

Title (en)

SUBSTRATE COATED WITH A COMPOSITE FILM, METHOD FOR MAKING SAME AND USES THEREOF

Title (de)

MIT EINEM ZUSAMMENGESETZTEN FILM VERSEHENES SUBSTRAT, VERFAHREN ZUR HERSTELLUNG UND VERWENDUNGEN.

Title (fr)

SUBSTRAT REVETU D'UN FILM COMPOSITE, PROCEDE DE FABRICATION ET APPLICATIONS

Publication

**EP 1427678 A1 20040616 (FR)**

Application

**EP 02774836 A 20020725**

Priority

- FR 0202673 W 20020725
- FR 0109901 A 20010725

Abstract (en)

[origin: WO03010103A1] The invention concerns a substrate coated with a composite film based on a mesoporous mineral layer containing nanoparticles formed in situ inside the layer. The composite film has a periodic lattice structure in the greater part of the thickness where the nanoparticles are present, structure wherein the nanoparticles are periodically arranged on a scale of domains of at least 4 periods in the thickness of the film. Said structure is obtainable from a mesoporous mineral layer with periodic structure on the scale of domains of at least 4 periods of pores forming a matrix on the substrate, by deposition of at least a precursor in the pores of the matrix layer; and growth of particles derived from the precursor with spatial distribution and dimension control by the structure of the pores of the matrix. The invention is applicable to materials for electronics, non-linear optics, magnetism.

IPC 1-7

**C03C 17/00**; **C04B 41/80**

IPC 8 full level

**B05D 7/24** (2006.01); **B05D 1/40** (2006.01); **B32B 9/00** (2006.01); **B82B 1/00** (2006.01); **C01B 33/149** (2006.01); **C03C 17/00** (2006.01)

CPC (source: EP KR US)

**B82B 3/00** (2013.01 - KR); **C03C 17/007** (2013.01 - EP US); **C03C 17/22** (2013.01 - KR); **B82Y 40/00** (2013.01 - KR); **C03C 2217/425** (2013.01 - EP US); **C03C 2217/45** (2013.01 - EP US); **C03C 2217/475** (2013.01 - EP US); **Y10S 977/811** (2013.01 - EP US); **Y10T 428/249953** (2015.04 - EP US); **Y10T 428/249967** (2015.04 - EP US); **Y10T 428/249969** (2015.04 - EP US); **Y10T 428/24997** (2015.04 - EP US); **Y10T 428/24999** (2015.04 - EP US)

Citation (search report)

See references of WO 03010103A1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR

DOCDB simple family (publication)

**WO 03010103 A1 20030206**; BR 0211413 A 20041109; BR 0211413 B1 20110222; CN 1297505 C 20070131; CN 1558877 A 20041229; EP 1427678 A1 20040616; FR 2827854 A1 20030131; FR 2827854 B1 20030919; JP 2004535925 A 20041202; JP 4184958 B2 20081119; KR 100870711 B1 20081127; KR 20040024590 A 20040320; MX PA04000722 A 20040420; PL 368602 A1 20050404; RU 2004105271 A 20050327; RU 2288167 C2 20061127; US 2004219348 A1 20041104; US 7348054 B2 20080325; ZA 200400522 B 20040520

DOCDB simple family (application)

**FR 0202673 W 20020725**; BR 0211413 A 20020725; CN 02818806 A 20020725; EP 02774836 A 20020725; FR 0109901 A 20010725; JP 2003515463 A 20020725; KR 20047001097 A 20020725; MX PA04000722 A 20020725; PL 36860202 A 20020725; RU 2004105271 A 20020725; US 48472104 A 20040607; ZA 200400522 A 20040123