

Fig. S1. Enlarged XRD profiles of (a) KMO and (d) KLMO

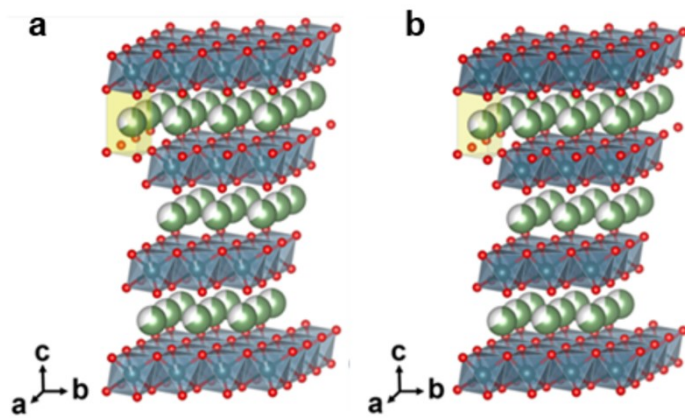


Fig. S2 Crystal structures of (a) KLMO and (b) KMO along the c-axis.

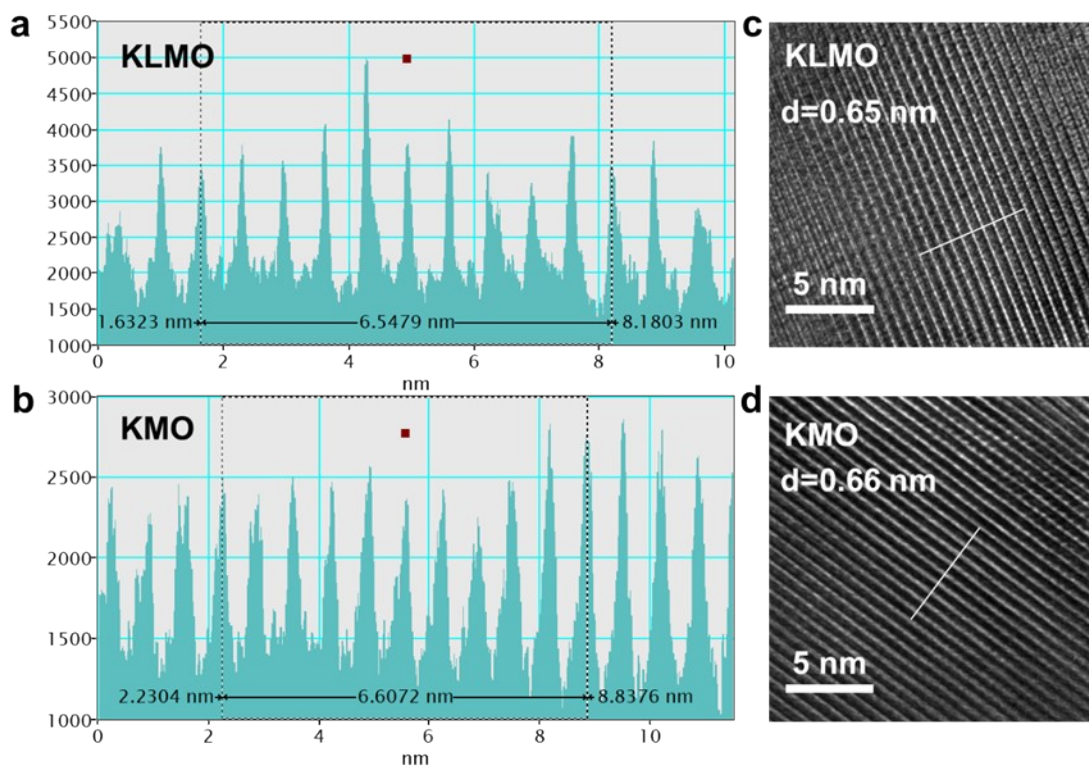


Fig. S3 The intensity line profiles of signals corresponding to (a) KLMO and (b) KMO from (c-d) HRTEM images.

