OPTIZEN VIEW

User's Guide

For PC Interface software OptizenView 4.1

Feb 2011 (2st edition)

Mecasys Co., Ltd.

Better solutions
in Spectroscopic analysis
MECASYS

Notice!

For more detail information on Optizen® and OptizenView™,
you may refer to “Technical Support”
in the last Chapter of this guide or visit our websites below.

http://english.mecasys.co.kr

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Part Ⅰ. Introduction & General Information

1. Setup OptizenView

1) Introduction

Personnel computer can be used with installing OptizenView into your personnel computer.

2) Before Starting

OptizenView is the exclusive S/W for Optizen POP/3220UV/2120UV/2120V/1412V and helps you measure, check and control experimental results on the real time in Windows-95/98/NT/2000/XP/Vista system. It also helps you manage the instrument easier.

3) PC System Required

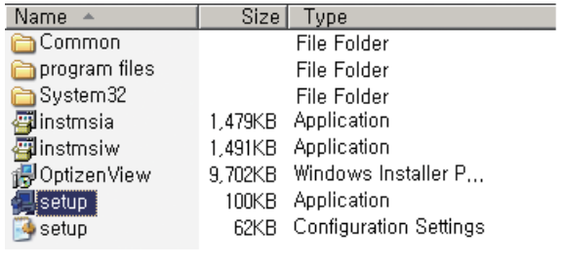
OptizenView can be installed with the required system as below.

- **IBM PC Pentium or equivalent**
- **over 256MB system memory**
- **VGA Display (more than resolution of 1024 X 768)**
- **MS-Windows 98/NT/2000/XP/VISTA**
- **more than HDD 50MB**
- **Mouse and keyboard**
- **Higher version of IE 6.0**
- **Printer (Optional)**

4) Installation

- **Start "Setup.exe"**

Find and Execute setup.exe at drive E.

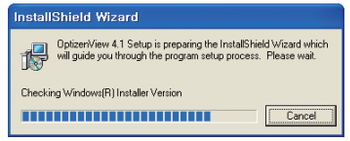


※**Caution : Above shows drive E, however, you must check your own CD-ROM drive.**

5) Installation with Install Wizard

Process1.

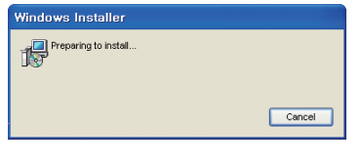
Install wizard started.



When you like to stop installing, press [cancel].

Process2.

OptizenView install wizard prepares to install OptizenView.

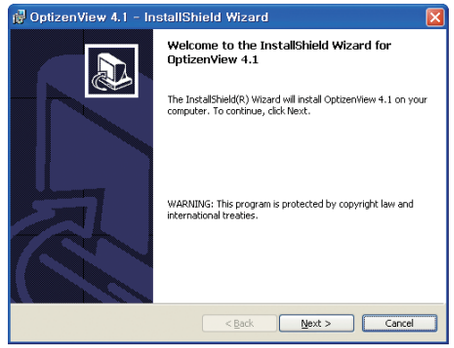


When you like to stop installing, press [cancel].

Process3.

All preparations for installation has been done.

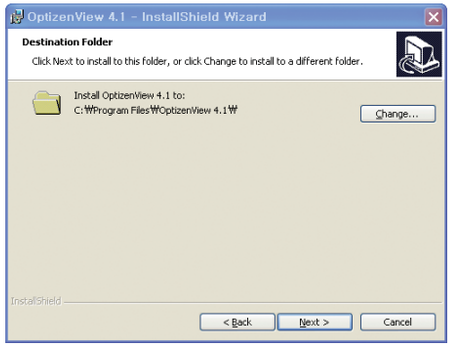
Start installation program of OptizenView as below.



To continue installing program, press [NEXT]. When you like to stop installing, press [cancel].

Process4.

Select folder for software OptizenView.



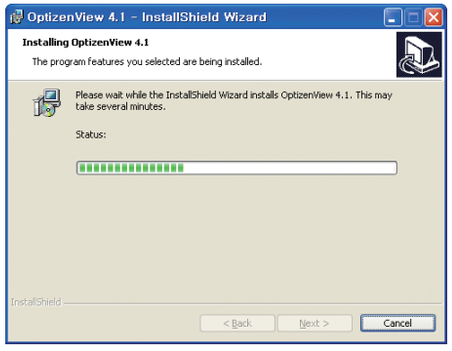
Choose folder for software OptizenView.

For updating software for future reference and information, suggest saving files that has been served by install wizard. (Suggested folder **C:₩Program Files\OptizenView4.1**)

※**Attention : 4.1 means the version of the S/W. It may change without notice.**

Process5.

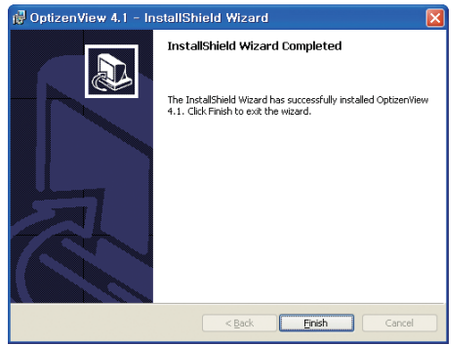
Start to install.



OptizenView is now on process of installation. According to specification of computer system, installation might take long.

Process6.

Installation has been successfully completed.



All process of setup has been successfully completed, and new icon of OptizenView shall be on your Display.

Complete all the process of installation, click [Finish].

Part I. Introduction & General Information
1. Setup OptizenView

6) Troubleshooting (on process of installation)

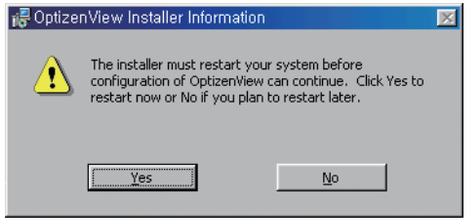
On process of installation, you might encounter to reboot computer.

This incident of rebooting computer might happen after process 2 or on process 5. Proceed as below.

• Case 1: After process 2

On process 2, 'Restart' message appears. Press [Yes] to restart.
After rebooting Windows, Process 3 starts automatically. According to the process 3, proceeds setup.

• Case 2: On process 5



On process 5, message box appears to restart as above.
Click [Yes] to proceed 'restart'.

After rebooting Windows, Process 5 will start continuously.
When process alert to stop, click [Next] to precede setup.

※**Attention : "Window restart" might repeat 2-3 times according to PC pecifications.**

7) Confirmation after installation

Check installation of OptizenView

After installation, check existence of a directory as below has composed.

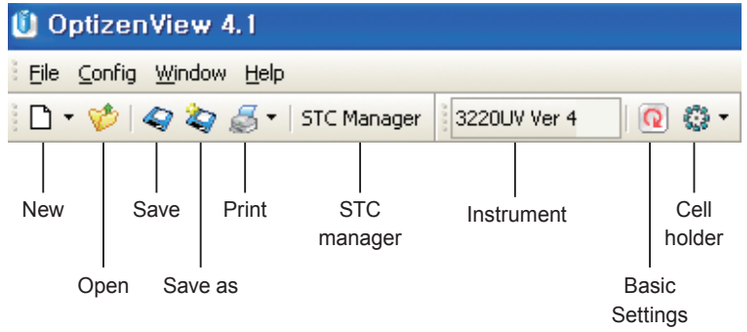
• In case of installing at the suggested folder.

	address
Folder	C:₩Program Files\OptizenView4.1

※**Attention : 4.1 means the version of the S/W. It may change without notice.**

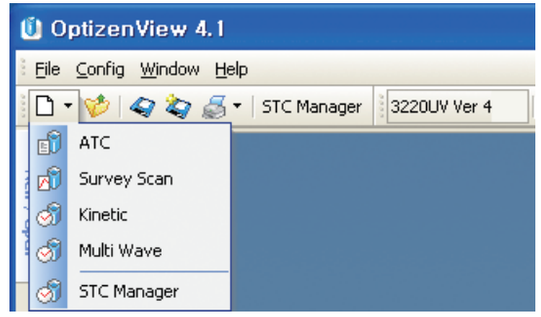
2. Menu And Basic Control

1) Toolbox



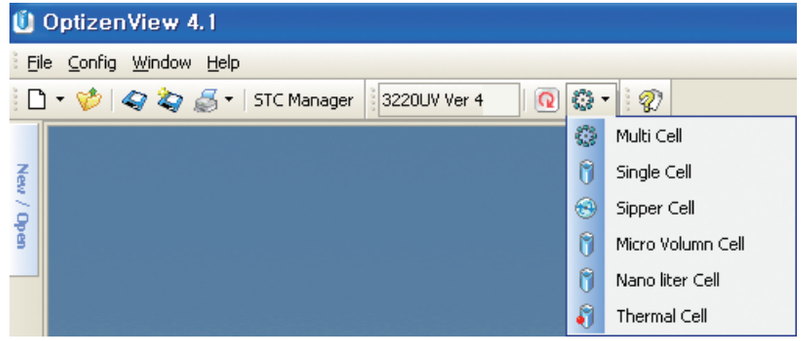
• New

Select measuring mode.



