

## COMPREHENSIVE STUDIES OF PIEZO-OPTICAL EFFECT IN LANGASITE CRYSTALS

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### S u m m a r y

The specific features of the procedure of determination of the absolute piezo-optical coefficients (POCs) for real specimens which are characterized, as a rule, by a slight out-of-parallelism of their faces of about  $(2 \div 4) \times 10^{-2}$  deg are described. The technique has been applied to study langasite  $\text{La}_3\text{Ga}_5\text{SiO}_{11}$  crystals. Besides the absolute POCs, which couple the changes of refractive indices with the mechanical stresses, the birefringence and path-difference POCs are also determined. The correlation between the indicated POCs, which confirmed the unambiguity and reliability of the results obtained, has been studied in detail. The comparative researches of piezo-optical effects in langasite crystals and reference crystals of lithium niobate have been carried out as well. Since the values of some POCs for both crystals turned out comparable, a conclusion has been drawn that langasite is a promising substance for the application in acousto-optical devices since langasite crystals are characterized by a high thermal stability of their physical parameters.