

## Supporting information

### Outstanding Electromagnetic Interference Shielding Performance in Hydrothermally Derived Vanadium Pentoxide -Polyaniline Aerogels

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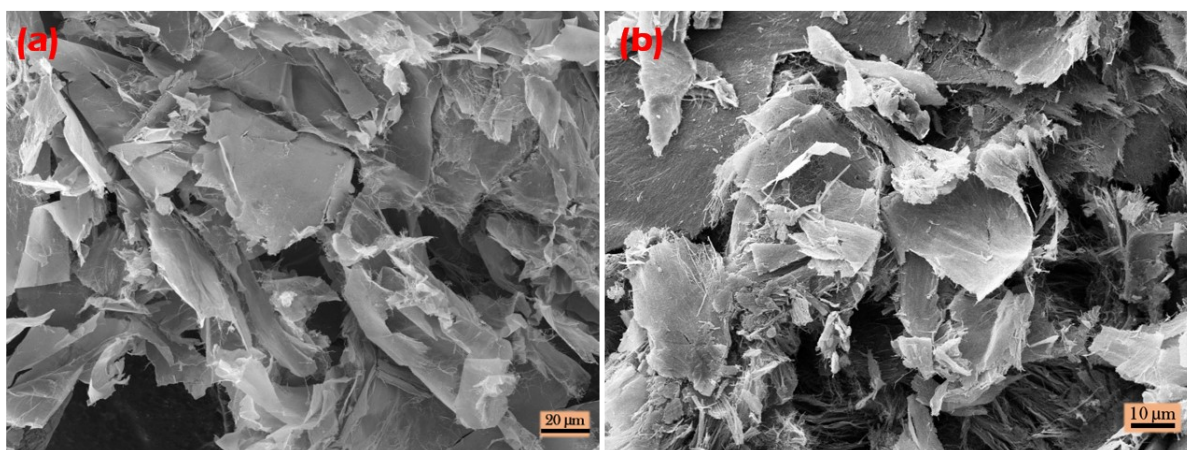
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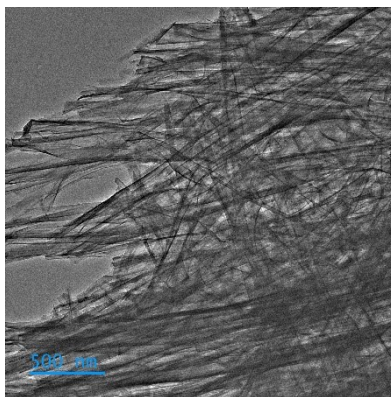
\* Corresponding Author; Email:[kpsurendran@niist.res.in](mailto:kpsurendran@niist.res.in)



