Supporting Information

Atmosphere controlled processing of Ga-substituted garnets for high Li-ion conductivity ceramics.

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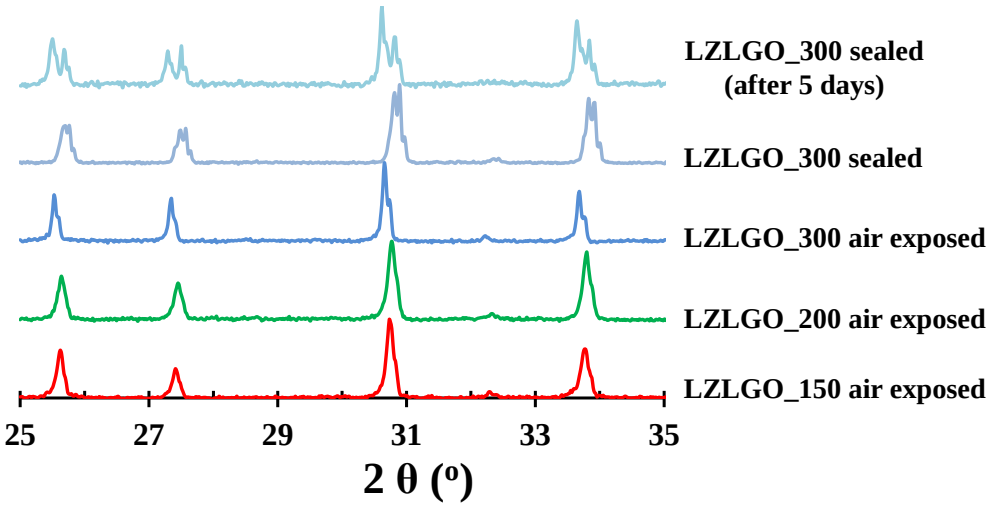

Figure S1. X-Ray diffraction patterns for all the LZLGO samples studied in this work exposed to air, for a non-air exposed LZLGO_300 sample (named sealed) at time 0 and after 5 days. It can be observed as the level of air exposure varies the distortion seems to change as well, which may indicate some Li re-ordering in the structure.

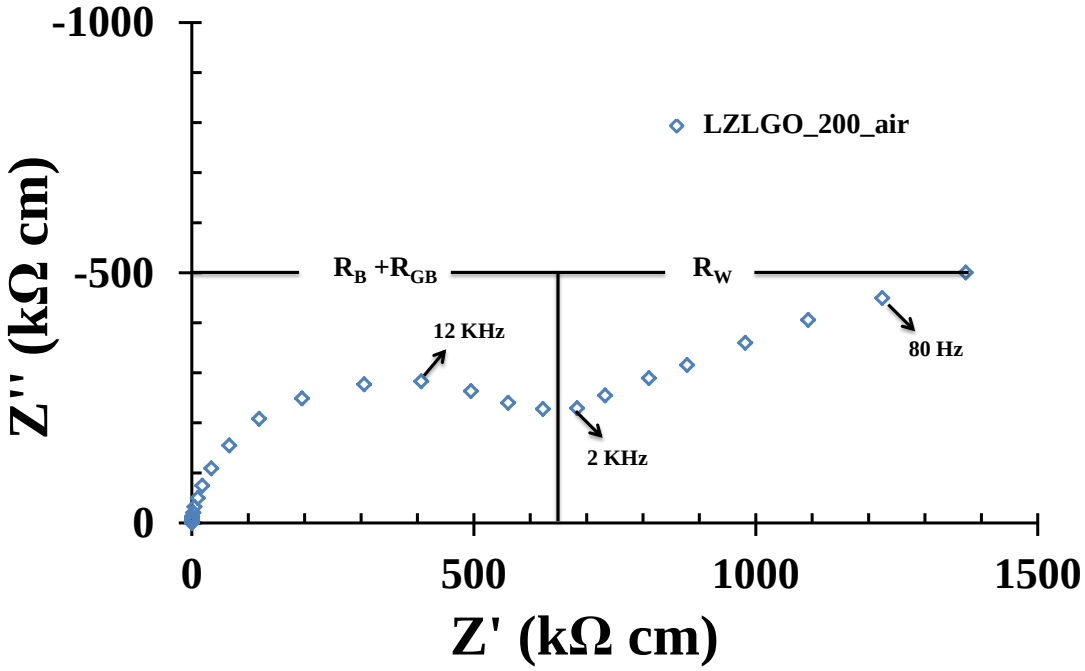

Figure S2. Nyquist plot for an LZLGO_200 sample sintered in air at 24 ^{o}C using Ag-blocking electrodes. It can be seen a single semicircle at higher frequencies which include both bulk and grain boundary processes (R_B+R_{GB}) and a diffusion process at lower frequencies (R_W). Selected frequencies are shown.

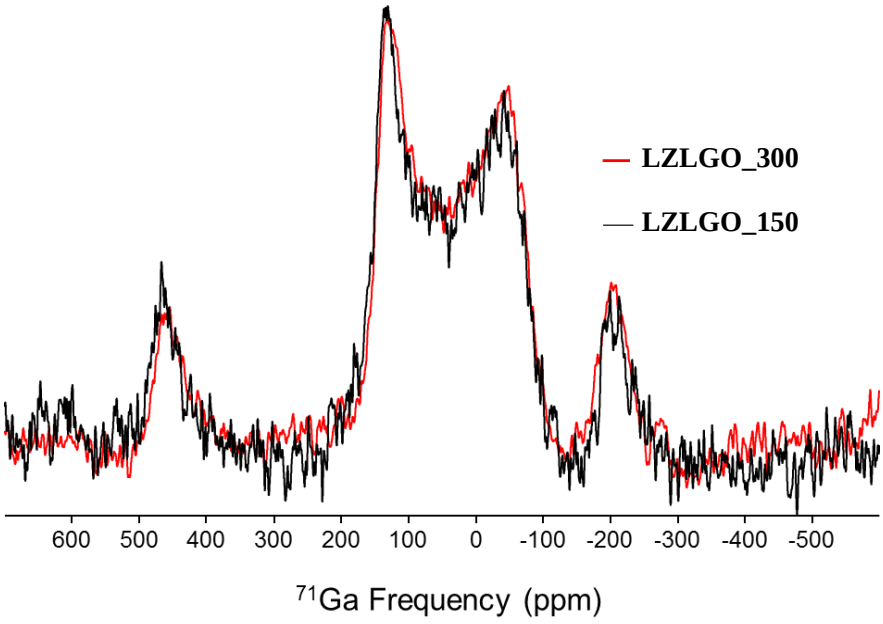

Figure S3: ^{71}Ga spectra of LZLGO in function of Ga content.