

Title: DURABLE METAL OXIDE COATED GLASS ARTICLES

Abstract: (Claim 1) 1. An article consisting essentially of a substrate that readily withstands temperatures of above about 1000° F., and a spandrel-type coating substantially completely covering a surface of said substrate, said coating consisting essentially of a low-temperature melting glass enamel undercoat adherent upon and substantially coextensive with said substrate, and a transparent, metal oxide overcoat adherent upon and substantially co-extensive with said enamel undercoat.

Classifications:

International (IPC 8-9): C03C17/34 C03C4/00 C23D5/00 (Advanced/Invention)

International (IPC 1-7): B44D1/08 B44D1/16 C23D11/00 C23D5/02 C23D5/10

CPC: C03C4/00 C03C17/3411 C23D5/00

European: C03C17/34D C03C4/00 C23D5/00

US: 117/70 427/376.2 427/419.4 428/427 428/428 428/432 428/701

Family:

Publication number	Publication date	Application number	Application date
US3510343 A	19700505	US19670652677	19670712

Priority:

US19670652677 19670712

Probable Assignee: PPG INDUSTRIES INC

Assignee(s): (std): PPG IND INC ; PPG INDUSTRIES INC

Inventor(s): (std): TWELLS ROBERT G

Inventor(s): ROBERT G TWELLS

Title: Glass coated with two doped oxide layers

Abstract: A low emissivity coated glass comprises a glass substrate with a coating comprising a first layer of a doped metal oxide in combination with a second layer of a doped metal oxide 4, 6 characterised in that the host metal oxides in each of the said layers are different. Preferably the first layer of a doped metal oxide comprises a layer of doped tin oxide, and the second layer comprises indium tin oxide or doped zinc oxide. A coated glass according to this invention will usually have a normal emissivity of 0.15 or lower. The layers may be deposited by sputtering or by chemical vapour deposition.

Classifications:

International (IPC 8-9): C03C17/34

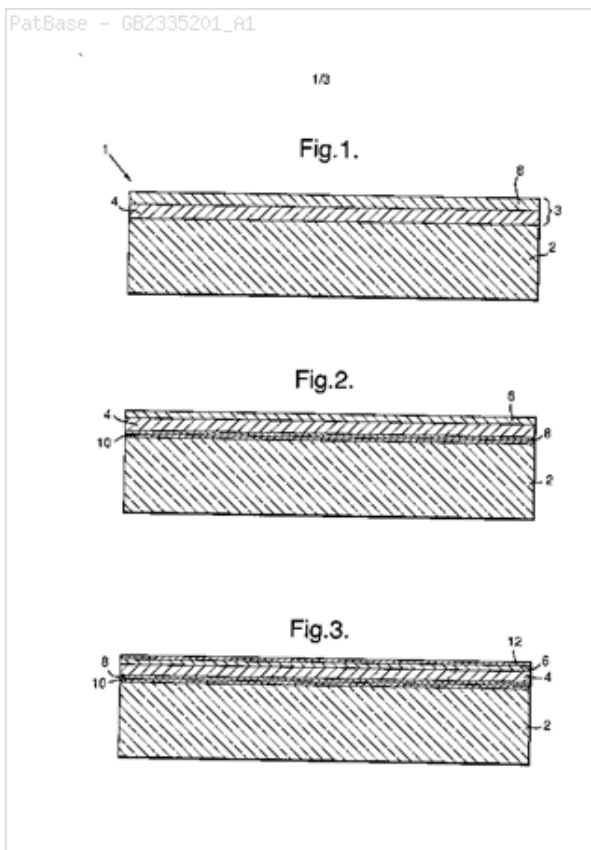
C23C16/40 (Advanced/Invention);

C03C17/34 C23C16/40 (Core/Invention)

International (IPC 1-7): C03C17/34 C23C14/08 C23C16/40 E06B3/66

CPC: C03C17/3417 C23C16/407

European: C03C17/34D2 C23C16/40L



Family:

Publication number	Publication date	Application number	Application date
GB2335201 A1	19990915	GB19980004907	19980310
GB9804907 A0	19980429	GB19980004907	19980310

Priority:

GB19980004907 19980310

Probable Assignee: PILKINGTON PLC

Assignee(s): (std): PILKINGTON PLC

Inventor(s): (std): HURST SIMON JAMES ; SHEEL DAVID WILLIAM

Inventor(s): SIMON JAMES HURST ; DAVID WILLIAM SHEEL

Title: PROTECTIVE LAYERS FOR SPUTTER COATED ARTICLE AND METHOD FOR MAKING SPUTTER COATED ARTICLES

Abstract: The present invention provides is a method of making an infrared reflective coated article, including the steps of: providing a substrate; depositing a first dielectric layer over at least a portion of the substrate, the layer comprising a first zinc stannate film deposited over the substrate, and an electrical enhancing film deposited over the first zinc stannate film, the electrical enhancing film selected from zinc oxide-tin oxide film and a second zinc stannate film; forming an infrared reflective layer on the first dielectric layer; forming a metal primer layer over the infrared reflective layer; forming a second dielectric layer over the primer layer; and forming a protective layer of at least two films in a position where it can provide durability to the dielectric layer, infrared reflective layer, metal primer layer, and second dielectric layer.

Classifications:

International (IPC 8-9): B05D5/06 B32B15/04 B32B7/02 B60J1/00 C03C17/00 C03C17/245 C03C17/34 C03C17/36 C23C14/06 C23C14/08 C23C14/34 H01L21/304 (Advanced/Invention); B60J1/00 C03C17/34 C03C17/36 C23C14/34 (Advanced/Non-invention); B05D5/06 B60J1/00 C03C17/00 C03C17/23 C03C17/34 C03C17/36 C23C14/08 C23C14/34 H01L21/02 (Core/Invention)

International (IPC 1-7): B05D1/36 B05D5/06 B32B17/06 B32B9/06 B60J1/00 C03C17/00 C03C17/36 C23C14/08 C23C14/34

CPC: C03C17/3618 C03C17/36 C03C17/366 C03C17/3681 C03C2217/78 C23C14/086 C23C14/3414 C03C17/3626 C03C17/3639 Y10T428/31678 Y10T428/265 C03C2218/155 C03C2217/24 C03C2217/23 C03C2217/216 C03C17/3652 C03C17/3644 C03C17/2453

European: C03C17/245B C03C17/36 C03C17/36B320 C03C17/36B332 C03C17/36B339 C03C17/36B342 C03C17/36B346 C03C17/36B352L C03C17/36B356 C23C14/08L C23C14/34B2 M03C217/216 M03C217/230 M03C217/240 M03C217/780 M03C218/155

US: 156/99 156/99P 427/162 427/164 427/164S 427/165 427/402 427/402P 428/336 428/432 428/434 428/457 428/469 428/472 428/697 428/699 428/701 428/702

Family:

Publication number	Publication date	Application number	Application date
AR015088 AA	20010411	AR1999P102185	19990510
AR025532 AA	20021204	AR2000P102949	20000615
AT527219 E	20111015	AT20000939609T	20000606
AU199939726 A1	19991129	AU19990039726	19990506
AU200054673 A1	20010102	AU20000054673	20000606
AU200054673 A5	20010102	AU20000054673	20000606
AU200179441 A1	20020110	AU20010079441	20011017

AU200179441 A5	20020110	AU20010079441D	20011017
AU749510 B2	20020627	AU19990039726	19990506
AU764332 B2	20030814	AU20000054673	20000606
CA2328910 AA	20001017	CA19992328910	19990506
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CN1209489 C	20050706	CN19998005969	19990506
CN1300327 A	20010620	CN19998005969	19990506
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EP1194385 B1	20111005	EP20000939609	20000606
EP1194385 B9	20120229	EP20000939609	20000606
ES2372024 T3	20120113	ES20000939609T	20000606
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US2005129863 AA	20050616	US20040017330	20041220
US2005155695 AA	20050721	US20040017139	20041220
US6833194 BA	20041221	US19990334193	19990616
US6899953 BA	20050531	US19990302409	19990430
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US7413768 BB	20080819	US20040017330	20041220
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Priority:

US19980084720P 19980508 US19980085129P 19980512 US19990302409 19990430
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KR20017016153 20011215 WO2000US15576 20011215 US20040017330 20041220
US20040017139 20041220

