

PatBase - Search results 08 June 2018

Search query (27): [SP]: related applications [0001] this application claims priority to u.s. provisional application ser. no. 61/939,147 filed feb. 12, 2014, entitled cleanable coating with anti-fogging properties and to u.s. provisional application ser. no. 61/945,676 filed feb. 27, 2014, entitled easy-clean antireflective coating, both of which are hereby incorporated herein by reference in their entireties. field of the invention [0002] the present invention is directed to optical coatings and, more particularly, to optical coatings that are easy to clean and that are anti-fogging and/or anti-reflective. background of the invention [0003] a functional coating or one or more functional coatings can be applied to a surface of article in order to impart one or more properties or characteristics to the surface of the article. such properties or characteristics imparted may include color, gloss, reflectivity, abrasion resistance, optical clarity, water repellency, resistance to fogging, anti-reflectivity, resistance to soiling, and ease of cleaning. of these various properties, the surface property or characteristic of ease of cleaning or easy-cleaning has potentially broad applications across a variety of industries including optical and non-optical related industries.[0004] current technologies employed to produce easily cleanable coatings or properties on surfaces often involve the application of a coating or surface treatment that is both hydrophobic and oleophobic. it has conventionally been considered desirable that a functional coating repel both oils and water, hence, these characteristics have been held as the benchmark for cleanability in the marketplace. unfortunately, basic market surveys reveal that current easy-cleaning coating technologies do not perform at the levels expected by the market or the level indicated by marketing literature.[0005] current easy-cleaning coating technologies are chiefly directed towards achieving the highest possible wetting angle for both water and oils because correlations have been made between high wetting angle for water and oil and surface resistance to smudges, fingerprints, and ease of cleaning. the basis of this target wetting performance lends to the objective that current easy-cleaning coating surface energy be rendered as low as possible, e.g. below that of teflon-like materials or below approximately 17-21 millijoules per square meter. in general, coatings of these types do not perform well with respect to cleaning because complete non-wetting of oily substances has not been achieved in a durable and manufacturable coating system. instead, the inherent partial wetting of oily substances on current coatings actually enhances the smeared appearance created when a thin layer of oils or dirt is left behind and is present as small droplets after cleaning is attempted. the presence of tiny droplets creates a hazy appearance by way of light scattering.[0006] in optical-based industries, it is often desirable to combine the properties or characteristics of ease of cleaning with other functional properties or characteristics, for example, anti-fogging. however, the inherent hydrophobicity of current easy-cleaning coatings renders them not feasible for fogging resistance since water droplets are capable of adhering to them in a partially non-wetted state, creating the appearance of fogging by way of light scattering.[0007] current anti-fogging coatings utilize a different technology when compared to typical cleanable coating systems. since the mechanism of fogging involves the formation of small water droplets that scatter visible light, coating systems that force the water to completely wet the surface eliminate this effect. the majority of anti-fogging technologies rely on the deposition of a surfactant on the surface of the article, which results in a short-lived resistance to fogging since the layer is quite temporary under conditions of use. most often, the act of cleaning the surface is sufficient to remove the anti-fogging property.[0008] other technologies employ the use of a hydrophilic coating layer, usually composed of a material that has a permanent hydrophilicity. however, these types of coatings are typically not durable and cannot be used in applications where abrasion is present. in addition, commercially available hydrophilic anti-fogging coatings do not necessarily lend themselves to being cleanable, based on their inherent surface energetic properties. accordingly, current coatings are marketed as either easy to clean or having anti-fogging properties. this is a result of the non-existence of a coating system that combines both properties in a durable and manufacturable way.[0009] in optical-based industries, it is often also desirable to combine the properties or characteristics of ease of cleaning with functional properties or characteristics such as the property of anti-reflectivity. for example, current easy-to-clean, anti-reflective coatings for use on, for example ophthalmic products, typically consist of a first substrate, e.g. an uncoated lens or other substrate material, an optional hard-coating system, and an anti-reflective coating system, which is imparted with a hydrophobic or superhydrophobic top or outermost layer intended to provide an easy-cleaning property. this top-functional coating typically comprises silica and perfluorosilyl chemical groups, which impart a dewetting behavior of water and oil-like substances. the dewetting of the oil-like substances from this surface having a low apparent surface energy is what is currently considered to be the easy-cleaning property marketed and/or tested using current ophthalmic industry standardized testing. such easy-cleaning, anti-reflective systems or coatings fail to perform at the levels expected by the market or the level indicated by marketing literature.[0010] hence, there exists a need for coatings and coating systems that impart effective easy-cleaning properties to a surface of an article alone and in combination with other functional coatings or coating systems that impart desirable surface properties. objects and summary of the invention [0011] the present invention provides coatings and coating systems that impart effective easy-cleaning properties to a surface of an article alone and/or in combination with other functional coatings or coating systems that impart desirable surface properties. these and other objectives are achieved, in part, through providing an ophthalmic article comprising: a substrate having a first surface a plurality of refractive layers, a first of the plurality of refractive layers deposited directly on said first surface and a last of the plurality of refractive layers forming a second surface and a top layer having a surface energy in a range of approximately 30 to 90 millijoules per square meter deposited on the second surface the ophthalmic article having a refractive index in the range of approximately 1.40 to 1.49 at a wavelength of 589 nanometers only after the top layer is deposited on the second surface.[0012] these and other objectives are also achieved, in part, through a method from making an ophthalmic article having easy-clean and anti-reflective properties comprising: forming a plurality of refractive layers on a surface of an ophthalmic article applying a saline-based layer having a cured surface energy in a range of approximately 30 to 90 millijoules per square meter on said plurality of refractive layers and imparting the ophthalmic article with a refractive index in a range of approximately 1.40 to 1.49 at a wavelength of 589 nanometers through said step of applying a saline-based layer on said plurality of refractive layers. [0013] these and other objectives are also achieved, in part, through providing a coating that imparts an easy-cleaning property on a surface comprising: a cured surface comprising pores having diameters in a range of approximately 2 to 100 nanometers and a surface energy in a range of approximately 30 to 90 millijoules per square meter. brief description of the drawings [0014] these and other aspects, features and advantages of which embodiments of the invention are capable of will be apparent and elucidated from the following description of embodiments of the present invention, reference being made to the accompanying drawings, in which:[0015] fig. 1 is a perspective view of a coated substrate according to one embodiment of the present invention.[0016] fig. 2 is a perspective view of a coated substrate according to one embodiment of the present invention. [0017] fig. 3 is a perspective view of a coated substrate according to one embodiment of the present invention.[0018] fig. 4 is a perspective view of a coated substrate according to one embodiment of the present invention.[0019] fig. 5 is a perspective view of a coated substrate according to one embodiment of the present invention.[0020] fig. 6 is a perspective view of a coated substrate according to one embodiment of the present invention. [0021] fig. 7 is a perspective view of a coated substrate according to one embodiment of the present invention.[0022] fig. 8 is a perspective view of a coated substrate according to one embodiment of the present invention.[0023] fig. 9 is a table showing the percent by weight solution of components of a coating solution according to one embodiment of the present invention.[0024] fig. 10 is a graph of reflectance data of an optical article with and without a coating according to one embodiment of the present invention.[0025] fig. 11 is a table showing color data for a coated lens according to one embodiment of the present invention.[0026] fig. 12 is a table showing a comparison of con

