

Metastable properties of garnet type $\text{Li}_5\text{La}_3\text{Bi}_2\text{O}_{12}$ solid electrolyte towards low temperature pressure driven densification

Daniele Campanella^{1,5}, Sergey Krachkovskiy¹, Giovanni Bertoni², Gian Carlo Gazzadi², Maryam Golozar³, Shirin Kaboli¹, Sylvio Savoie¹, Gabriel Girard¹, Alina Cristina Gheorghe Nita¹, Kirill Okhotnikov⁴, Zimin Feng^{1,*}, Abdelbast Guerfi¹, Ashok Vijn¹, Raynald Gauvin³, Daniel Bélanger⁵, Andrea Paoella^{1,*}

Supplementary Information

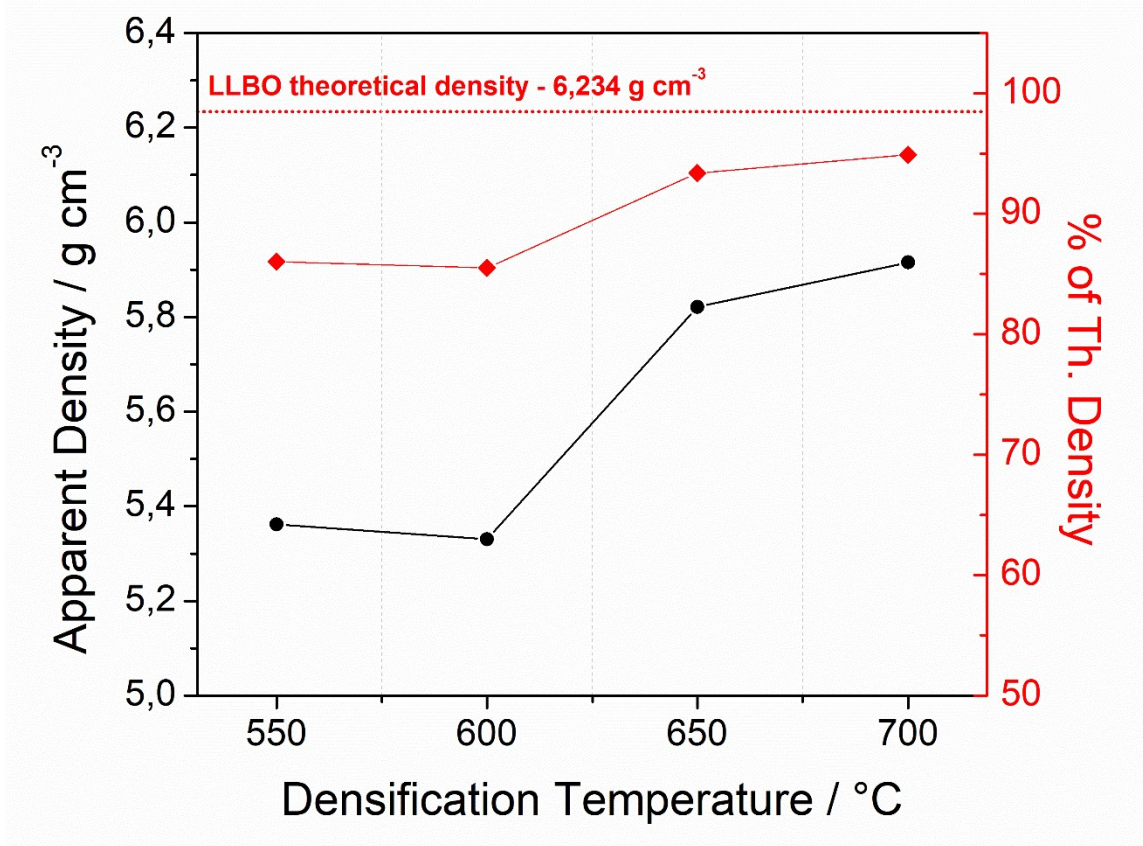


Figure S1 Graph of apparent density of LLBO samples densified at different temperatures

