

IHMA PATENT NEWSLETTER

Limited circulation patent news bulletin for the Holography Industry

JANUARY 2021 – 84 PATENTS

Published and granted patents

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- IHMA Patent Newsletter covers the requests for worldwide patents (WO, US, EP, FR, GB, DE, JP, CN, KR, RU...).
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- Some old patents are sometimes introduced in the databases if they have not been included in the previous update.
- The full patent information is in the tables at the end of this document (See TABLES WITH REFERENCES).
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P32849**SECURITY HOLOGRAMS' COLUMN****US10885413****HNU PHOTONICS****Inventors:**AUMILLER, RILEY; GOODMAN, WILLIAM; O'CONNELL, DANIEL G.;
SCHOLL, JAMES F.**Application Nber / Date:**

US201916359416A-2019-03-20

Priority Nber / Date / Country:

US201862645318P-2018-03-20

COLOR HOLOGRAPHIC QUICK RESPONSE (CHQR) CODE FOR COUNTERFEIT AVOIDANCE

New identifying code for labeling products to certify sources has Color Holographic Quick Response code by superimposing multiple layers of red, green and blue quick response codes using holographic imaging and creating layers of features that are extremely difficult to replicate. Multidimensional quick response code is provided in a hologram that cannot be copied.



CLAIM 1. Apparatus comprising a label having an identifying code, further comprising a Color Holographic Quick Response code combining red, green and blue (RGB) multiple superimposed layers quick response (QR) codes using holographic imaging technology and creating features that are extremely difficult to replicate, thereby providing a multidimensional QR code of a hologram itself that cannot be copied, wherein each of the multiple layers has a distinct color, and wherein the apparatus further comprises black and white components in one or more of the multiple layers.

No equivalent**Status:** Granted**Research Report:** Not available

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P32849

PATENT OF THE MONTH

US10885413

HNU PHOTONICS

Priority Date: 20/03/2018

COLOR HOLOGRAPHIC QUICK RESPONSE (CHQR) CODE FOR COUNTERFEIT AVOIDANCE

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P32893

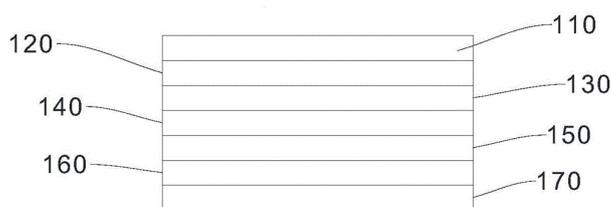
CN212380044U

WUHAN HUAGONG IMAGE TECHNOLOGY & DEVELOPMENT

Priority Date: 28/07/2020

LASER HOLOGRAPHIC ANTI-COUNTERFEITING FILM AND LASER HOLOGRAPHIC ANTI-COUNTERFEITING FILM ASSEMBLY

The utility model relates to a holographic anti-counterfeiting membrane field of laser particularly, relates to a holographic anti-counterfeiting membrane of laser and holographic anti-counterfeiting membrane subassembly of laser. The holographic anti-counterfeiting laser film comprises a base film layer, a first reflecting layer and a second reflecting layer, wherein the first reflecting layer and the second reflecting layer are arranged on two sides of the base film layer respectively, a first reflecting area and a first blank area are arranged on the first reflecting layer, a second reflecting area and a second blank area are arranged on the second reflecting layer, the first reflecting area and the second reflecting area are arranged in a staggered mode, the first blank area and the second blank area are arranged in a staggered mode, and therefore the holographic anti-counterfeiting laser film can form an anti-counterfeiting pattern with a dynamic moire effect under illumination after the first reflecting layer and the second reflecting layer are overlapped. The laser holographic anti-counterfeiting film has better anti-counterfeiting effect and is not easy to be imitated.



CLAIM 1. The utility model provides a holographic anti-counterfeiting membrane of laser, its characterized in that, it includes the base film layer and sets up first reflection stratum and the second reflection stratum in base film layer both sides respectively, be provided with first reflection district and first blank area on the first reflection stratum, be provided with second reflection district and second blank area on the second reflection stratum, first reflection district with the crisscross setting of second reflection district, first blank area with the crisscross setting of second blank area makes first reflection stratum with the second reflection stratum superposes the back, can form the anti-counterfeiting pattern of dynamic moire effect under the illumination.

P32899

BRAND PROTECTION

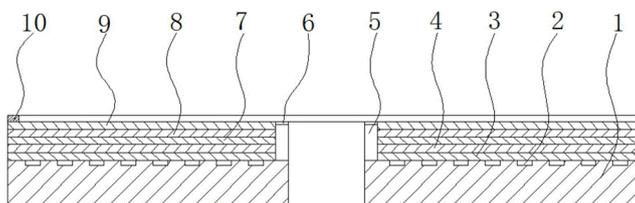
CN212365497U

XU SHIBAO

Priority Date: 22/05/2020

CD DISC WITH HOLOGRAPHIC ANTI-FAKE GRATING

The utility model belongs to the technical field of the CD technique and specifically relates to a CD with holographic anti-fake grating and specifically relates to a CD with holographic anti-fake grating, including the base plate layer, a plurality of anti-fake information gallery has been seted up to the upper end on base plate layer, the first metal reflection stratum of upper end fixedly connected with on base plate layer, and the upper end on first metal reflection stratum is connected with the adhesive linkage, the upper end fixedly connected with second metal reflection stratum of adhesive linkage, the upper end fixedly connected with printing layer on second metal reflection stratum, the upper end fixedly connected with protective layer on printing layer. The utility model discloses an upper end fixed connection printing layer on second metal reflection stratum, the upper end fixed connection protective layer on printing layer, the protective layer is the transparent adhesive layer, through printing layer printing anti-fake information pattern, through the protective layer coating, wraps up anti-fake information pattern for anti-fake information can not drop, and anti-fake information pattern and base plate layer form a body structure, the effectual CD piracy that prevents.



CLAIM 1. The utility model provides a CD with holographic anti-fake grating, includes base plate layer (1), its characterized in that, a plurality of anti-fake information gallery (2) have been seted up to the upper end of base plate layer (1), the first metal reflection stratum (3) of upper end fixedly connected with of base plate layer (1), the upper end of first metal reflection stratum (3) is connected with adhesive linkage (4), upper end fixedly connected with second metal reflection stratum (7) of adhesive linkage (4), the upper end fixedly connected with printing layer (8) of second metal reflection stratum (7), the upper end fixedly connected with protective layer (9) of printing layer (8).

P32909

LABEL

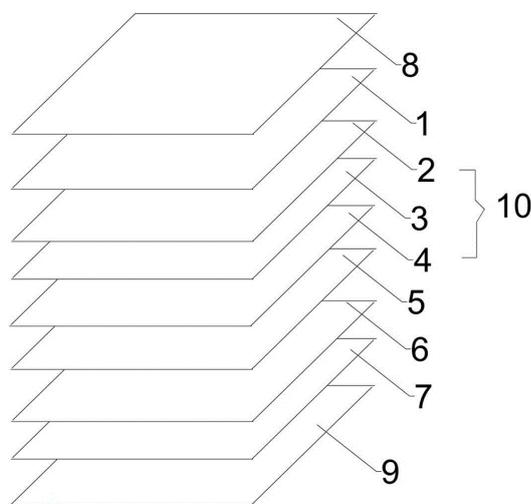
CN212322535U

HENAN PROVINCE WELLKING TECHNOLOGICAL DEVELOPMENT

Priority Date: 23/06/2020

SINGLE-LAYER DOUBLE-DISPLAY HOLOGRAPHIC ANTI-COUNTERFEIT LABEL

The utility model discloses a single-layer double-display holographic anti-counterfeit label, which comprises a transparent substrate, a laser holographic image layer, a metal layer, a VOID layer, an adhesive layer and a stripping substrate layer from top to bottom in sequence; the laser holographic image layer sequentially comprises a hidden laser holographic layer, a separation layer and a front laser holographic layer from top to bottom. The utility model discloses simple structure, easy preparation, the antifalsification is strong, and it is big to take off back information volume, takes off to open and destroys the reuse who avoids the label, guarantees that the product can realize a thing mark, and the convenience is to tracing back and supervision of product, avoids the forging of product.



CLAIM 1. A single-layer double-display holographic anti-counterfeiting label is characterized by sequentially comprising a transparent base material, a laser holographic image layer, a first metal layer, a VOID layer, an adhesive layer and a stripping base material layer from top to bottom; the laser holographic image layer sequentially comprises a hidden laser holographic layer, a separation layer and a front laser holographic layer from top to bottom.

P32910

LABEL – BRAND PROTECTION

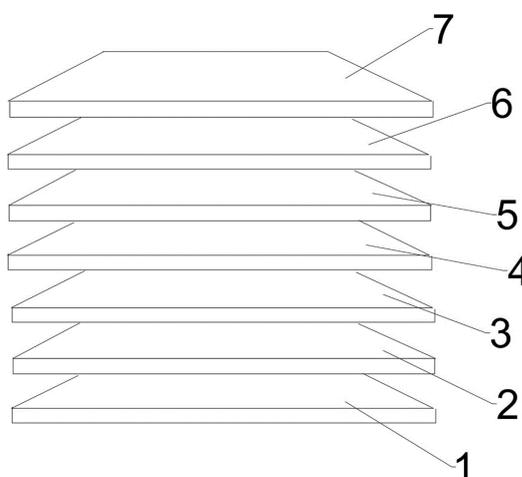
CN212322534U

Priority Date: 23/06/2020

HENAN PROVINCE WELLKING TECHNOLOGICAL DEVELOPMENT

TOBACCO TRACING ANTI-COUNTERFEIT LABEL

The utility model discloses a tobacco tracing anti-counterfeit label, which comprises a transparent base material, a laser holographic layer, a metal layer, an adhesive layer and glassine base paper which are arranged from top to bottom; a variable traceable image-text layer is printed or sprayed on the transparent substrate; variably trace back picture and text layer including setting up variable marketing two-dimensional code on the transparent substrate, set up variable marketing two-dimensional code random physics anti-fake shading all around and set up and be in variable physics anti-fake shading and the colored random verification code of physics anti-fake shading below. The utility model discloses a set up variable all kinds of information that trace back the picture and text layer and show the product, the customer can make comprehensive understanding to the product through the information that shows above, makes the label not only have anti-fake effect and can also be used for the stealthy introduction to the product to make the label have more product information.



P32912

LABEL

CN212276693U

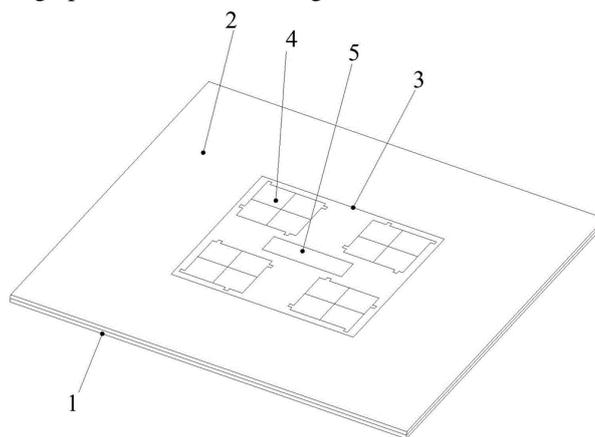
Priority Date: 18/05/2020

ANHUI JINCAI ANTI COUNTERFEITING TECHNOLOGY

WATER TRANSFER HOLOGRAPHIC ANTI-COUNTERFEITING STAINED PAPER

The utility model discloses a water transfer holographic anti-counterfeiting stained paper, which comprises a sticker layer and a protective layer, wherein the upper end of the sticker layer is fixedly attached with the protective layer, the sticker layer is provided with a plurality of anti-counterfeiting areas, the protective layer in the anti-counterfeiting area is provided with a label pasting hole, the sticker layer in the label pasting hole is pasted with a holographic anti-counterfeiting label combination, and the holographic anti-counterfeiting label combination in the next label pasting hole is distributed around the self rotation degree relative to the holographic anti-counterfeiting label combination in the previous label pasting hole according to the clockwise rotation direction; the utility model belongs to the anti-counterfeiting field, and multiple anti-counterfeiting is carried out through the holographic anti-counterfeiting label combination of the anti-counterfeiting area; meanwhile, a user observes all the anti-counterfeiting pattern marks of the four display visual angles of the holographic anti-counterfeiting label combination at one visual angle.

CLAIM 1. A water transfer holographic anti-counterfeiting stained paper comprises a sticker layer (1) and a protective layer (2), wherein the protective layer (2) is fixedly attached to the upper end of the sticker layer (1), and a plurality of anti-counterfeiting areas (3) are arranged on the sticker layer (1), and the water transfer holographic anti-counterfeiting stained paper is characterized in that label sticking holes (20) which are sequentially distributed in the clockwise rotation direction are formed in the protective layer (2) in the anti-counterfeiting areas (3), wherein the label sticking holes (20) penetrate through the protective layer (2), and the label sticking holes (20) are respectively positioned at the corners of the anti-counterfeiting areas (3); a holographic anti-counterfeiting label combination (4) is adhered on the paper layer (1) positioned in the label adhering hole (20), and the holographic anti-counterfeiting label combination (4) comprises a first holographic anti-counterfeiting label (41), a second holographic anti-counterfeiting label (42), a third holographic anti-counterfeiting label (43) and a fourth holographic anti-counterfeiting label (44) which are sequentially distributed in the clockwise rotation direction; according to the clockwise rotation direction, the holographic anti-counterfeiting label combination (4) in the next label pasting hole (20) rotates 90 degrees around the holographic anti-counterfeiting label combination (4) in the previous label pasting hole (20) in position distribution.



P32917

CN212219769U

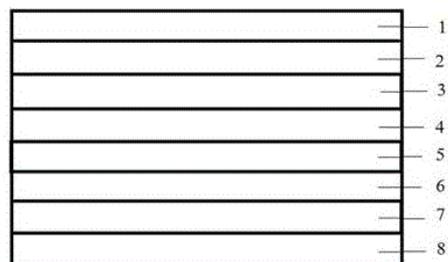
Priority Date: 08/01/2020

XU HUAMIN

HOLOGRAPHIC ANTI-COUNTERFEITING HOT STAMPING FILM WITH DOUBLE IMAGES

The holographic anti-counterfeiting hot stamping film with double images comprises a base material layer, a release layer, a wear-resistant layer, an imaging layer A, a semi-reflecting and semi-transmitting layer, an imaging layer B, a total reflection layer and a strong glue layer from top to bottom; the imaging layer A is provided with a deep concave position and a shallow concave position holographic image of composite mould pressing; the formed double-image holographic anti-counterfeiting film has the anti-counterfeiting effect of the deep concave position holographic image and the anti-counterfeiting effect of the shallow concave position holographic image on the same point, the holographic effects are rich, and the two anti-counterfeiting effects are combined to form a better anti-counterfeiting effect; the imaging layer B is a plastic-variable organic medium coating, a plurality of steps with different heights are arranged on at least one surface or inside the imaging layer B, the semi-reflecting and semi-transparent layer, the imaging layer B and the total reflection layer form a Fabry-Perot cavity, and one surface of the Fabry-Perot cavity is provided with a variable information code. The laser holographic anti-counterfeiting liquid has the laser holographic anti-counterfeiting effect, has the logistics management function of variable information, has the colorizing display and photochromic effects of pictures and texts on the same substrate, is easy to identify and has high anti-counterfeiting degree.

CLAIM 1. The utility model provides a holographic anti-fake thermoprint membrane with two images which characterized in that: the composite material comprises a base material layer (1), a release layer (2), a wear-resistant layer (3), an imaging layer A (4), a semi-reflecting and semi-permeable layer (5), an imaging layer B (6), a total reflection layer (7) and a strong glue layer (8) from top to bottom; the imaging layer A is provided with a deep concave position holographic image (401) and a shallow concave position holographic image (402) which are subjected to composite molding; the imaging layer B (6) is a plastic organic medium coating, at least one surface or the inside of the imaging layer B is provided with a plurality of steps with different heights, the semi-reflecting and semi-permeable layer (5), the imaging layer B (6) and the total reflection layer (7) form a Fabry-Perot cavity, and one surface of the Fabry-Perot cavity is provided with a variable information code; the variable information code is a two-dimensional code, a bar code, a serial number and a combination thereof.



P32930

CN112215738

Priority Date: 14/09/2020

EAST CHINA JIAOTONG UNIVERSITY

TWO-DIMENSIONAL CODE-BASED TAMPER-PROOF DIGITAL WATERMARK METHOD

A tamper-resistant digital watermark embedding and extracting method based on two-dimensional codes. The method comprises the steps of scrambling a two-dimensional code image obtained by scanning a gray carrier image, performing holographic processing and normalization, and generating watermark information to be embedded. Partitioning the carrier image, selecting several embedded blocks to extract the 2-level low-frequency component of redundant discrete wavelet decomposition. For the obtained low frequency component, performing a discrete Chebyshev transform (DTT) to obtain a matrix C. Decomposing the eigenvalue to obtain a corresponding eigenvalue matrix D. And comparing the extracted watermark information with the two-dimensional code image of the current carrier by using a threshold value during watermark extraction, so as to judge whether the carrier is tampered. The invention can effectively resist geometric attacks such as shearing, noise, tampering and the like, and well balances the contradiction between the invisibility and the robustness of the watermark.

CLAIM 1. A tamper-resistant digital watermarking method based on two-dimensional codes is characterized in that: the method comprises the steps of digital watermark embedding and digital watermark extraction; the method comprises the steps of firstly scrambling a two-dimensional code image obtained by scanning a gray carrier image, then performing holographic processing and normalization to generate watermark information w to be embedded, partitioning the carrier image, selecting a plurality of embedded blocks to extract a 2-level low-frequency component LL of redundant discrete wavelet decomposition. For the low frequency component LL of the selected block, performing discrete Chebyshev transform (DTT) to obtain a coefficient matrix C, performing eigenvalue decomposition on C to obtain a corresponding eigenvalue matrix D, embedding watermark information w into the eigenvalue of the eigenvalue matrix D, and extracting the watermark information by performing inverse transformation on an embedded block selected during watermark embedding.

P32931

BRAND PROTECTION

CN112211035

SVG TECHNOLOGY - SVG YANCHENG OPTRONICS – ZHEJIANG MINONG

Priority Date: 10/07/2019

MANUFACTURING METHOD OF HIGH-REGISTRATION-PRECISION PACKAGING PAPER

The invention discloses a method for manufacturing high-registration-precision packaging paper, which comprises the following steps: coating a layer of thermoplastic resin material on the surface of the base film, and forming a resin layer after curing; providing a template with a holographic pattern; die pressing: performing mould pressing on the resin layer by using the template to form the holographic pattern on the resin layer, wherein the surface temperature of the base film is 70-90 °C during mould pressing; compounding: providing a base paper, and combining the base paper with the resin layer with the holographic pattern to obtain a packaging paper roll with the holographic pattern; cutting: and cutting the packaging roll paper according to the required size to obtain the packaging paper. According to the manufacturing method of the high-registration-precision packaging paper, the surface temperature of the base film is controlled to be 70-90 °C during mould pressing, so that the base film is not deformed, and the holographic pattern on the resin layer is ensured not to be deformed, and therefore the registration precision of the color code and the holographic pattern is high.

CLAIM 1. A method for manufacturing high-registration-precision packaging paper is characterized by comprising the following steps: coating a layer of thermoplastic resin material on the surface of the base film, and forming a resin layer after curing; providing a template with a holographic pattern; die pressing: performing mould pressing on the resin layer by using the template to form the holographic pattern on the resin layer, wherein the surface temperature of the base film is 70-90 during mould pressing; compounding: providing a base paper, and combining the base paper with the resin layer with the holographic pattern to obtain a packaging paper roll with the holographic pattern; cutting: and cutting the packaging roll paper according to the required size to obtain the packaging paper.

P32938

PRINTING

CN112185237

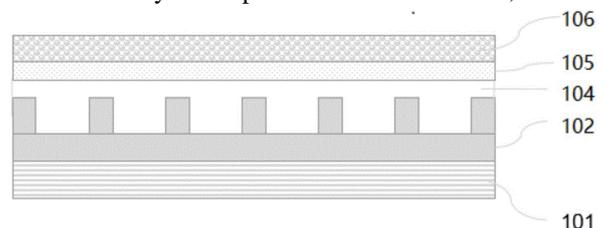
WUHAN HUAGONG IMAGE TECHNOLOGY & DEVELOPMENT

Priority Date: 28/10/2020

ENCRYPTED DIGITAL IDENTIFIER AND PREPARATION METHOD THEREOF

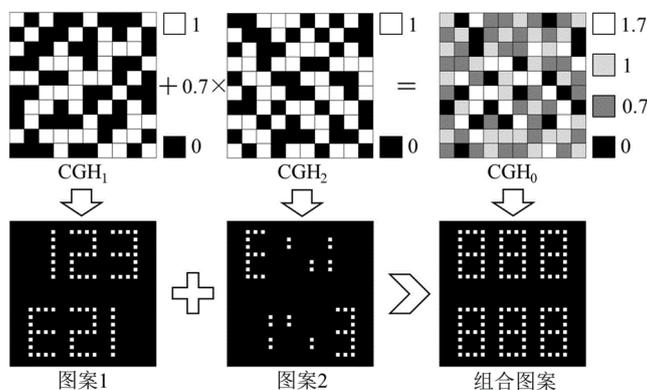
The invention discloses an encrypted digital mark and a preparation method thereof, wherein the mark comprises a base film layer and an information layer; the information layer comprises a first structure area and a second structure area; the first structure area comprises a first optically variable information layer, a color layer and a first plating layer; the first optically variable information layer is formed on the surface of the base film layer and is provided with a first microstructure capable of displaying a holographic pattern under the action of the first plating layer, and the first microstructure is embedded into the color layer; the second structure area comprises a transparent identification layer, a color layer and a first plating layer; the transparent identification layer is formed on the surface of the base film layer and is provided with a transparent second microstructure capable of forming an anti-counterfeiting code, and the second microstructure is embedded into the color layer; after the first optically variable information layer, the transparent identification layer and the color layer are separated by the base film layer, a holographic pattern is formed on the surface of the color layer by a first microstructure on the first optically variable information layer, and an anti-counterfeiting code is formed on the surface of the color layer by a second microstructure on the transparent identification layer; the mark provided by the invention can distinguish the authenticity of the product from the surface, and the mark is prevented from being reused.

CLAIM 1. An encrypted digital mark comprises a base film layer and an information layer; wherein the information layer comprises a first structured area and a second structured area; the first structure area comprises a first optical variable information layer, a color layer and a first plating layer which are sequentially stacked; the first optically variable information layer is formed on the surface of the base film layer and is provided with a first microstructure capable of displaying a holographic pattern under the action of the first plating layer, and the first microstructure is embedded into the color layer; the second structure area comprises a transparent identification layer, a color layer and a first coating which are sequentially stacked; the transparent identification layer is formed on the surface of the base film layer and is provided with a transparent second microstructure capable of forming an anti-counterfeiting code, and the second microstructure is embedded into the color layer; after the first optically variable information layer, the transparent identification layer and the color layer are separated through the base film layer, the first microstructures on the first optically variable information layer form holographic patterns on the surface of the color layer, and the second microstructures on the transparent identification layer form anti-counterfeiting codes on the surface of the color layer.



VARIABLE ANTI-COUNTERFEITING COMPUTER HOLOGRAM PREPARED BASED ON FEMTOSECOND LASER

The invention relates to a femtosecond laser-based variable anti-counterfeiting computer hologram, belonging to the technical field of laser application. The invention processes the hologram composed of three sizes of micro-pit structure on the heat shrinking film by femtosecond laser, the information recorded by the hologram is composed of the computer generated hologram corresponding to two optical patterns, and the two optical patterns are presented under the irradiation of laser. The heat shrinkage film is shrunk by controlling the heating temperature, the micro-pit structure with the minimum size is shrunk to hardly affect the transmittance of incident light, the information recorded by the hologram is changed, and only one optical pattern is finally presented, so that the change of the imaging content of the hologram is realized. The problems that the existing single holographic imaging is poor in anti-counterfeiting capability, and the variable holographic imaging manufacturing process and the imaging device are complex and difficult to popularize are solved. The method has the advantages of simple imaging change principle, realization of integration of packaging and anti-counterfeiting, strong operability and application in the fields of product anti-counterfeiting and information encryption.



CLAIM 1. A variable anti-counterfeiting computer hologram prepared based on femtosecond laser is characterized in that: the anti-counterfeiting computer hologram is formed by processing a hologram formed by combining computer-generated holograms corresponding to two optical patterns on a packaging material, namely a heat shrinkable film through femtosecond laser, wherein the processed hologram is formed by a micro-pit structure with three sizes; because the femtosecond laser processing can cause the oxidation and dehydrogenation of the surface of the micro-pit structure, the light transmission of the micro-pit structure is reduced, and thus amplitude modulation is formed; the processed sample is heated, so that the transverse dimension of the heat shrinkable film is shrunk, the heating temperature is controlled, the minimum-dimension micro-pit structure on the hologram is shrunk to the extent that the transmittance of incident light is hardly influenced, the transmittance of the incident light can be reduced after the large-dimension micro-pit structure is shrunk, finally, the information of the hologram is changed, only one optical pattern is left under the irradiation of incident laser, and therefore, the imaging content is changed, the variable holographic anti-counterfeiting function is realized, and the imitation difficulty is remarkably improved.

Click on the title to return to table of contents

PATENT REFERENCE – See the table at the end of this document

P32830

BANKNOTE – CARD – RELIEF

WO2020262679

TOPPAN PRINTING

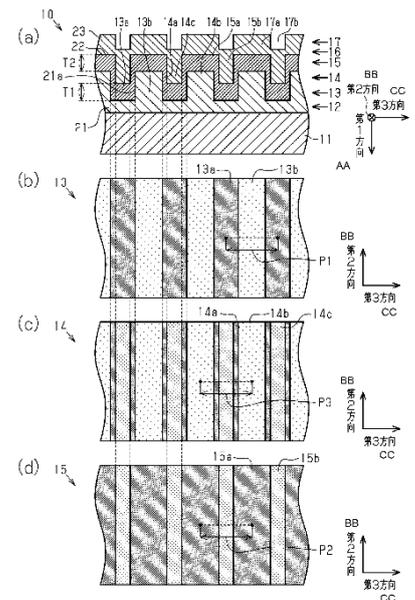
Priority Date: 27/06/2019

WAVELENGTH SELECTION FILTER, DISPLAY BODY, OPTICAL DEVICE, AND METHOD FOR MANUFACTURING WAVELENGTH SELECTION FILTER

This optical device is provided with: a surface relief structural layer having on a surface thereof a surface relief structure consisting of a plurality of protruding portions arranged with a sub-wavelength period; a high refractive index layer which is positioned on the surface relief structure and which has a surface shape that follows the surface relief structure; and a low refractive index layer which is positioned on the high refractive index layer and which has a surface shape that follows the recesses and protrusions on the surface of the high refractive index layer. The high refractive index layer includes: a first grating high refractive index portion which is positioned on a bottom portion of the surface relief structure and which forms a sub-wavelength grating; and a second grating high refractive index portion which is positioned on a top portion of the surface relief structure and which forms the sub-wavelength grating. The refractive index of the high refractive index layer is higher than the refractive indexes of both the surface relief structural layer and the low refractive index layer.

FILTRE DE SÉLECTION DE LONGUEUR D'ONDE, CORPS D'AFFICHAGE, DISPOSITIF OPTIQUE ET PROCÉDÉ DE FABRICATION D'UN FILTRE DE SÉLECTION DE LONGUEUR D'ONDE

Selon la présente invention, ce dispositif optique est pourvu : d'une couche structurale en relief de surface ayant sur une surface associée une structure en relief de surface constituée d'une pluralité de parties en saillie agencées avec une période de sous-longueur d'onde ; une couche à indice de réfraction élevé qui est positionnée en relief de surface ; et une couche à faible indice de réfraction qui est positionnée sur la couche à indice de réfraction élevé et qui a une forme de surface qui suit les creux et les saillies sur la surface de la couche à indice de réfraction élevé. La couche à indice de réfraction élevé comprend : une première partie à indice de réfraction élevé de réseau qui est positionnée sur une partie inférieure de la structure en relief de surface et qui forme un réseau de sous-longueur d'onde ; et une deuxième partie à indice de réfraction élevé de réseau qui est positionnée sur une partie supérieure de la structure en relief de surface et qui forme le réseau de sous-longueur d'onde. L'indice de réfraction de la couche à indice de réfraction élevé est supérieur aux indices de réfraction de la couche structurale en relief de surface et de la couche à faible indice de réfraction.



AA First direction
 BB Second direction
 CC Third direction

CLAIM 1. A recessing and protruding structure layer including, on a surface thereof, a recessing and protruding structure constituted by a plurality of the recessing and protruding elements arranged at sub-wavelength periods, the recessing and protruding structure being constituted by a plurality of the recessing and protruding elements being protrusions or recesses; a high refractive index layer located on the recessing and protruding structure and having a surface shape conforming to the recessing and protruding structure, the high refractive index layer including a first grating high refractive index portion located at a bottom of the recessing and protruding structure and constituting a sub-wavelength grating; and The high refractive index layer including a second grating high refractive index portion located at a top portion of the recessing and protruding structure, the second grating high refractive index portion constituting a sub-wavelength grating; and a low refractive index layer located on the high refractive index layer, the low refractive index layer having a surface shape following recesses and protrusions on a surface of the high refractive index layer, wherein a refractive index of the high refractive index layer is higher than a refractive index of each of the recessing and protruding structure layer and the low refractive index layer.

P32831

WO2020261923

ZEON

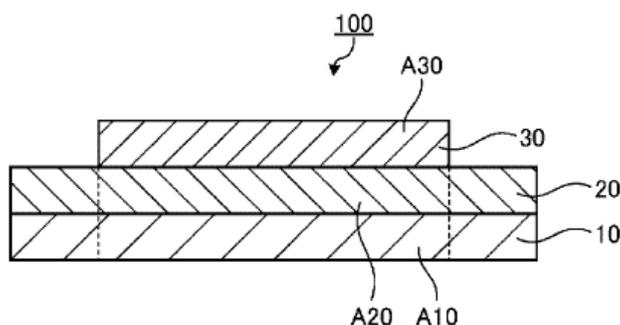
Priority Date: 26/06/2019

DISPLAY MEDIUM, AUTHENTICITY DETERMINATION METHOD, AND ARTICLE INCLUDING DISPLAY MEDIUM

Provided is a display medium including a first layer, a second layer, and a third layer, in which: all or part of the first layer, all or part of the second layer, and all or part of the third layer are stacked in this order in a thickness direction; the first layer can reflect circularly polarized light having a rotation direction D1, and can transmit circularly polarized light having a rotation direction D2 which is opposite the rotation direction D1; the second layer is a retardation layer; and the third layer can reflect circularly polarized light of which the rotation direction is the rotation direction D1, and can transmit circularly polarized light of which the rotation direction is the rotation direction D2.

