Supporting Information

for

A facile approach to nanoarchitectured three-dimensional graphene-based Li–Mn–O composite as high-power cathodes for Li-ion batteries

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Additional figures

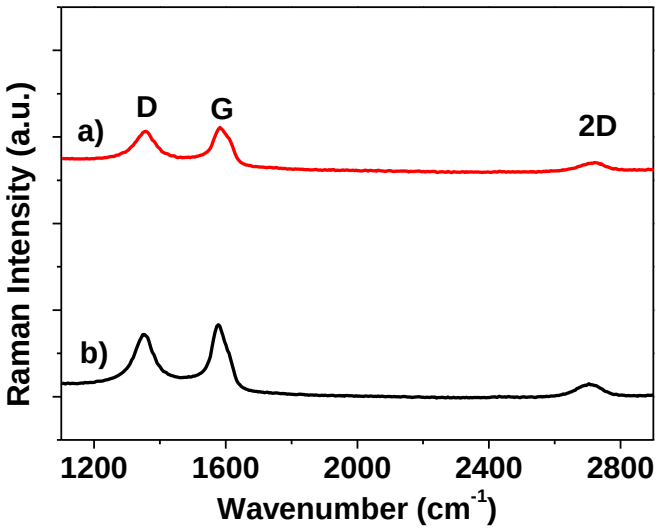

Figure S1: Raman spectra for (a) Mn_2O_3/graphene prepared with 0.15 M $MnSO_4$ in the electrochemical process and (b) $LiMn_2O_4$/graphene prepared by lithiating Mn_2O_3/graphene with $I_{MO:G}$ = 0.99 by molten salt reaction. The D, G and 2D bands are indicated.

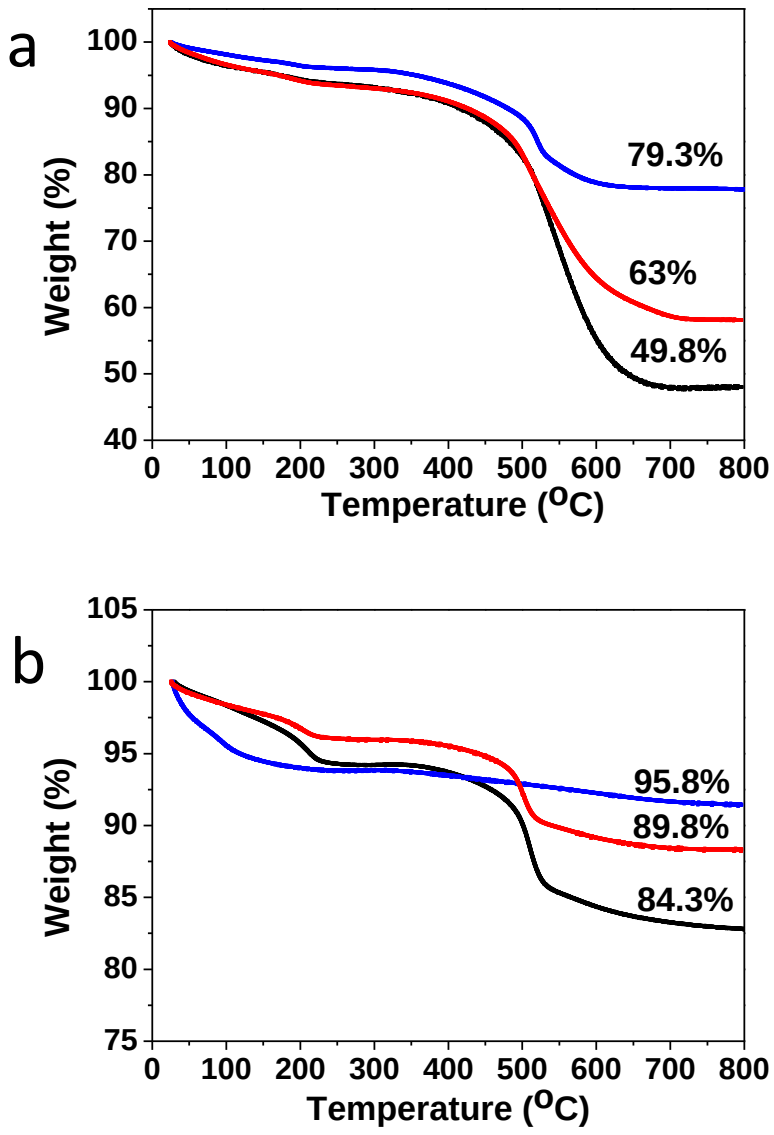

Figure S2: Thermogravimetric analyses of (a) Mn_2O_3/graphene and (b) $LiMn_2O_4$/graphene with various $I_{LMO:G}$ values.

