

Simulation about process

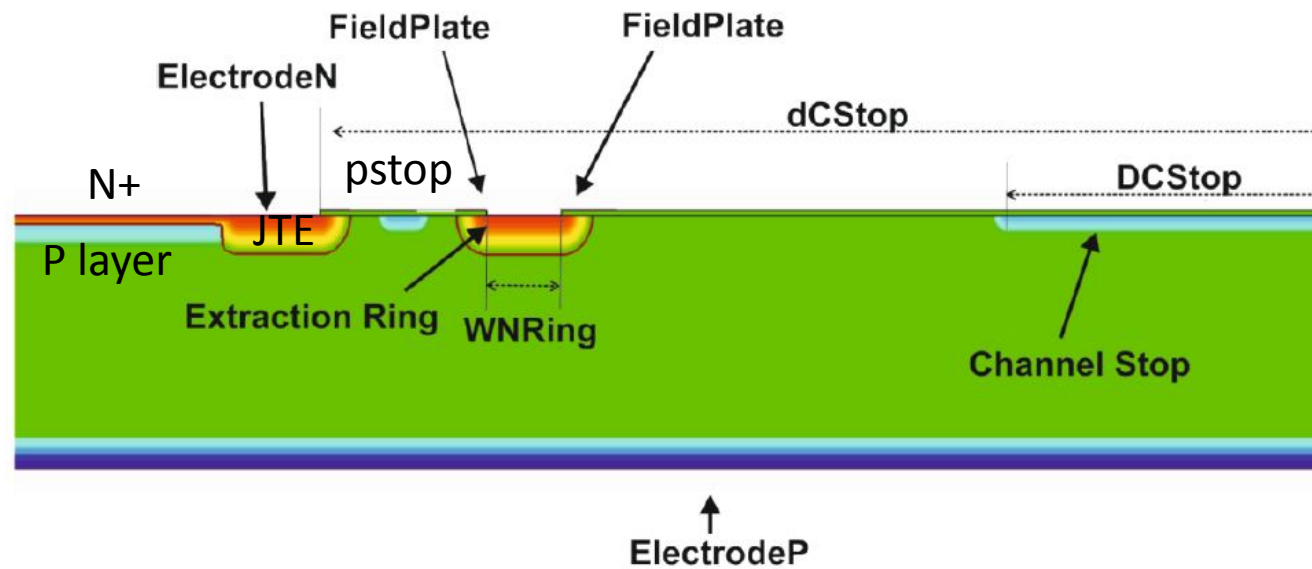
Mei Zhao

2018.11.1

Process

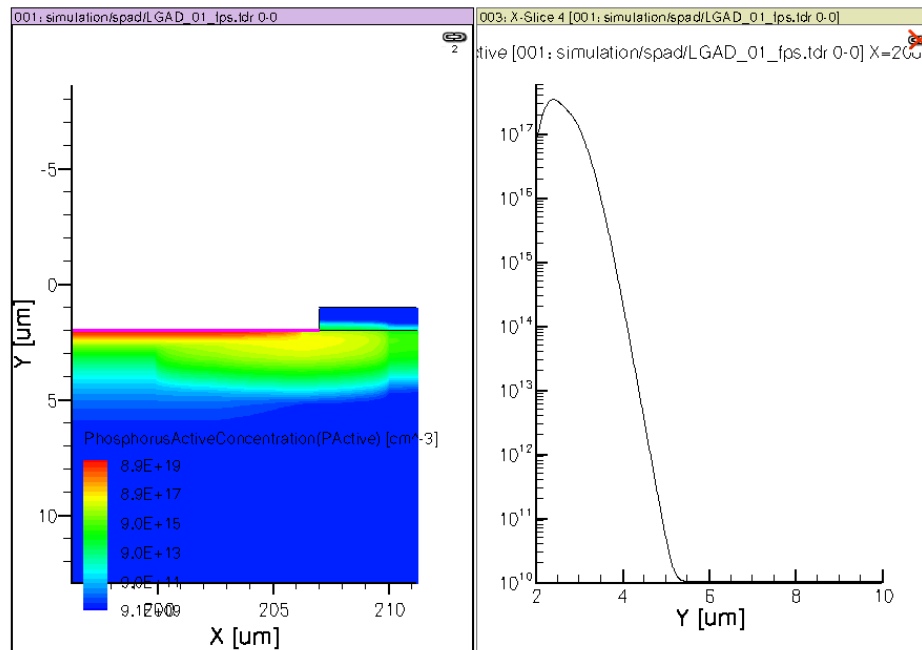
Mask: 6

- 1、 JTE
- 2、 P layer implantation
- 3、 p stop, DCstop
- 4、 WNring
- 5、 n+ layer
- 6、 field plate deposition, etch
- 7、 p+ back



Process

