Supporting Information

Reinforced supercapacitor electrode via reduced graphene oxide encapsulated $NiTe_2$-$FeTe_2$ hollow nanorods

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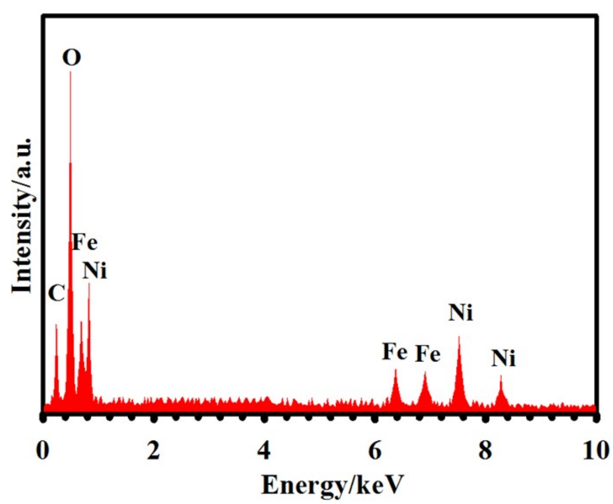

Fig. S1 EDX spectrum of the NiFeLDH.

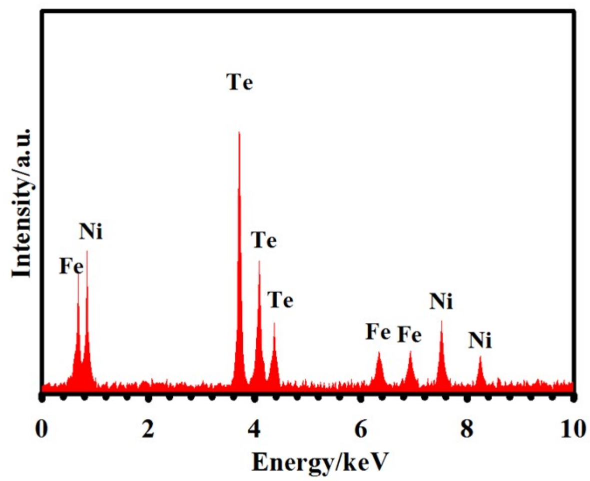

Fig. S2 EDX spectrum of the NFT500.

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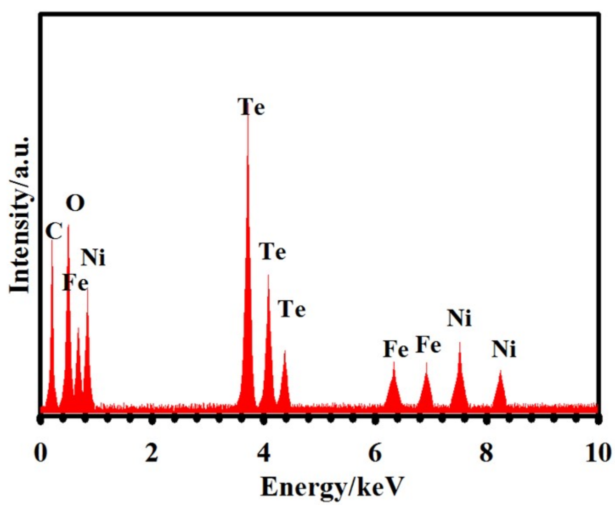

Fig. S3 EDX spectrum of the NFT500@RGO.

