Electronic Supplementary Information

ZnO/graphene hybrid with remarkably enhanced lithium storage capability

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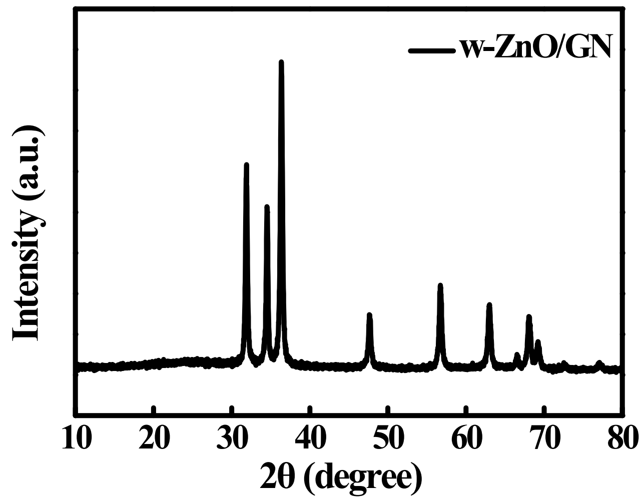

Fig. S1 XRD pattern of w-ZnO/GN hybrid.

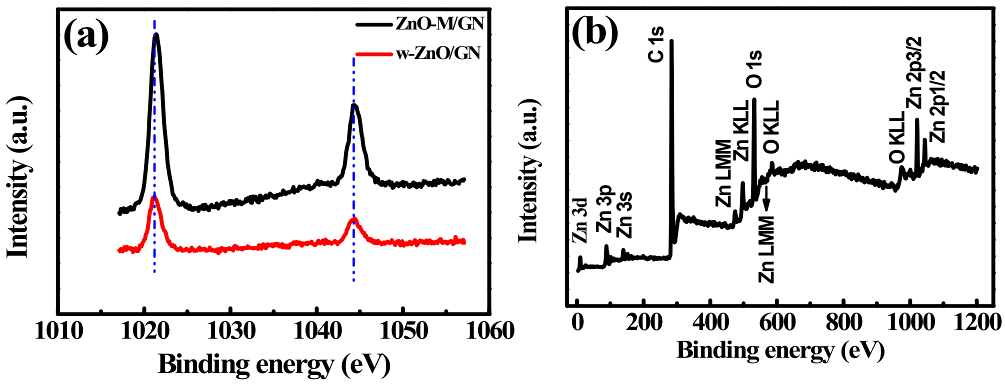

Fig. S2 (a) Zn 2p XPS spectra of ZnO-M/GN and w-ZnO/GN hybrids. (b) Survey spectrum of w-ZnO/GN hybrid.

As shown in Fig. S2, the Zn 2p high resolution XPS spectrum of ZnO-M/GN shows slight shift compared with that of w-ZnO/GN. We also provide the survey spectrum of ZnO/GN, and evidently, N element is not found.

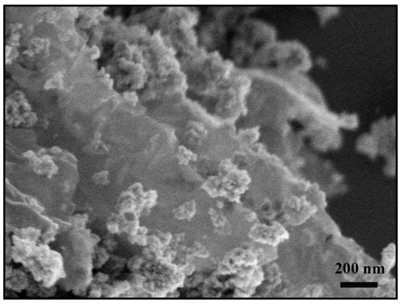

Fig. S3 SEM image of w-ZnO/GN hybrid.

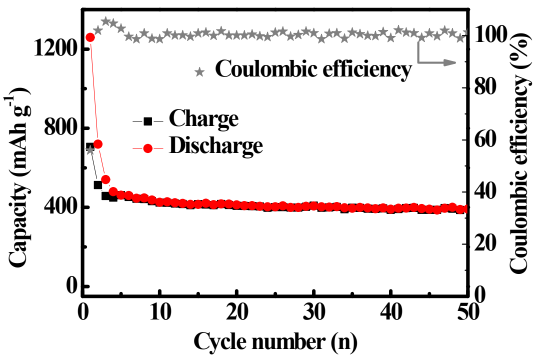

Fig. S4 Cycling performance and Coulombic efficiency of w-ZnO/GN hybrid at 100 mA g^{-1}.

Table S1 The comparison of the capacity of present work with those of reported ZnO-based materials.

Samples	Current density (mA g^{-1})	Cycle number	Capacity (mAh g^{-1})	Refs.
Ultrathin ZnO nanotubes	489(0.5C)	50	386	9
Flower-like ZnO nanospheres	489(0.5C)	30	381	10
Mesoporous ZnO nanosheets	100	50	420	12
Carbon/ZnO nanorod array	245(0.25C)	50	330	3
ZnO-loaded/porous carbon	100	100	653.7	14
ZnO/CNT composite	100	50	602	20
ZnO quantum dot/graphene	1000	100	560	21
ZnO nanocrystals/graphene	50	25	300	22
ZnO nanoparticles/graphene	489(0.5C)	100	404	23
ZnO@graphene composite	978(1C)	50	460	24
ZnO/graphene nanocomposite	100	500	610	25
ZnO/GN hybrid	100(500)	100	900(700)	this work