SUPPORT D'AFFICHAGE, PROCÉDÉ DE DÉTERMINATION D'AUTHENTICITÉ ET ARTICLE COMPRENANT SUPPORT D'AFFICHAGE

L'invention concerne un support d'affichage comprenant une première couche, une deuxième couche, et une troisième couche, dans laquelle : tout ou partie de la première couche, la totalité ou une partie de la deuxième couche, et la totalité ou une partie de la troisième couche sont empilées dans cet ordre dans une direction d'épaisseur ; la première couche peut réfléchir une lumière à polarisation circulaire ayant une direction de rotation D1, et peut transmettre une lumière à polarisation circulaire ayant une direction de rotation D2 qui est opposée à la direction de rotation D1 ; la deuxième couche est une couche de retard ; et la troisième couche peut réfléchir la lumière à polarisation circulaire dont la direction de rotation est la direction de rotation D1, et peut transmettre une lumière à polarisation circulaire dont la direction de rotation est la direction de rotation D2.



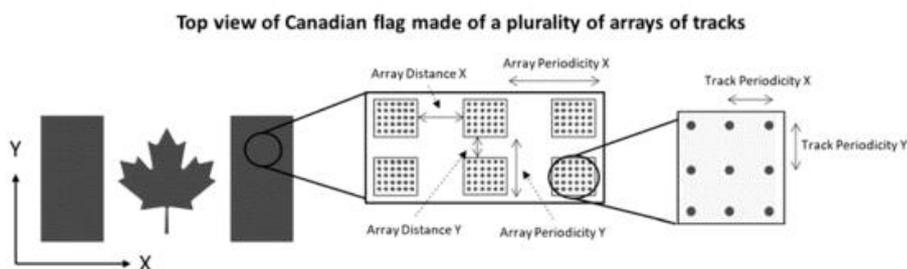
CLAIM 1. A first layer, a second layer, and a third layer, wherein some or all of the first layer, some or all of the second layer, and some or all of the third layer overlap in this order in a thickness direction, and wherein the first layer is capable of reflecting circularly polarized light having a rotational direction D1; Wherein the third layer is a layer capable of transmitting circularly polarized light having a rotation direction D2 opposite to the rotation direction D1, the second layer is a phase difference layer, and the third layer is a layer capable of reflecting circularly polarized light having a rotation direction in the rotation direction D1 and transmitting circularly polarized light having a rotation direction in the rotation direction D2.

DIFFRACTIVE STRUCTURES WITHIN POLYMER SUBSTRATES, THEIR MANUFACTURE AND USE

Disclosed are optical devices suitable as security devices for document authentication, which comprise at least one two-dimensional array of elongate laser-modified tracks extending within a document substrate that have a distinct optical refractive index compared to the unmodified substrate, which can exhibit excellent diffractive effects. Also disclosed are the use of such devices for document authentication and methods for their production.

STRUCTURES DIFFRACTIVES À L'INTÉRIEUR DE SUBSTRATS POLYMÈRES, LEUR FABRICATION ET LEUR UTILISATION

La présente invention concerne des dispositifs optiques appropriés en tant que dispositifs de sécurité pour une authentification de documents, qui comprennent au moins un réseau bidimensionnel de pistes allongées modifiées par laser s'étendant à l'intérieur d'un substrat de document qui présentent un indice de réfraction optique distinct par rapport à celui du substrat non modifié, qui peuvent présenter d'excellents effets de diffraction. La présente invention porte également sur l'utilisation de tels dispositifs pour une authentification de documents et sur des procédés pour leur production.



CLAIM 1. A substrate sheet comprising a material having a general refractive index n , the substrate sheet containing at least one ordered two-dimensional array of discrete laser-modified tracks in the material generated by a beam-shaped laser with laser light distributed along and / or about a laser propagation path extending within the substrate sheet, each laser-modified track comprising an elongate volume of modified substrate material at least 4 times longer than its narrowest width extending at least partially across a thickness of the substrate sheet, that comprises a modified form of the substrate material, that has a refractive index that is different to the general refractive index n of the substrate sheet from which each laser-modified track originated from, wherein for each two-dimensional ordered array the laser-modified tracks collectively diffract light impinging on the substrate sheet to form an observable shape, image, or region of colour.

SECURITY DEVICES AND METHODS OF MANUFACTURE

A security device is disclosed. The security device comprises an array of reflective elements (10) including at least a first set (10a) of reflective elements and a second set (10b) of reflective elements. The first and second sets of reflective elements are regularly or irregularly interlaced along at least a first interlacing direction across a first area of the security device. A non-dispersive colour-generating structure, which can be for instance an array of plasmonic nanostructures or a zero order diffractive structure, is provided in the surface of first and/or second sets of reflective elements. The first set of reflective elements is configured to collectively exhibit a first image across the first area of the security device to a viewer within a first viewing zone (15a). The second set of reflective elements is configured to collectively exhibit a second image across the first area of the security device to the viewer within a second viewing zone (15b) different from the first viewing zone. The non-dispersive colour generating structure is modulated across the first and/or second sets of reflective elements such that the first and/or second images include multiple colours. The first set of reflective elements is configured to collectively direct incident light convergently and/or divergently towards the first viewing zone of the first image.

DISPOSITIFS DE SÉCURITÉ ET PROCÉDÉS DE FABRICATION

La présente invention concerne un dispositif de sécurité. Le dispositif de sécurité comprend un réseau d'éléments réfléchissants (10) comprenant au moins un premier ensemble (10a) d'éléments réfléchissants et un second ensemble (10b) d'éléments réfléchissants. Les premier et second ensembles d'éléments réfléchissants sont entrelacés de manière régulière ou irrégulière le long d'au moins une première direction d'entrelacement à travers une première zone du dispositif de sécurité. Une structure de génération de couleur non dispersive, qui peut être par exemple un réseau de nano-structures plasmoniques ou une structure diffractive d'ordre zéro, est disposée dans la surface de premier et/ou second ensemble(s) d'éléments réfléchissants. Le premier ensemble d'éléments réfléchissants est configuré pour présenter collectivement une première image à travers la première zone du dispositif de sécurité à un observateur à l'intérieur d'une première zone de visualisation (15a). Le second ensemble d'éléments réfléchissants est configuré pour présenter collectivement une seconde image à travers la première zone du dispositif de sécurité à l'observateur à l'intérieur d'une seconde zone de visualisation (15b) différente de la première zone de visualisation. La structure de génération de couleur non dispersive est modulée à travers les premier et/ou second ensembles d'éléments réfléchissants de sorte que les première et/ou seconde images comprennent de multiples couleurs. Le premier ensemble d'éléments réfléchissants est configuré pour diriger collectivement la lumière incidente de manière convergente et/ou divergente en direction de la première zone de visualisation de la première image.

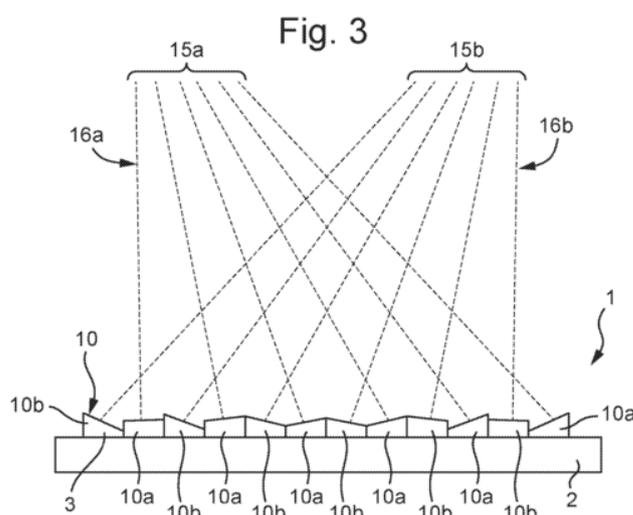
CLAIM 1. A security device comprising:

an array of reflective elements including at least a first set of reflective elements and a second set of reflective elements, the first and second sets of reflective elements being regularly or irregularly interlaced along at least a first interlacing direction across a first area of the security device, and a non-dispersive colour-generating structure provided in the surface of first and/or second sets of reflective elements;

wherein the first set of reflective elements is configured to collectively exhibit a first image across the first area of the security device to a viewer within a first viewing zone and wherein the second set of reflective elements is configured to collectively exhibit a second image across the first area of the security device to the viewer within a second viewing zone different from the first viewing zone;

wherein the non-dispersive colour generating structure is modulated across the first and/or second sets of reflective elements such that the first and/or second images include multiple colours; and

wherein the first set of reflective elements is configured to collectively direct incident light convergently and/or divergently towards the first viewing zone of the first image.

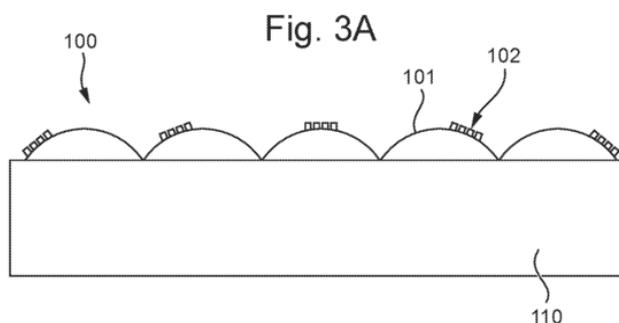


SECURITY DEVICES AND METHODS OF MANUFACTURE THEREOF

A security device is disclosed. The security device comprises an array of reflective sampling elements, which are eg convex micromirrors (101). A non-dispersive colour-generating relief structure (102) is formed in a surface of the reflective sampling elements. The non-dispersive colour-generating relief structure defines an array of image elements across the array of reflective sampling elements. The array of image elements defined by the non-dispersive colour-generating relief structure and the array of reflective sampling elements cooperate to exhibit an optically variable effect. The non-dispersive colour-generating relief structure can be an array of plasmonic nanostructures in the form of nanopillars each having a shaft (114) which can be a dielectric layer (111) being coated with a metal layer (112), or can be a zero-order diffraction grating (124), or can be an array of nanoholes (115). Each micromirror can be a Fresnel micromirror. The device can also comprise an array of anti-reflective nanostructures (35), eg moth-eye relief structures.

DISPOSITIFS DE SÉCURITÉ ET LEURS PROCÉDÉS DE FABRICATION

L'invention concerne un dispositif de sécurité. Le dispositif de sécurité comprend un réseau d'éléments d'échantillonnage réfléchissants, qui sont par exemple des micromiroirs convexes (101). Une structure en relief (102) générant une couleur non dispersive est formée dans une surface des éléments d'échantillonnage réfléchissants. La structure en relief générant une couleur non dispersive définit un réseau d'éléments d'image à travers le réseau d'éléments d'échantillonnage réfléchissants. Le réseau d'éléments d'image défini par la structure en relief générant une couleur non dispersive et le réseau d'éléments d'échantillonnage réfléchissants coopèrent pour présenter un effet optiquement variable. La structure en relief générant une couleur non dispersive peut être un réseau de nanostructures plasmoniques sous la forme de nanopiliers ayant chacun un arbre (114) qui peut être une couche diélectrique (111) revêtue d'une couche métallique (112) ou peut être un réseau de diffraction d'ordre zéro (124) ou peut être un réseau de nanotrous (115). Chaque micromiroir peut être un micromiroir de Fresnel. Le dispositif peut également comprendre un réseau de nanostructures anti-réfléchissantes (35), par exemple des structures en relief d'œil de papillon.



CLAIM 1. A security device comprising:

- an array of reflective sampling elements;
- a non-dispersive colour-generating relief structure formed in a surface of the reflective sampling elements, the non-dispersive colour-generating relief structure defining an array of image elements across the array of reflective sampling elements;
- wherein, the array of image elements defined by the non-dispersive colour-generating relief structure and the array of reflective sampling elements cooperate to exhibit an optically variable effect.

P32846

PRINTING – BANKNOTE – CARD – PLASMONIC STRUCTURE

US20210018834

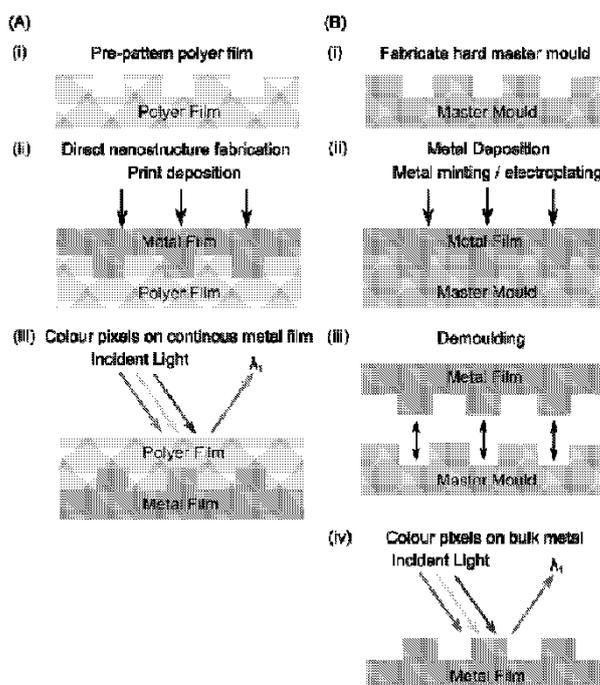
AGENCY FOR SCIENCE TECHNOLOGY & RESEARCH ASTAR

Priority Date: 17/04/2014

PROCESS FOR PLASMONIC-BASED HIGH RESOLUTION COLOR PRINTING

A process for plasmonic-based high resolution color printing is provided. The process includes a) providing a nanostructured substrate surface having a reverse structure geometry comprised of nanopits and nanoposts on a support, and b) forming a conformal continuous metal coating over the nanostructured substrate surface to generate a continuous metal film, the continuous metal film defining nanostructures for the plasmonic-based high resolution color printing, wherein a periodicity of the nanostructures is equal to or less than a diffraction limit of visible light. A nanostructured metal film or metal-film coated support obtained by the process and a method for generating a color image are also provided.

CLAIM 1. A system for plasmonic-based high resolution color printing, the system comprising: a nanostructured metal film or metal-film coated support obtained by a process for plasmonic-based high resolution color printing, the process comprising: a) providing a nanostructured substrate surface having a reverse structure geometry comprised of nanopits and nanoposts on a support, b) forming a conformal continuous metal coating over the nanostructured substrate surface entirely to generate a continuous metal film comprising a solid metal substrate and nanostructures on the solid metal substrate for the plasmonic-based high resolution color printing, wherein a periodicity of the nanostructures is equal to or less than a diffraction limit of visible light, and c) separating the continuous metal film by peeling the continuous film formed over the nanostructured substrate surface entirely, from the nanostructured substrate surface; and a broadband visible light source so that plasmonic resonances generated by the nanostructures when the nanostructures are irradiated with the visible light from the broadband visible light source absorb one or more colors of light, and the nanostructures reflect one or more other colors of light, thereby generating a color image; wherein the visible light is a broadband light.



P32854

PRINTING – MAGNETISM

KR20200144671

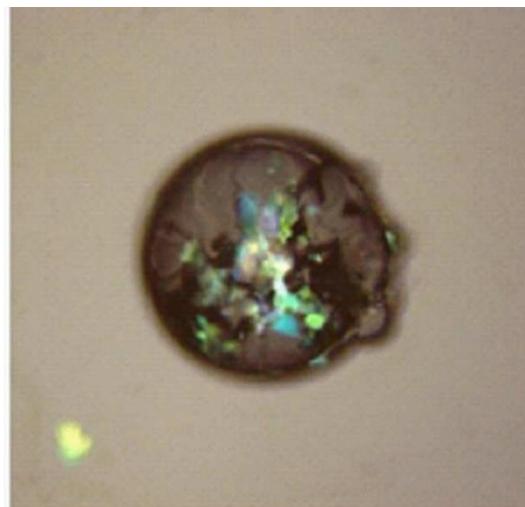
KOREA ELECTRONICS TECHNOLOGY INSTITUTE – KOREA SECURITY PRINTING & MINTING

Priority Date: 19/06/2019

SECURITY ELEMENT USING MICROCAPSULES

The present invention relates to a security element comprising a capsule wall, microcapsules containing a liquid medium and a magnetic pigment inside the capsule wall, wherein the magnetic pigment is a viewing-angle-dependent color conversion pigment comprising at least one magnetic layer, and wherein the magnetic pigment is fixed to the inner wall of the capsule or is flowable by the liquid medium.

CLAIM 1. A security element comprising a capsule wall, microcapsules containing a liquid medium and a magnetic pigment inside the capsule wall, wherein the magnetic pigment is a viewing-angle-dependent color conversion pigment comprising at least one magnetic layer, and wherein the magnetic pigment is fixed to the inner wall of the capsule or is flowable by the liquid medium.



P32862

PRINTING – BANKNOTE – CARD – RELIEF – MICROLENS

JP2021005104

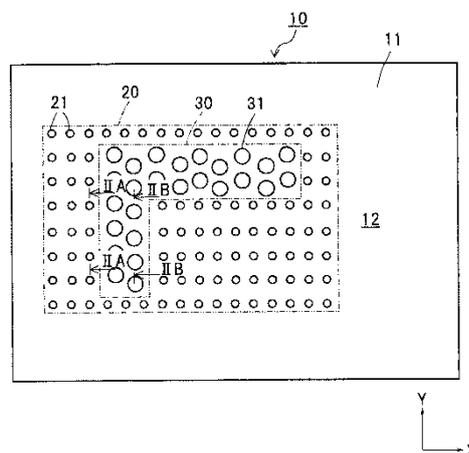
DAI NIPPON PRINTING

Priority Date: 24/09/2020

OPTICAL ELEMENT, PRINTED MATERIAL, AND ANTI-COUNTERFEITING MEDIUM

TOPIC: To provide an optical element, a printed material, and an anti-counterfeiting medium in which a design appears due to transmitted light and which can be manufactured at low cost.

INVENTION: An optical element 10 that is light-transmissive and includes a sheet body 11, a spectral region 20 that is formed on the sheet body 11 and that diffracts light, and a non-spectral region 30 that is formed on the sheet body 11 and that diffracts light less readily than in the spectral region 20. The spectral region 20 and the non-spectral region 30 are disposed immediately adjacent to each other. The first dots 21 protruding from the sheet body 11 are regularly disposed in the spectroscopic region 20, and the second dots 31 protruding from the sheet body 11 are regularly disposed in the non-spectroscopic region 30. The size of the second dots 31 is greater than the size of the first dots 21, or the pitch of the second dots 31 is greater than the pitch of the first dots 21.



CLAIM 1. A light-transmissive sheet-like optical element comprising: a sheet body; a spectral region formed on the sheet body that diffracts visible light; and a non-spectral region formed on the sheet body that diffracts visible light more difficult than in the spectral region; wherein The spectral region and the non-spectral region are arranged adjacent to each other directly or interposing a boundary region, and first dots protruding from the sheet main body are regularly arranged in the spectral region, and In the non-spectral region, second dots protruding from the sheet body are regularly arranged, and the size of the second dots is larger than the size of the first dots; or A pitch of the second dots is greater than a pitch of the first dots, and the non-spectral region transmits light from a surface of the sheet body on an opposite side to a surface on which the second dots are formed.

P32863

RELIEF

JP2021005102

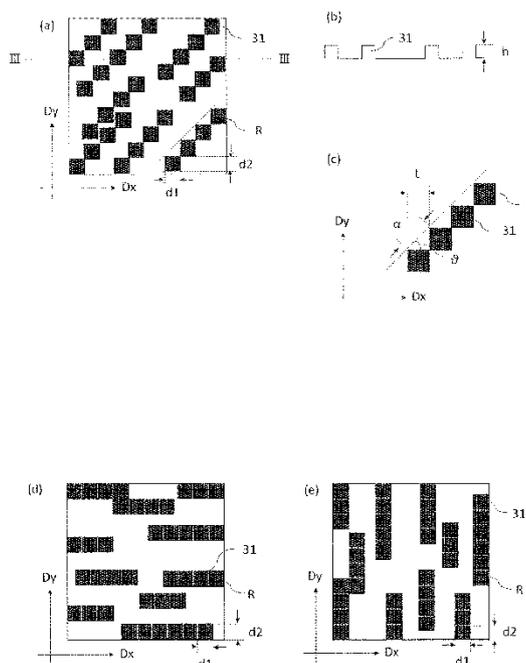
TOPPAN PRINTING

Priority Date: 17/09/2020

DISPLAY BODY AND METHOD FOR MANUFACTURING DISPLAY BODY

TOPIC: To produce a display body that is manufactured by a simple process and has a high degree of design.

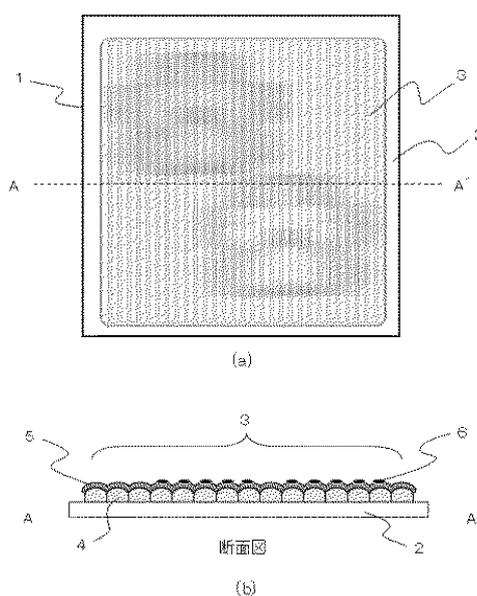
INVENTION: a display body including a plurality of display elements. The display element includes a concave-convex layer including a concave-convex structure, and a multilayer film layer provided on the concave-convex structure. When viewed from the direction opposite the concavo-convex layer, the pattern constituting the convexities can be divided into graphic elements disposed within a plurality of virtual rectangles, and each graphic element disposed within each virtual rectangle is inscribed within the rectangle in which it is disposed. The plurality of virtual rectangles include sides along a first direction and sides along a second direction orthogonal to the first direction, and a length of the sides along the first direction is less than or equal to a sub-wavelength. When θ is an angle formed by an alignment direction of rectangles specifying a plurality of graphic elements constituting one convexity and sides of the plurality of rectangles along the first direction Dx, the angle θ is constant within each of the display elements. In at least one display element, the angle θ is greater than 0° and less than 90° or greater than 90° and less than 180° .



LATENT IMAGE PRINTED MATERIAL

TOPIC: The present invention provides a latent image printed material having a layered structure that can impart a plurality of rich colors of different hues to a latent image that appears under specularly reflected light, and that can simplify a manufacturing process despite having the same effect as compared to conventional techniques.

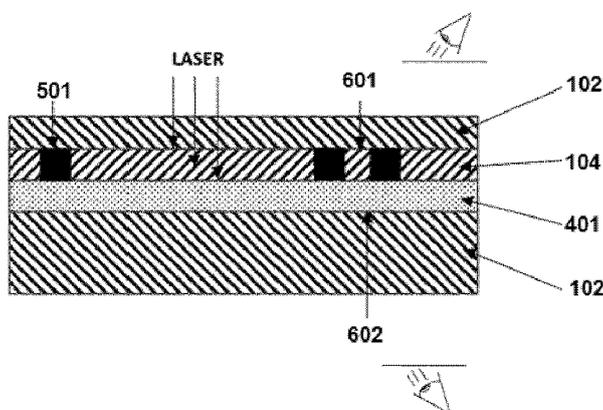
INVENTION: a latent image printed material formed by laminating, in this order, a semicylindrical screen layer, a color layer that does not produce a dynamic effect of a latent image and complements the color of the latent image, and a latent image layer obtained by dividing or compressing a base image of the latent image, wherein the color latent image is dynamically visible under specularly reflected light. Furthermore, by forming a reflective layer on which a diffused image is formed on the color layer, a first color image obtained by synthesizing the color layer and the reflective layer is observed under diffuse reflected light, and a second color image obtained by synthesizing the color layer and the latent image layer is dynamically observed under specular reflected light.



CLAIM 1. A printed image is provided on at least a portion of a base material, the printed image being formed by laminating a color layer and a latent image element group on the semicylindrical element group, the semicylindrical element group having at least one characteristic of light-dark flip-flop properties or color flip-flop properties, Wherein a raised semicylindrical element is regularly arranged at a specific pitch, the latent image element group has optical transparency and comprises a plurality of latent image elements obtained by dividing or compressing a base image and regularly arranged at a specific pitch, and the color layer comprises: A color element group in which a plurality of color elements having a predetermined color are arranged at positions overlapping with the latent image element group, and a color background part having a color different from that of the color element group and disposed adjacent to the color element group, wherein when the print image is observed under diffuse reflected light, the color element group is visually recognized, Wherein when the print image is observed at a specific observation angle under specularly reflected light, a latent image having a color of the color element appears, and further, when the print image is observed at different observation angles under specularly reflected light, the latent image having a color of the color element moves and is visually recognized.

DATA CARRIER AND A METHOD OF PRODUCTION OF THE DATA CARRIER

The object of the invention is a data carrier comprising a layer at least partially coated with a layer of material with optically variable properties, the layer of material with optically variable properties being transparent, wherein at least part of the area coated with the material with optically variable properties (401) is transparent, wherein the carrier further comprises an at least partially transparent laser-markable layer (104) wherein markings capable of being made with a laser can be applied, such that the markings after being applied will be visible from both sides of the carrier, wherein the laser-markable layer (104) is located so that the laser-made marking (501) after application thereof will partially obscure the visibility of the coating with optically variable properties (401) from one side (601) of the carrier, and from the other side (602) of the carrier it will provide a contrasting background for the coating with optically variable properties (401), therefore providing the marking (501), seen from the laser-unmarked side (602) of the carrier, with optically variable properties. The invention further relates to a method of production of the multi-layered data carrier according to the invention.



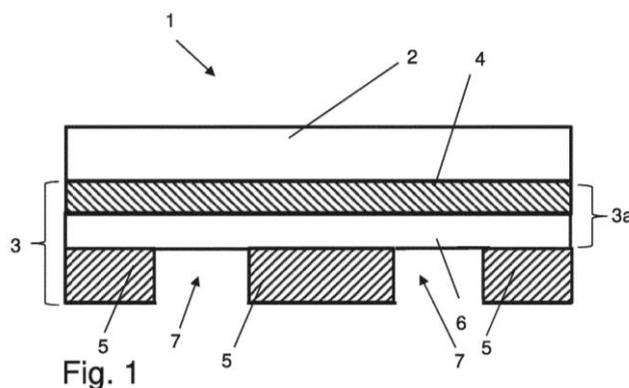
CLAIM 1. A data carrier comprising a layer at least partially coated with a layer of material with optically variable properties, the layer of material with optically variable properties being transparent, characterized in that at least part of the area coated with the material with optically variable properties (401) is transparent, wherein the carrier further comprises an at least partially transparent laser-markable layer (104) wherein markings capable of being made with a laser can be applied, such that the markings after being applied will be visible from both sides of the carrier, wherein the laser-markable layer (104) is located so that the laser-made marking (501) after application thereof will partially obscure the visibility of the coating with optically variable properties (401) from one side (601) of the carrier, and from the other side (602) of the carrier it will provide a contrasting background for the coating with optically variable properties (401), therefore providing the marking (501), seen from the laser-unmarked side (602) of the carrier, with optically variable properties.

SECURITY ELEMENT FOR A VALUABLE DOCUMENT

The invention relates to a security element (1, 10) for a valuable document, a security paper and the like, the security element (1, 10) having at least one colour-tilting thin-film element (3, 11) with at least one absorber layer (4), at least one reflector layer (5) and at least one spacer layer (6) situated between the absorber layer (4) and the reflector layer (5), wherein the at least one reflector layer (5) has at least one cut-out (7), wherein the at least one spacer layer (6) covers the entire area of the at least one absorber layer (4) and the reflector layer (5) on mutually facing sides, wherein the spacer layer (6) also covers the entire area of the at least one cut-out (7) in the at least one reflector layer (5), wherein a colour-tilting element consisting at least of the at least one absorber layer (4) and the at least one spacer layer (6) is formed in a region of the at least one cut-out (7).

ÉLÉMENT DE SÉCURITÉ POUR UN DOCUMENT DE VALEUR

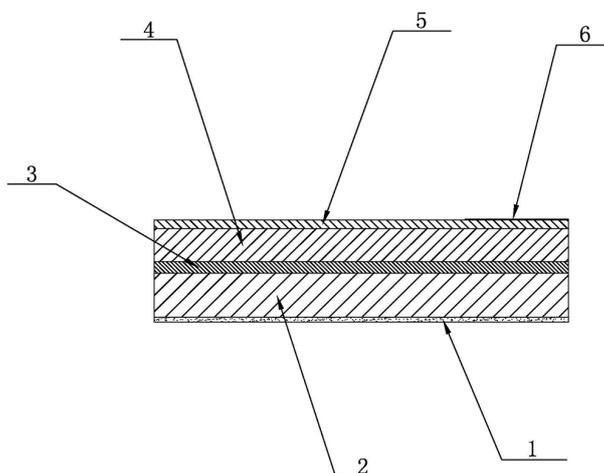
L'invention concerne un élément de sécurité (1, 10) pour un document de valeur, un papier de sécurité et similaire. L'élément de sécurité (1, 10) comporte au moins un élément à couche fine (3, 11) à changement de couleur, pourvu d'au moins une couche absorbante (4), d'au moins une couche réfléchissante (5) et d'au moins une couche d'espacement (6) disposée entre la couche absorbante (4) et la couche réfléchissante (5). La ou les couches réfléchissantes (5) comportent au moins un évidement (7). La ou les couches d'espacement (6) recouvrent toute la surface de la ou des couches absorbantes (4) et de la couche réfléchissante (5) sur des côtés tournés les uns vers les autres. La couche d'espacement (6) recouvre également toute la surface du ou des évidements (7) dans la ou les couches réfléchissantes (5). Un élément de changement de couleur constitué au moins de la ou des couches absorbantes (4) et de la ou des couches d'espacement (6) est formé dans une zone du ou des évidements (7).



CLAIM 1. A security element (1, 10) for a value document, a security paper and the like, wherein the security element (1, 10) comprises at least one color-shifting thin-film element (3, 11) having at least one absorber layer (4, 8), at least one reflector layer (5) and at least one spacer layer (6) arranged between the absorber layer (4, 8) and the reflector layer (5), wherein the at least one reflector layer (5) has at least one recess (7), characterized in that the at least one spacer layer (6) covers the at least one absorber layer (4, 8) and the reflector layer (5) over the entire surface on mutually facing sides, wherein the spacer layer (6) also covers the at least one cutout (7) in the at least one reflector layer (5) over the entire surface, wherein a colour shift element (3 a) consisting at least of the at least one absorber layer (4) and the at least one spacer layer (6) is formed in an area of the at least one recess (7). The second security element according to claim 1, characterized in that the at least one Recess (7) is formed as a letter, number, character, symbol or part of an image or pattern.

