

Title (en)  
REAL-TIME CONTROL OF THE HEATING OF A PART BY A STEEL FURNACE OR A HEAT TREATMENT FURNACE

Title (de)  
ECHTZEITSTEUERUNG DER ERHITZENS EINES TEILS DURCH EINEN STAHLOFEN ODER EINEN WÄRMEBEHANDLUNGSOFFEN

Title (fr)  
CONTRÔLE EN TEMPS RÉEL DU CHAUFFAGE D'UNE PIÈCE PAR UN FOUR SIDERURGIQUE OU UN FOUR DE TRAITEMENT THERMIQUE

Publication  
**EP 3452623 A1 20190313 (FR)**

Application  
**EP 17722709 A 20170428**

Priority

- BE 201605312 A 20160502
- EP 16167875 A 20160502
- EP 2017060153 W 20170428

Abstract (en)  
[origin: WO2017191039A1] A method, furnace and software program for the controlled heating of a part comprising: obtaining a heating scheme defining a desired evolution of one or more indicators of the temperature of the part during heating in the furnace; providing the part to be heated in the furnace; three-dimensional digital modelling of the heating of the part, in real time and simultaneous to the heating of the part, the digital modelling using heating parameters of the furnace and a three-dimensional model of the part to be heated, and comprising predicting the one or more indicators of the temperature of said part for the next reference time; comparing the one or more indicators of the temperature of the part of said heating scheme with one or more indicators of the temperature of the part predicted by the digital modelling for the next reference time; and, following each comparison, adapting, if necessary, the heating parameters of the furnace depending on the result of the comparison, in order to reduce a difference between the one or more indicators of the temperature of the part of the heating scheme and the one or more indicators of the temperature of the part predicted by the digital modelling for the next reference time.

IPC 8 full level  
**C21D 11/00** (2006.01); **C21D 1/34** (2006.01); **F27D 19/00** (2006.01)

CPC (source: EP US)  
**C21D 1/34** (2013.01 - EP US); **C21D 11/00** (2013.01 - EP US); **F27D 19/00** (2013.01 - EP US); **F27D 2019/0003** (2013.01 - EP US); **F27D 2019/0021** (2013.01 - EP US); **F27D 2019/0028** (2013.01 - EP US); **F27D 2019/0087** (2013.01 - EP US)

Citation (search report)  
See references of WO 2017191039A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**WO 2017191039 A1 20171109**; CA 3021529 A1 20171109; CN 109072333 A 20181221; EP 3452623 A1 20190313; JP 2019523341 A 20190822; RU 2018140518 A 20200603; RU 2018140518 A3 20200603; US 2019144961 A1 20190516

DOCDB simple family (application)  
**EP 2017060153 W 20170428**; CA 3021529 A 20170428; CN 201780026481 A 20170428; EP 17722709 A 20170428; JP 2018557043 A 20170428; RU 2018140518 A 20170428; US 201716097862 A 20170428