

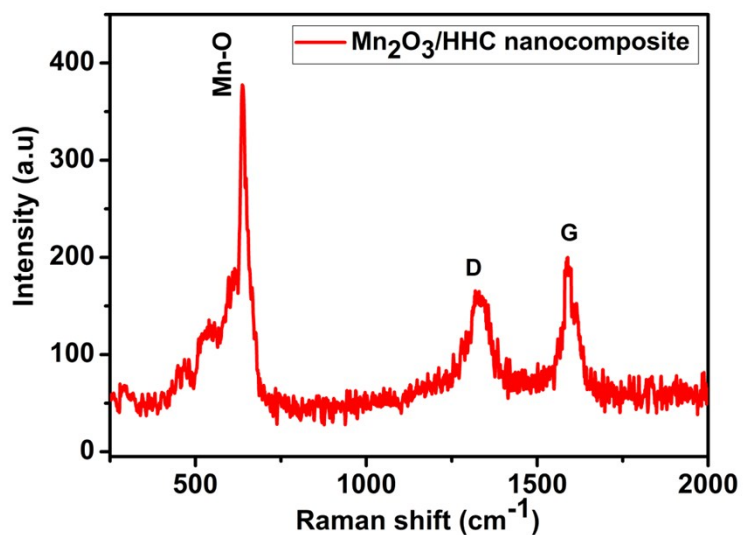
**Electronic Supplementary Information (ESI)**

**Validation of Green Composite Containing Nanocrystalline Mn<sub>2</sub>O<sub>3</sub> Biocarbon Derived  
from Human Hair as a Potential Anode for Lithium-Ion Batteries**

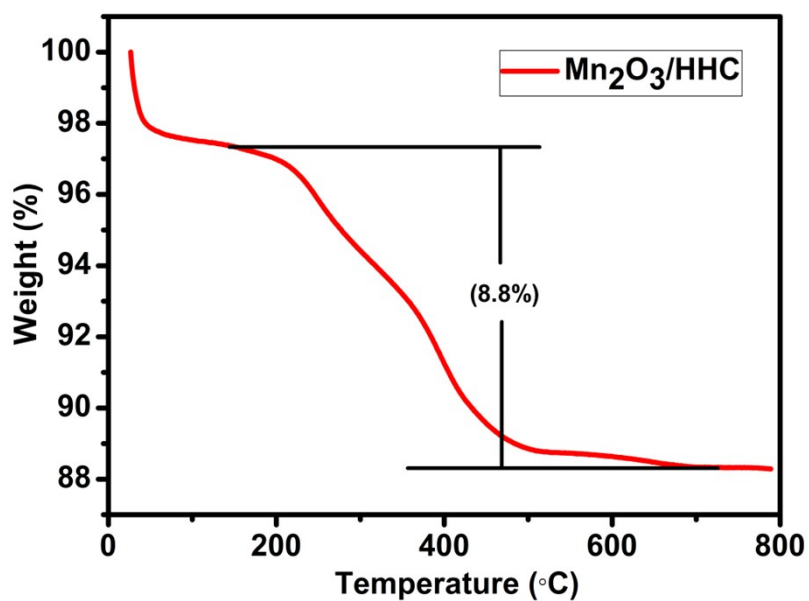
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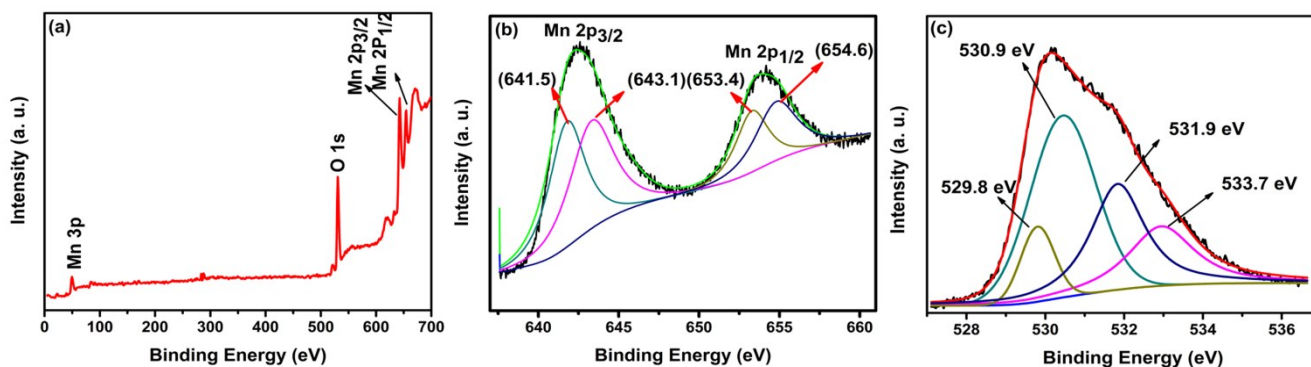
Karaikudi-630 006, Tamilnadu, India.



