Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.


**Supporting Information**

# Synthesis of Indium Oxide Nanoparticles Embedded Graphene Three Dimensional Architecture for Enhanced Lithium-Ion Storage

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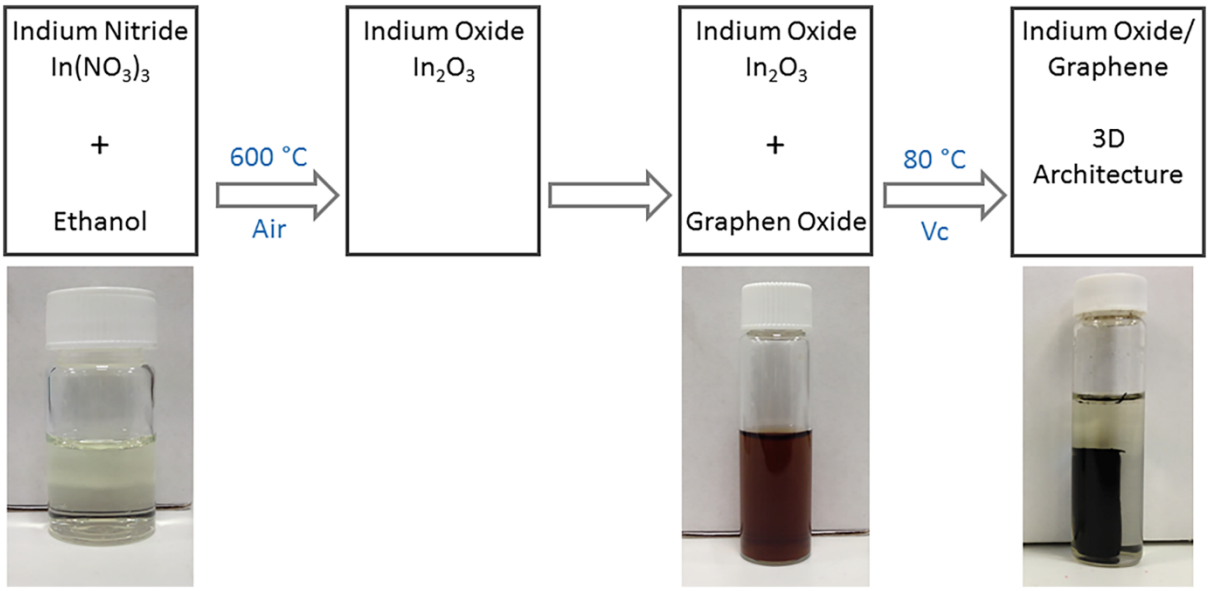


**Fig. S1** Schematic of the fabrication procedure and photos of products at different step including $In(NO_3)_3$ in ethanol, $In_2O_3$ NPs/graphene oxide solution and $In_2O_3$/graphene 3D architecture after reduction and self-assembly.

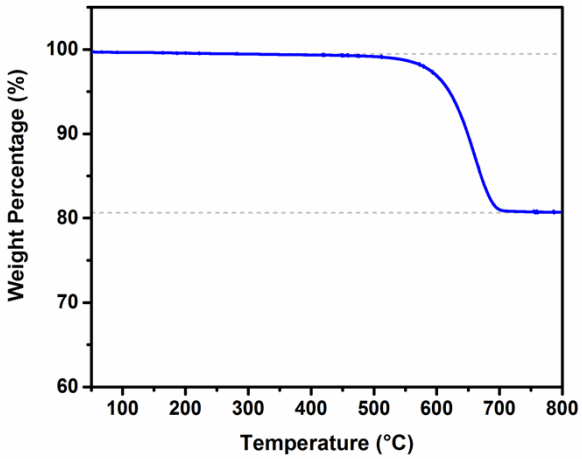


**Fig. S2** Thermogravimetric analysis results showing weight loss of the $In_2O_3$/graphene 3D architecture when heated in air flow from room temperature to 800 °C.