Probable Assignee: VITRO SAB DE CV

Assignee(s): (std): PPG IND OHIO INC ; PPG INDUSTRIES OHIO INC ; VITRO S A
B DE C V

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SHAUGHNESSY

Agent(s): COLLISON AND CO; BORDEN LADNER GERVAIS LLP;
FLEISCHER ENGELS AND PARTNER MBB PATENTANWALTE;
F AND E PATENT; POLYPATENT; VALLEJO JUAN PEDRO; PPG
INDUSTRIES INC, INTELLECTUAL PROPERTY DEPT; PPG IND
INC INTELLECTUAL PROPERTY DEPT; MILES JACQUES B;
JACQUES B; SIMINERIO ANDREW C; ANDREW C

Designated states: AE AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH
CI CM CN CR CU CY CZ DE DK DM EE ES FI FR GA GB GD GE
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Title: SUBSTRATES COATED WITH MIXTURES OF TITANIUM AND ALUMINUM MATERIALS, METHODS FOR MAKING THE SUBSTRATES, AND CATHODE TARGETS OF TITANIUM AND ALUMINUM METAL

Abstract: Titanium and aluminum cathode targets are disclosed for sputtering absorbing coatings of titanium and aluminum-containing materials in atmospheres comprising inert gas, reactive gases such as nitrogen, oxygen, and mixtures thereof, which can further comprise inert gas, such as argon, to form nitrides, oxides, and oxynitrides, as well as metallic films. The titanium and aluminum-containing coatings can be utilized as an outer coat or as one or more coating layers of a coating stack.

Classifications:

International (IPC 8-9): B32B15/04

B32B7/02 C03C17/34 C03C17/36

C23C14/00 C23C14/02 C23C14/06

C23C14/08 C23C14/14 C23C14/18

C23C14/34 C23C28/00 H01J37/34 (Advanced/Invention)

International (IPC 1-7): B32B15/00 C03C17/36 C23C14/00 C23C14/34 C23C28/00

CPC: Y10T428/12736 Y10T428/12771 C03C17/3615 C03C17/3411 C03C17/3435

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C03C17/3694 C03C2217/23 C03C2217/29 C03C2217/78 C03C2217/91 C03C2218/154

C23C14/027 C23C14/0641 C23C14/08 C23C14/185 C23C14/3414 H01J37/3426

Y10T428/12806

European: M03C217/230 M03C217/290 M03C217/780 M03C217/910 M03C218/154

T01J237/36C46

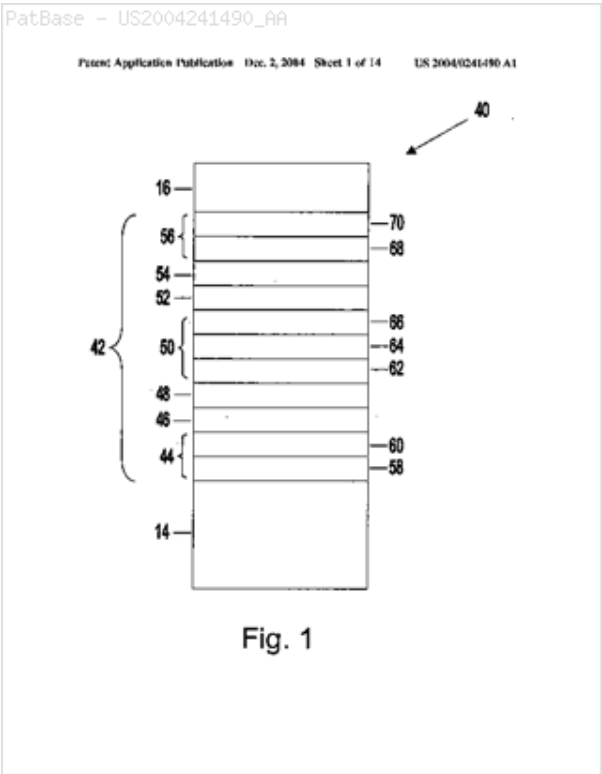
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204/298.13 427/531 427/531P 428/65 428/650 428/650S 428/655 428/655P 428/66 428/660

428/660S

Family:

Publication number	Publication date	Application number	Application date
AU2004225545 AA	20041014	AU20040225545	20040325
AU2004225545 BB	20080814	AU20040225545	20040325



