

Electronic Supplementary Information

Interface layer formation in solid polymer electrolyte lithium batteries: an XPS study

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S1. The relative surface concentrations of F, O, N, C, S and Li in pristine Li and SPE, Li and SPE(Li) from both SPE-based graphite half-cells (different water contents) and a Li electrode from a liquid electrolyte (L.E.) battery.

	F	O	N	C	S	Li
Li	0.00	38.58	0.49	36.14	0.00	24.80
SPE	12.94	30.38	1.61	47.68	3.29	4.01
Li 2300 ppm	13.21	28.70	1.34	40.30	3.25	13.20
SPE(Li) 2300 ppm	4.71	26.38	1.66	58.44	1.04	7.75
Li 675 ppm	7.03	29.84	1.93	47.29	1.87	12.04
SPE(Li) 675 ppm	14.82	29.62	1.74	42.17	3.47	8.18
Li L.E.	22.12	20.65	2.73	37.59	5.65	11.25