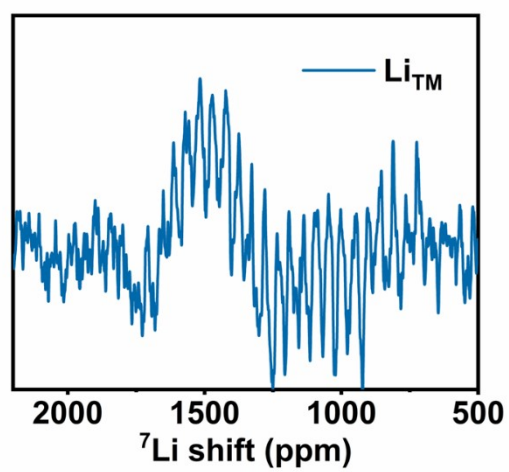


Fig. S4 ${}^7\text{Li}$ ss-NMR of KLMO.

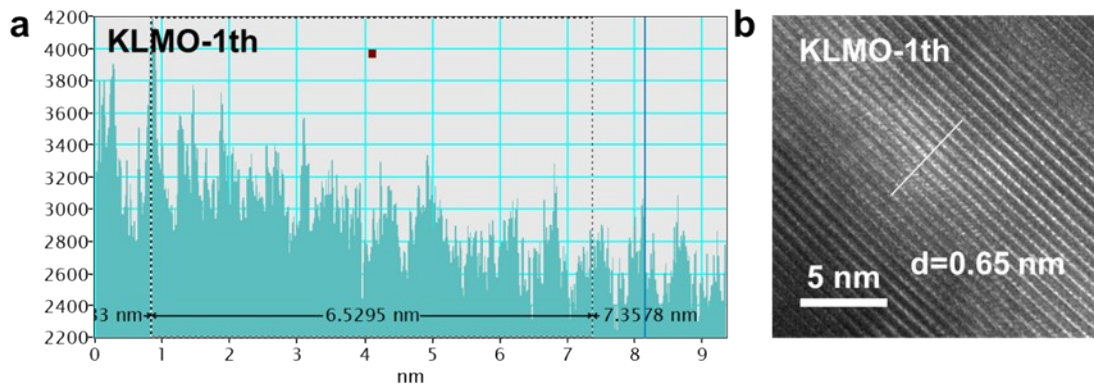


Fig. S5 The intensity line profiles of signals corresponding to (a) KLMO after one cycle from (b) HRTEM image.

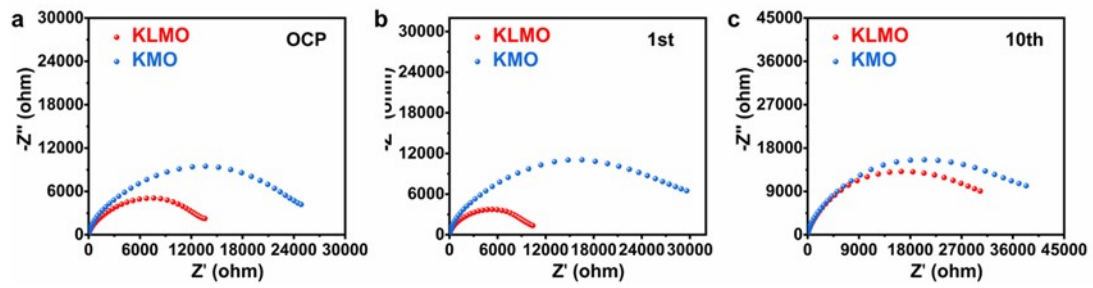


Fig. S6 EIS plots of KLMO and KMO (a) at open-circuit voltage, (b) after 1 cycle, and (c) 10 cycles.

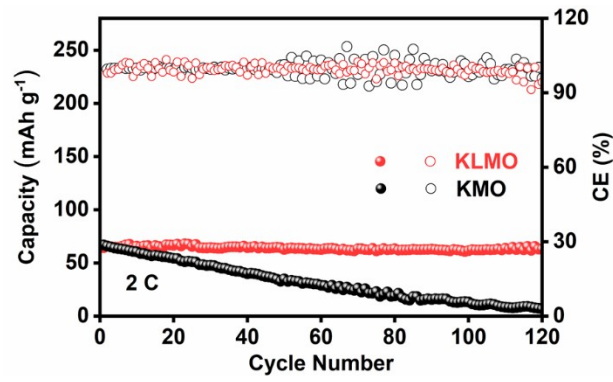


Fig. S7 Cycle stabilities of KMO and KLMO at 2C.