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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
12 July 2007 (12.07.2007)

PCT

(10) International Publication Number
WO 2007/078790 A1

(51) International Patent Classification:
H01L 21/288 (2006.01) *H01L 21/768* (2006.01)

(21) International Application Number:
PCT/US2006/047603

(22) International Filing Date:
13 December 2006 (13.12.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
102005063093.6
30 December 2005 (30.12.2005) DE
102006001253.4 10 January 2006 (10.01.2006) DE
11/536,041 28 September 2006 (28.09.2006) US

(71) Applicant *(for all designated States except US)*: **ADVANCED MICRO DEVICES, INC.** [US/US]; ONE AMD PLACE, MAIL STOP 68, P.O. BOX 3453, Sunnyvale, CA 94088-3453 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **PREUSSE, Axel** [DE/DE]; HUMBOLDTSTRASSE 3, 01445 Radebeul (DE). **WEHNER, Susanne** [DE/DE]; RUDOLFSTR 23B, 01097 Dresden (DE). **NOPPER, Markus** [DE/DE]; D0EBELNER STRASSE 67G, 01129 Dresden (DE).

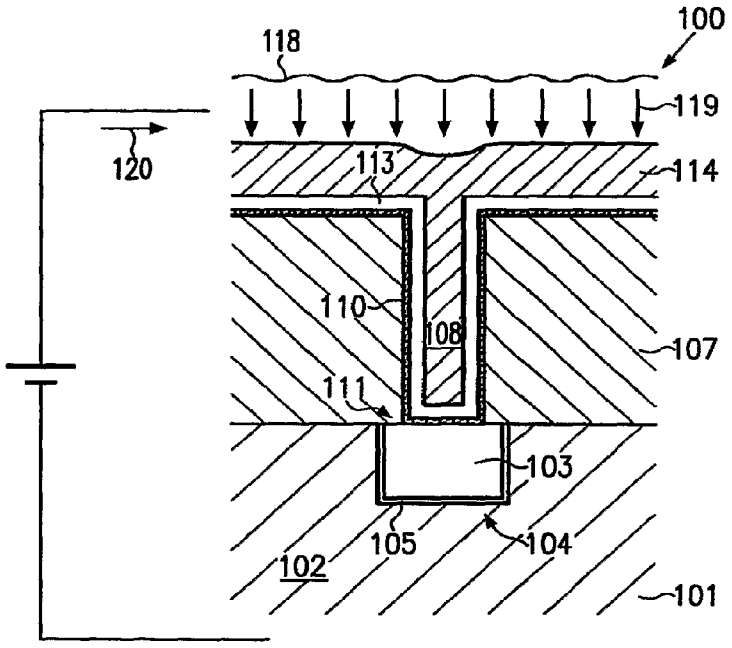
(74) Agent: **DRAKE, Paul, S.**; ADVANCED MICRO DEVICES, INC., 5204 EAST BEN WHITE BOULEVARD, MAIL STOP 562, Austin, TX 78741 (US).

(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, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, 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, HU, IE, IS, IT, LT, LU, LV, 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).

[Continued on next page]

(54) Title: METAL LAYER OVER A PATTERNED DIELECTRIC BY WET CHEMICAL DEPOSITION INCLUDING AN ELECTROLESS AND A POWERED PHASE



(57) Abstract: By performing an electroless deposition and an electro deposition process in situ, highly reliable metallizations may be provided, wherein limitations with respect to contaminations and device scaling, encountered by conventional chemical vapor deposition (CVD), atomic layer deposition (ALD) and physical vapor deposition (PVD) techniques for the formation of seed layers may be overcome. In some embodiments, a barrier layer is also deposited on the basis of a wet chemical deposition process.

WO 2007/078790 A1

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*

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.