Supplementary Information for

A facile solvothermal polymerization approach to thermoplastic polymer-based nanocomposites as alternative anodes for high-performance lithium-ion batteries

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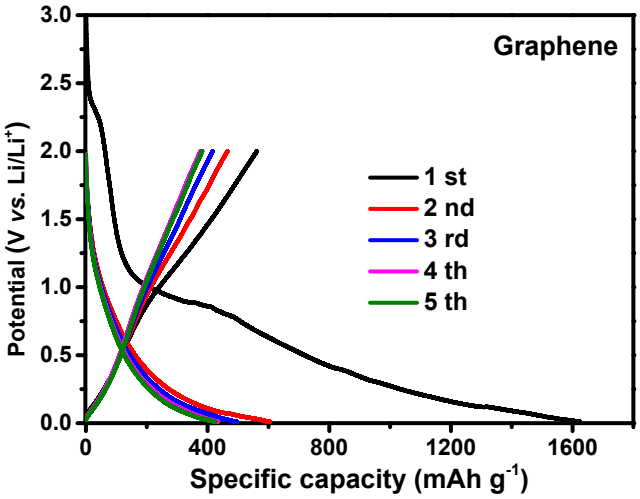


Fig. S1 Discharge/charge profiles of pure graphene anode at a current density of 20 mA g^{-1} in the initial five cycles.

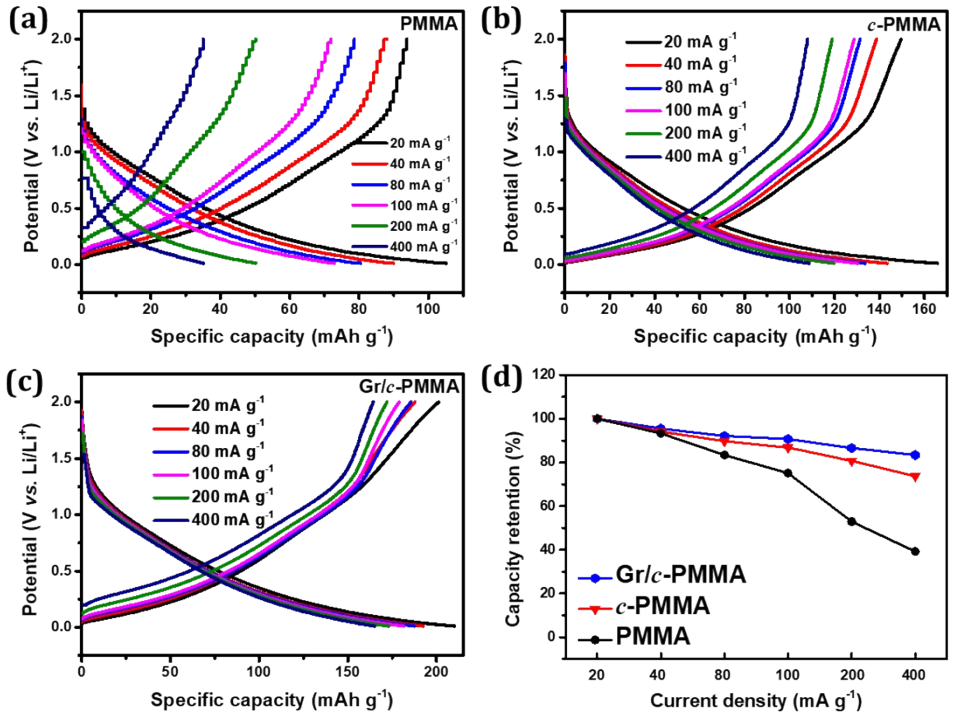


Fig. S2 (a, b, c) Typical discharge/charge profiles and (d) capacity retention of PMMA-based anodes at different current densities.

