Supplementary information

Flash-Induced Reduced Graphene Oxide as Sn Anode Hosts for High Performance Sodium Ion Batteries

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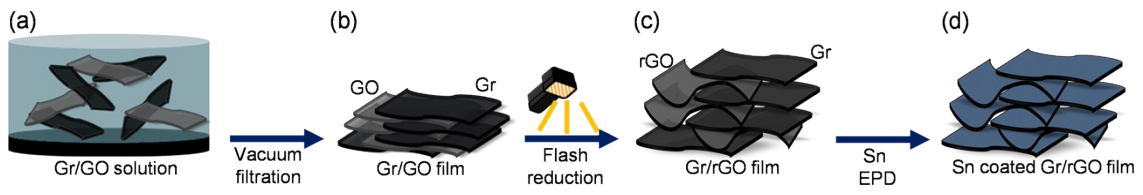
Scheme S1. Schematic illustration for the preparation of the Sn-coated RGO-graphene film.
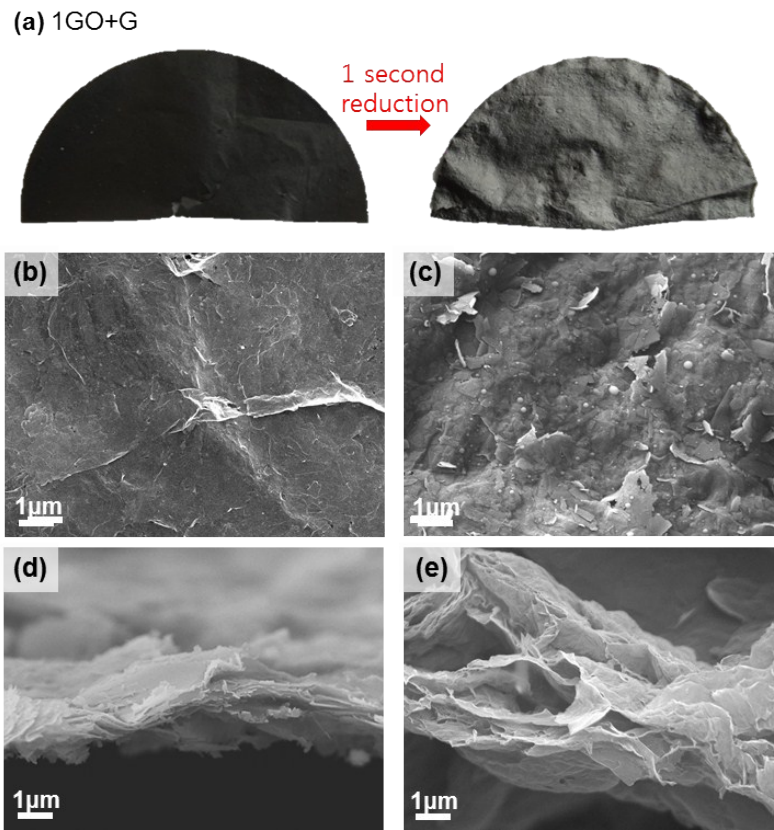
Figure S1. (a) Photographs of (1GO+G) before and after flash reduction. (b) Top view-, (d) cross sectional view-SEM images of (1GO+G) film before flash reduction. (c) Top view-, (e) cross sectional view-SEM images of (1GO+G) film after flash reduction. All scale bars indicate 1 μm.
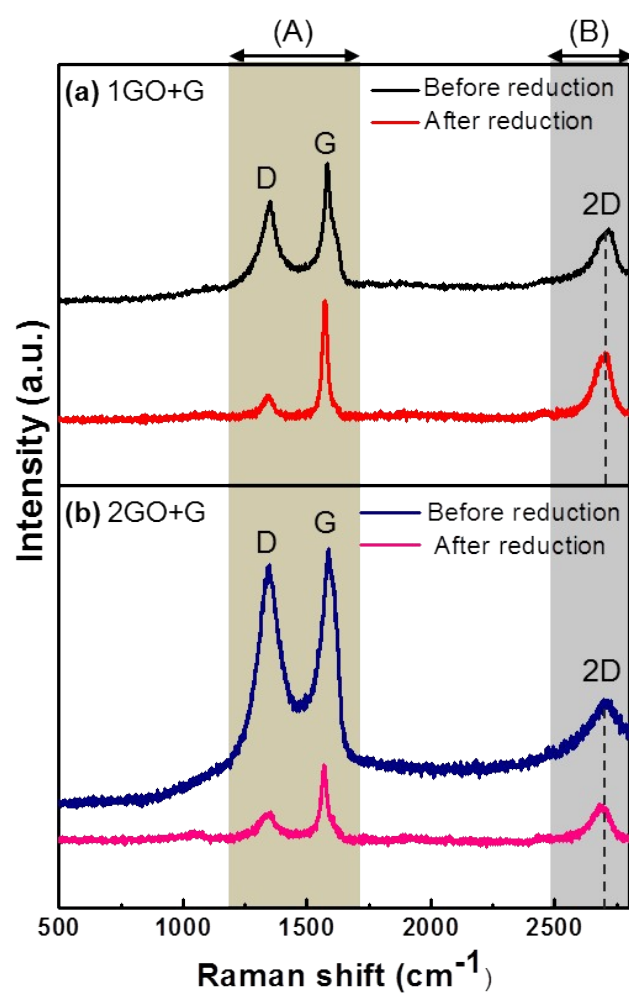
Figure S2. Raman spectra of (a) (1GO+G), (b) (2GO+G) electrodes before and after reduction.

