

[www.i3412.com](http://www.i3412.com)

ScopePhoto user guide

Only for Windows XP or Vista with  
USB2.0

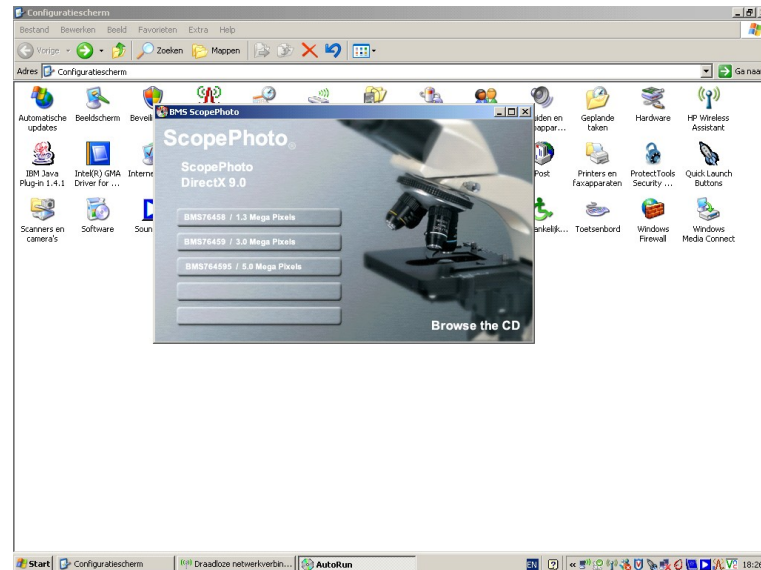
# ***Application*** of Digital Camera for Microscope



# 1. D

## Start Using Digital Camera for Microscope

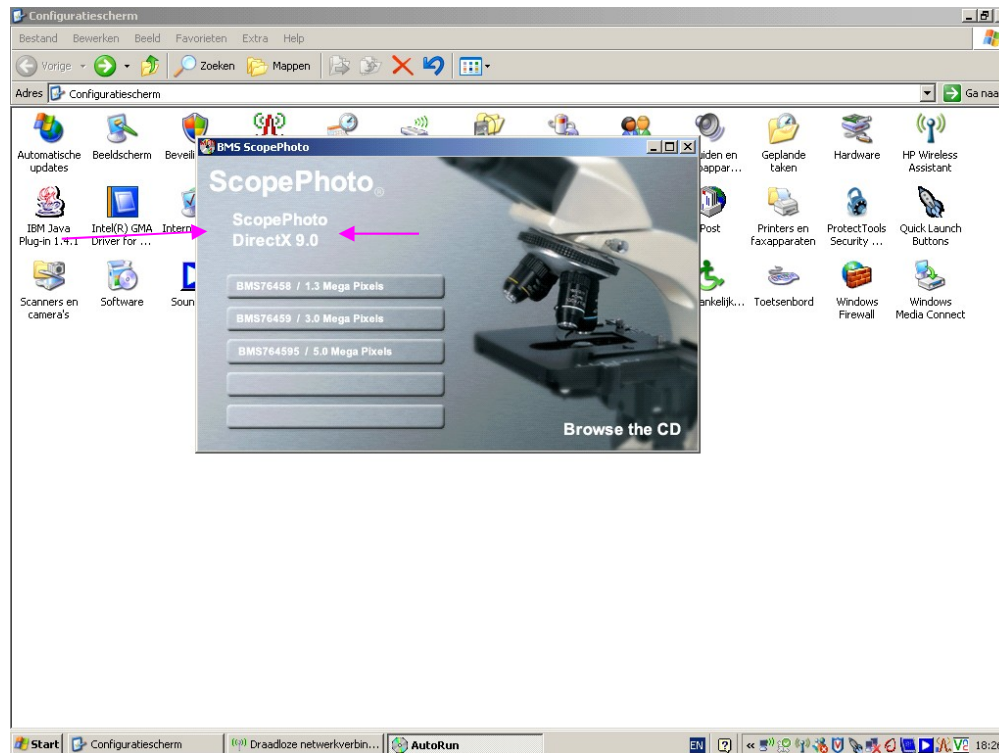
- **Insert the CD into your PC CDROM .**
- **Do not connect your camera at this moment., You will be asked to do so later. The installation program should run automatically.**
- **Install the driver with the name as your DCM hardware.**



## 2. Install ScopePhoto

# Start Using *Digital Camera for Microscope*

- *Install DirectX 9.0 if your version is lower than 9.0, otherwise, skip this step*
- *Install ScopePhoto*

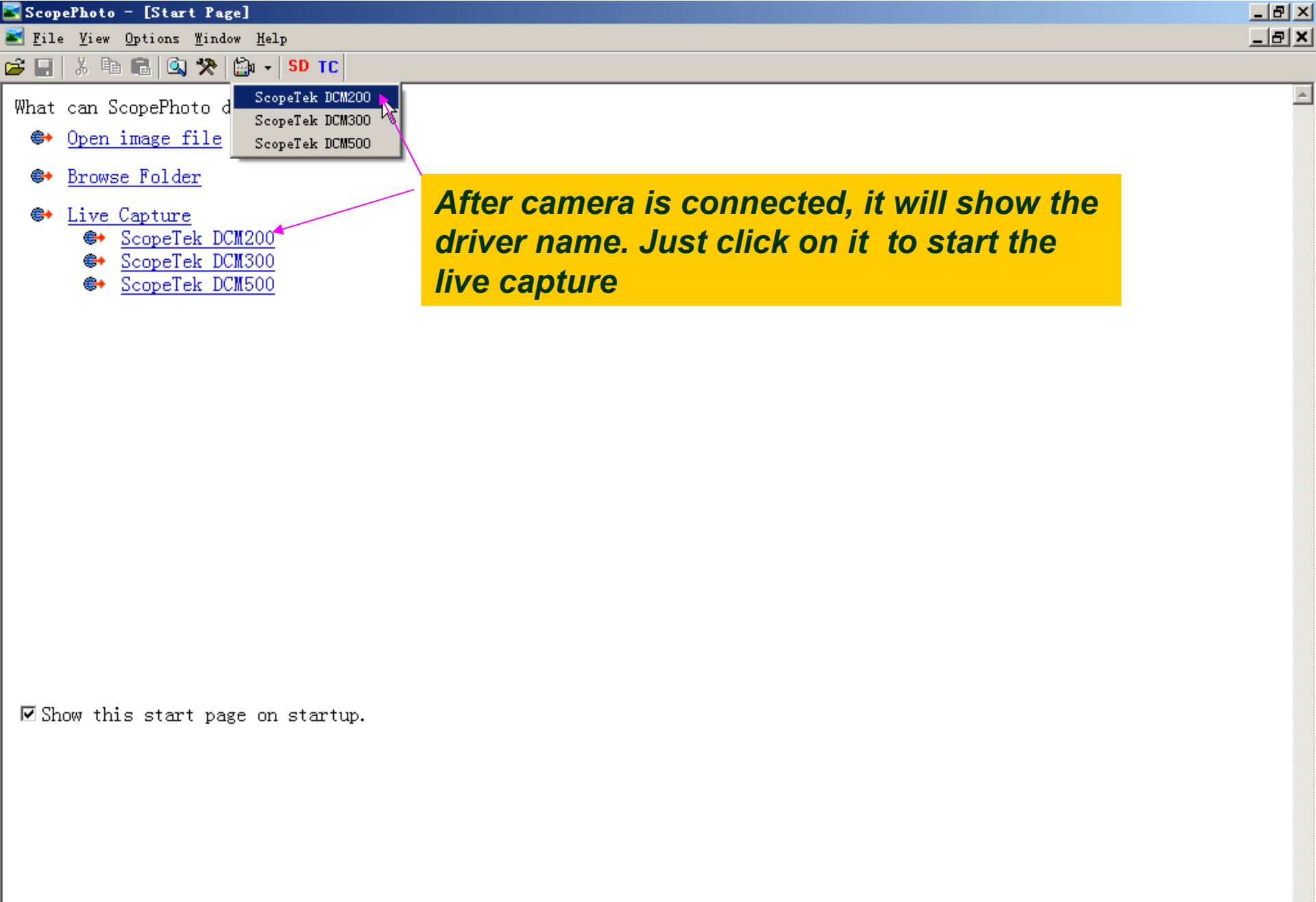


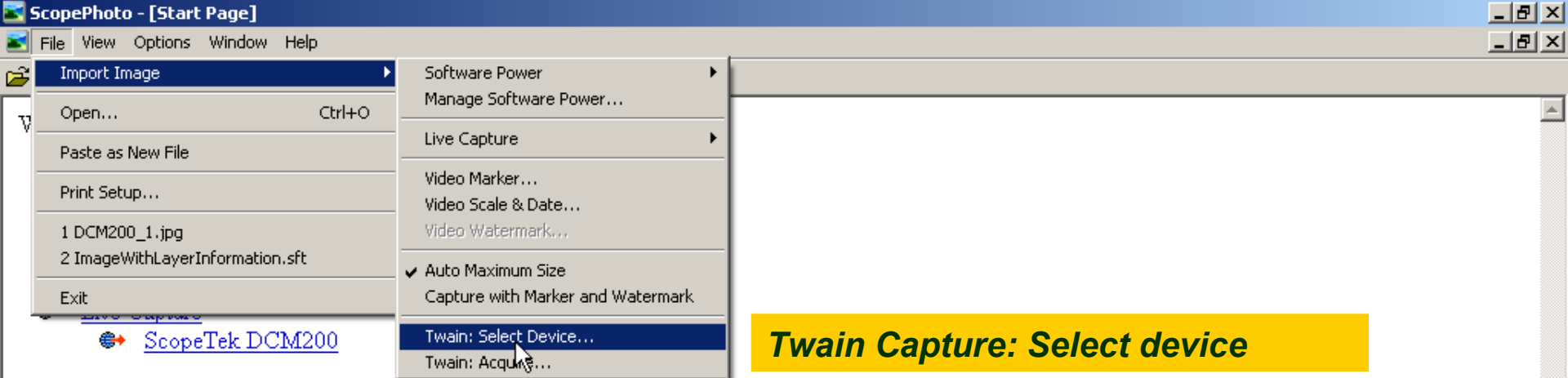


# **Start Using** *Digital Camera for Microscope*

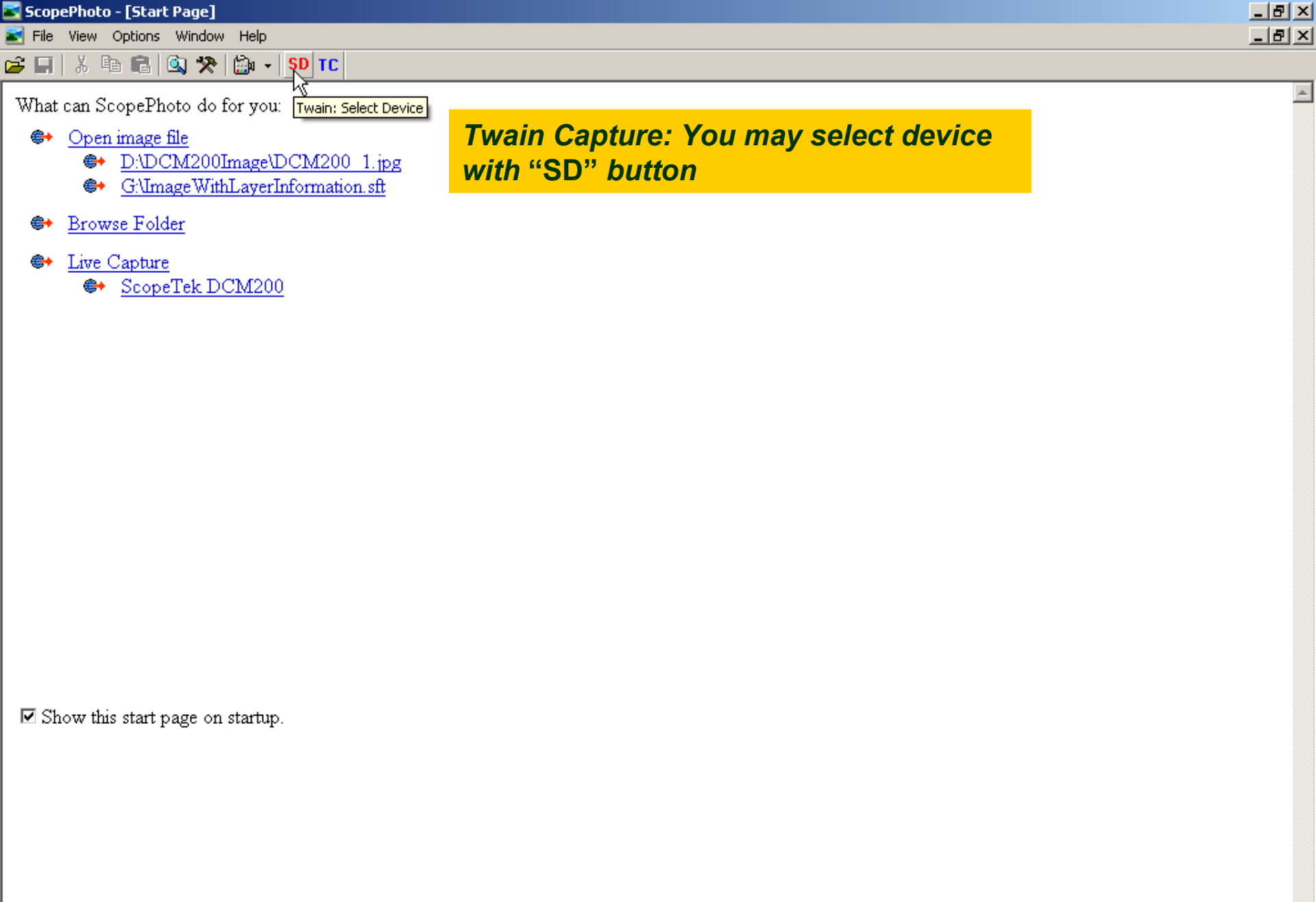
## **3. What can ScopePhoto do?**

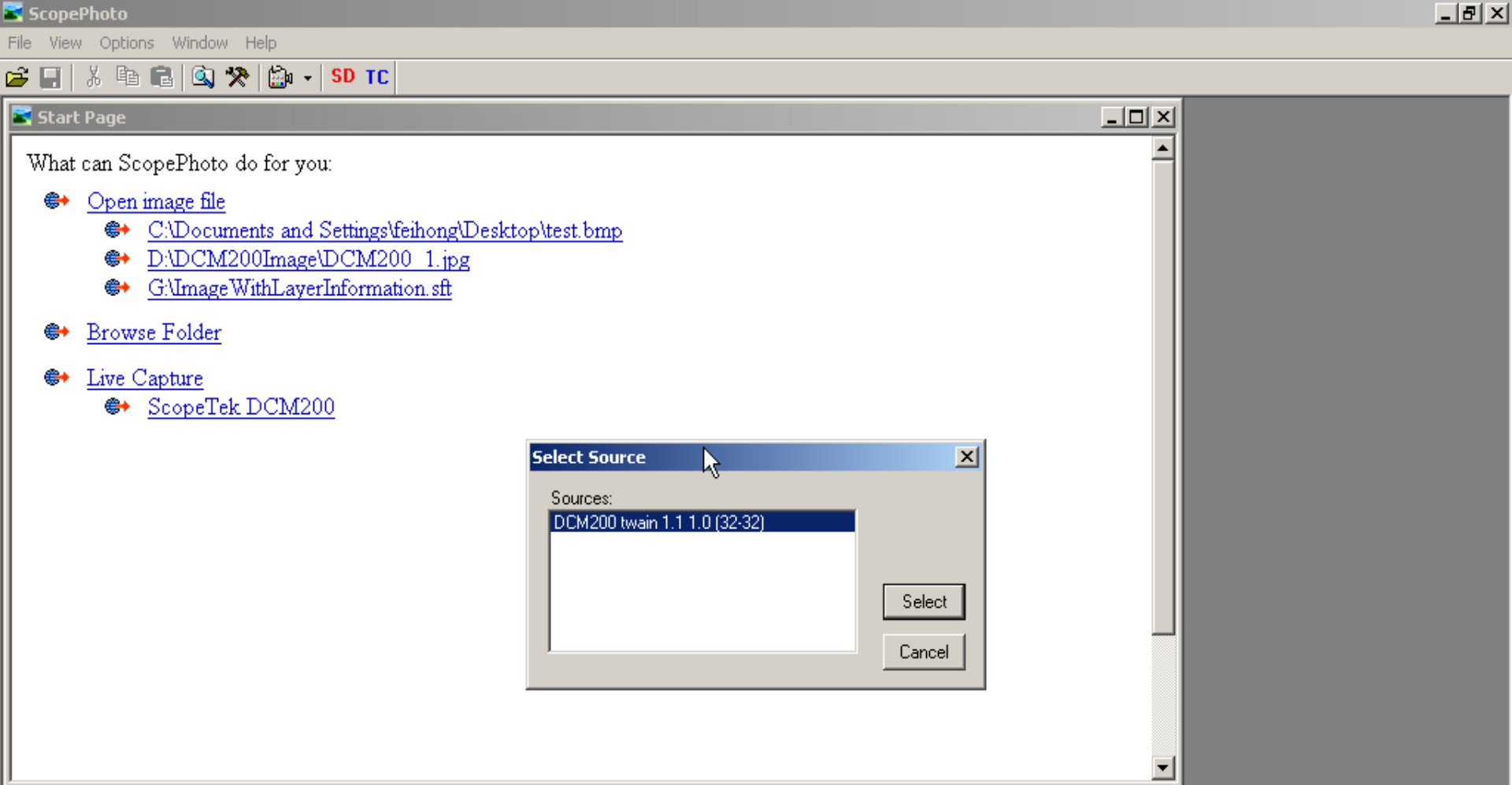
- **Video Preview and Capture**
  - *Start video preview in DirectShow or Twain format;*
  - *Overlay marker, scale & date , water marker on video;*
  - *Software power definition and video measurement*
  - *Record video in AVI ,MPEG4 or other format;*
  - *Capture image and save image in BMP, JPG, PNG,TIFF,PCX, TGA or SFT formats;*
- **Layer and Draw**
  - *Insert layer on the image to keep draw objects;*
  - *Draw geometrical objects on the image to show the image information;*
  - *Export draw objects operation ;*
  - *Draw object and image print ;*
  - *Save draw objects with the image in sft format ;*
- **Image Processing**
  - *Image adjustment;*
  - *Image processing ;*
  - *Image plugin provided by the 3rd party;*
- **Image Browse**

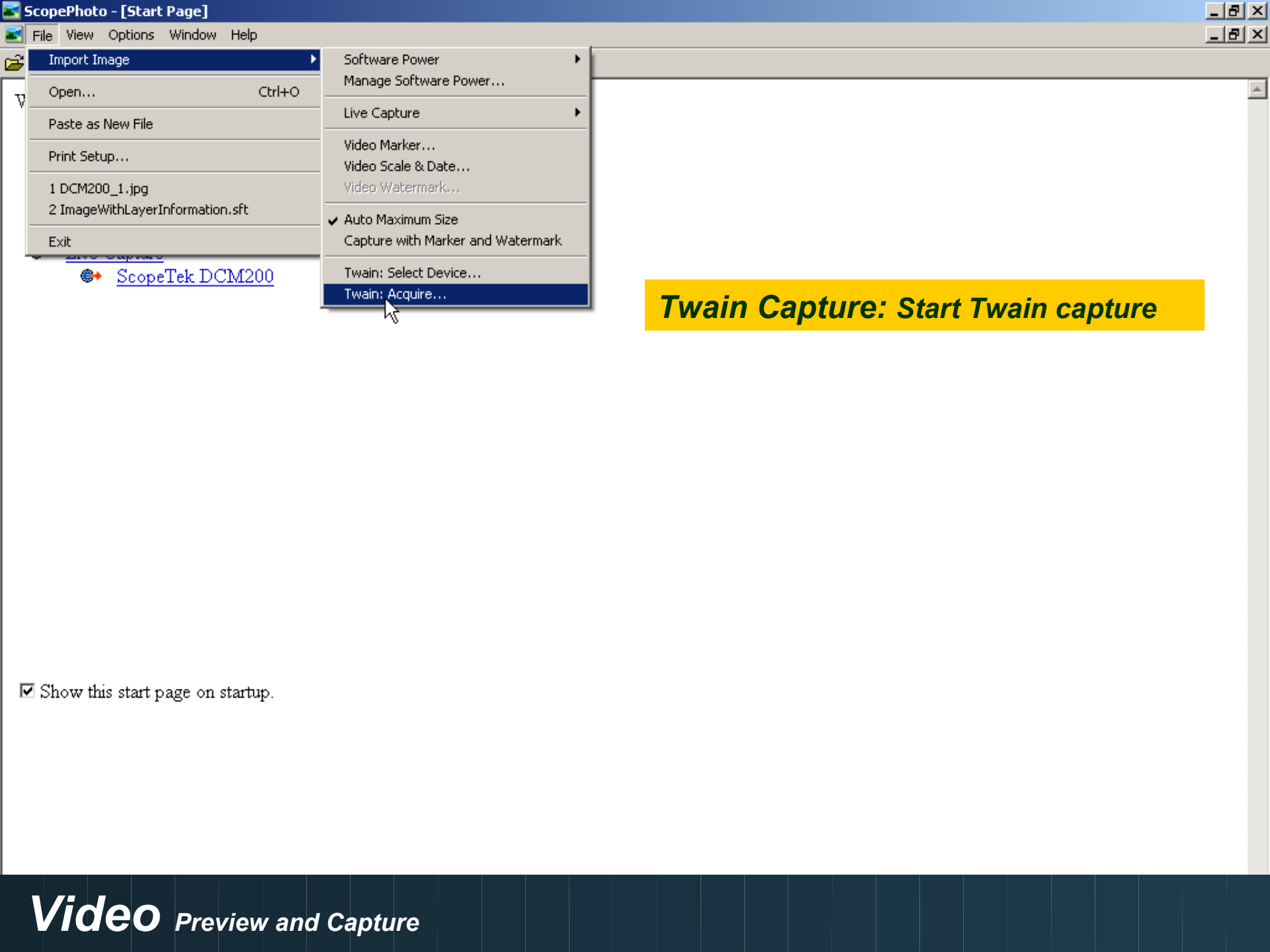




☒ Show this start page on startup.

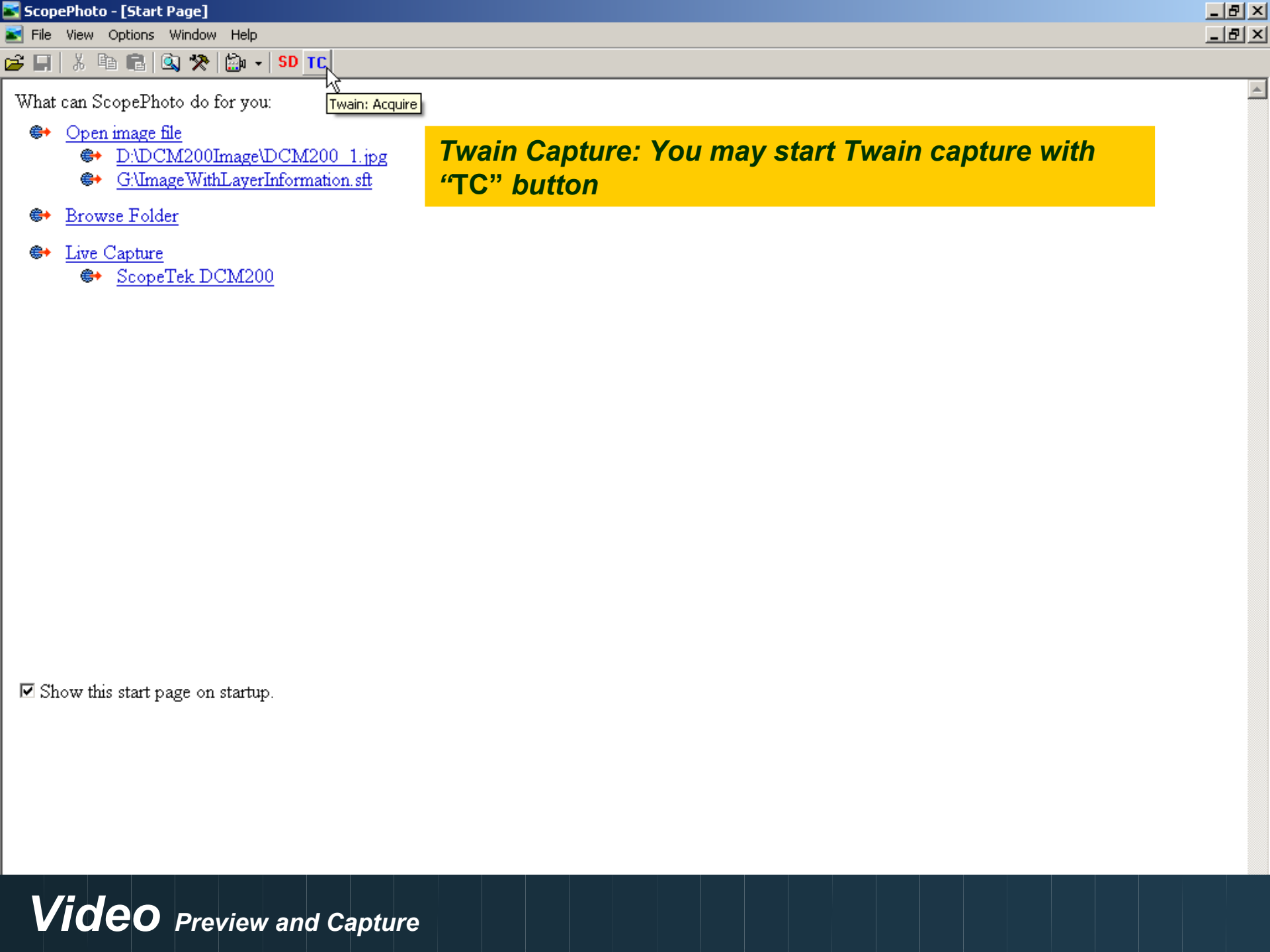




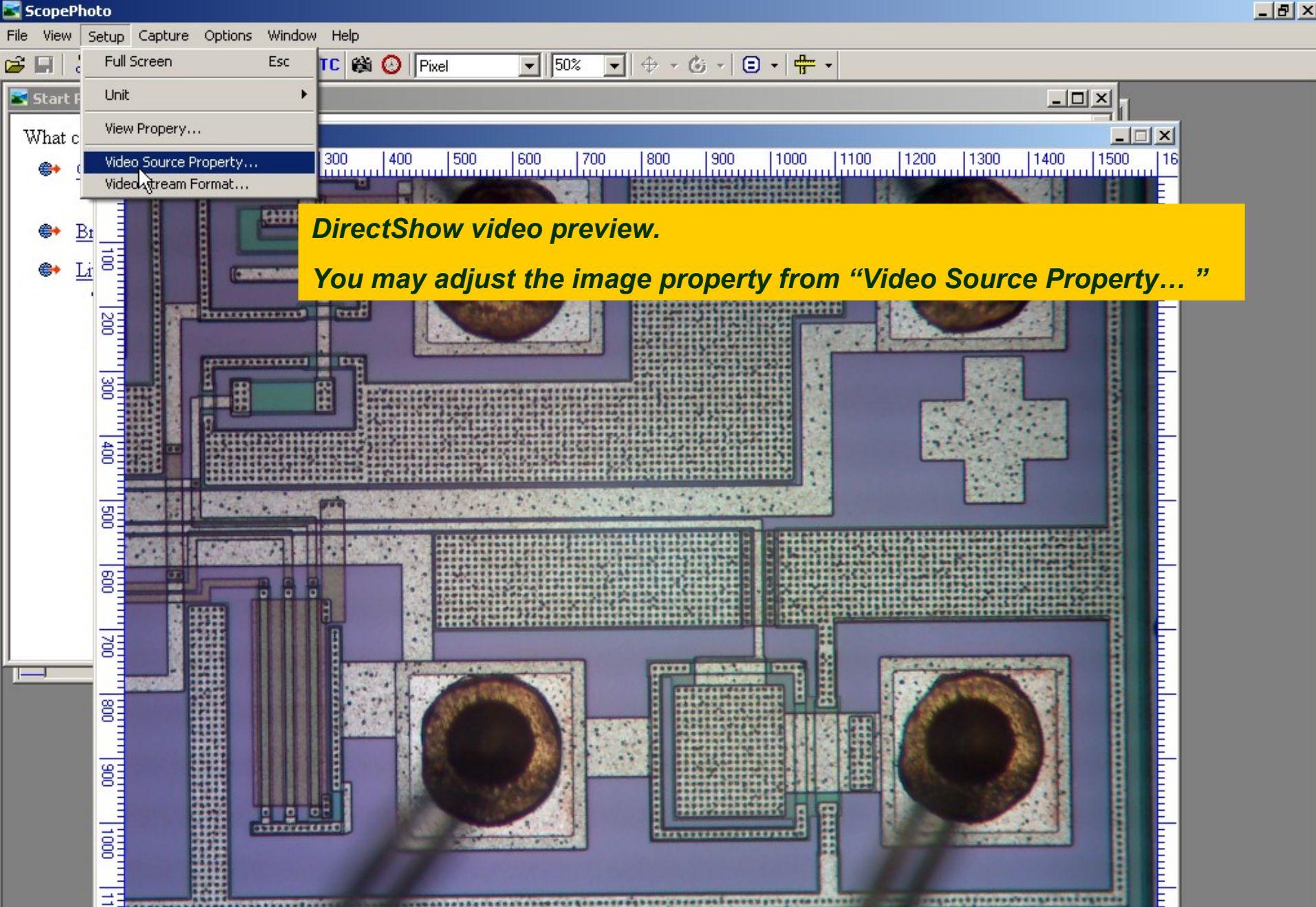


**Twain Capture: Start Twain capture**

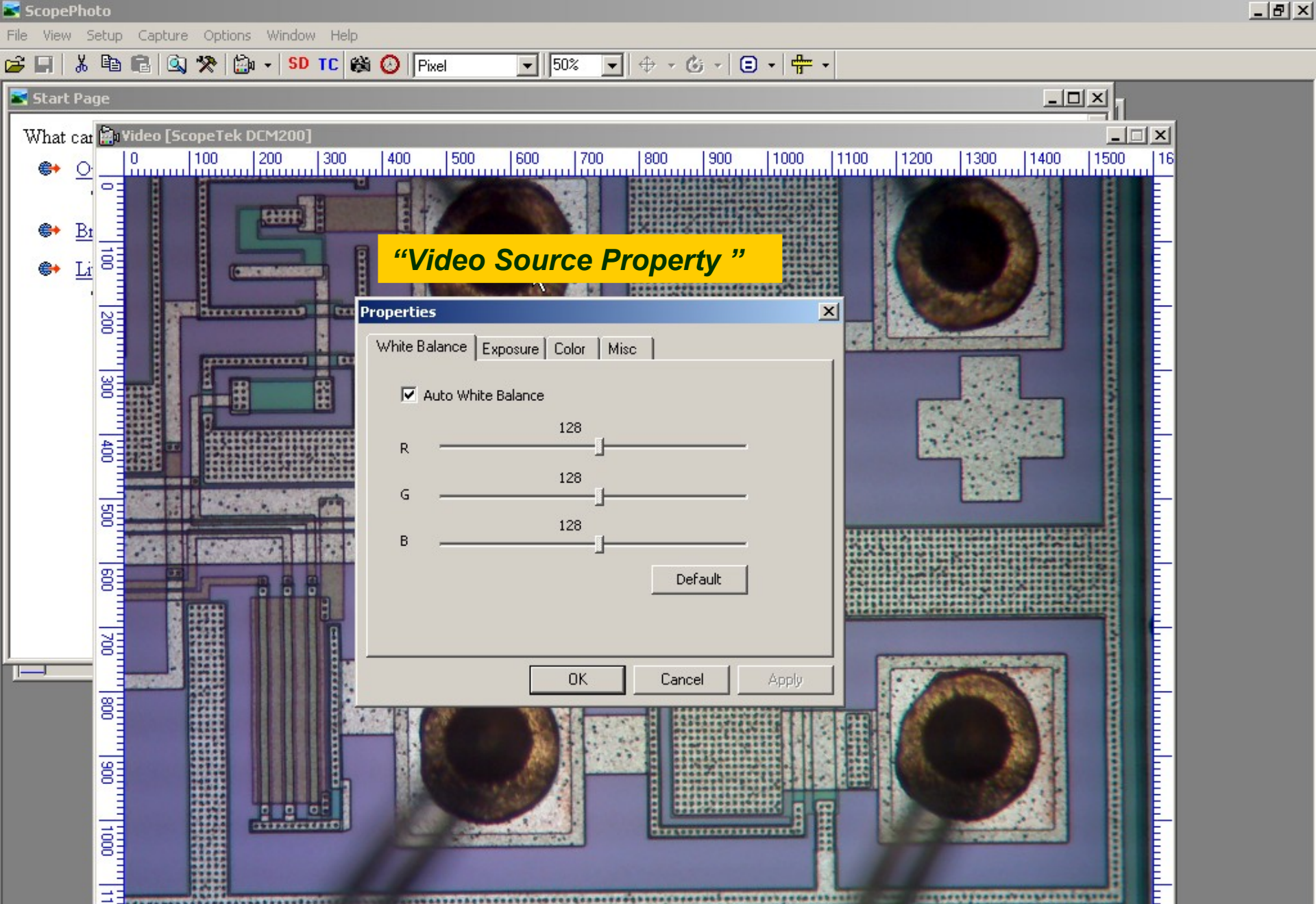
☒ Show this start page on startup.