Results: 10**Search history**

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Search PN=(WO2015123473) (Results 1)
26:

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antireflective coating, both of which are hereby incorporated herein by reference in their entireties. field of the invention [0002] the present
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across a variety of industries including optical and non-optical related industries.[0004] current technologies employed to produce easily
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a last of the plurality of refractive layers forming a second surface and a top layer having a surface energy in a range of approximately 30 to 90

millijoules per square meter deposited on the second surface the ophthalmic article having a refractive index in the range of approximately 1.40 to 1.49 at a wavelength of 589 nanometers only after the top layer is deposited on the second surface.[0012] these and other objectives are also achieved, in part, through a method from making an ophthalmic article having easy-clean and anti-reflective properties comprising: forming a plurality of refractive layers on a surface of an ophthalmic article applying a saline-based layer having a cured surface energy in a range of approximately 30 to 90 millijoules per square meter on said plurality of refractive layers and imparting the ophthalmic article with a refractive index in a range of approximately 1.40 to 1.49 at a wavelength of 589 nanometers through said step of applying a saline-based layer on said plurality of refractive layers.[0013] these and other objectives are also achieved, in part, through providing a coating that imparts an easy-cleaning property on a surface comprising: a cured surface comprising pores having diameters in a range of approximately 2 to 100 nanometers and a surface energy in a range of approximately 30 to 90 millijoules per square meter. brief description of the drawings [0014] these and other aspects, features and advantages of which embodiments of the invention are capable of will be apparent and elucidated from the following description of embodiments of the present invention, reference being made to the accompanying drawings, in which:[0015] fig. 1 is a perspective view of a coated substrate according to one embodiment of the present invention.[0016] fig. 2 is a perspective view of a coated substrate according to one embodiment of the present invention.[0017] fig. 3 is a perspective view of a coated substrate according to one embodiment of the present invention.[0018] fig. 4 is a perspective view of a coated substrate according to one embodiment of the present invention.[0019] fig. 5 is a perspective view of a coated substrate according to one embodiment of the present invention.[0020] fig. 6 is a perspective view of a coated substrate according to one embodiment of the present invention.[0021] fig. 7 is a perspective view of a coated substrate according to one embodiment of the present invention.[0022] fig. 8 is a perspective view of a coated substrate according to one embodiment of the present invention.[0023] fig. 9 is a table showing the percent by weight solution of components of a coating solution according to one embodiment of the present invention.[0024] fig. 10 is a graph of reflectance data of an optical article with and without a coating according to one embodiment of the present invention.[0025] fig. 11 is a table showing color data for a coated lens according to one embodiment of the present invention.[0026] fig. 12 is a table showing a comparison of con (Results 10)

Title: EASY-CLEAN COATING

Abstract: An easy-cleaning coating, an easy cleaning coating having anti-fogging properties, and an easy-cleaning, anti-reflective coating.

Classifications:

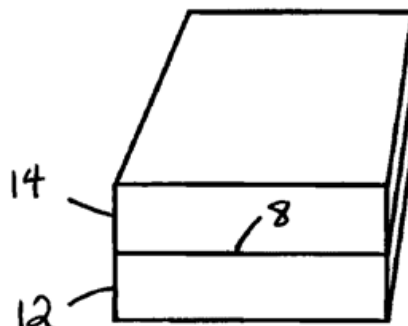
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G02B1/10 (Core/Invention)

CPC: C09D183/12 G02B1/11 G02B27/0006 G02B2207/107 G02B2207/109

US: 351/159.01 427/162 428/220 521/154

PatBase - US2015226886_AA



Family:

Publication number	Publication date	Application number	Application date
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CA2939226 AA	20160809	CA20152939226	20150212
CL2016002052 A1	20170203	CL20160002052	20160812
CN106164710 A	20161123	CN201580018990	20150212
CO20160001650 A2	20161216	CO20160001650	20160907
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IN201617028324 A	20170106	IN201617028324	20160819
KR20160119804 A	20161014	KR20167023978	20150212
MX2016010539 A1	20161130	MX20160010539	20150212
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WO15123473 A1	20150820	WO2015US15717	20150212