In the region (A) and (b) involve D/G band peaks and 2D related peaks, respectively.
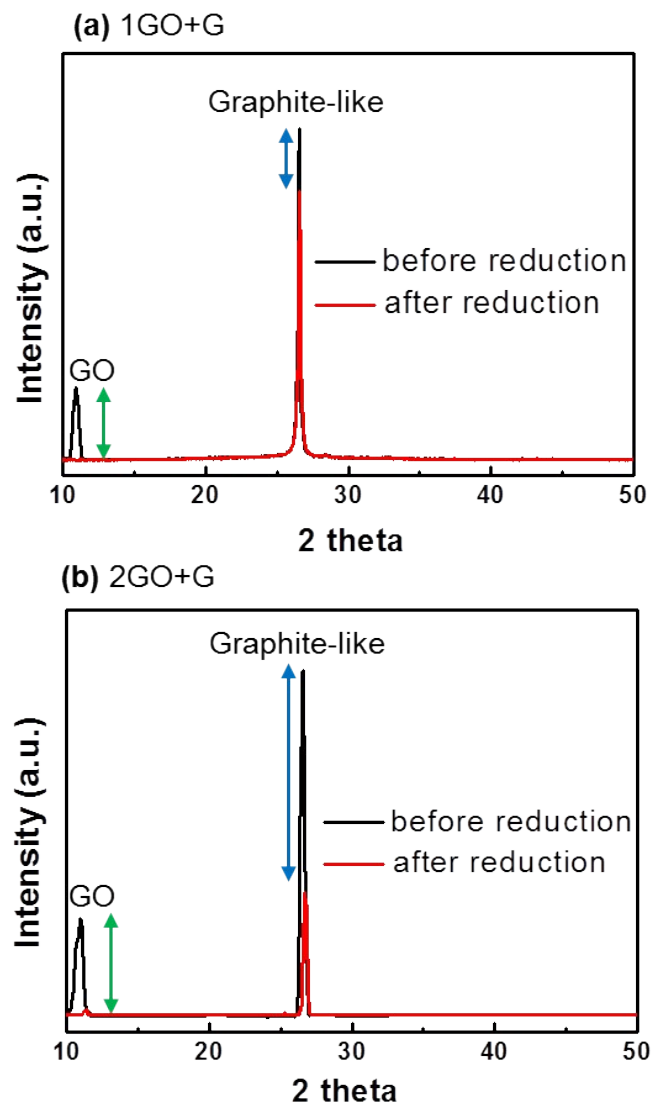
Figure S3. XRD analysis of (a) (1GO+G), (b) (2GO+G) films before and after reduction. Blue arrows indicate the graphite-like peak ($2\theta = 26.52$ º) differences between (nGO+G) and (nRGO+G). Green arrows indicate the GO peak ($2\theta = 10.27$ º) differences between (nGO+G) and (nRGO+G).
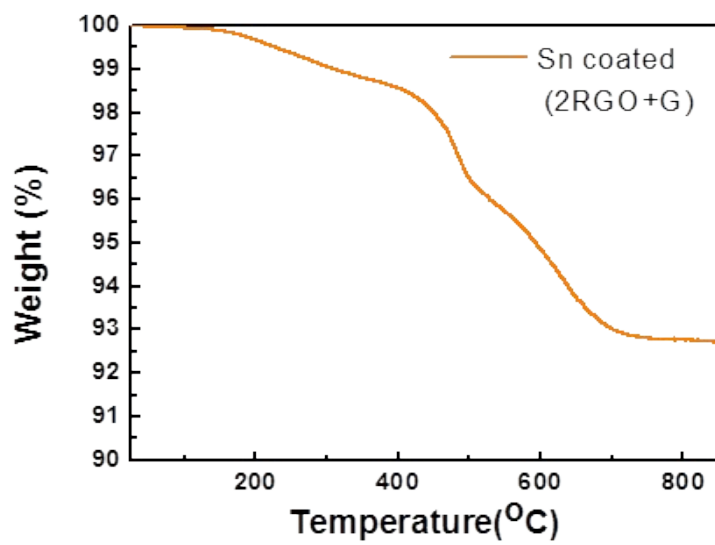
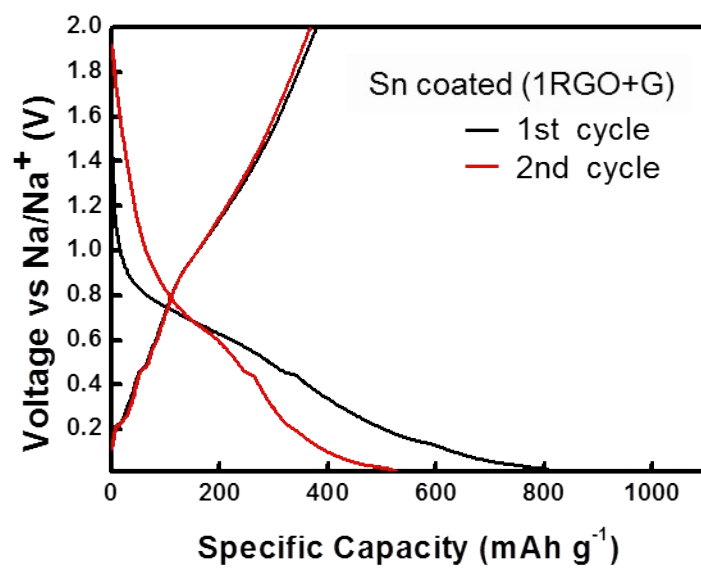**Figure S4**. TGA curves of Sn-coated (2RGO+G) composite anode from room temperature to 850 °C.

