
MECHANISM OF REMOVING SULFUR AND PHOSPHORUS FROM MOLTEN STEEL U8 BY FILTRATION THROUGH FOAM CERAMICS

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Abstract

The article considers the mechanism of physico-chemical processes of filtration of solid sulphur and phosphorus compounds in molten steel U8 flowing through porous ceramics. We studied the structure of porous filter channels and built the 3D-model of filter hydraulic channels, in which the molten mass moves. Furthermore, we carried out the simulation of motion of compound impurities in hydraulic channels. As a result, we identified the surfaces of hydraulic channels, where particulate contamination is expected. Finally, we found the forces acting on particles of different sizes and shapes, depending on the flow of molten steel and obtained the particle filter criterion.

Keywords

Filtration, foam ceramics, macroscopic structure, modeling, hydraulic channel, adhesion

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