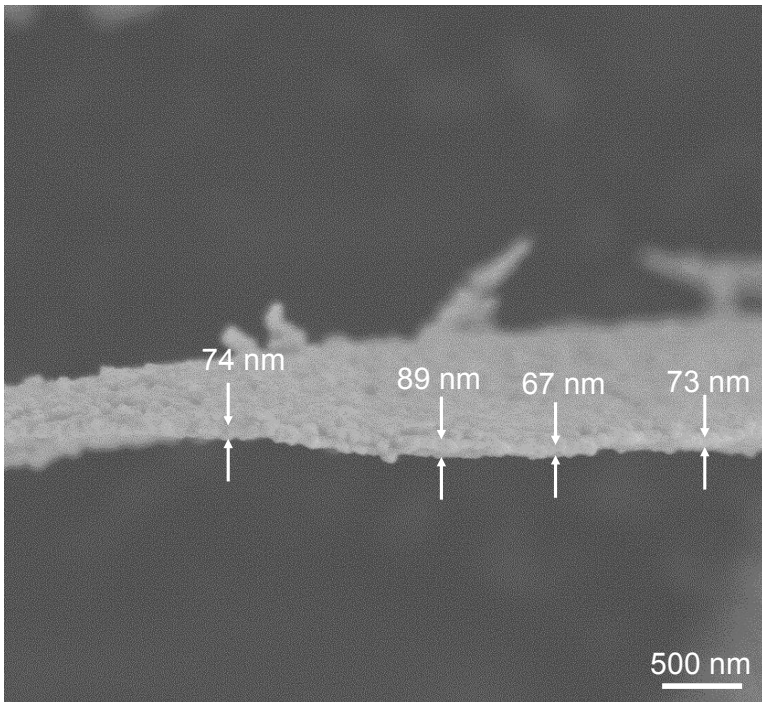

Figure S4. SEM image of 2D NiO porous nanosheets.