Priority:

US20140939147P 20140212 US20140945676P 20140227 US20150621334 20150212
WO2015US15717 20150212

Probable Assignee: INSIGHT EQUITY APX LP DBA VISION EASE LENS

Assignee(s): (std): INSIGHT EQUITY A P X L P DBA VISION EASE LENS ; INSIGHT EQUITY A P X LP DBA VISION EASE LENS ; VISION EASE LP

Assignee(s): KISSEL DAVID J ; BOULINEAU MICHAEL S ; HAWK PATRICK S ; INSIGHT EQUITY APX LP DBA VISION EASE LENS ; INSIGHT EQUITY APX ; INSIGHT EQUITY AP X LP DBA VISION EASE LENS

Inventor(s): (std): BOULINEAU MICHAEL S ; DAVID J KISSEL ; HAWK PATRICK S ; KISSEL DAVID J ; MICHAEL S BOULINEAU ; PATRICK S HAWK

Agent(s): CAMERON IP; ESTUDIO CLARKE MODET AND CO CHILE LIMITADA; CAROLINA MERCEDES DAZA MONTALVO; ADOLF MARTUA PANGGABEAN MAROLITA SETIATI; SWANSON SHANE S ESQ

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: METHOD OF PREPARING NANO-STRUCTURED SURFACE COATINGS AND COATED ARTICLES

Abstract: The invention relates to new processes for the preparation of antireflective coatings and coated substrates, as well as articles produced by these processes. These coatings can include one or more layers made of materials which form nano-structured and/or nano-porous surfaces. The process can include applying a cross-linkable hard coat to a substrate, partially curing or cross-linking the hard coat, and then applying a second coat carried by a solvent or mixture of solvents capable of swelling the partially cured hard coat. The second coat is then cross-linked and grafted to the hard coat to produce a durable coated substrate with antireflective properties.

Classifications:

International (IPC 8-9): B05D1/12 B05D1/38 B05D5/06 B05D7/24 B32B27/30 B32B3/00 B32B3/26 B32B5/16 B32B9/04 B82B3/00 B82Y30/00 C03C17/00 C04B41/45 C04B41/81 C08F2/46 C08F2/48 C09D1/00 C09D183/04 C09D4/00 C09D5/00 C09D7/12 G02B1/11 (Advanced/Invention);

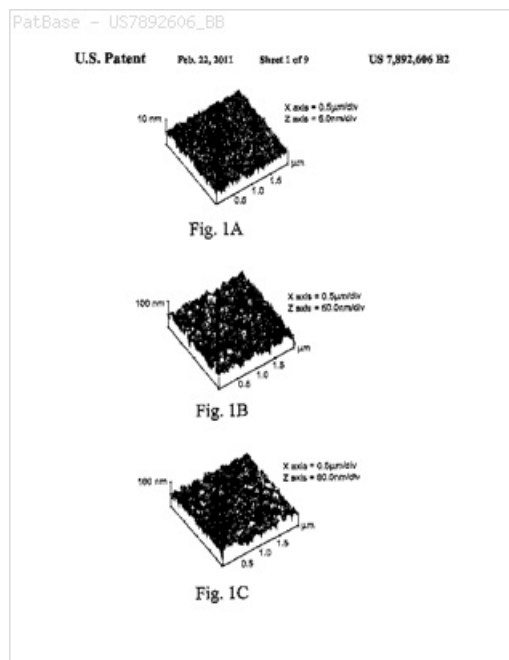
B82B3/00 C09D4/00 C09D7/12 (Advanced/Non-invention); B05D1/12 B05D5/06 B05D7/24 B32B27/30 B32B3/00 B32B3/26 B32B5/16 B32B9/04 B82B3/00 C03C17/00 C04B41/45 C04B41/81 C08F2/46 C09D1/00 C09D4/00 C09D5/00 C09D7/12 G02B1/10 (Core/Invention)

International (IPC 1-7): C03C17/00 C09D1/00 C09D183/04 C09D4/00 C09D5/00 C09D7/12

CPC: C03C17/007 C03C2217/425 C04B41/009 C04B41/4584 C04B41/81 C08K3/20 C08K3/36 C08K9/08 G02B1/11 C09D4/00 C09D7/62

European: C03C17/00D2 C04B41/00V C04B41/45P C04B41/81 C09D4/00 C09D7/12D2 C09D7/12D2B G02B1/11 M03C217/425 M08K3/20 M08K3/36 M08K9/08

US: 427/162 427/162S 427/164 427/164S 427/180 427/180S 427/402 427/402S 427/407.1 427/487 427/487S 427/493 427/495 427/508 427/508S 428/312.2 428/312.200P 428/315.5 428/315.500S 428/315.7 428/315.700P 428/411.1 428/411.100P 428/515 428/522 428/522P

**Family:**

Publication number	Publication date	Application number	Application date
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IN234070 B	20090529	IN2005CN03073	20051118
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Priority:

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Probable Assignee: DSM IP ASSETS BV

Assignee(s): (std): THIES JENS CHRISTOPH ; MEIJERS GUIDO JOZEFINA WILHELM ; NIJENHUIS ATZE JAN ; TRONCHE

CHRISTOPHER FREDERIC ; SOUTHWELL JOHN EDMOND ; THIES JENS C ; MEIJERS GUIDO J ; NIJENHUIS ATZE J ; THIES JENS CHRISTOPH J ; SOUTHWELL JOHN E ; TRONCHE CHRISTOPHER F ; MEIJERS GUIDO J W ; DSM IP ASSETS BV ; GAN KEQI ; MEIJERS GUIDO ; CURRIE EDWIN ; CURRIE EDWIN E

