

Abstract Submitted
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Velocity of sound and elastic properties of lanthanum gallogermanate glasses LUU-GEN HWA, WAY C. CHAO, Department of Physics, Fu-Jen Catholic University — The velocity of sound of a group of lanthanum gallogermanate glasses is obtained by the ultrasonic pulse-echo measurements, at room temperature. Both longitudinal and transverse velocities of these glasses are composition dependence. The experimental results are used to obtain the elastic constants. The correlation of elastic stiffness, the cross-link density, and the fractal bond connectivity of these glasses are discussed. The derived experimental values of Young's modulus, bulk modulus, shear modulus and Poisson's ratio for our glasses are compared with those theoretically calculated values in terms of the Makishima-Mackenzie model. A possible existence of both tetrahedral (four-fold coordination) and octahedral (six-fold coordination) of Ga and Ge in the structure of these glasses is discussed.

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