(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
10 April 2003 (10.04.2003)

PCT

(10) International Publication Number
WO 03/029431 A2

(51) International Patent Classification[7]: C12N

(21) International Application Number: PCT/US02/31655

(22) International Filing Date: 2 October 2002 (02.10.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/326,583 2 October 2001 (02.10.2001) US

(71) Applicant: **BOARD OF REGENTS - THE UNIVERSITY OF TEXAS SYSTEM** [US/US]; 201 West 7th Street, Austin, TX 78701 (US).

(72) Inventors: **BELCHER, Angela, M.**; 35 Balfour Street, Lexington, MA 02421 (US). **LEE, Seung-Wuk**; 3350 Lake Austin Boulevard A, Austin, Texas 78703 (US).

(74) Agents: **WARREN, Sanford, E., Jr.** et al.; Gardere & Wynne, L.L.P., 3000 Thanksgiving Tower, 1601 Elm Street, Dallas, TX 75201-4761 (US).

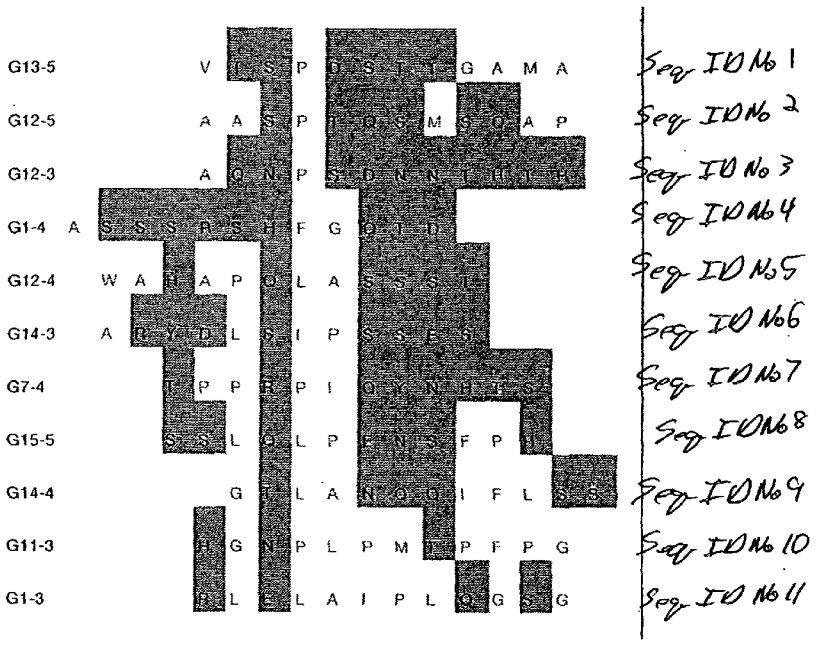
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, 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, IE, IT, LU, MC, NL, PT, SE, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *without international search report and to be republished upon receipt of that report*

[Continued on next page]

(54) Title: NANOSCALING ORDERING OF HYBRID MATERIALS USING GENETICALLY ENGINEERED MESOSCALE VIRUS



(57) Abstract: The present invention includes methods for producing nanocrystals of semiconductor material that have specific crystallographic features such as phase and alignment by using a self-assembling biological molecule that has been modified to possess an amino acid oligomer that is capable of specific binding to semi-conductor material. One form of the present invention is a method to construct ordered nanoparticles within the liquid crystal of the self-assembling biological molecule.

WO 03/029431 A2

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.