Electronic Supplementary Material (ESI) for Inorganic Chemistry Frontiers.

Synergy of oxygen defects and structural modulation on titanium niobium oxide with constructed conductive network for high-rate lithium-ion half/full batteries

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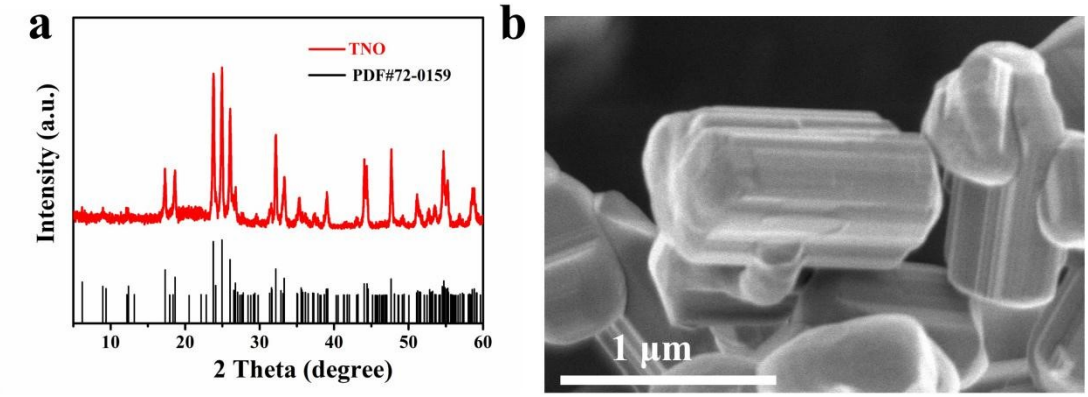

Fig. S1 Microstructure and morphology of TNO. (a) XRD pattern; (b) SEM images.

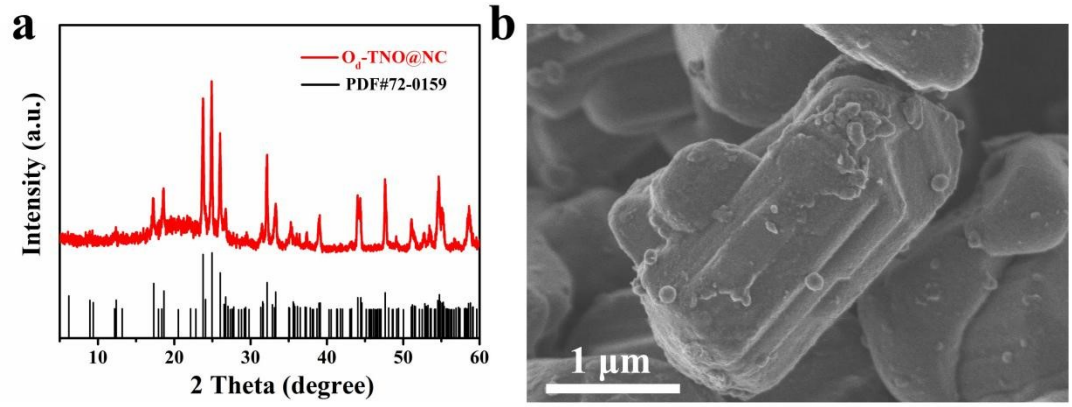

Fig. S2 Microstructure and morphology of O_d-TNO@NC. (a) XRD pattern; (b) SEM images.

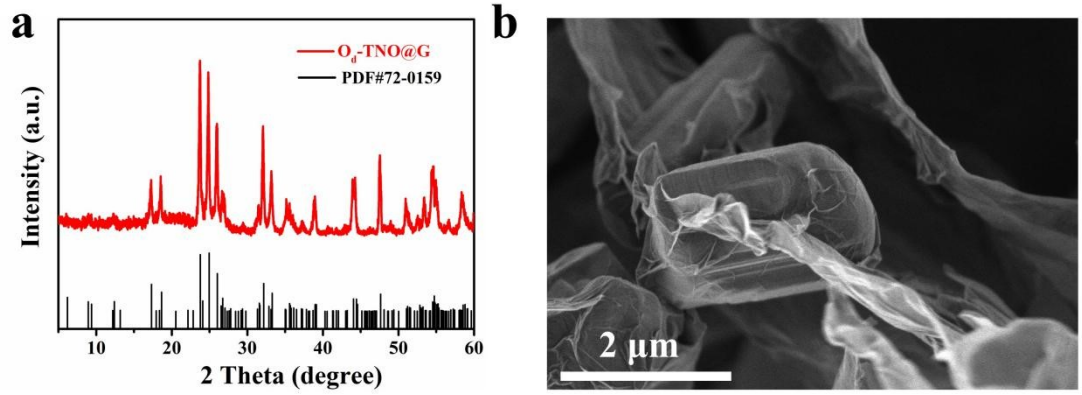

Fig. S3 Microstructure and morphology of O_d-TNO@G. (a) XRD pattern; (b) SEM images.