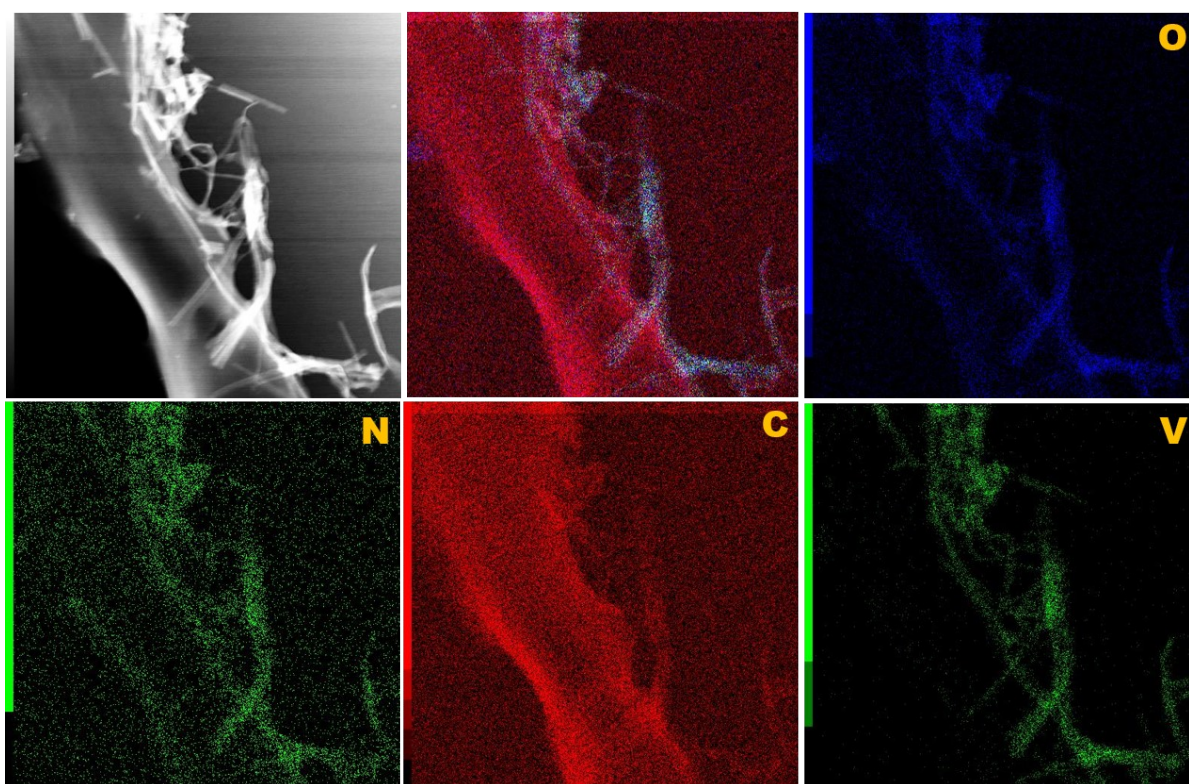
*Fig. S1* Photographic image of  $V_2O_5$  hydrogel



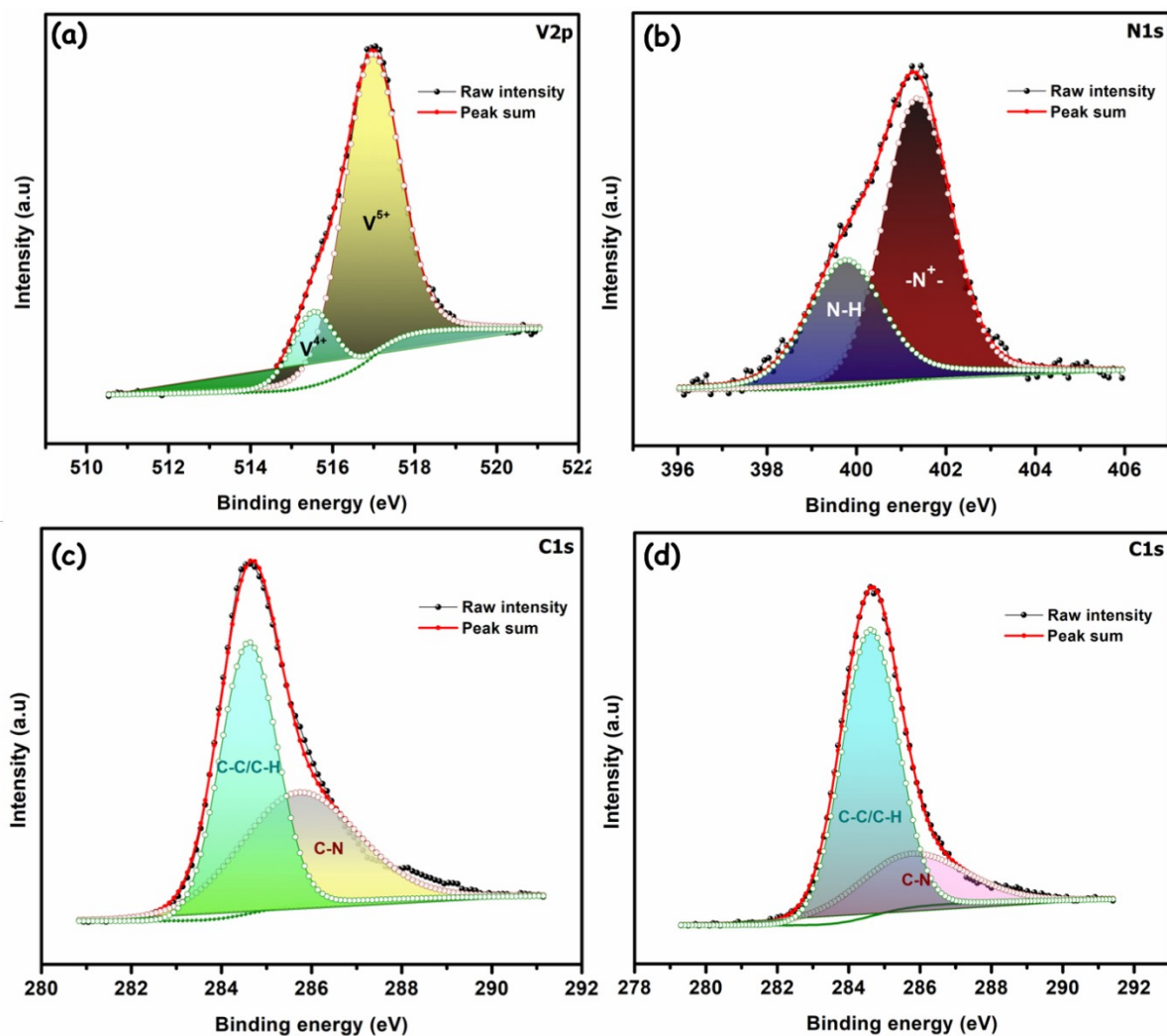
*Fig. S2* SEM images of (a) VHT and (b) VPHT aerogels



