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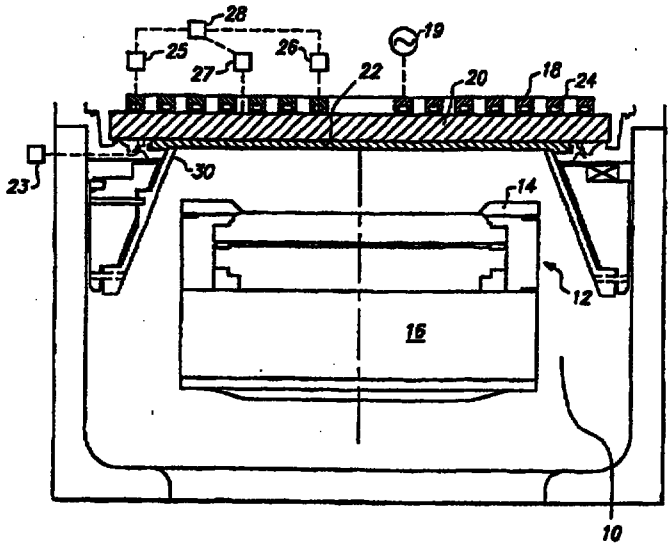
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(54) Title: TEMPERATURE CONTROLLING METHOD AND APPARATUS FOR A PLASMA PROCESSING CHAMBER



(57) Abstract

A plasma processing chamber (10) includes a substrate holder (12) and a dielectric member such as a dielectric window (20) or gas distribution plate having an interior surface facing the substrate holder, the interior surface being maintained below a threshold temperature to minimize process drift during processing of substrates. The chamber can include an antenna (18) which inductively couples RF energy through the dielectric member to energize process gas into a plasma state. The antenna can include a channel (24) through which a temperature controlling fluid, which has been cooled by a closed circuit temperature controller, is passed. The control of the temperature of the interior surface minimizes process drift and degradation of the quality of the processed substrates during sequential bath processing of substrates such as during oxide etching of semiconductor wafers.