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Dielectric spectra in molecular single crystals

Bashirov F., Gaisin N.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

A theoretical description of the frequency-dependent, complex dielectric permittivity of molecular single crystals is given within the framework of the relaxation polarization mechanism. The extended angular jump model, accounting for the local symmetry distortion, simulates the hindered molecular motion. Both the real and imaginary parts of dielectric permittivity are anisotropic in all cases of point symmetry groups of molecule motion, except for those of the cubic crystallographic system. The three-dimensional graphs of dielectric spectra, which can be helpful in practical application, illustrate the predicted spectra. © Versita Warsaw and Springer-Verlag Berlin Heidelberg 2009.

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