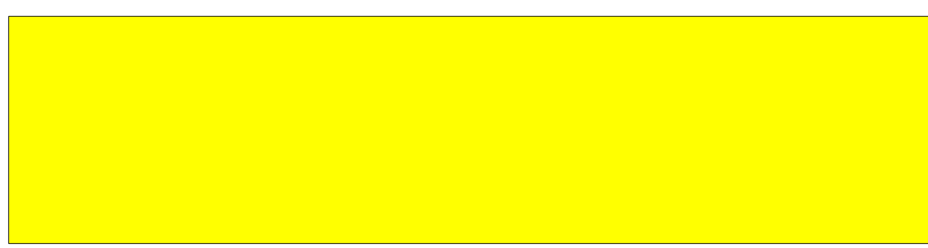
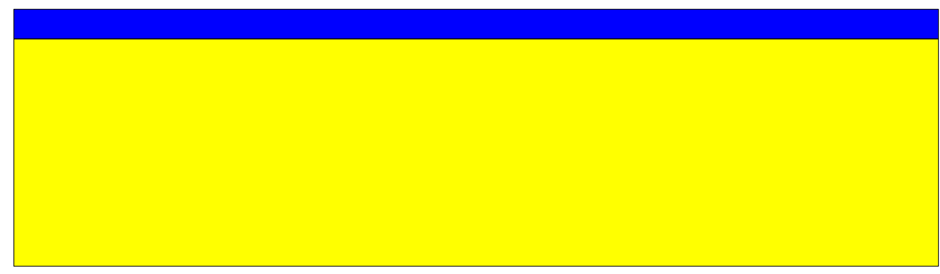
NMOS Process

