

## **Low resistant and stable lithium-garnet electrolyte interface enabled by a multifunctional anode additive for solid-state lithium batteries**

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## Supplementary Information

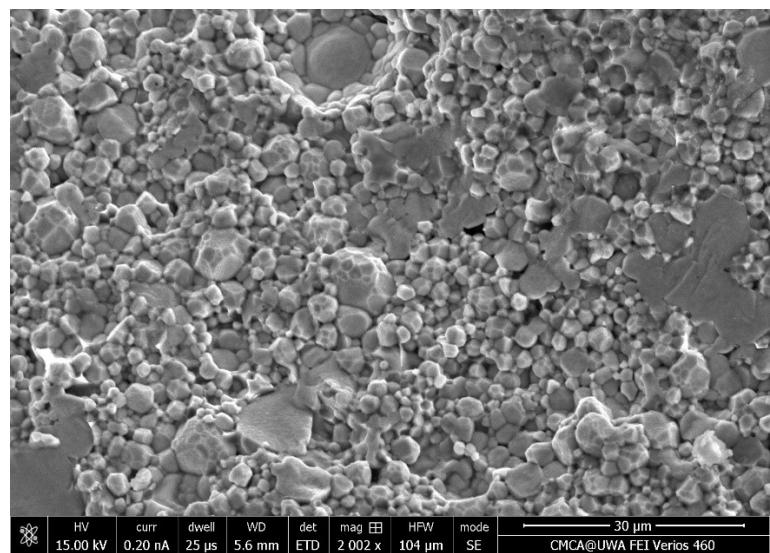


Fig. S1 SEM of LLZTO pellet sintering at 1150 °C.

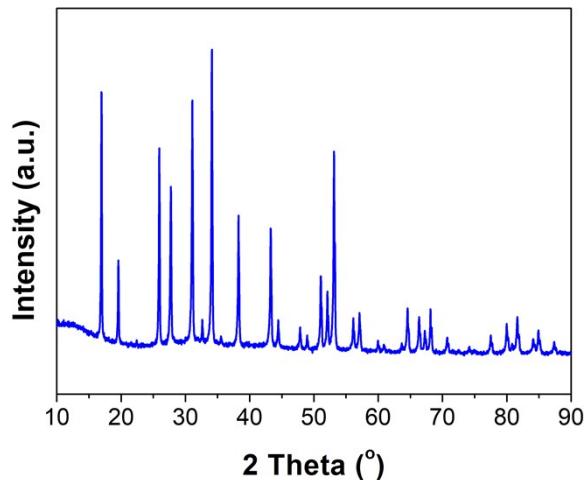


Fig. S2 XRD pattern of the LLZTO pellet.



Fig. S3 A digital photo of molten Li on the garnet pellet.

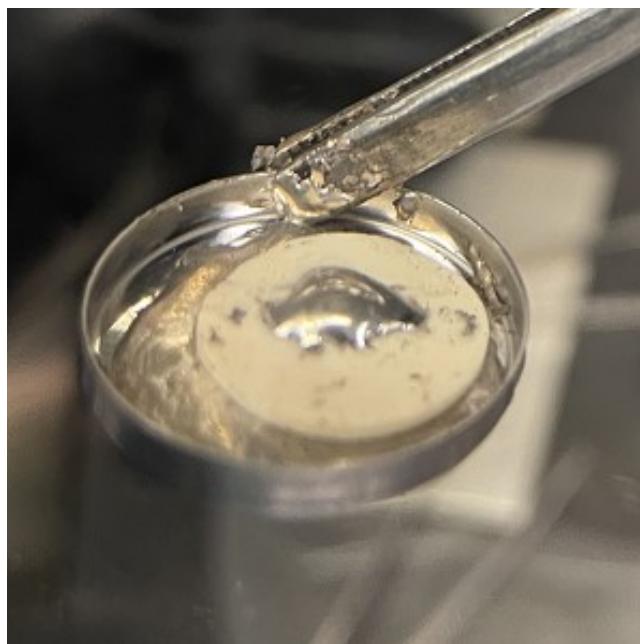


Fig. S4 A digital photo of Li-LLTO on the garnet pellet.

