

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
22 April 2004 (22.04.2004)

PCT

(10) International Publication Number
WO 2004/033488 A3

- (51) International Patent Classification⁷: **B01J 19/00**, C07K 1/04
- (21) International Application Number: PCT/US2003/029555
- (22) International Filing Date: 22 September 2003 (22.09.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/411,804 18 September 2002 (18.09.2002) US
- (71) Applicant (for all designated States except US): **BOARD OF REGENTS, UNIVERSITY OF TEXAS SYSTEM** [US/US]; 201 West 7th Street, Austin, TX 78701 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **BELCHER, Angela, M.** [US/US]; 35 Balfour, Lexington, MA 02421 (US). **REISS, Brian** [US/US]; c/o University of Texas, 201 West 7th Street, Austin, TX 78701 (US). **MAO, Chuanbin** [US/US]; c/o University of Texas, 201 West 7th Street, Austin, TX 78701 (US). **SOLIS, Daniel** [US/US]; c/o University of Texas, 201 West 7th Street, Austin, TX 78701 (US).
- (74) Agents: **MAEBIUS, Stephen, B.** et al.; Foley & Lardner, 3000 K Street, N.W., Suite 500, Washington, DC 20007-5143 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
- with international search report
 - before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 7 October 2004
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



WO 2004/033488 A3

(54) Title: PEPTIDE MEDIATED SYNTHESIS OF METALLIC AND MAGNETIC MATERIALS

(57) Abstract: The present invention includes methods of producing magnetic nanocrystals by using a biological molecule that has been modified to possess an amino acid oligomer that is capable of specific binding to a magnetic material.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 03/29555

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 B01J19/00 C07K1/04

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)
 IPC 7 C07K B01J

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 practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	CHUANBIN MAO ET AL: "viral assembly of oriented quantum dot nanowires" PNAS, vol. 100, no. 12, June 2003 (2003-06), pages 6946-6951, XP002288377 the whole document	1-147
P,X	WO 03/029431 A (UNIV TEXAS) 10 April 2003 (2003-04-10) abstract page 6, line 25 - page 7, line 7 figures 1-11 ----- -/--	1-147

Further documents are listed in the continuation of box C.

Patent family members are listed in 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 document 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

16 July 2004

Date of mailing of the international search report

29/07/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Keller, Y

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 03/29555

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	NAIK R R ET AL: "BIOMIMETIC SYNTHESIS AND PATTERNING OF SILVER NANOPARTICLES" NATURE MATERIALS, NATURE PUBLISHING GROUP, LONDON, GB, vol. 1, no. 3, November 2002 (2002-11), pages 169-172, XP009032889 ISSN: 1476-4660 the whole document -----	1-147
X	SEUNG-WUK LEE ET AL.: "ordering of quantum dots using genetically engineered viruses" SCIENCE, vol. 296, May 2002 (2002-05), pages 892-895, XP002288378 the whole document -----	1-147
A	LEE J ET AL: "LAYER-BY-LAYER GROWTH OF CDSE-BASED NANOCRYSTAL LIGHT-EMITTING DIODES" JOURNAL OF NANOSCIENCE AND NANOTECHNOLOGY, AMERICAN SCIENTIFIC PUBLISHERS, US, vol. 1, no. 1, 2001, pages 59-64, XP009032870 ISSN: 1533-4880 -----	
A	HAAPARANTA T ET AL: "A COMBINATORIAL METHOD FOR CONSTRUCTING LIBRARIES OF LONG PEPTIDES DISPLAYED BY FILAMENTOUS PHAGE" 1995, MOLECULAR DIVERSITY, ESCOM SCIENCE PUBLISHERS, LEIDEN, NL, PAGE(S) 39-52, XP009032871 ISSN: 1381-1991 -----	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/US 03/29555

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 03029431 A	10-04-2003	WO 03029431 A2	10-04-2003
		US 2003028888 A1	06-02-2003
		US 2003073104 A1	17-04-2003
<hr/>			