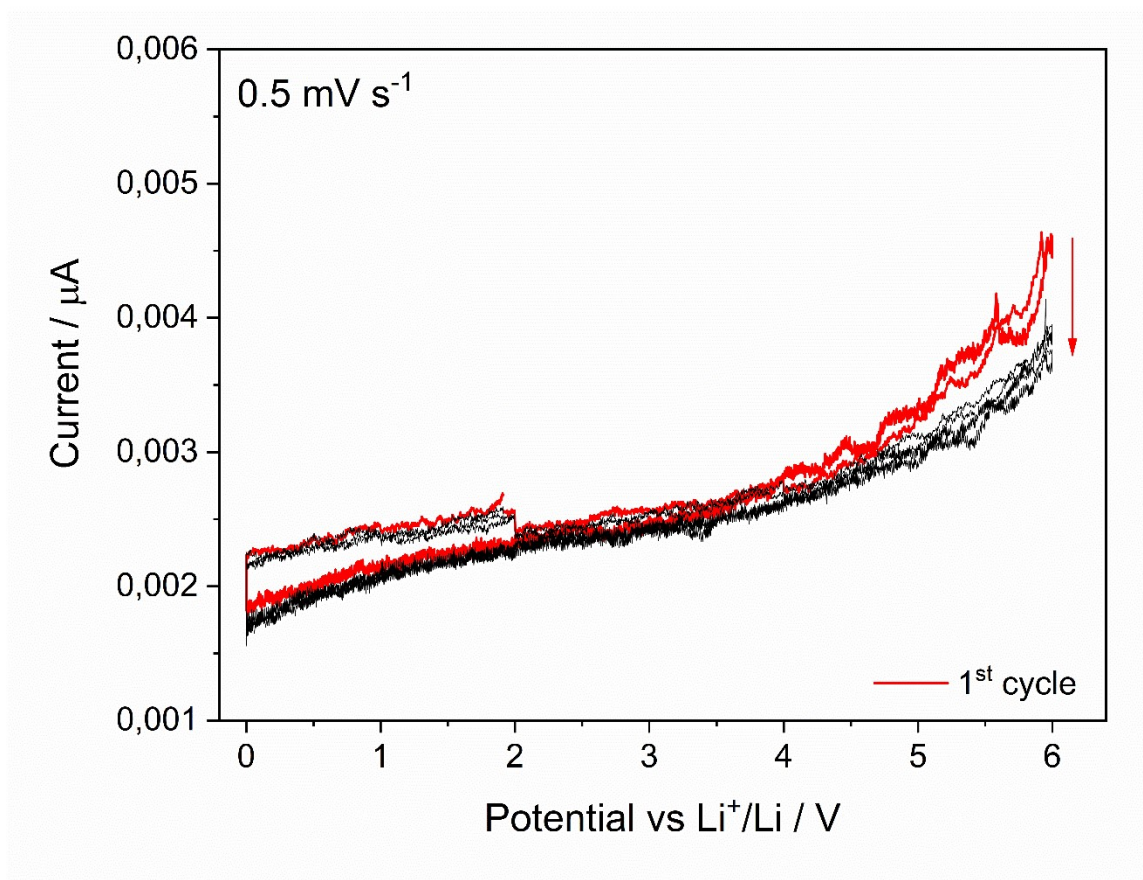


Figure S2 Cyclic voltammetry of LLBO hot pressed at 650 °C, performed in a C//LLBO//Li cell at a potential scan rate of 0.5 mV s^{-1} .