NOVEL MULTIPLE ANTI-FAKE GOLD STAMPING FILM

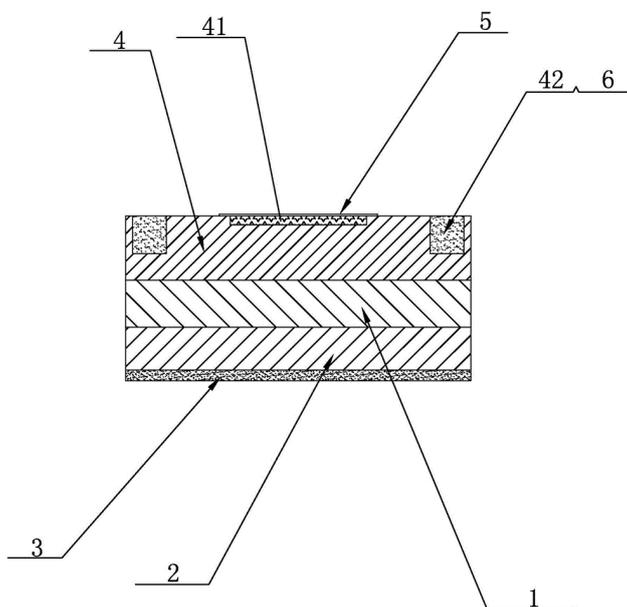
The utility model discloses a novel multiple anti-counterfeiting gold stamping film, which comprises a gold stamping film body, wherein the gold stamping film body comprises an adhesive layer, a PET base layer, a chromium-plated layer, an anti-counterfeiting layer and an antibacterial BOPP film protective layer; the upper surface of the adhesive layer is fixedly bonded with the lower surface of the PET base layer, the upper surface of the PET base layer is fixedly bonded with the lower surface of the chromium coating, the upper surface of the chromium coating is fixedly bonded with the lower surface of the anti-counterfeiting layer, and the upper surface of the anti-counterfeiting layer is fixedly bonded with the lower surface of the antibacterial BOPP film protective layer; the anti-counterfeiting layer comprises an aluminum-plated anti-counterfeiting layer, a photosensitive color-changing anti-counterfeiting layer and a temperature-sensitive color-changing anti-counterfeiting layer, an anti-counterfeiting information laser engraving area is arranged on the upper surface of the aluminum-plated anti-counterfeiting layer, and an anti-counterfeiting information covering coating is arranged at the local position of the anti-counterfeiting information laser engraving area, which is aligned to the anti-counterfeiting information protective layer of the antibacterial BOPP film. Above-mentioned technical scheme, structural design is reasonable, convenient to use, difficult counterfeit, anti-fake effectual and the practicality is good.



CLAIM 1. The utility model provides a novel multiple anti-fake gilding film, includes gilding film body, its characterized in that: the hot-stamping foil body comprises an adhesive layer (1), a PET base layer (2), a chromium-plated layer (3), an anti-counterfeiting layer (4) and an antibacterial BOPP thin film protective layer (5); the upper surface of the adhesive layer (1) is fixedly bonded with the lower surface of the PET base layer (2), the upper surface of the PET base layer (2) is fixedly bonded with the lower surface of the chromium coating (3), the upper surface of the chromium coating (3) is fixedly bonded with the lower surface of the anti-counterfeiting layer (4), and the upper surface of the anti-counterfeiting layer (4) is fixedly bonded with the lower surface of the antibacterial BOPP film protective layer (5); the anti-counterfeiting layer (4) comprises an aluminum plating anti-counterfeiting layer (41), a photosensitive color-changing anti-counterfeiting layer (42) and a temperature-sensing color-changing anti-counterfeiting layer (43), the aluminum plating anti-counterfeiting layer (41) is arranged between the photosensitive color-changing anti-counterfeiting layer (42) and the temperature-sensing color-changing anti-counterfeiting layer (43), an anti-counterfeiting information laser engraving area (411) is arranged on the upper surface of the aluminum plating anti-counterfeiting layer (41), and an anti-counterfeiting information covering coating (6) is arranged at the local position of the anti-counterfeiting information laser engraving area (411) aligned to the antibacterial BOPP film protective layer (5).

NOVEL COLD STAMPING ELECTROCHEMICAL ALUMINUM SPECIAL FOR CIGARETTE PACKET

The utility model discloses a novel cold stamping alumite special for cigarette packets, which comprises a PET (polyethylene terephthalate) base film layer, wherein a chromium plating positioning layer is fixedly arranged on the lower surface of the PET base film layer, and an adhesive layer is fixedly arranged on the lower surface of the chromium plating positioning layer; an aluminum-plated layer is fixedly arranged on the upper surface of the PET base film layer, an anti-counterfeiting information laser engraving layer is arranged in the middle of the upper surface of the aluminum-plated layer, and an anti-counterfeiting information covering coating covers the local position of the anti-counterfeiting information laser engraving layer; the upper surface of aluminizing layer is located the both sides position on anti-fake information laser sculpture layer and all is provided with one and puts the thing recess, and every is put and all embeds in the thing recess and is provided with a phosphor strip. Above-mentioned technical scheme, structural design is reasonable, hardness is good, at night under no light environment or other dark environment easy to see clearly, convenient to use, anti-fake performance is good and the practicality is good.



CLAIM 1. The utility model provides a novel special cold wave electrochemical aluminium of tobacco bale, includes PET base film layer (1), its characterized in that: a chromium plating positioning layer (2) is fixedly arranged on the lower surface of the PET base film layer (1), and an adhesive layer (3) is fixedly arranged on the lower surface of the chromium plating positioning layer (2); an aluminum-plated layer (4) is fixedly arranged on the upper surface of the PET base film layer (1), an anti-counterfeiting information laser engraving layer (41) is arranged in the middle of the upper surface of the aluminum-plated layer (4), and an anti-counterfeiting information covering coating (5) covers the local position of the anti-counterfeiting information laser engraving layer (41); the upper surface of the aluminum-plated layer (4) is provided with a storage groove (42) at the two sides of the anti-counterfeiting information laser engraving layer (41), and a fluorescent strip (6) is embedded in each storage groove (42).

P32922

LABEL – RELIEF – MICROLENS

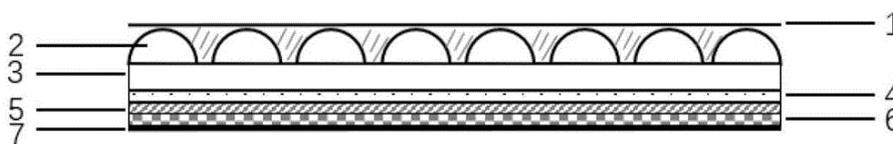
CN112233536

Priority Date: 02/11/2020

SHENZHEN YUTONG PACKAGING SCIENCE & TECHNOLOGY

ANTI-COUNTERFEIT LABEL AND PRODUCTION METHOD THEREOF

The invention discloses an anti-counterfeit label and a production method thereof, relating to the technical field of optical anti-counterfeit labels. The anti-counterfeiting label provided by the invention comprises a first label, wherein the first label comprises the following structures from top to bottom: the label comprises a micro-lens array layer, a transparent substrate layer, a micro-image-text array layer, a white ink layer, a release layer and label base paper; by utilizing the focusing and imaging optical functions of the micro-lens array layer, the micro-image-text information of the micro-image-text array layer can show a three-dimensional (3D) effect through the micro-lens array layer and the transparent substrate layer. The invention solves the problems of homogenization, low copying difficulty and the like of two-dimensional plane anti-counterfeiting by three-dimensional vision on one hand, and solves the inconvenience that a special anti-counterfeiting technology depends on an auxiliary tool on the other hand. Moreover, the manufacturing method of the anti-counterfeiting label is simple, and batch and efficient production of the label can be realized through traditional technologies such as stamping, printing, laminating and coating.



CLAIM 1. The utility model provides an anti-counterfeit label, its characterized in that, includes first label, first label includes following structure from top to bottom: the label comprises a micro-lens array layer, a transparent substrate layer, a micro-image-text array layer, a white ink layer, a release layer and label base paper; the micro-image-text information of the micro-image-text array layer can present a three-dimensional (3D) effect through the micro-lens array layer and the transparent substrate layer.

P32943

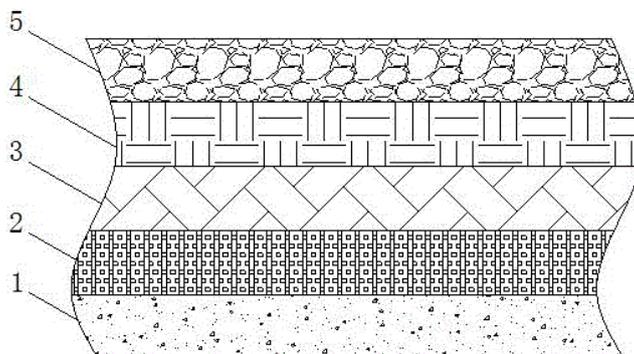
CN112173425

Priority Date: 22/09/2020

GUANGDONG EKO FILM MANUFACTURE

ANTI-COUNTERFEITING LASER FILM

The invention discloses an anti-counterfeiting laser film, which comprises a base paper layer, wherein a bright film is arranged on the top of the base paper layer, a laser coating is arranged on the top of a bright film, and a dummy film is arranged on the top of the laser coating, and a transparent film is arranged on the top of the dummy film.



CLAIM 1. The anti-counterfeiting laser film comprises a base paper layer (1), and is characterized in that: the laser paper is characterized in that a bright film (2) is arranged at the top of the base paper layer (1), a laser coating (3) is arranged at the top of the bright film (2), a dummy film (4) is arranged at the top of the laser coating (3), and a transparent film (5) is arranged at the top of the dummy film (4).

ALUMINUM-BASED ANTI-COUNTERFEITING RELEASE FILM

The invention discloses an aluminum-based anti-counterfeiting release film which comprises a release layer, a supporting layer and a metal layer, wherein the lower surface of the supporting layer is connected with the upper surface of the release layer, the aluminum-based anti-counterfeiting release film also comprises an anti-counterfeiting layer, an adhesion layer and a metal protection layer, the supporting layer is made of PET (polyethylene terephthalate) with the transparency of more than 85%, the upper surface of the supporting layer is discontinuously attached to the lower surface of the anti-counterfeiting layer, the upper surface of the anti-counterfeiting layer is connected with the lower surface of the adhesion layer, the upper surface of the adhesion layer is connected with the lower surface of the metal layer, the upper surface of the metal layer is connected with the lower surface of the metal protection layer, the dry thickness of the anti-counterfeiting layer is 1-. The aluminum-based anti-counterfeiting release film prepared by the invention has large peeling force and high coverage degree, so that the anti-counterfeiting effect is better; when a customer needs the aluminum-based anti-counterfeiting sealing adhesive tape with different colors, the pigment with the corresponding color is only needed to be selected in the adhesion layer, the pigment is not needed to be added in the pressure-sensitive adhesive, and the yield of the aluminum-based anti-counterfeiting sealing adhesive tape is further ensured.

CLAIM 1. The utility model provides an aluminium base is anti-fake from type membrane, includes from type layer (1), supporting layer (2), metal level (5), the lower surface of supporting layer (2) with from the upper surface connection of type layer (1), its characterized in that: the anti-counterfeiting coating is characterized by further comprising an anti-counterfeiting layer (3), an adhesion layer (4) and a metal protection layer (6), wherein the support layer (2) is made of PET (polyethylene terephthalate) with the transparency larger than 85%, the upper surface of the support layer (2) is discontinuously attached to the lower surface of the anti-counterfeiting layer (3), the upper surface of the anti-counterfeiting layer (3) is connected with the lower surface of the adhesion layer (4), the upper surface of the adhesion layer (4) is connected with the lower surface of the metal layer (5), the upper surface of the metal layer (5) is connected with the lower surface of the metal protection layer (6), the anti-counterfeiting layer (3) is 1-3 μm in dry thickness, the metal layer (5) is an aluminum-based layer, and the metal layer (5) is 30-140 nm in thickness, and the preparation method comprises the following steps: (a) taking a layered material with the thickness of 25-100 μm , wherein the layered material is made of PET, and then carrying out corona treatment on the upper surface and the lower surface of the layered material to form a supporting layer (2) with the corona value larger than 50 dyne; (b) taking mixed resin with the solid content of 10-20%, the viscosity of 12-25 seconds and the glass transition temperature of 70-100 , then printing the mixed resin on the surface of the supporting layer (2) through an anti-counterfeiting concave plate, and drying after printing to form an anti-counterfeiting layer (3) with the dry thickness of 1-3 μm , wherein the drying temperature is 70-120 and the drying time is 10-15 s; (c) taking a pigment and an adhesive resin with the solid content of 28-32%, the viscosity of 120-200 seconds and the glass transition temperature of 70-100 according to the weight ratio of 5-15: 85-95 to form an adhesive resin mixture, coating the adhesive resin mixture on the supporting layer (2) and the anti-counterfeiting layer (3) through a comma scraper, and drying to form an adhesive layer (4) with the dry thickness of 10-20 microns after coating, wherein the drying temperature is 70-150 and the drying time is 5-10 min; (d) placing the bonding layer (4) in an environment with a vacuum degree of 125 Pa-150 Pa, and forming a metal layer (5) with a thickness of 300-500 nm on the upper surface of the bonding layer (4) through a plating device, wherein the metal layer (5) is an aluminum base layer, and the winding speed of the plating device is 100-150 m/min, and the conveying speed is 0.15-0.35 m/min; (e) taking a protective resin with the solid content of 28-32%, the viscosity of 120-200 seconds and the glass transition temperature of 70-100 , then coating the protective resin on the surface of the metal layer (5) through a micro-concave plate, and drying to form a metal protective layer (6) after the coating is finished, wherein the drying temperature is 70-150 , and the drying time is 3-5 min; (f) taking 100 parts by weight of a release agent, 0.01-0.05 part by weight of a catalyst and 3-5 parts by weight of a curing agent to carry out compounding to form a release mixture, coating the release mixture on the lower surface of the supporting layer (2) through a micro-concave coating device, then carrying out drying treatment through an oven to form a release layer (1), wherein the drying temperature is 80-150 , the drying time is 10-20 s, and finally cooling to finally obtain the aluminum-based anti-counterfeiting release film.



P32951

CN112126322

Priority Date: 27/08/2020

SUZHOU HONGQI MATERIAL TECHNOLOGY

PREPARATION METHOD OF RESPONSIVE STRUCTURAL COLOR OPTICAL VARIABLE ANTI-COUNTERFEITING COATING

The invention relates to a preparation method of a responsive structural color optical variable anti-counterfeiting coating, which comprises the following steps: preparing 100ml of SiO₂ with the mass fraction of 10-15% and the diameter of 150-200nm, adding 0.3-0.8mg of carbon quantum dot powder and 0.1-0.4mg of photochromic polymer into the aqueous dispersion of the microspheres, and fully mixing by magnetic stirring at room temperature for 10-20 minutes to obtain uniformly dispersed dispersion to be sprayed; constructing a structural color pattern on the substrate by using a method of spraying nanoparticles on a mask plate; and then, plating a metal film on the surface of the constructed structural color pattern. According to the invention, the carbon quantum dots are added into the spraying dispersion liquid, so that the obtained anti-counterfeiting coating has a wider color change range and is quicker to recover; the spiropyran is in the cross-linked structure of polyester as color-changing compound, and the unique structure can make spiropyran be affected. The polyester with relatively stable property protects the color-changing compound from the external environment, the spectral response is more sensitive, and the color-changing effect is good.

CLAIM 1. A preparation method of a responsive structural color optically variable anti-counterfeiting coating is characterized by comprising the following steps: preparing 100ml of SiO₂ with the mass fraction of 10-15% and the diameter of 150-200nm, adding 0.3-0.8mg of carbon quantum dot powder and 0.1-0.4mg of photochromic polymer into the aqueous dispersion of the microspheres, and fully mixing by magnetic stirring at room temperature for 10-20 minutes to obtain uniformly dispersed dispersion to be sprayed; constructing a structural color pattern on the substrate by using a method of spraying nanoparticles on a mask plate; and plating a metal film on the surface of the constructed structural color pattern.

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PATENT REFERENCE – See the table at the end of this document

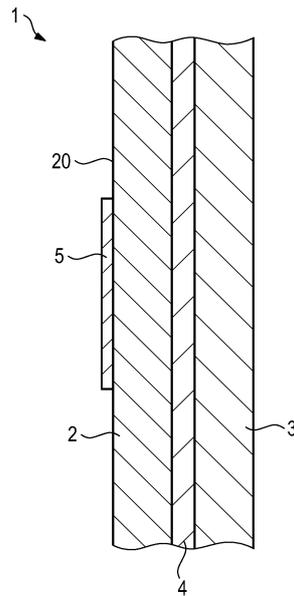
N7507

DE102019119367
Priority Date: 17/07/2019

PORSCHE

LAMINATED GLASS FRONT PANEL FOR A MOTOR VEHICLE

The invention relates to a laminated glass front pane (1) for a motor vehicle, comprising - an inner pane (2), - an outer pane (3), - an intermediate layer (4), which is arranged between the inner pane (2) and the outer pane (3) and connects these to one another in a materially integral manner, and - a polymer film (5), which has an individual film or a film composite comprising a plurality of layers with an optically functional microstructure, which is based on a holographic optical element, wherein the polymer film (5) with the optically functional microstructure is arranged in a section on an inner side (20) of the inner pane (2) which, in the assembled state of the laminated glass front pane (1), forms a see-through region of a camera device of the motor vehicle arranged behind the laminated glass front pane (1).



CLAIM 1. Laminated glass front pane (1) for a motor vehicle, comprising - an inner pane (2), - an outer pane (3), - an intermediate layer (4) which is arranged between the inner pane (2) and the outer pane (3) and connects the latter to one another in a materially integral manner, and - a polymer film (5) which has a single film or a film composite comprising a plurality of layers with an optically functional microstructure which is based on a holographic optical element, characterized in that the polymer film (5) with the optically functional microstructure is arranged in a section on an inner side (20) of the inner pane (2) which, in the assembled state of the laminated glass front pane (1), forms a see-through region of a camera device of the motor vehicle arranged behind the laminated glass front pane (1).

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PATENT REFERENCE – See the table at the end of this document

N7488

WO202104797

Priority Date: 05/07/2019

FONDATION B COM - ORANGE

METHOD AND DEVICE FOR CODING A DIGITAL HOLOGRAM SEQUENCE

The present invention concerns a method and a device for coding a sequence comprising at least a first digital hologram (H1) representing a first scene and a second digital hologram (H2) representing a second scene, the first digital hologram (H1) and the second digital hologram (H2) being represented by means of a set of wavelets each defined by a multiplet of coordinates in a multidimensional space. The first hologram (H1) is represented by a set of first coefficients ($c1(k,s,X)$) respectively associated with at least some of the wavelets of the set of wavelets, and the second hologram (H2) is represented by a set of second coefficients ($C2(k',s',X')$) respectively associated with at least some of the wavelets of the set of wavelets. The coding method comprises the following steps: - for each of a plurality of second coefficients ($C2(k',s',X')$), determining a remainder (lk',s',X') by a difference between the second coefficient concerned ($C2(k',s',X')$), associated with a first wavelet defined by a given multiplet ((k',s',X')), and the first coefficient ($c1(k,s,X)$) associated with a second wavelet defined by a multiplet ((k,s,X)) having as its image the multiplet ((k',s',X')) given by transform (G_i) in the multidimensional space; - coding the determined remainders (lk',s',X'). The transform (G_i) is determined by analysis of variation between the first scene represented by the first digital hologram (H1) and the second scene represented by the second digital hologram (H2).

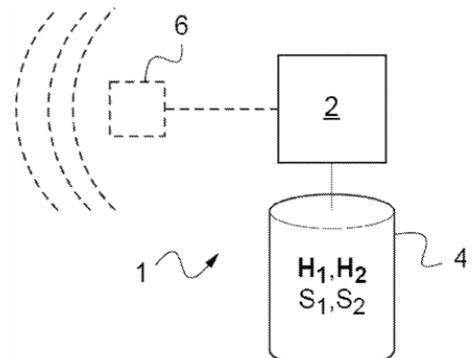
PROCÉDÉ ET DISPOSITIF DE CODAGE D'UNE SÉQUENCE D'HOLOGRAMMES NUMÉRIQUES

La présente invention concerne un procédé et un dispositif de codage d'une séquence comprenant au moins un premier hologramme numérique (H1) représentant une première scène et un second hologramme numérique (H2) représentant une seconde scène, le premier hologramme numérique (H1) et le second hologramme numérique (H2) étant représentés au moyen d'un ensemble d'ondelettes définies chacune par un multiplet de coordonnées dans un espace pluridimensionnel. Le premier hologramme (H1) est représenté par un ensemble de premiers coefficients ($c1(k,s,X)$) respectivement associés à certaines au moins des ondelettes dudit ensemble d'ondelettes et le second hologramme (H2) est représenté par un ensemble de seconds coefficients ($C2(k',s',X')$) respectivement associés à certaines au moins des ondelettes dudit ensemble d'ondelettes. Le procédé de codage comprend les étapes suivantes : - pour chacun d'une pluralité de seconds coefficients ($C2(k',s',X')$), détermination d'un résidu (lk',s',X') par différence entre le second coefficient concerné ($C2(k',s',X')$), associé à une première ondelette définie par un multiplet donné ((k',s',X')), et le premier coefficient ($c1(k,s,X)$) associé à une seconde ondelette définie par un multiplet ((k,s,X)) ayant pour image le multiplet donné ((k',s',X')) par transformation (G_i) dans l'espace pluridimensionnel; - codage des résidus déterminés (lk',s',X'). La transformation (G_i) est déterminée par analyse de variation entre la première scène représentée par le premier hologramme numérique (H1) et la seconde scène représentée par le second hologramme numérique (H2).

CLAIM 1. Method for coding a sequence comprising at least one first digital hologram (H1) representing a first scene and a second digital hologram (H2) representing a second scene, the first digital hologram (H1), and the second digital hologram (H2) being represented by means of a set of wavelets each defined by a byte of coordinates in a multi-dimensional space, the first hologram (H1) being represented by a set of first coefficients ($c1(K,s,X)$) respectively associated with at least some of the wavelets of said set of wavelets and the second hologram (H2) being represented by a set of second coefficients ($C2(K',S',X')$) respectively associated with at least some of the wavelets of said set of wavelets, the encoding method comprising the following steps:

- for each of a plurality of second coefficients ($C2(K',S',X')$), determining (E10) a residual ($L K',S','$) by the difference between the second coefficient concerned ($C2(k',s',X')$), associated with a first wavelet defined by a given byte ((k',s',X')), and the first coefficient ($c1(k,s,X)$) associated with a second wavelet defined by a multiplet ((k,s,X)) having as image the given multiplet ((k',s',X')) by transformation (G_i) in the multi-dimensional space;

- encoding (E12) the determined residuals ($L K',S','$), wherein the transformation (G_i) is determined by analyzing variation between the first scene represented by the first digital hologram (H1) and the second scene represented by the second digital hologram (H2).



N7489

WO202103380

CELLOPTIC

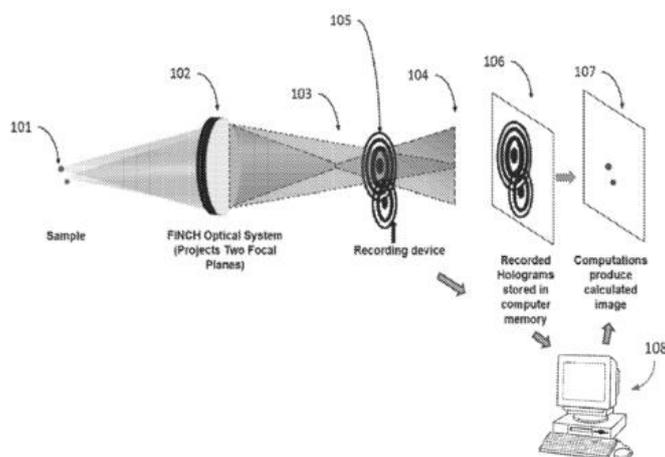
Priority Date: 03/07/2019

CALIBRATION-FREE PHASE SHIFTING PROCEDURE FOR SELF-INTERFERENCE HOLOGRAPHY

An apparatus and method are introduced to produce a hologram of an object from electromagnetic radiation, such as incoherent light, received from the object. The electromagnetic radiation is received by a receiving assembly and transformed into a plurality of co-linear co-propagating beams with different focal distances. The interference of the plurality of beams is enabled by projecting components of each beam along a common polarization direction. The interference patterns thus formed are recorded and then processed to form the hologram of the object.

PROCÉDURE DE DÉPHASAGE SANS ÉTALONNAGE POUR HOLOGRAPHIE À AUTO-INTERFÉRENCE

L'invention concerne un appareil et un procédé pour produire un hologramme d'un objet à partir d'un rayonnement électromagnétique, tel qu'une lumière incohérente, reçu à partir de l'objet. Le rayonnement électromagnétique est reçu par un ensemble de réception et transformé en une pluralité de faisceaux colinéaires à copropagation ayant différentes distances focales. L'interférence de la pluralité de faisceaux est permise par la projection de composantes de chaque faisceau le long d'une direction de polarisation commune. Les motifs d'interférence ainsi formés sont enregistrés et ensuite traités pour former l'hologramme de l'objet.



CLAIM 1. An imaging device, comprising:

- a means for receiving electromagnetic radiation from an object;
- a means for imposing a linear polarization on the received electromagnetic radiation; a means to produce two linearly orthogonally polarized beams from the received electromagnetic radiation, each beam bearing information about the location of the object, and each beam having a distinct phase curvature;
- a means to convert the linearly orthogonally polarized beams into circularly orthogonally polarized beams without changing the phase curvatures of the beams;
- a means to cause mutual interference of the circularly orthogonally polarized beams with controlled relative phase factors;
- a means to record the interference patterns created by the mutual interference, and a means to produce holograms and reconstructed images of the object from the recorded interference patterns.

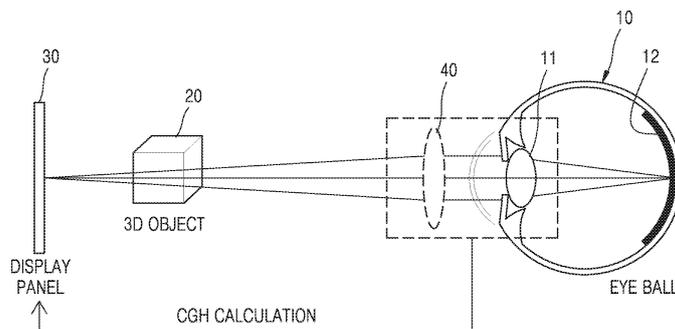
N7495

US20210003967
Priority Date: 03/07/2019

SAMSUNG ELECTRONICS

METHOD AND APPARATUS FOR PROCESSING HOLOGRAPHIC IMAGE

Provided are methods of processing a holographic image and apparatuses using the methods. A method includes obtaining image data with respect to a three-dimensional (3D) object, obtaining interference patterns in a computer-generated hologram (CGH) plane by performing a Fourier transform on the image data, and generating a CGH with respect to the 3D object based on the interference patterns, wherein the Fourier transform is performed based on a focal length of an eye lens of an observer.



CLAIM 1 . A method of processing a holographic image, the method comprising: obtaining image data with respect to a three-dimensional (3D) object; obtaining interference patterns in a computer-generated hologram (CGH) plane by performing a Fourier transform on the image data; and generating a CGH with respect to the 3D object based on the interference patterns, wherein the Fourier transform is performed based on a focal length of an eye lens of an observer.

N7529

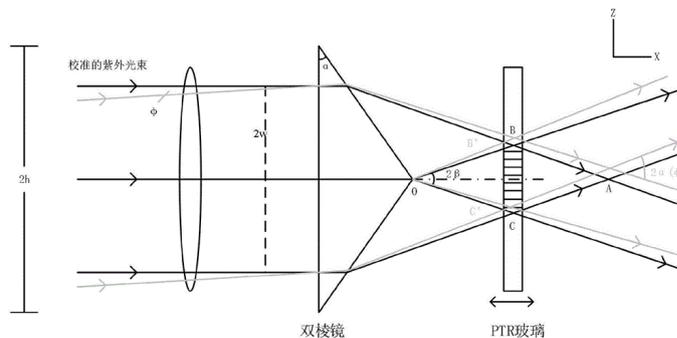
CN112198576
Priority Date: 12/10/2020

CHINA JILIANG UNIVERSITY

ULTRAVIOLET EXPOSURE METHOD OF VOLUME HOLOGRAPHIC BRAGG REFLECTOR

The invention discloses an ultraviolet exposure method of a volume holographic Bragg reflector, which comprises the following steps: (1) enabling a beam of parallel ultraviolet light to vertically enter the bottom surface of the double prism and emit two beams of parallel light from the two side wave splitting surfaces of the double prism, wherein the two beams of parallel light form interference fringes in front of the double prism. (2) Illuminating interference fringes on the PTR glass and recording the interference fringes; forming a volume holographic bragg grating on the PTR glass during T time. The exposure method is specially designed for the volume holographic Bragg reflector, the wave splitting surface interference is carried out through the double prisms, the PTR glass is used for recording at the interference fringes, the period of the volume holographic Bragg grating can be accurately determined by controlling the base angles of the double prisms without manual adjustment, and the manufacturing accuracy and efficiency are greatly improved. Meanwhile, the cycle deviation caused by instability of double-beam interference and the uncertainty of the interference fringe cycle caused by environmental vibration are avoided.

CLAIM 1 . An ultraviolet exposure method of a volume holographic Bragg reflector is characterized in that: the method comprises the following steps: (1) enabling a beam of parallel ultraviolet light to vertically enter the bottom surface of the double prism and emit two beams of parallel light from the two side wave splitting surfaces of the double prism, wherein the two beams of parallel light form interference fringes in front of the double prism; (2) illuminating interference fringes on the PTR glass and recording the interference fringes; forming a volume holographic bragg grating on the PTR glass during T time.



