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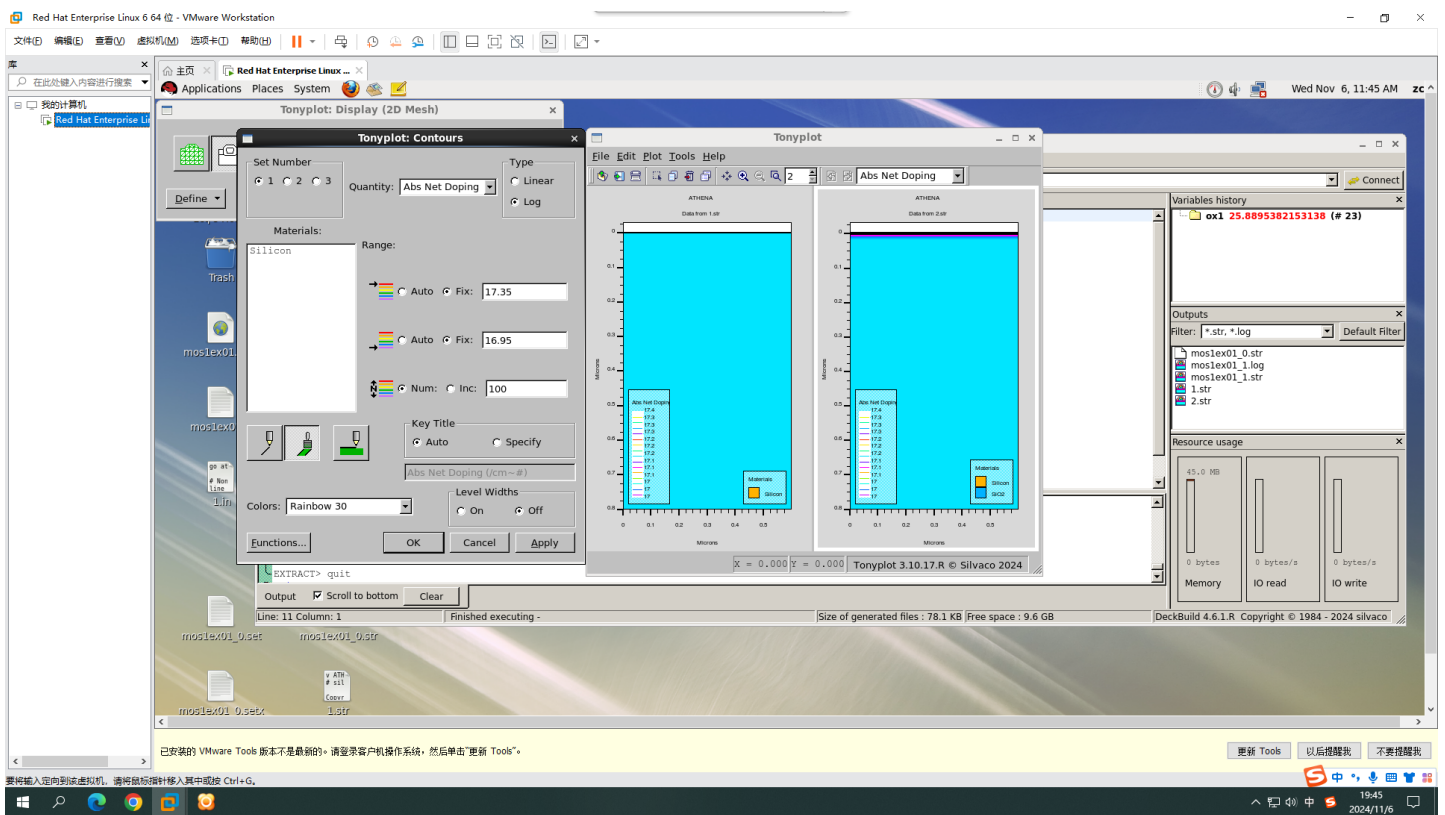
ox1=20.5989 angstroms (0.00205989 um)

