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# United States Patent [19]

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**Bossart**

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[54] **METHOD AND APPARATUS FOR IMPROVED COATING OF A SEMICONDUCTOR WAFER**

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### [57] **ABSTRACT**

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Disclosed is a spin coating apparatus and method for coating a semiconductor wafer of known diameter with a thin and substantially uniform coating of a solution. The apparatus comprises a containment bowl with a rotatable vacuum chuck, having a diameter less than that of the wafer, rotatably mounted inside the bowl. The vacuum chuck captively holds a bottom surface of the wafer. Directly beneath the bottom surface of the wafer is a substantially frustoconical deflector ring. The deflector ring is concentrically attached about and stationary with respect to the rotatable vacuum chuck. The top surface of the ring is located just below and in close-spaced parallel relation to the bottom surface of the wafer. The top face of the deflector has a minimum diameter that is greater than the diameter of the semiconductor wafer. With the system of this invention the requirement of an organic solvent wash of the wafer backside after the coating of the wafer top surface is eliminated.

### **Related U.S. Application Data**

[63] Continuation of application No. 08/508,052, Jul. 27, 1995, abandoned.

[51] **Int. Cl.<sup>6</sup>** ..... **B05D 3/12**; B05C 11/02; H01L 21/469

[52] **U.S. Cl.** ..... **427/240**; 118/52; 118/500; 427/385.5; 427/377; 437/231

[58] **Field of Search** ..... 427/240, 385.5, 427/377; 118/52, 500; 437/231

### **References Cited**

[56]

#### **U.S. PATENT DOCUMENTS**

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**33 Claims, 1 Drawing Sheet**