N7530

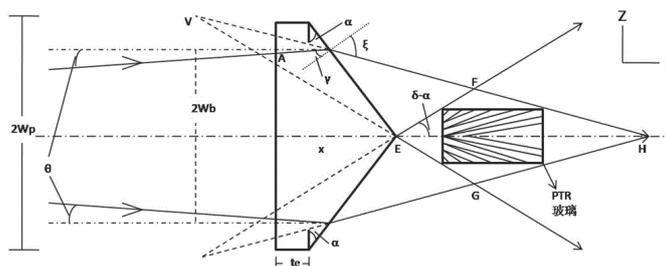
CN112198575

Priority Date: 12/10/2020

CHINA JILIANG UNIVERSITY

PREPARATION METHOD OF TRANSVERSE CHIRP VOLUME HOLOGRAPHIC BRAGG GRATING

The invention discloses a method for preparing a transverse chirp volume holographic Bragg grating, which comprises the following steps: (1) one beam of divergent ultraviolet light vertically enters the bottom surface of the double prism, two beams of parallel light are emitted from two side wave splitting surfaces of the double prism, and the two beams of parallel light emitted form interference fringes in front of the double prism. (2) Interference fringes are illuminated on the PTR glass, and a transverse chirped volume holographic Bragg grating is formed on the PTR glass in the T time. Ensuring that the biprism and the PTR glass are relatively stationary. The double-beam interference realized by the double-prism wave-splitting surface can avoid the uncertainty of the interference fringe period caused by environmental vibration, and compared with the reported phase plate method, the method has lower cost which is about one fourth of the cost of the phase plate method and better effect.



CLAIM 1. A method for preparing a transverse chirp volume holographic Bragg grating is characterized by comprising the following steps: (1) enabling one beam of divergent ultraviolet light to vertically enter the bottom surface of the double prism and emit two beams of parallel light from the two side wave splitting surfaces of the double prism, wherein the two beams of parallel light form interference fringes in front of the double prism; (2) and placing rectangular PTR glass into the interference fringes, wherein the long side of the rectangular PTR glass is perpendicular to the bottom surface of the double prisms, so that the interference fringes are irradiated on the PTR glass, and a transverse chirped volume holographic Bragg grating is formed on the PTR glass within T time.

N7533

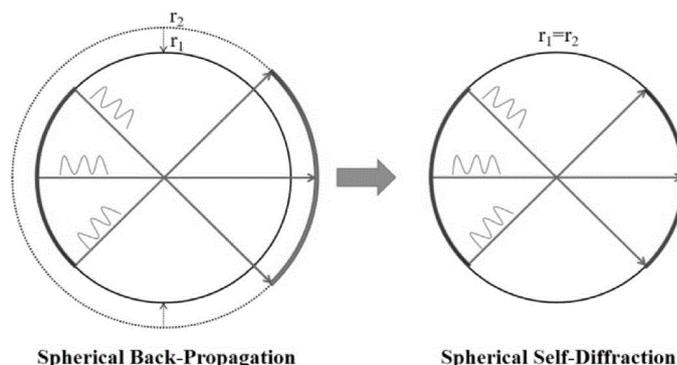
CN112180707

Priority Date: 28/09/2020

SICHUAN UNIVERSITY

SPHERICAL PURE PHASE HOLOGRAM GENERATION METHOD BASED ON SPHERICAL SELF-DIFFRACTION MODEL

The invention provides a spherical pure phase hologram generation method based on a spherical self-diffraction model. The method firstly provides a spherical self-diffraction calculation model, and the diffraction process of the model is that an object plane diffraction field is transmitted to the same object plane through spherical center diffraction; then, based on an iterative algorithm of spherical self-diffraction, a spherical pure phase hologram can be generated; the spherical self-diffraction iterative algorithm mainly relies on the amplitude of an object plane to provide iterative amplitude limitation, and the energy conservation of the same object plane ensures the rapid convergence of the iterative algorithm so as to generate a spherical pure phase hologram which can be reconstructed with high quality. Compared with the traditional iterative algorithm, the reconstructed image quality of the spherical pure phase hologram generated by the method is high, and speckle noise of the reconstructed image of the spherical pure phase calculation hologram is effectively inhibited.



so as to generate a spherical pure phase hologram which can be reconstructed with high quality. Compared with the traditional iterative algorithm, the reconstructed image quality of the spherical pure phase hologram generated by the method is high, and speckle noise of the reconstructed image of the spherical pure phase calculation hologram is effectively inhibited.

Click on the title to return to table of contents

PATENT REFERENCE – See the table at the end of this document

N7506

IN201911022734

Priority Date: 07/06/2019

MAX SPECIALITY FILMS

TRANSPARENT BIAXIALLY ORIENTED POLYPROPYLENE FILM FOR DIRECT SOFT EMBOSSING/HOLOGRAPHY APPLICATIONS

The invention relates to a transparent biaxially oriented polypropylene (BOPP) film suitable for manufacturing holographic films. The transparent BOPP film comprises three layers i.e. a core layer and two skin layers one on either side of the core layer, or five layers i.e a core layer, two skin layers and two tie layers, such that each skin layer sandwiches the core layer sandwiched between the tie layers from either side. The BOPP film of the present invention can be utilized for holographic embossing process without any need of primer or acrylic coating. The embossable BOPP film of present invention exhibit improved softness, optical characteristics and excellent mechanical properties.



CLAIM 1. A biaxially oriented transparent holographic film comprising two skin layers and atleast one of them is embossable; a core layer sandwiched between the two skin layers; wherein atleast on embossable skin layer comprises of polymers or co-polymers selected from the group comprising metallocene polyethylene, maleic anhydride grafted propylene Co-Polymer blend, and/or combination thereof; and it's thickness ranges from 1 to 5 micron; and wherein the core layer comprises homopolymer and or co-polymers of polypropylene.

N7510

CN212331282U

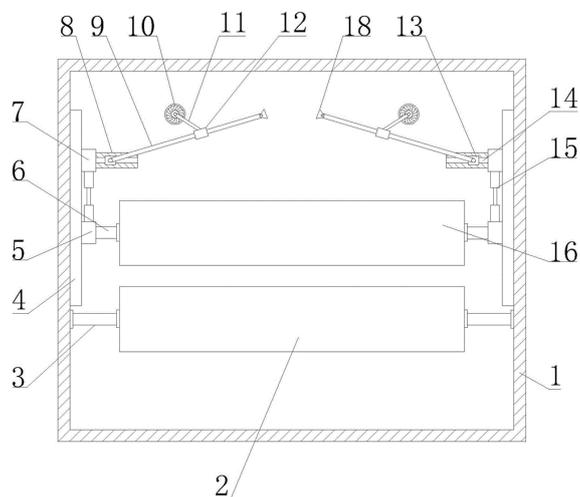
Priority Date: 29/04/2020

SHENZHEN HENGRUNDA OPTOELECTRONICS SCREEN PRINTING TECHNOLOGY

MOLDING PRESS MECHANISM OF LASER HOLOGRAPHIC FILM PRESSING MACHINE

A mould pressing mechanism of a laser holographic film pressing machine comprises a shell, a first sliding block, a second sliding block, a fixing plate, a first swing rod, a driving device, a second swing rod and a connecting rod; two groups of mounting plates, a mould pressing roller and a press roller are arranged in the shell; the mould pressing roller is positioned right below the compression roller and is rotationally connected with the inner wall of the shell; the press roller is connected with the two groups of first sliding blocks; the first sliding block is connected with the mounting plate in a sliding manner; the two ends of the connecting rod are respectively connected with the first sliding block and the second sliding block; the second sliding block is connected with the first sliding chute in a sliding manner, and a fixing plate is arranged on the second sliding block; the end surfaces of the fixed plates are provided with second sliding chutes; the sliding sleeve is sleeved on the first swing rod, and a third sliding block and a mounting seat are arranged at two ends of the first swing rod; the third sliding block is connected with the fixed plate in a sliding manner; two ends of the second swing rod are respectively connected with the sliding sleeve and an output shaft of the driving device. The utility model is simple in operation convenient to use can realize that compression roller periodicity and mould pressing version roller extrude in order to carry out the mould pressing to the molding material.

CLAIM 1. A mould pressing mechanism of a laser holographic film pressing machine is characterized by comprising a shell (1), a mould pressing roller (2), a mounting plate (4), a first sliding block (5), a second sliding block (7), a fixing plate (8), a first swing rod (9), a driving device (10), a second swing rod (11), a sliding sleeve (12), a third sliding block (13), a connecting rod (15), a pressing roller (16) and a mounting seat (18); a feed inlet and a discharge outlet are respectively arranged on the two side end faces of the shell (1) which are far away from each other; two groups of mounting plates (4) are respectively mounted on the inner wall of the shell (1), the two groups of mounting plates (4) are symmetrically distributed, and the end face of each group of mounting plates (4) is provided with a first sliding chute (41); the mould pressing plate roller (2) and the compression roller (16) are distributed side by side and are both positioned in the shell (1), and the mould pressing plate roller (2) and the compression roller (16) are positioned between the feeding hole and the discharging hole; the mould pressing plate roller (2) is positioned under the compression roller (16), and the mould pressing plate roller (2) comprises a mould pressing working plate and a rotating roller; the mould pressing working plate is arranged on the rotating roller; two ends of the rotating roller are respectively provided with two groups of first rotating shafts (3); the two groups of first rotating shafts (3) are respectively and rotatably connected with the inner wall of the shell (1); two ends of the press roll (16) are respectively provided with a second rotating shaft (6); the two groups of second rotating shafts (6) are respectively and rotatably connected with the two groups of first sliding blocks (5); each group of first sliding blocks (5) is respectively connected with each group of first sliding grooves (41) in a sliding manner; one end of each of the two groups of connecting rods (15) is respectively connected with the two groups of first sliding blocks (5), and the other end of each of the two groups of connecting rods (15) is respectively connected with the two groups of second sliding blocks (7); the two groups of second sliding blocks (7) are respectively connected with the two groups of first sliding grooves (41) in a sliding manner; two groups of fixed plates (8) are respectively and vertically arranged on the end surfaces of the two groups of second sliding blocks (7) far away from the two groups of mounting plates (4), and a second sliding chute (14) is arranged on the end surface of each group of fixed plates (8); one end of each of the two groups of first swing rods (9) is respectively and rotatably connected with two groups of third sliding blocks (13); the two groups of third sliding blocks (13) are respectively connected with the two groups of second sliding grooves (14) in a sliding manner; the other ends of the two groups of first swing rods (9) are respectively and rotatably connected with two groups of mounting seats (18); the two groups of mounting seats (18) are mounted on the inner wall of the shell (1); the two groups of sliding sleeves (12) are respectively sleeved on the outer sides of the two groups of first swing rods (9); one end of each of the two groups of second swing rods (11) is respectively and rotatably connected with the two groups of sliding sleeves (12), and the other end of each of the two groups of second swing rods (11) is respectively connected with the output shafts of the two groups of driving devices (10); two groups of driving devices (10) are arranged in the shell (1).



N7522

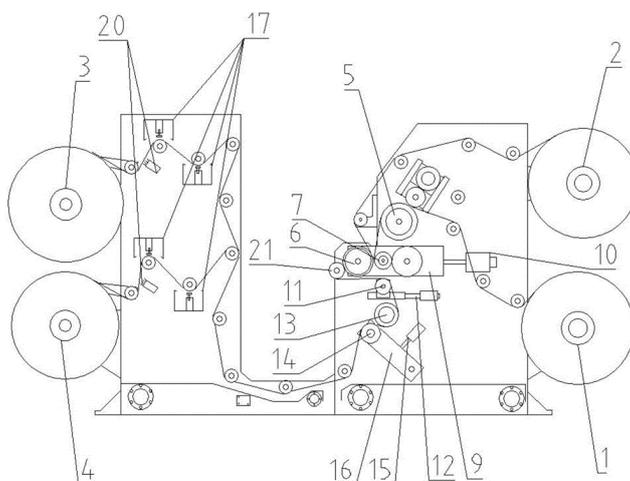
CN212219623U

Priority Date: 10/04/2020

WENZHOU KELEI LASER SCIENCE & TECHNOLOGY

NANO HOLOGRAPHIC FILM MOULD PRESS

The utility model provides a holographic membrane moulding press of nanometer, including the frame with install the unwinding mechanism in the frame, winding mechanism, preheat the mechanism, thermoprint combined mechanism, tension guiding mechanism, surface treatment mechanism and main control system, unwinding mechanism includes holographic thermoprint membrane unreels the roller and the substrate unreels the roller, winding mechanism includes finished product wind-up roll and base film recovery roller, preheat the mechanism and include preheating roll, thermoprint combined mechanism includes the subsides roller, displacement device and the flower roller that leans on in proper order, the top roll, the smooth roll, tension guiding mechanism is including the primary tension adjusting device who is used for compound tension adjustment and the secondary tension adjusting device who is used for peeling off the base film, surface treatment mechanism includes corona unit.



CLAIM 1. A nanometer holographic film moulding press is characterized in that: the hot stamping machine comprises a rack, and an unreeling mechanism, a reeling mechanism, a preheating mechanism, a hot stamping compound mechanism, a tension adjusting mechanism, a surface treatment mechanism and a control host which are arranged on the rack; the unwinding mechanism comprises a holographic hot stamping film unwinding roller (1) and a substrate unwinding roller (2), the winding mechanism comprises a finished product winding roller (3) and a base film recovery roller (4), and the finished product winding roller (3) and the base film recovery roller (4) are in transmission connection with an arranged motor; the preheating mechanism comprises a preheating roller (5), a heat conduction layer is arranged on the surface of the preheating roller (5), and the heat conduction layer generates heat through an arranged heating device; the hot stamping composite mechanism comprises a pasting roller (21), a displacement device, and a flower roller (6), a top roller (7) and a smooth roller (8) which are sequentially abutted against each other, wherein the flower roller (6), the top roller (7) and the smooth roller (8) are all installed on a fixing plate (9) which is arranged on the flower roller, the flower roller (6) is electrified to generate heat through a heating layer arranged on the surface of the flower roller, a printing plate is fixed on the surface of the heating layer, an elastic adhesive layer is arranged on the surface of the top roller (7), the displacement device comprises a composite cylinder (10), the composite cylinder (10) is connected with and controls the transverse movement of the fixing plate (9), and the flower roller (6) can be abutted against the pasting roller (21) by moving the fixing plate (9); the tension adjusting mechanism comprises a primary tension adjusting device for composite tension adjustment and a secondary tension adjusting device for peeling off a base film, the primary tension adjusting device comprises a primary tension roller (11) and a primary adjusting cylinder (12), the primary adjusting cylinder (12) is used for controlling the transverse movement of the primary tension roller (11), the secondary tension adjusting device comprises a fixed roller (13), a secondary tension roller (14), a secondary adjusting cylinder (15) and a swing rod (16), two ends of the swing rod (16) are respectively used for installing the secondary tension roller (14) and hinged on a rack, the secondary tension roller (14) can be abutted against the fixed roller (13) through the swing of the swing rod (16), and the secondary adjusting cylinder (15) is used for controlling the swing angle of the swing rod (16); the surface treatment mechanism comprises a corona device (17), and double-sided corona treatment is carried out on the finished product and the base film through the corona device (17) before the finished product and the base film are wound; the control host is electrically connected with and controls the operation of the heating layer of the motor, the heating device, the composite cylinder (10), the primary adjusting cylinder (12), the secondary adjusting cylinder (15), the corona device (17) and the embossing roller (6).

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PATENT REFERENCE – See the table at the end of this document

N7485

WO202106012

SONY

Priority Date: 08/07/2019

PHOTOSENSITIVE COMPOSITION AND A HOLOGRAM STORAGE MEDIUM USING SAME, HOLOGRAM OPTICAL ELEMENT, AND HOLOGRAM DIFFRACTION GRATING FORMING METHOD

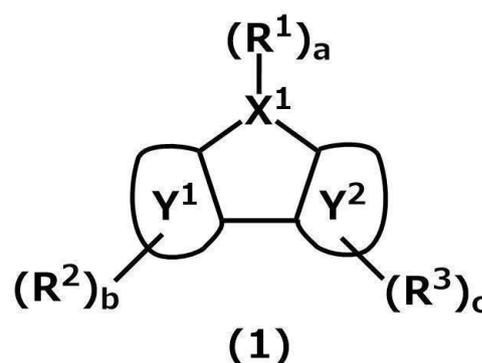
Provided is a photosensitive composition capable of realizing further improvement in diffraction characteristics. The present technology provides a photosensitive composition containing at least a compound represented by general formula (1), a binder resin, and a photoinitiator. In general formula (1), X1 represents an oxygen atom, a nitrogen atom, a phosphorus atom, a carbon atom, or a silicon atom. Y1 and Y2 are each a benzene ring or a naphthalene ring, but Y1 and Y2 would not simultaneously be benzene rings. R1-R3 are each hydrogen or a substituent represented by *-Z1(R4)d (* represents a bond position). Z1 represents a single bond, a saturated hydrocarbon group having a valence of 2 or more, or an unsaturated hydrocarbon group having a valence of 2 or more, and the saturated hydrocarbon group or the unsaturated hydrocarbon group optionally includes an ether linkage and/or a thioether linkage. R4 represents hydrogen or a polymerizable substituent.

COMPOSITION PHOTOSENSIBLE ET SUPPORT DE STOCKAGE D'HOLOGRAMME L'UTILISANT, ÉLÉMENT OPTIQUE D'HOLOGRAMME ET PROCÉDÉ DE FORMATION DE RÉSEAU DE DIFFRACTION D'HOLOGRAMME

L'invention concerne une composition photosensible capable d'apporter de nouvelles améliorations à des caractéristiques de diffraction. La présente invention concerne une composition photosensible contenant au moins un composé représenté par la formule générale (1), une résine liante et un photo-initiateur. Dans la formule générale (1), X1 représente un atome d'oxygène, un atome d'azote, un atome de phosphore, un atome de carbone ou un atome de silicium. Y1 et Y2 représentent chacun un cycle benzène ou un cycle naphthalène, mais Y1 et Y2 ne peuvent pas représenter simultanément des cycles benzène. R1 à R3 représentent chacun un atome d'hydrogène ou un substituant représenté par *-Z1(R4)d (* représente une position de liaison). Z1 représente une simple liaison, un groupe hydrocarboné saturé présentant une valence égale ou supérieure à 2 ou un groupe hydrocarboné insaturé présentant une valence égale ou supérieure à 2, et le groupe hydrocarboné saturé ou le groupe hydrocarboné insaturé comprend éventuellement une liaison éther et/ou une liaison thioéther. R4 représente un atome d'hydrogène ou un substituant polymérisable.

CLAIM 1. A photosensitive composition comprising at least a compound represented by general formula (1) below, a binder resin, and a photopolymerization initiator. In general formula (1), X1 is an oxygen atom, nitrogen atom, phosphorus atom, carbon atom, or silicon atom. When X1 is an oxygen atom, a is 0, when X1 is a nitrogen atom or a phosphorus atom, a is 1, and when X1 is a carbon atom or a silicon atom, a is 2. Y1 and Y2 are each a benzene ring or a naphthalene ring, and Y1 and Y2 are not benzene rings simultaneously. When Y1 or Y2 is a benzene ring, b or c corresponding to the benzene ring Y1 or Y2 is 4. When Y1 and/or Y2 is a naphthalene ring, b and/or c corresponding to the naphthalene ring Y1 and/or Y2 is 6. Each R1 ~ R3 is hydrogen or a substituent represented by *-Z1 (R4) d (* represents a bond position). When a plurality of R1

~ R3 moieties are present, the plurality of R1 ~ R3 moieties may be the same as or different from each other, but not all of the R1 ~ R3 moieties in general formula (1) are simultaneously hydrogen. Z1 represents a single bond, a saturated hydrocarbon group of divalent or higher valency, or an unsaturated hydrocarbon group of divalent or higher valency, wherein the saturated hydrocarbon group or unsaturated hydrocarbon group may contain an ether bond and/or a thioether bond. When Z1 is a single bond, d is 1, and when Z1 is a saturated hydrocarbon group or an unsaturated hydrocarbon group, d is an integer of 1 or greater. R4 represents hydrogen or a polymerizable substituent. When a plurality of R4 moieties are present, the plurality of R4 moieties may be the same as or different from each other, but not all of the R4 moieties in general formula (1) are simultaneously hydrogen.



N7486

WO202106011

SONY

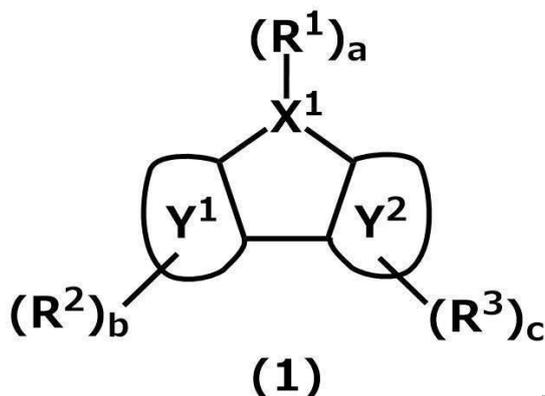
Priority Date: 08/07/2019

COMPOUND, POLYMER, ORGANIC MATERIAL, AND OPTICAL DEVICE, OPTICAL COMPONENT, AND IMAGE DISPLAY DEVICE ALL INCLUDING SAID ORGANIC MATERIAL

Provided is a compound which can heighten the functions of organic materials. This compound is represented by general formula (1). In general formula (1), X1 is an oxygen, nitrogen, phosphorus, carbon, or silicon atom. Y1 and Y2 are each a benzene ring or a naphthalene ring and both Y1 and Y2 are not benzene rings. R1 to R3 are each a hydrogen atom or a substituent represented by *-Z1(R4)d (* indicates a bonding site). Z1 represents a single bond, a saturated hydrocarbon group having a valence of 2 or higher, or an unsaturated hydrocarbon group having a valence of 2 or higher, the saturated hydrocarbon group or unsaturated hydrocarbon group optionally containing an ether bond and/or a thioether bond. R4 represents a hydrogen atom or a polymerizable substituent.

COMPOSÉ, POLYMÈRE, MATÉRIAU ORGANIQUE, ET DISPOSITIF OPTIQUE, COMPOSANT OPTIQUE ET DISPOSITIF D’AFFICHAGE D’IMAGE COMPRENANT TOUS LEDIT MATÉRIAU ORGANIQUE

La présente invention concerne un composé capable de favoriser les fonctions de matériaux organiques. L'invention concerne un composé représenté par la formule générale (1). Dans la formule générale (1), X1 représente un atome d'oxygène, d'azote, de phosphore, de carbone ou de silicium. Y1 et Y2 représentent chacun un cycle benzène ou un cycle naphthalène et Y1 et Y2 ne sont pas tous les deux des cycles benzène. R1 à R3 représentent chacun un atome d'hydrogène ou un substituant représenté par *-Z1(R4)d (* indique un site de liaison). Z1 représente une liaison simple, un groupe hydrocarboné saturé ayant une valence de 2 ou plus, ou un groupe hydrocarboné insaturé ayant une valence de 2 ou plus, le groupe hydrocarboné saturé ou le groupe hydrocarboné insaturé contenant éventuellement une liaison éther et/ou une liaison thioéther. R4 représente un atome d'hydrogène ou un substituant polymérisable.



CLAIM 1. A compound represented by general formula (1) below: In general formula (1), X1 is an oxygen atom, nitrogen atom, phosphorus atom, carbon atom, or silicon atom. When X1 is an oxygen atom, a is 0, when X1 is a nitrogen atom or a phosphorus atom, a is 1, and when X1 is a carbon atom or a silicon atom, a is 2. Y1 and Y2 are each a benzene ring or a naphthalene ring, and Y1 and Y2 are not benzene rings simultaneously. When Y1 or Y2 is a benzene ring, b or c corresponding to the benzene ring Y1 or Y2 is 4. When Y1 and/or Y2 is a naphthalene ring, b and/or c corresponding to the naphthalene ring Y1 and/or Y2 is 6. Each R1 ~ R3 is hydrogen or a substituent represented by *-Z1 (R4) d (* represents a bond position). When a plurality of R1 ~ R3 moieties are present, the plurality of R1 ~ R3 moieties may be the same as or different from each other, but not all of the R1 ~ R3 moieties in general formula (1) are simultaneously hydrogen. Z1 represents a single bond, a saturated hydrocarbon group of divalent or higher valency, or an unsaturated hydrocarbon group of divalent or higher valency, wherein the saturated hydrocarbon group or unsaturated hydrocarbon group may contain an ether bond and/or a thioether bond. When Z1 is a single bond, d is 1, and when Z1 is a saturated hydrocarbon group or an unsaturated hydrocarbon group, d is an integer of 1 or greater. R4 represents hydrogen or a polymerizable substituent. When a plurality of R4 moieties are present, the plurality of R4 moieties may be the same as or different from each other, but not all of the R4 moieties in general formula (1) are simultaneously hydrogen.

N7490

WO202102648

LG CHEM

Priority Date: 02/07/2019

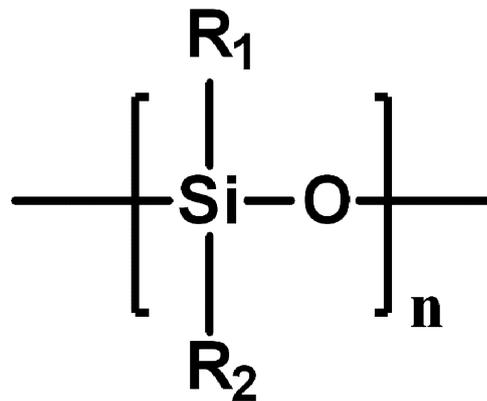
PHOTOPOLYMER COMPOSITION

The objective of the present invention is to provide a photopolymer composition comprising: a polymer matrix having a predetermined chemical structure or a precursor thereof; a photoreactive monomer; and a photoinitiator, a holographic recording medium using same, an optical element, and a holographic recording method.

COMPOSITION PHOTOPOLYMÈRE

L'objectif de la présente invention est de fournir une composition photopolymère comprenant : une matrice polymère ayant une structure chimique prédéterminée ou un précurseur de celle-ci ; un monomère photoréactif ; et un photoinitiateur, un support d'enregistrement holographique l'utilisant, un élément optique et un procédé d'enregistrement holographique.

CLAIM 1. A photosensitive resin composition comprising: a polymer matrix formed by crosslinking a siloxane-based polymer comprising at least one silane functional group (Si-H) and a (meth) acrylic polyol or a precursor thereof; a photoreactive monomer; and a photoinitiator,
A photopolymer composition for forming a hologram recording medium.



N7496

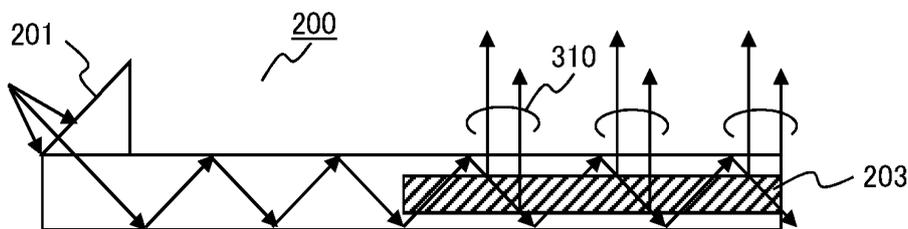
US20210003763

HITACHI LG DATA STORAGE - HITACHI MEDIA ELECTRONICS

Priority Date: 04/07/2019

LIGHT-GUIDING PLATE, AND HOLOGRAM RECORDING DEVICE AND HOLOGRAM RECORDING METHOD USED FOR THE SAME

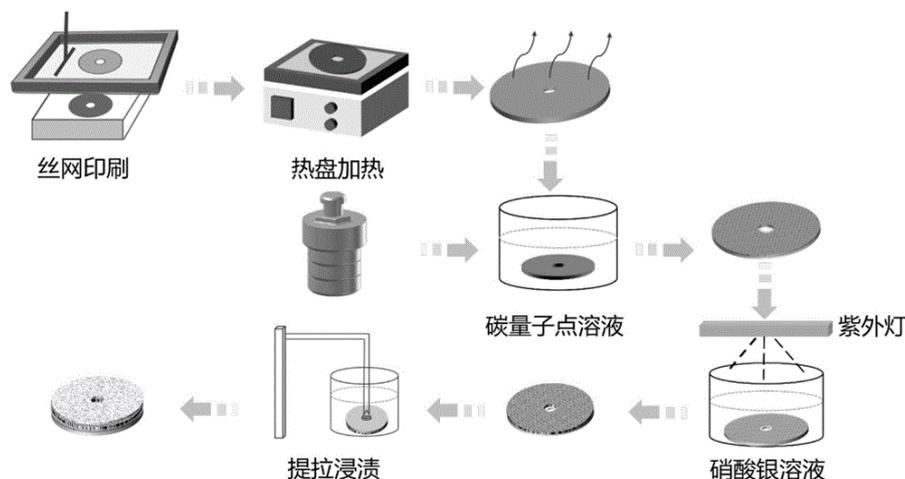
A hologram recording device for producing a hologram that diffracts incident light includes: a laser light source; a first half-wave plate that controls a polarization direction of a light beam emitted from the laser light source; a polarizing beam splitter that reflects S-polarized light to emit the S-polarized light as an "A" light ray and transmits P-polarized light to emit the P-polarized light as a "B" light ray with respect to the light beam passing through the first half-wave plate, and splits the light beam in two directions; a first wedge prism mirror that reflects the "A" light ray; a second half-wave plate that polarizes the "B" light ray into S-polarized light; a second wedge prism mirror that reflects the S-polarized light polarized by the second half-wave plate; and a recording medium irradiated with light rays reflected by the first wedge prism mirror and the second wedge prism mirror.



CLAIM 1 . A light-guiding plate having a light diffractive portion that diffracts incident light by multiple-recorded hologram, wherein the light diffractive portion has at least two or more regions and diffracts a different wavelength depending on each region when a certain light ray is incident, and power densities of light output diffracted for the different wavelengths are the same.

PREPARATION METHOD AND APPLICATION OF HYDROGEL-MODIFIED HIGH-STABILITY CARBON-BASED HOLOGRAPHIC OPTICAL DISK

A hydrogel modified high-stability carbon-based holographic optical disk preparation method and application relate to the technical field of information storage, and solve the problem that a preparation method of a storage medium with high information storage stability and high diffraction efficiency is needed, and the preparation method comprises the steps of preparing a porous titanium dioxide film on an optical disk type glass substrate; soaking the porous titanium dioxide film in a carbon quantum dot solution to load carbon quantum dots on the porous titanium dioxide film to obtain a carbon quantum dot/titanium dioxide composite film; soaking in silver nitrate solution and preparing a silver/carbon quantum dot/titanium dioxide composite film by adopting ultraviolet lamp irradiation; and attaching a layer of hydrogel by adopting a pulling and dipping method. The preparation method is convenient and reliable, has low cost and is suitable for commercial mass production, and the prepared optical disc has the performance advantages of high stability, high efficiency and high uniformity of information storage, so that holographic optical storage is possible in the future data storage field, and the method can be well applied to the holographic data storage field.



