

RESEARCH OF THE ELASTIC
WAVE VELOCITY DISPERSION
IN X-RAY-IRRADIATED LiF CRYSTALS

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S u m m a r y

The influence of a preliminary deformation (the residual strain $\varepsilon = 0.65\%$) and x-ray irradiation to exposure doses of 0–800 R on the frequency dependence of the sound velocity, $v(f)$, in LiF crystals in the frequency interval from 7.5 to 232.5 MHz and at room temperature has been studied using the pulsed technique. By extrapolating the results obtained for $v(f)$ to the low-frequency interval and using the well-known theoretical relations, the coefficient of dynamic viscosity B and the dislocation density Λ were found to be independent of the irradiation dose. At the same time, the absolute values of B were found to be lower and the values of Λ higher by an order of magnitude than the corresponding values obtained with the use of the most reliable techniques, such as the methods of high-frequency internal friction and etch pit counting, respectively.