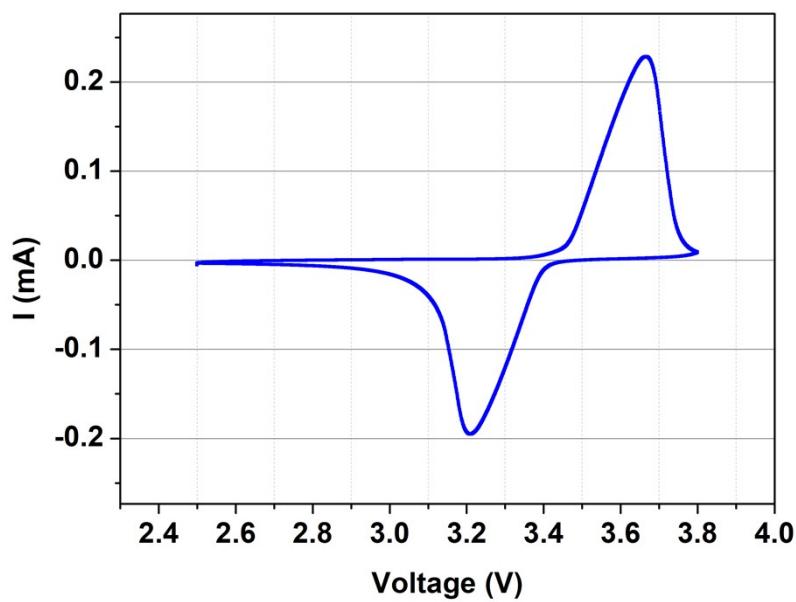


Fig. S5 CV curve of the full cell  $\text{LiFePO}_4 \mid \text{LLZTO} \mid \text{Li-LLTO}$ .

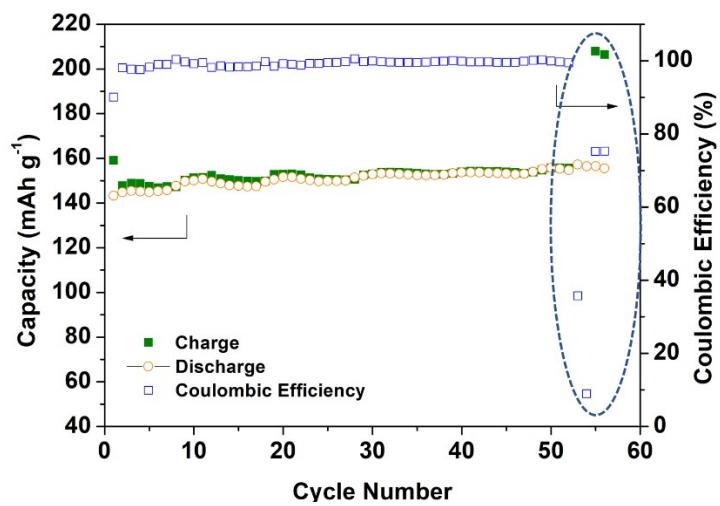


Fig. S6 Cycling performance of  $\text{LiFePO}_4 \mid \text{LLZTO} \mid \text{Li}$  full cell at 1 C.