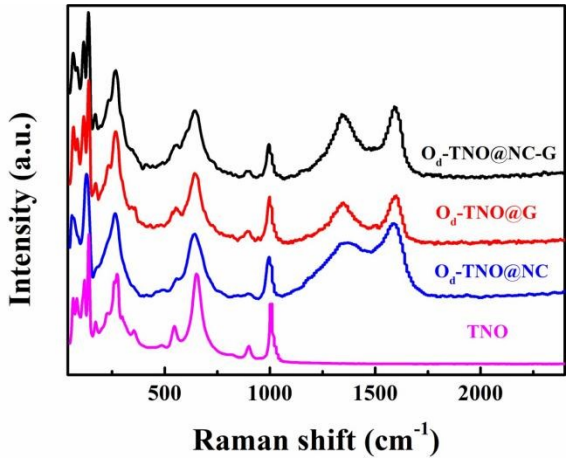

Fig. S4 Raman spectra of the TNO, O_d-TNO@NC, O_d-TNO@G and O_d-TNO@NC-G.

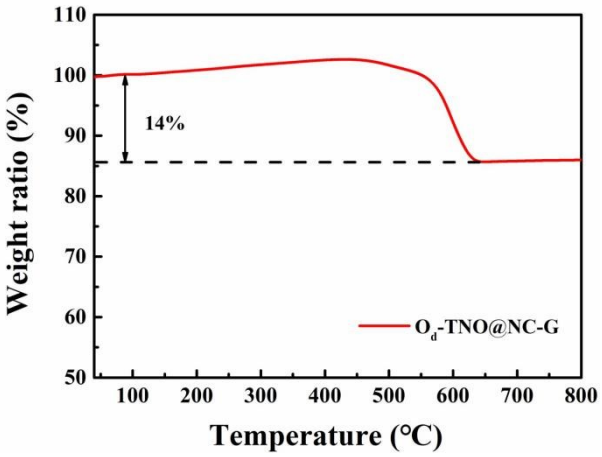

Fig. S5 TGA curve of O_d-TNO@NC-G.

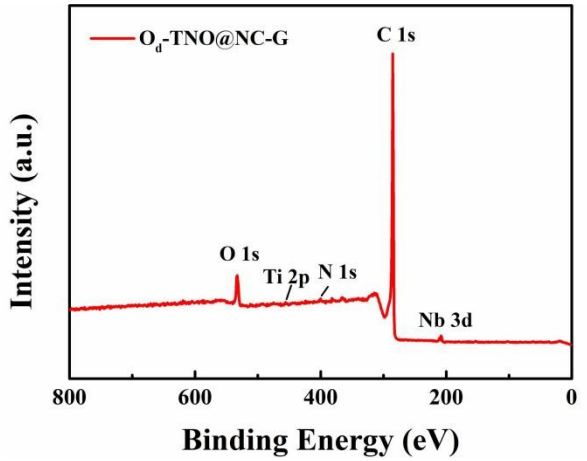

Fig. S6 XPS survey spectrum of O_d-TNO@NC-G.

