SUPPLEMENTARY INFORMATION (S.I.)

Three-dimensional graphene oxide: A promising green and sustainable catalyst for oxidation reactions at room temperature

Gil A.B. Gonçalves, Sónia M.G. Pires, Mário M.Q. Simões, M. Graça P.M.S. Neves and Paula A.A.P. Marques

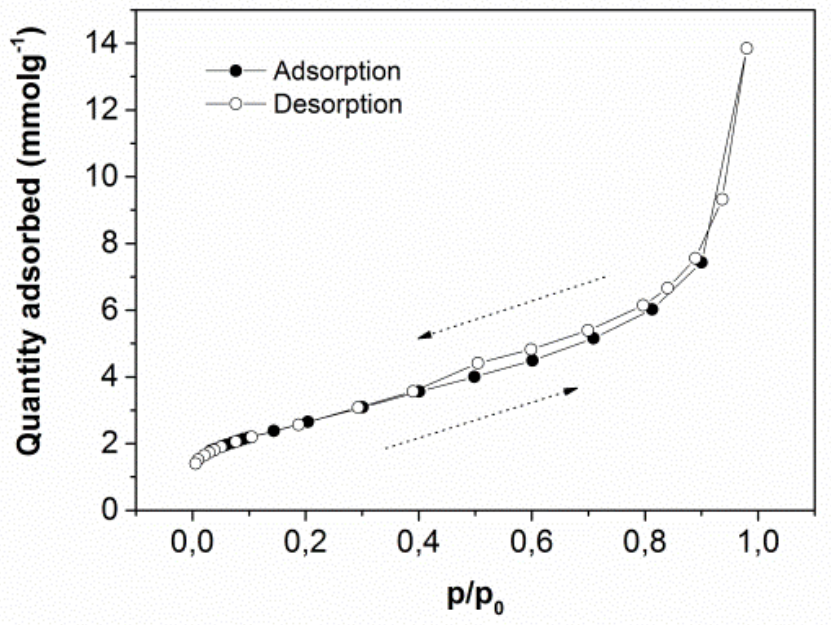

Fig. S1 Nitrogen adsorption-desorption isotherm of 3DGO.

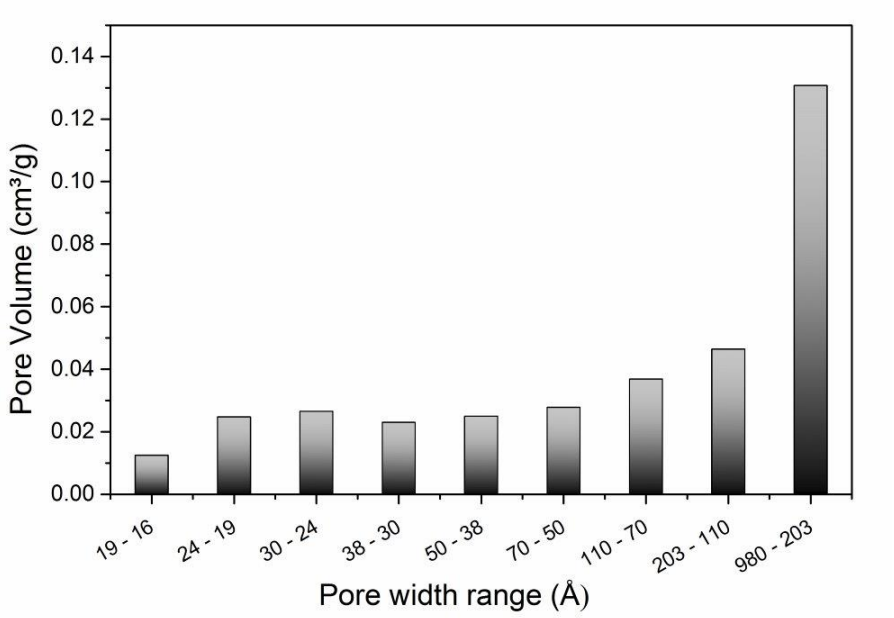

Fig. S2 Pore width range distribution.

