N&K1500機台簡介

Details on the N&K1500

- Stage design for wafer samples
- Reflectance measurement only
- 1mm spot size
- Full wafer mapping capability
- Manual sample loading / unloading

Measurement Performance

- Wavelength range: 190-1000nm
- Measurement Spot Size : 1mm

Characterizes Various Types of Films Including:

- Semiconductors
- Dielectrics
- Polymers(PR, etc.)

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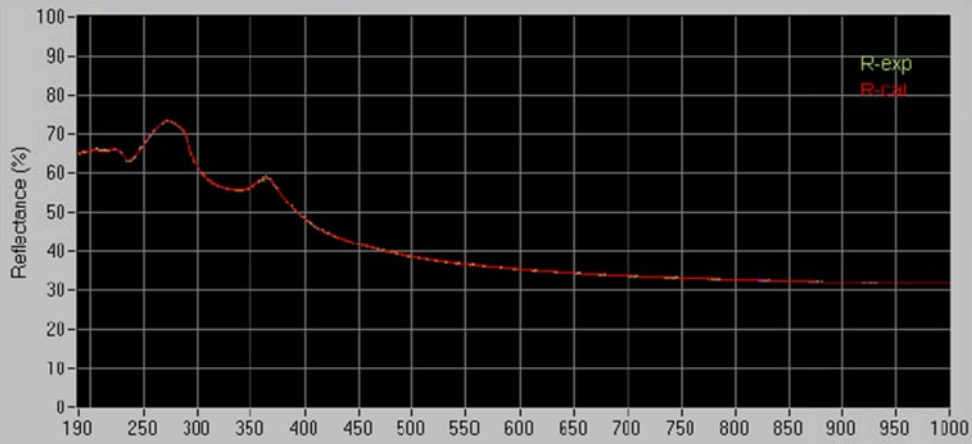
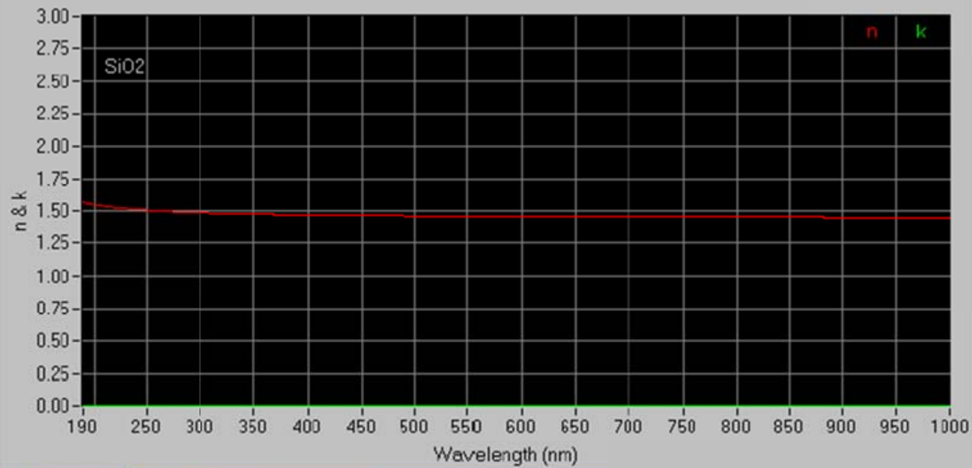
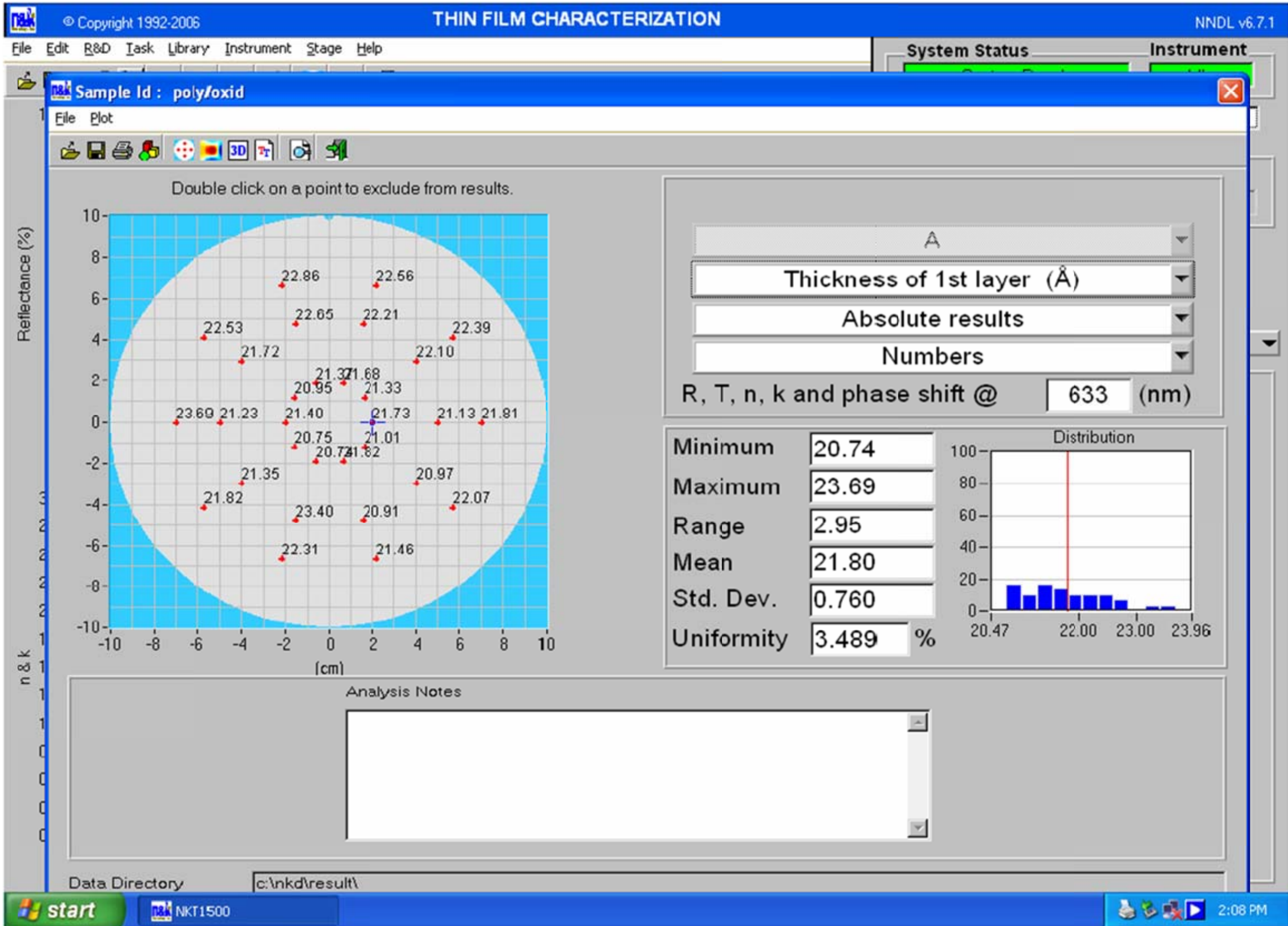
THIN FILM CHARACTERIZATION
NNDL v6.7.1
File Edit R&D Task Library Instrument Stage Help


