

Supporting Information for

Highly conductive and flexible mesoporous graphitic films prepared by graphitizing the composites of graphene oxide and nanodiamond

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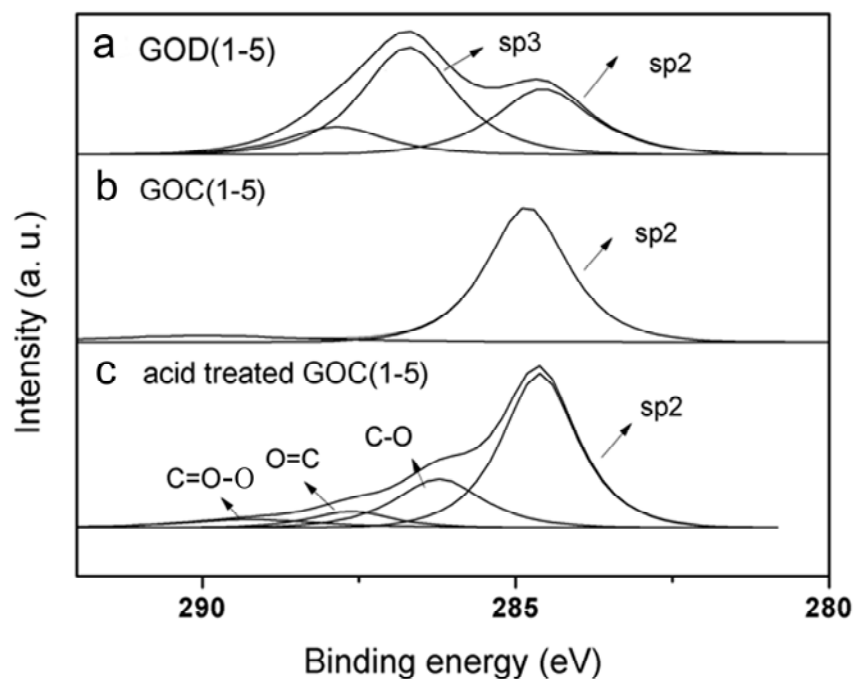


Fig. S1 C 1s XPS spectra of GOD(1-5), GOC(1-5), and acid treated GOC(1-5).

The C 1s XPS spectrum of GOD(1-5) shows two types of carbon atoms, C-C(sp³, 286.6eV) and C=C(sp², 284.7eV) (Fig. S1a). However, the C 1s spectrum of GOC(1-5) has only one band of SP² carbon (Fig. S1b), indicating the surfaces of diamond nanoparticles were extensively graphitized by annealing at high temperature. Fig. S1c reflects that oxygen containing groups were introduced to GOC(1-5) by acid treatment.

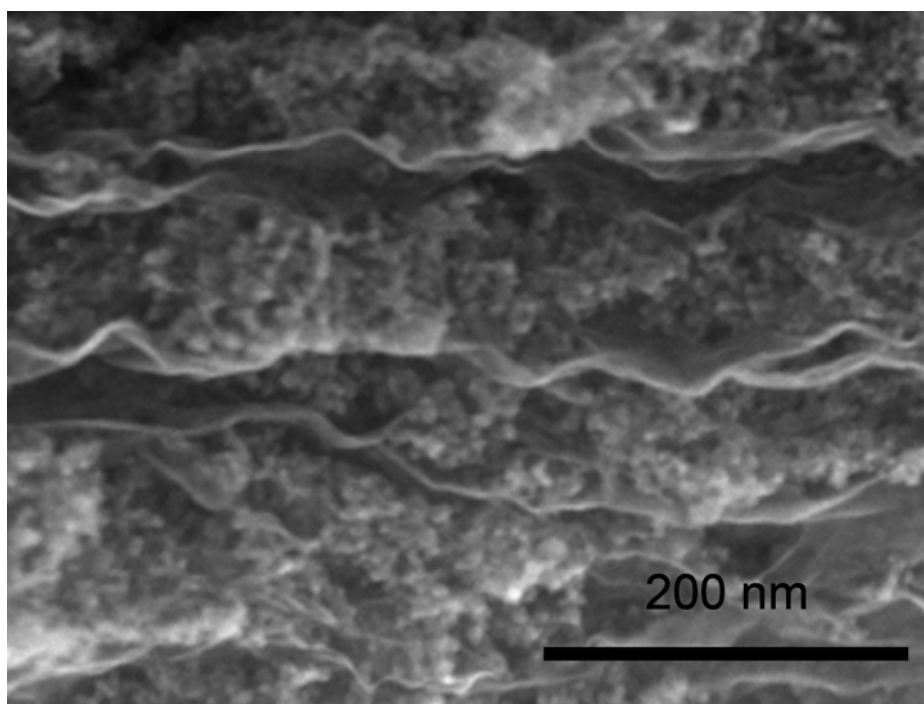


Fig. S2. Cross-section SEM image of a GOC (1-5) film after 5000 charge/discharge cycles.

Table S1. The atomic contents of GO, CCG, GOD, GOC and acid treated CCG and GOC

	C	N	O	S
GO	76.28	1.00	22.40	0.32
GOD(1-1)	65.04	1.96	31.44	1.56
GOD(1-3)	73.91	1.73	24.28	0.08
GOD(1-5)	82.55	1.25	16.08	0.11
GNS	81.45	0.28	17.96	0.30
GOC(1-1)	70.15	0.83	28.86	0.16
GOC(1-3)	85.88	0.21	13.83	0.09
GOC(1-5)	84.15	0.00	15.85	0.00
Acid treated GNS	71.21	3.15	24.99	0.66
Acid treated GOC(1-1)	76.32	2.16	20.95	0.56
Acid treated GOC(1-3)	80.99	1.43	17.34	0.23
Acid treated GOC(1-5)	83.09	1.71	14.99	0.21