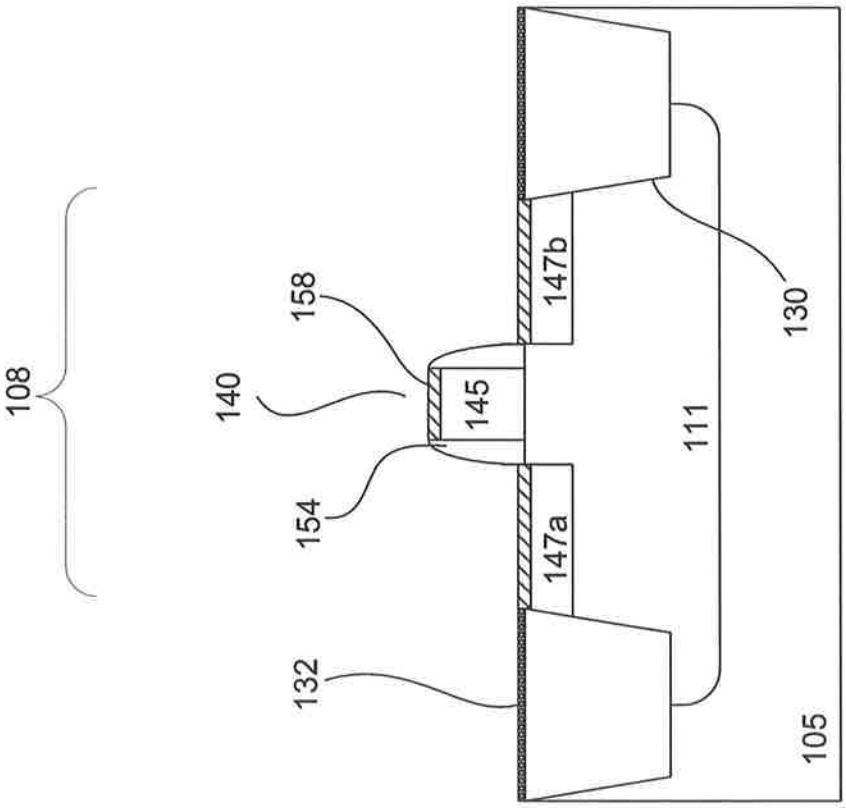



Fig. 1

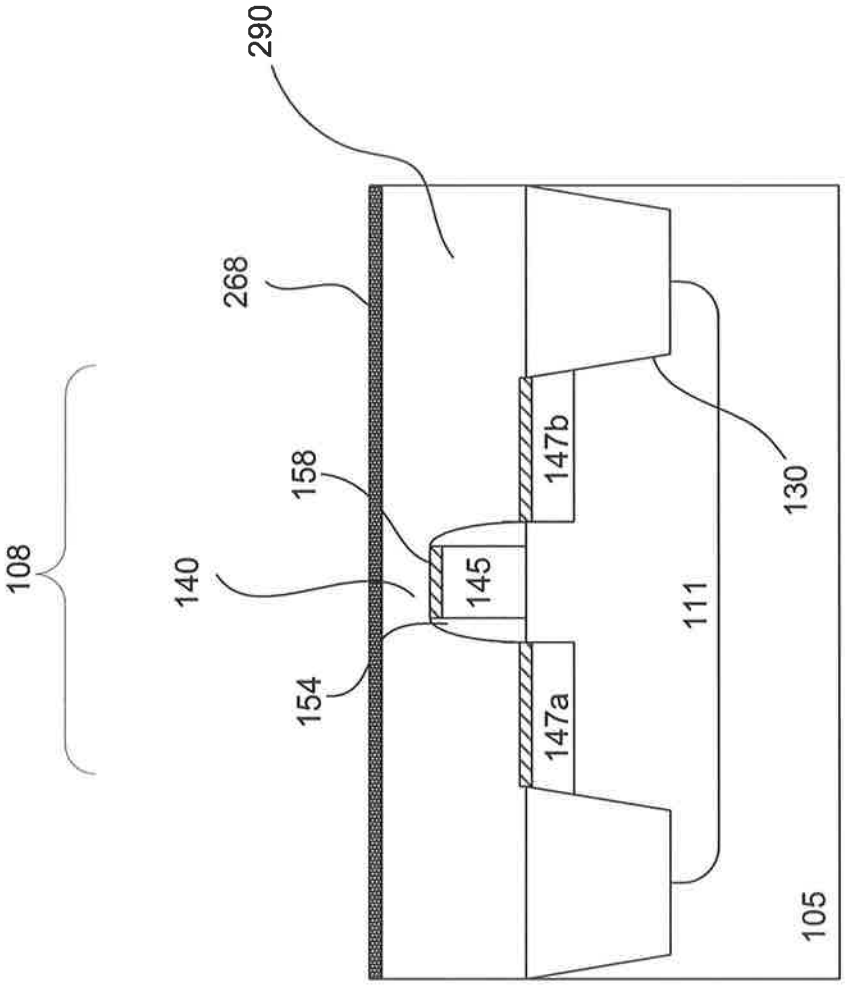



Fig. 2