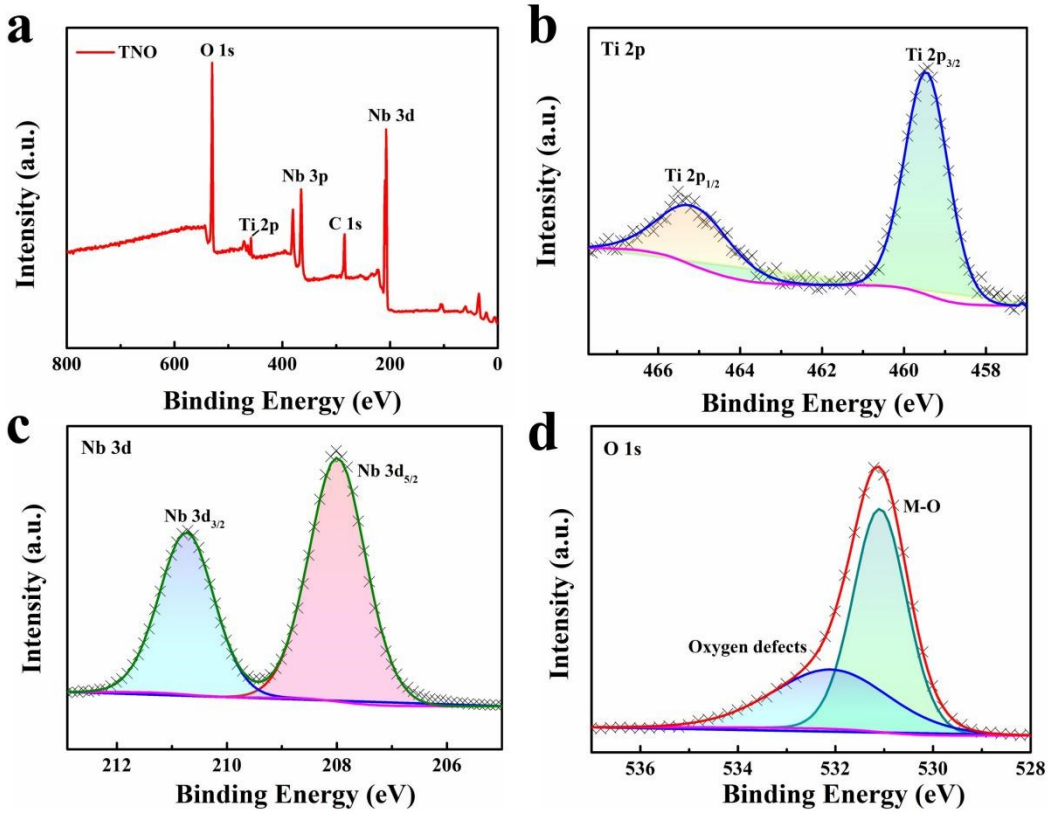

Fig. S7 (a) XPS survey spectrum of TNO; (b) Ti 2p; (c) Nb 3d; (d) O 1s.

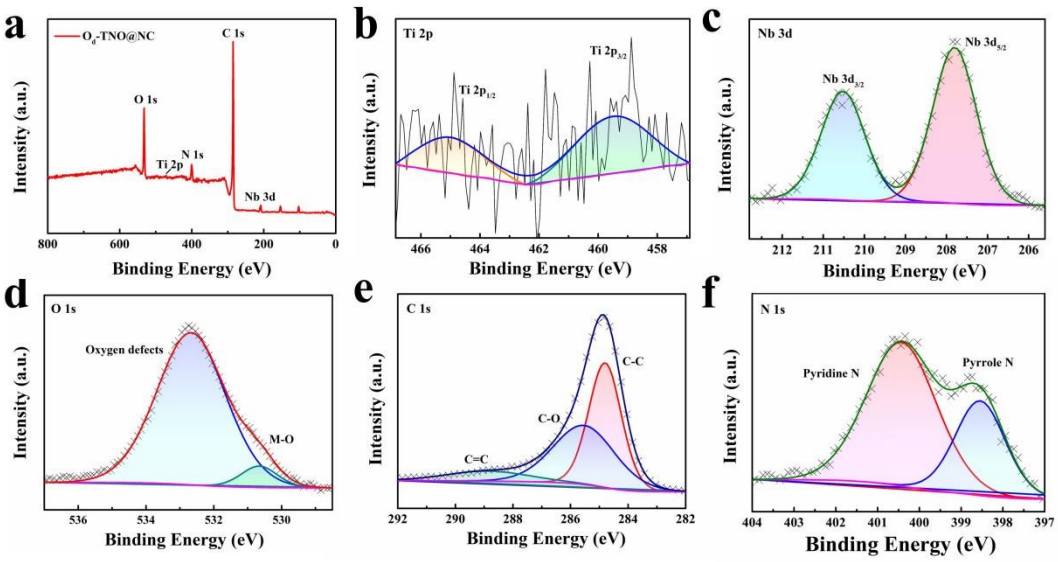

Fig. S8 (a) XPS survey spectrum of O_d-TNO@NC; (b) Ti 2p; (c) Nb 3d; (d) O 1s; (e) C 1s; (f) N 1s.

