

PatBase - Search results 11 March 2019

Search query (2): [SP]: 1. a substrate coated on one face with a thin-films stack having reflection properties in the infrared and/or in solar radiation comprising a single metallic functional layer and two antireflection coatings, said coatings each comprising at least one dielectric layer, said functional layer being positioned between the two antireflection coatings, wherein at least one of said antireflection coatings comprises an intermediate layer comprising zinc oxide ZnO_{1+x} with $0.05 \leq x \leq 0.3$ and having a physical thickness of between 0.5 nm and 20 nm. 2. the substrate as claimed in claim 1, wherein said intermediate layer comprises zinc oxide ZnO_{1+x} with $0.1 \leq x \leq 0.3$. 3. the substrate as claimed in claim 1, wherein said intermediate layer is located in the antireflection coating superjacent to the functional layer. 4. the substrate as claimed in claim 1, wherein said intermediate layer is located in said dielectric coating positioned beneath said metallic functional layer. 5. the substrate as claimed in claim 3, wherein said intermediate layer is located, on another face, directly in contact with a nitride-based dielectric layer having a physical thickness of between 10 and 50 nm. 6. the substrate as claimed in claim 1, wherein said antireflection coating positioned beneath said metallic functional layer comprises a high-index layer made of a material having a refractive index between 2.3 and 2.7. 7. the substrate as claimed in claim 6, wherein said high-index layer has a physical thickness of between 5 and 25 nm. 8. a multiple glazing comprising: at least two substrates which are held together by a frame structure, said glazing providing a separation between an external space and an internal space, wherein at least one intermediate gas-filled space is positioned between the two substrates, one of the two substrates being the substrate as claimed in claim 1. 9. a process for obtaining a substrate coated on one face with a thin-films stack having reflection properties in the infrared and/or in solar radiation comprising a single metallic functional layer and two antireflection coatings, comprising the following steps, in order: the deposition depositing on one face of said substrate the thin-films stack having reflection properties in the infrared and/or in solar radiation comprising the single metallic functional layer and the two antireflection coatings, to form the substrate as claimed in claim 1, treating said thin-films stack using a source that produces radiation. 10. the substrate as claimed in claim 1, wherein the single metallic functional layer is based on silver or on a metal alloy containing silver. 11. the substrate as claimed in claim 1, wherein the physical thickness is between 2.5 nm and 10 nm. 12. the substrate as claimed in claim 1, wherein said intermediate layer comprises zinc oxide ZnO_{1+x} with $0.15 \leq x \leq 0.25$. 13. the substrate as claimed in claim 3, wherein said intermediate layer is located directly on an overblocker coating located directly on said functional layer. 14. the substrate as claimed in claim 4, wherein said intermediate layer is located in said dielectric coating positioned directly underneath said metallic functional layer. 15. the substrate as claimed in claim 4, wherein said intermediate layer is located, on another face, directly in contact with a nitride-based dielectric layer having a physical thickness of between 10 and 50 nm. 16. the substrate as claimed in claim 15, wherein the nitride-based dielectric layer is based on silicon nitride Si_3N_4 . 17. the substrate as claimed in claim 5, wherein the nitride-based dielectric layer is based on silicon nitride Si_3N_4 . 18. the substrate as claimed in claim 6, wherein the high-index layer is based on oxide. 19. the process as claimed in claim 9, wherein the single metallic functional layer is based on silver or on a metal alloy containing silver. 20. the process as claimed in claim 9, wherein the radiation produced in the treating is infrared radiation.

Results: 6

1) Family number: 71883137 (WO18207555A1)

© PatBase

Title: SOLAR RADIATION SHIELDING MEMBER

Priority: JP20170095342 20170512

Family:

Publication number	Publication date	Application number	Application date
WO18207555 A1	20181115	WO2018JP15648	20180416

Probable Assignee: CENTRAL GLASS CO LTD

Assignee(s):(std): CENTRAL GLASS CO LTD

Inventor(s):(std): HORIE YUKI ; KATO KAZUHIRO

Agent(s): KOBAYASHI HIROMICHI ET AL

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 DJ 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 JO JP KE KG KH KM KN KP KR KW 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

International class (IPC 8-9): B32B15/01 B32B9/00 C03C17/36 C03C27/12 E06B5/00 (Advanced/Invention); G02B1/115 (Advanced/Non-invention)

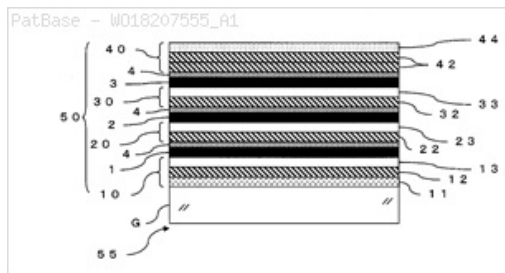
CPC: B32B9/00 B32B15/01 C03C17/36 E06B5/00 G02B1/115

