

RESEARCH ON ALUMINIA REDUCTION CELL MHD STABILITY IN RELATION TO GOVERNING PARAMETERS

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Aluminia electrolysis in reduction cells proceeds under high temperatures and in chemically aggressive media which makes it hardly controllable and almost unpredictable. Developed 3D multiphase model based on MHD system of equations is used in order to define position and behaviour of metal-kryolite interface depending on governing parameters such as: anode currents, x, y, z - components of electromagnetic field.

Литература

1. *Savenkova N.P., Anpilov S.V., Kuzmin R.N., Provorova O.G., Piskazhova T.V. Two-phase 3D model of MHD processes in reduction cell.* – Collection of abstracts of third international congress «Tsvetnie metalli - 2011». Krasnoyarsk, – C. 282-286.
2. *Nigmatulin R.I.* Osnovi mechaniki geterogennih sred. –M.: Nauka, 1978.