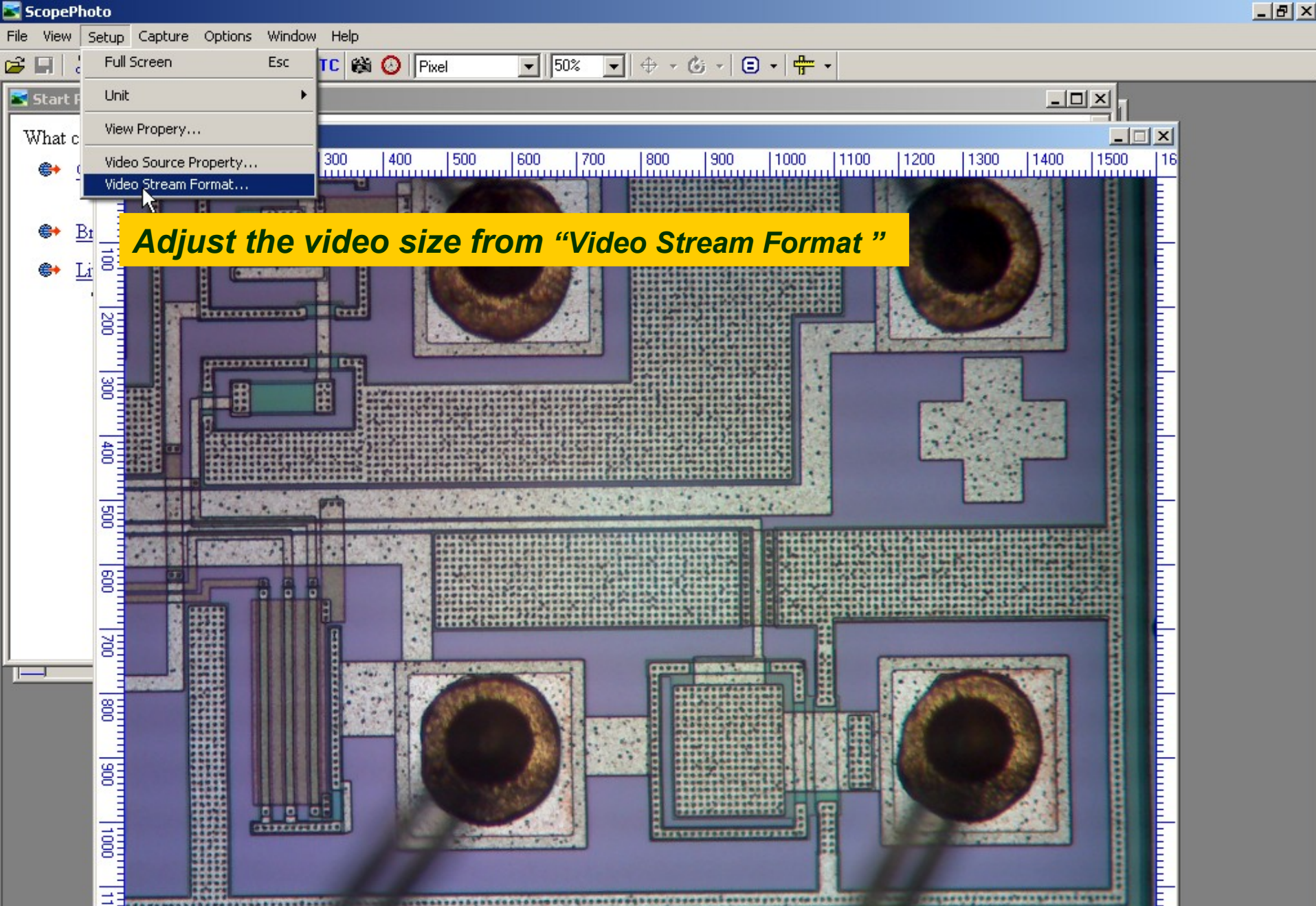


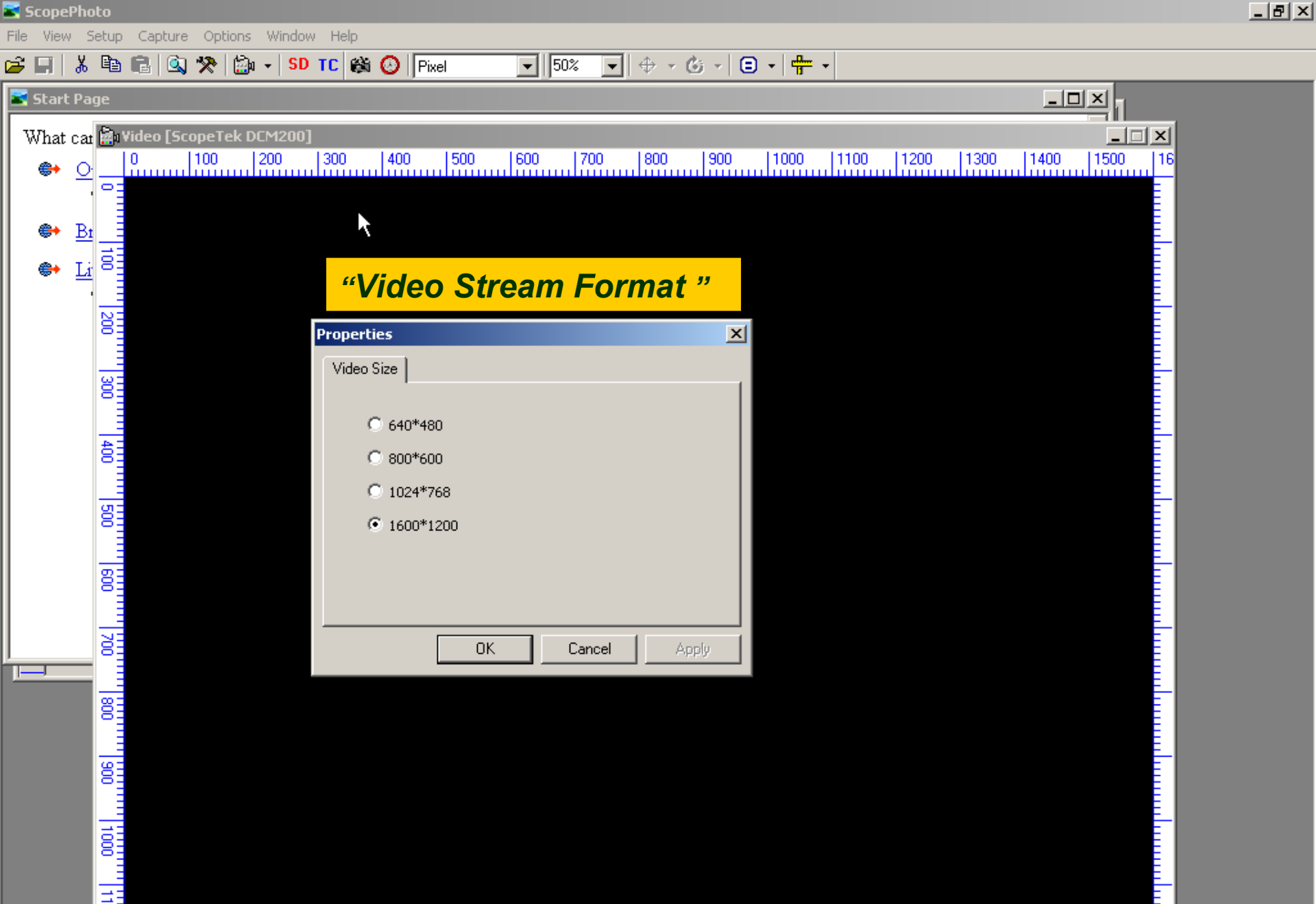




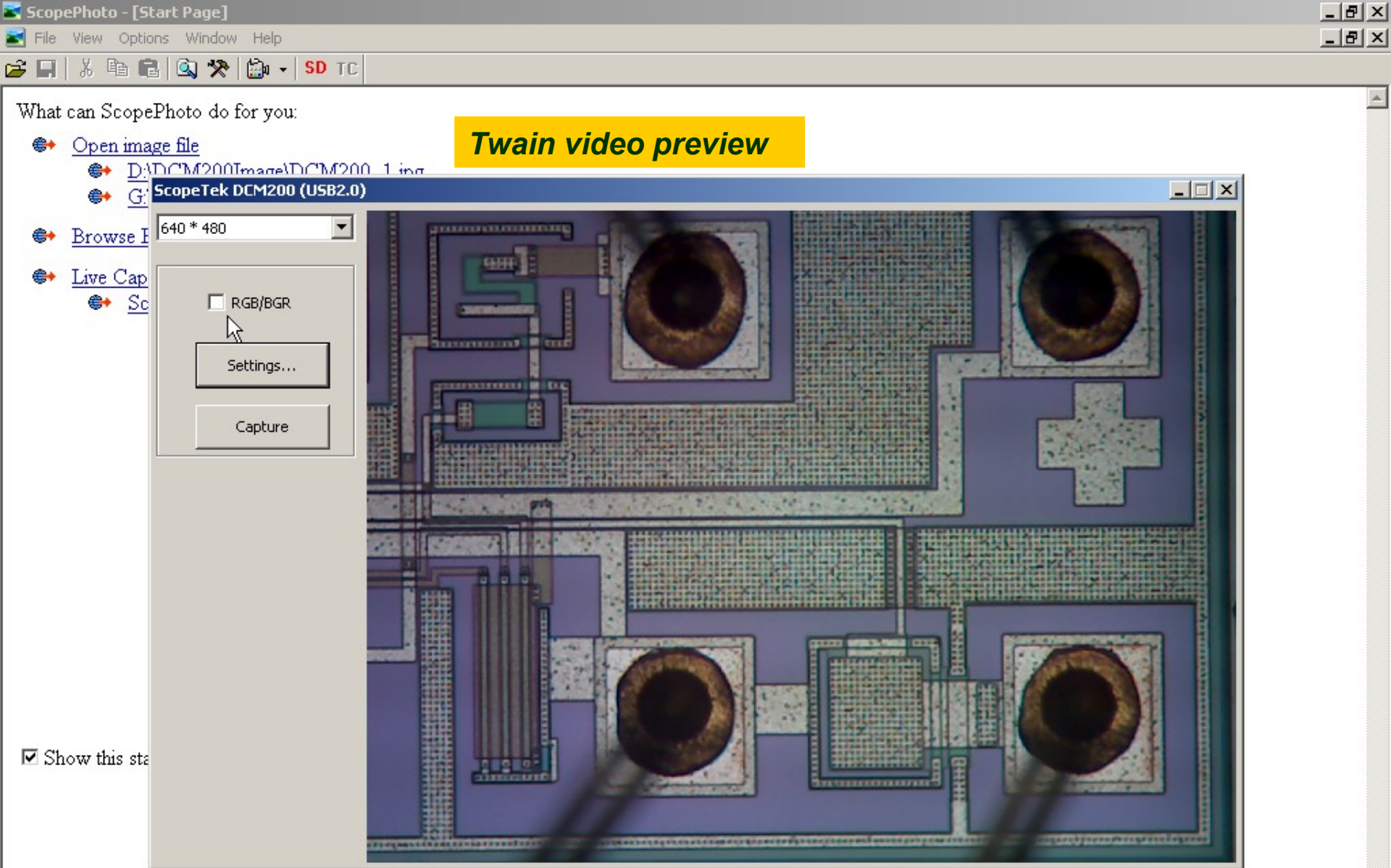


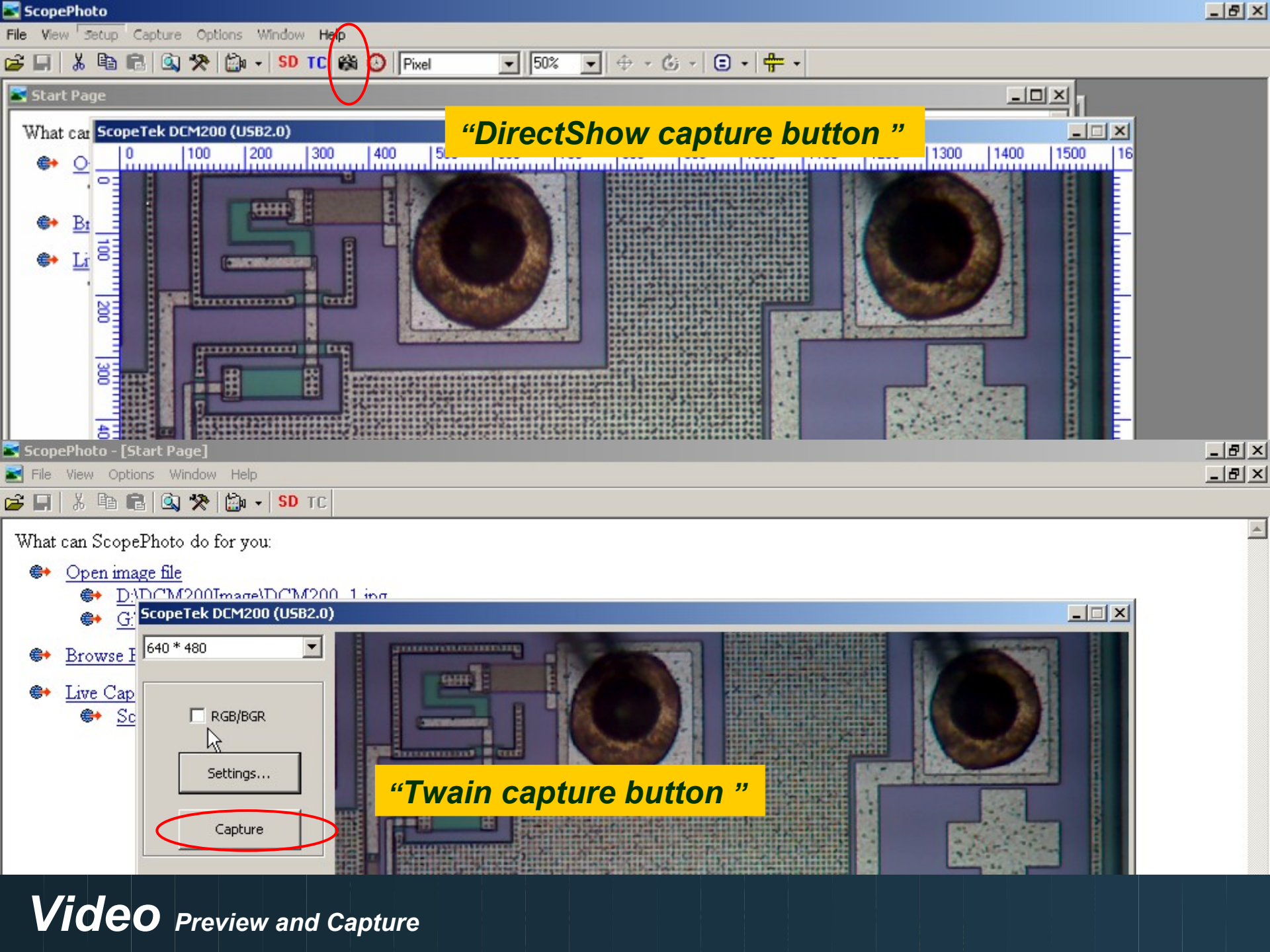




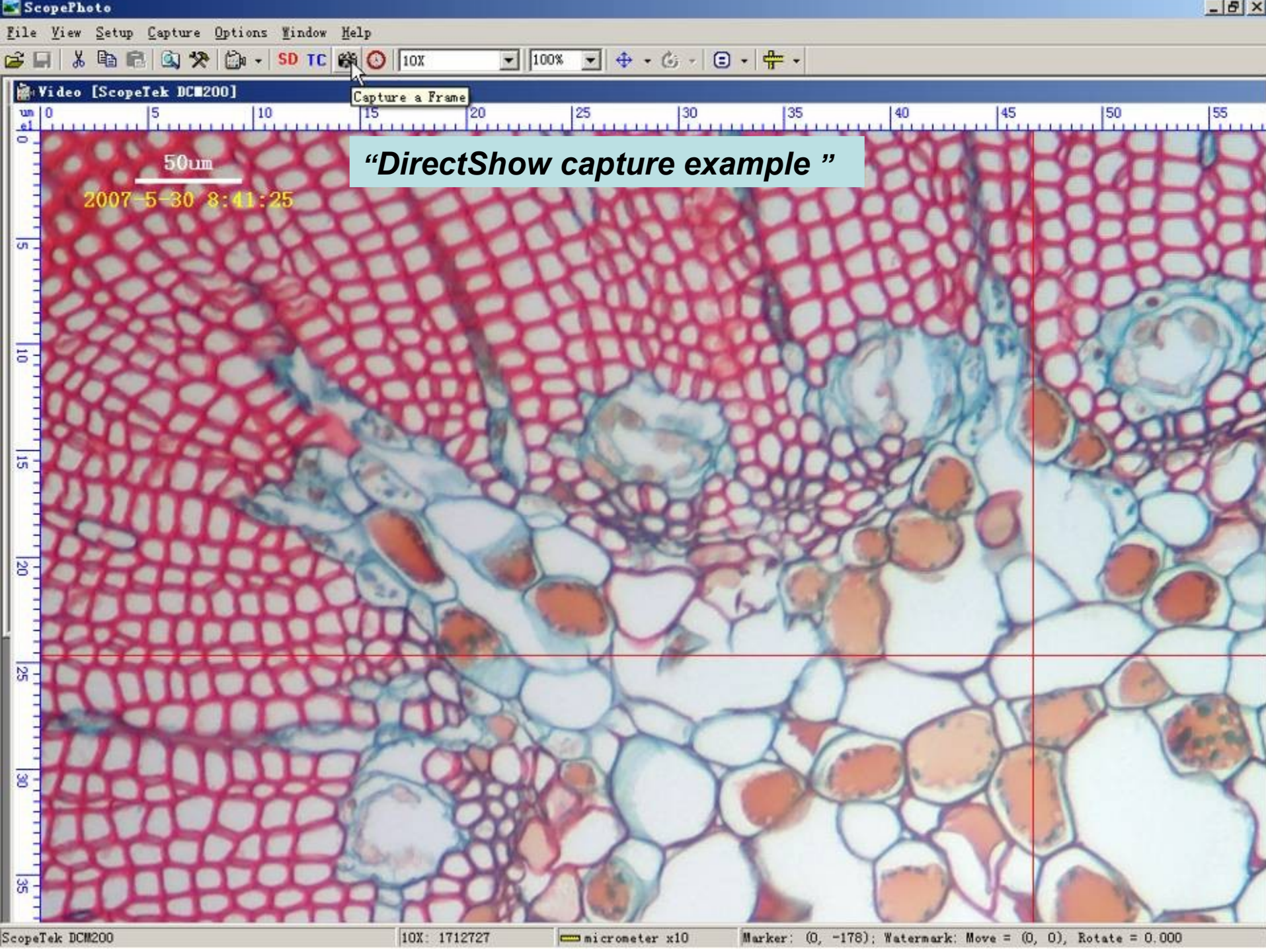














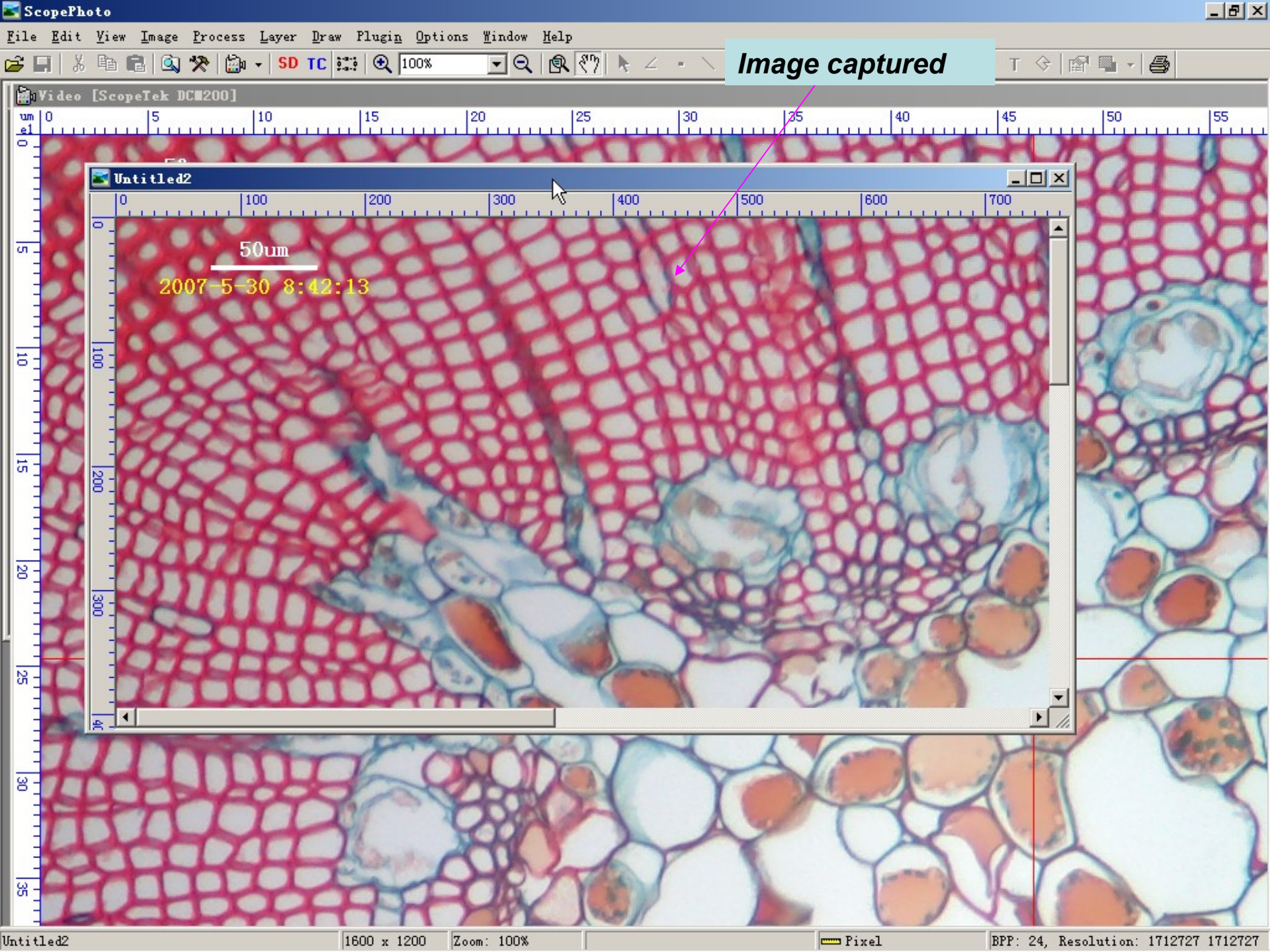
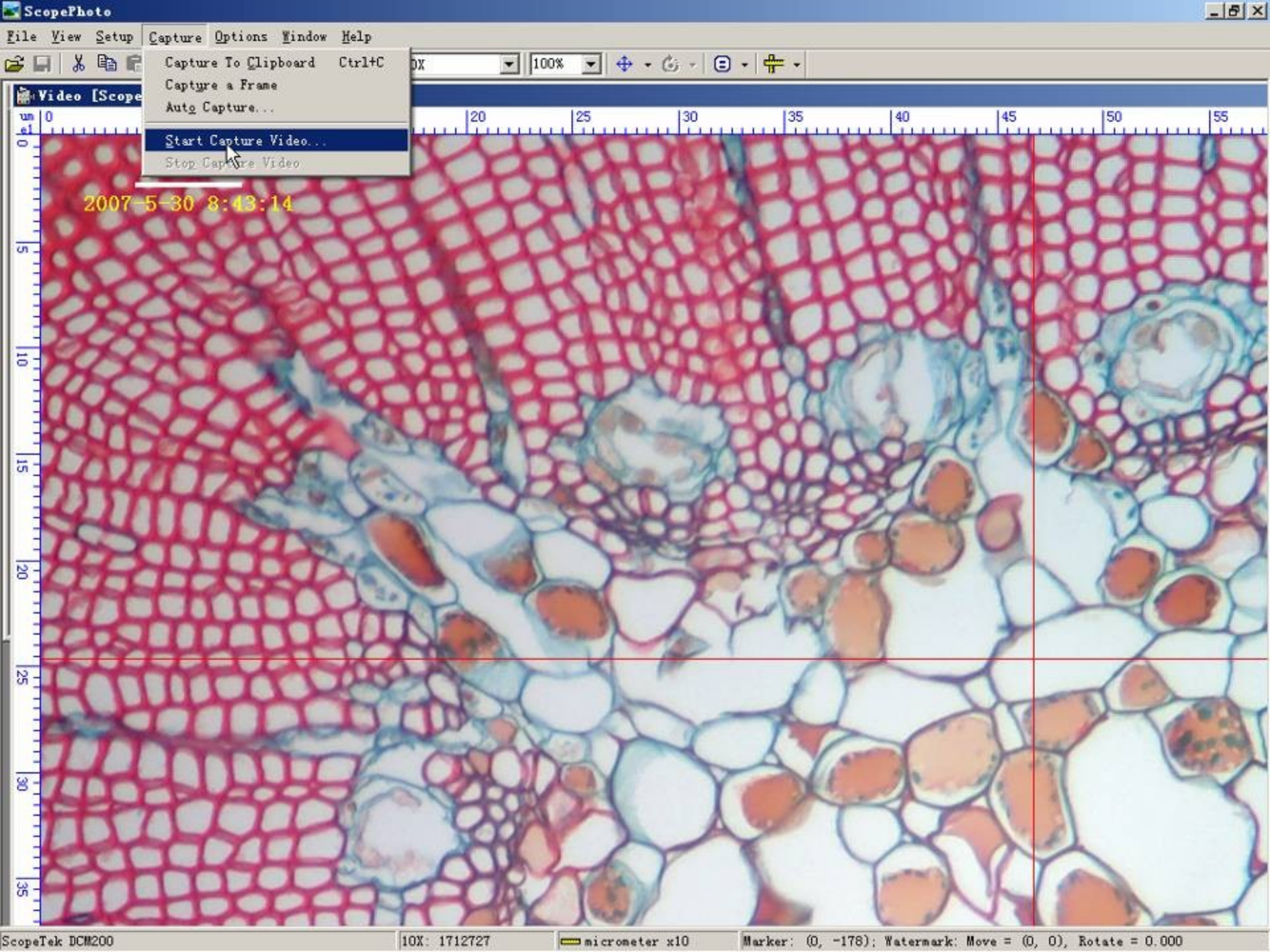


