

ABSTRACT

Shallow Trench Isolation (STI) Chemical Mechanical Planarization (CMP) Polishing with
Low Abrasive Concentration and a Combination of Chemical Additives

Shallow Trench Isolation (STI) chemical mechanical planarization (CMP) polishing compositions, methods and systems of use therefore are provided. The CMP polishing composition comprises abrasives of ceria coated inorganic metal oxide particles, such as ceria-coated silica; and dual chemical additives for providing high oxide film removal rate. The dual chemical additives comprise gelatin compounds possessing negative and positive charges on the same molecule, and non-ionic organic molecules having multi hydroxyl functional groups in the same molecule.

[No figure]