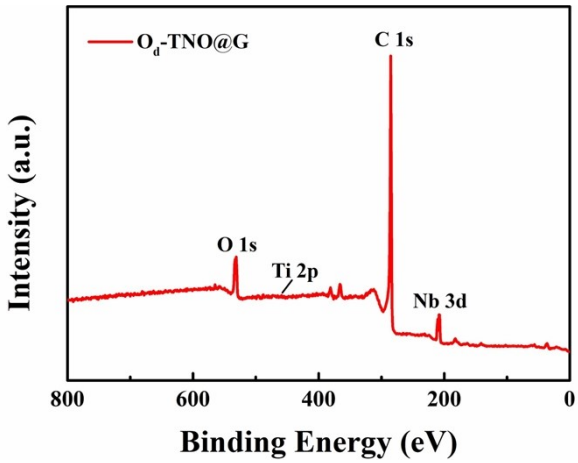

Fig. S9 XPS survey spectrum of O_d-TNO@G;

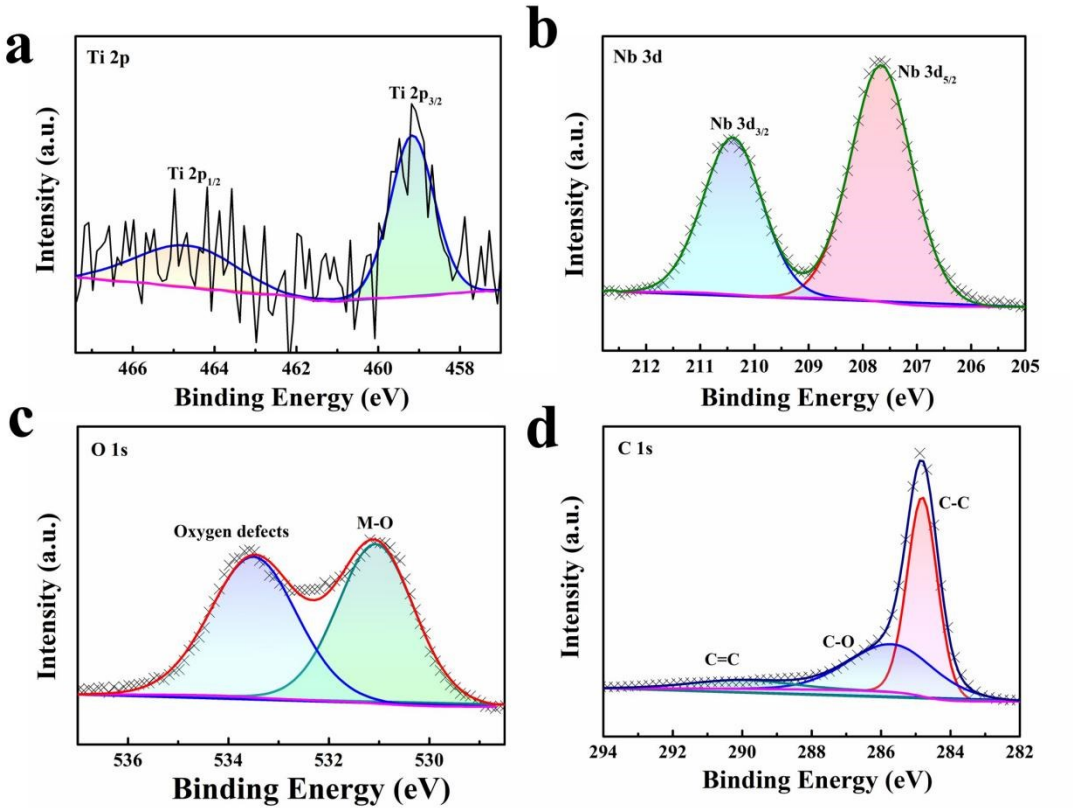

Fig. S10 XPS spectra of O_d-TNO@G; (a) Ti 2p; (b) Nb 3d; (c) O 1s; (d) C 1s.