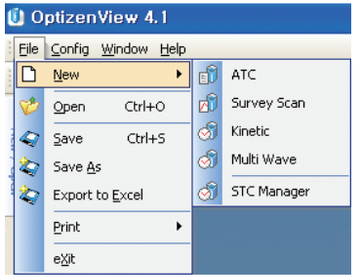
• Cell Holder

Select cell type.



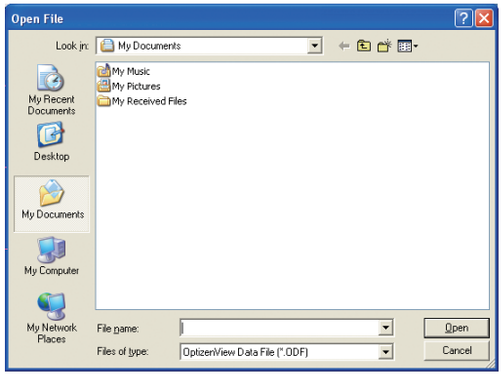
2) File Management And Mode Selection

• New File



Select measuring mode at [File(F)] → [New(N)], or select [New] icon in tool box..

• Open/Save File (Save as)



Interface of File saving and opening mostly like designed operated same way as Windows.

- **Open :** [File(F)] → [Open(O)] or select [Open] icon in tool box
- **Save :** [File(F)] → [Save(S)] or select [Save], [Save as] icon in tool box

  ※**Data files are saved as *.ODF file.**

• Export to Excel (E)

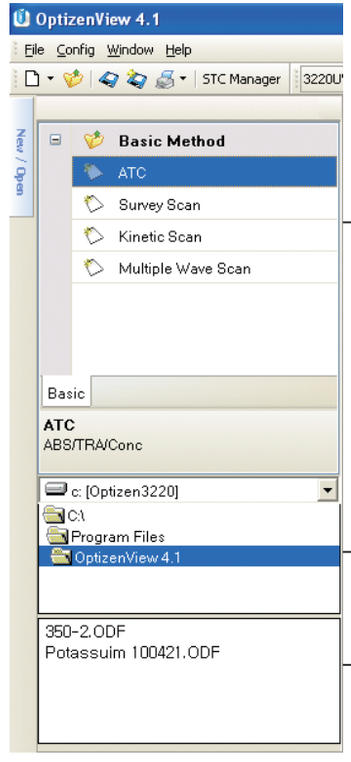
Using [Export to Excel(E)], you can save as MS-Excel(*.csv) form.

• Print(P)

[File(F)] → [Print(P)], or select [print] icon in tool box. You can choose the report form among Graph+Table, Graph or Table.

• Mode selection and File management

Move cursor to left side of display of OptizenView, [New/Open]. And you can see modes display as below.



Ⓐ Mode select : Select mode for measuring

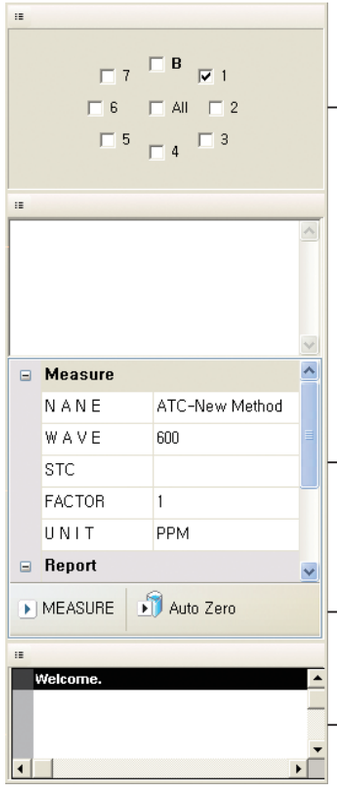
Ⓑ Folder select : Select folder for data.

Ⓒ File select : Confirm the saved data, then double click will open file.

Part I. Introduction & General Information
2. Menu And Basic Control

3) Common Function Keys And Input Windows

On the right side of display of OptizenView, you can see Cell selecting box, message box, buttons, and box of inputting measuring conditions.



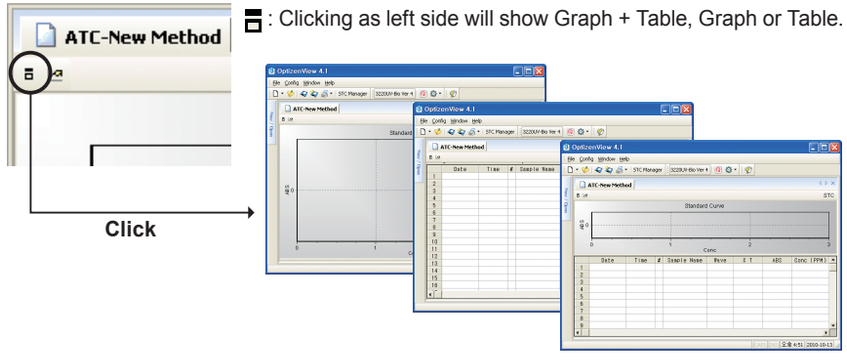
Ⓐ Select cell : Select the number of cells for measuring.

Ⓑ Set measuring condition : Input experiment name and set measuring condition.

Ⓒ Measure/Autozero : Measure & Auto Zero buttons.

Ⓓ Message box : Windows for status of measuring, or error message.

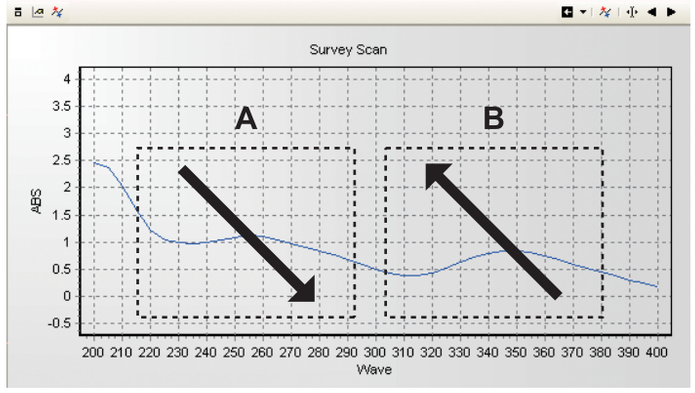
• Display



: Clicking as left side will show Graph + Table, Graph or Table.

4) Chart Control

• Zoom In/Out



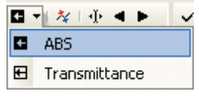
Use drag and drop will lead display bigger and smaller window.

Drag and drop like ‘A’(right and down) in picture above, zoom out.
Drag and drop like ‘B’(left and up) in picture above, zooms in.

• Move

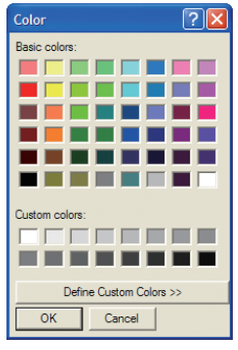
Keep pressing the right button of mouse and move the graph as your will.

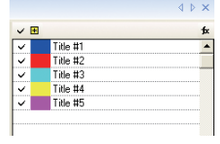
• Select



Select absorbance or transmittance to show in Y axis of graph. By selecting, transform into either way for showing absorbance or transmittance.

• Chart Color Setting





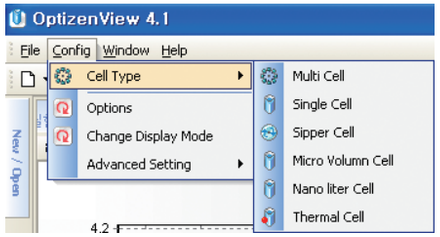
Choose color of line figment in graph from color box.

3. Configuration

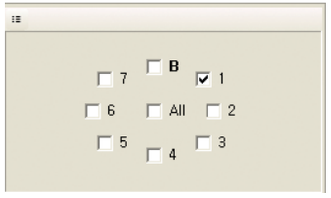
Before measuring for accumulating data, check conditions as shown below..

1) Cell Type

Select [Config(C)] → [Cell Type] in menu, cell holder types will show as below. Select cell holder type, then status of changes in cell holder type will appear as below.
You cannot select some cell types according to instruments.

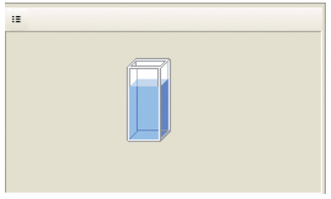


• Multi Cell Holder Mode



Standard cell holder
(8 rotating cell holder) shows as left.
[Config(C)] → [Cell Type] → [Multi Cell].

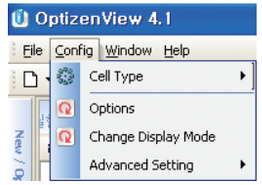
• Single Cell Holder Mode



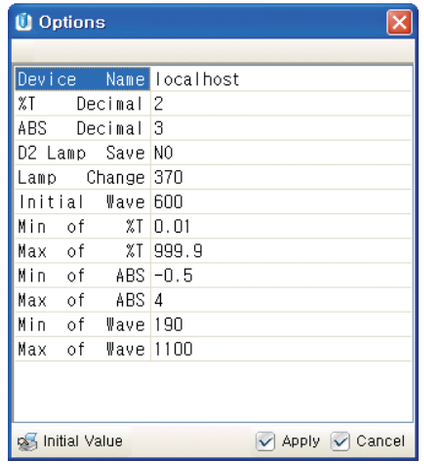
Standard setting applied cell holders like Round cell holder, Film cell holder and Long path cell holder.
Single cell holder shows as left.
[Config(C)] → [Cell Type] → [Single Cell].

