



US009254085B2

(12) **United States Patent**
Wang et al.

(10) **Patent No.:** **US 9,254,085 B2**
(45) **Date of Patent:** **Feb. 9, 2016**

(54) **SYSTEM AND METHOD FOR MONITORING CHANGE OF INTRAOCULAR PRESSURE AND CONTACT LENS FOR SENSING CHANGE OF INTRAOCULAR PRESSURE**

(58) **Field of Classification Search**
CPC A61B 3/10; A61B 3/14; A61B 3/16; A61B 3/107; A61B 3/125; A61B 5/14532
See application file for complete search history.

(71) Applicant: **National Taiwan University**, Taipei (TW)

(56) **References Cited**

(72) Inventors: **Lon Wang**, Taipei (TW); **Pin-Chung Lin**, Taipei (TW); **I-Jong Wang**, Taipei (TW)

U.S. PATENT DOCUMENTS

(73) Assignee: **NATIONAL TAIWAN UNIVERSITY**, Taipei (TW)

6,544,193	B2 *	4/2003	Abreu	600/558
6,554,425	B1 *	4/2003	Roffman et al.	351/159.74
6,749,568	B2 *	6/2004	Fleischman et al.	600/399
7,137,952	B2 *	11/2006	Leonardi et al.	600/398
7,594,729	B2 *	9/2009	Van Heugten	351/221
8,870,371	B2 *	10/2014	Ando et al.	351/159.31
8,899,753	B2 *	12/2014	Steinmueller	351/221
8,960,898	B1 *	2/2015	Etzkorn et al.	351/159.03
8,989,834	B2 *	3/2015	Ho et al.	600/381

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 298 days.

* cited by examiner

(21) Appl. No.: **13/837,362**

Primary Examiner — Max Hindenburg

(22) Filed: **Mar. 15, 2013**

(74) *Attorney, Agent, or Firm* — Muncy, Geissler, Olds & Lowe, P.C.

(65) **Prior Publication Data**
US 2014/0163351 A1 Jun. 12, 2014

(57) **ABSTRACT**

(30) **Foreign Application Priority Data**
Dec. 12, 2012 (TW) 101147040 A

A system and a method for monitoring change of intraocular pressure and a contact lens for sensing change of intraocular pressure are provided. The contact lens includes a first material layer and a first pattern. The center of the first material layer has an optical region, and the optical region corresponds to a cornea region of an eyeball. The first pattern is formed on the optical region. Furthermore, the contact lens may further include a second material layer and a second pattern. The second material layer is located on the first material layer. The second pattern is formed on the second material layer and overlaps with the first pattern to form a moire pattern.

(51) **Int. Cl.**
A61B 5/00 (2006.01)
A61B 3/16 (2006.01)
A61B 3/107 (2006.01)

18 Claims, 19 Drawing Sheets

(52) **U.S. Cl.**
CPC .. *A61B 3/16* (2013.01); *A61B 3/107* (2013.01)

