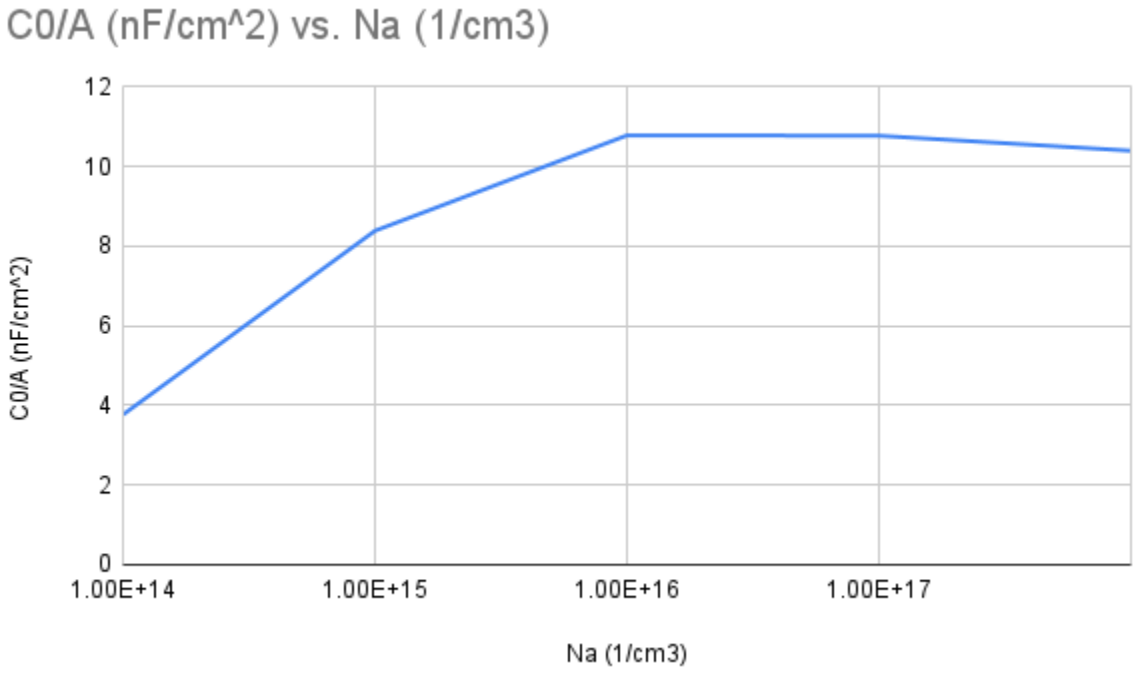
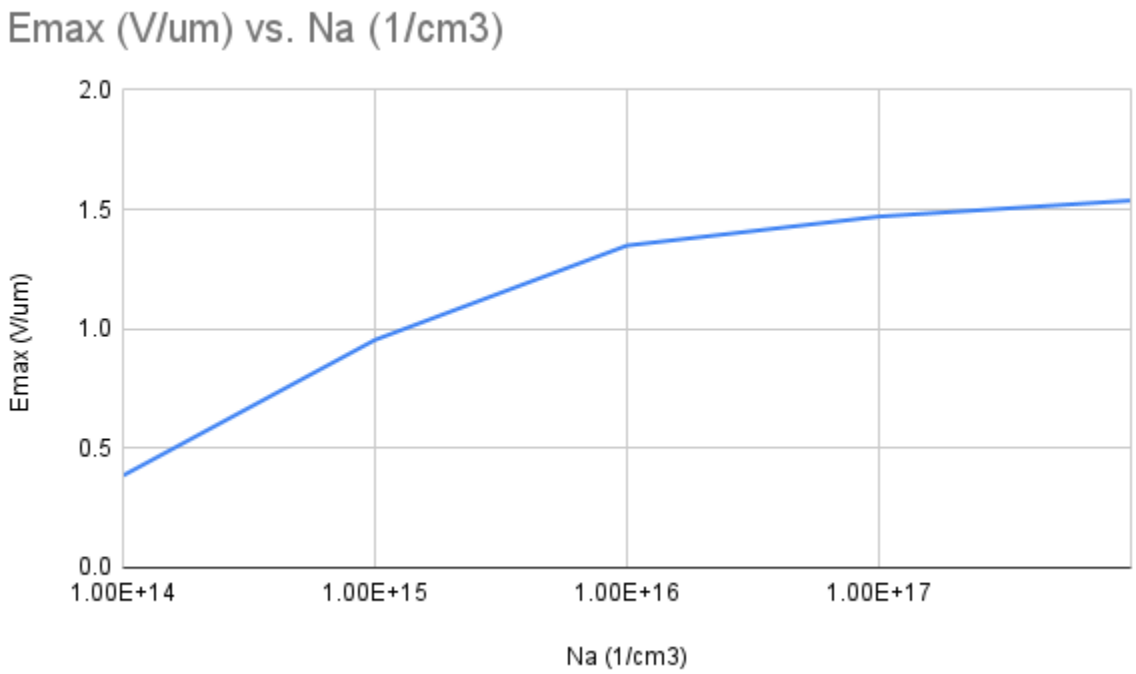
