

Supplementary Information

Preparation of RGO wrapped Magnetite Nanocomposites and its Energy Storage Properties

A. Shahul Hameed,^a M. V. Reddy,^{bc} B. V. R. Chowdari^b and Jagadese J. Vittal^a

^aDepartment of Chemistry, National University of Singapore, Singapore 117543. Fax: (+) 65-6779-1691

^bAdvanced batteries lab, Department of Physics, National University of Singapore, Singapore 117542. Fax: (+) 65-6777-6126

^cDepartment of Materials Science and Engineering, National University of Singapore, Singapore

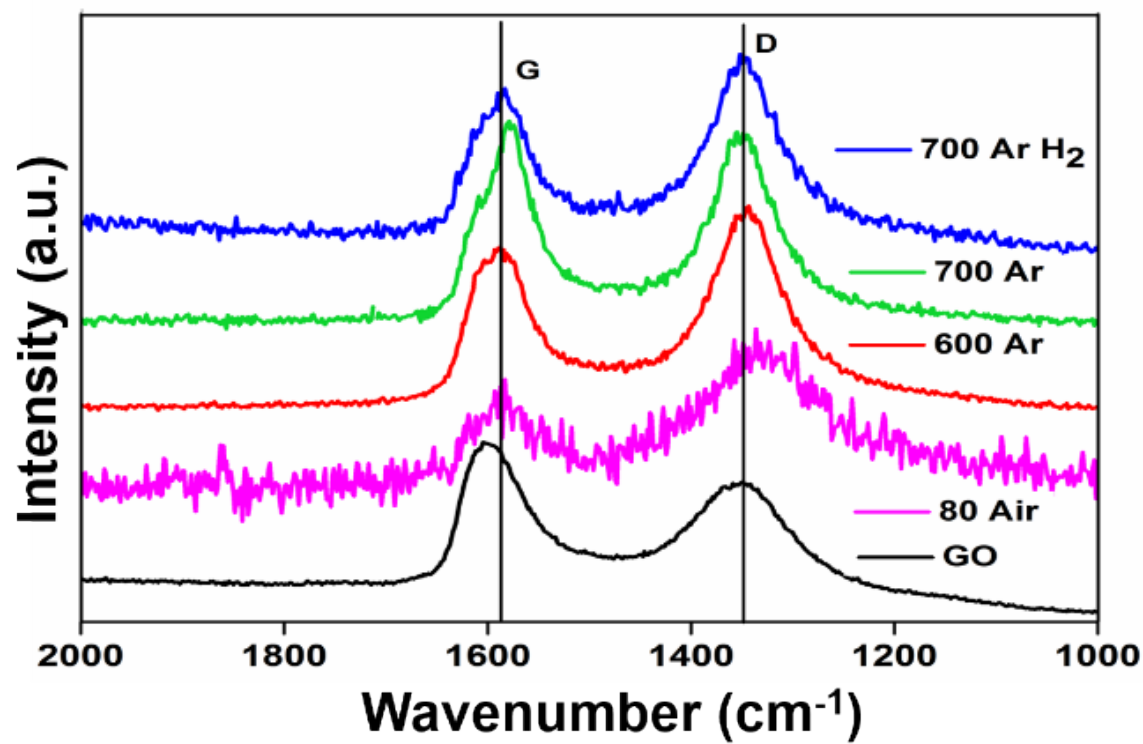


Fig. S1 Raman spectra rGO/Fe₃O₄ nanocomposites synthesized at different conditions

