

## 75 word Abstract

Title :

The impact of oxynitride process, deuterium annealing and STI stress to 1/f noise of 0.11  $\mu\text{m}$  CMOS

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Abstract :

1/f noise in PMOS is sensitive to 1) oxynitride formation process of gate insulator, 2) deuterium annealing after metal formation and 3) STI stress comparing with NMOS. Simulation results of 1/f noise show the degradation of 1/f noise due to STI stress is mainly caused by increasing mobility fluctuation. In order to reduce 1/f noise, it is important that plasma nitridation process is introduced and the distance between gate and STI edge is beyond 1.5  $\mu\text{m}$  to reduce STI stress.