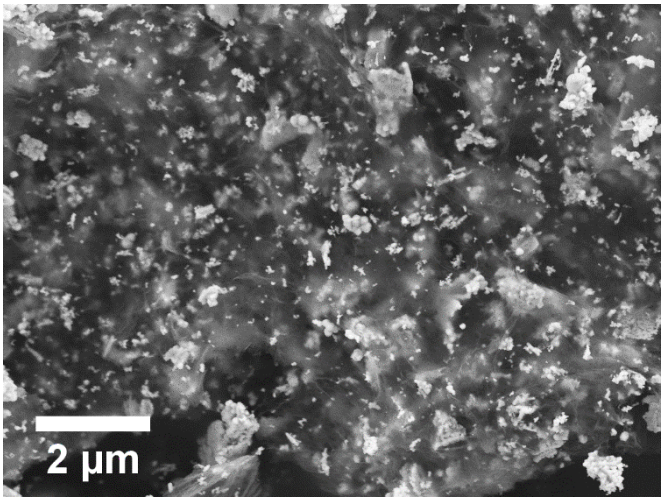


**Fig. S3** SEM image of the $In_2O_3$/graphene 3D architecture showing the dispersion of $In_2O_3$ nanoparticles.

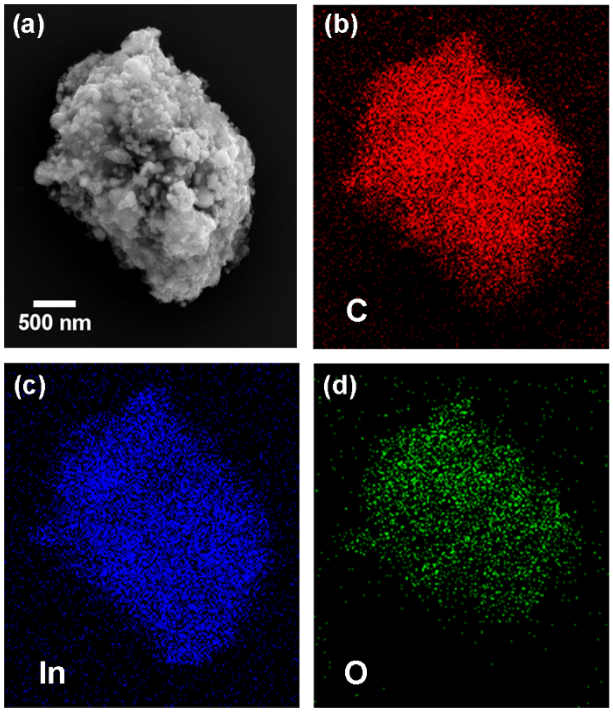


**Fig. S4** (a) SEM image of a piece of $In_2O_3$/carbon black, and elemental energy-dispersive X-ray (EDX) maps of (b) carbon, (c) indium and (d) oxygen, respectively.