R-exp
R-cal
Reflectance (%)
100
90
80
70
60
50
40
30
20
10
0
190 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000


n
k
SiO2
n & k
3.00
2.75
2.50
2.25
2.00
1.75
1.50
1.25
1.00
0.75
0.50
0.25
0.00
190 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000
Wavelength (nm)
System Status
System Ready
Instrument
Idle
Task
Multi-Point Collection & Analysis
Data
R
T
current
START
Stage Out
Recipe
SiO2/Si
start
NKT1500
2:06 PM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NNDL v6.7.1
File Edit R&D Task Library Instrument Stage Help
System Status
Instrument
Sample Id : poly/oxid
File Plot
Double click on a point to exclude from results.
Reflectance (%)
n & k
[cm]
A
Thickness of 1st layer (Å)
Absolute results
Numbers
R, T, n, k and phase shift @ 633 (nm)
Minimum 20.74
Maximum 23.69
Range 2.95
Mean 21.80
Std. Dev. 0.760
Uniformity 3.489 %
Distribution
Analysis Notes
Data Directory c:\nkd\result\
start
NKT1500
2:08 PM

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File Edit R&D Task Library Instrument Stage Help

System Status Instrument

Sample Id : poly/oxid

File Plot

Double click on a point to exclude from results.

Reflectance (%)

n & k

Max	23.69
	23.69
	22.74
	mean
	21.09
	20.74
Min	20.74

(cm)

A

Thickness of 1st layer (Å)

Absolute results

Numbers

R, T, n, k and phase shift @ 633 (nm)

Minimum	20.74
Maximum	23.69
Range	2.95
Mean	21.80
Std. Dev.	0.760
Uniformity	3.489 %

Distribution

Analysis Notes

Data Directory c:\nkd\result\

start NKT1500 2:09 PM

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File Edit R&D Task Library Instrument Stage Help

System Status Instrument

Sample Id : poly/oxid

File Plot

Double click on a point to exclude from results.

Reflectance (%)

n & k

Max 61.38

61.38

42.56

mean

21.73

20.73

20.73 Min

[cm]