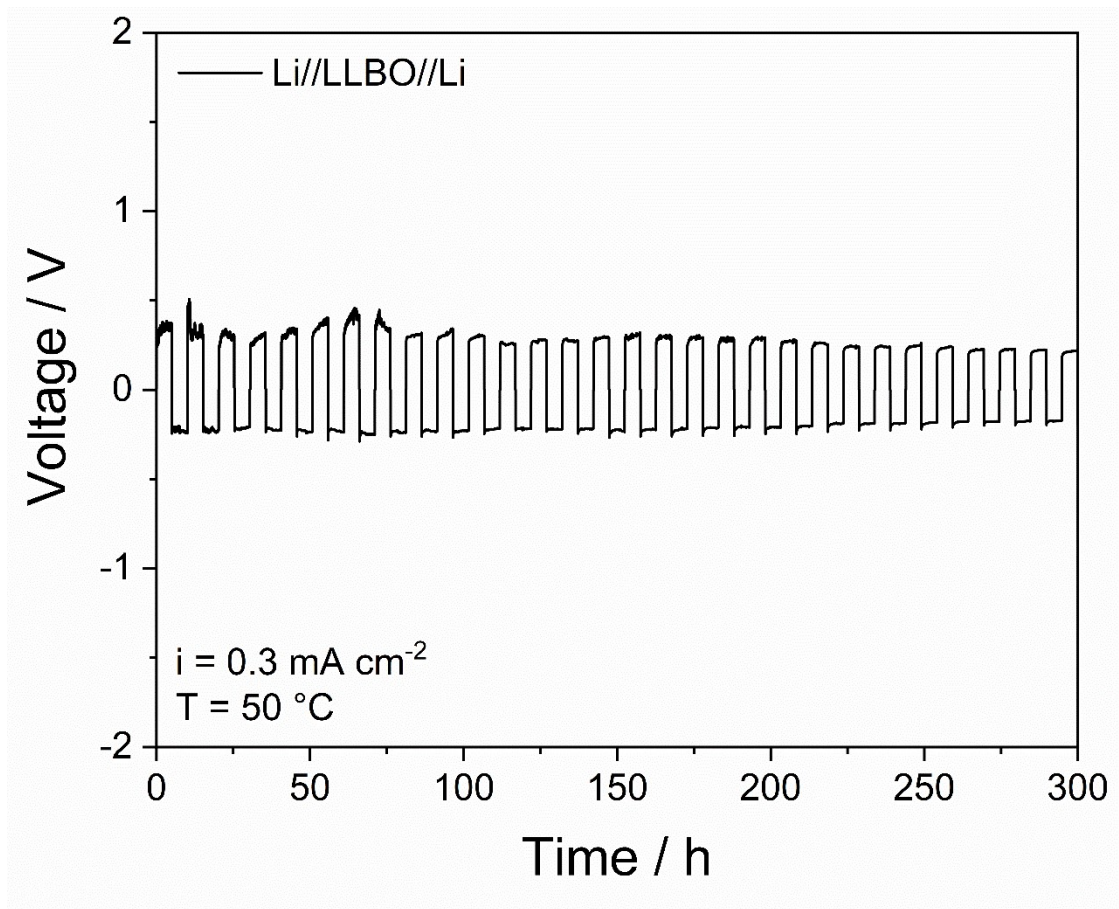


Figure S3 Li stability curve of hot-pressed LLBO performed in a symmetric Li//LLBO//Li cell at 50 °C with a current density of 0.3 mA cm⁻²

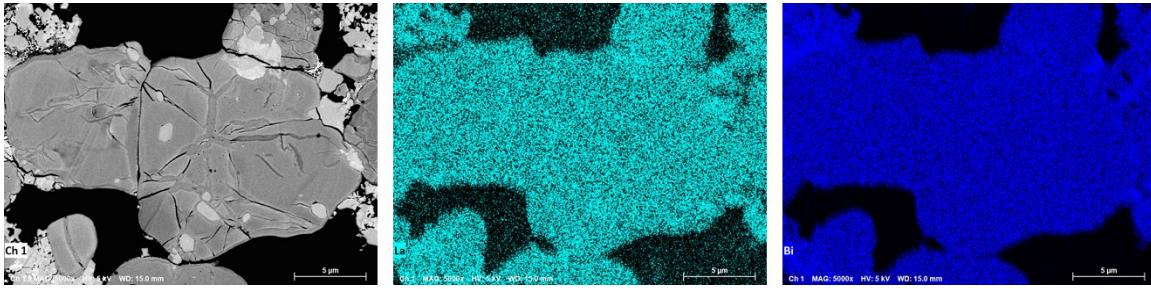


Figure S4 High magnification SEM image and EDS elemental mapping for La (cyan) and Bi (blue) of LLBO hot pressed at 600 °C

