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FOREIGN MATTER REDUCTION IN HIGH DENSITY PLASMA CHEMICAL VAPOR DEPOSITION PROCESS

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ABSTRACT

This paper describes the aspects of foreign matter reduction in the High Density Plasma chemical vapor deposition (HDP-CVD) process. Methodologies to reduce foreign matter were verified experimentally. Based on the results obtained a correlation between process parameters and foreign matter was obtained. The analysis of such data led to accuracy in determination the causes of foreign matter in a HDP-CVD process. The yield and productivity of equipments were increased by employing methods to reduce foreign matter contamination. A correlation was also drawn between particle counts and causes of foreign matter. Experiments were carried out for numerous tool sets. All the activities were carried out in a real time semiconductor fab.

KEYWORDS: Foreign Matter, HDP – CVD, Semiconductor