Assignee(s): DSM IP ASSETS B V ; MEIJERS GUIDO JOZEFINA WILHELMUS

Inventor(s): (std): CURRIE EDWIN ; CURRIE EDWIN E ; GAN KEQI ; JOHN THIES JENS CHRISTOPH CURR ; MEIJERS GUIDO ; MEIJERS GUIDO J ; MEIJERS GUIDO J W ; MEIJERS GUIDO JOSEFINA WILHELM ; MEIJERS GUIDO JOZEFINA WILHELM ; NIJENHUIS ATZE J ; NIJENHUIS ATZE JAN ; SOUTHWELL JOHN ; SOUTHWELL JOHN E ; SOUTHWELL JOHN EDMOND ; THIES JENS C ; THIES JENS CHRISTOPH ; MEIJERS GUIDO JOZEFINA WILHELMUS ; MEIJERS GUIDO JOZEFINA ; JAN NIJENHUIS ATZE ; FREDERIC TRONCHE CHRISTOPHER ; EDWIN CURRIE ; EDMOND SOUTHWELL JOHN ; CHRISTOPH THIES JENS ; TRONCHE CHRISTOPHER ; TRONCHE CHRISTOPHER F ; TRONCHE CHRISTOPHER FREDERIC ; WILHELM MEIJERS GUIDO JOZEFINA ; THIES JENS CHRISTOPH J ; THIES JENS ; NIJENHUIS ATZE

Inventor(s): THIES JENS CHRISTOPH JC ; THIES JENS CHRISTOPH ; THIES JENS CHRISTOPH CURRIE EDWIN MEIJERS GUIDO JOZEFINA WILHELM NIJENHUIS ATZE JAN SOUTHWELL JOHN EDMOND TRONCHE CHRISTOPHER FREDERIC ; MEIJERS GUIDO JW ; THIES JENS CHRISTOPH CURRIE EDWIN MEIJERS... ; THIES JENS CHRISTOPH CURRIE EDWIN MEIJERS GUIDO JO ; MEIJERS GUIDO JOSEFINA WILHELMUS ; JOHN EDMOND SOUTHWELL

Agent(s): ALEXANDER SEAN MATTHEW ; SCHMITT MAJA ; MAYER BROWN ROWE AND MAW LLP, INTELLECTUAL PROPERTY GROUP ; MAYER BROWN ROWE AND MAW LLP INTELLECTUAL PROPERTY GROUP ; NIXON AND VANDERHUYE PC

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: PROCESS FOR REPLACING AN INITIAL OUTERMOST COATING LAYER OF A COATED OPTICAL LENS WITH A DIFFERENT COATING LAYER OR BY DEPOSITING THEREON A DIFFERENT COATING LAYER

Abstract: The invention concerns a process for replacing an initial outermost coating layer of a coated optical lens with a layer of a new final coating having surface properties different from those of said initial outermost coating which comprises: (a) providing a coated optical lens having an initial outermost coating layer having a surface contact angle with water of at least 65 degrees; (b) subjecting the initial outermost coating layer to a treatment with activated chemical species at about atmospheric pressure, and for less than one minute, in order there is obtained a treated surface having a contact angle with water of 10 degrees or less; and (c) depositing on said treated surface a layer of a final coating having surface properties different from those of said initial outermost coating.

Classifications:

International (IPC 8-9): B05D3/14 B05D5/06 C03C17/00 C03C17/42 C08J7/00 C08J7/12 C08J7/18 G02B1/04 G02B1/10 G02B1/11 G02B1/12 G02C7/02 (Advanced/Invention); G02B1/04 G02B1/10 G02B1/12 (Advanced/Non-invention); B05D3/14 B05D5/06 C03C17/00 C03C17/42 C08J7/00 G02B1/04 G02B1/10 G02C7/02 (Core/Invention)

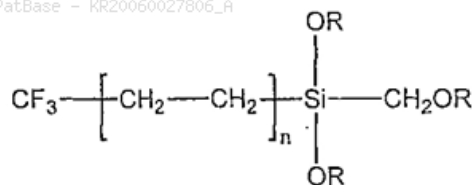
International (IPC 1-7): B05D5/06 C08J7/18 G02B1/04 G02B1/12 H05H1/00

CPC: G02B1/115 G02B1/14 G02B1/18 C08J7/123 B05D3/141 B05D3/142 C03C17/001 C03C17/42 C03C2217/734 G02B1/105

European: B05D3/14C C03C17/00B C03C17/42 C08J7/12A G02B1/10B L05D3/14C3 M03C217/734

US: 427/14 427/140 427/140S 427/162 427/162P 427/166 427/167 427/255.6 427/255.7 427/402 427/535 427/535S 427/561

PatBase - KR20060027806_A



Family:

Publication number	Publication date	Application number	Application date
AU2004248264 AA	20041223	AU20040248264	20040610
AU2004248264 BB	20090827	AU20040248264	20040610
BRPI0411415 A	20060725	BR2004PI11415	20040610
BRPI0411415 B1	20170207	BR2004PI11415	20040610
CA2529321 AA	20051213	CA20042529321	20040610
CA2529321 C	20090818	CA20042529321	20040610
CN100514089 C	20090715	CN200480019952	20040610
CN1823282 A	20060823	CN200480019952	20040610
DE602004045720 D1	20141009	DE200460045720T	20040610
EP1636616 A1	20060322	EP20040739790	20040610
EP1636616 B1	20140827	EP20040739790	20040610
ES2523847 T3	20141202	ES20040739790T	20040610
IN05621DN2005 A	20080118	IN2005DN05621	20051205
JP2006527402 T2	20061130	JP20060515888T	20040610
JP4820751 B2	20111124	JP20060515888T	20040610
KR101234691 B1	20130219	KR20057024005	20040610
KR20060027806 A	20060328	KR20057024005	20040610
US2004253369 AA	20041216	US20030461091	20030613
US7217440 BB	20070515	US20030461091	20030613
WO04111691 A1	20041223	WO2004EP06293	20040610

