

(51) International Patent Classification:
A61B 5/00 (2006.01) *A61B 5/155* (2006.01)(21) International Application Number:
PCT/IL2009/000566(22) International Filing Date:
7 June 2009 (07.06.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/058,935 5 June 2008 (05.06.2008) US(71) Applicant (for all designated States except US): **G-SENSE LTD.** [IL/IL]; 2 Hasadna St., 39032 Tirat Hacarmel (IL).

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: SYSTEMS AND METHODS FOR IMPLEMENTING RAPID RESPONSE MONITORING OF BLOOD CONCENTRATION OF A METABOLITE

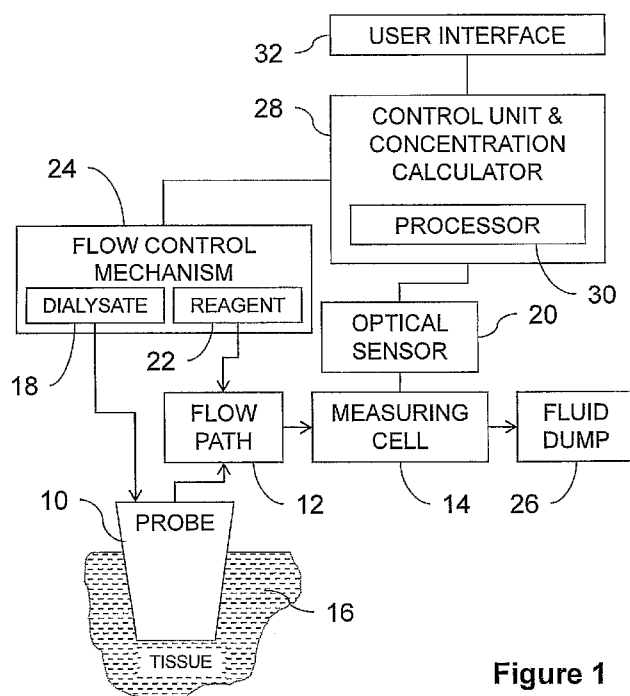


Figure 1

(57) Abstract: Systems and methods for monitoring the concentration of glucose or other metabolites by way of a low-volume microdialysis-probe (10) operative in accordance with a pulsed mode of flow through a flow path (12) defined by a layered structure. Also described are a system and a method for deployment of the microdialysis probe (10) within the body and a technique for deriving a metabolite concentration of the basis of a rate of change of an optical parameter.

**Published:****(88) Date of publication of the international search report:**

15 July 2010

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

INTERNATIONAL SEARCH REPORT

International application No
PCT/IL2009/000566

A. CLASSIFICATION OF SUBJECT MATTER

INV. A61B5/00
ADD. A61B5/155

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)

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, BIOSIS, EMBASE, 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	WO 99/41606 A1 (STICHTING FUND OND MATERIAL [NL]; BERGVELD PIET [NL]; BOEHM SEBASTIAN) 19 August 1999 (1999-08-19) abstract; figure 1 page 6, paragraph 2 page 3, paragraph 4-6	2-12
X	US 2007/106140 A1 (BELLANTONE ROBERT A [US]) 10 May 2007 (2007-05-10) paragraphs [0005], [0032], [0037] - [0074], [0087], [0240] - [0243], [0253]; figure 1 ----- -/--	2-12



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

"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.

"&" document member of the same patent family

Date of the actual completion of the international search

9 March 2010

Date of mailing of the international search report

17/05/2010

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INTERNATIONAL SEARCH REPORT

International application No

PCT/IL2009/000566

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 96/14889 A1 (CMA MICRODIALYSIS AB [SE]; UNGERSTEDT URBAN [SE]; KARLSSON HANS [SE]) 23 May 1996 (1996-05-23) page 4, paragraph 7 - page 5, paragraph 1 page 1, paragraph 2; figure 1 page 6, paragraph 2 - page 7, paragraph 1; claim 4 -----	2-12
A	WO 2008/056363 A2 (SENSE LTD G [IL]; SHEKALIM AVRAHAM [IL]; PELEG NOAM [IL]) 15 May 2008 (2008-05-15) the whole document -----	2-12

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IL2009/000566

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 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, 20-21
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery
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 No. III Observations where unity of invention is lacking (Continuation of item 3 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 fees, this Authority did not invite payment of additional fees.
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.:

see annex

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ 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: 2(completely); 3-12(partially)

Said transport time being no more than 25 percent of said diffusion period

2. claims: 13-19

At least part of the flow path from the probe volume to the measuring volume is formed as a channel enclosed between at least two layers of a layered structure

3. claim: 22

System for deploying a microdialysis probe as part of a device for monitoring the concentration of a metabolite in vivo within a body fluid, the system comprising (b) an inserter comprising (i) an elongated shaft having a penetrating tip and a recess for receiving a part of said probe, and (ii) an actuator element, deployed at least partially coextensively with said elongated shaft, wherein said elongated shaft and said actuator element are configured such that, in a first relative position of said elongated shaft and said actuator element, said inserter retains said probe for insertion through a biological barrier into tissue, and, when said actuator element is displaced relative to said elongated shaft, said probe is released, thereby allowing withdrawal of said inserter from the tissue while said probe remains inserted within the tissue

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IL2009/000566

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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