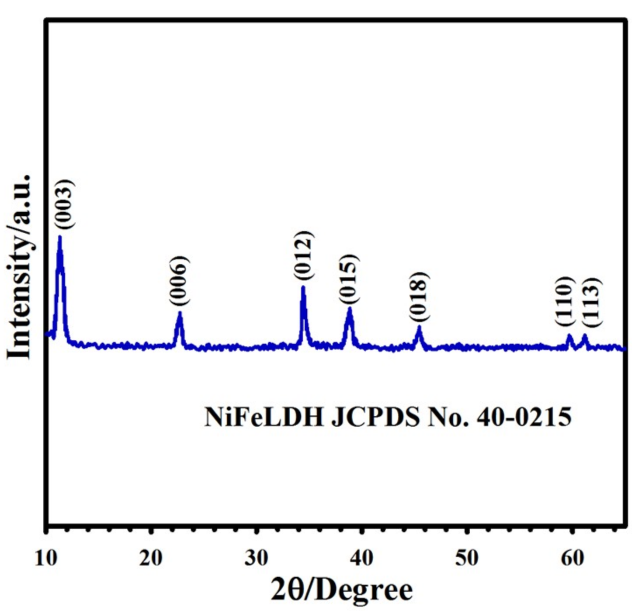

Fig. S4 XRD of the NiFeLDH.

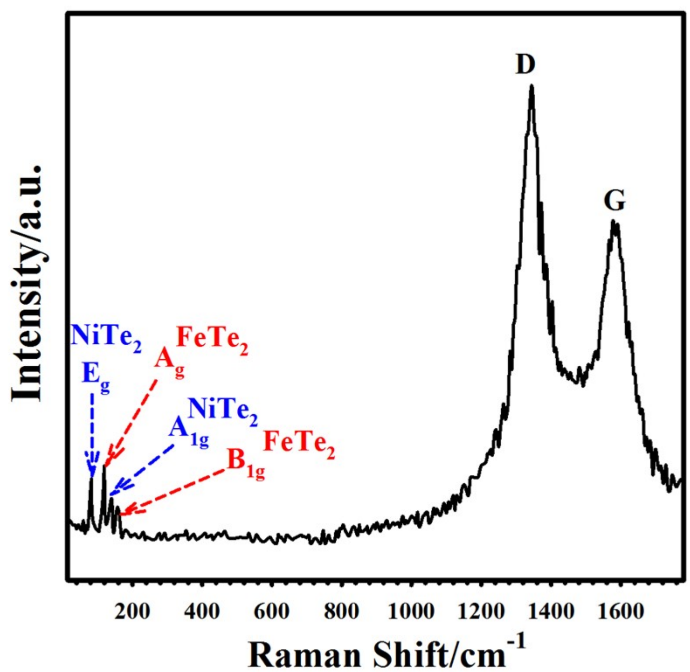

Fig. S5 Raman pattern of the NFT@RGO.

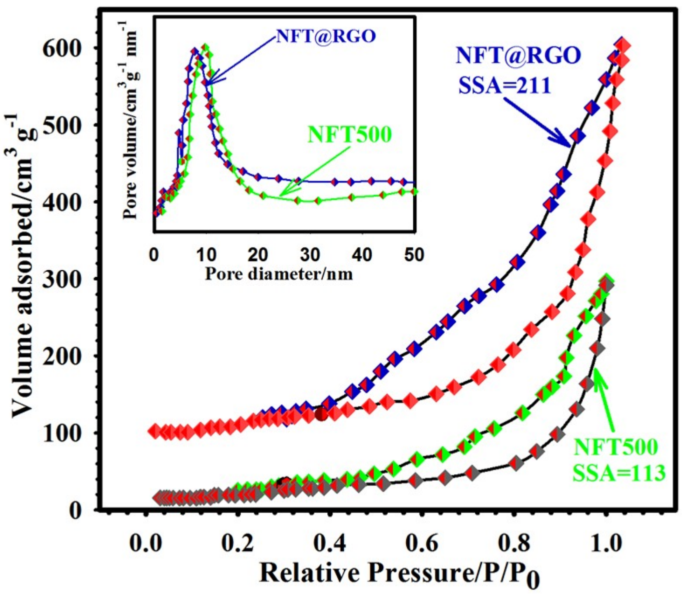

Fig. S6 BET curves of the NFT@RGO and NFT and their corresponding BJH curves (inset).