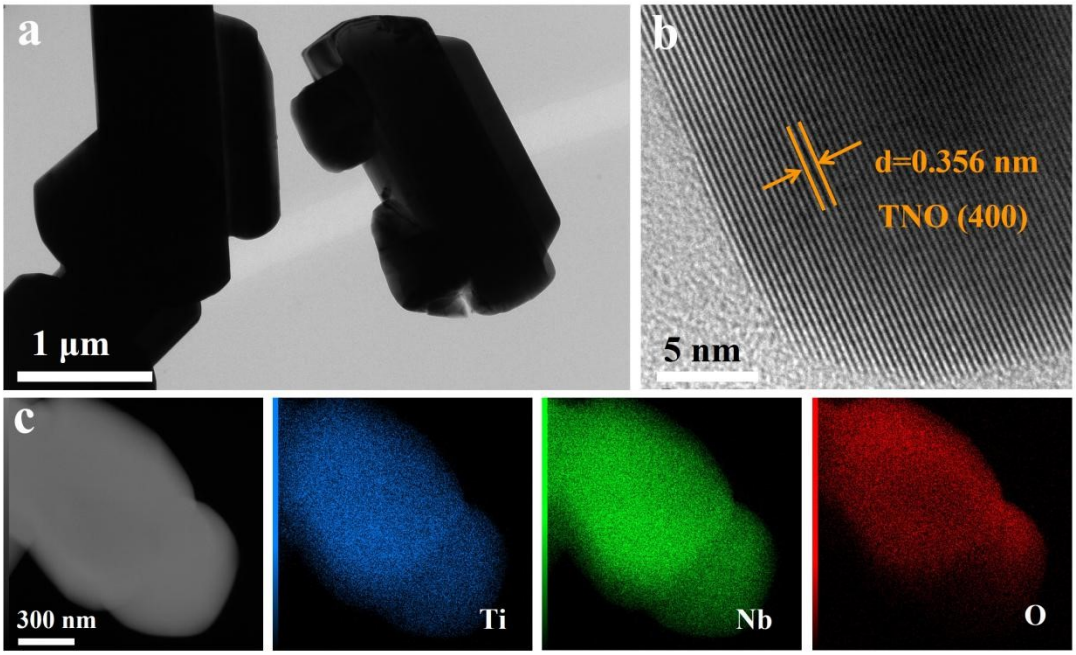

Fig. S11 (a) TEM and (b) HR-TEM images of the TNO; (c) HAADF-STEM image and EDX mappings of the TNO.

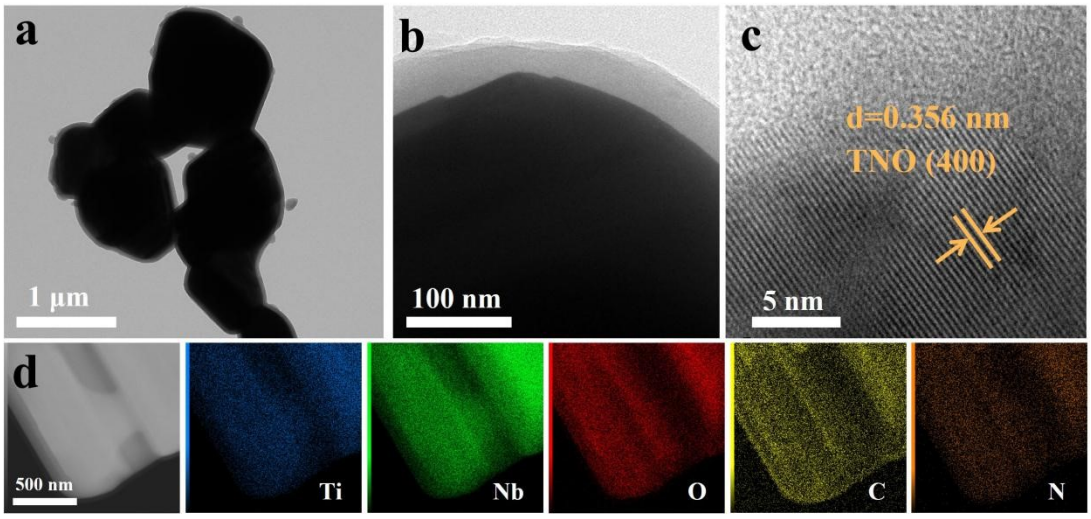

Fig. S12 (a and b) TEM and (c) HR-TEM images of the O_d-TNO@NC; (d) HAADF-STEM image and EDX mappings of the O_d-TNO@NC.