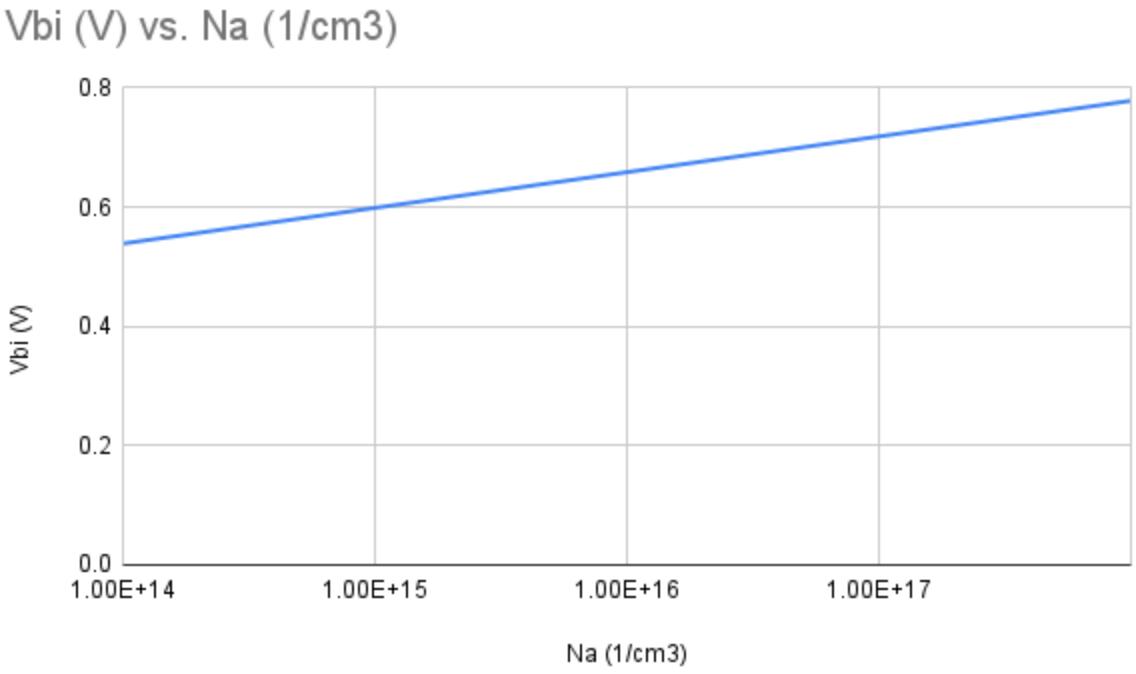
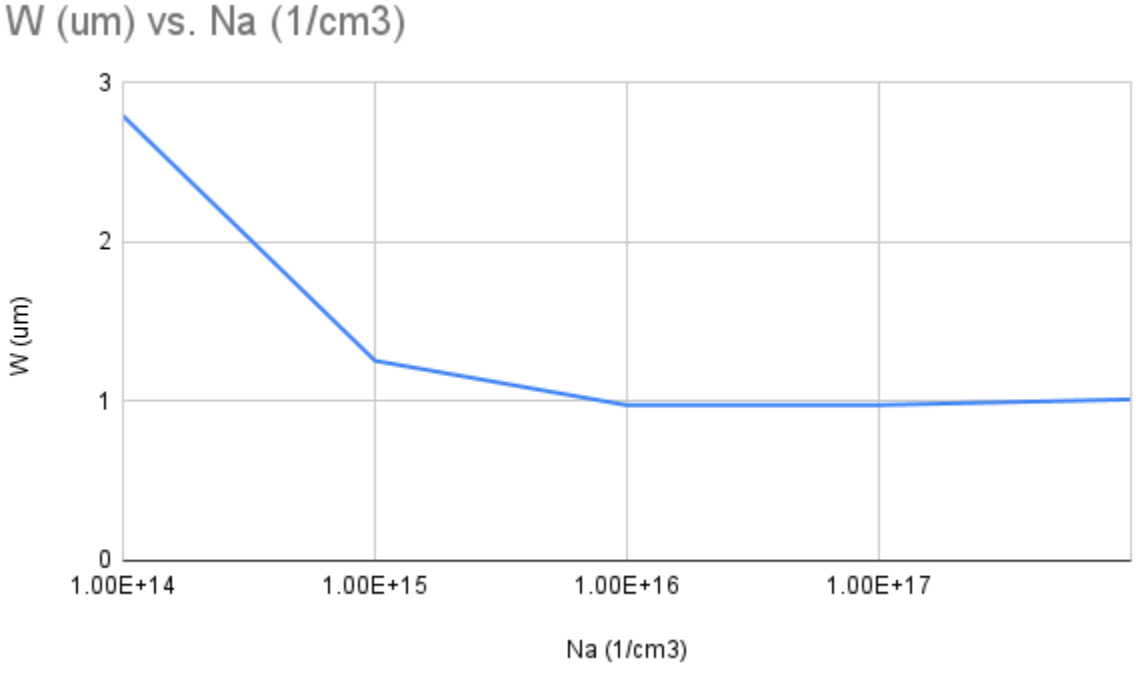
Dependence on Doping Conc



