

# La-, K- and Nb-doped $0.90(\text{Bi}_{0.5}\text{Na}_{0.5}\text{TiO}_3)-0.10\text{PbTiO}_3$

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## Abstract

Lanthanum, Potassium and Niobium have been selected as cation dopants to modify the relaxor characteristics of  $0.90(\text{Bi}_{0.5}\text{Na}_{0.5}\text{TiO}_3)-0.10\text{PbTiO}_3$ . The experimental results show that La lowers the phase transition temperatures and decreases the grain size. In contrast, the grain size of K-doped composition tends to increase. Furthermore, the maximum of dielectric permittivity and the Curie temperature increase as compared to those of La-doped material. La can improve the broadness of dielectric permittivity of  $0.90(\text{Bi}_{0.5}\text{Na}_{0.5}\text{TiO}_3)-0.10\text{PbTiO}_3$ . However, Nb is a better promising dopant for enhancing the relaxor behavior for this composition.

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*Keywords:* C. Dielectric properties; Bismuth sodium titanate; Relaxor

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