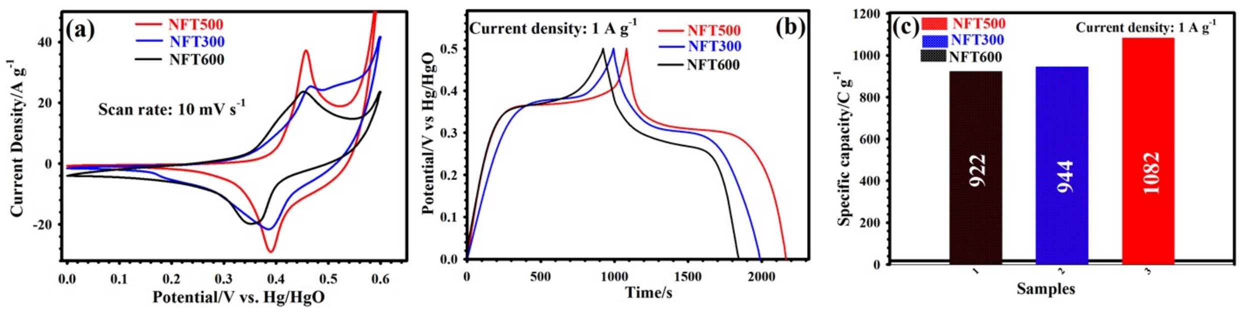

Fig. S7 (a) CV curves of the NFT300, NFT500, and NFT600 at 10 mV/s. (b) GCD curves of the NFT300, NFT500, and NFT600 at 1 A/g. (c) Specific capacities of the NFT300, NFT500, and NFT600 at 1 A g^{-1}.

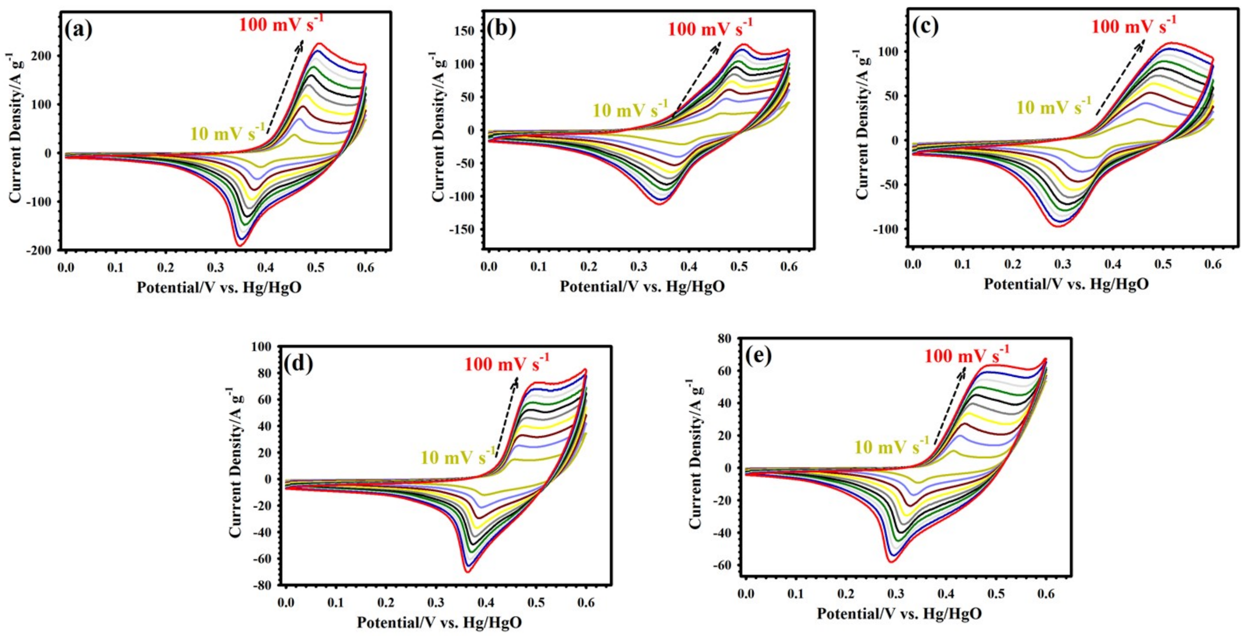

Fig. S8 (a) CV curves of the NFT500 from 10 to 100 mV s^{-1}. (b) CV curves of the NFT300 from 10 to 100 mV s^{-1}. (c) CV curves of the NFT600 from 10 to 100 mV s^{-1}. (d) CV curves of the NiFeLDH from 10 to 100 mV s^{-1}. (e) CV curves of Ni precursors from 10 to 100 mV s^{-1}.