BRPI0408851 A	20060404	BR2004PI08851	20040325
CA2519651 AA	20050919	CA20042519651	20040325
CA2519651 C	20130702	CA20042519651	20040325
CN1777690 A	20060524	CN200480008611	20040325
CN1777690 B	20101103	CN200480008611	20040325
EP1611265 A2	20060104	EP20040758328	20040325
EP1611265 B1	20170503	EP20040758328	20040325
ES2627415 T3	20170728	ES20040758328T	20040325
IN03805DN2008 A	20080815	IN2008DN03805	20080505
IN04241DN2005 A	20070105	IN2005DN04241	20050920
IN220692 B	20080725	IN2005DN04241	20050920
MXPA05010170 A1	20051108	MX2005PA10170	20040325
RU2005133184 A	20060227	RU20050133184	20040325
RU2335576 C2	20081010	RU20050133184	20040325
TR201707505 T4	20170621	TR20170007505T	20040325
US2004241490 AA	20041202	US20040809770	20040325
US2007231501 AA	20071004	US20070706454	20070214
US8597474 BB	20131203	US20070706454	20070214
WO04087985 A2	20041014	WO2004US09150	20040325
WO04087985 A3	20050120	WO2004US09150	20040325

Priority:

US20030458819 20030328 US20030458819P 20030328 EP20040758328 20040325
US20040809770 20040325 WO2004US09150 20040325 US20070706454 20070214

Probable Assignee: VITRO SAB DE CV

Assignee(s): (std): PPG IND OHIO INC ; PPG INDASTRIZ OGAJO INK ; FINLEY JAMES J ; VITRO S A B DE C V

Assignee(s): VITRO FLAT GLASS LLC ; PPG IND ; PPG INDUSTRIES OHIO INC ; VITRO SAB DE CV

Inventor(s): (std): FINLEY JAMES J ; JAMES J FINLEY ; FINLI DZHEJMS DZH

Inventor(s): FINLEY JAMES ; FINLEY JAMES JOSEPH

Agent(s): COLLISON AND CO; BORDEN LADNER GERVAIS LLP; F AND E PATENT; VALLEJO JUAN PEDRO; ERDEM KAYA; INTELLECTUAL PROPERTY DEPARTMENT PPG IND INC; ANDREW C

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: THIN FILM DEPOSITION METHOD AND RESULTING PRODUCT

Abstract: A process for producing a substrate coated on a face with a low-E thin film multilayer, the process including: depositing a thin-film multilayer containing a thin silver film between at least two thin dielectric films and an absorbent film on a face a substrate; and heat treating the coated face with laser radiation between 500 and 2000 nm to reduce at least one selected from the group of the emissivity and the sheet resistance of the multilayer by at least 5 percent, wherein the absorbent film at least partially absorbs the laser radiation so that the absorption of the multilayer the wavelength of the laser radiation is such that the absorption of a clear glass substrate 4 mm in thickness coated with the multilayer at the wavelength of the laser radiation is greater than or equal to 10 percent.

Classifications:

International (IPC 8-9): B32B15/04 B32B17/06 B32B9/04 C03B27/00 C03C17/36 C03C23/00 C08J7/18 G02B5/26 (Advanced/Invention);
C03C17/00 (Core/Invention)

CPC: C03C17/36 C03C17/3613 C03C17/3626 C03C17/3639 C03C17/3644 C03C17/366 C03C17/3681 C03C23/0025 C03C23/007 C03C23/00

European: C03C17/36 C03C17/36B316 C03C17/36B332 C03C17/36B339 C03C17/36B342 C03C17/36B352L C03C17/36B356 C03C23/00B8 C03C23/00D

US: 359/360 359/360P 427/554 427/554S

Family:

Publication number	Publication date	Application number	Application date
AU2010258455 AA	20101216	AU20100258455	20100611
AU2010258455 BB	20150305	AU20100258455	20100611
BRPI1013090 A2	20160405	BR2010PI13090	20100611
CA2762319 AA	20101216	CA20102762319	20100611
CA2762319 C	20171031	CA20102762319	20100611
CN102803174 A	20121128	CN201080025936	20100611
CN108545962 A	20180918	CN201810153647	20100611
DE202010018207 U1	20141231	DE201020018207U	20100611
DE202010018236 U1	20141224	DE201020018236U	20100611
EA022242 B1	20151130	EA20110071346	20100611
EA201171346 A1	20120530	EA20110071346	20100611
EG26585 A	20140317	EG20110112020	20111130
EP2440503 A1	20120418	EP20100737997	20100611
FR2946639 A1	20101217	FR20090053956	20090612

