

METHOD FOR FABRICATING FIN FIELD EFFECT TRANSISTORS**ABSTRACT OF THE DISCLOSURE**

A method of fabricating a Fin field effect transistor (FinFET) includes providing a substrate having a first fin and a second fin extending above a substrate top surface, wherein the first fin has a top surface and sidewalls and the second fin has a top surface and sidewalls. The method includes forming an insulation layer between the first and second fins. The method includes forming a first gate dielectric having a first thickness covering the top surface and sidewalls of the first fin using a plasma doping process. The method includes forming a second gate dielectric covering the top surface and sidewalls of the second fin having a second thickness less than the first thickness. The method includes forming a conductive gate strip traversing over both the first gate dielectric and the second gate dielectric.

Figure 1