

APPLIED MATERIALS SILICON TECHNOLOGIES BECAUSE INNOVATION MATTERS™

Applied Reflexion GT CMP

Introduction

Demands to increase productivity and reduce costs are major factors affecting chemical mechanical planarization (CMP)—the process whereby materials deposited on the wafer are polished to remove excess film thickness and create the best possible surface for the next process step.

As devices become more complex, incorporating a wider variety of materials and a growing number of film layers, demands on CMP technology continue to expand. It is therefore vital to reduce overall CMP cost of ownership by improving throughput and operational cost efficiencies.

The new Applied Reflexion® GT™ CMP platform for advanced applications answers these demands, setting new benchmarks in processing capability, system productivity, and cost-efficiency. It offers up to twice the wafer throughput of competing systems with up to 30% savings in the cost of consumables (CoC). Reducing CoC is a key benefit for CMP processes, in which consumables (slurry and replacement pads) typically contribute the most to cost per wafer.

Unique dual wafer architecture drives the Reflexion GT platform's exceptional productivity by simultaneously processing pairs of wafers through planarization, rinsing, cleaning, and drying. The actual process steps employ the same family of Titan Head™, Desica® cleaner, and Marangoni® vapor drying technologies that have made Applied's Reflexion LK™ the industry's leading CMP platform. Dedicated slurry delivery and pad conditioning for each wafer promote matched process conditions.

Sophisticated head and process tuning controls allow for precise control of thickness, enabling benchmark uniformity and topography within wafer and wafer to wafer. Cost-efficiencies are also a direct result of dual wafer processing. When polishing is optimized, less slurry is used per wafer, and larger pads double pad life.

Production-ready for 4X applications and beyond, and delivering the best throughput density (throughput/tool footprint) in the industry, the Applied Reflexion GT platform offers fabs the industry's most reliable CMP technologies at potential savings in capital expenditure. For a given wafer output, significantly fewer Reflexion GT platforms are needed compared with competing polishing tools.