Supporting Information

Engineering reduced graphene oxide aerogel produced by effective γ-ray radiation-induced self-assembly and its application for continuous oil–water separation

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Experimental Section

Materials: Natural graphite flakes (~500 μm) were purchased from Sigma-Aldrich to synthesize graphene oxide (GO). Concentrated sulfuric acid (H_2SO_4, 98%), concentrated nitric acid (HNO_3), potassium persulfate ($K_2S_2O_8$), phosphorus pentoxide (P_2O_5), potassium permanganate ($KMnO_4$), hydrogen peroxide (H_2O_2, 30%) solution, hydrochloric acid (HCl), ethylenediamine (EDA), ethanol, and ferroferric oxide (Fe_3O_4), were purchased from Sinopharm Chemical Reagent Co., Ltd., China. Ultrapure water (Milli-Q purification system, Millipore, USA) was used for all experiments in this paper.

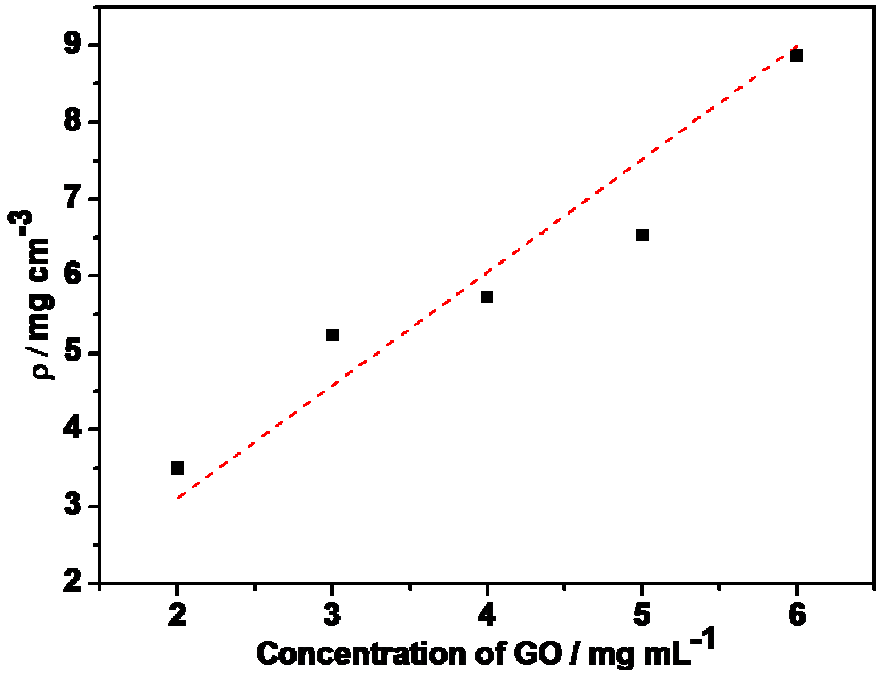

Figure S1 The density of RGO aerogel as a function of the concentration of GO.

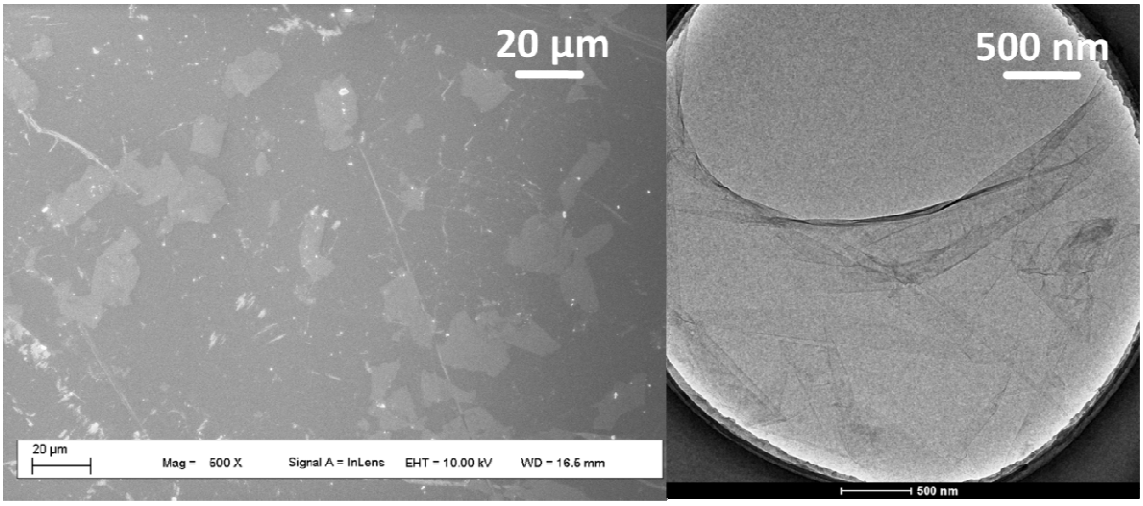

Figure S2 SEM images of GO sheets deposited on silicon slice and TEM image of GO sheets.

