



(51) International Patent Classification:
H01L 21/8247 (2006.01) *H01L 27/115* (2006.01)

(21) International Application Number:
PCT/US2010/028107

(22) International Filing Date:
22 March 2010 (22.03.2010)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
12/424,404 15 April 2009 (15.04.2009) US

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

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MARSH, Eugene, P.** [US/US]; 1722 Picabo Ct., Boise, ID 83716 (US). **QUICK, Timothy, A.** [US/US]; 4606 Castlebar Dr., Boise, ID 83703 (US). **UHLENBROCK, Stefan** [DE/US]; 11366 West Divide Pass Drive, Boise, ID 83709 (US).

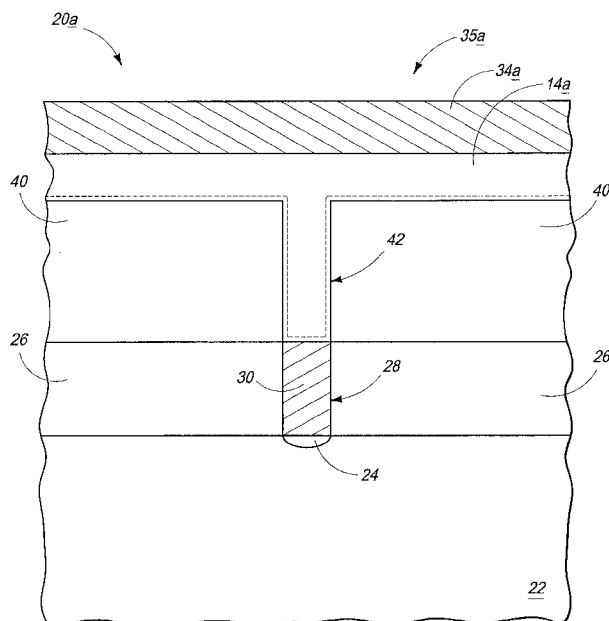
(74) Agents: **MATKIN, Mark S.** et al.; Wells St. John P.S., 601 West First Avenue, Suite 1300, Spokane, WA 99201 (US).

(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, CL, 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, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: METHODS OF FORMING PHASE CHANGE MATERIALS AND METHODS OF FORMING PHASE CHANGE MEMORY CIRCUITRY



(57) Abstract: A method of forming a phase change material which having germanium and tellurium therein includes depositing a germanium-containing material over a substrate. Such material includes elemental-form germanium. A gaseous tellurium-comprising precursor is flowed to the germanium-comprising material and tellurium is removed from the gaseous precursor to react with the elemental-form germanium in the germanium-comprising material to form a germanium and tellurium-comprising compound of a phase change material over the substrate. Other implementations are disclosed.



Published:

- *without international search report and to be republished
upon receipt of that report (Rule 48.2(g))*