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Supporting Information

A three-dimensional polyoxometalate/graphene aerogel as a highly efficient and recyclable absorbent for oil/water separation

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Table S1. Comparison of absorption capacity of POM-GAs with the reported GAs obtained by different methods

Synthetic methods	Synthesis condition	Adsorption capacity ($g\ g^{-1}$)	Refs.
chemical reduction	25 °C, 6 h, N_2H_4 and POM	100-208	This work
	90 °C, 6 h, $FeSO_4$ and NH_3	13-27	[1]
	95 °C, 48 h, L-phenylalanine	107-258	[2]
	80 °C, 24 h, ethylenediamine	120-250	[3]
	70 °C, 4 h, ascorbic acid	120-200	[4]
	80 °C, 8 h, HI	34-112	[5]
	95 °C, 12 h, N_2H_4	15-80	[6]
	60 °C, 8 h, ascorbic acid and HI	154-325	[7]
hydrothermal reduction	90 °C, 10 h, N_2H_4	10-37	[8]
	180 °C, 24 h, $NH_3{\cdot}H_2O$	20-86	[9]
	160 °C, 10 h, polyvinylidene fiuoride	20-70	[10]
	120 °C, 12 h, CNT and ethylenediamine	100-270	[11]
	180 °C, 6 h	52-68	[12]
	95 °C, 1 h, ascorbic acid	58-97	[13]
high temperature treatment	180 °C, 6 h, air	60-140	[14]
	750 °C, 3 h, N_2	187-350	[15]
	800 °C, 1 h, Ar	110-320	[16]
	1000 °C, 2 h, N_2	134-283	[17]

Table S2. Summary of absorption capacity of POM-GAs with other 3D porous absorbents

Adsorbent materials	Adsorption Capacity ($g\ g^{-1}$)	Refs.
POM-GAs	100-208	This work
carbonaceous nanofiber aerogel	40-115	[18]
biomass-derived synthetic polymer aerogel	20-40	[19]
silylated wood sponge	16-41	[20]
silylated chitosan aerogel	31-63	[21]
polysiloxane coated PU sponge	15-25	[22]
fiber/silica composite aerogel	up to 16	[23]
silylated bacterial cellulose aerogel	86-185	[24]
silylated nanocellulose sponge	49-102	[25]

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