

Search history

Search FT=(Float bath coating system and coater and nanoparticle and vapor deposition) (Results 1)

1:

Search [SP]: 1. a glass article, comprising: a glass substrate having a first surface, a second surface, and an edge a first nanoparticle region located within the substrate comprising first nanoparticles which are completely surrounded by the substrate and a second nanoparticle region located adjacent at least one of the first surface and the second surface, wherein the second nanoparticle region comprises second nanoparticles, wherein at least some of the second nanoparticles are completely surrounded by the substrate.2. the article of claim 1, wherein the first nanoparticles are larger than the second nanoparticles.3. the article of claim 1, wherein the first nanoparticles comprise metal oxide nanoparticles.4. the article of claim 1, wherein the first nanoparticles comprise luminescent and/or phosphorescent nanoparticles.5. the article of claim 1, wherein the first nanoparticles comprise phosphors.6. the article of claim 1, wherein the first nanoparticles comprise luminous nanocrystalline nanoparticles.7. the article of claim 1, including a light source adjacent the edge of the substrate.8. the article of claim 1, wherein the second nanoparticles are completely surrounded by substrate.9. the article of claim 1, wherein the first nanoparticle region is adjacent the first surface and the second nanoparticle region is adjacent the second surface.10. the article of claim 9, further comprising a third nanoparticle region adjacent the first surface and a fourth nanoparticle region adjacent the second surface.11. the article of claim 10, wherein the first nanoparticle region is spaced from the third nanoparticle region.12. the article of claim 10, wherein the second nanoparticle region is spaced from the fourth nanoparticle region.13. the article of claim 1, including at least one coating layer over at least one of the first surface and the second surface.14. the article of claim 13, wherein the at least one coating layer comprises a conductive metal oxide layer.15. the article of claim 1, wherein the first second nanoparticles are not completely surrounded by the substrate, wherein the second nanoparticles comprise a material having a lower coefficient of friction than the substrate.16. the article of claim 1, wherein the second nanoparticles are not completely surrounded by the substrate, wherein the second nanoparticles comprise a material having a higher coefficient of friction than the substrate.17. the article of claim 1, wherein the first nanoparticles or the second nanoparticles are selected from the group consisting of alumina, titania, cerium oxide, zinc oxide, tin oxide, silica, and zirconia.18. the article of claim 1, wherein the first nanoparticles are selected from the group consisting of alumina, titania, cerium oxide, zinc oxide, tin oxide, silica, and zirconia, and wherein, independently, the second nanoparticles are selected from the group consisting of alumina, titania, cerium oxide, zinc oxide, tin oxide, silica, and zirconia.19. the article of claim 1, wherein the first nanoparticle region is at a first depth, and the second nanoparticle region is at a second depth, and the first depth is different from the second depth, and wherein the second nanoparticles are completely surrounded by the substrate.20. the article of claim 1, wherein the first and second nanoparticle regions do not overlap. (Results 0)

