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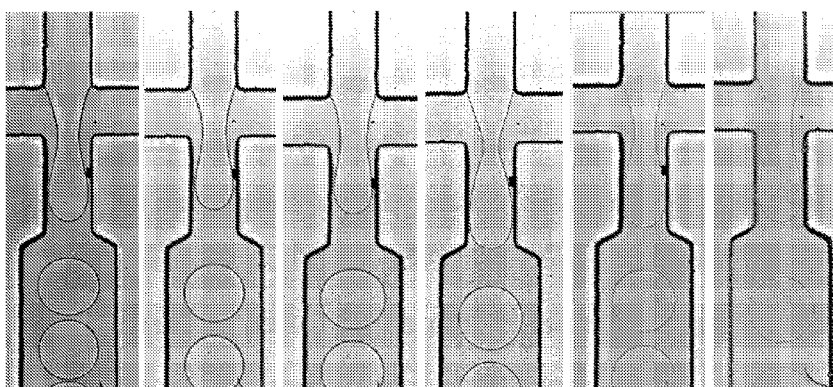


Figure 10

(57) Abstract: The present invention provides an emulsion for sorting droplets in a microfluidic device, the emulsion comprising: a discontinuous aqueous phase; and a continuous oil phase; wherein said aqueous phase comprises at least one analyte, said oil phase comprises a fluorinated oil and a refractive index modifying compound comprising at least one aromatic ring, and the refractive index of said aqueous phase and the refractive index of said oil phase are substantially matched.



## INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2014/052331

A. CLASSIFICATION OF SUBJECT MATTER  
 INV. B01L3/00  
 ADD.

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

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 practicable, search terms used)

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## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	J. ZIMING SUN ET AL: "Refractive index matching and clear emulsions", INTERNATIONAL JOURNAL OF COSMETIC SCIENCE, vol. 27, no. 6, 1 December 2005 (2005-12-01), pages 355-356, XP055161904, ISSN: 0142-5463, DOI: 10.1111/j.1467-2494.2005.00290_3.x pages 256-260	1-3
A	MELIKHAN TANYERI ET AL: "<title>Chemical and biological sensing through optical resonances in pendant droplets</title>", PROCEEDINGS OF SPIE, vol. 6008, 9 November 2005 (2005-11-09), page 60080Q, XP055161919, ISSN: 0277-786X, DOI: 10.1117/12.631080 pages 1-4; figures 2,3	1,2



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 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

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## INTERNATIONAL SEARCH REPORT

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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	<p>DANIEL R GOSSETT ET AL: "Label-free cell separation and sorting in microfluidic systems", ANALYTICAL AND BIOANALYTICAL CHEMISTRY, SPRINGER, BERLIN, DE, vol. 397, no. 8, 25 April 2010 (2010-04-25), pages 3249-3267, XP019839258, ISSN: 1618-2650 page 3263</p> <p>-----</p>	1

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/GB2014/052331

## 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.:  
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.:

1-45

### 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: 1-45

Claim 1 is directed to an emulsion for sorting droplets in a microfluidic device. The claimed emulsion comprises aqueous droplets containing an analyte in a continuous oil phase and the oil phase comprises a fluoruous oil and a refractive index modifying compound which compound includes an aromatic ring.

By adding the refractive index modifying compound the refractive index of the aqueous droplets and the refractive index of the oil phase are matched so that the problem of light being scattered from boundaries of the droplets is reduced and the light is mainly scattered by the contained analytes enabling thus reliable detection of such analytes.

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2. claims: 46, 47

Independent claim 46 relates to a first group of compounds defined by a specific formula which formula includes an aromatic ring. Claim 47 is directed to a reaction for making such compounds

The problem solved by these claims is the preparation of a first group of chemical compounds.

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3. claims: 48, 49

Claims 48 and 49 are directed to a second group of chemical compounds and to a reaction for preparing such compounds respectively.

The problem solved by these claims is the preparation of a second group of chemical compounds.

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