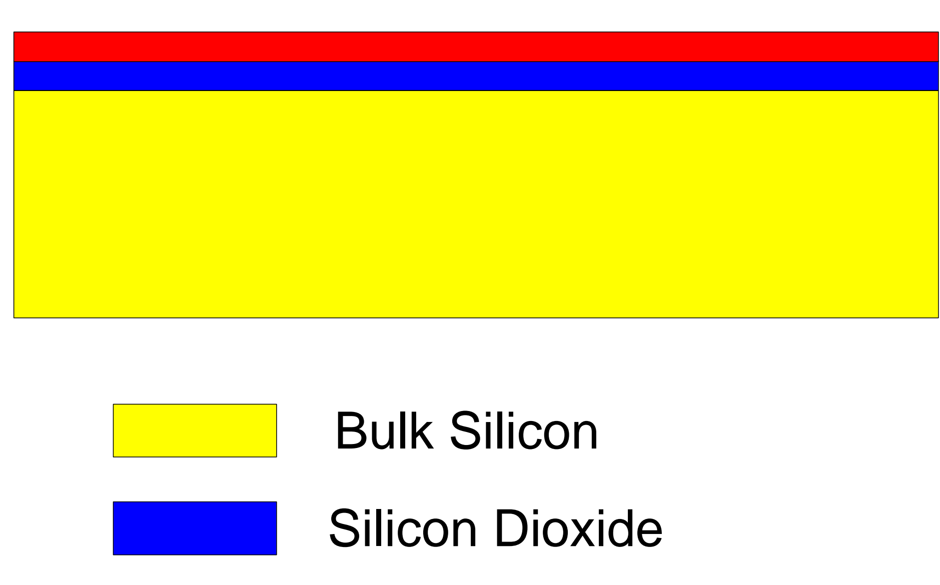
Step 1 : Starting Material



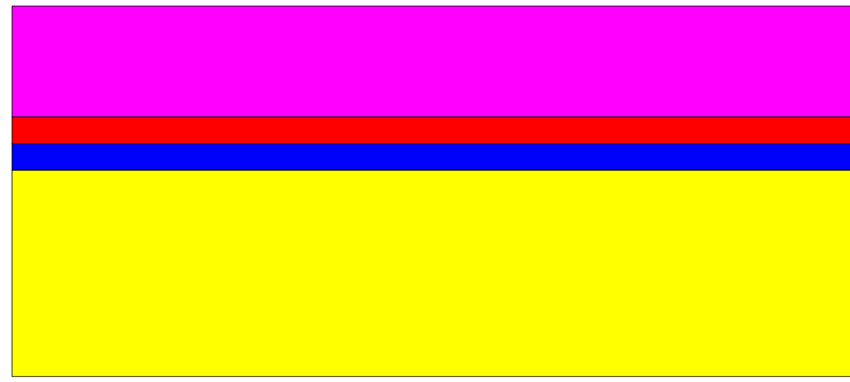
Step 2 : Thermal Oxidation



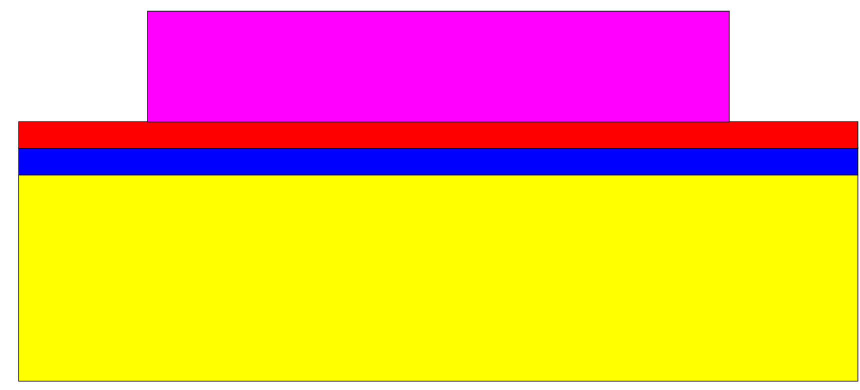
Step 3 : LPCVD Nitride



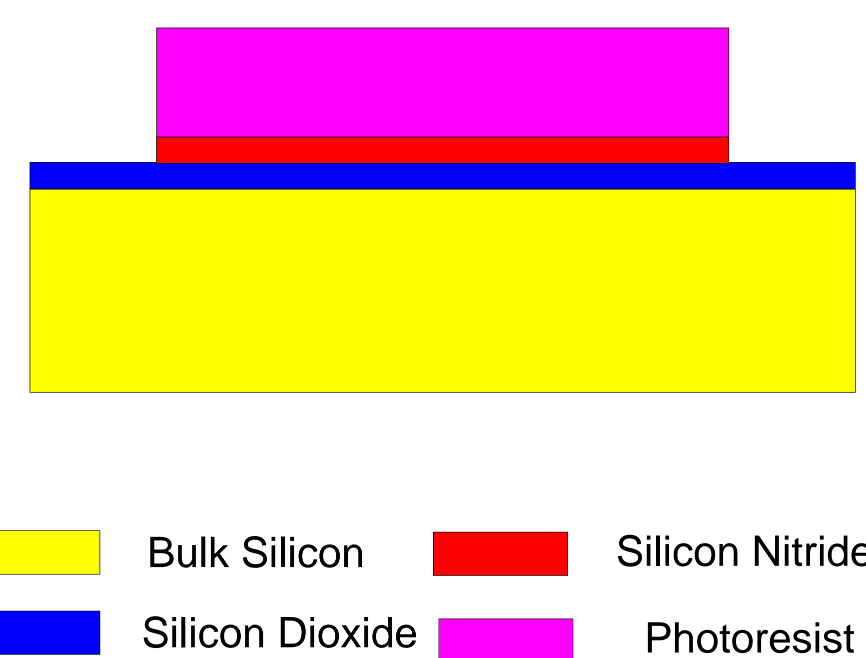
Step 4a : Lithography - **Active Area**



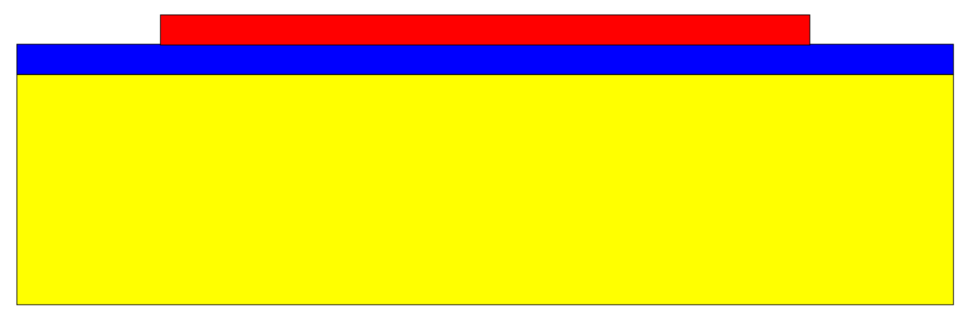
Step 4b : Lithography



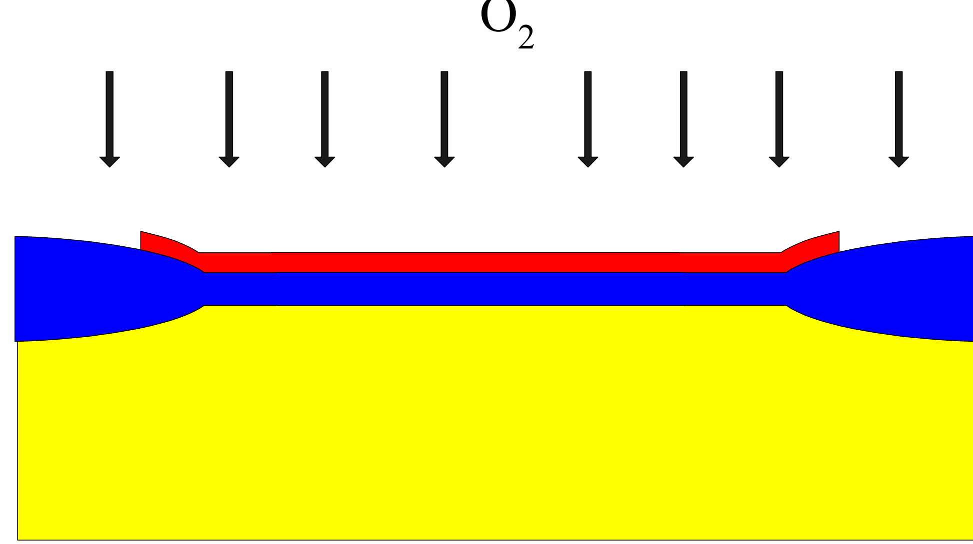