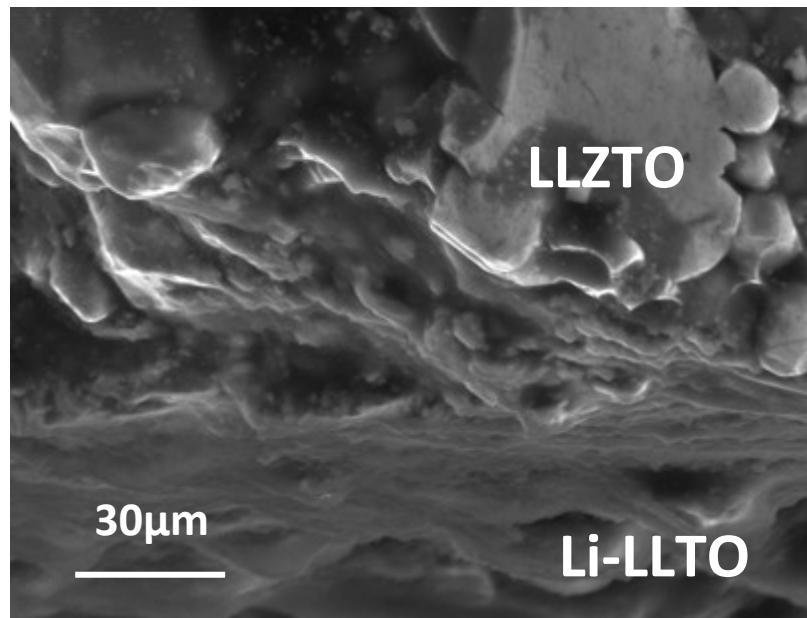


Fig. S7 SEM of Li-LLTO| LLZTO interface after the full cell cycling.

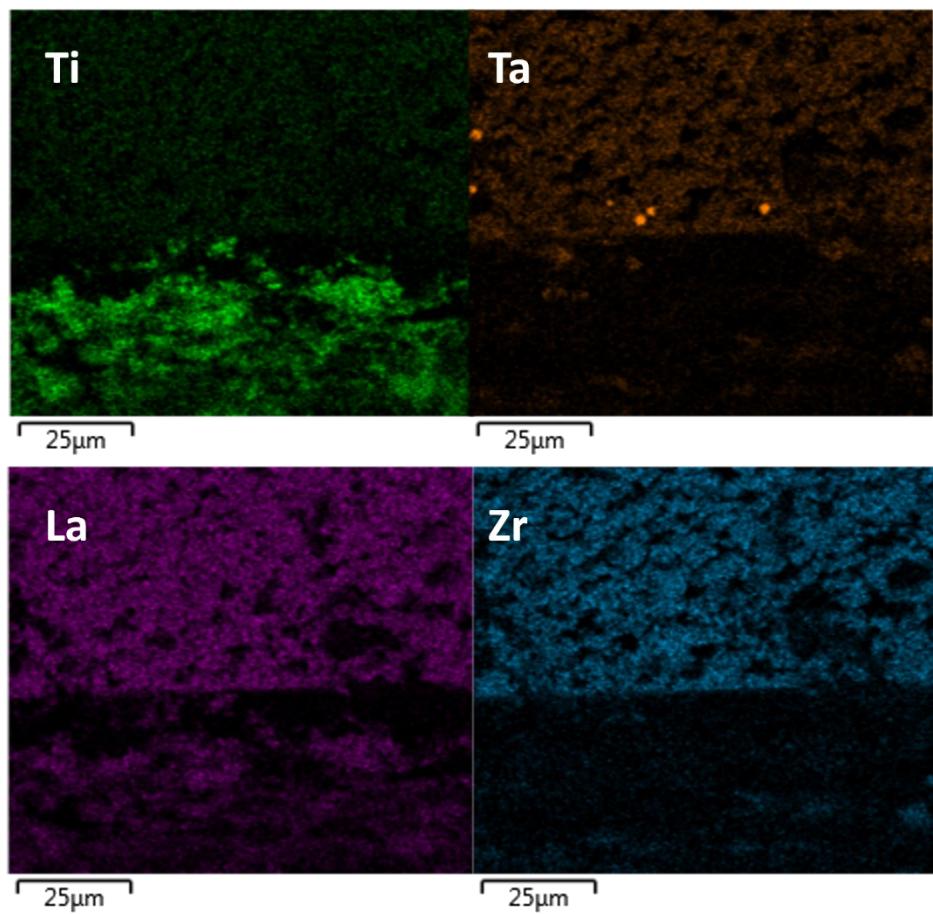


Fig. S8 SEM-EDX mapping of the Li-LLTO and LLZTO interface after cycling.