Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Supplementary Information

Strategy of Enhancing Ionic Conductivity of $Li_7La_3Zr_2O_{12}$ with Accurate Sintering Conditions

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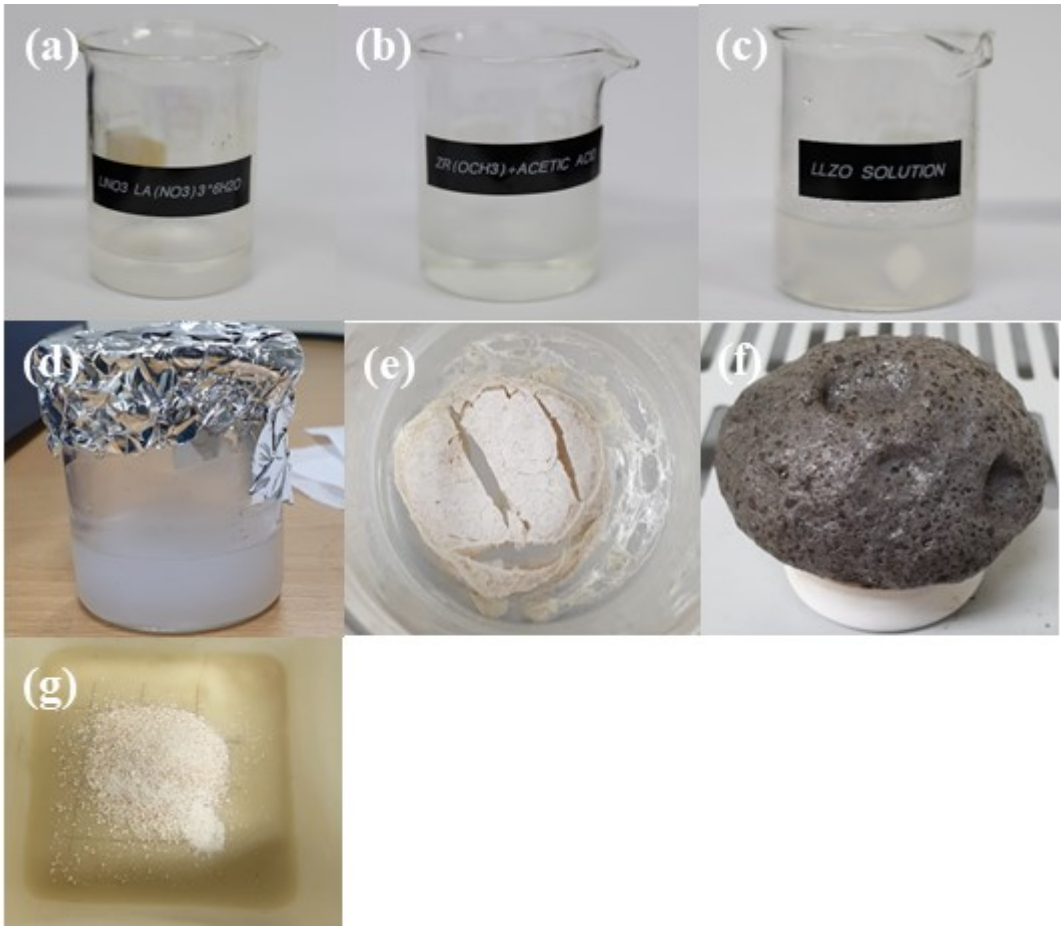

Figure S1. (a) $LiNO_3$, $La(NO_3)_3 \cdot 6H_2O$ in 1-propanol, (b) $Zr(OH_7C_3)_4$ + acetic acid in 1-propanol, (c) LLZO solution, (d) LLZO gel, (e) dried LLZO gel, calcinated at 450 °C for 4 h in air atmosphere (f) LLZO with excess acetic acid, and (g) LLZO powder

