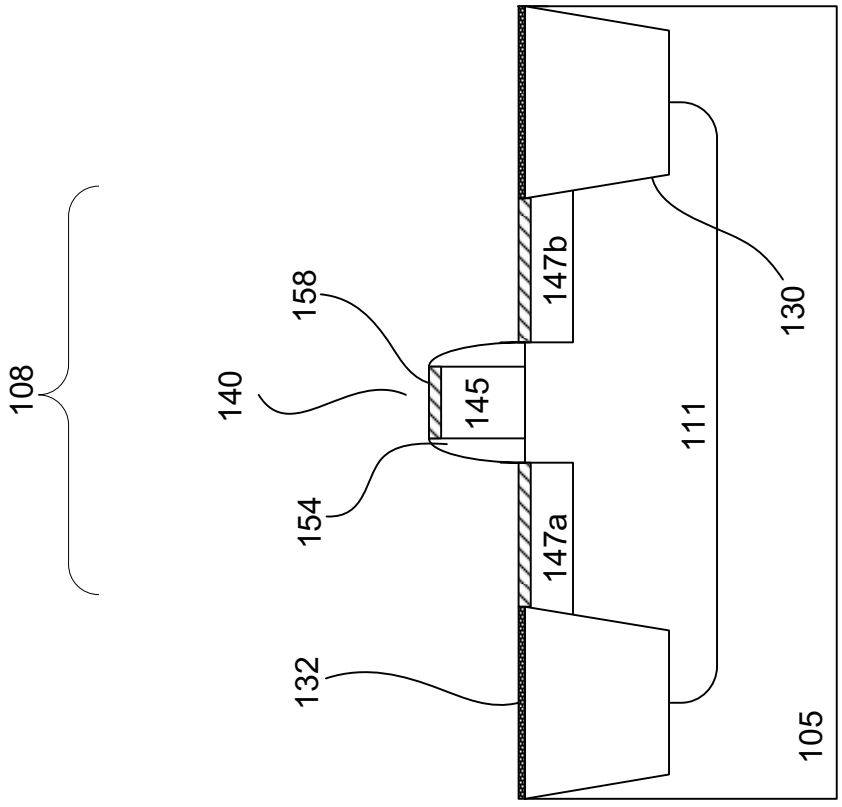


Fig. 1

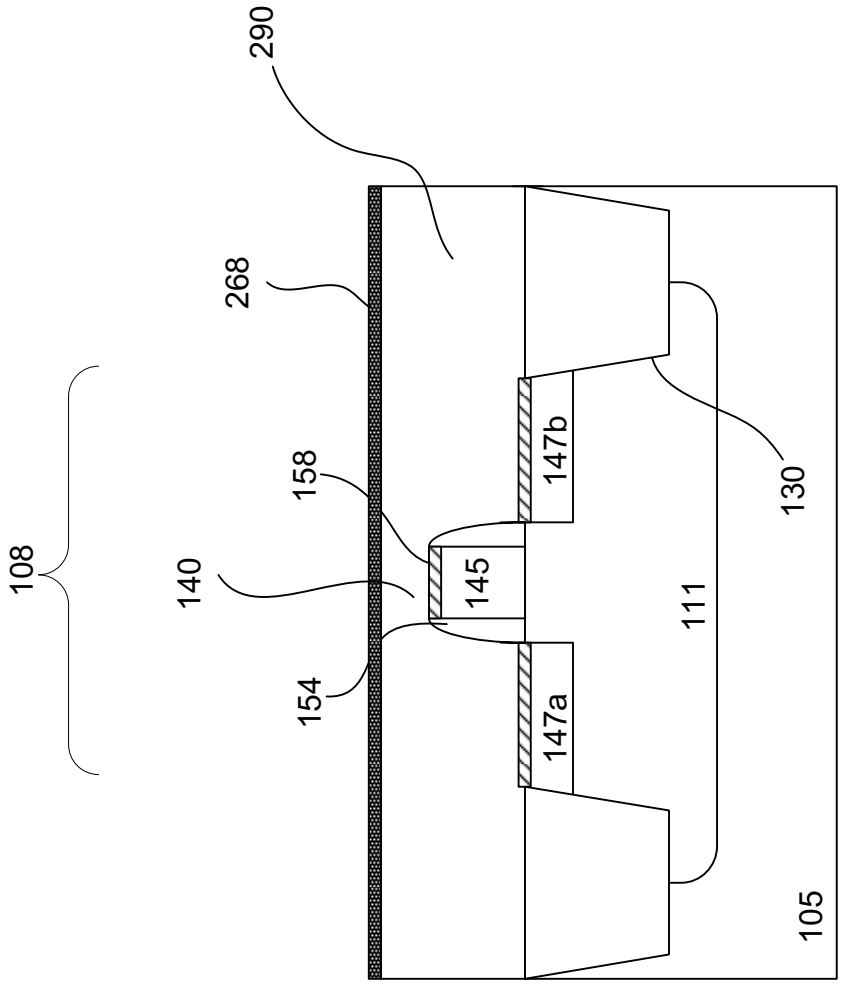


Fig. 2

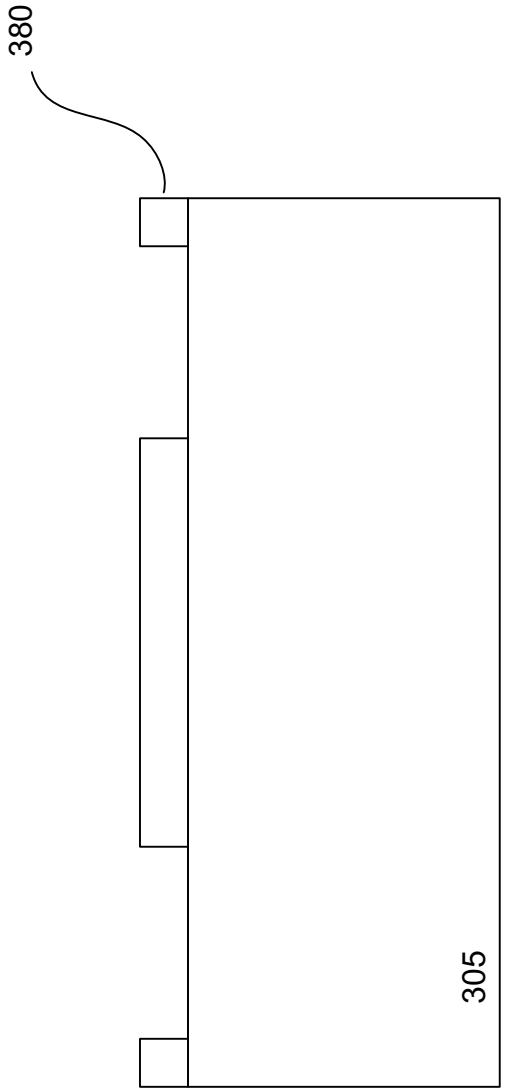


