

The preparation of a three dimensional terbium doped reduced graphene oxide aerogel with photoluminescence, paramagnetic properties

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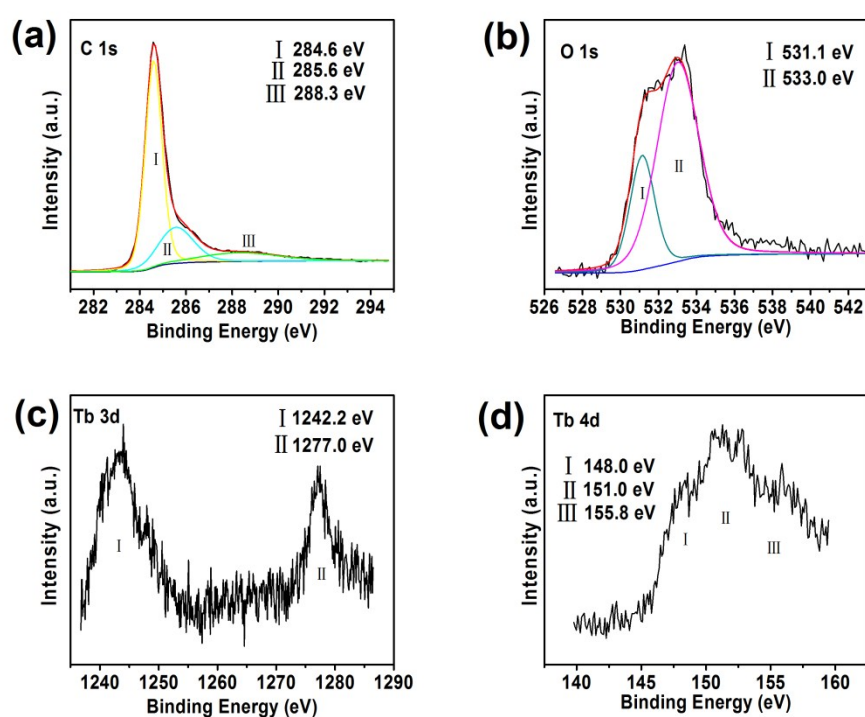


Fig. S1 the XPS survey spectrum of rGO-2. XPS high resolution spectra of C 1s (a), O 1s (b), Tb 3d (c), Tb 4d (d) core levels in rGO-2.