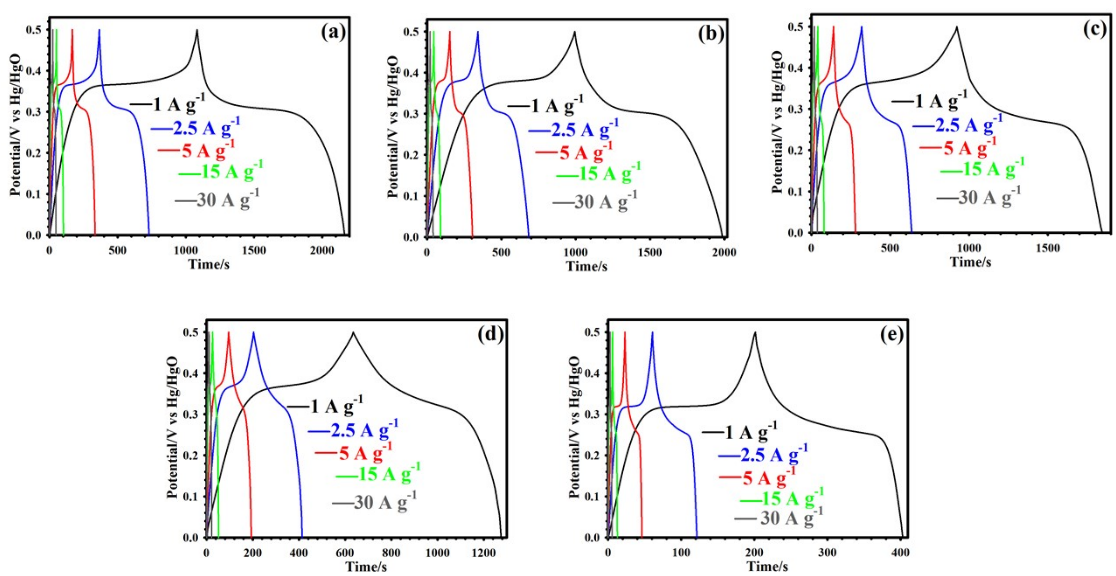

Fig. S9 (a) GCD curves of the NFT500 from 1 to 30 A g^{-1}. (b) GCD curves of the NFT300 from 1 to 30 A g^{-1}. (c) GCD curves of the NFT600 from 1 to 30 A g^{-1}. (d) GCD curves of the NiFeLDH from 1 to 30 A g^{-1}. (e) GCD curves of Ni precursors from 1 to 30 A g^{-1}.

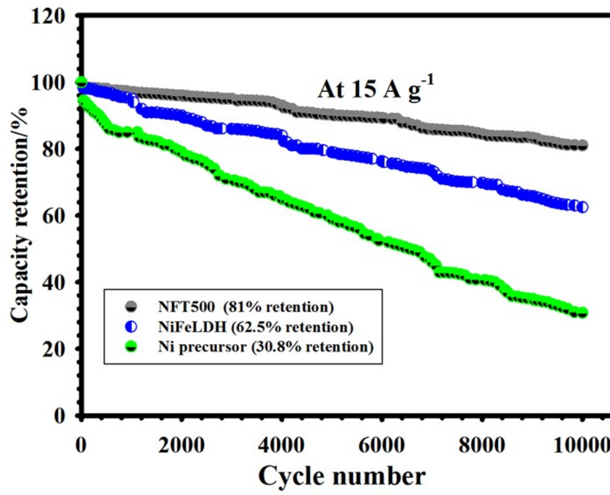

Fig. S10 Longevity of the NFT500, NiFeLDH, and Ni precursor based-electrodes at 15 A g^{-1}.