CLAIM 1. A preparation method of hydrogel-modified high-stability carbon-based holographic optical disk is characterized by comprising the following steps: s1, preparing a titanium dioxide film on the surface of the optical disk type glass substrate by adopting a screen printing technology, curing the titanium dioxide film, and then carrying out high-temperature annealing treatment to obtain a porous titanium dioxide film; s2, soaking the porous titanium dioxide film in the carbon quantum dot solution to enable the porous titanium dioxide film to load carbon quantum dots, and obtaining a carbon quantum dot/titanium dioxide composite film; s3, soaking the carbon quantum dot/titanium dioxide composite film in a silver nitrate solution, irradiating the carbon quantum dot/titanium dioxide composite film by using an ultraviolet lamp, and depositing silver nano particles on the carbon quantum dot/titanium dioxide composite film to obtain a silver/carbon quantum dot/titanium dioxide composite film; and S4, attaching a layer of hydrogel on the surface of the silver/carbon quantum dot/titanium dioxide composite film by adopting a pulling and dipping method, and finishing the preparation of the hydrogel-modified high-stability carbon-based holographic optical disk.

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PATENT REFERENCE – See the table at the end of this document

N7491

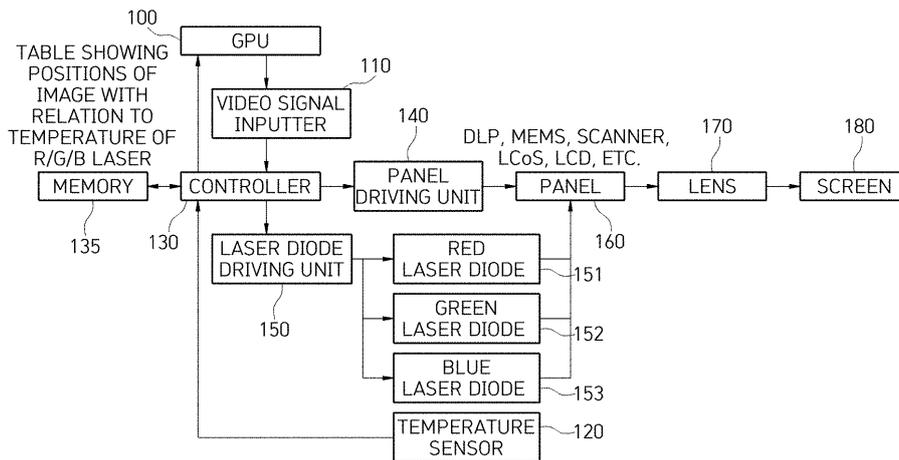
US20210021792

Priority Date: 16/07/2019

HYUNDAI MOBIS

METHOD AND APPARATUS FOR COMPENSATING FOR COLOR SEPARATION OF IMAGE IN A LASER PROJECTOR-BASED HOLOGRAPHIC HEAD-UP 3 DISPLAY

An apparatus and method for compensating for color separation of an image in a holographic head-up display (HUD), caused by a change in characteristics such as a temperature or wavelength of a laser projector. An apparatus (200) for compensating for color separation of an image in a HUD includes a GPU (100); a video signal inputter (110); a temperature sensor (120); a controller (130); a memory (135); a panel driving unit (140) for outputting an image to a panel (160); a laser diode driving unit (150) for driving R, G, and B laser diodes (151), (152), and (153); a lens (170), and a screen (180). Accordingly, an image, the quality of which is degraded due to color separation of an image, may be improved.



CLAIM 1 . An apparatus for compensating for color separation of an image in a head-up display (HUD) to process image information to be output through the HUD using a laser diode, the apparatus comprising: a memory configured to store a table of correction values for an amount of movement of an image with relation to a change of characteristics of the laser diode; a sensor configured to monitor the change of the characteristics of the laser diode; a unit configured to determine a correction value for an amount of movement of an image with relation to the change of the characteristics of the laser diode, which is monitored by the sensor, on the basis of the table; and a unit configured to divide image information to be output to the HUD into a red (R) image, a green (G) image and a blue (B) image, change positions of the R, G and B images according to the determined correction value, and combine the resultant R, G, and B images.

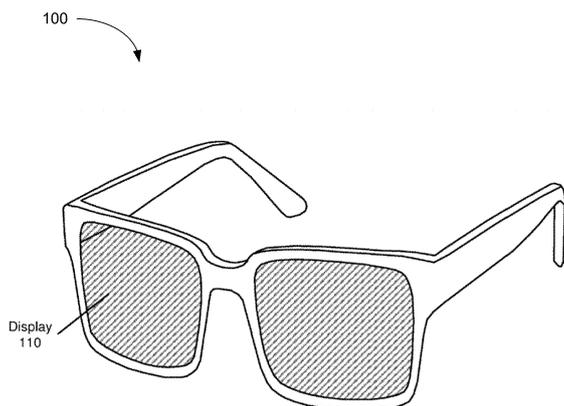
N7492

US20210017150
Priority Date: 17/12/2018

FACEBOOK TECHNOLOGIES

HOLOGRAPHIC IN-FIELD ILLUMINATOR

A system for making a holographic medium for use in generating light patterns for eye tracking includes a light source configured to provide light and a beam splitter configured to separate the light into a first portion of the light and a second portion of the light that is spatially separated from the first portion of the light. The system also includes a first set of optical elements configured to transmit the first portion of the light for providing a first wide-field beam onto an optically recordable medium and one or more diffractive optical elements configured to receive the second portion of the light and project a plurality of separate light patterns onto the optically recordable medium for forming the holographic medium.



CLAIM 1 . An eye-tracking system, comprising: an optical detector; and a holographic illuminator that includes: a light source configured to provide light; and a holographic medium optically coupled with the light source, the holographic medium positioned to: receive the light provided from the light source; project a plurality of separate light patterns concurrently toward an eye; receive a reflection of at least a subset of the plurality of separate light patterns reflected off the eye; and redirect the reflection toward the detector.

N7493

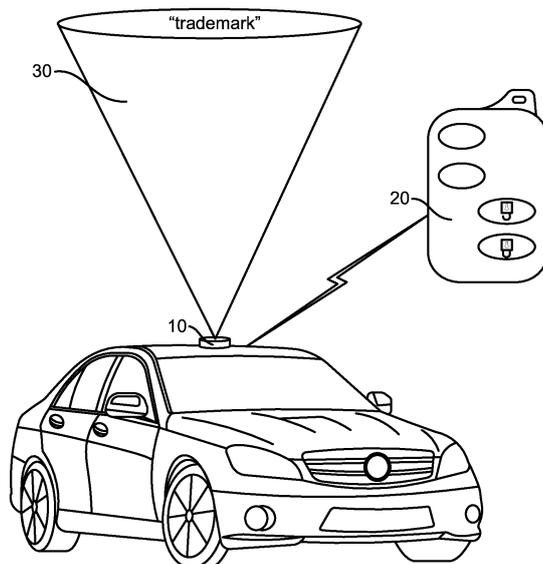
US20210005122
Priority Date: 01/07/2019

KIRAKOSIAN ARMEN

KEYFOB ACTIVATED AUTOMOBILE HOLOGRAPHIC

A holographic system for an automobile includes a holographic pack configured to display a holographic image from atop an automobile, a wireless transceiver configured to transmit an image for holographic projection to the holographic pack, a software application configured to receive and to process an image from a user to the wireless transceiver based on processing signals from a key fob and multiple holographic projectors in the pack configured to display the holograph parallel to a length of the automobile and parallel to a front and a rear of the automobile.

CLAIM 1 . A holographic system for an automobile, comprising: a holographic pack configured to display a holographic image from atop an automobile; a wireless transceiver configured to transmit an image for holographic projection to the holographic pack; a software application configured to receive and to process an image from a user to the wireless transceiver based on processing signals from a key fob; and a holographic projector configured to display the holograph parallel to an outside length of the automobile.



N7494

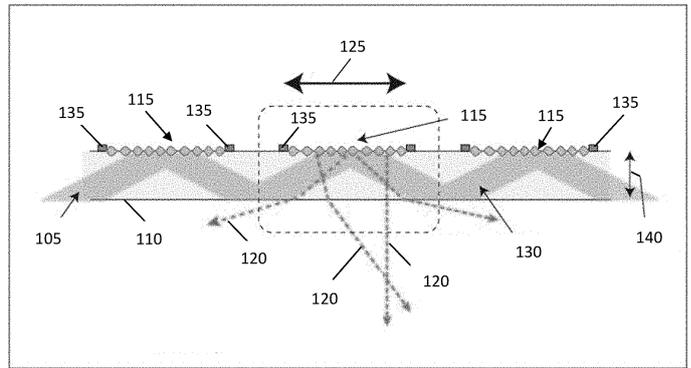
US20210003968
Priority Date: 11/08/2007

MIT - MASSACHUSETTS INSTITUTE OF TECHNOLOGY

TRANSPARENT FLAT-PANEL HOLOGRAPHIC DISPLAY

In a method for forming a holographic image, light is provided to a flat-panel holographic video display that includes waveguide elements that each have a light-guiding substrate and an array of transducers configured to produce a diffraction grating comprising surface acoustic waves. The grating causes the waveguide to outcouple light, focusing it to, or producing wavefront curvatures consistent with it having emanated from, one or more points, in order to form a holographic image. The transducer array may include a large number of densely packed, vertically-adjacent transducers for each hogel for full parallax or may include a small number of vertically-adjacent transducers and a cylindrical optical element for each hogel. The display may be edge-illuminated by a collinear multicolor source. The substrate exit face may have nanopatterned areas alternated with flat areas in order to create regions of optimal internal reflection next to regions of low reflection.

CLAIM 1 . A method for creating a holographic image, comprising: providing one or more wavelengths of light to a holographic video display, the display comprising at least one waveguide element, each waveguide element comprising: a light-guiding substrate physically coupled to a control layer and having optical inputs, wherein an exit face of the substrate has nanopatterned areas alternated with pristine flat surface areas in order to create regions of optimal internal reflection next to regions of low Fresnel reflection, thereby providing for minimized loss of propagation of confined light and efficient exit of unconfined light; and an array of surface acoustic wave transducers arranged along an outer surface of the light-guiding substrate, the array being electrically connected to the control layer and configured to produce a diffraction grating comprising surface acoustic waves, wherein the surface acoustic wave diffraction grating causes the waveguide element to outcouple light bouncing within the substrate and focuses the outcoupled light to one or more points, or produces wavefront curvatures in the light consistent with its having emanated from one or more point sources, in order to form a holographic image; providing holographic information to the video display; coupling the light received at the holographic video display into the waveguide elements for diffraction according to the holographic information; and scanning the diffracted light to form the holographic image.



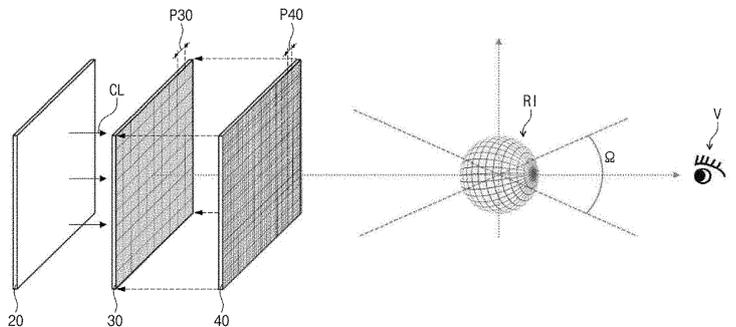
N7497

US20200409307
Priority Date: 26/06/2019

ELECTRONICS & TELECOMMUNICATIONS RESEARCH INSTITUTE

DIGITAL HOLOGRAM DISPLAY APPARATUS AND DISPLAYING METHOD OF DIGITAL HOLOGRAPHIC IMAGE

Provided are a method of displaying a digital holographic image and a digital hologram display apparatus, the method including generating and converting a digital hologram, recording the digital hologram in a spatial light modulator, radiating coherent parallel light to the spatial light modulator, removing an aliasing noise image, and implementing a reconstructed image reconstructed by the spatial light modulator.



CLAIM 1 . A method of displaying a digital holographic image, comprising: generating and converting a digital hologram; recording the digital hologram in a spatial light modulator; radiating coherent parallel light to the spatial light modulator; removing an aliasing noise image; and implementing a reconstructed image reconstructed by the spatial light modulator.

N7498

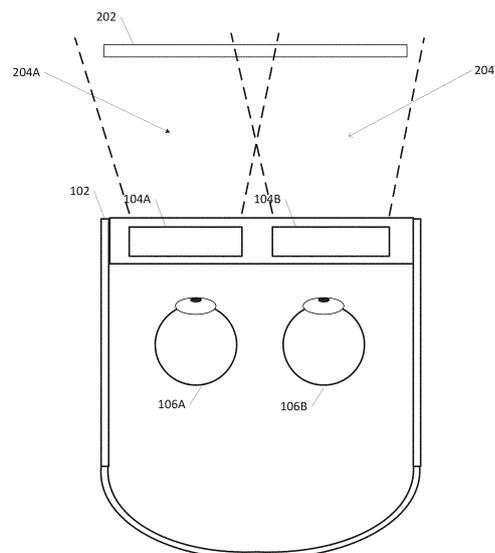
US20200409153
Priority Date: 26/02/2018

VEYEZER

HOLOGRAPHIC REAL SPACE REFRACTIVE SYSTEM

A system, method, and non-transitory computer readable medium for providing a visual examination are provided. A diagnostic module configured to execute on a first computing device communicatively coupled to a head mounted holographic display device worn by a user renders a virtual arrangement displayed within the head mounted holographic display device at an initial simulated distance away from the user. Within the virtual arrangement is an imbedded pattern. A second computing device receives, from leads attached to the user, brain waves of the user. The second computing device displays a visual evoked potential within the brain waves. The visual evoked potential comprises an indication that the user visually identified the imbedded pattern at a second simulated distance away from the user. The visual evoked potential occurs at a focal length of a refractive error of an eye of the user.

CLAIM 1 . A method for providing a visual examination, comprising: rendering, via a diagnostic module configured to execute on a first computing device communicatively coupled to a head mounted holographic display device worn by a user, a virtual arrangement displayed within the head mounted holographic display device at an initial simulated distance away from the user, wherein the virtual arrangement comprises a background grid orientated in a first orientation and an imbedded pattern located within the background grid orientated in a second orientation that is different from the first orientation; updating, via the diagnostic module, the rendering of the virtual arrangement within the head mounted holographic display device, wherein the update comprises a virtual movement of the virtual arrangement; receiving, by a second computing device from leads attached to the user, brain waves of the user; displaying, via the second computing device, a visual evoked potential within the brain waves, wherein the visual evoked potential comprises an indication that the user visually identified the imbedded pattern within the virtual arrangement at a second simulated distance away from the user, wherein the visual evoked potential occurs at a focal length of a refractive error of the user.



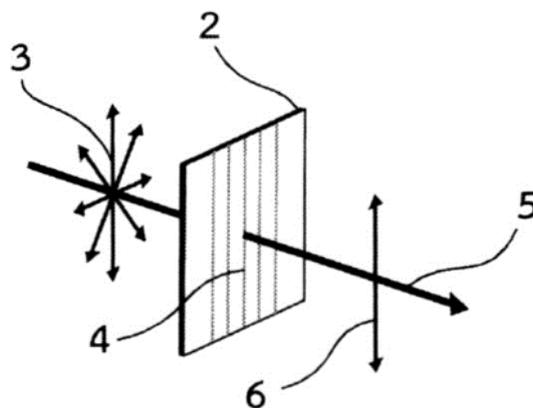
N7499

TH20180004455
Priority Date: 26/07/2018

NATIONAL SCIENCE & TECHNOLOGY DEVELOPMENT AGENCY

HOLOGRAPHIC DISPLAY SYSTEM WITH LIGHT ATTENUATION FROM THE IMAGE SOURCE.

Holographic display system with light attenuation from image source based on this invention has improved Visualization features Using a polarizer (Polarizer) serves to block the light coming from. Image source, but emits light reflected from the semi-penetrating material plane. Resulting in reducing light Disturbing that comes from the visual source. Makes the proportion of the light intensity of the image from the source And from that reflects the surface The semi-penetrating material transmits at the position of the observer. Has a significantly reduced proportion Which characteristics according to this invention Is to use a polarized light source image And there is a half wave plate (Half Waveplate) to rotate the axis of the polarization of light to get the proper orientation. Together with the installation A Linear Polarizer that rotates axially at an angle of -45 or 45 degrees (either) in front of the observer to attenuate the light in a direct view of the image source (Direct View), the end result is light.



Disturbances from light sources in the observer's vision will be significantly reduced compared to light that is Reflection through glass The light coming from behind the scene can be transmitted in a high proportion. In addition, two circular polarizers were introduced to produce light that Have the reverse direction of polarization Instead of using linear polarizers in light attenuation, the use of circular polarizers. It will produce the same light attenuation results as using a linear polarizer.

N7500

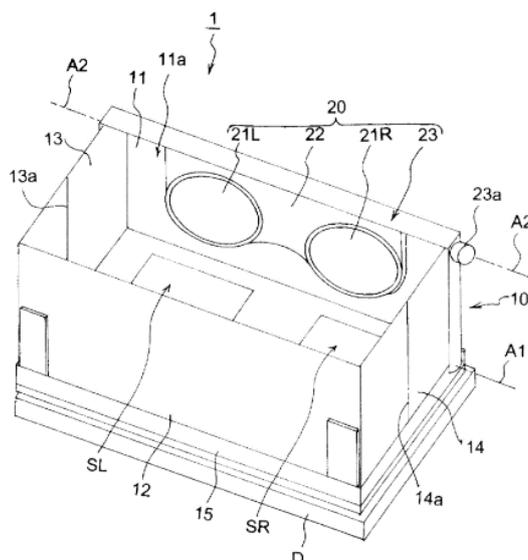
TH20170005185

Priority Date: 10/03/2015

INABA MINOR

HOLOGRAM VIEWER AND / OR HOLOGRAM BOX

To provide a three-dimensional viewing device And / or stereoscopic viewing boxes, where three-dimensional images can be Display on an electronic screen to be easily seen and to increase portability to make Provides convenient and easy navigation when external 3D shooting and viewing has been provided with three viewing devices. Dimension / Hologram Box (1) that includes a folding light barrier (10) fixed on a liquid crystal screen (D), and a magnifying lens (20) that includes a twin lens. One (21R, 21L) for holographic viewing (SR, SL) and folder lens (22), magnifying lens fixed to the front inner wall surface (11a) of the light blocking cover (10). By using hinges (23) and that can be developed parallel to the liquid crystal display (D)



N7502

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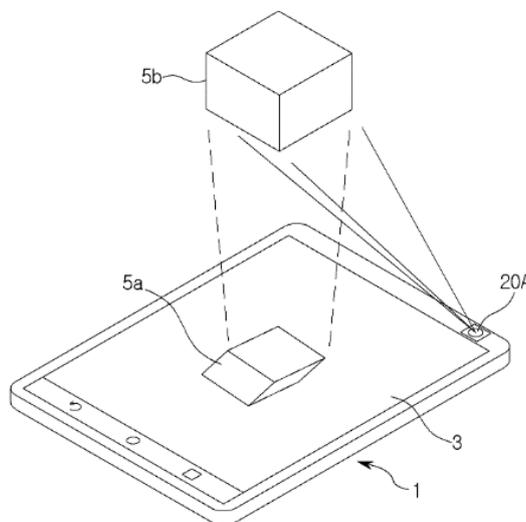
Priority Date: 05/07/2019

YUN, YEO PYO

PRODUCT INFORMATION PROVIDING APPARATUS USING HOLOGRAM

The present invention relates to an apparatus for providing product information using holograms, which can improve purchase desire and increase convenience by allowing a user to obtain three-dimensional and realistic product information by providing information or an image of a product for which a user desires detailed information using holograms in providing a menu board using an electronic book, kiosk or smart terminal.

CLAIM 1. An electronic device, comprising: a storage unit configured to store a plurality of product information; an input unit configured to input a selection command for selecting any one of a plurality of the product information; a first output unit configured to output the product information selected by the selection command; a second output unit configured to output the product information in a predetermined space; And a control unit configured to determine whether the second output unit needs to output the selection command, select hologram product information corresponding to the product information output by the first output unit when the second output unit needs to output the hologram product information, and output the hologram product information by the second output unit.



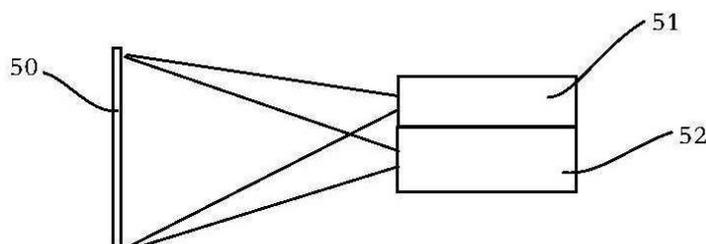
N7503

KR2021000005U
Priority Date: 24/06/2019

LEE, JUNG-YONG

PROJECTOR WITH HOLOGRAPHIC SCREEN

In order for a hologram screen to be formed on the front surface of a variety of projectors, holograms in which images of the screen are stored are projected by a laser of the hologram projector, and the holograms are adjusted to match the image sizes of the various projectors, so that the hologram projector can be turned off and turned on separately for general use.



CLAIM 1. In order to form a holographic screen on the front surface of a variety of projectors (projectors) 51 in a projector equipped with a holographic screen, a hologram storage device causes reference light to be incident on the holograms of the screens stored in a hologram memory unit to reproduce A hologram screen (50) formed by a hologram reproducing apparatus or a hologram reproducing apparatus for reproducing a hologram screen recorded by making reference light incident on a hologram recording medium storing an image of the hologram screen. The image size of the hologram screen is adjusted to substantially match the image size of the various projectors, and the image size of the hologram screen is adjusted to substantially match the image size of the various projectors.

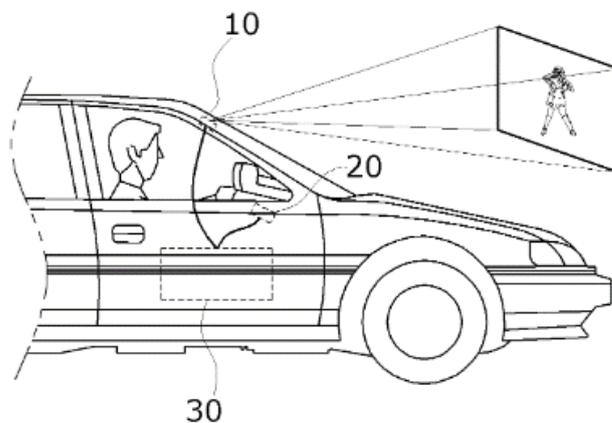
N7504

KR20200143074
Priority Date: 14/06/2019

KOREA ELECTRONICS TECHNOLOGY INSTITUTE

APPARATUS AND METHOD FOR PROVIDING HOLOGRAPHIC CONTENT IN A MOTOR VEHICLE

The present invention relates to an occupant driving service for analyzing similarity by comparing an image of a recognized occupant with an image of an object (dans valence in music video) in content displayed in a hologram Ar using a motion recognition camera and a hologram Ar display provided in a vehicle. According to an embodiment of the present invention, the dancer of the holographic image content is displayed in an augmented reality manner on the background of the road using the holographic Ar display device, and a lyrics is displayed on the lower end of the outputted music video, so that an occupant can sit and park along the song according to the movement of the dancer, thereby improving spatial sensory realism and immersiveness. In addition, a motion of the occupant and the hologram dancer is determined as a shade, and a final score value is derived by a software program capable of calculating a dancing score based on the similarity of the degree of the motion, thereby providing a high-quality operation service to the occupant.



CLAIM 1. An apparatus for providing hologram content in a vehicle, the apparatus comprising: a hologram Ar indicator configured to project and display a hologram image including a movement of an object in front of the vehicle; an occupant motion recognizer configured to recognize a motion of an occupant of the vehicle; and a processor configured to receive the hologram image and the occupant motion image from the hologram Ar indicator and the occupant motion recognizer and perform image processing.

N7505

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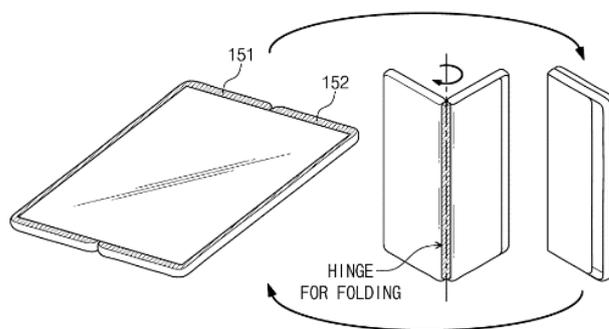
Priority Date: 13/06/2019

KOREA ELECTRONICS & TELECOMMUNICATIONS RESEARCH INSTITUTE

HOLOGRAPHIC CONTENT GENERATING APPARATUS, HOLOGRAPHIC DATA DISPLAY SYSTEM HAVING THE SAME, AND METHOD OF OPERATING THE SAME

The holographic image display system includes a light source configured to generate a radiation beam, a beam expander configured to output the radiation beam as illumination light having spatially homogeneous intensity and coherence, an image display device configured to output hologram data for a left eye and hologram data for a right eye, a beam convergence device configured to converge the illumination light to a left eye position or a right eye position of the image display device, A hologram content generating device configured to generate the hologram data for the left eye and the hologram data for the right eye based on image data, and the image display device includes a left panel unit and a right panel unit connected to the left panel unit through a hinge, Wherein hologram content corresponding to the left eye hologram data and the right eye hologram data is displayed in a three-dimensional space between the left panel unit and the right panel unit.

CLAIM 1. A holographic image display system, comprising: a light source for generating a coherent radiation beam; a beam expanding device for outputting the radiation beam as illumination light having spatially homogeneous intensity and coherence; an image display device for outputting hologram data for a left eye and hologram data for a right eye; a beam converging device for converging the illumination light to a left eye position or a right eye position of the image display device; A hologram content generating device configured to generate the hologram data for the left eye and the hologram data for the right eye based on image data; and the image display device includes a left panel unit and a right panel unit connected to the left panel unit through a hinge, Wherein hologram contents corresponding to the hologram data for the left eye and the hologram data for the right eye are displayed in a three-dimensional space between the left panel unit and the right panel unit.



Wherein hologram contents corresponding to the hologram data for the left eye and the hologram data for the right eye are displayed in a three-dimensional space between the left panel unit and the right panel unit.

N7508

CN212379718U

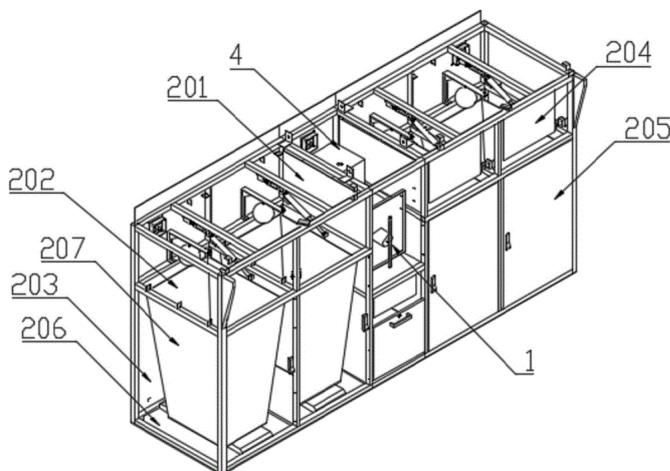
Priority Date: 24/06/2020

TIANJIN JURUIDA POWER EQUIPMENT TECHNOLOGY

HOLOGRAPHIC 3D PROJECTION SYSTEM AND INTELLIGENT CLASSIFICATION DUSTBIN THEREOF

The utility model provides a holographic 3D projection system and intelligent classification dustbin thereof, includes a dustbin main part, is provided with a cavity in the dustbin main part, and 3D projection mechanism sets up in the cavity, and 3D projection mechanism includes a rotary driving device and connects in the rotating vane of rotary driving device's output shaft, and is provided with LED lamp area on the rotating vane, and the controller passes through rotary driving device controls rotating vane's rotational speed reaches LED lamp area rotates and presents different patterns and be used for advertising, throws out through glass panels, need not the automatic broadcast of illumination, has wide angle 3D display effect.

CLAIM 1. A holographic 3D projection system, characterized by: comprises a 3D projection mechanism (1); the 3D projection mechanism (1) comprises a rotary driving device (101) and a rotary blade (102) connected to an output shaft of the rotary driving device (101), wherein an LED lamp strip (103) is arranged on the rotary blade (102).



N7509

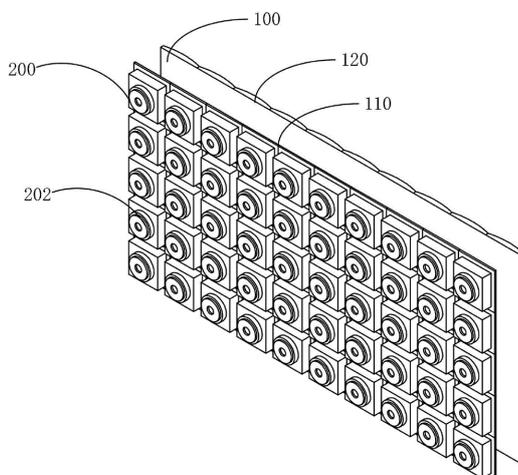
CN212364739U

Priority Date: 02/09/2020

YUE YUFEI

HOLOGRAPHIC IMAGE DISPLAY SYSTEM

The utility model discloses a holographic image display system, which comprises a display device; the display device comprises a display screen and a lens; the lenses are arranged into a lens array, and the lens array is arranged in front of the display screen; the display screen is used for receiving initial images with different visual angles; the initial images of different viewing angles are displayed as holographic images by the lens array. Because the lens array is arranged in front of the display screen, initial images at different angles can be displayed into holographic images through the lens array, and the display angle of the holographic images can be enhanced.



CLAIM 1. A holographic image display system, comprising a display device; the display device comprises a display screen and a lens; the lenses are arranged into a lens array, and the lens array is arranged in front of the display screen; the display screen is used for receiving initial images with different visual angles; the initial images of different viewing angles are displayed as holographic images by the lens array.

N7511

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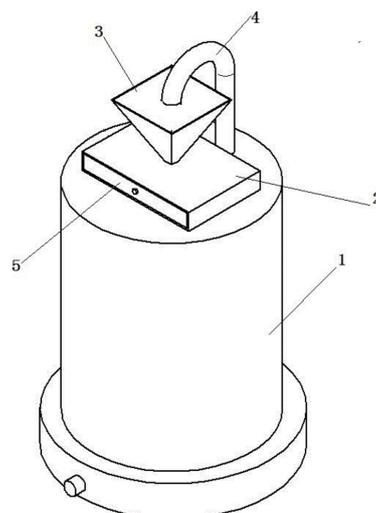
Priority Date: 29/02/2020

JIANGSU WENZHAN DESIGN CONSTRUCTION

TAKE ILLUSION HUMIDIFIER OF 3D HOLOGRAPHIC PROJECTION

A dreamy humidifier with 3D holographic projection comprises a humidifier body, a 3D projection device and a projection pyramid, wherein the 3D projection device is arranged at the top of the humidifier body, and the projection pyramid is arranged above the 3D projection device in an inverted manner; the projection pyramid is made of transparent materials, the interior of the projection pyramid is hollow, and the top of the projection pyramid is not covered; the humidifier body is provided with a water mist spray pipe, and a spray head of the water mist spray pipe is aligned to the top of the projection pyramid from top to bottom so that water mist is sprayed into the projection pyramid and then overflows from the projection pyramid; the humidifier body is provided with the water mist spray pipe, a spray head of the water mist spray pipe is aligned to the top of the projection pyramid from top to bottom, so that water mist is sprayed into the projection pyramid and then overflows from the projection pyramid, a very warm atmosphere is created originally, and in addition, the 3D projection device is arranged below the projection pyramid, a vivid 3D stereoscopic image is easily formed in the projection pyramid, and the warm atmosphere is further increased.