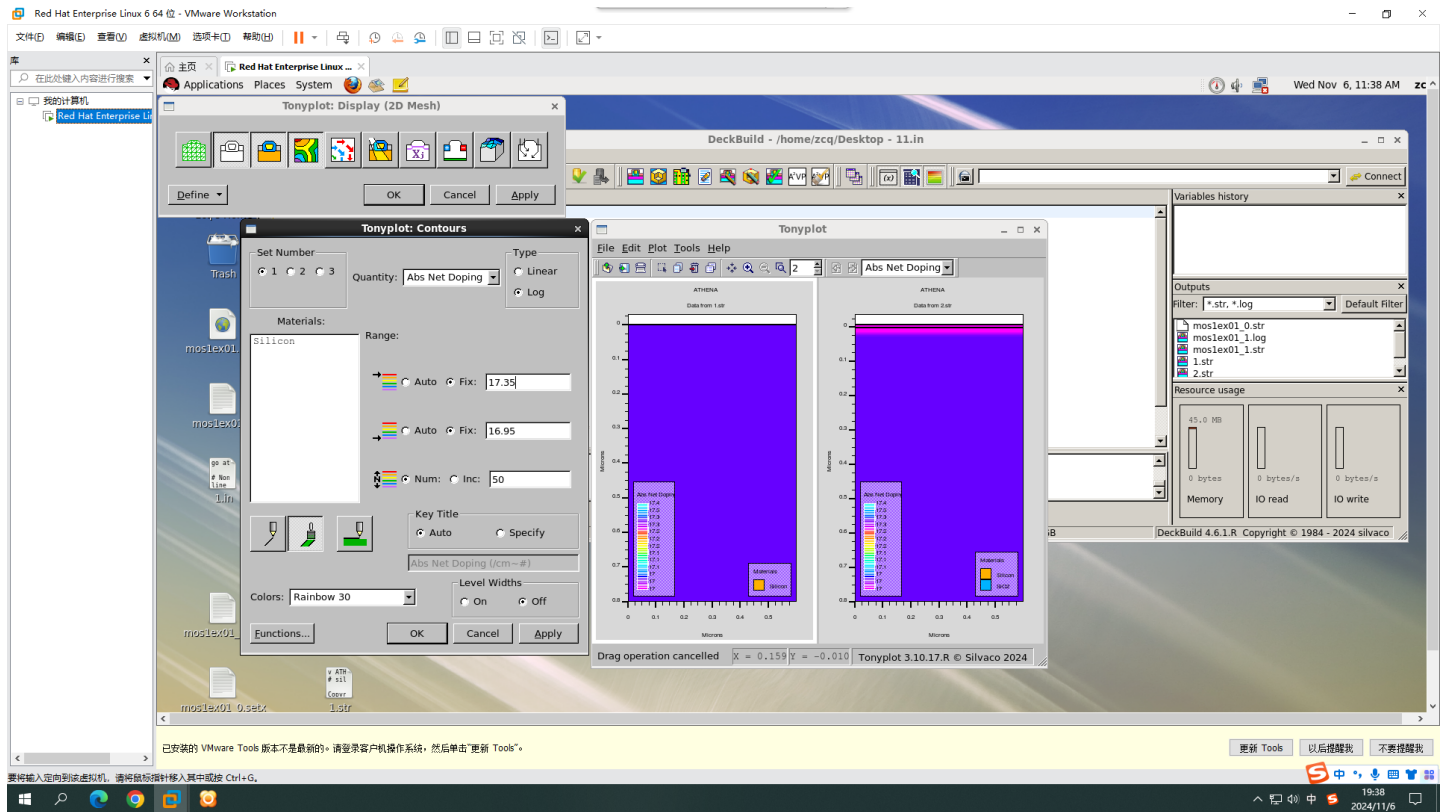
ox1=25.8895 angstroms (0.00258895 um)

ox1=47.5404 angstroms (0.00475404 um)

ox1=71.427 angstroms (0.0071427 um)