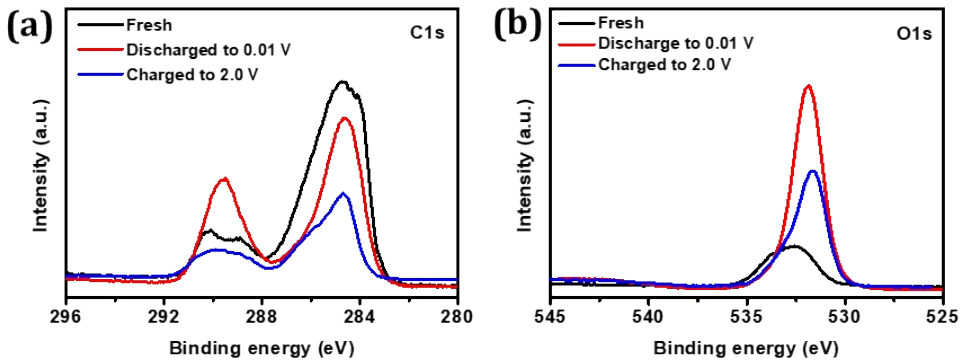
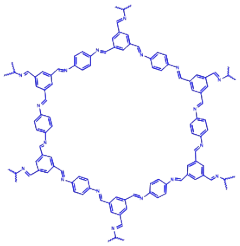
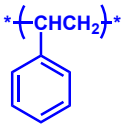
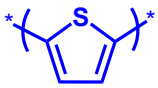
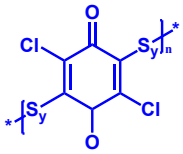
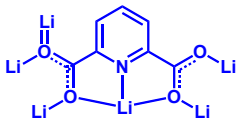
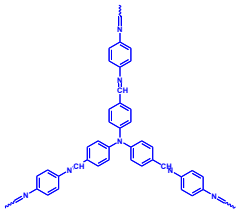
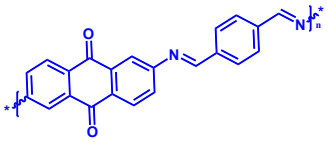
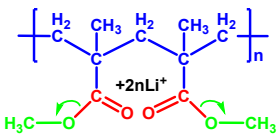


Fig. S3 (a) C 1s and (b) O 1s XPS spectra of the fresh Gr/c-PMMA anode and the electrode after being discharged to 0.02 V and charged to 2.0 V.

Table S1 Lithium storage performance of Gr/*c*-PMMA and organic polymer anode counterparts reported in the references

Polymers used	Specific capacity	Rate capability	Cycling stability	Ref.
	125 mAh g^{-1} at 100 mA g^{-1}	—	77.3% after 300 cycles at 100 mA g^{-1}	[1]
	149.97 mAh g^{-1} at 100 mA g^{-1}	90.38 mAh g^{-1} at 500 mA g^{-1}	67.6% after 300 cycles at 100 mA g^{-1}	[2]
	745 mAh g^{-1} at 45 mA g^{-1}	141 mAh g^{-1} at 3000 mA g^{-1}	30% after 300 cycles at 100 mA g^{-1}	[3]
	85 mAh g^{-1} at 100 mA g^{-1}	99 mAh g^{-1} at 1000 mA g^{-1}	67% after 200 cycles at 200 mA g^{-1}	[4]
	160 mAh g^{-1} at 30 mA g^{-1}	—	57.1% after 50 cycles at 30 mA g^{-1}	[5]
	140 mAh g^{-1} at 0.4 C	60 mAh g^{-1} at 16 C	—	[6]
	1401 mAh g^{-1} at 100 mA g^{-1}	259 mAh g^{-1} at 2000 mA g^{-1}	97% after 1000 cycles at 200 mA g^{-1}	[7]
	**206 mAh g^{-1} at 20 mA g^{-1}**	**167 mAh g^{-1} at 400 mA g^{-1}**	**~100% after 1000 cycles at 400 mA g^{-1}**	**This work**

References

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