Electronic Supplementary Information

High-Performance Hybrid Electrochemical Capacitor with Binder-Free Nb_2O_5@Graphene

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Additional Figures

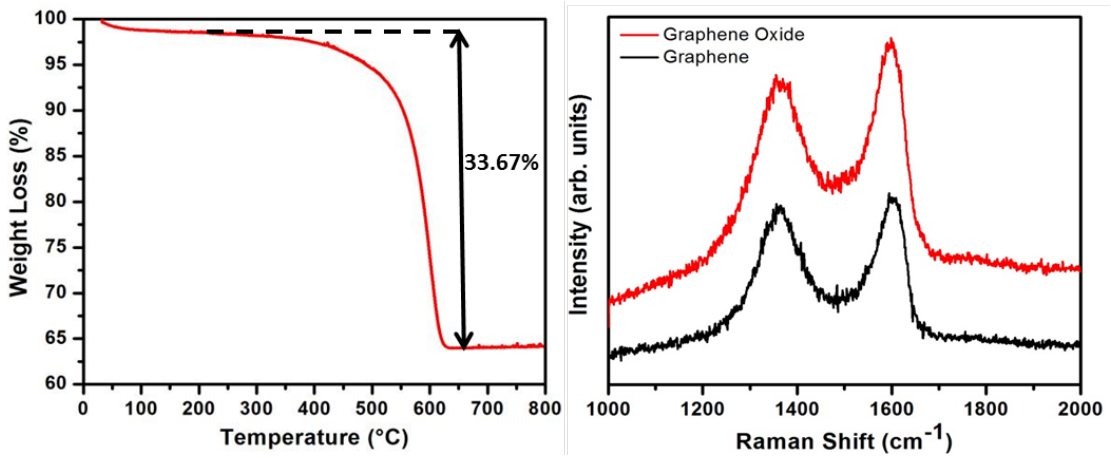

Fig. S1 (a) Thermogravimetric Analysis (TGA) profile of Nb_2O_5@Graphene composite, indicating the weight % of graphene present in the sample. (b) Raman Spectrum of the Nb_2O_5@Graphene composite

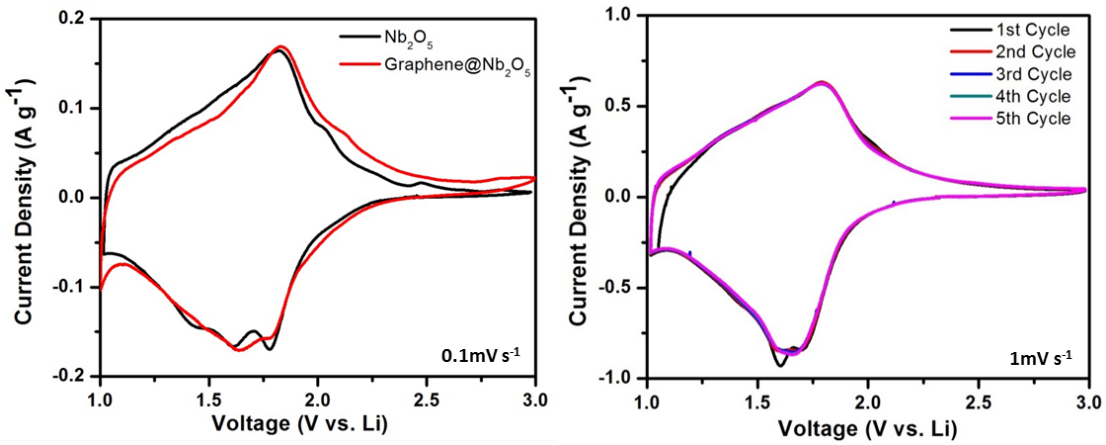

Fig. S2 (a) 1st cycle Cyclic Voltammetry (CV) of Nb_2O_5 and rGO-Nb_2O_5 half-cells tested at 0.1mV s^{-1} (b) CV curve of rGO-Nb_2O_5 half-cell tested over 5 cycles at 1mV s^{-1}.