[Classification Explorer](#)

Cited documents: WO16121752 A1, WO16051066 A1, JP2014508093 T2,

Abstract:

This solar radiation shielding member is characterized by comprising, on a transparent substrate, a low irradiation film in which a first dielectric film, a first metal film, a second dielectric film, a second metal film, a third dielectric film, a third metal film and a fourth dielectric film are sequentially laminated. This solar radiation shielding member is also characterized in that: the first dielectric film comprises a dielectric layer A which contains silicon and nitrogen and is arranged directly on the transparent substrate, and a dielectric layer B which contains titanium and oxygen and is arranged on the dielectric layer A; the dielectric layer A has an optical film thickness of 12-86 nm; the first dielectric film, the second dielectric film and the third dielectric film have crystalline dielectric layers that respectively serve as the uppermost layers; the crystalline dielectric layers have an optical film thickness of 5-54 nm; and the first metal film, the second metal film and the third metal film are Ag films that respectively have the crystalline dielectric layers directly below themselves.



2) Family number: 43772382 (US2011070417A)

© PatBase

Title: SUBSTRATE PROVIDED WITH A STACK HAVING THERMAL PROPERTIES

Priority: FR20080051731 20080318 WO2009FR50444 20090317

Family:

Publication number	Publication date	Application number	Application date
--------------------	------------------	--------------------	------------------

BRPI0908713 A2	20150728	BR2009PI08713	20090317
CA2717921 AA	20091008	CA20092717921	20090317
CN102036930 A	20110427	CN200980117939	20090317
CN102036930 B	20140618	CN200980117939	20090317
EA021052 B1	20150331	EA20100071085	20090317
EA201071085 A1	20110429	EA20100071085	20090317
EP2268588 A2	20110105	EP20090726740	20090317
FR2928913 A1	20090925	FR20080051731	20080318
FR2928913 B1	20110520	FR20080051731	20080318
IN03417KN2010 A	20111125	IN2010KN03417	20100916
JP2011518096 T2	20110623	JP20110500271T	20090317
KR20100123875 A	20101125	KR20107020797	20090317
MX2010010100 A1	20101004	MX20100010100	20090317
US2011070417 AA	20110324	US20090933240	20090317
WO09122090 A2	20091008	WO2009FR50444	20090317
WO09122090 A3	20091210	WO2009FR50444	20090317
ZA201006614 A	20110525	ZA20100006614	20100915

Probable Assignee: SAINT GOBAIN GLASS FRANCE

Assignee(s):(std): SAINT GOBAIN ; SAINT GOBAIN GLASS FRANCE ; GERARDIN HADIA ; REUTLER PASCAL ; SAINT GOBAIN SA

Assignee(s): SAINT GOBA IN GLASS FRANCE ; SAINT GOBAIN GLASS FRANCE SOC ANONYME ; SAINT GOBAIN GLASS FRANCE SOCIETE ANONYME

Inventor(s):(std): GERARDIN HADIA ; HADIA GERARDIN ; PASCAL REUTLER ; REUTLER PASCAL

Agent(s): JAMET VINCENT; SAINT GOBAIN RECHERCHE; AOKI ATSUSHI; ISHIDA TAKASHI; KOGA TETSUJI

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 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 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 PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

International class (IPC 8-9): B05D5/06 B32B17/00 B32B17/06 B32B37/00 B32B7/02 C03C C03C17/34 C03C17/36 G02B1/11 (Advanced/Invention); B32B17/06 C03C17/34 C03C17/36 G02B1/11 (Advanced/Non-invention); B32B17/06 C03C17/36 (Core/Invention)

CPC: Y10T428/2495 C03C17/3618 C03C17/3626 C03C17/3644 C03C17/3652 C03C17/366 C03C17/36

European class: C03C17/36 C03C17/36B320 C03C17/36B332 C03C17/36B342 C03C17/36B346 C03C17/36B352L

US class: 156/278 156/278S 427/160 427/160S 428/213 428/213P

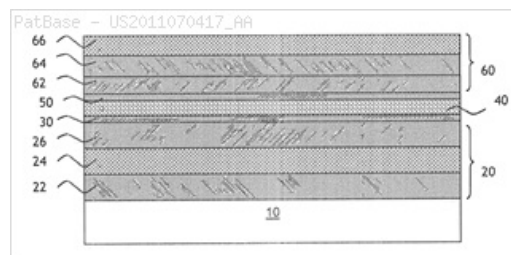
[Classification Explorer](#)