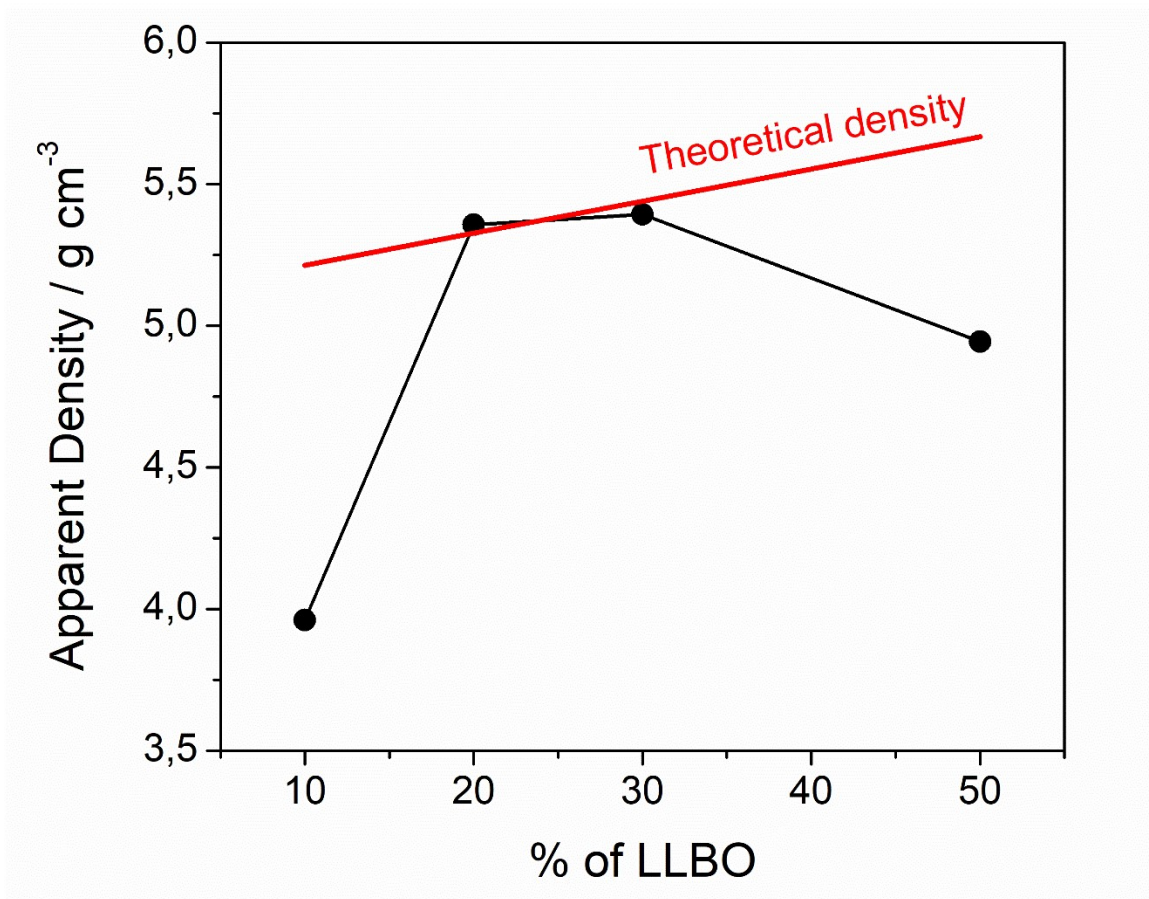


Figure S5 Values of apparent density of LLZTO-LLBO samples with different LLBO content.