Step 5 : Etching Nitride



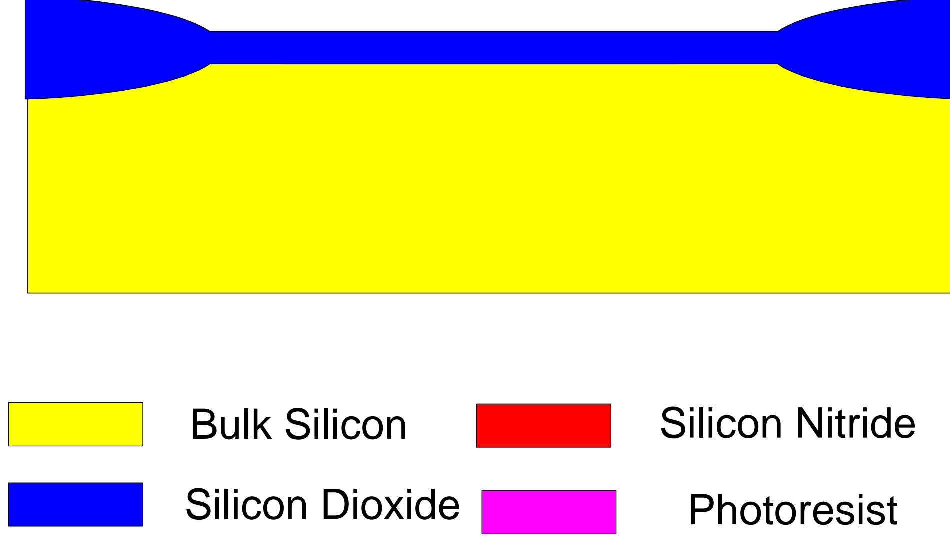
Step 6 : Resist Removal



Step 7 : Thermal Oxidation for **Field Oxide**

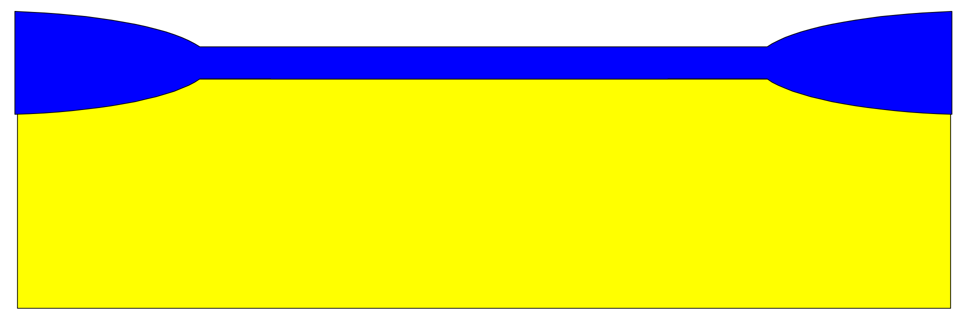


Step 8 : Etching Nitride

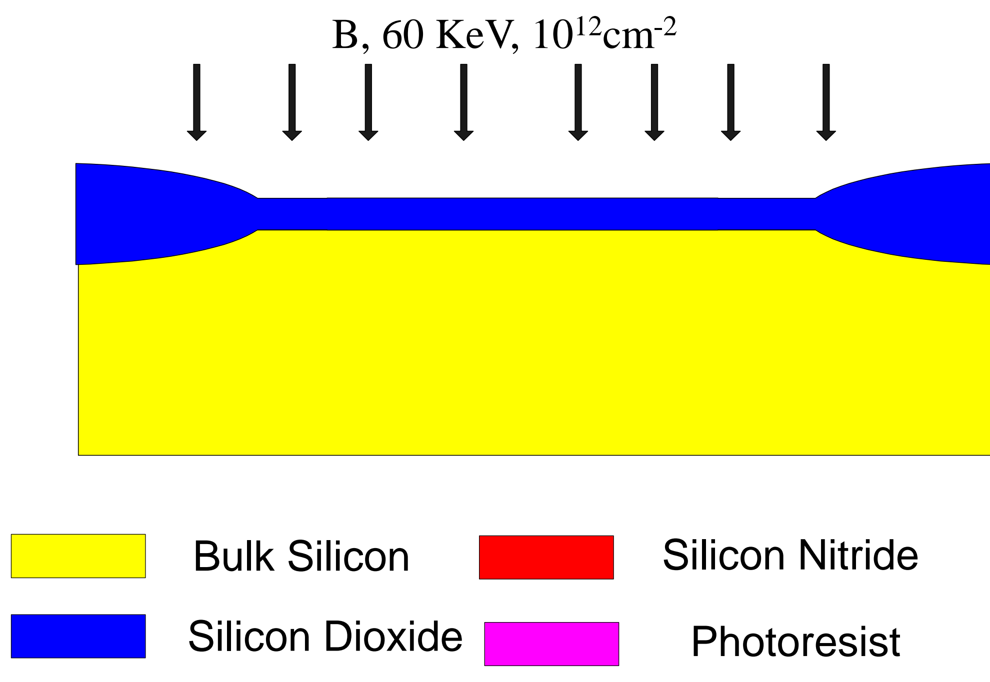


Step 9 : Etching Oxide

Step 10 : Thermal Oxidation - Sacrificial Oxide

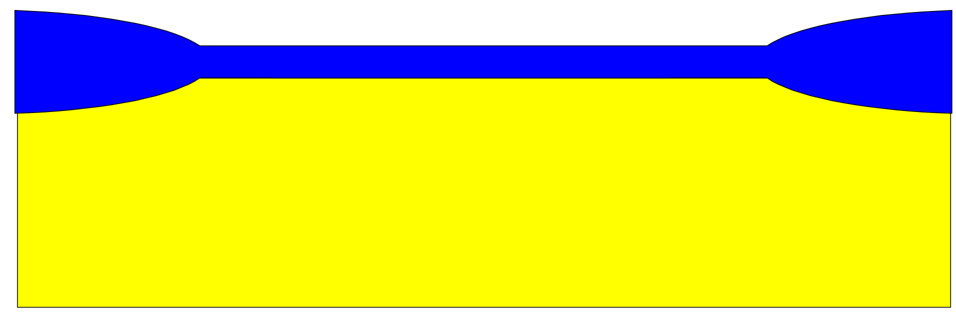