CLAIM 1. The utility model provides a take illusion humidifier of 3D holographic projection which characterized in that: the humidifier comprises a humidifier body (1), a 3D projection device and a projection pyramid (3), wherein the 3D projection device is arranged at the top of the humidifier body (1), and the projection pyramid (3) is arranged above the 3D projection device in an inverted mode; the 3D projection device comprises an equipment box (2) and projection equipment, wherein the equipment box (2) is provided with a drawer (5), the projection equipment is arranged in the drawer (5) of the equipment box (2), the equipment box (2) is provided with a power line access hole (6) and a network cable access hole (7), and the power line access hole (6) and the network cable access hole (7) are respectively accessed to a power supply and a network cable to provide convenience for the projection equipment in the equipment box (2) to be connected with the network cable and the power supply; the projection pyramid (3) is made of transparent materials, the interior of the pyramid is hollow, and the top of the pyramid is not covered; a spray nozzle (4) of the water mist spray pipe (4) is arranged on the humidifier body (1) and is aligned to the top of the projection pyramid (3) from top to bottom, so that water mist is sprayed into the projection pyramid (3) and then overflows from the projection pyramid (3); the projection equipment is placed with the screen facing upwards; the top of the equipment box (2) is a transparent plate, and each frame of video or image played by the projection equipment is composed of 4 pictures which are associated and can become a 3D image after being projected on a projection pyramid.



N7512

CN212302948U

Priority Date: 28/06/2020

BEIJING QUANTUM DISPLAY TECHNOLOGY

BORE HOLE 3D LED HOLOGRAPHIC DEVICE

The utility model belongs to the technical field of holographic display technique and specifically relates to a bore hole 3D LED holographically device, including two LED screens and a holographic membrane, a LED screen is vertical to be set up to the background screen, and another LED screen sets up to the foreground screen at the front end of background screen top level, and holographic membrane slope sets up the front end at the background screen, and the slope upper surface of holographic membrane sets up corresponding to the foreground screen, the utility model discloses the adaptation scene is wider, and the luminance of LED display screen is super high for entire system need not to use in special dark environment, and because the use can seamless concatenation, the LED display screen of unlimited extension presents the carrier as the display content, and the size can be done is bigger.

CLAIM 1. The utility model provides a bore hole 3D LED holographic device which characterized in that: the holographic screen comprises two LED screens and a holographic film, wherein one LED screen is vertically arranged as a background screen, the other LED screen is horizontally arranged as a foreground screen above the front end of the background screen, the holographic film is obliquely arranged at the front end of the background screen, and the oblique upper surface of the holographic film is arranged corresponding to the foreground screen.

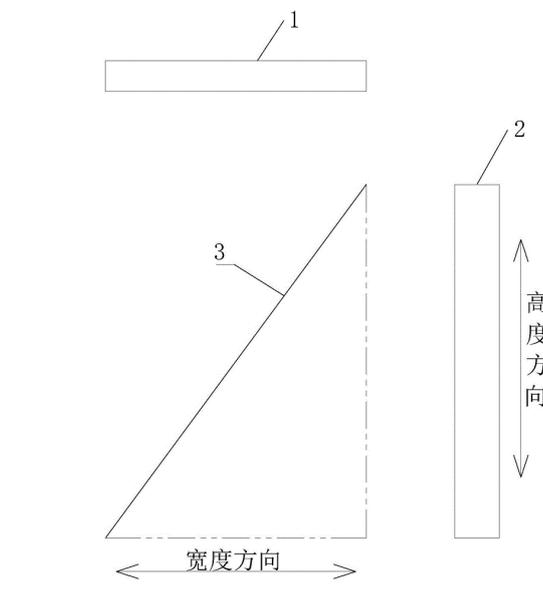


Figure 1: Diagram of the bore hole 3D LED holographic device showing the arrangement of the background screen (1), foreground screen (2), and holographic film (3).

N7513

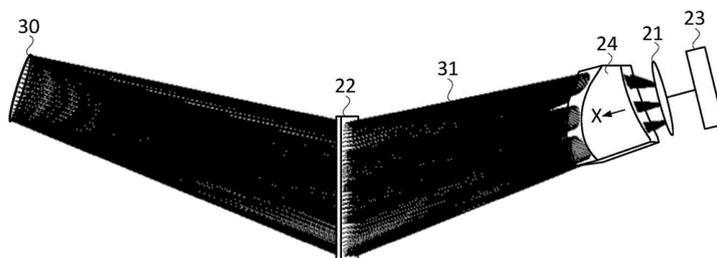
CN212302103U

Priority Date: 17/09/2020

BEIJING KANGTEMAN ELECTRONIC SYSTEMS – TIANJIN YANGGUANG TECHNOLOGY

TRANSMISSION-TYPE HEAD-UP DISPLAY BASED ON VOLUME HOLOGRAPHIC DIFFRACTION OPTICS

The utility model discloses a transmission-type head-up display based on holographic diffraction optics of volume, including like image source system, optics correction system, holographic diffraction screen of volume and control system, control system and image source headtotal, like image source system is used for the outgoing to show the light beam, and holographic diffraction screen of volume is located the propagation path who shows the light beam for throw the light beam that shows to people's eye. The utility model provides a transmission-type head-up display based on volume holographic diffraction optics has realized the requirement of small-size, big visual field, big eye box simultaneously.



CLAIM 1. A transmission type head-up display based on volume holographic diffraction optics is characterized by comprising an image source system, an optical correction system, a volume holographic diffraction screen and a control system; the control system is connected with the image source system; the image source system is used for emitting display beams; the optical correction system is positioned on the propagation path of the display light beam and is used for correcting the image quality; the volume holographic diffraction screen is positioned on the propagation path of the display beam and used for projecting the display beam to human eyes.

N7514

CN212298281U

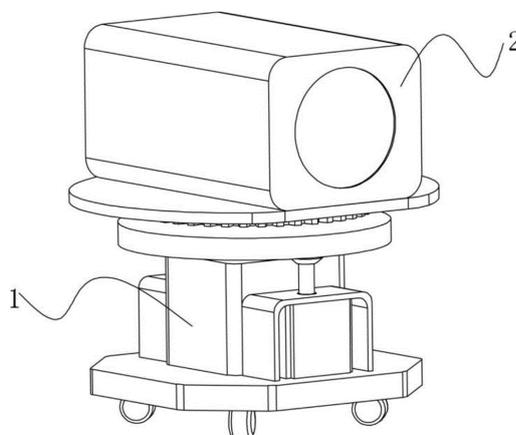
Priority Date: 12/06/2020

SHENZHEN MOXIU CULTURE TECHNOLOGY

ROTATIONALLY ADJUSTABLE HOLOGRAPHIC PROJECTION DEVICE

The utility model discloses a holographic projection device capable of being adjusted in a rotating way, which comprises an adjusting seat and a high-definition projector arranged on the adjusting seat; the adjusting seat comprises a controller, and a movable base, a lifting mechanism and a rotating mechanism which are sequentially arranged from bottom to top; the lifting mechanism comprises a base, a jacking cylinder arranged on the base and a supporting table horizontally arranged at the top of the base, wherein a guide shaft extending vertically and downwards is arranged in the middle of the supporting table, the guide shaft is slidably arranged in the base, and the bottom surface of the supporting table is connected with the jacking cylinder; the high-definition projector is arranged on the rotating platform; the controller is in signal connection with the jacking cylinder and the driving assembly. The utility model discloses place high definition projector on the adjustment seat, to high definition projector's adjustment convenient and fast more, practice thrift the manpower. After the projection exhibition, the utility model discloses transport, removal convenience can use in the theater of difference.

CLAIM 1. A rotationally adjustable holographic projection device, characterized by: comprises an adjusting seat (1) and a high-definition projector (2) arranged on the adjusting seat (1); the adjusting seat (1) comprises a controller (3) and a moving base, a lifting mechanism and a rotating mechanism which are sequentially arranged from bottom to top; the lifting mechanism comprises a base (4), a jacking cylinder (5) arranged on the base (4) and a supporting table (6) horizontally arranged at the top of the base (4), a guide shaft (7) vertically extending downwards is arranged in the middle of the supporting table (6), the guide shaft (7) is slidably mounted in the base (4), and the bottom surface of the supporting table (6) is connected with the jacking cylinder (5); the rotating mechanism comprises a rotating platform (8) rotatably mounted on the supporting platform (6) and a driving assembly for driving the rotating platform (8) to rotate, and the high-definition projector (2) is mounted on the rotating platform (8); and the controller (3) is in signal connection with the jacking cylinder (5) and the driving assembly.



N7515

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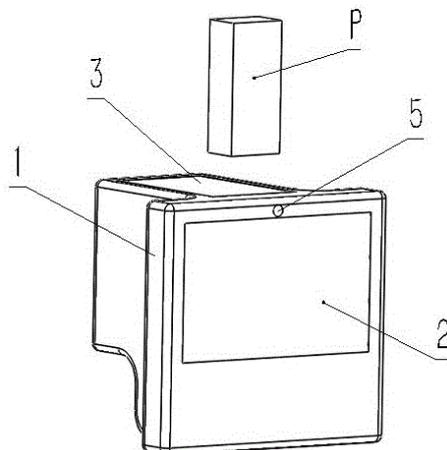
Priority Date: 23/08/2020

GUO SHENGWEN

MEDIUM-FREE HOLOGRAPHIC IMAGING AI USER TERMINAL

The utility model relates to a no medium holographic imaging AI user terminal, which comprises a housing, be provided with first display screen on the casing, the first display screen back is provided with at least one optical waveguide lens and second display screen, the optical waveguide lens at the first display screen back and second display screen are the relation that corresponds, the holographic virtual people and the first display screen of demonstration can detect the user and watch the visual angle and carry out horizontal rotation and/or vertical rotation. A user, a displayed holographic virtual person and a first display screen intelligent voice interaction system are arranged in the shell. The technical problem that a virtual person and/or a first display screen in holographic display in the prior art cannot flexibly adapt to different viewing positions or viewing angles of a user is solved.

CLAIM 1. The utility model provides a no medium holographic imaging AI user terminal which characterized in that, includes the casing, be provided with first display screen on the casing, the first display screen back is provided with at least one optical waveguide lens and second display screen, the optical waveguide lens and the second display screen at first display screen back are corresponding relation, the holographic image that shows can detect the user and watch the visual angle and carry out horizontal rotation and/or vertical rotation.



N7516

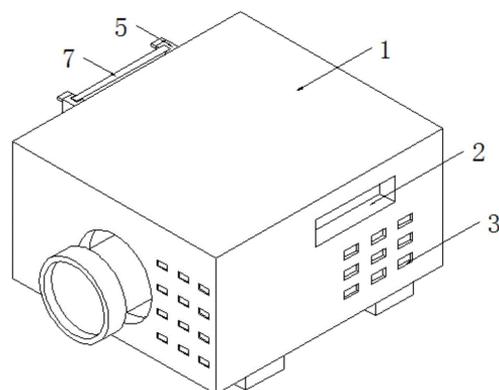
CN212276200U

Priority Date: 10/04/2020

DREAMWORLD TECHNOLOGY ZHUHAI

FULL-COLOR HOLOGRAPHIC OPTICAL DEVICE

The utility model discloses a full-color holographic optical device, including projecting apparatus, heat dissipation mechanism and clearance mechanism, the both sides of projecting apparatus are all set up flutedly, and a plurality of louvre has been set up to one side of projecting apparatus, and heat dissipation mechanism includes a fan, two mounting brackets, two square grooves, a framework and a dust screen, and the shell fixed mounting of fan is in one side of projecting apparatus inner wall, and one side fixed mounting of two mounting brackets is on the projecting apparatus. This kind of full-color holographic optical device, through set up fan and two mounting brackets in the recess, set up two square groove simultaneously and install the framework on two mounting brackets, owing to be provided with the dust screen in the framework, can blow the projecting apparatus hot gas to the outside through the projecting apparatus when fan work like this, to playing radiating effect in the projecting apparatus, set up the dust screen in the air inlet department of fan simultaneously, prevent to have the air of dust in the air process fan gets into the projecting apparatus, reduce the work load in the later stage clearance projecting apparatus.



CLAIM 1. A full-color holographic optical device comprises a projector (1), a heat dissipation mechanism and a cleaning mechanism, it is characterized in that both sides of the projector (1) are provided with grooves (2), one side of the projector (1) is provided with a plurality of heat dissipation holes (3), the heat dissipation mechanism comprises a fan (4), two mounting frames (5), two square grooves (6), a frame body (7) and a dust screen (8), the shell of the fan (4) is fixedly arranged on one side of the inner wall of the projector (1), one side of the two mounting frames (5) is fixedly arranged on the projector (1), the two square grooves (6) are respectively arranged on one side opposite to the two mounting frames (5), the outer wall of framework (7) is fixed in two square grooves (6), dust screen (8) is fixed in the inner wall of framework (7).

N7517

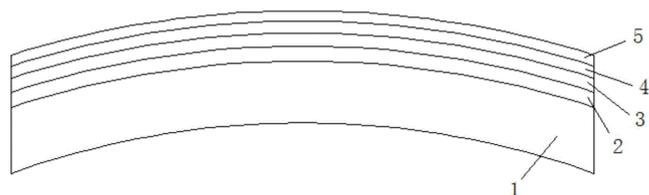
CN212276121U

Priority Date: 11/06/2020

EYEPOL POLARIZING TECHNOLOGY

LENS STRUCTURE FOR DISPLAYING THREE-DIMENSIONAL VISUAL FIELD OF ELECTRONIC SCREEN BASED ON POLARIZATION HOLOGRAPHY

The utility model discloses a lens structure for displaying three-dimensional visual field of electronic screen based on polarization holography, which comprises a lens substrate and a plurality of coating film layers, wherein the coating film layers are mutually overlapped and formed on one side of the lens substrate; the multilayer film coating layer is used for sequentially carrying out linear polarization treatment, circular polarization treatment and deflection treatment on light waves emitted by a two-dimensional color picture of the electronic display screen so as to finally display a three-dimensional image picture after entering eyes.



The application provides a lens structure based on three-dimensional field of vision of polarization holographic display electronic screen, the holographic lens structure that realizes three-dimensional field of vision with two-dimensional flat panel display electronic screen is holographic in the diffraction polarization of carrying out circular polarized light based on inclination angle nano column array photonic crystal rete, based on the holographic in the diffraction polarization, need not to arrange any electronic system, and the imaging quality is high, easily processing, and is with low costs, and easy the realization has good application prospect.

CLAIM 1. A lens structure for displaying a three-dimensional field of view of an electronic screen based on polarization holography, comprising: the lens comprises a lens substrate and a plurality of coating film layers, wherein the coating film layers are mutually overlapped and formed on one side of the lens substrate; the multilayer film coating layer is used for sequentially carrying out linear polarization treatment, circular polarization treatment and deflection treatment on light waves emitted by a two-dimensional color picture of the electronic display screen so as to finally display a three-dimensional image picture after entering eyes; the first film layer of the plurality of film coating film layers is an inclined angle nano-pillar array film layer; the second film layer of the plurality of film coating film layers is an equivalent 1/4 wave plate film layer; and the third film layer of the plurality of film coating film layers is a linear polarization film layer.

N7518

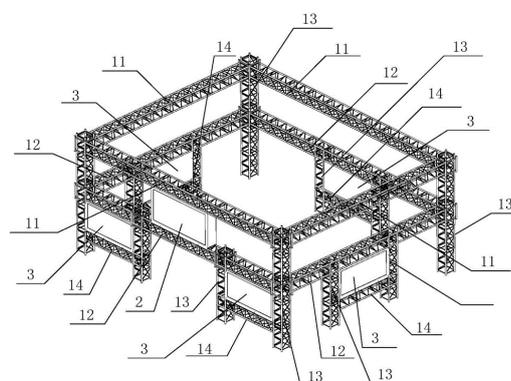
CN212271707U

Priority Date: 13/03/2020

SUZHOU WEIKA HUANJING INTELLIGENT TECHNOLOGY

IMAGE DISPLAY STAND AND HOLOGRAPHIC INTERACTIVE DISPLAY STAND

The utility model provides an image display stand and a holographic interactive display stand, relating to the field of display stands, wherein the image display stand comprises a first cross beam, a second cross beam and a longitudinal beam; the first cross beam is positioned above the second cross beam, the first cross beam and the second cross beam are connected to the longitudinal beam in a detachable mode, and an installation space for installing a curtain or a display screen is formed between the first cross beam and the second cross beam; the first cross beam, the second cross beam and the longitudinal beam are spliced by a plurality of basic frames in a detachable mode. The holographic interactive exhibition stand comprises a holographic interactive exhibition window and the image exhibition stand, wherein the holographic interactive exhibition window is arranged in the installation space in a detachable mode; the utility model discloses having alleviated at least and having carried out the scene of image show to object form through curtain or ordinary display screen, the show stand is built and is demolishd cycle length, curtain or the easy not hard up problem that causes the image to rock of display screen to and do not have better mode at present and make holographic interactive exhibition window can be applied to open air problem.



The utility model discloses having alleviated at least and having carried out the scene of image show to object form through curtain or ordinary display screen, the show stand is built and is demolishd cycle length, curtain or the easy not hard up problem that causes the image to rock of display screen to and do not have better mode at present and make holographic interactive exhibition window can be applied to open air problem.

CLAIM 1. An image display stand is characterized by comprising a first cross beam (11), a second cross beam (12) and a longitudinal beam (13); the first cross beam (11) is positioned above the second cross beam (12), the first cross beam (11) and the second cross beam (12) are connected to the longitudinal beam (13) in a detachable mode, and an installation space capable of installing a curtain or a display screen is formed between the first cross beam (11) and the second cross beam (12); the first cross beam (11), the second cross beam (12) and the longitudinal beam (13) are spliced by a plurality of basic frames (100) in a detachable mode.

N7519

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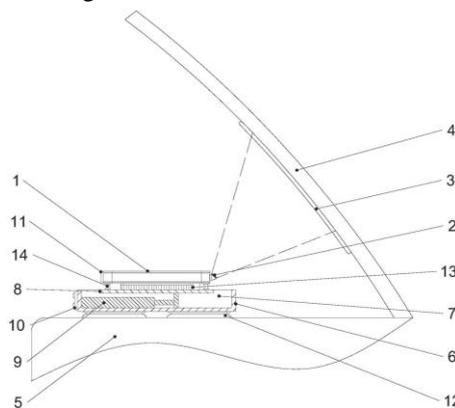
Priority Date: 07/04/2020

DREAMWORLD TECHNOLOGY ZHUHAI

VEHICLE-MOUNTED HEAD-UP DISPLAY BASED ON HOLOGRAPHIC OPTICAL FILM

The utility model discloses a vehicle-mounted head-up display based on holographic optical film, which comprises a HUD host and a reflection film, wherein a projector is arranged on one side of the HUD host close to a front windshield; the bottom of the HUD host is provided with a driving box, the top of the driving box is provided with a sliding chute, a sliding cover is connected in the sliding chute in a sliding mode, the bottom of the sliding cover is provided with an electric push rod, the tail end of the electric push rod is fixedly connected with the inner wall of the driving box through a bolt, and the moving end of the electric push rod is fixedly connected with the bottom of the sliding cover; the reflective film is bonded to the inner side of the front windshield. The utility model discloses an on-vehicle automatic diagnostic equipment of OBD interface connects, through HUD host computer and projecting apparatus with the speed per hour, position, the residual oil mass of vehicle on the reflection film that bonds on preceding windshield, so, the driver need not to bow just can know the relevant information of vehicle, when having improved the security of traveling, has still increased the travelling comfort of driving.

CLAIM 1. A vehicle-mounted head-up display based on a holographic optical film comprises a HUD host, a reflection film, a center console and a front windshield, and is characterized in that the HUD host is arranged on one side, close to a cab, of the top of the center console, a projector is arranged on one side, close to the front windshield, of the HUD host, and the projector is electrically connected with the HUD host; the bottom of the HUD host is provided with a driving box, the top of the driving box is provided with a sliding chute, a sliding cover is connected in the sliding chute in a sliding mode, the bottom of the sliding cover is provided with an electric push rod, the tail end of the electric push rod is fixedly connected with the inner wall of the driving box, far away from one side of the front windshield, through a bolt, and the moving end of the electric push rod is fixedly connected with the bottom of the sliding cover; the reflective film is bonded to the inner side of the front windshield.



N7520

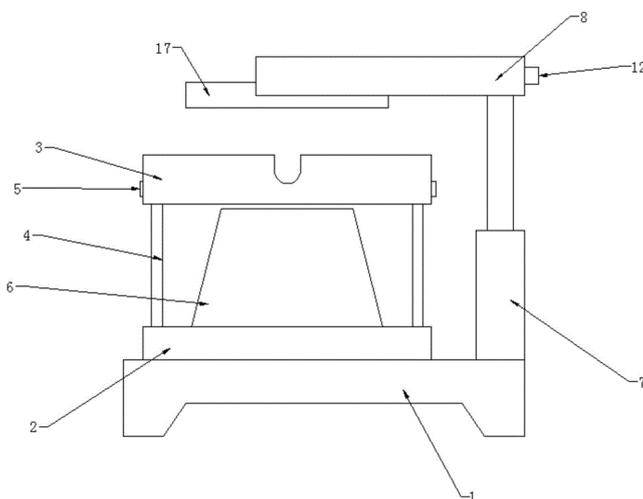
CN212230030U

Priority Date: 02/07/2020

ZHEJIANG CHINESE MEDICAL UNIVERSITY

HOLOGRAPHIC PROJECTION DEVICE FOR CHINESE MEDICINE CULTURE PROPAGATION

The utility model discloses a holographic projection arrangement for traditional chinese medicine culture is propagated, the on-line screen storage device comprises a base, the top of base is fixed with supporting mechanism, supporting mechanism's internally mounted has the prism, electric putter is installed to the one end at base top, electric putter's output shaft's top is fixed with the casing, the casing is hollow U type structure, the inside of casing is rotated and is connected with first pivot, the both ends of first pivot are all fixed the cup joint and are had first belt pulley, fixed cup joint has first bevel gear in the first pivot, the side-mounting of casing has the motor, the output shaft of motor inserts the inside of casing and is connected with second bevel gear. The utility model is convenient for the projectors of different specifications to be matched with the supporting frame for use, thereby improving the flexibility of use; and through the regulation to the contained angle between projecting apparatus and the prism, make the prism image more meticulous, improve the projected quality.



CLAIM 1. The holographic projection device for Chinese medicine culture propagation comprises a base (1) and is characterized in that a supporting mechanism is fixed at the top of the base (1), a prism (6) is installed inside the supporting mechanism, an electric push rod (7) is installed at one end of the top of the base (1), a shell (8) is fixed at the top of an output shaft of the electric push rod (7), the shell (8) is of a hollow U-shaped structure, a first rotating shaft (9) is connected to the inside of the shell (8) in a rotating mode, first belt pulleys (10) are fixedly sleeved at two ends of the first rotating shaft (9), a first bevel gear (11) is fixedly sleeved on the first rotating shaft (9), a motor (12) is installed on the side face of the shell (8), an output shaft of the motor (12) is inserted into the inside of the shell (8) and connected with a second bevel gear (13), the inside wall of casing (8) all rotates and is connected with second pivot (14), second pivot (14) insert the inside of casing (8) and are connected with second belt pulley (15), install projecting apparatus (17) between second pivot (14).

N7521

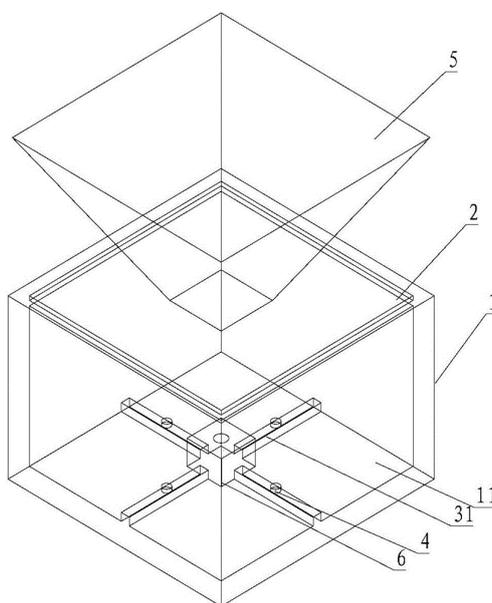
CN212229431U

Priority Date: 21/07/2020

QUANZHOU HUAMA OPTO ELECTRONICS

HOLOGRAPHIC PROJECTOR

The utility model relates to a projection technology field especially relates to a holographic projector. The device comprises a shell, an image projector, a projection screen, a fixing frame, a light supplementing device and a holographic image screen, wherein the image projector, the projection screen, the fixing frame, the light supplementing device and the holographic image screen are respectively arranged in the shell; a projection screen is arranged at one end inside the shell, and a mounting cavity, a fixing frame and a light supplementing device are arranged at the other end opposite to one end inside the shell; the holographic image screen is of a quadrangular frustum pyramid structure with trapezoidal four sides, the holographic image screen is arranged on the projection screen, and one end face, corresponding to the smaller end face of the quadrangular frustum pyramid structure, of the holographic image screen is in contact with the projection screen; the lens of the image projector passes through the projection hole to the outside of the placing cavity and is coaxially arranged with the holographic image screen. The light supplementing device is fixed on the bracket through being in threaded connection with a threaded hole in the bracket; the light supplementing device comprises an LED lamp and a collimating lens, and light rays emitted by the LED lamp are projected to the projection screen through the collimating lens. The holographic projector can perform optical compensation work aiming at the imaging characteristics of holographic projection.



CLAIM 1. A holographic projector is characterized by comprising a shell, an image projector, a projection screen, a fixing frame, a light supplementing device and a holographic image screen, wherein the image projector, the projection screen, the fixing frame, the light supplementing device and the holographic image screen are respectively arranged in the shell; a projection screen is arranged at one end inside the shell, and a mounting cavity, a fixing frame and a light supplementing device are arranged at the other end opposite to one end inside the shell; the holographic image screen is of a quadrangular frustum pyramid structure with trapezoidal four sides, the holographic image screen is arranged on the projection screen, and one smaller end face of the holographic image screen, corresponding to the quadrangular frustum pyramid structure, is in contact with the projection screen; the image projector is arranged in the arranging cavity, and a projection hole matched with a lens of the image projection lens instrument is formed in one surface, opposite to the projection screen, of the arranging cavity; the lens of the image projector penetrates through the projection hole to the outside of the mounting cavity and is coaxially arranged with the holographic image screen; the fixing frame comprises four brackets which are respectively arranged corresponding to four vertex positions of a virtual quadrangle, and the four brackets respectively correspond to four sides of the holographic image screen one by one; the four brackets are arranged between the mounting cavity and the inner side surface of the shell; each bracket is also provided with a threaded hole; the light supplementing device is fixed on the bracket through being in threaded connection with a threaded hole in the bracket; the light supplementing device comprises an LED lamp and a collimating lens, and light rays emitted by the LED lamp are projected to the projection screen through the collimating lens.

N7524

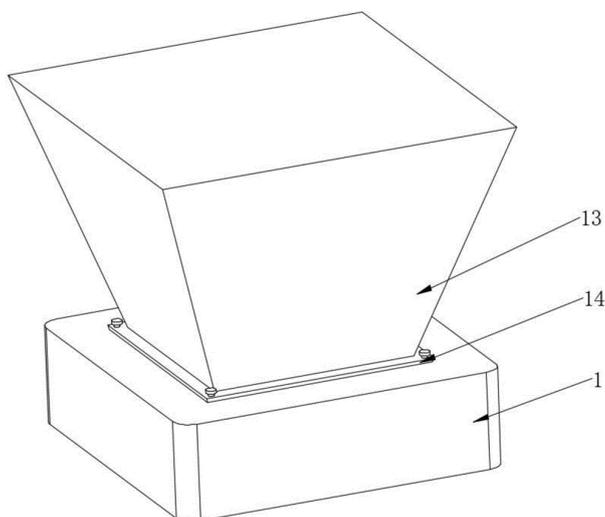
CN112230501

Priority Date: 20/10/2020

GUANGZHOU CHUANGYING TECHNOLOGY

360-DEGREE HOLOGRAPHIC PROJECTION DEVICE

The invention relates to the technical field of holographic projection, and discloses a 360-degree holographic projection device which comprises a bottom box, wherein a rotating shaft is movably sleeved at the bottom of an inner cavity of the bottom box, a rotating plate is fixedly installed at the top of the rotating shaft, a side plate is fixedly installed at one side of the top of the rotating plate, an air cylinder is fixedly installed at one side of the side plate, a holographic projection body is placed at the other side of the top of the rotating plate, and a clamping groove is formed in the front side of the holographic projection body. This 360 degrees holographic projection device, through the cylinder contract evenly can drive the movable block and remove, utilize connecting plate swing joint between rethread movable block and the movable plate, be convenient for drive the movable plate and remove in the inner chamber of shifting chute, be convenient for shift out or move the cardboard on the movable plate in the inner chamber of draw-in groove from the inner chamber of draw-in groove, be convenient for with holographic projection body centre gripping on the top of shifting board, it is firm to install, also is convenient for dismantle holographic projection body simultaneously.



CLAIM 1. A 360-degree holographic projection device, comprising a bottom case (1), characterized in that: the bottom of the inner cavity of the bottom box (1) is movably sleeved with a rotating shaft (2), the top of the rotating shaft (2) is fixedly provided with a rotating plate (3), one side of the top of the rotating plate (3) is fixedly provided with a side plate (4), one side of the side plate (4) is fixedly provided with a cylinder (5), the other side of the top of the rotating plate (3) is provided with a holographic projection body (6), the front side of the holographic projection body (6) is provided with a clamping groove (7), one end of the cylinder (5) is fixedly provided with a moving block (8), the top of the moving block (8) is movably sleeved with a connecting plate (9) through a shaft, one side of the bottom of the connecting plate (9) is movably sleeved with a moving plate (10) through a shaft, the rear side of the moving plate (10) is fixedly provided with a clamping plate (11) positioned in the inner cavity of the clamping groove, the inner cavity of the moving groove (12) is movably sleeved with a moving plate (10).