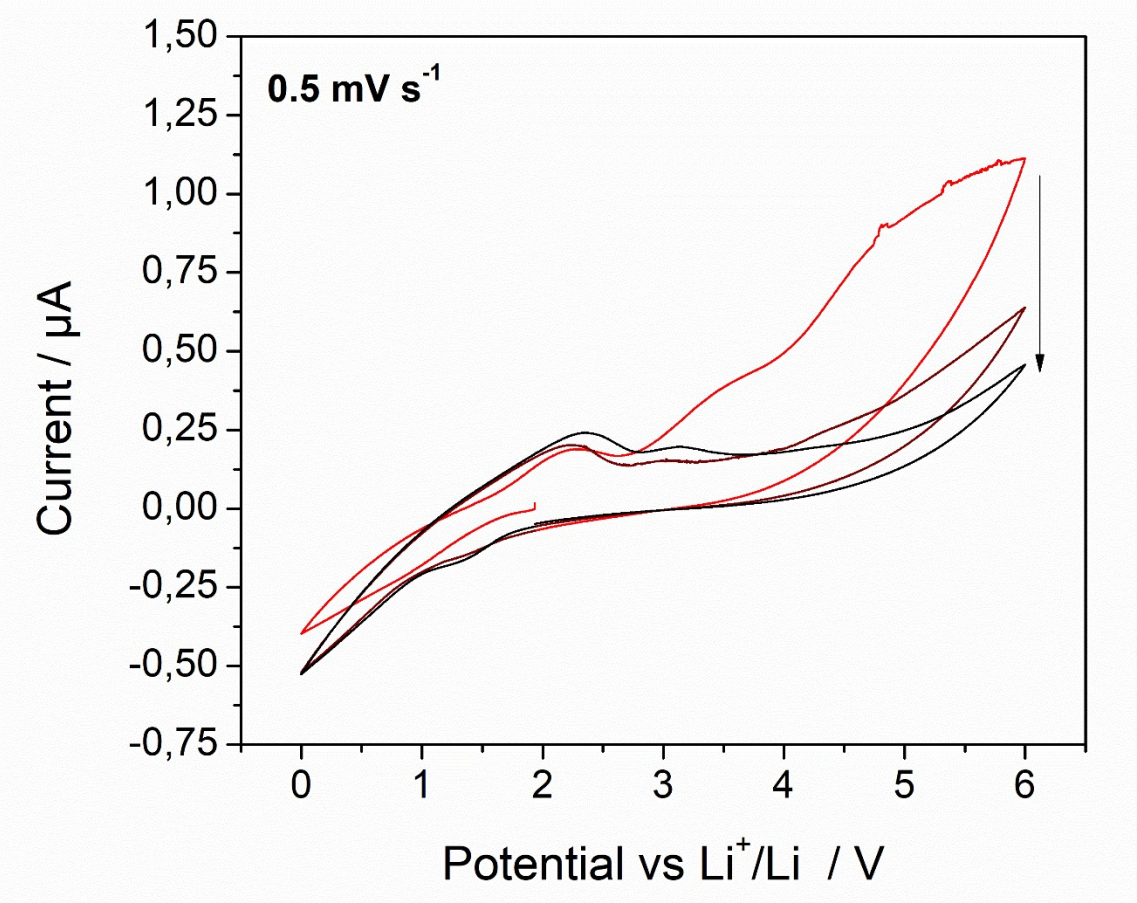


Figure S6 Cyclic voltammetry of LLZO/10%LLBO hot pressed at 650 °C, performed in a C//LLZO/10%LLBO//Li cell at a potential scan rate of 0.5 mV s^{-1} .

