Supporting Information (New Journal of Chemistry)

Hydrothermal formation of graphene aerogel for oil sorption: the role of reducing agent, reaction time and temperature

Wenchao Wan,[a,b] Fei Zhang,[b] Shan Yu,[b] Ruiyang Zhang,[b] and Ying Zhou [a,b]*

[a)] State Key Laboratory of Oil and Gas Reservoir and Exploitation, Southwest Petroleum University, Chengdu 610500, China

[b)] The Center of New Energy Materials and Technology, School of Materials and Engineering, . Southwest Petroleum University, Chengdu 610500, China

*To whom correspondence should be addressed

Email: yzhou@swpu.edu.cn (Y. Zhou)

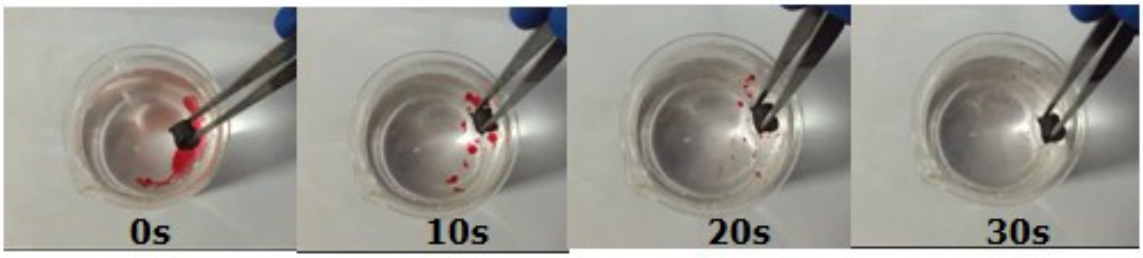

Fig. S1 The oil-water separation process of toluene (stained with Sudan red) from water by the GA reduced with VC.