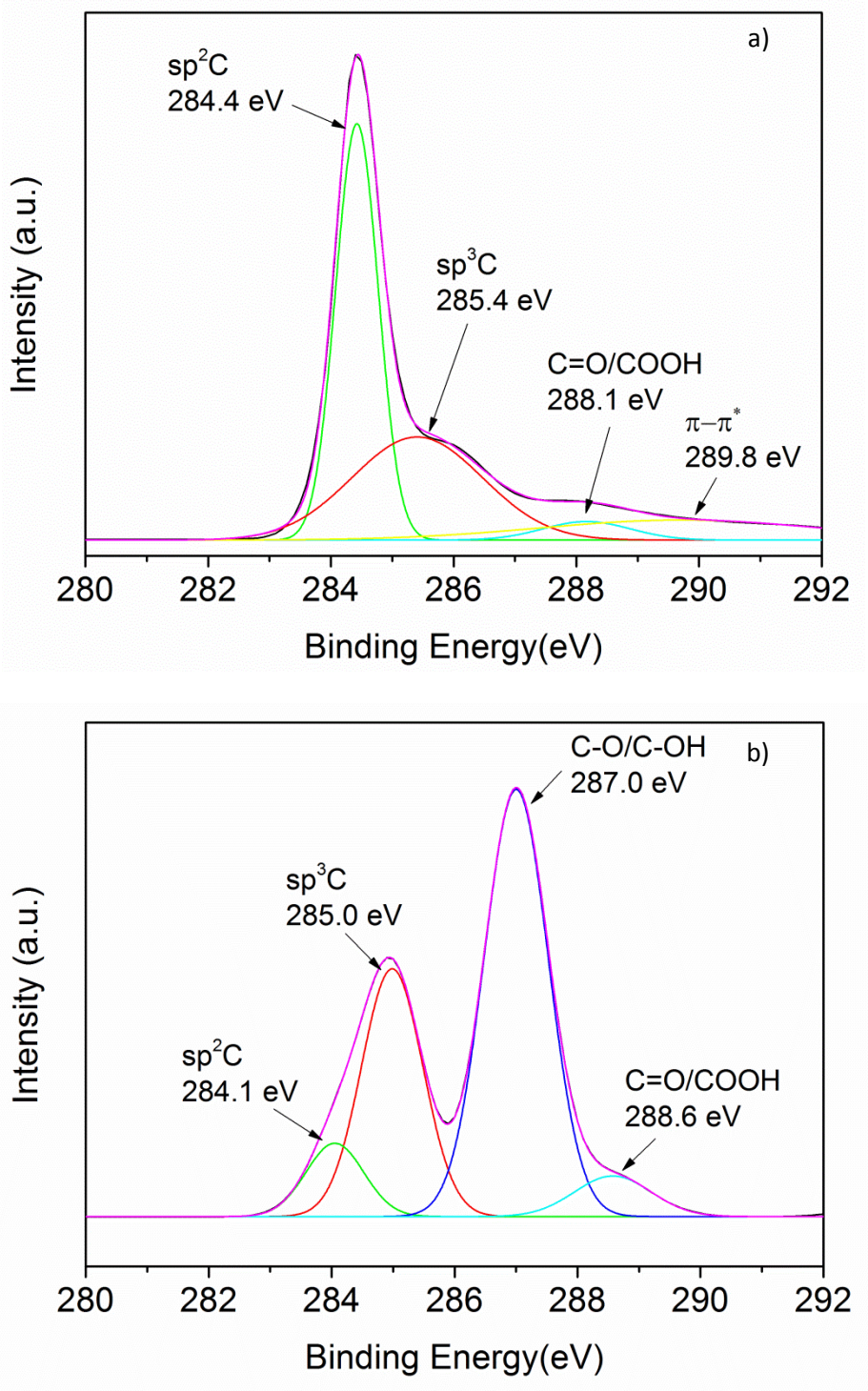

Fig. S3 Curve-fitting of C1s XPS spectra of a) 3DGO and b) 2DGO

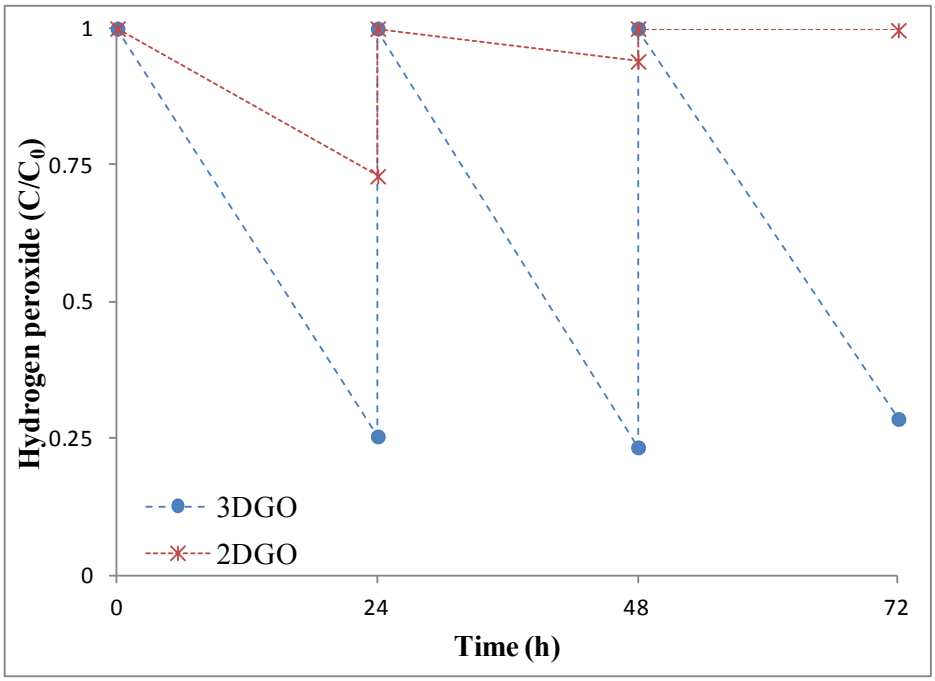

Fig. S4 Determination of hydrogen peroxide amounts during the catalytic reactions, both for 2D and 3DGO. For the determination of H_2O_2, aliquots of each reaction were dissolved in dilute sulphuric acid cooled with ice and H_2O_2 was titrated against 0.1 N ceric sulfate solution, using ferroin as indicator [1].

Table S1 Results of XPS analysis of the C1s content on the 3DGO and 2DGO

Chemical Bonds [2]	**3DGO**		**2DGO**	
	BE (eV)	AC (at.%)	BE (eV)	AC (at.%)
sp^2C	284.4	46.1	284.1	8.44
sp^3C	285.3	35.0	285.0	30.45
C-O/C-OH	*<0.1*	*<0.1*	287	54.89
C=O/COOH	288.1	4.23	288.6	6.22
π-π* [3]	289.7	14.68	-	-
Ratio sp^2/sp^3C	1.32		0.28	
Ratio C/O	2.10		0.75	

References

[1] A. I. Vogel, A Text-Book of Quantitative Inorganic Analysis Including Elementary Instrumental Analysis, 3rd edn., Longman, London, 1961, p. 325.

[2] Z.J. Fan, W. Kai, J. Yan, T. Wei, L.J. Zhi, J. Feng et al. Facile synthesis of graphene nanosheets via Fe reduction of exfoliated graphite oxide ACS Nano, 5 (2011), pp. 191-198.

[3] A. V. Murugan, T. Muraliganth and A. Manthiram, *Chem. Mater.*, 2009, **21**, 5004