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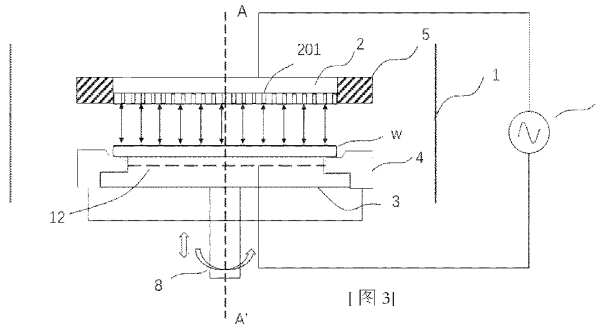
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(54) Title: THIN-FILM DEPOSITION APPARATUS

(54) 发明名称: 一种薄膜沉积装置



(57) Abstract: Disclosed in the present invention is a thin-film deposition apparatus, which is characterized by comprising a processing chamber, which is used for performing thin-film deposition; a gas supply assembly, which is arranged on the top wall of the processing chamber and is used for supplying a process gas into the processing chamber; a heating tray, which is disposed below the gas supply assembly and is used for carrying and heating a substrate; an upper electrode and a lower electrode, which are used for forming a uniform electric field in the processing chamber; and a radio frequency source, which is connected to the upper electrode and the lower electrode for providing a radio frequency power, so as to excite the process gas inside the processing chamber to dissociate into a plasma gas, wherein the plasma gas performs thin-film deposition on the substrate. The sizes of the upper electrode and the lower electrode are the same or differ by ± 10 mm from each other, the diameter of the lower electrode is less than that of the substrate, and the uniform electric field is generated between the upper electrode and the lower electrode. The present invention may ensure the uniform distribution of an electric field in a process cavity, a deposited thin film has good uniformity, and the uniformity of the thin film may also be ensured especially when continuously stacking more than 300 layers or even 1000 layers.

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本国际公布:
— 包括国际检索报告(条约第21条(3))。

(57) 摘要: 本发明公开了一种薄膜沉积装置, 其特征在于, 包括处理腔室, 用于进行薄膜沉积; 气体供应组件, 设置于所述处理腔室顶壁, 用于向处理腔室内部供应工艺气体; 加热托盘, 设置于所述气体供应组件下方, 用于承载并加热基板; 上下电极, 用于在处理腔室内形成均匀电场; 射频源, 用于与上下电极相连提供射频功率, 激发所述处理腔室内部的工艺气体解离为等离子体气体, 等离子体气体在所述基板上进行薄膜沉积。其中, 所述上下电极大小相同或相差 $\pm 10\text{mm}$ 且下电极的直径小于基板, 在上下电极之间产生均匀电场。本发明能够保证工艺腔内电场均匀分布, 沉积后的薄膜均匀性好, 尤其是在超过300层甚至1000层的持续堆栈也能保证薄膜的均匀性。