



(51) International Patent Classification:

B05B 1/00 (2006.01) **B05D 5/00** (2006.01)
B05C 1/00 (2006.01)

(21) International Application Number:

PCT/US2009/044487

(22) International Filing Date:

19 May 2009 (19.05.2009)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/054,306 19 May 2008 (19.05.2008) US

(71) Applicant (for all designated States except US): **E. I. DU PONT DE NEMOURS AND COMPANY** [US/US]; 1007 Market Street, Wilmington, DE 19898 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **LANG, Charles, D.** [US/US]; 6203 Stow Canyon Road, Goleta, CA 93117 (US). **FAIRCLOTH, Tami, Janene** [US/US]; 2037 Elise Way, Santa Barbara, CA 93109 (US).

(74) Agent: **LAMMING, John, H.**; E. I. Du Pont De Nemours And Company, Legal Patent Records Center, 4417 Lancaster Pike, Wilmington, DE 19805 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, 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 (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR SOLUTION COATING THIN LAYERS

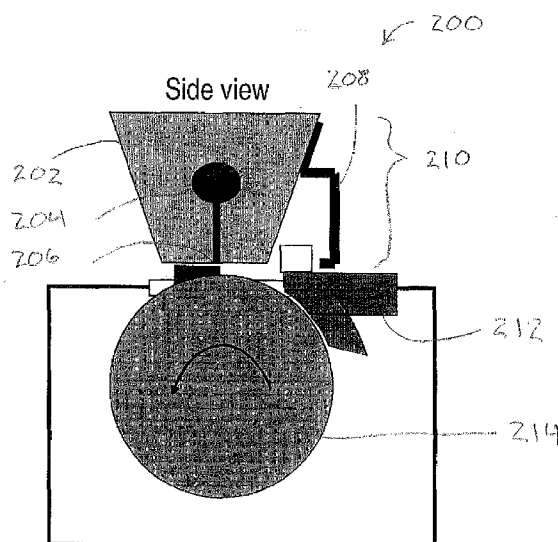


Fig. 2

(57) Abstract: An apparatus and method for solution coating layers onto a substrate of an electronic device. A slot die coater in conjunction with a vacuum assist device is used in priming, coating and cleaning stations to produce thin layers having performance advantages over competing technologies.



(88) Date of publication of the international search report:

4 March 2010

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/044487**A. CLASSIFICATION OF SUBJECT MATTER*****B05B 1/00(2006.01)i, B05C 1/00(2006.01)i, B05D 5/00(2006.01)i***

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 9 : B05C 5/00, 5/02, 11/10, B05D 1/26, B29C 47/12.

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applications for Utility Models since 1975

Japanese Utility Models and application for Utility Models since 1975

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

eKOMPASS(KIPO internal) and keyword : slot, die, vacuum, substrate, coater, apparatus, assembly, priming, cleaning.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2007/055102 A1 (NAMEKAWA. et al) 18 May 2007 See Paragraphs 13-25; Claims 1-11 and Figures 8-9.	1 - 10
A	US 2005/0150449 A1 (MATSUNAGA. et al.) 14 July 2005 See Paragraphs 29-31; Claims 1-17 and Figures 1-3.	1 - 10
A	US 06475282 B1 (SNODGRASS. et al.) 05 November 2002 See Column 4, Line 20 - Column 5, Line 44; Claims 1-11 and Figures 1-4.	1 - 10
A	US 2003/0116881 A1 (NELSON. et al.) 26 June 2003 See Paragraphs 29-36; Claims 1-17 and Figures 1-3.	1 - 10



Further documents are listed in the continuation of Box C.



See patent family 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 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 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

13 JANUARY 2010 (13.01.2010)

Date of mailing of the international search report

14 JANUARY 2010 (14.01.2010)

Name and mailing address of the ISA/KR

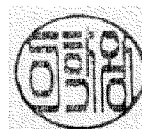
Korean Intellectual Property Office
Government Complex-Daejeon, 139 Seonsa-ro, Seo-
gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

LEE, Hak Woang

Telephone No. 82-42-481-8396



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2009/044487

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2007-055102 A1	18.05.2007	CN 101267894 A EP 1946849 A1 WO 2007-055102 A1 KR 10-2008-0066661 A US 2008-0210160 A1	17.09.2008 23.07.2008 18.05.2007 16.07.2008 04.09.2008
US 2005-0150449 A1	14.07.2005	AU 2003-219556 A1 DE 20320699 U1 JP 04-108353 B2 JP 2003-300000 A TW 288663 B US 07387681 B2 WO 2003-082480 A1	13.10.2003 14.04.2005 25.06.2008 21.10.2003 21.10.2007 17.06.2008 09.10.2003
US 06475282 B1	05.11.2002	None	
US 2003-0116881 A1	26.06.2003	AT 383236 T AU 2002-342259 A1 BR 0214504 A DE 60224574 D1 EP 1458545 A1 EP 1458545 B1 JP 2005-512853 A KR 10-0921583 B1 TW 256337 B US 06813820 B2 US 07615175 B2 WO 2003-053655 A1	15.01.2008 09.07.2003 03.11.2004 21.02.2008 22.09.2004 09.01.2008 12.05.2005 14.10.2009 11.06.2006 09.11.2004 10.11.2009 03.07.2003