

Abstract: The goal of the present work is investigation of deformation mechanisms in magnesium-based metal matrix composites and examination of the influence of morphology of strengthening phase on the mechanical properties. The microstructure of the specimen was studied by means of light optical and electron microscopy (SEM). Compression tests in the temperature range of 20°C-300°C were performed. Acoustic emission measurements were performed during compression test at room temperature, whose help us elucidate the ongoing micromechanisms during the straining. Furthermore residual stress in the magnesium matrix at different strain levels was measured by neutron diffraction.