N7526

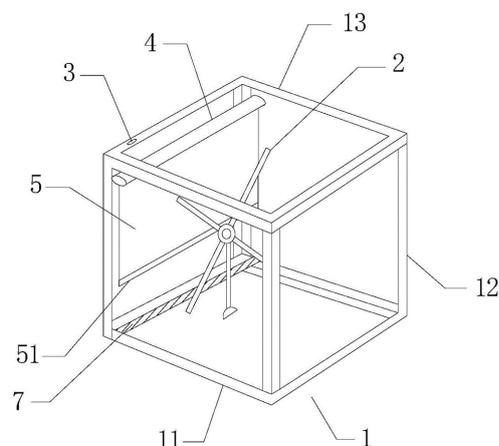
CN112216233

Priority Date: 24/04/2020

CHONGQING HANGJING TECHNOLOGY

HOLOGRAPHIC LAMP BOX WITH ELECTRIC CURTAIN AND ELECTRIC DIMMING GLASS

The invention provides a holographic lamp box with an electric curtain and electro-dimming glass, which comprises a display cabinet, holographic display equipment arranged in the display cabinet, a shade system, a remote control module, a light-sensitive switch, a timing switch and an LED lamp tube, wherein the shade system, the remote control module, the light-sensitive switch, the timing switch and the LED lamp tube are fixedly arranged in the display cabinet; the electric shade system can automatically put down the light-tight curtain under the strong light condition to provide a light-tight background for the holographic display equipment, so that the holographic display equipment can still normally display under the strong light condition, and the display effect is ensured; the color of the electrochromic glass can be automatically adjusted according to the intensity of light rays in an external environment, so that the display equipment can normally work under different light rays.



CLAIM 1. A holographic lamp box with an electric curtain and electro-dimming glass comprises a display cabinet and holographic display equipment arranged in the display cabinet, and is characterized by further comprising a shade system, a remote control module, a light-sensitive switch, a timing switch and an LED lamp tube, wherein the shade system, the remote control module, the light-sensitive switch, the timing switch and the LED lamp tube are fixedly arranged in the display cabinet; the remote control module comprises a controller, a wireless communication module, a mobile terminal and a power supply module; the wireless communication module, the mobile terminal, the light sensing switch and the timing switch are electrically connected with the controller; and the wireless communication module sends the data signal of the PLC to the mobile terminal.

N7527

CN112213933

Priority Date: 03/11/2020

HEBEI UNIVERSITY OF TECHNOLOGY

INDOOR DESIGN SYSTEM CAPABLE OF REALIZING HOLOGRAPHIC PROJECTION DISPLAY

The invention provides an indoor design system capable of realizing holographic projection display, belongs to the technical field of design systems, and aims to solve the problems that most of the existing indoor designs are displayed on a plane, and the effect is poor; the device comprises a processor module, and a data access unit, a display unit, a memory module, a data generation unit, a scaling module and a controller module which are electrically connected with the processor module; the design of the invention can realize the three-dimensional holographic effect display of the indoor design scheme, and the three-dimensional holographic effect display can be more visually and vividly displayed to the client, thereby improving the experience of the client, improving the communication efficiency between the client and a designer, and reducing the communication cost.

CLAIM 1. An indoor design system capable of realizing holographic projection display is characterized by comprising a processor module, and a data access unit, a display unit, a memory module, a data generation unit, a scaling module and a controller module which are electrically connected with the processor module; the data access unit comprises a data import module and a data conversion module; the display unit comprises a holographic projection module and a holographic projection unit; the data generation unit comprises a building outline generation module, a hard-package generation module and a soft-package generation module; the processor module is used for core data processing of the system; the data import module is electrically connected with the data conversion module and is used for accessing design effect drawing data of external equipment; the data conversion module is electrically connected with the processor module and is used for converting the design effect diagram data into system data; the holographic projection module is electrically connected with the processor module and is used for controlling the holographic projection unit to execute a projection command; the holographic projection unit is electrically connected with the projection module and is used for projecting a three-dimensional holographic image with a decoration effect for a client to watch; the memory module is used for storing all data in the system; the building outline generation module is used for generating projection data of a wall and a floor of a building of a client; the hardware generation module is used for generating projection data of the building hardware on the building outline; the soft-mounting generation module is used for generating projection data of the building soft-mounting on the building outline and the building hardware; the scaling module is used for controlling the scaling of the holographic projection so as to adapt to the size of the holographic projection unit; the controller module is used for controlling the starting and closing of the projection content, the projection area and the projection angle.

N7528

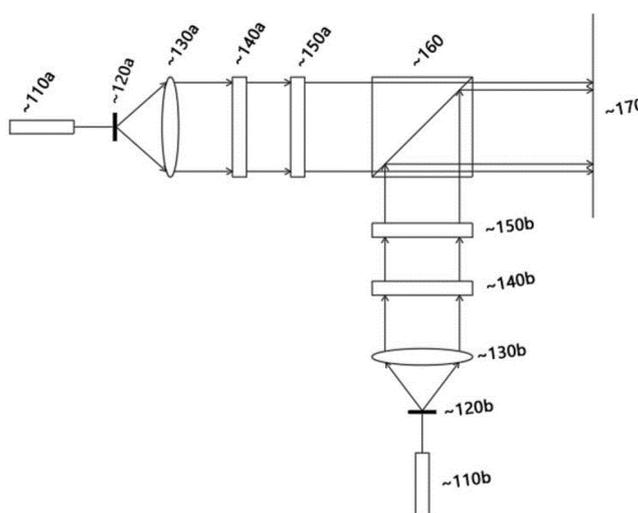
CN112198778

Priority Date: 18/10/2020

UNIVERSITY OF NANKAI

DISPLAY METHOD FOR IMPROVING REFRESH RATE OF HOLOGRAPHIC DISPLAY IMAGE

A display method for improving the refresh rate of a holographic display image. On the basis of the existing holographic display system, the invention adds the Spatial Light Modulator (SLM) with the same refreshing frequency, and controls the SLM to alternately image through time sequence. Including improving a typical holographic display method with sequential control using shutters and modulated light sources, respectively. The invention also improves a typical color holographic display method, using shutters and modulated light sources for timing control, respectively. The method comprises the steps of firstly establishing the same N incident light paths sequentially composed of a light source, a beam expander, a collimating lens and a spatial light modulator, and then respectively controlling the N incident light paths to work alternately, so that the 1st to the Nth images in the whole hologram sequence are sequentially displayed on a projection surface and are circularly repeated. The improvement improves the refreshing frequency of the image, thereby reducing the screen flicker, improving the definition and generating certain protection effect on eyes.



CLAIM 1. A display method for improving the refresh rate of a holographic display image is characterized in that a shutter performs time sequence control to improve the refresh rate of the holographic display image, and the method comprises the following steps: the method comprises the following steps: respectively building the same N parallel incident light paths which are sequentially composed of a light source, a beam expander, a collimating lens and a spatial light modulator, and then inserting a shutter at any position of each incident light path; n paths of incident light paths are projected to a projection plane through a spectroscopically respectively, wherein N is more than or equal to 2; step two: the shutters in the N light paths are respectively controlled to alternately work, and the opening working time of each shutter is A period; at the first one Period t₁In the first incident light path, the first shutter is opened, the shutters in the other incident light paths are closed, and at the moment, the hologram on the first spatial light modulator in the first incident light path, namely the 1st hologram in the whole hologram sequence, is displayed on the projection surface; the second one Period t₂In the second incident light path, the shutter is opened, the other shutters are closed, and at the moment, the hologram on the second spatial light modulator in the incident light path, namely the 2nd hologram in the whole hologram sequence, is displayed on the projection surface; , Nth Period t_nIn the method, an Nth shutter in an Nth incident light path is opened, shutters in other incident light paths are closed, and at the moment, a hologram on an Nth spatial light modulator in the Nth incident light path, namely an Nth hologram in the whole hologram sequence, is displayed on a projection surface; step three: repeating the operation of the second step; repeatedly controlling the shutter and loading of the hologram according to the rules of step two and step three, wherein t₁t₂t_nT, one working period of the system is T₁+t₂+...+t_nThe dwell time per frame of image is nt An image refresh rate of

N7531

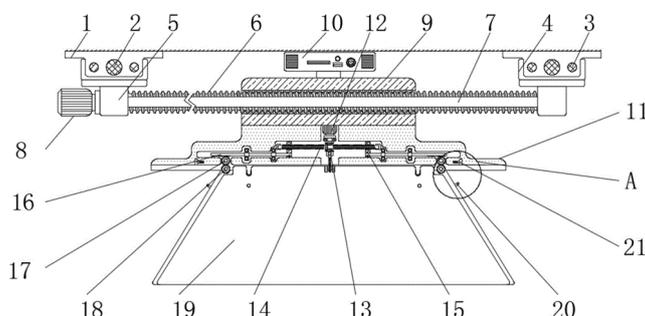
CN112197151

Priority Date: 19/10/2020

GUANGZHOU RUIYIN TECHNOLOGY

HANGING MOVABLE MULTIMEDIA TEACHING HOLOGRAPHIC PROJECTION MECHANISM

The invention relates to the technical field of multimedia equipment, and discloses a suspended movable multimedia teaching holographic projection mechanism which comprises a fixed seat, wherein a longitudinal screw rod is rotatably connected inside the fixed seat, a longitudinal slide rod is fixedly connected inside the fixed seat, a longitudinal slide block is in threaded connection with the outer side of the longitudinal screw rod, a movable seat is fixedly connected at the bottom of the longitudinal slide block, a transverse screw rod is rotatably connected between the movable seats, and a transverse slide rod is fixedly connected between the movable seats. This hang portable multimedia teaching holographic projection mechanism, it is rotatory to drive vertical screw rod through feeding the motor, vertical screw rod drives vertical slider displacement, vertical slider drives and removes a displacement, it drives holographic projector longitudinal movement to remove the seat, it is rotatory that feeding the motor drives horizontal screw rod, horizontal screw rod drives and removes balladeur train lateral displacement, the cooperation of mechanisms such as horizontal slide bar of rethread is used, thereby reach free mobility control, make every student of student can both be on the spot effect on the person.



CLAIM 1. The utility model provides a hang holographic projection mechanism of movable multimedia teaching, includes fixing base (1), its characterized in that: the inner part of the fixed seat (1) is rotatably connected with a longitudinal screw rod (2), the inner part of the fixed seat (1) is fixedly connected with a longitudinal sliding rod (3), the outer side of the longitudinal screw rod (2) is in threaded connection with a longitudinal sliding block (4), the bottom of the longitudinal sliding block (4) is fixedly connected with a movable seat (5), the movable seat (5) is rotatably connected with a transverse screw rod (6), the movable seat (5) is fixedly connected with a transverse sliding rod (7), the right side of the transverse screw rod (6) is fixedly connected with a feed motor (8), the outer side of the transverse screw rod (6) is in threaded connection with a movable sliding frame (9), the top of the movable sliding frame (9) is fixedly connected with a holographic projector (10), the bottom of the movable sliding frame (9) is fixedly connected with a control frame (11), the inner part of the control frame (11), the bottom of control motor (12) is rotated and is connected with transmission bevel gear group (13), the outside fixedly connected with two-way screw rod (14) of transmission bevel gear group (13), the outside threaded connection of two-way screw rod (14) has removal slider (15), the inside fixedly connected with who removes slider (15) removes rack (16), the inside rotation of control frame (11) is connected with rotation gear (17) and fixed gear (18), the bottom fixedly connected with reflection diffraction board (19) of fixed gear (18), the positive fixedly connected with fixed pin (20) of reflection diffraction board (19), the spacing subassembly (21) of inside fixedly connected with of control frame (11).

N7532

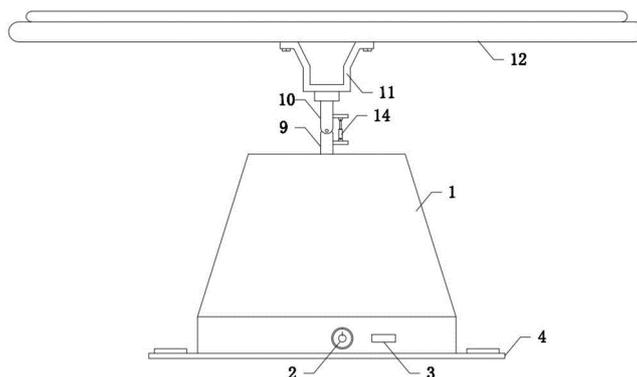
CN112185276

Priority Date: 20/10/2020

NANJING INTELLIGENT SIMULATION TECHNIQUE INSTITUTE

HOLOGRAPHIC FAN ADVERTISEMENT DISPLAY SCREEN OF DEVELOPMENTS HIGH DEFINITION

The invention discloses a dynamic high-definition holographic fan advertisement display screen, which belongs to the technical field of advertisement display screens and comprises a lower mounting shell, wherein a control switch and a power supply interface are arranged on the lower side of the front wall of the lower mounting shell; through the components of a whole that can function independently design of first pivot, second pivot, and through backup pad, telescopic mechanism's mating reaction, can carry out angle modulation to the holographic fan screen of upside to make holographic fan screen carry out multi-angle rotating.



CLAIM 1. The utility model provides a holographic fan advertisement display screen of developments high definition, includes installation casing (1) down, its characterized in that: a control switch (2) and a power interface (3) are arranged on the lower side of the front wall of the lower mounting shell (1), a double-shaft driving motor (5) is arranged in the lower mounting shell (1), an angle sensor (7) is arranged at the bottom of an inner cavity of the lower mounting shell (1), the angle sensor (7) is connected with a lower output shaft of the double-shaft driving motor (5), a controller (8) is arranged at the bottom of the inner cavity of the lower mounting shell (1), a first rotating shaft (9) is connected with an upper output shaft of the double-shaft driving motor (5), a second rotating shaft (10) is rotatably connected with the upper end of the first rotating shaft (9) through a pin shaft, an angle adjusting mechanism is connected between the side walls of the first rotating shaft (9) and the second rotating shaft (10), a support (11) is connected with the upper end of the second rotating shaft (10), and a holographic fan screen (12) is connected, holographic fan screen (12) include bedplate (121) and upper cover plate (122), block each other between bedplate (121) and upper cover plate (122), the upper surface of bedplate (121) evenly is provided with luminous body (123), luminous luminance and colour can be adjusted in luminous body (123), controller (8) respectively with power source (3), angle sensor (7), luminous body (123) electric connection.

N7534

CN112180594

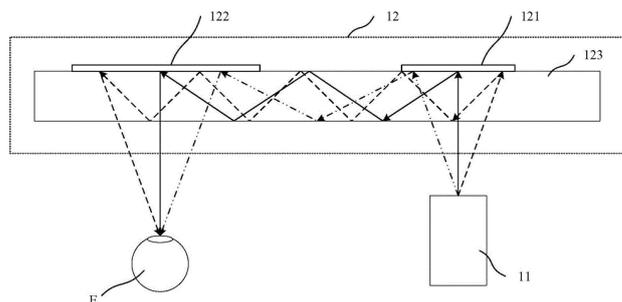
Priority Date: 04/07/2019

HANGZHOU HIKVISION DIGITAL TECHNOLOGY

HOLOGRAPHIC WAVEGUIDE DISPLAY DEVICE

The application provides a holographic waveguide display device, the device includes: the optical-mechanical module comprises a plurality of light-emitting diodes, wherein at least two light-emitting diodes have wavelengths with the same spectral energy value and larger than zero, and the central wavelengths of the at least two light-emitting diodes are different; a holographic waveguide module comprising at least one first volume holographic optical device, at least one second volume holographic optical device, an optical waveguide in contact with the at least one first volume holographic optical device and the at least one second volume holographic optical device. The light that a plurality of emitting diode sent in this application device has the light of at least part the same wave band, can improve the spectral energy distribution degree of consistency of above-mentioned wave band light for the ray machine module can send the light that has the broad spectral bandwidth, makes holographic waveguide display device have the Bragg angle bandwidth of broad, and then effectively increases holographic waveguide display device's visual field.

CLAIM 1. A holographic waveguide display, comprising: the optical-mechanical module comprises a plurality of light-emitting diodes, wherein at least two light-emitting diodes have wavelengths with the same spectral energy value and larger than zero, and the central wavelengths of the at least two light-emitting diodes are different; the holographic waveguide module comprises at least one first volume holographic optical device, at least one second volume holographic optical device and an optical waveguide which is in contact with the at least one first volume holographic optical device and the at least one second volume holographic optical device, wherein the at least one first volume holographic optical device is used for guiding light emitted by the optical machine module into the optical waveguide, and the at least one second volume holographic optical device is used for guiding out light in the optical waveguide.



N7535

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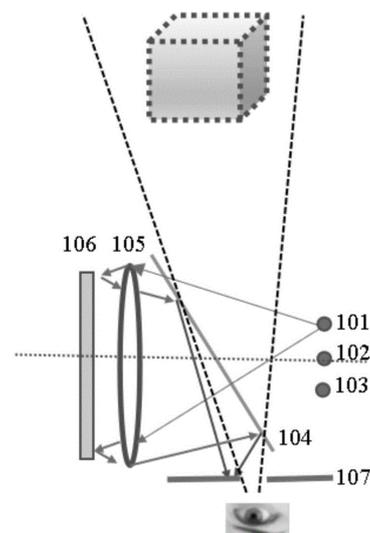
Priority Date: 07/09/2020

CHANGZHOU INSTITUTE OF TECHNOLOGY

COMPACT NEAR-TO-EYE AUGMENTED REALITY HOLOGRAPHIC THREE-DIMENSIONAL DISPLAY DEVICE

The invention discloses a compact near-eye augmented reality holographic three-dimensional display device, which comprises: a light source emitting divergent illumination light; a half mirror for partially transmitting the illumination light and partially reflecting the diffracted light; a lens for collimating the illumination light; a spatial light modulator for loading a computational hologram; the liquid crystal light valve is used for eliminating the influence of zero-order light and conjugate light. The invention can realize holographic near-eye augmented reality three-dimensional display without convergence regulation conflict. The designed device has simple structure and strong practicability and has important application value.

CLAIM 1. A compact near-eye augmented reality holographic three-dimensional display device, comprising: a light source configured to emit a divergent illumination light; a lens configured to convert divergent illumination light emitted by the light source, the converted light for illuminating a spatial light modulator; a spatial light modulator configured to load the computational hologram and modulate a light field illuminated thereon, emitting the modulated light field; a half-mirror configured as a means to reflect the modulated light field portion into a human eye; a liquid crystal light valve configured as a device for filtering the light field after passing through the half-transmitting and half-reflecting mirror; the control module is configured to calculate and generate a hologram, load the hologram into the spatial light modulator, and realize synchronous control of loading the hologram into the light source module and the spatial light modulator and the liquid crystal light valve; the environment light passes through the semi-transparent semi-reflecting mirror without interference to enter human eyes and then passes through the opening of the liquid crystal light valve.



N7536

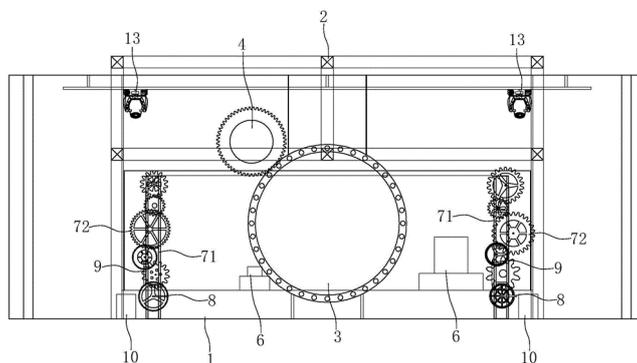
CN112138415

Priority Date: 20/10/2020

3D NEW CULTURE

HOLOGRAPHIC INTERACTIVE TALK SHOW THEATER

The invention discloses a holographic interactive talk show theater, which comprises a performance platform (1); the projection system (2) can put a virtual image on the performance platform (1); a first display screen (3); a second display screen (4); two third display screens (5); two fourth display screens (6); two groups of gear assemblies (7) are respectively positioned at two sides of the front of the performance platform (1) and comprise a bracket (71) and at least two gears (72) which are sequentially arranged on the bracket (71) from top to bottom; the two rocking handles (8) correspond to the gear assemblies (7) one by one; the two table tennis sprayers (9) correspond to the gear assemblies (7) one by one; and the air outlets of the two fans (10) face the outlets of the table tennis sprayers (9). Compared with the prior art, the holographic interactive talk show theater has rich expression forms and low cost.



CLAIM 1. A holographic interactive talk show theater comprises A performance platform (1); and the projection system (2) is arranged above the performance platform (1) and can put a virtual image on the performance platform (1); the method is characterized in that: also comprises A first display screen (3) vertically and centrally arranged on the rear side of the performance platform (1); the second display screen (4) is vertically arranged at the front side of the performance platform (1), and the projection of the second display screen (4) on the plane where the first display screen (3) is located is staggered with the first display screen (3); the two third display screens (5) are respectively and vertically arranged on the left side and the right side of the performance platform (1); two fourth display screens (6) which are vertically arranged on the performance platform (1) and are respectively positioned at two sides of the first display screen (3); two groups of gear assemblies (7) are respectively positioned at two sides of the front of the performance platform (1) and comprise a bracket (71) and at least two gears (72) which are sequentially arranged on the bracket (71) from top to bottom; the two rocking handles (8) correspond to the gear assemblies (7) one by one, and the end parts of the two rocking handles penetrate through the centers of the gears (72) at the lowest part in the corresponding gear assemblies (7) and are rotationally connected with the corresponding brackets (71); the two table tennis sprayers (9) correspond to the gear assemblies (7) one by one and are arranged on the brackets (71) of the corresponding gear assemblies (7); and the two fans (10) are respectively positioned on two sides in front of the performance platform (1), and the air outlet faces to the outlet of the table tennis ejector (9).

N7537

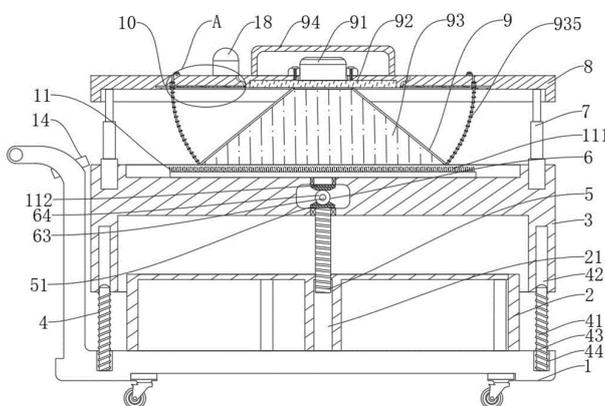
CN112133231

Priority Date: 21/10/2020

GUANGZHOU ZHONGZHI EDUCATIONAL COUNSELING

CULTURE PROPAGATION EXHIBITION 3D HOLOGRAPHIC PROJECTION EQUIPMENT FOR SHOW CONVENIENT TO REMOVE

The invention discloses a 3D holographic projection device convenient to move and used for culture propagation exhibition, which comprises a moving frame, wherein the top of the moving frame is fixedly connected with a storage box, the top of the storage box is provided with a display rack, four corners of the bottom of the display rack are respectively provided with a guide assembly, an adjusting screw rod is arranged in the center of the bottom of the display rack, a conversion assembly is arranged in the display rack, four corners of the top of the display rack are respectively and fixedly connected with an electric push rod, and a mounting substrate is fixedly connected between the output ends of the four electric push rods. According to the invention, the two pressing bolts are adjusted and adjusted through the conversion assembly to enable the adjusting block to horizontally ascend and descend, so that the adjustment of cleaning and the conversion of a storage state are achieved, the mechanical structure is linked, and the electric push rod is matched, so that the device is convenient to store and install and convenient to use.



CLAIM 1. The utility model provides a culture propagation exhibition 3D holographically projected equipment for show convenient to remove, includes removal frame (1), its characterized in that: remove frame (1) top fixedly connected with receiver (2), receiver (2) top is equipped with show rack (3), show rack (3) bottom four corners all is equipped with guide assembly (4), show rack (3) bottom center department is equipped with adjusting screw (5), show rack (3) inside is equipped with conversion components (6), the equal fixedly connected with electric putter (7) in show rack (3) top four corners, four fixedly connected with mounting substrate (8) between electric putter (7) the output, mounting substrate (8) middle part is equipped with holographic projection subassembly (9), mounting substrate (8) bottom and show rack (3) top are equipped with clearance subassembly (10) and clearance subassembly (11) down respectively.

N7538

CN112131275

Priority Date: 23/09/2020

INSTITUTE OF SMART CITY UNIVERSITY OF SCIENCE & TECHNOLOGY OF CHINA WUHU

ENTERPRISE PORTRAIT CONSTRUCTION METHOD OF HOLOGRAPHIC CITY BIG DATA MODEL AND KNOWLEDGE GRAPH

The invention discloses an enterprise portrait construction method of a holographic city big data model and a knowledge graph, which comprises the steps of enterprise holographic data model construction, enterprise knowledge graph construction and enterprise label automatic extraction; the method can finely position enterprise characteristics through the holographic sketch, excavate potential enterprise relations, and describe any one existing enterprise through constructing the enterprise sketch, thereby providing a way for fully recognizing and comprehensively understanding the enterprise for enterprise information demanders. The enterprise holographic sketch establishes an enterprise all-information database, and labels are extracted from enterprise holographic data and a knowledge graph by using natural human language processing and data mining technologies to draw the enterprise sketch, so that the problems of enterprise data dispersion and loss can be solved, and enterprise full-dimensional information can be displayed.

Click on the title to return to table of contents

PATENT REFERENCE – See the table at the end of this document

N7525

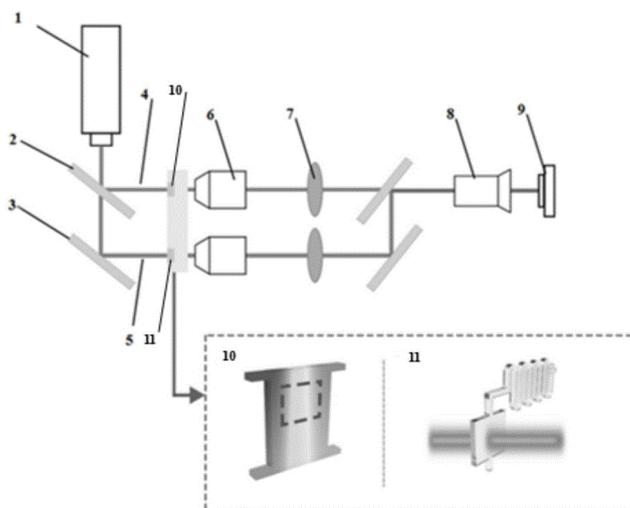
CN112229821

Priority Date: 21/10/2020

CHINA UNIVERSITY OF GEOSCIENCES WUHAN

THERMAL FLUID DYNAMICS MEASURING DEVICE AND METHOD BASED ON DIGITAL HOLOGRAPHIC MICROSCOPY

The invention provides a thermal fluid dynamics measuring device and method based on digital holographic microscopy, the device comprises: the device comprises an interference device, an imaging system, a fluid control system, a phase shifter and a chip to be tested. The method comprises the following steps: collecting six holograms by using an area array CCD; analyzing a wrapping phase diagram with discontinuous concentration gradient field of the chip to be detected according to a five-step phase shift method; obtaining a continuous phase distribution diagram of the concentration gradient field by using a phase unwrapping algorithm; reconstructing the refractive index distribution of the diffusion region according to the obtained continuous phase distribution map; and quantitatively measuring the concentration gradient field of the diffusion region under different conditions and accurately measuring the diffusion coefficient, the pecllet number and other thermal fluid dynamics. The invention realizes the integration of the microfluidic phase shift element, has simple manufacturing process and reliable working principle, simplifies the phase shift operation, reduces the operation cost, and simultaneously has the advantages of no mark, integration, stability, capability of finishing transient measurement and the like.



CLAIM 1. Thermal fluid dynamics measuring device based on digital holographic microscopy, characterized by, includes: the system comprises an interference device, an imaging system, a fluid control system, a phase shifter (10) and a chip to be tested (11); the interference device includes: the device comprises a continuous laser (1), a spectroscopically filtered lens (2), a high-reflection mirror (3), an objective lens (6), a biconvex lens (7) and an eyepiece (8); the imaging system includes: an area array CCD (9), an acquisition card and a computer; the fluid control system is realized by a double-channel injection pump; the phase shifter (10) consists of a snake-shaped micro mixer and a phase shifting chamber, and the adjustment of the phase shift is realized by adjusting the concentration of fluid in the phase shifting chamber through the micro mixer so as to change the refractive index; the phase shifter (10) and the chip (11) to be tested are made by inverse molding PDMS on a silicon chip.

N7539

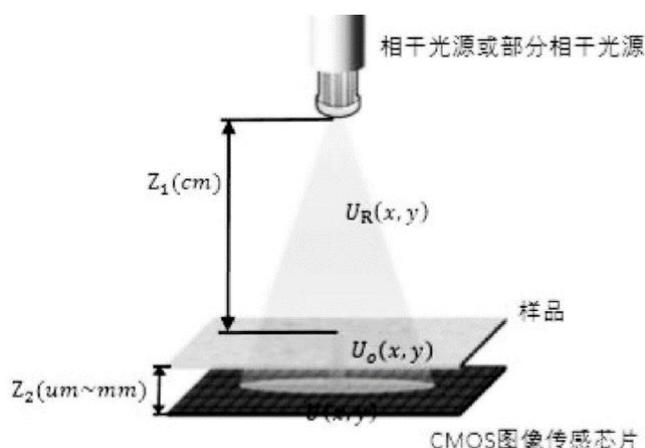
CN112130306

Priority Date: 17/09/2020

ZHEJIANG UNIVERSITY

CMOS HOLOGRAPHIC MICROSCOPIC IMAGING DEVICE AND METHOD APPLIED TO CELL SEGMENTATION

The invention belongs to the technical field of microscope imaging, and particularly relates to a CMOS holographic microscopic imaging device and method applied to cell segmentation. A CMOS holographic microscopic imaging device for use in cell segmentation, said imaging device comprising: the light source is used for emitting illumination light and arranged on an optical axis of the imaging device, and the illumination light is a coherent light source or a partially coherent light source; the sample stage is used for placing an imaging sample; and the CMOS image sensing chip is electrically connected with a computer. The invention provides a CMOS holographic microscopic imaging device and a CMOS holographic microscopic imaging method applied to cell segmentation, which are based on the traditional lensless microscopic technology, calculate the light intensity of three images with different vertical axis distances by using light intensity transmission and amplification to obtain the approximate phase distribution information of an intermediate image, and then combine with a GS algorithm to carry out multiple iterations to obtain the accurate magnitude and phase information of a sample image, and finally improve the lensless field of view and the system limit resolution.



