

Title (en)
CERAMIC CARRIER AND SENSOR ELEMENT, HEATING ELEMENT AND SENSOR MODULE, EACH WITH A CERAMIC CARRIER AND METHOD FOR MANUFACTURING A CERAMIC CARRIER

Title (de)
KERAMIKTRÄGER SOWIE SENSORELEMENT, HEIZELEMENT UND SENSORMODUL JEWEILS MIT EINEM KERAMIKTRÄGER UND VERFAHREN ZUR HERSTELLUNG EINES KERAMIKTRÄGERS

Title (fr)
SUPPORT EN CÉRAMIQUE AINSI QU'ÉLÉMENT DE CAPTEUR, ÉLÉMENT CHAUFFANT ET MODULE DE CAPTEUR COMPORTANT CHACUN UN SUPPORT EN CÉRAMIQUE ET PROCÉDÉ DE FABRICATION D'UN SUPPORT EN CÉRAMIQUE

Publication
EP 3123154 A1 20170201 (DE)

Application
EP 15713160 A 20150325

Priority
• DE 102014104219 A 20140326
• EP 2015056356 W 20150325

Abstract (en)
[origin: WO2015144748A1] The present invention relates to a ceramic carrier, in particular an Al₂O₃ carrier, on which a thin-film structure (10) of platinum or a platinum alloy is arranged, wherein the carrier and/or the thin-film structure (10) are adapted in order to reduce mechanical stresses owing to different thermal expansion coefficients. The carrier and/or the thin-film structure (10) comprise the following: e) a surface (11) of the carrier in the region of the thin-film structure (10) is smoothed at least in sections to reduce the adhesion and/or f) a/the surface (11) of the carrier has an intermediate layer (12) on which the thin-film structure (10) is arranged, wherein the thermal expansion coefficient of the intermediate layer (12) is from 8*10⁻⁶/K to 16*10⁻⁶/K, in particular from 8.5*10⁻⁶/K to 14*10⁻⁶/K, and/or g) the thin-film structure (10) has at least one conductor path (13) that is undular at least in sections, said conductor path extending laterally along a/the surface (11) of the carrier, wherein the amplitude of the undular conductor path (13) is from 0.2*B to 2*B, in particular from 0.4*B to 1*B, and the wavelength of the undular conductor path (13) is from 3*B to 10*B, in particular from 4*B to 7*B, where "B" is the width of the conductor path (13), and/or h) a first coating (14a) is applied directly to the thin-film structure (10), said coating containing oxide nanoparticles, in particular of Al₂O₃ and/or MgO.

IPC 8 full level
G01N 27/12 (2006.01); **H10N 97/00** (2023.01); **G01K 7/18** (2006.01); **G01N 15/06** (2006.01); **H01C 1/016** (2006.01); **H01C 3/12** (2006.01); **H01C 7/00** (2006.01); **H01C 17/00** (2006.01); **H01C 17/065** (2006.01); **H01C 17/08** (2006.01); **H05B 3/12** (2006.01)

CPC (source: CN EP KR US)
G01D 21/02 (2013.01 - CN); **G01F 1/692** (2013.01 - CN); **G01K 7/183** (2013.01 - CN EP US); **G01N 15/0656** (2013.01 - KR); **H01C 1/016** (2013.01 - EP KR US); **H01C 3/12** (2013.01 - EP KR US); **H01C 7/006** (2013.01 - EP KR US); **H01C 17/065** (2013.01 - EP US); **H01C 17/06526** (2013.01 - EP KR US); **H01C 17/075** (2013.01 - US); **H01C 17/08** (2013.01 - EP KR US); **H05B 3/03** (2013.01 - KR); **H05B 3/12** (2013.01 - EP KR US); **G01N 15/0606** (2013.01 - EP US); **G01N 15/0656** (2013.01 - EP US); **G01N 2015/0046** (2013.01 - EP KR US)

Citation (examination)
DE 19540194 C1 19970220 - HERAEUS SENSOR GMBH [DE]

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)
DE 102014104219 A1 20151001; **DE 102014104219 B4 20190912**; CN 106104235 A 20161109; CN 106104235 B 20191231; EP 3123154 A1 20170201; JP 2017516081 A 20170615; JP 6622711 B2 20191218; KR 20160138039 A 20161202; TW 201541573 A 20151101; TW I606558 B 20171121; US 10529470 B2 20200107; US 2017110225 A1 20170420; WO 2015144748 A1 20151001

DOCDB simple family (application)
DE 102014104219 A 20140326; CN 201580014672 A 20150325; EP 15713160 A 20150325; EP 2015056356 W 20150325; JP 2016559256 A 20150325; KR 20167026193 A 20150325; TW 104109549 A 20150325; US 201515129288 A 20150325