

Abstrakt

This work is focused on the study of the relationship between microstructure and deformation mechanisms in magnesium (Mg) alloys during uniaxial (tension, compression) and low cyclic loading by the acoustic emission (AE) technique. The main attention is paid to the study of tension-compression yield asymmetry and twinning-detwinning process during changes in deformation mode in novel aluminium-free Mg alloys, where the deformation texture influences the activation of various deformation mechanisms. The results contribute to the understanding of dislocation processes and twin activation (especially of twinning-detwinning process) during cyclic loading. These processes are of great importance because they influence significantly the fatigue life of Mg alloys.