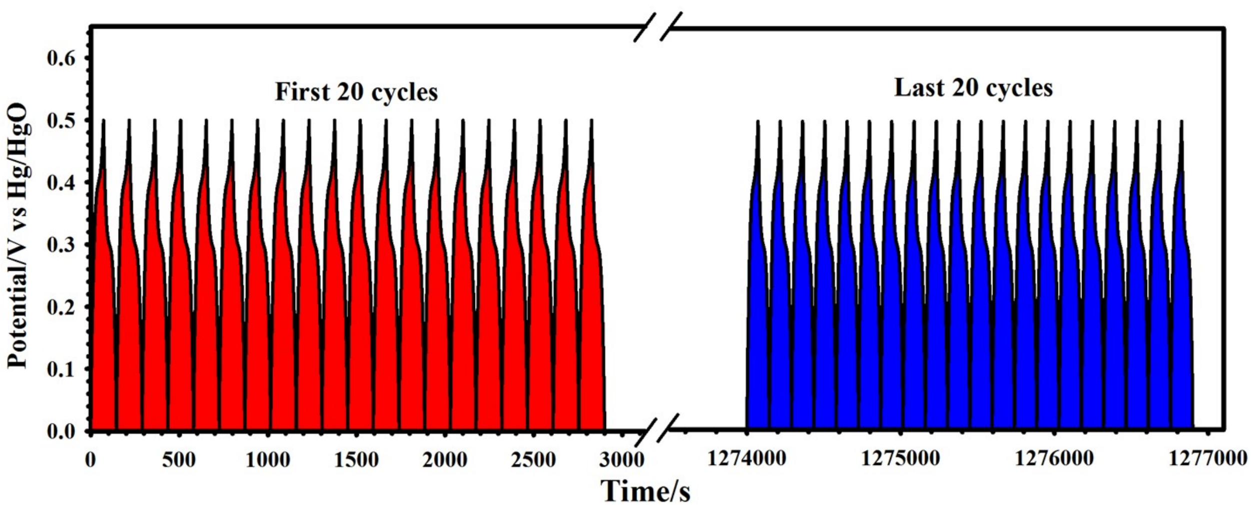

Fig. S11 First and last 20 GCD cycles of the NFT@RGO at 15 A g^{-1}.

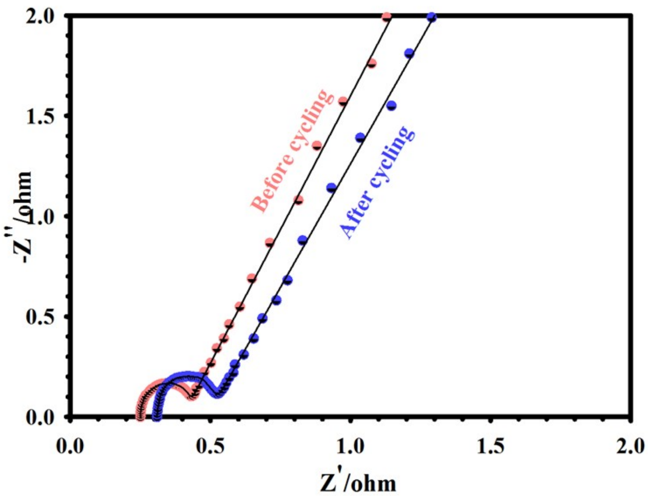

Fig. S12 EIS curves of the NFT@RGO before and after 10000 cycles.

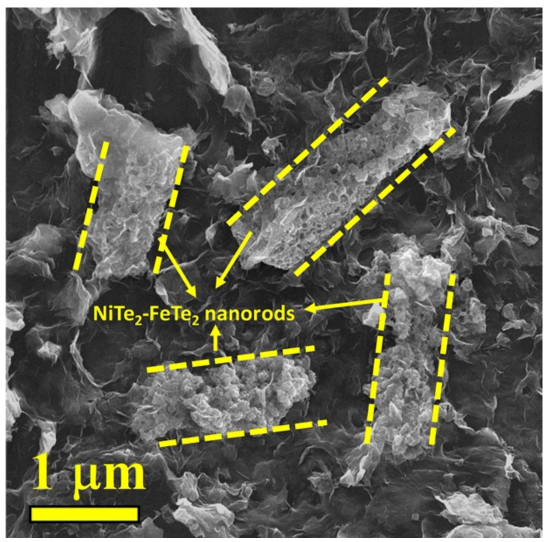

Fig. S13 FESEM image of the NFT@RGO after 10000 cycles.