Cited documents: WO08115329 A1, WO08060453 A2, WO07101964 A1, WO07054656 A1, WO06122900 A1, WO02092529 A1, US2007009746 AA, JP2006159580 A2, EP1394130 A1, EP0963960 A1, CN1173428,

Forward Citations: WO16088688, WO16051068, WO16051066, WO13127563, US9802860, US9771301, US9751801, US9708215, US9630875, US9598311, US9126862, US8987697, US8969129, US8906736, US8859328, US8735217, US2014374240, US2014357046, US2014224645, US2014217348, US2013136921, US2012263885, US10214447, US10167225, US10138160, US10017416, KR101890968, JP6113794, JP5996561, JP2016110224, JP2016041651, JP2014508093, JP2014017448, FR3026404, FR3026403, EP3388400, EP3004980, CN106966607, CN105254187, CN103946174, CN103946174,

Abstract:

The invention relates to a glass substrate (10) provided on a main face with a stack of thin layers comprising a metallic functional layer (40) with reflective properties in the infrared and/or in solar radiation, based notably on silver or a metal alloy containing silver, and two antireflective coatings (20, 60), each of said coatings having at least one dielectric layer (22, 64) based on silicon nitride, optionally doped with at least one other element, such as aluminum, said functional layer (40) being disposed between the two antireflective coatings (20, 60), characterized in that the optical thickness e₆₀ in nm of the overlying antireflective coating (60) is: e₆₀=5xe₄₀+a, where e₄₀ is the geometric thickness in nm of the functional layer (40) such that 13?e₄₀?25, and preferably 14?e₄₀?18, and where a is a number=25 plus or minus 15.



3) Family number: 46846508 (US2003150711A)

© PatBase

Title: COATED ARTICLE WITH HIGH VISIBLE TRANSMISSION AND LOW EMISSIVITY

Priority: US20010978184 20011017 WO2002US32909 20021016

Family:	Publication number	Publication date	Application number	Application date
	CA2459505 AA	20040226	CA20022459505	20021016
	CA2459505 C	20080930	CA20022459505	20021016
	EP1441996 A1	20040804	EP20020773759	20021016
	PL200138 B1	20081231	PL20020368608	20021016
	PL368608 A1	20050404	PL20020368608	20021016
	US2003150711 AA	20030814	US20010978184	20011017
	US6936347 BB	20050830	US20010978184	20011017
	WO03033427 A1	20030424	WO2002US32909	20021016

Probable Assignee: GUARDIAN GLASS LLC

Assignee(s):(std): GUARDIAN IND ; CT LUXEMBOURGEOIS RECH VERRE

Assignee(s): GUARDIAN IND CORP ; CENTRE LUXEMBOURGEOIS DE RECHERCHES POUR LE VERRE ET LA CERAMIQUE S A C R V C ; GUARDIAN GLASS LLC ; CENTRE LUXEMBOURGEOIS DE RECHERCHES POUR LE VERRE ET LA CERAMIQUE SARL ; GUARDIAN EUROPE RL SA ; CENTRE LUXEMBOURGEOIS DE RECHERCHES POUR LE VERRE ; CENTRE LUXEMBOURGEOIS DE RECHERCHES POUR LE VERRE EL AL CERAMIZUE (CRVC) SA ; CENTRE LUXEMBOURGEOIS DE RECHERCHES POUR LE VERRE EL AL CERAMIZUE CRVC SA ; CENTRE LUXEMBOURGEOIS DE RECHERCHES POUR LE VERRE ET LA CERAMIQUE CRVC SA ; CENTRE LUXEMBOURGEOIS DE RECHERCHES POUR LE VERRE ET LA CERAMIQUE RL SA ; LAIRD RONALD E

Inventor(s):(std): LAIRD RONALD E ; LAIRD CAROLE ; KRILTZ UWE

Agent(s): MACPHERSON LESLIE AND TYERMAN LLP; NIXON AND VANDERHYE PC

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE 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 LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ OM PH PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW

International class (IPC 8-9): C03C17/36 (Advanced/Invention)

International class (IPC 1-7): B32B17/06 C03C17/36 C23C14/32

CPC: C03C17/36 C03C17/3618 C03C17/3626 C03C17/3639 C03C17/3644 C03C2217/78 C03C17/3636 C03C17/366 Y10T428/12896

European class: C03C17/36 C03C17/36B320 C03C17/36B332 C03C17/36B339 C03C17/36B342 C03C17/36B352L M03C217/780

US class: 204/192.11 204/192.110P 204/192.17 204/192.170S 204/192.21 204/192.210S 428/428 428/432 428/432S 428/448 428/472 428/673 428/697 428/698 428/699 428/699S 428/701 428/702 428/702S