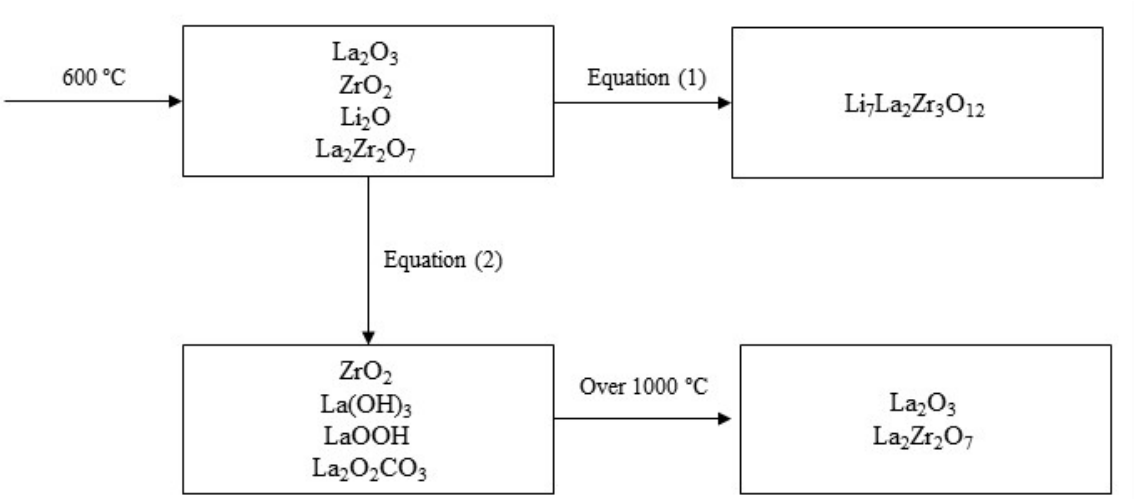

Figure S2. Schematics of HRFTP4.

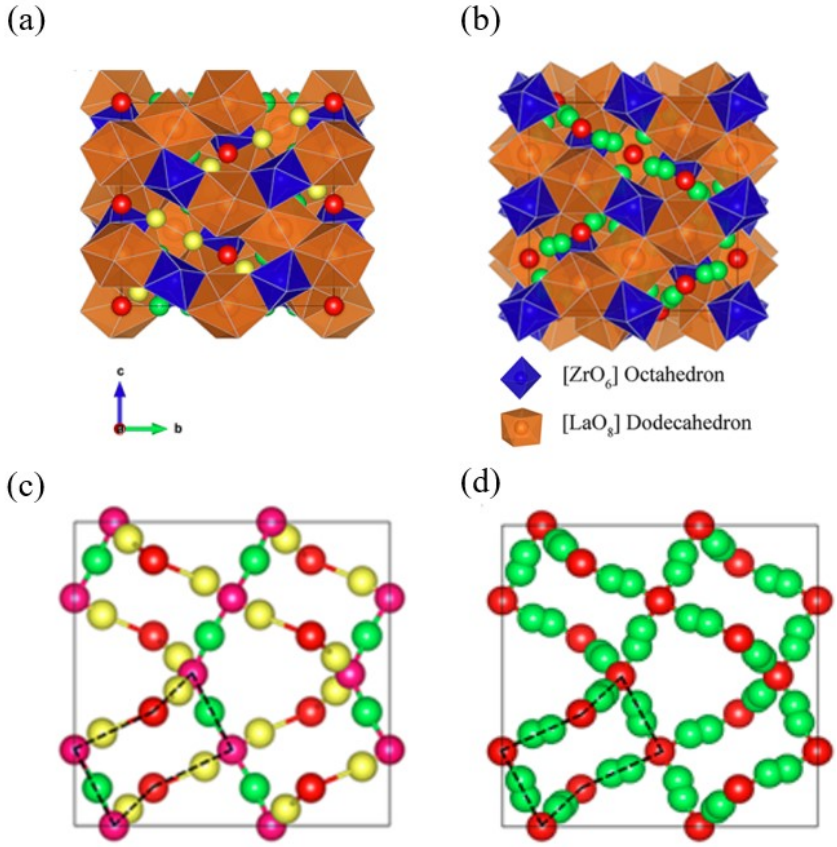

Figure S3. (a) Tetragonal LLZO phase, (b) cubic LLZO phase, Li arrangement of (c) tetragonal LLZO phase, and (d) cubic LLZO phase.[3]

