

ABSTRACT OF THE DISCLOSURE

DEPOSITION APPARATUS INCLUDING AN ISOTHERMAL PROCESSING ZONE

A deposition apparatus for processing semiconductor substrates having an isothermal processing zone comprises a chemical isolation chamber in which semiconductor substrates are processed. A process gas source is in fluid communication with a showerhead module which delivers process gases from the process gas source to the isothermal processing zone wherein the showerhead module includes a faceplate wherein a lower surface of the faceplate forms an upper wall of a cavity defining the isothermal processing zone, a backing plate, and an isolation ring which surrounds the faceplate and the backing plate. At least one compression seal is compressed between the faceplate and the backing plate which forms a central gas plenum between the faceplate and the backing plate. A substrate pedestal module is configured to heat and support a semiconductor substrate wherein an upper surface of the pedestal module forms a lower wall of the cavity defining the isothermal processing zone within the chemical isolation chamber. A vacuum source is in fluid communication with the isothermal processing zone for evacuating process gas from the processing zone.

Fig. 1