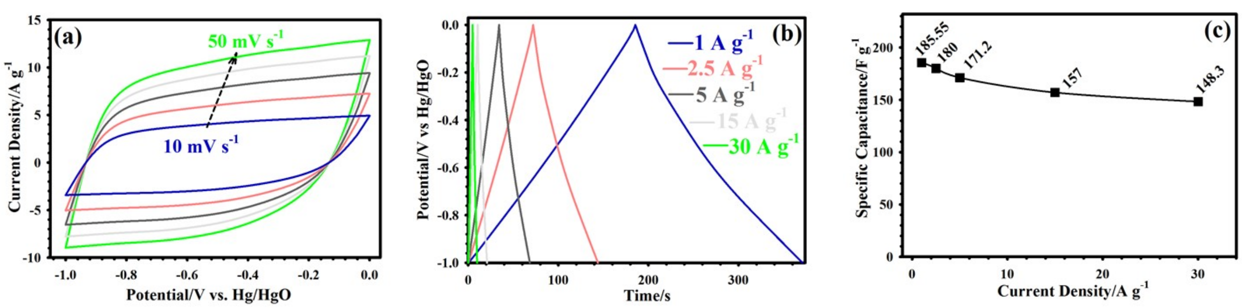

Fig. S14 (a) CV plots of the AC from 10 to 50 mV s^{-1}. (b) GCD plots of the AC from 1 to 30 A g^{-1}. (c) Rate capability of the AC electrode.

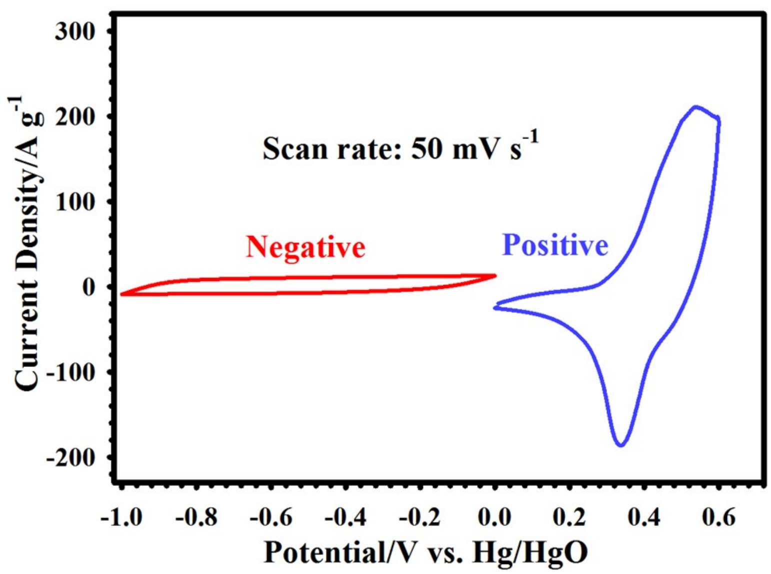

Fig. S15 CV plots of AC (anode electrode) and NFT@RGO (cathode electrode) at 50 mV s^{-1}in three-electrode cell.

