Silicon Oxycarbide and Silicon Carbonitride Based Materials for MOS Devices

ABSTRACT OF THE DISCLOSURE

In the preferred embodiment, a gate dielectric and an electrode are formed on a substrate. A pair of spacers is formed along opposite sidewalls of the gate electrode and the gate dielectric. Spacers are preferably formed of SiCO based material or SiCN based material. The source and drain are then formed. A contact etch stop (CES) layer is formed on the source/drain regions and the spacers. The CES layer is preferably formed of SiCO based material or SiCN based material. An Inter-Level Dielectric (ILD) is then formed on the CES layer.

Figure 7