

Title (en)
CLOSED MICROFLUIDIC NETWORK FOR STRAIN SENSING EMBEDDED IN A CONTACT LENS TO MONITOR INTRAOCULAR PRESSURE

Title (de)
IN EINE KONTAKTLINSE EINGEBETTETES GESCHLOSSENES MIKROFLUIDISCHES BELASTUNGSMESSUNGSNETZWERK ZUR
ÜBERWACHUNG DES AUGENINNENDRUCKS

Title (fr)
RÉSEAU MICROFLUIDIQUE FERMÉ POUR LA DÉTECTION DE CONTRAINTE INTÉGRÉ DANS UNE LENTILLE DE CONTACT POUR
SURVEILLER LA PRESSION INTRAOCULAIRE

Publication
EP 3852607 A1 20210728 (EN)

Application
EP 18934447 A 20180920

Priority
US 2018052062 W 20180920

Abstract (en)
[origin: WO2020060558A1] A microfluidic strain sensing device for monitoring intraocular pressure. The device has a contact lens and a closed microfluidic network embedded with the contact lens. The network has a volume that is sensitive to an applied strain. The network distinguishes: (i) a gas reservoir containing a gas, (ii) a liquid reservoir containing a liquid that changes volume when the strain is applied, and (iii) a sensing channel able to hold the liquid within the sensing channel. The sensing channel connects the gas reservoir on one end and connects the liquid reservoir on another end. The sensing channel establishes a liquid-gas equilibrium pressure interface and equilibrium within the sensing channel, which would fluidically change as a response to radius of curvature variations on a cornea, or as a response to mechanical stretching and release of the cornea. The liquid-gas equilibrium pressure interface and equilibrium are used for measuring the intraocular pressure.

IPC 8 full level
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