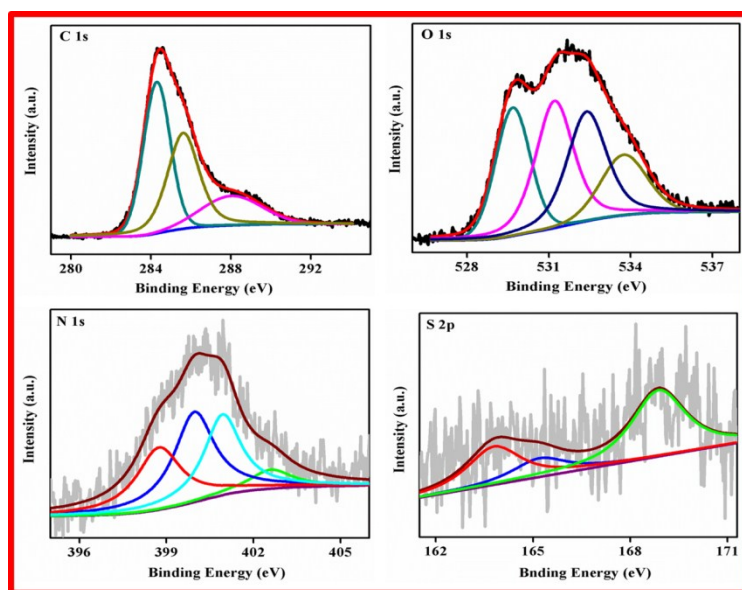
**Fig. S1** Raman spectrum of Mn<sub>2</sub>O<sub>3</sub>/HHC composite, which confirms the presence of HHC in Mn<sub>2</sub>O<sub>3</sub>/HHC composite.



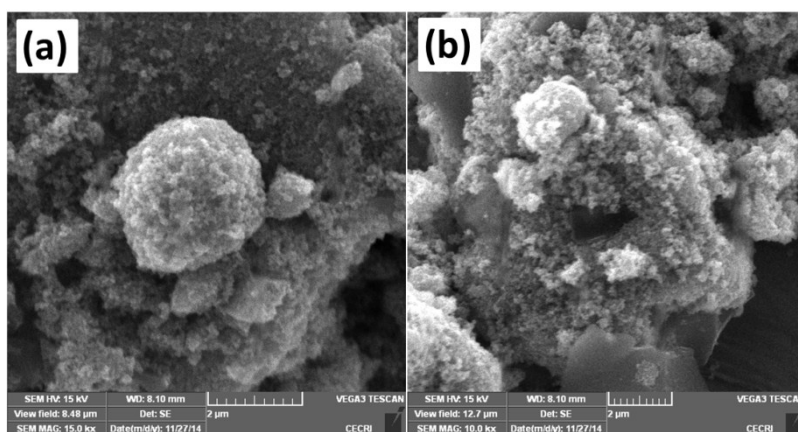
**Fig. S2** TGA behavior evidencing the presence of carbon in Mn<sub>2</sub>O<sub>3</sub>/HHC composite



