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**31.10.2007 Bulletin 2007/44**

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**00955472.6 / 1 143 852**

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(54) **Method and apparatus for performing intra-operative angiography**

(57) The device is provided with a laser (1) for exciting the fluorescent imaging agent which emits radiation at a wavelength that causes any of the agent located within the vasculature or tissue of interest (3) irradiated thereby to emit radiation of a particular wavelength. Advantageously, a camera capable of obtaining multiple images over a period of time, such as a CCD camera (2)

may be used to capture the emissions from the imaging agent. A band-pass filter (6) prevents the capture of radiation other than that emitted by the imaging agent. A distance sensor (9) incorporates a visual display (9a) providing feedback to the physician saying that the laser be located at a distance from the vessel of interest that is optimal for the capture of high quality images.

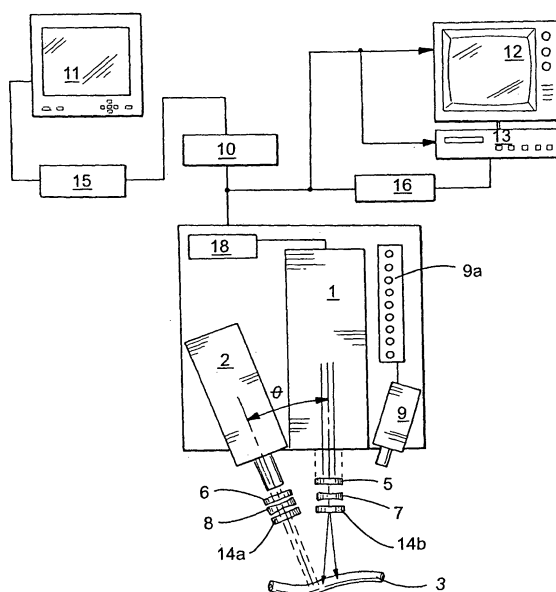


Fig. 1



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# PARTIAL EUROPEAN SEARCH REPORT

Application Number

which under Rule 45 of the European Patent Convention EP 07 01 5008 shall be considered, for the purposes of subsequent proceedings, as the European search report

| DOCUMENTS CONSIDERED TO BE RELEVANT                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                              |                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Category                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Citation of document with indication, where appropriate, of relevant passages                                                                                                                                                                                                                                                    | Relevant to claim                                                                                                                                                                                                                                                            | CLASSIFICATION OF THE APPLICATION (IPC)    |
| Y                                                                                                                                                                                                                                                                                                                                                                                                                                                              | LEE E T ET AL: "A new method for assessment of changes in retinal blood flow"<br>MEDICAL ENGINEERING & PHYSICS,<br>BUTTERWORTH-HEINEMANN, GB,<br>vol. 19, no. 2, March 1997 (1997-03),<br>pages 125-130, XP002285464<br>ISSN: 1350-4533<br>* page 126, column 2, line 21 - line 48 *<br>* page 127, column 2, line 6 - line 12 * | 1-4,9                                                                                                                                                                                                                                                                        | INV.<br>A61B5/02                           |
| A                                                                                                                                                                                                                                                                                                                                                                                                                                                              | BARTON J K ET AL: "Simultaneous irradiation and imaging of blood vessels during pulsed laser delivery."<br>LASERS IN SURGERY AND MEDICINE 1999,<br>vol. 24, no. 3, 1999, pages 236-243,<br>XP002452175<br>ISSN: 0196-8092<br>* page 237, column 2, line 9 - line 14 *<br>-----<br>-/-                                            | 1,8                                                                                                                                                                                                                                                                          | TECHNICAL FIELDS<br>SEARCHED (IPC)<br>A61B |
| INCOMPLETE SEARCH                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                              |                                            |
| <p>The Search Division considers that the present application, or one or more of its claims, does/do not comply with the EPC to such an extent that a meaningful search into the state of the art cannot be carried out, or can only be carried out partially, for these claims.</p> <p>Claims searched completely :</p> <p>Claims searched incompletely :</p> <p>Claims not searched :</p> <p>Reason for the limitation of the search:</p> <p>see sheet C</p> |                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                              |                                            |
| Place of search<br>The Hague                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                  | Date of completion of the search<br>24 September 2007                                                                                                                                                                                                                        | Examiner<br>Knüpling, Moritz               |
| CATEGORY OF CITED DOCUMENTS<br>X : particularly relevant if taken alone<br>Y : particularly relevant if combined with another document of the same category<br>A : technological background<br>O : non-written disclosure<br>P : intermediate document                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                  | T : theory or principle underlying the invention<br>E : earlier patent document, but published on, or after the filing date<br>D : document cited in the application<br>L : document cited for other reasons<br>& : member of the same patent family, corresponding document |                                            |