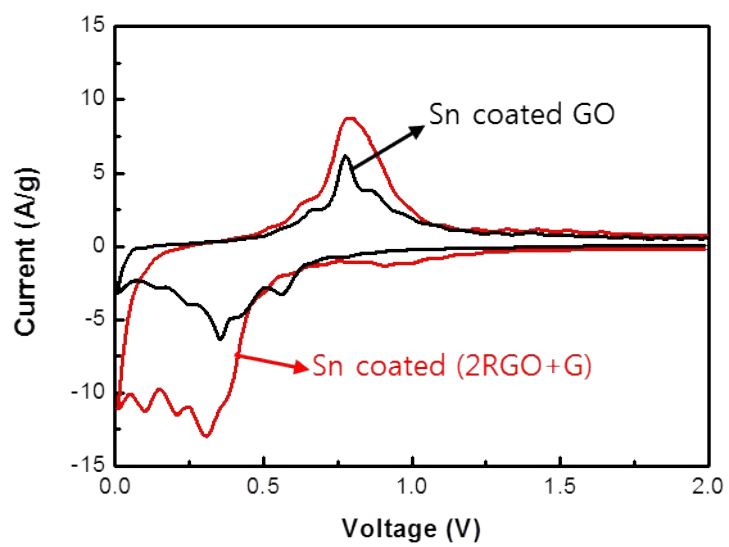**Figure S5**. Voltage profiles for the 1st and 2nd cycles of Sn coated (1RGO+G) electrode at a rate of 0.5 C.

Figure S6. Cyclic voltammetry curves of Sn coated (2RGO+G) and Sn coated GO at a scanning rate of 0.1 mV s $^{-1}$