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

Supporting Information

Nitrogen and Fluorine Co-Doped Graphene as High-Performance Anode Material for Lithium-Ion Batteries

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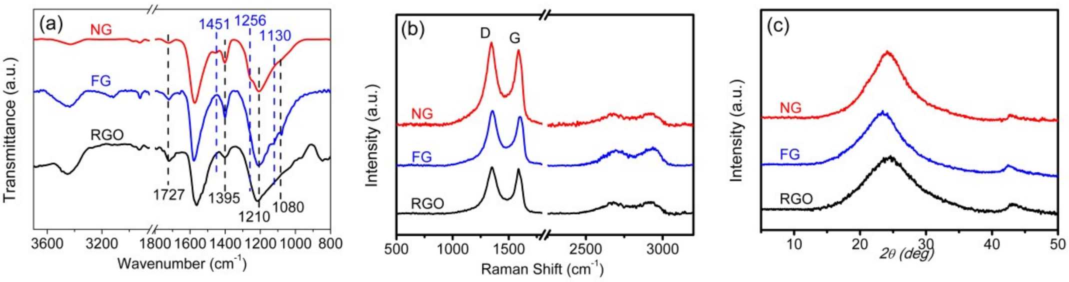

Fig. S1 (a) FT-IR spectrum, (b) Raman spectrum, and (c) XRD patterns of NG and RGO.

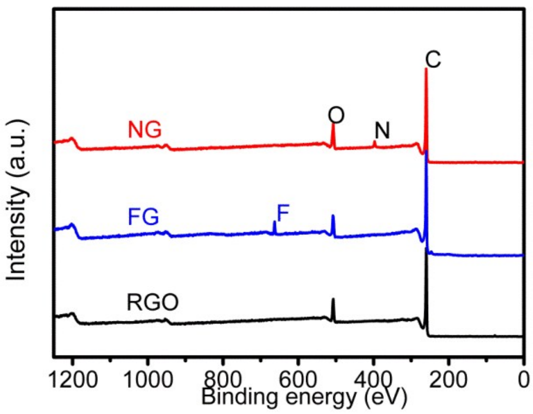

Fig. S2 XPS survey spectra of the NG and RGO.

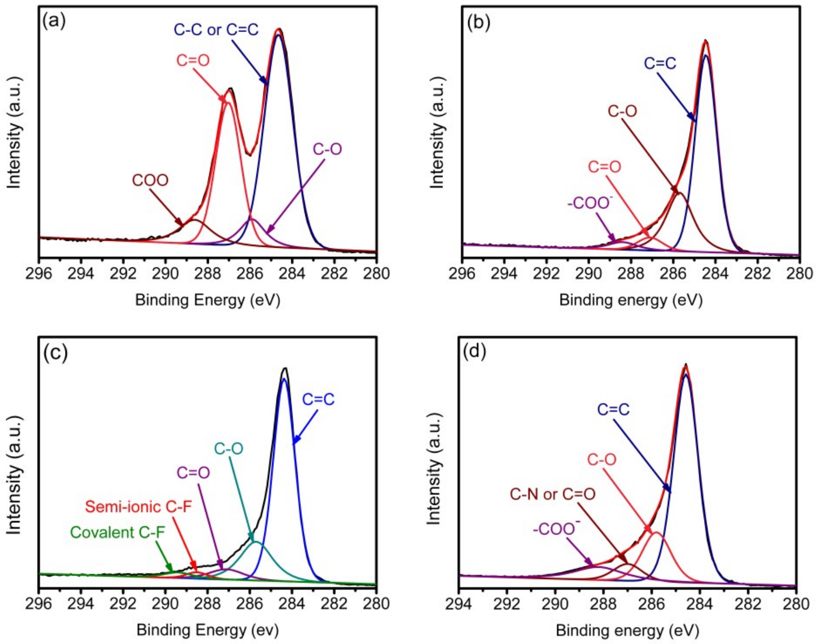

Fig. S3 High resolution C1s spectrum of GO (a), RGO (b), FG (c) and NG (d).

