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

Publication

EP 1554081 A4 20100519 (EN)

Application

EP 03708894 A 20030128

Priority

- US 0302643 W 20030128
- US 21585902 A 20020809

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 mum 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.

IPC 8 full level

B08B 7/04 (2006.01); **B24B 1/00** (2006.01); **B08B 3/02** (2006.01); **B08B 3/08** (2006.01); **B08B 7/00** (2006.01); **H01L 21/02** (2006.01); **H01L 21/304** (2006.01); **H01L 21/306** (2006.01); **H01L 21/3105** (2006.01); **H01L 21/321** (2006.01)

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Citation (search report)

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- See references of WO 2004014604A1

Designated contracting state (EPC)

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DOCDB simple family (application)

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