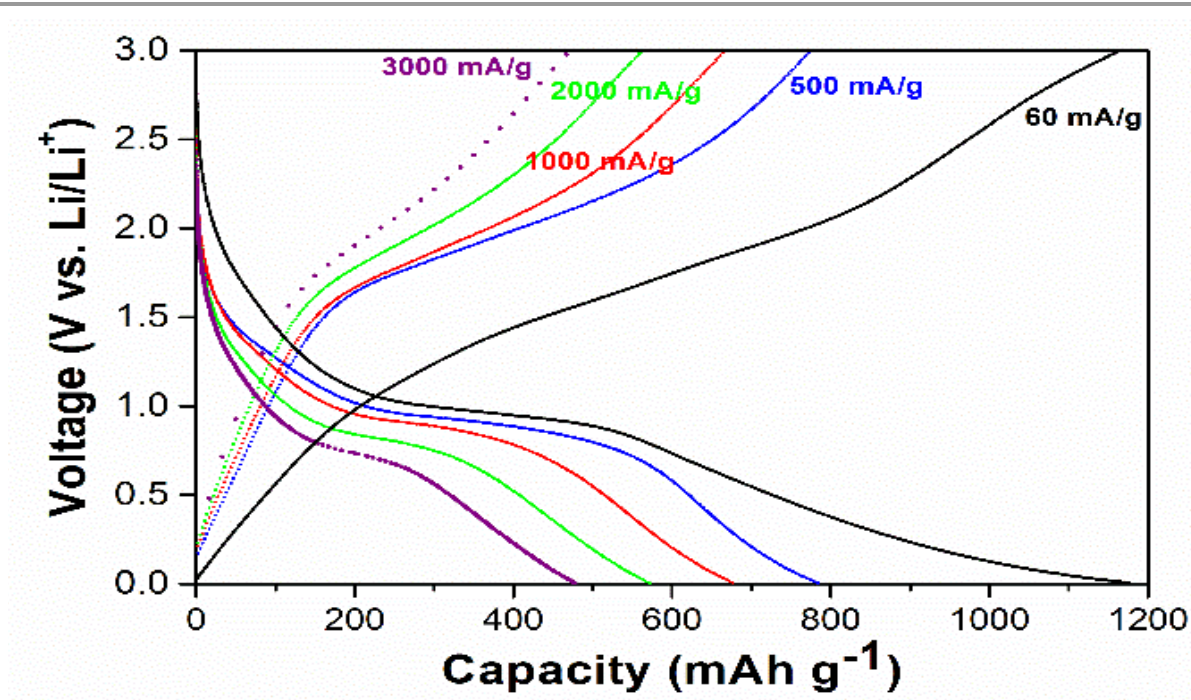


Fig. S2 Charge-discharge profiles at different current rates for rGO/Fe₃O₄ obtained at 700 °C in Ar-H₂

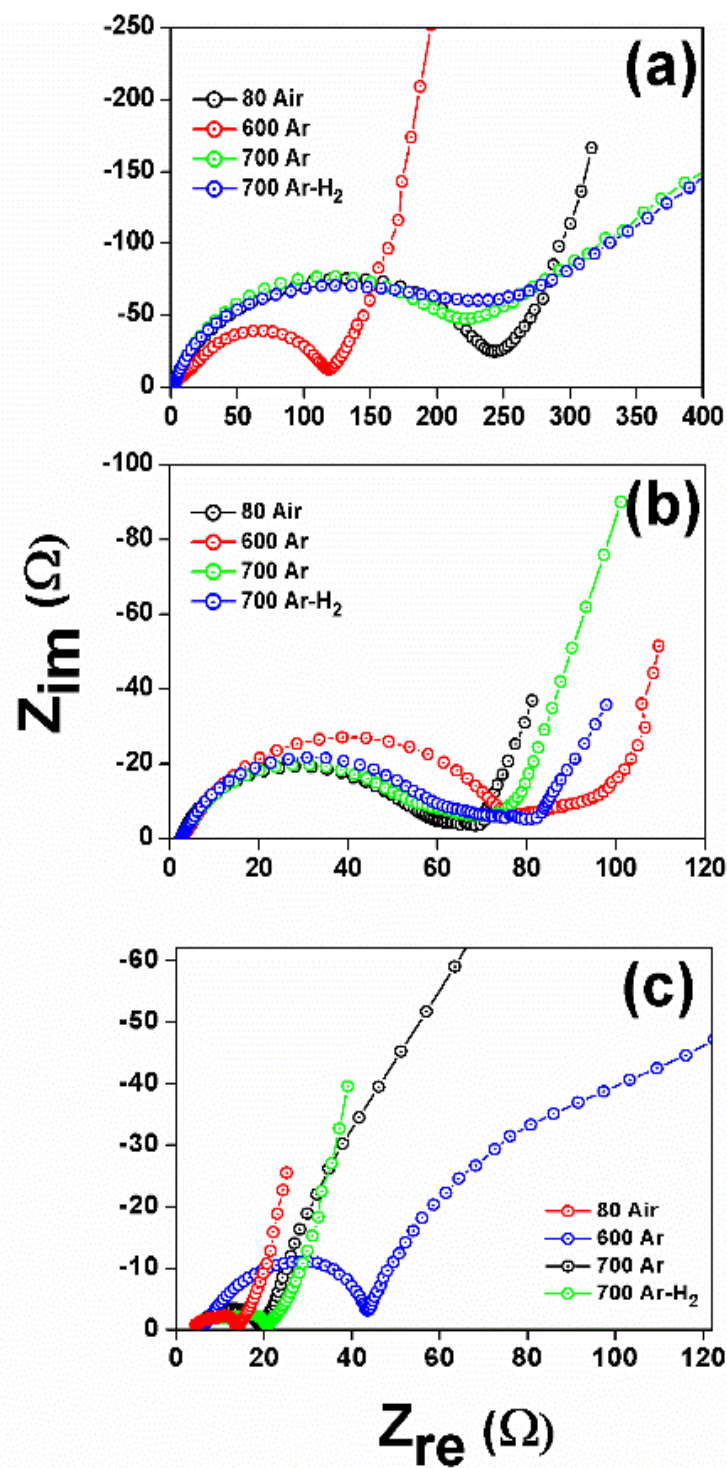


Fig. S3 Nyquist plots of the different rGO/Fe₃O₄ composites at (a) OCV; (b) fully discharged (0.005 V) state (1st cycle) and (c) fully discharged (0.005 V) state (40th cycle)

Table S1. Lattice parameter, a (Å), BET surface area, pore size and pore volume of rGO/Fe₃O₄ nanocomposites obtained at different conditions

Sample	Lattice parameter a (Å)	BET surface area (m ² g ⁻¹)	Pore diameter (nm)	Pore volume (cm ³ g ⁻¹)
rGO/Fe₃O₄ 80 °C in air	8.3665(1)	30.4	9.0	0.069
rGO/Fe₃O₄ 600 °C in Ar	8.3700(4)	19.2	13.0	0.060
rGO/Fe₃O₄ 700 °C in Ar	8.3947(9)	3.2	18.7	0.015
rGO/Fe₃O₄ 700 °C in ArH₂	8.3824(6)	8.2	16.3	0.033