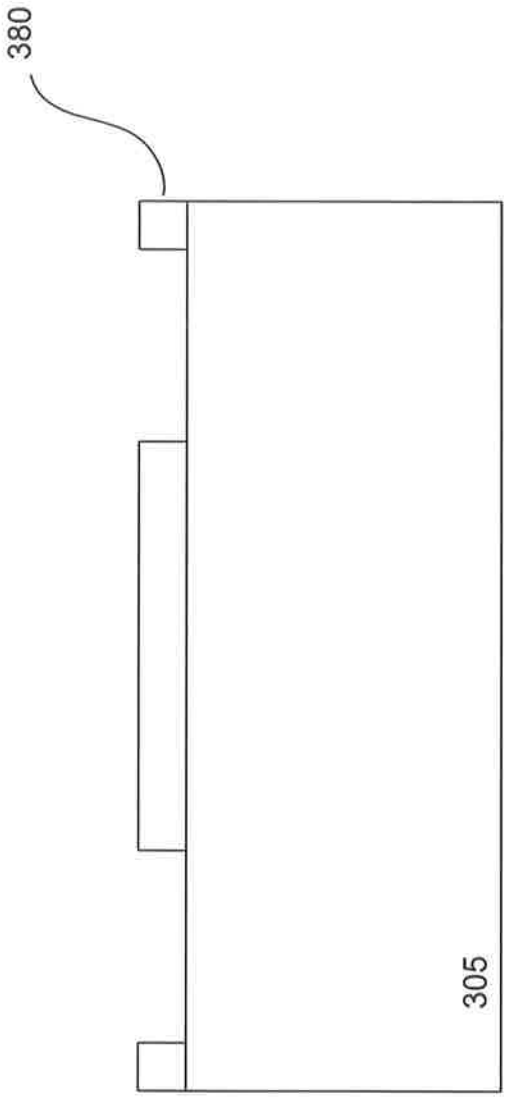



Fig. 3a

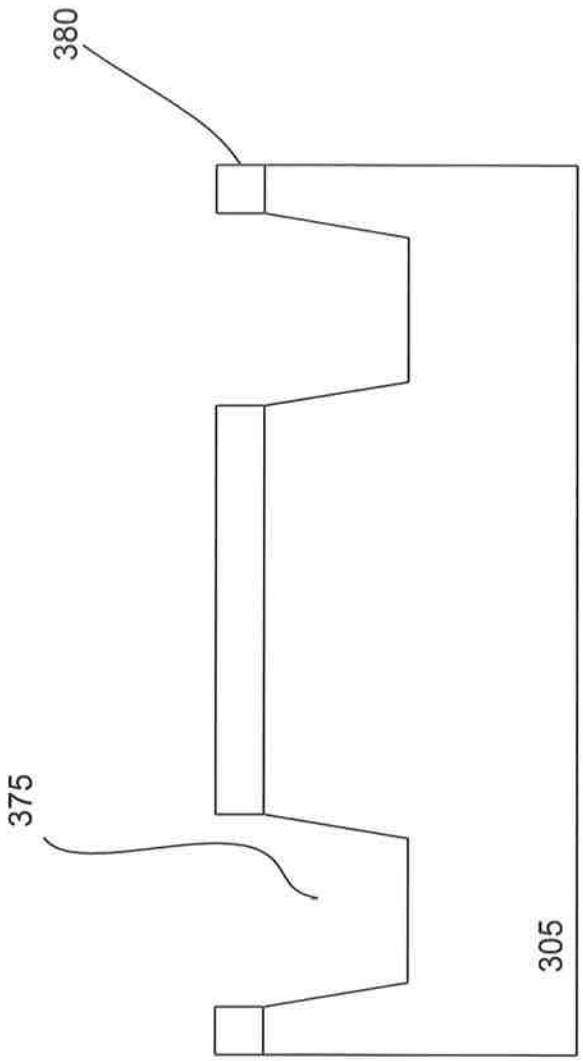



Fig. 3b