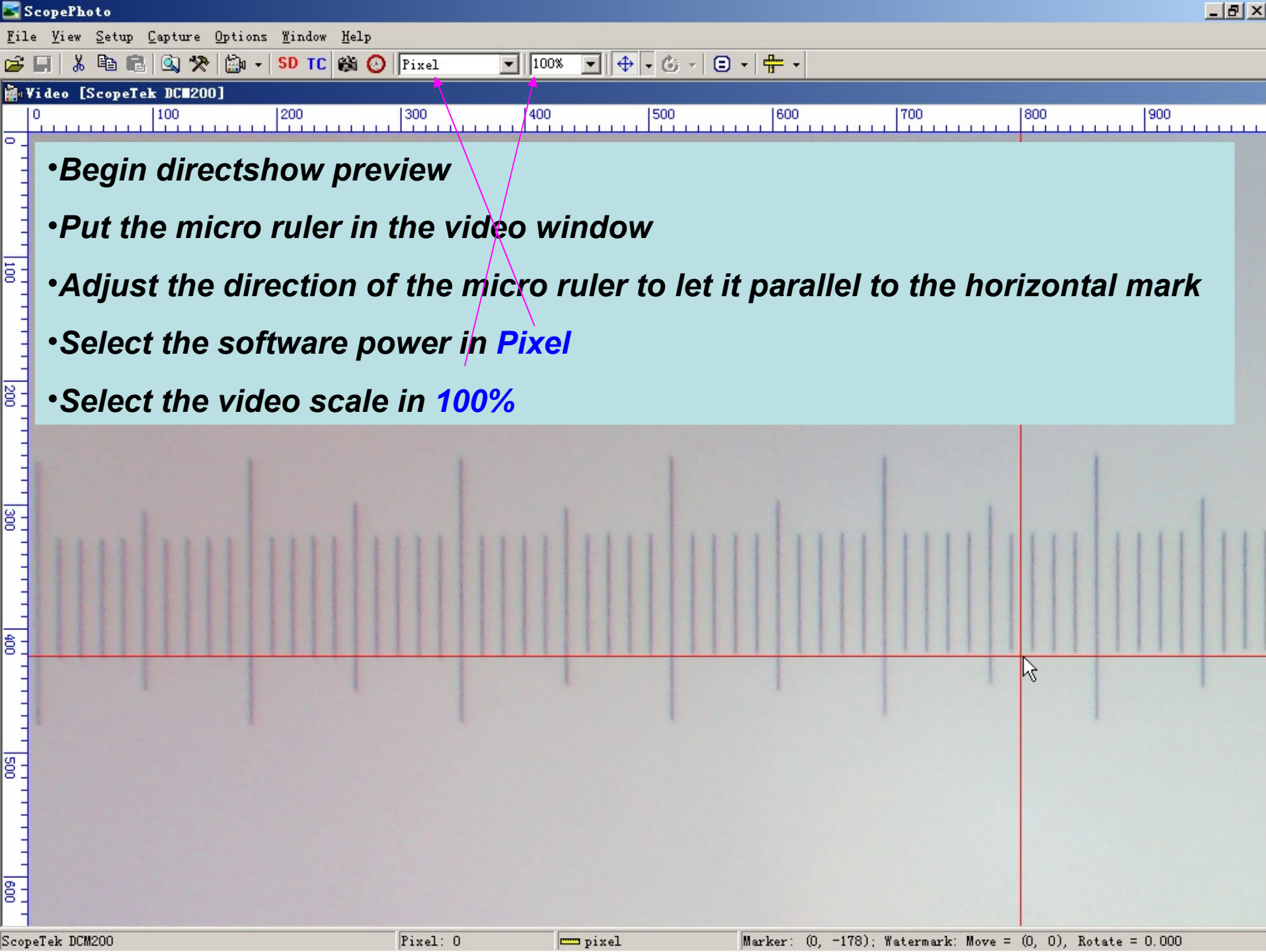
Image captured

50um

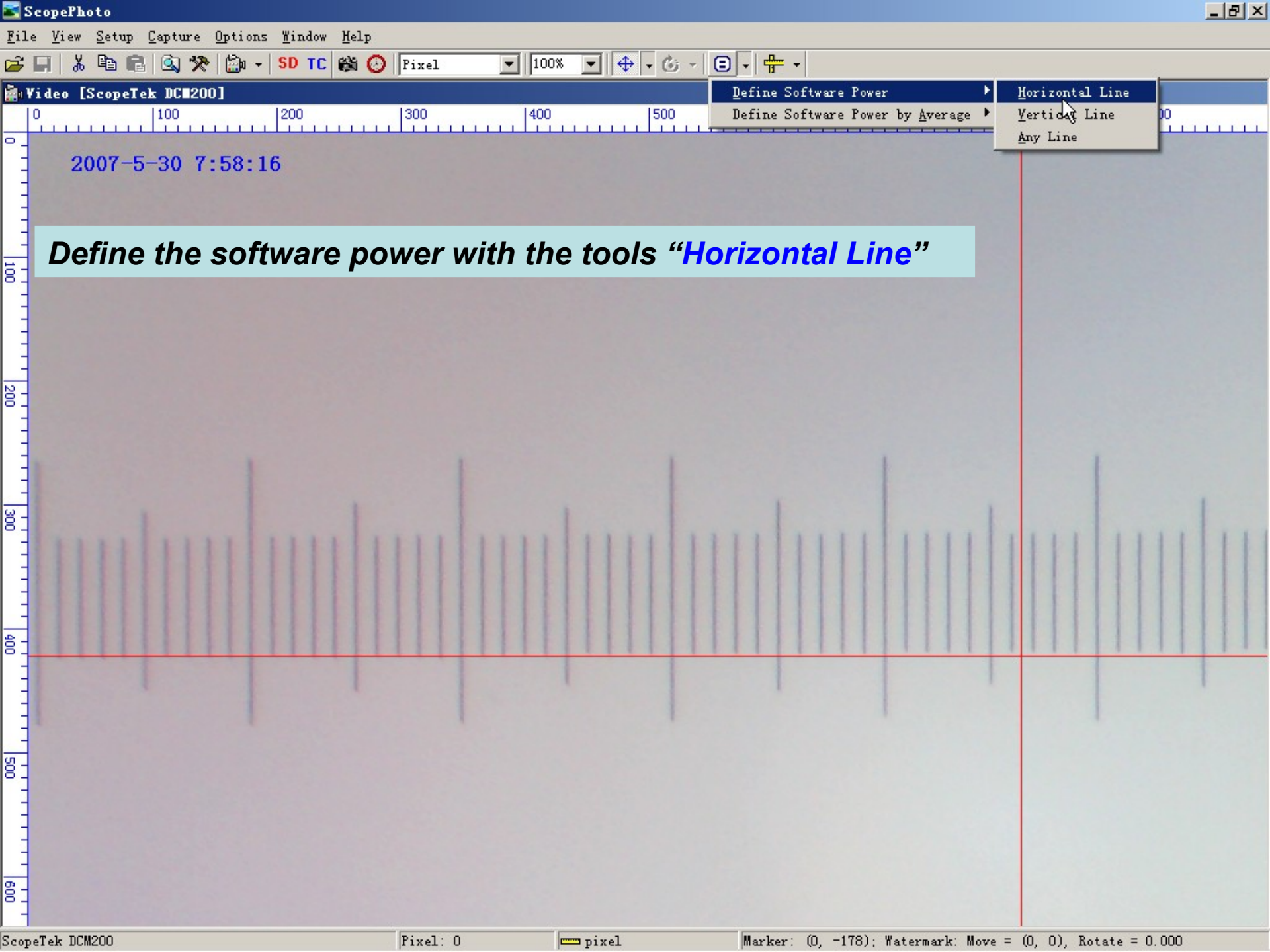
2007-5-30 8:42:13

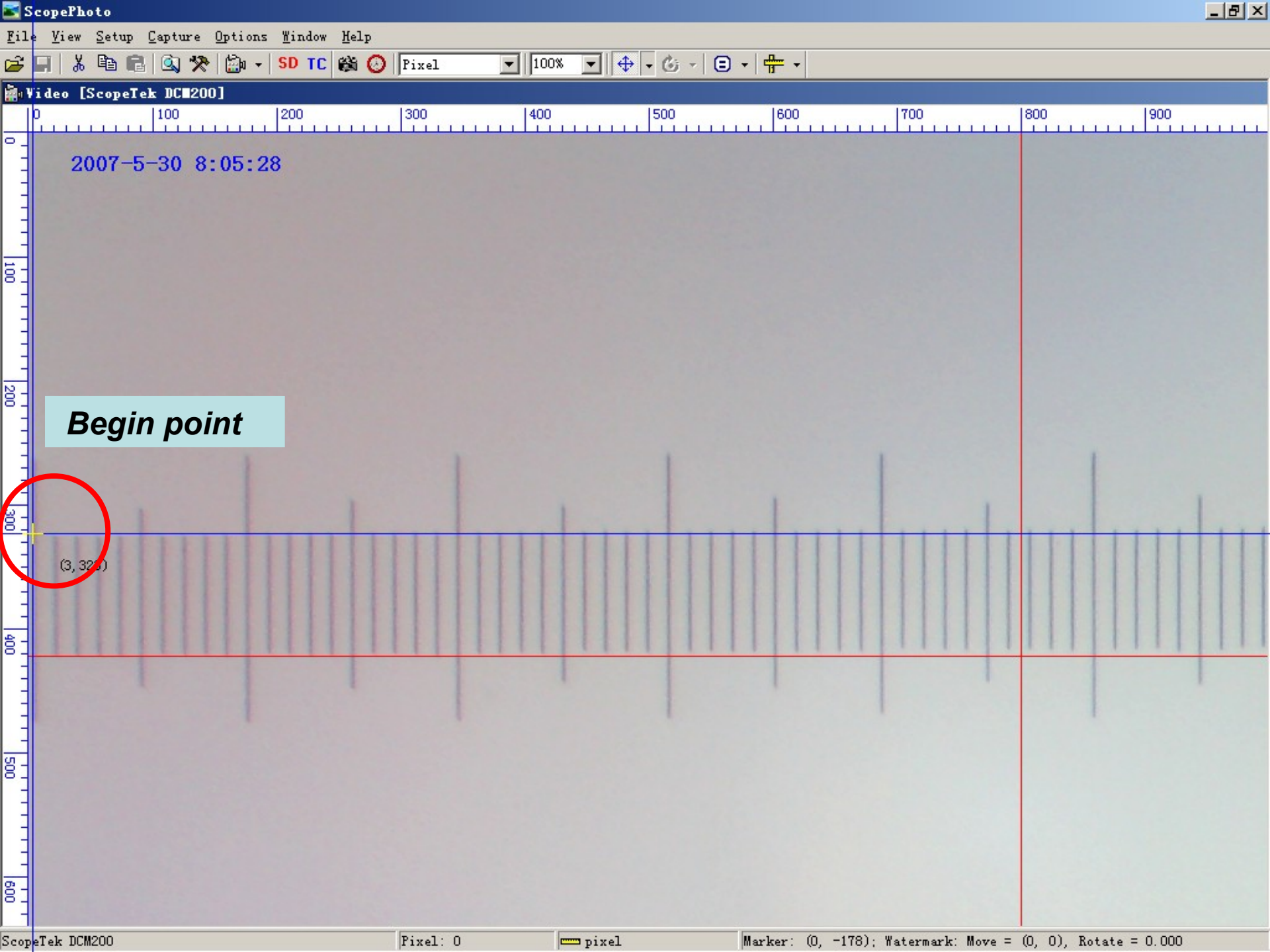


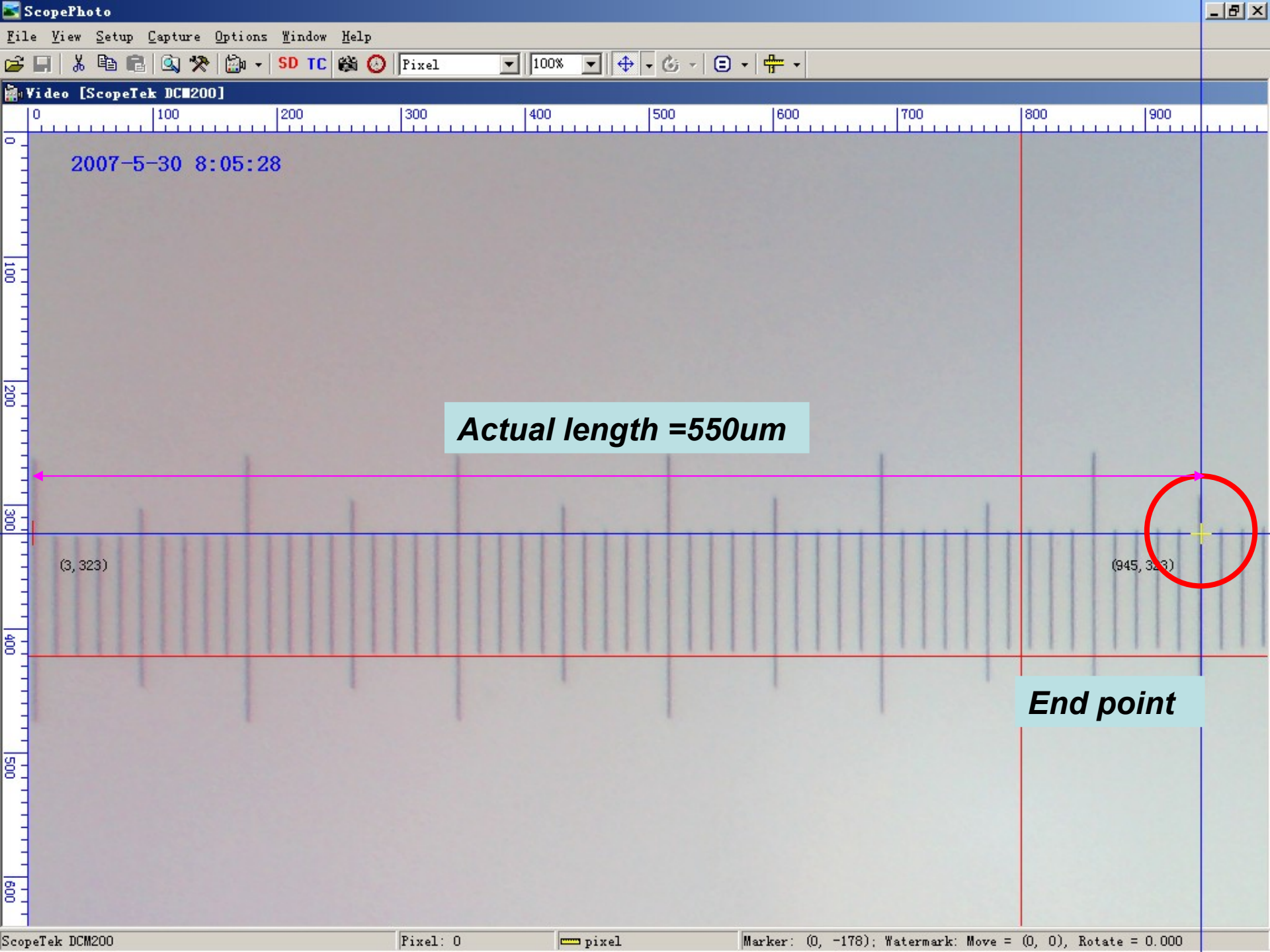




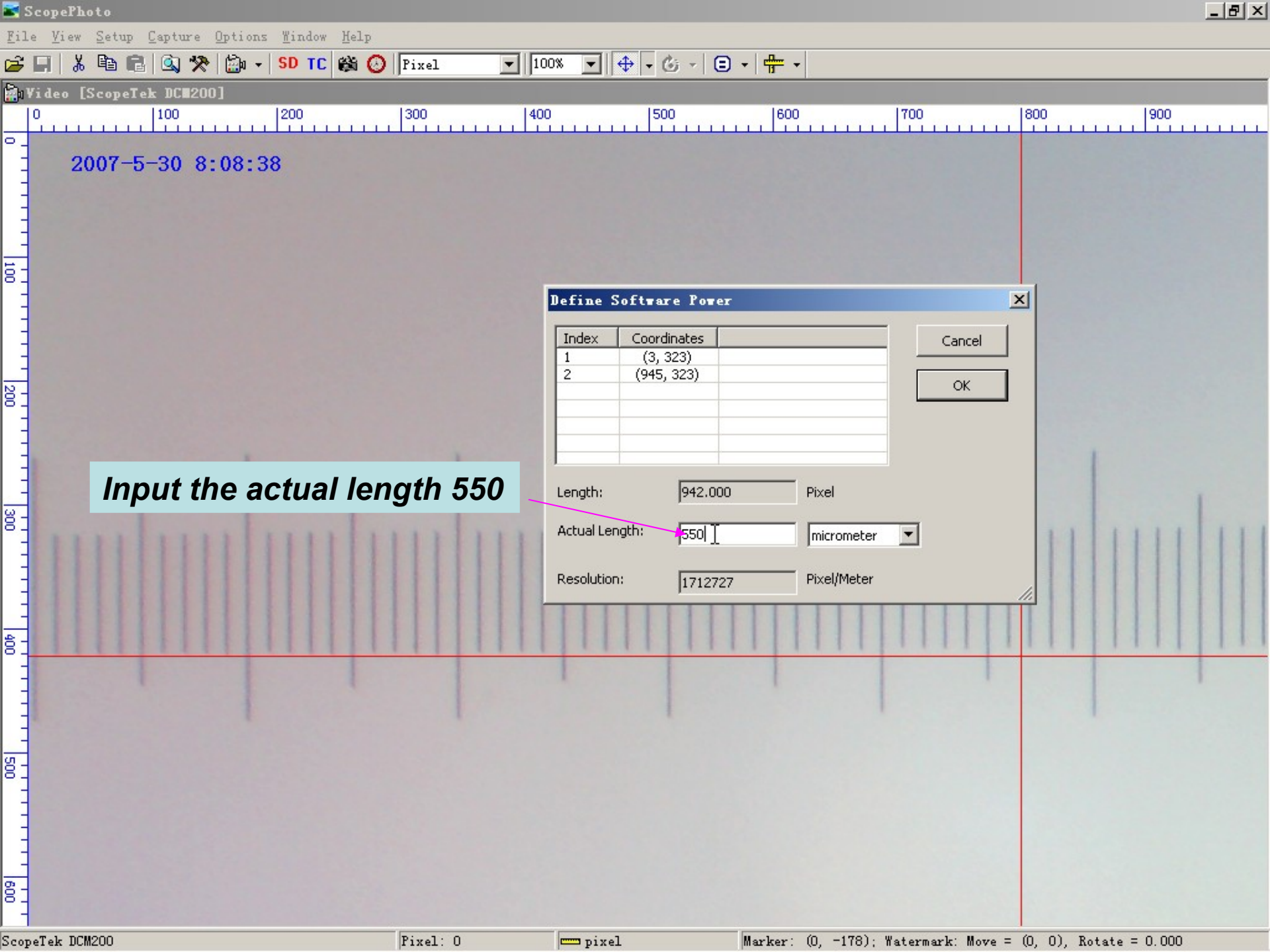






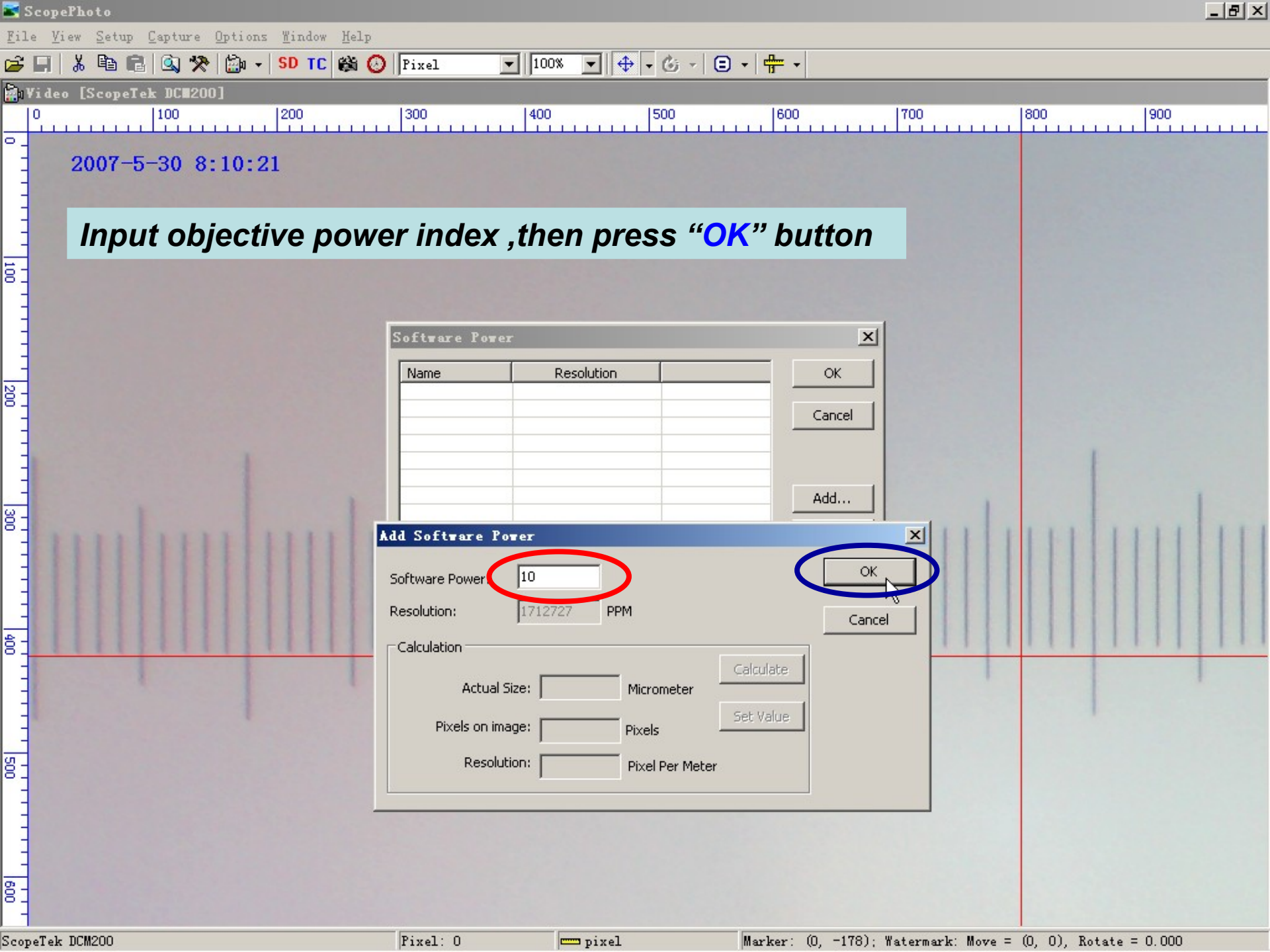












2007-5-30 8:10:21

***Input objective power index ,then press “OK” button***

Software Power

Name	Resolution

OK  
Cancel  
Add...

Add Software Power

Software Power: 10

Resolution: 1712727 PPM

Calculation

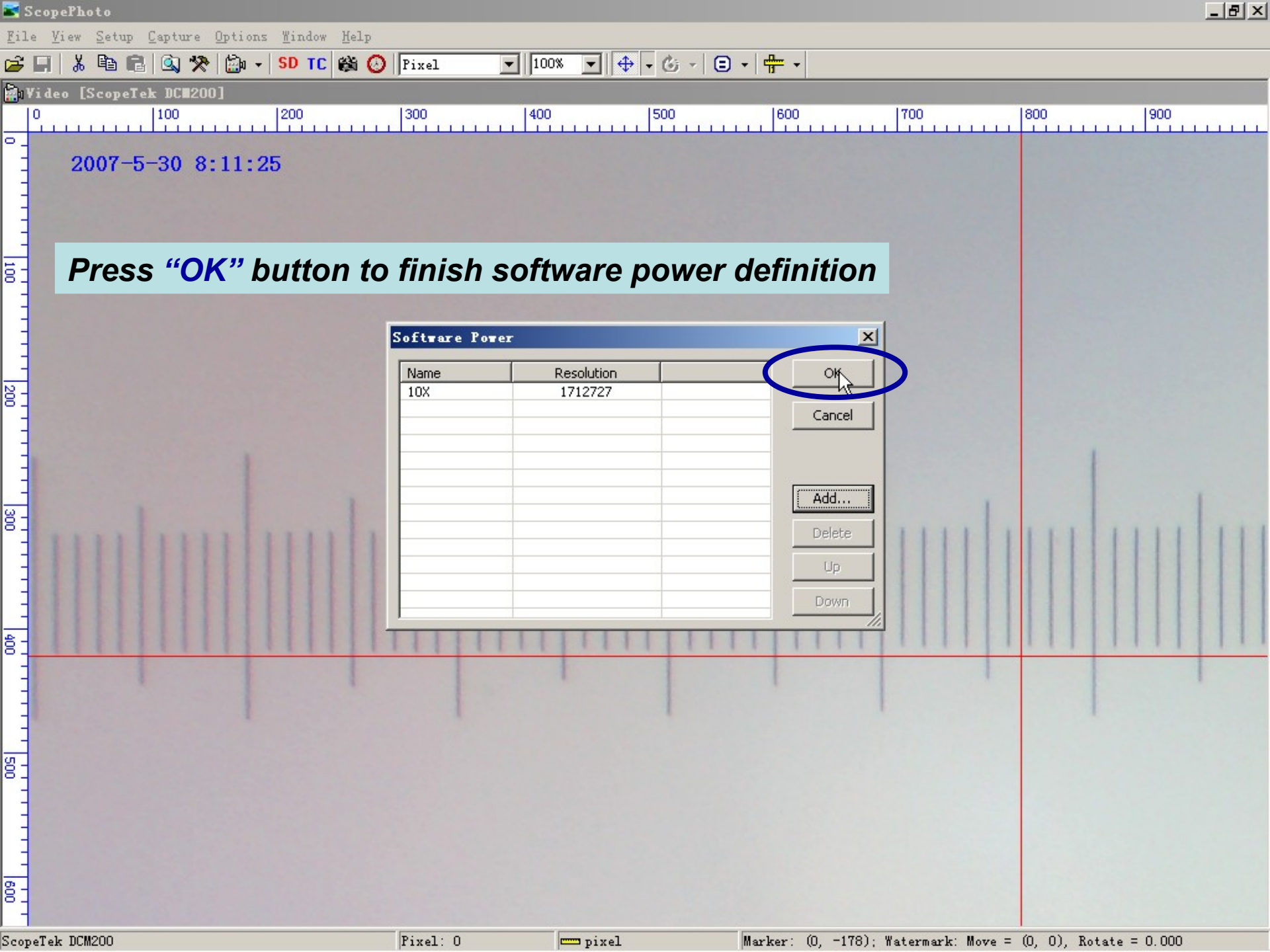
Actual Size:      Micrometer

Pixels on image:      Pixels

Resolution:      Pixel Per Meter

Calculate  
Set Value

OK  
Cancel



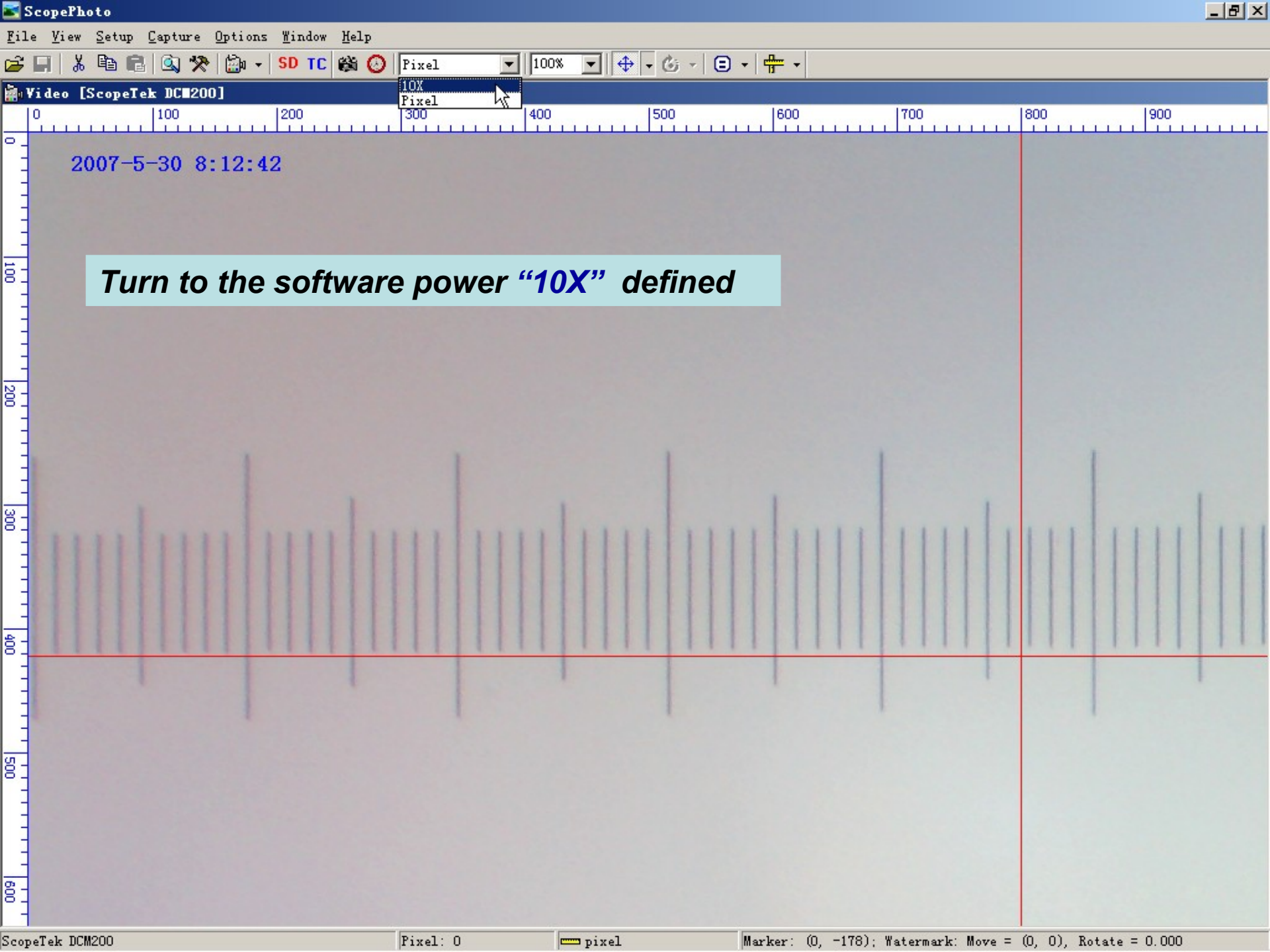
2007-5-30 8:11:25

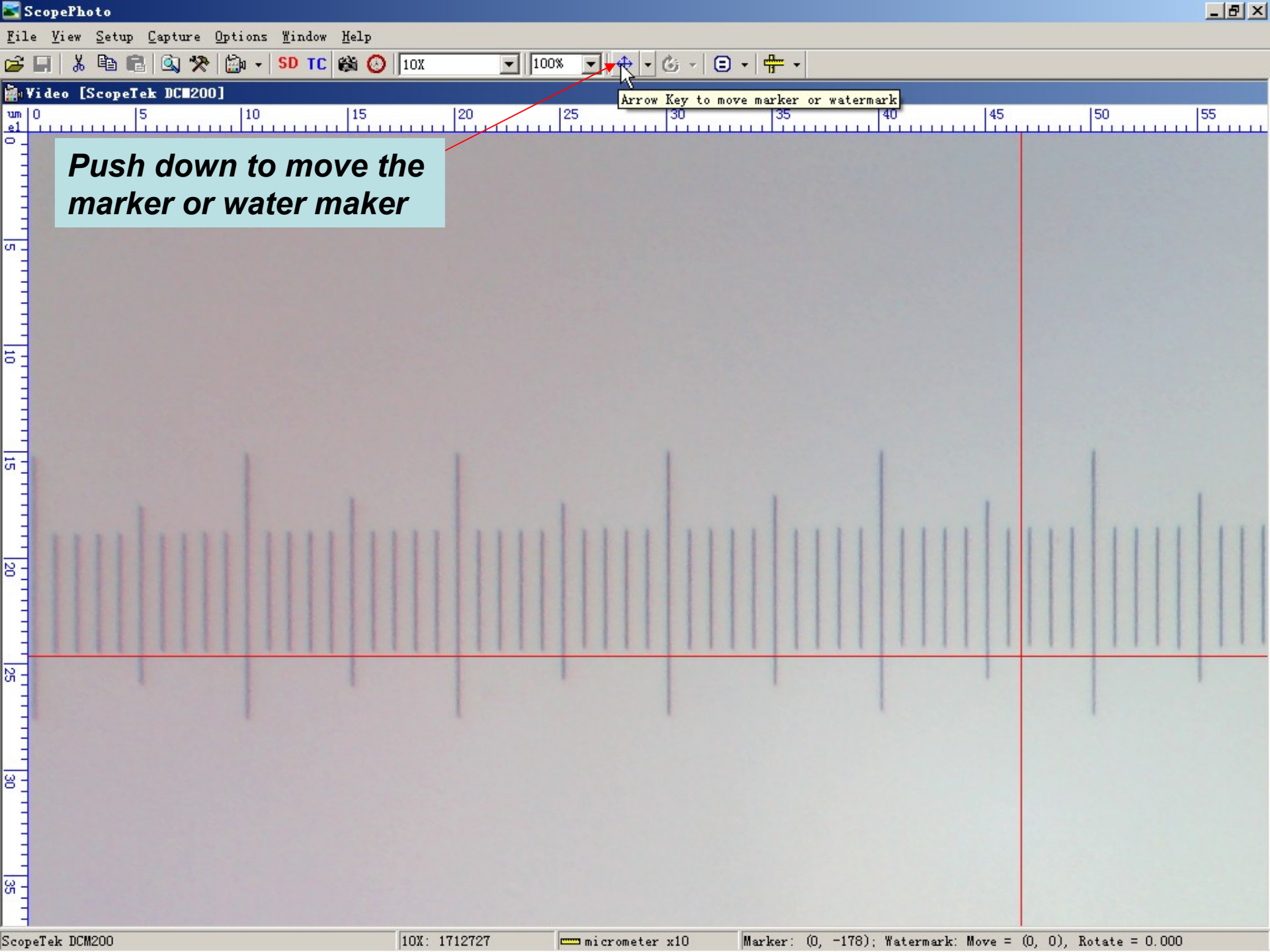
**Press "OK" button to finish software power definition**

Name	Resolution
10X	1712727

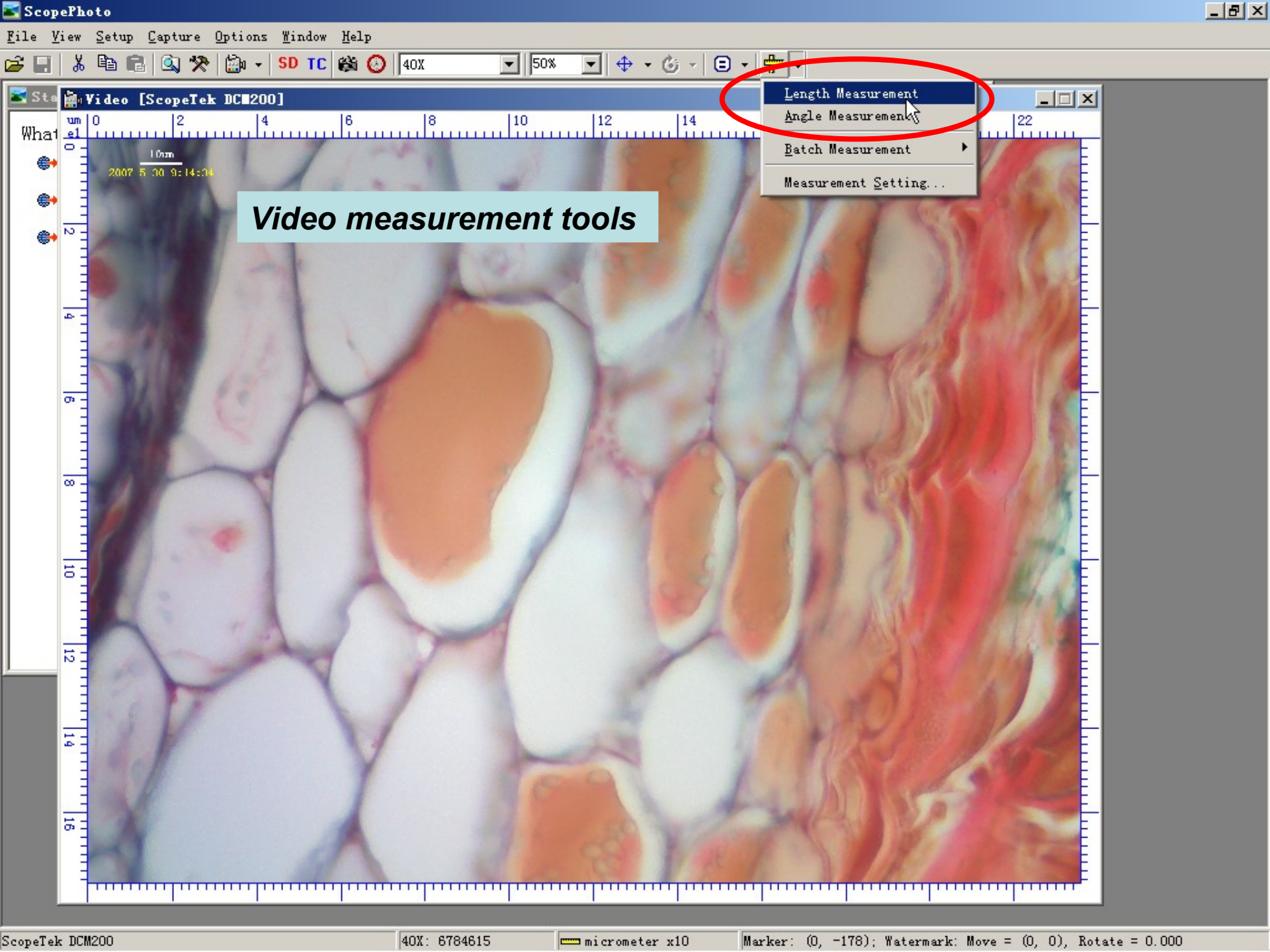
OK  
Cancel  
Add...  
Delete  
Up  
Down











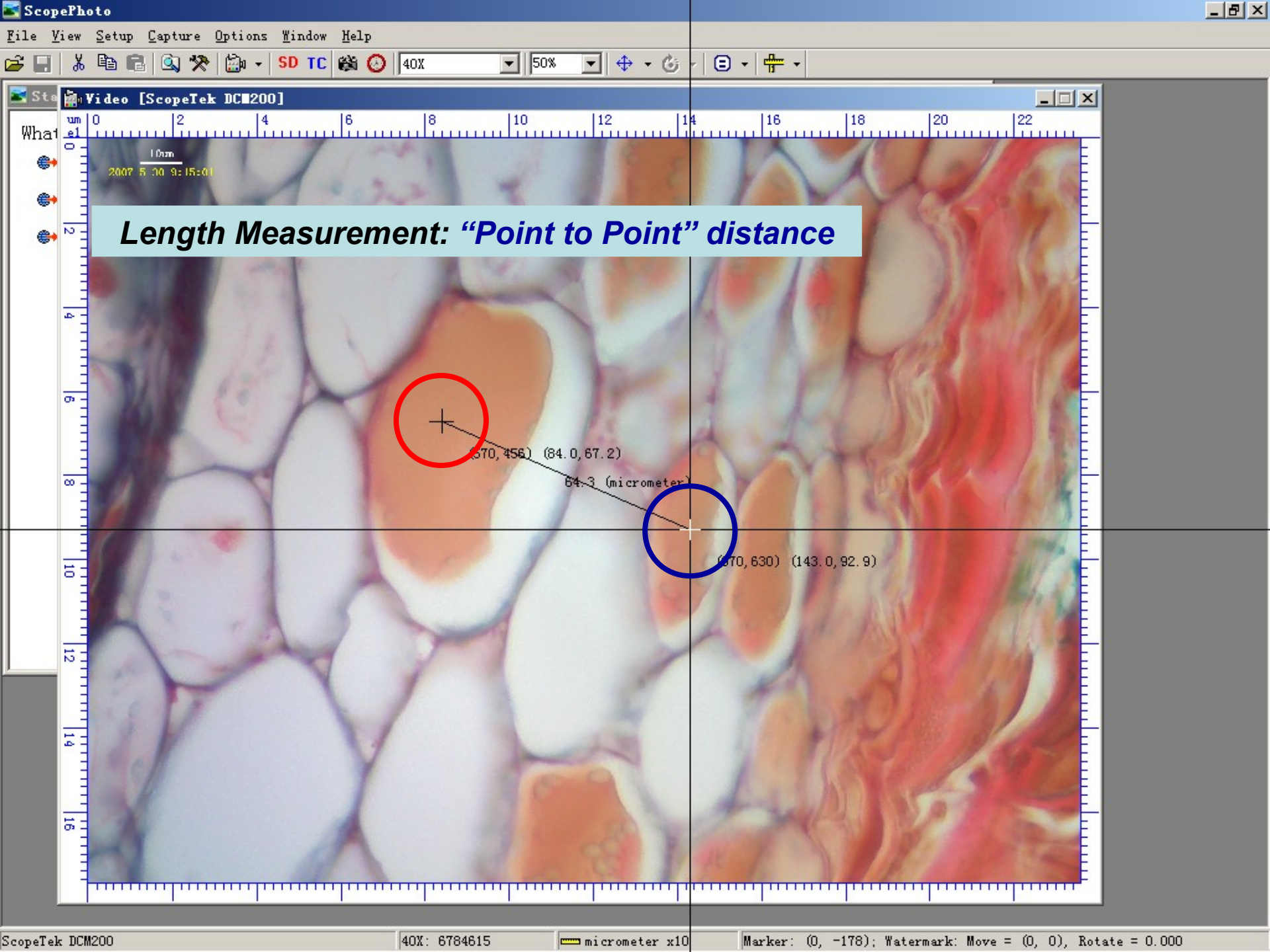
***Video measurement tools***

Length Measurement

Angle Measurement

Batch Measurement

Measurement Setting...



