Influence of Homogenization Annealing on Internal Damping Depending on the Vibration Amplitude Measured on Specimens AZ31 and AZ91

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Damping capacity of alloys is closely tied to the presence of defects including solute atoms, second phases and voids. The interaction between moving dislocations and point defects is one of the major internal damping mechanisms of magnesium alloys so the precipitates influence the damping capacity and contribute to damping properties. The article is focused on the analysis of the internal damping changes depending on the amplitude of magnesium alloys AZ31 and AZ91 in as cast state and after homogenization annealing. In experimental measurements only resonance method was used. This method is based on continuous excitation of oscillations of the specimen and the entire apparatus vibrates at a frequency which is near to the resonance. Starting resonance frequency for all measurements was about f = 20500 Hz.

Keywords: Magnesium alloys, Internal damping, Vibration amplitude

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