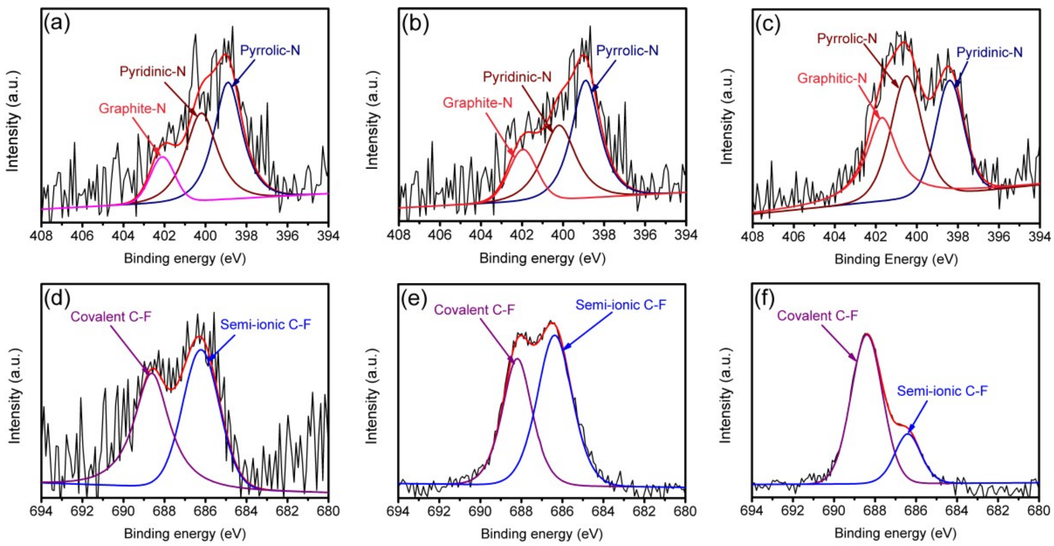

Fig. S4 High-resolution N1s spectrum FNG-90 (a), FNG-120 (b) and FNG-180 (c); High-resolution F1s spectrum of FNG-90 (d), FNG-120 (e) and FNG-180 (f).

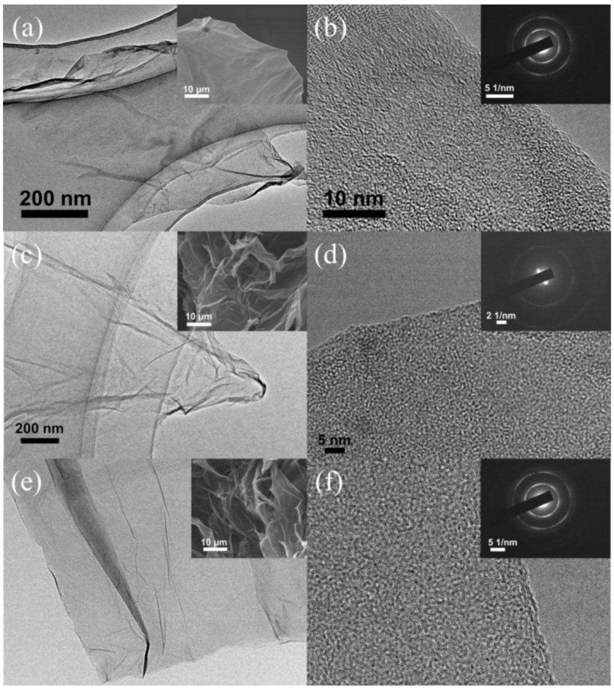

Fig. S5 (a) TEM image of RGO. Inset: SEM image of RGO. (b) HR-TEM of RGO. Inset: Corresponding SAED pattern of RGO. (c) TEM image of FG. Inset: SEM image of FG. (d) HR-TEM of FG. Inset: Corresponding SAED pattern of FG. (e) TEM image of NG. Inset: SEM image of NG. (f) HR-TEM of NG. Inset: Corresponding SAED pattern of NG.