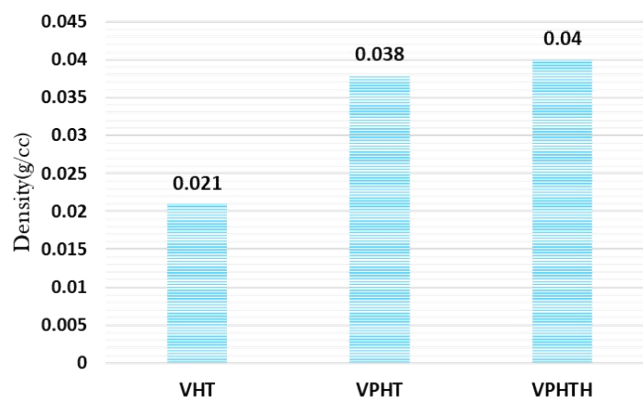
*Fig. S3* TEM image of VPHT aerogel.



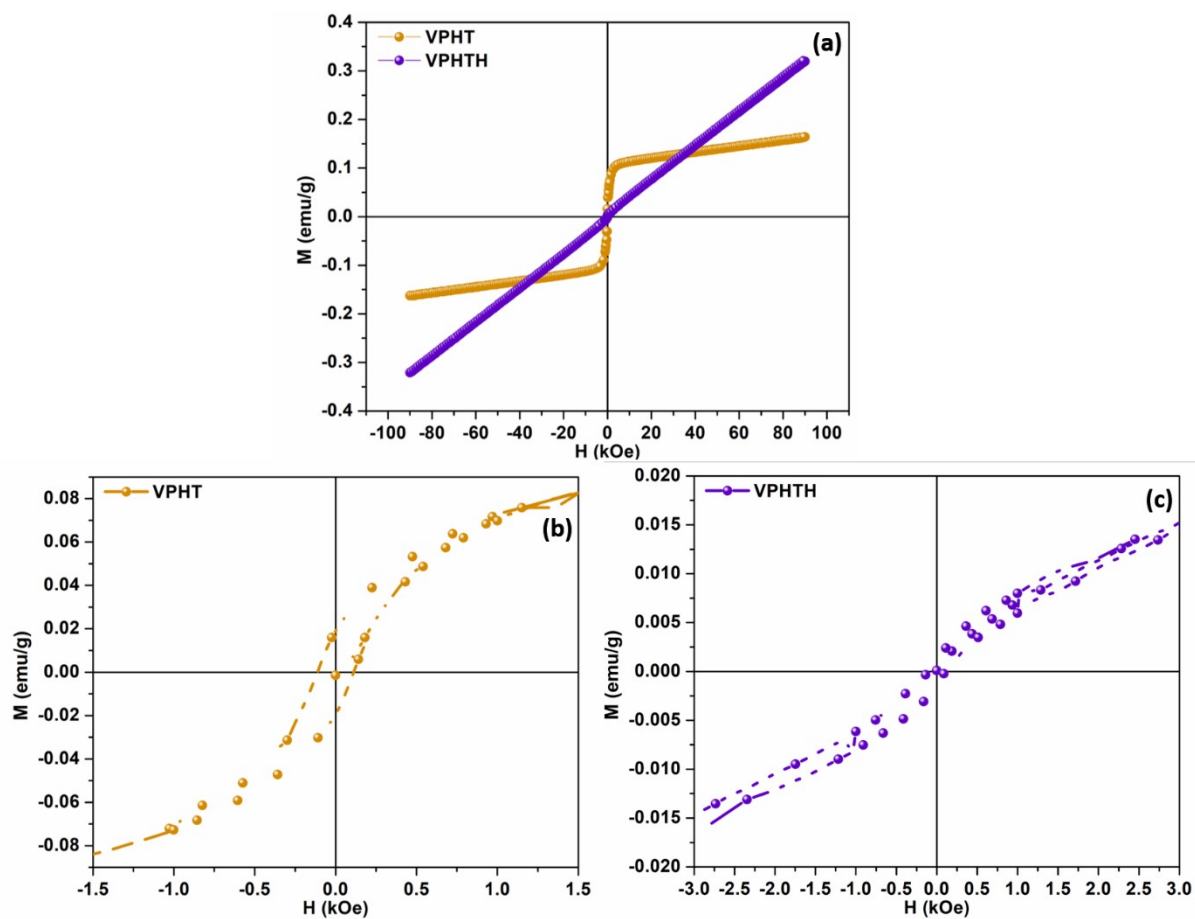
*Fig. S4* Elemental mapping of VPHTH aerogel.