CLAIM 1. The CMOS holographic microscopic imaging device applied to cell segmentation is characterized by comprising: the light source is used for emitting illumination light and arranged on an optical axis of the imaging device, and the illumination light is a coherent light source or a partially coherent light source; the sample stage is used for placing an imaging sample; the CMOS image sensing chip is electrically connected with a computer; the light source, the sample stage and the CMOS image sensing chip are sequentially arranged from top to bottom to form an imaging device, and the axial distance Z between the light source and the sample stage 15-20 mm, and the axial distance Z between the sample stage and the CMOS image sensing chip 25 μm to 2 mm.

Click on the title to return to table of contents

PATENT REFERENCE – See the table at the end of this document

N7487

WO202105287

Priority Date: 05/07/2019

CEA - COMMISSARIAT A L ENERGIE ATOMIQUE & AUX ENERGIES ALTERNATIVES

MATRIX-ARRAY OPTICAL COMPONENT FOR FOCUSING AN INCIDENT LIGHT BEAM ON A SERIES OF POINTS

Matrix-array optical component (100) that comprises, superposed, a holder (120), a matrix-array of reflectors (130), and at least one matrix-array of holographic lenses (110), with the holder (120) placed between the matrix-array of reflectors and the at least one matrix-array of holographic lenses. The holographic lenses are each formed by at least one reflection hologram, and each comprise a through-aperture for letting light pass. Each individual cell (10) of the matrix-array optical component comprises one reflector (131) of the matrix-array of reflectors and one holographic lens (111) of the matrix-array of holographic lenses, which are arranged opposite one another on either side of the holder with respective reflective faces of the reflector and of the holographic lens located facing. Thus, a planar matrix-array optical component with a focusing efficiency higher than or equal to 50% and able to focus an incident light beam axially is produced.

COMPOSANT OPTIQUE MATRICIEL POUR FOCALISER SUR UNE SÉRIE DE POINTS UN FAISCEAU LUMINEUX INCIDENT

Composant optique matriciel (100) qui comprend, superposés, un support (120), une matrice de réflecteurs (130), et au moins une matrice de lentilles holographiques (110), avec le support (120) disposé entre la matrice de réflecteurs et l'au moins une matrice de lentilles holographiques. Les lentilles holographiques sont formées chacune par au moins un hologramme en réflexion, et comportent chacune une ouverture traversante pour laisser passer la lumière. Chaque cellule individuelle (10) du composant optique matriciel comporte un réflecteur (131) de la matrice de réflecteurs et une lentille holographique (111) de la matrice de lentilles holographiques, disposés en vis-à-vis de part et d'autre du support avec des faces réfléchissantes respectives du réflecteur et de la lentille holographique situées face à face. On réalise ainsi un composant optique matriciel plan, avec un rendement de focalisation supérieur ou égal à 50%, et apte à focaliser dans l'axe un faisceau lumineux incident.

CLAIM 1. Matrix optical component (100; 200; 500; 700; 800), comprising a plurality of individual cells (10; 30; 40; 50) and configured to focus an incident light beam at a plurality of points (Pi), and which comprises:

- a support (120; 320; 620; 720);
 - an array of reflectors (130; 730); and
 - at least one holographic lens array (110; 210), wherein each holographic lens (111; 311; 411; 811) is formed by at least one reflection hologram;
- with the carrier (120; 320; 620; 720) disposed between the reflector array and the at least one holographic lens array,
- with each individual cell (10; 30; 40; 50) of the matrix optical component comprising a reflector (131; 331; 431; 831) of the reflector matrix and a respective holographic lens (111; 211; 311; 411; 811) of each of the at least one holographic lens array,
- with the reflector and the holographic lens facing each other on either side of the carrier and with respective reflective faces of said reflector and said holographic lens facing each other, and
- with each holographic lens (111; 311; 411; 811) of the at least one holographic lens array (110; 210) being provided with a respective through-opening (112; 312; 812), for passing light at each of the individual cells (10; 30; 40; 50) of the array optical component.

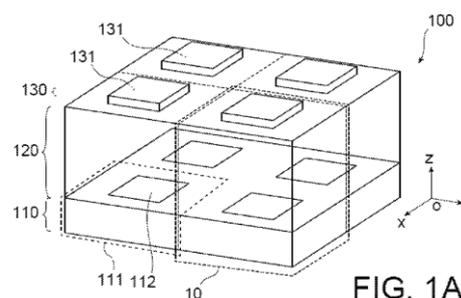


FIG. 1A

Fig. 1B)

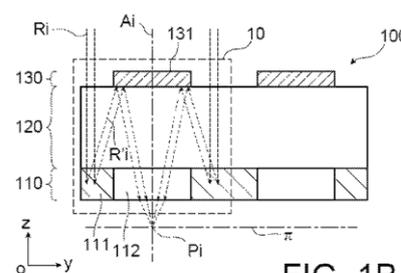


FIG. 1B

N7501

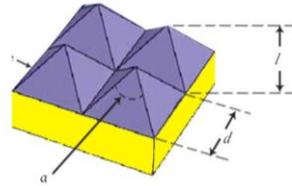
RU-201526

Priority Date: 30/09/2020

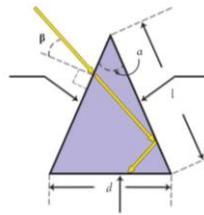
MIKHAILOVNA KIRPICHNIKOVA IRINA - ANATOLEVICH SIROTKIN
EVGENII

GHOST-BASED HOLOGRAPHIC FILM

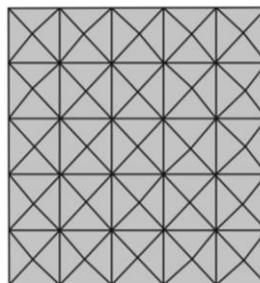
A useful model is solar energy and concerns holographic film based on prismatic hubs from transparent material. The film contains holographic lenses carried out in the form of holographic film, which includes a layer of sodium dust from its upper side. The internal structure of the film consists of prismatic concentrators, with equilateral granaries on the sides of the grounds. The angle at the top for the film material with a refracting factor between 2.1 and 3.4 is between 28.4 and 17.1 degrees. The technical result is to improve solar modules and photovoltaic systems.



Фиг.1



Фиг.2



Фиг.3

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HOLOGRAMS - 11 PATENTS

REFERENCE	COUNTRY	PATENT NUMBER	PUBLICATION DATE Day-Month-Year	APPLICANT	PRIORITY	PRIORITY DATE Day-Month-Year	PRIORITY NUMBER	EQUIVALENTS	TITLE	KEY WORDS
P32849	US	10885413	05/01/2021	HNU PHOTONICS	US	20/03/2018	US2018062645318	US10885413	COLOR HOLOGRAPHIC QUICK RESPONSE (CHQR) CODE FOR COUNTERFEIT AVOIDANCE	
P32893	CN	212380044	19/01/2021	WUHAN HUAGONG IMAGE TECHNOLOGY & DEVELOPMENT	CN	28/07/2020	CN2020001523399	CN212380044U	LASER HOLOGRAPHIC ANTI-COUNTERFEITING FILM AND LASER HOLOGRAPHIC ANTI-COUNTERFEITING FILM ASSEMBLY	
P32899	CN	212365497	15/01/2021	XU SHIBAO	CN	22/05/2020	CN2020000873687	CN212365497U	CD DISC WITH HOLOGRAPHIC ANTI-FAKE GRATING	
P32909	CN	212322535	08/01/2021	HENAN PROVINCE WELLKING TECHNOLOGICAL DEVELOPMENT	CN	23/06/2020	CN2020001171074	CN212322535U	SINGLE-LAYER DOUBLE-DISPLAY HOLOGRAPHIC ANTI-COUNTERFEIT LABEL	
P32910	CN	212322534	08/01/2021	HENAN PROVINCE WELLKING TECHNOLOGICAL DEVELOPMENT	CN	23/06/2020	CN2020001171073	CN212322534U	TOBACCO TRACING ANTI-COUNTERFEIT LABEL	
P32912	CN	212276693	01/01/2021	ANHUI JINCAI ANTI COUNTERFEITING TECHNOLOGY	CN	18/05/2020	CN2020000848827	CN212276693U	WATER TRANSFER HOLOGRAPHIC ANTI-COUNTERFEITING STAINED PAPER	
P32917	CN	212219769	25/12/2020	XU HUAMIN	CN	08/01/2020	CN2020000031770	CN212219769U	HOLOGRAPHIC ANTI-COUNTERFEITING HOT STAMPING FILM WITH DOUBLE IMAGES	
P32930	CN	112215738	12/01/2021	EAST CHINA JIAOTONG UNIVERSITY	CN	14/09/2020	CN2020000959482	CN112215738	TWO-DIMENSIONAL CODE-BASED TAMPER-PROOF DIGITAL WATERMARK METHOD	
P32931	CN	112211035	12/01/2021	SVG TECHNOLOGY - SVG YANCHENG OPTRONICS - ZHEJIANG MINONG	CN	10/07/2019	CN2019000619874	CN112211035	MANUFACTURING METHOD OF HIGH-REGISTRATION-PRECISION PACKAGING PAPER	
P32938	CN	112185237	05/01/2021	WUHAN HUAGONG IMAGE TECHNOLOGY & DEVELOPMENT	CN	28/10/2020	CN2020001168974	CN112185237	ENCRYPTED DIGITAL IDENTIFIER AND PREPARATION METHOD THEREOF	
P32950	CN	112130439	25/12/2020	BEIJING UNIVERSITY OF TECHNOLOGY	CN	25/09/2020	CN2020001019615	CN112130439	VARIABLE ANTI-COUNTERFEITING COMPUTER HOLOGRAM PREPARED BASED ON FEMTOSECOND LASER	

VARIOUS OPTICAL EFFECTS - 18 PATENTS

REFERENCE	COUNTRY	PATENT NUMBER	PUBLICATION DATE Day-Month-Year	APPLICANT	PRIORITY	PRIORITY DATE Day-Month-Year	PRIORITY NUMBER	EQUIVALENTS	TITLE	KEY WORDS
P32830	WO	2020262679	30/12/2020	TOPPAN PRINTING	JP	27/06/2019	JP2019000120103	WO2020262679 JP2021005049 JP2021005843	WAVELENGTH SELECTION FILTER, DISPLAY BODY, OPTICAL DEVICE, AND METHOD FOR MANUFACTURING WAVELENGTH SELECTION FILTER	
P32831	WO	2020261923	30/12/2020	ZEON	JP	26/06/2019	JP2019000119065	WO2020261923	DISPLAY MEDIUM, AUTHENTICITY DETERMINATION METHOD, AND ARTICLE INCLUDING DISPLAY MEDIUM	
P32832	WO	2020257935	30/12/2020	BANK OF CANADA - GOVERNING COUNCIL OF THE UNIVERSITY OF TORONTO	US	26/06/2019	US2019062866693	WO2020257935	DIFFRACTIVE STRUCTURES WITHIN POLYMER SUBSTRATES, THEIR MANUFACTURE AND USE	
P32834	WO	202109498	21/01/2021	DE LA RUE INTERNATIONAL	GB	12/07/2019	GB2019000010042	WO202109498 GB201910042 GB2585703	SECURITY DEVICES AND METHODS OF MANUFACTURE	
P32835	WO	202109497	21/01/2021	DE LA RUE INTERNATIONAL	GB	12/07/2019	GB2019000010041	WO202109497 GB201910041	SECURITY DEVICES AND METHODS OF MANUFACTURE THEREOF	Microlens
P32846	US	20210018834	21/01/2021	AGENCY FOR SCIENCE TECHNOLOGY & RESEARCH ASTAR	SG	17/04/2014	SG2014001001610	US20210018834	PROCESS FOR PLASMONIC-BASED HIGH RESOLUTION COLOR PRINTING	Plasmonic
P32854	KR	20200144671	30/12/2020	KOREA ELECTRONICS TECHNOLOGY INSTITUTE - KOREA SECURITY PRINTING & MINTING	KR	19/06/2019	KR2019000072626	KR20200144671	SECURITY ELEMENT USING MICROCAPSULES	
P32862	JP	2021005104	14/01/2021	DAI NIPPON PRINTING	JP	24/09/2020	JP2020000160015	JP2021005104	OPTICAL ELEMENT, PRINTED MATERIAL, AND ANTI-COUNTERFEITING MEDIUM	Microlens
P32863	JP	2021005102	14/01/2021	TOPPAN PRINTING	JP	17/09/2020	JP2020000156524	JP2021005102	DISPLAY BODY AND METHOD FOR MANUFACTURING DISPLAY BODY	

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VARIOUS OPTICAL EFFECTS - 18 PATENTS (continuation)

REFERENCE	COUNTRY	PATENT NUMBER	PUBLICATION DATE Day-Month-Year	APPLICANT	PRIORITY	PRIORITY DATE Day-Month-Year	PRIORITY NUMBER	EQUIVALENTS	TITLE	KEY WORDS
P32867	JP	2021003860	14/01/2021	NATIONAL PRINTING BUREAU	JP	27/06/2019	JP2019000119634	JP2021003860	LATENT IMAGE PRINTED MATERIAL	Microlens
P32879	EP	3763541	13/01/2021	POLSKA WYTWÓRNA PAPIERÓW WARTOSCIOWYCH SPÓŁKA AKCYJNA	PL	10/07/2019	PL2019000430543	EP3763541	DATA CARRIER AND A METHOD OF PRODUCTION OF THE DATA CARRIER	
P32883	EP	3760450	06/01/2021	HUECK FOLIEN	EP	03/07/2019	EP2019000184053	WO202101475 EP3760450	SECURITY ELEMENT FOR A VALUABLE DOCUMENT	
P32895	CN	212373051	19/01/2021	ZHEJIANG YUSHI PACKAGE MATERIAL	CN	22/05/2020	CN2020000886890	CN212373051U	NOVEL MULTIPLE ANTI-FAKE GOLD STAMPING FILM	Thermochromy - antibacterial
P32896	CN	212373011	19/01/2021	ZHEJIANG YUSHI PACKAGE MATERIAL	CN	22/05/2020	CN2020000883770	CN212373011U	NOVEL COLD STAMPING ELECTROCHEMICAL ALUMINUM SPECIAL FOR CIGARETTE PACKET	
P32922	CN	112233536	15/01/2021	SHENZHEN YUTONG PACKAGING SCIENCE & TECHNOLOGY	CN	02/11/2020	CN2020001212948	CN112233536	ANTI-COUNTERFEIT LABEL AND PRODUCTION METHOD THEREOF	Microlens
P32943	CN	112173425	05/01/2021	GUANGDONG EKO FILM MANUFACTURE	CN	22/09/2020	CN2020001001718	CN112173425	ANTI-COUNTERFEITING LASER FILM	
P32946	CN	112170145	05/01/2021	ZHEJIANG DAOMING NEW MATERIAL	CN	28/10/2020	CN2020001170471	CN112170145	ALUMINUM-BASED ANTI-COUNTERFEITING RELEASE FILM	
P32951	CN	112126322	25/12/2020	SUZHOU HONGQI MATERIAL TECHNOLOGY	CN	27/08/2020	CN2020000875739	CN112126322	PREPARATION METHOD OF RESPONSIVE STRUCTURAL COLOR OPTICAL VARIABLE ANTI-COUNTERFEITING COATING	

NON SECURITY HOLOGRAMS - 55 PATENTS

REFERENCE	COUNTRY	PATENT NUMBER	PUBLICATION DATE Day-Month-Year	APPLICANT	PRIORITY	PRIORITY DATE Day-Month-Year	PRIORITY NUMBER	EQUIVALENTS	TITLE	KEY WORDS
N7485	WO	202106012	14/01/2021	SONY	JP	08/07/2019	JP2019000126976	WO202106012	PHOTOSENSITIVE COMPOSITION AND A HOLOGRAM STORAGE MEDIUM USING SAME, HOLOGRAM OPTICAL ELEMENT, AND HOLOGRAM DIFFRACTION GRATING FORMING METHOD	
N7486	WO	202106011	14/01/2021	SONY	JP	08/07/2019	JP2019000126973	WO202106011	COMPOUND, POLYMER, ORGANIC MATERIAL, AND OPTICAL DEVICE, OPTICAL COMPONENT, AND IMAGE DISPLAY DEVICE ALL INCLUDING SAID ORGANIC MATERIAL	
N7487	WO	202105287	14/01/2021	CEA - COMMISSARIAT A L ENERGIE ATOMIQUE & AUX ENERGIES ALTERNATIVES	FR	05/07/2019	FR2019000007551	WO202105287 FR3098311	MATRIX-ARRAY OPTICAL COMPONENT FOR FOCUSING AN INCIDENT LIGHT BEAM ON A SERIES OF POINTS	
N7488	WO	202104797	14/01/2021	FONDATION B COM - ORANGE	FR	05/07/2019	FR2019000007555	WO202104797 FR3098367	METHOD AND DEVICE FOR CODING A DIGITAL HOLOGRAM SEQUENCE	
N7489	WO	202103380	07/01/2021	CELLOPTIC	US	03/07/2019	US2019062870364	WO202103380	CALIBRATION-FREE PHASE SHIFTING PROCEDURE FOR SELF-INTERFERENCE HOLOGRAPHY	
N7490	WO	202102648	07/01/2021	LG CHEM	KR	02/07/2019	KR2019000079367	WO202102648 KR20210003510	PHOTOPOLYMER COMPOSITION	
N7491	US	20210021792	21/01/2021	HYUNDAI MOBIS	KR	16/07/2019	KR2019000085942	US20210021792 DE102020118552 CN112243115	METHOD AND APPARATUS FOR COMPENSATING FOR COLOR SEPARATION OF IMAGE IN A LASER PROJECTOR-BASED HOLOGRAPHIC HEAD-UP 3 DISPLAY	
N7492	US	20210017150	21/01/2021	FACEBOOK TECHNOLOGIES	US	17/12/2018	US2018016222900	US20210017150	HOLOGRAPHIC IN-FIELD ILLUMINATOR	
N7493	US	20210005122	07/01/2021	KIRAKOSIAN ARMEN	US	01/07/2019	US2019016459246	US20210005122	KEYFOB ACTIVATED AUTOMOBILE HOLOGRAPHIC	
N7494	US	20210003968	07/01/2021	MIT - MASSACHUSETTS INSTITUTE OF TECHNOLOGY	US	11/08/2007	US2007011837517	US20210003968	TRANSPARENT FLAT-PANEL HOLOGRAPHIC DISPLAY	
N7495	US	20210003967	07/01/2021	SAMSUNG ELECTRONICS	KR	03/07/2019	KR2019000080316	US20210003967 KR20210004232	METHOD AND APPARATUS FOR PROCESSING HOLOGRAPHIC IMAGE	

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N7496	US	20210003763	07/01/2021	HITACHI LG DATA STORAGE - HITACHI MEDIA ELECTRONICS	JP	04/07/2019	JP2019000125130	US20210003763 CN112180595	LIGHT-GUIDING PLATE, AND HOLOGRAM RECORDING DEVICE AND HOLOGRAM RECORDING METHOD USED FOR THE SAME	
N7497	US	20200409307	31/12/2020	ELECTRONICS & TELECOMMUNICATIONS RESEARCH INSTITUTE	KR	26/06/2019	KR2019000076595	US20200409307 KR20210001974	DIGITAL HOLOGRAM DISPLAY APPARATUS AND DISPLAYING METHOD OF DIGITAL HOLOGRAPHIC IMAGE	
N7498	US	20200409153	31/12/2020	VEYEZER	US	26/02/2018	US2018015904995	US20200409153	HOLOGRAPHIC REAL SPACE REFRACTIVE SYSTEM	
N7499	TH	20180004455	25/11/2019	NATIONAL SCIENCE & TECHNOLOGY DEVELOPMENT AGENCY	TH	26/07/2018	TH2018001004455	TH20180004455	HOLOGRAPHIC DISPLAY SYSTEM WITH LIGHT ATTENUATION FROM THE IMAGE SOURCE.	
N7500	TH	20170005185	27/07/2020	INABA MINOR	TH	10/03/2015	TH2017001005185	TH20170005185	HOLOGRAM VIEWER AND / OR HOLOGRAM BOX	
N7501	RU	201526	21/12/2020	MIKHAILOVNA KIRPICHNIKOVA IRINA - ANATOLEVICH SIROTKIN EVGENII	RU	30/09/2020	RU2020000132145	RU-201526	GHOST-BASED HOLOGRAPHIC FILM	
N7502	KR	20210004732	13/01/2021	YUN, YEO PYO	KR	05/07/2019	KR2019000081590	KR20210004732	PRODUCT INFORMATION PROVIDING APPARATUS USING HOLOGRAM	
N7503	KR	20210000005	04/01/2021	LEE, JUNG-YONG	KR	24/06/2019	KR2019000002641	KR20210000005U	PROJECTOR WITH HOLOGRAPHIC SCREEN	
N7504	KR	20200143074	23/12/2020	KOREA ELECTRONICS TECHNOLOGY INSTITUTE	KR	14/06/2019	KR2019000070918	KR20200143074	APPARATUS AND METHOD FOR PROVIDING HOLOGRAPHIC CONTENT IN A MOTOR VEHICLE	
N7505	KR	20200142736	23/12/2020	KOREA ELECTRONICS & TELECOMMUNICATIONS RESEARCH INSTITUTE	KR	13/06/2019	KR2019000069949	KR20200142736	HOLOGRAPHIC CONTENT GENERATING APPARATUS, HOLOGRAPHIC DATA DISPLAY SYSTEM HAVING THE SAME, AND METHOD OF OPERATING THE SAME	
N7506	IN	201911022734	11/12/2020	MAX SPECIALITY FILMS	IN	07/06/2019	IN2019011022734	IN201911022734	TRANSPARENT BIAXIALLY ORIENTED POLYPROPYLENE FILM FOR DIRECT SOFT EMBOSSING/HOLOGRAPHY APPLICATIONS	
N7507	DE	102019119367	21/01/2021	PORSCHE	DE	17/07/2019	DE201910119367	DE102019119367	LAMINATED GLASS FRONT PANEL FOR A MOTOR VEHICLE	
N7508	CN	212379718	19/01/2021	TIANJIN JURUIDA POWER EQUIPMENT TECHNOLOGY	CN	24/06/2020	CN2020001204351	CN212379718U	HOLOGRAPHIC 3D PROJECTION SYSTEM AND INTELLIGENT CLASSIFICATION DUSTBIN THEREOF	
N7509	CN	212364739	15/01/2021	YUE YUFEI	CN	02/09/2020	CN2020001881180	CN212364739U	HOLOGRAPHIC IMAGE DISPLAY SYSTEM	
N7510	CN	212331282	12/01/2021	SHENZHEN HENGRUNDA OPTOELECTRONICS SCREEN PRINTING TECHNOLOGY	CN	29/04/2020	CN2020000687887	CN212331282U	MOLDING PRESS MECHANISM OF LASER HOLOGRAPHIC FILM PRESSING MACHINE	
N7511	CN	212319983	08/01/2021	JIANGSU WENZHAN DESIGN CONSTRUCTION	CN	29/02/2020	CN2020000236286	CN212319983U	TAKE ILLUSION HUMIDIFIER OF 3D HOLOGRAPHIC PROJECTION	
N7512	CN	212302948	05/01/2021	BEIJING QUANTUM DISPLAY TECHNOLOGY	CN	28/06/2020	CN2020001221606	CN212302948U	BORE HOLE 3D LED HOLOGRAPHIC DEVICE	
N7513	CN	212302103	05/01/2021	BEIJING KANGTEMAN ELECTRONIC SYSTEMS - TIANJIN YANGGUANG TECHNOLOGY	CN	17/09/2020	CN2020002040724	CN212302103U	TRANSMISSION-TYPE HEAD-UP DISPLAY BASED ON VOLUME HOLOGRAPHIC DIFFRACTION OPTICS	
N7514	CN	212298281	05/01/2021	SHENZHEN MOXIU CULTURE TECHNOLOGY	CN	12/06/2020	CN2020001084233	CN212298281U	ROTATIONALLY ADJUSTABLE HOLOGRAPHIC PROJECTION DEVICE	
N7515	CN	212276782	01/01/2021	GUO SHENGWEN	CN	23/08/2020	CN2020001769769	CN212276782U	MEDIUM-FREE HOLOGRAPHIC IMAGING AI USER TERMINAL	
N7516	CN	212276200	01/01/2021	DREAMWORLD TECHNOLOGY ZHUHAI	CN	10/04/2020	CN2020000518340	CN212276200U	FULL-COLOR HOLOGRAPHIC OPTICAL DEVICE	
N7517	CN	212276121	01/01/2021	EYEPOL POLARIZING TECHNOLOGY	CN	11/06/2020	CN2020001069641	CN212276121U	LENS STRUCTURE FOR DISPLAYING THREE-DIMENSIONAL VISUAL FIELD OF ELECTRONIC SCREEN BASED ON POLARIZATION HOLOGRAPHY	

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N7518	CN	212271707	01/01/2021	SUZHOU WEIKA HUANJING INTELLIGENT TECHNOLOGY	CN	13/03/2020	CN2020000318667	CN212271707U	IMAGE DISPLAY STAND AND HOLOGRAPHIC INTERACTIVE DISPLAY STAND	
N7519	CN	212267345	01/01/2021	DREAMWORLD TECHNOLOGY ZHUHAI	CN	07/04/2020	CN2020000487798	CN212267345U	VEHICLE-MOUNTED HEAD-UP DISPLAY BASED ON HOLOGRAPHIC OPTICAL FILM	
N7520	CN	212230030	25/12/2020	ZHEJIANG CHINESE MEDICAL UNIVERSITY	CN	02/07/2020	CN2020001290445	CN212230030U	HOLOGRAPHIC PROJECTION DEVICE FOR CHINESE MEDICINE CULTURE PROPAGATION	
N7521	CN	212229431	25/12/2020	QUANZHOU HUAMAO OPTO ELECTRONICS	CN	21/07/2020	CN2020001440163	CN212229431U	HOLOGRAPHIC PROJECTOR	
N7522	CN	212219623	25/12/2020	WENZHOUS KELEI LASER SCIENCE & TECHNOLOGY	CN	10/04/2020	CN2020000521871	CN212219623U	NANO HOLOGRAPHIC FILM MOULD PRESS	
N7523	CN	112233702	15/01/2021	NORTHEAST NORMAL UNIVERSITY	CN	26/10/2020	CN2020001153886	CN112233702	PREPARATION METHOD AND APPLICATION OF HYDROGEL-MODIFIED HIGH-STABILITY CARBON-BASED HOLOGRAPHIC OPTICAL DISK	
N7524	CN	112230501	15/01/2021	GUANGZHOU CHUANGYING TECHNOLOGY	CN	20/10/2020	CN2020001127785	CN112230501	360-DEGREE HOLOGRAPHIC PROJECTION DEVICE	
N7525	CN	112229821	15/01/2021	CHINA UNIVERSITY OF GEOSCIENCES WUHAN	CN	21/10/2020	CN2020001134264	CN112229821	THERMAL FLUID DYNAMICS MEASURING DEVICE AND METHOD BASED ON DIGITAL HOLOGRAPHIC MICROSCOPY	
N7526	CN	112216233	12/01/2021	CHONGQING HANGJING TECHNOLOGY	CN	24/04/2020	CN2020000333969	CN112216233	HOLOGRAPHIC LAMP BOX WITH ELECTRIC CURTAIN AND ELECTRIC DIMMING GLASS	
N7527	CN	112213933	12/01/2021	HEBEI UNIVERSITY OF TECHNOLOGY	CN	03/11/2020	CN2020001208452	CN112213933	INDOOR DESIGN SYSTEM CAPABLE OF REALIZING HOLOGRAPHIC PROJECTION DISPLAY	
N7528	CN	112198778	08/01/2021	UNIVERSITY OF NANKAI	CN	18/10/2020	CN2020001113998	CN112198778	DISPLAY METHOD FOR IMPROVING REFRESH RATE OF HOLOGRAPHIC DISPLAY IMAGE	
N7529	CN	112198576	08/01/2021	CHINA JILIANG UNIVERSITY	CN	12/10/2020	CN2020001084414	CN112198576	ULTRAVIOLET EXPOSURE METHOD OF VOLUME HOLOGRAPHIC BRAGG REFLECTOR	
N7530	CN	112198575	08/01/2021	CHINA JILIANG UNIVERSITY	CN	12/10/2020	CN2020001084412	CN112198575	PREPARATION METHOD OF TRANSVERSE CHIRP VOLUME HOLOGRAPHIC BRAGG GRATING	
N7531	CN	112197151	08/01/2021	GUANGZHOU RUIYIN TECHNOLOGY	CN	19/10/2020	CN2020001117584	CN112197151	HANGING MOVABLE MULTIMEDIA TEACHING HOLOGRAPHIC PROJECTION MECHANISM	
N7532	CN	112185276	05/01/2021	NANJING INTELLIGENT SIMULATION TECHNIQUE INSTITUTE	CN	20/10/2020	CN2020001121952	CN112185276	HOLOGRAPHIC FAN ADVERTISEMENT DISPLAY SCREEN OF DEVELOPMENTS HIGH DEFINITION	
N7533	CN	112180707	05/01/2021	SICHUAN UNIVERSITY	CN	28/09/2020	CN2020001037653	CN112180707	SPHERICAL PURE PHASE HOLOGRAM GENERATION METHOD BASED ON SPHERICAL SELF-DIFFRACTION MODEL	
N7534	CN	112180594	05/01/2021	HANGZHOU HIKVISION DIGITAL TECHNOLOGY	CN	04/07/2019	CN2019000598949	CN112180594	HOLOGRAPHIC WAVEGUIDE DISPLAY DEVICE	
N7535	CN	112162474	01/01/2021	CHANGZHOU INSTITUTE OF TECHNOLOGY	CN	07/09/2020	CN2020000927187	CN112162474	COMPACT NEAR-TO-EYE AUGMENTED REALITY HOLOGRAPHIC THREE-DIMENSIONAL DISPLAY DEVICE	
N7536	CN	112138415	29/12/2020	3D NEW CULTURE	CN	20/10/2020	CN2020001124884	CN112138415	HOLOGRAPHIC INTERACTIVE TALK SHOW THEATER	
N7537	CN	112133231	25/12/2020	GUANGZHOU ZHONGZHI EDUCATIONAL COUNSELING	CN	21/10/2020	CN2020001130661	CN112133231	CULTURE PROPAGATION EXHIBITION 3D HOLOGRAPHIC PROJECTION EQUIPMENT FOR SHOW CONVENIENT TO REMOVE	
N7538	CN	112131275	25/12/2020	INSTITUTE OF SMART CITY UNIVERSITY OF SCIENCE & TECHNOLOGY OF CHINA WUHU	CN	23/09/2020	CN2020001008544	CN112131275	ENTERPRISE PORTRAIT CONSTRUCTION METHOD OF HOLOGRAPHIC CITY BIG DATA MODEL AND KNOWLEDGE GRAPH	
N7539	CN	112130306	25/12/2020	ZHEJIANG UNIVERSITY	CN	17/09/2020	CN2020000982332	CN112130306	CMOS HOLOGRAPHIC MICROSCOPIC IMAGING DEVICE AND METHOD APPLIED TO CELL SEGMENTATION	