Fig. 3a

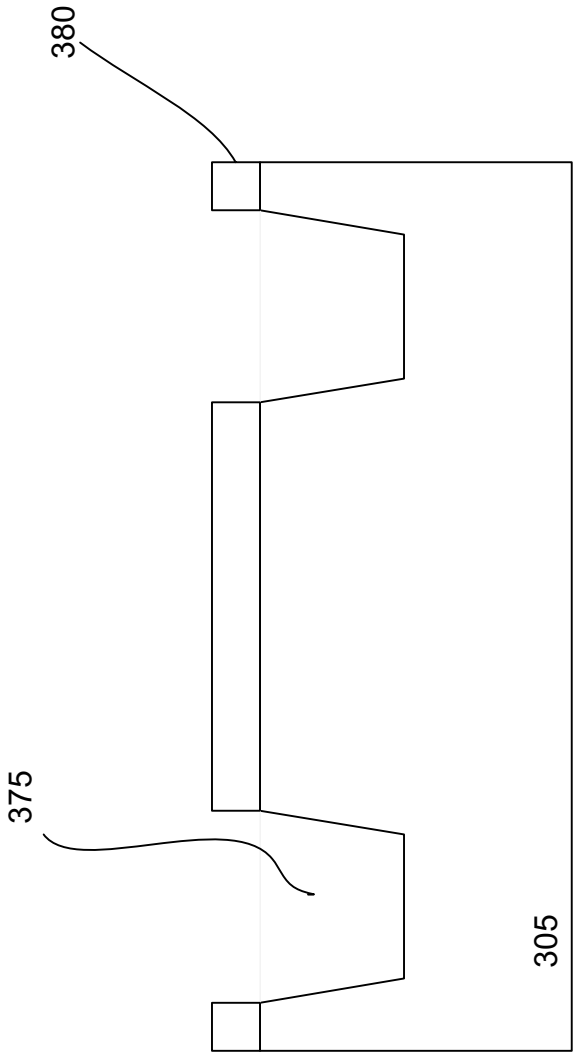


Fig. 3b

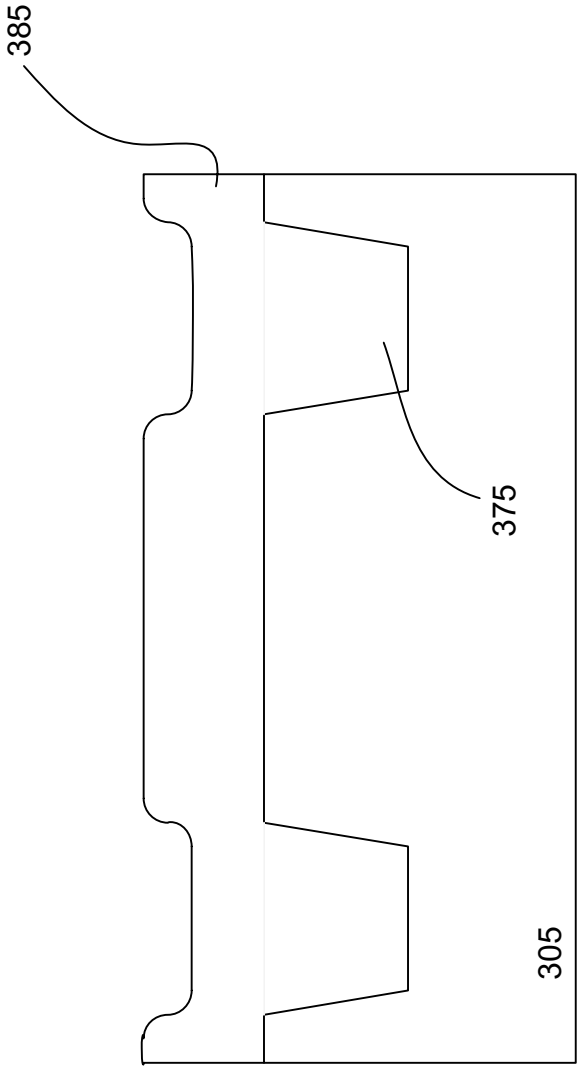