Priority:

US20030461091 20030613 EP20040739790 20040610 WO2004EP06293 20040610

Probable Assignee: ESSILOR INT COMP GENERALE D OPTIQUE

Assignee(s): (std): ESSILOR INT ; ESSILOR INT CIE GENERALE D OPTIQUE ; ESSILOR INT COMPAGNIE GENERALE D OPTIQUE ; JALLOULI AGNES ; FOURNAND GERALD

Assignee(s): ESSILOR INTERNATIONAL (COMPAGNIE GENERALE ; ESSILOR INTERNATIONAL COMPAGNIE GENERALE D OPTIQUE ; ESSILOR INT COMP GEN D OPTIQUE ; ESSILOR INT COMP GENERALE D OPTIQUE ; ESSILOR INT COMP GENERALE D'OPTIQUE

Inventor(s): (std): JALLOULI AGN S ; GERALD FOURNAND ; GERALD JALLOULI AGNES FOURNAND ; JALLOULI AGNES DE LEUZE ; FOURNAND GERALD ; JALLOULI AGNES ; AGNES JALLOULI ; AGN S JALLOULI

Inventor(s): JALLOULI AGNES FOURNAND GERALD ; FOURNAND GERALD TAMPA ; AGNTHS JALLOULI ; JALLOULI AGNES LARGO

Agent(s): WATERMARK INTELLECTUAL PROPERTY PTY LTD; WATERMARK PATENT AND TRADE MARKS ATTORNEYS; GOWLING LAFLEUR HENDERSON LLP; CATHERINE ALAIN; LEHMANN MARIA ISABEL; FULBRIGHT AND JAWORSKI LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: BIOMIMETIC WATER MEMBRANE COMPRISING AQUAPORINS USED IN THE PRODUCTION OF SALINITY POWER

Abstract: The present invention relates to the use of aquaporin containing membranes in the production of salinity power. The membranes are preferably lipid bilayers incorporating reconstituted aquaporin channels, e.g. entrapped between porous support materials, or alternatively enclosing a highly hydrophobic porous support material. Also disclosed is a salinity power plant.

Classifications:

International (IPC 8-9): B01D B01D61/00 B01D61/02 B01D61/06 B01D61/08 B01D61/24 B01D61/38 B01D65/00 B01D67/00 B01D69/00 B01D69/02 B01D69/10 B01D69/12 B01D69/14 B01D71/02 B01D71/06 B01D71/10 B01D71/36 B01D71/68 B01D71/74 B01D71/80 C02F1/44 C02F103/04 C08J9/40 F03B13/00 F03B17/02 F03G F03G7/00 F03G7/06 (Advanced/Invention);

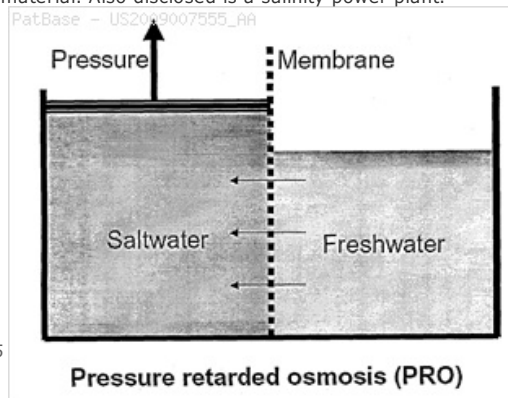
C02F103/04 C07K14/00 (Advanced/Non-invention); B01D61/00 B01D61/02 B01D61/24 B01D61/38 B01D69/00 B01D71/00 C02F1/44 F03G7/00 F03G7/06 (Core/Invention); B01D C02F F03G (Subclass/Invention)

International (IPC 1-7): B01D69/02 B01D69/14 F03G7/00

CPC: B01D61/002 B01D71/06 B01D71/80 C02F1/441 B01D69/10 B01D69/02 B01D69/141 B01D69/142 B01D71/74 C02F1/44 C02F1/442 C07K14/705 F03G7/005 Y02E10/36 Y02A20/131

European: B01D61/00B B01D69/02 B01D69/10 B01D69/14B B01D69/14B10 B01D71/06 B01D71/74 B01D71/80 C02F1/44 C07K14/705 F03G7/00C M02F1/44B M02F1/44C Y02E10/36

US: 210/170.11 210/321.65 210/321.66 210/321.71 210/321.710S 210/321.75 210/500.1 210/500.21 210/500.210S 210/500.29 210/637 210/638 210/641 210/650 210/651 210/652 210/653 210/655 290/54 422/101 422/534 424/450 60/326 60/326P 60/445 60/445S



Family:

Publication number	Publication date	Application number	Application date
AT457823 E	20100315	AT20060722955T	20060519
AT532576 E	20111115	AT20060791419T	20060920
AU2006246841 AA	20061123	AU20060246841	20060519
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EP2179780 B9	20130403	EP20100001511	20060519
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IN258338 B	20140103	IN2008KN01345	20080403
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US2009007555 AA	20090108	US20060067448	20060920
US2009120874 AA	20090514	US20060915121	20060519
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Priority:

DK20050000740	20050520	US20050683466	20050520	US20050683466P	20050520
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JP20110247702	20060920	JP20080531533T	20060920	EP20060791419	20060920
WO2006DK00520	20060920	US20060067448	20060920		

Probable Assignee: AQUAPORIN A S

Assignee(s): (std): AQUAPORIN APS ; AQUAPORIN AS ; JENSEN PETER HOLME ; KELLER DANIELLE

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Inventor(s): CLAUS HELIX NIELSEN ; PETER HOLME JENSEN ; THE DESIGNATION OF THE INVENTOR HAS NOT YET...