- JTE
 - implant Phosphorus dose= $4e13 < \text{cm}^{-2} >$
energy= $200 < \text{keV} >$
- diffuse temperature= $1050 < \text{C} >$ time= $10.0 < \text{min} >$

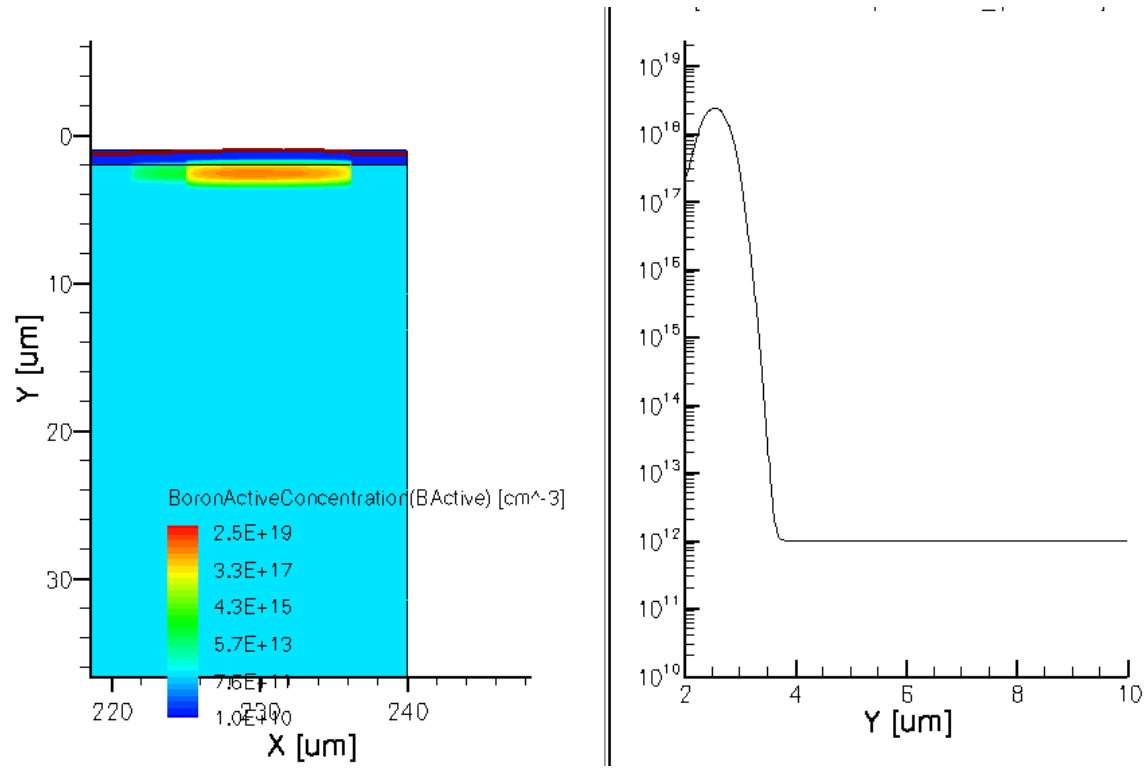


Process

- P stop, DCstop

implant Boron dose= 2×10^{14} [cm⁻²] energy=100 [keV]

