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Comparison of Ferroelectric phase transition in $BaSr_4RTi_3V_7O_{30}$ (R= Gd, La) ceramics

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Abstract : Looking to the demand of materials having high dielectric constant and low loss, are very much useful for their effective use as transducers, actuators, capacitors and also in memory devices, polycrystalline samples of $BaSr_4RTi_3V_7O_{30}$ (R = Gd, La) are synthesized by a high temperature solid state reaction technique. Formation of single-phase orthorhombic structures at room temperature having average crystallite size of the order of some nanometer for all the compounds are confirmed from preliminary XRD analyses of these compounds. Detailed dielectric study in a wide temperature range (33–500^{o}C) shows ferro to para phase transition for Gd doped compound and no such transition is observed for La doped compound.

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[Full Paper]