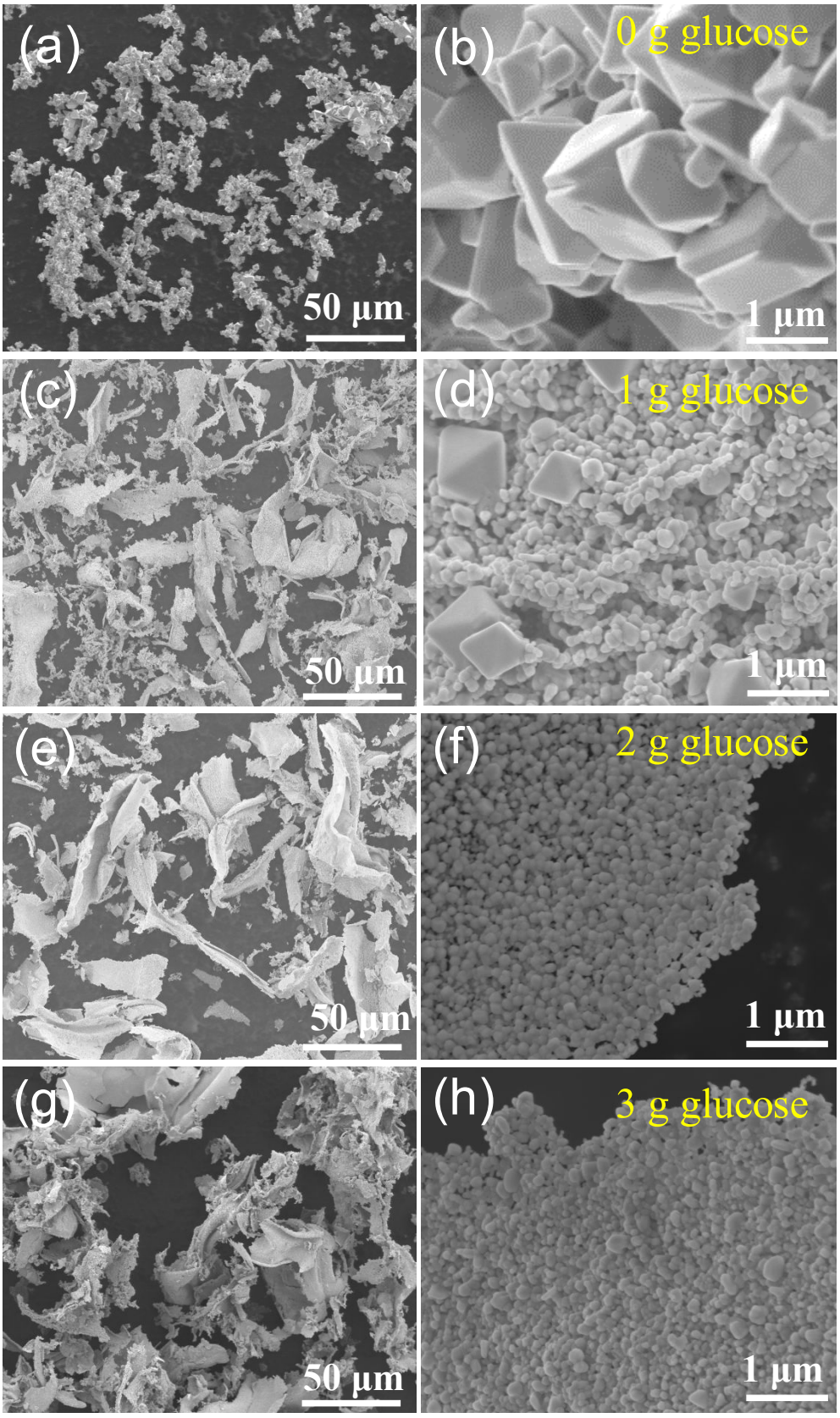

Figure S5. SEM images of the NiO samples prepared with (a, b) 2.0 g $NiCl_2 \cdot 6H_2O$ and 0 g glucose, (c, d) 2.0 g $NiCl_2 \cdot 6H_2O$ and 1.0 g glucose, (e, f) 2.0 g $NiCl_2 \cdot 6H_2O$ and 2.0 g glucose, (g, h) 2.0 g $NiCl_2 \cdot 6H_2O$ and 3.0 g glucose.

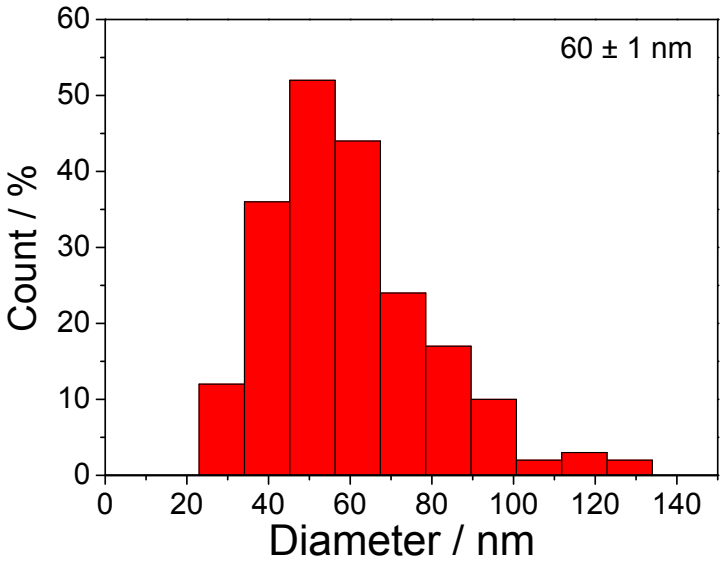

Figure S6. The statistics of particle distribution of the 2D NiO porous nanosheets.

