

Title (en)
POST-CMP CLEANING OF SEMICONDUCTOR WAFER SURFACES USING A COMBINATION OF AQUEOUS AND CRYOGENIC CLEANING TECHNIQUES

Title (de)
POST-CMP-REINIGUNG VON HALBLEITERWAFERFLÜCHEN UNTER VERWENDUNG VON WÄSSRIGEN UND KRYOGENEN REINIGUNGSTECHNIKEN

Title (fr)
NETTOYAGE POST-CMP DE LA SURFACE DE TRANCHES DE SEMI-CONDUCTEURS PAR UNE COMBINAISON DE TECHNIQUES AQUEUSES ET CRYOGENIQUES

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Abstract (en)
[origin: US2004029494A1] The present invention provides for a new and improved method of aqueous and cryogenic enhanced (ACE) cleaning for semiconductor surfaces as well as the surfaces of metals, dielectric films particularly hydrophobic low k dielectric films, and CMP etch stop films to remove post-CMP contaminants. It is particularly useful for removing contaminants which are 0.3 μm in size or smaller. The ACE cleaning process is applied to a surface which has undergone chemical-mechanical polishing (CMP). It includes the steps of cleaning the surface with an aqueous-based cleaning process, at least partially drying the surface, and, shortly thereafter, cleaning the surface with a CO₂ cryogenic cleaning process. This process removes such contaminants from surfaces which are hydrophobic and hence difficult to clean with aqueous-based cleaning techniques alone.

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