Supplementary Information (SI) for Environmental Science: Nano.

Room Temperature Capture of Hazardous Gases by Sustainable N-doped Graphene Aerogel

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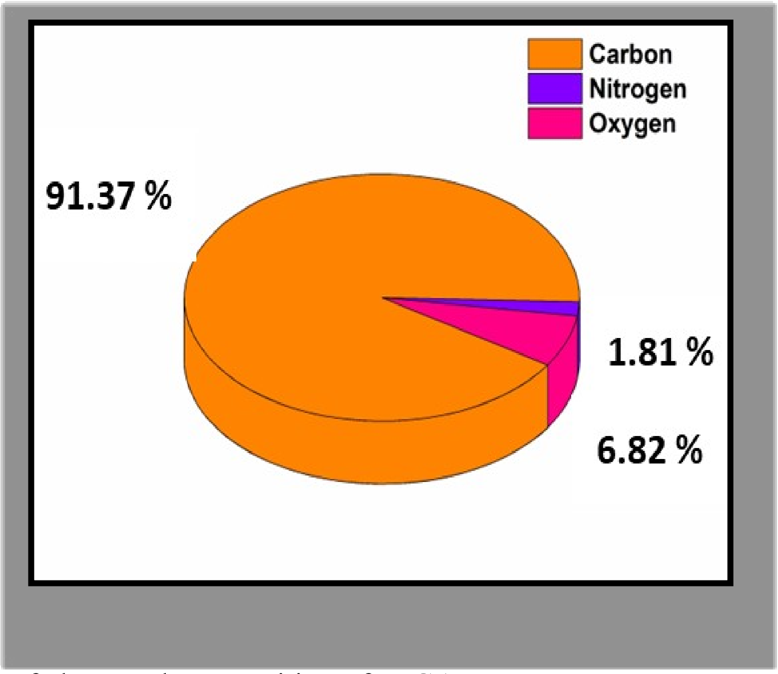

Fig. S1 Pie-chart of elemental composition of N-GA.

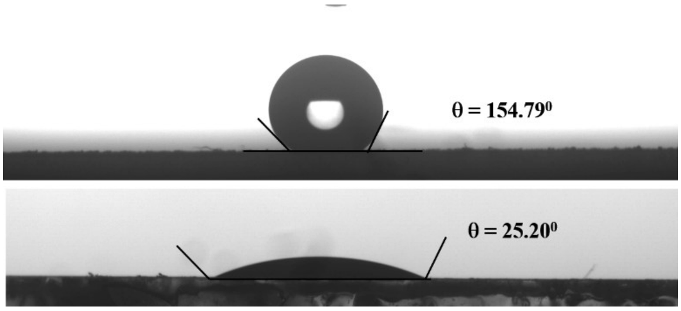

Fig. S2 Contact angle measurement of N-GA.

Table S1: A comparative study of adsorption of VOCs/TGCs using various nano carbons.

S. No	**Precursor**	**Material**	**Synthesis method**	**Adsorption capacity mg g^{-1}**	**Ref.**
1.	Coconut shell	Activated carbon	Steam activation (900 ^{0}C)	Toluene: 255 Chlorobenzene: 272	1
2.	Pine wood chips	N-doped hierarchical porous biochar	Multistep: pyrolysis (500 ^{0}C), carbonization (500 ^{0}C) and catalytic activation with $CaCl_2$ (900 ^{0}C)	DCM : 54.9 Toluene: 308	2
3.	Neem	Biochar	Pyrolysis (600 ^{0}C)	Toluene: 65.5 CCl_4: 40.99	3
4.	Hickory wood	Biochar	Pyrolysis	Acetone: 103.4	4
5.	Resorcinol and formaldehyde	Carbon aerogel	Sol-gel polymerization	Benzene: 307 Toluene: 365 Xylene: 380	5
6.	Pear	Graphene aerogel	Multistep: Freeze drying, hydrothermal carbonization, graphitization (1000 ^{0}C)	HCHO: 996.7 Benzene: 482.3 Toluene: 392	6
7.	Manganese acetate PAN	Mn-embedded PAN-based activated carbon nanofibers	Multistep: electrospinning, carbonization, activation (800 ^{0}C)	Toluene - 680	7
8.	Glucose	Iron-phosphate included activated carbon	Hydrothermal (200 ^{0}C)	Acetone: 127.8 Isopropanol: 204.3	8
9.	Rice husks	Hierarchical porous carbon	Multistep: Fungal pre-treatment, carbonization and KOH activation	Toluene: 708	9
10.	SWCNTs	Oxidized	Commercially	Isopropanol: 84.9	10

		SWCNTs	available		
11.	Milled hickory wood chips and peanut shell	Hydrochar	Hydrothermal carbonization (200 ^{0}C) CO_2 activation (600-900 ^{0}C)	Acetone: 121.74 Cyclohexane: 155.41	11
12.	ZIF-8 and agarose	Carbon aerogel	Pyrolysis (800 ^{0}C) $NaNH_2$ activation (450 ^{0}C)	Toluene: 511.2	12
13.	Resorcinol and formaldehyde	Pt-doped carbon aerogel	Sol-gel polymerization	Toluene: 715 Acetone: 500	13
14.	Graphene oxide	Amine-functionalized graphene aerogel	Gelation and reduction	HCHO: 2.43	14
15.	Shrubby bamboo	Monolithic activated carbon (MAC) tubes	Chemical activation and carbonization (900 ^{0}C)	Toluene: 350	15
16.	Jaggery	Graphene aerogel	One-step pyrolysis method (1100 ^{0}C)	DCM:1226 H_2S: 1002.07 CS_2: 885.58 Benzene: 792.9.	**This work**

DCM: Dichloromethane

HCHO: Formaldehyde

PAN: Polyacrylonitrile

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