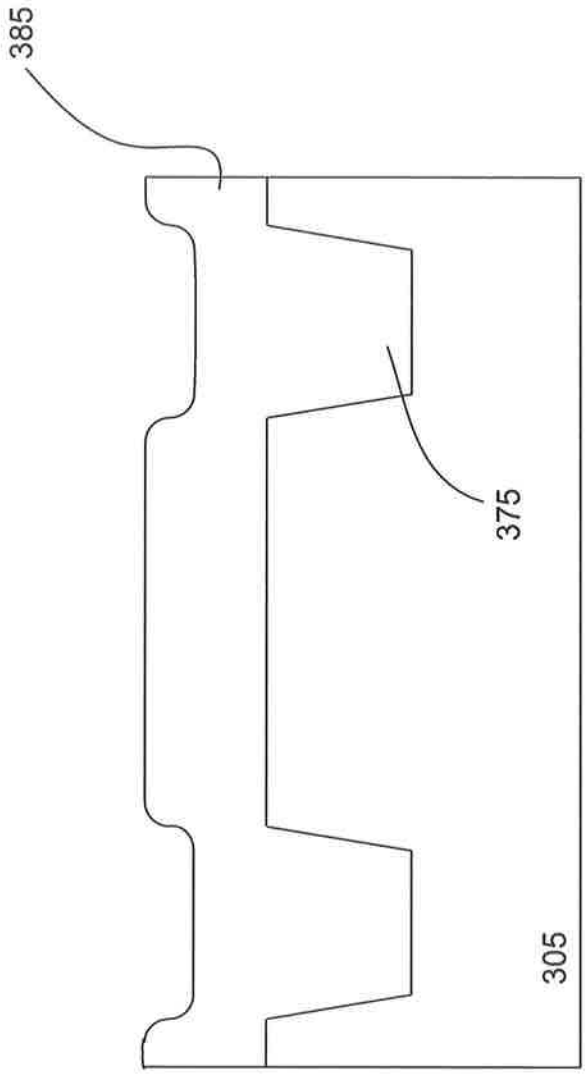



Fig. 3c

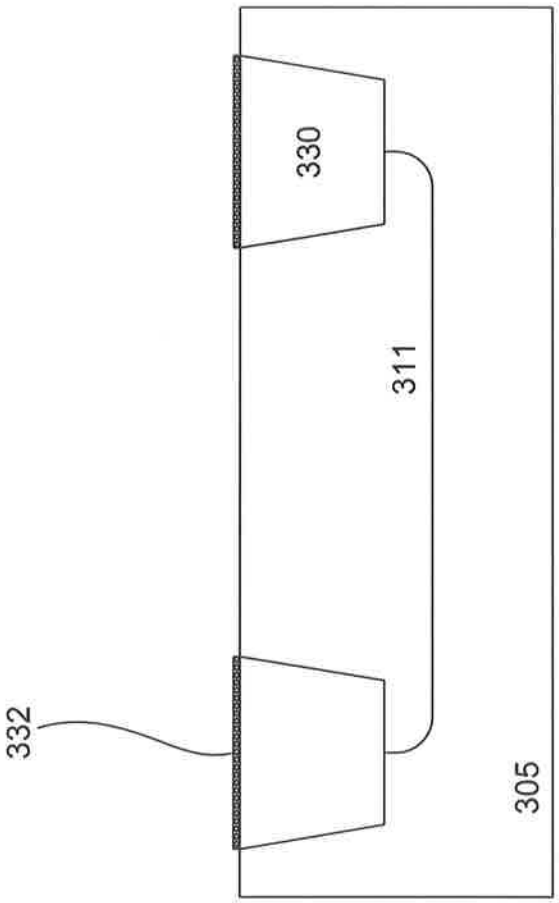



Fig. 3d