2) Options

To set the basic conditions of the instrument, select [Config(C)] → [Options] in menu.



Select as above, table box appears as below.



• **Device Name** : In a case of Stand Alone Version, Write “Localhost”
In a case of PC Version, when user has personal computer connected for measuring with Optizen 3220UV, write [Default: Optizen3220UV]
When using 2120 or 1412, input the name of PC connected to the instrument.

• **%T(ABS) Decimal** : Set decimal point in absorbance and transmittance.

• **D2 Lamp Save** : If you use visible light source area mostly, you can save power and lengthen lifespan of D2 lamp by turning off D2 lamp. However, frequent switching power of D2 lamp might cause shortening lifespan of D2 lamp.
Attention : D2 lamp is one of expensive part in your instrument.

• **Lamp Change** : You can set wavelength change point in D2 lamp and W lamp.
wavelength range : 340nm ~ 410nm.

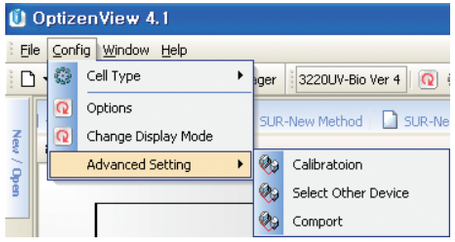
• **%T(ABS) Max/Min** : Set minimum/maximum of measured value in absorbance and transmittance.

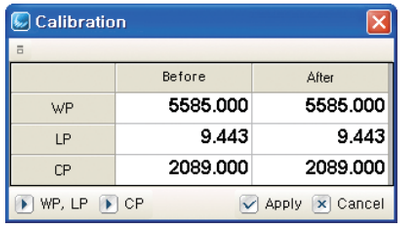
Part I. Introduction & General Information
3. Configuration

• **Wavelength Max/Min** : Select minimum/maximum wavelength range.
wavelength range : 190nm ~ 1100nm
(For 1412, range is from 340nm to 1100 nm)

3) Calibration (Only applied in OPTIZEN 3220UV)

To calibrate OPTIZEN 3220UV, select [Config(C)] → [Advanced Setting] → [Calibration].





This is to calibrate wavelength and cell holder positioning.
After manufacturing, on process of quality control, we, Mecasys, have done all calibration for correction in wavelength and cell positioning. You don't need to calibrate without special reasons. Please, be aware that calibration is usually done under manufacturer's strict guideline.

※**Attention : False calibration by user may cause breakdown.**

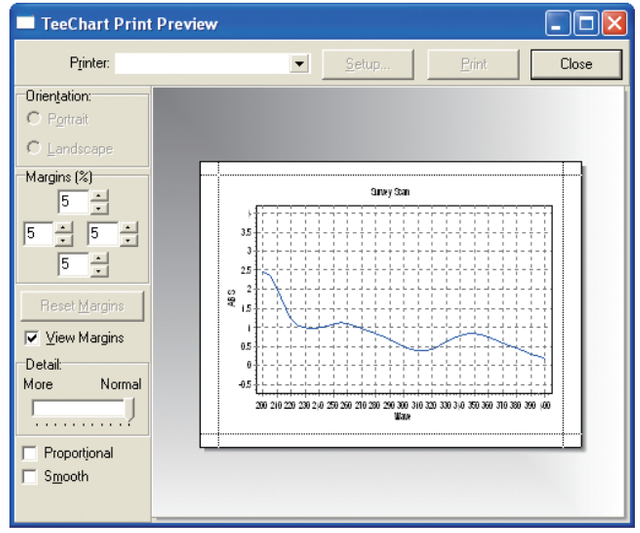
4. Print Out

You can print he measured results, and you can select three forms, Graph, Table and Graph+Table.

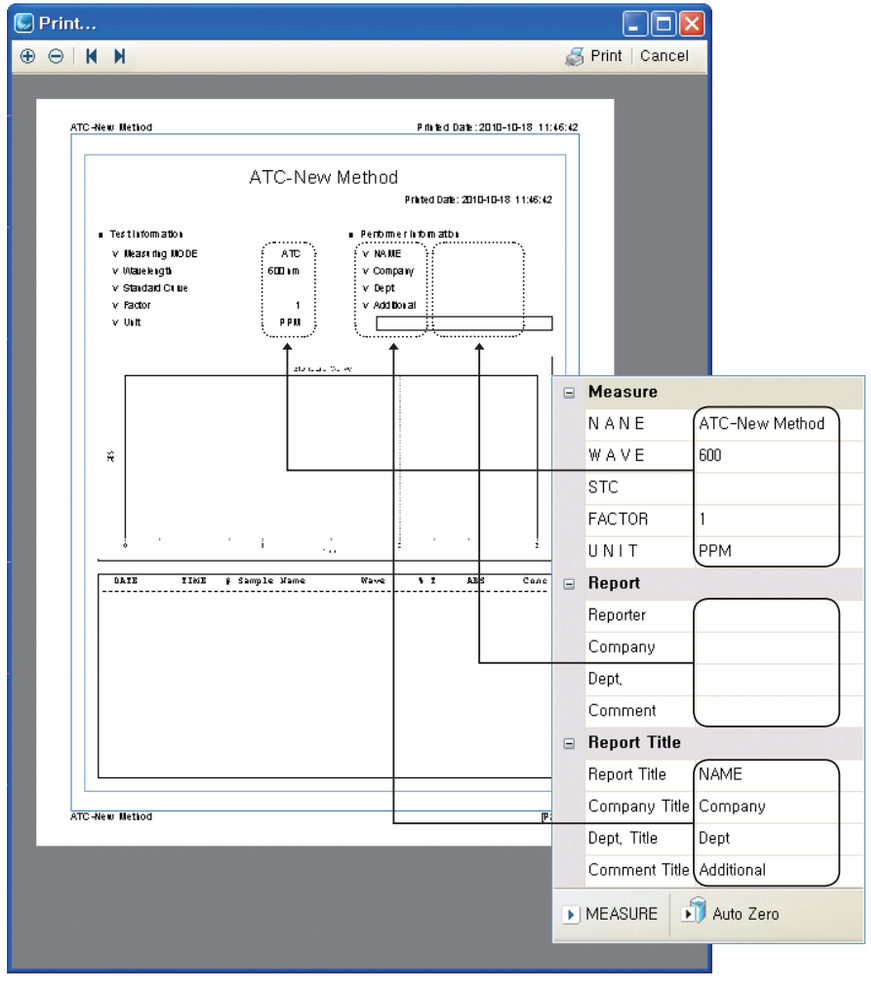
• **Print form**

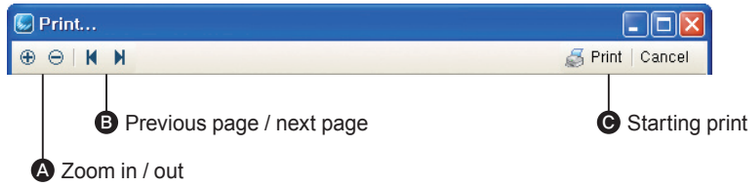
Select [Print(P)], and you can see three options as below. Select one and you can see preview for it.

• **Graph form**



• **Table/Graph+Table form**





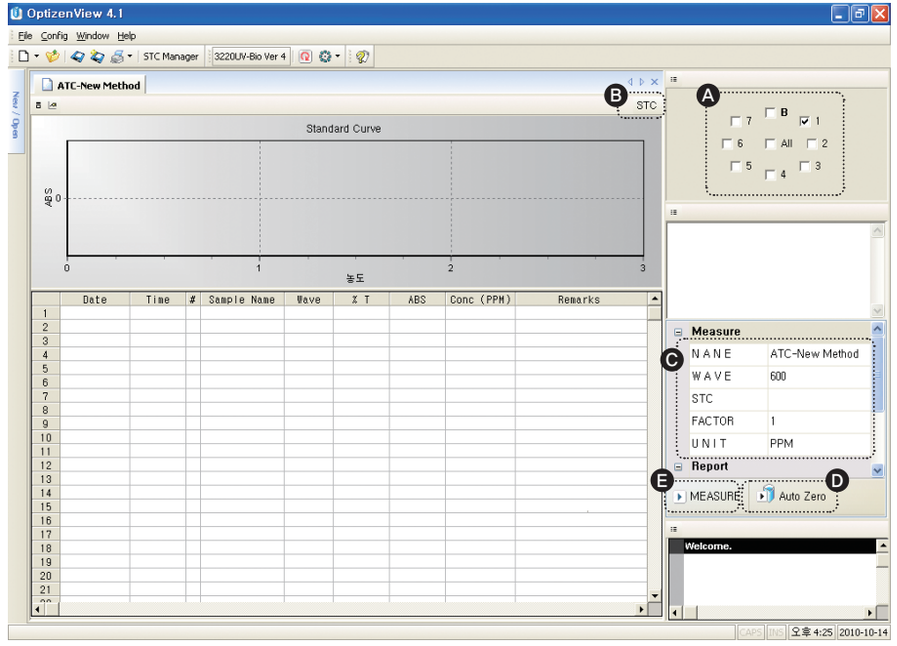
Part II. OptizenView Usage

1. ABS/%T/CONC and Standard Curve

1) Introduction

This mode is to set Standard Curve at the specific Wavelength to find out Absorbance, Transmittance and Concentration of samples.

