

Abstract

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Ultrasonic velocity and elastic moduli of heavy metal tellurite glasses

Longitudinal and transverse ultrasonic waves velocities in lead tungsten tellurite glasses have been measured using the pulse-echo method at 5MHz frequency; at room temperature (300 K). The elastic properties longitudinal modulus, shear modulus, Young's modulus, bulk modulus; Poisson's ratio together with the microhardness, softening temperature; Debye temperature are found to be rather sensitive to the glass composition. Information about the structure of the glass can be deduced after calculating the average stretching force constant; the average ring size. A comparison between the experimental elastic moduli data obtained in this study; those calculated theoretically by other models has been discussed.