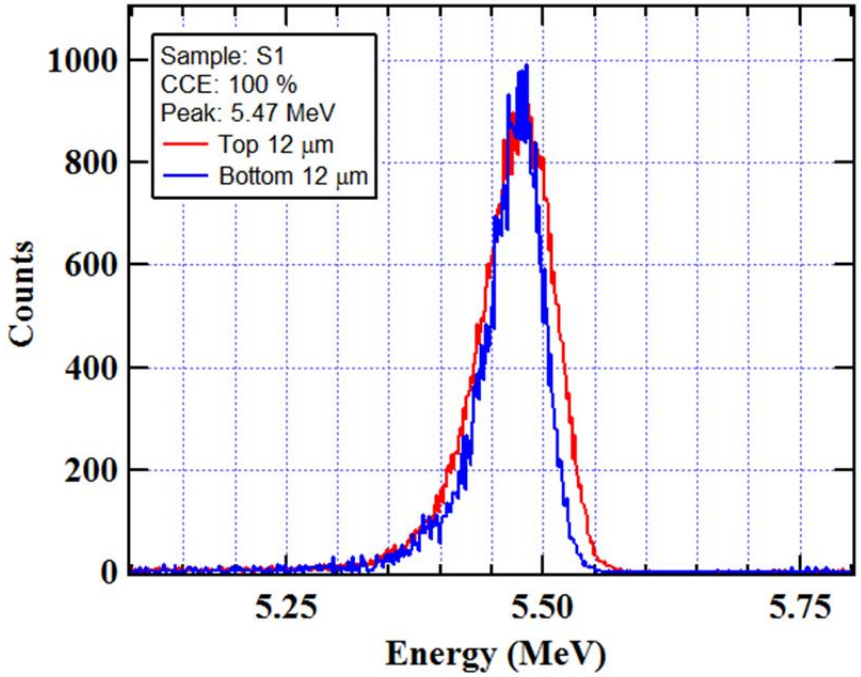
Sample: S1
CCE: 100 %
Peak: 5.47 MeV
Top 12 µm
Bottom 12 µm
Counts
1000
800
600
400
200
0
5.25
5.50
5.75
Energy (MeV)

Figure 1

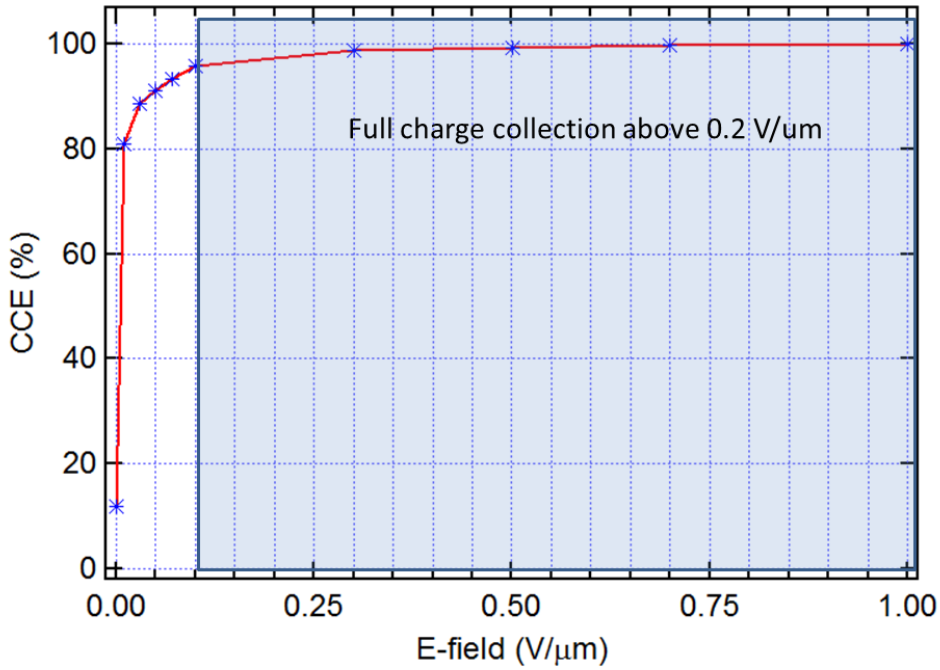
Full charge collection above 0.2 V/um
CCE (%)
E-field (V/μm)
0
20
40
60
80
100
0.00
0.25
0.50
0.75
1.00