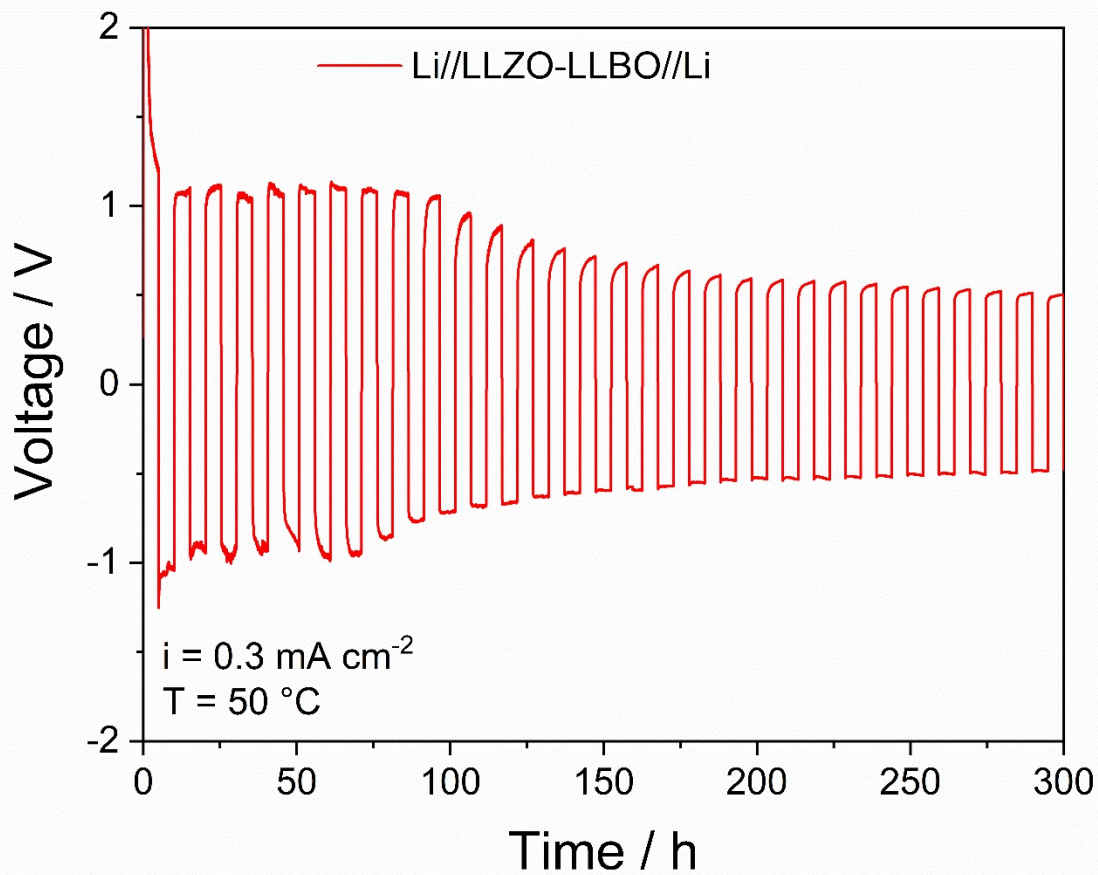


Figure S7 Li stability curve of hot-pressed LLZO-LLBO performed in a symmetric Li//LLZO-LLBO//Li cell at 50 °C with a current density of 0.3 mA cm⁻²

