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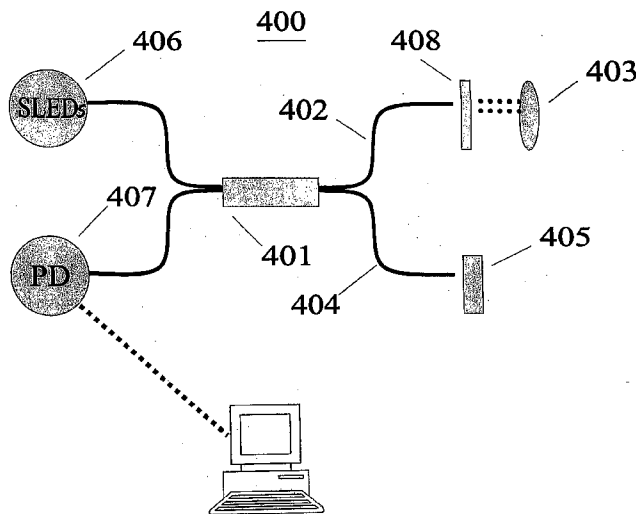
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(54) Title: METHOD AND APPARATUS FOR MONITORING GLUCOSE LEVELS IN A BIOLOGICAL TISSUE



(57) Abstract: In accordance with the invention, a low coherence interferometer is used to non-invasively monitor the concentration of glucose in blood by shining a light over a surface area of human or animal tissue, continuously scanning the light over a two dimensional area of the surface, collecting the reflected light from within the tissue and constructively interfering this reflected light with light reflected along a reference path to scan the tissue in depth. Since the reflection spectrum is sensitive to glucose concentration at particular wavelengths, measurement and analysis of the reflected light provides a measure of the level of glucose in the blood. The measurement of glucose is taken from multiple depths within blood-profused tissue, and sensitivity is preferably enhanced by the use of multiple wavelengths. Noise or speckle associated with this technique is minimized by continuously scanning the illuminated tissue in area and depth.

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**INTERNATIONAL SEARCH REPORT**

International application No.

PCT/US05/26744

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC: **A61B 5/00**( 2006.01)

USPC: 600/316

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. : 600/316,310,322

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 6,725,073 B1 (MOTAMEDI et al) 20 April 2006 (20.04.2006), column 2, line 49 - column 4, line 3; columns 7 - 11 (Example 1).	1-13, 17-33, 35 ----- 14-16, 34
Y	US 5,710,630 A (ESSENPREIS et al) 20 January 1998 (20.01.1998), column 17, lines 5 - 26.	14, 34
Y	WO 02/065090 A2 (INSTRUMENTATION METRICS, INC) 22 August 2002 (22.08.2002), page 17 - 18 (Summary of the Invention).	15,16

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

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"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
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