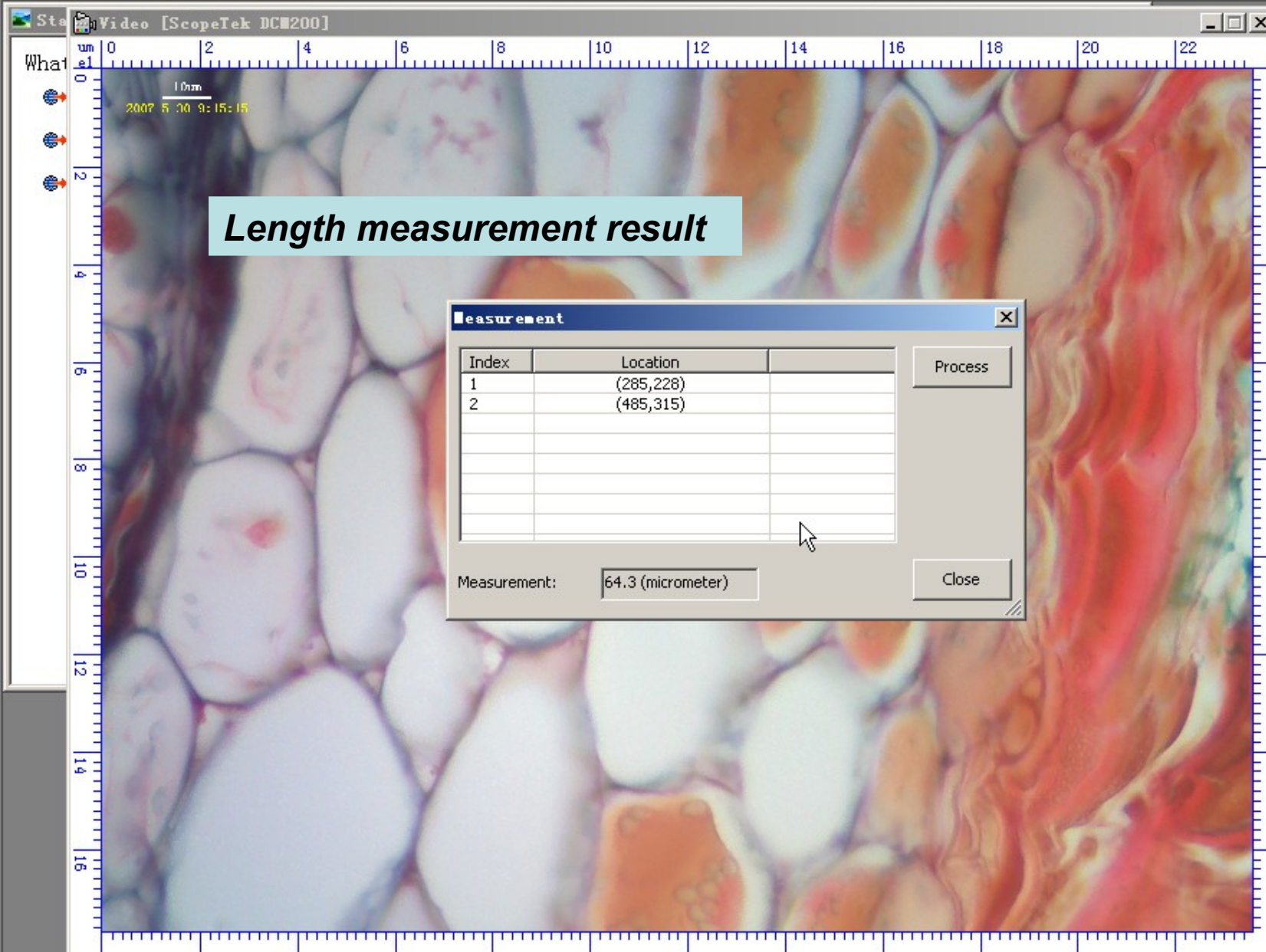
**Length Measurement: "Point to Point" distance**

(370, 456) (84.0, 67.2)

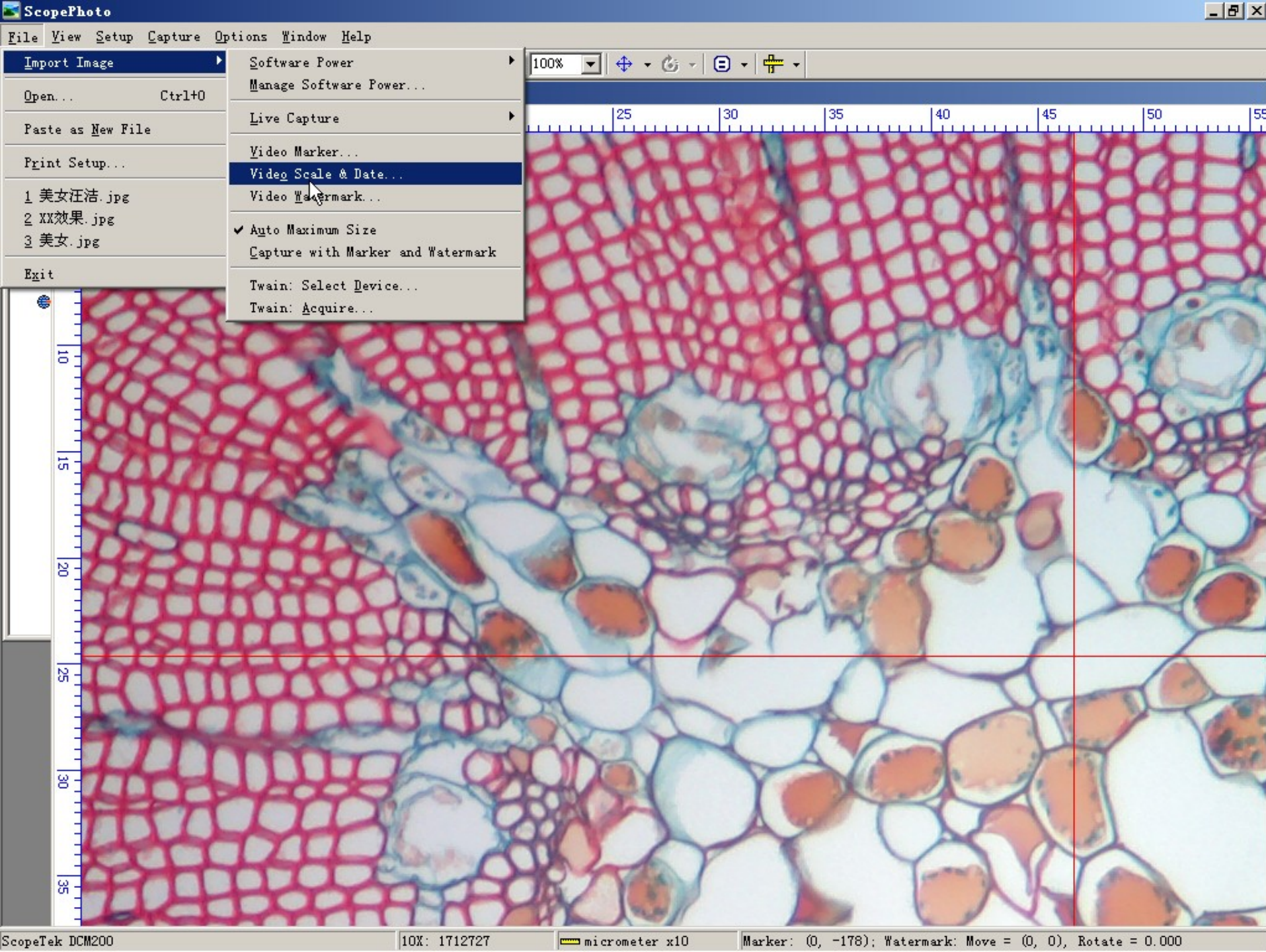
64.3 (micrometer)

(370, 630) (143.0, 92.9)

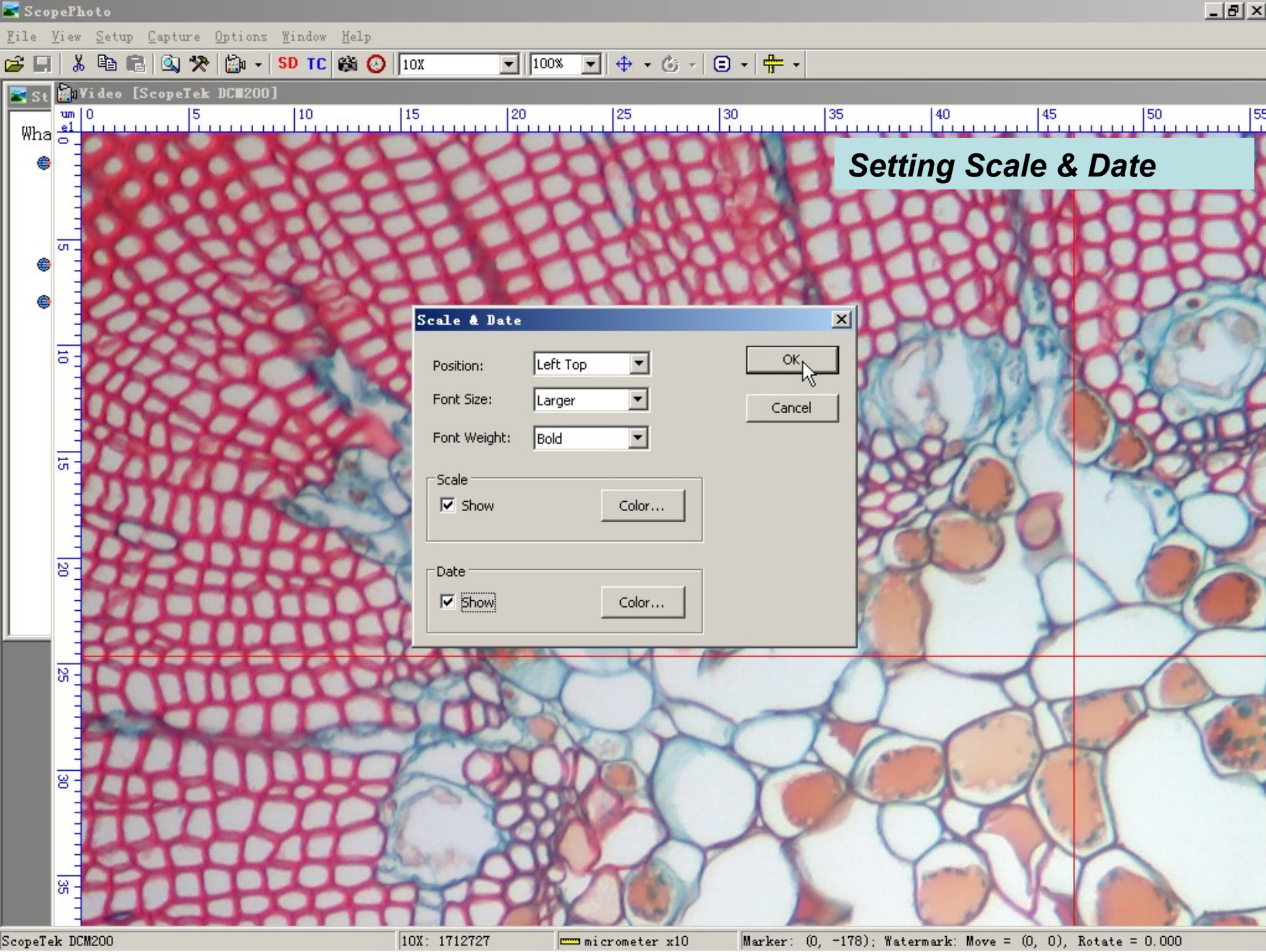




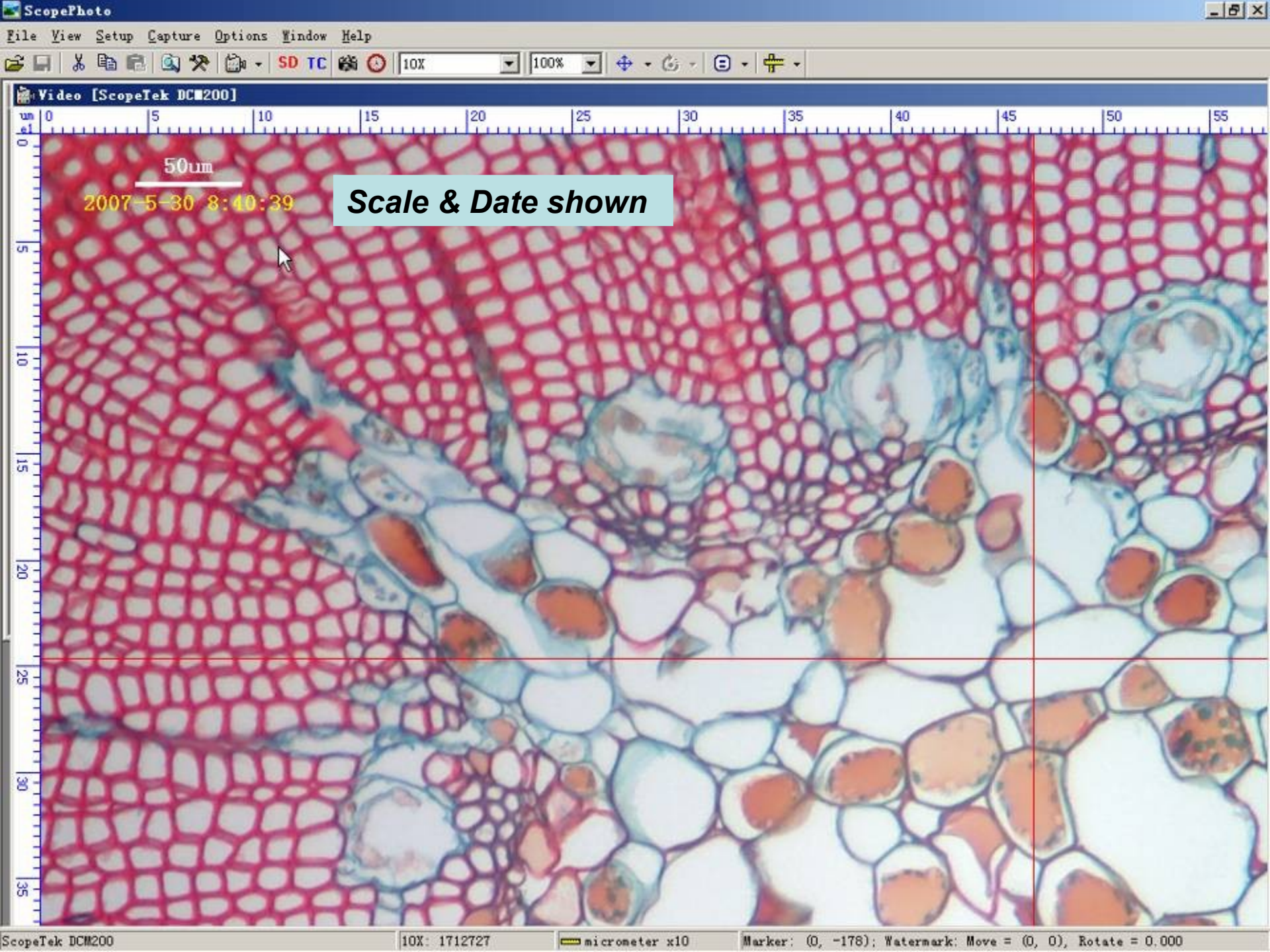




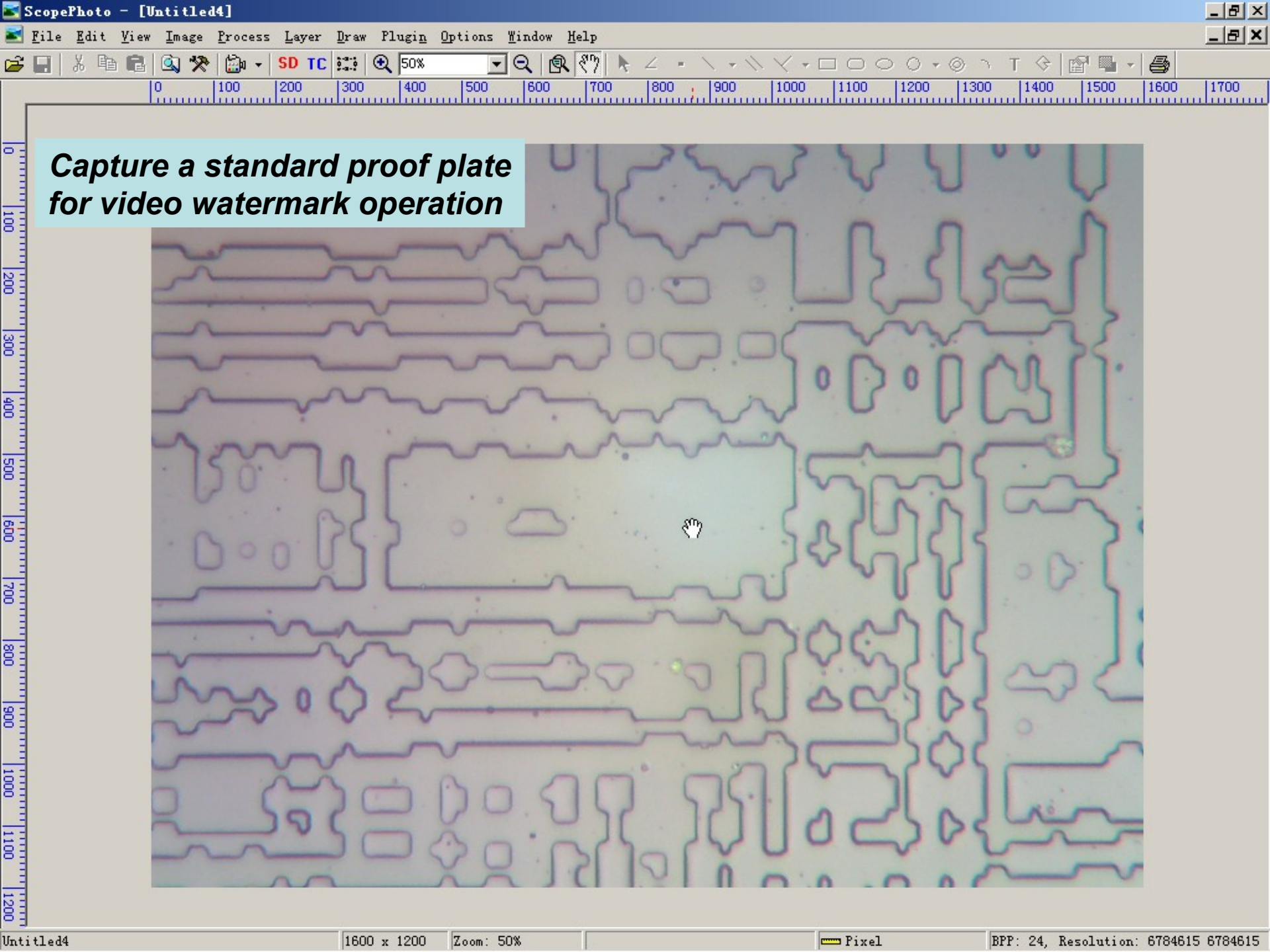




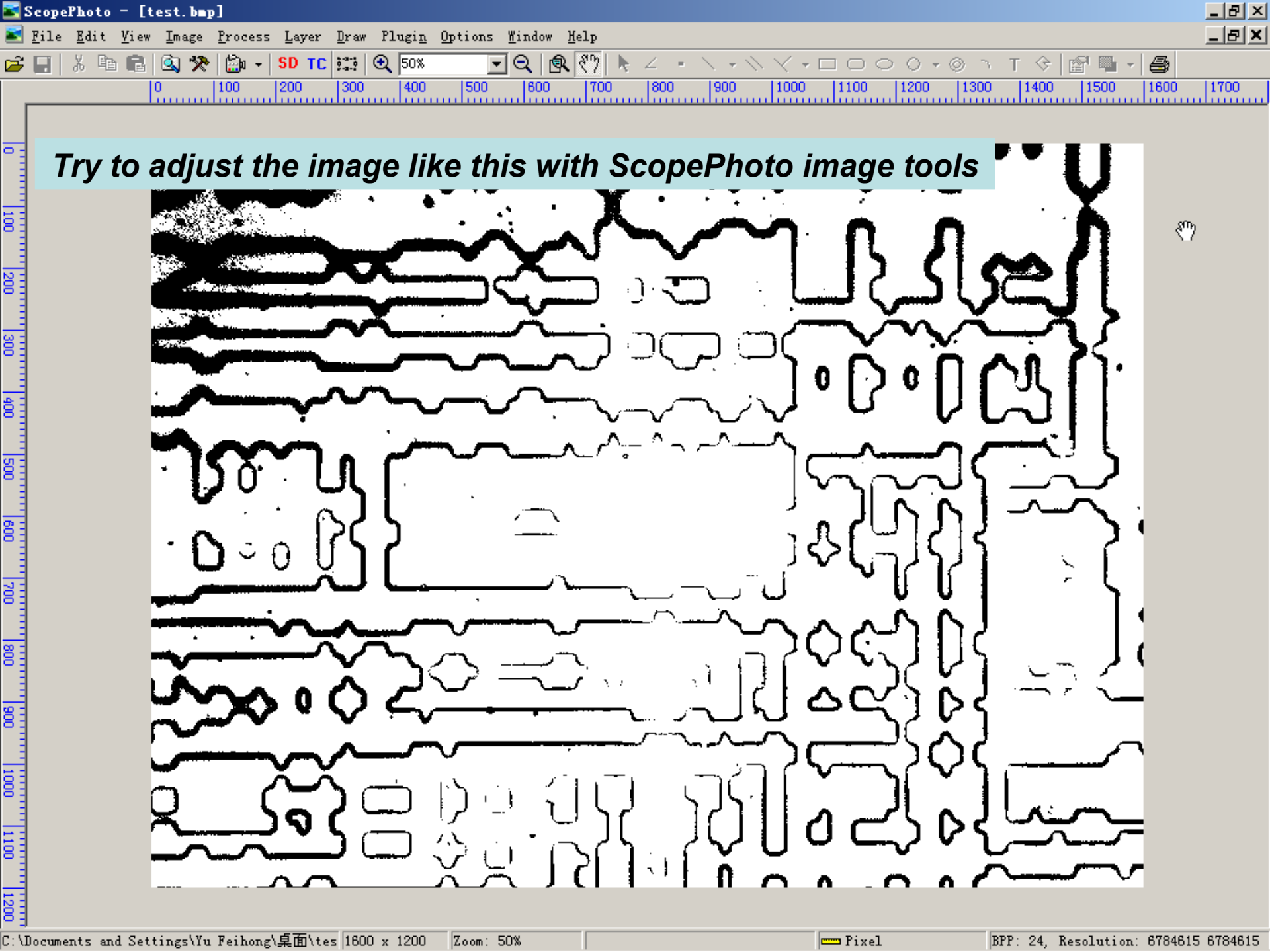


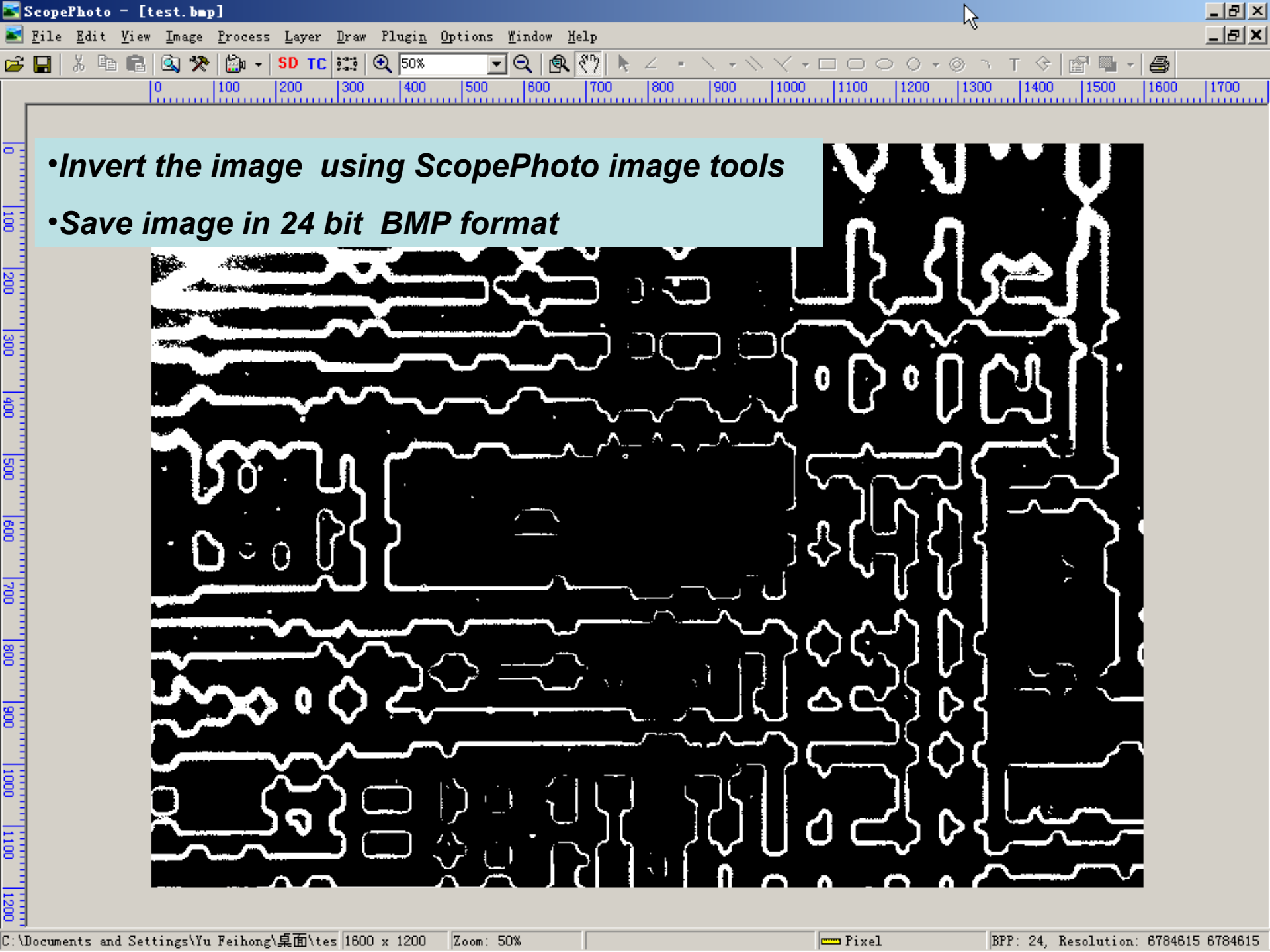






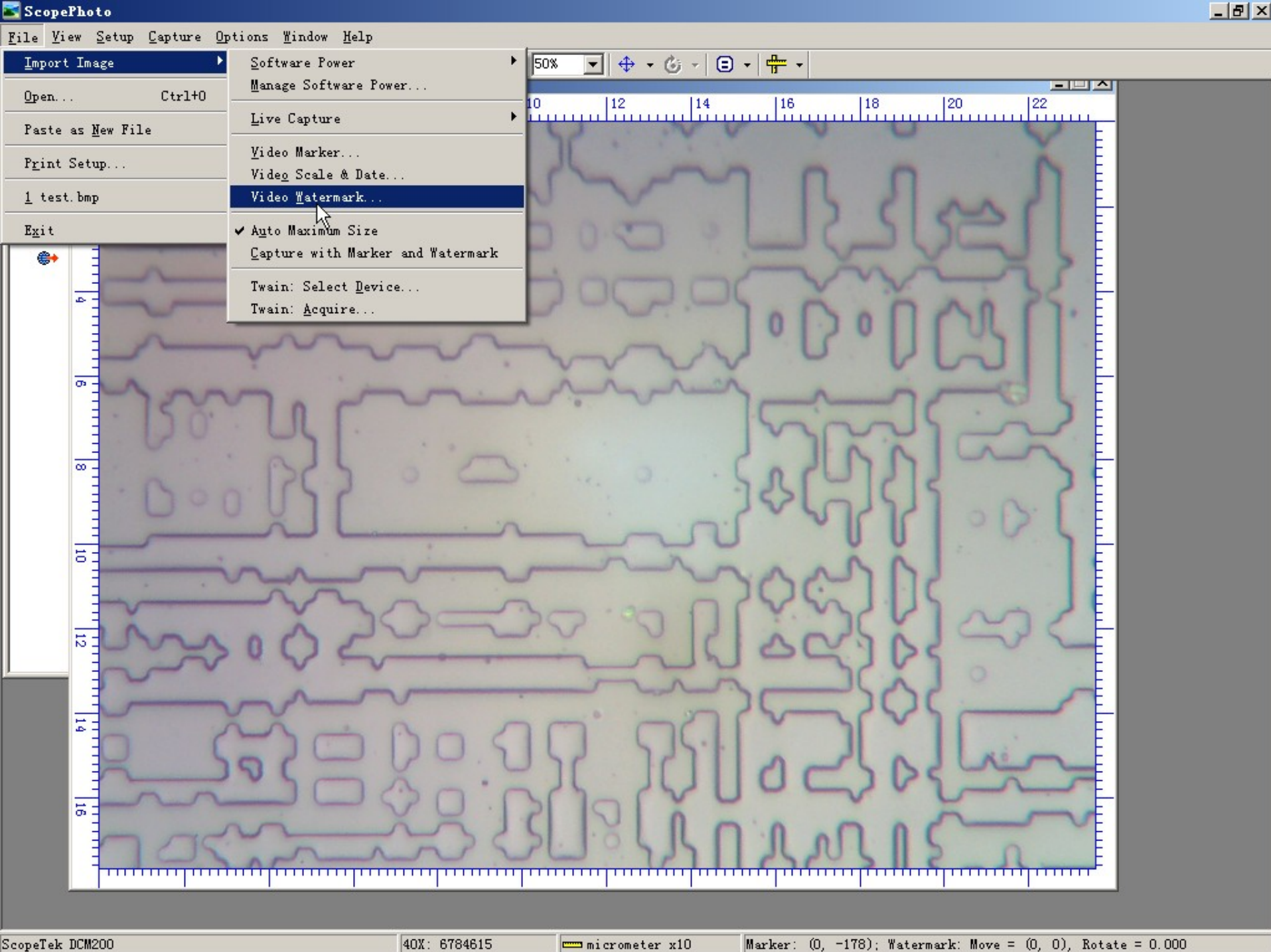
***Capture a standard proof plate  
for video watermark operation***



