

Title (en)

Burner for a combustion system with a premixing element and cooling element, combustion system with the burner and use of the combustion system

Title (de)

Brenner für ein Verbrennungssystem mit Vormischelement und Kühlelement, Verbrennungssystem mit Brenner und Verwendung des Verbrennungssystems

Title (fr)

Brûleur destiné à un système de combustion avec un élément de prémélange et élément de refroidissement, système de combustion doté d'un brûleur et utilisation du système de combustion

Publication

**EP 2853818 A1 20150401 (EN)**

Application

**EP 13186160 A 20130926**

Priority

EP 13186160 A 20130926

Abstract (en)

A burner for combustion a combustion mixture is provided. The burner comprises at least one burner body with at least one cooling element for cooling the burner body and at least one premixing element for mixing a fluidic combustion component and at least one additional fluidic combustion component for providing the combustion mixture, wherein the cooling element and the premixing element are integrated in the burner body and the cooling of the burner body can be carried out by the fluidic combustion component and/or by the additional fluidic combustion component. The premixing element is developed for cooling the burner body. Thereby fuel and/or air (combustion reactants) can be used for the cooling of the burner body. In order to ensure a high thermal conductivity between cooling element and the burner body the cooling element is integrated into the burner body. Preferably the mixing element and the cooling element comprise open pores. In addition, a combustion system with at least one such burner is provided as well as use of the combustion system for producing electricity by combusting a combustion mixture. Exhaust gas of the combustion process drives a turbine with which the electricity is produced. The combustion system is preferably included into a gas turbine.

IPC 8 full level

**F23R 3/28** (2006.01)

CPC (source: EP)

**F23R 3/28** (2013.01); **F23R 3/283** (2013.01)

Citation (search report)

- [X] US 2011083442 A1 20110414 - KHAN ABDUL RAFEY [US], et al
- [X] US 2012180490 A1 20120719 - TAKAMI EIJI [JP], et al
- [A] EP 0548908 A2 19930630 - TOSHIBA KK [JP]
- [A] DE 102011056058 A1 20120606 - GEN ELECTRIC [US]

Cited by

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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)

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