(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 27 July 2006 (27.07.2006)

(10) International Publication Number WO 2006/078293 A3

- (51) International Patent Classification: **D01F 9/12** (2006.01)
- (21) International Application Number:

PCT/US2005/017839

- (22) International Filing Date: 20 May 2005 (20.05.2005)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 3 June 2004 (03.06.2004) 10/860,331 US
- (71) Applicant (for all designated States except US): NAN-TERO, INC. [US/US]; 25-D Olympia Avenue, Woburn, MA 01801 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): SEN, Rahul [IN/US]; 6214 Avalon Drive, Wilmington, MA 01887 (US). SIVARAJAN, Ramesh [IN/US]; 65 Riverside Avenue, #3, Medford, MA 02155 (US). RUECKES, Thomas [DE/US]; 31 Norwood Avenue, Rockport, MA 01966 (US). SEGAL, Brent, M. [US/US]; 15 Mayflower Road, Woburn, MA 01801 (US).
- (74) Agents: DICHIARA, Peter, M. et al.; WILMER CUT-LER PICKERING HALE AND DORR LLP, 60 State Street, Boston, MA 02109 (US).

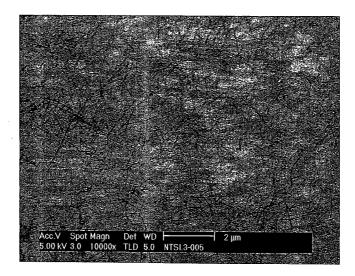
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW. GH. GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (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: 12 October 2006

[Continued on next page]

(54) Title: METHOD OF MAKING AN APPLICATOR LIQUID FOR ELECTRONICS FABRICATION PROCESS



(57) Abstract: Certain spin-coatable liquids and application techniques are described, which can be used to form nanotube films or fabrics of controlled properties. A method of making an applicator liquid containing nanotubes for use in an electronics fabrication process includes characterizing an electronic fabrication process according to fabrication compatible solvents and allowable levels of metallic and particle impurities; providing nanotubes that satisfy the allowable impurities criteria for the electronics fabrication process; providing a solvent that meets the fabrication compatible solvents and allowable impurities criteria for the electronic fabrication process; and dispersing the nanotubes into the solvent at a concentration of at least one milligram of nanotubes per liter solvent to form an applicator liquid.





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.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/17839

A. CLASSIFICATION OF SUBJECT MATTER			
IPC: D01F 9/12 (2006.01)			
USPC: 423/447.1 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.: 423/447.1			
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)			
C. DOCU	JMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages		Relevant to claim No.
X	US 6,723,299 B1 (CHEN et al) 20 April 2004 (20.04.2004), Abstract and Column 10, lines 56-60; column 13, lines 56-67; and column 11, lines 58-66		1-8
Y			9-20
Y	US 6,627,689 B2 (IINO et al) 30 September 2003 (30.09.2003), column 18, lines 12-25		9-11
Y	US 6,683,783 B1 (SMALLEY et al) 27 January 2004 (27.01.2004), column 15, lines 12-16		12-20
Further	documents are listed in the continuation of Box C.	See patent family annex.	
* Special categories of cited documents: "T" "A" document defining the general state of the art which is not considered to be of particular relevance		"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
"E" earlier application or patent published on or after the international filing date		"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	
"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)		"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	
"O" document referring to an oral disclosure, use, exhibition or other means		obvious to a person skilled in the art	
"P" document published prior to the international filing date but later than the priority date claimed		"&" document member of the same patent family	
Date of the actual completion of the international search		Date of mailing of the international search	10 6
27 June 2006 (27.06.2006) Name and mailing address of the ISA/US		Authorized officer	[1 1
Mail Stop PCT, Attn: ISA/US		Colleen P. Cooke	Male L
Commissioner for Patents P.O. Box 1450		Telephone No. 571-272-1700	WWW T
	xandria, Virginia 22313-1450 o. (571) 273-3201	Telephone 140. 5/1-2/2-1/00 /	

Form PCT/ISA/210 (second sheet) (April 2005)