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Doan

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[54] **CHEMICAL DISPENSING SYSTEM FOR SEMICONDUCTOR WAFER PROCESSING**

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[58] **Field of Search** 427/350, 336, 427/284, 296, 240, 352, 294; 118/55, 56, 52; 134/33, 34, 902; 222/108, 204; 438/691, 748, 759, 906

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[57] **ABSTRACT**

A method for dispensing a chemical, such as an edge bead removal solvent, onto a semiconductor wafer comprising the steps of dispensing the chemical selectively onto the wafer and applying a suction to the area immediately surrounding the location at which the chemical is dispensed onto the wafer. Preferably, the suction is applied simultaneously with the dispensing of the chemical. One specific version of the invention provides an edge bead removal system wherein suction is applied to the area immediately surrounding the solvent dispensing nozzle to remove dissolved coating material and excess solvent from the wafer. In one aspect of this system, an apparatus for removing the edge bead includes a mechanism for dispensing a solvent selectively onto the edge of the wafer, and a mechanism surrounding the dispensing mechanism for vacuuming excess solvent and dissolved coating material from the edge of the wafer. The edge bead removal apparatus preferably also includes mechanisms for spinning the semiconductor wafer and coating material on the spinning wafer. Another aspect of the system provides a method for removing an edge bead of a coating of material that has been spun onto the surface of a semiconductor wafer. The method includes the steps of dispensing a solvent selectively onto the edge of the wafer to dissolve the coating material at the extreme edge of the wafer, and applying a suction to vacuum excess solvent and dissolved coating material from the wafer.

28 Claims, 2 Drawing Sheets