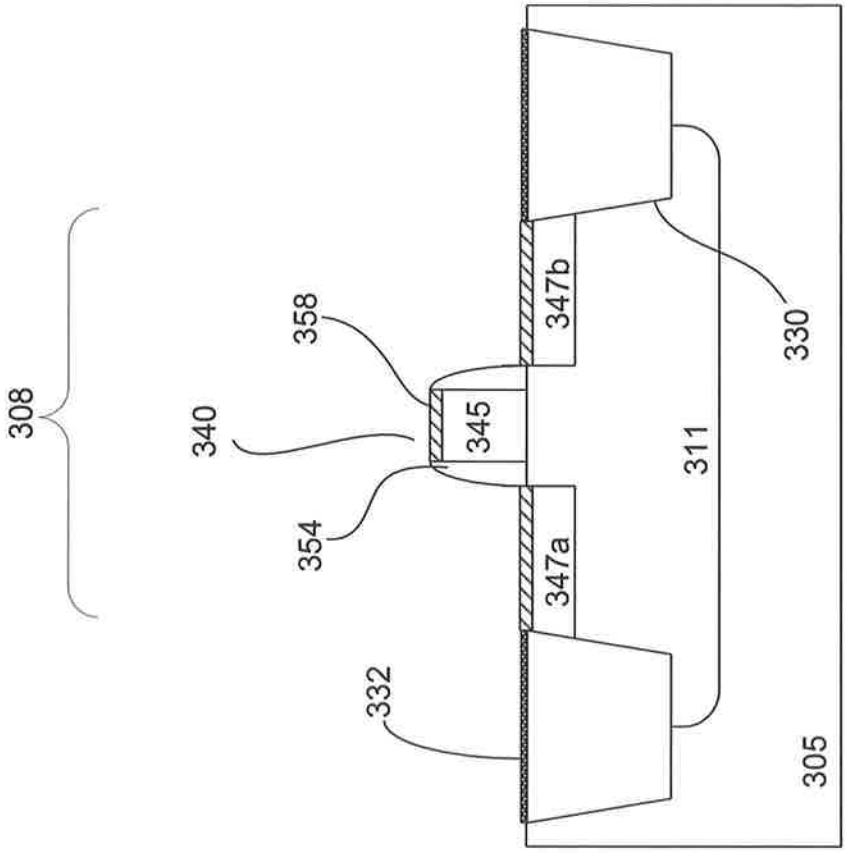



Fig. 3e

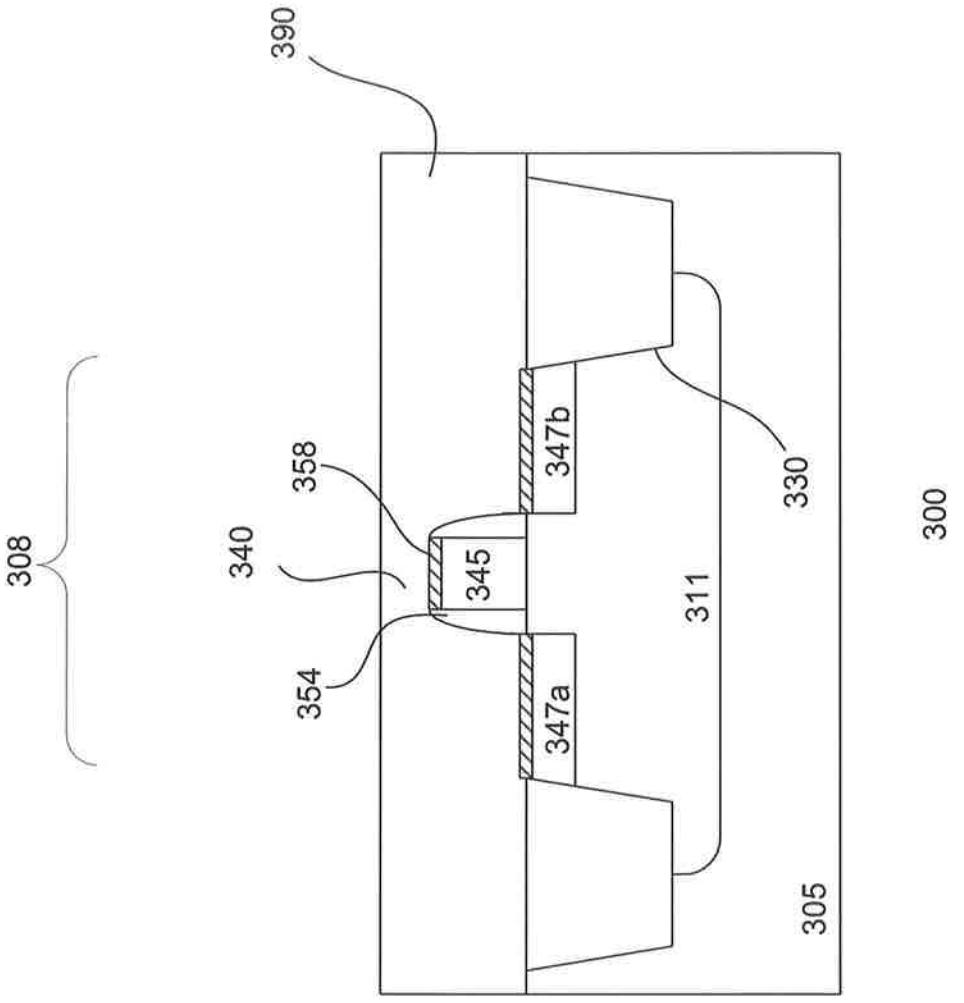



Fig. 4a

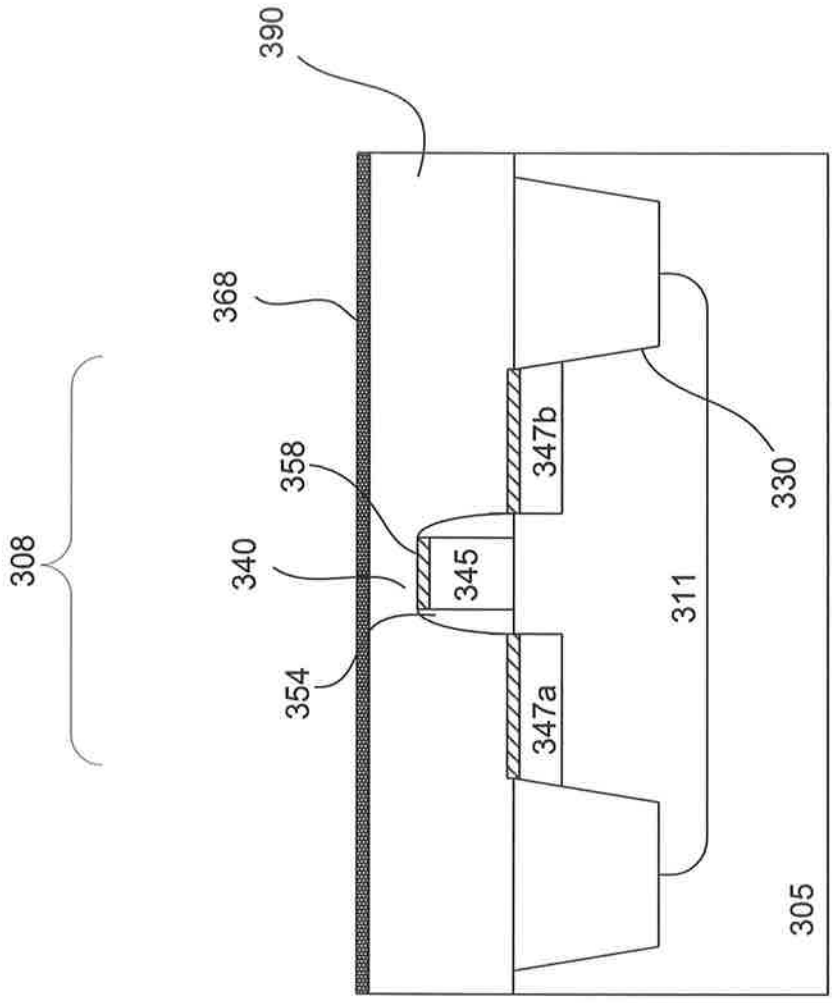



