Electronic Supplementary Material (ESI) for RSC Advances.

SiO_X-based Graphite Composite Anode and efficient binders: Practical Applications in Lithium-ion Batteries

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Tables

Table S1 The swelling of 423480 pouch cells using PAA and SBR binder (ΔS: Increasing swelling)

Cycles ΔS (%)	T_0 (mm)	50^{th}	100^{th}	150^{th}	200^{th}	250^{th}	300^{th}	350^{th}	400^{th}	450^{th}
PPA-1	4.06	2.20	2.44	3.18	4.38	5.62	6.11	7.33	7.36	7.49
PPA-2	4.09	2.86	2.96	3.69	4.16	5.40	6.50	7.68	7.77	
SBR-1	4.1	1.71	1.95	3.41	4.88	5.90	6.59	7.92	8.54	
SBR-2	4.09	2.20	2.69	3.67	5.13	5.72	6.62	8.06	8.49	9.56

Table S2 IR and anode electrode thickness change of 423480 pouch cells (before and after cycling)

cell	IR(mΩ)		ΔIR(%)(after 400^{th})	Anode electrode thickness(μm）	
	before cycle	400^{th} cycles		before cycle	after cycle
SBR-1	23	32.8	42.61	98-99	149-152@400^{th}
SBR-2	23	32	39.13	98-99	158-159@450^{th}
PAA-1	23.2	30.3	30.60	98-99	147-148 @450^{th}
PAA-2	23	30.8	33.91	98-99	146-149@400^{th}

Figure Captions

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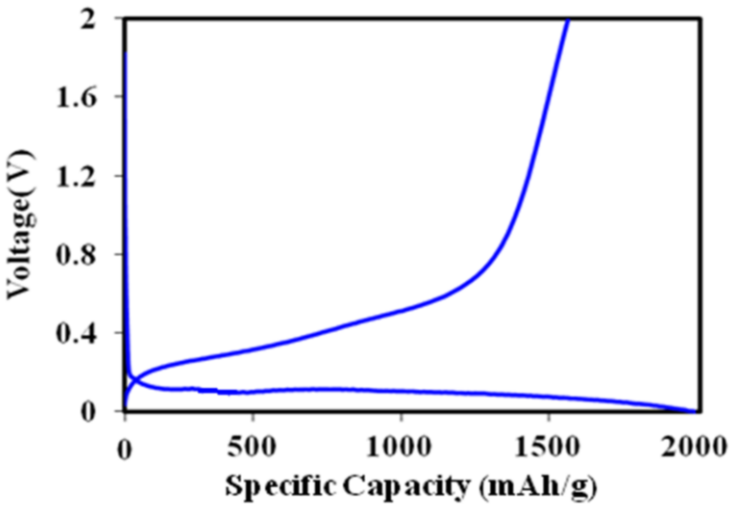

Fig. S1 The first charge and discharge curve of the SiO_x sample.

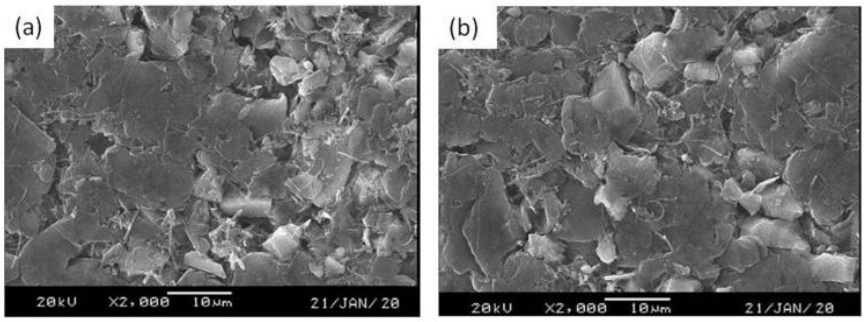

Fig. S2 SEM of anode electrodes after rolling (a) SBR binder; (b) PAA binder.

Fig. S3 Fresh anode electrode using PAA as binder.