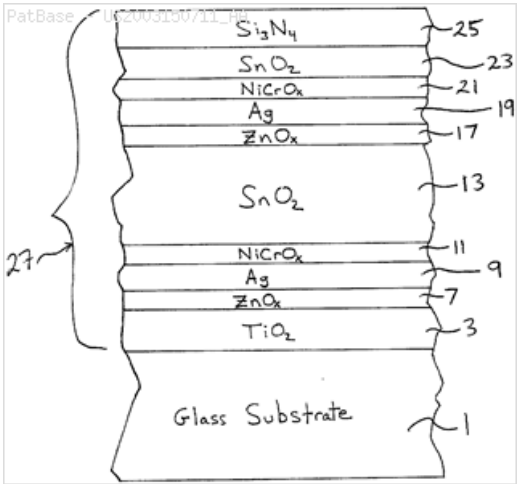
[Classification Explorer](#)

Cited documents: US6398925 BA, US6355334 BA, US6354109 BA, US6292302 BA, US6284377 BA, US6280834 BA, US6277480 BA, US6261693 BA, US6231999 BA, US6060178 A, US5965246 A, US5962115 A, US5942338 A, US5935702 A, US5834103 A, US5821001 A, US5800933 A, US5770321 A, US5688585 A, US5563734 A, US5557462 A, US5425861 A, US5376455 A, US5302449 A, US5298048 A, US5153054 A, US4898789 A, US4413877 A, US3682528 A, US2002136905 AA, EP1174397 A2, EP0963960 A1, EP0870601 A2, DE4211363 A1,

Forward Citations: WO18165406, WO18165357, WO18165355, WO18165136, WO18165130, WO18160936, WO18160933, WO18160789, WO18160783, WO18160626, WO18160616, WO18156837, WO18047037, WO17093677, WO17093676, WO17093675, WO16051066, WO15047928, WO14105674, WO14008183, WO14008173, WO10096108, WO10014132, WO09061329, WO09023150, WO09023149, WO08153622, WO08133773, WO08094381, WO08085264, WO07095876, WO07081473, WO07075298, WO06097513, WO06078492, WO06078492, WO06063171, WO06063171, WO06028629, WO06020753, WO06020753, WO06020641, WO06020641, WO06012183, WO05115941, WO05100275, WO05092812, WO05019125, WO05019125, WO04087598, WO04087598, WO03068502, US9971194, US9963383, US9956906, US9897332, US9859840, US9816316, US9789750, US9776915, US9738561, US9694740, US9574352, US9557595, US9556070, US9556068, US9518319, US9517721, US9423533, US9403345, US9371684, US9371032, US9343803, US9333728, US9302936, US9297197, US9272949, US9212417, US9151879, US9090504, US9067822, US8945714, US8941788, US8936842, US8900679, US8828194, US8808864, US8734920, US8703281, US8668961, US8665384, US8663433, US8617641, US8609260, US8592059, US8524051, US8506737, US8491760, US8450600, US8450594, US8445774, US8440310, US8440037, US8409717, US8409663, US8377524, US8367226, US8357458, US8334452, US8298678, US8281617, US8237047, US8236116, US8226803, US8221833, US8203073, US8202619, US8199264, US8197941, US8197892, US8187713, US8147975, US8147972, US8142622, US8124237, US8119199, US8114472, US8109141, US8097342, US8092912, US8076571, US8025941, US8022291, US8017243, US8012317, US8009053, US7998602, US7998320, US7989072, US7964788, US7947374, US7931971, US7901781, US7897260, US7892662, US7888594, US7879448, US7858191, US7858150, US7846492, US7845142, US7820019, US7803427, US7775103, US7771830, US7767253, US7752907, US7745009, US7744951, US7713633, US7659002, US7648769, US7641978, US7632538, US7628896, US7597965, US7597963, US7597962, US7585396, US7563347, US7561055, US7556868, US7551095, US7551094, US7550067, US7537677, US7534496, US7521096, US7516002, US7492270, US7462398, US7462397, US7419725, US7390572, US7344782, US7311975, US7291251, US7217461, US7217460, US7198851, US7189458, US7150916, US7087309, US7081302, US7067175, US7056588, US6942923, US6887575, US2017129808, US2015118465, US2015118421, US2014356634, US2014272395, US2012318475, US2012056791, US2011214733, US2011169402, US2011135955, US2011133640, US2011117371, US2011111204, US2011108101, US2011097590, US2011024284, US2010300645, US2010295330, US2010291393, US2010279144, US2010276274, US2010242587, US2010089444, US2010046191, US2010040892, US2010024874, US2009324934, US2009297864, US2009263596, US2009226714, US2009223288, US2009220802, US2009214880, US2009205956, US2009197097, US2009194157, US2009194155, US2009181256, US2009176107, US2009169846, US2009135319, US2009126791, US2009115922, US2009101209, US2009084438, US2009075092, US2009068447, US2009044897, US2009025777, US2009025776, US2009004412, US2008308151, US2008308146, US2008308145, US2008302462, US2008302414, US2008295584, US2008285134, US2008271782, US2008268260, US2008223430, US2008220160, US2008220152, US2008210303, US2008178932, US2008169021, US2008163929, US2008107799, US2008105299, US2008105298, US2008105293, US2008070044, US2008060749, US2008057319, US2008020232, US2008020201, US2007254164, US2007254163, US2007243391, US2007224357, US20072200718, US2007162201, US2007157722, US2007148379, US2007144085, US2007128451, US2007128449, US2007116965, US2007104964, US2007036990, US2007009746, US2007007125, US2006275613, US2006269661, US2006207291, US2006172139, US2006166009, US2006159932, US2006144697, US2006099428, US2006083934, US2006078746, US2006046074, US2006046073, US2006046072, US2006046018, US2006029754, US2006008657, US2006008656, US2006008655, US2005287309, US2005258029, US2005238861, US2005208281, US2005202255, US2005196632, US2005191502, US2005191501, US2005164015, US2005042460, US2005025917, US2004253471, US2004229074, US2004121165, US2004101694, US2004074260, US2003228476, US2003175529, US10173579, KR100668091, FR3044658, FR3044657, FR3044656, FR3026403, EP3403820, EP3348526, EP3168402, EP3023246, EP2870037, EP2664495, EP2664495, EP2634286, EP2540681, EP2540681, EP2332891, EP2316802, EP2284135, EP2284135, EP2269961, EP2264210, EP2218616, EP2217437, EP2138667, EP2119608, EP2100783, EP2100783, EP2100768, EP2100722, EP2100722, EP2093051, EP2093051, EP1971508, EP1966462, EP1851354, EP1831013, EP1831013, EP1831013, EP1819643, EP1786623, EP1786623, EP1784303, EP1778476, EP1778476, EP1734019, EP1673313, EP1673313, EP1673313, EP1663887, EP1644186, EP1606225, EA12597, EA012597, DE102004047135, CN104325736, BE1016553,

