

Title (en)

Ceramic thermal insulation coating on structured surface and production method

Title (de)

Keramische Wärmedämmschicht auf strukturierter Oberfläche und Herstellungsverfahren

Title (fr)

Couche d'isolation thermique en céramique sur une surface structurée et procédé de fabrication

Publication

EP 2589682 A1 20130508 (DE)

Application

EP 11188032 A 20111107

Priority

EP 11188032 A 20111107

Abstract (en)

The layer system comprises a substrate (4), and a ceramic layer (16) that is applied on a structured surface. The structured surface is formed by elongated recesses that form a honeycomb structure, and a stitch structure in quadratic or rectangular shape and have a breadth of 10-30 μ m and a depth of 10-30%. The ceramic layer has a thickness of 10-30 μ m. A distance of the opposite recesses is 100-300 μ m. The layer system further comprises an interfacial layer (10) such as a metallic layer made of chromium-aluminum (MCrAlX) alloy, where the interfacial layer is introduced into the recesses. An independent claim is included for a method for preparing a layer system.

Abstract (de)

Durch die Einbringung von Vertiefungen (19', 19'', ...) in eine Oberfläche (7, 13) werden die Spannungen in der keramischen Schicht (16) an den metallischen Untergrund reduziert, so dass eine längere Lebensdauer für die keramische Schicht erzielt wird.

IPC 8 full level

C23C 30/00 (2006.01); **F01D 5/28** (2006.01)

CPC (source: EP US)

B05D 3/007 (2013.01 - US); **C23C 30/00** (2013.01 - EP US); **F01D 5/28** (2013.01 - US); **F01D 5/288** (2013.01 - EP US); **F23R 3/007** (2013.01 - EP US); **F05D 2250/294** (2013.01 - EP US); **F23M 2900/05003** (2013.01 - EP US); **F23M 2900/05004** (2013.01 - EP US); **F23R 2900/00018** (2013.01 - EP US)

Citation (applicant)

- EP 1204776 B1 20040602 - SIEMENS AG [DE], et al
- EP 1306454 A1 20030502 - SIEMENS AG [DE]
- EP 1319729 A1 20030618 - SIEMENS AG [DE]
- WO 9967435 A1 19991229 - SIEMENS AG [DE], et al
- WO 0044949 A1 20000803 - SIEMENS AG [DE], et al
- EP 0486489 B1 19941102 - SIEMENS AG [DE]
- EP 0786017 B1 19990324 - SIEMENS AG [DE]
- EP 0412397 B1 19980325 - SIEMENS AG [DE]
- EP 1306454 A1 20030502 - SIEMENS AG [DE]

Citation (search report)

- [X] EP 2275645 A2 20110119 - ROLLS ROYCE CORP [US]
- [X] US 2008085191 A1 20080410 - LIANG GEORGE [US]
- [X] US 5419971 A 19950530 - SKELLY DAVID W [US], et al
- [XI] WO 2004043691 A1 20040527 - UNIV VIRGINIA [US], et al
- [XI] US 6074706 A 20000613 - BEVERLEY MICHAEL [US], et al
- [XI] US 2009017260 A1 20090115 - KULKARNI ANAND A [US], et al

Cited by

DE102015222808A1; EP3222747A1; DE102015222812A1

Designated contracting state (EPC)

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