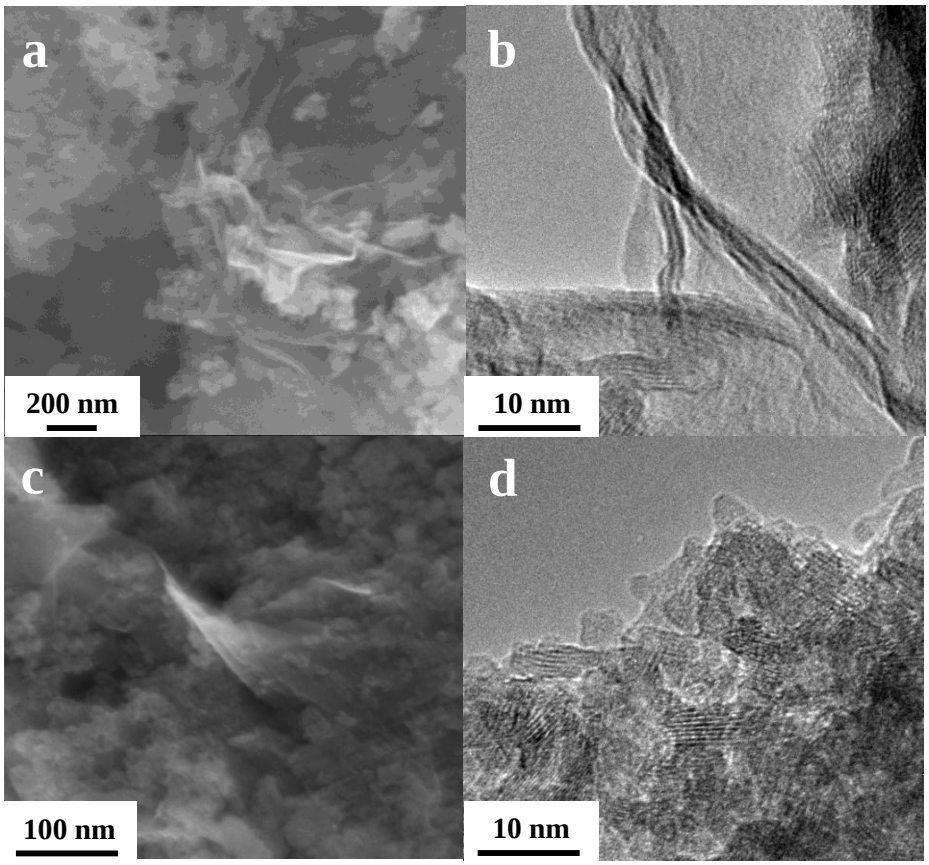

Figure S3: (a, c) SEM and (b, d) HRTEM images of $LiMn_2O_4$/graphene with (a, b) $I_{LMO:G}$ = 8.80 and (c, d) $I_{LMO:G}$ = 22.81.

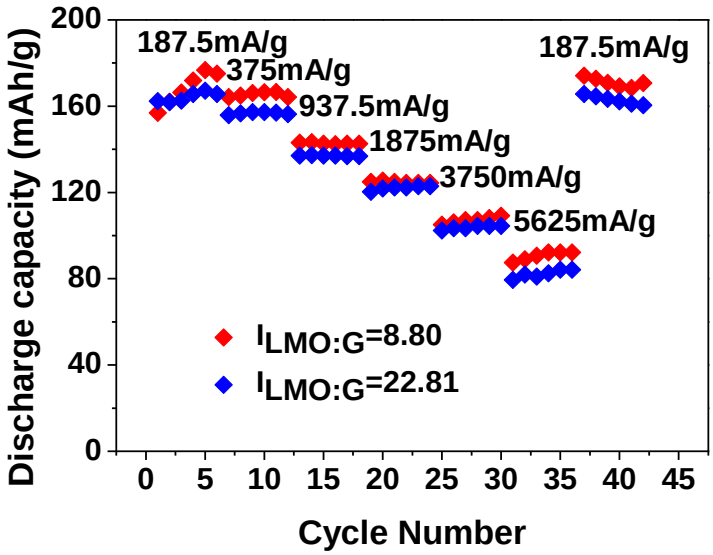

Figure S4: Rate performance of $LiMn_2O_4$/graphene with $I_{LMO:G}$ = 8.80 and 22.81 between 2 and 4.5 V.

