

ABSTRACT OF THE DISCLOSURE

VARIABLE TEMPERATURE HARDWARE AND METHODS FOR REDUCTION OF WAFER BACKSIDE DEPOSITION

A process tuning kit for use in a chemical deposition apparatus wherein the process tuning kit includes a carrier ring, horseshoes and shims. The horseshoes have the same dimensions and the shims are provided in sets with different thicknesses to control the height of the horseshoes with respect to an upper surface of a pedestal assembly on which the horseshoes and shims are mounted. A semiconductor substrate is transported into a vacuum chamber of the chemical deposition apparatus by the carrier ring which is placed on the horseshoes such that minimum contact area supports lift the substrate from the carrier ring and support the substrate at a predetermined offset with respect to an upper surface of the pedestal assembly. During processing of the substrate, backside deposition can be reduced by using shims of desired thickness to control the predetermined offset.

FIG. 2