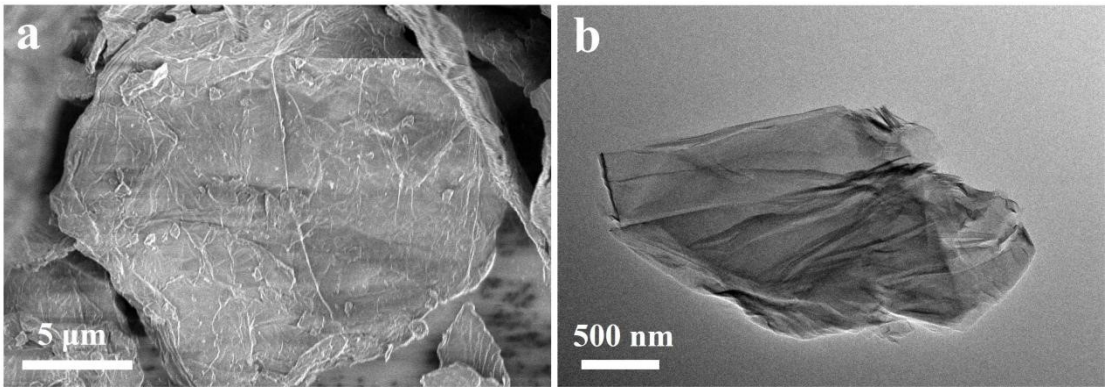

Fig. S13 (a) SEM and (b) TEM images of the GO.

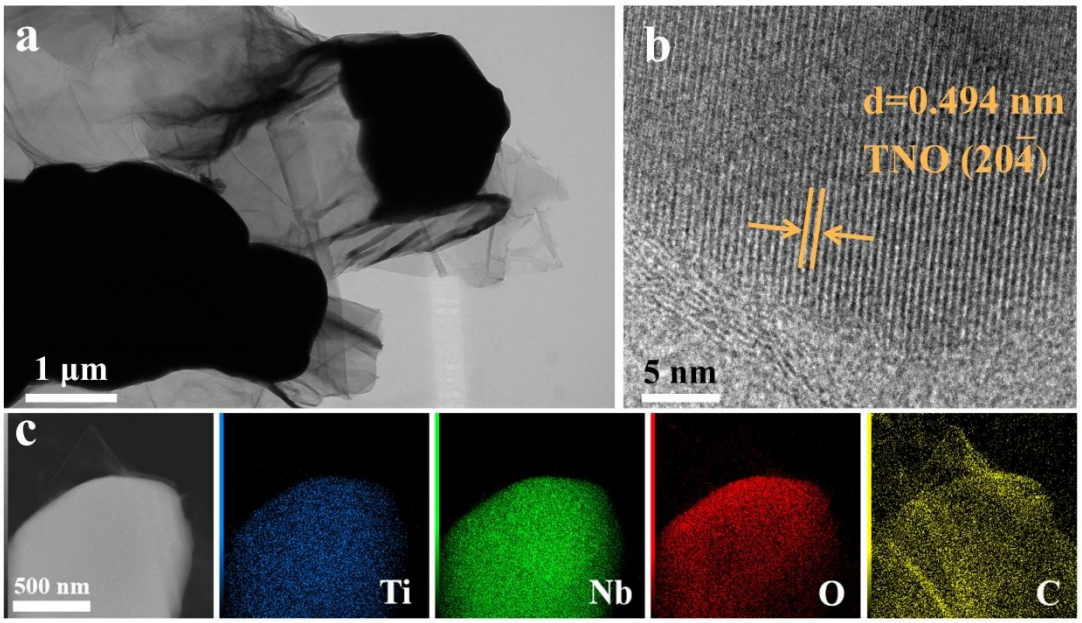

Fig. S14 (a) TEM and (b) HR-TEM images of the O_d-TNO@G; (c) HAADF-STEM image and EDX mappings of the O_d-TNO@G.