Agent(s): FB RICE; FB RICE PTY LTD; BERESKIN AND PARR LLP; BERESKIN AND PARR LLP SENCRL SRL; PIASETZKI NENNIGER KVAS LLP; LEINWEBER AND ZIMMERMANN; KIDDLE SIMON JOHN; KIDDLE SIMON JOHN ET AL; PONTI ADELAIDA; REINHOLD COHN AND PARTNERS; KOBAYASHI YASUSHI; YAMAMOTO OSAMU; IZUMIYA REIKO; HOSHINO OSAMU; ONO SHINJIRO; KAJITA TSUYOSHI; TAKEUCHI SHIGEO; CLARK AND ELBING LLP; KRISTINA

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

Title: SUPERHYDROPHILIC COATINGS

Abstract: A superhydrophilic coating can be antireflective and antifogging. The coating can remain antireflective and antifogging for extended periods.

Classifications:

International (IPC 8-9): B32B5/14 B32B5/16 B32B7/04 C09K3/00

D06N7/04 G11B5/64 (Advanced/Invention);

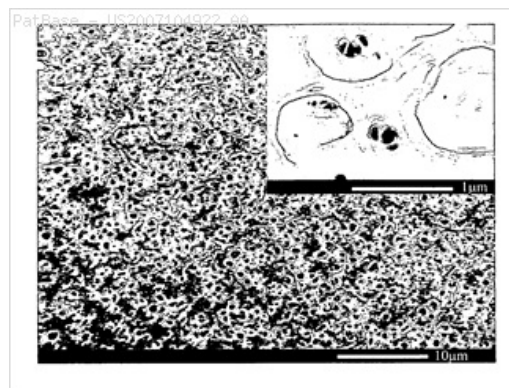
B05D1/18 B05D5/06 (Advanced/Non-invention);

C09K3/00 G11B5/64 (Core/Invention)

CPC: B05D5/04 B05D1/18 B05D5/06 C03C17/3405 C03C2217/42
C03C2217/425 C03C2217/478 C03C2217/75 C08L33/02 C09D139/00
Y10T428/24355 Y10T428/24372 Y10T428/24942 Y10T428/25

European: B05D5/04 C03C17/34B C09D139/00 L05D1/18 L05D5/06
M03C217/420 M03C217/425 M03C217/478 M03C217/750 M08L33/02

US: 428/141 428/141P 428/143 428/143S 428/212 428/323



Family:

Publication number	Publication date	Application number	Application date
EP1952394 A2	20080806	EP20060844287	20061107
EP1952394 A4	20110518	EP20060844287	20061107
JP2009515032 T2	20090409	JP20080540148T	20061107
US2007104922 AA	20070510	US20050268547	20051108
US2007166513 AA	20070719	US20060530751	20060911
US8153233 BB	20120410	US20060530751	20060911
WO07056427 A2	20070518	WO2006US43435	20061107
WO07056427 A3	20071101	WO2006US43435	20061107

Priority:

US20050268547 20051108 US20060530751 20060911 WO2006US43435 20061107

Probable Assignee: MASSACHUSETTS INST OF TECHNOLOGY

Assignee(s): (std): CEBECI FEVZI C ; COHEN ROBERT E ; MASSACHUSETTS INST TECHNOLOGY ; RUBNER MICHAEL F ; ZHAI LEI ; SHENG XIAOXIA

Assignee(s): TECHNOLOGY MASSACHUSETTS INST ; TECHNOLOGY MASSACHUSETTS INST OF ; MASSACHUSETTS INSTITUTE OF TECHNOLOGY ; MASSACHUSETTS INST ; MASSACHUSETTS INST OF TECHNOLOGY

Inventor(s): (std): CEBECI FEVZI C ; COHEN ROBERT E ; RUBNER MICHAEL F ; ZHAI LEI ; SHENG XIAOXIA

Inventor(s): CEBECI FEVZI ; RUBNER MICHAEL ; COHEN ROBERT

Agent(s): MALLALIEU CATHERINE LOUISE ET AL; STEPTOE AND JOHNSON LLP

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: SUBSTRATE HAVING A SELF CLEANING ANTI-REFLECTING COATING AND METHOD FOR ITS PREPARATION

Abstract: Provided is a substrate having a surface that is at least partially laminated with a coating that provides the surface both anti-reflective and self-cleaning properties. The coating is characterized by low refraction, a contact angle of at least 150 degrees and a sliding angle of at most 10 degrees, and includes two components: (i) an anti-reflecting coating (ARC) component and (ii) a self-cleaning coating (SCC) component. Also provided is a method for providing a substrate having a surface that is at least partially laminated with an anti-reflecting (AR) self-cleaning (SC) coating, the method including providing a substrate with at least one surface and applying a coating onto at least a part of the at least one surface, the coating including an ARC component and a SCC component.

