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(71) Applicant: LAM RESEARCH CORPORATION

[US/US]; 4650 Cushing Parkway, Fremont, California 94538 (US).

(72) Inventors: KUMAR, Ravi; 4650 Cushing Parkway,

Fremont, California 94538 (US). AGARWAL, Pulkit; 4650 Cushing Parkway, Fremont, California 94538 (US). LAVOIE, Adrien; 4650 Cushing Parkway, Fremont, California 94538 (US). AUSTIN, Dustin Zachary; 4650 Cushing Parkway, Fremont, California 94538 (US). ABEL, Joseph R.; 4650 Cushing Parkway, Fremont, California 94538 (US). AGNEW, Douglas Walter; 4650 Cushing Parkway, Fremont, California 94538 (US). BAKER, Jonathan Grant; 4650 Cushing Parkway, Fremont, California 94538 (US).

(74) Agent: BERGIN, Denise S. et al.; WEAVER AUSTIN

VILLENEUVE & SAMPSON LLP, P.O. Box 70250, Oakland, California 94612-0250 (US).

(54) Title: PLASMA ENHANCED ATOMIC LAYER DEPOSITION OF SILICON-CONTAINING FILMS

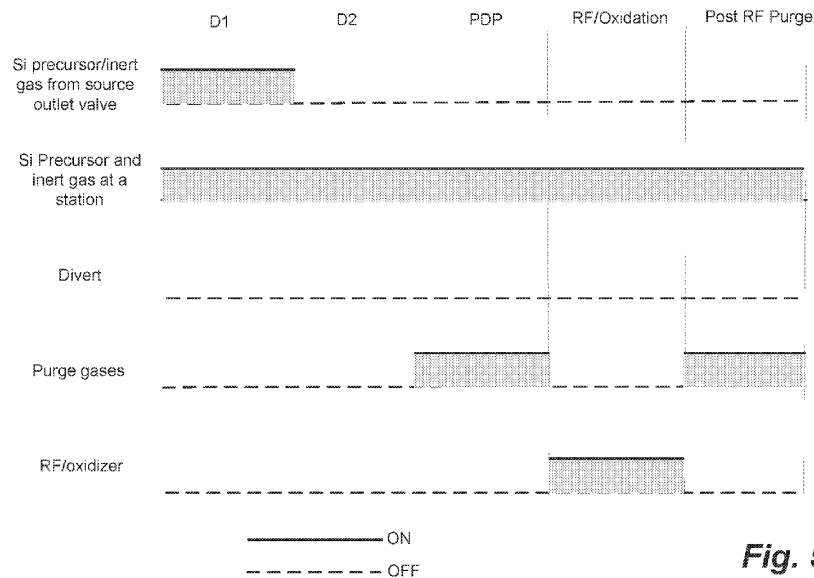


Fig. 5

(57) Abstract: A method comprising: providing a substrate in a processing station comprising a substrate support and a showerhead, the substrate comprising a gap to be filled; and depositing silicon-containing film in the gap by a plasma-enhanced atomic layer deposition (PEALD) process comprising multiple cycles of operations (a)-(d): (a) a dose operation comprising flowing a silicon-containing precursor into the processing station via the showerhead to allow the silicon-containing precursor to adsorb onto the substrate; (b) after (a), flowing a purge gas into the processing station; (c) after (b), exposing the substrate to plasma species to react with the adsorbed silicon-containing precursor; and (d) after (c), flowing a purge gas into the processing station, wherein the silicon-containing precursor continues to flow into the processing station during at least (b).

[Continued on next page]

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