

Abstract: Dispersoids formed during rapid solidification of a quaternary Al-Fe-Mn-Si alloy prepared by twin-roll casting and their transformation after following heat treatment were studied. A conventional transmission electron microscopy and modern automated phase identification methods such as electron backscatter diffraction in scanning electron microscope and automated orientation crystal phase and orientation mapping in transmission microscopy were applied. Energy dispersive X-ray spectroscopy was used to determine the chemical composition of the dispersoids. The phase identification methods were tested on as cast samples and samples annealed for 4 hours at 580 °C. Strategies for statistical evaluation of particle distribution and their crystallographic structure were discussed.