

ABSTRACT

NOVEL COPPER INTERCONNECT PATTERNING

A improved and new method for forming dual damascene etch back of copper lines and interconnects (studs) using a combination of oxidation of Cu and chemical/mass transport of the Cu oxide by the action of acid. The etch back solves the dishing problem in that it planarized the Cu. Etch back rates can be high at high temperatures. The surface of the substrate is kept clean and free of polishing scratches from CMP. The process produces better uniformity across the substrate and better electrical performance due the increased copper line cross-sectional area.

(FIGURE 2 IS SUGGESTED FOR PUBLICATION)