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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
13 November 2003 (13.11.2003)

PCT

(10) International Publication Number
WO 03/094243 A1

(51) International Patent Classification[7]: H01L 29/423, 21/28, 21/336

(21) International Application Number: PCT/US03/12958

(22) International Filing Date: 28 April 2003 (28.04.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/135,227 30 April 2002 (30.04.2002) US

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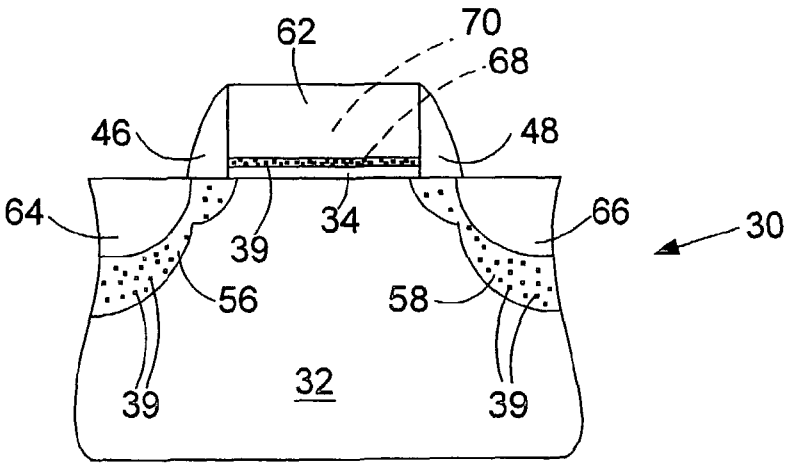
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, 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*

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.

(54) Title: METAL GATE ELECTRODE USING SILICIDATION AND METHOD OF FORMATION THEREOF



(57) Abstract: A semiconductor device is fabricated by providing a substrate (32), and providing a dielectric layer (34) on the substrate (32). A polysilicon body (36) is formed on the dielectric layer (34), and a metal layer (60) is provided on the polysilicon body (36). A silicidation process is undertaken to silicidize substantially the entire polysilicon body (36) to form a gate (62) on the dielectric (34). In an alternative process, a cap layer (90) is provided on the polysilicon body (86), which cap layer (90) is removed prior to the silicidation process. In both embodiments, the polysilicon body (36, 86) is doped with a chosen specie prior to the silicidation process, which dopant (39, 89), during the silicidation process, is driven toward the dielectric layer (34, 84) to form a gate portion (60, 150) having a high concentration thereof adjacent the dielectric (34, 84), the type and concentration of this specie being instrumental in determining the work function of the formed gate (62, 122).

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