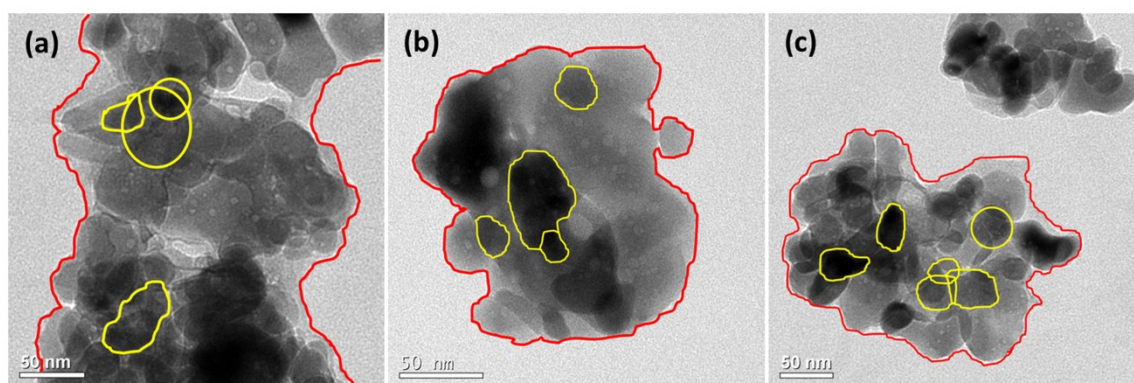
**Fig. S3** XPS spectra of (a) Survey spectrum, (b) Mn 2p and (c) O 1s spectra of pristine  $\text{Mn}_2\text{O}_3$  nanoparticles



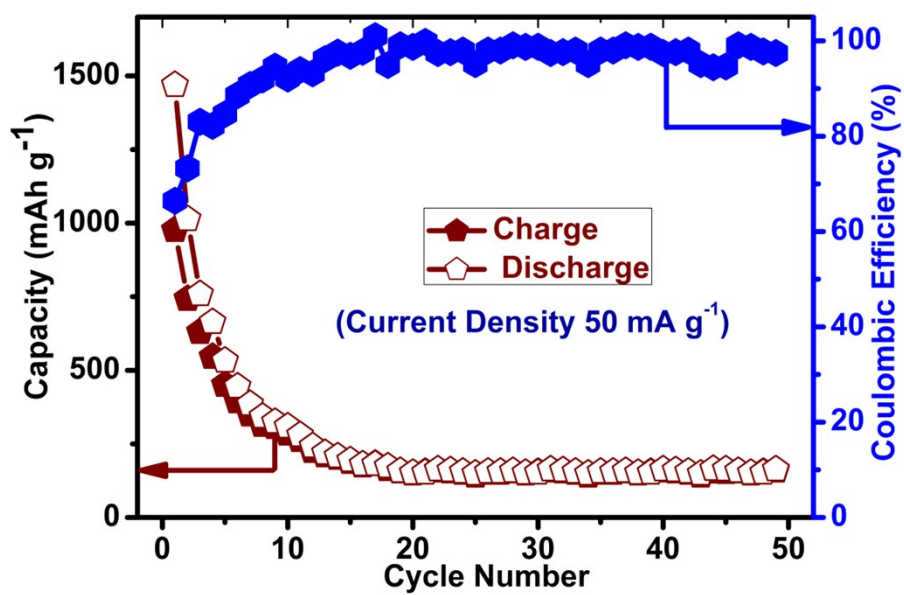
**Fig. S4** XPS spectra of C1s, O1s, N1s and S2p orbitals of HHC (Reproduced from our previous report, Ref. 36).



**Fig. S5** SEM images of  $\text{Mn}_2\text{O}_3/\text{HHC}$  nanocomposite showing the presence of  $\text{Mn}_2\text{O}_3$  nanoparticles wrapped in the graphene sheet like human hair derived carbon (HHC)



**Fig. S6** (a-c) TEM images of  $\text{Mn}_2\text{O}_3/\text{HHC}$  composite (TEM images evidence the presence of  $\text{Mn}_2\text{O}_3$  nanoparticles embedded or flocked by HHC sheets)



**Fig. S7** Cycling performance and coulombic efficiency of pristine  $\text{Mn}_2\text{O}_3$  nanoparticles