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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
9 September 2005 (09.09.2005)

PCT

(10) International Publication Number
WO 2005/082588 A3

(51) International Patent Classification[7]: B28D 5/00, 5/02

(21) International Application Number:
PCT/US2005/005340

(22) International Filing Date:
22 February 2005 (22.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/547,398 23 February 2004 (23.02.2004) US

(71) Applicants *(for all designated States except US)*: **TOWA-INTERCON TECHNOLOGY, INC.** [US/US]; 18255 Sutter Blvd., Morgan Hill, CA 95037 (US). **KONINKLIJKE PHILLIPS ELECTRONICS N.V.** [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **MIHAI, Chris** [US/US]; 9149 Eagle View Drive, Morgan Hill, CA 95037 (US). **KHOR, Teang, K.** [MY/US]; 896 Towne Drive, Milpitas, CA 95035 (US). **DONKER, Marcus, Franciscus** [NL/NL]; De Flier 3032, NL-6605 Wijchen ZA (NL). **VAN GEMERT, Leo** [NL/NL]; Berg en Dalseweg 95, NL-6652 BC Nijmegen (NL).

(74) Agent: **AUSTIN, James, E.**; Beyer Weaver & Thomas, LLP, P.O. Box 70250, Oakland, CA 94612-0250 (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, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, 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).

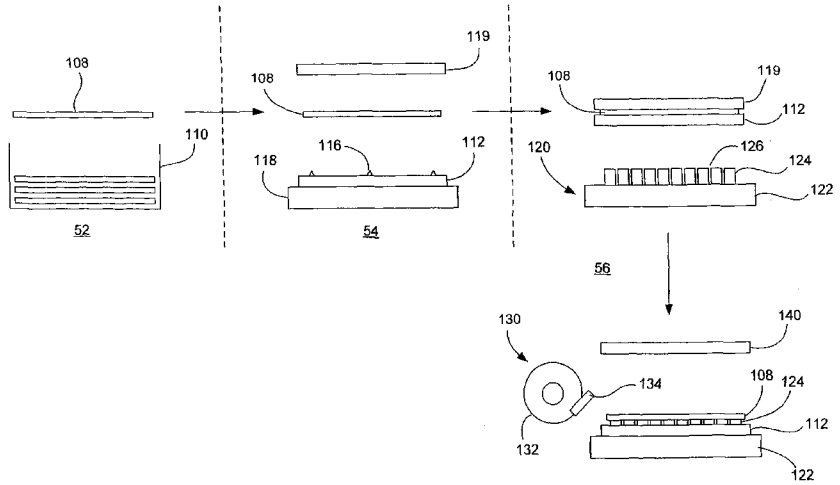
**Published:**

— *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*

*[Continued on next page]*

(54) Title: SAW FOR A SEMICONDUCTOR DEVICE




(57) Abstract: Improved systems and methods for singulating a substrate into a plurality of integrated circuit devices are disclosed. One aspect of the invention corresponds to a fixture that holds the substrate during the dicing process. Another aspect of the invention pertains to a nozzle assembly that provides better fluid flow over the cutting blades. Another aspect of the invention corresponds to a nozzle adjustment assembly that helps position the nozzles relative to the blades. Another aspect of the invention corresponds to spacers that reduce the problem of imbalance caused by fluid retained therein. Yet another aspect pertains to the composition of the fluid, which is distributed by the nozzle assembly to the blades.

WO 2005/082588 A3

**(88) Date of publication of the international search report:**
19 January 2006

*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.*