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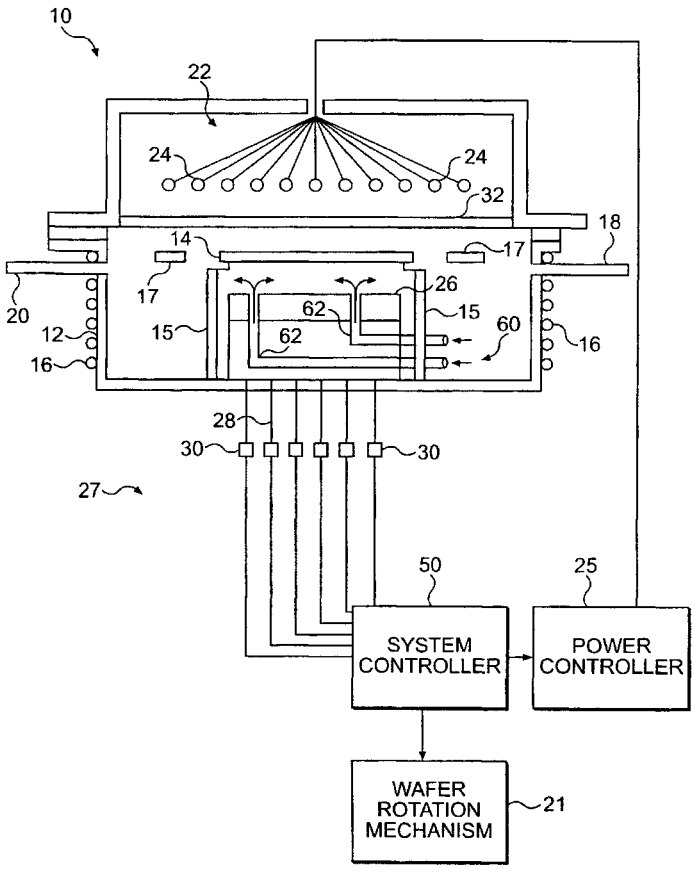
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(54) Title: LOCALIZED HEATING AND COOLING OF SUBSTRATES



(57) Abstract: The present invention is directed to an apparatus and process for locally heating and/or cooling of semiconductor wafers in thermal processing chambers. In particular, the apparatus of the present invention includes a device for heating or cooling localized regions of a wafer to control the temperature of such regions during one or more stages of a heat cycle. For instance, in one embodiment, gas nozzles eject gas towards the bottom of the wafer to provide localized temperature control. In another embodiment, a transparent gas pipe containing a variety of gas outlets distributes gas onto the top surface of the wafer to provide localized temperaure control.

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