Classifications:

International (IPC 8-9): B05D1/18 B05D1/36 B05D5/06 B32B9/00 B32B9/04 C03C17/34 C09D1/00 C09D5/00 C09D5/16 G02B1/11 G02B27/00 (Advanced/Invention);

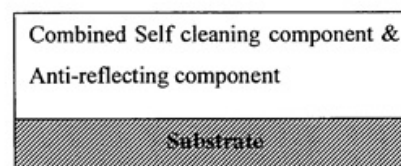
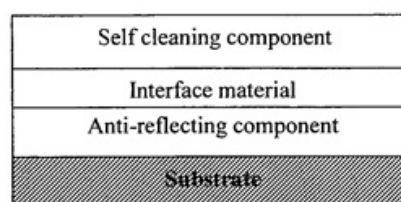
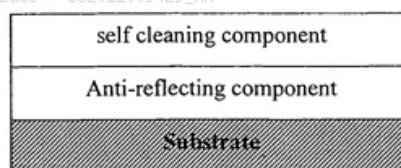
C03C17/34 (Core/Invention)

CPC: C03C2217/425 C03C2217/732 C03C2217/76 C09D5/006 C09D5/1618 G02B27/0006 Y10T428/31504 Y10T428/31663 G02B1/18 G02B1/11 C03C17/3411

European: C03C17/34D C09D5/00D C09D5/16C3E G02B1/11 G02B27/00C M03C217/425 M03C217/732 M03C217/760

US: 1/1 106/286.1 106/286.100S 106/286.2 106/286.200S 106/286.5 106/286.500S 106/286.6 106/286.600S 106/286.7 106/286.700S 427/162 427/162S 428/411.1 428/411.100S 428/447 428/447P

PatBase - US2012009429_AA



Family:

Publication number	Publication date	Application number	Application date
■ CN102317228 A	20120111	CN201080007637	20100112
■ CN102317228 B	20151125	CN201080007637	20100112
■ EP2385931 A1	20111116	EP20100702545	20100112
■ US2012009429 AA	20120112	US20100144166	20100112
■ US9073782 BB	20150707	US20100144166	20100112
■ WO10079495 A1	20100715	WO2010IL00027	20100112

Priority:

US20090193948P 20090112 US20100144166 20100112 WO2010IL00027 20100112

Probable Assignee: CLEANSUN ENERGY LTD

Assignee(s): (std): CLEANSUN ENERGY LTD ; LEIKOVICH AMNON ; SHMUELI EITAN

Inventor(s): (std): AMNON LEIKOVICH ; EITAN SHMUELI ; LEIKOVICH AMNON ; SHMUELI EITAN

Agent(s): ROBERTSON JAMES ALEXANDER; VORYS SATER SEYMOUR AND PEASE LLP; SUSANNE M; ARI G; REINHOLD COHN AND PARTNERS

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: OPTICAL COATING COMPRISING POROUS SILICA NANOPARTICLES

Abstract: An optical coating comprising a binder and a plurality of porous silica nanoparticles in which the pores are randomly oriented, a solution for forming an optical coating comprising a solvent and a plurality of porous silica nanoparticles in which the pores are randomly oriented, a method for fabricating an optical coating, and the use of porous silica nanoparticles in which the pores are randomly oriented in the manufacture of an optical coating.

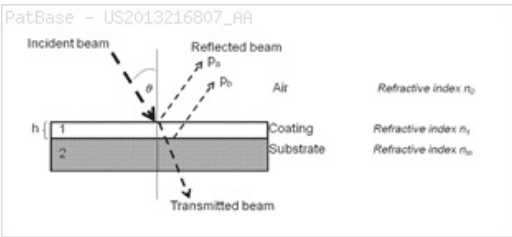
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International (IPC 8-9): B32B7/02 C09D183/02 C09D183/06 C09D201/00 C09D7/12 G02B1/10 G02B1/11 (Advanced/Invention)

CPC: G02B1/111 G02B1/113 G02B2207/107 Y10T428/24942 Y10T428/24992 Y10T428/249974

European: G02B1/11 G02B1/11D S02B207/107

US: 106/287.16 427/162 428/212 428/218 428/313.9 523/466



Family:

Publication number	Publication date	Application number	Application date
CN103097918 A	20130508	CN201180039540	20110819
EP2606388 A1	20130626	EP20110748979	20110819
GB201014024 A0	20101006	GB20100014024	20100820
IN02405DN2013 A	20160415	IN2013DN02405	20130319
JP2013539550 T2	20131024	JP20130524482T	20110819
KR20130092565 A	20130820	KR20137004390	20110819
RU2013112006 A	20140927	RU20130112006	20110819
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US2013216807 AA	20130822	US20110817268	20110819
WO12022983 A1	20120223	WO2011GB51565	20110819

Priority:

GB20100014024 20100820 WO2011GB51565 20110819

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Assignee(s): OXFORD ENERGY TECHNOLOGIES LIMITED

Inventor(s): (std): GARDENER MARTIN ; OSTROWSKI SASHA ; WAKEFIELD GARETH

Agent(s): ANDREWS PAUL DAVID; MURGITROYD AND COMPANY

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: DURABLE ANTI-REFLECTION COATINGS

Abstract: An article comprising a substrate and an anti-reflection coating, and methods for depositing the coating, are disclosed. The coating comprises (a) a first coating layer having a high refractive index deposited on the substrate; (b) an epoxide-silica coating layer deposited onto the high refractive index coating layer, comprising an inorganic silica component and an organic organo-silicate component, and (c) a silica coating layer consisting essentially of silica, deposited directly onto the epoxide-silica coating layer. The anti-reflection coating optionally comprises a stack of coating layers, between the first high refractive index coating layer and the epoxide-silica coating layer, having alternating a low refractive index and a high refractive index. Individual coating layer compositions, refractive indexes, and thicknesses are carefully controlled such that reflectance is minimized through destructive interference in the visible light wavelength range of 400 to 700 nm. The resulting deposited coating provides excellent mechanical, chemical, and environmental durability.

