

Electronic Supplementary Information of the Paper Titled “The exceptionally large height of the potential barrier at the grain boundary of LaGaO₃-based solid solution deduced from the linear diffusion model”

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This supplementary information comprises X-ray diffraction results of 1 mol% Sr-doped LaGaO₃ (LSGO1) in Figure S1, a representative SEM image showing the microstructure of sintered LSGO1 pellet in Figure S2, and the fitting results of impedance spectra with respect to the applied bias voltages regarding resistances and capacitances in Figure S3 and Figure S4, respectively.

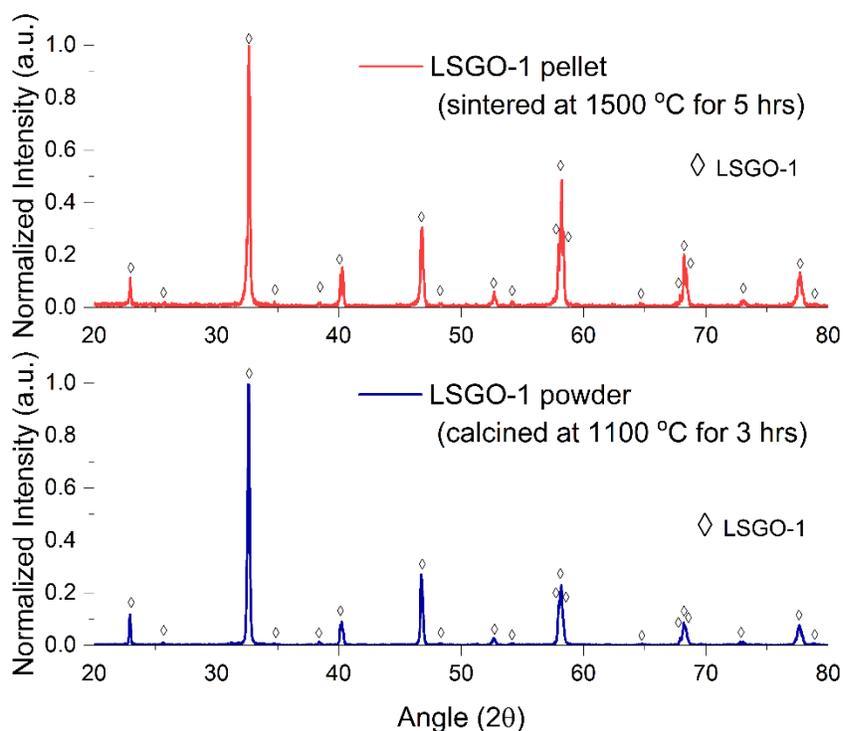


Fig. S1 X-ray diffraction patterns of as-synthesized LSGO1 powder (bottom) and LSGO1 pellet after sintering (top)

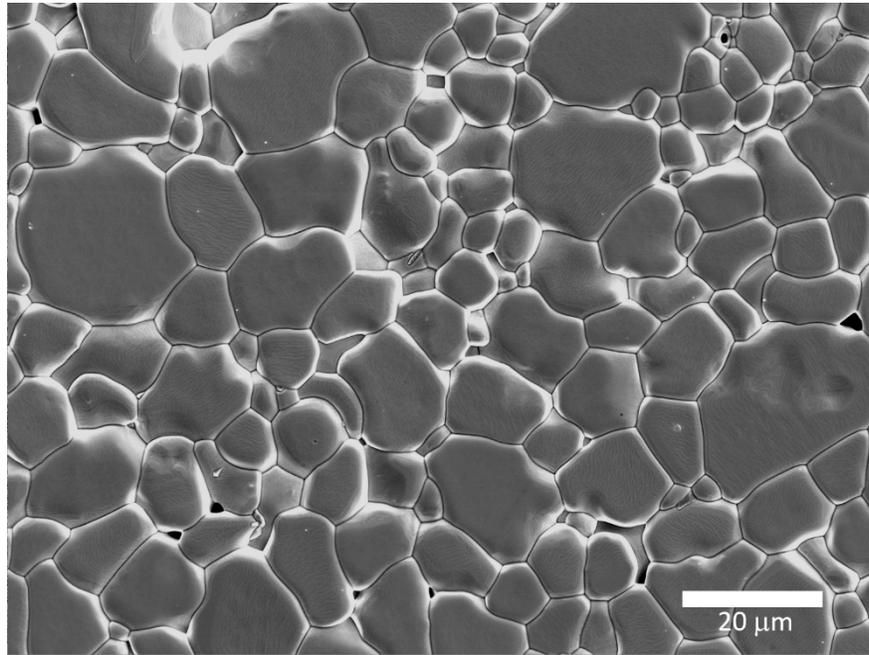


Fig. S2 An SEM image from a polished surface of sintered LSGO1 pellet. Grain boundary were revealed after thermal etching.