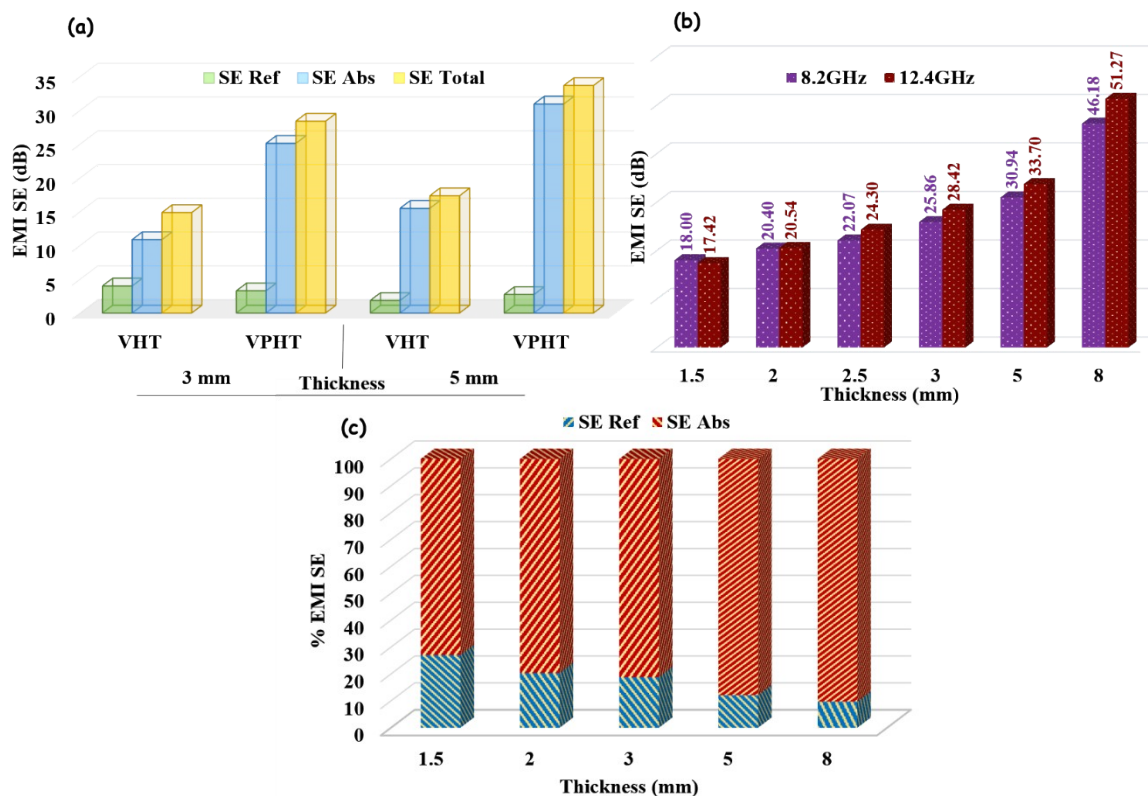
**Fig. S5** High-resolution XPS spectra of (a) V2p, (b) N1s & (c) C1s (in VPHT), and (d) high-resolution XPS spectra of C1s (in VPHTH).