Search [SP]: cross reference to related application[0001] this application claims priority to provisional application no. 62/266,239, filed dec. 11, 2015, which is herein incorporated by reference in its entirety.background of the invention[0002] field of the invention[0003] this invention relates generally to organic light emitting diodes, solar or photovoltaic (pv) cells, daylighting windows, light extracting substrates, substrates with friction modified surfaces, and methods of making the same.[0004] technical considerations[0005] an organic light emitting diode (oled) is a light-emitting device having an emissive electroluminescent layer incorporating organic compounds. the organic compounds emit light in response to an electric current. typically, an emissive layer of organic semiconductor material is situated between two electrodes (an anode and a cathode). when electric current is passed between the anode and the cathode, the organic material emits light. oleds are used in numerous applications, such as television screens, computer monitors, mobile phones, pdas, watches, lighting, and various other electronic devices.[0006] oleds provide numerous advantages over conventional inorganic devices, such as liquid crystal displays. for example, an oled can function without the need for a back light. in low ambient light, such as a dark room, an oled screen can achieve a higher contrast ratio than conventional liquid crystal displays. oleds typically are also thinner, lighter, and more flexible than liquid crystal displays and other lighting devices. oleds typically also require less energy to operate than many other conventional lighting devices.[0007] however, one disadvantage with oled devices is that they typically emit less light per unit area than inorganic solid-state based point-light sources. in a typical oled lighting device, a large percentage of the light emitted from the organic material is trapped inside the device due to the optical waveguide effect in which the light from the organic emitting layer is reflected back from the interface of the organic emitting layer/conductive layer (anode), the interface of the conductive layer (anode)/substrate, and the outer surface/air interface. only a relatively small percentage of the light emitted from the organic material escapes the optical waveguide effect and is emitted by the device. therefore, it would be advantageous to provide a device and/or method to extract more light from an oled device than is possible with conventional methods.[0008] photovoltaic solar cells are in principle counterparts to light emitting diodes. here, the semiconductor material absorbs the energy of light (photons) and converts that energy into electricity. similar to oleds, the efficiency of the photovoltaic device is relatively low. at the module level, for example, typically only up to 20 percent of the incident light is converted to electric energy. in one class of photovoltaic devices, those consisting of thin film pv cells, this efficiency can be much lower, depending on the semiconducting material and the junction design. therefore, it would be advantageous to increase the fraction of the solar light that is absorbed near the photovoltaic semiconductor junction to increase the efficiency of the photovoltaic device.[0009] oleds and photovoltaic devices are typically made in batch coating processes in which each coating layer is applied in a coating station. the substrate is then transferred to another separate coating station for application of the next layer, and so on. this is a time intensive and labor intensive process. it would be advantageous if two or more of the coating layers or functional regions of the device could be made in a continuous process rather than a batch process. it would also be advantageous if the friction coefficient of a substrate could be modified, for example in a continuous coating process.summary of the invention[0010] a glass article includes a glass substrate having a first surface, a second surface, and an edge. at least one nanoparticle region is located adjacent at least one of the first surface and the second surface.brief description of the drawings[0011] the invention is illustrated in the accompanying drawing figures wherein like reference characters identify like parts throughout. unless indicated to the contrary, the drawing figures are not to scale.