

Title (en)
A FUEL CELL AND A SUPPORT LAYER THEREFORE

Title (de)
BRENNSTOFFZELLE UND TRÄGERSCHICHT DAFÜR

Title (fr)
PILE À COMBUSTIBLE ET COUCHE PORTEUSE POUR CELLE-CI

Publication
EP 3022789 A4 20170111 (EN)

Application
EP 14826807 A 20140714

Priority
• SE 1350882 A 20130716
• SE 2014050891 W 20140714

Abstract (en)
[origin: WO2015009232A1] The present invention describes a solid oxide fuel cell (SOFC) or solid oxide electrolysis cell (SOEC) layered structure, said structure comprising a fuel electrode layer; an oxygen electrode layer; an electrolyte layer positioned in between the fuel electrode layer and the oxygen electrode layer; a support layer being attached to the fuel electrode layer and/or the oxygen electrode layer, said support layer being composed of a porous 3D backbone structure and a coated material covering the 3D backbone structure, wherein the 3D backbone structure of the support layer comprises a metal or metal alloy or a mixture of several metals and/or metal alloys and at least one toughened ceramic, and wherein the 3D backbone structure of the support layer is free from any metal exhibiting full reduction-oxidation (redox) transformation at cell operating temperature and conditions and free from any electro-catalytic ceramic or metal. The coated material on the 3D structure guarantees high temperature electrical conductivity sufficient for or superior to the needs for appropriate cell operation.

IPC 8 full level
H01M 8/0245 (2016.01); **H01M 8/0232** (2016.01); **H01M 8/0236** (2016.01); **H01M 8/0243** (2016.01); **H01M 8/124** (2016.01)

CPC (source: EP)
C25B 9/19 (2021.01); **H01M 8/0232** (2013.01); **H01M 8/0236** (2013.01); **H01M 8/0245** (2013.01); **H01M 8/0243** (2013.01); **H01M 2008/1293** (2013.01); **Y02E 60/50** (2013.01)

Citation (search report)
• [A] US 2004185326 A1 20040923 - WETZEL FRANZ-JOSEF [DE], et al
• [A] US 2012186976 A1 20120726 - LAUCOURNET RICHARD [FR], et al
• [A] US 2012121999 A1 20120517 - LAURENCIN JEOME [FR], et al
• [A] US 2007072046 A1 20070329 - THOMPSON ANTHONY M [US], et al
• [A] WO 0008703 A1 20000217 - INST GAS TECHNOLOGY [US]
• See references of WO 2015009232A1

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 2015009232 A1 20150122; EP 3022789 A1 20160525; EP 3022789 A4 20170111

DOCDB simple family (application)
SE 2014050891 W 20140714; EP 14826807 A 20140714