Electronic Supplementary Material (ESI) for Journal of Materials Chemistry A.

SUPPORTING INFORMATION

for

Local Li-ion conductivity changes within $Li_7La_3Zr_2O_{12}$ solid electrolytes and their relation to three dimensional variations of the bulk composition

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CONTENT:

Table S1 Parameters for the LA-ICP-OES measurement

Laser ablation system	ESI NWR213	
Average fluence		
Pre-Ablation	2.50 J cm^{-2}	
Imaging	4.25 J cm^{-2}	
Laser diameter		
Pre-Ablation	250 µm	
Imaging	100 µm	
Scan speed		
Pre-Ablation	250 µm s^{-1}	
Imaging	100 µm s^{-1}	
Repetition rate	20 Hz	
Carrier gas flow (He)	0.6 l min^{-1}	
Make-up gas flow (Ar)	0.8 l min^{-1}	
ICP-OES instrumentation	**Thermo iCAP 6500 RAD**	
RF power	1200 W	
Radial observation height	12 mm	
Plasma gas flow	12 l min^{-1}	
Auxiliary gas flow	0.5 l min^{-1}	
Integration time	1 s	
Analytical wavelengths		
Al	309.271 nm	396.152 nm
La	261.034 nm	419.655 nm
Li	610.362 nm	670.784 nm
Zr	257.139 nm	274.256 nm

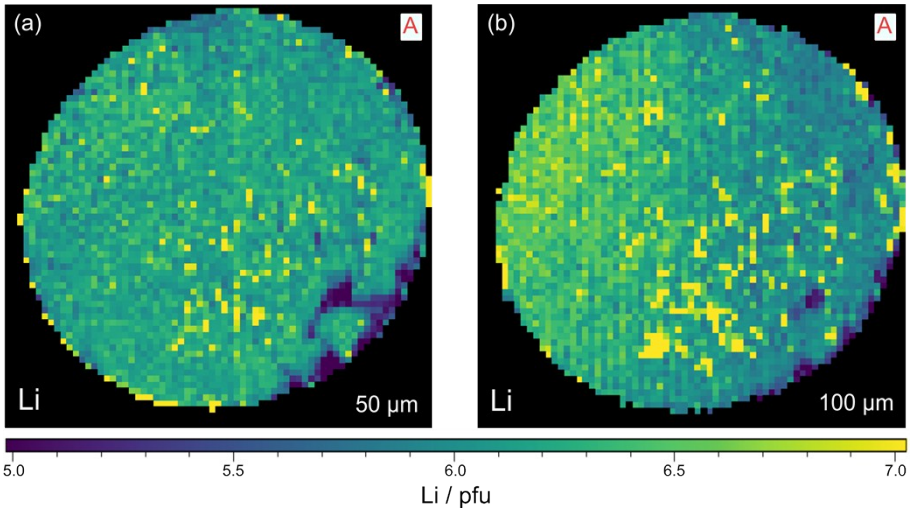

Fig. S1 LA-ICP-OES distribution images of sample A, illustrating the amount of lithium in (a) 50 µm and (b) 100 µm sample depth.