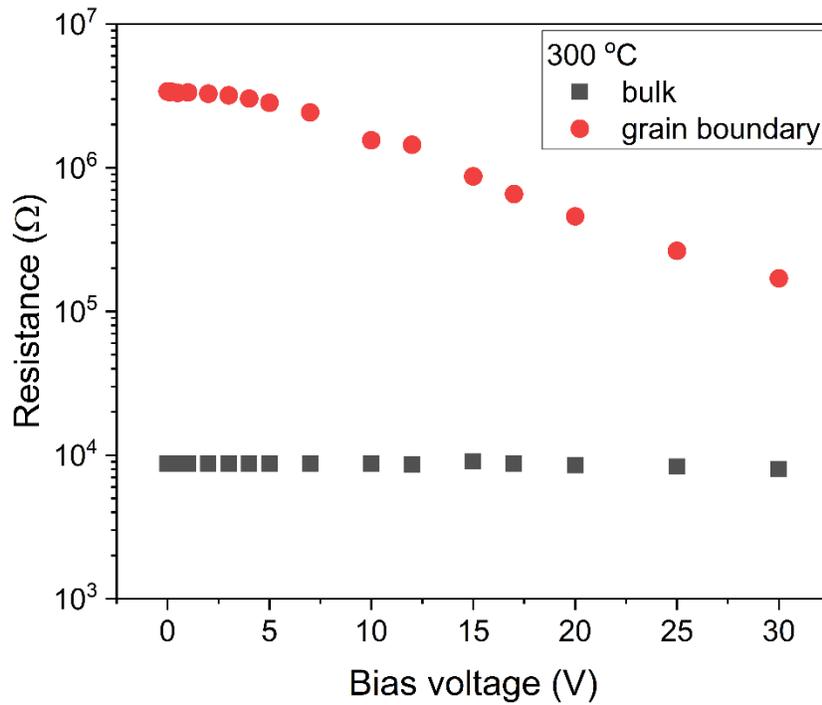


Fig. S3 Bulk and grain boundary resistance (R_b and R_{gb} , respectively) as a function of an applied dc-bias at $T= 300 \text{ }^\circ\text{C}$

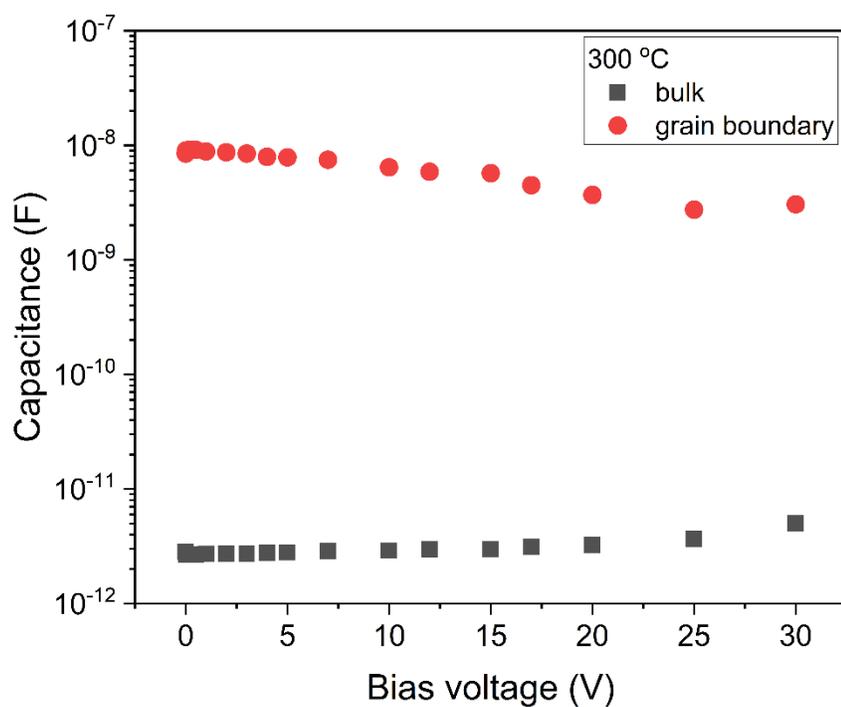


Fig. S4 Bulk and grain boundary capacitance (C_b and C_{gb} respectively) as a function of an applied dc-bias at $T= 300\text{ }^\circ\text{C}$