

Electronic Supplementary Information

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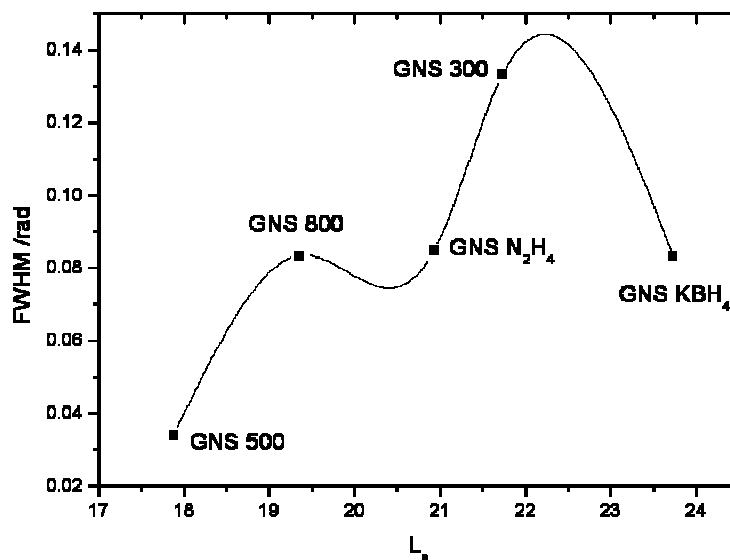


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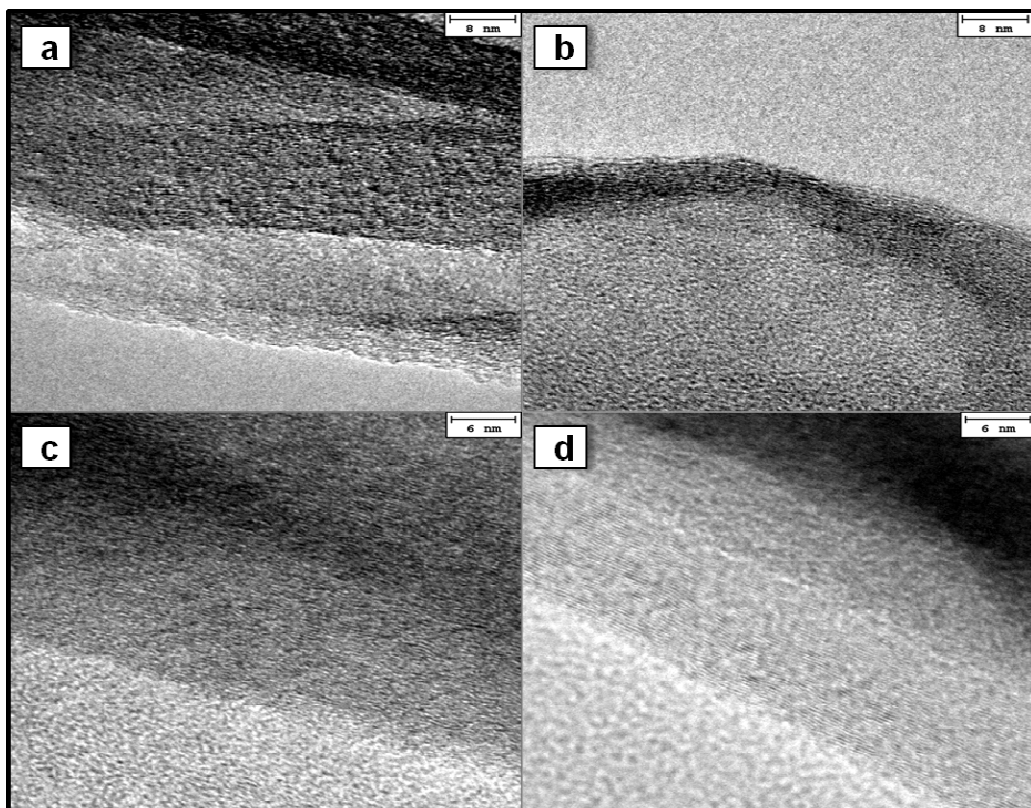