FR2946639 B1	20110715	FR20090053956	20090612
IN08635CN2011 A	20130517	IN2011CN08635	20111123
IN302646 B	20181109	IN2011CN08635	20111123
JP2012529419 T2	20121122	JP20120514521T	20100611
JP2014156395 A2	20140828	JP20140095289	20140502
JP2015157759 A2	20150903	JP20150094850	20150507
JP5964883 B2	20160803	JP20140095289	20140502
JP6272270 B2	20180131	JP20150094850	20150507
KR101710219 B1	20170224	KR20117029507	20100611
KR20120037386 A	20120419	KR20117029507	20100611
MX2011013250 A1	20120120	MX20110013250	20100611
MX346709 B	20170329	MX20110013250	20100611
US2012087005 AA	20120412	US20100376983	20100611
US9481603 BB	20161101	US20100376983	20100611
WO10142926 A1	20101216	WO2010FR51172	20100611

Priority:

FR20090053956 20090612 CN201080025936 20100611 WO2010FR51172 20100611
JP20120514521 20100611 JP20120514521T 20100611 JP20150094850 20150507

Probable Assignee: SAINT GOBAIN GLASS FRANCE

Assignee(s): (std): KHARCHENKO ANDRIY ; NADAUD NICOLAS ; REYMOND
VINCENT ; SAINT GOBAIN ; SAINT GOBAIN GLASS FRANCE ;
SAINT GOBAIN SA

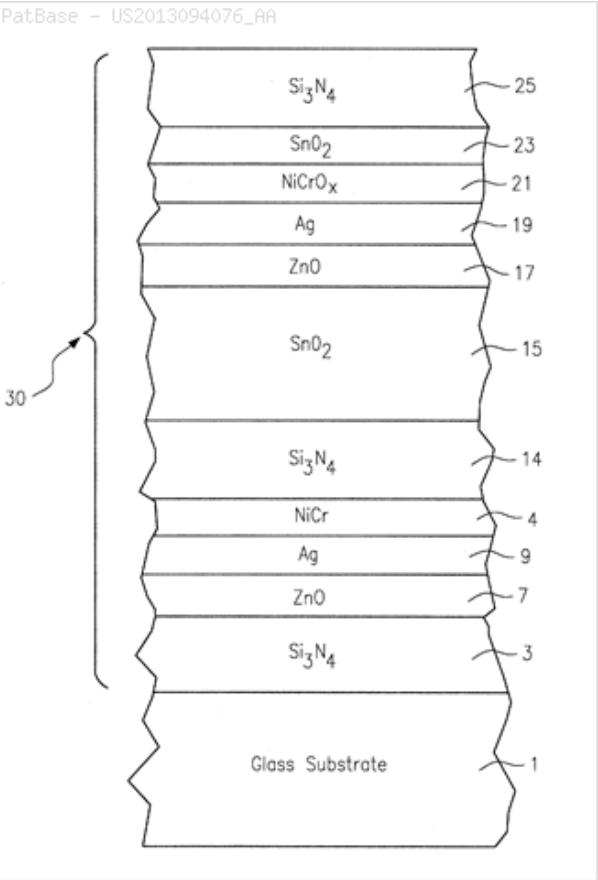
Inventor(s): (std): KHARCHENKO ANDRIY ; NADAUD NICOLAS ; REYMOND
VINCENT ; NICOLAS NADAUD ; VINCENT REYMOND ; ANDRIY
KHARCHENKO

Agent(s): GRIFFITH HACK; GOUDREAU GAGE DUBUC; LAVERY DE
BILLY LLP; TEYSSERE LAURENT; SAINT GOBAIN
RECHERCHE; AOKI ATSUSHI; KOGA TETSUJI; ISHIDA
TAKASHI; 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
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Title: COATED ARTICLE WITH LOW-E COATING HAVING ABSORBING LAYER OVER FUNCTIONAL LAYER DESIGNED TO INCREASE OUTSIDE REFLECTANCE

Abstract: A coated article includes a low-E coating having an absorbing layer located over a functional layer (IR reflecting layer) and designed to cause the coating to have an increased outside reflectance (e.g., in an IG window unit) and good selectivity. In certain embodiments, the absorbing layer is metallic, or substantially metallic, and is provided directly over and contacting a lower of two IR reflecting layers. In certain example embodiments, a nitride based layer (e.g., silicon nitride or the like) may be located directly over and contacting the absorbing layer in order to reduce or prevent oxidation thereof during heat treatment (e.g., thermal tempering, heat bending, and/or heat strengthening) thereby permitting predictable coloration, high outside reflectance values, and/or good selectivity to be achieved.