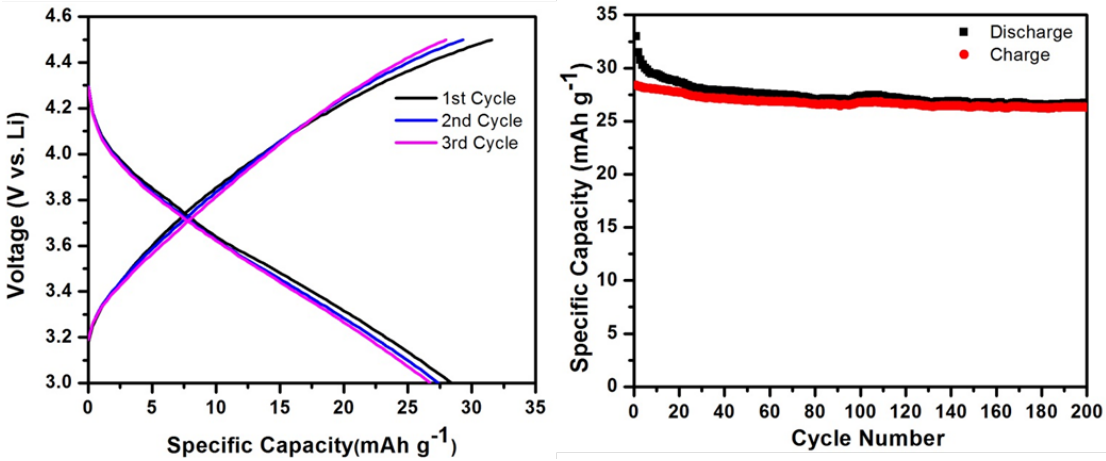

Fig. S3 Galvanostatic charge-discharge profile of the Li/Activated Carbon (AC) half-cell tested at 100mA g^{-1} within voltage range of 3-4.5V vs. Li (b) Cycling of the Li/AC half-cell over 200 cycles

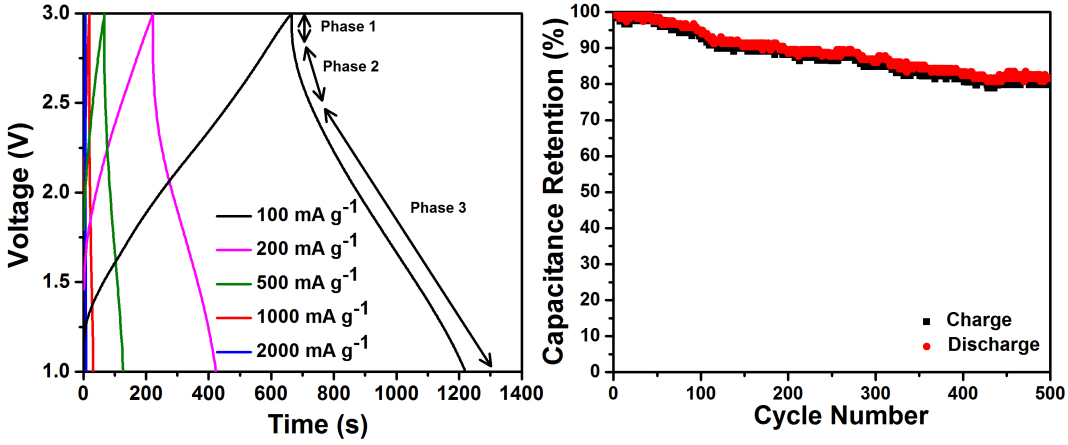

Fig. S4 Galvanostatic charge-discharge curve AC/Nb_2O_5@graphene HEC tested at various current rates within a voltage range of 1.0-3.0 V (vs. Li). (b) Cycling behaviour of AC/Nb_2O_5@graphene HEC tested at 1 A g^{-1} over 1000 cycles.