Supporting Information

Flexible Symmetrical Planar Supercapacitors Based on Multi-Layered MnO₂/Ni/Graphite/Paper Electrodes with High-Efficient Electrochemical Energy Storage

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Figure S1. (a) TEM image of a MnO₂ layers and (b) HRTEM image and SAED pattern (inset).
Figure S2. (a) BET curve and (b) Pore size distribution of the electrode material.
**Figure S3.** The comparison CV curves between the composite electrodes with and without Ni layer.

**Figure S4.** The comparison galvanostatic charge-discharge curves between the electrodes with and without Ni layer.
**Figure S5.** The magnified EIS curve of MnO$_2$/Ni/graphite/paper electrode in the FSPSC.

**Figure S6.** (a) CV curves at potential from 0.8 V to 1.5 V; (b) Capacitance retention after 3000 cycles at normal state at 1.5 V, 100 mV/s.
Figure S7. (a) The relationship between potential and energy density; (b) The relationship between potential and power density.

Figure S8. SEM image of surface morphology of MnO$_2$ layers of the MnO$_2$/Ni/graphite/paper electrode in the SPESC after 3000 cycles at (a) 100 mV/s, (b) 4 mA/cm$^2$. 