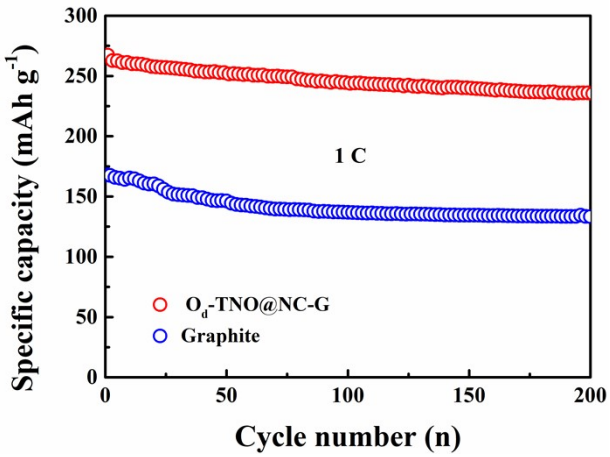

Fig. S15 Cycling performance at 1 C of the O_d-TNO@NC-G and commercial graphite (Hefei Kejing Material Technology Co., LTD, 99%).

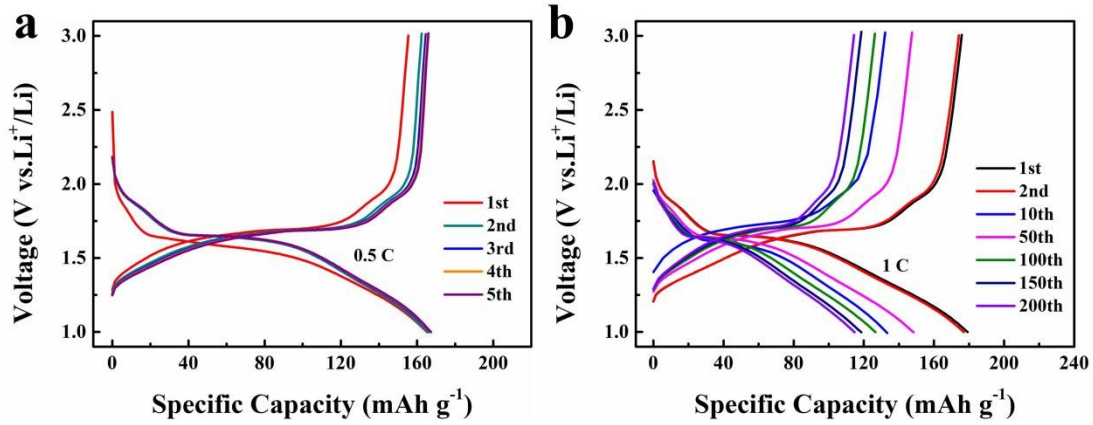

Fig. S16 (a) The GCD curves at 0.5 C and (b) typical charge–discharge curves at 1 C at different cycles of the TNO.

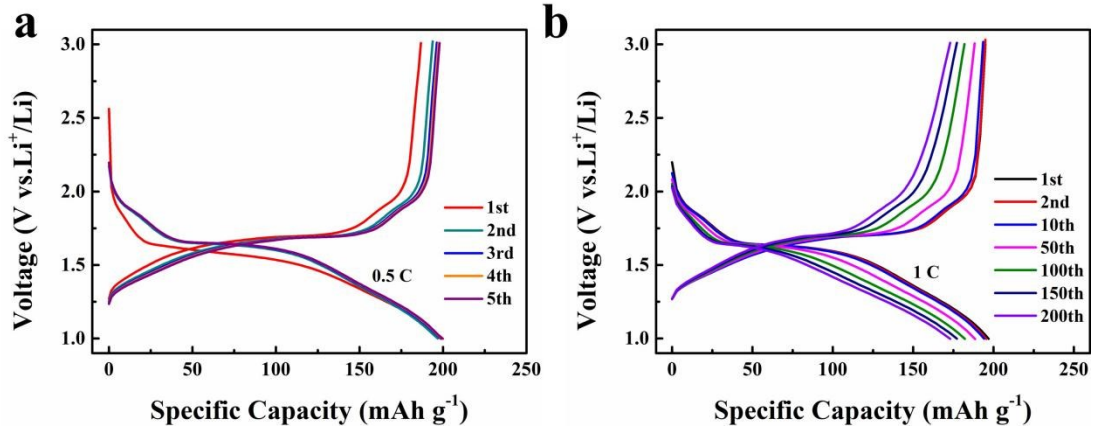

Fig. S17 (a) The GCD curves at 0.5 C and (b) typical charge–discharge curves at 1 C at different cycles of the O_d-TNO@NC.