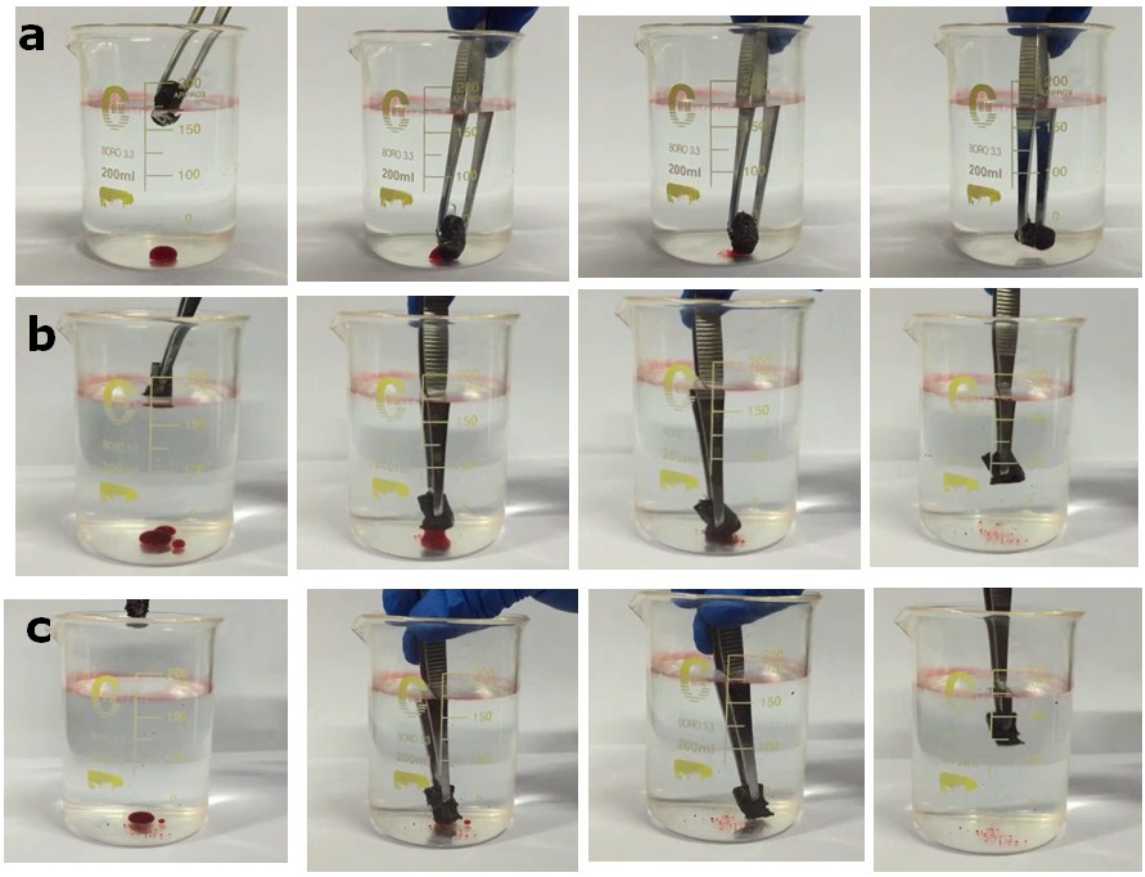

Fig. S2 The process of the oil-water separation test under the water over the GAs reduced by (a) VC, (b) EDA and (c) ammonia with the chloroform stained by Sudan red.

