**Abstract**

The ferroelectric properties and piezoelectric properties are enhanced by the addition of CeO2.

CeO2 in the 0.94Na0.5Bi0.5TiO3−0.06BaTiO3 (NBT-BT). 0.4 wt% of CeO2. CeO2 added NBT-BT

crystals were grown by flux method.X-ray diffraction studies show that the Ce ion diffuses

into the NBT-BT lattice to form a solid solution. Temperature dependence of dielectric constant

for the frequency range 20 Hz-2 MHz is studied. Due to the addition of CeO2 the dielectric loss is

found to be 1.1 for 1kHz. The diffuseness parameter is found to be 1.82.