(20040604897)
13/09/04

*162162*

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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
25 September 2003 (25.09.2003)

PCT

(10) International Publication Number
WO 2003/079443 A3

(51) International Patent Classification[7]: H01L 45/00, G11C 11/34, H01L 27/24

(21) International Application Number: PCT/US2003/008148

(22) International Filing Date: 12 March 2003 (12.03.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/100,450 14 March 2002 (14.03.2002) US

(71) Applicant: MICRON TECHNOLOGY, INC. [US/US]; 8000 South Federal Way, Boise, ID 83707-0006 (US).

(72) Inventor: CAMPBELL, Kristy, A.; 9845 W. Mossy Cup Street, Boise, ID 83709 (US).

(74) Agent: D'AMICO, Tom; Dickstein, Shapiro, Morin & Ohinsky, 2101 L Street NW,, Washington D.C. 20037-1526 (US).

(81) Designated States (national): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), 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, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK (utility model), SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.

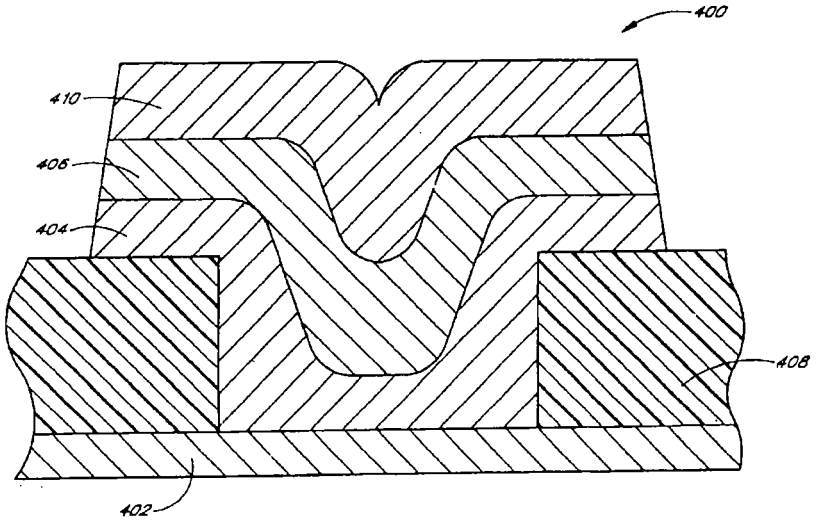
(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, 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

(88) Date of publication of the international search report: 1 April 2004

[Continued on next page]

(54) Title: MANUFACTURING METHODS FOR RESISTANCE VARIABLE MATERIAL CELLS




(57) Abstract: The present invention is related to methods and apparatus to produce a memory cell (400) or resistance variable material with improved data retention characteristics and higher switching speeds. In a memory cell (400) according to an embodiment of the present invention, silver selenide (406) and a chalcogenide glass (404), such as germanium selenide (GexSe(1-x)) are combined in an active layer, which supports the formation of conductive pathways in the presence of an electric potential applied between electrodes (402, 410). Advantageously, embodiments of the present invention can be fabricated with relatively wide ranges for the thicknesses of the silver selenide (406) and glass layers (404).

WO 2003/079443 A3

*ACTION*