

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
16 May 2002 (16.05.2002)

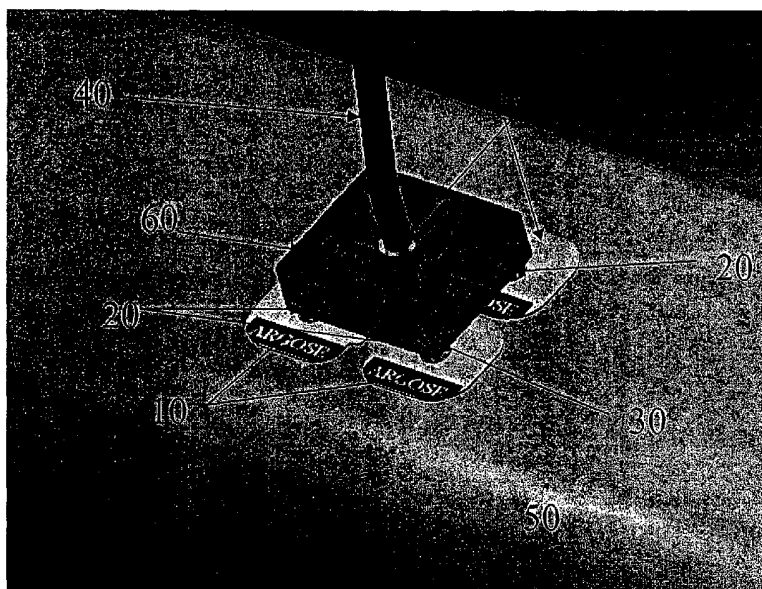
PCT

(10) International Publication Number
WO 02/038043 A3

- (51) International Patent Classification⁷: **A61B 5/00**, 5/103
- (21) International Application Number: PCT/US01/43062
- (22) International Filing Date:
13 November 2001 (13.11.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/247,002 13 November 2000 (13.11.2000) US
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- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report

[Continued on next page]

(54) Title: REDUCTION OF SPECTRAL SITE TO SITE VARIATION



(57) Abstract: The invention relates to devices and methods that improve the quality of optic measurements from surfaces such as skin and biological materials. Three methods for reducing spectral site to site variation in fluorescence and/or reflectance signals obtained from a sample surface are: repeated measurements taken at identifiable location(s) determined by fiducial marks, repeat of measurements at different locations on the sample, and tensioning the sample surface during measurement to alleviate surface heterogeneity. Combinations of these methodologies provide best results, and are expected to improve the ability to measure blood glucose non-invasively.



WO 02/038043 A3



(88) Date of publication of the international search report:
16 January 2003

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/43062

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 A61B5/00 A61B5/103

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 7 A61B

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 practical, search terms used)

EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 898 931 A (KURASHIKI BOSEKI KK ;KYOTO DAIICHI KAGAKU KK (JP)) 3 March 1999 (1999-03-03) column 1, line 7 -column 1, line 47 column 2, line 36 -column 3, line 38 column 5, line 57 -column 8, line 11 column 10, line 2 -column 10, line 21; claims 1,2; figures 3-9 ---	
A	EP 0 801 297 A (KURASHIKI BOSEKI KK ;KYOTO DAIICHI KAGAKU KK (JP)) 15 October 1997 (1997-10-15) column 6, line 15 -column 7, line 55 column 9, line 34 -column 9, line 43 column 10, line 12 -column 10, line 28 column 17, line 56 -column 18, line 18; claims 1-5,13-18; figure 10 --- -/--	



Further documents are listed in the continuation of box C.



Patent family members are listed in 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 document 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 another 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.
- *Z* document member of the same patent family

Date of the actual completion of the international search

15 July 2002

Date of mailing of the international search report

21/08/2002

Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/43062

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 903 571 A (MATSUSHITA ELECTRIC IND CO LTD) 24 March 1999 (1999-03-24) the whole document ---	
A	EP 0 843 986 A (MATSUSHITA ELECTRIC WORKS LTD) 27 May 1998 (1998-05-27) column 3, line 33 -column 4, line 10 column 6, line 6 -column 11, line 44 column 16, line 31 -column 18, line 31 ---	
A	WO 98 37805 A (BARKER TODD Q ;DIASENSE INC (US); COOPER PATRICK J (US)) 3 September 1998 (1998-09-03) page 13, line 1 -page 18, line 3; claims 1-3,8,9,15 ---	
A	US 6 032 071 A (BINDER MICHAEL) 29 February 2000 (2000-02-29) column 2, line 64 -column 3, line 39 column 14, line 51 -column 14, line 53; claims 21,32 -----	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 01/43062

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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.: 1-29
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Diagnostic method practised on the human or animal body.
However, claims 1-29 have been searched for the structural features of a corresponding system.
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 II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

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.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-10

Reduction of spectral site to site variation in fluorescence and/or reflectance signals by repeated measurements taken at identifiable locations determined by fiducial marks.

2. Claims: 11-19

Reduction of spectral site to site variation in fluorescence and/or reflectance signals by measurements repeated at different locations on the sample.

3. Claims: 20-29

Reduction of spectral site to site variation in fluorescence and/or reflectance signals by tensioning the sample surface during measurement.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/43062

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