Figure 2

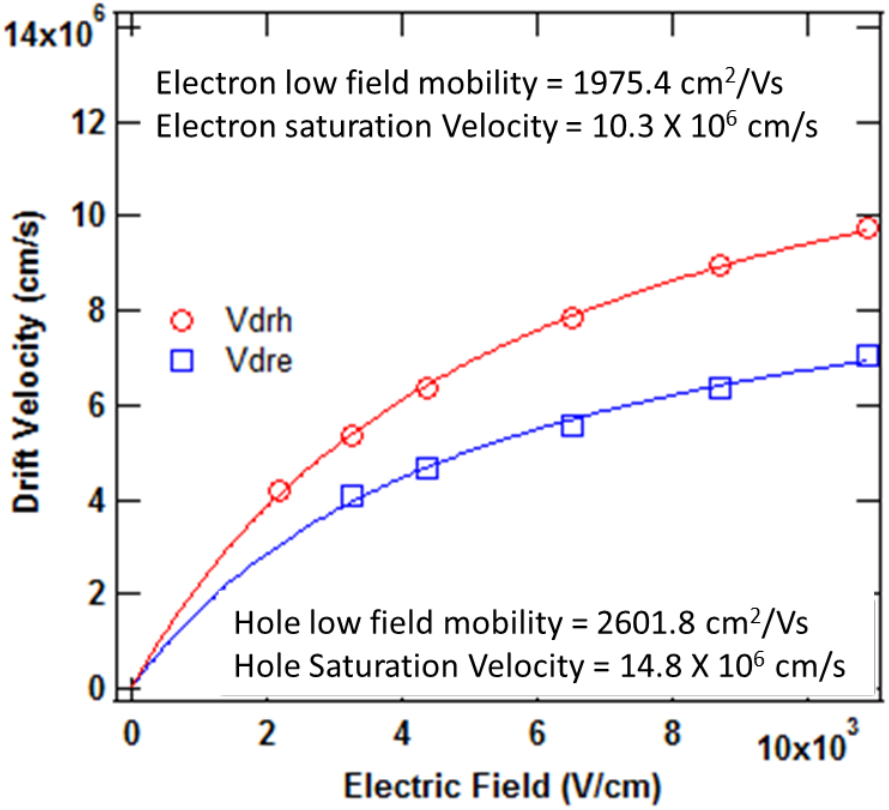
14x10^6
12
10
8
6
4
2
0
Drift Velocity (cm/s)
Electron low field mobility = 1975.4 cm²/Vs
Electron saturation Velocity = 10.3 X 10⁶ cm/s
Vdrh
Vdre
Hole low field mobility = 2601.8 cm²/Vs
Hole Saturation Velocity = 14.8 X 10⁶ cm/s
0
2
4
6
8
10x10^3
Electric Field (V/cm)