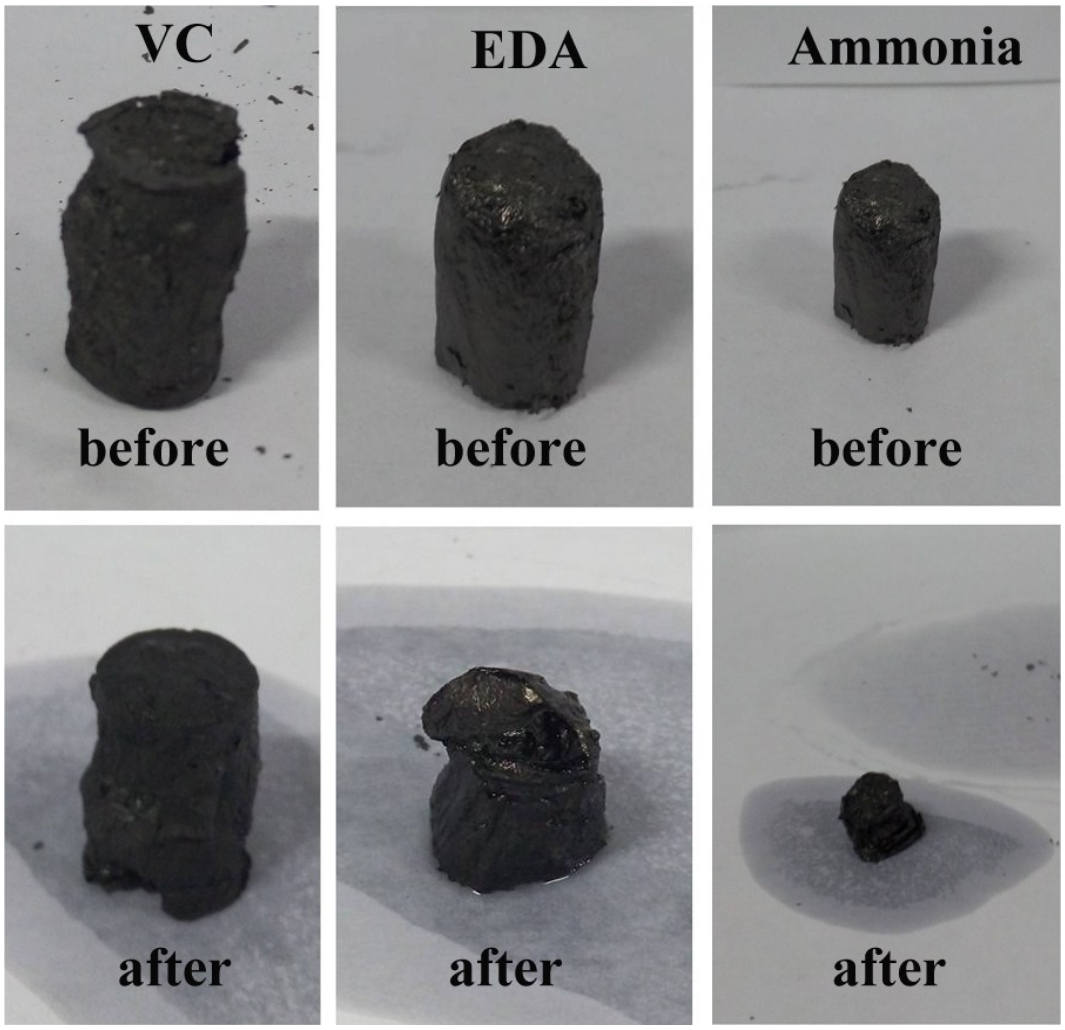

Fig. S3 Photographs of three kinds of GAs before and after the adsorption-squeezing experiments.

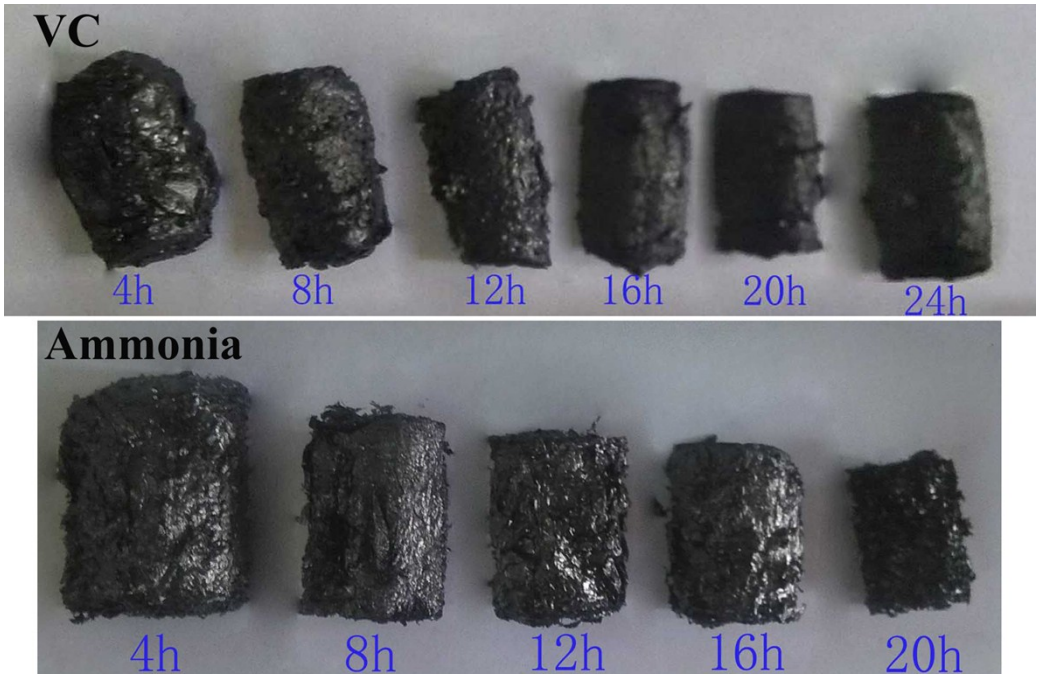

Fig. S4 Photographs of the GAs prepared with vc (up) and ammonia (down) for different reaction times.