2) Display

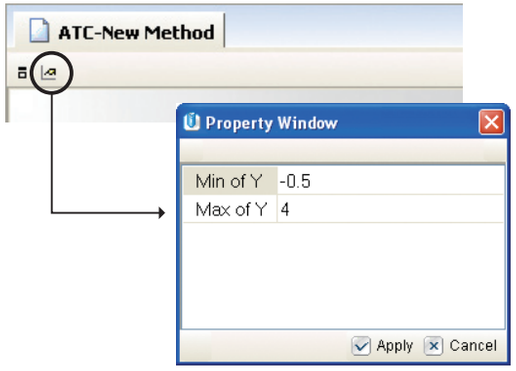


3) Measure (Multi cell holder Mode)

1. Select cell number(A).
2. Input wavelength, factor, unit and so on to measuring condition (C).
   When taking concentration by Standard Curve, Click and select standard curve frame (B).
3. Select Auto Zero(D).
4. Select Measure(E), and you can see the measured data on table.

4) Graph Setting

Set Min/Max of Y axis - 1



: You can set min/max value of Y axis(ABS) of Standard Curve.

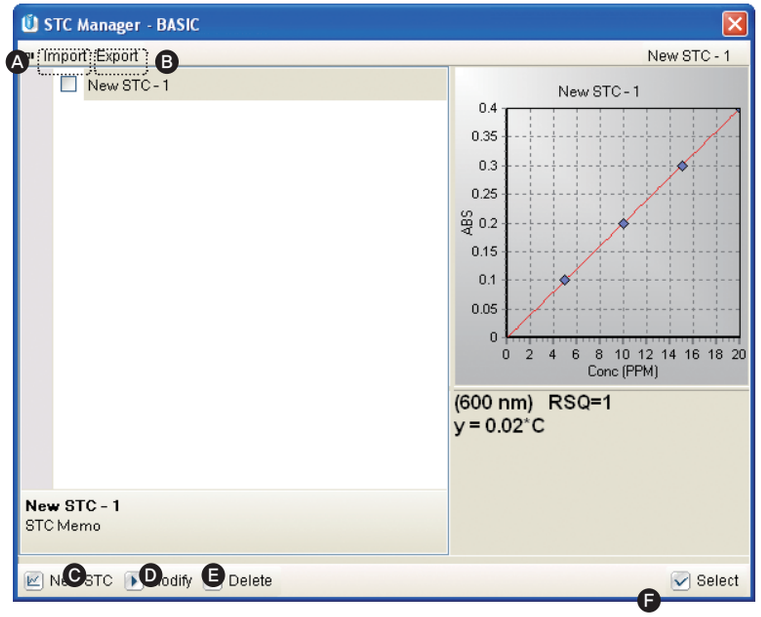
5) STC open or Select

Open STC Manager and select one STC (Standard Curve).

※ Usage of STC Manager Refer (23page)

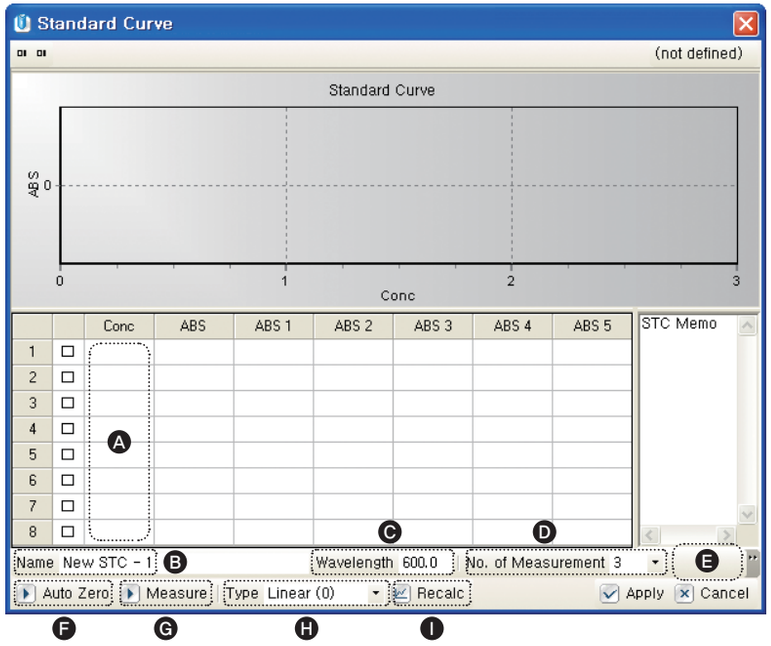
6) Usage of STC Manager

This mode is to make, modify, delete, find and open Standard Curve(STC).
STCs saved in STC Manager can be shared by several ATC modes.
To transfer STC to other PCs, click [Export] and save STC as a separate file.
And on the contrary, you can open STC file by selecting [Import].



- **Import (A)** : Open STC file that is exported from other instruments.
- **Export (B)** :Save STC as a separate file for transfer or backup purposes.
- **New STC (C)**
- **Modify (D)**
- **Delete (E)** : Delete selected STC.
- **Select (F)**

As selecting New STC(C) or Modify(D), you can see the window as below.



1. Input name of this STC. (B)
2. Input wavelength. (C)
3. Input measuring times. (D)
4. Set unit. (E)
5. Input the concentration of the standard sample. (A)
6. Press AutoZero. (F)
7. Press Measure to get the ABS value. (G)
8. After measuring, click Type(H) and Recalc(I) to get the proper STC.
9. Click [Apply] to save at STC manager.

7) Attentions while making & modifying STC

a. No. of Measurement means the number of measuring times of each standard samples.

b. After measuring, if you discard the specific result, click square(left side of A) and then click Type(H) and Recalc(I).

c. If you use multi cell mode, the number of cell number and row must be the same.
For example, if you put the sample in cell no. 1, 3 and 5, you must input the concentration at row no. 1, 3 and 5.

d. You can make STC without measuring standard samples. Input ABS at ABS column, and then click Type(H) and Recalc(I).

e. We recommend that you make the backup file of STC.data which is in the folder, C:\Program Files\OptizenView 4.1, since STCs are saved on it.

8) Calculating value R in a regression line

Compensate maximum value of aberration and compute accurate value, an equation known as Pearson'R equation used when a linear line going through Zero point. And other linear line takes method of ordinary least square.

• Pearson' R

$$r = \frac{n(\Sigma XY) - (\Sigma X)(\Sigma Y)}{\sqrt{\left[n\Sigma X^2 - (\Sigma X)^2\right]\left[n\Sigma Y^2 - (\Sigma Y)^2\right]}}$$

When, X = Concentration
Y = Absorbance

• Method of Ordinary Least Square

$$r^2 = \frac{\sum(\hat{Y}_i - \overline{Y})^2}{\sum(Y_i - \overline{Y})^2}$$

When, Y = Extended coefficient in slope of Selection Curve
Y = Average

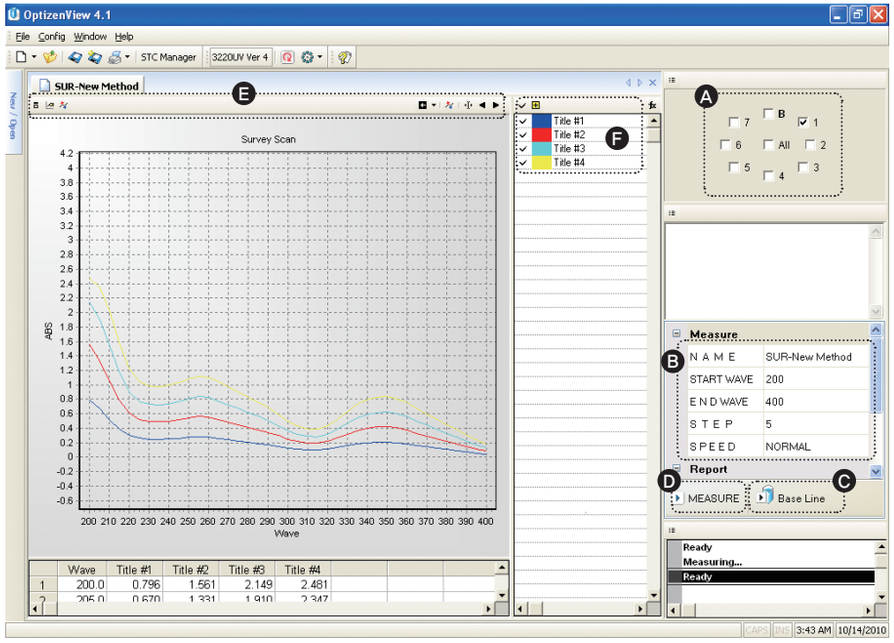
Part II. OptizenView Usage
1. ABS/%T/CONC and Standard Curve

2. Survey Scan

1) Introduction

Survey scan allows you to have data with selected cell measured in selected wavelength range. After tested and measured absorbance and transmittance, test results will be shown as below table and graph.