Step 11 : Ion Implantation -Channel Implant

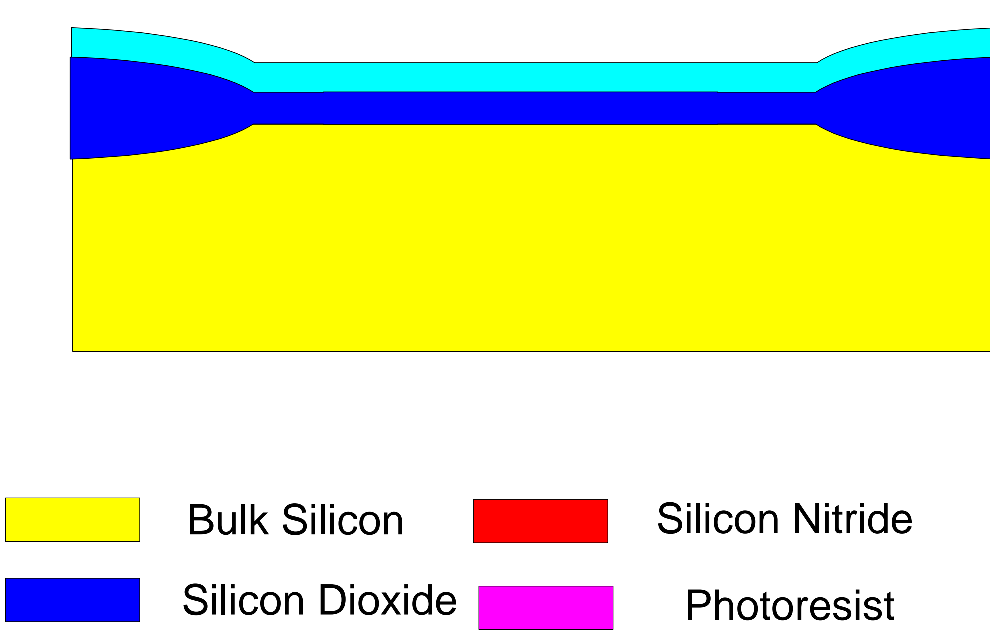


Step 12 : Etching Sacrificial Oxide

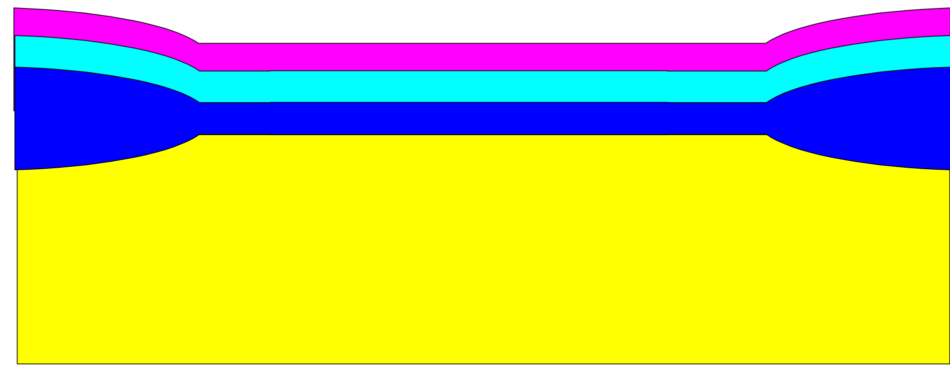
Step 13 : Thermal Oxidation - **Gate Oxide**



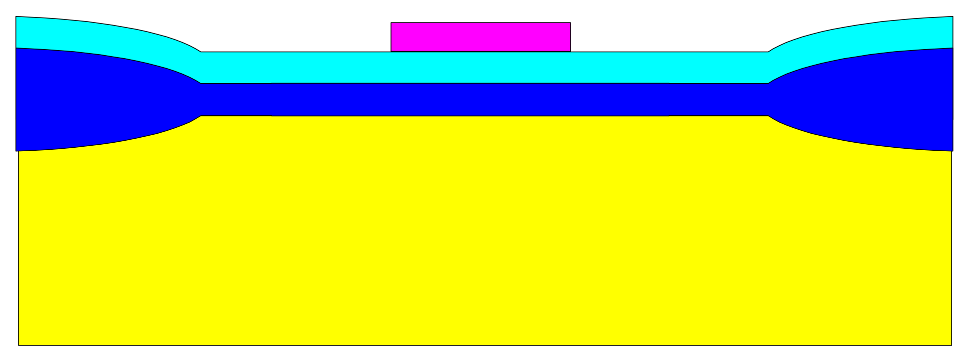
Step 14 : LPCVD Polysilicon



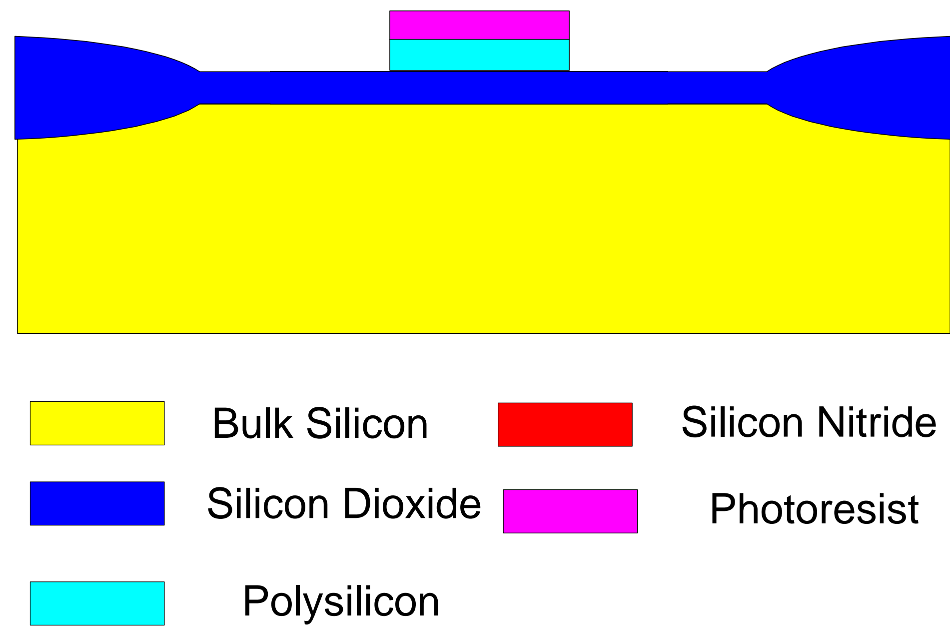
Step 15a : Lithography - **Gate Definition**



