Supporting Information for

“Ultralong single crystalline V$_2$O$_5$ nanowires / graphene composite fabricated by a facile green approach and its lithium storage behavior”

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Figure S1: SEM images of pristine graphite flakes (a, b) and after ultrasonic treatment (c, d, e).
Figure S2: TG-DTA curves of composite material. The weight loss before 350 °C is ascribed to the physisorbed or chemisorbed water molecular, and the weight loss before 650°C is ascribed to the burning of GNS. At around 700°C, the V$_2$O$_5$ is melted.
Figure S3: Photograph of as-prepared papery sheets of V$_2$O$_5$ nanowires / GNS composite.
Figure S4: SEM and TEM images of controlled pure V$_2$O$_5$ nanowires.
**Figure S5:** A proposed exfoliation process of graphite flake under hydrothermal condition in this work.
Figure S6: A large-scaled SEM image of V$_2$O$_5$ nanowires / GNS composite.
Figure S7: Impedance plot of V$_2$O$_5$ nanowires/GNS electrode and bare V$_2$O$_5$ nanowires electrode. It can be found from the Nyquist plot that the diameter of the semicircle for V$_2$O$_5$/GNS composite electrode in the medium-frequency region was much smaller than that of bare V$_2$O$_5$ electrode, thus suggesting that V$_2$O$_5$/GNS electrode possess lower contact and charge-transfer resistance (Rct) than that of the bare V$_2$O$_5$ nanowires electrode.
Figure S8: SEM images of a VO$_2$ (B) nanorods / GNS composite fabricated by a similar preparation route.