Figure 3

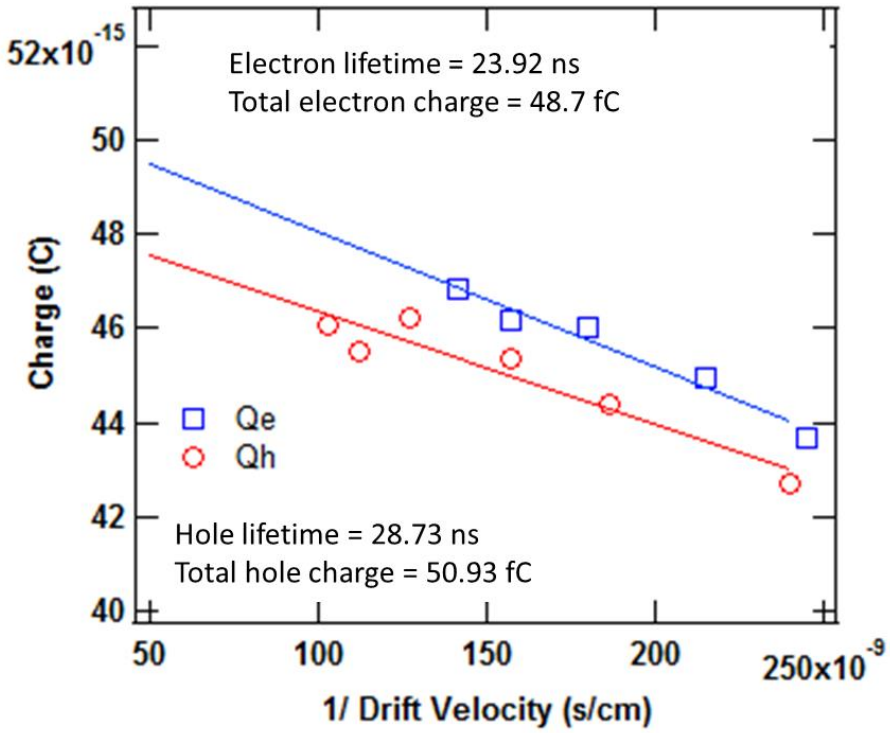
52x10^-15
50
48
46
44
42
40
Charge (C)
Electron lifetime = 23.92 ns
Total electron charge = 48.7 fC
Qe
Qh
Hole lifetime = 28.73 ns
Total hole charge = 50.93 fC
50
100
150
200
250x10^-9
1/ Drift Velocity (s/cm)

Figure 4

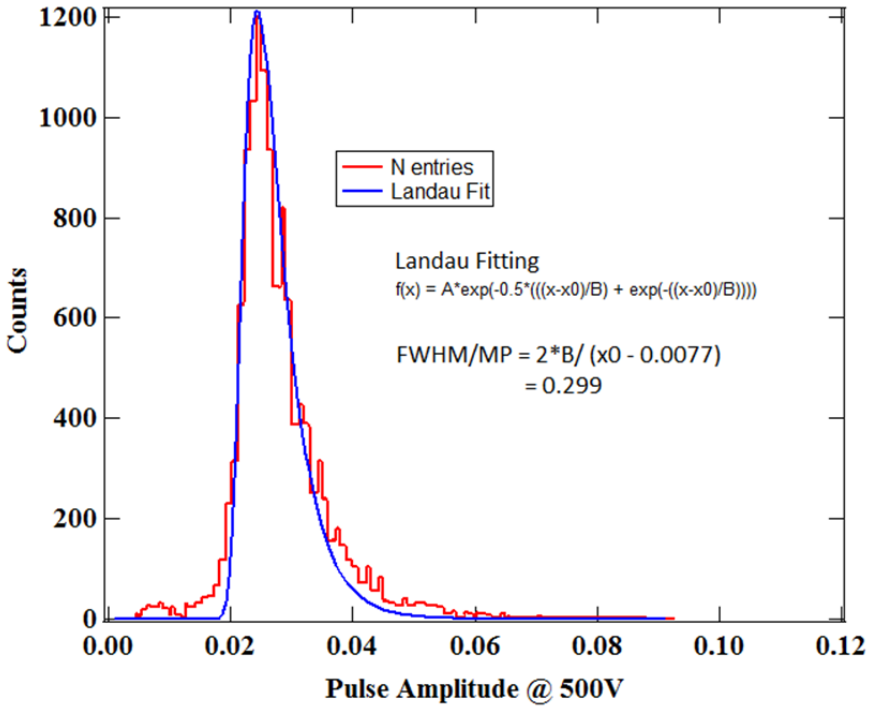
1200
1000
800
600
400
200
0
Counts
0.00
0.02
0.04
0.06
0.08
0.10
0.12
Pulse Amplitude @ 500V
N entries
Landau Fit
Landau Fitting
f(x) = A*exp(-0.5*(((x-x0)/B) + exp(-((x-x0)/B))))
FWHM/MP = 2*B/ (x0 - 0.0077)
= 0.299

