Title (en)

CFD SIMULATION OF A COMBUSTION CHAMBER WITH A PLURALITY OF BURNERS WITH SEPARATE CONSIDERATION OF THE FUEL AND AIR COMPONENTS ORIGINATING FROM EACH BURNER

Title (de)

CFD-SIMULATION EINES FEUERRAUMS MIT MEHREREN BRENNERN MIT GETRENNTER BERÜCKSICHTIGUNG DER VON DEN JEWEILIGEN BRENNERN STAMMENDEN BRENNSTOFF- UND LUFTANTEILE

Title (fr)

SIMULATION CFD D'UN FOYER À PLUSIEURS BRÛLEURS EN TENANT COMPTE SÉPARÉMENT DES FRACTIONS DE COMBUSTIBLE ET D'AIR PROVENANT DE CHAQUE BRÛLEUR

Publication

EP 2920515 B1 20170111 (DE)

Application

EP 13798930 A 20131114

Priority

- DE 102012022470 A 20121116
- DE 102013000058 A 20130102
- DE 102013002940 A 20130220
- EP 2013003415 W 20131114

Abstract (en)

[origin: WO2014075795A1] The invention relaters to a method and device for improving combustion in a combustion chamber (1) with a plurality of burners (2), wherein at least a part of a fuel and/or air mass flow (ṁB , ṁL) can be adjusted for at least one section. A local distribution (VR) of a parameter (λ, T)characterizing the quality of combustion is determined by measurement in an ignition/firing region (ZA). Based on this, at least one region (G1-G4) with an unfavourable parameter in respect of combustion quality is identified. A section of the combustion chamber essential for a flow, pyrolysis and combustion simulation is mapped in a digital simulation model (CDF), divided into a plurality of volume elements (dV). The origin of the fuel and air components (AB/ AL) coming from the various burners is continuously and separately taken into consideration in the simulation of each of the volume elements. A distribution (Vs) of the fuel and air components corresponding in location in the simulation model to the local distribution determined by measurement is defined. At least the one burner critical for each region identified in respect of the fuel and air components recorded is determined to improve combustion by a correction of the relevant fuel and/or air mass flow.

IPC 8 full level

F23C 9/00 (2006.01); **F23C 6/04** (2006.01); **F23N 1/02** (2006.01)

CPC (source: EP)

F23N 1/022 (2013.01); F23N 2223/40 (2020.01); F23N 2229/20 (2020.01); F23N 2900/05006 (2013.01)

Cited by

CN109815594A; US11732891B2; US11719435B2; WO2020255092A1

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

DOCDB simple family (publication)

WO 2014075795 A1 20140522; EP 2920515 A1 20150923; EP 2920515 B1 20170111

DOCDB simple family (application)

EP 2013003415 W 20131114; EP 13798930 A 20131114