Temperature Dependence of the Internal Friction Measured at Different Excitation Voltages

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Internal friction reflects the ability of the material irreversibly dissipating mechanical energy oscillations. That means, the material of high internal friction ability is able to significantly reduce the vibration amplitude. Dispersion of mechanical energy in the material is just the one of the ways of energy transformation for example conversion of mechanical energy to heat energy. This article is focused on the analysis of the internal friction changes depending on the temperature. For experimental measurements was used AZ91 magnesium alloy. Measurements were performed at different excitation voltages. In experimental measurements was used only ultrasonic resonance method. This method is based on continuous excitation of oscillations of the test bar, and the entire apparatus vibrates at a frequency which is close to the resonance.

Keywords: Internal friction, Resonance Method, Magnesium Alloy

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