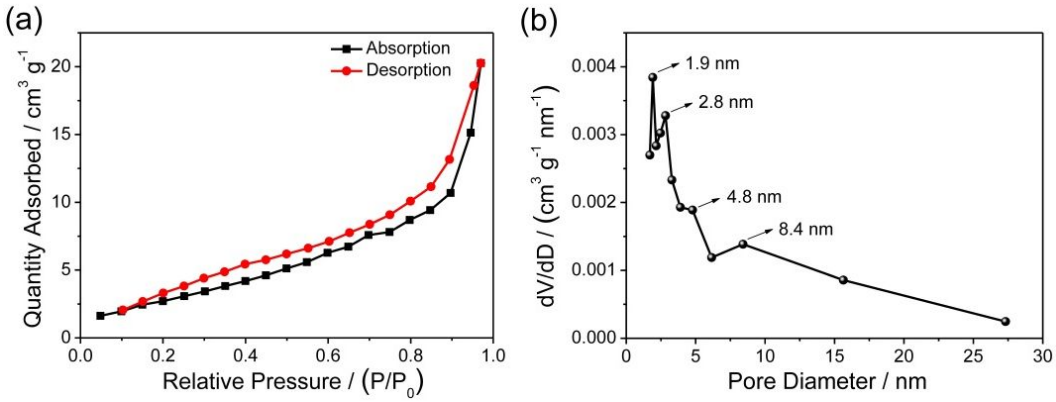

Figure S7. (a) Nitrogen sorption isotherms and (b) pore size distribution of the 2D NiO porous nanosheets sample.

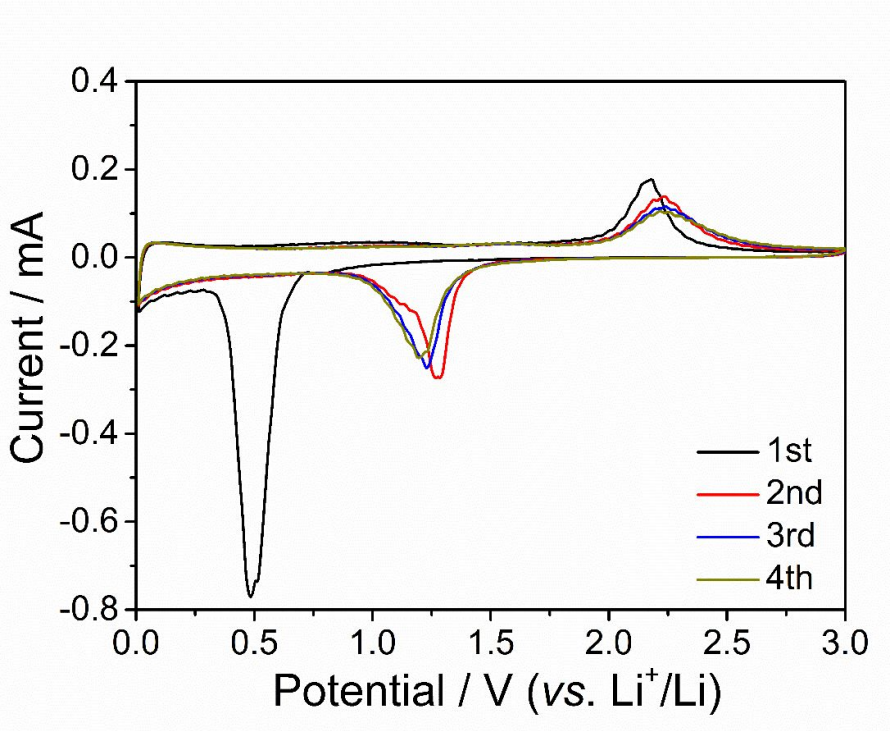

Figure S8. CV curves at 0.1 mV s^{-1} of the micro-sized NiO polyhedrons.

