

ELASTIC, DIELECTRIC AND
PIEZOELECTRIC COEFFICIENTS OF
LANGASITE-TYPE CRYSTALS

U. Straube¹, H. Beige¹, J. Bohm², R.B. Heimann²,
T. Hauke¹, M. Hengst²

¹*Martin-Luther-Universität Halle-Wittenberg, Fachbereich Physik,
Friedemann-Bach-Pl. 6, 06108 Halle/Saale, Germany*

²*Technische Universität Bergakademie Freiberg, Institut für Mineralogie,
09596 Freiberg, Germany*

The complete set of linear elastic, dielectric and piezoelectric coefficients of some langasite-type crystals was determined at room temperature. The compounds lanthanum gallium silicate (langasite, $La_3Ga_2SiO_{14}$), lanthanum gallium niobate (langanite, $La_3Ga_{5.5}Nb_{0.5}O_{14}$), and lanthanum gallium tantalate (langataite, $La_3Ga_{5.5}Ta_{0.5}O_{14}$) belong to the trigonal acentric crystal class 32. The ultrasound pulse overlap technique was used to get the direction dependent sound velocities.