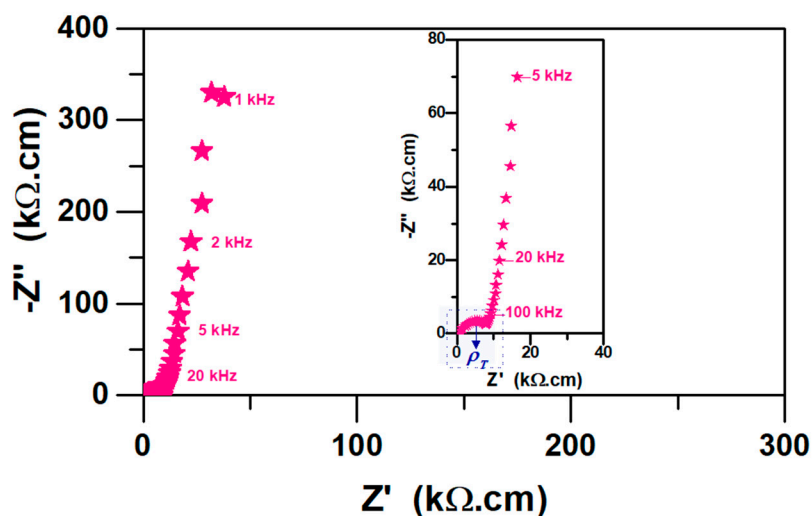
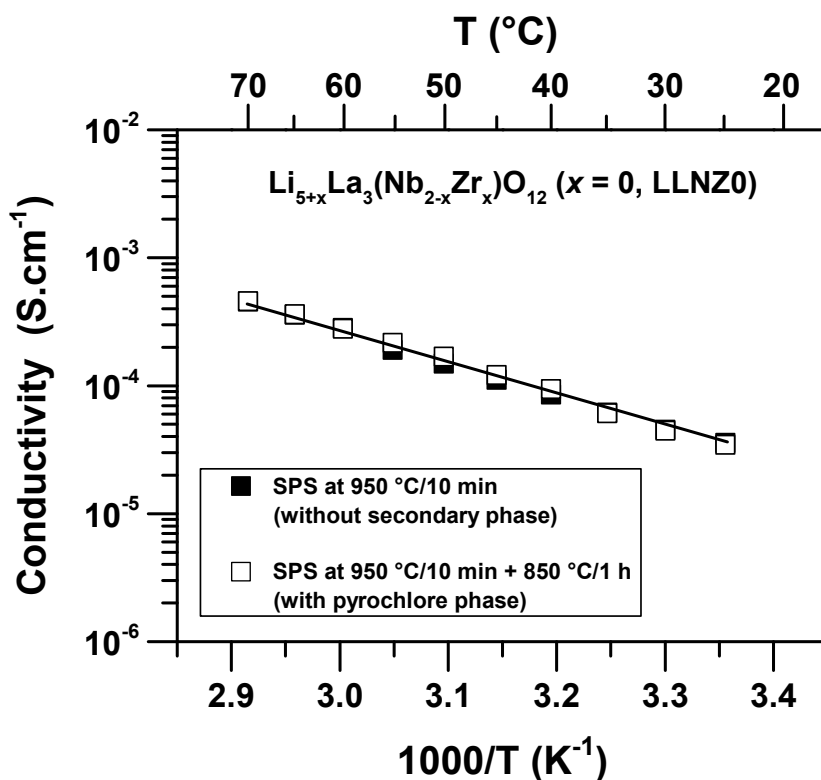


## Supplementary Material



**Figure S1.** Impedance diagram of the sintered LLNZ0.75 garnet-structured pellet obtained at 25 °C within the frequency range of 1 kHz to 13 MHz.



**Figure S2.** Arrhenius plot of the electrical conductivity of LLNZ0 samples sintered by SPS at 950 °C for 10 min before and after conventional heat treatment at 850 °C for 1 h, which promoted pyrochlore phase formation as evidenced by the X-ray diffraction patterns in Figure 6.