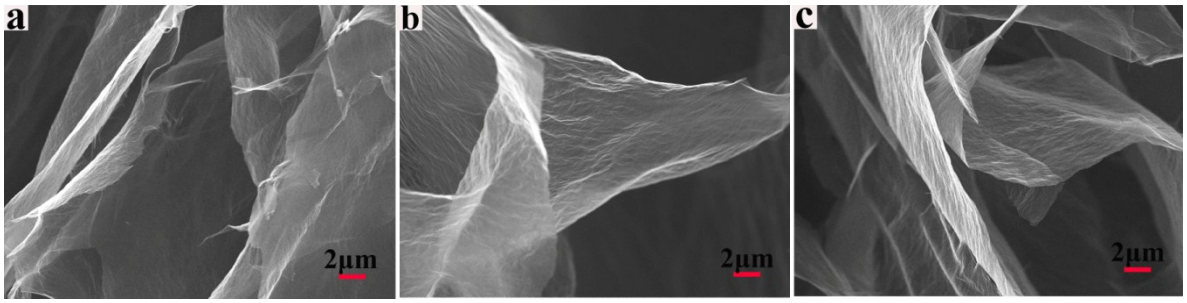

Fig. S5 SEM images of GAs reduced with EDA for (a) 6 h, (b) 12 h and (c) 24 h at 120°C

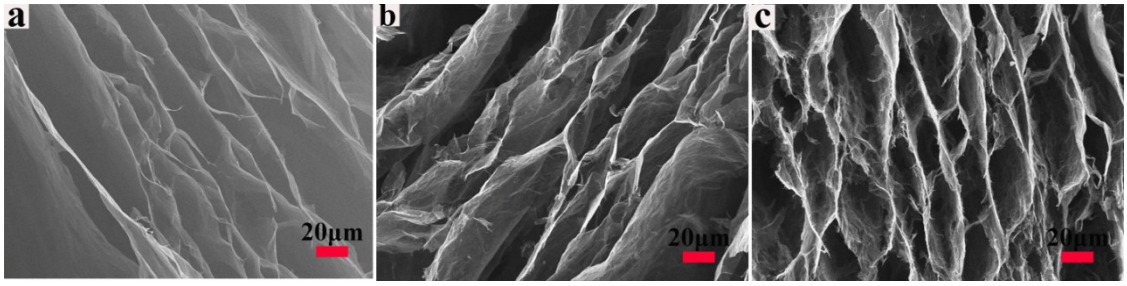

Fig. S6 SEM images of the GAs reduced for 6 h with ammonia at the temperatures of (a) 120 °C, (b) 150 °C and (c) 180 °C.

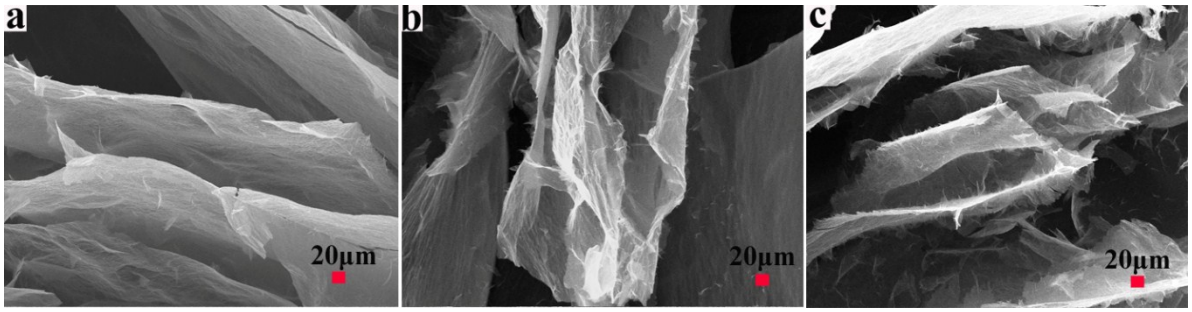

Fig. S7 SEM of GAs reduced with EDA at the temperatures of 90 °C, 120 °C and 180 °C

Table S1 The elemental composition of GAs prepared by various reducing agents.

	N (wt. %)	C (wt.%)	S (wt%)
VC	0.52	64.72	0.05
EDA	8.79	65.47	0.03
ammonia	8.48	64.47	0.09

Table S2 The density and viscosity of the involved solvents in this work

	Density (g/cm^3)	Viscosity (m • pas)
lube	0.89	9.9
n-hexane	0.66	0.307
water	1	0.89
chloroform	1.5	0.325
toluene	0.866	0.5866