

Title (en)

Ultra-thin water and oil repellent layer, manufacturing method and use in mechanics as a barrier film

Title (de)

Hydrophobe und oleophobe ultradünne Schicht, Herstellungsverfahren sowie deren mechanische Anwendung als Sperrschicht

Title (fr)

Couche ultra-mince hydrophobe et oleophobe, procede de fabrication, son utilisation en mecanique comme film barriere

Publication

EP 1927649 A1 20080604 (FR)

Application

EP 06405505 A 20061201

Priority

EP 06405505 A 20061201

Abstract (en)

Ultra-thin hydrophobic layer and oleophobic layer formed by self-assembly on a solid substrate surface having a compound (I), is claimed. Ultra-thin hydrophobic layer and oleophobic layer formed by self-assembly on a solid substrate surface having a compound of formula (A-B 1) (I), is claimed. A : dihydroxy substituted aromatic compound of formula (II); Z : C or N +>; X : C-H or C-L; L : electro attractor group comprising F, Cl, Br, I, CF 3, NO 2 and N(CH 3) 3 +>; either Y 1H or CH3; or XY 15-6 membered heterocyclic atom; T : NH, CO, CONH or NH 2 +>U 1 ->; U 1 ->soluble anion containing F ->, Cl ->, Br ->, I, OH ->, NO 3 ->, HSO 4 ->, SO 4 2->, CO 3 2->, HCO 3 -> or SCN ->; and B 11-20C aliphatic linear alkyl group substituted by F. An independent claim is included for a preparation of the ultra-thin layer comprising immersing the substrate in a solution containing (I) in water or its mixture and protic solvent. [Image] [Image] [Image] [Image].

Abstract (fr)

L'invention concerne une nouvelle couche ultra-mince hydrophobe et oléophobe formée par auto-assemblage sur une surface de substrat solide de composés de formule générale ##### A-B dans laquelle A représente un groupe de formule dans laquelle Z représente C ou N + , X représente C-H ou C-L, L étant un groupe électroattracteur choisi parmi F, CF 3 , NO 2 et N(CH 3) 3 + , Y représente H ou CH 3 , ou Y forme avec X un hétérocycle de 5 ou 6 atomes, T représente NH, CO, CONH ou NH 2 + U - , U - étant un anion soluble , et B représente un groupe alkyl linéaire aliphatique C 1 -C 20 non substitué ou substitué partiellement ou complètement par F, ainsi qu'un procédé pour préparer cette couche et son utilisation comme film barrière.

IPC 8 full level

C10M 133/06 (2006.01); **C10M 133/16** (2006.01); **C10M 133/20** (2006.01); **C10M 133/40** (2006.01); **C10N 40/06** (2006.01)

CPC (source: EP US)

C10M 105/54 (2013.01 - EP US); **C10M 105/62** (2013.01 - EP US); **C10M 105/68** (2013.01 - EP US); **C10M 105/70** (2013.01 - EP US); **C10M 2211/0425** (2013.01 - EP US); **C10M 2211/063** (2013.01 - EP US); **C10M 2215/0425** (2013.01 - EP US); **C10M 2215/0806** (2013.01 - EP US); **C10M 2215/1023** (2013.01 - EP US); **C10M 2215/2203** (2013.01 - EP US); **C10N 2040/06** (2013.01 - EP US); **Y10T 428/31681** (2015.04 - EP US)

Citation (search report)

- [A] DD 238812 A1 19860903 - RUHLA UHREN VEB K [DD]
- [X] FAN ET AL: "Surface-initiated polymerization from TiO2 nanoparticle surfaces through a biomimetic initiator: A new route toward polymer-matrix nanocomposites", COMPOSITES SCIENCE AND TECHNOLOGY, ELSEVIER, vol. 66, no. 9, July 2006 (2006-07-01), pages 1198 - 1204, XP005434295, ISSN: 0266-3538
- [A] MARIA TILLWICH: "Synthetic lubricants in precision mechanisms - an overview", JOURNAL OF SYNTHETIC LUBRICATION, vol. 5, no. 2, July 1988 (1988-07-01), pages 91 - 104, XP002438119

Cited by

EP3627237A1; US11543776B2

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

Designated extension state (EPC)

AL BA HR MK RS

DOCDB simple family (publication)

EP 1927649 A1 20080604; EP 2102319 A1 20090923; EP 2102319 B1 20170329; US 2010098926 A1 20100422; WO 2008064512 A1 20080605; WO 2008064513 A1 20080605

DOCDB simple family (application)

EP 06405505 A 20061201; CH 2007000603 W 20071129; CH 2007000604 W 20071129; EP 07816286 A 20071129; US 51712107 A 20071129