A

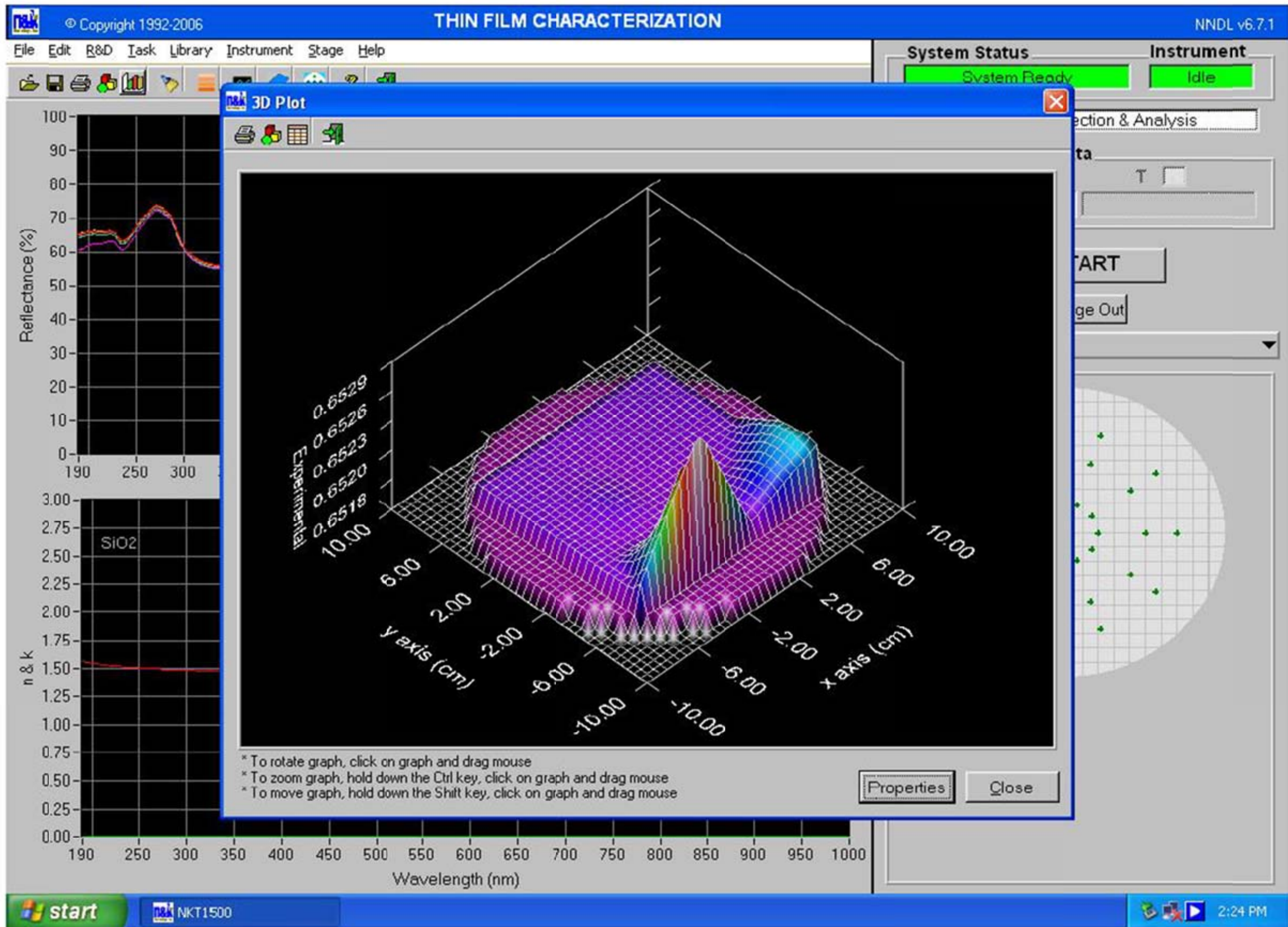
Thickness of 1st layer (Å)

- Experimental reflectance
- Calculated reflectance
- Experimental transmittance
- Calculated transmittance
- n
- k
- Phase shift (º)
- Thickness of substrate (mm)
- ✓Thickness of 1st layer (Å)
- Goodness of fit (%)
- Eg (eV)
- Pattern Match Score

Analysis Notes

Data Directory c:\nkd\result\

start NKT1500 2:23 PM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THIN FILM CHARACTERIZATION
NNDL v6.7.1
File Edit R&D Task Library Instrument Stage Help
System Status
System Ready
Instrument
Idle
3D Plot
Reflectance (%)
SiO2
n & k
Wavelength (nm)
Experimental
y axis (cm)
x axis (cm)
* To rotate graph, click on graph and drag mouse
* To zoom graph, hold down the Ctrl key, click on graph and drag mouse
* To move graph, hold down the Shift key, click on graph and drag mouse
Properties
Close
start
NKT1500
2:24 PM

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File Edit R&D Task Library Instrument Stage Help

R-exp
R-cal

Reflectance (%)

100 90 80 70 60 50 40 30 20 10 0

190 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000

n k

poly-Si

n & k

3.00 2.75 2.50 2.25 2.00 1.75 1.50 1.25 1.00 0.75 0.50 0.25 0.00

190 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000

Wavelength (nm)

