**Supporting Information for**

# Synthesis, Characterization and Electromagnetic Performance of Nanocomposites of Graphene with α-$LiFeO_2$ and β-$LiFe_5O_8$

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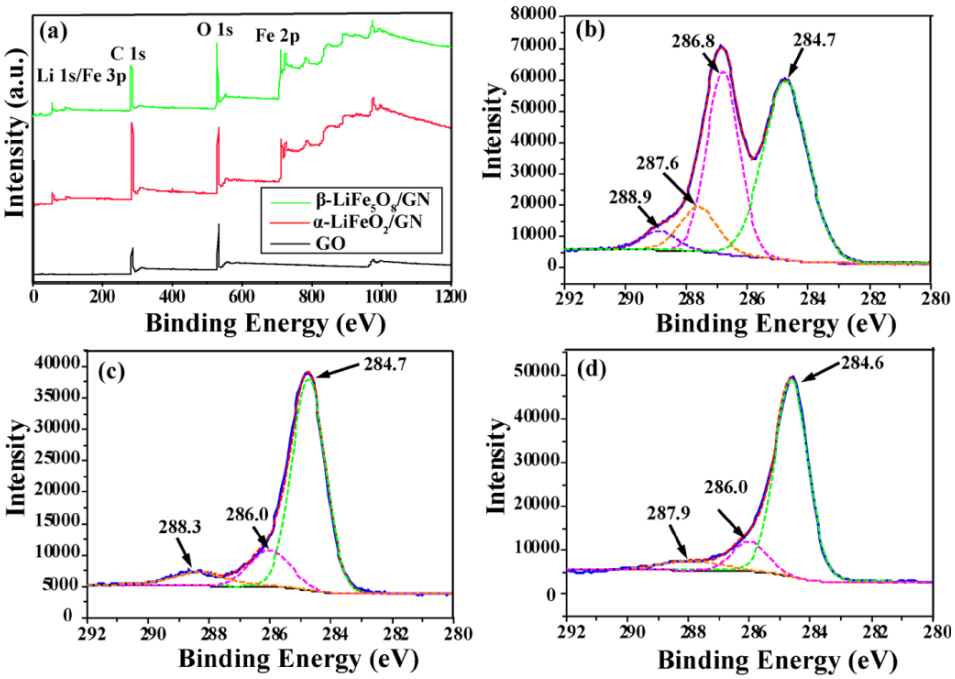


**Fig. S1** (a) Survey scans for XPS spectra of GO (black), α-$LiFeO_2$/GN (red), and β-$LiFe_5O_8$/GN (green) nanocomposites. C 1s peaks of (b) GO, (c) α-$LiFeO_2$/GN, and (d) β-$LiFe_5O_8$/GN nanocomposites.

In the XPS spectra (Fig. S1a), the main peaks observed in the survey scans of the two nanocomposites are C 1s, O 1s, and Fe 2p, Li 1s/Fe 3p (the peaks of Li 1s and Fe 3p overlap) peaks centered at *ca.* 285, 530, 710 and 55 eV, respectively. The XPS spectra of C 1s for GO in Fig. S1b could be identified into C entities, corresponding to single or double bonds in aromatic rings [i.e., C−C ($sp^2$ carbon, C1), C−O (C2), C=O (C3), C(O)O (C4) bonds] with a binding energy of about 284.7, 286.8, 287.6 and 288.9 eV, respectively. As shown in Figs. S1 c and d, the C4 peaks located at 288.9 eV disappeared in nanocomposites, meanwhile, the C2 peaks located at 286.0 eV and C3 peaks located at 288.3/287.9 eV became prominently weaker, confirming the effective conversion of most $sp^3$ hybridized carbon atoms of GO to $sp^2$ hybridized carbons.