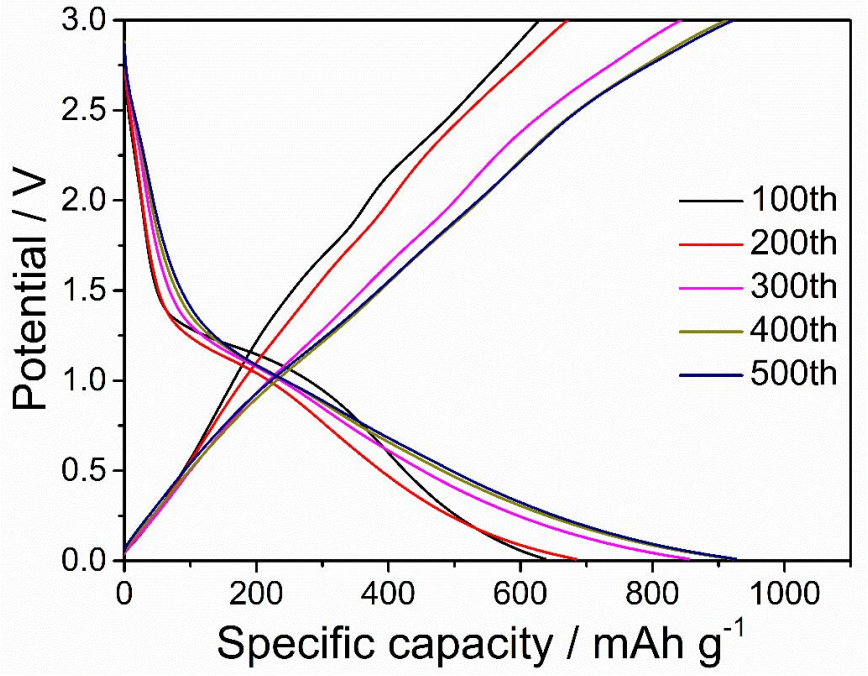

Figure S9. the charge/discharge voltage profiles for the 100th, 200th, 300th, 400th and 500th cycle at 1000 mA·g^{-1} of the 2D NiO porous nanosheets.

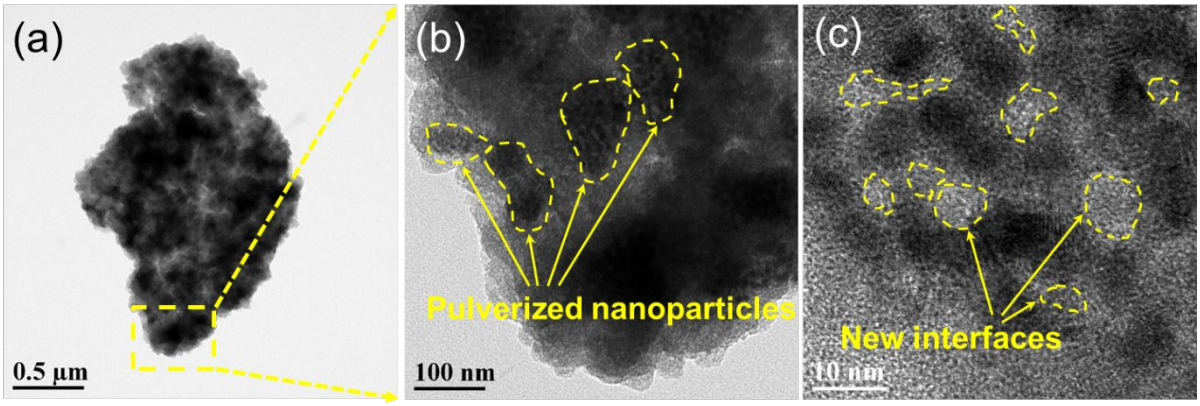

Figure S10. (a, b, c) TEM images of the 2D NiO porous nanosheets after 500 cycles at 1 A g^{-1}.