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EPO FORM 1503 03.02 (P04C07)



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## PARTIAL EUROPEAN SEARCH REPORT

Application Number  
EP 07 01 5008

| DOCUMENTS CONSIDERED TO BE RELEVANT |                                                                                                                                                                                                                                                                                                                                                                       |                   | CLASSIFICATION OF THE APPLICATION (IPC) |
|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------|
| Category                            | Citation of document with indication, where appropriate, of relevant passages                                                                                                                                                                                                                                                                                         | Relevant to claim |                                         |
| Y                                   | <p>T R K B ET AL: "ÄSimultaneous digital indocyanine green and fluorescein angiographyÜ"</p> <p>KLINISCHE MONATSBLAETTER FUER AUGENHEILKUNDE, FERDINAND ENKE VERLAG, STUTTGART, DE,</p> <p>vol. 208, no. 5, May 1996 (1996-05), pages 333-336, XP008083953</p> <p>ISSN: 0023-2165</p> <p>* page 333, column 1, line 1 - page 334, column 1, line 6 *</p> <p>-----</p> | 1-4,9             |                                         |
| A                                   | <p>WO 98/30144 A (BIOSENSE INC [US]; BEN HAIM SHLOMO [IL]; YARON URI [IL]; ZILBERSTEIN J) 16 July 1998 (1998-07-16)</p> <p>* page 4, line 10 - line 25 *</p> <p>-----</p>                                                                                                                                                                                             | 1,5-7             | <p>TECHNICAL FIELDS SEARCHED (IPC)</p>  |



Claim(s) not searched:  
10-13

Reason for the limitation of the search (non-patentable invention(s)):

Article 52 (4) EPC - Method for treatment of the human or animal body by surgery

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 07 01 5008

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

24-09-2007

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|                |                                                           |         |            |
|----------------|-----------------------------------------------------------|---------|------------|
| 专利名称(译)        | 用于执行术中血管造影的方法和设备                                          |         |            |
| 公开(公告)号        | <a href="#">EP1849408A3</a>                               | 公开(公告)日 | 2007-11-07 |
| 申请号            | EP2007015008                                              | 申请日     | 2000-08-11 |
| [标]申请(专利权)人(译) | 加拿大国家研究委员会                                                |         |            |
| 申请(专利权)人(译)    | 加拿大国家研究委员会的                                               |         |            |
| 当前申请(专利权)人(译)  | 加拿大国家研究委员会的                                               |         |            |
| [标]发明人         | THE DESIGNATION OF THE INVENTOR HAS NOT YET BEEN FILED    |         |            |
| 发明人            | THE DESIGNATION OF THE INVENTOR HAS NOT YET BEEN FILED    |         |            |
| IPC分类号         | A61B5/02 A61B5/00 A61B1/00 A61B5/026 A61B5/0275 A61B10/00 |         |            |
| CPC分类号         | A61B5/0261 A61B5/0275                                     |         |            |
| 优先权            | 60/155652 1999-09-24 US                                   |         |            |
| 其他公开文献         | EP1849408A2                                               |         |            |
| 外部链接           | <a href="#">Espacenet</a>                                 |         |            |

#### 摘要(译)

该装置具有激光器(1)，用于激发荧光成像剂，该荧光成像剂发射波长的辐射，该波长使得位于脉冲系统或被照射的感兴趣组织(3)内的任何药剂发射特定波长的辐射。有利地，能够在一段时间内获得多个图像的相机，例如CCD相机(2)可以用于捕获来自成像剂的发射。带通滤波器(6)防止捕获除成像剂发射的辐射之外的辐射。距离传感器(9)包括视觉显示器(9a)，其向医师提供反馈，称激光器位于距感兴趣的血管一定距离处，该距离对于捕获高质量图像是最佳的。

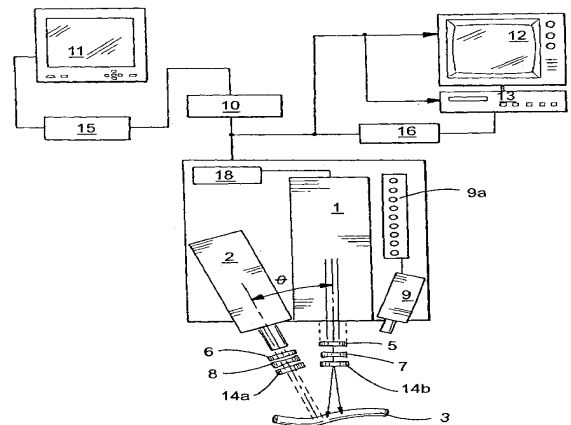


Fig. 1