[0012] fig. 1 is a side view of a float glass system incorporating a float bath coating system of the invention[0013] fig. 2 is a plan view of the float bath coating system of fig. 1[0014] fig. 3 is a side, sectional view of a nanoparticle coater of the invention[0015] fig. 4 is a side, sectional view of a vaporization coater of the invention[0016] fig. 5 is a side, sectional view of the vaporization coater of fig. 4 having a modified nozzle block[0017] fig. 6 is a side, sectional view of an article of the invention having nanoparticle regions in the article[0018] fig. 7 is a side, sectional view of an article of the invention having a friction modification surface on a surface of the article[0019] fig. 8 is a side, sectional view of an article of the invention in the form of a privacy glazing[0020] fig. 9 is a side, sectional view of an article of the invention in the form of an oled device[0021] fig. 10 is a schematic view of a drawdown coating system of the invention[0022] fig. 11 is a side, sectional view of an article made by the drawdown coating system of fig. 10 having nanoparticle regions adjacent the opposed major sides of the article[0023] fig. 12 is a side, sectional view of article of the invention having a friction modification surface on opposed major sides of the article[0024] fig. 13 is a side, sectional view of an article of the invention in the form of a privacy glazing and[0025] fig. 14 is a side, sectional view of an article of the invention in the form of an oled having light extraction regions adjacent opposed major sides of the substrate.description of the preferred embodiments[0026] spatial or directional terms, such as "left", "right", "inner", "outer", and the like, relate to the invention as it is shown in the drawing figures. it is to be understood that the invention can assume various alternative orientations and, accordingly, such terms are not to be considered as limiting.[0027] all numbers used in the specification and claims are to be understood as being modified in all instances by the term "about". all ranges are to be understood to encompass the beginning and ending range values and any and all subranges subsumed therein. the ranges set forth herein represent the average values over the specified range.[0028] when referring to a layer of a coating, the term "over" means "farther from the substrate surface". for example, a second layer located "over" a first layer means that the second layer is located farther from the substrate surface on which the layers are present than is the first layer. the second layer can be in direct contact with the first layer or one or more other layers can be located between the second layer and the first layer.[0029] the terms "polymer" or "polymeric" include oligomers, homopolymers, copolymers, and terpolymers.[0030] all documents referred to herein are to be considered to be "incorporated by reference" in their entirety.[0031] any reference to amounts, unless otherwise specified, is "by weight percent".[0032] the term "film" means a region having a desired or selected composition. a "layer" comprises one or more "films". a "coating" is comprised of one or more "layers". the term "organic material" includes polymers as well as small molecule organic materials that can be used to fabricate organic opto-electronic devices.[0033] the term "visible light" means electromagnetic radiation having a wavelength in the range of 380 nm to 780 nm. the term "infrared radiation" means electromagnetic radiation having a wavelength in the range of greater than 780 nm to 100,000 nm. the term "ultraviolet radiation" means electromagnetic energy having a wavelength in the range of 100 nm to less than 380 nm. [0034] the terms "metal" and "metal oxide" include silicon and silica, respectively, as well as traditionally recognized metals and metal oxides, even though silicon may not be conventionally considered a metal. the term "curable" means a composition capable of polymerizing or crosslinking. by "cured" is meant that the material is at least partly polymerized or cross-linked, preferably fully polymerized or cross-linked. by "at least" is meant "greater than or equal to". by "not more than" is meant "less than or equal to". the terms "upstream" and "downstream" refer

