Title (en)

Process for controlling the bath temperature in an aluminium electrolysis cell

Title (de)

Verfahren zur Temperaturregelung eines Bades in einer Aluminium-Elektrolysewanne

Title (fr)

Procédé de régulation de la température du bain d'une cuve d'électrolyse pour la production d'aluminium

Publication

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Application

EP 97420174 A 19970924

Priority

FR 9611962 A 19960925

Abstract (en)

[origin: EP0834601A1] Thermal regulation of individual electrolysis cells for the production of aluminium comprises directly measuring the temperature of the bath at regular time intervals and modifying the distance between the anode and the metal as a function of the measured values of the resistance R of the cell w.r.t. a consigned resistance (Ro). During each cycle of thermal regulation of duration (Tr) corresponding to a working sequence incorporated in the duration (T) of the work cycle of the cell the following steps are taken: (a) at least one measurement of the bath temperature (θ) is effected; (b) from the n latest measures a corrected average temperature (θ mc) representative of the medium state of the cell assembly and free from the variations in the time and space due to the periodic operations of exploitation is determined; (c) an additional resistance (RTH) is determined, this may be positive or negative and comprises two terms: (i) a prior correction term (RTHa), calculated in a manner to neutralise by anticipation the irregular but known and quantified perturbations such as the addition of solids to the bath; and (ii) a posterior correction term (RTHb), calculated as a function of the corrected average temperature (θ mc) and a consigned temperature (θ o); and (d) the additional resistance (RTH) is then applied to the consigned resistance (Ro) of the cell in order to maintain or correct the temperature of the cell.

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