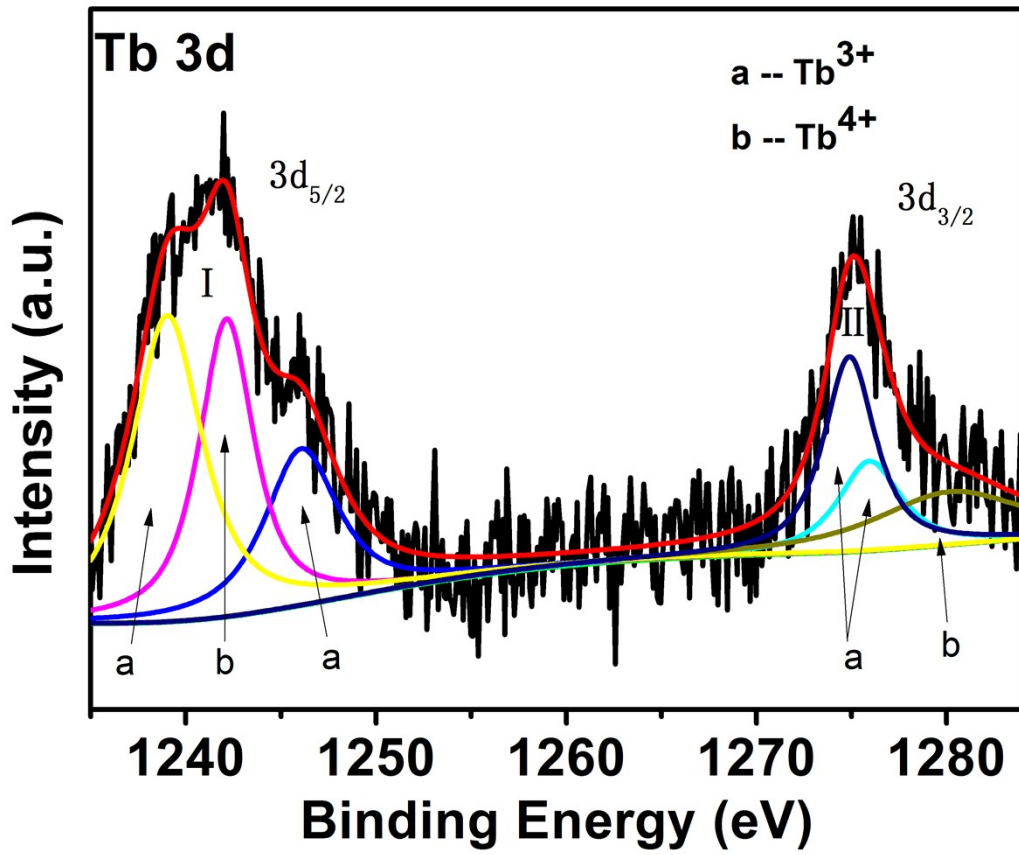


Fig. S2 the fitting curve of XPS spectrum for terbium atom.

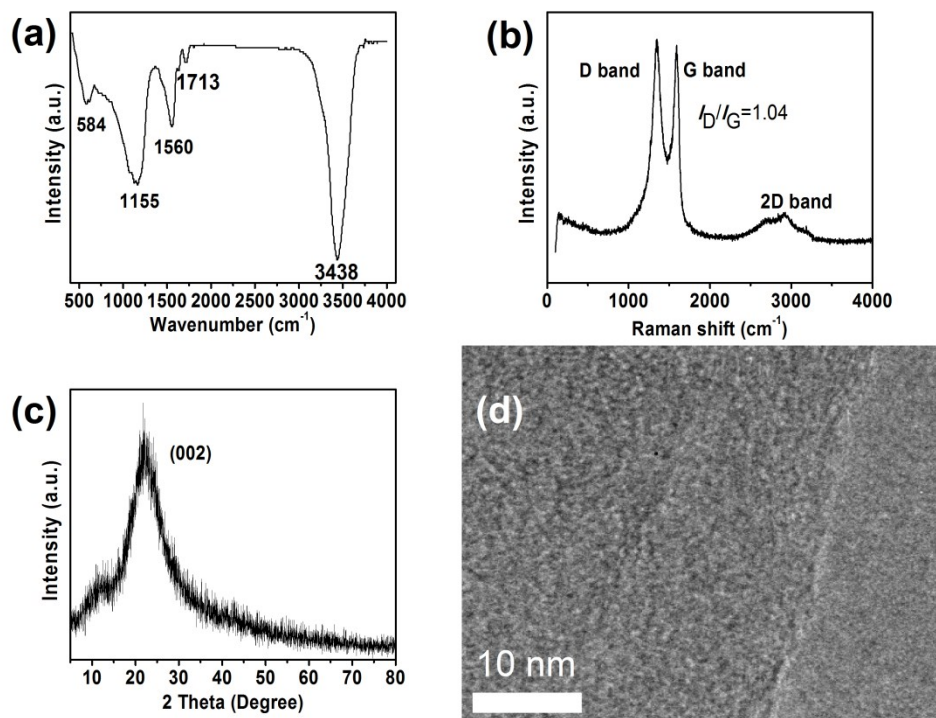


Fig. S3 FT-IR (a), Raman (b), XRD spectrum (c) and HR-TEM (d) of rGO-2.

Table S1 the BET data of the rGO-2

Method	Surface Area	Pore Volume	Pore Size
BJH adsorption	25.26 m <sup>2</sup> /g	0.1701 cm <sup>3</sup> /g	26.93 nm
BJH desorption	33.30 m <sup>2</sup> /g	0.1713 cm <sup>3</sup> /g	20.58 nm
	25.3 m <sup>2</sup> /g (BET Surface Area)		9.68 nm (adsorption average pore width)

