Effectiveness Evaluation of Novel Pau Dressing N	(athed
hy Flavihla Fihar Dresser	
by Flexible Fiber Dresser	
-Tool Life Evaluation of Flexible Fiber Dresser-	Date Sep. 24, 2014
Objective Kanazawa Institute of Technology: Michio Showa Industry Co., Ltd.: Yutaro Arai, Tokyo Seim) Uneda and <u>Naoki Takahashi</u> nitsu Co., Ltd.: Takashi Fujita
Trial to the quantitative evaluation of t6he effectiveness and tool life of the flexible	e fiber dresser
Background	\sim
Chemical mechanical polishing/ planarization (CMP) is one of the most important technologies for fabricating high-efficient semiconductor devices. → The CMP characteristics (removal rate and accuracy, etc.) is depended on the consumables represented by slurry, <u>pad and dresser</u> used in the CMP process. Dressing Aiming at control the <u>pad surface asperity</u> → Diamond dresser is frequently used to recover the pad surface asperity, however, the diamond dresser of the deterioration of the diamond grains, thus, it is <u>difficult to keep the dressing performance stability f</u> For this reason, we propose a novel flexible fiber dresser that would ensure high performance and Network and the state of the deterioration of the diamond grains and the state of the dresser that would ensure high performance and the state of the deterior the state of the deterior the state of the deterior the state of the dresser that would ensure high performance and the state of the deterior the state of the dresser that would ensure high performance and the state of the deterior the state of the deterior the state of the deterior the state of the dresser that would ensure high performance and the state of the deterior t	Pressure Water Dresser Dressing process model has a disadvantage or a long time. hd longer life of tools.
Fynerimental method	
Tool life test (accumulation dressing time: 70 hours) was carried out by both the	
fiber dresser and the diamond dresser. Oregan Removal rate Oregan Contact image analysis Pad cut rate Fiber height Fi	Prime Diamond disc dresser
Experimental result	
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Experimental conditions Dressing time 30, 60, 120, 180, 300, 600 min Polishing and Dressing pressure 30.0 kPa Dtt times used of dresses	210 200 5 190 5 180 5 170
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(1) In the flexible fiber dresser, the removal rate increase immediately after dressing, and that the removal rate maintain the stable value. Furthermore, the removal rate show more stable compared with the results by the diamond dresser in the tool life test.

② The pad cut rate by the flexible fiber dresser is smaller than that by the diamond conditioner.

③ The variation of the pad surface asperity can be reduced by the flexible fiber dresser.