



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : H01L 21/8242, 21/8234, 21/8236, 21/336, 21/3205, 29/94, 29/76, 31/062, 31/113, 31/119	A1	(11) International Publication Number: WO 00/30174 (43) International Publication Date: 25 May 2000 (25.05.00)
(21) International Application Number: PCT/US99/26175 (22) International Filing Date: 4 November 1999 (04.11.99) (30) Priority Data: 09/191,729 13 November 1998 (13.11.98) US 09/276,477 25 March 1999 (25.03.99) US (71) Applicant (for all designated States except US): INTEL CORPORATION [US/US]; 2200 Mission College Boulevard, Santa Clara, CA 95052 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): JAN, Chia-Hong [-/US]; 3995 N.W. 176th Avenue, Portland, OR 97229 (US). TSAI, Julie, A. [US/US]; 15021 S.W. Telluride Terrace, Beaverton, OR 97007 (US). YANG, Simon [US/US]; 16800 N.W. Waterford Way, Portland, OR 97229 (US). GHANI, Tahir [US/US]; 16380 S.W. Estuary Drive #104, Beaverton, OR 97006 (US). WHITEHILL, Kevin, A. [US/US]; 5506 S.W. Miles, Court, Portland, OR 97219 (US). KEATING, Steven, J. [US/US]; 16079 S.W. Waxwing Place, Beaverton, OR 97007 (US). MYERS, Alan [US/US]; 625 S.W. 90th, Portland, OR 97225 (US).		
(74) Agents: MILLIKEN, Darren, J. et al.; Blakely, Sokoloff, Taylor & Zafman LLP, 7th floor, 12400 Wilshire Boulevard, Los Angeles, CA 90025 (US). (81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, 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, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>		
(54) Title: A METHOD AND DEVICE FOR IMPROVED SALICIDE RESISTANCE ON POLYSILICON GATES		
(57) Abstract A method and device for improved salicide resistance in polysilicon gates under .20 micro meter. The several embodiments of the invention provide for formation of gate electrode structures with recessed and partially recessed spacers. One embodiment, provides a gate electrode structure (220) with recessed thick inner spacers (230) and thick outer spacers (240). Another embodiment provides a gate electrode structure (320) with recessed thin inner spacers (330) and recessed thick outer spacers (340). Another embodiment provides a gate electrode structure (420) with thin inner spacers (430) and partially recessed outer spacers (440). Another embodiment provides a gate electrode structure (520) with two spacer stacks. The outermost spacer stack with recessed thin inner spacers (550) and recessed thick outer spacers (560). The inner spacer stack with thin inner spacers (530) and thin outer spacers (540). Another embodiment provides a gate electrode structure (620) with two spacer stacks. The outermost spacer stack with recessed thin inner spacers (650) and recessed thick outer spacers (660). The inner spacer stack with recessed thin inner spacers (630) and recessed thin outer spacers (640).		
		