Electronic Supplementary Material (ESI) for RSC Advances.

Electronic Supplementary Information:

:

A carbon nanotube approach for efficient thermally insulating material with high mechanical stability and fire-retardancy

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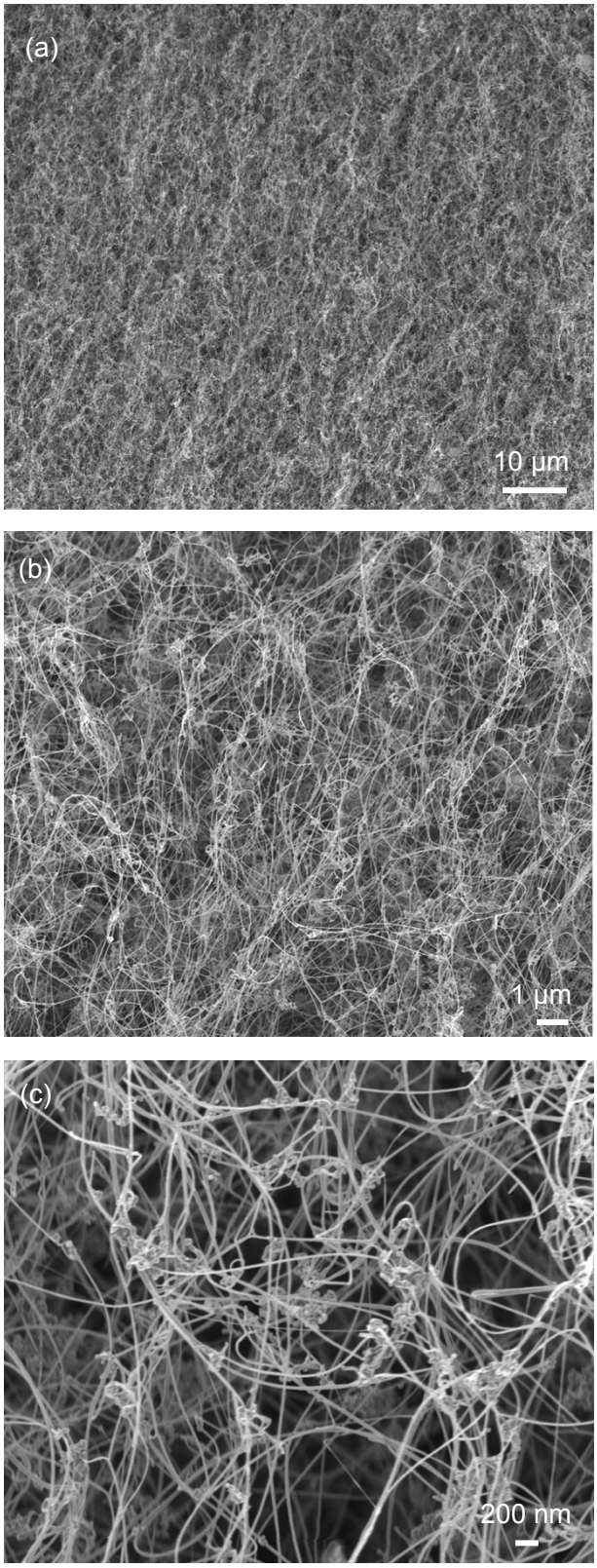

Figure S1. SEM images of the sponge at different magnifications

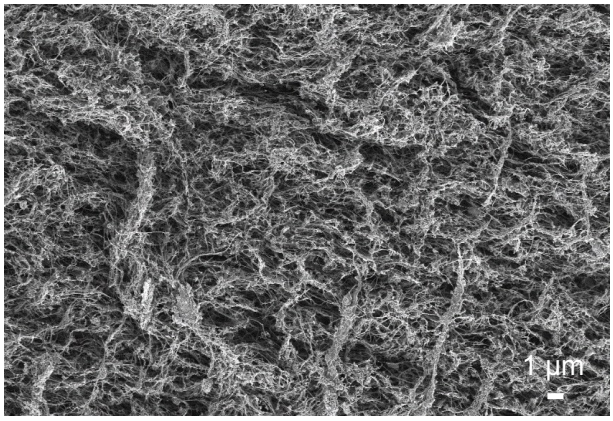

Figure S2. SEM image of the sponge viewed from the side wall

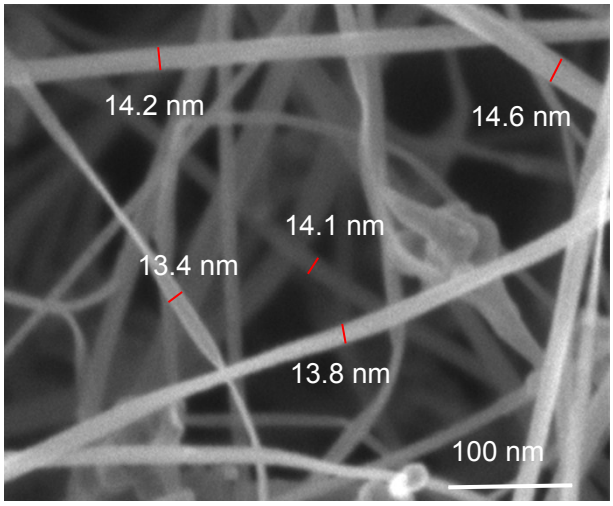

Figure S3. SEM image of the CNT sponge preform. The diameter determination is marked.

