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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, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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[Continued on next page]

(54) Title: STOP-FLOW ANALYTICAL SYSTEMS AND METHODS

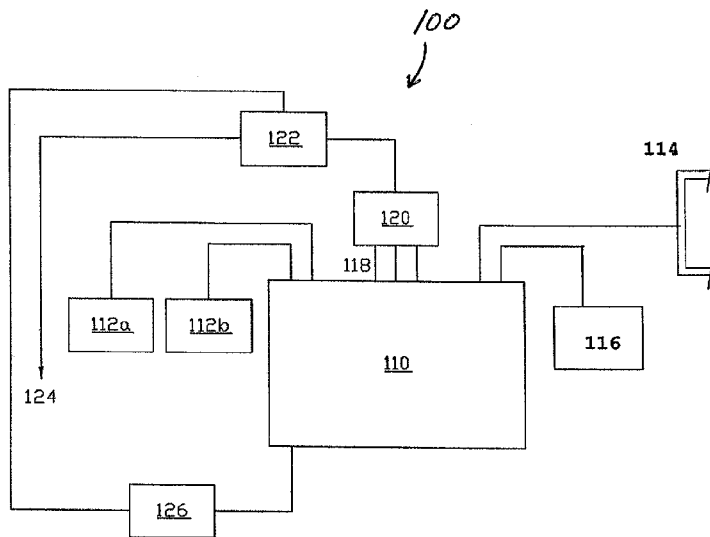


FIG. 1

(57) Abstract: Analytical systems and methods are provided for simultaneously dispensing metered volumes of fluids at different rates and mixing the fluids to generate a mixed sample having the fluids in proportion to the different rates at which they were dispensed. In some cases two or more of the fluids are premixed prior to mixing with other fluids. In some cases a use composition and diluent are simultaneously dispensed at different rates and premixed to form a diluted sample. One or more reagents may be mixed with the diluted sample and the sample mixture can be analyzed to determine characteristics of the use composition.

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— *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))*

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2011/053422**A. CLASSIFICATION OF SUBJECT MATTER***G01N 31/00(2006.01)i, G01N 35/08(2006.01)i, B01L 3/00(2006.01)i, G01N 21/01(2006.01)i*

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)

G01N 31/00; G01N 15/06; G05B 21/00; G06F 19/00; G01N 33/48; B01J 19/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: sense, concentration, analysis, composition, pump, reagent, diluent.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 7,349,760 B2 (WEI, GUANG-JONG J. et al.) 25 March 2008 See paragraphs [0017], [0022], [0027], and [0049]; claims 1-4, 18, and 20; and figures 1 and 5.	1-3, 18-20, 24-25
Y	US 2009-0150106 A1 (ERICKSON, JOSEPH et al.) 11 June 2009 See paragraphs [0039]-[0040], [0044], [0046], [0050], [0055], and [0074]; claims 1-2 and 6; and figures 1-2, 4-5, and 10.	1-3, 18-20, 24-25
A	US 6,855,296 B1 (BAKER, MARTIN T. et al.) 15 February 2005 See col.3, lines 33-52 and col.10, lines 41-60; claims 1 and 23; and figure 1.	1-3, 18-20, 24-25
A	US 2003-0231294 A1 (WARIAR, RAMESH et al.) 18 December 2003 See paragraphs [0054] and [0058]-[0065]; claims 1 and 8; and figures 1-3.	1-3, 18-20, 24-25

 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 application or patent 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 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

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01 MAY 2012 (01.05.2012)

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/IB2011/053422

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

International application No.

PCT/IB2011/053422**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.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.: 16
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:

Claim 16 is too unclear to make a meaningful search because this claim refers to multiple dependent claim 15 that depends on other multiple dependent claims.

3. Claims Nos.: 4-15, 17, 21-23, 26-35
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:

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 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.