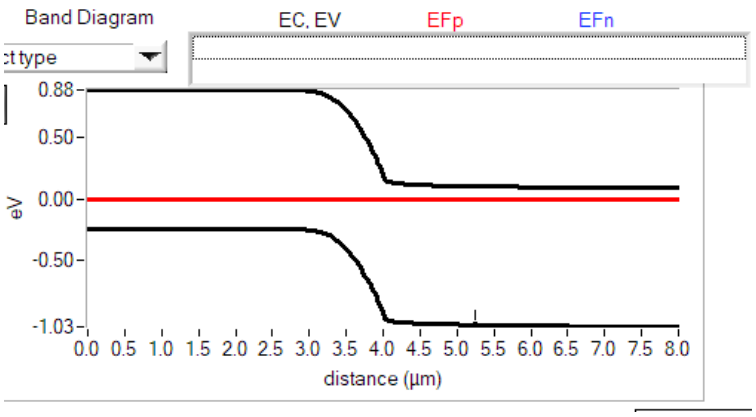


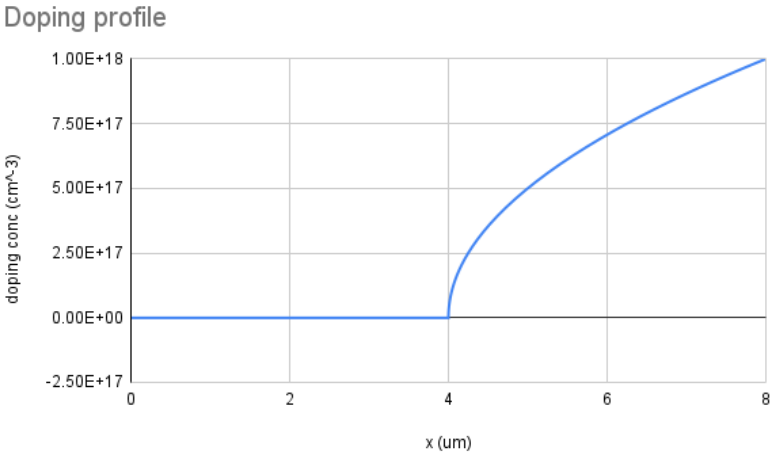

Vbi (V) vs. Na (1/cm3)
0.8
0.6
0.4
0.2
0.0
Vbi (V)
1.00E+14
1.00E+15
1.00E+16
1.00E+17
Na (1/cm3)

