

Table S4. Comparison of voltage decay of the reported LLOs.

Modified strategy	Cycle number (n)	Voltage decay (mV / cycle)	Reference
KP-LLO	500	1.1	This work
Spinel coating	50	4.4	9
LiMgPO ₄ coating	250	1.6	10
Li ₄ M ₅ O ₁₂ @LBO dual coating	100	4.8	11
La ³⁺ doping	100	1.5	12
CoF ₂ coating	100	3.1	13
LiCoPO ₄ and spinel dual coating	100	4.0	14
Nb ⁵⁺ surface doping	100	1.4	15
Li ₄ Mn ₅ O ₁₂ coating	300	1.8	16
La doping and CaF ₂ coating	100	2.0	17
LiCeO ₂ coating	200	2.0	18
LiTaO ₃ coating	50	2.2	19
K _{1-x} Li _x F coating and K surface doping	100	3.1	20
CeO ₂ @Rocksalt surface modification	200	1.8	21
PDA coating	200	1.5	22
Single-crystal LLO	50	2.5	23

Ti ⁴⁺ doping	130	3.3	24
Li ₃ PO ₄ and spine dual coating	100	5.5	25
Li _{0.5} Mn _{0.5} O coating	200	2.3	26
LiF-MgF ₂ -CaF ₂ coating and Mg ²⁺ , Ca ²⁺ , F ⁻ doping	120	3.1	27
Li ₂ TiO ₃ coating	125	1.3	28
Surface Al-doping	100	3.1	29
Surficial oxygen vacancies	200	1.5	30
Li ₃ PO ₄ and spinel dual coating	300	0.8	31
F ⁻ gradient doping and LiF coating	100	1.75	32
