Granule size dependent sinterability of $SrBi_2Nb_2O_9$ Aurivillius ceramics

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The sintering process of the Aurivillius phase by testing the experimentally measured densities, by measuring the dependence of the dielectric properties. $SrBi_2Nb_2O_9$ was synthesized by the solid-state reaction method. Phase purity was assessed using high-resolution and conventional X-ray techniques. The results will be beneficial for materials processing. based on the PXRD, the observed reflections are indexable and additional reflections from impurity phases are absent. Ceramic arising from powder retained within the 50-75 µm range, when exposed to 1200°C for three hours, allowed achieving a high densification leading to an improved sintering process. The observed dielectric constant, and dielectric loss are related to the grain size.

Keywords: Dielectric; Granule size; Sintering; High-resolution XRD

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