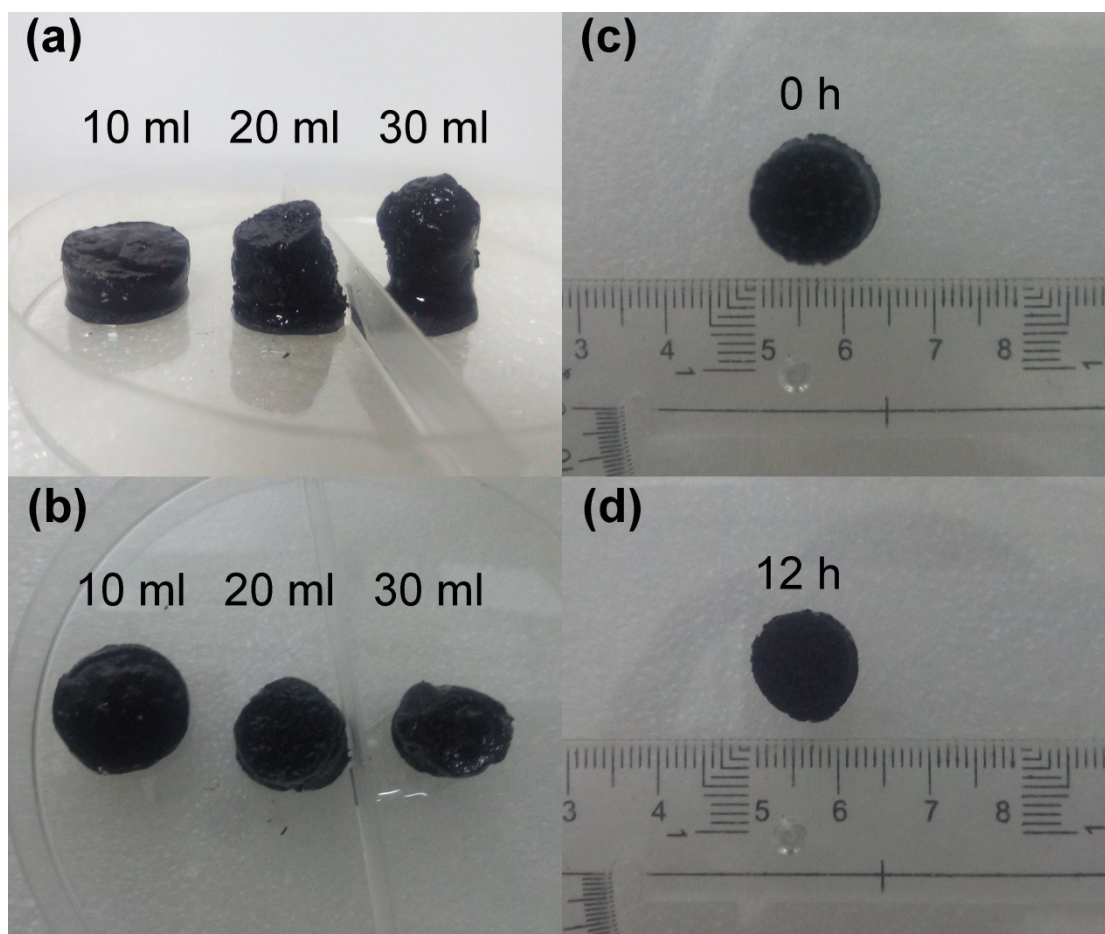


Fig. S4 the photos of nucleation area factor (a) and (b), air drying experiment (c) and (d) for volume of rGO.

