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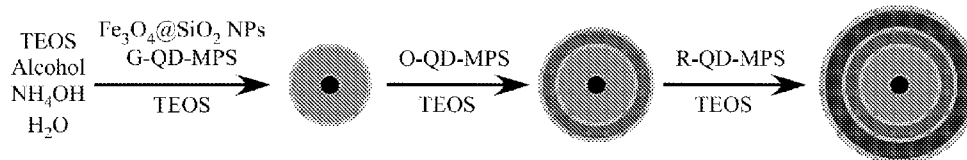
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- (88) Date of publication of the international search report:
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(54) Title: QUANTUM DOT BARCODE STRUCTURES AND USES THEREOF



(57) Abstract: The present invention provides novel barcode microstructures and methods for making and using the microstructures for molecular recognition, and/or delivery of therapeutic, diagnostic, contrast, and imaging agents.



WO 2008/033804 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/78114

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - H01L 21/311 (2008.01)

USPC - 438/694

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)

USPC - 438/694

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC - 438/694, 962 ; 257/14, 9, 17, 21, 23, 88, 22

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

PubWEST(USPT,PGPB,EPAB,JPAB); Google Patent; Google

Search Terms: core shell layer plurality "quantum dot" quantum dot microstructure intensity barcode spacer diameter nm mm CdS Fe2O3 Fe3O4 nanoparticle

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ----- Y	US 2003/0082237 A1 (CHA et al.) 1 May 2003 (01.05.2003) entire document especially paras [0020], [0044]-[0045], abstract	17-19 ----- 1-5 and 21-25
Y	US 6,597,010 B2 (ERIKSSON et al.) 22 July 2003 (22.07.2003); col 2, ln 14-33, col 4, ln 1-5	1-5 and 21-25
Y	US 6,774,361 B2 (BAWENDI et al.) 10 August 2004 (10.08.2004); col 7, ln 15-30	1-5 and 21-25
Y	US 6,924,160 B2 (WEI et al.) 2 August 2005 (02.08.2005); col 3, ln 39-54	2, 3, 22 and 23

 Further documents are listed in the continuation of Box C.

* 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

Date of the actual completion of the international search

22 January 2008 (22.01.2008)

Date of mailing of the international search report

08 APR 2008

Name and mailing address of the ISA/US

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/78114

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.: claims 6-16, 20 and 26-39
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 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.:

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.