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WO2021240488 (A1) — 2021-12-02

COMPOSITIONS AND METHODS FOR TREATING NEOVASCULARIZATION AND ISCHEMIC RETINOPATHIES BY TARGETING ANGIOGENESIS AND CHOLESTEROL TRANSPORT

Embodiments of the disclosure include methods and compositions for the treatment of neovascularization- and ischemic retinopathy-related disorders. In some embodiments, a composition comprising an effective amount of an apoA-I binding protein or its agonist in combination with anti-VEGF reagents is administered to an individual in need thereof to treat, prevent, reverse, and/or ameliorate conditions associated with macular degeneration or cancer. In some embodiments, a composition comprising an effective amount of an AIBP-inhibitor is administered to an individual in need thereof to stimulate revascularization in the eye to treat, prevent, reverse, and/or ameliorate conditions associated with ischemic retinopathies.

WO2021242788 (A1) — 2021-12-02

METHODS AND COMPOSITIONS FOR TREATING RETINAL DISEASES AND CONDITIONS

Provided herein are methods, compositions of matter, and devices for treating diseases and illnesses of the eye, including retinal conditions such as macular degeneration.

AU2020321023 (A1) — 2021-12-02

OPHTHALMOLOGIC TESTING SYSTEMS AND METHODS

A modular, headset for performing ophthalmic tests on a patient comprises a removable optical module that can be replaced based on ophthalmic testing need. A miniaturized fundus camera is provided and can be movably mounted within the headset, including to the optical module. The fundus camera position can be automatically adjusted to align the camera with a headset wearer's eye. Software controls image capture and captured images are combined assembled and combined to provide a wide field retinal image. The optical module can have replaceable sub-components allowing configuration for different ophthalmic tests, such as visual field testing and optical coherence tomography.

AU2020268978 (A1) — 2021-12-02

METHOD FOR DESIGNING EDGE-TO-EDGE PHOTOCHROMIC SOFT CONTACT LENSES

The disclosure is related to a new soft contact lens with edge-to-edge photochromic material where geometry of the optical region and the peripheral region of the lens are optimized to give the best cosmetic effect on eye. The vision correction component and the mechanical component of that soft contact lens are designed independently from each other. The design of each component, vision and mechanical, is achieved by the mean of using diffractive optics.

AU2020273154 (A1) — 2021-12-02

PLASMA KALLIKREIN INHIBITORS AND METHODS OF USE THEREOF IN OCULAR DISORDERS

This disclosure is generally in the field of ophthalmic therapies, and more particularly to the treatment of various ocular diseases and conditions by non-surgical administration to the eye of a subject of a drug composition described herein containing a plasma kallikrein inhibitor. Plasma kallikrein inhibitors include avoralstat. The compositions and methods include delivery of a plasma kallikrein inhibitor to the suprachoroidal space (SCS) of the eye.

AU2020270386 (A1) — 2021-12-02

CLOUD BASED SYSTEM CATARACT TREATMENT DATABASE AND ALGORITHM SYSTEM

Systems, devices and methods are provided that provide assistance in selecting appropriate interventions for treatment of disease and injury to the eye. Systems of the inventive concept provide cloud-based processing and storage of clinical and patient-specific data, which can provide treatment recommendations and projected outcomes to a practitioner using a local device. Systems, devices, and methods can generate interactive physiomechanical models of the eye of a specified individual, which are derived measurements of mechanical properties of structures of the eye. The physiomechanical model is interactive, and can be used to emulate the effects of one or more medical interventions in the eye in order to implement an optimized treatment plan for the individual.

WO2021233097 (A1) — 2021-11-25

FABRICATION METHOD FOR LENS GRATING

A fabrication method for a lens grating (100), comprising: providing a substrate (101), the substrate (101) being provided with at least one light-shielding structure (103); and forming at least two lenses (102) on the substrate (101), so that a boundary area of adjacent lenses (102) among the at least two lenses (102) correspond to at least one light-shielding structure (103). The at least one light-shielding structure (103) formed on the substrate (101) of the lens grating (100) is used to block light directed to the lens grating (100), so as to solve the problem of the lens grating (100) in which a light projection position of a sub-pixel is wrong as a result of an irregular cross-sectional structure formed in the boundary area between adjacent lenses (102). By solving the problem, the crosstalk between left and right eye images by be reduced or eliminated.

WO2021232550 (A1) — 2021-11-25

HIGH-PRECISION MEIBOMIAN GLAND DIAGNOSIS AND TREATMENT INSTRUMENT

Disclosed in the present invention is a high-precision meibomian gland diagnosis and treatment instrument, comprising a film unit that can extend to the inside of an eyelid and be attached to the surface of a cornea. The film unit at least comprises an ultrasonic light-transmitting layer located on the side close to the eyelid, a light barrier layer located on the side close to the cornea, and a light guide and heat insulation layer located between the ultrasonic light-transmitting layer and the light barrier layer; moreover, multiple filling grooves are provided in the light guide and heat insulation layer, all the filling grooves are provided with filling mediums that can convert ultrasound into heat energy, and the heat energy released by the filling mediums can only be transferred to the inner surface of the eyelid by means of the ultrasonic light-transmitting layer. The high-precision meibomian gland diagnosis and treatment instrument further comprises an ultrasonic main unit used for generating ultrasound, and the ultrasonic main unit comprises an ultrasonic probe that can be attached to the outer surface of the eyelid; the light barrier layer can block ultrasound. The present invention has the following advantages and effects: being accurately aligned with the position of an eyelid of a patient for treatment, being more targeted, and having no adverse effect generated in use.

WO2021232096 (A1) — 2021-11-25

METHODS AND APPARATUS TO MANAGE MEIBOMIAN GLAND DEFICIENCIES

A plurality of methods and apparatus for managing deficiencies of the meibomian gland lipid production and delivery, including wearable fabrics configured with a matrix of micro- and nano- electromechanical materials, or composite fibers of yarn that are substantially made from carbon nanotubes, graphene, spider silk, natural silk, denim, cotton, metals, or combination thereof. Other methods and apparatus include infrared and ultrasound energy sources within a kit aimed at personalised therapies for improving overall health of the eyelids, while providing for adjunctive relief for associated dry eye symptoms. The management kit may comprise a wearable fabric or spectacle frame configured with infrared emitters and sensors, a handheld imaging device and software containing dosage and administration information coupled with information on improving eyelid hygiene which is reviewed and periodically updated using user-specific information.

WO2021235814 (A1) — 2021-11-25

DEVICE FOR DIAGNOSING AND TREATING OCULAR DEVIATION

The present invention provides a device for diagnosing and treating ocular deviation, comprising: an eye mask which is worn by an examinee, and in which an eye movement capturing means for capturing the eye movement of the examinee is provided; a temperature-regulating pipe which is inserted into the ear of the examinee and which increases or decreases the temperature inside the ear of the examinee; a heat source supply part for supplying a heat source to the temperature-regulating pipe from the outside in order to increase and decrease the temperature of the temperature-regulating pipe; a fixing main body which is worn by the examinee, and which has a mounting hole, in which the temperature-regulating pipe is mounted, in order to fix the temperature-regulating pipe inserted into the ear of the examinee; and a control part, which is connected to the eye movement capturing means and the heat source supply part, receives an image of the eye captured by the eye movement capturing means, and extracts center coordinates from the transmitted image of the eye to compare same with the center coordinates of the eye inputted in advance, and then operates the heat source supply part to control the temperature of the temperature-regulating pipe in order to move the eye to the center coordinates of the eye inputted in advance.