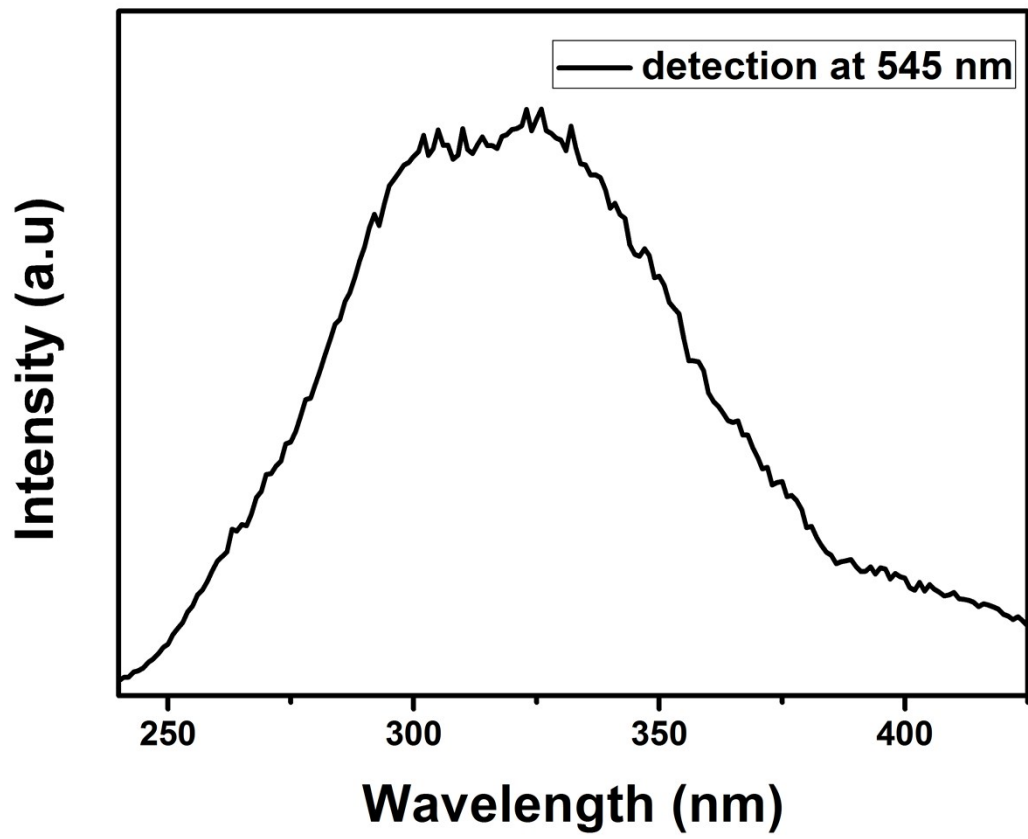


Fig. S5 PLE spectrum of rGO-2.

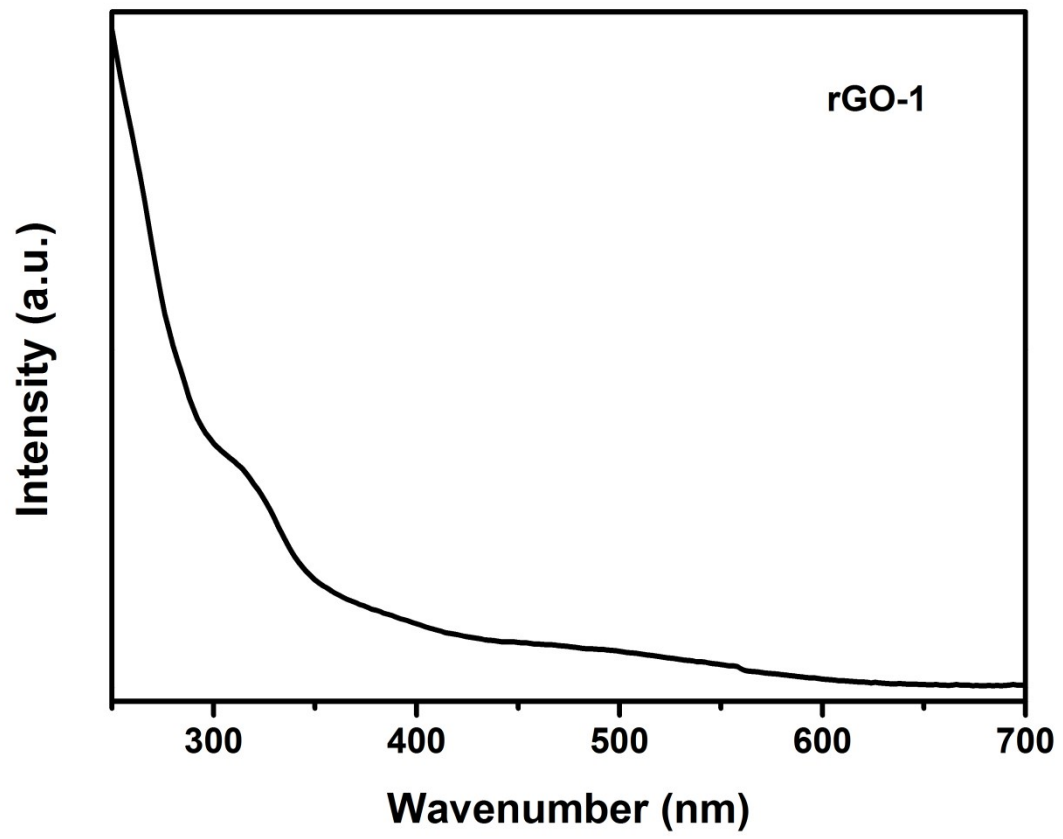


Fig. S6 UV-vis Adsorption spectrum of rGO-1.

