Supporting information

An ultrathin Li doped perovskite SEI film with high Li ion flux for fast charging lithium metal battery

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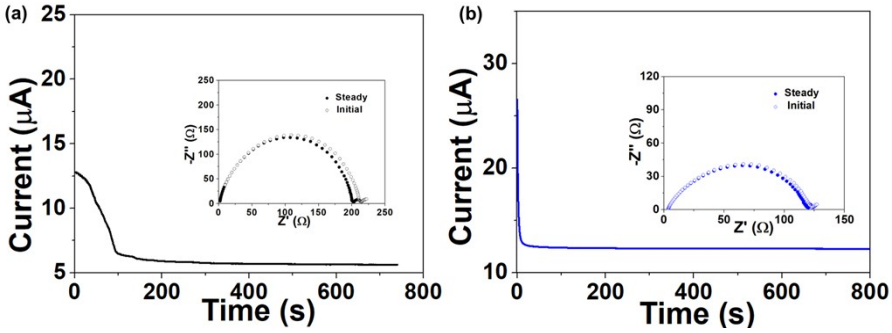

Figure S1. Chronoamperometry profiles of Li/Li symmetric cells with (a) bare Li and (b) at Li@Li-$CsPbCl_3$10 mV of polarization (inset: Nyquist plots before and after polarization).

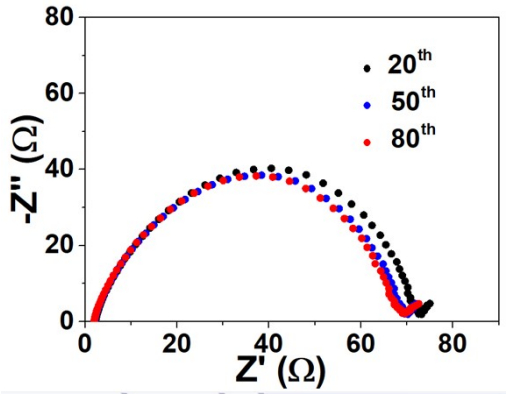

Figure S2. Nyquist plots of symmetric Li/Li cell with Li-$CsPbCl_3$ SEI film at different cycles (20^{th}, 50^{th} and 80^{th}).

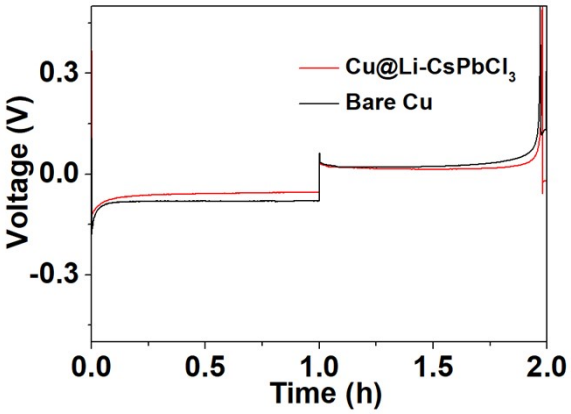

Figure S3. The first voltage-time curves for Li/Cu cells with bare Cu and Cu@ Li-$CsPbCl_3$ film at a current density of 1 mA cm^{-2}.

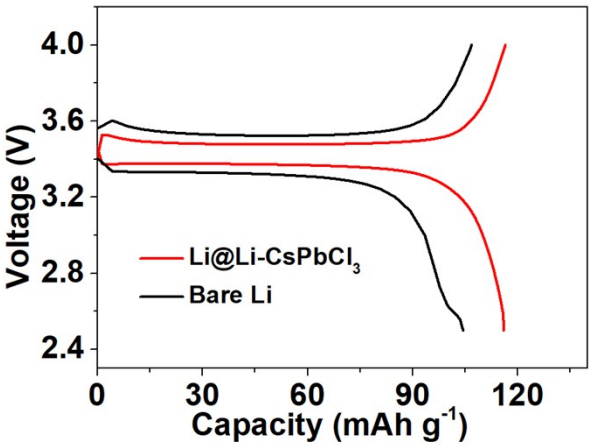

Figure S4. The first charge-discharge profiles of Li/$LiFePO_4$ cells with bare Li and Li@Li-$CsPbCl_3$ anodes at 3 C.