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# United States Patent [19]

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Teng

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[54] **GAS BARRIER DURING EDGE RINSE OF SOG COATING PROCESS TO PREVENT SOG HUMP FORMATION**

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### [57] ABSTRACT

[21] Appl. No.: **657,223**

A method and an apparatus are disclosed for preventing the formation of humps along the edge of substrates while being spin coated. Said humps are especially observed in edge rinsing substrates that are being coated with spin-on-glass (SOG) and state of the art photoresists. The edge rinse is usually directed at the edge of the substrate at a certain angle from the vertical axis of the rotating substrate. The hump is a consequence of the phenomenon of hydraulic jump that occurs in fluid flow. The humps, later in the manufacturing process, disintegrate causing particle contamination problems. A novel technique is proposed where the formation of humps is prevented by directing a jet stream of gas at the hump. The jet is placed along the plane of the spinning substrate, and behind the rinse nozzle in the direction of the spin.

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[51] Int. Cl.<sup>6</sup> ..... **B05D 3/12**

[52] U.S. Cl. .... **427/240; 427/336; 427/348; 427/385.5; 118/52; 118/56; 118/320; 437/231**

[58] Field of Search ..... **427/240, 273, 427/336, 348, 385.5; 437/231; 118/52, 56, 326**

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**25 Claims, 4 Drawing Sheets**