Classifications:

International (IPC 8-9): B32B15/04 B32B17/06 B32B9/00 B32B9/04 B60J3/00 C03C17/00 C03C17/22 C03C17/23 C03C17/245 C03C17/34 C03C17/36 C03C27/06 E06B3/66 E06B3/67 F21V9/02 F21V9/04 G02B5/08 G02B5/22 G02B5/28 (Advanced/Invention); C03C17/36 (Advanced/Non-invention)

CPC: C03C17/3618 C03C17/3626 C03C17/3639 C03C17/3652 C03C17/366 C03C17/3681 E06B3/6715 C03C17/225 C03C17/245 G02B5/08 G02B5/0875 Y10T428/265 E06B3/6612 E06B3/6722 B60J3/007 C03C17/23 G02B5/282 C03C17/3435 C03C17/36 C03C17/3642 C03C17/3644

US: 1/1 359/360 428/336 428/34 428/426 428/428

Family:

Publication number	Publication date	Application number	Application date
BR112014008661 A2	20170425	BR20141108661	20120914
CN103958431 A	20140730	CN201280058312	20120914

CN103958431 B	20170908	CN201280058312	20120914
EP2766318 A1	20140820	EP20120769804	20120914
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JP6178322 B2	20170809	JP20140535725T	20120914
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RU2014118757 A	20151120	RU20140118757	20120914
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US2013094076 AA	20130418	US20110317176	20111012
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US2015125635 AA	20150507	US20140471208	20140828
US2015360998 AA	20151217	US20150751243	20150626
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Priority:

US20110317176 20111012 WO2012US55467 20120914 US20130025144 20130912
US20140471208 20140828 US20150751243 20150626 US20160134415 20160421

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Inventor(s): OCONNOR KEVIN ; O'CONNOR KEVIN

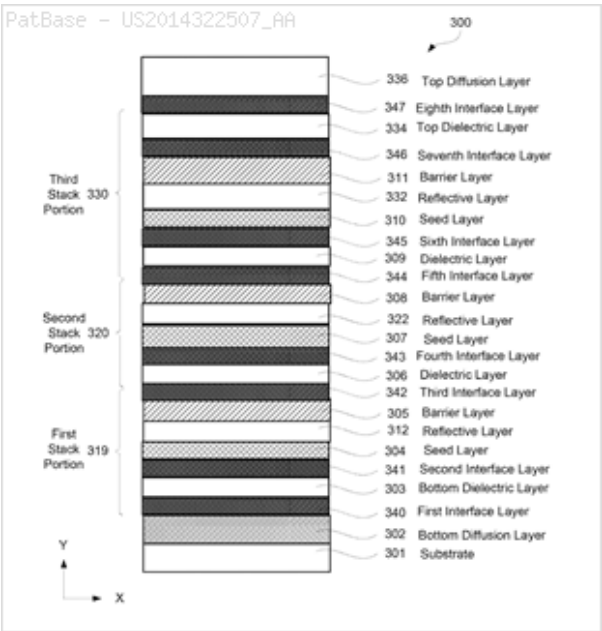
Agent(s): HESS PETER K G; NIXON AND VANDERHYE PC; RHOA JOSEPH A

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 IS IT JP KE KG KM KN KP KR

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ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC
VN ZA ZM ZW

Title: SYSTEMS, METHODS, AND APPARATUS FOR PRODUCTION COATINGS OF LOW-EMISSIVITY GLASS

Abstract: Disclosed herein are systems, methods, and apparatus for forming low emissivity panels. In some embodiments, a partially fabricated panel may be provided that includes a substrate, a reflective layer formed over the substrate, and a barrier layer formed over the reflective layer such that the reflective layer is formed between the substrate and the barrier layer. The barrier layer may include a partially oxidized alloy of three or more metals. A first interface layer may be formed over the barrier layer. A top dielectric layer may be formed over the first interface layer. The top dielectric layer may be formed using reactive sputtering in an oxygen containing environment. The first interface layer may prevent further oxidation of the partially oxidized alloy of the three or more metals when forming the top dielectric layer. A second interface layer may be formed over the top dielectric layer.