System Status: System Ready

Instrument: Idle

Task: Multi-Point Collection & Analysis

Data

R ✓ T

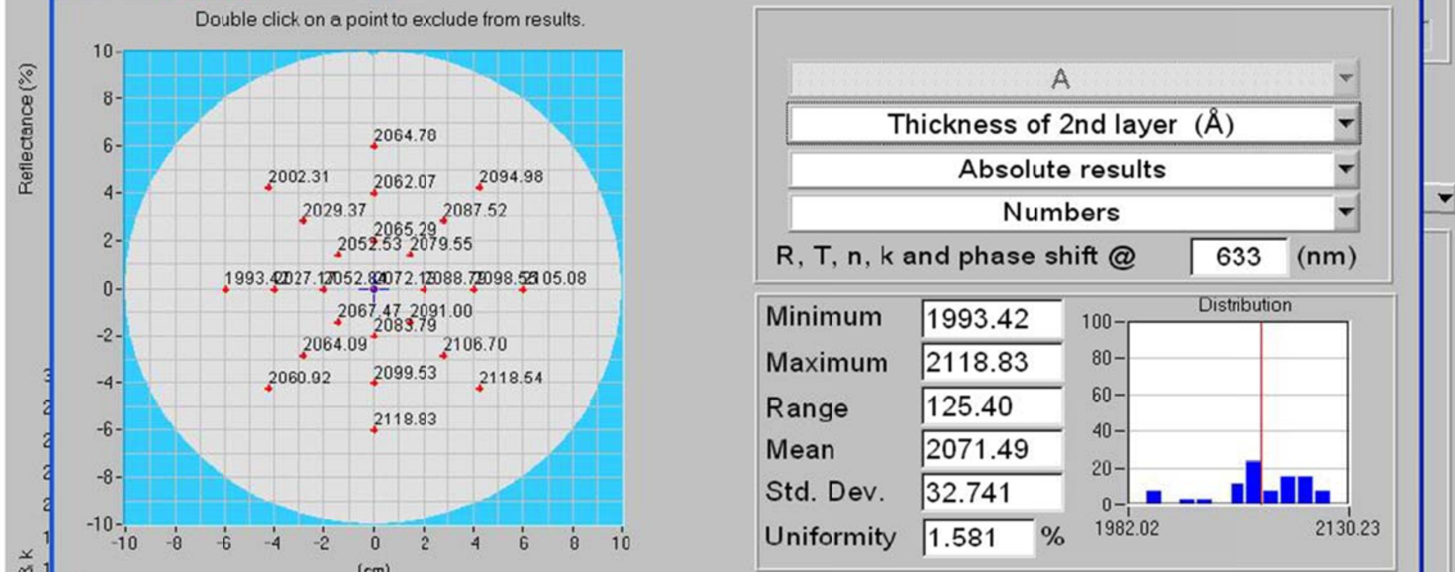
current

START

Stage Out

Recipe: User Defined Recipe

start NKT1500 2:32 PM



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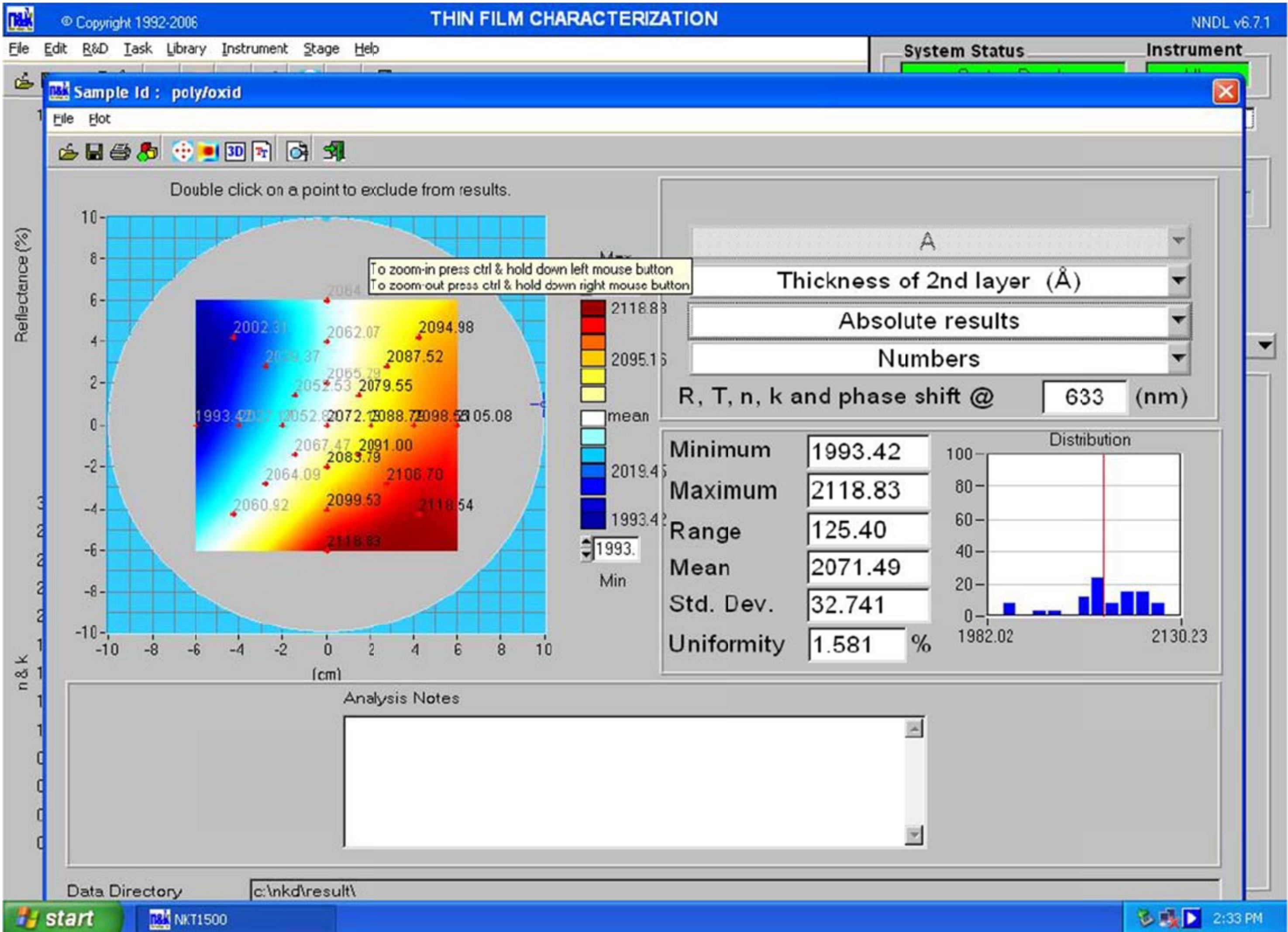
File Edit R&D Task Library Instrument Stage Help
System Status
Instrument
Sample Id : poly/oxid
File Plot
Double click on a point to exclude from results.
Reflectance (%)
n & k
(cm)
A
Thickness of 2nd layer (Å)
Absolute results
Numbers
R, T, n, k and phase shift @ 633 (nm)
Minimum 1993.42
Maximum 2118.83
Range 125.40
Mean 2071.49
Std. Dev. 32.741
Uniformity 1.581 %
Distribution
1982.02
2130.23
Analysis Notes
Data Directory
c:\nkd\result\
start
NKT1500
2:33 PM



