

DIOS 工艺仿真实例

```
Title('p-well process')
repl(cont(ngra=1000))

set sim_y1=-10
set sim_y2=10
set sim_x1=-15
set sim_x2=15
Grid(X(-15,15),Y(-10,10),Nx=10)

repl(cont(maxtrl=5,RefineGradient=-6,RefineMaximum=0,RefineJunction=-6,RefineBoundary=-6))
Substrate(Element=P, Ysubs=0, Orientation=100, Cutline(0.0,0.0,15,0.0), Concentration=4.32e15)

Comment('p-well')
diff:(moddiff=Conventional)
diff:(modox=DealGrove)
Diffusion(Time=20, Temperature=1200, Atmosphere=Mixture Flow(H2O=3) Pressure=1)
Diffusion(Time=72, Temperature=1200, Atmosphere=Mixture Flow(H2O=3) Pressure=1)
Diffusion(Time=54, Temperature=1200, Atmosphere=Mixture Flow(H2O=3) Pressure=1)
save(n@node@_pwell_OX,type=MDRAW,compress=off)

Mask(Material=Resist,Thickness=2um,X(-15.1,6,9.0,15.1))
etch(material=ox,stop=sigas,Rate(Aniso=10))
etch(material=Resist)
Implantation(Element=B,Dose=1.6e14,Energy=120,Tilt=0degree,Rotation=-90degree,NumSplits=2
)
Diffusion(Time=150,Temperature=1050,Atmosphere=Mixture Flow( N2=3) Pressure=1)
etch(material=OX)
save(n@node@_pwell_Imp,type=MDRAW,compress=off)

Comment('you yuan qu guang ke')
Diffusion(Time=0.16666, Temperature=1200, Atmosphere=Mixture Flow(o2=3) Pressure=1)
Deposit(Material=Nitride,Thickness=2um)
Mask(Material=Resist,Thickness=2um,X(-12.0,-3.0,3,12.0))
etch(material=Nitride,stop=OXgas,Rate(Aniso=10))
etch(material=Ox,stop=sigas)
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```
etch(material=Resist)
save(n@node@_active,type=MDRAW,compress=off)
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```
Comment('chang yang')
Diffusion(Time=75, Temperature=1200, Atmosphere=Mixture Flow(H2O=3) Pressure=1)
etch(material=Nitride)
Mask(Material=Resist,Thickness=2um,X(-15.1,-11.0,-3.0,3,11.0,15.1))
etch(material=ox,remove=0.4,Rate(Aniso=100),over=1)
etch(material=Resist)
save(n@node@_FOX,type=MDRAW,compress=off)
```

```
Comment('shan ji')
Diffusion(Time=0.16666, Temperature=1200, Atmosphere=Mixture Flow(O2=3) Pressure=1)
Deposit(Material=PO,Thickness=0.5um,Element=P,Conc=1e20)
Mask(Material=Resist,Thickness=2um,X(-9.0,-6.0,6.0,9.0))
etch(material=PO,remove=1.5um,Rate(Aniso=100),over=0)
etch(material=OX,remove=0.5um,Rate(Aniso=100),over=0)
etch(material=Resist)
save(n@node@_Gate,type=MDRAW,compress=off)
```

```
Comment('p+ ')
Mask(Material=Resist,Thickness=2um,X(-15.1,-10.0,-5.0,15.1))
Implantation(Element=B,Dose=4e15,Energy=10,Tilt=0degree,Rotation=-90degree)
etch(material=Resist)
Diffusion(Time=5,Temperature=1050,Atmosphere=Mixture Flow(N2=3) Pressure=1)
save(n@node@_pplus,type=MDRAW,compress=off)
```

```
Comment('n+ ')
Mask(Material=Resist,Thickness=2um,X(-15.1,5.0,10.0,15.1))
Implantation(Element=P,Dose=4e15,Energy=10,Tilt=0degree,Rotation=-90degree,NumSplits=2)
etch(material=Resist)
Diffusion(Time=5,Temperature=1050,Atmosphere=Mixture Flow(N2=3) Pressure=1)
save(n@node@_nplus,type=MDRAW,compress=off)
```

```
Comment('save profile')
1d(file=n@node@_nwell_to,xsection(7.5),spe(btot,ptot,itot),fact=-1,append=off)
!
1d(file=n@node@_nwell_field,xsection(-7.5),spe(btot,ptot,itot),fact=-1,append=off)
save(n@node@,type=dmp,compress=off)
!save(n@node@,type=dfise)
save(file=n@node@,type=MDRAW,synonyms(po=metal,al=metal,ms=metal)
compress=off
)
```

)

exit

!-----END

end