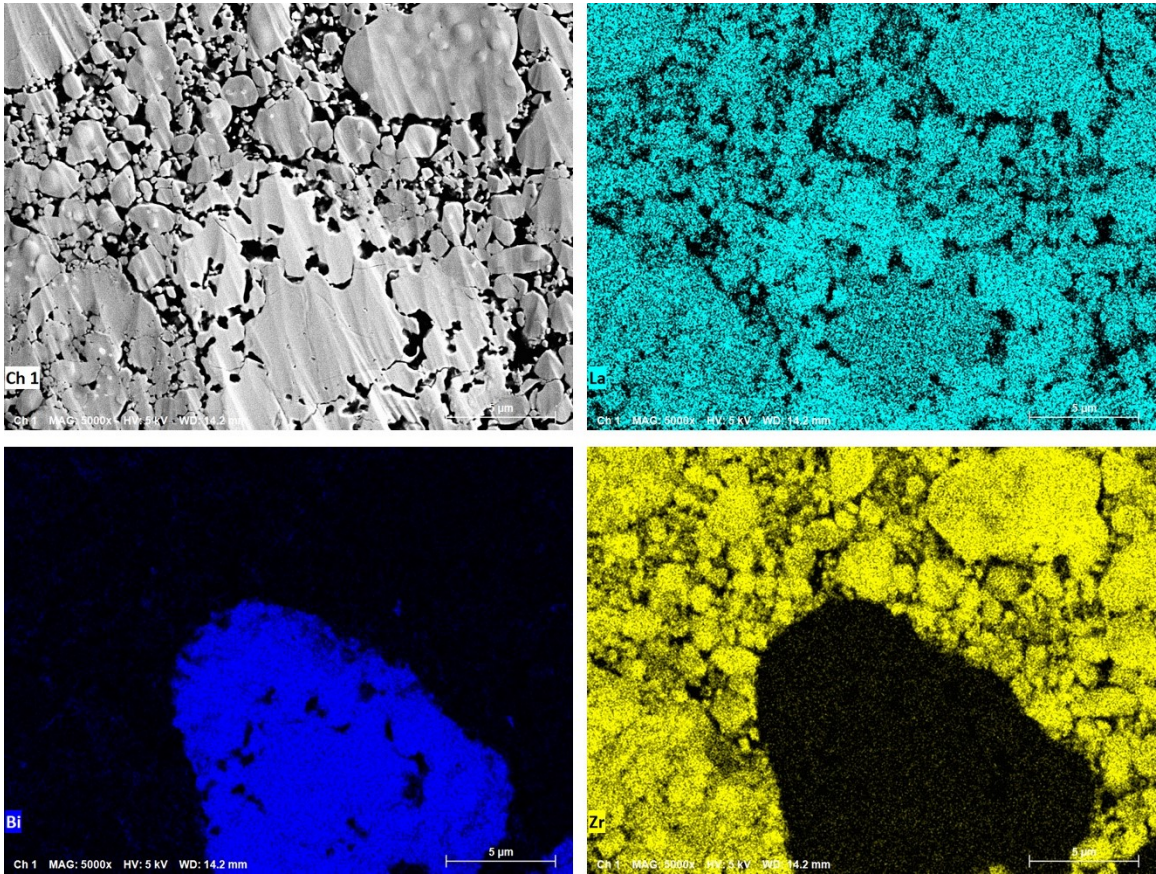


Figure S8 High magnification SEM image and EDS elemental mapping for La (cyan), Bi (blue) and Zr (yellow) of LLZTO/10%LLBO hot pressed at 600 °C

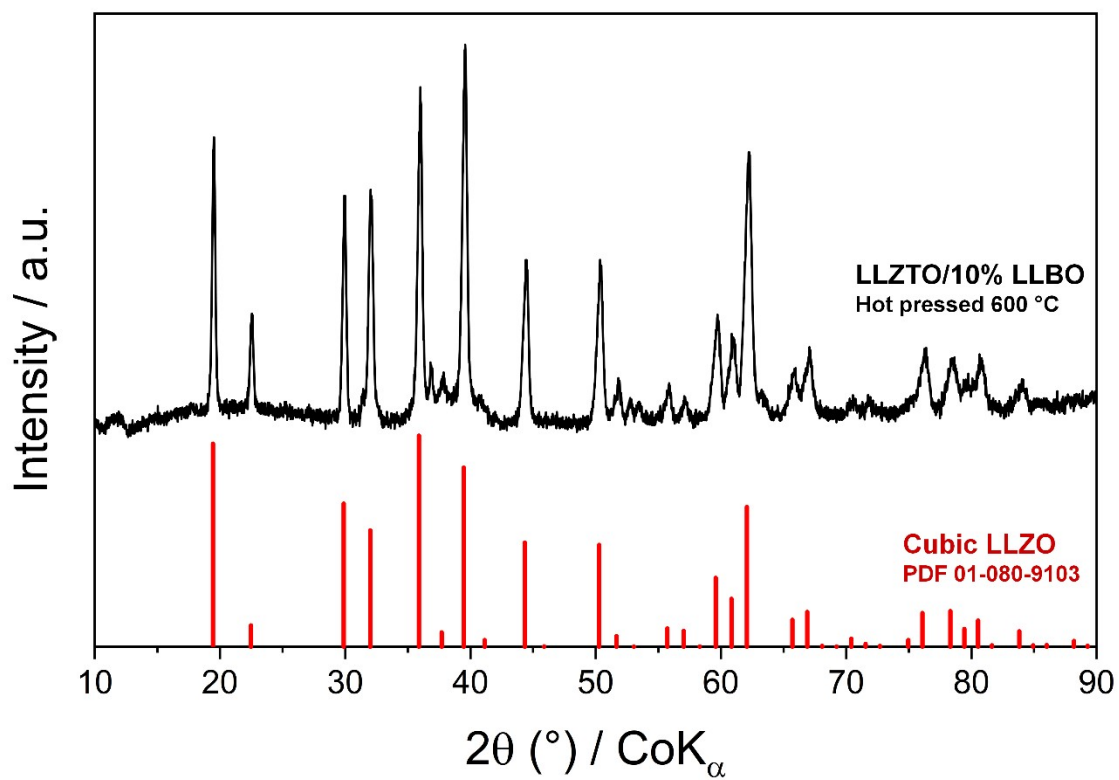


Figure S9 XRD pattern of LLZTO/10%LLBO hot-pressed at 600 °C, compared with the reference pattern for cubic LLZO