to the direction of travel of the glass ribbon.[0035] haze and transmittance values herein are those determined using a haze-gard plus hazemeter (commercially available from byk-gardner usa) or a perkin elmer lamda 9 spectrophotometer. surface roughness values are those determined using an instrument dimension 3100 atomic force microscope.[0036] the discussion of the invention may describe certain features as being "particularly" or "preferably" within certain limitations (e.g., "preferably", "more preferably", or "even more preferably", within certain limitations). it is to be understood that the invention is not limited to these particular or preferred limitations but encompasses the entire scope of the disclosure.[0037] the invention comprises, consists of, or consists essentially of, the following aspects of the invention, in any combination. various aspects of the invention are ill (Results 44)

Search IC=(B05C19/04) (Results 1490)
4:

Search IC=(C03C14/00) (Results 3138)
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Search 4 AND 5 (Results 1)
6:

Search 3 AND 4 (Results 3)
7:

1) Family number: 24085610 (US2003037569A)

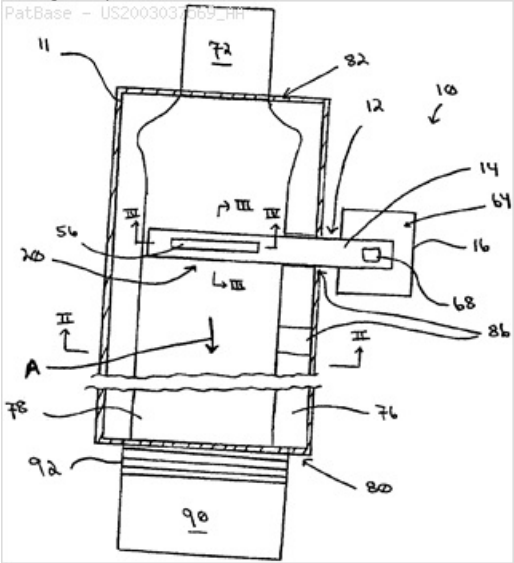
PatBase

Title: METHOD AND APPARATUS FOR FORMING PATTERNED AND/OR TEXTURED GLASS AND GLASS ARTICLES FORMED THEREBY

Abstract: The present invention provides a method of producing patterned and/or textured glass by applying a material onto at least a portion of a glass substrate, e.g., a float glass ribbon, at or above a softening point of the material and/or the glass substrate. The material is configured to affect the surface of the glass substrate to scatter light rays. An apparatus of the invention for forming patterned glass in a float glass process includes an applicator extensible into and out of a float bath chamber above a molten metal bath. A glass article of the invention includes a first surface and a second surface spaced from the first surface. The second surface includes a patterned portion configured to scatter light rays.

Classifications:

International (IPC 8-9): B05C19/04 C03B C03B18/12 C03C C03C17/00 C03C17/04 (Advanced/Invention);
B05C19/00 C03B18/00 C03C17/00 C03C17/02 (Core/Invention)
International (IPC 1-7): C03B18/12 C03B18/14 C03C17/00
CPC: Y02P40/57 B05C19/04 C03B18/12 C03C17/002 C03C17/008 C03C17/04
European: B05C19/04 C03B18/12 C03C17/00B2 C03C17/00D4 C03C17/04
US: 65/146 65/22 65/51 65/93 65/99.2 65/992



Family:

Publication number	Publication date	Application number	Application date
■ CN1501892 A	20040602	CN20028006949	20020319
■ HK1066522 A1	20050324	HK20040109470	20041201
■ HK1066522 A3	20050324	HK20040109470	20041201
■ US2003037569 AA	20030227	US20020101242	20020319
■ WO02081390 A1	20021017	WO2002US08371	20020319

Priority:

US20010277317P 20010320 US20020101242 20020319 WO2002US08371 20020319

Probable Assignee: PPG IND OHIO INC

Assignee(s): (std): ARBAB MEHRAN ; BALDAUFF JAMES M ; DIGIAMPAOLO GERALD ; PPG IND OHIO INC ; SMITH DENNIS G

Assignee(s): PPG INDUSTRIES OHIO INC ; PPG IND OHIO INC 3800 WEST 143RD STREET CLEVELAND OH 44111 ; PPG IND

Inventor(s): (std): ARBAB MEHRAN ; BALDAUFF JAMES M ; SMITH DENNIS G ; DIGIAMPAOLO GERALD ; GERALD DIGIAMPAOLO ; MEHRAN ARBAB

Inventor(s): MEHRAN ARBAB M ; JAMES M BALDAUFF J M ; DENNIS G SMITH D G ; GERALD DIGIAMPAOLO G

Agent(s): CLT PATENT AND TRADEMARK HK LTD UNIT 10 34 F OFFICE TOWER CONVENTION

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

Title: DEVICE FOR FORMING AEROSOL, AND METHOD AND APPARATUS FOR COATING GLASS

Abstract: The invention relates to a device for forming aerosol, the device comprising at least one gas-dispersing atomizer for atomizing a liquid into aerosol by means of gas at an atomizing head of the atomizer and an atomizing chamber, which is in flow connection with the atomizing head and in which flow restraints are arranged for changing the hydrodynamic properties of the aerosol flow discharging from the atomizing head. According to the present invention the flow restraints are arranged in the inner walls of the atomizing chamber in such a manner that they protrude from the inner walls to the inside of the atomizing chamber.