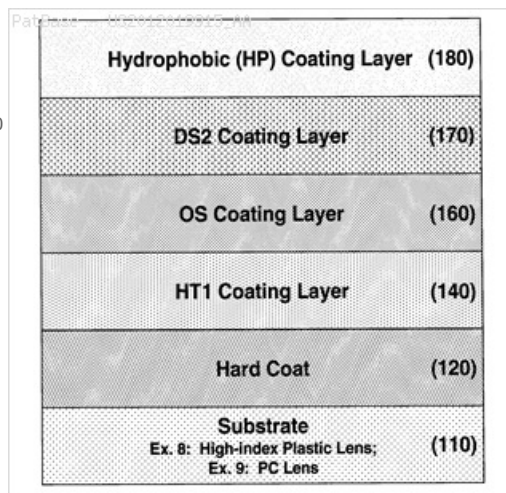
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International (IPC 8-9): B05D5/06 B32B18/00 B32B25/20 B32B37/00 G02B1/10 G02B1/11 G02B5/28 (Advanced/Invention)

CPC: G02B1/111 B32B33/00 B32B2307/40 B32B2307/418 C03C17/42 C03C2217/73 C03C2217/76 C08J7/045

European: B32B33/00 C03C17/42 C08J7/04D1 G02B1/11B L32B307/400 L32B307/418 M03C217/730 M03C217/760

US: 359/580 359/580S 359/581 359/582 359/586 359/586P 359/589 427/164 427/164S 427/165 427/165S

**Family:**

Publication number	Publication date	Application number	Application date
US2012019915 AA	20120126	US20110247334	20110928
US8358467 BB	20130122	US20110247334	20110928
WO11044519 A2	20110414	WO2010US52080	20101008
WO11044519 A3	20110818	WO2010US52080	20101008

Priority:

US20090250206P 20091009 WO2010US52080 20101008 US20110247334 20110928

Probable Assignee: YAZAKI CORP

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Agent(s): PERKINS COIE LLP; VIOLA T; KUNG VIOLA T

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Title: OPTICAL ARTICLE COMPRISING A TEMPORARY ANTI-FOGGING COATING WITH IMPROVED DURABILITY

Abstract: The present invention relates to an optical article comprising a substrate provided with a coating comprising silanol groups on the surface thereof and, directly contacting this coating, an anti-fog coating precursor coating, said precursor coating having a static contact angle with water of more than 10 degrees and of less than 50 degrees, a thickness lower than or equal to 5 nm, and being obtained through the grafting of at least one organosilane compound having a polyoxyalkylene group comprising less than 80 carbon atoms and at least one silicon atom bearing at least one hydrolyzable group. The anti-fog coating precursor is converted into an actual anti-fog coating by applying on the surface thereof a film of a liquid solution comprising at least one surfactant. The anti-fog coating is immediately operational and provides long-lasting effects.

Classifications:

International (IPC 8-9): B05D5/06 B32B37/00 C03C17/30 G02B1/10 G02B1/11 G02B1/111 G02B1/18 G02B27/00 G02C11/08 G02C7/00

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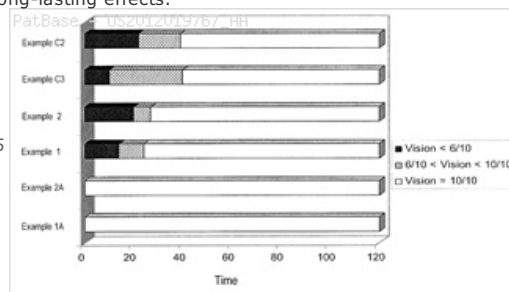
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C03C17/30 (Core/Invention)

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European: C03C17/30 G02B1/10B G02C7/02 M03C217/750 M03C218/310

US: 351/62 351/62P 427/164 427/164S 428/304.4



Family:

Publication number	Publication date	Application number	Application date
AU2010338060 AA	20110707	AU20100338060	20101222
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WO11080472 A2	20110707	WO2010FR52895	20101222
WO11080472 A3	20110825	WO2010FR52895	20101222

Priority:

FR20090059685 20091231 FR20100053269 20100428 EP20100808928 20101222
WO2010FR52895 20101222

Probable Assignee: ESSILOR INT COMPAGNIE GENERALE D OPTIQUE

Assignee(s): (std): CADET MAMONJY ; ESSILOR INT ; HENKY FRANCIS ; FEUILLADE MATHIEU ; SATISLOH AG

Assignee(s): ESSILOR INT COMPAGNIE GENERALE D OPTIQUE ; ESSILOR INT COMP GENERALE D OPTIQUE ; ESSILOR INT (COMPAGNIE GENERALE D'OPTIQUE) ; ESSILOR INT COMAGNIE GENERALE D OPTIQUE ; ESSILOR INTERNATIONAL COMPAGNIE GENERALE D OPTIQUE

Inventor(s): (std): CADET MAMONJY ; FEUILLADE MATHIEU ; HENKY FRANCIS ; FRANCIS HENKY ; MAMONJY CADET ; MATHIEU FEUILLADE

Agent(s): WATERMARK PATENT AND TRADE MARKS ATTORNEYS; WATERMARK INTELLECTUAL PROPERTY PTY LTD; GOWLING LAFLEUR HENDERSON LLP; GOWLING WLG CANADA LLP; CORALIS HARLE; LEHMANN MARIA ISABEL; CABINET HARLE ET PHELIP; FULBRIGHT AND JAWORSKI LLP; CATHERINE ALAIN ET AL

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