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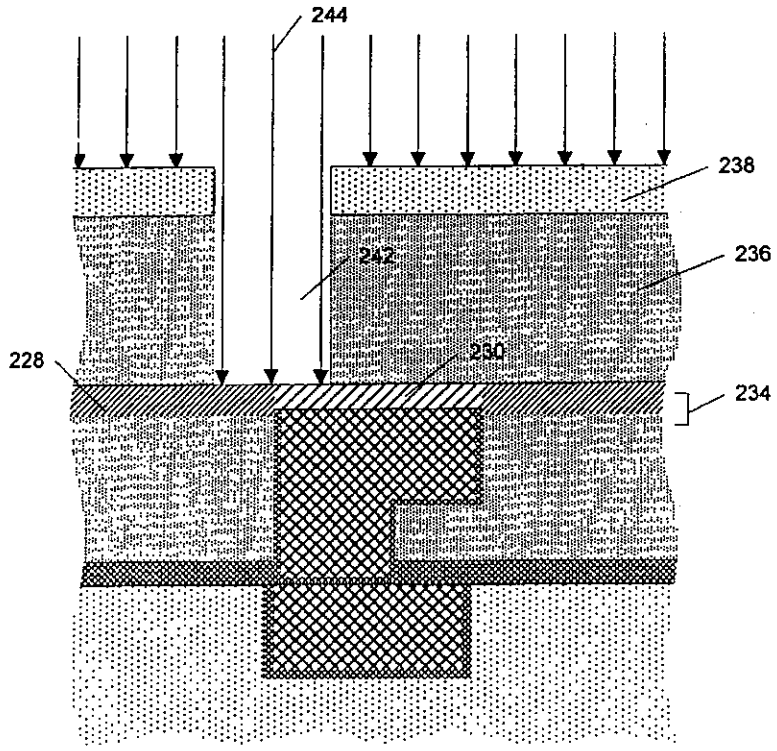
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(54) Title: METHOD FOR FORMING METAL-METAL OXIDE ETCH STOP/ELECTROMIGRATION BARRIER FOR INTEGRATED CIRCUIT INTERCONNECTS AND DEVICE



(57) Abstract: Described is a method and apparatus for forming interconnects with a metal-metal oxide electromigration barrier and etch-stop. In one embodiment of the invention, the method includes depositing a metal layer on the top of a planarized interconnect layer, the interconnect layer having an interlayer dielectric (ILD) with a top that is planar with the top of an electrically conductive interconnect. In one embodiment of the invention, the method includes reacting the metal layer with the ILD to form a metal oxide layer on the top of the ILD. At the same time, the metal layer will not be significantly oxidized by the electrically conductive interconnect, thus forming a metal barrier on the electrically conductive interconnect to improve electromigration performance. The metal barrier and metal oxide layer together comprise a protective layer. A second ILD may be subsequently formed on the protective layer, and the protective layer may act an etch-stop during a subsequent etch of the second ILD.

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