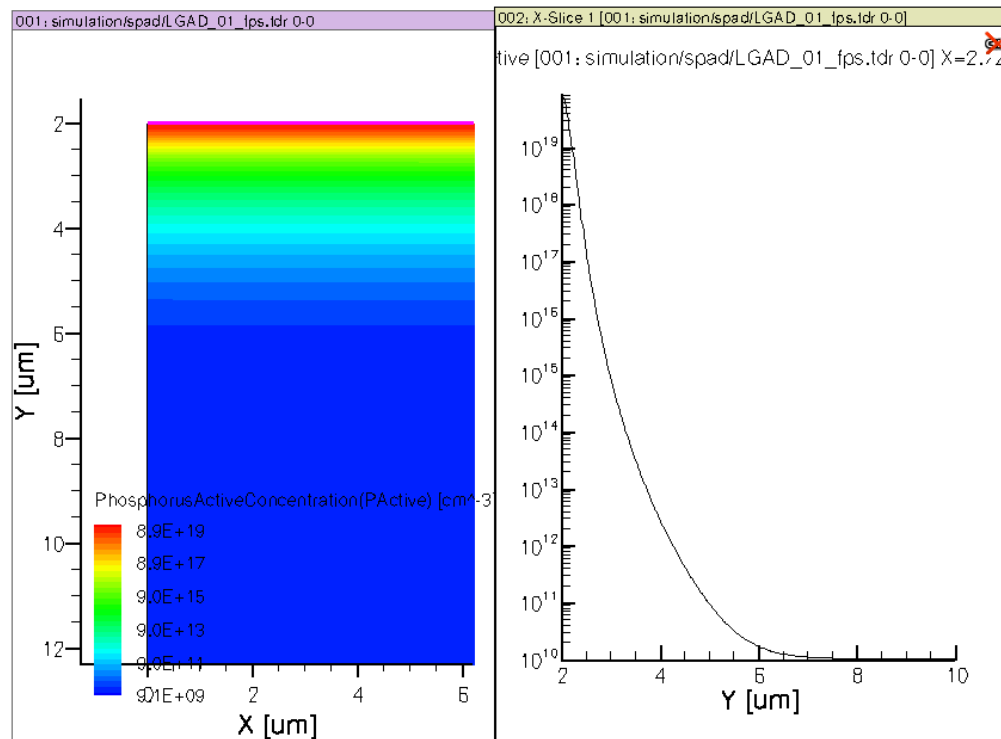
diffuse temperature=1050 [C] time=30.0 [min]



Process

- N+

implant Phosphorus dose=1e15<cm-2> energy=40<keV>
diffuse temperature=1050<C> time=10.0<s>



