

Title (en)

METHOD FOR OPERATING AN ANNEALING SURFACE

Title (de)

VERFAHREN ZUM BETREIBEN EINES GLÜHOFENS

Title (fr)

PROCÉDÉ PERMETTANT DE FAIRE FONCTIONNER UN FOUR DE RECUIT

Publication

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Application

EP 18729646 A 20180605

Priority

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Abstract (en)

[origin: WO2018234028A1] The invention relates to a method for operating an annealing furnace (200) for annealing a metal strip (100). According to the method, at first at least one desired target material property ME Soll is specified for a point or a section of the metal strip (100) after it has passed through the annealing furnace (200). Additionally, information E regarding the metal strip is provided upstream of or in the annealing furnace. A target temperature distribution T Soll and/or a target speed V Soll for the metal strip in the annealing furnace is then calculated with the aid of a computer-assisted model as a function of the target material property and said information. The target temperature distribution and/or target speed thus calculated are/is then set in the annealing furnace (200) in order to change the material property of the metal strip downstream of the annealing furnace into the desired target material property ME Soll.

IPC 8 full level

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Citation (opposition)

Opponent : Tata Steel UK Ltd.

- US 5673368 A 19970930 - BROESE EINAR [DE], et al
- US 2014175713 A1 20140626 - ROESSIGER MARTIN [DE], et al
- WO 2016210084 A1 20161229 - NOVELIS INC [US]
- KR 20040055855 A 20040630 - POSCO
- JP H05263147 A 19931012
- EP 0350173 A1 19900110 - SELLITTO THOMAS A [US], et al
- CN 102392119 A 20120328 - CISDI IND FURNACE CO LTD
- US 2016102916 A1 20160414 - HARTUNG HANS-GEORG [DE], et al
- JP 2015059226 A 20150330 - JFE STEEL CORP
- WO 2016189144 A1 20161201 - SMS GROUP GMBH [DE]
- JP H10130742 A 19980519 - NISSHIN STEEL CO LTD
- JP H11153581 A 19990608 - KAWASAKI STEEL CO
- US 2010219567 A1 20100902 - IMANARI HIROYUKI [JP], et al
- WO 2017157692 A1 20170921 - SMS GROUP GMBH [DE]
- EP 2177892 A1 20100421 - NIPPON STEEL CORP [JP]
- YAHIRO K ET AL.: "DEVELOPMENT OF STRIP TEMPERATURE CONTROL SYSTEM FOR A CONTINUOUS ANNEALING LINE", PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON INDUSTRIAL ELECTRONICS, CONTROL, AND INSTRUMENTATION (IECON, vol. 1, 15 November 1993 (1993-11-15), NEW YORK, pages 481 - 486, XP000451844
- VALLEE G ET AL.: "LIGNE DE RECUIT TOUT ASYNCHRONE POUR UGINE GUEUGNON", REVUE DE METALLURGIE - CAHIERS D'INFORMATIONS TECHNIQUES, REVUE DE METALLURGIE, vol. 90, no. 6, 1 June 1993 (1993-06-01), PARIS, FR, pages 843 - 847, XP000393745, ISSN: 0035-1563
- SMITH M A ET AL.: "APPLICATION OF DISTRIBUTED CONTROL ON UPI'S KM/CAL", AISE STEEL TECHNOLOGY, vol. 70, no. 6, 1 June 1993 (1993-06-01), PITTSBURG, PA, US, pages 17 - 22, XP000387767, ISSN: 0021-1559

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