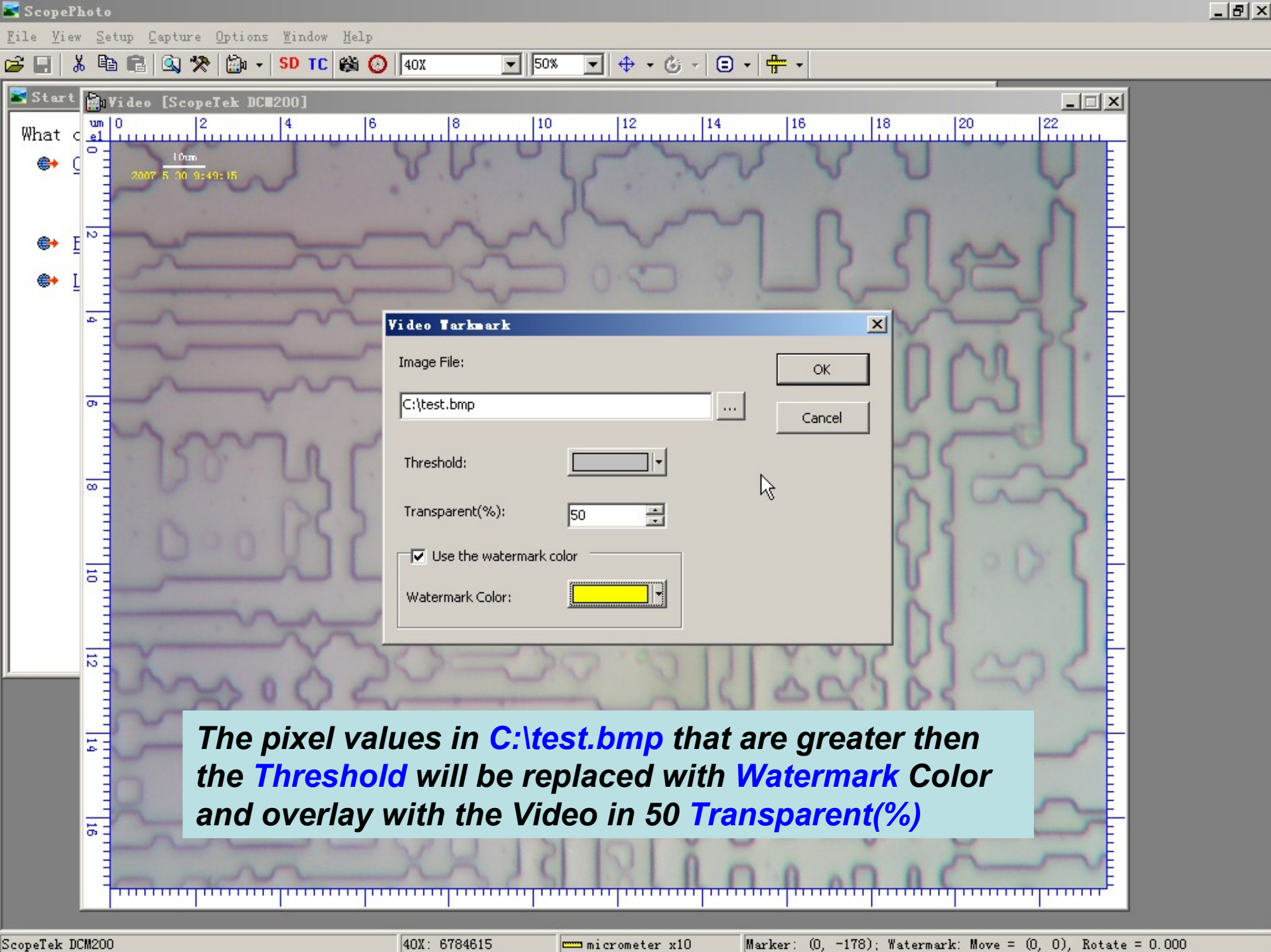


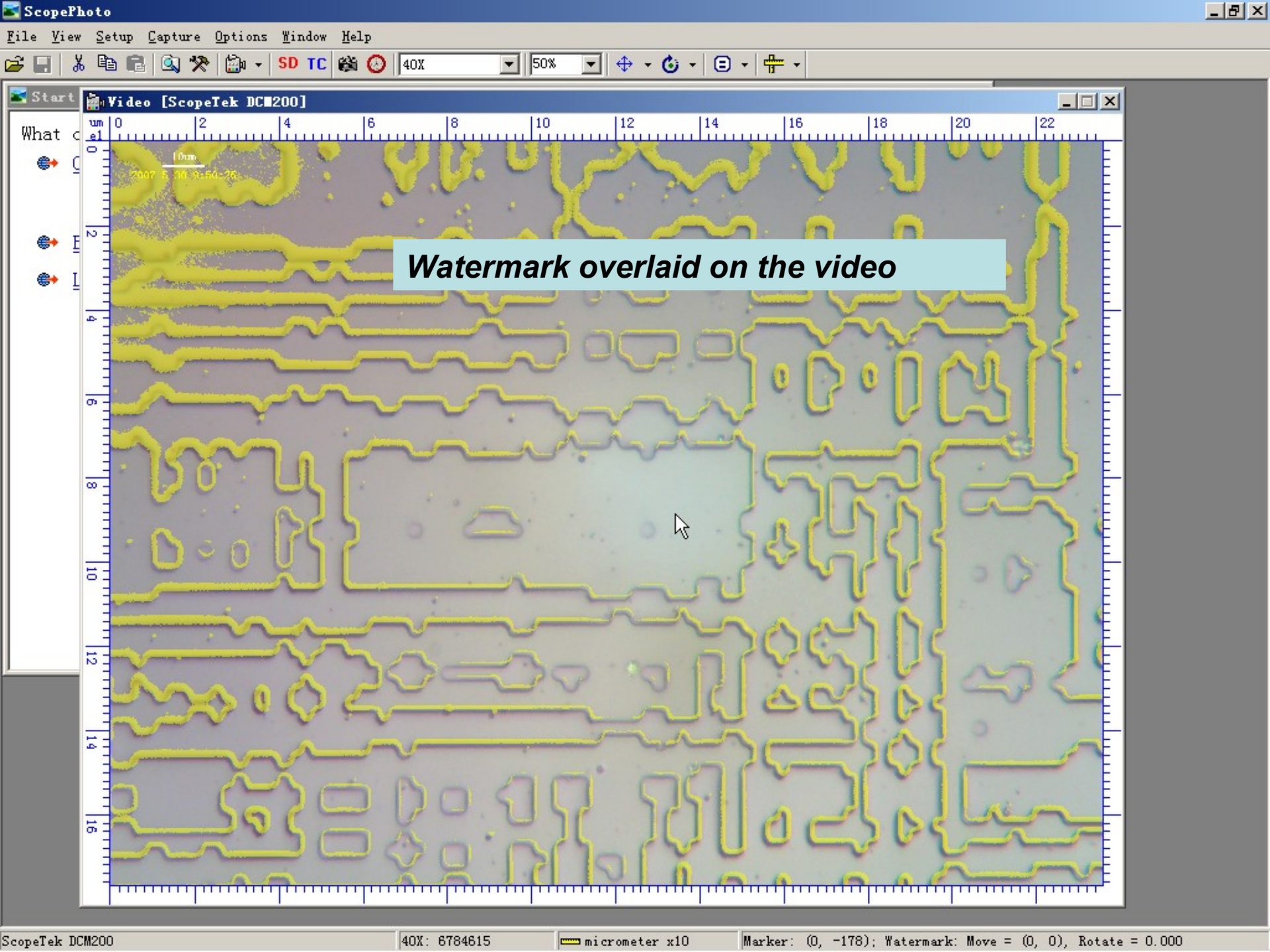
- *Invert the image using ScopePhoto image tools*
- *Save image in 24 bit BMP format*





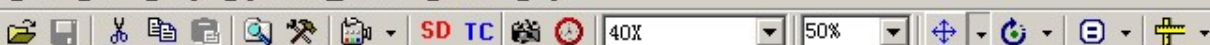




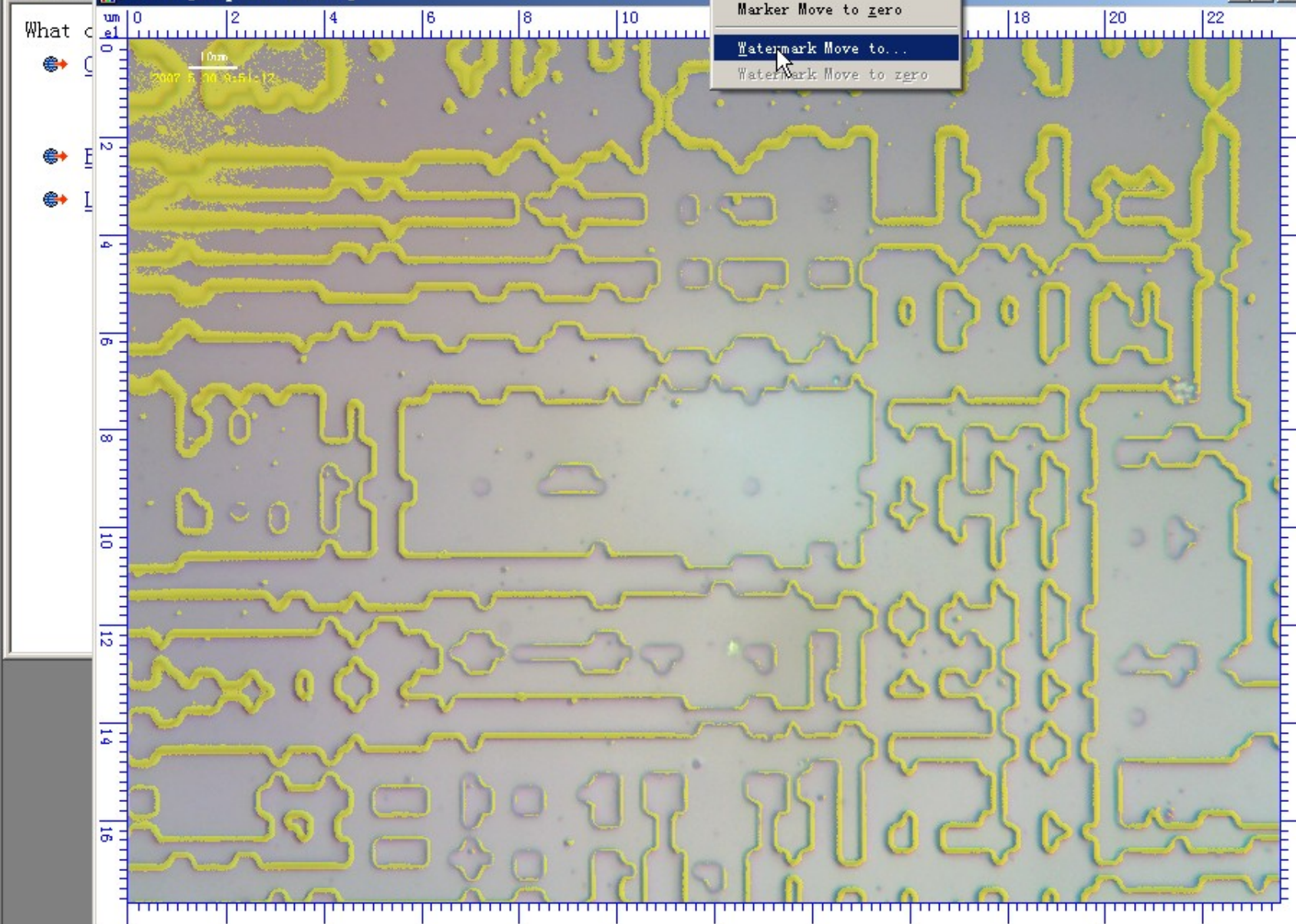


***Watermark overlaid on the video***

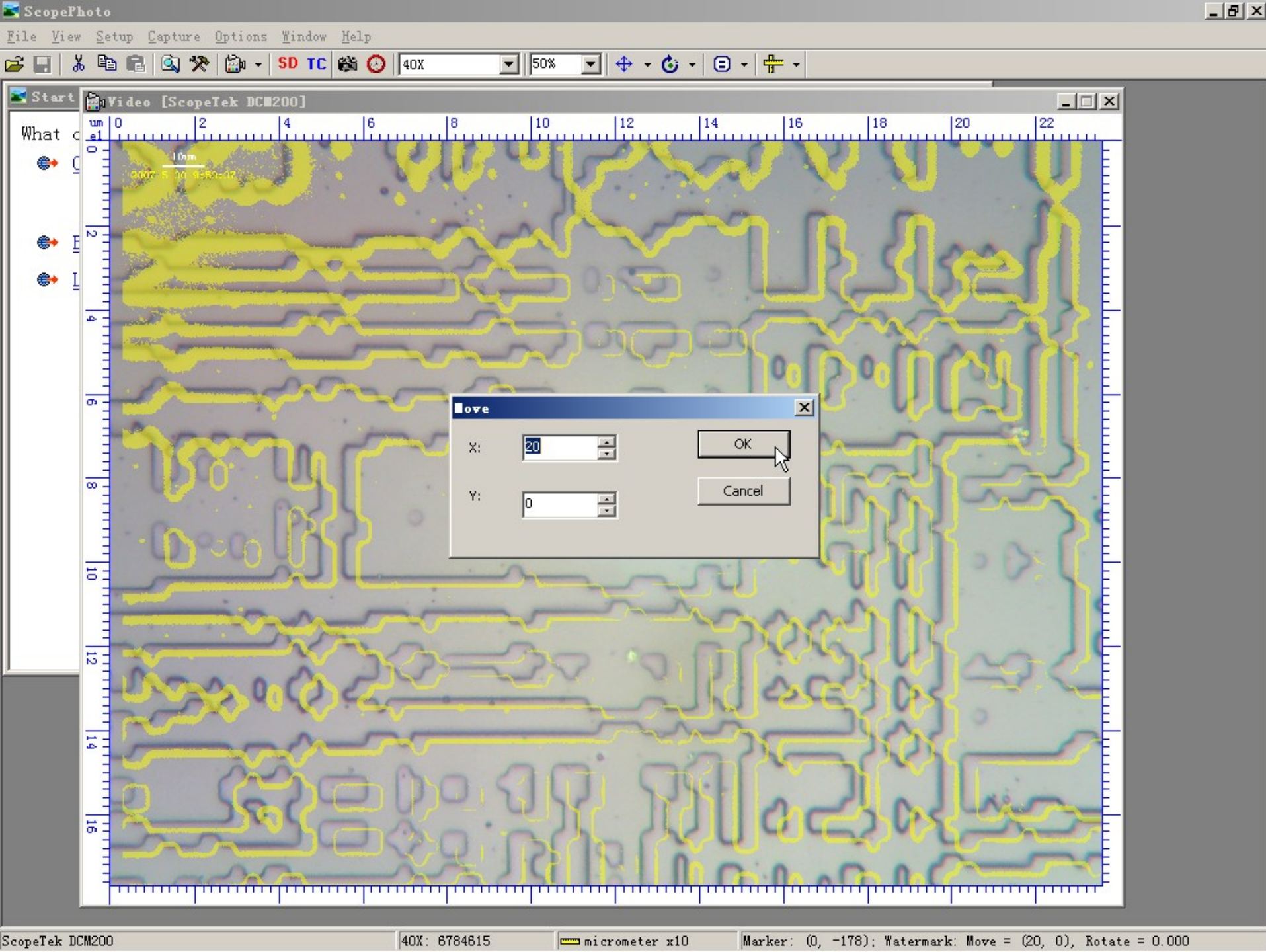




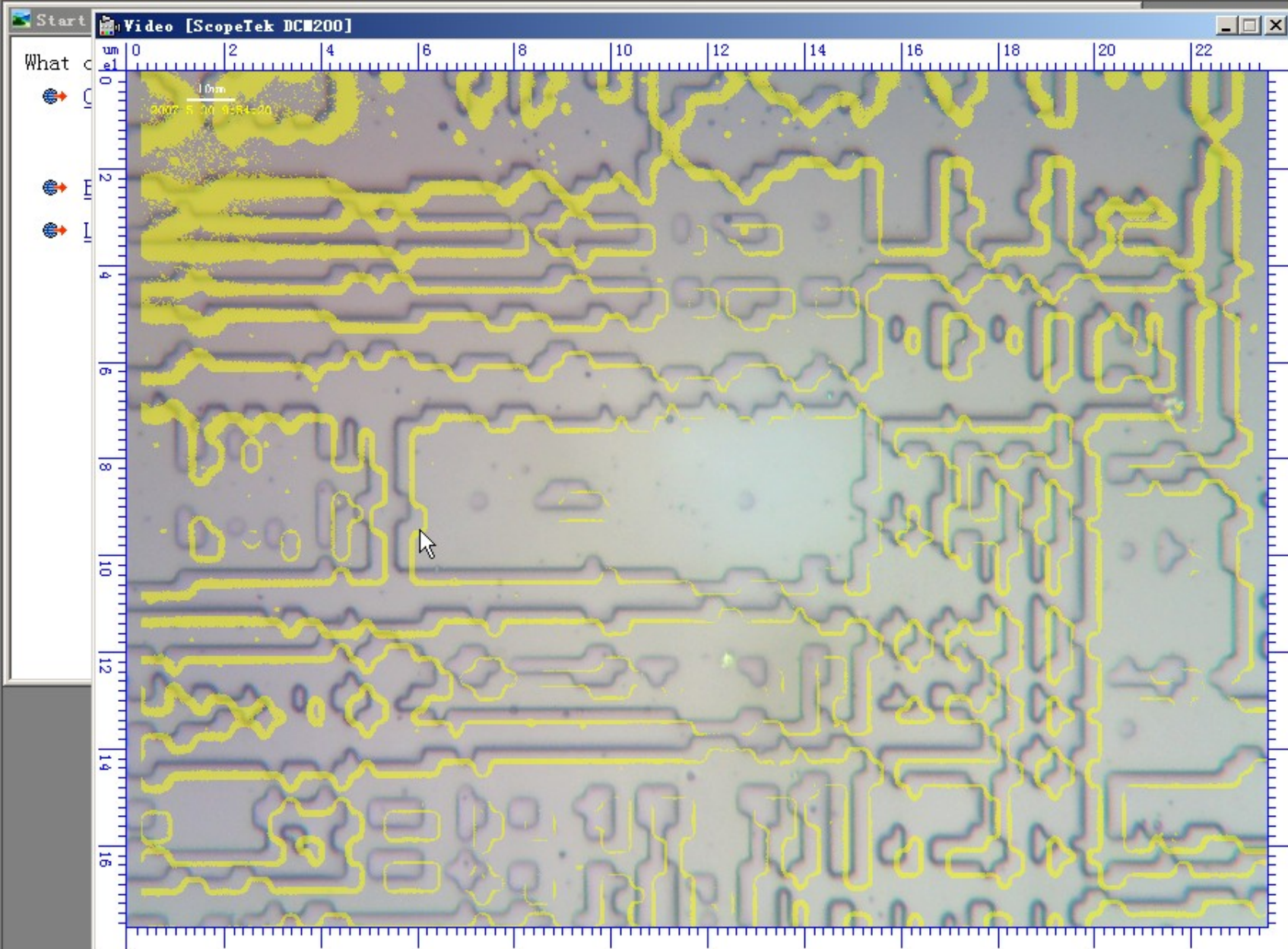
Start Video [ScopeTek DCM200]