Figure 5

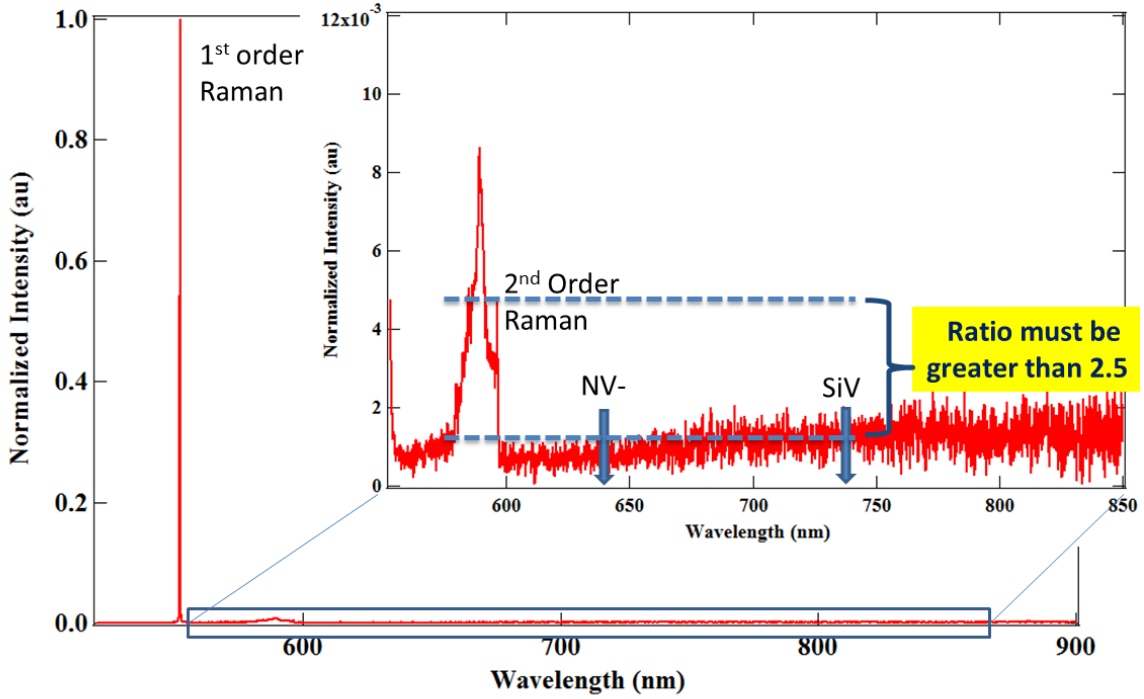
1st order
Raman
2nd Order
Raman
NV-
SiV
Ratio must be
greater than 2.5
Normalized Intensity (au)
Wavelength (nm)
12x10-3