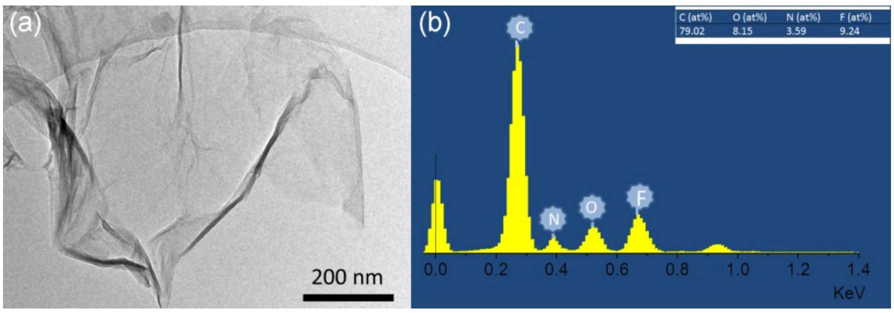

Fig. S6 TEM image of NFG-150(a), EDX spectra of NFG-150.

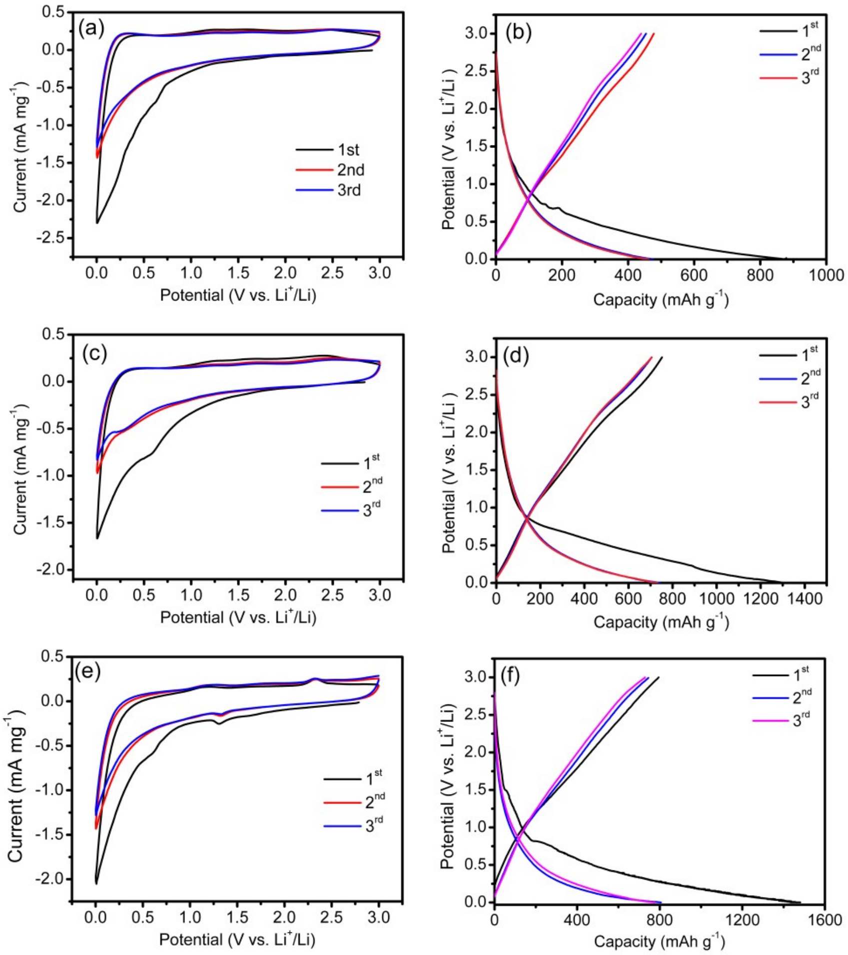

Fig. S7 The first three CV curves (a) and The first three discharge–charge profiles (b) of RGO. The first three CV curves (c) and The first three discharge–charge profiles(d) of NG.

