Title (en)

PROCESS FOR PREPARING A SOL-GEL FROM AT LEAST THREE METAL SALTS AND USE OF THE PROCESS FOR PREPARING A CERAMIC MEMBRANE

Title (de)

VERFAHREN ZUR HERSTELLUNG EINES SOL-GELS AUS MINDESTENS DREI METALLSALZEN UND ANWENDUNG DES VERFAHRENS BEIM HERSTELLEN EINER KERAMIKMEMBRAN

Title (fr)

PROCÉDÉ DE PRÉPARATION D'UN SOL-GEL D'AU MOINS TROIS SELS DE MÉTAUX ET MISE EN UVRE DU PROCÉDÉ POUR PRÉPARER UNE MEMBRANE CÉRAMIQUE

Publication

EP 2791078 A1 20141022 (FR)

Application

EP 12766076 A 20120926

Priority

• FR 1161690 A 20111215
• EP 2012068923 W 20120926

Abstract (en)

[origin: WO2013087241A1] Process for preparing a sol-gel from at least four salts of metals M1, M2, M3 and M4 suitable and intended for the preparation of a perovskite type material corresponding to the general formula (I): A(1-X) A'x B(1-y-U) B'y B"u Omicron3-delta, (I), said process comprising the following steps: - a step a) of preparing an aqueous solution of water-soluble salts of said elements A, A' optionally A", B and B', in the stoichiometric proportions necessary for obtaining the material as defined above; - a step b) of preparing an aqueous-alcoholic solution of at least one non-ionic surfactant in an alcohol chosen from methanol, ethanol, propanol, propanol, isopropanol or butanol, mixed with an aqueous solution of ammonia in a sufficient proportion to ensure the complete solubilisation of said non-ionic surfactant in said aqueous-alcoholic solution, the concentration of said non-ionic surfactant in said aqueous-alcoholic solution being less than the critical micelle concentration; - a step c) of mixing said aqueous solution prepared in step a) with said alcoholic dispersion prepared in step b) in order to form a sol; - a step d) of drying said sol obtained in step c), by evaporation of the solvent, in order to obtain a sol-gel. Use of the process for preparing a ceramic membrane.

IPC 8 full level

C04B 35/01 (2006.01); **C01G 15/00** (2006.01); **C01G 23/00** (2006.01); **C01G 49/00** (2006.01); **C01G 51/04** (2006.01); **C04B 35/26** (2006.01); **C04B 35/465** (2006.01); **C04B 38/06** (2006.01); **C04B 41/00** (2006.01); **H01M 4/86** (2006.01); **H01M 4/88** (2006.01); **H01M 4/90** (2006.01)

CPC (source: EP RU US)

B01D 53/228 (2013.01 - EP US); **B01D 67/0048** (2013.01 - EP RU US); **B01D 71/0271** (2022.08 - EP RU US); **B05D 1/18** (2013.01 - US); **B82Y 30/00** (2013.01 - EP US); **B82Y 40/00** (2013.01 - RU); **C01G 15/006** (2013.01 - EP US); **C01G 23/003** (2013.01 - EP US); **C01G 23/006** (2013.01 - EP US); **C01G 49/009** (2013.01 - EP US); **C01G 51/68** (2013.01 - EP US); **C04B 35/01** (2013.01 - EP US); **C04B 35/26** (2013.01 - EP US); **C04B 35/2633** (2013.01 - RU); **C04B 35/2641** (2013.01 - RU); **C04B 35/50** (2013.01 - US); **C04B 35/624** (2013.01 - EP RU US); **C04B 35/64** (2013.01 - EP US); **C04B 38/06** (2013.01 - EP US); **C04B 38/067** (2013.01 - RU); **C04B 41/009** (2013.01 - EP US); **C04B 41/4537** (2013.01 - RU); **C04B 41/5036** (2013.01 - EP US); **C04B 41/87** (2013.01 - EP US); C01P 2002/34 (2013.01 - EP US); C01P 2002/52 (2013.01 - EP US); C01P 2004/64 (2013.01 - EP US); C04B 2111/00801 (2013.01 - EP US); C04B 2111/0081 (2013.01 - EP US); C04B 2235/3208 (2013.01 - EP US); C04B 2235/3213 (2013.01 - EP US); C04B 2235/3215 (2013.01 - EP US); C04B 2235/3227 (2013.01 - EP US); C04B 2235/3275 (2013.01 - EP US); C04B 2235/3286 (2013.01 - EP US); C04B 2235/768 (2013.01 - EP US); C04B 2235/77 (2013.01 - EP US)

C-Set (source: EP US)

1. **C04B 41/009** + **C04B 35/2641**
2. **C04B 41/5036** + **C04B 41/4537**
3. **C04B 38/06** + **C04B 35/01** + **C04B 38/0045**

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 2013087241 A1 20130620; BR 112014014370 A2 20170704; CN 104136393 A 20141105; EP 2791078 A1 20141022; FR 2984305 A1 20130621; FR 2984305 B1 20150130; JP 2015504836 A 20150216; KR 20140104019 A 20140827; RU 2014128820 A 20160210; RU 2608383 C2 20170118; US 2014335266 A1 20141113

DOCDB simple family (application)

EP 2012068923 W 20120926; BR 112014014370 A 20120926; CN 201280061184 A 20120926; EP 12766076 A 20120926; FR 1161690 A 20111215; JP 2014546365 A 20120926; KR 20147019174 A 20120926; RU 2014128820 A 20120926; US 201214364389 A 20120926