Abstract:
A coated article that can be used in applications such as insulating glass (IG) units, so that resulting IG units can achieve high visible transmission of at least 70 percent (e.g., when using clear glass substrates from 1.0 to 3.5 mm thick), combined with at least one of: (a) SHGC no greater than about 0.45; more preferably no greater than about 0.40; (b) SC no greater than about 0.49; more preferably no greater than about 0.46; (c) chemical and/or mechanical durability; (d) neutral transmissive color such that transmissive ass is from -5.0 to 0 (more preferably from -3.5 to -1.5), and transmissive bss is from -2.0 to 4.0 (more preferably from 1.0 to 3.0); and (e) neutral reflective color from the exterior of the IG unit (i.e., Rg/Rout) such that reflective ass

is from -3.0 to 2.0 (more preferably from -2.0 to 0.5), and reflective bss is from -5.0 to 1.0 (more preferably from -4.0 to -1.0). In certain example non-limiting embodiments, coated articles herein comprise: substrate/TiOx/ZnOx/Ag/NiCrOx/SnOx/ZnOx/Ag/NiCrOx/SnOx/SixNy.



4) Family number: 62008581 (US2017218685A) © PatBase

Title: SUBSTRATE PROVIDED WITH A STACK HAVING THERMAL PROPERTIES AND A SUPERSTOICHIOMETRIC INTERMEDIATE LAYER

Priority: FR20140059255 20140930 WO2015FR52587 20150929

Family:	Publication number	Publication date	Application number	Application date
	BR112017006220 A2	20180313	BR20171106220	20150929
	CN106715351 A	20170524	CN201580053115	20150929
	CO20170004368 A2	20170920	CO20170004368	20170428
	EA201790761 A1	20170929	EA20170090761	20150929
	EP3201152 A1	20170809	EP20150787258	20150929
	FR3026403 A1	20160401	FR20140059255	20140930
	FR3026403 B1	20161125	FR20140059255	20140930
	IN201717011425 A	20170915	IN201717011425	20170330
	JP2017537044 T2	20171214	JP20170517090T	20150929
	KR20170063706 A	20170608	KR20177009867	20150929
	MX2017004159 A1	20170530	MX20170004159	20150929
	US2017218685 AA	20170803	US20150515354	20150929
	WO16051066 A1	20160407	WO2015FR52587	20150929

Probable Assignee: SAINT GOBAIN GLASS FRANCE

Assignee(s):(std): SAINT GOBAIN ; SAINT GOBAIN GLASS FRANCE ; SAINT GOBAIN SA

Inventor(s):(std): BENOIT GEORGES ; BERTRAND KUHN ; GEORGES BENOIT ; KUHN BERTRAND ; MERCADIER NICOLAS ; NICOLAS MERCADIER

