

Self-Healing in rapidly solidified aluminium alloys

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Rapid solidification of alloys can be performed e.g. by melt spinning method. This process leads to several changes in the microstructure, the main are increase of solubility of alloying elements, microstructure refinement and formation of metastable phases such as quasicrystals. These microstructural features have promising potential for self-healing behaviour of the material. Decomposition of supersaturated solid solution can lead to precipitation healing mechanism that was already proven in underaged aluminium alloy. Decomposition of quasicrystals can also cause closing of the crack in the alloy. The self-healing behaviour in the

Al-Cr-Fe alloy was observed in this work. The alloy was studied by LM, SEM and TEM. Correlative SEM/AFM microscopy was also performed.

Biography

Alena Michalcová has completed her PhD from University of Chemistry and Technology in Prague and Postdoc Fellowship in Max-Planck Institute für Eisenforschung in Düsseldorf, Germany. She has published more than 58 papers in reputed journals.

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