

DSS에서 CeO₂ 연마제의 첨가량과 분산시간이 TEOS 막에 미치는 특성연구

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A Study on the effect of TEOS film by Dispersion Time and Content of CeO₂ Abrasive

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Abstract : One of the critical consumables in chemical mechanical polishing (CMP) is a specialized solution or slurry, which typically contains both abrasives and chemicals acting together to planarize films. In single abrasive slurry (SAS), the solid phase consists of only one type of abrasive particle. On the other hand, mixed abrasive slurry (MAS) consists of a mixture of at least two types of abrasive particles. In this paper, we have studied the CMP characteristics of mixed abrasive slurry (MAS) retreated by adding of CeO₂ abrasives within 1:10 diluted silica slurry (DSS). The slurry designed for optimal performance should produce reasonable removal rates, acceptable polishing selectivity with respect to the underlying layer, low surface defects after polishing, and good slurry stability. The modified abrasives in MAS are evaluated with respect to their particle size distribution, surface morphology, and CMP performances such as removal rate and non-uniformity. As an experimental result, we obtained the comparable slurry characteristics compared with original silica slurry in the viewpoint of high removal rate and low non-uniformity.

Key Words : Chemical mechanical polishing (CMP); Cerium oxide (CeO₂); Mixed abrasive slurry (MAS); Diluted silica slurry (DSS).