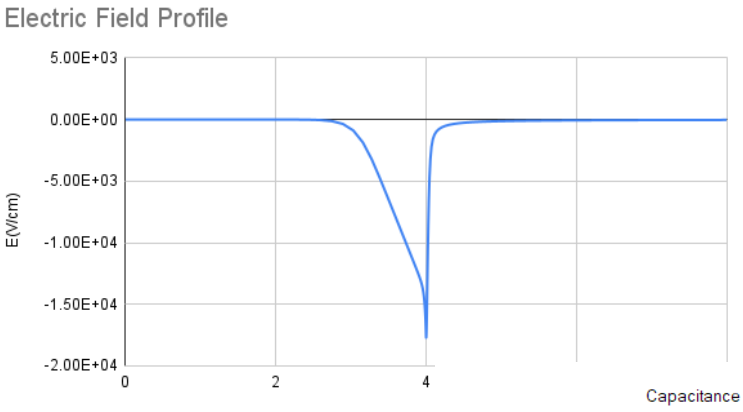

W (um) vs. Na (1/cm3)
3
2
1
0
W (um)
1.00E+14
1.00E+15
1.00E+16
1.00E+17
Na (1/cm3)

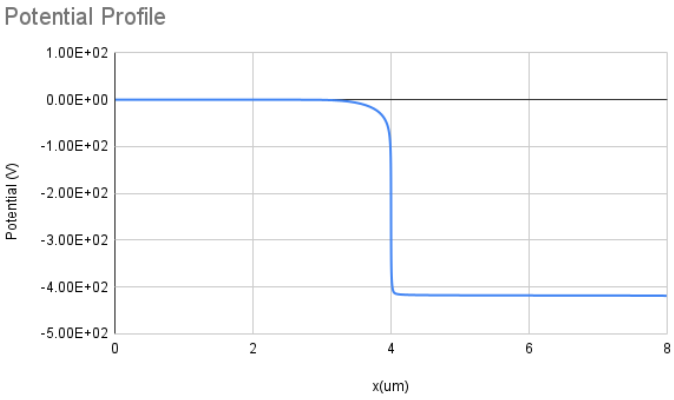
Part 2

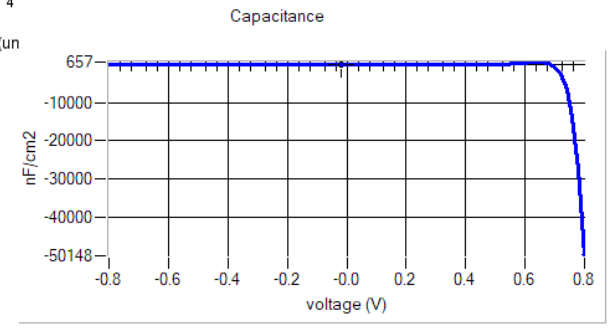
(i) m = 0.5

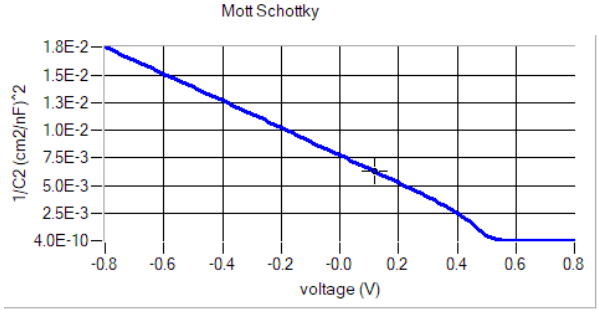

Band Diagram
EC, EV
EFp
EFn
t type
0.88
0.50
0.00
-0.50
-1.03
eV
0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0
distance (µm)


Doping profile
1.00E+18
7.50E+17
5.00E+17
2.50E+17
0.00E+00
-2.50E+17
doping conc (cm^-3)
0
2
4
6
8
x (um)

