Electronic Supplementary Material (ESI) for RSC Advances.

Electronic Supporting Information

Boron and phosphorus-doped graphene as metal-free electrocatalyst for oxygen reduction reaction in alkaline medium

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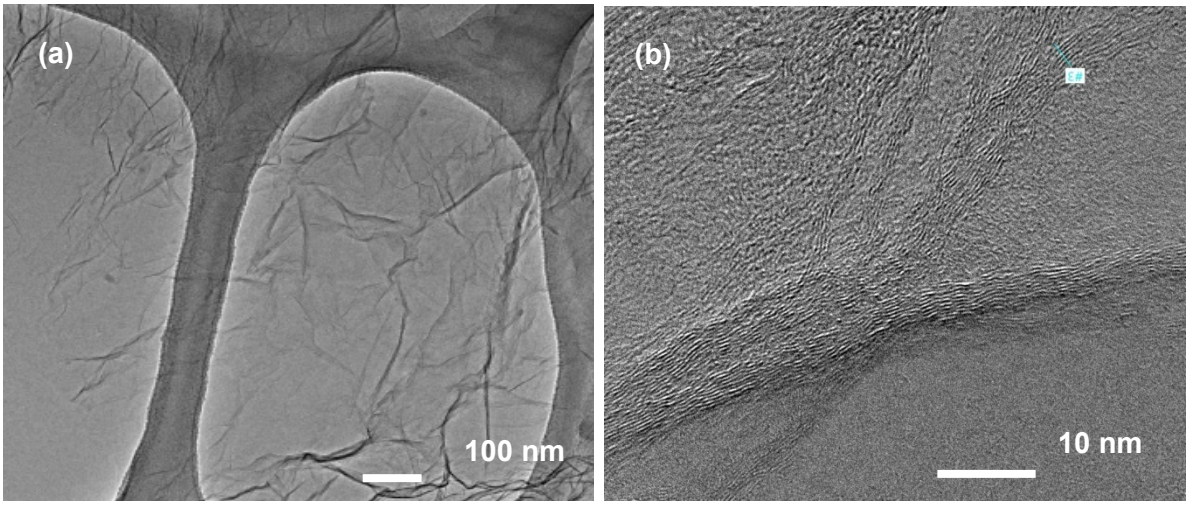

Fig. S1. (a) Low resolution and (b) high resolution TEM images of pristine graphene.

Table S1**.** The physico-chemical characterization and oxygen reduction activities of phosphorous or boron-doped graphene

Sample	Atomic percent (at%)				Phosphorous or boron distribution (at%)						P/C or B/C ratio (at%)	I_D/I_G	ORR activity		
	C	O	P	B	P-O	P-C	BCO_2	BC_2O	BC_3	B_4C			Onset potential (vs. RHE)	J_k ($mAcm^{-2}$) (at 0.7 V)	n (at 0.3 V)
PDG	95.28	4.54	0.18	0	62.9	37.1	0	0	0	0	0.19	1.03	0.78	1.80	3.98
BDG	94.16	5.02	0	0.82	0	0	13.3	58.2	11.8	16.7	0.87	1.36	0.82	5.50	3.94