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(54) Title: SEMICONDUCTOR HEAT TREATMENT DEVICE, AND TEMPERATURE CONTROL METHOD THEREFOR

(54) 发明名称: 一种半导体热处理设备及其温度控制方法

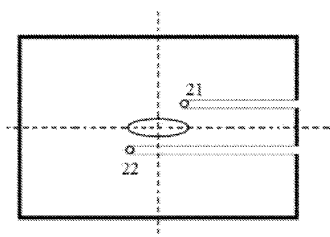


图 2b

(57) Abstract: A semiconductor heat treatment device, and a temperature control method therefor. The device comprises a coil, a chamber, a first temperature sensor, a second temperature sensor and a temperature controller, wherein the coil surrounds the chamber and provides a thermal field for the chamber, and the chamber is provided with a first temperature measurement hole and a second temperature measurement hole which are distributed in the central area of the chamber; the first temperature sensor is used for measuring the temperature of the chamber via the first temperature measurement hole and recording the temperature as a first temperature; the second temperature sensor is used for measuring the temperature of the chamber via the second temperature measurement hole and recording the temperature as a second temperature; and the temperature controller is used for acquiring the first temperature and the second temperature. When the temperature of the chamber reaches a steady state, the temperature controller determines, on the basis of the first temperature and/or the second temperature, whether the central position of the coil deviates from the central point of the chamber, and if the central position of the coil deviates from the central point of the chamber, the temperature controller controls, on the basis of the first temperature and/or the second temperature, the coil to translate along a central axis until the central position of the coil reaches the central point of the chamber. The semiconductor heat treatment device can ensure the uniformity of the temperature of a wafer.

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CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN,
TD, TG)。

本国际公布:

— 包括国际检索报告(条约第21条(3))。

(57) 摘要: 一种半导体热处理设备及其温度控制方法, 该设备包括: 线圈、腔室、第一温度传感器、第二温度传感器和温度控制器; 线圈环绕腔室设置并为腔室提供热场, 腔室上设置有分布在腔室的中心区域的第一测温孔和第二测温孔; 第一温度传感器用于通过第一测温孔检测腔室的温度, 记为第一温度; 第二温度传感器用于通过第二测温孔检测腔室的温度, 记为第二温度; 温度控制器用于获取第一温度和第二温度, 当腔室的温度达到稳态时, 基于第一温度和/或第二温度判断线圈的中心位置是否偏离腔室的中心点, 如果是, 基于第一温度和/或第二温度控制线圈沿中心轴线平移, 直至线圈的中心位置到达腔室的中心点。该半导体热处理设备可以保证晶圆温度的均匀性。