Supporting Information

A facile route to the production of polymeric nanofibrous aerogels for environmentally sustainable applications

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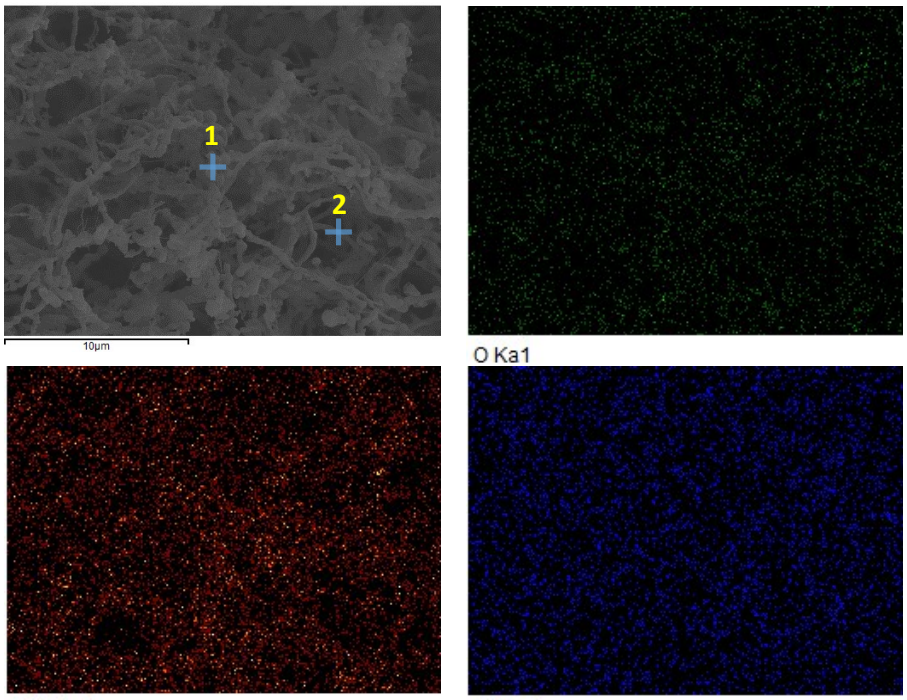
Table S1. The density, porosity, BET surface area and average pore size of all the aerogels.

Sample	Density (mg cm^{-3})	Porosity (%)	Specific surface area (m^2 g^{-1})	Average pore size (nm)
NFA1	6.56	99.4	32.3	15.8
NFA2	7.11	99.3	32.0	15.2
NFA3	8.38	99.1	31.8	15.0
NFA4	9.66	99	25.9	13.4
NFA5	16.29	98.5	24.1	12.1
NFA6	24.08	97.8	22.1	11.0
HNFA	11.1	99	25.6	13.0



Spot 1

Element	wt. %	at. %
C K	68.12	77.34
O K	19.57	16.68
Si K	12.31	5.98
Total	100.00	

Spot 2

Element	wt. %	at. %
C K	71.53	79.14
O K	20.66	17.16
Si K	7.81	3.70
Total	100.00	

Figure S1. The EDS mapping and local point EDS analysis of the HNFA.

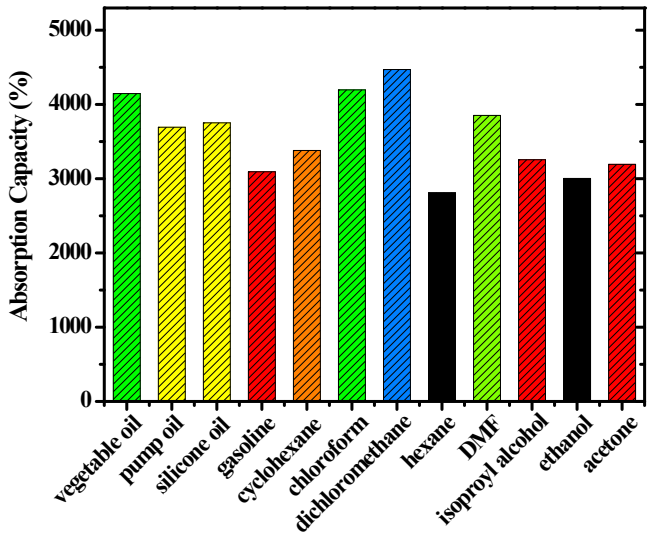


Figure S2. The respective mass based absorption capacities of the NFA3 aerogels for different oils and organic solvents.

Table S2. Comparison of the absorption capacities of NFA and HNFA for various organic solvents.

Organic solvents	Absorption capacity (g g^{-1} %)	
	NFA3	HNFA
Vegetable Oil	4147	4200
Pump Oil	3693	4105
Silicone Oil	3752	4000
Gasoline	3093	2695
Cyclohexane	3380	4881
Chloroform	4197	5392
Dichloromethane	4471	4647
Hexane	2810	3047
DMF	3853	3914
Isoproyl Alcohol	3256	3294
Ethanol	3003	3346
Acetone	3193	5014

Table S3. Comparison of absorption capacities of various absorbents.

Absorbents	Absorption capacity ($g\ g^{-1}$ %)	Reference
Cellulose nanofibrils aerogel	2000-4600	ACS Appl Mater Interfaces (2016) [1]
Cellulose-based waste newspaper	2800-5000	Carbohydrate Polymers (2015) [2]
PVF sponge	1400-5700	ACS Applied Materials & Interfaces (2014) [3]
Cellulose nanofibrils aerogel	4900-20000	ACS Applied Materials & Interfaces (2017) [4]
Carbon Aerogel	5000-22500	Advanced Materials Interfaces (2016) [5]
Carbon aerogel from winter melon	1600-5000	ACS Sustainable Chemistry & Engineering (2014) [6]
Graphene aerogels	3000-12000	Chemical Engineering Journal (2017) [7]
Graphene aerogel	1800-2700	Journal of Colloid and Interface Science (2017) [8]
Silica aerogels	500-1500	RSC Advances (2017) [9]
Graphene/R-FeOOH aerogel	1200-2700	ACS Nano (2012) [10]
PVA-*co*-PE NF Aerogel	2300-5000	This study

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Movies for supporting information

Movie S1. The movie showing dynamic compressive behavior of the HNFA aerogel. **(Please see online)**

Movie S2. The movie showing the excellent thermal insulation properties of the NFA aerogel. **(Please see online)**

Movie S3. The movie showing continuous separation of organic solvent from water through a HNFA aerogel. **(Please see online)**