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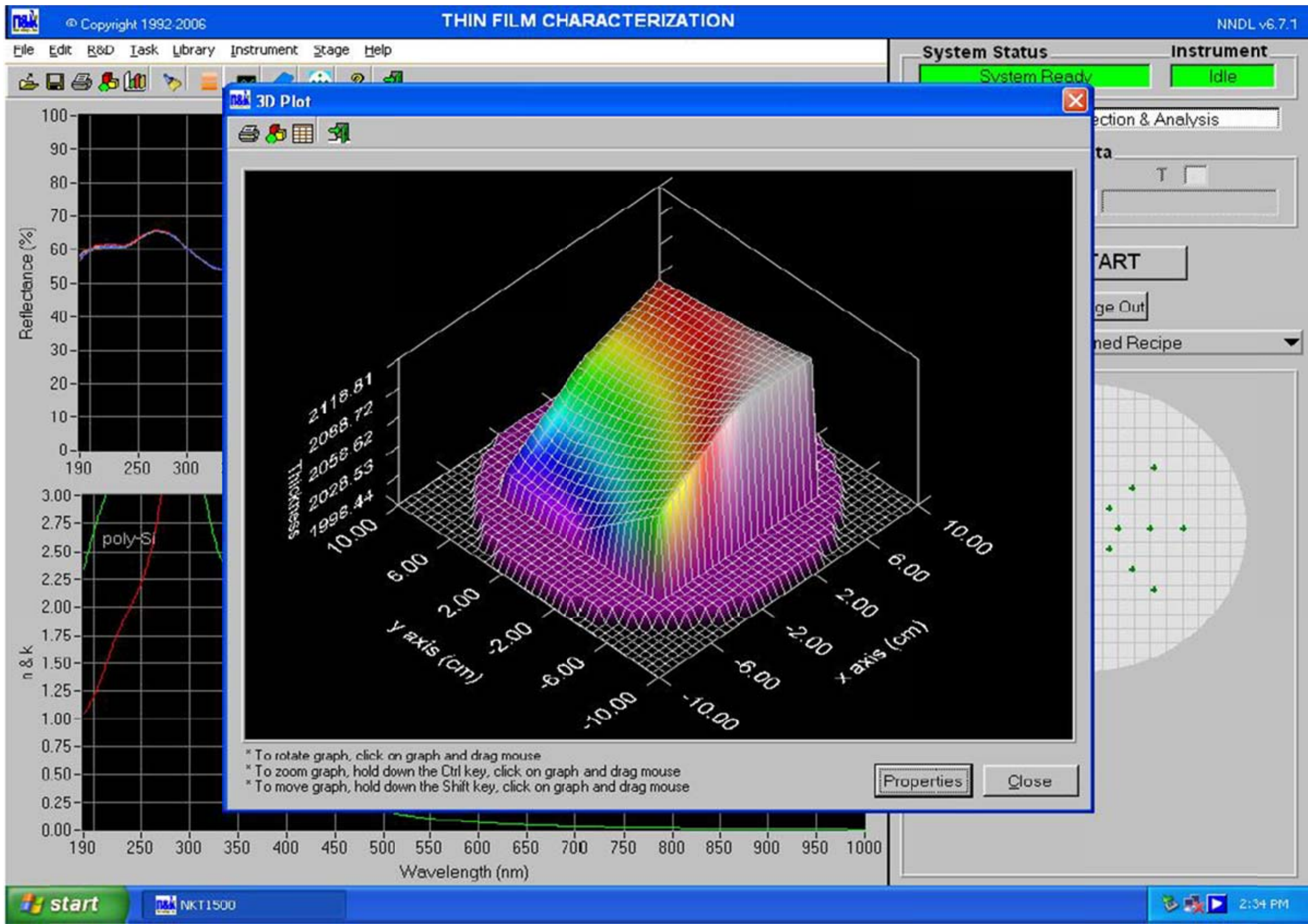
File Edit R&D Task Library Instrument Stage Help
System Status
Instrument
Sample Id : poly/oxid
Double click on a point to exclude from results.
To zoom-in press ctrl & hold down left mouse button
To zoom-out press ctrl & hold down right mouse button
Reflectance (%)
n & k
(cm)
Max
mean
Min
Thickness of 2nd layer (Å)
Absolute results
Numbers
R, T, n, k and phase shift @ 633 (nm)
Minimum 1993.42
Maximum 2118.83
Range 125.40
Mean 2071.49
Std. Dev. 32.741
Uniformity 1.581 %
Distribution
1982.02
2130.23
