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(81) 指定国(除另有指明, 要求每一种可提供的国家保护): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU,

(54) Title: METHOD FOR IMPROVING UNIFORMITY OF WAFER ELECTROPLATING THICKNESS

(54) 发明名称: 一种提高晶圆电镀厚度均匀性的方法

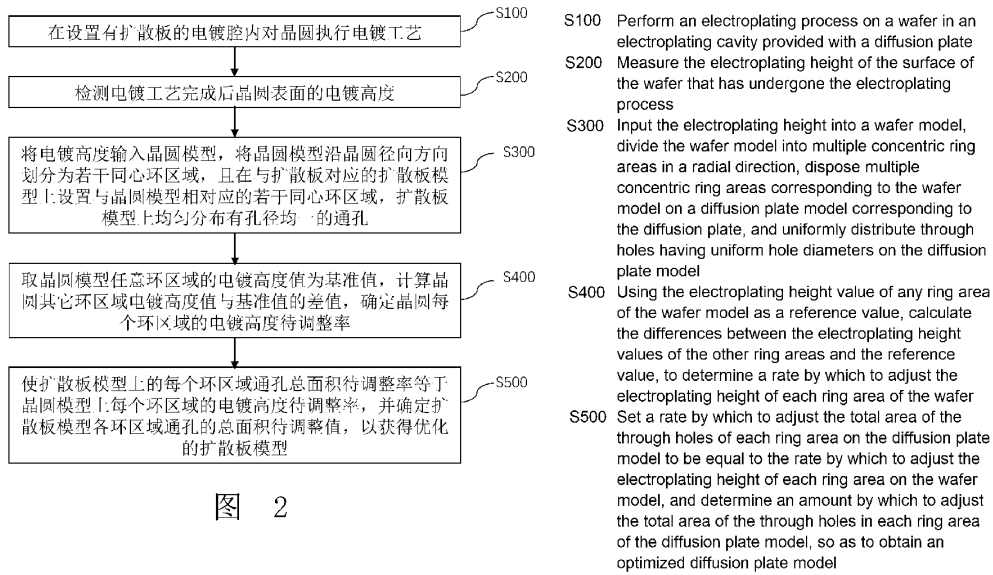


图 2

(57) Abstract: The present invention provides a method for improving the uniformity of wafer electroplating thickness. The method comprises: electroplating a wafer in an electroplating cavity containing a diffusion plate; measuring the electroplating height of the wafer; inputting the electroplating height into a wafer model, dividing the wafer model into multiple concentric ring areas in a radial direction, and disposing multiple concentric ring areas corresponding to the wafer model on a diffusion plate model, through holes having uniform hole diameters being uniformly distributed on the diffusion plate model; using any electroplating height value as a

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reference value, calculating the differences between the electroplating height values of other ring areas and the reference value, to determine a rate by which to adjust the electroplating height of each ring area; setting a rate by which to adjust the total area of the through holes of each ring area on the diffusion plate model to be equal to the rate by which to adjust the electroplating height of each ring area, and determining an amount by which to adjust the total area of the through holes in each ring area of the diffusion plate model, so as to obtain an optimized diffusion plate model. The present invention, by means of the optimization of a diffusion plate, improves electroplating quality and enables wafer electroplating thickness to be more uniform.

(57) 摘要: 本发明提出提高晶圆电镀厚度均匀性的方法, 包括: 在包含扩散板的电镀腔内对晶圆电镀; 检测晶圆电镀高度; 将电镀高度输入晶圆模型, 将晶圆模型沿径向方向划分为若干同心环区域, 且在扩散板模型上设置与晶圆模型相对应的若干同心环区域, 扩散板模型上均匀分布有孔径均一的通孔; 取任意电镀高度值为基准值, 计算其它环区域电镀高度值与基准值的差值, 确定每个环区域的电镀高度待调整率; 使扩散板模型上的每个环区域通孔总面积待调整率等于晶圆模型上每个环区域的电镀高度待调整率, 并确定扩散板模型各环区域通孔的总面积待调整值, 以获得优化的扩散板模型。本发明通过扩散板的优化, 有助于提高电镀质量, 使晶圆的电镀厚度更为均匀。