Figure 6

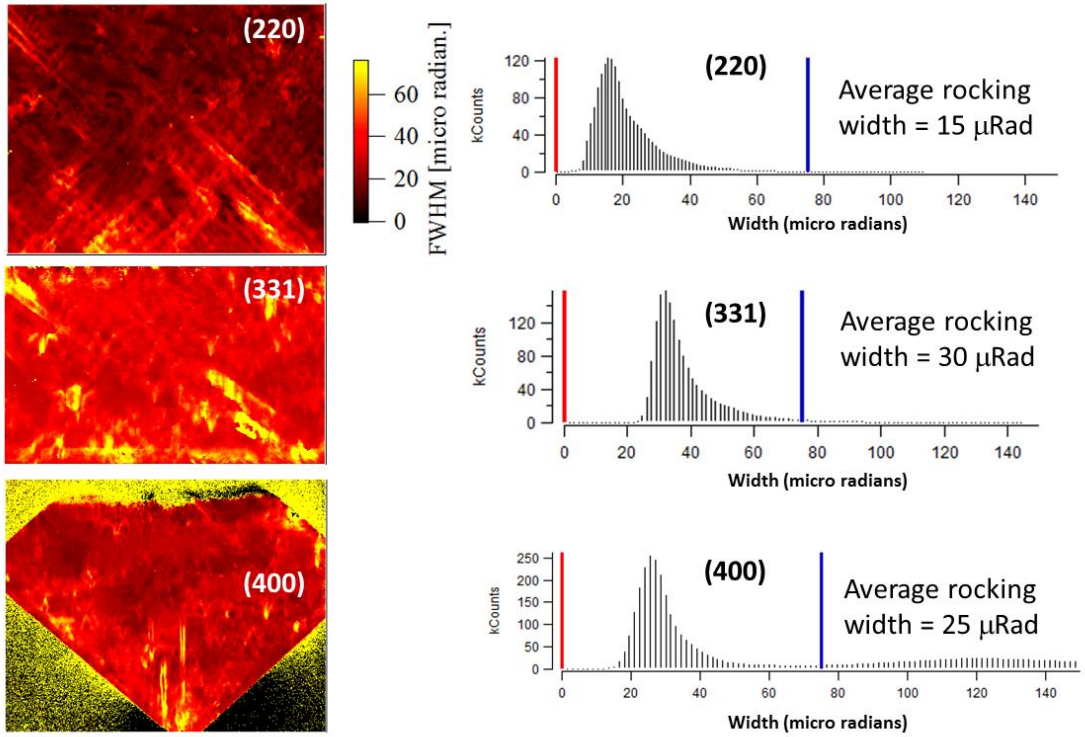
(220)
(331)
(400)
60
40
20
0
FWHM [micro radian.]
(220)
Average rocking
width = 15 µRad
(331)
Average rocking
width = 30 µRad
(400)
Average rocking
width = 25 µRad
kCounts
Width (micro radians)

