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# (54) METHOD FOR TRACKING A BLOOD VESSEL IN AN IMAGE

(57) Vessel perfusion and myocardial blush are determined by analyzing fluorescence signals obtained in a static region-of-interest (ROI) in a collection of fluorescence images of myocardial tissue. The blush value is determined from the total intensity of the intensity values of image elements located within the smallest contiguous range of image intensity values containing a predefined fraction of a total measured image intensity of all image elements within the ROI. Vessel (arterial) peak intensity is determined from image elements located within the ROI that have the smallest contiguous range of highest measured image intensity values and contain a predefined fraction of a total measured image intensity of all image elements within the ROI. Also disclosed is a method for tracking a moving blood vessel to aid in assessing peak vessel intensity over time. Improvement in cardiac function can be established by comparing the time differential between the time of peak intensity in a blood vessel and that in a region of neighboring myocardial tissue both pre and post procedure.

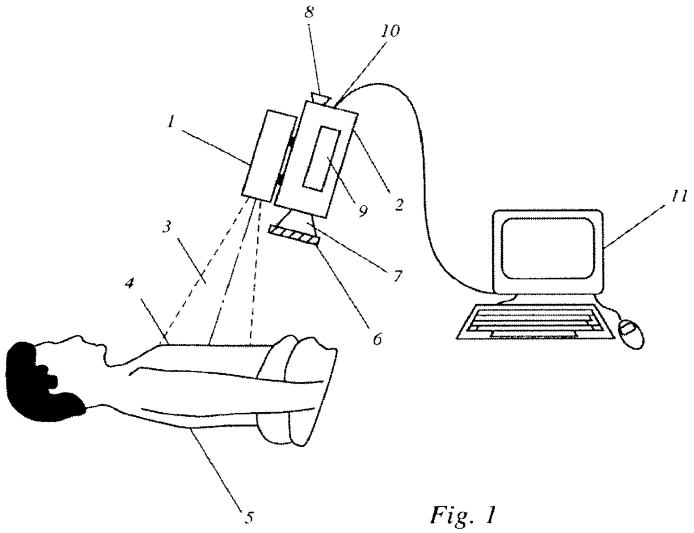


*Fig. 1*

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# EUROPEAN SEARCH REPORT

Application Number
EP 15 18 8378

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| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (IPC) |
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The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| Berlin | 25 February 2016 | Kronberger, Raphael |

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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## DOCUMENTS CONSIDERED TO BE RELEVANT

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The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| Berlin | 25 February 2016 | Kronberger, Raphael |

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& : member of the same patent family, corresponding document

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## ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 15 18 8378

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
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25-02-2016

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

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|---|---|---|---|
| 专利名称(译) | 用于跟踪图像中的血管的方法 | | |
| 公开(公告)号 | EP2989976A3 | 公开(公告)日 | 2016-04-06 |
| 申请号 | EP2015188378 | 申请日 | 2009-01-23 |
| [标]申请(专利权)人(译) | 诺瓦达克技术公司 | | |
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| 发明人 | DVORSKY, PETER<br>GOYETTE, DAVID MARK HENRI<br>FERGUSON, T BRUCE, JR.<br>CHEN, CHENG | | |
| IPC分类号 | A61B5/00 A61B5/026 | | |
| CPC分类号 | A61B5/0059 A61B5/0071 A61B5/0261 A61B5/0275 A61B5/489 A61B6/503 A61B6/504 | | |
| 优先权 | 61/023818 2008-01-25 US | | |
| 其他公开文献 | EP2989976A2 | | |
| 外部链接 | Espacenet | | |


摘要(译)

通过分析在心肌组织的荧光图像的集合中的静态感兴趣区域（ROI）中获得的荧光信号来确定血管灌注和心肌腮红。根据位于包含ROI内所有图像元素的总测量图像强度的预定义部分的图像强度值的最小连续范围内的图像元素的强度值的总强度来确定发白值。血管（动脉）峰强度由位于ROI内的图像元素确定，该图像元素具有最高测量图像强度值的最小连续范围并且包含ROI内所有图像元素的总测量图像强度的预定义部分。还公开了一种用于跟踪移动的血管以帮助评估峰值血管强度随时间的方法。通过比较手术前后的血管峰值强度时间与邻近心肌组织区域的时间差，可以建立心脏功能的改善。


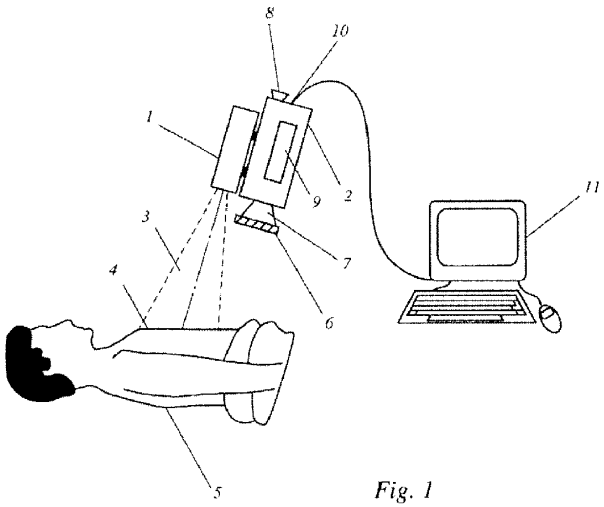


Fig. 1