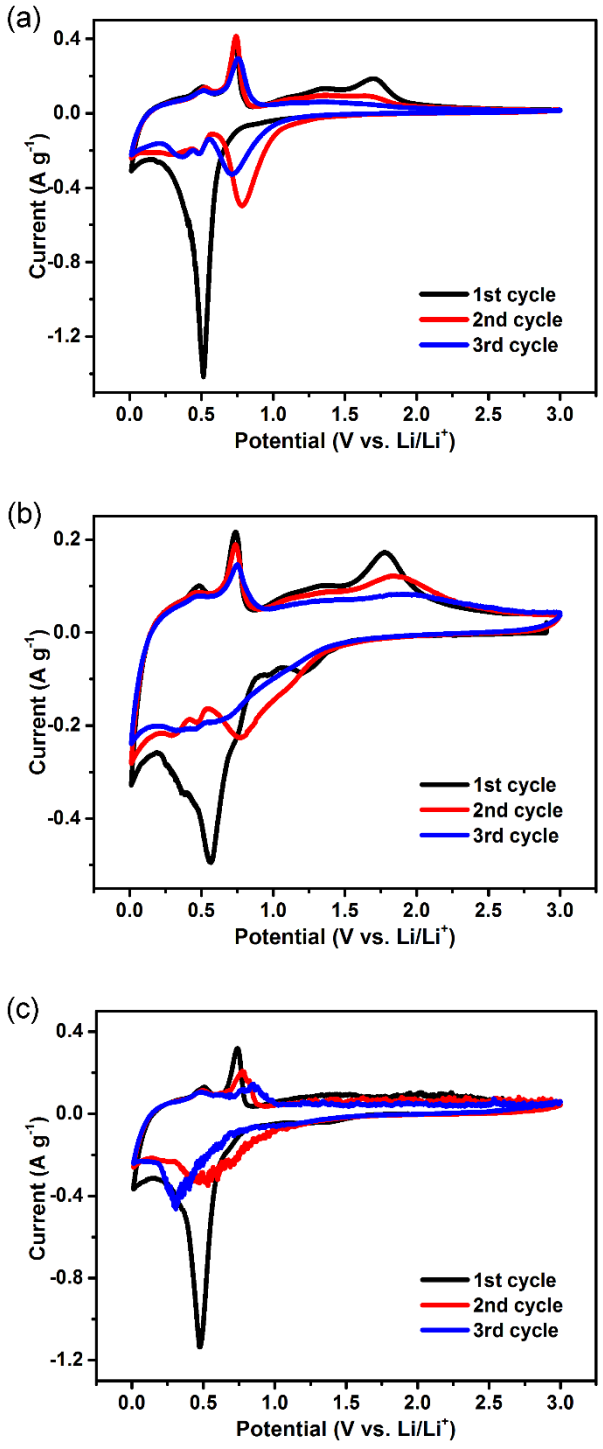


**Fig. S5** CV curves of the first three cycles of (a) pure $In_2O_3$ NPs, (b) $In_2O_3$/carbon black composite, and (c) $In_2O_3$/graphene at a voltage range of 0.01 to 3.0 V and scan rate of 0.1 mV $s^{-1}$.

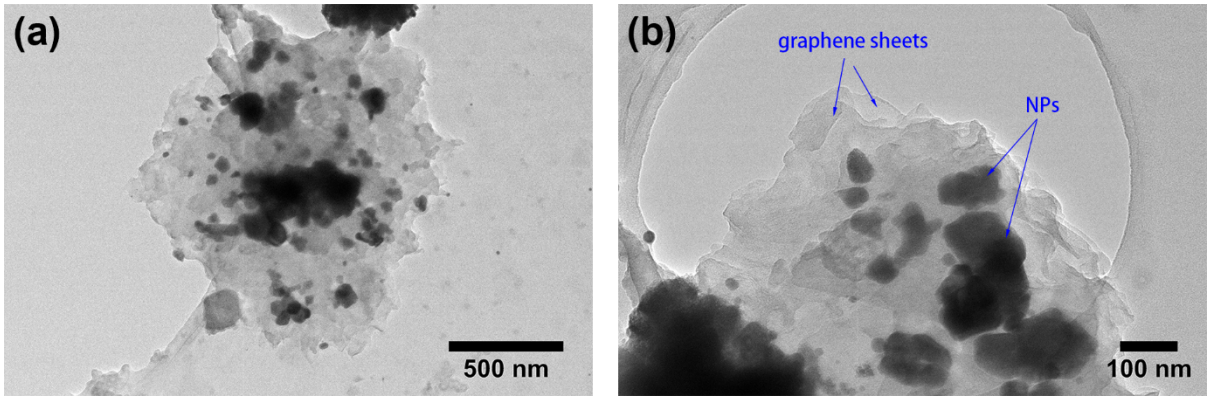


**Fig. S6** TEM images showing $In_2O_3$/graphene 3D architecture after 30 cycles.