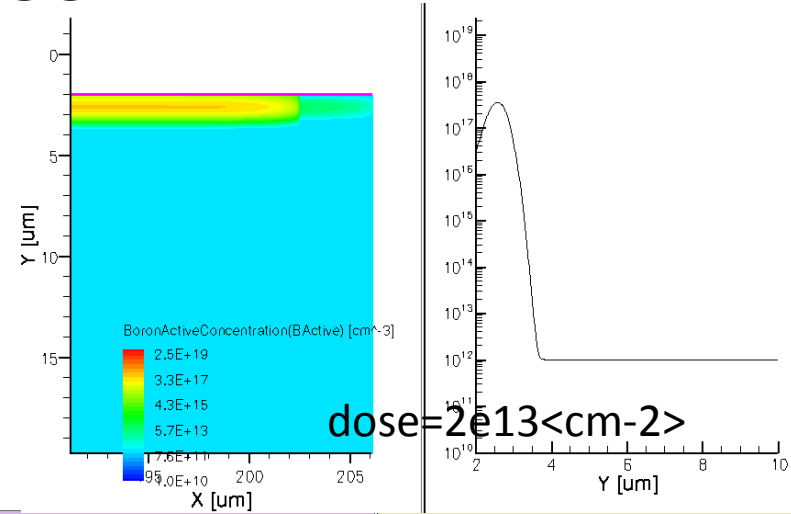
Process

- p

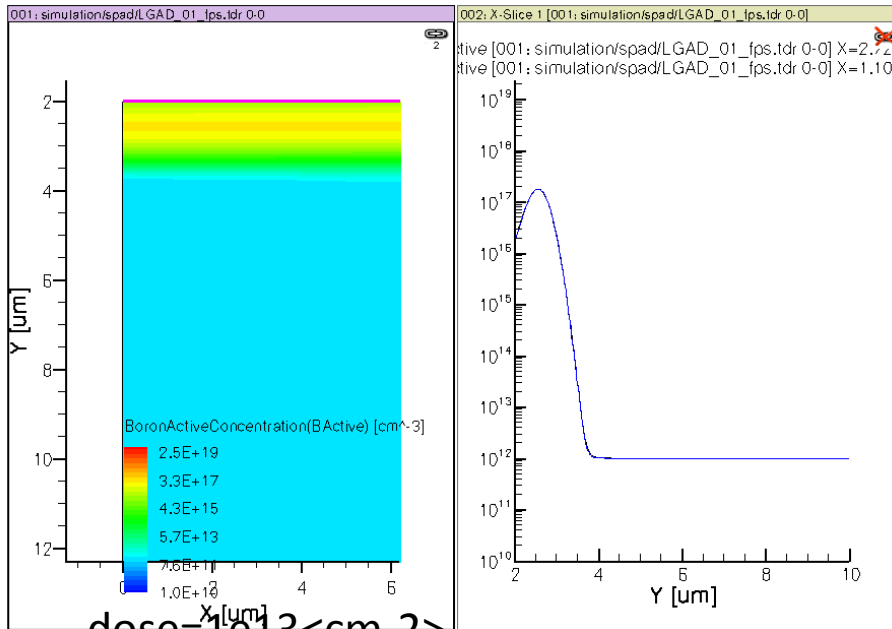
implant Boron dose= $2e13<cm^{-2}>$

energy=100<keV>

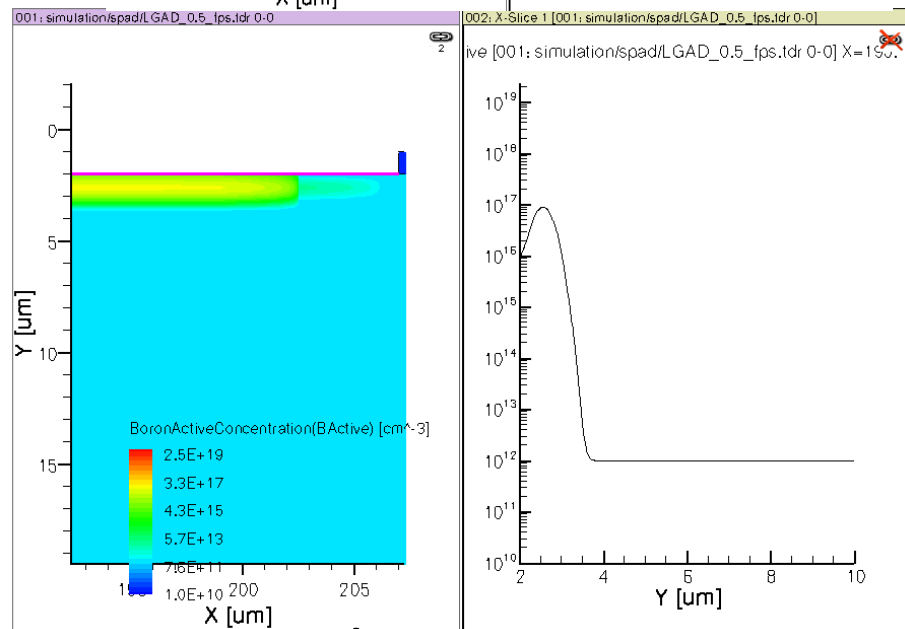
diffuse temperature=1050<C> time=10.0<min>