Agent(s): MARGARITA CASTELLANOS ABONDANO; SAINT GOBAIN RECHERCHE

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 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 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

International class (IPC 8-9): B32B15/04 B32B9/00 C03C17/36 C03C27/06 E06B3/66 E06B3/67 (Advanced/Invention)

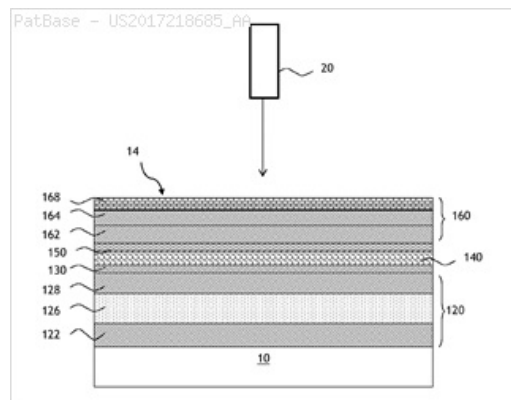
CPC: C03C2218/154 E06B3/6715 C03C2217/212 C03C2217/216 C03C2217/281 C03C2217/256 C03C2217/73 C03C17/36 C03C17/3626 C03C17/3644 C03C17/3652 C03C17/366 C03C17/3681

[Classification Explorer](#)

Cited documents: WO10103224 A1, WO09122090 A2, WO03033427 A1, WO03010105 A1,

Forward Citations: WO18207555,

Abstract: A substrate is coated on one face with a thin-films stack having reflection properties in the infrared and/or in solar radiation including a single metallic functional layer, based on silver or on a metal alloy containing silver, and two antireflection coatings. The coatings each include at least one dielectric layer. The functional layer is positioned between the two antireflection coatings. At least one of the antireflection coatings includes an intermediate layer including zinc oxide Zn₁O_{1+x} with 0.05<x<0.3 and having a physical thickness of between 0.5 nm and 20 nm, or between 2.5 nm and 10 nm.



5) Family number: 46819868 (US2012028009A)

© PatBase

Title: SUBSTRATE PROVIDED WITH A MULTILAYER COATING HAVING THERMAL PROPERTIES, WHICH INCLUDES HIGH-REFRACTIVE-INDEX LAYERS

Priority: FR20090051458 20090309 EP20100714927 20100308 WO2010FR50391 20100308

Family:

Publication number	Publication date	Application number	Application date
CA2753842 AA	20100916	CA20102753842	20100308
CA2753842 C	20170815	CA20102753842	20100308
CN102421720 A	20120418	CN201080020382	20100308
CN102421720 B	20140903	CN201080020382	20100308
DK2406197 T3	20180813	DK20100714927T	20100308
EA021230 B1	20150529	EA20110071111	20100308
EA201171111 A1	20120430	EA20110071111	20100308
EG26958 A	20150201	EG20110081433	20110828
EP2406197 A1	20120118	EP20100714927	20100308
EP2406197 B1	20180516	EP20100714927	20100308
ES2683900 T3	20180928	ES20100714927T	20100308
FR2942794 A1	20100910	FR20090051458	20090309
FR2942794 B1	20110218	FR20090051458	20090309
IN03582KN2011 A	20120420	IN2011KN03582	20110829
JP2012519648 T2	20120830	JP20110553491T	20100308
JP5711158 B2	20150430	JP20110553491T	20100308
KR101677572 B1	20161118	KR20117020546	20100308
KR20110128285 A	20111129	KR20117020546	20100308
PL2406197 T3	20181130	PL20100714927T	20100308
TR201811072 T4	20180921	TR20180011072T	20100308
US2012028009 AA	20120202	US20100254513	20100308
US9708215 BB	20170718	US20100254513	20100308
WO10103224 A1	20100916	WO2010FR50391	20100308

Probable Assignee: SAINT GOBAIN GLASS FRANCE

Assignee(s):(std): REYMOND VINCENT ; SAINT GOBAIN ; SAINT GOBAIN GLASS FRANCE ; SAINT GOBAIN SA ; GERARDIN HADIA

Assignee(s): HADIA GERARDIN ; VINCENT REYMOND

Inventor(s):(std): GERARDIN HADIA ; HADIA GERARDIN ; REYMOND VINCENT ; VINCENT REYMOND

Agent(s): GLOUDREAU GAGE DUBUC ; LAVERY DE BILLY LLP ; JAMET VINCENT ; SAINT GOBAIN RECHERCHE ; ELZABURU SLP ELZABURU SLP ; FULYA SUEMERALP ; OBLON MCCLELLAND MAIER AND NEUSTADT LLP