Figure 7

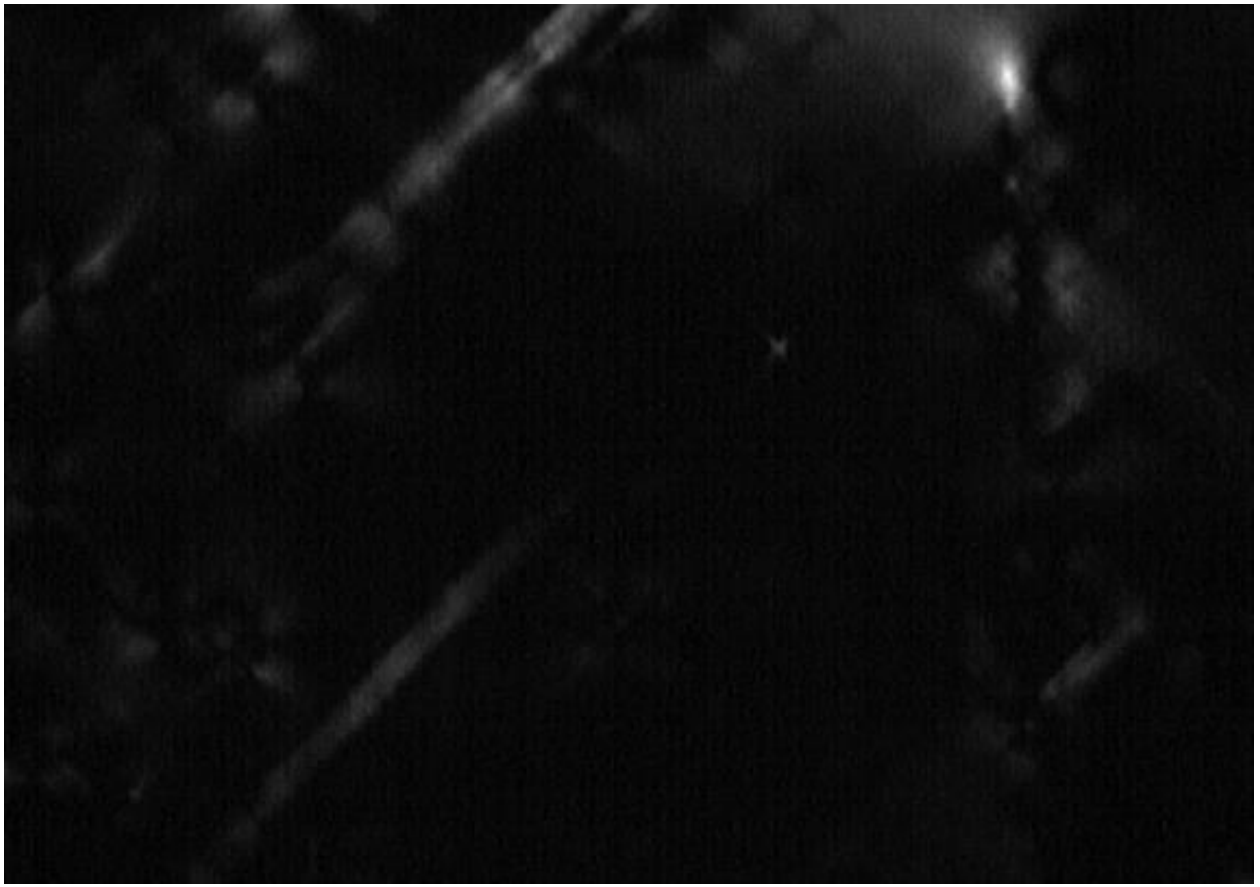

Figure 8

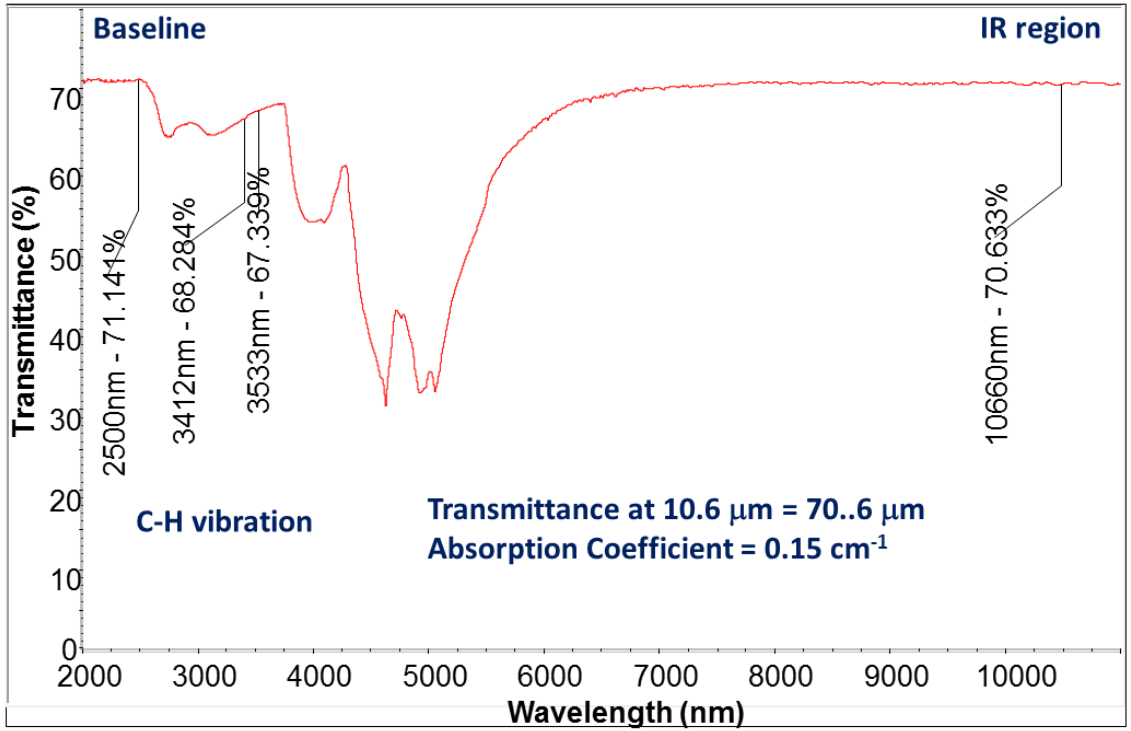
Baseline
IR region
Transmittance (%)
70
60
50
40
30
20
10
0
2500nm - 71.141%
3412nm - 68.284%
3533nm - 67.339%
10660nm - 70.633%
C-H vibration
Transmittance at 10.6 μm = 70..6 μm
Absorption Coefficient = 0.15 cm-1
2000
3000
4000
5000
6000
7000
8000
9000
10000
Wavelength (nm)

