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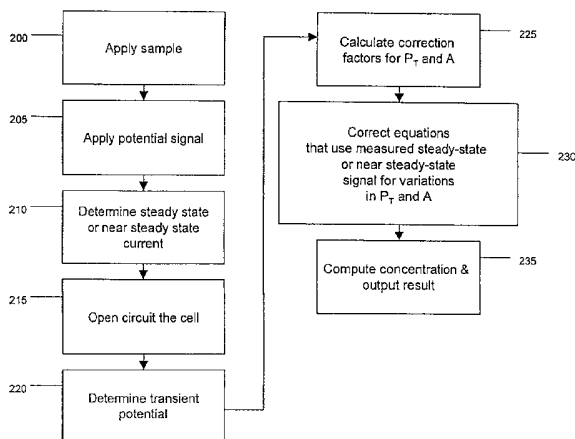
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**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR ASSAY OF ELECTROCHEMICAL PROPERTIES



(57) Abstract: The presence of a select analyte in the sample is evaluated in an electrochemical system using a conduction cell-type apparatus. A potential or current is generated between the two electrodes of the cell sufficient to bring about oxidation or reduction of the analyte or of a mediator in an analyte-detection redox system, thereby forming a chemical potential gradient of the analyte or mediator between the two electrodes. After the gradient is established, the applied potential or current is discontinued and an analyte-independent signal is obtained from the relaxation of the chemical potential gradient. The analyte-independent signal is used to correct the analyte-dependent signal obtained during application of the potential or current. This correction allows an improved measurement of analyte concentration because it corrects for device-specific and test specific factors such as transport (mobility) of analyte and/or mediator, effective electrode area, and electrode spacing (and as a result, sample volume), without need for separate calibration values. The analysis can be performed using disposable test strips in a hand held meter, for example for glucose testing.

WO 2005/022143 A3



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12 May 2005

*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/US2004/027441

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 GO1N33/487 C12Q1/00 A61B5/00 GO1N27/48

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 GO1N A61B C12Q

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, WPI Data, PAJ, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category <sup>o</sup>	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 251 260 B1 (YARNITZKY CHAIM ET AL) 26 June 2001 (2001-06-26) column 1, line 60 - column 2, line 13; figures 2a-2c column 3, line 66 - column 4, line 19	1-9, 12-15
X	DE 41 00 727 A (KLEIN KARL DITTMAR DR) 16 July 1992 (1992-07-16) page 2, line 67 - page 3, line 30; figures 2,3	1,12
A	DE 43 00 499 A (KLEIN KARL DITTMAR DR) 14 July 1994 (1994-07-14) the whole document	1-9, 12-15
A	US 4 340 458 A (GINER JOSE D ET AL) 20 July 1982 (1982-07-20) column 1, line 48 - column 2, line 24	1-9, 12-15
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Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

<sup>o</sup> 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

28 February 2005

Date of mailing of the international search report

11 03 2005

Name and mailing address of the ISA

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## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US2004/027441

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>ALVAREZ ROMERO J T ET AL: "Regression models for the determination of the absorbed dose rate with an extrapolation chamber for flat ophthalmic applicators" HEALTH PHYSICS USA, vol. 68, no. 2, February 1995 (1995-02), pages 234-252, XP008043661 ISSN: 0017-9078 page 239, right-hand column, last paragraph - page 240, right-hand column, paragraph 1</p> <p>-----</p>	10
X	<p>VALLET C E ET AL: "Steady-state composition profiles in mixed molten salt electrochemical devices. I. Lithium/sulfur battery analogs" JOURNAL OF THE ELECTROCHEMICAL SOCIETY USA, vol. 125, no. 8, August 1978 (1978-08), pages 1193-1198, XP008043657 ISSN: 0013-4651 page 1197, left-hand column, last paragraph - right-hand column; figure 5</p> <p>-----</p>	11
A	<p>US 5 567 302 A (SONG ET AL) 22 October 1996 (1996-10-22) column 2, line 26 - line 38</p> <p>-----</p>	11
P,X	<p>WO 03/069304 A (AGAMATRIX, INC; IYENGAR, SRIDHAR, G; HARDING, IAN, S) 21 August 2003 (2003-08-21) the whole document</p> <p>-----</p>	1-15

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2004/027441

## Box 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.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
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 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 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: 1-9,12-15

Method and apparatus for evaluating a sample for the presence of a select analyte.  
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2. claim: 10

Method for determining the effective separation distance between a first electrode and a second electrode in an electrochemical cell.  
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3. claim: 11

Method for determining an effective transport property between a first electrode and a second electrode in an electrochemical cell.  
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## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No  
PCT/US2004/027441

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