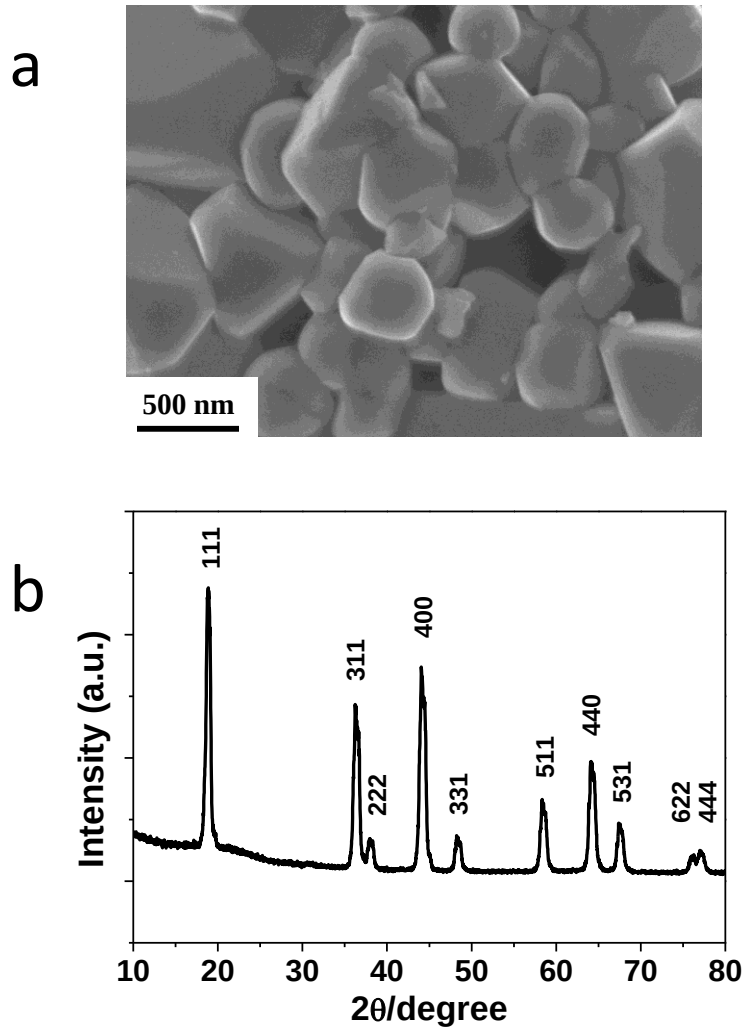

Figure S5: (a) SEM image and (b) XRD pattern of commercial $LiMn_2O_4$.

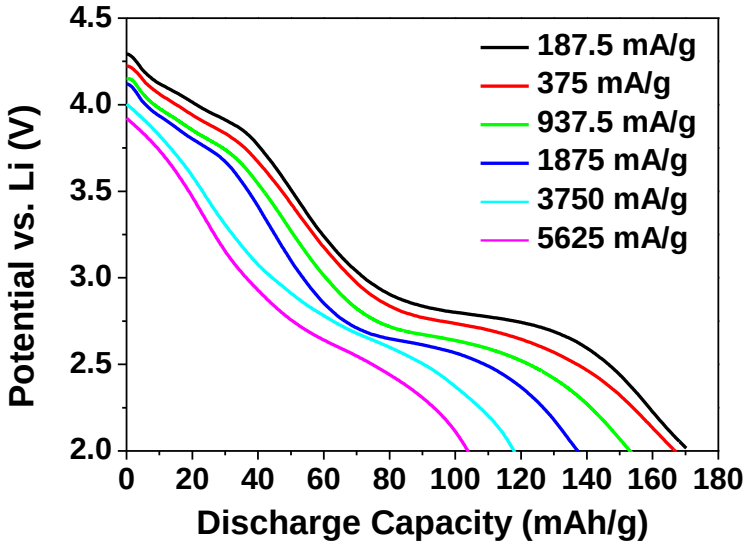

Figure S6: Discharge voltage profiles of LMO/G ($I_{LMO:G}$ = 5.37) electrode at various current densities.