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 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

International class (IPC 8-9): B32B17/06 B32B17/10 B32B7/02 C03C17/36 G02B1/11 G02B5/26 G02B5/28 (Advanced/Invention); G02B5/28 (Advanced/Non-invention); B32B17/06 C03C17/36 (Core/Invention)

CPC: B32B17/06 B32B7/02 B32B17/10229 G02B5/282 C03C17/36 C03C17/3626 C03C17/3644 C03C17/366 C03C2217/73 Y10T428/24942

European class: C03C17/36 C03C17/36B332 C03C17/36B342 C03C17/36B352L M03C217/730

US class: 428/212 428/212P

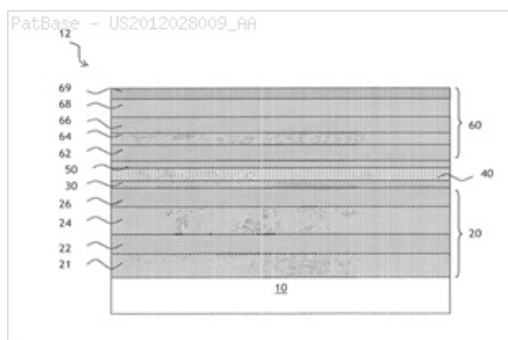
[Classification Explorer](#)

Cited documents: WO07101964 A1, WO07101964, US7087309 BB, US6589658 BA, US6589658, US6040939 A, US5837361 A, US5837361 A, US3901997 A, US3901997 A, US2011070417 AA, US2009197077 AA, US2006246301 AA, US2006246301 AA, US2006099428 AA, JP2009514770 T2, JP2009514770, EP1656328 A2, EP0678484, DE19751711 A1, DE19751711 A1, CN1447133 A,

Forward Citations: WO16051069, WO16051068, WO16051066, WO15071610, WO15056752, WO14199872, WO14080141, WO12143648, WO12127162, US9809492, US9688572, US9599752, US9494717, US9312444, US9059425, US9048459, US8987697, US8969129, US8906736, US8859328, US8735217, US2017240463, US2016207826, US2014374240, US2014357046, US2014224645, US2014217348, US2014117330, US2014061660, US10207952, US10167225, US10081570, KR20170109089, KR20160005748, KR101941718, KR101781768, KR101768257, KR101739563, KR101642672, JP6196980, JP6066929, JP2016536462, JP2015508372, JP2015056752, JP2014508711, JP2014508091, JP2014199872, FR3026405, FR3026404, FR3026403, FR2998564, FR2973946, EP3228604, EP3089869, EP2688852, EA029118, EA027124, EA025947, CN106435497, CN106435496, CN106381465,

Abstract:

A transparent glass substrate including on a main face a thin-film multilayer coating including a metallic functional layer having reflection properties in the infrared and/or in solar radiation, for example based on silver or a metal alloy containing silver, and two antireflection films. The films each include at least two dielectric layers, the functional layer being placed between the two antireflection films. Each antireflection film includes at least one high-refractive-index dielectric layer located in contact with or close to the functional layer.



6) Family number: 27923902 (US2004241406A)

© PatBase

Title: GLAZING PROVIDED WITH STACKED THIN LAYERS REFLECTING INFRARED RAYS AND/OR SOLAR RADIATION
Priority: FR20010009900 20010725 WO2002FR02674 20020725 US20040483989 20040630
US20060399471 20060407

Family:	Publication number	Publication date	Application number	Application date
	AU2002341016 AA	20030217	AU20020341016	20020725
	AU2002341016 BB	20080807	AU20020341016	20020725
	AU2002341016 BI	20090122	AU20020341016	20020725
	BRPI0211421 A	20040817	BR2002PI11421	20020725
	BRPI0211421 B1	20120904	BR2002PI11421	20020725
	CA2453925 AA	20040115	CA20022453925	20020725
	CN100369845 C	20080220	CN20028014663	20020725
	CN1535254 A	20041006	CN20028014663	20020725
	EP1412300 A1	20040428	EP20020774837	20020725
	FR2827855 A1	20030131	FR20010009900	20010725
	FR2827855 B1	20040702	FR20010009900	20010725
	IN01679KN2003 A	20060310	IN2003KN01679	20031230
	IN223376 B	20080912	IN2003KN01679	20031230
	JP2004536013 T2	20041202	JP20030515465T	20020725
	JP4490096 B2	20100623	JP20030515465T	20020725
	KR101051777 B1	20110726	KR20047000876	20020725
	KR20040017336 A	20040226	KR20047000876	20020725
	MXPA04000687 A1	20040405	MX2004PA00687	20020725
	PL201811 B1	20090529	PL20020365032	20020725
	PL365032 A1	20041227	PL20020365032	20020725
	US2004241406 AA	20041202	US20040483989	20040630
	US2006222863 AA	20061005	US20060399471	20060407
	WO03010105 A1	20030206	WO2002FR02674	20020725