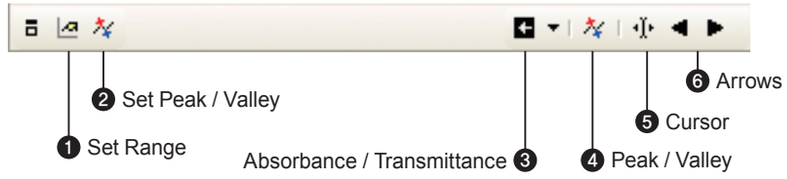
2) Display



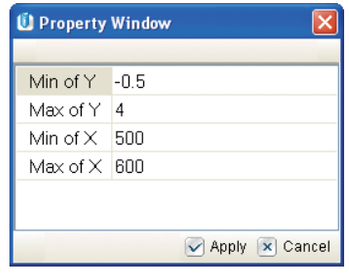
3) Measure

1. Select cell number(A).
2. Input Name, Start wave, End wave, Step, Scan speed and so on(B).
3. First, blank must be scanned with selected condition as order (2).
   Click Baseline[C] for setting up for blank.
   After setting up with blank, all cleared to measure.
4. Click Measure(D).

4) Graph Setting(E)

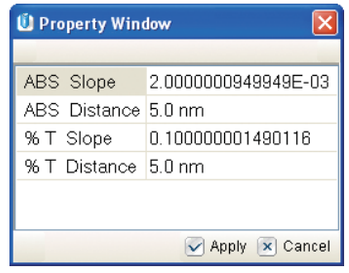


• Set Range (1)



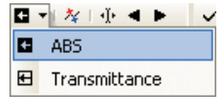
Set min/max wavelength (y-axis) and absorbance or transmittance (x-axis).

• Set Peak/Valley (2)



This is to set the condition of auto detecting of peak/ valley.

• Absorbance / Transmittance (3)

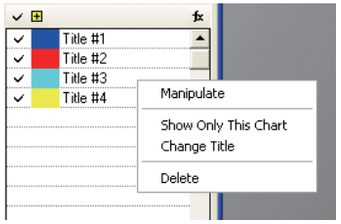


Select absorbance or transmittance.

• Peak/Valley, Cursor, Arrows (4,5,6)

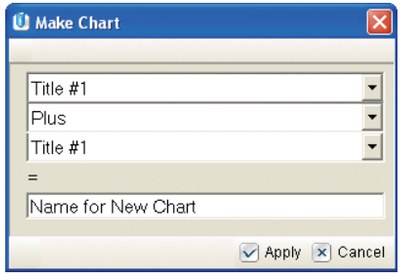
Click Peak/Valley[4] to find Peak/Valley.
In Peak/Valley box, click Cursor[5] will show absorbance (transmittance) and wavelength. ← / → table arrows[6] can search before or next peak/valley Managing.

5) Managing data value from Measurement (F)



Measured data (F), click right side of mouse will lead to be shown as left.

• **Manipulate**



You can Manipulate the measured data.
- Graph (+,-,*,/) Graph
- Graph (+,-,*,/) Constant
- Differentiate of graph.

• **Show only this chart** : You can see the only selected graph.

• **Change title** : Change the name of selected data.
Changing name of selected data will lead some changes in title of table.

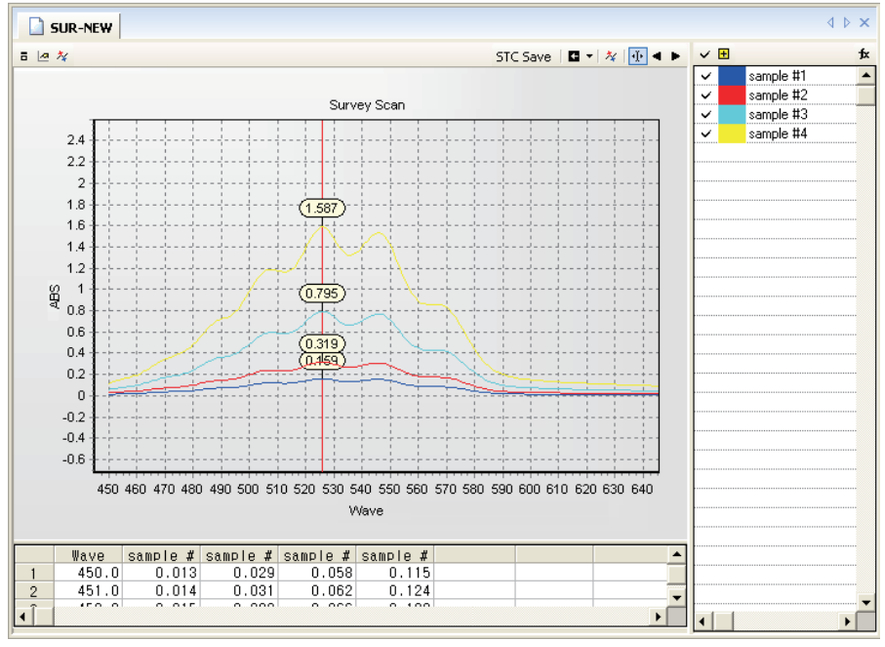
• **Delete** : Delete measured data.

6) Draw STC at SUR mode

1. Make the scanning spectrum of standard samples orderly.

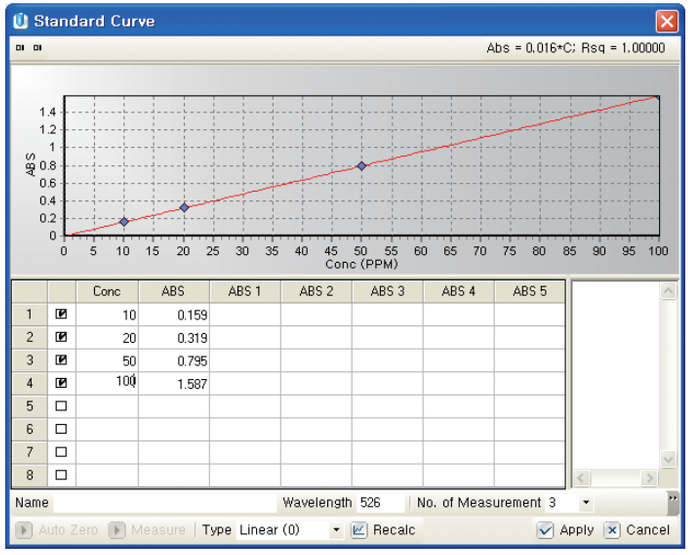
2. After measuring, click Cursor(5) to check the ABS values of each wavelengths.

3. Place the Cursor at the wavelength to draw STC.



4. Click to proceed to STC mode.

5. At the concentration column, meaningless values are written. Please input the correct concentration values.



6. After input the concentration, click [Make STC] to draw STC. Refer to – Attentions while making & modifying STC – for other settings.

7. Click [Apply] to save at STC manager.

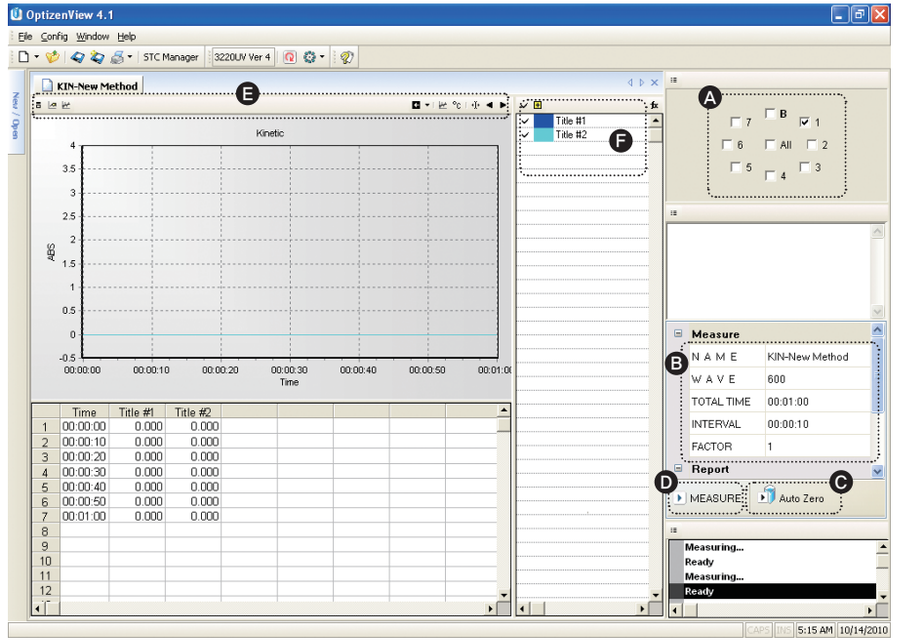
8. Import the STC at the ATC mode to measure the concentration of unknown samples.

3. Simple Kinetic

1) Introduction

Simple kinetic allows mutation or variation of samples in time interval at selected wavelength. Test results will be shown as below table and graph.