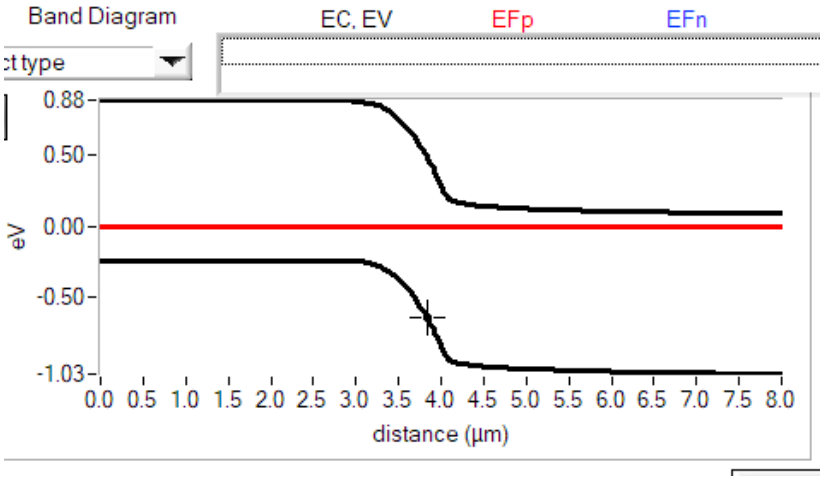

Electric Field Profile
5.00E+03
0.00E+00
-5.00E+03
-1.00E+04
-1.50E+04
-2.00E+04
E(V/cm)
0
2
4
x(un

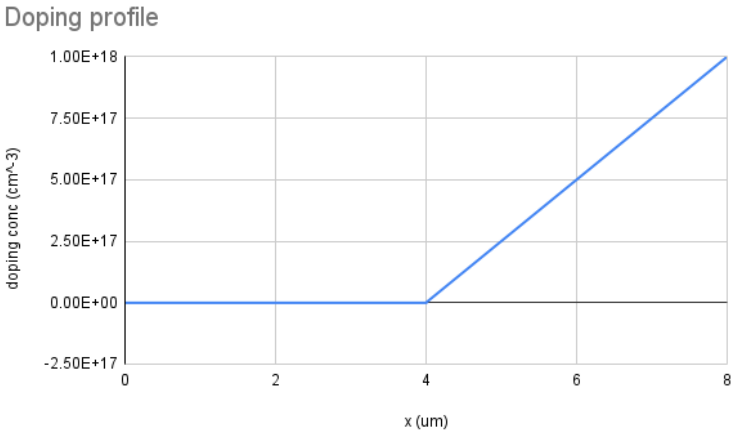

Potential Profile
1.00E+02
0.00E+00
-1.00E+02
-2.00E+02
-3.00E+02
-4.00E+02
-5.00E+02
Potential (V)
0
2
4
6
8
x(um)

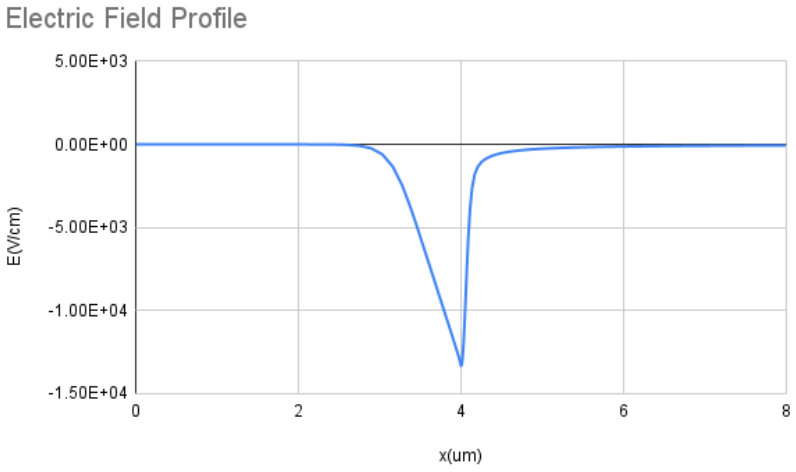

Capacitance
657
-10000
-20000
-30000
-40000
-50148
nF/cm2
-0.8 -0.6 -0.4 -0.2 -0.0 0.2 0.4 0.6 0.8
voltage (V)