Probable Assignee: SAINT GOBAIN GLASS FRANCE
Assignee(s):(std): BILLERT ULRICH ; NADAUD NICOLAS ; SAINT GOBAIN ; SAINT GOBAIN GLASS FRANCE ; SAINT GOBAIN SA ; SCHUETT JUERGEN ; YU LI MING
Inventor(s):(std): J SCHUTT ; N NADAUD ; NADAUD N ; NADAUD NICOLAS ; SCHUETT JUERGEN ; SCHUTT J ; SCHUTT JUERGEN ; SCHUTT JURGEN ; TT J RGEN SCH ; U BILLERT ; ULRICH BILLERT ; YU LI MING ; BILLERT U ; BILLERT ULRICH
Inventor(s): J RGEN SCH TT ; NICOLAS NADAUD ; SCH TT J RGEN ; J³RGEN SCH³TT ; JUERGEN SCHUETT ; JURGEN SCHUTT ; LI MING YU
Agent(s): GRIFFITH HACK ; GOUDREAU GAGE DUBUC ; SAINT GOBAIN RECHERCHE ; C IRVIN MCCLELLAND OBLON SPIVAK MCCLELLAND MAIER AND NEUSTADT PC
Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE 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 NE NL NO NZ OM PH PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW
International class (IPC 8-9): B32B15/04 B32B17/06 B32B7/02 C03C17/36 (Advanced/Invention); B32B15/04 (Advanced/Non-invention); B32B15/04 B32B17/06 B32B7/02 C03C17/36 (Core/Invention)
International class (IPC 1-7): B32B15/04 B32B7/02 B60J1/02 B60J1/08 C03C17/36
CPC: Y10T428/24942 C03C17/3618 B32B17/10036 B32B17/10174 B32B17/10761 C03C17/36 C03C17/3626 C03C17/3639 C03C17/3644 C03C17/3652 C03C17/366 C03C17/3673
European class: B32B17/10C4 B32B17/10E10 B32B17/10G28 C03C17/36 C03C17/36B320 C03C17/36B332 C03C17/36B339 C03C17/36B342 C03C17/36B346 C03C17/36B352L C03C17/36B354H
US class: 428/212 428/432
[Classification Explorer](#)
Cited documents: WO0024686 A1, US6602587 BB, US6582809 BB, US6322881 BA, US6158247 A, US6045896 A,

US6007901 A, US5935702 A, US4915722 A, US4790922 A, US4764196 A, JP9314745 A2, JP10217378 A2, FR2599357 A1, EP1010677 A1, EP0847965 A1, EP0844219 A1, EP0718250 A2, EP0638528 A1, EP0506507 A1, EP0389354 A1, EP0132198 A1, EP0131523 A2,

Forward Citations:

WO17062738, WO16051066, WO15200050, WO15181500, WO14191484, WO14139755, WO12035258, WO10063973, WO06024809, US9790593, US9726786, US9688572, US9561981, US9555600, US9546108, US9481924, US9416049, US9403717, US9335444, US9079802, US9011649, US8701363, US8534006, US8420207, US8221846, US7884047, US7737080, US2016244361, US2016207826, US2015140355, US2010119705, US2010062152, US2009266015, US2009130409, US2007188871, US2007148064, US2007129248, US2007003700, US2006127586, US2005202178, US2004194388, US10099958, US10023494, KR101335169, KR101104772, JP6408565, JP2016524585, JP2013535025, JP2012513323, JP2012153599, JP2008540320, JP2007527328, JP2007501184, FR3026403, FR3021649, FR2964722, FR2874607, FR2858816, EP3148949, EP3115812, EP3004014, EP3004012, EP2969990, EP2615948, EP1945587, EP1881893, EP1881893, EP1881893, EP1833768, EP1789255, EP1663887, EP1656328, EP1424315, DE102008007981, DE102008007981, DE102007008833, CN105683117, CN105493245, CN105347696, CN102918434, CN101536608, AU2005279031,

Abstract:

The invention relates to glazing that comprises at least one transparent substrate S provided with a stack of thin layers comprising an alternation of n functional layers A having reflection properties in the infrared and/or in solar radiation, especially metal layers, and (n+1) coatings B made of a dielectric, where n greater than or equal to 1. The stack satisfies the following criteria: at least one functional layer A is (i) directly in contact with the dielectric coating B placed on top of it and (ii) in contact with the dielectric B placed beneath it via a layer C that absorbs at least in the visible, of the metallic, optionally nitride, type.