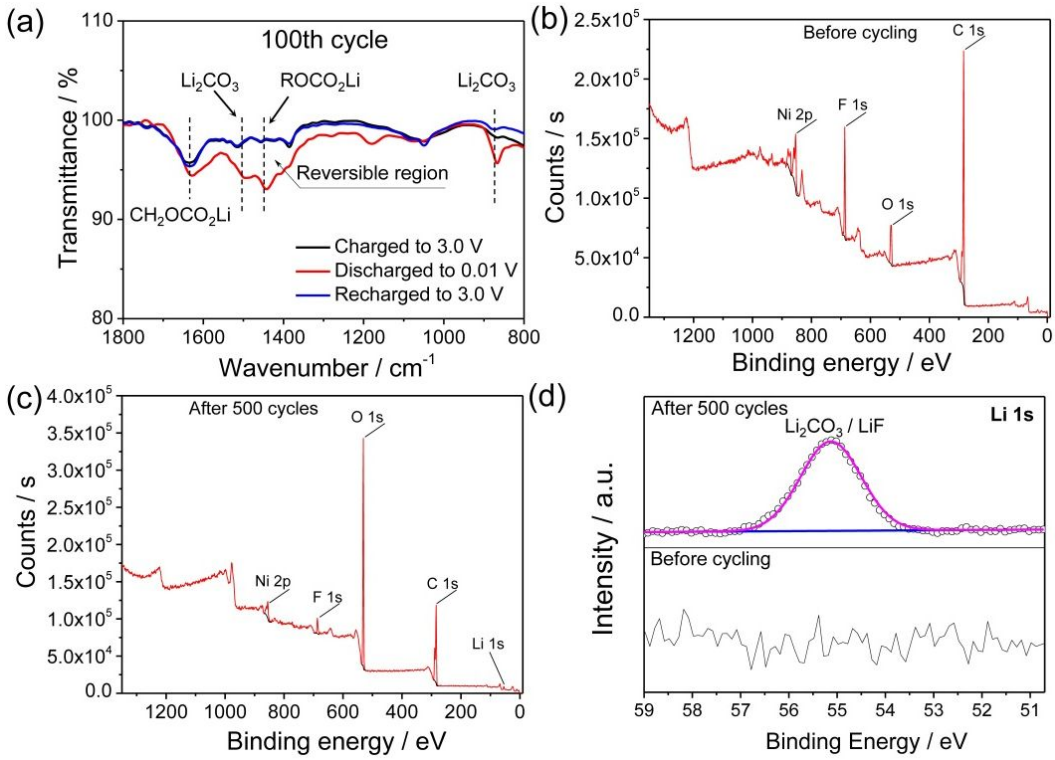

Figure S11. The FTIR spectroscopy of the 2D NiO porous nanosheets electrode at different charge/discharge potentials during the 100th cycle. XPS survey spectra of the 2D NiO porous nanosheets electrode (b) before cycling, (c) after 500 cycles. (d) Li 1s XPS spectra of the 2D NiO porous nanosheets electrode before cycling and after 500 cycles.

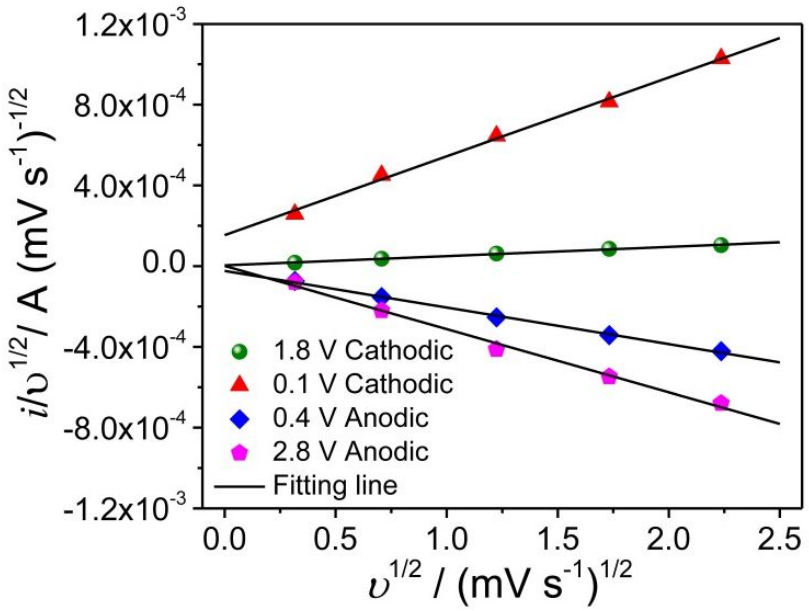

Figure S12. The fitted lines of i(V)/$\upsilon^{1/2}$ *vs* $i/\upsilon^{1/2}$ at different voltage (1.8 V, 0.1 V for cathodic scan and 0.4 V, 2.8 V for anodic scan).