

FEATURES OF DIELECTRIC NONLINEARITY IN PARAELECTRICS

I.S. Vorotiahin, Yu.M. Poplavko, Y.M. Fomichov

National Technical University of Ukraine
“Kyiv Polytechnical Institute”
(37, Peremogy Ave., Kyiv 03056, Ukraine)

S u m m a r y

Analytical expressions describing the polarizability of insulators in the framework of main mechanisms of polarization have been derived and analyzed. The obtained formula can adequately describe the effects that emerge, when the electric field penetrates into a dielectric crystal. A dielectric nonlinearity occurring at the ferroelectric-paraelectric phase transition is analyzed. The results of analytical calculations confirmed the results of previous researches concerning the application of thin paraelectric films in microwave technology and as gate insulators.