Classifications:

International (IPC 8-9): B05B1/00 B05B1/26 B05B7/00 B05B7/04

B05B7/24 B05B7/26 B05C19/04 B05C5/00 B05D1/02 B05D1/08

B32B17/00 C03C17/00 C03C17/22 C03C17/25 C23C18/02

G02B1/10 (Advanced/Invention);

B05B1/26 B05B7/00 B05D1/02 B05D1/08 C03C17/25 (Core/Invention);

B05D C03C C08C C23C G02B (Subclass/Invention)

CPC: B05D1/02 B07C5/3412 C23C18/02 G02B1/10 F23D91/04

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C03C17/253 C03C23/006 C03C2217/211 C03C2217/213 C03C2217/214

C03C2217/218 C03C2218/112

European: B05B7/04C3 C03C17/25 C03C17/25B C03C23/00B22

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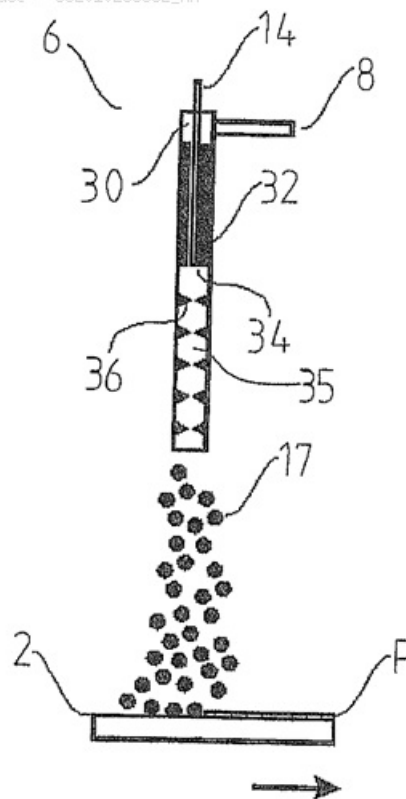
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239/502S 427/180 427/180S 427/202 427/202S 427/203 427/203S

427/421.1 427/421.100S 428/426 428/426P 65/117 65/117S 65/60.1

65/60.100S

PatBase - US2010258652_AA



Family:

Publication number	Publication date	Application number	Application date
■ CN101903303 A	20101201	CN200880121623	20081219
■ CN101903303 B	20160601	CN200880121623	20081219
■ CN102010138 A	20110413	CN201010512610	20081219
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■ EA201001399 A1	20101230	EA20100001399	20081219
■ EA201070728 A1	20110228	EA20100070728	20081219
■ EP2231538 A1	20100929	EP20080864733	20081219
■ EP2231538 A4	20160330	EP20080864733	20081219
■ EP2231538 B1	20180711	EP20080864733	20081219
■ EP2241540 A2	20101020	EP20100168266	20081219
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■ FI122502 B	20120229	FI20080000217	20080314
■ FI20071003 A	20090621	FI20070001003	20071220
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■ FI20080217 A	20090621	FI20080000217	20080314
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■ US2010258652 AA	20101014	US20080744953	20081219
■ US2010330377 AA	20101230	US20100827815	20100630
■ WO09080892 A1	20090702	WO2008FI50772	20081219

Priority:

FI20070001003 20071220 FI20080000217 20080314 FI20080000218 20080314
EP20080864733 20081219 WO2008FI50772 20081219 US20100744953 20100527
US20100827815 20100630

Probable Assignee: BENEQ OY

Assignee(s): (std): ASIKKALA KAI ; BENEQ OY ; ILMARINEN JOONAS ; RAJALA MARKKU ; VALKEAPAEAE TOMI

Inventor(s): (std): RAJALA MARKKU ; ASIKKALA KAI ; ILMARINEN JOONAS ; VALKEAPAEAE TOMI ; VALKEAPAA TOMI ; KAI ASIKKALA ; MARKKU RAJALA ; JOONAS ILMARINEN ; TOMI VALKEAPAEAE

Agent(s): VALKEISKANGAS TAPIO LASSI PAAVALI; NUPPOLA ANNA MARJUKKA; KOLSTER OY AB; OLIFF AND BERRIDGE PLC

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3) Family number: 66073925 (US2017165703A)

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Title: NANOPARTICLE COATER

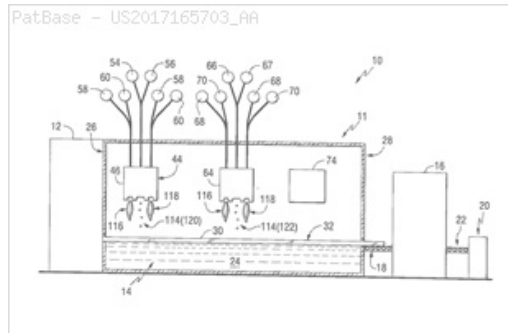
Abstract: A nanoparticle coater includes a housing; a nanoparticle discharge slot; a first combustion slot; and a second combustion slot.