Figure 9

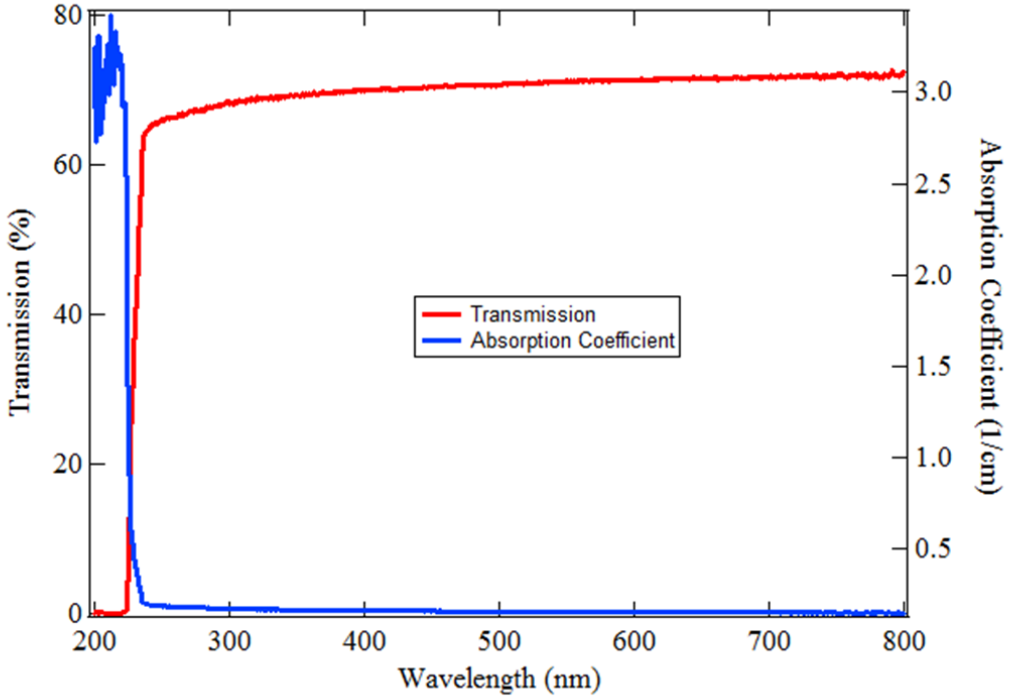
Transmission (%)
Absorption Coefficient (1/cm)
Wavelength (nm)
Transmission
Absorption Coefficient
0
20
40
60
80
0.5
1.0
1.5
2.0
2.5
3.0
200
300
400
500
600
700
800

Figure 10