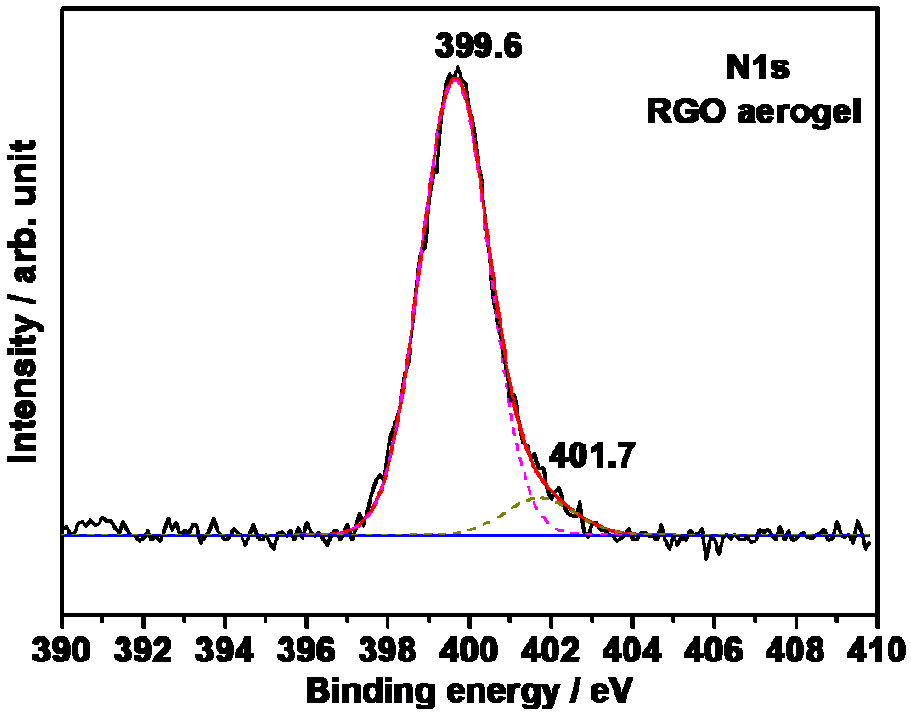

Figure S3 XPS N1s narrow spectrum of RGO aerogel.

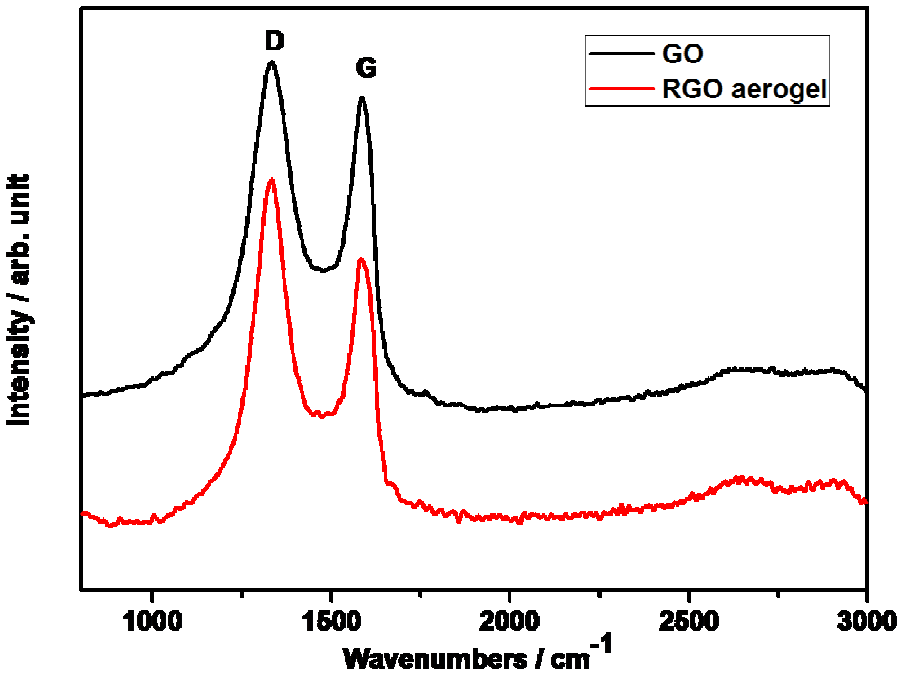

Figure S4 Raman spectra of GO and RGO aerogel.

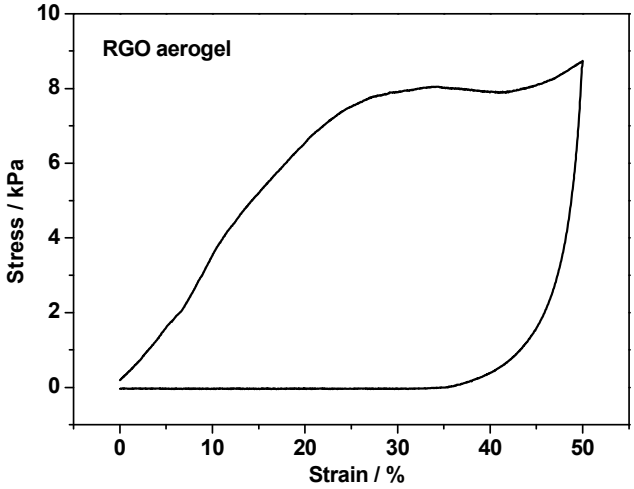

Figure S5 Compressive stress-strain curve of RGO aerogel.

Table S1 Elemental analysis data of GO, GO-i and RGO aerogel

	Weight percentage (%)			Elemental ratio	
	C	N	O	C/O	C/N
GO	60.88	0.77	38.35	2.12	92.24
GO-i	57.41	1.97	40.62	1.88	34.00
RGO aerogel	80.73	7.19	12.09	8.90	13.10