Classifications:

International (IPC 8-9): B05B7/26 B05C11/10 B05C19/04 B05C5/02 C03B18/02 C03B18/12 C03C14/00 C03C17/00 C03C17/09 C03C17/22 C03C17/23 C03C17/245 C03C17/25 C03C17/28 C03C17/34 C03C17/36 C03C17/38 C23C14/04 C23C14/16 C23C14/58 C23C16/30 C23C16/40 C23C16/453 C23C24/04 F21V8/00 H01L31/054 H01L31/055 H01L51/00 H01L51/50 H01L51/52 H01L51/56 H05B33/00 H05B33/02 H05B33/10 (Advanced/Invention)

CPC: C03C17/23 B05C19/04 C03C14/004 C03C17/007 C03C2217/42 C03C2218/1525 C23C14/046 C23C14/16 C23C14/165 C23C14/5806 C23C24/04 C03C17/002 C03C17/22 C03C17/28 C03C17/34 C03C17/38 C03C2217/21 C03C2217/70 C03C2218/152 C03C2218/31 C03C2218/32 H01L51/0096 H01L51/447 H01L51/52 H01L51/5268 H01L2251/5369 Y02E10/52 Y02E10/549 B05C5/02 B05C11/10 C03C17/25 G02B6/0003 G02B6/0065 G02B6/0073 H01L31/054 H01L31/055 H01L51/56

US: 1/1 118/429 118/47 118/68 362/629



Family:

Publication number	Publication date	Application number	Application date
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CN108367309 A	20180803	CN201680072356	20161209
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TWI642638 B	20181201	TW20160140860	20161209
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US2017165706 AA	20170615	US20150967953	20151214
US2017166476 AA	20170615	US20150968039	20151214
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US10112208 BB	20181030	US20150968011	20151214
US10112209 BB	20181030	US20150968039	20151214
WO17100607 A1	20170615	WO2016US65875	20161209

Priority:

US20150266239P	20151211	US20150967953	20151214	US20150967981	20151214
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JP20180150780	20180809				

Probable Assignee: VITRO FLAT GLASS LLC

Assignee(s): (std): MCCAMY JAMES W ; PPG IND OHIO INC ; VITRO SAB DE CV ; VITRO S A B DE C V ; VITRO FLAT GLASS LLC

Assignee(s): VITRO S A B DE S V ; ARBAB MEHRAN ; BHANDARI ABHINAV ; HUNG CHENG HUNG ; VITRO S AB DE CV

Inventor(s): (std): CHENG HUNG HUNG ; MEHRAN ARBAB ; ABHINAV BHANDARI ; JAMES W MCCAMY ; MCCAMY W JAMES ; ARBAB MEHRAN ; BHANDARI ABHINAV ; HUNG CHENG HUNG ; MCCAMY JAMES W ; MCCAMY JAMES

Inventor(s): JAMES MCCAMY W ; W MCCAMY JAMES W ; ARBAB MEKHRAN ; BKHANDARI ABKHINAV ; KHUN CHEN KHUN ; MAKKEJMI DZHEJMZ U ; MCCAMY W

Agent(s): BORDEN LADNER GERVAIS LLP; JUAN PABLO CADENA SARMIENTO; F AND E PATENT; ASAMURA PATENT OFFICE PC; SOYUZPATENT OOO; SIMINERIO ANDREW C ET AL

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