

ABSTRACT

DARK CF₄ FLASH

A new method of removing photoresist residues and sidewall deposits is described. Semiconductor device structures are provided in and on a semiconductor substrate. The semiconductor device structures are covered with an insulating layer. A metal layer is deposited overlying the insulating layer. The metal layer is covered with a layer of photoresist. The photoresist layer is exposed to actinic light and developed and patterned to form the desired photoresist mask. The metal layer is etched away where it is not covered by the photoresist mask to form metal lines whereby a photoresist residue remains overlying the metal lines and whereby sidewall deposits form on the sidewalls of the metal lines. The wafer is exposed to a plasma comprising O₂ and CF₄ at a low power of less than about 200 watts whereby an upper portion of the photoresist residue and a portion of the sidewall deposits are removed. Thereafter, the wafer is heated and then rinsed whereby all of the sidewall deposits are removed. Thereafter, the wafer is exposed to oxygen ashing whereby all of the photoresist residue is removed.

(FIGURE 1 IS SUGGESTED FOR PUBLICATION)