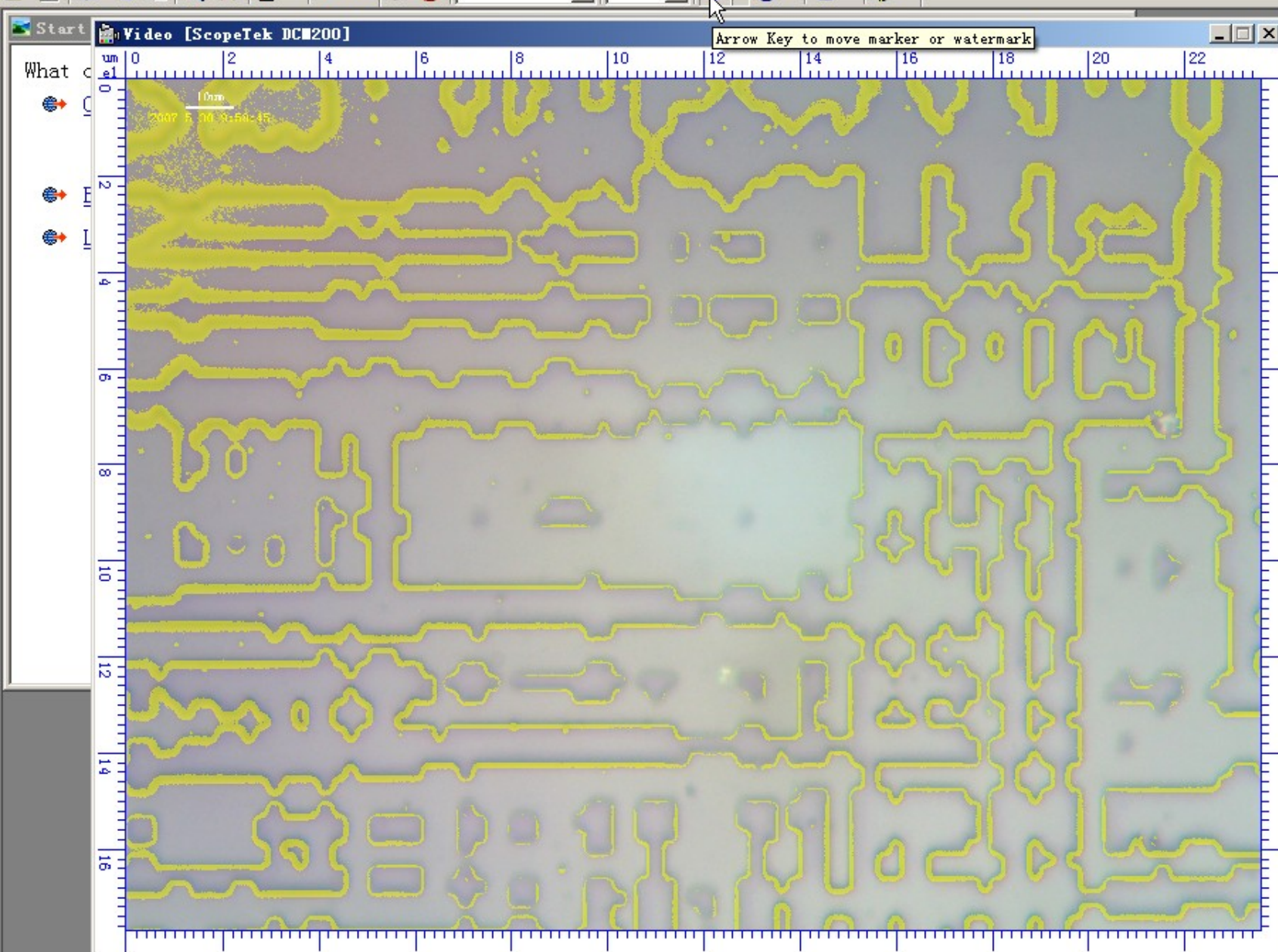




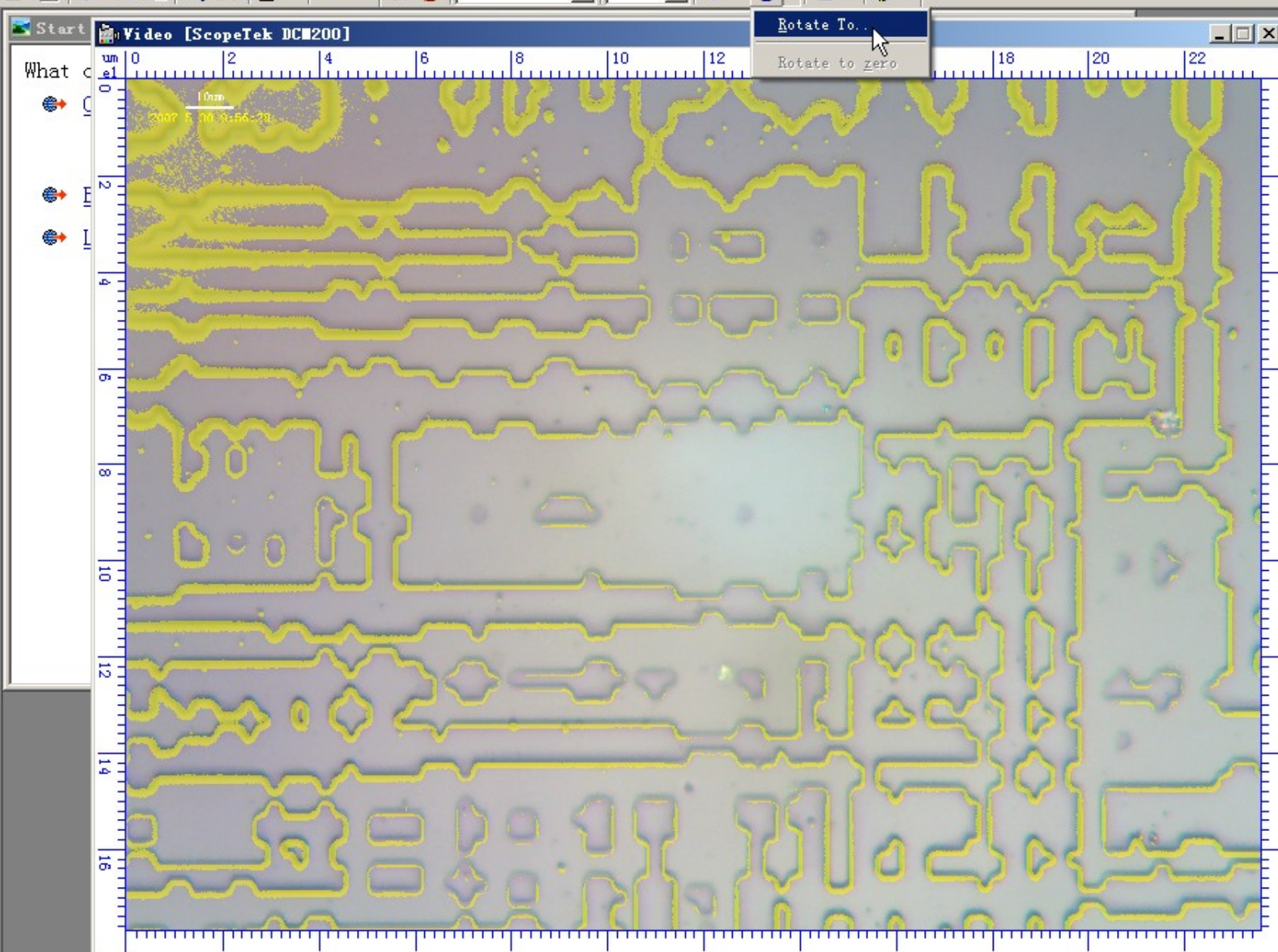




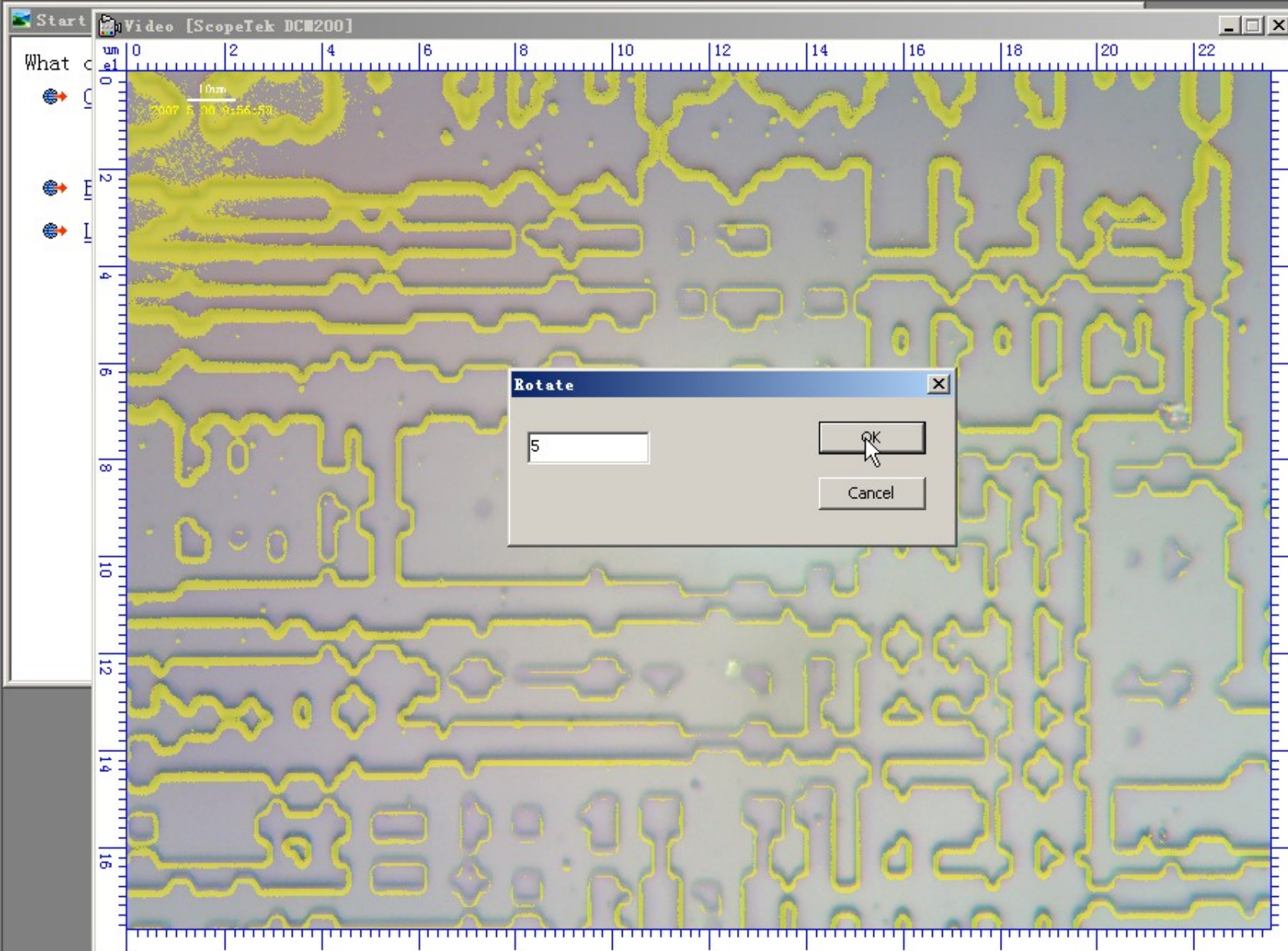




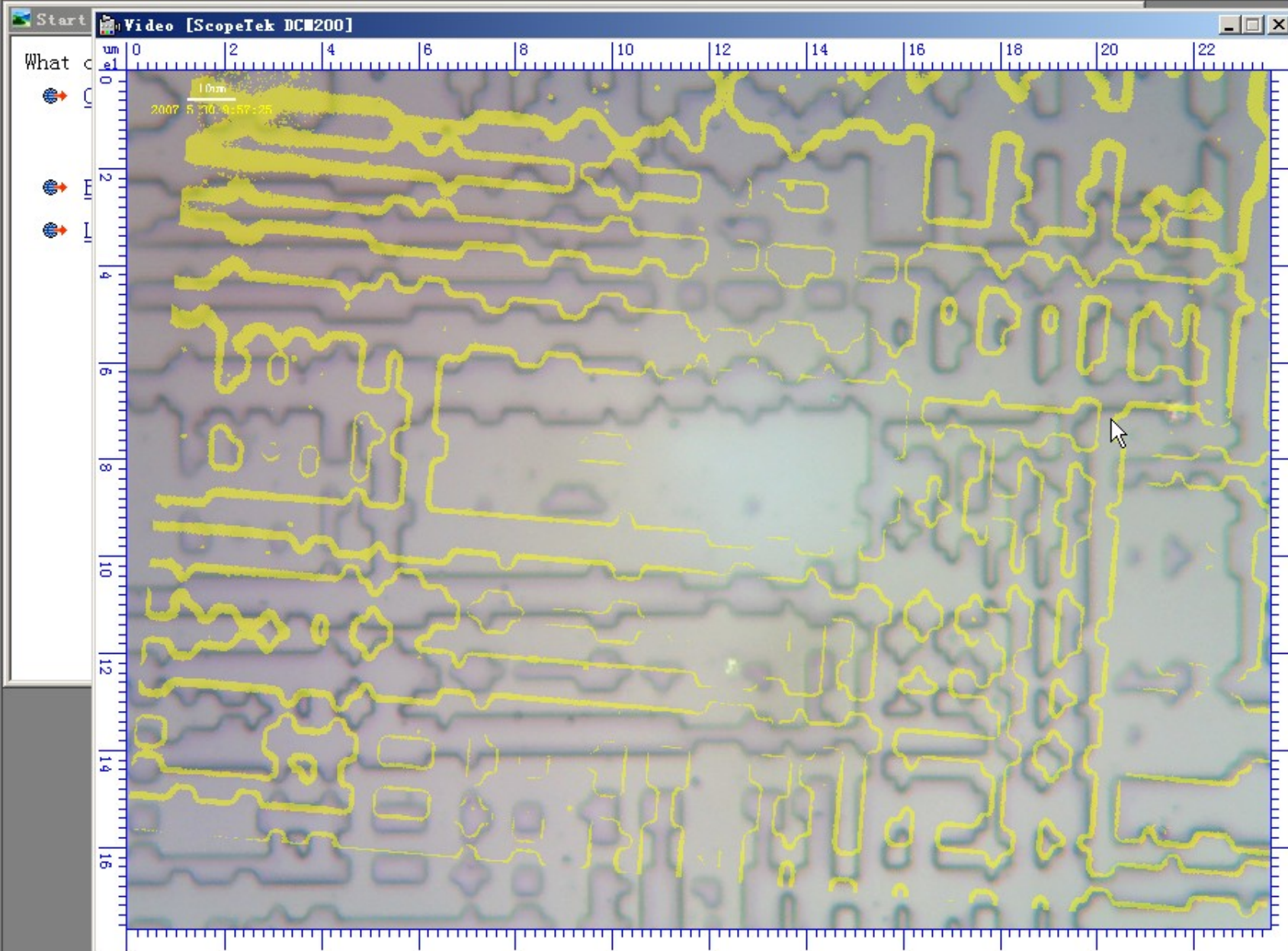




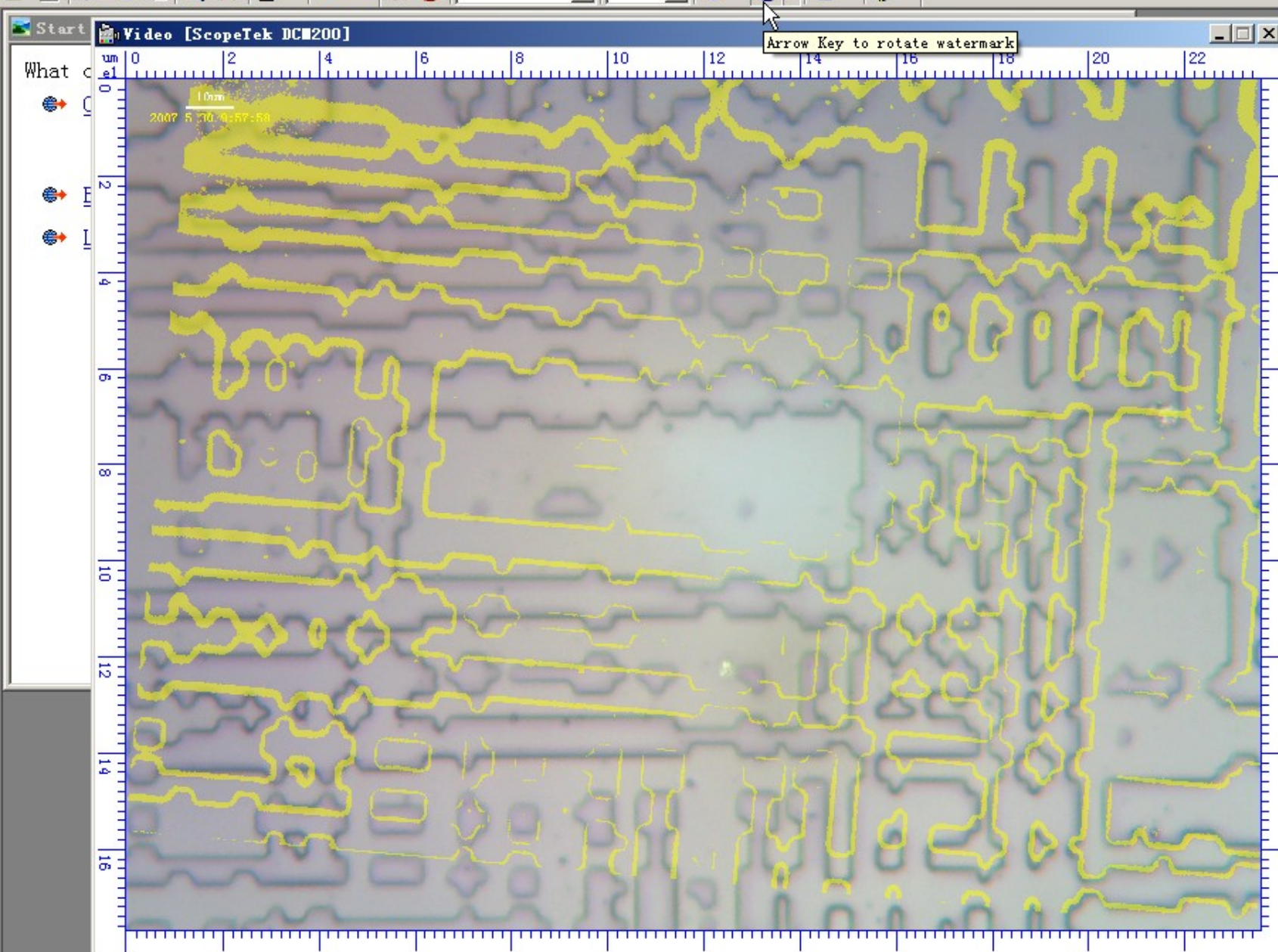










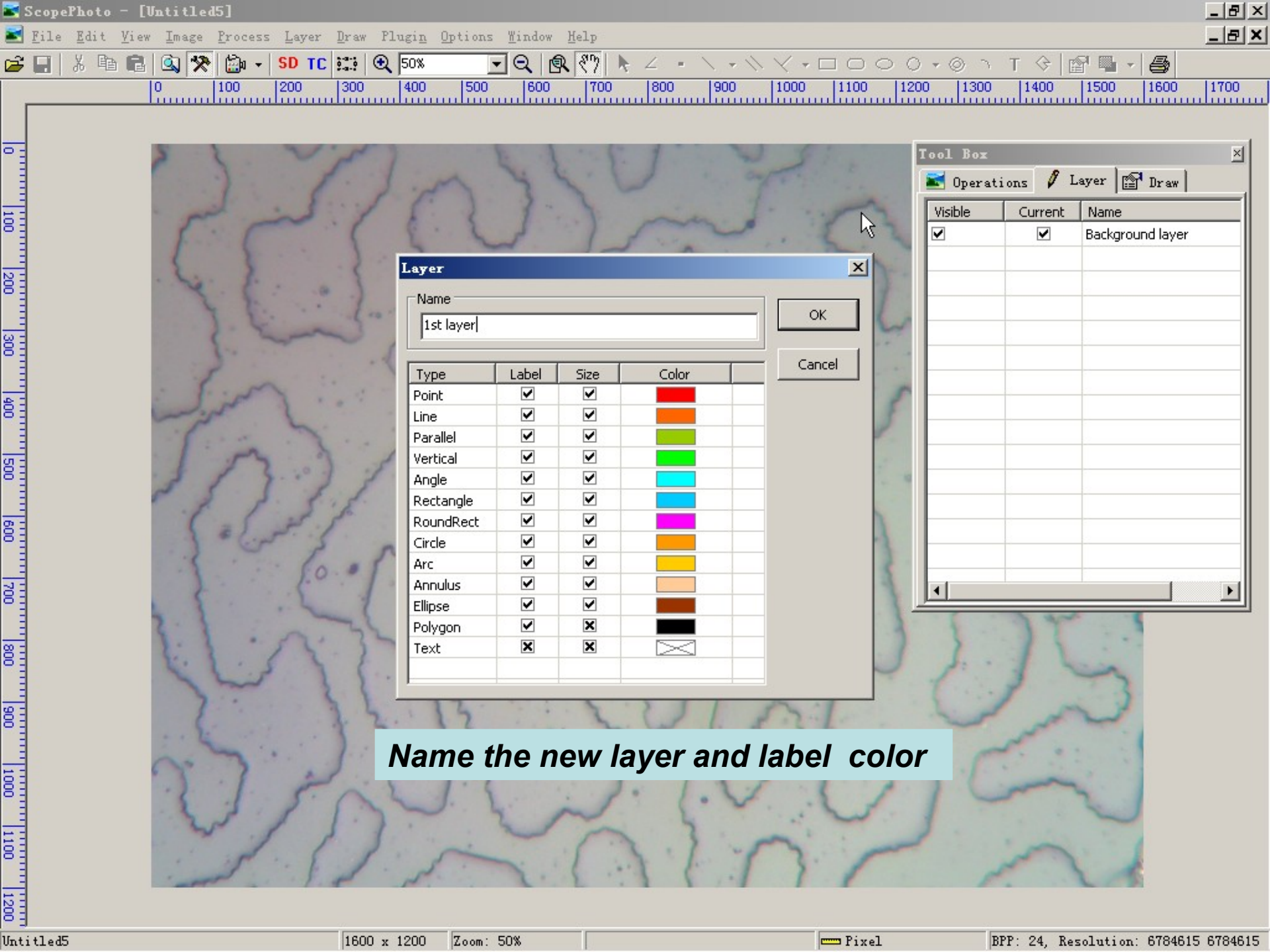


# ***Layer and Draw***



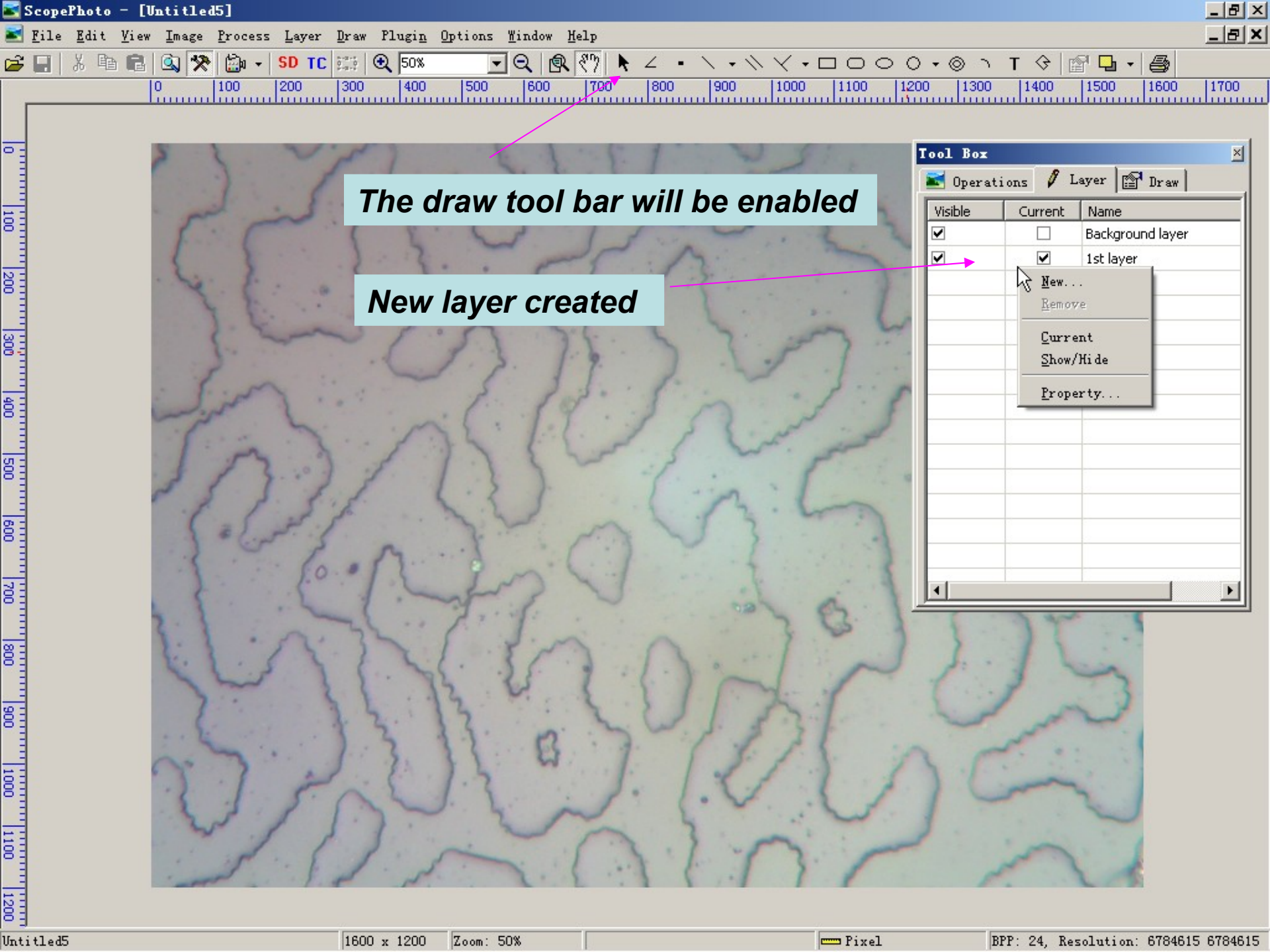


*Insert a new layer*



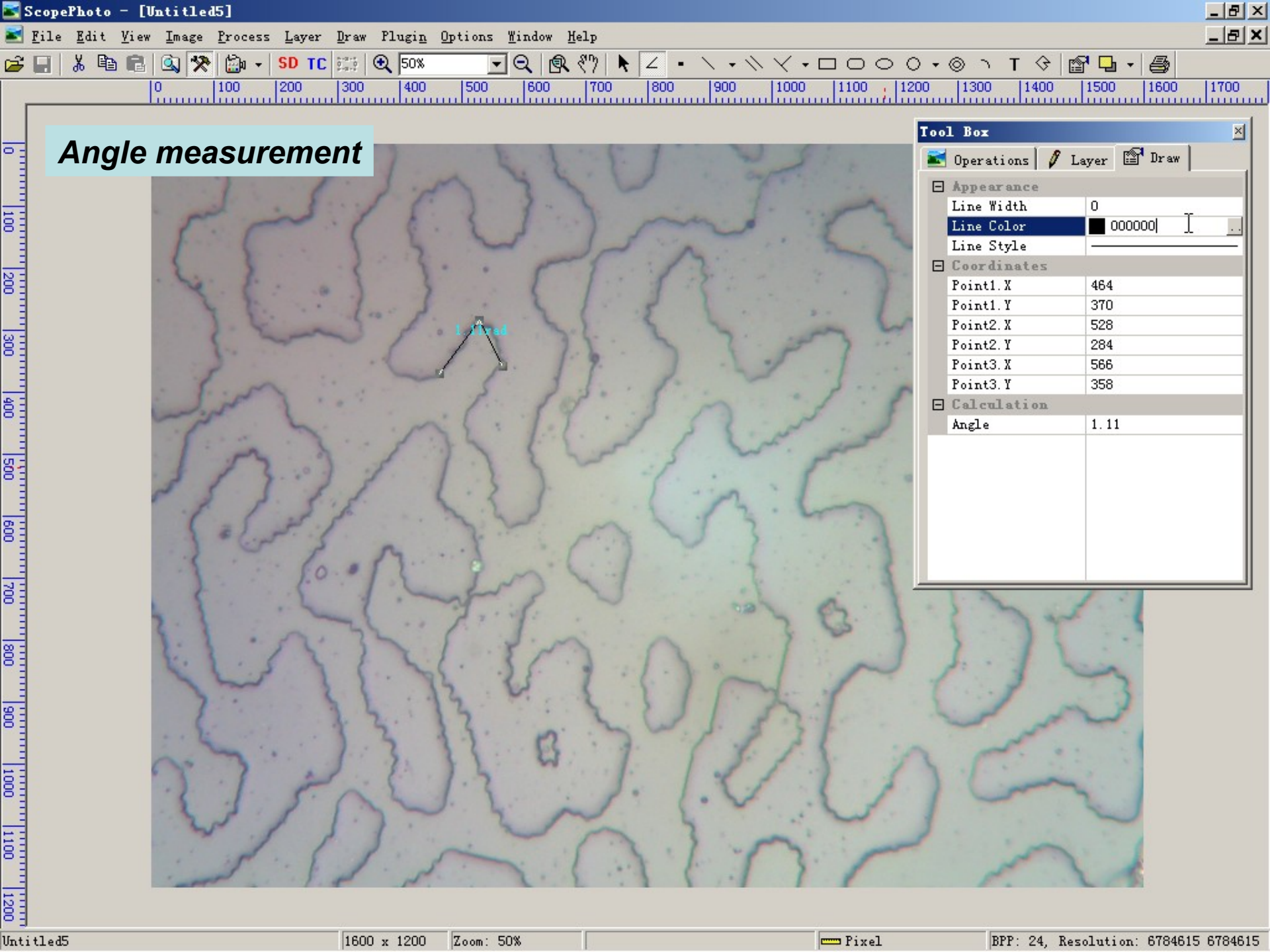
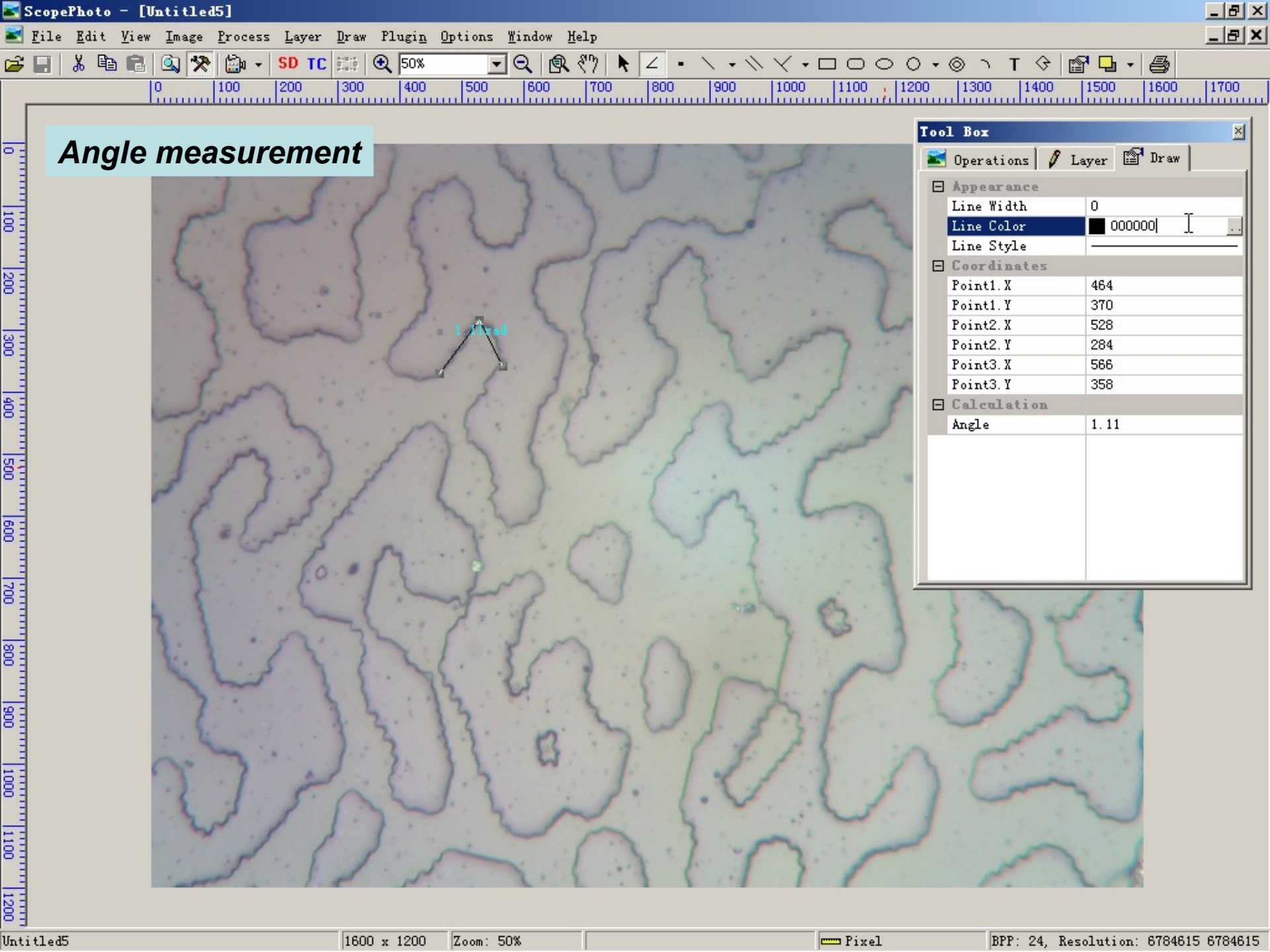
***Name the new layer and label color***





*The draw tool bar will be enabled*

*New layer created*



## Angle measurement

**Tool Box**

Operations | Layer | Draw

Appearance

Line Width0

Line Color000000

Line Style

Coordinates

Point1.X464

Point1.Y370

Point2.X528

Point2.Y284

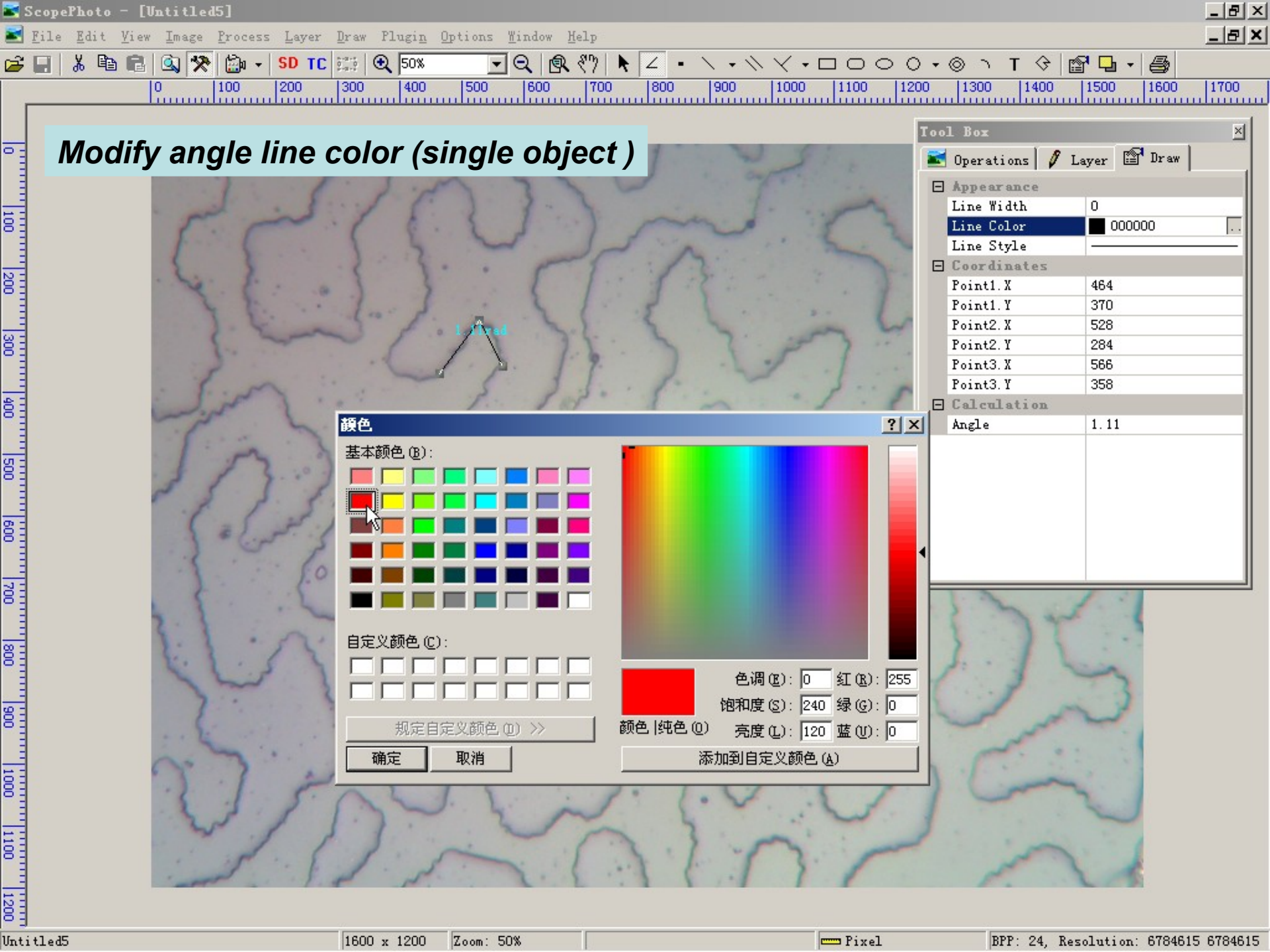
Point3.X566

Point3.Y358

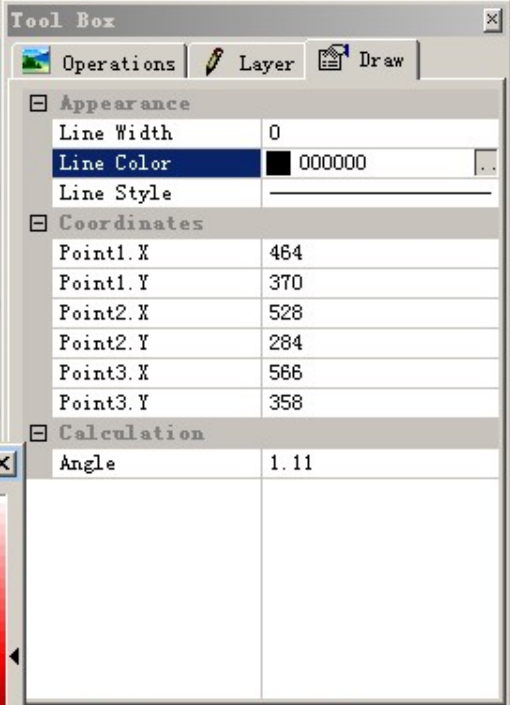
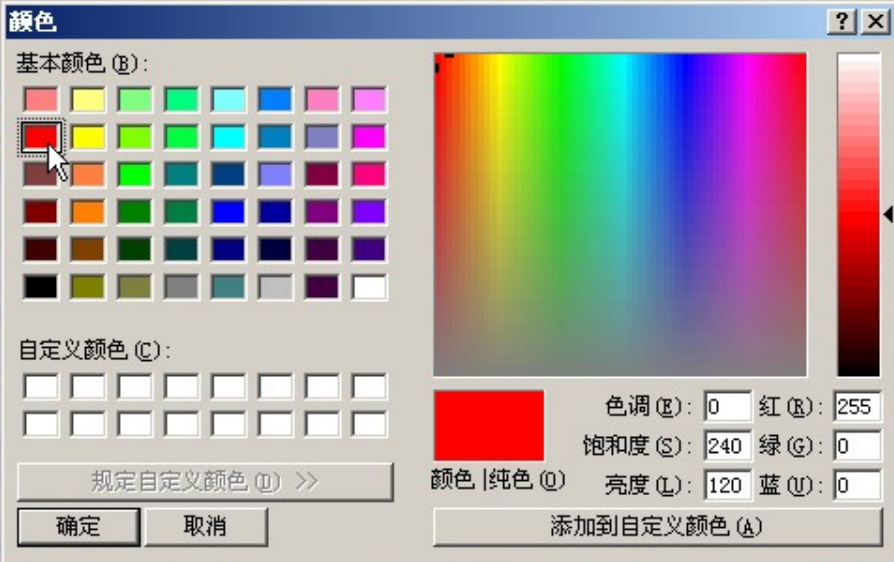
Calculation