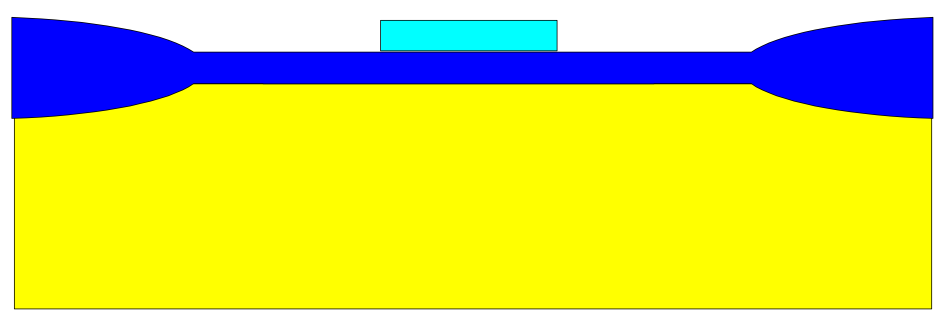
Step 15b : Lithography



Step 16 : Etching LPCVD Polysilicon

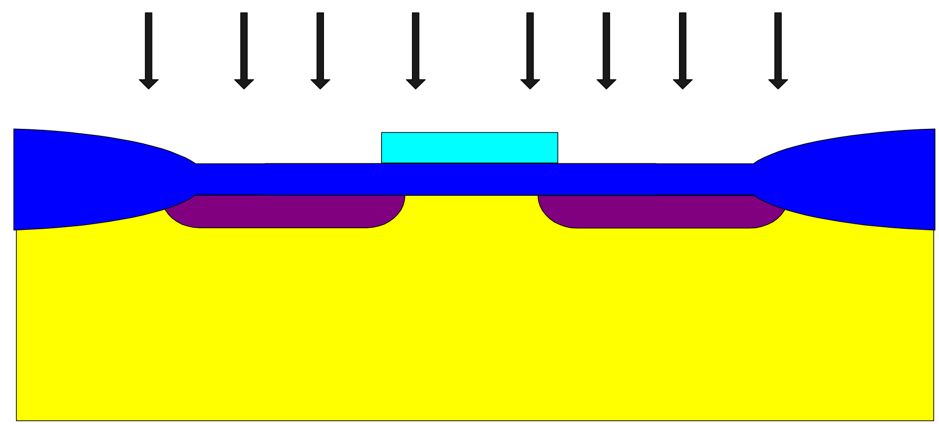


Step 17 : Resist Removal

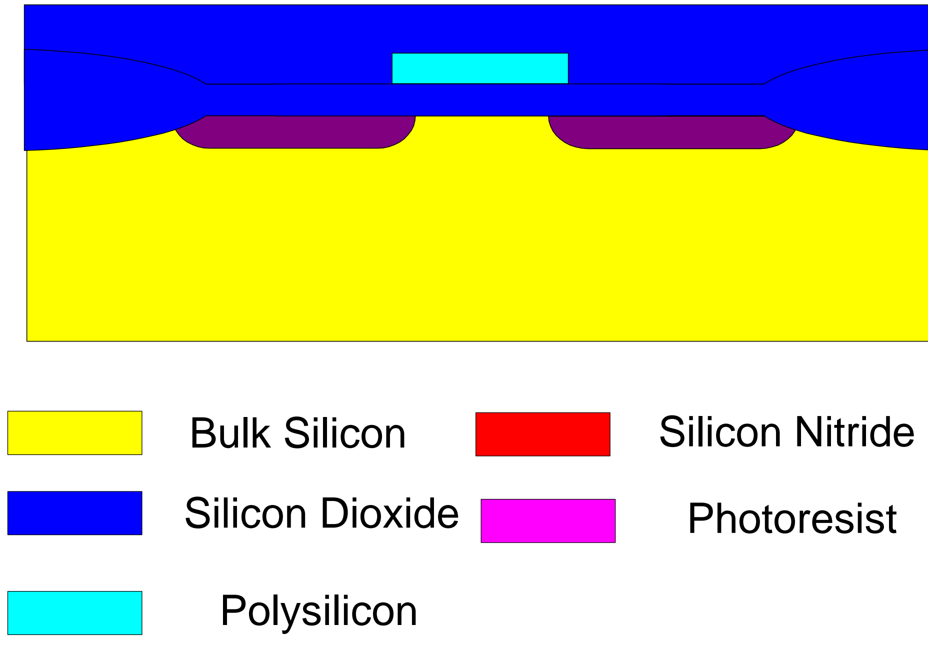


Step 18 : Ion Implantation- **Source/Drain Implant**

