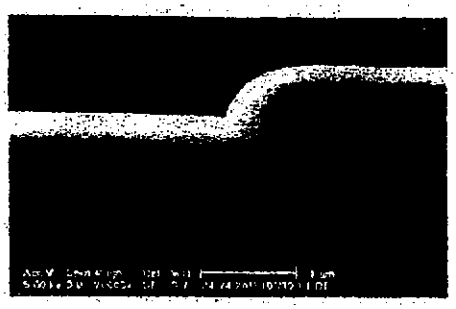
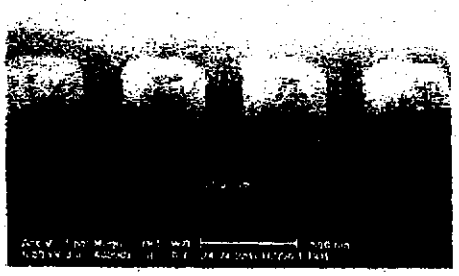
SEM CROSS-SECTIONS SHOWING THE AS-DEPOSITED FILM (A) STEP COVERAGE AND (B) GAP FILL BEHAVIOR.



BPSG STEP COVERAGE

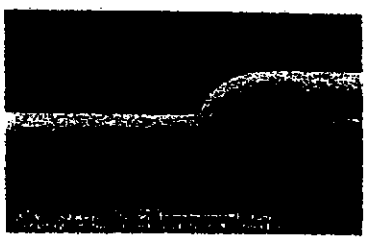
FIG. 1A



BPSG GAP FILL BEHAVIOR

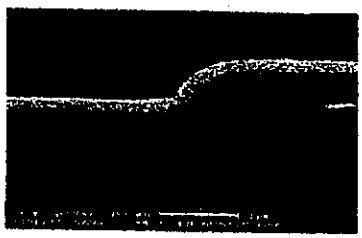
FIG. 1B

SEM CROSS-SECTIONS SHOWING THE FLOW ANGLE VARIATION WITH TIME AT 750 °C FOR N_2 AND STEAM PROCESSES.



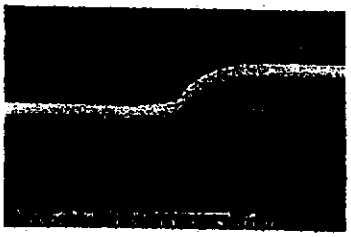
750 °C 30 SEC N_2

FIG. 2A



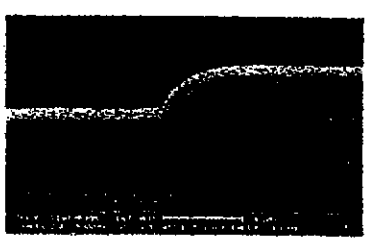
750 °C 90 SEC N_2

FIG. 2B



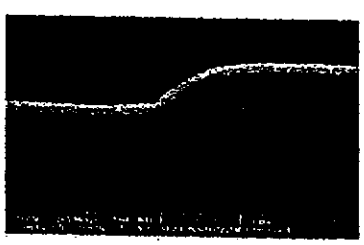
750 °C 180 SEC N_2

FIG. 2C



750 °C 30 SEC STEAM

FIG. 2D



750 °C 90 SEC STEAM

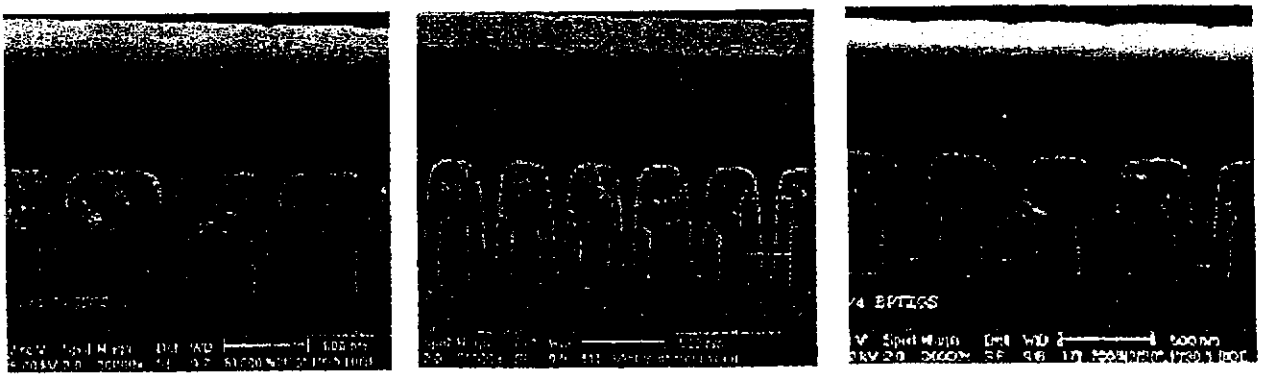
FIG. 2E



750 °C 180 SEC STEAM

FIG. 2F

SEM MICROGRAPHS SHOWING GAP FILL BEHAVIOR OF BPSG FILMS ANNEALED IN N_2.



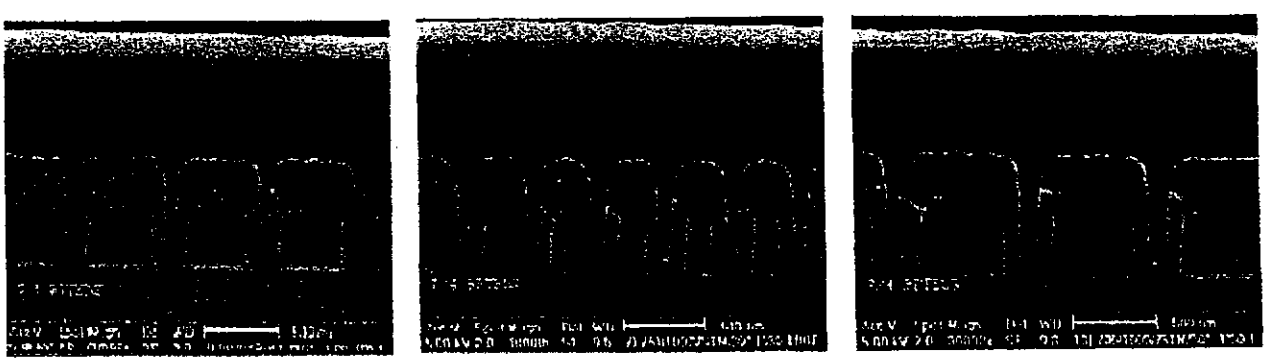
800 °C 30 SEC N_2 GAP FILL

750 °C 30 SEC N_2 GAP FILL

700 °C 30 SEC N_2 GAP FILL

FIG. 3

SEM MICROGRAPHS SHOWING GAP FILL BEHAVIOR OF BPSG FILMS ANNEALED IN STEAM.



800 °C 30 SEC H_2O GAP FILL

750 °C 30 SEC H_2O GAP FILL

700 °C 30 SEC H_2O GAP FILL

FIG. 4