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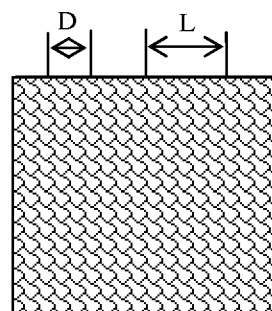
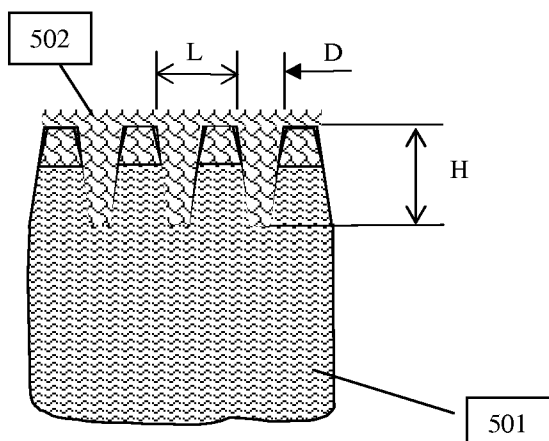
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17 July 2008

(54) Title: A METHOD AND APPARATUS FOR HARD TISSUE TREATMENT AND MODIFICATION



(57) Abstract: A device and method for forming a texture on a surface of a hard material. Spatial patterns, such as an array of microbeams, are delivered to the tissue through the handpiece. The plurality of microbeams illuminate and ablate the hard material simultaneously. Each of the microbeams has of a sufficient fluence and pulse width to ablate the surface of the hard material and form the texture. Alternatively, one microbeam of a sufficient fluence and pulse width to ablate the surface of the hard material and form the texture is scanned over the surface either manually or in an automatic fashion.

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**A. CLASSIFICATION OF SUBJECT MATTER****A61C 19/00(2006.01)1**

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 8 IPC8 A61B, A61C, A61N, B32B

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

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and applications for Utility models since 1975

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

eKIPASS(KIPO internal) "optical radiation" "microtexture" "handpiece"

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                           | Relevant to claim No |
|-----------|--|----------------------|
| A         | US 5,374,266 A ( Kabushiki Kaisha Morita Seisakusho et al ) 20 December 1994<br>see the abstract and claim 1 | 24 - 44              |
| A         | US 5,458,594 A ( Siemens Aktiengesellschaft ) 17 October 1995<br>see the abstract and claim 1                | 24 - 44              |
| A         | US 6,679,837 B2 ( Intlas Ltd ) 20 January 2004<br>see the abstract and Fig 1                                 | 24 - 44              |
| A         | US 5,415,652 A ( Siemens Aktiengesellschaft ) 16 May 1995<br>see the abstract                                | 24 - 44              |

 Further documents are listed in the continuation of Box C See patent family 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 application or patent 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 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

"&amp;" document member of the same patent family

Date of the actual completion of the international search

28 MAY 2008 (28 05 2008)

Date of mailing of the international search report

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**Box No. 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 1-23, 45-53  
because they relate to subject matter not required to be searched by this Authority, namely  
Claim 1-23 and 45-53 pertain to method for treatment of the human or animal body by therapy or diagnostic methods, and thus relate to a subject matter which this International Searching Authority is not required, under Article 17(2)(a)(i) of the PCT and Rule 39 I(iv) of the Regulations under the PCT, to search
- 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 No. 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

- 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
- 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 and, where applicable, the payment of a protest fee
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation
- No protest accompanied the payment of additional search fees

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No

**PCT/US2007/085676**

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
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|  |                  | EP00530574B1            | 05.11.1997       |
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