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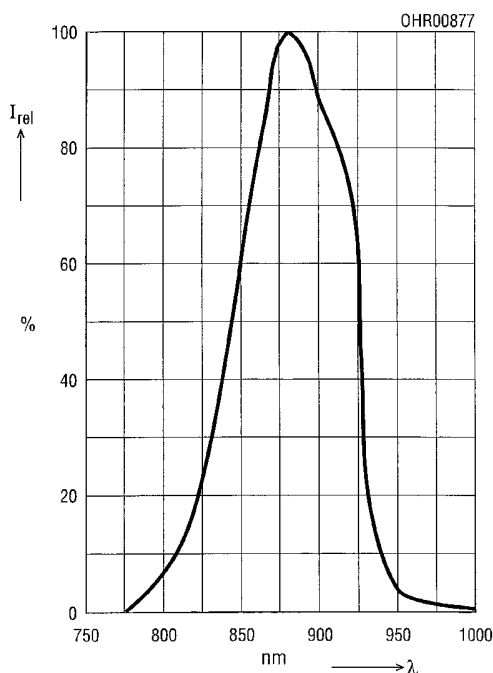
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[Continued on next page]

(54) Title: COSMETIC OR THERAPEUTIC METHODS AND APPARATUS



(57) Abstract: A method of photorejuvenation, wrinkle removal, wound healing and/or pain reduction comprises irradiation with light of a wavelength substantially within the range of 610-680nm, and preferably having a maximum intensity around 630 nm, or substantially within the range of 800-880 nm, and preferably having a maximum intensity around 830 nm. A method of photorejuvenation comprises irradiation with light of a wavelength substantially within the range 550-600 nm and preferably having a maximum intensity around 585 nm. A method of promoting healing of wounds or tissue damage comprises irradiating the affected area with polychromatic radiation substantially within the wavelength range of 405 to 904 nm. Preferably, the radiation has substantial intensity at a wavelength of one or more of 633, 680 or 780 nm, so as to stimulate DNA/RNA synthesis. Preferably, the radiation has substantial intensity at a wavelength of 750 nm so as to promote protein synthesis/ Preferably, the radiation has substantial intensity at 890 nm, so as to cause increased cell proliferation. Preferably, the radiation has substantial intensity at a wavelength of 880 nm, so as to inhibit fibroblast proliferation. Alternatively, the radiation has substantial intensity at 820 nm and/or 870 nm, so as to enhance the release of stimulating factors. A method of treating hypopigmentary skin disorders, such as vitiligo, comprises irradiating a hypopigmented area of a patient's skin with low intensity ultraviolet radiation. Preferably, the low intensity ultraviolet radiation has substantial intensity at a wavelength of at least one of 365, 400-420 and 434nm. Preferably, the radiation also has a substantial intensity at a wavelength of approximately 630nm or 760 nm. The radiation may be provided by an array of discrete light-emitting diodes arranged to emit the light.



GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
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ML, MR, NE, SN, TD, TG).

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB2004/000758

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61N5/06

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)
IPC 7 A61N

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 practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 03/001984 A (LIGHT BIOSCIENCE INC) 9 January 2003 (2003-01-09) page 4, line 14 - page 5, line 24 page 13, line 8 - line 30 page 15, line 1 - line 22 page 16, line 12 - line 15 examples ---	1-16, 34-40
X	US 2003/216795 A1 (HARTH YORAM ET AL) 20 November 2003 (2003-11-20) abstract paragraphs '0002!', '0006!', '0041!', '0057!', '0062!', '0065!', '0127!; claims 7, 13, 15 --- -/--	1-4, 7-16, 34, 37-40

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents:

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *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)
- *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

- *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
- *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
- *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.
- *&* document member of the same patent family

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/212388 A1 (RONN AVIGDOR M) 13 November 2003 (2003-11-13) paragraphs '0015!', '0016!', '0043!'-'0047!; claims paragraph '0020! -----	1-11, 15, 16, 34, 37-40
X	US 6 602 275 B1 (SULLIVAN JANA) 5 August 2003 (2003-08-05) cited in the application abstract column 5, line 48 column 6, line 40 - line 50 -----	1-4, 34-36
X	US 2003/004499 A1 (MCDANIEL DAVID H) 2 January 2003 (2003-01-02) cited in the application paragraph '000A! paragraphs '0011!', '0012!', '0099!', '0103!; figures 13A-16; examples 10, 26, 27 -----	1-16, 34-40

INTERNATIONAL SEARCH REPORT

national application No.
PCT/GB2004/000758

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 17-33, 41-46, 55-82
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☒ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
1-16, 34-40
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-3,7-16

claims 1-3 and claims 7-16 (partially, when depending back on claims 1-3):
method of cosmetic treatment with light having a wavelength within the range 610-680 nm.

2. Claims: 4-16, 7-16

claims 4-6 and 7-16 (partially, when depending back on claims 4-6):
method of cosmetic treatment with light having a wavelength within the range 800-880 nm.

3. Claims: 34-40

claims 34-40:
method of photorejuvenation of the skin with light having a wavelength in the range 560-610 nm.

4. Claims: 47-54

claims 47-54:
light source arranged to emit polychromatic light within the wavelength range of 405 to 904 nm.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB2004/000758

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
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