FORMATION OF AN INTERPOLY CAPACITOR STRUCTURE USING A CHEMICAL MECHANICAL POLISHING PROCEDURE


## ABSTRACT

A process for simultaneously forming a polysilicon gate structure, for a transfer gate transistor, and a polysilicon top plate, for a capacitor structure, on an underlying planar surface, has been developed. The process features the formation of a polysilicon bottom plate, for the capacitor structure, embedded in a first opening in composite insulator layer, and the formation of an active device region, for a transfer gate transistor structure, via the selective growth of an epitaxial silicon layer, in a second opening of the composite insulator layer, resulting in a planar top surface topography. The presence of this topography reduces the risk of residual polysilicon, present after patterning of the polysilicon gate structure, and of the capacitor, polysilicon top plate.


FIG 1