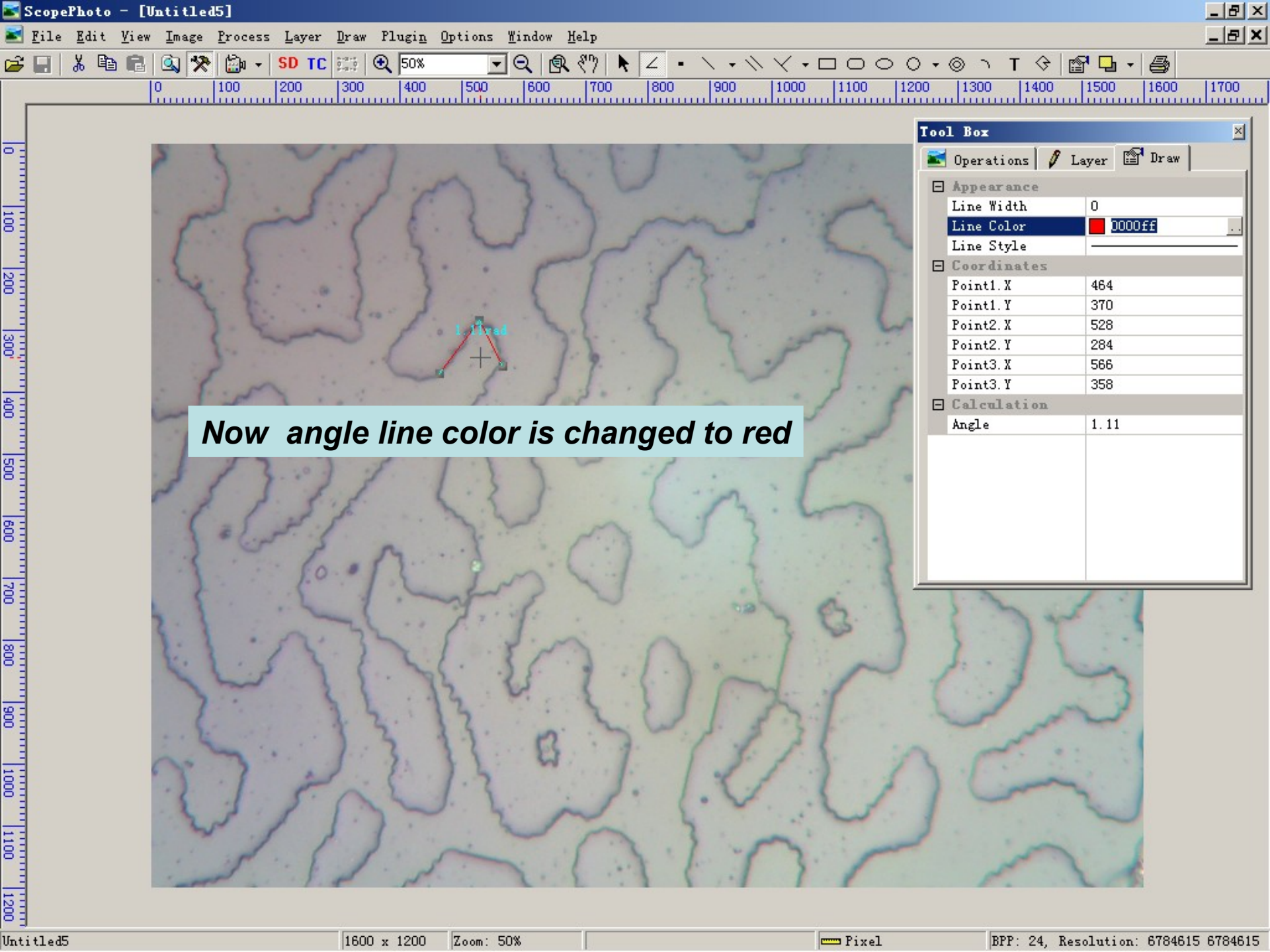
Angle1.11





*Modify angle line color (single object)*





*Now angle line color is changed to red*

**Tool Box**

Operations | Layer | Draw

Appearance

Line Width0

Line Color0000ff

Line Style

Coordinates

Point1.X464

Point1.Y370

Point2.X528

Point2.Y284

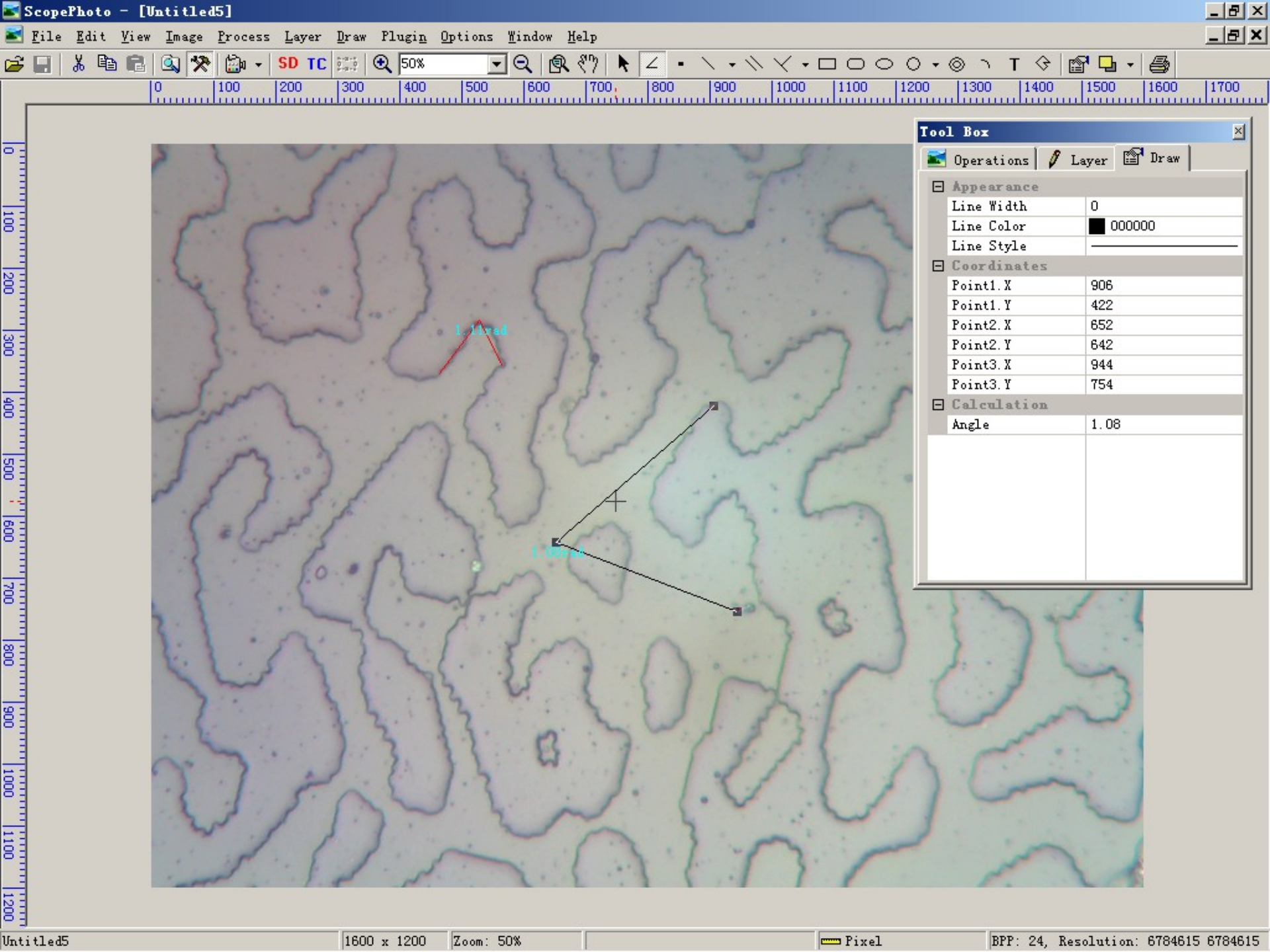
Point3.X566

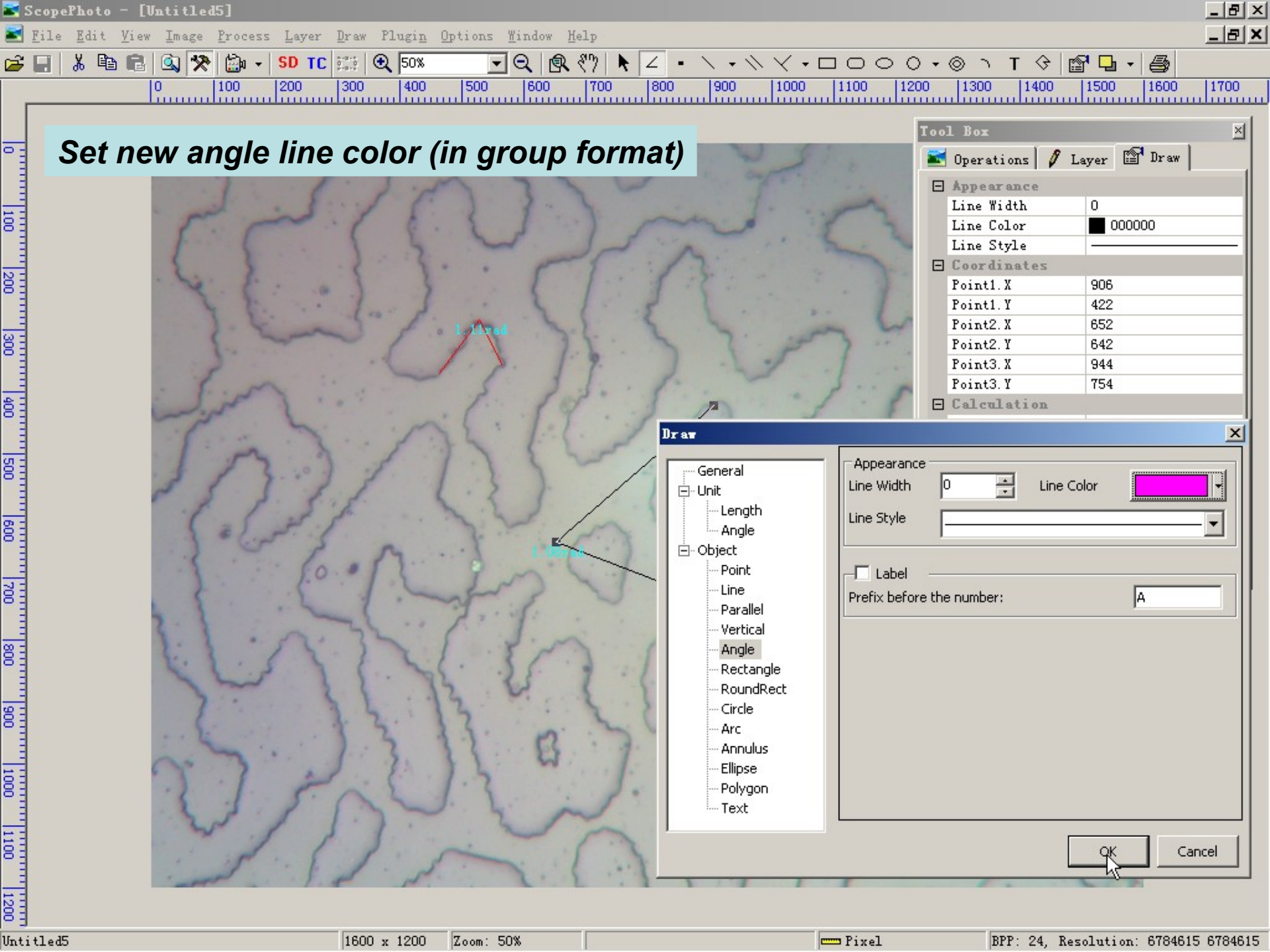
Point3.Y358

Calculation

Angle1.11







***Set new angle line color (in group format)***

**Draw**

General

Unit

Length

Angle

Object

Point

Line

Parallel

Vertical

Angle

Rectangle

RoundRect

Circle

Arc

Annulus

Ellipse

Polygon

Text

Appearance

Line Width

0

Line Color

Line Style

☐ Label

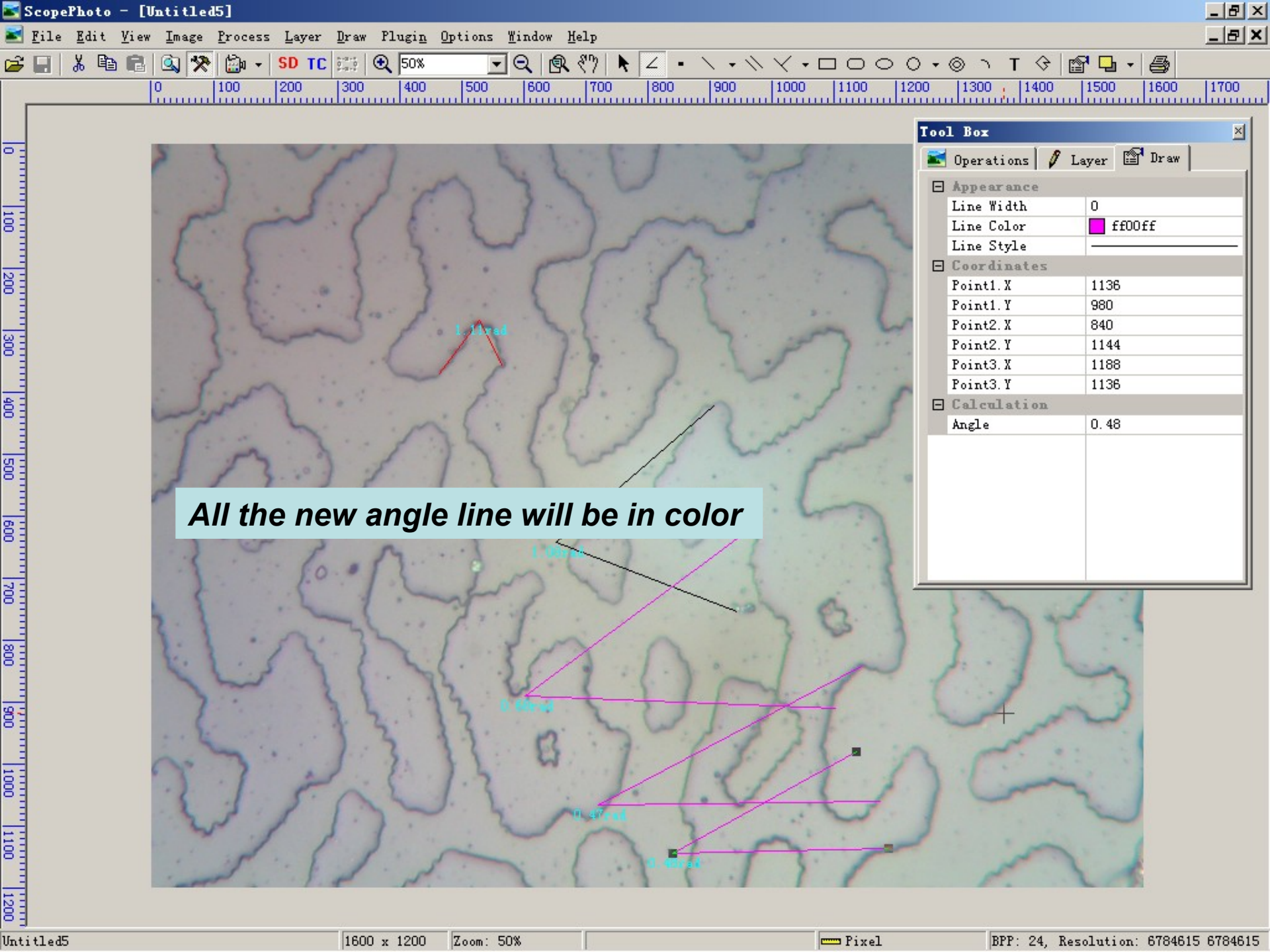
Prefix before the number:

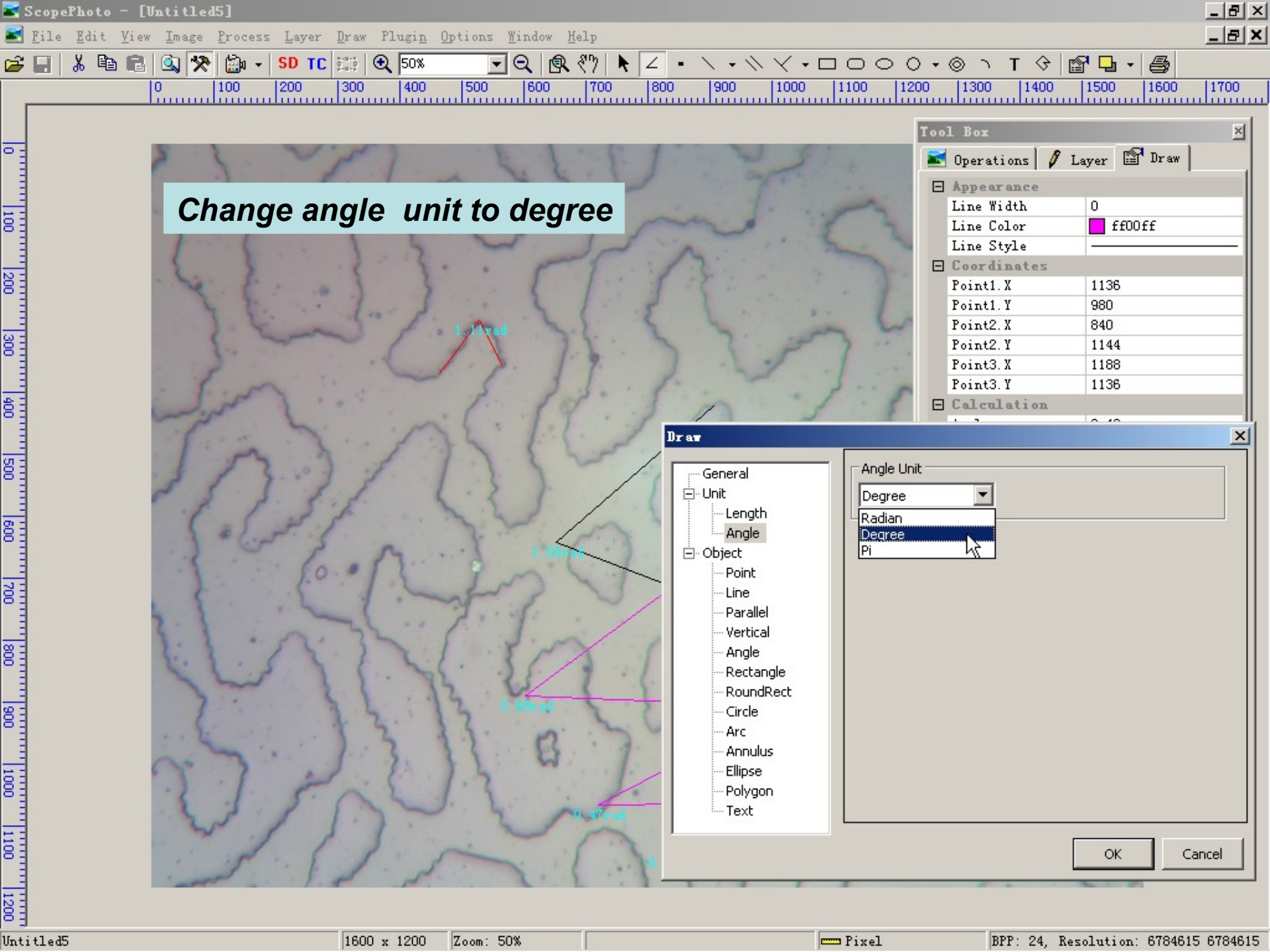
A

OK

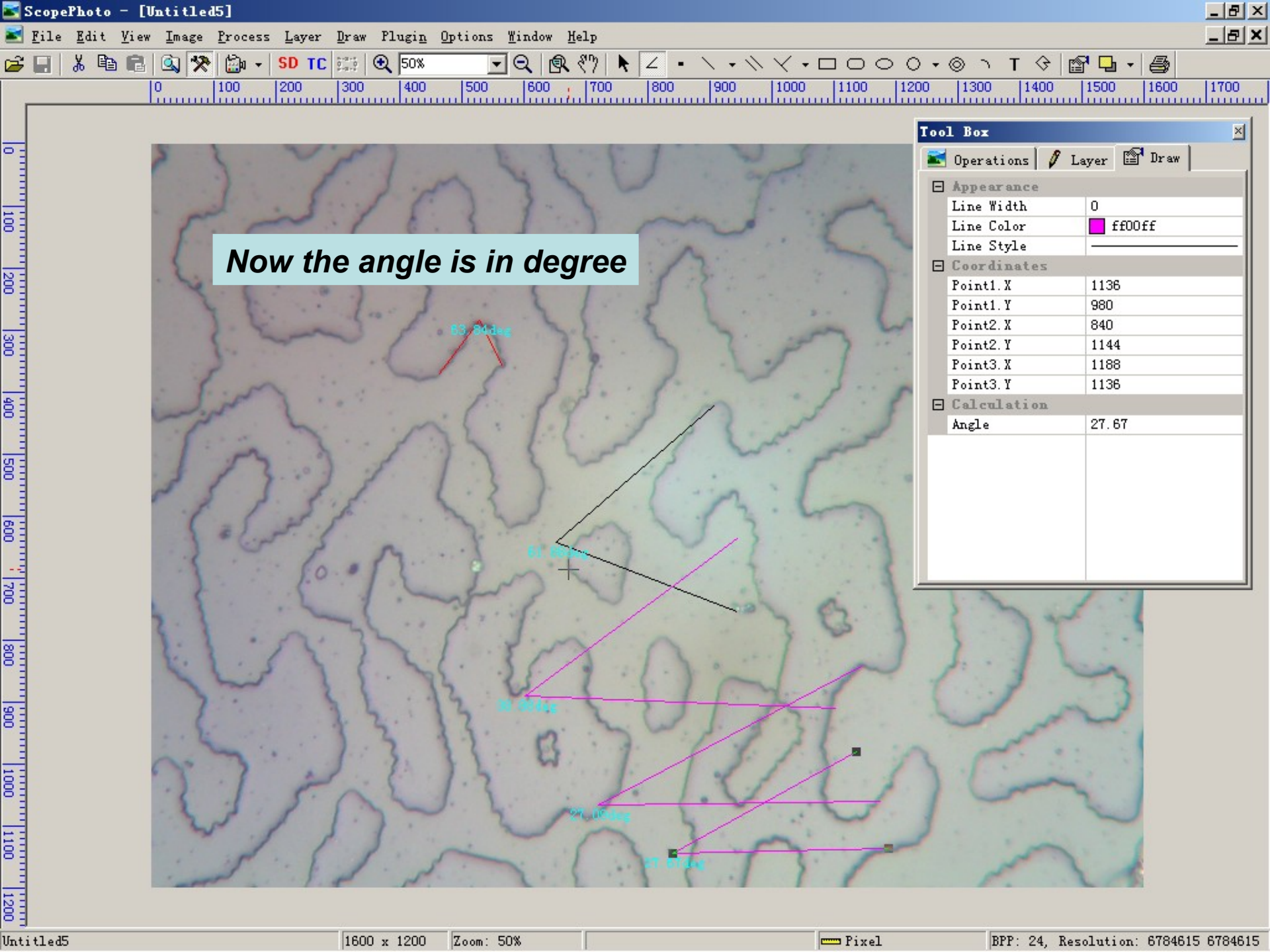
Cancel

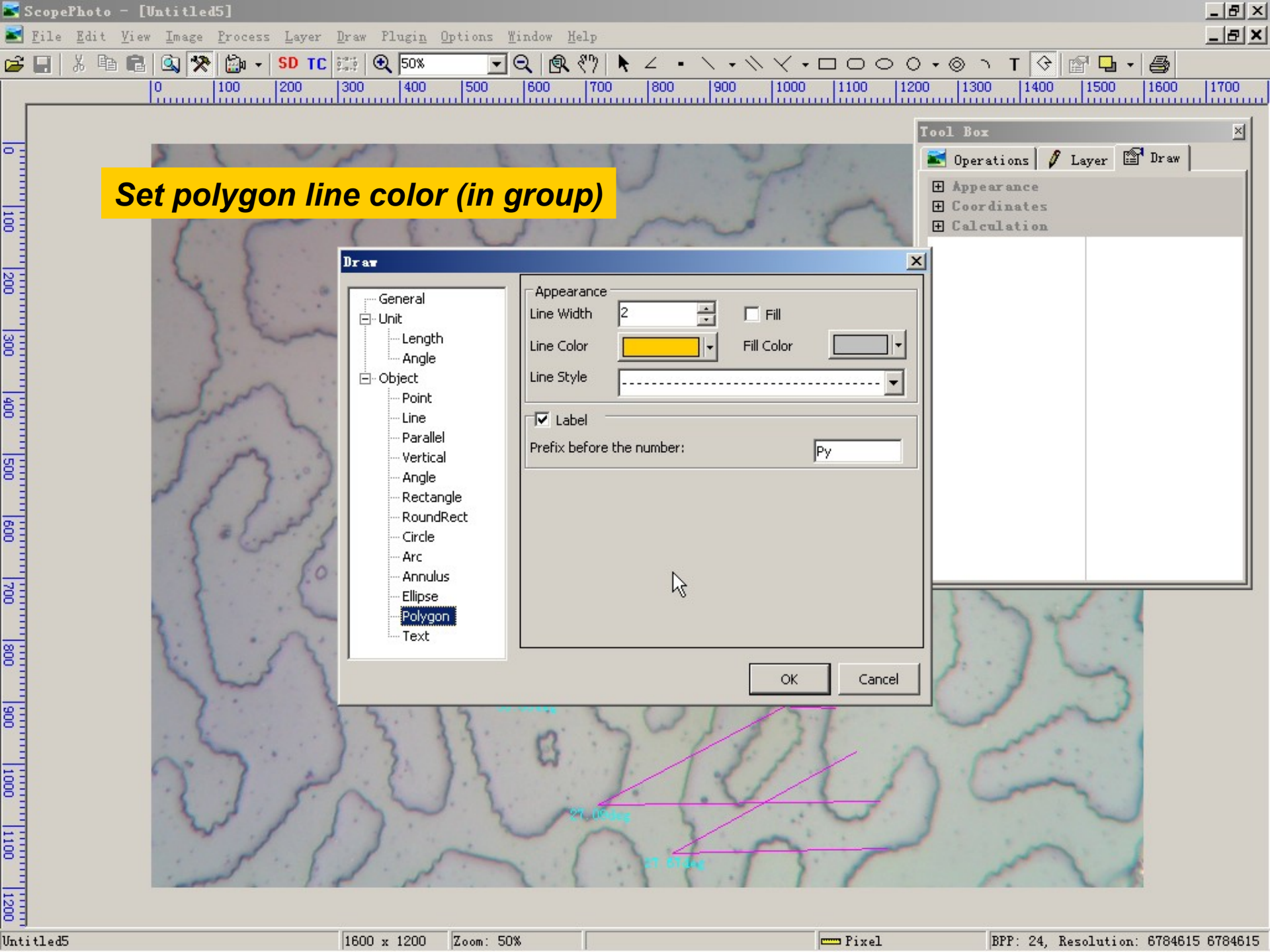












**Set polygon line color (in group)**

**Draw**

- General
  - Unit
    - Length
    - Angle
  - Object
    - Point
    - Line
    - Parallel
    - Vertical
    - Angle
    - Rectangle
    - RoundRect
    - Circle
    - Arc
    - Annulus
    - Ellipse
    - Polygon**
    - Text
- Appearance
  - Line Width: 2
  - Line Color:
  - Line Style:
  - ☐ Fill
  - Fill Color:
- ☒ Label
  - Prefix before the number: Py

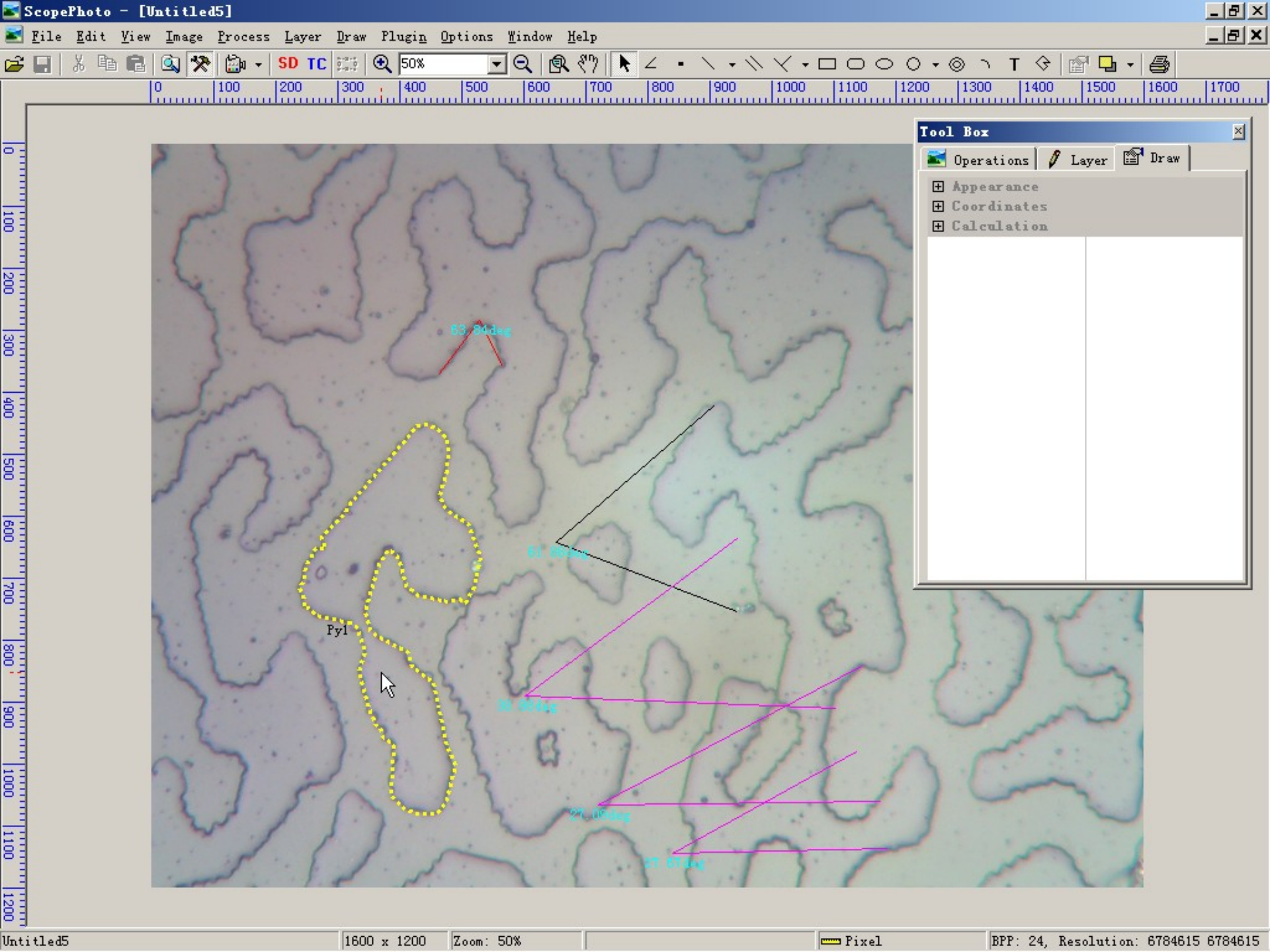
OK Cancel

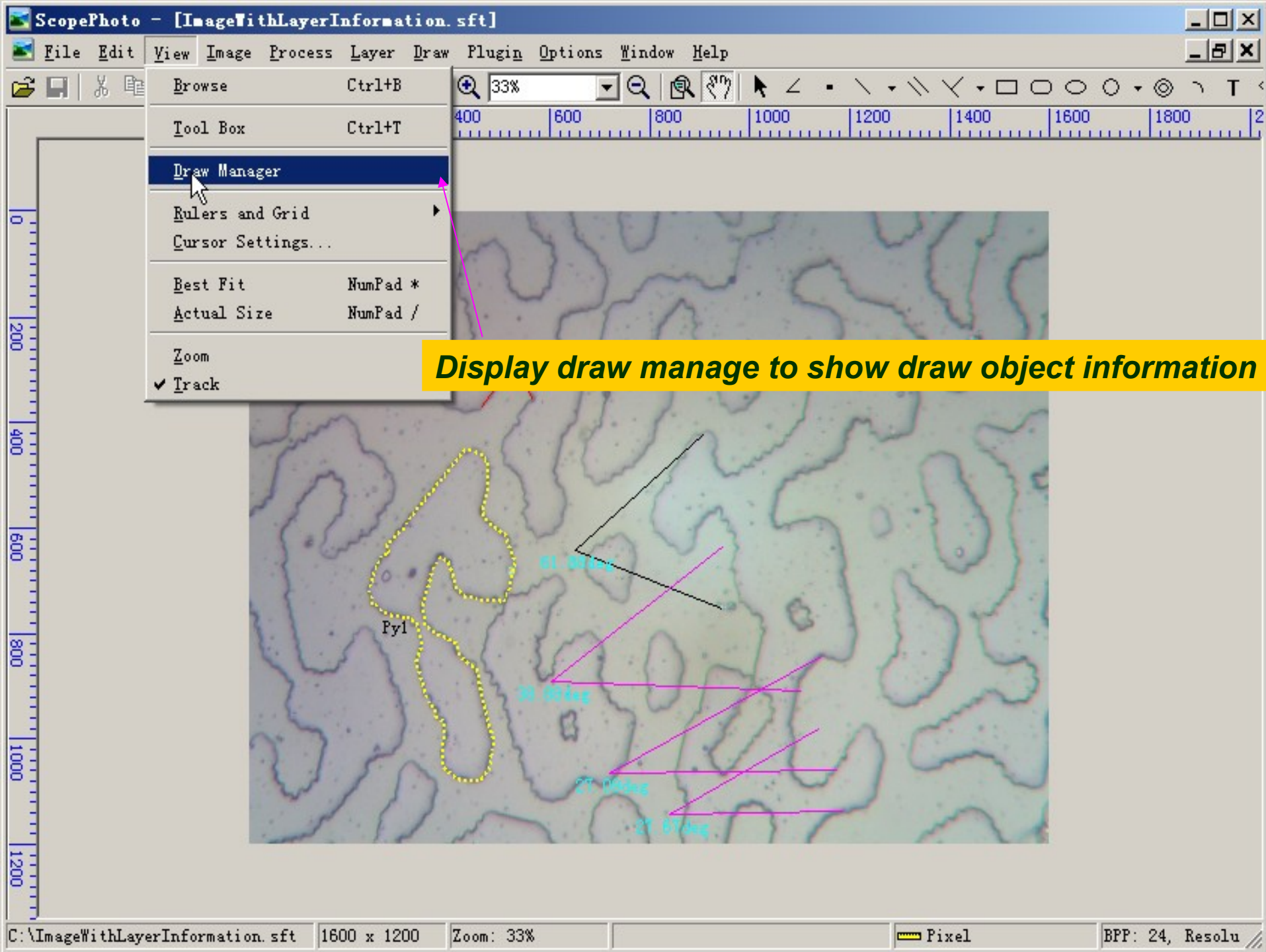
**Tool Box**

Operations Layer Draw

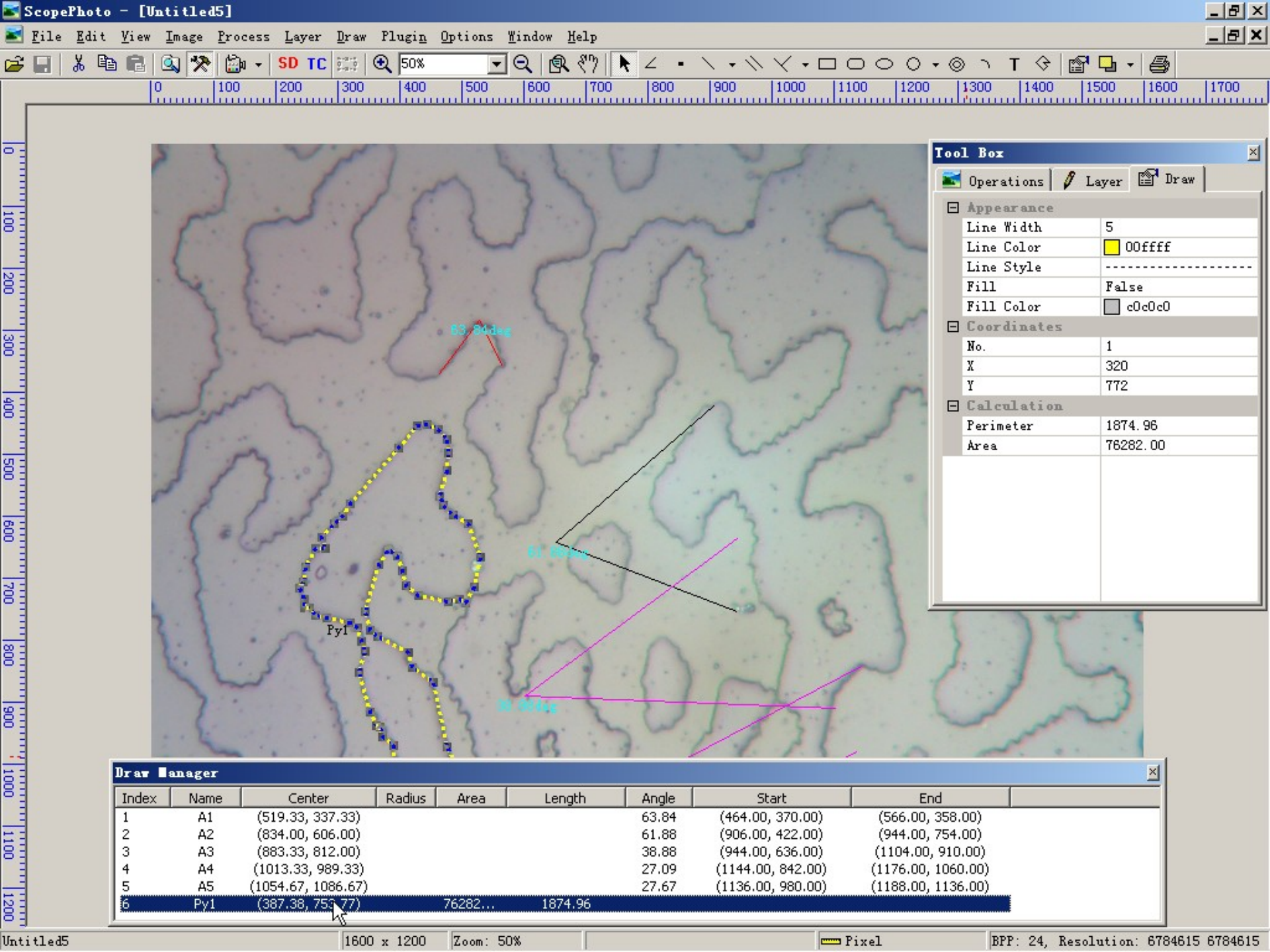
- ☒ Appearance
- ☒ Coordinates
- ☒ Calculation