Classifications:

International (IPC 8-9): B29D11/00 B32B15/04 C03C17/36 C03C23/00 C23C14/00 C23C14/08 C23C14/14 C23C14/22 C23C14/32 E06B9/24 G02B5/20 G02B5/26 G02F1/09 (Advanced/Invention)

CPC: C23C14/14 C23C14/085 B29D11/00865 G02B5/26 G02F1/091 G02F2001/094 C03C17/366 Y10T428/24975 Y10T428/265 C03C17/3652 C03C17/36 C03C17/3639 C03C17/3644 C03C17/3681 C03C2217/43 C03C2217/48 E06B9/24 E06B2009/2464 G02B5/208 C03C17/3626 C03C23/007 C03C2218/154 C23C14/083 C23C14/22 E06B2009/2417

US: 204/192.27 428/216

Family:

Publication number	Publication date	Application number	Application date
US2014322507 AA	20141030	US20130144915	20131231
US2017351013 AA	20171207	US20170666603	20170802
US9739915 BB	20170822	US20130144915	20131231
WO14164989 A1	20141009	WO2014US24051	20140312

Priority:

US20130777956P 20130312 US20130778758P 20130313 US20130144915 20131231
US20170666603 20170802

Probable Assignee: GUARDIAN GLASS LLC

Assignee(s): (std): GUARDIAN GLASS LLC ; GUARDIAN IND ; INTERMOLECULAR
INC

Assignee(s): GUARDIAN IND CORP

Inventor(s): (std): CHENG JEREMY ; DING GUOWEN ; IMRAN MUHAMMAD ;
IMRAN MUHAMMED ; LE MINH HUU ; SCHWEIGERT DANIEL ;
XU YONGLI ; ZHANG GUIZHEN

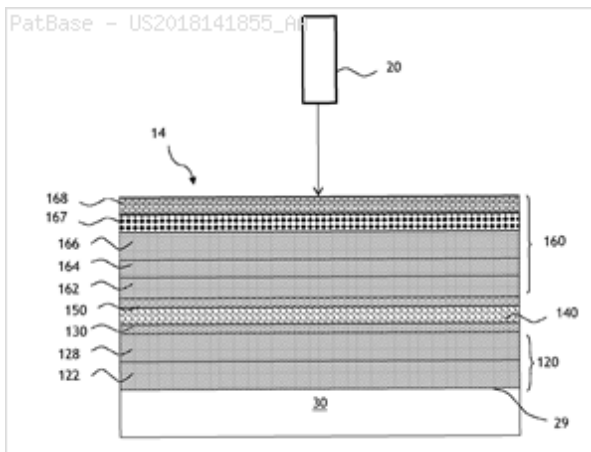
Agent(s): NIXON AND VANDERHYE PC; HELMS AUBREY L JR

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW
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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: SUBSTRATE PROVIDED WITH A STACK HAVING THERMAL PROPERTIES, HAVING A METALLIC TERMINAL LAYER AND HAVING AN OXIDIZED PRETERMINAL LAYER

Abstract: An substrate is coated on one face with a stack of thin layers including at least one metallic functional layer. The stack includes a terminal layer that is the layer of the stack furthest from the face, which comprises at least one metal M_2 that is a reducing agent in an oxide/metal pair exhibiting an oxidation/reduction potential γ_2 and the terminal layer is in the metallic state. The stack also

includes a preterminal layer that is the layer of the stack located immediately under and in contact with the terminal layer in the direction of the face, which comprises at least one metal M_1 that is an oxidizing agent in an oxide/metal pair exhibiting an oxidation/reduction potential γ_1 and the preterminal layer is in the at least partially oxidized state. The oxidation/reduction potential γ_1 is greater than the oxidation/reduction potential γ_2 .



Classifications:

International (IPC 8-9): B32B15/04 C03C17/36 C03C23/00 E06B3/66 (Advanced/Invention)

CPC: C03C17/3626 C03C17/3644 C03C17/3649 C03C17/3652 C03C17/3681 C03C17/3689 C03C23/007 C03C17/3639 C03C17/3613 C03C17/366 C03C17/36

Family:

Publication number	Publication date	Application number	Application date
BR112017024097 A2	20180724	BR20171124097	20160526
CN107667077 A	20180206	CN201680031333	20160526
CO20170011292 A2	20180320	CO20170011292	20171102
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US2018141855 AA	20180524	US20160577025	20160526
WO16193577 A1	20161208	WO2016FR51238	20160526

Priority:

FR20150054852 20150529 WO2016FR51238 20160526

Probable Assignee: SAINT GOBAIN GLASS FRANCE

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

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