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(71) 申请人: 北京北方华创微电子装备有限公司 (**BEIJING NAURA MICROELECTRONICS EQUIPMENT CO., LTD.**) [CN/CN]; 中国北京市大兴区北京经济技术开发区文昌大道 8 号, Beijing 100176 (CN)。

(72) 发明人: 朱磊 (**ZHU, Lei**); 中国北京市大兴区北京经济技术开发区文昌大道 8 号, Beijing 100176 (CN)。
朱旭 (**ZHU, Xu**); 中国北京市大兴区北京经济技术开发区文昌大道 8 号, Beijing 100176 (CN)。

(74) 代理人: 北京天昊联合知识产权代理有限公司 (**TEE & HOWE INTELLECTUAL PROPERTY ATTORNEYS**); 中国北京市东城区东长安街 1 号东方广场东方经贸城西一办公楼 5 层 1, 6-12 室, Beijing 100738 (CN)。

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(54) **Title:** GAS DISTRIBUTION DEVICE AND SEMICONDUCTOR PROCESSING APPARATUS

(54) 发明名称: 气体分配装置和半导体加工设备

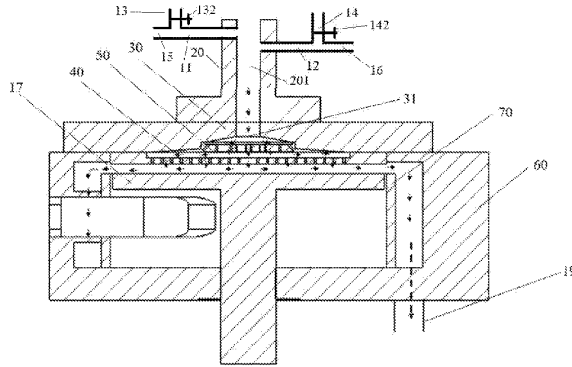


图 3

(57) **Abstract:** Provided in the present application are a gas distribution device and a semiconductor processing apparatus. The semiconductor processing apparatus comprises a reaction cavity having a cover plate arranged at the top, the cover plate being provided with a gas inlet that is in communication with the interior of the reaction cavity. The gas distribution device is arranged below the cover plate, and comprises a gas distribution plate and at least one diffusion plate, wherein the gas distribution plate is located below the gas inlet, a gas uniformizing cavity is formed between the gas distribution plate and the cover plate, and the gas distribution plate is provided with a plurality of gas distribution holes penetrating the gas distribution plate in the thickness direction; the at least one diffusion plate is arranged in the gas uniformizing cavity and divides the gas uniformizing cavity into at least two gas uniformizing sub-cavities distributed at intervals in a vertical direction; each diffusion plate of the at least one diffusion plate is provided with a plurality of diffusion holes penetrating the diffusion plate in the thickness direction; the gas uniformizing sub-cavity adjacent to the cover plate is in communication with the gas inlet; any two adjacent gas uniformizing sub-cavities are in communication by means of the diffusion holes; and the gas uniformizing sub-cavity adjacent to the gas distribution plate is in communication with the interior of the reaction cavity.

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— 包括国际检索报告(条约第21条(3))。

the reaction cavity by means of the gas distribution holes.

(57) 摘要: 本申请提供了一种气体分配装置和半导体加工设备, 半导体加工设备包括顶部设置有盖板的反应腔体, 盖板具有与反应腔体内连通的进气口; 气体分配装置用于设置在盖板下方, 气体分配装置包括: 分气板和至少一个扩散板; 分气板位于进气口的下方, 且在分气板与盖板之间构成匀气腔, 并且分气板具有贯穿分气板的板厚的多个分气孔; 至少一个扩散板设置于匀气腔内, 且将匀气腔隔成沿竖直方向间隔分布的至少两个子匀气腔; 至少一个扩散板中每一扩散板均具有贯穿扩散板的板厚的多个扩散孔; 其中, 与盖板相邻的子匀气腔与进气口连通; 任意相邻的两个子匀气腔通过扩散孔连通; 与分气板相邻的子匀气腔通过分气孔与反应腔体内部连通。