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ABSTRACT

Method of planarizing a surface of a semiconductor wafer

A method of planarizing a semiconductor wafer, comprising firstly, applying a photoresist layer on the irregular wafer surface to evenly coat over the undesirable topography of the wafer so as to provide a top surface of the photoresist layer that is substantially planar, and secondly, etching the photoresist and dielectric layer at substantially the same rate.

The flowability of the photoresist ensures even spread over the irregular surface to achieve a substantially planar top surface. The dielectric layer may preferably be etched further until the thickness of the layer is desirable for subsequent fabrication.

In one embodiment, the etchant may include any one of oxide, poly-silicon, metal, photoresist and polyimide etchants, or combinations thereof. Oxide etchants may be employed for etching dielectric material while poly-silicon and metal etchants may be employed for etching layers comprised of conductive structures or material.

FIGURE 4