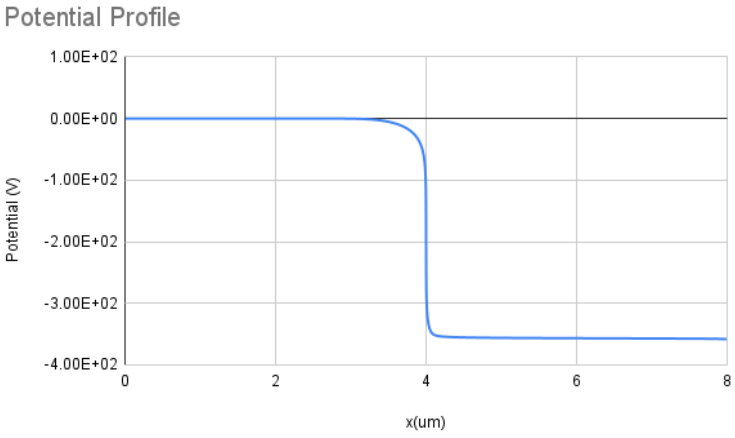

Mott Schottky
1.8E-2
1.5E-2
1.3E-2
1.0E-2
7.5E-3
5.0E-3
2.5E-3
4.0E-10
1/C2 (cm2/nF)^2
-0.8 -0.6 -0.4 -0.2 -0.0 0.2 0.4 0.6 0.8
voltage (V)

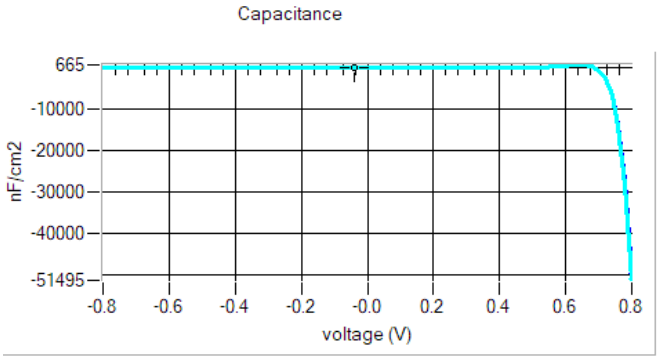
(ii) m = 1

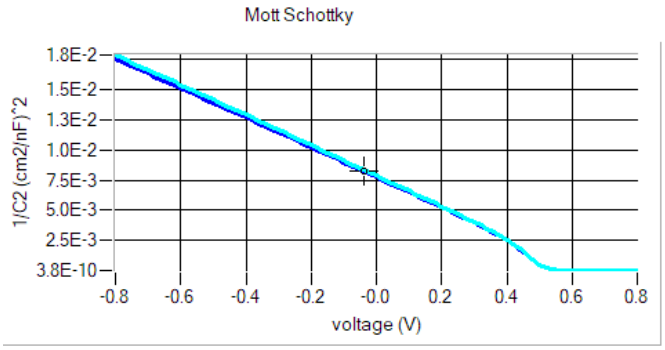

Band Diagram
EC, EV
EFp
EFn
ct type
0.88
0.50
0.00
-0.50
-1.03
eV
0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0
distance (µm)


Doping profile
1.00E+18
7.50E+17
5.00E+17
2.50E+17
0.00E+00
-2.50E+17
doping conc (cm^-3)
0
2
4
6
8
x (um)

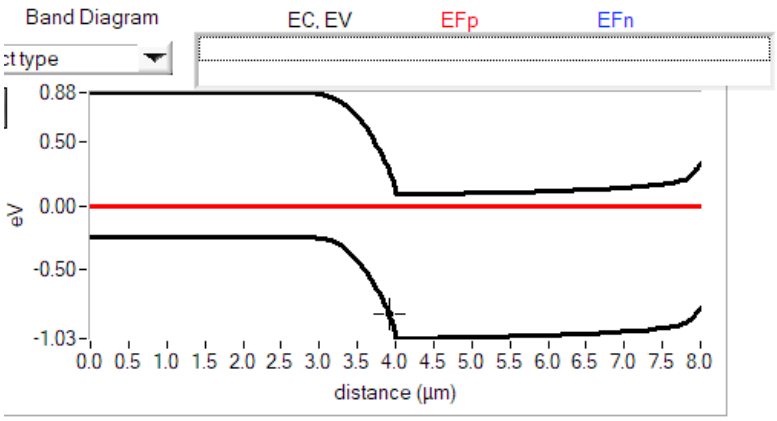

Electric Field Profile
5.00E+03
0.00E+00
-5.00E+03
-1.00E+04
-1.50E+04
E(V/cm)
0
2
4
6
8
x(um)