Fig. 3c

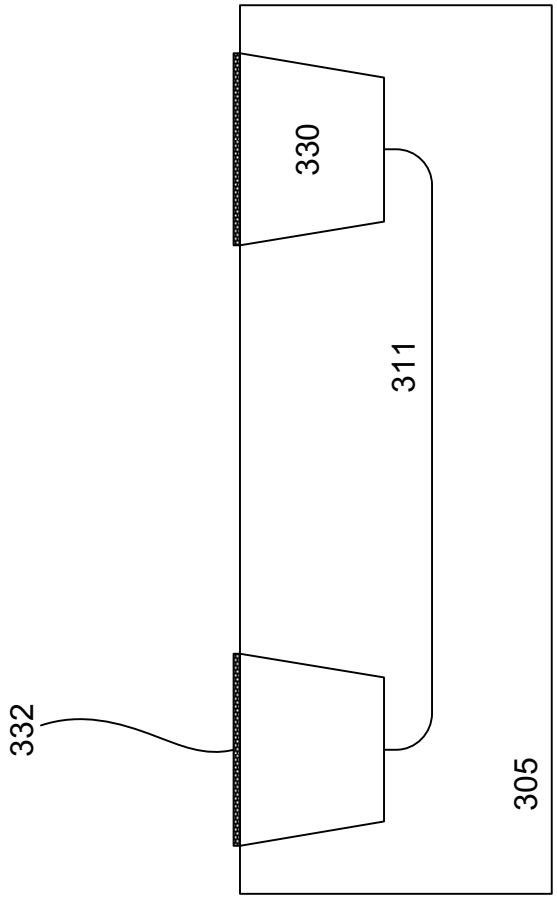


Fig. 3d

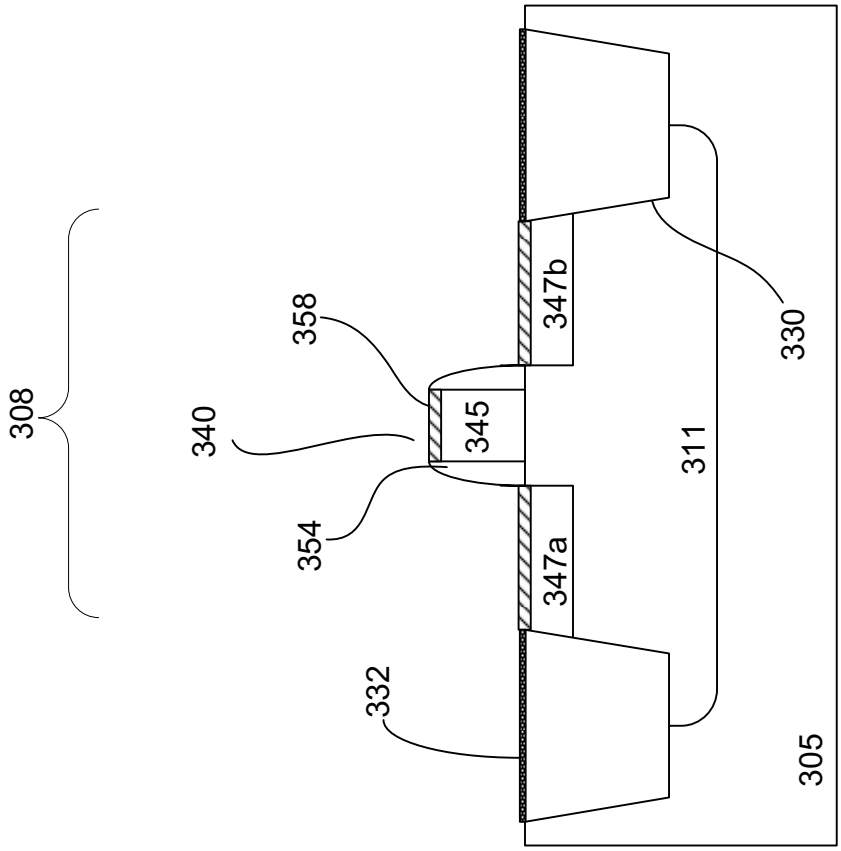


Fig. 3e

