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(54) Title: LOW OXIDE TRENCH DISHING SHALLOW TRENCH ISOLATION CHEMICAL MECHANICAL PLANARIZATION POLISHING

(57) Abstract: The present invention discloses STI CMP polishing compositions, methods and systems that significantly reduce oxide trench dishing and improve over-polishing window stability in addition to provide high and tunable silicon oxide removal rates, low silicon nitride removal rates, and tunable high selectivity of SiO_2: SiN through the use of an unique combination of ceria inorganic oxide particles, such as ceria coated silica particles as abrasives, and an oxide trench dishing reducing additive of poly(methacrylic acids), its derivatives, its salts, or combinations thereof.