Fig. 4b

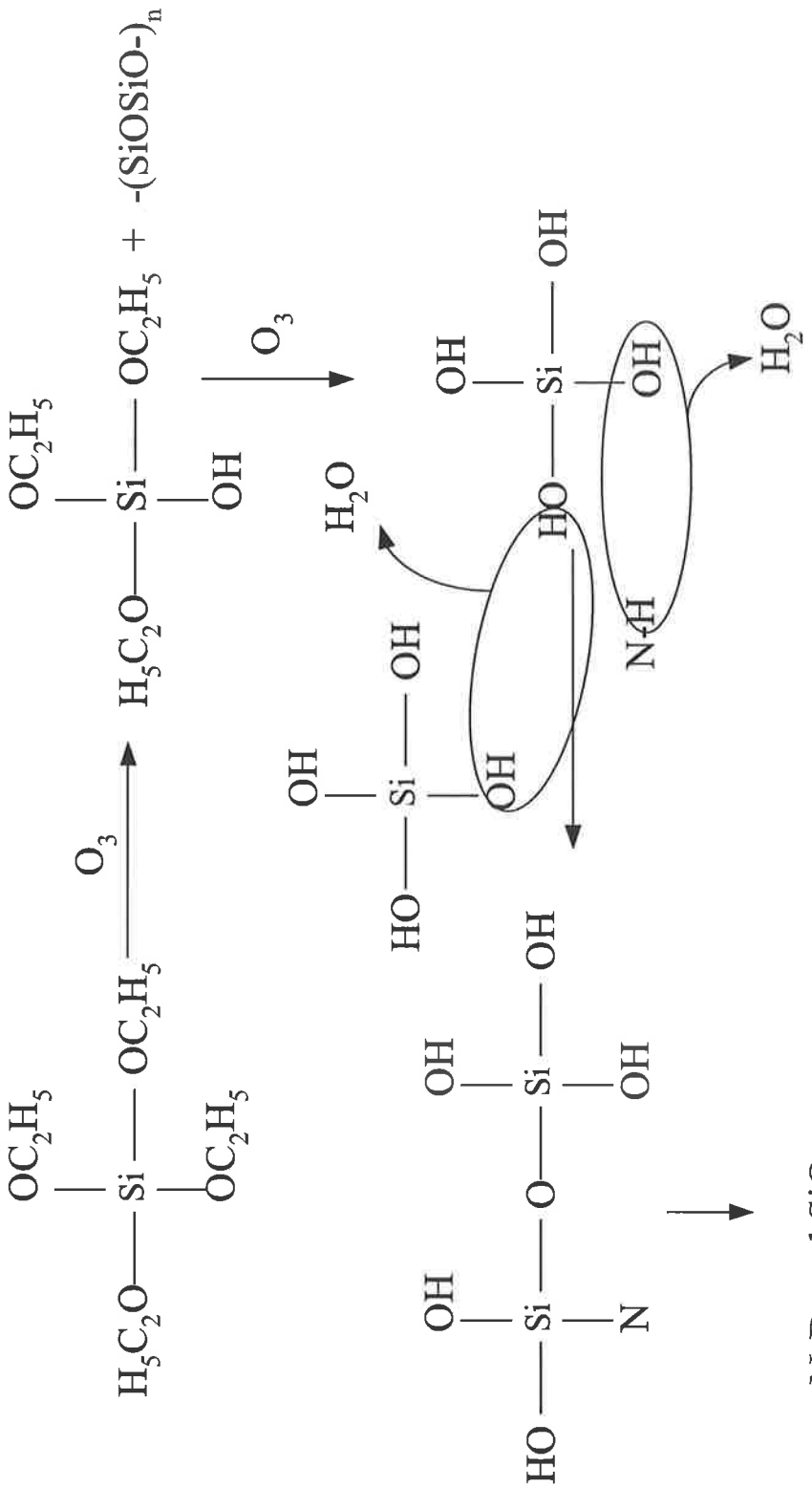

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O3
OH
Si
OH
HO
OH
H2O
OH
Si
OH
HO
OH
Si
OH
N-H
H2O
OH
Si
OH
OH
Si
O
OH
Si
N
HO
N-Doped SiO2

Fig. 5