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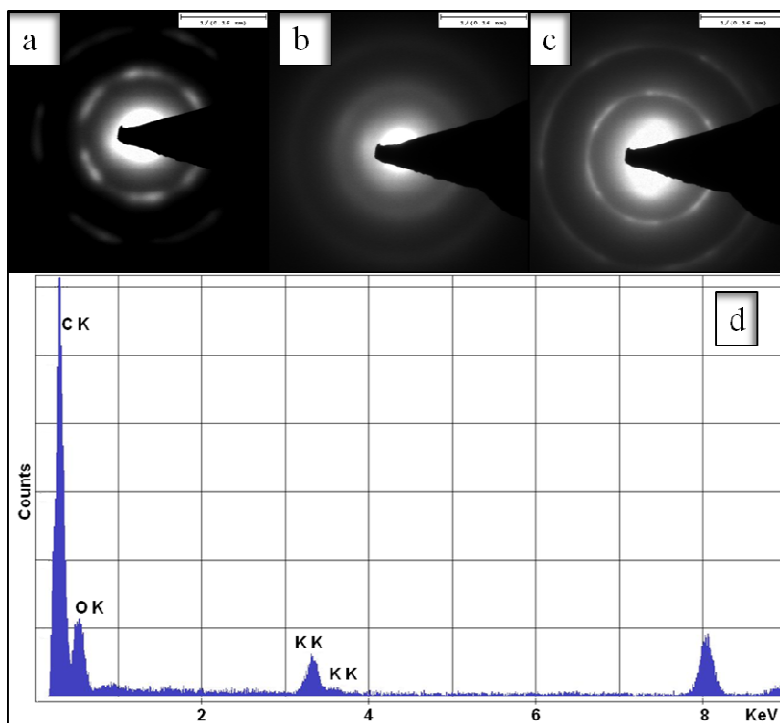


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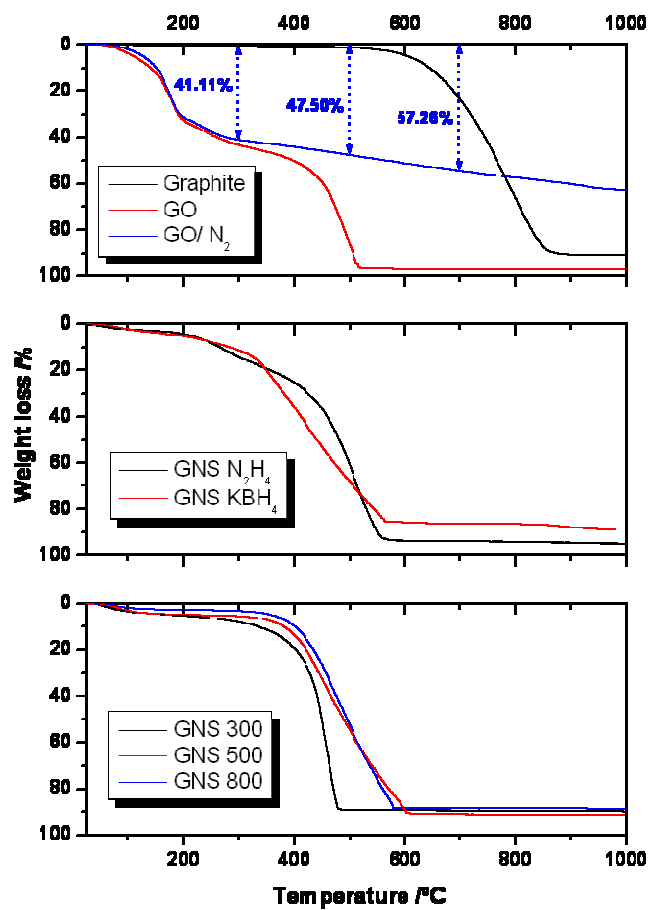


Figure 4S. TG curves of GO and GNS. Heating rate $5\text{ }^{\circ}\text{C min}^{-1}$ under air (unless otherwise stated).

Table 1S. Elemental analysis of the graphenes.

Sample	C (% ms)	H (% ms)	N (% ms)	S (% ms)	O (% ms)	C/O (EA)	C/O (XPS)
GO	45.67	2.44	0.04	1.68	42.38	1.08	3.37
GNS N_2H_4	71.08	1.16	5.82	0.01	13.34	5.33	5.63
GNS KBH_4	66.47	1.41	0.12	0.00	21.62	3.07	6.95
GNS 300	69.51	0.66	0.22	0.30	22.63	3.07	5.92
GNS 500	76.53	0.67	0.30	0.00	15.48	4.94	6.46
GNS 800	81.93	0.80	0.12	0.00	8.27	9.91	6.88

Table 2S. Specific capacity (mAh g⁻¹) delivered by the half-cells after different number of cycles.

Sample	Rate	Cycle number				
		2	10	20	50	100
GNS N ₂ H ₄	1C	734	536	491	397	374
	C/5	1292	907	832	655	688
GNS KBH ₄	1C	410	286	214	208	202
	C/5	552	343	284	260	251
GNS 300	1C	759	612	520	368	300
	C/5	941	762	673	506	488
GNS 500	1C	681	537	486	368	277
	C/5	750	644	524	381	354
GNS 800	1C	308	267	234	218	229
	C/5	411	341	308	270	279