

عنوان مقاله:

AIPSim®: Simulation Software for Modeling of Aluminum Electrolysis Cell

محل انتشار:

دومین کنفرانس بین المللی آلومینیوم (سال: 1391)

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خلاصه مقاله:

Due to a limiting number of operational parameters that can be measured in an operating cell, the process is not fully understood and cell operation based largely on experience. In this work, the principles of the Hall-Héroult process are presented and a mathematical model developed to predict the behavior of an aluminum reduction cell. AIPSim is a Simulating model which is used for calculation of aluminium electrolysis properties (same as Electrical Conductivity, Electrolyte Viscosity, Electrolyte Density, Aluminium Density, Max Alumina Solubility in Electrolyte, Max Aluminium Solubility in Electrolyte and Liquidus Temperature) in order to optimize operational parameter in aluminium production systems. AIPSim is a mathematical-experimental model with a static simulation base with ability to evaluate the effect of additive same as Alumina, Carbonate Sodium and Aluminium Fluoride on the electrolysis properties and cell voltage. Cell Voltage in this model separated to decomposition voltage, over voltage and ohmic voltage drops which is part of the ohmic voltage measured manually with operators and will be used as an input parameters

کلمات کلیدی:

AIPSim; Mathematical Model; Aluminium Electrolysis; Mass & Energy Balance; Electrolyte Properties

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