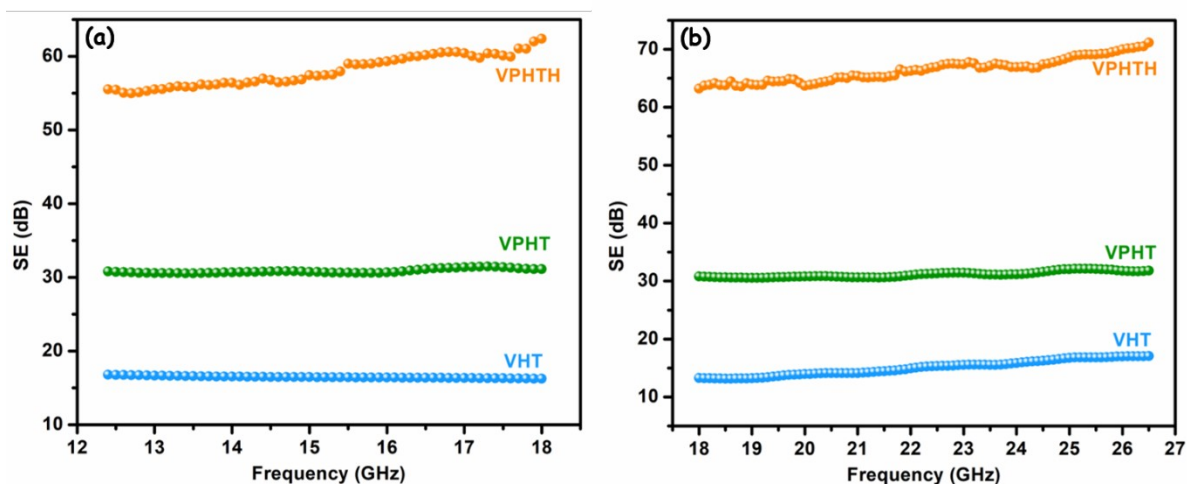
**Fig. S6** Density of aerogels



**Fig. S7** (a)  $M$ - $H$  curve of VPHT and VPHTH; and enlarged portions of  $M$ - $H$  curve of (b) VPHT and (c) VPHTH.



**Fig. S8** (a) Shielding efficiency of VHT and VPHT aerogels at two different thicknesses at 12.4 GHz, (b) Variation of EMI SE of VPHT aerogels at different thicknesses at start and end frequencies of X band, (c) Percentage contribution of reflection and absorption shielding effectiveness of VPHT towards total shielding efficiency as a function of shield thickness at 8.2 GHz.



**Fig. S9** Frequency-dependent variation of total EMI shielding effectiveness of aerogels over (a) Ku band and (b) K band.