

ABSTRACT

BARRIER CHEMICAL MECHANICAL PLANARIZATION SLURRIES
USING CERIA-COATED SILICA ABRASIVES

Chemical Mechanical Planarization (CMP) polishing compositions comprising composite particles comprising core particles with surfaces covered by nanoparticles, such as ceria coated silica particles, in combination with abrasive particles selected from silica, alumina, zirconia, titania, ceria and surface modified inorganic oxide particles, a pH-adjusting agent and a corrosion inhibitor. Said CMP compositions offer tunable polishing removal selectivity values between different films, enable high removal rates on interconnect metal and the silicon oxide dielectric while providing a polish stop on low-K dielectrics, a Si and tungsten films. Chemical Mechanical Planarization (CMP) polishing compositions have shown excellent performance using soft polishing pad.

Fig. 1