

Title (en)
DEVICE AND METHOD FOR CONTROLLING THE PERMEATION OF OXYGEN THROUGH NON-POROUS CERAMIC MEMBRANES WHICH CONDUCT OXYGEN ANIONS, AND THE USE THEREOF

Title (de)
VORRICHTUNG UND VERFAHREN ZUR REGELUNG DER SAUERSTOFFPERMEATION DURCH NICHT-PORÖSE SAUERSTOFFANIONEN LEITENDE KERAMISCHE MEMBRANEN UND DEREN VERWENDUNG

Title (fr)
DISPOSITIF ET PROCÉDÉ PERMETTANT DE RÉGULER LA PERMÉATION DE L'OXYGÈNE À TRAVERS DES MEMBRANES CÉRAMIQUES NON POREUSES CONDUCTRICES D'ANIONS D'OXYGÈNE ET LEUR UTILISATION

Publication
EP 2519340 A1 20121107 (DE)

Application
EP 10795621 A 20101215

Priority
• DE 102009060489 A 20091229
• EP 2010007696 W 20101215

Abstract (en)
[origin: WO2011079913A1] The invention relates to a method for controlling the permeation rate of oxygen through a non-porous ceramic membrane which conducts oxygen anions and which contains alkaline earth ions. Carbon dioxide and/or a gaseous carbon dioxide precursor is added for a specified time on at least one face of the non-porous ceramic membrane which conducts oxygen anions, said addition enabling a change in the oxygen permeability of the membrane material. This causes a reversible chemical formation of alkaline earth carbonates in the membrane and thereby changes the properties thereof for the permeation of oxygen. A membrane reactor designed with a feed line for a moderating gas can be controlled in a simple manner. The membrane reactor can be advantageously adjusted for oxidation reactions or for separating oxygen from gas mixtures.

IPC 8 full level
B01D 71/02 (2006.01); **B01D 53/22** (2006.01); **C01B 13/02** (2006.01)

CPC (source: EP US)
B01D 53/22 (2013.01 - EP US); **B01D 53/228** (2013.01 - EP US); **B01D 61/54** (2013.01 - EP US); **B01D 69/08** (2013.01 - EP US); **B01D 71/0271** (2022.08 - EP US); **B01J 8/009** (2013.01 - EP US); **B01J 8/02** (2013.01 - EP US); **B01J 8/0278** (2013.01 - EP US); **C01B 13/0251** (2013.01 - EP US); **B01D 2311/16** (2013.01 - EP US); **B01J 2208/00061** (2013.01 - EP US); **B01J 2208/00964** (2013.01 - EP US); **B01J 2208/00973** (2013.01 - EP US); **B01J 2219/002** (2013.01 - EP US); **B01J 2219/00202** (2013.01 - EP US); **B01J 2219/00211** (2013.01 - EP US); **B01J 2219/00231** (2013.01 - EP US)

Citation (search report)
See references of WO 2011079913A1

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 2011079913 A1 20110707; DE 102009060489 A1 20110630; EP 2519340 A1 20121107; US 2013032760 A1 20130207

DOCDB simple family (application)
EP 2010007696 W 20101215; DE 102009060489 A 20091229; EP 10795621 A 20101215; US 201013516061 A 20101215