

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
9 January 2003 (09.01.2003)

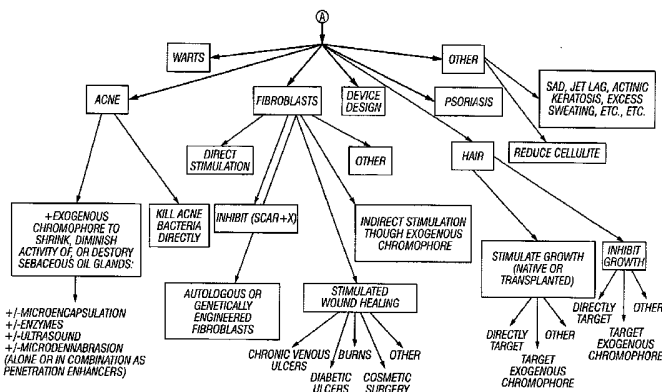
PCT

(10) International Publication Number
WO 03/001984 A3

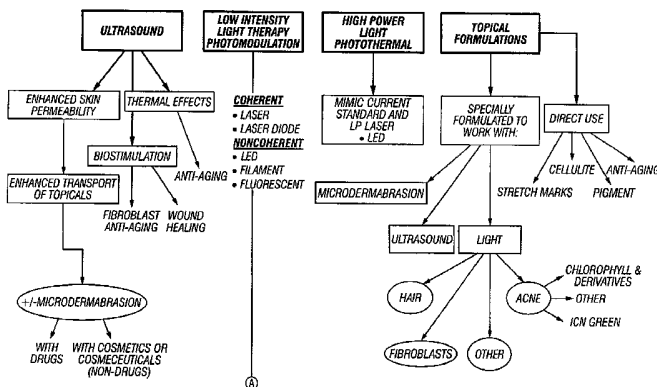
- (51) International Patent Classification⁷: **A61N 5/06**
- (21) International Application Number: PCT/US02/20706
- (22) International Filing Date: 1 July 2002 (01.07.2002)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
09/894,899 29 June 2001 (29.06.2001) US
- (71) Applicant: **LIGHT BIOSCIENCE, INC.** [US/US]; Suite 205, 933 First Colonial Road, Virginia Beach, VA 23454 (US).
- (72) Inventor: **MCDANIEL, David, H.**; 3033 Little Haven Road, Virginia Beach, VA 23452 (US).
- (74) Agents: **JAESCHKE, Wayne, Jr.** et al.; Morrison & Foerster LLP, 1650 Tysons Boulevard, Suite 300, McLean, VA 22102 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR THE PHOTOMODULATION OF LIVING CELLS



(57) Abstract: The present invention relates to a system and method for the photomodulation of living tissue. When photomodulated, living tissue will exhibit bioactivation or bioinhibition according to the present invention and, when using the disclosed sources of narrowband multichromatic radiation can cause significant dermatologic advantages such as hair removal, hair growth stimulation, wrinkle reduction, acne reduction and scar removal, vitiligo, etc. The present invention has application to non-dermatological medical treatments including tumor growth inhibition, cell regeneration, the stimulation of tissue in organs, etc.



WO 03/001984 A3



Published:

— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:

14 August 2003

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US02/20706

A. CLASSIFICATION OF SUBJECT MATTER
 IPC(7) :A61N 5/06
 US CL :607/088
 According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
 Minimum documentation searched (classification system followed by classification symbols)
 U.S. : 607/88, 89, 91; 606/8, 9, 10; 128/898

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

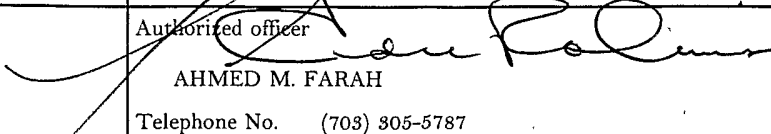
C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 4,930,504 A (Diamantopoulos et al.) 5 June 1990. See claims 1-4; Col. 6, line 31; Col. 9, lines 20-24, 39-47; and Col. 10, lines 9-13.	1-11, 13-26, and 30 ----- 12, 27-29, and 31
Y	US 5,474,528 A (Meserol) 12 December 1995. See the entire document.	12, 27-29, and 31

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E" earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 25 JULY 2002	Date of mailing of the international search report 15 APR 2003
---	--

Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer  AHMED M. FARAH Telephone No. (703) 305-5787
---	--