2) Display



3) Measure

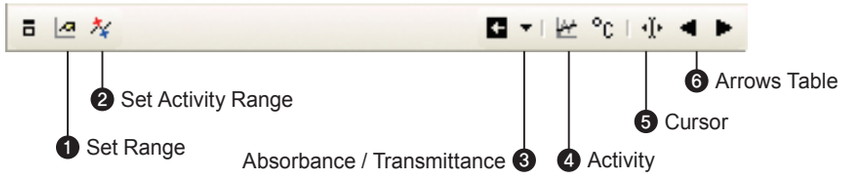
1. Select cell number(A).

2. Input Name, Wavelength, Total time, Interval, and so on(B).

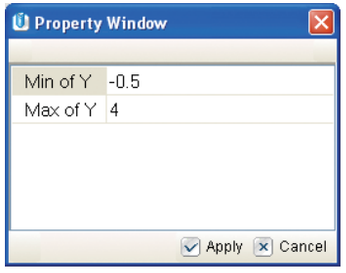
3. Click Autozero(C).

4. Click Measure(D). And you will get the results at graph and table in real time.

4) Graph Setting(E)

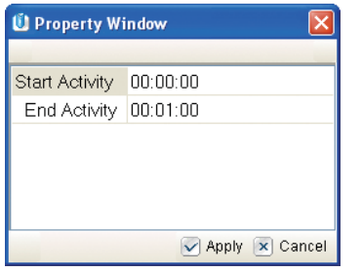


• Set Range (1)



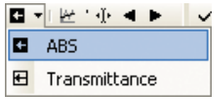
Y-axis shows transmittance or absorbance. Set Minimum and maximum.

• Set Activity Range (2)



Set interval in time for activity.

• Absorbance / Transmittance (3)



Select absorbance or transmittance.

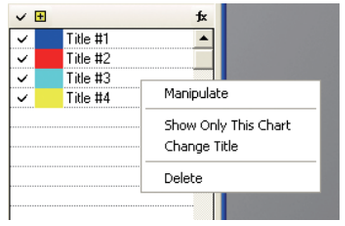
• Activity, Cursor,Arrows Table (4,5,6)

Click Activity will show interval in time and value will be shown on the right-upper part as a table.

Click Cursor [5] leads displaying value of absorbance [transmittance], testing time, and testing wavelength.

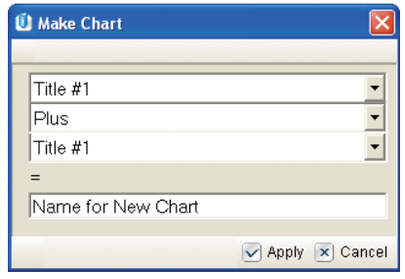
← / → Arrows Table [6] leads before or next value in a table.

5) Managing data value from Measurement (F)



Measured data (F), click right side of mouse will lead to be shown as left.

• Manipulate



You can Manipulate the measured data.
- Graph (+,-,*,/) Graph
- Graph (+,-,*,/) Constant
- Differentiate of graph.

• Show only this chart : You can see the only selected graph.

• Change title : Change the name of selected data.
Changing name of selected data will lead some changes in title of table.

• Delete : Delete measured data.

4. Multiple Wave Scan

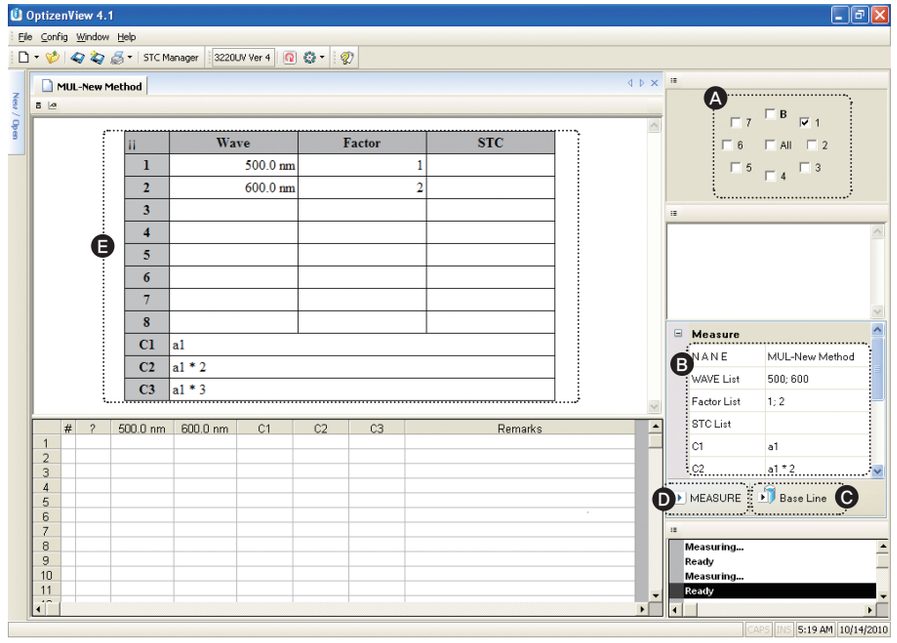
1) Introduction

This mode is to measure absorbances and calculate with preset equations at multi wavelength.

• Terminology

Name	Description
Wave List	Wavelengths to be measured.
Factor List	Factors to be used in equation.
STC List	STCs to be used in equation.
C1, C2, C3	Calculated results
Variables	An : (n=1~8) The ABS of No. n wavelength at Wave List. If Wave List is 500; 600, A1 = ABS of 500 nm A2 = ABS of 600 nm Fn : (n=1~8) The Factor of No. n (kinds of a constant). If Factor List is 3; 5; 1.9, F1 = 3 F2 = 5 F3 = 1.9 Sn : (n=1~8) The calculated result of An by No. n STC If Wave List is 500; 600, and If STC List is STC_A; STC_B, S1 = the result that input ABS of 500 nm to STC_A S2 = the result that input ABS of 600 nm to STC_B

2) Display



3) Measure

1. Select Cell(A).
2. Input Name, Wave List, Factor List, STC List, C1, C2, C3 and do on(B).
3. Click and perform Base Line(C).
4. Click Measure(D), and you will get the results at table.

4) Attentions while Multiple Wave Scan

1. The variables used in equations are not case-sensitive.
2. You cannot input at Table(E) directly. It will just show settings.
3. The variables not defined or out of range are determined as 0.
4. In case of errors in equations, the value will be determined as 0.
5. Calculate C1 first, and C2, C3 in order.
6. You can use C1 at C2 and C1 and C2 at C3.
7. If the wavelengths of STC and Wave list are different, it will obey the wavelength of Wave list.
8. These are examples that can be used at C1, C2, C3.

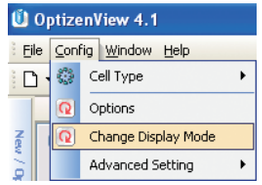
A1
A1 * A2
A1 + A2
A1 * 1.234 + A2 * 3.141592
A1 * (A2 * A3)
A1 * F1
A1 * F2
S1 + S2
A3 * A2 + S1 * F3

5. Quick Guideline

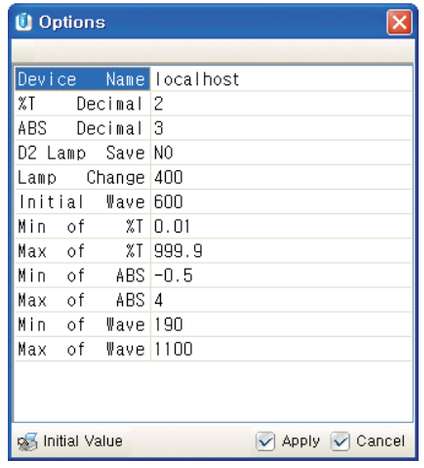
1) Introduction

This chapter shows you measurement steps of each mode step by step to use OptizenView more easily.

2) Confirmation before measurement



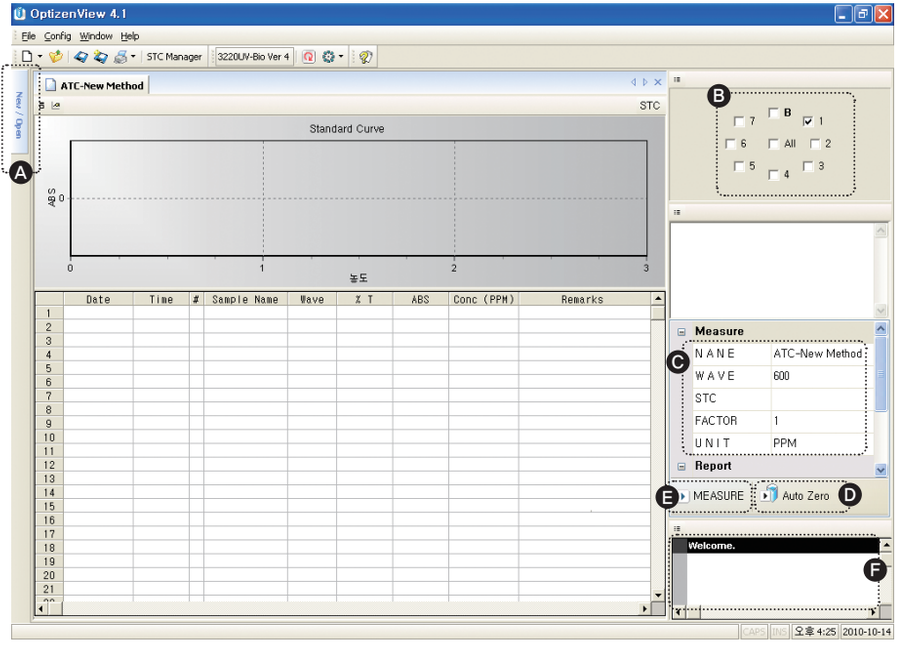
Click [Config(C)] → [Options] to check device name, type of cell, device information and other settings before measuring.



