

Supplementary information

Removal of Hexamethyldisiloxane by a Novel Hydrophobic APTMS–Modified Activated Porous Carbon

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Table S1. Different preparation methods, textural parameters, and performances of porous absorbent materials for siloxane removal

Adsorbent	Origin	Modified method	S_{BET} , $\text{m}^2 \text{g}^{-1}$	V_{tot} , $\text{cm}^3 \text{g}^{-1}$	Adsorbed gas	Q , mg g^{-1}	Ref.
APC–4	Coconut shells	NaOH	2551	1.30	L2	894.7	[14]
AC–8	Commercial	/	1573	0.92	D4	224.6	[17]
AC2	Lignocellulosic waste	K_2CO_3	1668	0.70	L2 D4	438.0 512.0	[19]
MMSG	Silica gel	PEI ^a	539	0.73	L2	367.1	[20]
MFS2	Silica gel	MTS ^b	1261	1.03	L2	315.4	[21]
UCT–15 ^c	Tetraethylorthosilicate and aluminum nitrate	/	533	0.26	D4	105.0	[22]
RPA	Silica gel	PAA ^d	120	/	D5	21.6	[23]
rGOA–2	IGGO ^e	CA ^f	582	2.43	L2	188.3	[15]
U–rGOA	IGGO ^e	Urea	168	0.74	L2	83.9	[24]
APTMS@APC–0.125	Coconut shells	H_3PO_4 and APTMS	1274	0.88	L2	380.4	This work

^a Polyethylene imine;

^b Methyltrimethoxymethylsilane;

^c Mesoporous aluminosilicate;

^d Polyacrylic acid

^e Industrial grade multilayer graphene oxide;

^f Citric acid.

Table S2. The statistical parameters of curves between $Q_{B, th} - CA$, $Q_{B, th} - S_{BET}$, $Q_{B, th} - V_{meso}$, and $Q_{B, th} - V_{tot}$ for the APTMS@APC-0.125

Statistical parameters		$Q_{B, th} - CA$	$Q_{B, th} - S_{BET}$	$Q_{B, th} - V_{meso}$	$Q_{B, th} - V_{tot}$
Number of Points		6	6	6	6
Equation		$y = a + bx$			
Residual Sum of Squares		178.4943	898.0011	1518.9473	1751.6294
Standard deviation		5.9749	13.4015	17.4296	18.717
<i>R</i> -Square		0.9880	0.9393	0.8974	0.8817
Intercept	Value	-10.0785	-242.7953	-103.0703	-313.1645
	Standard Error	17.8034	70.3012	70.0219	114.1675
Slope	Value	2.8772	0.4730	949.6968	761.1790
	Standard Error	0.1589	0.0601	160.5428	139.4050