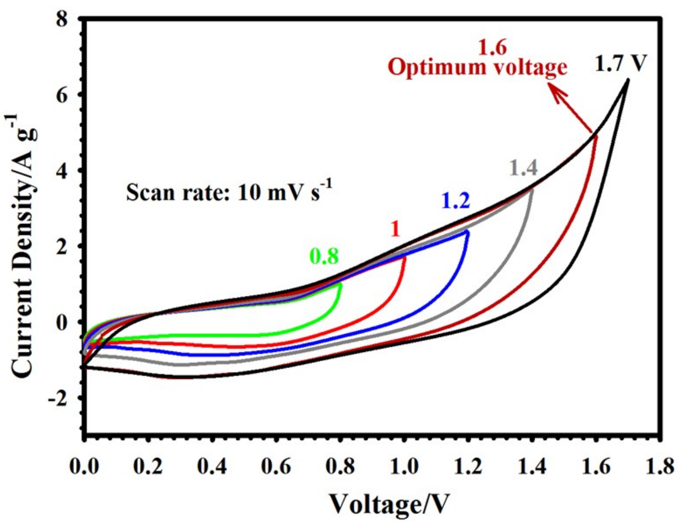

Fig. S16 CV plots of the AC//NFT@RGO at various potential window at 10 mV s^{-1} from 1.0 to 1.7 V.

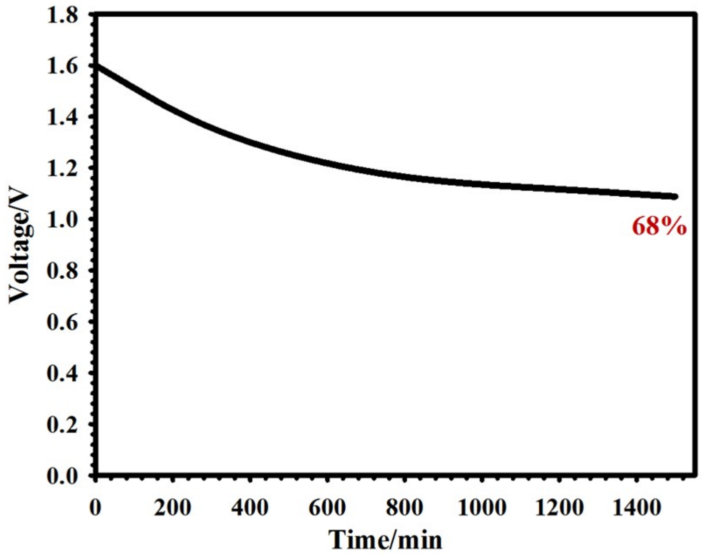

Fig. S17 Self-discharge curve of the NFT@RGO//AC tested for 1500 min.

Table S1. Comparison of the performance of the NFT@RGO with other previously reported electrode materials.

Composition	Capacity (C/g)	Cycles, retention	Rate capability	ED (Wh kg^{-1})	Reference
$FeCoSe_y$@$SnCoS_x$	**965**	**10000, 86.71%**	**52.02% at 15 A g^{-1}**	**59.44**	**1**
rGO-CCSe	**724 at 1 A g^{-1}**	**6000, 91.5%**	**71% at 60 A g^{-1}**	**57.8**	**2**
Co doped NiTe	**90.5.1 at 1 A g^{-1}**	**1000, 90%**	**77.2% at 10 A g^{-1}**	**36.8**	**3**
CoMnSe@NF	**579.6 at 1 A g^{-1}**	**8000, 91.8%**	**61.83% at 20 A g^{-1}**	**55.1**	**4**
3DG/ZnSe–$SnSe_2$	**833.36 at 1 A g^{-1}**	**3000, 90.1%**	**72.37% at 10 A g^{-1}**	**32.4**	**5**
NiSe-$Ni_{0.85}Se$	**669 at 1 A g^{-1}**	**5000, 80%**	**69% at 20 A g^{-1}**	**41**	**6**
Se@$(NiCo)Se_2$	**864 at 1 A g^{-1}**	**5000, 83.2%**	**65.8% at 30 A g^{-1}**	**49.4**	**7**
$Ni_{0.85}Se$@$MoSe_2$	**387 at 1 A g^{-1}**	**1000, 95%**	**63% at 15 A g^{-1}**	**25.5**	**8**
NFT@RGO	**1388.5 at 1 A g^{-1}**	**10000, 93.82 (3 E)**	**73% at 30 A g^{-1}**	**61.11**	**This work**

Reference

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