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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
10 April 2008 (10.04.2008)

PCT

(10) International Publication Number
WO 2008/041716 A1

(51) International Patent Classification:
H01L 29/786 (2006.01) *H01L 27/04* (2006.01)
H01L 21/822 (2006.01) *H01L 27/10* (2006.01)

(21) International Application Number:
PCT/JP2007/069329

(22) International Filing Date:
26 September 2007 (26.09.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2006-273394 4 October 2006 (04.10.2006) JP

(71) Applicant *(for all designated States except US)*: **SEMICONDUCTOR ENERGY LABORATORY CO., LTD.** [JP/JP]; 398, Hase, Atsugi-shi, Kanagawa, 2430036 (JP).

(72) Inventor; and

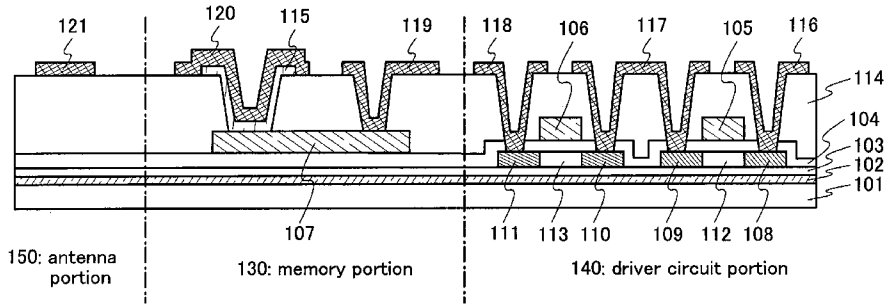
(75) Inventor/Applicant *(for US only)*: **TOKUNAGA, Hajime** [JP/JP]; c/o SEMICONDUCTOR ENERGY LABORATORY CO., LTD., 398, Hase, Atsugi-shi, Kanagawa, 2430036 (JP).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, 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, 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, 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, MT, 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*

(54) **Title:** SEMICONDUCTOR DEVICE AND MANUFACTURING METHOD THEREOF



(57) **Abstract:** An object is to provide a semiconductor device mounted with memory which can be driven in the ranges of a current value and a voltage value which can be generated from a wireless signal. Another object is to provide write-once read-many memory to which data can be written anytime after manufacture of a semiconductor device. An antenna, antifuse-type ROM, and a driver circuit are formed over an insulating substrate. Of a pair of electrodes included in the antifuse-type ROM, the other of the pair of the electrodes is also formed through the same step and of the same material as a source electrode and a drain electrode of a transistor included in the driver circuit.

WO 2008/041716 A1