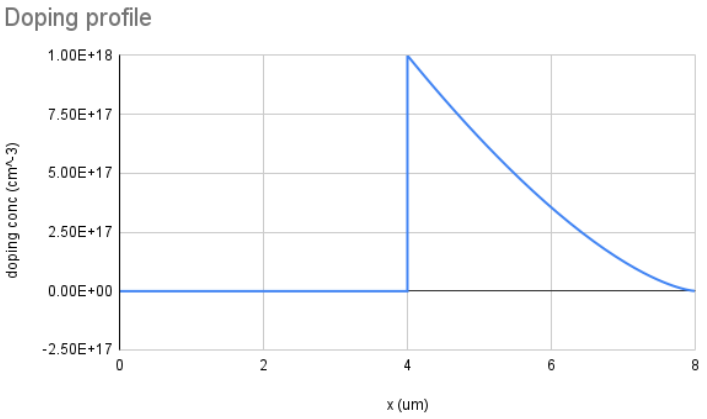

Potential Profile
1.00E+02
0.00E+00
-1.00E+02
-2.00E+02
-3.00E+02
-4.00E+02
Potential (V)
0
2
4
6
8
x(um)

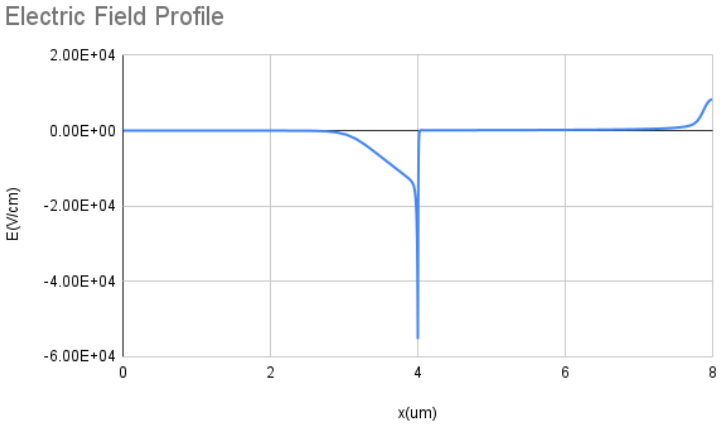

Capacitance
665
-10000
-20000
-30000
-40000
-51495
nF/cm2
-0.8 -0.6 -0.4 -0.2 -0.0 0.2 0.4 0.6 0.8
voltage (V)

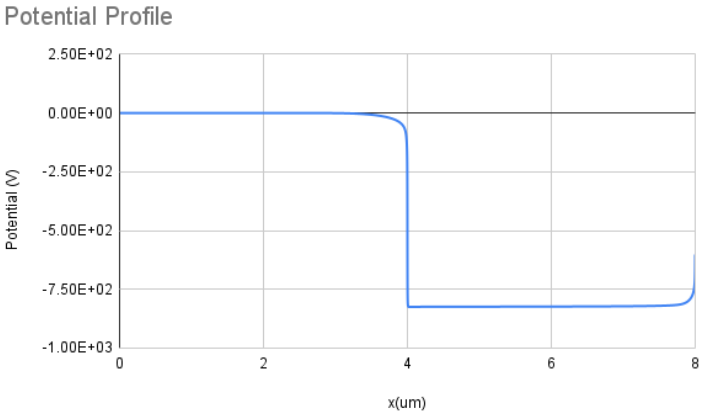

Mott Schottky
1.8E-2
1.5E-2
1.3E-2
1.0E-2
7.5E-3
5.0E-3
2.5E-3
3.8E-10
1/C2 (cm2/nF)^2
-0.8 -0.6 -0.4 -0.2 -0.0 0.2 0.4 0.6 0.8
voltage (V)

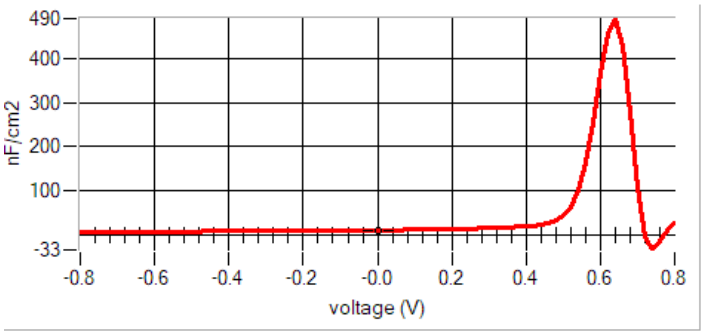
(ii) m = -1.5











Mott Schottky