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(54) Title: WATER SOLUBLE METAL AND SEMICONDUCTOR NANOPARTICLE COMPLEXES

(57) Abstract: The invention provides a water soluble complex comprising an inner core of a metal or semi-conductor nanoparticle. The nanoparticle is coated with a hydrophobic ligand, which is encapsulated in a micelle. In an aqueous medium, the micelle comprises a hydrophilic shell and a hydrophobic core, the hydrophilic shell comprising a plurality of hydrophilic moieties, the hydrophobic core comprising a plurality of hydrophobic moieties, each hydrophobic moiety comprising at least one chain, each chain comprising a minimum of 8 atoms; wherein the total number of atoms in all chains for each moiety comprises at least 24 atoms. The micelle has a minimum average diameter of approximately 5 nm and a maximum average diameter of approximately 45 nm.

INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC: G01N 33/92(2006.01);A61K 9/127(2006.01)

USPC: 428/402.2,436/829;424/450

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. : 428/402.2; 436/829; 424/450; 252/301.4

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 --- Y	US 6,251,303 B1 (BAWENDI ET AL) 26 JUNE 2001 (26.06.2001), FIGURE 5B; COLUMN 6, LINE 30 TO COLUMN 7, LINE 34; COLUMN 6, LINES 48-51; COLUMN 12, LINES 10-37.	1-3, 37, 38, 42-56, 71- 74, 76-83 ----- 4-10, 13-36, 39-41, 60- 70, 75, 84-89
Y	US 5,817,856 (TIROSH ET AL) 6 OCTOBER 1998 (06.10.1998), COLUMN 3, LINES 40- 56; COLUMN 5, LINE 54 TO COLUMN 6 LINE 6.	4-10, 32-35, 36
Y	US 5277913 A (THOMPSON ET AL) 11 JANUARY 1994 (11.01.1994), CLAIM 18	11, 12

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See patent family annex.

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"P" document published prior to the international filing date but later than the priority date claimed	

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