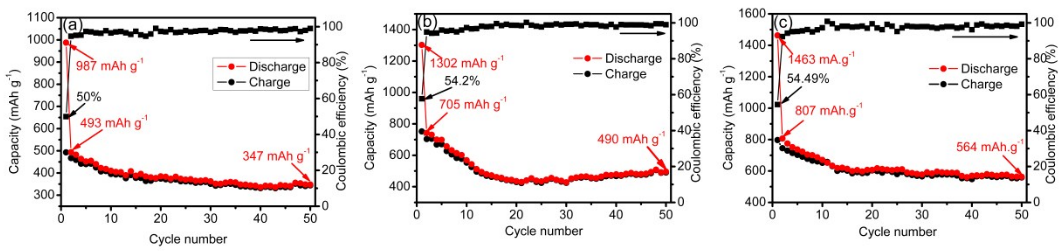

Fig. S8 Cycle performance of RGO (a), FG (b) and NG (c) as anode materials at a current density of 100 mA g^{-1}.

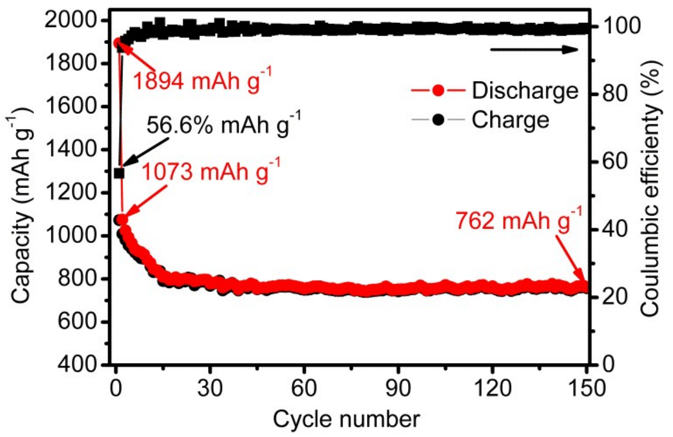

Fig. S9 cycling and Coulombic efficiency NFG-150 at a current density of 100 mAh g^{-1}

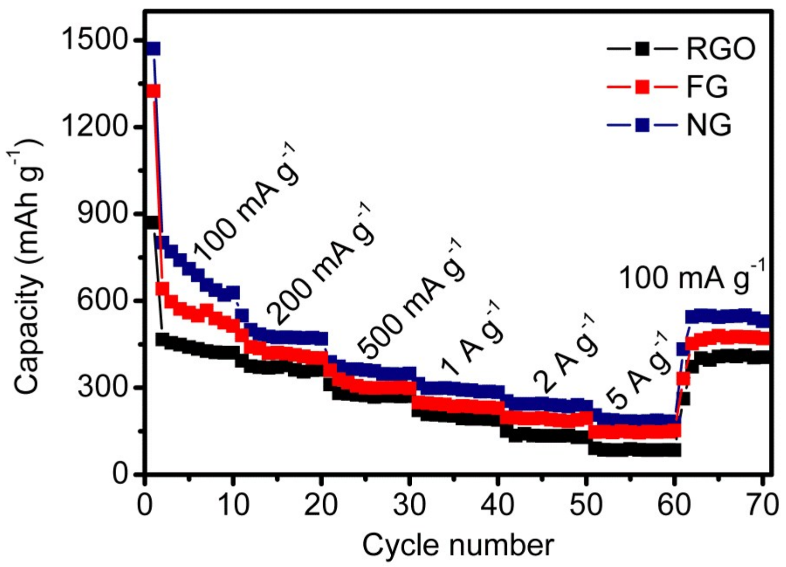

Fig. S10 Rate capability of RGO, FG and NG at current densities of 100, 200, 500, 1000, 2000, 5000, and 100 mA g^{-1}.

References

[S1] Safety Information of Hydrofluoric Acid.

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