Analysis Notes
Data Directory c:\nkd\result\
start
NKT1500
2:33 PM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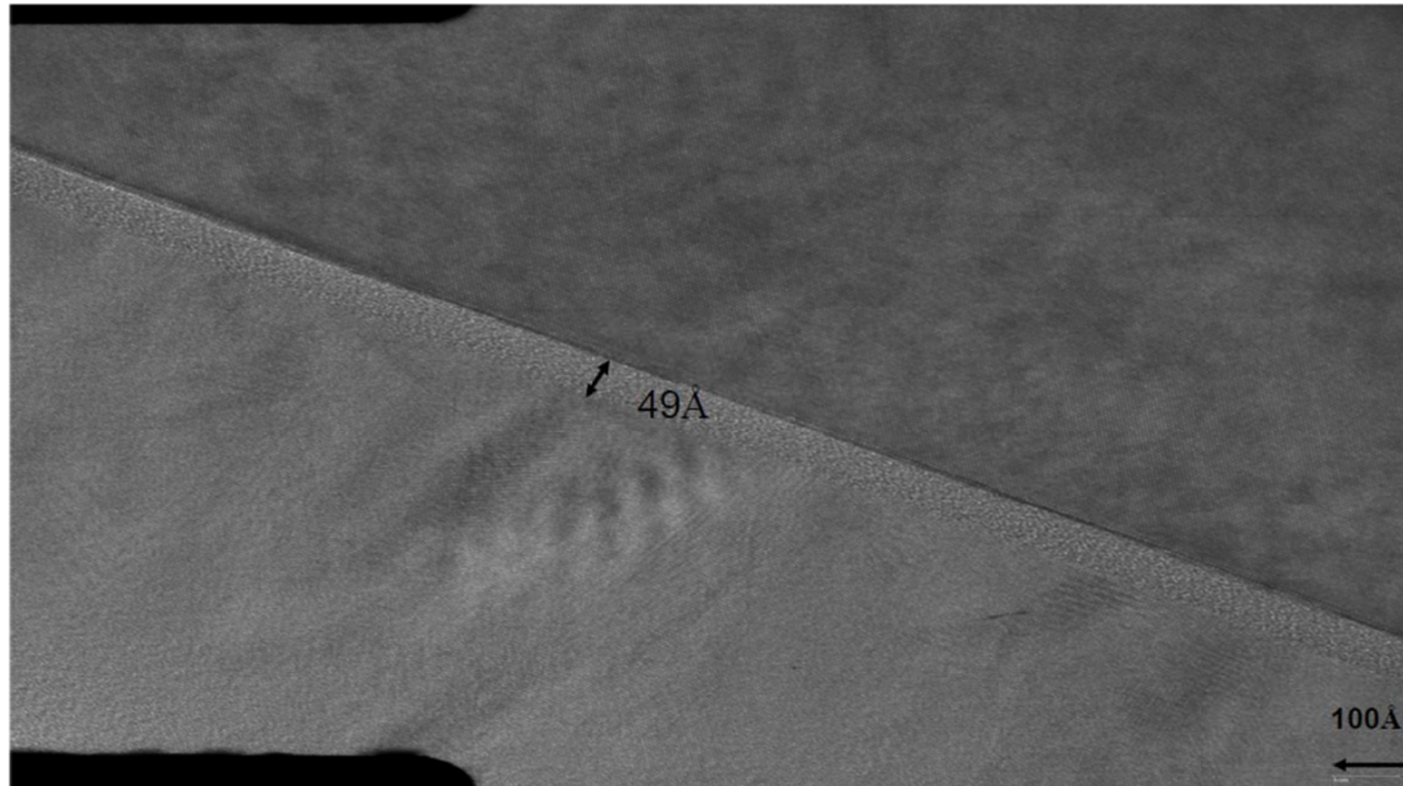
THIN FILM CHARACTERIZATION
NNDL v6.7.1
File Edit R&D Task Library Instrument Stage Help
System Status
System Ready
Instrument
Idle
3D Plot
Reflectance (%)
poly-Si
n & k
Wavelength (nm)
Thickness
y axis (cm)
x axis (cm)
* To rotate graph, click on graph and drag mouse
* To zoom graph, hold down the Ctrl key, click on graph and drag mouse
* To move graph, hold down the Shift key, click on graph and drag mouse
Properties
Close
start
NKT1500
2:34 PM

