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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
26 February 2009 (26.02.2009)

PCT

(10) International Publication Number
WO 2009/025942 A1

(51) International Patent Classification:
H01L 21/3205 (2006.01) *H01L 21/28* (2006.01)

(21) International Application Number:
PCT/US2008/070141

(22) International Filing Date: 16 July 2008 (16.07.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
11/840,120 16 August 2007 (16.08.2007) US

(71) Applicant *(for all designated States except US)*: **MICRON TECHNOLOGY, INC.** [US/US]; 8000 South Federal Way, Boise, ID 83716 (US).

(72) Inventors: **PRATT, Dave**; 2282 W. Andrew Creek St., Meridian, ID 83642 (US). **PERKINS, Andy**; 817 Patrick Pl., Boise, ID 83709 (US).

(74) Agents: **MATKIN, Mark, S.** et al.; Wells St. John P.S., 601 W. 1st Ave, Ste 1300, Spokane, WA 99201 (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, 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*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(54) Title: METHODS OF FORMING THROUGH SUBSTRATE INTERCONNECTS

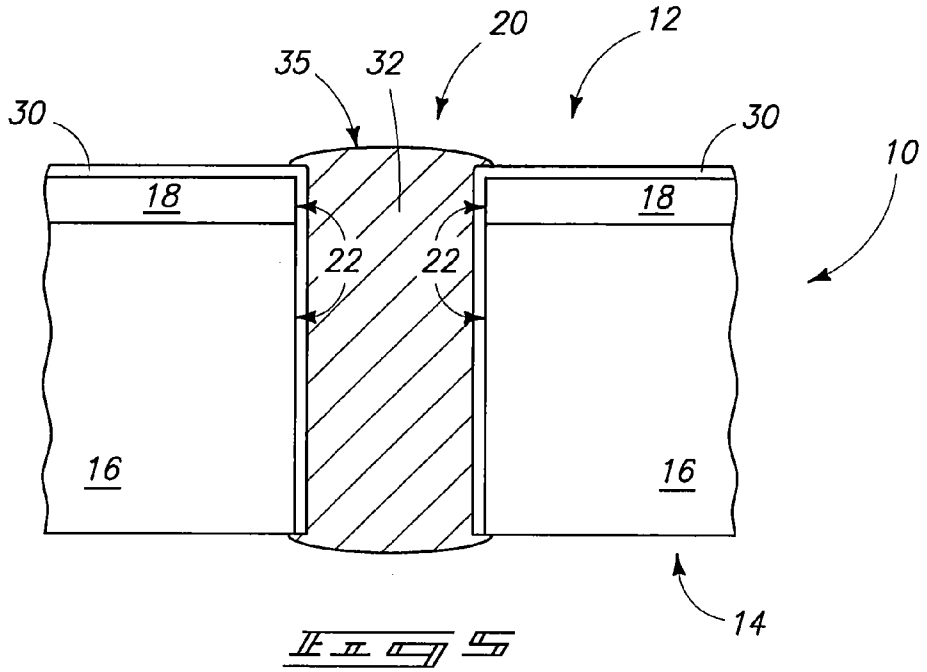


Fig 5

(57) Abstract: A method of forming a through substrate interconnect includes forming a via into a semiconductor substrate. The via extends into semiconductive material of the substrate. A liquid dielectric is applied to line at least an elevationally outermost portion of sidewalls of the via relative a side of the substrate from which the via was initially formed. The liquid dielectric is solidified within the via. Conductive material is formed within the via over the solidified dielectric and a through substrate interconnect is formed with the conductive material.

WO 2009/025942 A1