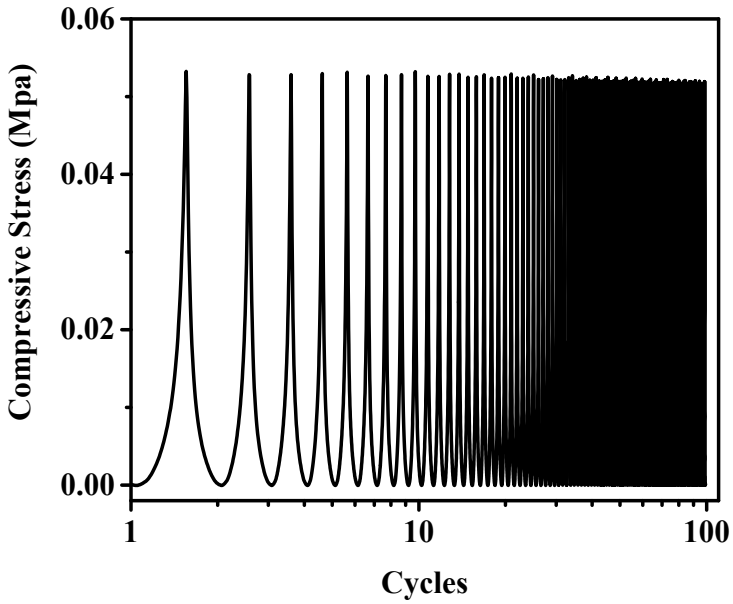

Figure S4. Compressive cycling from 0% to 90% strain

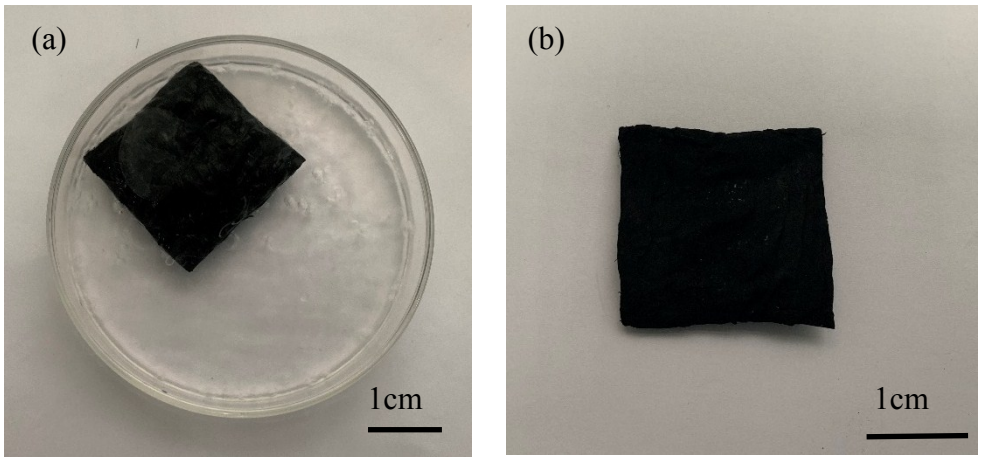

Figure S5. (a) CNT sponge immersed in liquid nitrogen. (b) CNT sponge of the same taken out from the liquid nitrogen

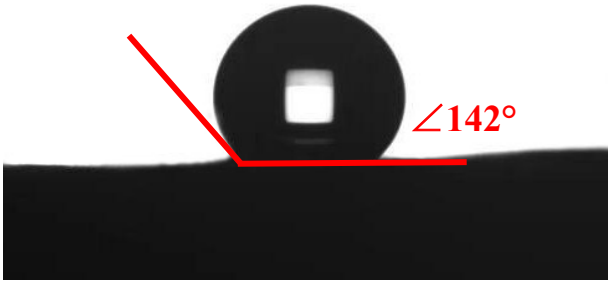

Figure S6. Water contact angle measurement of CNT sponge

Table S1. Thermal conductivity coefficients of representative TIMs reported in the literature

Sample	Thermal conductivity ($mW \cdot m^{-1} \cdot K^{-1}$)	Reference
Wood composites	λ_{axial} =320; λ_{radial}=150	1
Expanded polystyrene	30~40	2
Cellulose	40~50	3
Polymer/clay aerogel	45	3
Fiber glass	33~44	3
Polyurethane	20~30	4
Porous aramids	28	5
Silica aerogels	17~40	6
CNF-GO-BA-SEP foam	15~18	7
Graphene - carbon sphere	9~19	8
Graphene/CNT hybrid aerofoam	19.2~41.4	9
3D Graphene scaffolds	12.6~31.4	10
Graphene based foam	＞100	11
CNT network	＞100	12
CNT sponge	9.6~14	This work

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