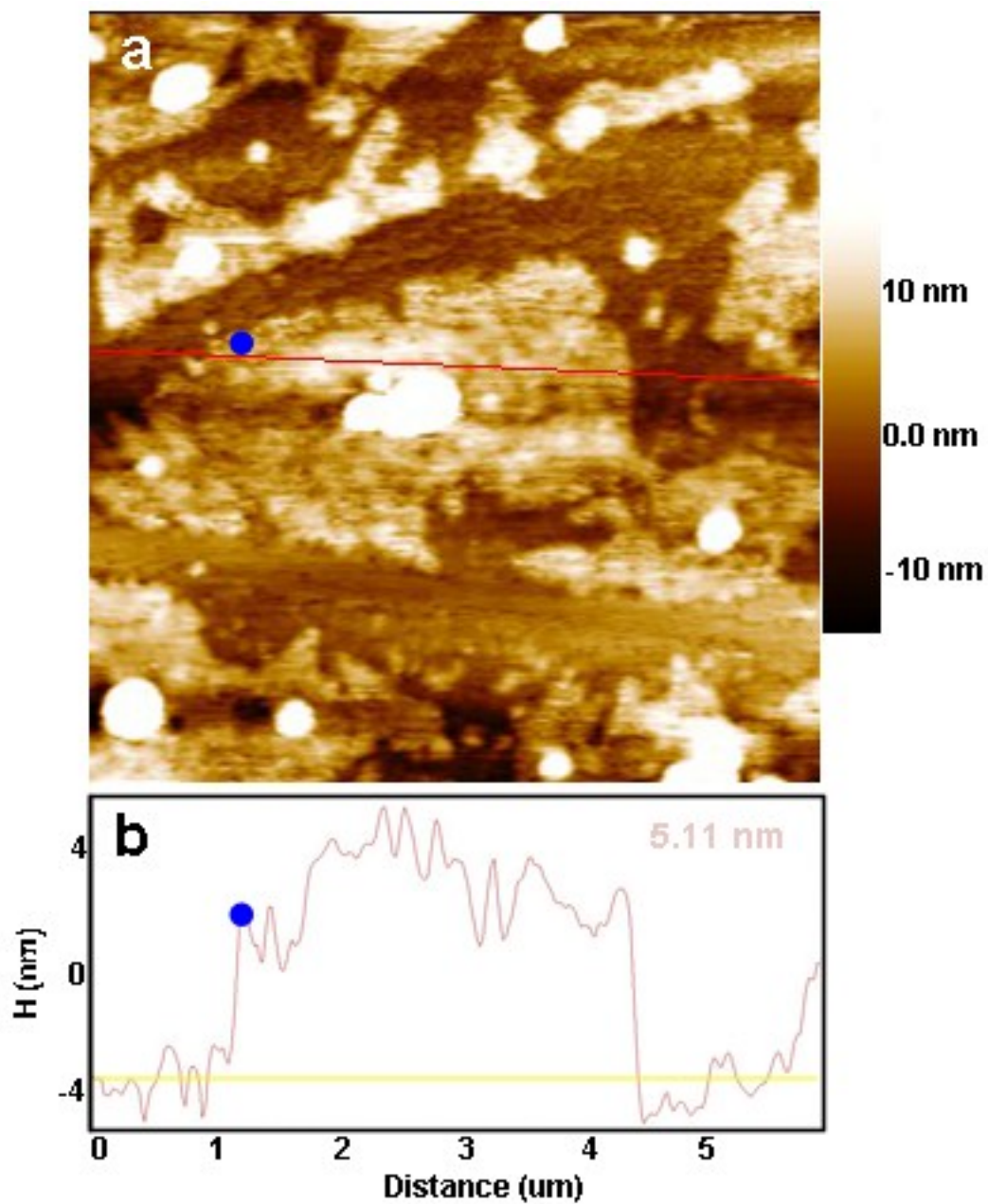


Fig. S7 (a) AFM image of rGO-2. (b) The height distribution according to the scanning line marked in the AFM image.