

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
31 December 2008 (31.12.2008)

PCT

(10) International Publication Number
WO 2009/002019 A3

(51) International Patent Classification:

H01L 21/20 (2006.01)

(21) International Application Number:

PCT/KR2008/002919

(22) International Filing Date: 26 May 2008 (26.05.2008)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:

10-2007-0063711 27 June 2007 (27.06.2007) KR

(71) Applicant (for all designated States except US): **DOOSAN MECATEC CO., LTD.** [KR/KR]; 64, Sinchon-dong, Changwon-si, Gyeongsangnam-do 641-370 (KR).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **KWON, Jin Haon** [KR/KR]; 334-1302, Yulgok Jugong Apartment, 876, Geumjeong-dong, Gunpo-si, Gyeonggi-do 435-050 (KR). **SONG, Kyo Jun** [KR/KR]; 204-806, Hyundai Apartment, Wolpi-dong, Sangnok-gu, Ansan-si, Gyeonggi-do 426-789 (KR). **CHO, Sung Jae** [KR/KR]; 1503-1002, Greenville 15-danji, Choji-dong, Danwon-gu, Ansan-si, Gyeonggi-do 425-877 (KR). **PARK, Ki Ju** [KR/KR]; Rm. 618, Neulbom Sweetville, 524, Gojan 1-dong, Danwon-gu,

Ansan-si, Gyeonggi-do 425-801 (KR). **LEE, Hyun Ki** [KR/KR]; 101-402, Mujigae maeul KCC, Apartment, 797, Dang-dong, Gunpo-si, Gyeonggi-do 435-010 (KR). **MOK, Jin Il** [KR/KR]; 44-3, Poil-dong, Uiwang-si, Gyeonggi-do 437-829 (KR).

(74) Agent: **HAM, Hyun-Kyung**; 14F., Kukdong Building, 60-1, Chungmuro3-ka, Chung-ku, Seoul 100-705 (KR).

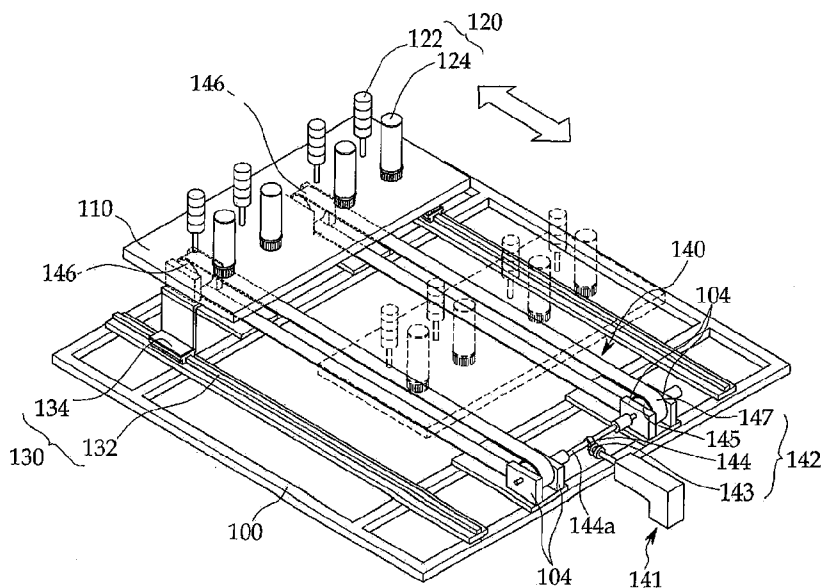
(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, 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, 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, MT, NL,

[Continued on next page]

(54) Title: EVAPORATION APPARATUS

FIG. 1



(57) Abstract: Disclosed is an evaporation apparatus, which includes a moving plate disposed on the frame to be reciprocated, a plurality of evaporation sources for evaporating an evaporation material onto a substrate so as to deposit the evaporation material on the substrate in which the plurality of evaporation sources is arranged in a direction intersecting a movement direction of the moving plate on the moving plate, and a driving unit for reciprocating the moving plate. The evaporation apparatus can be simplified in structure, and can deposit the evaporation material with a uniform thickness on the substrate in a short time.



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).

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

Published:

— *with international search report*

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

19 February 2009

A. CLASSIFICATION OF SUBJECT MATTER***H01L 21/20(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 8 H01L 21/20

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)

eKIPASS(KIPO internal) & keyword : evaporation, source, moving plate, guide, and similar terms

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 16-035964 A (TOKKI CORP) 05.02.2004 See the abstract, fig. 1~6, paragraph [0005] ~ paragraph [0048]	1-10
A	JP 16-353030 A (TOKKI CORP) 16.12.2004 See the abstract, fig. 2~7, paragraph [0005] ~ paragraph [64]	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

16 DECEMBER 2008 (16.12.2008)

Date of mailing of the international search report

16 DECEMBER 2008 (16.12.2008)

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

JO Soo Ik

Telephone No. 82-42-481-8196



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR2008/002919Patent document
cited in search reportPublication
datePatent family
member(s)Publication
date

JP16035964 A

05.02.2004

KR 2004-0004755 A

14.01.2004

JP16353030 A

16.12.2004

KR 2004-0104384 A

10.12.2004