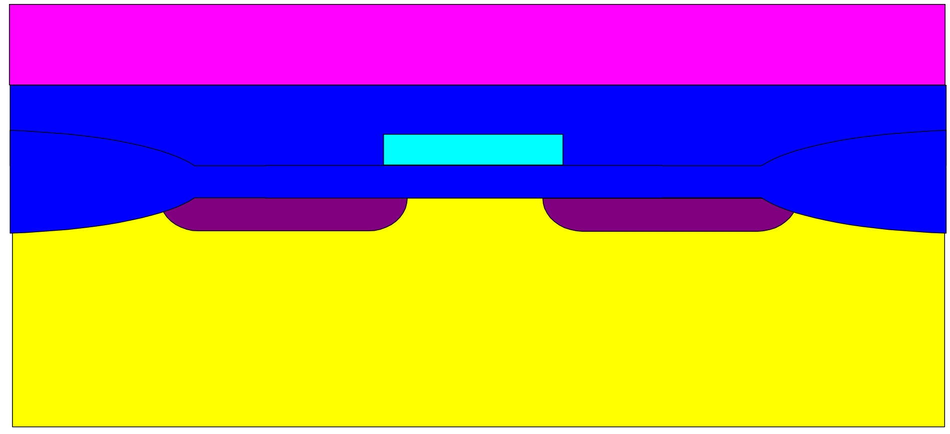
As, 120 KeV, 2 $10^{15} cm^{-2}$



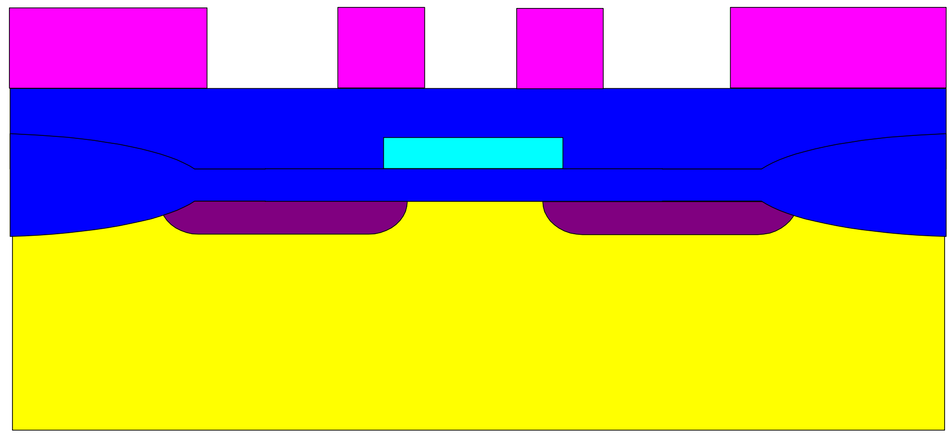
Step 19 : TEOS Oxide Deposition



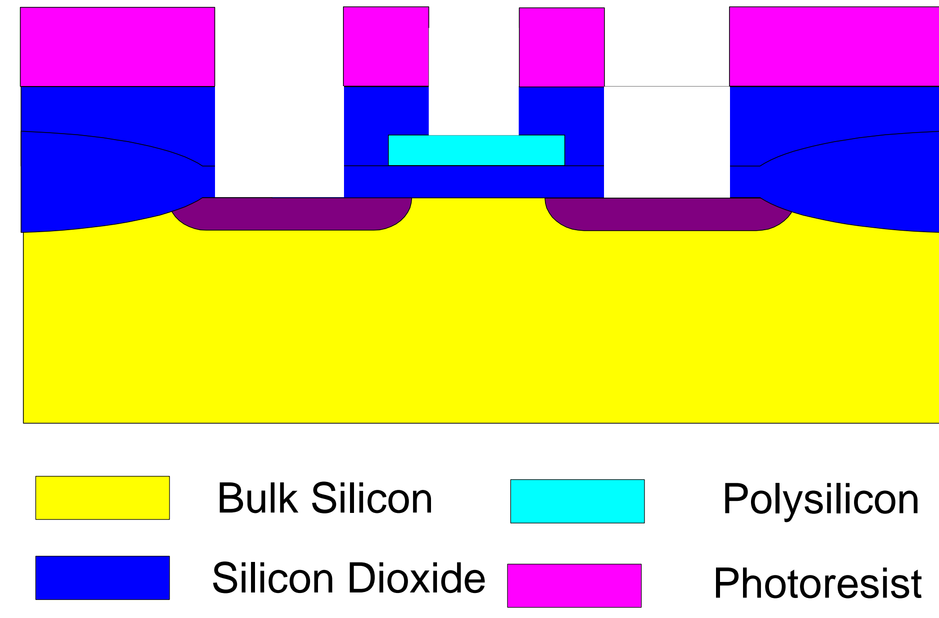
Step 20a : Lithography- **Contacts**



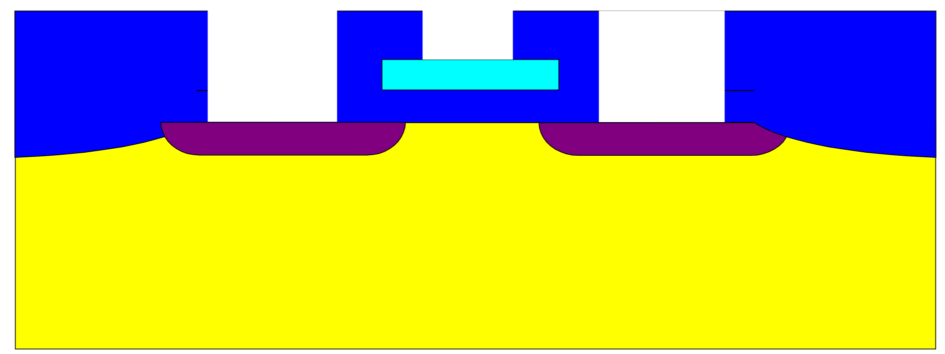