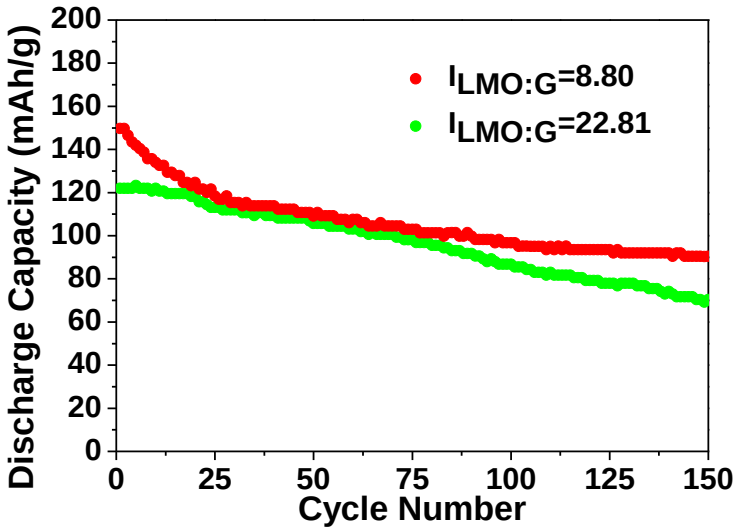

Figure S7: Cycling performance of $LiMn_2O_4$/graphene electrodes with different $I_{LMO:G}$ values at the 38 C discharge rate and 19 C charge rate.

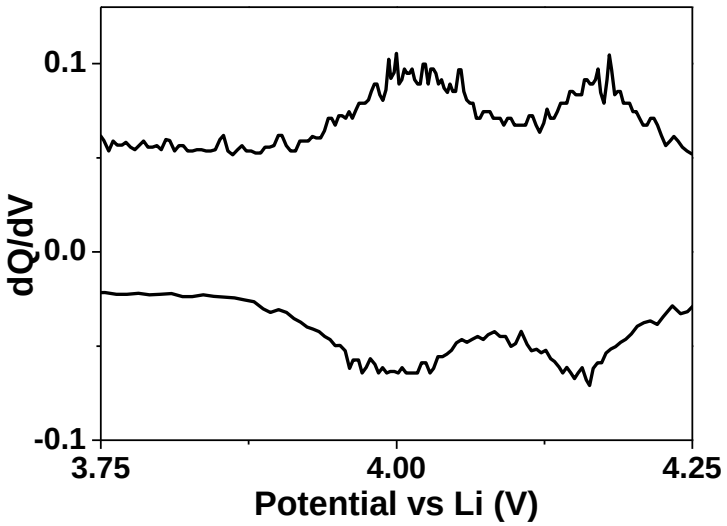

Figure S8: The curve of d*Q*/d*V* against potential (vs Li) of the second-cycle voltage profiles of $LiMn_2O_4$/graphene ($I_{LMO:G}$ = 1.22) between 3 and 4.5 V at 1.27 C.

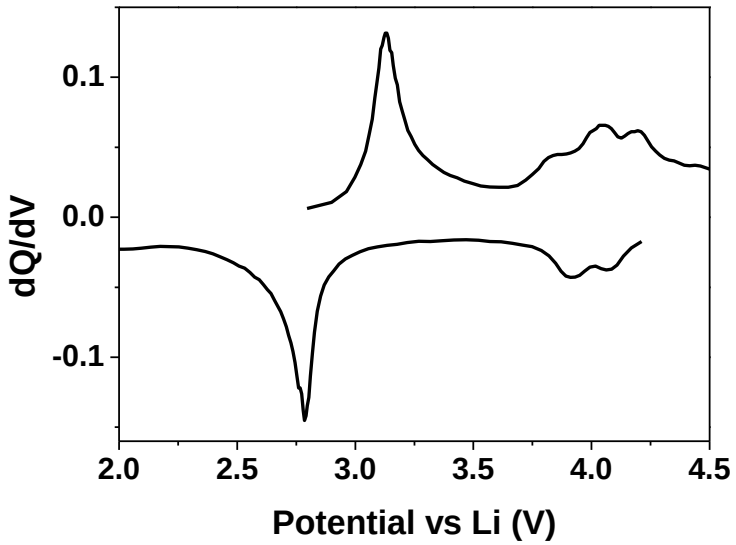

Figure S9: The curve of d*Q*/d*V* against potential (vs Li) of the second-cycle voltage profiles of $LiMn_2O_4$/graphene ($I_{LMO:G}$ = 1.22) between 2 and 4.5 V at 1.27 C.