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Dielectric and magnetic Properties of the Non-centrosymmetric Fe-Lagasite NARA LEE, YOUNG JAI CHOI, SANG-WOOK CHEONG, Rutgers University — The non-centrosymetric compound $Ba_3NbFe_3Si_2O_{14}$ known as the Fe-langasite forms in a unique magnetic triangular lattice of Fe^{3+} spins. The interesting magnetic and dielectric properties may arise from the spin frustration of the triangular magnetic lattice as well as the broken inversion symmetry of the crystallographic structure. In order to understand the complex structure and magnetic spin ordering, we have performed comprehensive experiments on single crystals grown by a floating zone method, including x-ray diffraction analysis and measurements of magnetic susceptibility, dielectric constant and heat capacity under variation of temperature and magnetic field.

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