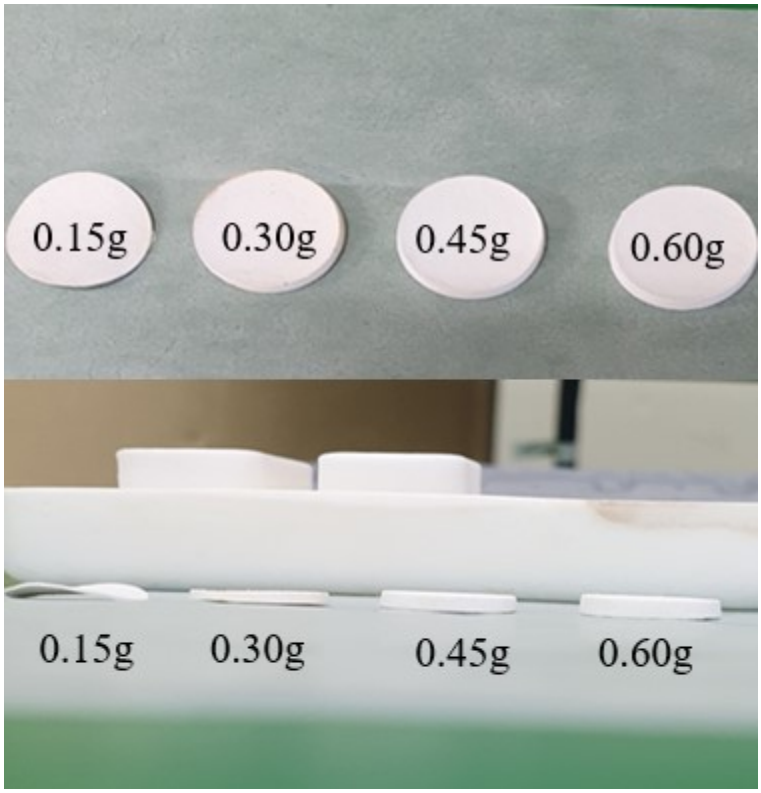

Figure S4. LLZO pellet distortion according to thickness changes after the sintering process.

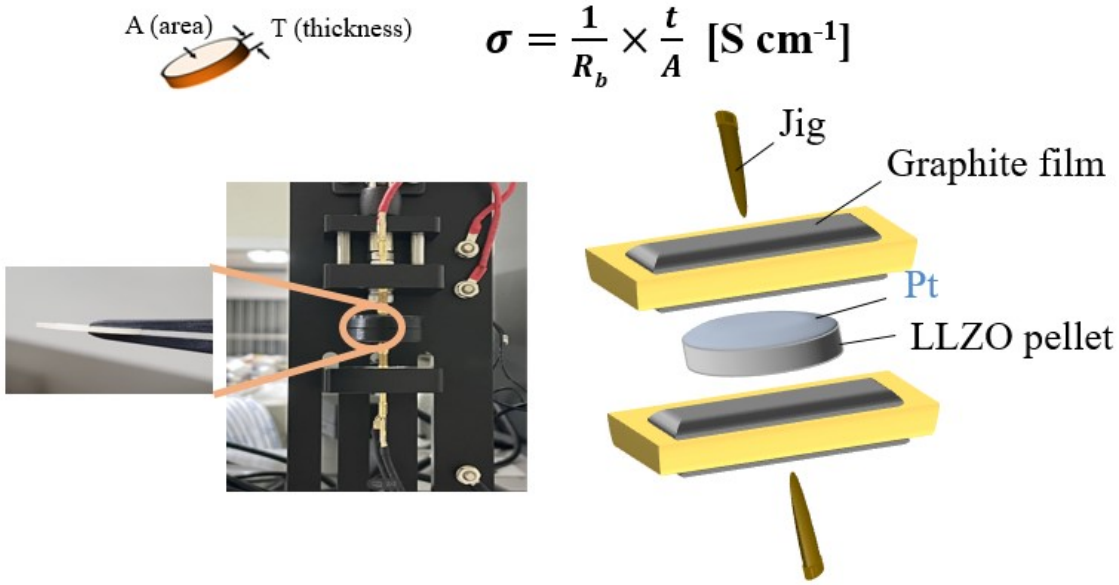

Figure S5. EIS and schematic of Jig for EIS analysis.