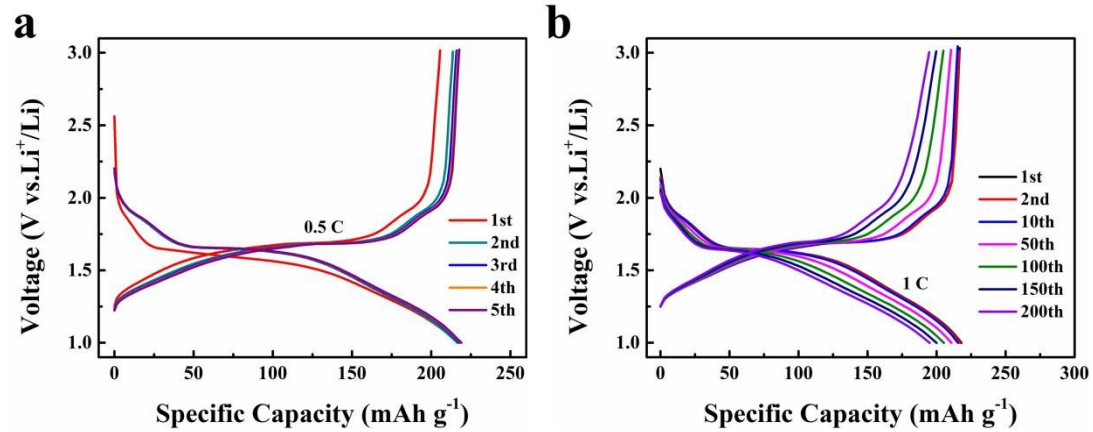

Fig. S18 (a) The GCD curves at 0.5 C and (b) typical charge–discharge curves at 1 C at different cycles of the O_d-TNO@G.

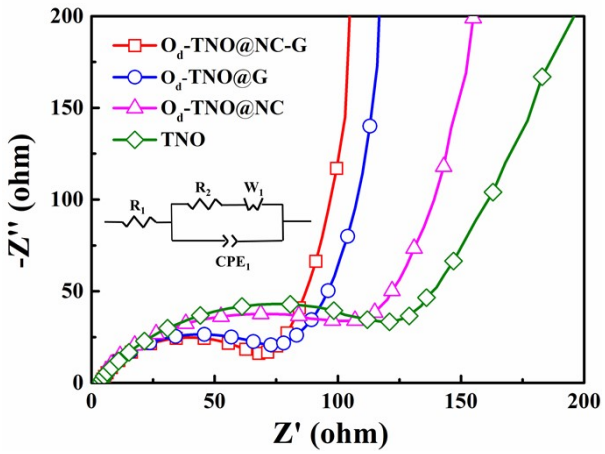

Fig. S19 EIS spectra of TNO, O_d-TNO@NC, O_d-TNO@G and O_d-TNO@NC-G (Inset is the corresponding equivalent circuit).

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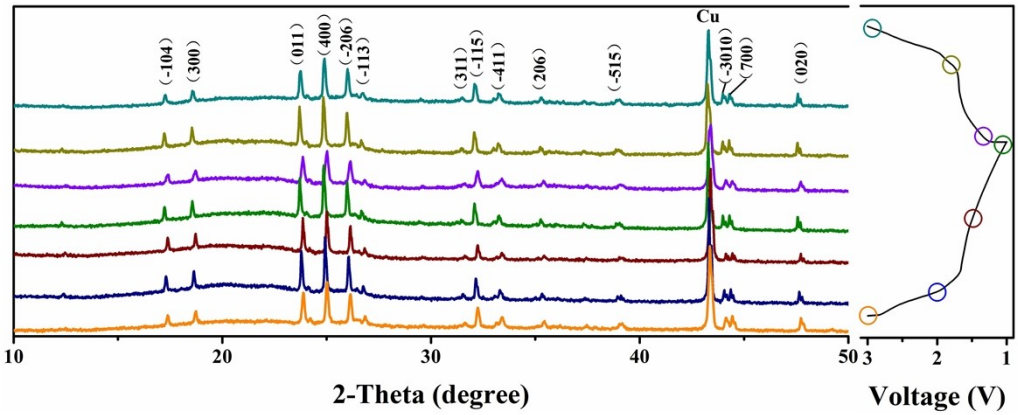

Fig. S20 Ex-situ XRD patterns of the O_d-TNO@NC-G anode measured at various discharge/charge states.