

Effects of Pressure and Electric Field on the
Relaxational Dielectric Properties of $K_{0.97}Li_{0.03}O_3$ (KLT-3)

G.A. Samara, R. K. Grubbs and E.L. Venturini, Sandia National Lab
and
L.A. Boatner, Oak Ridge National Lab

The temperature dependence of the dielectric response of KLT-3 shows no evidence of a thermodynamic phase transition, but reveals two prominent relaxational features associated with the off-center Li^+ ion, one attributed to the hopping of the Li^+ dipole and the other with the reorientation of $Li^+ - Li^+$ ion pair. Both relaxations are Debye-like and follow Arrhenius kinetics, the energy barriers decreasing with pressure. While pressure favors the relaxational behavior, a biasing *dc* electric field favors long-range order of the dipolar system. The interplay between pressure and field provides additional insight. Pressure suppresses the magnitude of the $\epsilon'(T)$ response over the whole temperature range. The results allow evaluation of the contributions of the soft mode and of the Li^+ dipoles to the measured $\epsilon'(T)$ response.

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