

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
13 December 2007 (13.12.2007)

PCT

(10) International Publication Number
WO 2007/143200 A3

(51) International Patent Classification:
G01B 11/14 (2006.01) **A61B 5/05** (2006.01)

(21) International Application Number:
PCT/US2007/013157

(22) International Filing Date: 4 June 2007 (04.06.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/810,339 2 June 2006 (02.06.2006) US

(71) Applicants and

(72) Inventors: **FUTRELL, J., William** [US/US]; 1 Sweet Water Lane, Pittsburgh, PA 15238 (US). **GASKIN, David, J.** [US/US]; 85 Tifton Way North, Ponte Vedra, FL 32082 (US).

(74) Agents: **MILLER, Daniel, R.** et al.; Kirkpatrick & Lockhart Preston Gates Ellis LLP, Henry W. Oliver Building, 535 Smithfield Street, Pittsburgh, PA 15222-2312 (US).

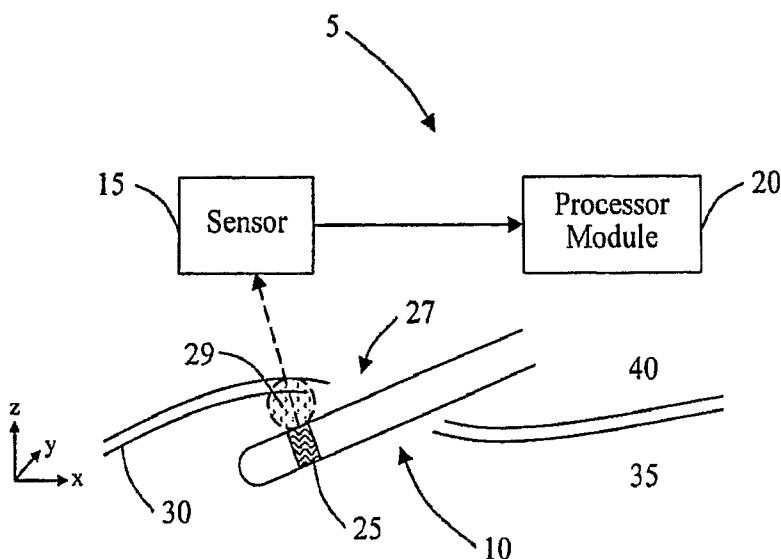
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— with international search report

(88) Date of publication of the international search report:
18 December 2008

(54) Title: SYSTEMS AND METHODS FOR ILLUMINATING MATERIALS



(57) Abstract: A system including a medical instrument, a sensor, and a processor module in communication with the sensor. The medical instrument includes a radiation source for transmitting electromagnetic radiation from within a body and through a material in the body. The sensor receives a portion of the electromagnetic radiation transmitted through the material, and the processor module determines at least one characteristic of the material based on the electromagnetic radiation received by the sensor.

WO 2007/143200 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/13157

A. CLASSIFICATION OF SUBJECT MATTER
 IPC: **G01B 11/14(2006.01);A61B 5/05(2006.01)**

USPC: **324/226;600/427**
 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. : 324/226;600/427

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	US 6,611,141 B1 (SCHULZ et al) 26 August 2003 (26.08.2003), column 3, lines 22-64; column 5, lines 19-55.	1-22

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	"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
"E" earlier application or patent published on or after the international filing date	"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
"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)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 16 June 2008 (16.06.2008)	Date of mailing of the international search report 14 JUL 2008
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Authorized officer BAISAKHI ROY <i>[Signature]</i> Telephone No. 571-272-7139 <i>[Signature]</i>