ox1=147.864 angstroms (0.0147864 um)





go athena

Non-uniform Grid (0.6um*0.8um)

line x loc=0.00 spac=0.10

line x loc=0.2 spac=0.01

line x loc=0.6 spac=0.01

line y loc=0.00 spac=0.008

line y loc=0.20 spac=0.01

line y loc=0.50 spac=0.05

line y loc=0.8 spac=0.15

Initial Silicon Structure with <100> Orientation

init silicon c.boron=1.0e17 orientation=100 two.d

structure outfile=1.str

tonyplot 1.str

Gate Oxidation

```
diffus time=11 minutes temp=950 dryo2 press=1 hcl.pc=3
structure outfile=2.str
tonyplot 2.str
```

Plot Boron Distribution

```
extract name="Boron Profile after Oxidation" x.boron outfile="boron_profile.plt"
```

```
tonyplot 2.str
```

```
quit
```

```
go athena
```

Non-uniform Grid (0.6um*0.8um)

```
line x loc=0.00 spac=0.10
```

```
line x loc=0.2 spac=0.01
```

```
line x loc=0.6 spac=0.01
```

```
line y loc=0.00 spac=0.008
```

```
line y loc=0.20 spac=0.01
```

```
line y loc=0.50 spac=0.05
```

```
line y loc=0.8 spac=0.15
```

```
#Initial Silicon Structure with <100> Orientation
```

```
init silicon c.boron=1.0e17 orientation=100 two.d
```

```
structure outfile=1.str
```

```
tonyplot 1.str
```

Gate Oxidation

```
diffus time=11 minutes temp=950 dryo2 press=1 hcl.pc=3
```

```
structure outfile=2.str
```

```
tonyplot 2.str
```

```
quit
```

go athena

Non-uniform Grid (0.6um*0.8um)

line x loc=0.00 spac=0.10

line x loc=0.2 spac=0.01

line x loc=0.6 spac=0.01

line y loc=0.00 spac=0.008

line y loc=0.20 spac=0.01

line y loc=0.50 spac=0.05

line y loc=0.8 spac=0.15

#Initial Silicon Structure with <100> Orientation

init silicon c.boron=1.0e14 orientation=100 two.d structure outfile=1.str

tonyplot 1.str

Gate Oxidation

diffus time=11 minutes temp=950 dryo2 hcl.pc=3 structure outfile=2.str

tonyplot 2.str

quit

go athena

mesh(3*2.5)

line x loc=0.00 spac=0.05

line x loc=0.15 spac=0.02

line x loc=0.3 spac=0.01

line x loc=0.5 spac=0.1

line x loc=0.7 spac=0.01

line x loc=0.85 spac=0.02

line x loc=1 spac=0.05

line y loc=0 spac=0.01

line y loc=1 spac=0.1

Initialize

init silicon orientation=111 two.d

rate.depo machine=MOCVD nitride n.m cvd dep.rate=20.0 step.cov=1

deposit machine=MOCVD time=15.0 minutes divisions=15

Etch

etch nitride start x=0.20 y=0.00

etch cont x=0.20 y=-0.30

etch cont x=0.80 y=-0.30

etch done x=0.80 y=0.00

Dry oxide

diffus time=30 minutes temp=1200 dryo2

structure outfile=test2.str

tonyplot test2.str

quit

go athena

Non-uniform Grid (0.6um*0.8um)

line x loc=0.00 spac=0.10

line x loc=0.2 spac=0.01

line x loc=0.6 spac=0.01

line y loc=0.00 spac=0.008

line y loc=0.20 spac=0.01

line y loc=0.50 spac=0.05

line y loc=0.8 spac=0.15

#Initial Silicon Structure with <100> Orientation

```
init silicon c.boron=1.0e14 orientation=100 two.d  
structure outfile=1.str  
tonyplot 1.str
```

Gate Oxidation

```
diffus time=11 minutes temp=950 dryo2 hcl.pc=3  
structure outfile=2.str  
tonyplot 2.str  
quit
```