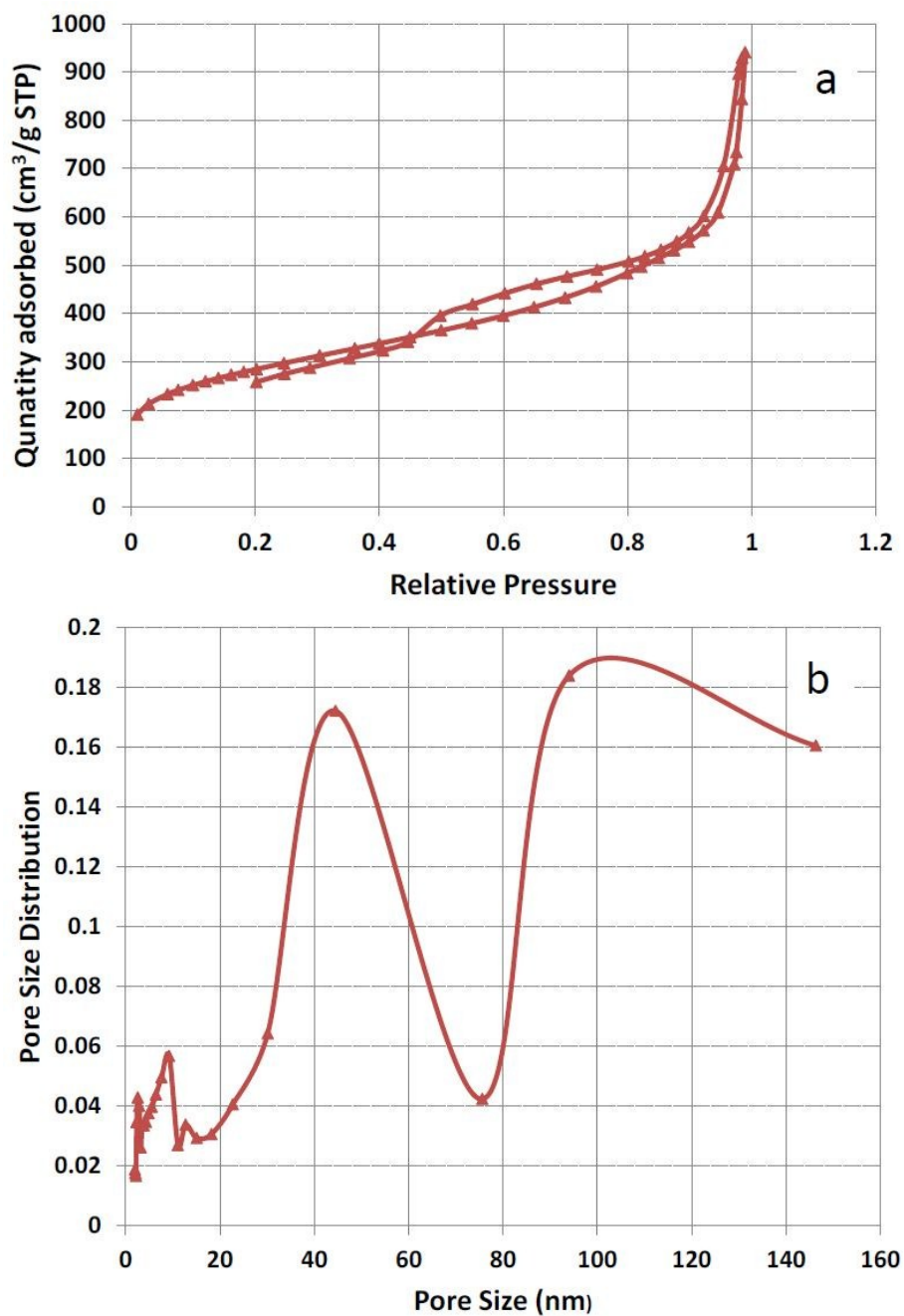
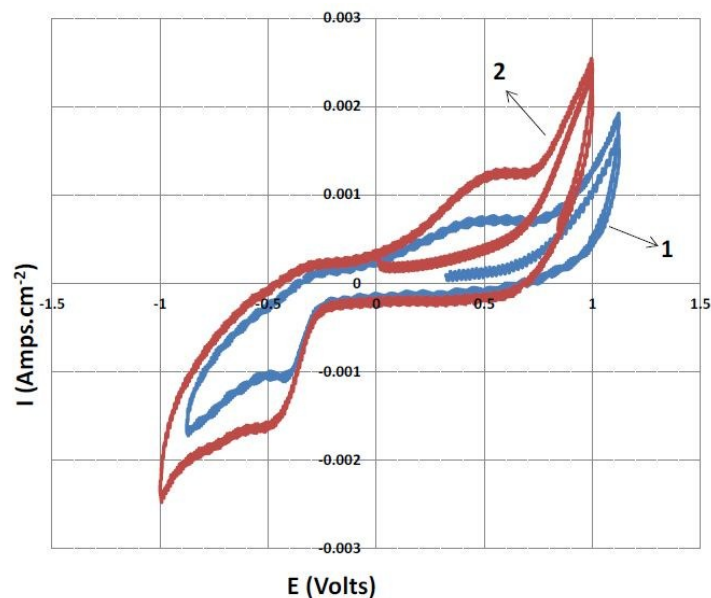