Step 20b : Lithography **- Contacts**



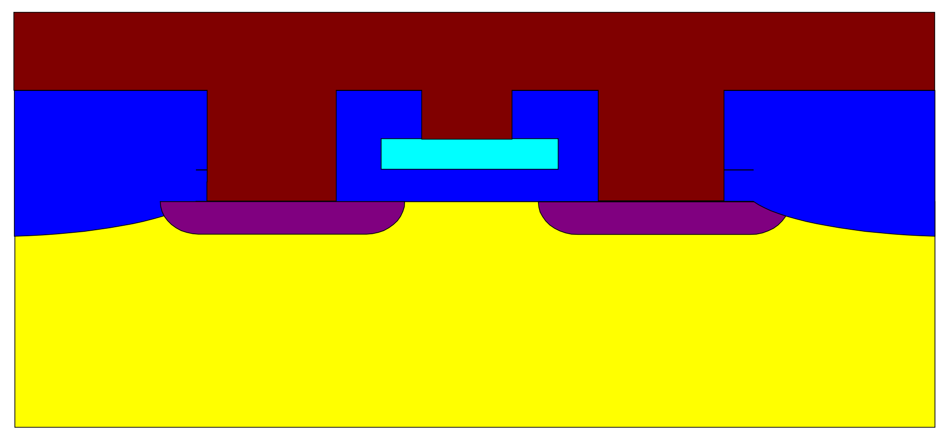
Step 21 : Etching Oxide

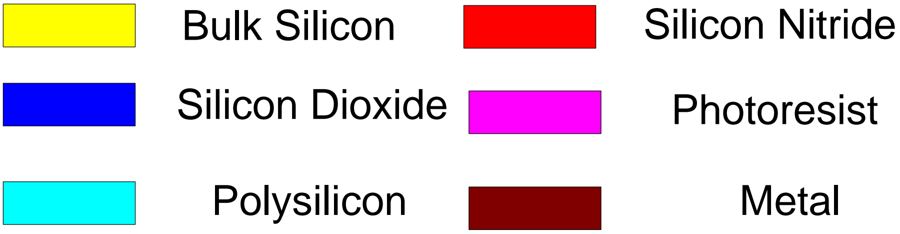


Step 22 : Resist Removal

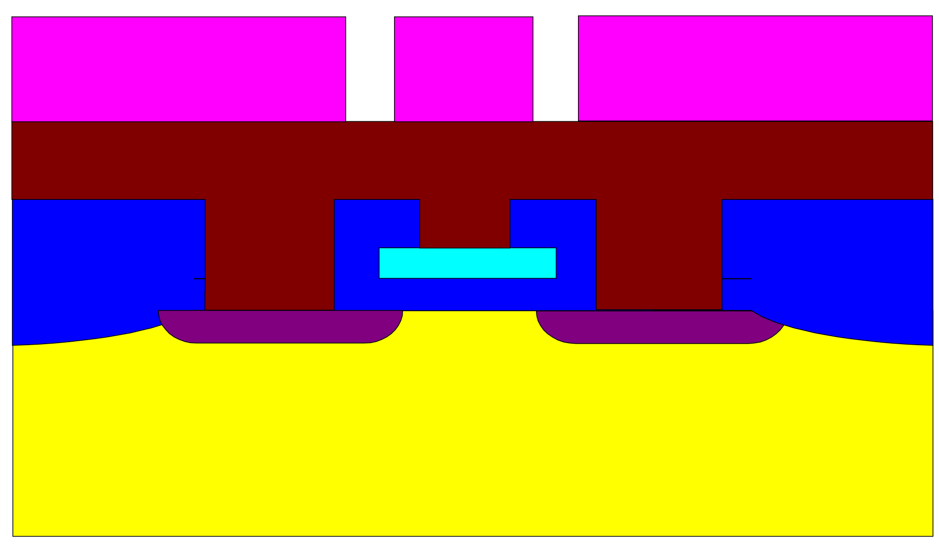


Step 23 : Metal Deposition

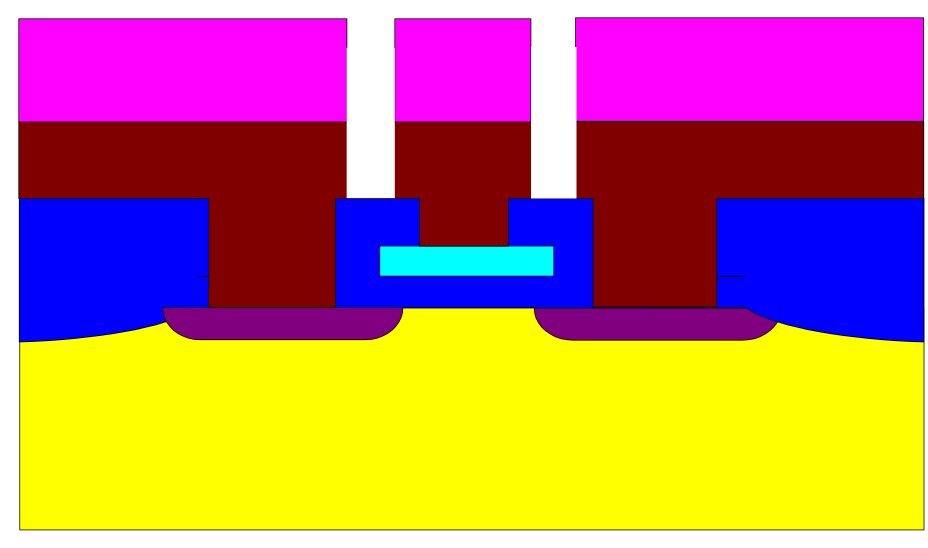