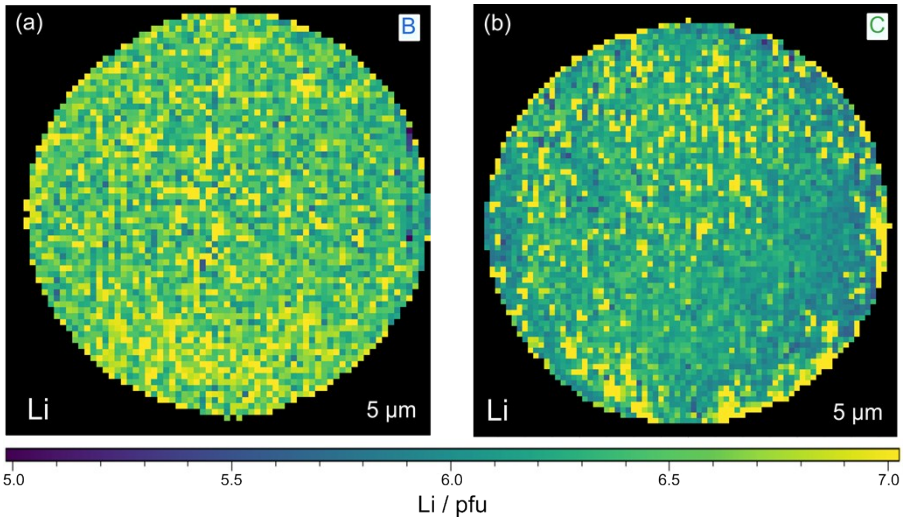

Fig. S2 LA-ICP-OES images of (a) sample B and (b) sample C, illustrating the amount of Li in 5 µm depth.

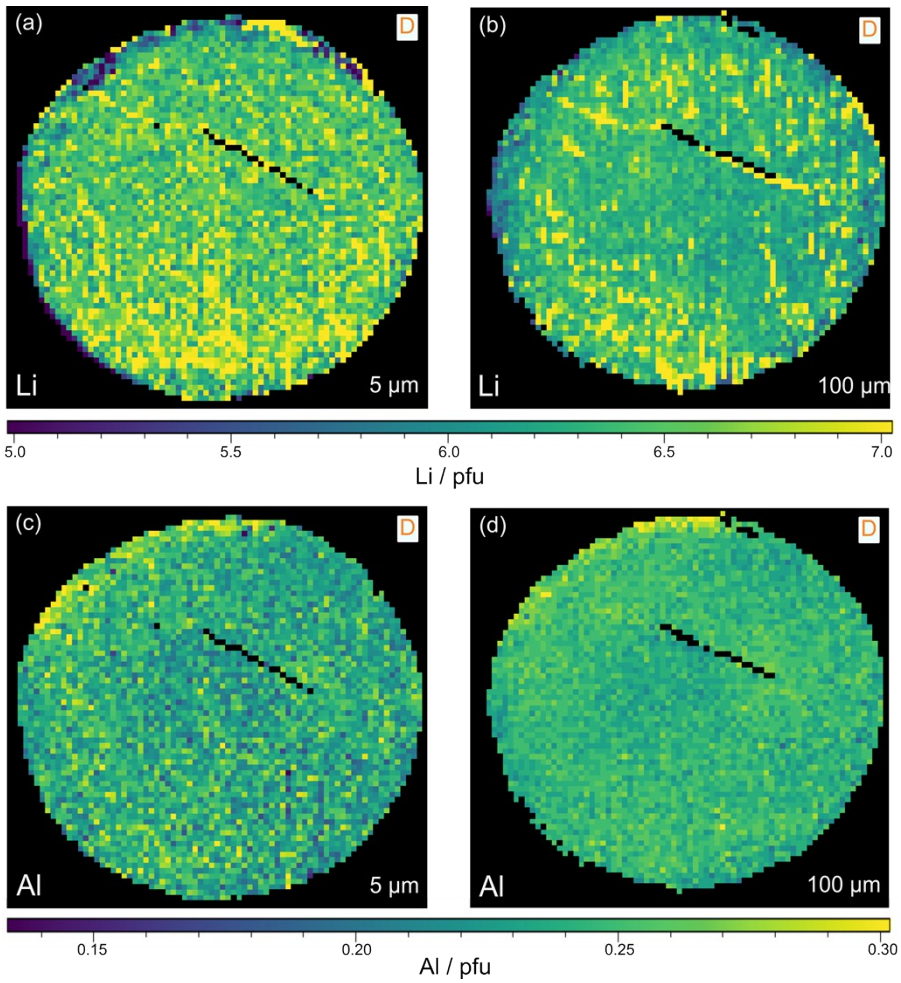

Fig. S3 LA-ICP-OES images of sample D, illustrating the amount of Li (a,c) and Al (b,d) in 5 µm and 100 µm depth.