TEM---SiO_2 50Å result



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File Edit R&D Task Library Instrument Stage Help

System Status Instrument

Sample Id : poly/oxid

File Plot

Double click on a point to exclude from results.

49.83

49.95 50.05 49.52

49.82

[cm]

Reflectance (%)

n & k

A

Thickness of 1st layer (Å)

Absolute results

Numbers

R, T, n, k and phase shift @ 633 (nm)

Minimum	49.52
Maximum	50.05
Range	0.53
Mean	49.83
Std. Dev.	0.199
Uniformity	0.399 %

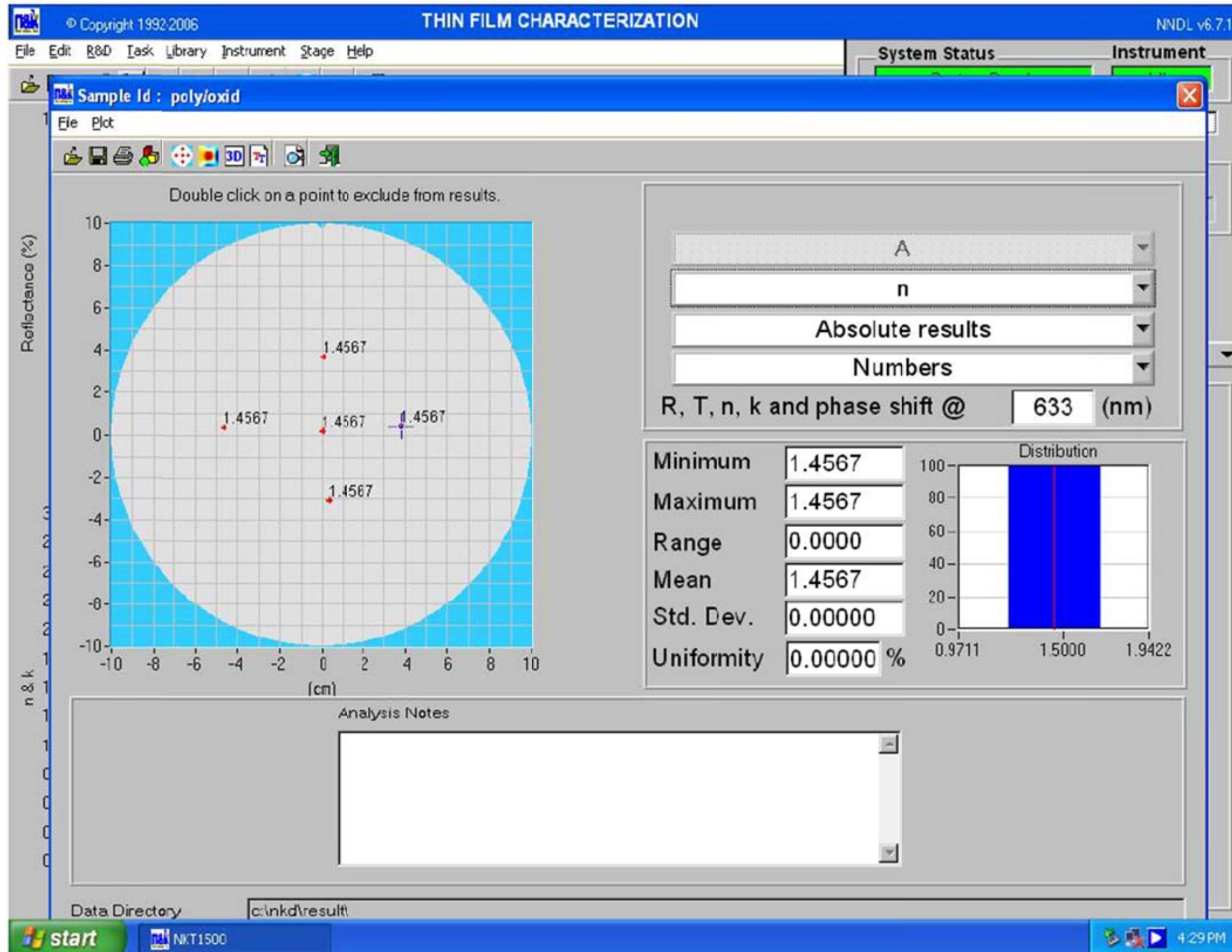
Distribution

49.47 49.60 49.80 50.10

Analysis Notes

Data Directory c:\nkd\result\

start NKT1500 4:28 PM



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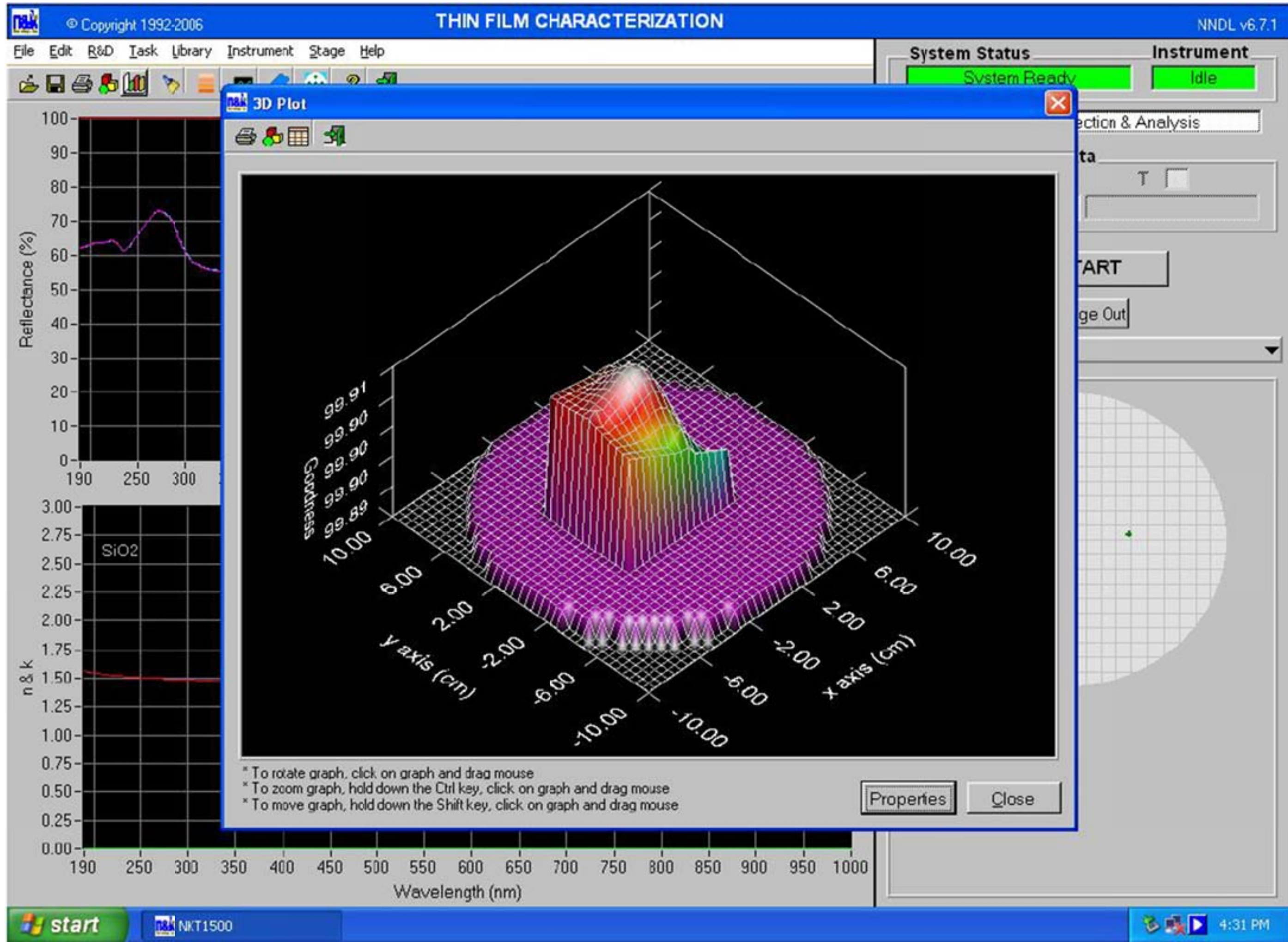
NNDL v6.7.1
File Edit R&D Task Library Instrument Stage Help
System Status
Instrument
Sample Id : poly/oxid
File Plot
Double click on a point to exclude from results.
Reflectance (%)
1.4567
1.4567
1.4567
1.4567
1.4567
(cm)
n & k
A
n
Absolute results
Numbers
R, T, n, k and phase shift @
633
(nm)
Minimum
1.4567
Maximum
1.4567
Range
0.0000
Mean
1.4567
Std. Dev.
0.00000
Uniformity
0.00000 %
Distribution
0.9711
1.5000
1.9422
Analysis Notes
Data Directory
c:\nkd\result\
start
NKT1500
4:29 PM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THIN FILM CHARACTERIZATION
NNDL v6.7.1
File Edit R&D Task Library Instrument Stage Help
System Status
System Ready
Instrument
Idle
3D Plot
Reflectance (%)
n & k
SiO2
Wavelength (nm)
Goodness
y axis (cm)
x axis (cm)
* To rotate graph, click on graph and drag mouse
* To zoom graph, hold down the Ctrl key, click on graph and drag mouse
* To move graph, hold down the Shift key, click on graph and drag mouse
Properties
Close
start
NKT1500
4:31 PM