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(54) Title: SOFT POLYSILOXANE CORE-SHELL ABRASIVES FOR CHEMICAL MECHANICAL PLANARIZATION

(57) Abstract: Soft polysiloxane core-shell abrasives are provided. The core and the shell of the nanosized soft polysiloxane core-shell abrasives comprise different materials with different chemical and mechanical properties, preferably the shell has lower E-modulus and is thus mechanically softer than the core. The shell comprises polyorganosiloxane polymers which are crosslinked, entangled, or combinations thereof. The CMP polishing compositions, methods, and systems using the soft polysiloxane core-shell abrasives are provided to achieve high removal rates and low detectivity.



WO 2024/191746 A1