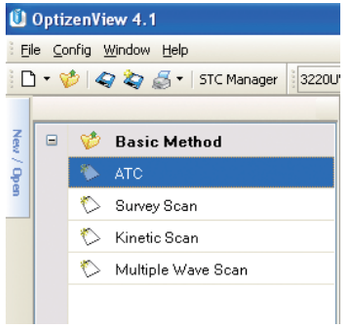
Set device name, select Cell type.
And set the display option and minimum/ maximum of measured value (ABS/%T).

Ex) set device name
Stand Alone Ver : localhost
PC Ver : PC name or IP address

5-1. Simple Absorbance(or Transmittance) Measurement

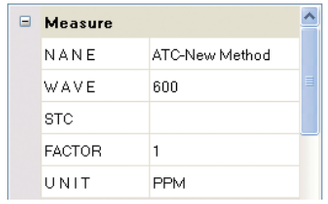


1. Locate Mouse point New/Open(A) left side, and Mode selections will appear as shown.



Double click ATC.

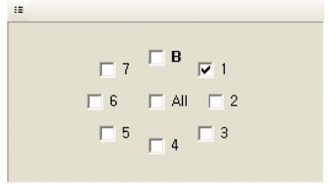
2. Input name of test, wavelength, Distillation factor and unit.(C)



3. Click Auto Zero(D) to correspond the light intensity between Sample & Blank.

While Auto Zero is executing, “Executing Auto Zero” appears on Message Box(F), after execution “Ready” appears.

4. Select Cell Number(CELL 1-No. 1)(B).

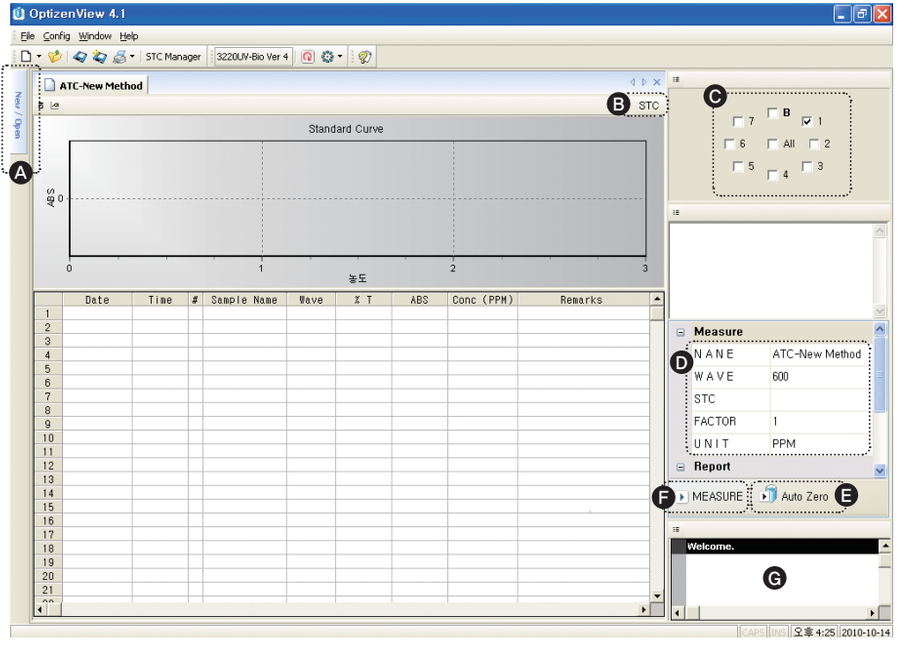


5. After Cell selection, Click Measure(E) to start measurement.

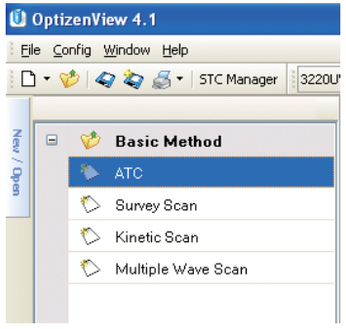
While execution, “Measuring” appears on Message Box, and after execution “Ready” appears.

Part II. OptizenView Usage
5-1. Simpel Absorbance(or Transmittance) Measurementv

5-2. Measuring Concentration using Standard Curve

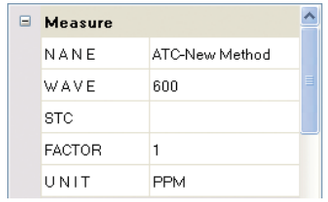


1. Locate Mouse point New/Open(A) left side, and mode selections will appear as shown.

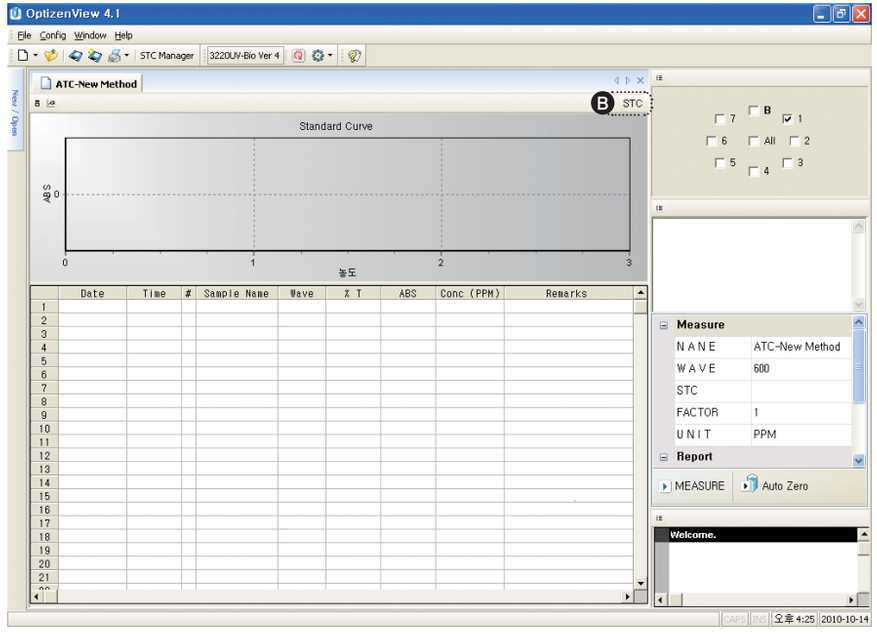


Double click ATC .

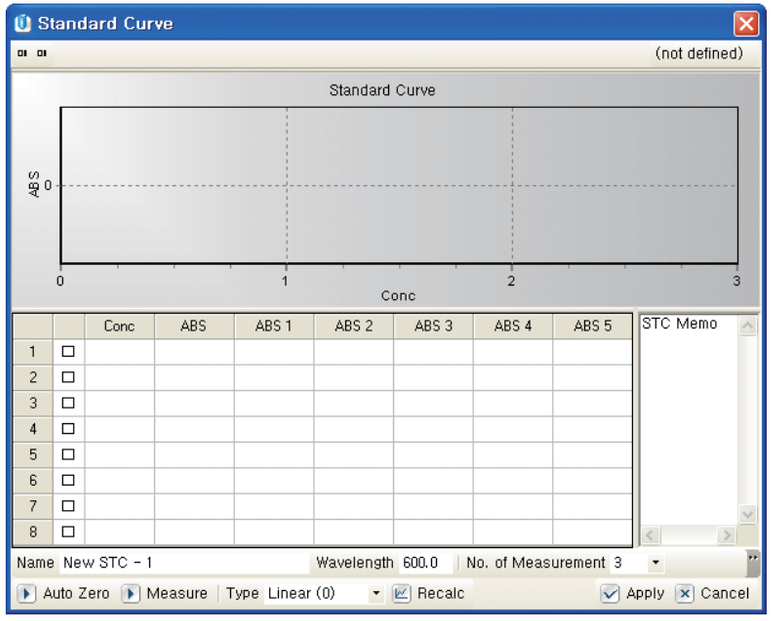
2. Input name of test, wavelength, Distillation factor and unit.(D)



3. Pop up Standard Curve window by click Make STC(B) upper right side of graph.



4. Make STC.



a. Input sample's concentration orderly from number 1.(Cell number 1 – Number 1)

b. Click Auto Zero.

c. Click Measure to start measurement.

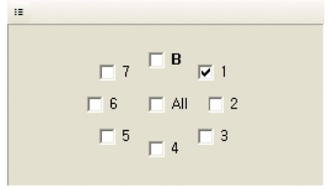
d. When tests are done, absorbance value and data result appeared as graph.

e. Select Recalc, and click Apply to use framed graph into ATC.

