METHOD FOR DUAL GATE OXIDE DUAL WORKFUNCTION CMOS

ABSTRACT

A method of forming integrated circuit chips including two dissimilar type NFETs and /or two dissimilar type PFETs on the same chip.. First, a gate stack (100) including a first thick gate SiO_2 layer (104) is formed on a wafer (102). The stack (100) includes a doped polysilicon layer (106) on the gate oxide layer, a silicide layer (108) on the polysilicon layer (106) and a nitride layer (110) on the silicide layer (108). Part of the stack is selectively removed to re-expose the wafer (102). A thinner gate oxide layer (116) is formed on the re-exposed wafer (114). Next, gates (120) are formed on the thinner gate oxide layer (116) and thin oxide NFETs and PFETs are formed at the gates. After selectively siliciding thin oxide device regions, gates are etched from the stack in the thick oxide device regions. Finally, source and drain regions (140,142) are implanted and diffused for the thick gate oxide devices.
Fig.1