

## 실리카 입자의 형상과 표면 특성이 산화막 CMP에 미치는 영향

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### Effect of shape and surface properties of hydrothermally silica particles in chemical mechanical planarization of oxide film

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**Abstract :** The oxide film of silicon wafer has been mainly polished by fumed silica, colloidal silica or ceria slurry. Because colloidal silica slurry is uniform and highly dispersed composed of spherical shape particles, by which the oxide film polished remains to be less scratched in finishing polishing process. Even though the uniformity and spherical shape is advantage for reducing the scratch, it may also be the factor to decrease the removal rate. We have studied the correlation of silica abrasive particles and CMP characteristics by varying pH, down force, and table rotation rate in polishing. It was found that the CMP polishing is dependent on the morphology, aggregation, and the surface property of the silica particles.

**Key words :** CMP(Chemical mechanical planarization), morphology, surface property, removal rate