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61/251,902 15 October 2009 (15.10.2009) US(71) Applicant (for all designated States except US): **SPEC-**
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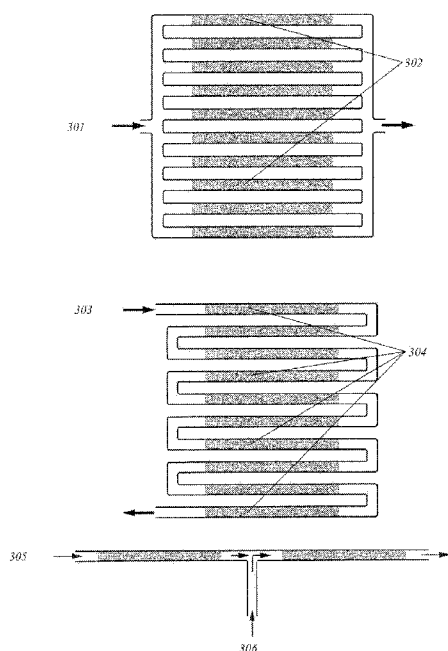
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[US/US]; 612 E. De La Guerra, Santa Barbara, California(84) Designated States (unless otherwise indicated, for every
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[Continued on next page]

(54) Title: SERS-ACTIVE ABSORBERS FOR THE ANALYSIS OF ANALYTES

FIGURE 3



(57) Abstract: Solid-type SERS-active substrates (e.g., noble metallic nanostructured powders or noble metallic nanoparticle-coatings on beads, microbeads, particles, etc.) are contained within optically-transparent modules. The modules allow for the controlled introduction of analyte-bearing fluid(s) into SERS-active substrates. The modules also allow for the monitoring of SERS signals emanating from analyte(s) which have accumulated on the confined SERS-active substrates. These SERS signals may be monitored over time by direct readout of the SERS substrates through the optically transparent module for chemical analysis and chemical detection applications.

**Declarations under Rule 4.17:**

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
- *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))*

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

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PATENT COOPERATION TREATY

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INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 38260-704601	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/US2010/052742	International filing date (<i>day/month/year</i>) 14 OCTOBER 2010 (14.10.2010)	(Earliest) Priority Date (<i>day/month/year</i>) 15 OCTOBER 2009 (15.10.2009)
Applicant SPECTRAFLUIDICS, INC. et al		

This International search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of:

☒ the international application in the language in which it was filed

☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6bis(a)).

c. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box No. II)

3. ☐ **Unity of invention is lacking** (See Box No. III)

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the **drawings** to be published with the abstract is Figure No. 3

☐ as suggested by the applicant.

☒ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figure is to be published with the abstract.

A. CLASSIFICATION OF SUBJECT MATTER**G01N 21/65(2006.01)i, B82B 1/00(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 21/65; B01L 11/00; G01J 3/44

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: (SERS,(surface enhanced+raman))+(flow*,flew*,fluid*,channel*,microchannel*)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003-0231304 A1 (SELENA CHAN et al.) 18 December 2003	1,4,5
Y	See the abstract, pages 1,2,4,5,7,8, fig. 3.	2,3,6
Y	US 2005-0282287 A1 (STUART FARQUHARSON et al.) 22 December 2005 See pages 3,4, fig. 4.	2,6
Y	US 2008-0074661 A1 (JINGWU ZHANG et al.) 27 March 2008 See the abstract, pages 3,5,6, figs. 1,6.	3
A	US 7075642 B2 (INTEL CORPORATION) 11 July 2006 See the abstract, pages 3,5,8, fig. 1.	1-6



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

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"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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INTERNATIONAL SEARCH REPORT

Information on patent family members

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International application No.

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