



US009393154B2

(12) **United States Patent**
Myers

(10) **Patent No.:** **US 9,393,154 B2**
(45) **Date of Patent:** **Jul. 19, 2016**

(54) **LASER METHODS FOR CREATING AN ANTIOXIDANT SINK IN THE CRYSTALLINE LENS FOR THE MAINTENANCE OF EYE HEALTH AND PHYSIOLOGY AND SLOWING PRESBYOPIA DEVELOPMENT**

USPC 606/1-19; 607/88-94; 128/898
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,971,382 A	7/1976	Krasnov
3,982,541 A	9/1976	L'Esperance
4,024,852 A	5/1977	L'Esperance et al.
4,263,893 A	4/1981	Paviak et al.
4,381,007 A	4/1983	Doss
4,394,144 A	7/1983	Aoki
4,461,294 A	7/1984	Baron
4,477,159 A	10/1984	Mizuno et al.
4,502,816 A	3/1985	Creter et al.

(Continued)

FOREIGN PATENT DOCUMENTS

WO 2005070358 A1 1/2005

OTHER PUBLICATIONS

Qian, Wen, et al., "3 Year Simvastatin Treatment and Lens Nuclear Back Scattering," J. Ophthalmol, vol. 84, 2000, pp. 512-516.

(Continued)

Primary Examiner — Lynsey Crandall

Assistant Examiner — Sebastian X Lukjan

(74) *Attorney, Agent, or Firm* — Lewis Rice LLP

(57) **ABSTRACT**

Systems and methods of laser treatment of the intact crystalline lens to increase ionic transport of antioxidants in specific areas where flexural changes and transparency reduction come from lens aging. Microchannels created in patterns and grids placed strategically in the inner lens carry antioxidants from the source—the anterior and the epithelium—into areas scarce or void of transport mechanisms (and thus scarce of antioxidants). A variety of patterns are utilized to facilitate ions traveling along new pathways.

12 Claims, 12 Drawing Sheets

(71) Applicant: **Raymond I Myers**, Collinsville, IL (US)

(72) Inventor: **Raymond I Myers**, Collinsville, IL (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 259 days.

(21) Appl. No.: **13/790,968**

(22) Filed: **Mar. 8, 2013**

(65) **Prior Publication Data**

US 2014/0121652 A1 May 1, 2014

Related U.S. Application Data

(63) Continuation-in-part of application No. 13/633,154, filed on Oct. 29, 2012, now abandoned.

(60) Provisional application No. 61/552,933, filed on Oct. 28, 2011.

(51) **Int. Cl.**

A61B 18/18 (2006.01)

A61F 9/008 (2006.01)

(52) **U.S. Cl.**

CPC **A61F 9/008** (2013.01); **A61F 9/00802** (2013.01); **A61F 2009/0087** (2013.01); **A61F 2009/00861** (2013.01); **A61F 2009/00887** (2013.01); **A61F 2009/00891** (2013.01); **A61F 2009/00895** (2013.01)

(58) **Field of Classification Search**

CPC A61F 9/008; A61F 9/00802; A61F 2009/00887; A61F 2009/00861