5. Click Auto Zero(E) to correspond the light intensity between Sample & Blank.

While Auto Zero is executing, "Executing Auto Zero" appears on Message Box(G), after execution "Ready" appears.

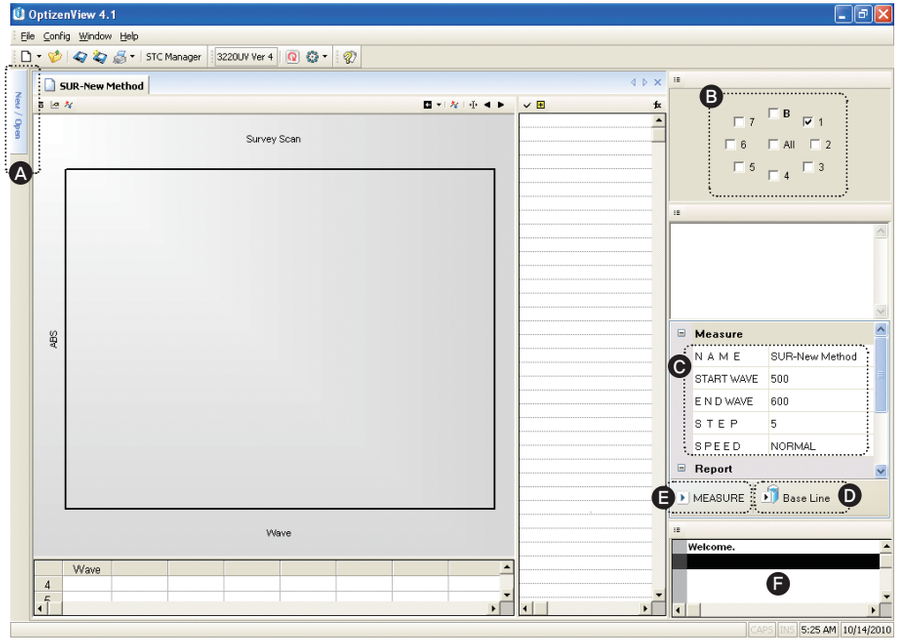
6. Select Cell Number(CELL 1-No. 1)(B).



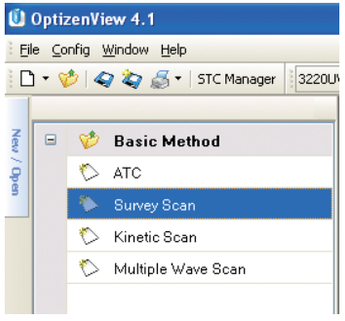
7. After Cell selection, Click Measure(F) to start measurement.

While execution, "Measuring" appears on Message Box(G), and after execution "Ready" appears on a message box and measured value will be displayed as a table and a graph.

5-3. Measuring Absorbance (Transmittance) In Specific Wavelength Area

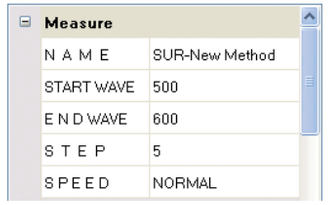


1. Locate Mouse point New/Open(A) left side, and mode selections will appear as shown.



Double click Survey Scan .

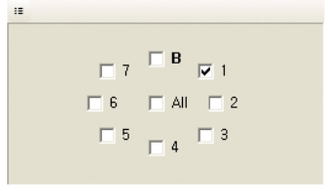
2. Input/select Name of Test, Start wavelength, finish point wavelength, Step and Scan Speed(C).



3. First and before measuring samples, click Base Line(D) for setting blank.

While execution, “Executing Base Line Collection” appears on Message Box(F), and after execution “Ready” appears.

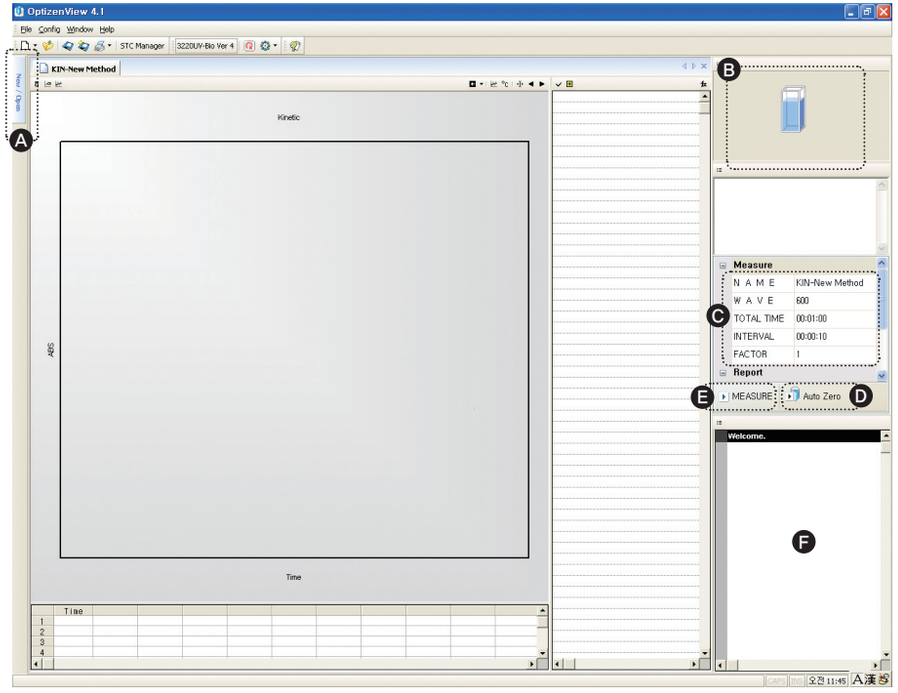
4. Select Cell Number(CELL 1-No. 1)(B).



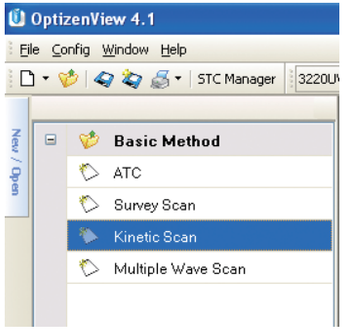
5. After Cell selection, Click Measure(E) to start measurement.

While execution, “Measuring” appears on Message Box(F), and after execution “Ready” appears on a message box and measured value will be displayed as a table and a graph.

5-4. Measuring Absorbance (Transmittance) Timely

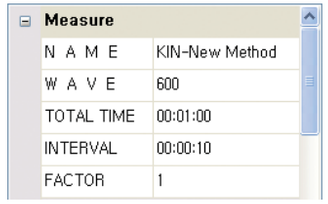


1. Locate Mouse point New/Open(A) left side, and mode selections will appear as shown.



Double click Kinetic Scan .

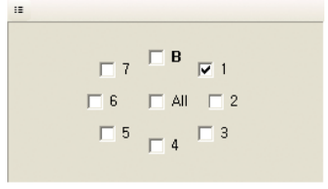
2. Input Name of Test, Wavelength, Total Time and Time interval.(C)



3. Click Auto Zero(D) to correspond the light intensity between Sample & Blank.

While Auto Zero is executing, “Executing Auto Zero” appears on Message Box(F), after execution “Ready” appears.

4. Select Cell Number(CELL 1-No. 1)(B).

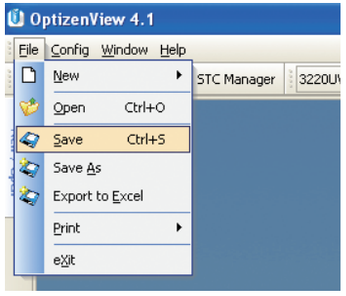


5. After Cell selection, Click Measure(E) to start measurement.

While execution, “Measuring” appears on Message Box(F), and after execution “Ready” appears on a message box and measured value will be displayed on a table and a graph.

5-5. Save and Print Out

• Save



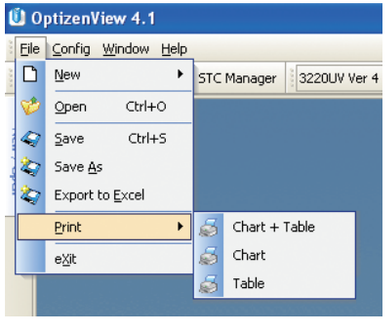
Select [File(F)] → [Save(S)] or [Save as(A)] to save measured data.

※**File format is *.ODF.**

Select [File(F)] → [Export to Excel(E)]

to save measured data as Excel form.

• Print



Select [File(F)] → [Print(P)] and choose print form to print out.

6. Trobleshooting

• When a message box [Instrument is not found] appears,

1. Embedded PC(Internal PC) happens not to be operated in booting process of OPTIZEN 3220UV. Please re-boot 10 seconds later. After “beep” sound, rebooting has been succeeded.

2. Check Device name at [Options].
   - Stand Alone Version : localhost
   - PC Version : Optizen3220UV

3. Check the OptizenDevice icon(shape of mecasys logo) at system tray window.

Part Ⅲ. Technical Supports

1. Technical Supports

When you have any difficulties of installing Optizen 3220UV and OptizenView. Please go through and review with this user's guide. If troubleshooting does not help to solve troubles, please contact your nearest distributor or producer.

Caution: When contact for after service, must be reported symptom of trouble.

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