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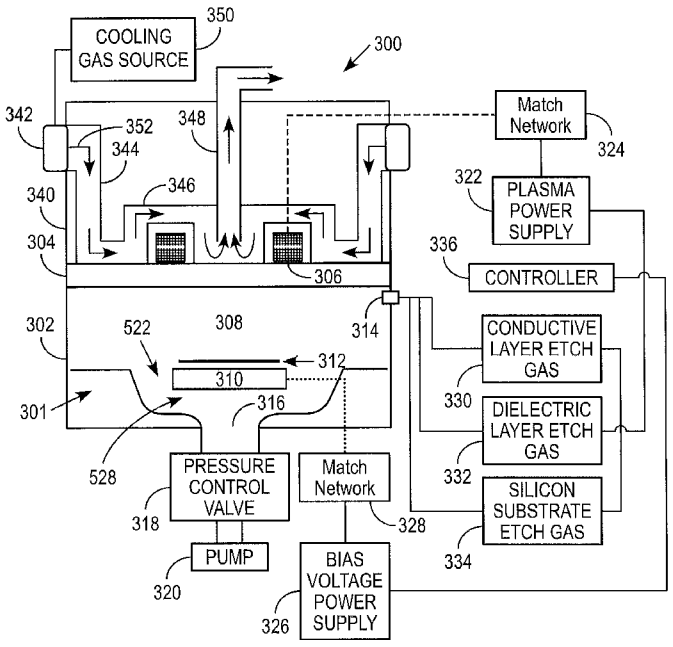
Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

[Continued on next page]

(54) Title: CHAMBER FILLER KIT FOR PLASMA ETCH CHAMBER USEFUL FOR FAST GAS SWITCHING



(57) Abstract: A chamber filler kit for an inductively coupled plasma processing chamber in which semiconductor substrates are processed by inductively coupling RF energy through a window facing a substrate supported on a cantilever chuck. The kit includes at least one chamber filler which reduces the lower chamber volume in the chamber below the chuck. The fillers of the kit can be mounted in a standard chamber having a chamber volume of over 60 liters and by using different sized chamber fillers it is possible to reduce the chamber volume to provide desired gas flow conductance and accommodate changes in vacuum pressure during processing of the substrate. The kit can include top, mid and bottom fillers wherein the top filler has a frustoconical inner wall which provides an annular gap of desired size around the chuck and the mid filler has a horizontal surface which provides a vertical gap of desired size below the chuck. The bottom filler has a central opening in fluid communication with a vacuum outlet in the bottom of the chamber through which process gas and byproducts are removed from the chamber. The chamber filler kit can be used to modify a standard chamber to accommodate different processing regimes such as rapid alternating processes wherein wide pressure changes are needed without varying a gap between the substrate and the window.

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