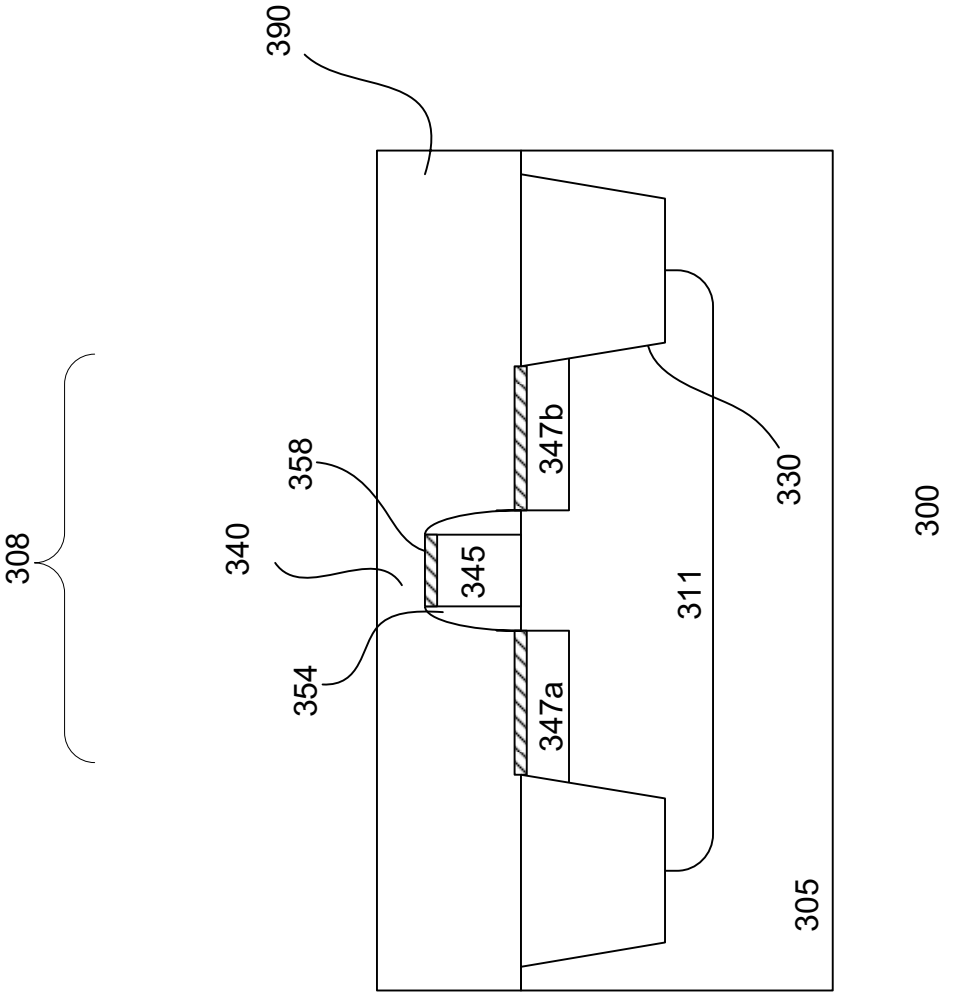


Fig. 4a

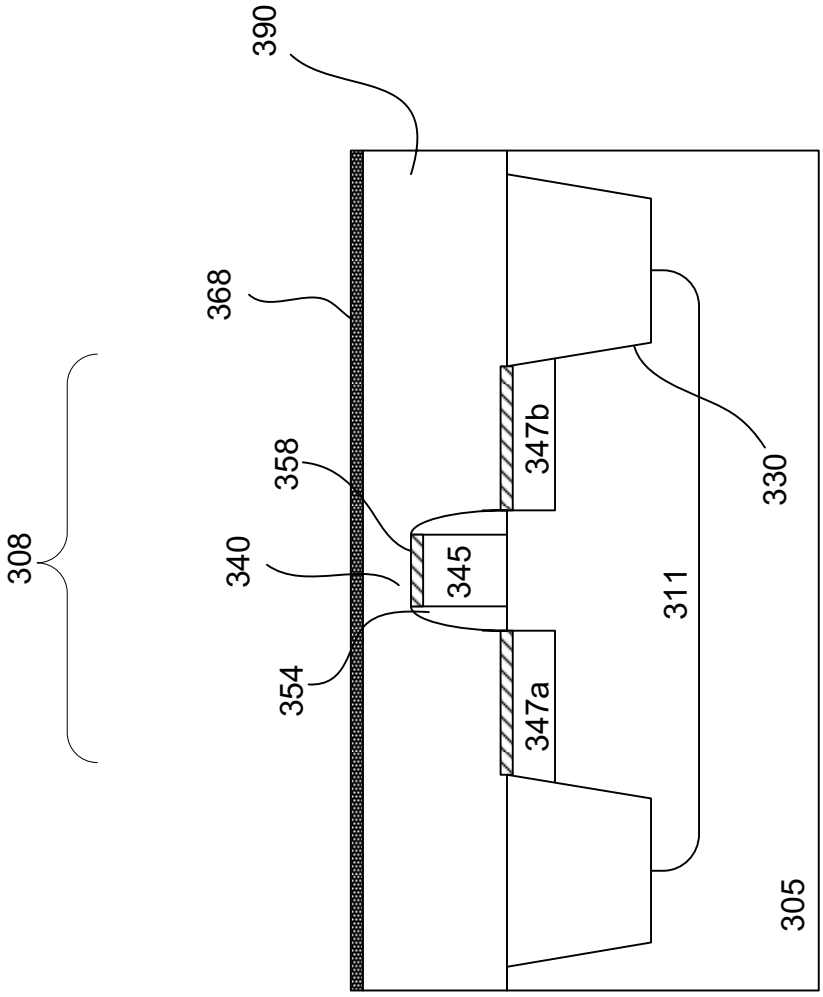
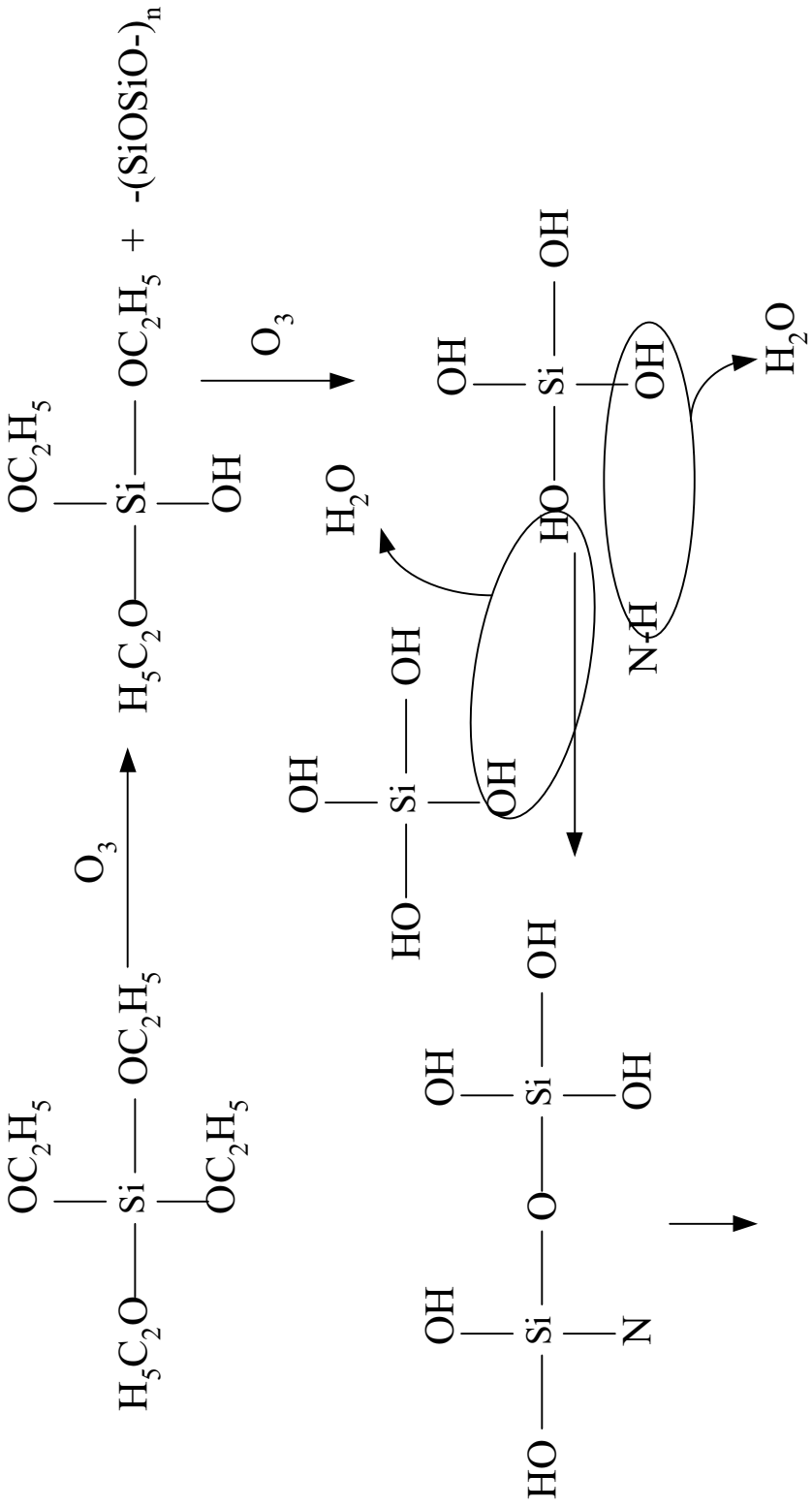


Fig. 4b



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O_3
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OH
OC_2H_5
+ -(SiOSiO-)$_n$
O_3
HO
OH
Si
N
O
OH
Si
OH
OH
N-Doped SiO_2
HO
OH
Si
OH
OH
H_2O
HO
OH
Si
OH
OH
N-H
H_2O

Fig. 5