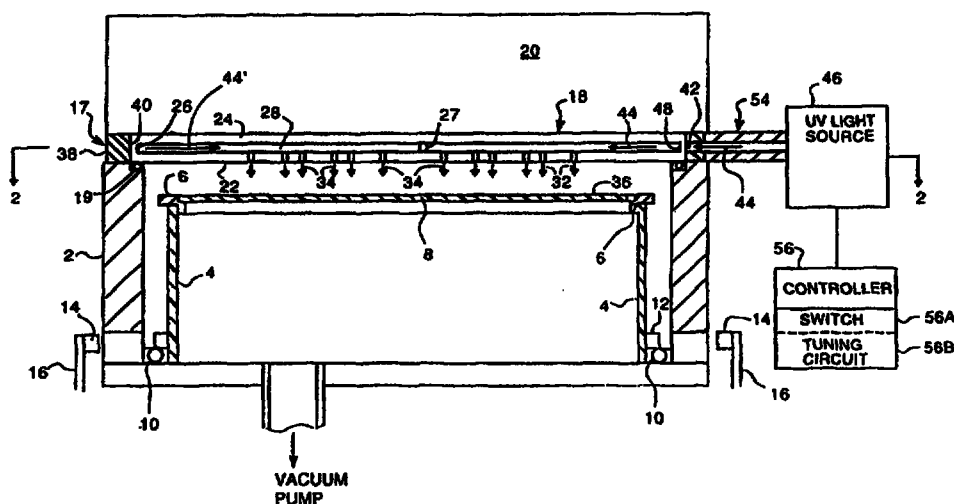




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(54) Title: GAS MANIFOLD FOR UNIFORM GAS DISTRIBUTION AND PHOTOCHEMISTRY



(57) Abstract

The invention provides a system for providing a flow of a short-lived, reactive process gas species into an RTP chamber without creating ionic species. An RTP chamber (2) includes a transparent quartz window assembly (18). The window assembly has a first pane (22) facing a wafer (8) inside the RTP chamber. A second pane (24) is positioned adjacent a heat lamp array (20) on the outside of the RTP chamber. A window side wall (26) joins the first and second panes at their peripheral edges to provide an internal chamber (28) therebetween. A plurality of channels (34) extend through the first pane from the internal chamber to the inside of the RTP chamber. A port (30) communicates between the internal chamber and a process gas source. The window assembly also includes a reflective surface (40) facing the internal chamber. An ultraviolet light source (46) is positioned to illuminate process gas flowing through the window assembly with ultraviolet light such that the ultraviolet light alters the chemistry of the process gas. A process using the reactive gas species can be turned on and off quickly by turning on and off the ultraviolet light.