
Effect of electric current on the dendrite structure of an aluminum alloy

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Change of the dendrite structure configuration during the crystallization of aluminum alloy by electric current was found. Experimental dependence of the dendrite cell size on an electric current was obtained. Current range in which it's effect on the dendrite cells size is maximized was detected. Expression for the critical radius of the nucleus in presence of current was received by analysis of the equilibrium conditions of the liquid and solid phases.

Keywords: *electric current, alloy, crystallization, nucleus of a crystal, eutectic, dendrite parameter, hardness.*

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