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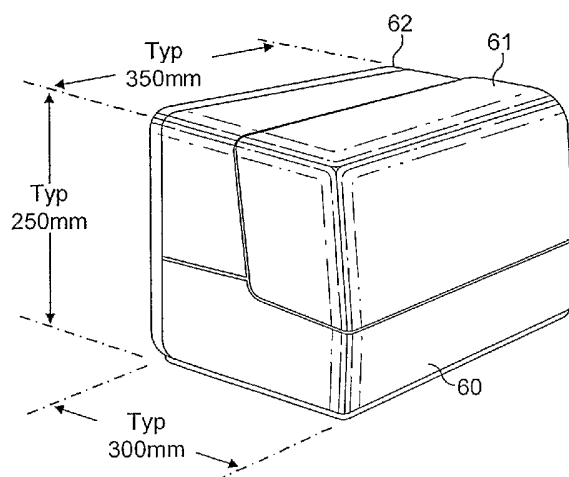
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[Continued on next page]

(54) Title: ANALYSIS INSTRUMENT FOR PROCESSING A MICROFLUIDIC DEVICE



(57) Abstract: The invention relates to an analysis instrument for processing a microfluidic device, comprising sample storage means, a microfluidic device holder, sample loading means for loading sample into a microfluidic device disposed in the holder, processing means for enabling a reaction in a microfluidic device, and detection means for detecting and/or measuring the reaction, characterised in that the microfluidic device holder is adapted to hold the microfluidic device comprising or including a tape in position for processing and/or detection. The invention further relates to a microfluidic processing device, comprising a reaction chamber, a sample loading chamber into which a sample is injectable, the reaction chamber being operatively connected to the sample loading chamber, a cover that extends across at least part of the sample loading chamber, the cover and the reaction chamber comprising pierceable material and being separated by an overspill cavity configured to accept any overspill of an injected sample. Finally, the invention concerns a kit comprising an analysis instrument and a microfluidic processing device as described above.

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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/GB2006/000444

A. CLASSIFICATION OF SUBJECT MATTER INV. B01L3/00 G01N35/00				
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) B01L G01N				
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.		
X	WO 2004/071660 A (CYTOCENTRICS CCS GMBH; KNOTT, THOMAS; STETT, ALFRED; SYGALL, PETER; VO) 26 August 2004 (2004-08-26) the whole document	1-38,46		
A	US 2001/020588 A1 (ADOURIAN ARAM S ET AL) 13 September 2001 (2001-09-13) the whole document	1-38,46		
A	US 2001/005489 A1 (ROACH DAVID J ET AL) 28 June 2001 (2001-06-28) the whole document	1-38,46		
A	EP 1 388 369 A (XEROX CORPORATION) 11 February 2004 (2004-02-11) the whole document	1-38,46		
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<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"><input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.</td> <td style="width: 50%; border: none;"><input checked="" type="checkbox"/> See patent family annex.</td> </tr> </table>			<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.	<input checked="" type="checkbox"/> See patent family annex.
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.	<input checked="" type="checkbox"/> 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	Date of mailing of the international search report			
11 September 2006	02/10/2006			
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Skowronski, Maik			

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International application No

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 03/045557 A (LAB901 LTD; POLWART, STUART; FEARNLEY, JOEL; ROY, DOUGLAS; GHAZAL, PET) 5 June 2003 (2003-06-05) the whole document -----	39-45
A	WO 01/30490 A (ACLARA BIOSCIENCES, INC) 3 May 2001 (2001-05-03) the whole document -----	39-45
A	US 5 284 570 A (SAVAGE ET AL) 8 February 1994 (1994-02-08) the whole document -----	39-45

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2006/000444

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: 1-38,46

An analysis instrument suitable for processing a
microfluidic device

2. claims: 39-46

A microfluidic processing device wherein the cover and the
reaction chamber comprise pierceable material

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/GB2006/000444

Patent document cited in search report	A	Publication date	Patent family member(s)	Publication date
WO 2004071660	A	26-08-2004	DE 10307227 A1 EP 1599287 A1 US 2006032746 A1	26-08-2004 30-11-2005 16-02-2006
US 2001020588	A1	13-09-2001	US 6207031 B1	27-03-2001
US 2001005489	A1	28-06-2001	US 2004262162 A1	30-12-2004
EP 1388369	A	11-02-2004	JP 2004106172 A US 2004022681 A1 US 2006057031 A1	08-04-2004 05-02-2004 16-03-2006
WO 03045557	A	05-06-2003	AU 2002347309 A1 AU 2002352349 A1 CA 2468334 A1 CA 2468894 A1 EP 1451568 A2 EP 1450955 A2 WO 03046542 A2 GB 2397384 A GB 2397256 A US 2005089449 A1 US 2005079104 A1	10-06-2003 10-06-2003 05-06-2003 05-06-2003 01-09-2004 01-09-2004 05-06-2003 21-07-2004 21-07-2004 28-04-2005 14-04-2005
WO 0130490	A	03-05-2001	AU 1970101 A CA 2387064 A1 EP 1225977 A1 JP 2004500233 T	08-05-2001 03-05-2001 31-07-2002 08-01-2004
US 5284570	A	08-02-1994	NONE	