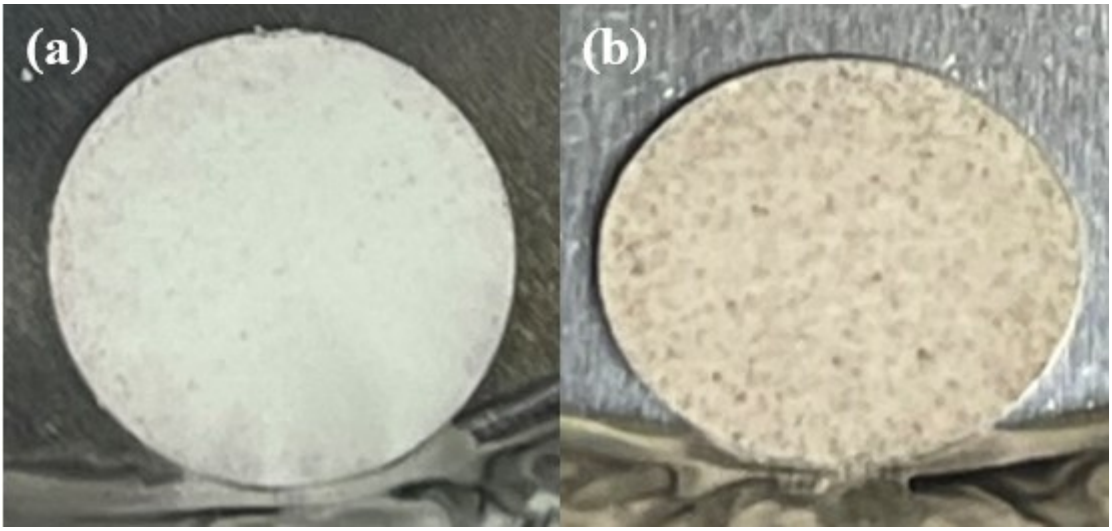

Figure S6. (a) LLZO pellet after sintering at 1,100 °C, and (b) LLZO pellet after sintering at 1,200 °C.

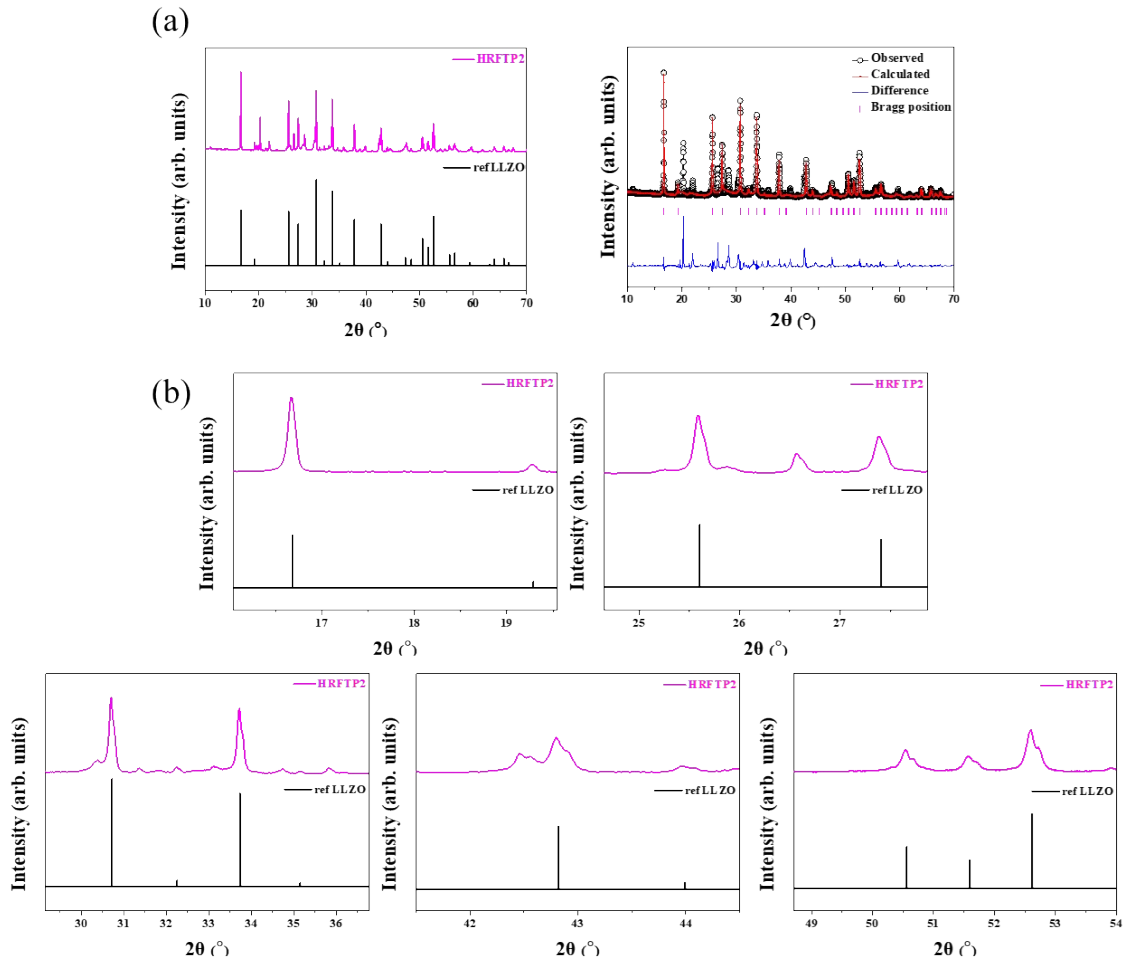

Figure S7. (a) XRD analysis and Rietveld refinement of HRFTP2 LLZO and (b) magnified XRD analysis of HRFTP2 LLZO.