

United States Patent [19]

Yang et al.

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| [54] | DETACHABLE SPONGE DEVICE FOR SPIN- COATING MACHINES | | | | | | |
|------|--|--------------------|---------|----------|---------|----------------------------|--------------|
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| [52] | U.S. Cl | | | | | | |
| | | | | | | /319; 118/ | |
| [58] | Field of So | | | | | | |
| | | 118/: | 52, 56, | 319, 32 | | 902, 153, 1 98.11; 156/ | |
| [56] | References Cited | | | | | | |
| | U.S | S. PA | TENT : | DOCUN | MENTS | | |

5,480,530 1/1996 Zejda 118/504

| 5,482,612 | 1/1996 | Armstrong et al | 204/298.11 |
|-----------|--------|-----------------|------------|
| 5,614,071 | 3/1997 | Mahvan et al | 204/298.11 |
| 5,637,199 | 6/1997 | Lorentz et al | 204/298.11 |

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ABSTRACT

A detachable sponge device for a spin coating machine used to coat a liquid material over a semiconductor wafer is provided. The detachable sponge device is used to prevent the solvent that is jetted on the edge of the wafer from being oversprayed elsewhere on the wafer. The detachable sponge device is composed of a curved mounting piece and a corrugated piece of sponge attached on the curved inner side of the mounting piece. The mounting piece can be detachably mounted on the spin coating machine. The corrugated piece of sponge can absorb splattered particles of solvent from the wafer which can thus be prevented from bouncing back onto the wafer. The planarization of the coating of SOG on the wafer thus will not be affected by splattering particles of the solvent. Excellent results of planarization of SOG or photoresist layers can thus be achieved.

6 Claims, 2 Drawing Sheets

