

The objective of this bachelor thesis was to determine, whether precipitation processes occur in the Mg-Nd with 3% by weight of Nd admixture and to measure the kinetics of this process and what effect it has on subsequent hardening of the alloy at higher temperatures. The progression of the mechanical properties of the alloy was monitored by the Vickers hardness measurement method. Concurrently, the characterization of the crystal lattice defects of turbid alloy samples was performed using positron annihilation spectroscopy. It was measured that at elevated temperature, significant hardening occurs in the examined system due to the formation of precipitates of GP zones and β' phase by Nd and Mg atoms.