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International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 : H01L 21/76, 21/8242 — A1

(11) International Publication Number: **WO 00/60659**

(43) International Publication Date: 12 October 2000 (12.10.00)

(21) International Application Number: PCT/US00/08650

(22) International Filing Date: 31 March 2000 (31.03.00)

(30) Priority Data:
60/127,520 2 April 1999 (02.04.99) US

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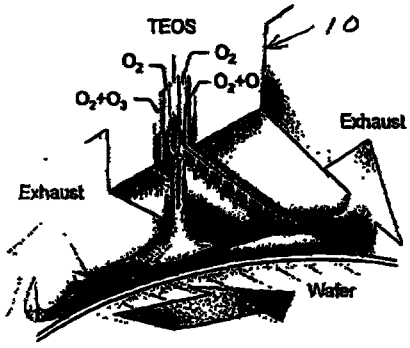
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(81) Designated States: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX,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

(54) Title: IMPROVED TRENCH ISOLATION PROCESS TO DEPOSIT A TRENCH FILL OXIDE PRIOR TO SIDEWALL LINER OXIDATION GROWTH

- Simultaneously captures both conformal and flow-like deposition regions

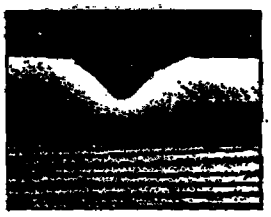


Directly under injection-conformal

2-3cm from injection-flow-like



- Conformal



- Flow-like

(57) Abstract

This invention relates generally to a method of trench isolation used in the fabrication of semiconductor devices, wafers and the like. More specifically, the present invention related to a method of trench isolation using chemical vapor deposition (CVD) with TEOS and ozone to deposit a trench fill oxide prior to growing a thermal oxide layer or liner on sidewalls of the trench. The method provides void-free as-deposited dielectric CVD films into gaps or trenches with non-vertical, vertical and or re-entrant profiles.