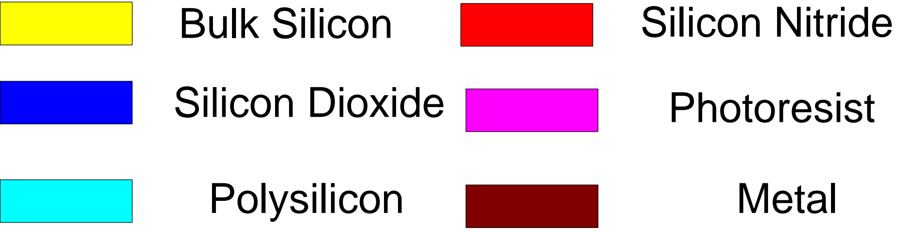


Step 24 : Lithography - **Metal**

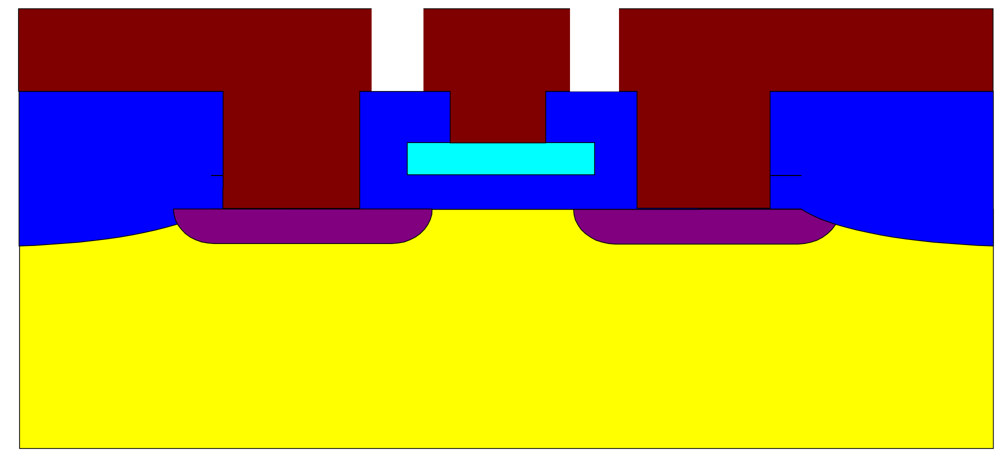


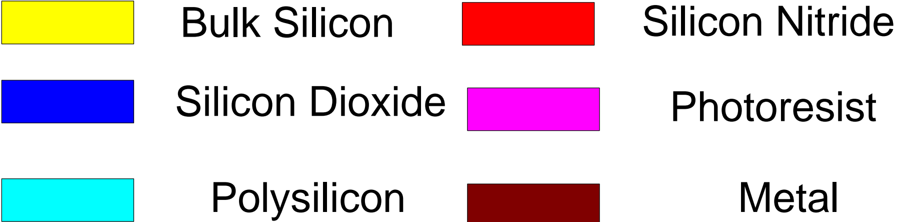
Step 25 : Etching Metal

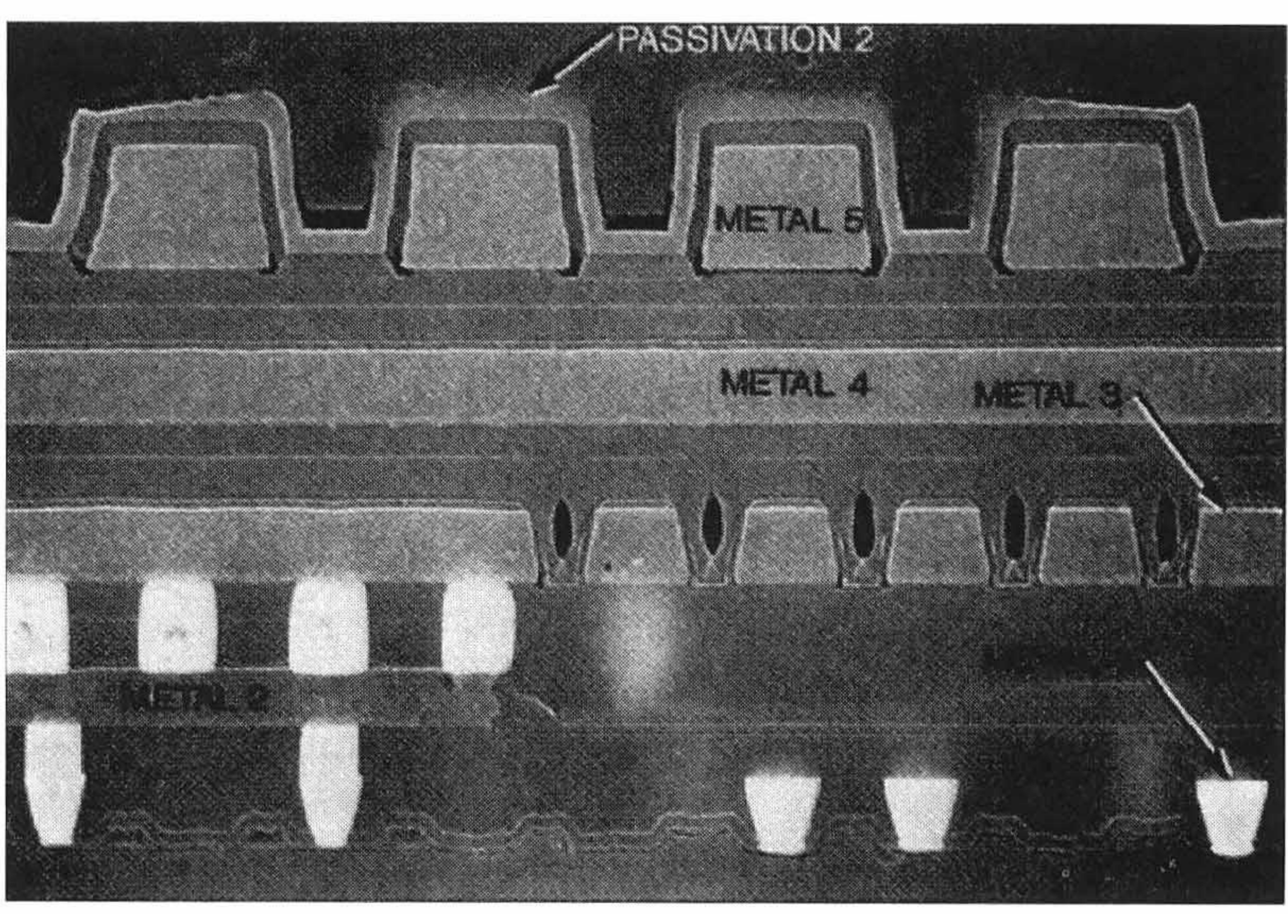




NMOS Device






PASSIVATION 2
METAL 5
METAL 4
METAL 3
METAL 2