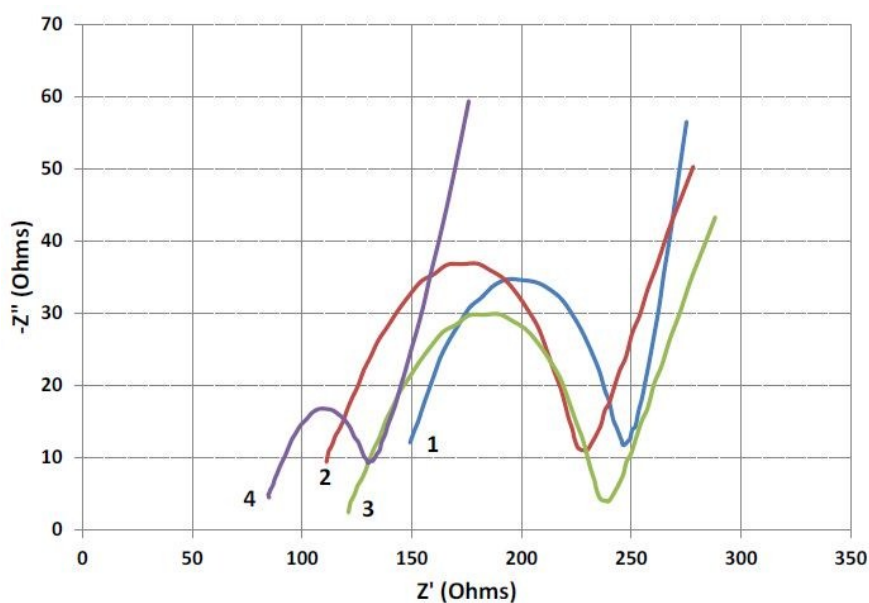
## Supplementary Information



**Figure S1.** BET Surface Area Analysis of Hybrid 1. (a)  $N_2$  adsorption-desorption isotherm; (b) Pore size distribution for Hybrid 1.



**Figure S2.** Cyclic Voltammetry curves for (1) GNSs and (2) N-GNSs in 0.1 M KOH at 25 °C at scan rate of 5 mV·min<sup>-1</sup>.



**Figure S3.** Nyquist plots of lithium-oxygen cell before discharge at 75 °C using (1) GNSs, (2) N-GNSs; (3) Ex-N-GNSs and (4) Hybrid 1 as cathode.