dose= $2e13<cm^{-2}>$



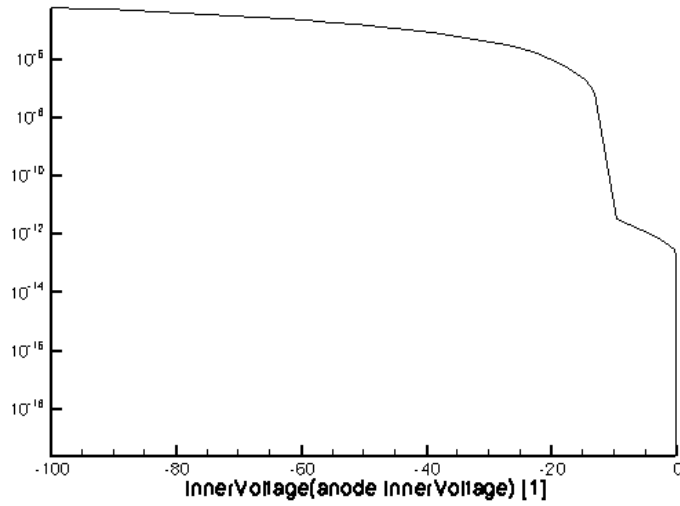
dose= $1e13<cm^{-2}>$



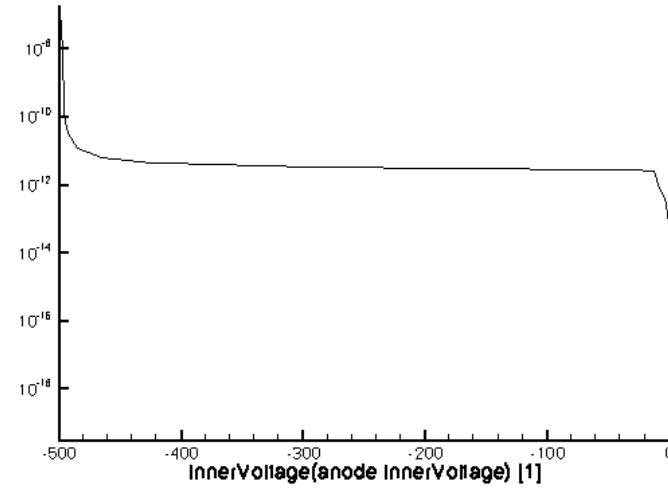
dose= $0.5e13<cm^{-2}>$

Simulation

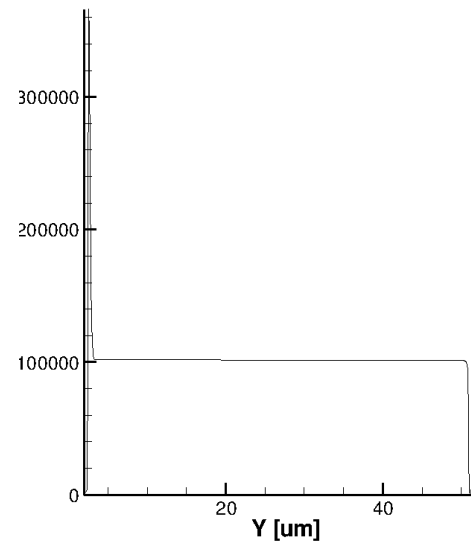
- I_V



dose=2e13<cm-2>



dose=0.5e13<cm-2>



Next work

- Base on process
Gain
Change JTE width: I-V, gain
JTE and pstop space: I-V, gain
- Base on structure
Gain at different p doping(KeWei)
- Draw layout

