Crystal structure refinement of $LaInO_3$

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$LaInO_3$, that may be a prototype electrolyte for holistic solid oxide fuel cells, was synthesized via a solid state reaction route, and its crystallographic structure was refined with a Rietveld method using x-ray powder diffraction. The space group has been determined to be *Pnma* (#62) with a(Å)=5.9419(3), b(Å)=8.2179(4), c(Å)=5.7235(2), $\alpha=\beta=\gamma=90^{o}$, V=279.48(1)Å^3, Z=4, D_x=7.17Mgm^{-3}, Cu$K\alpha$, λ=1.5418Å, T=293K. The structure is refined to R_p=0.0978, R_{wp}=0.1410 and the Goodness-of-fit (χ^2) is 1.13. The structure of $LaInO_3$ is distorted by the inphase and the antiphase tilting of oxygen octahedral with the a+b-b- system of the InO_6 polyhedra.