

High Temperature Processes in AlLi-Based Alloys with Small Addition of Sc

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Abstract. Non-equilibrium solidification of AlLi-based alloys results in a non-uniform distribution of solutes in the material after casting. Therefore their homogenization is a standard procedure. The main goal of this high-temperature treatment is to receive a more uniform distribution of principal solutes in cast ingots or strips. Another intension of homogenization is to transform particles of primary phases containing minor solutes (also impurities) into particles with a morphology and distribution suitable for further thermo-mechanical treatment. In-situ electron microscopy is a powerful tool to study phase transformations occurring in small volumes. Diffusion induced processes occurring in Sc and Sc-free AlLi-based alloys cast with a substantially different casting rates were studied in the contribution by in-situ TEM, STEM and SEM.