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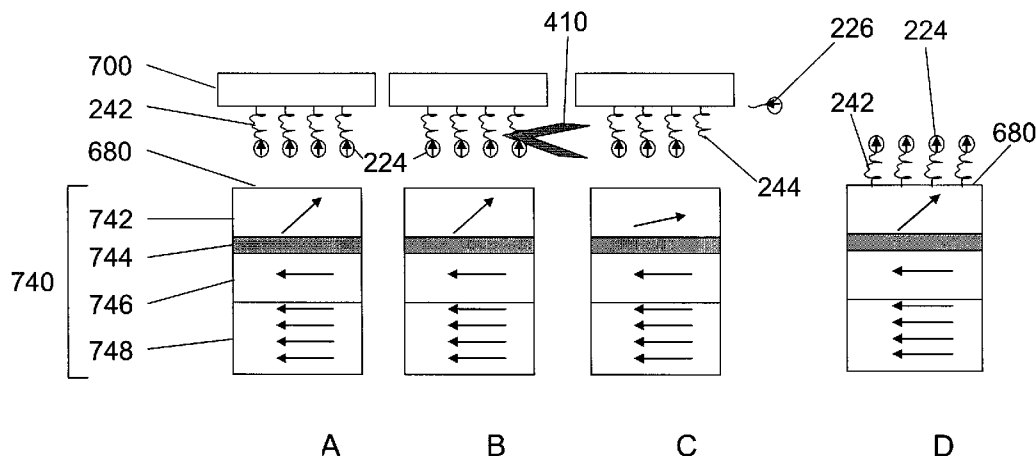
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(54) Title: MOLECULAR INTERACTION SENSORS



(57) Abstract: In preferred embodiments, the present invention provides a specific molecular interaction sensor and methods of use thereof, comprising at least one molecular interaction complex comprising a disruptable linker having first and second end, the first end being coupled to a detectable label and the second end being coupled to a surface of a support, wherein the linker is disrupted by a specific predetermined target molecule; a detector adapted to detect the label; and at least one readout device. In preferred embodiments, the detectable label is a superparamagnetic nanoparticle and the detector is a magnetoresistive device.

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US07/61808

## A. CLASSIFICATION OF SUBJECT MATTER

IPC: C12Q 1/34( 2006.01)

USPC: 435/287.2

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)  
U.S. : 435/287.2

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)  
EAST

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/0219590 (DICKINSON et al.) 4 November 2004 (04.11.2004), see entire document	1-10, 12, 13, 18, 20
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Y		11, 14-17, 19
Y	US 2005/0100930 (WANG et al.) 12 May 2005 (12.05.2005), see entire document	15-16, 19
Y	2001/0007022 (AITHAUS et al) 5 July 2001 (05.07.2001), see entire patent	11

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:		"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
"A"	document defining the general state of the art which is not considered to be of particular relevance	"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
"E"	earlier application or patent published on or after the international filing date	"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
"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)	"&"	document member of the same patent family
"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		

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# INTERNATIONAL SEARCH REPORT

International application No.

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## 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.: 21 and 22  
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:  
claims 21 and 22 are recited twice, with conflicting limitations, rendering it unclear which claims are the actual claims 21 and 22
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:

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 additional fees, this Authority did not invite payment of any 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.: 1-20

### 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.