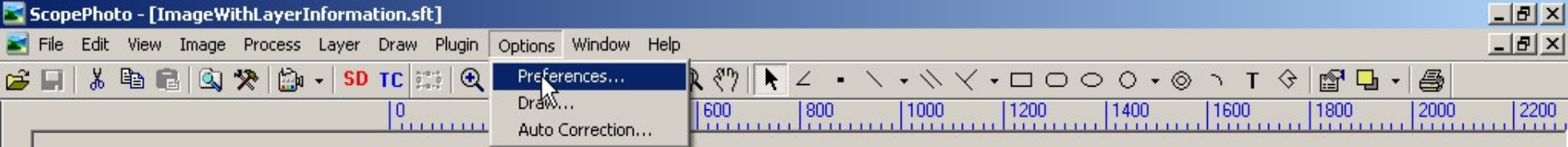




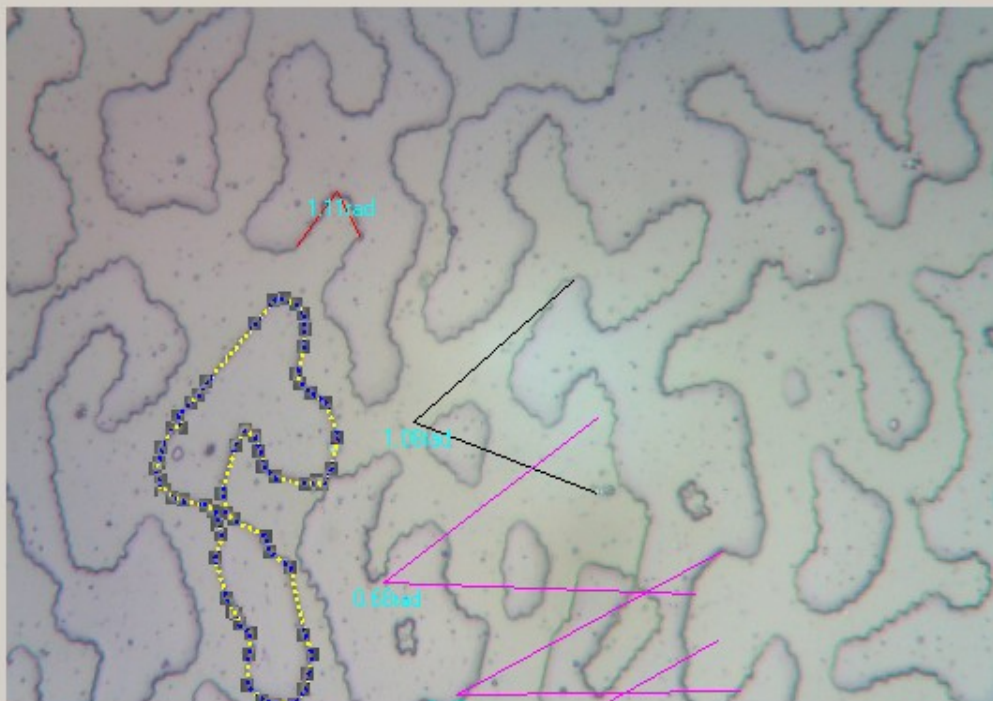






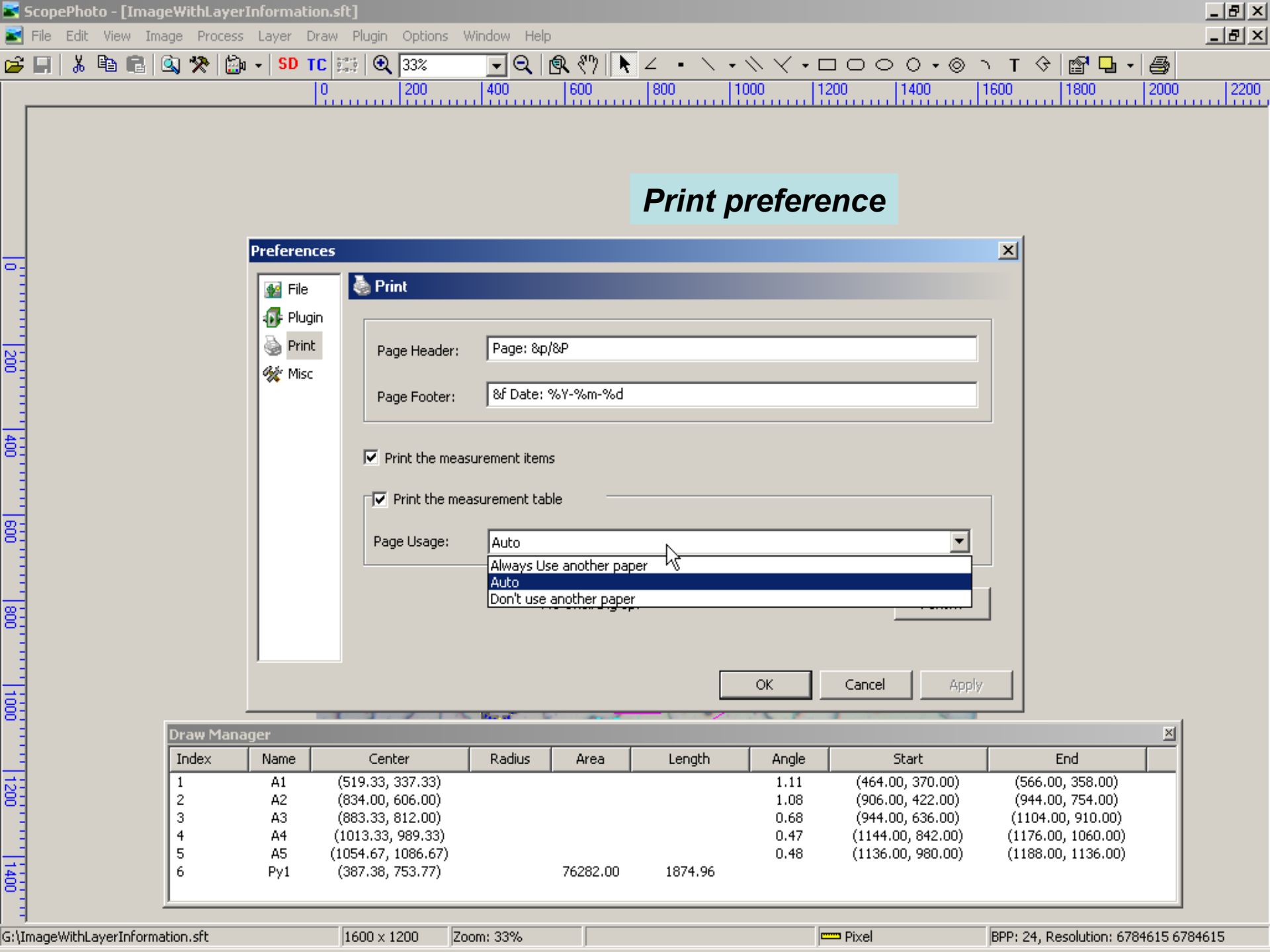


## Layer print preference



Draw Manager									
Index	Name	Center	Radius	Area	Length	Angle	Start	End	
1	A1	(519.33, 337.33)				1.11	(464.00, 370.00)	(566.00, 358.00)	
2	A2	(834.00, 606.00)				1.08	(906.00, 422.00)	(944.00, 754.00)	
3	A3	(883.33, 812.00)				0.68	(944.00, 636.00)	(1104.00, 910.00)	
4	A4	(1013.33, 989.33)				0.47	(1144.00, 842.00)	(1176.00, 1060.00)	
5	A5	(1054.67, 1086.67)				0.48	(1136.00, 980.00)	(1188.00, 1136.00)	
6	Py1	(387.38, 753.77)		76282.00	1874.96				





## Print preference

File  
Plugin  
Print  
Misc

Print

Page Header: Page: &p/&P

Page Footer: &f Date: %Y-%m-%d

☒ Print the measurement items

☒ Print the measurement table

Page Usage: Auto

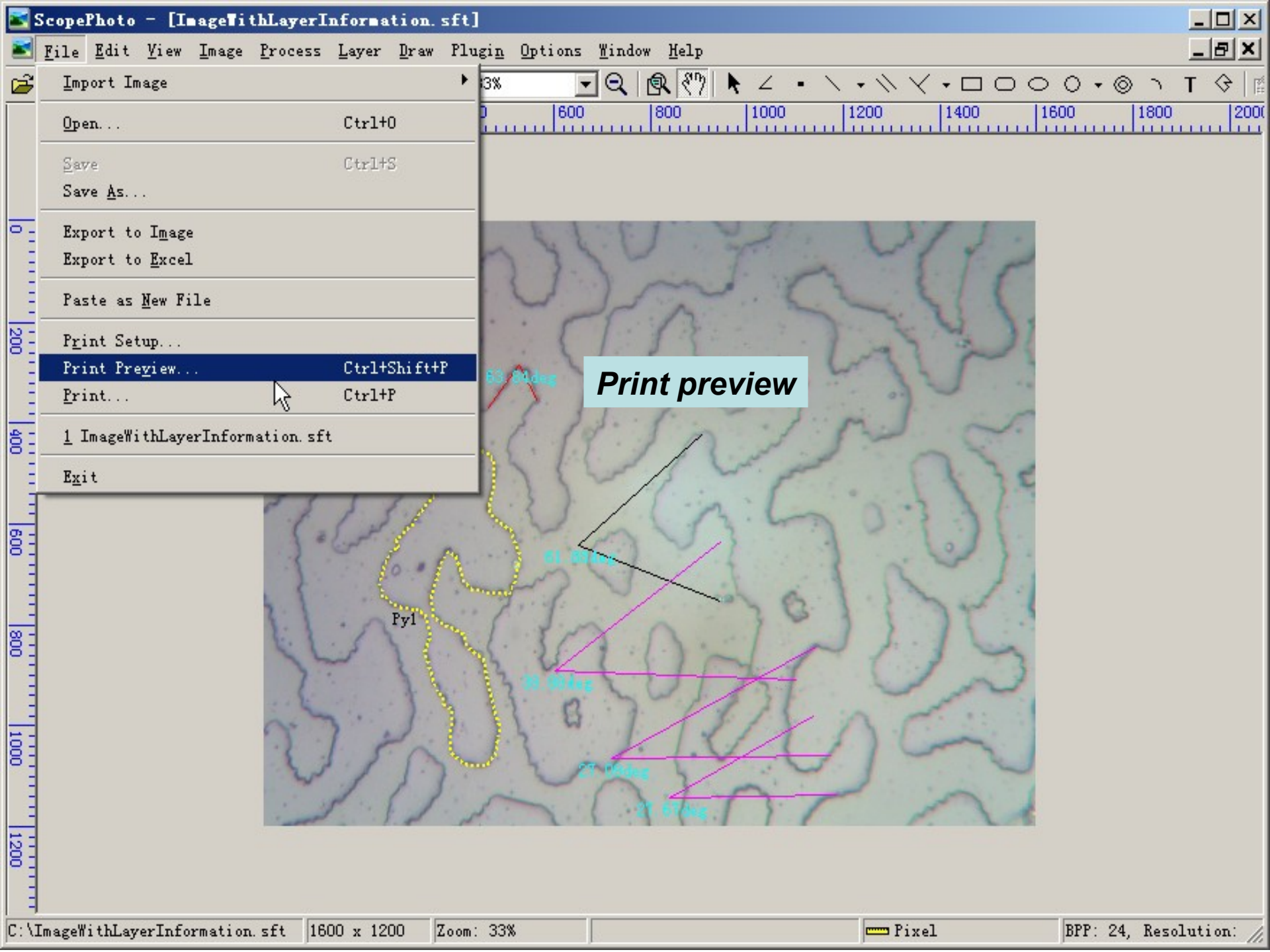
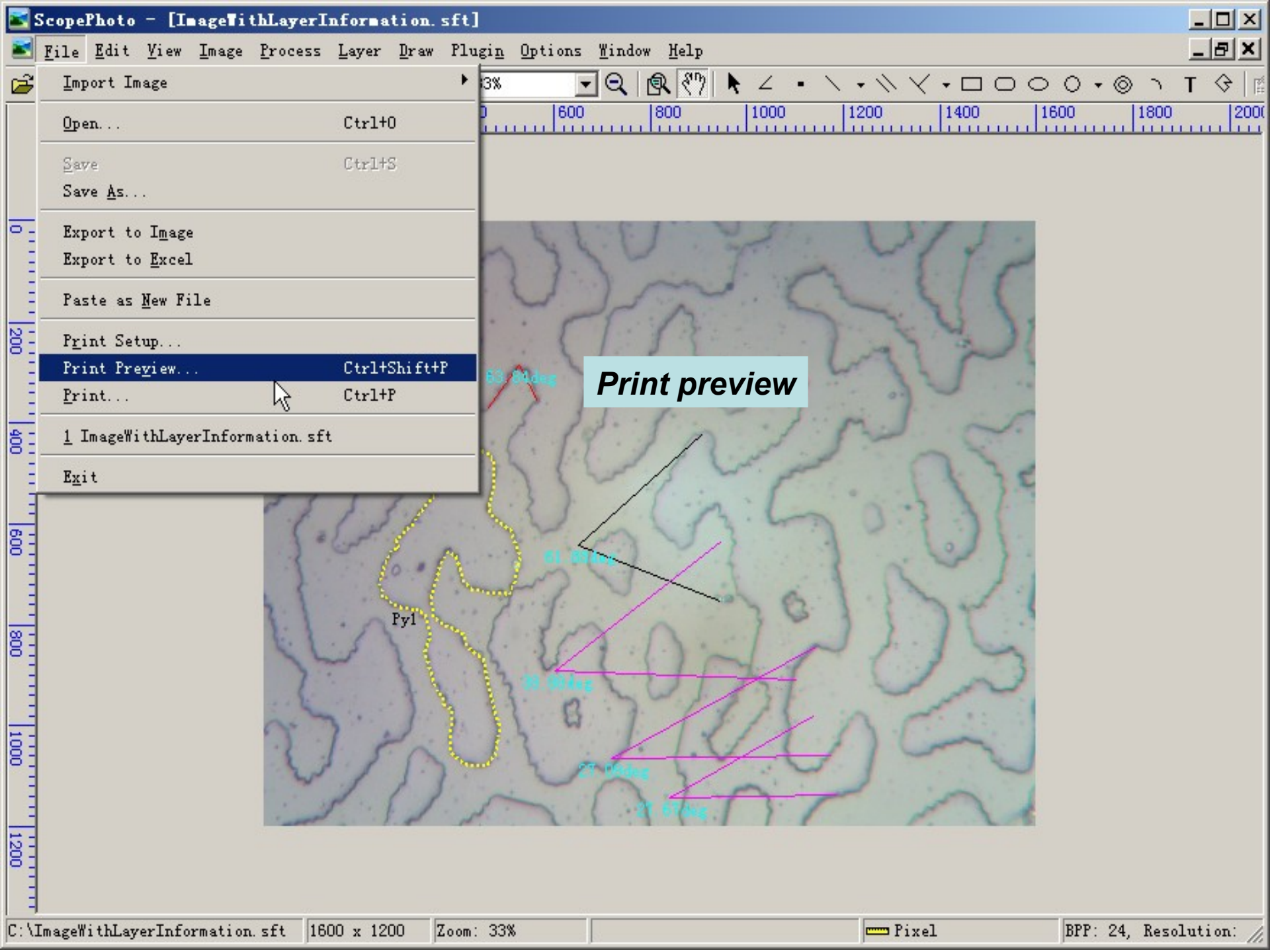
Always Use another paper

Auto

Don't use another paper

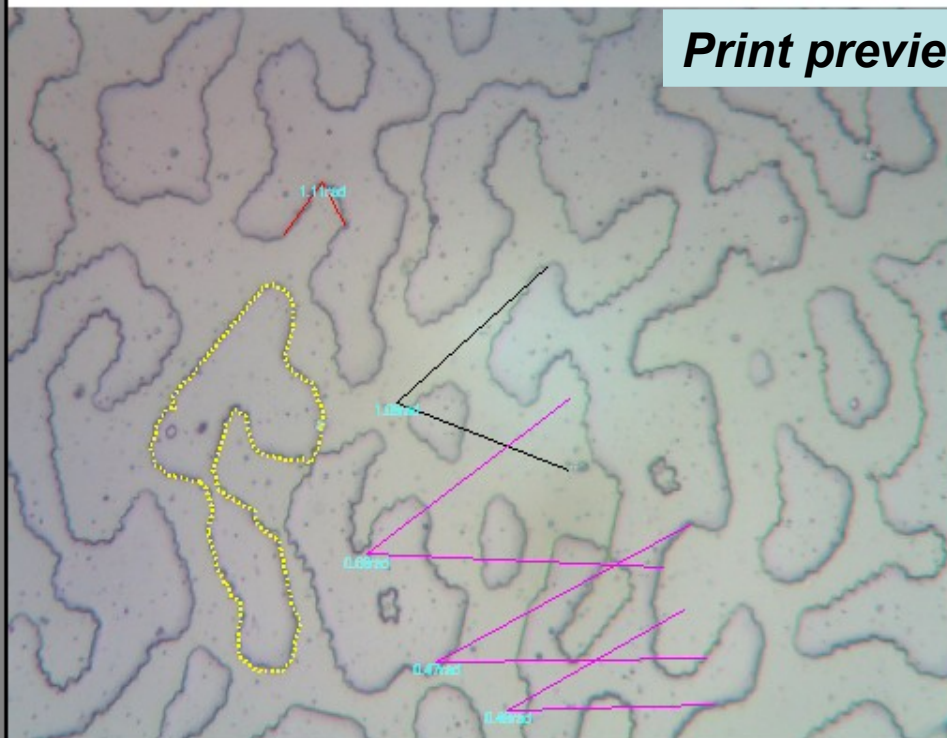
OKCancelApply

Draw Manager									
Index	Name	Center	Radius	Area	Length	Angle	Start	End	
1	A1	(519.33, 337.33)				1.11	(464.00, 370.00)	(566.00, 358.00)	
2	A2	(834.00, 606.00)				1.08	(906.00, 422.00)	(944.00, 754.00)	
3	A3	(883.33, 812.00)				0.68	(944.00, 636.00)	(1104.00, 910.00)	
4	A4	(1013.33, 989.33)				0.47	(1144.00, 842.00)	(1176.00, 1060.00)	
5	A5	(1054.67, 1086.67)				0.48	(1136.00, 980.00)	(1188.00, 1136.00)	
6	Py1	(387.38, 753.77)		76282.00	1874.96				

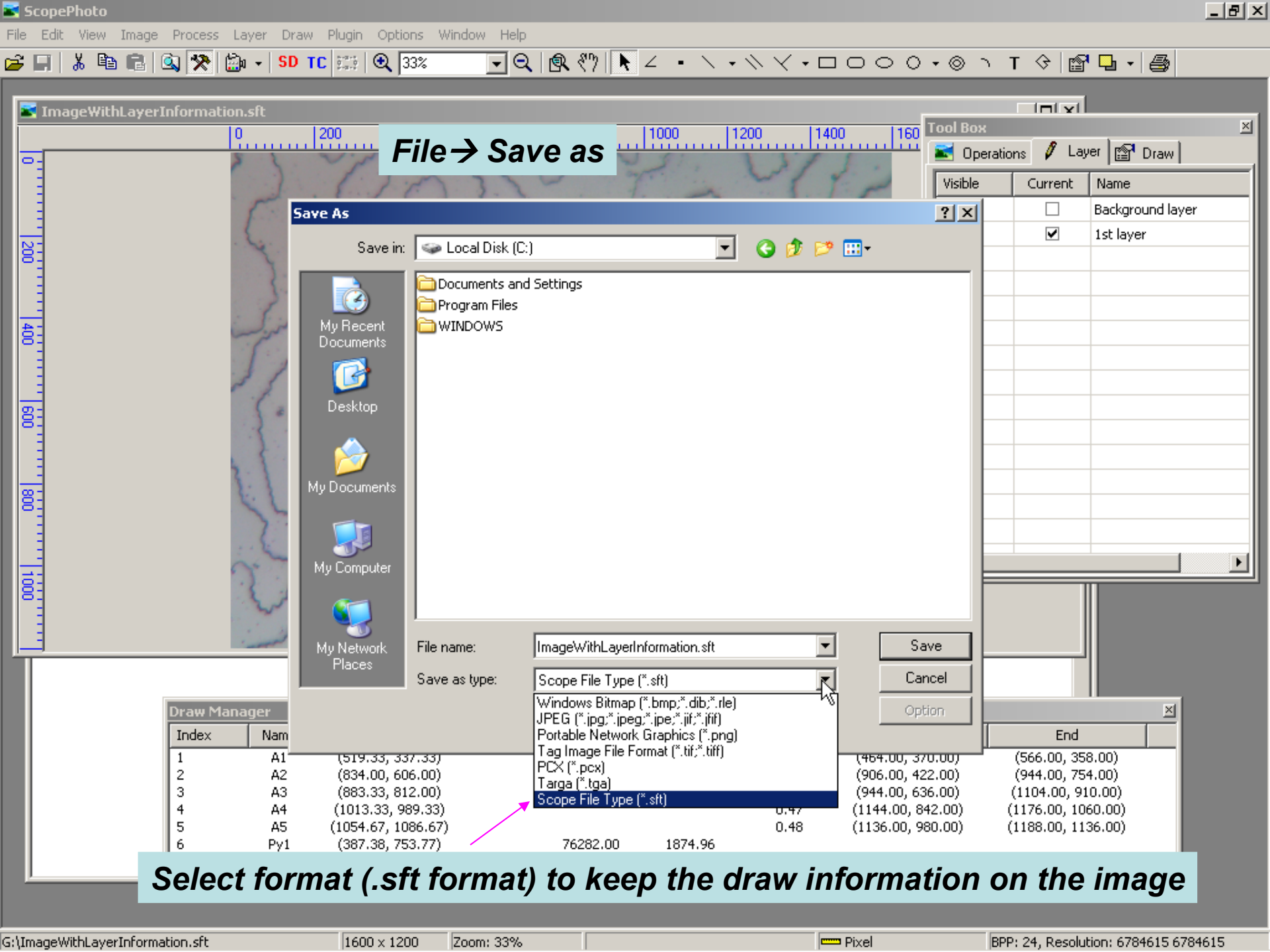




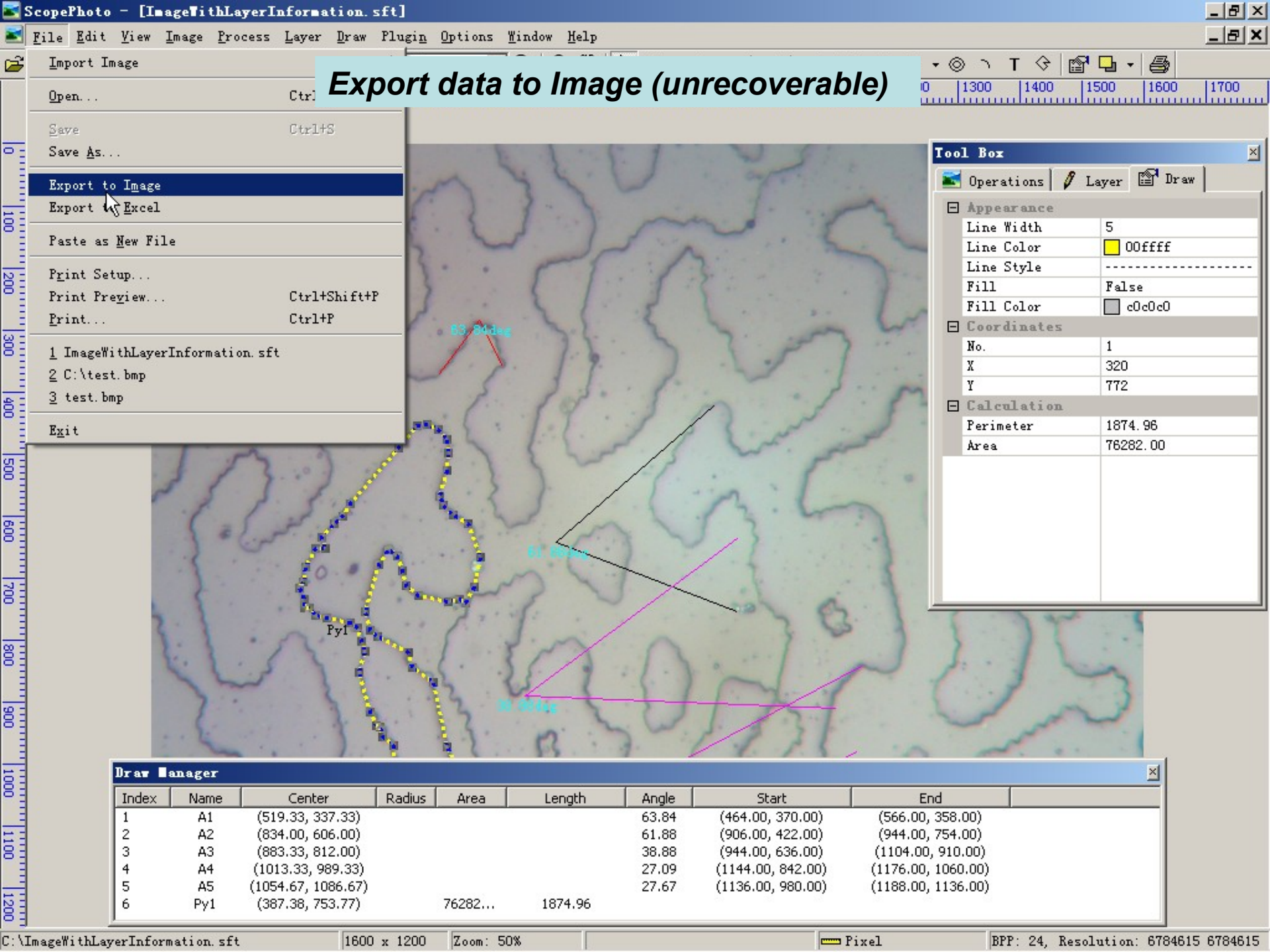
**Print preview**

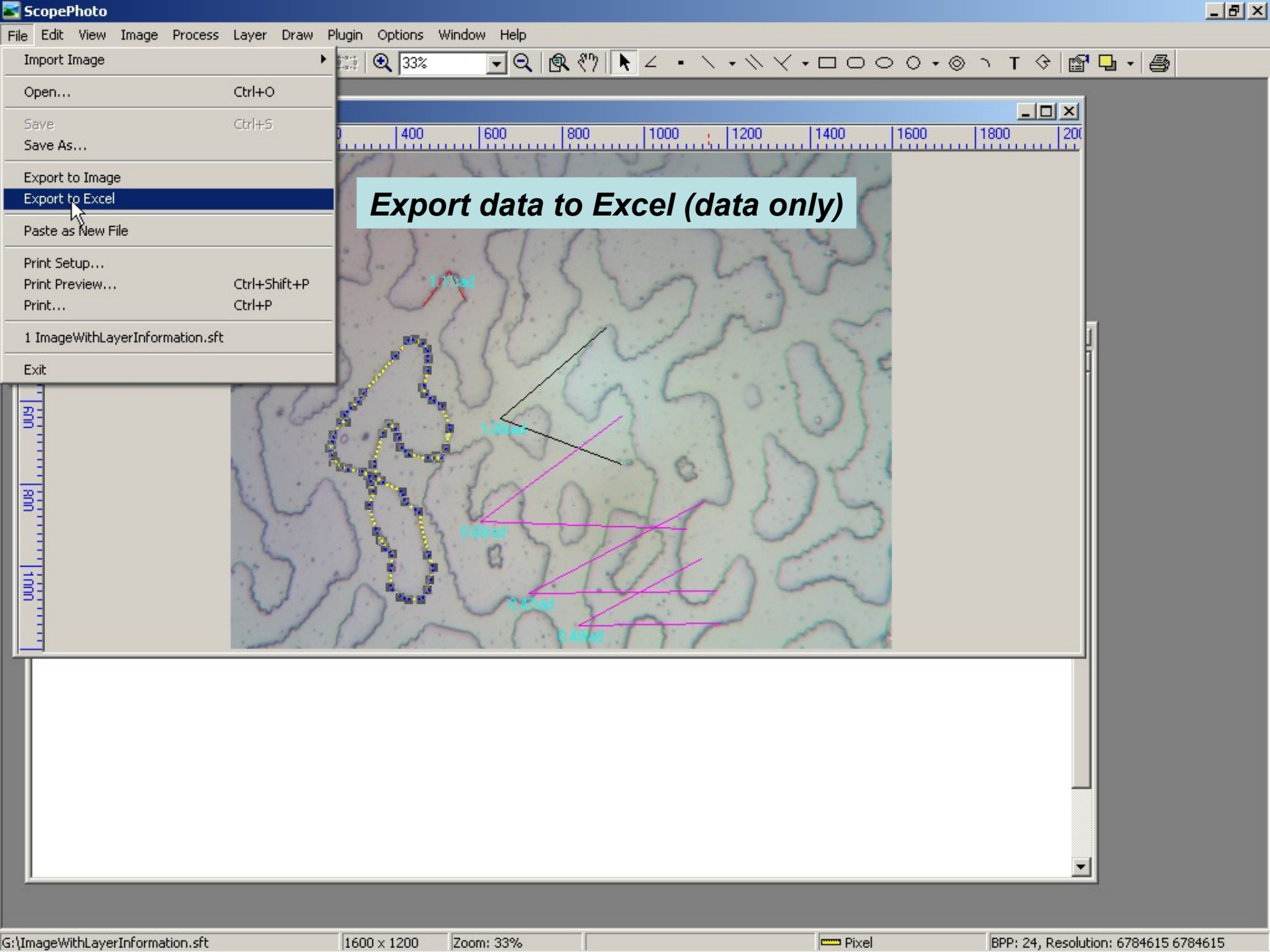


Index	Name	Center	Radius	Area	Length	Angle	Start	End
1st layer								
1	A1	(519.33, 337.33)				1.11	(464.00, 370.00)	(566.00, 358.00)
2	A2	(834.00, 606.00)				1.08	(908.00, 422.00)	(944.00, 754.00)
3	A3	(883.33, 812.00)				0.68	(944.00, 636.00)	(1104.00, 910.00)
4	A4	(1013.33, 989.33)				0.47	(1144.00, 842.00)	(1176.00, 1060.00)
5	A5	(1054.67, 1086.67)				0.48	(1136.00, 980.00)	(1188.00, 1136.00)
6	Py1	(387.38, 753.77)		7628200	1874.96			



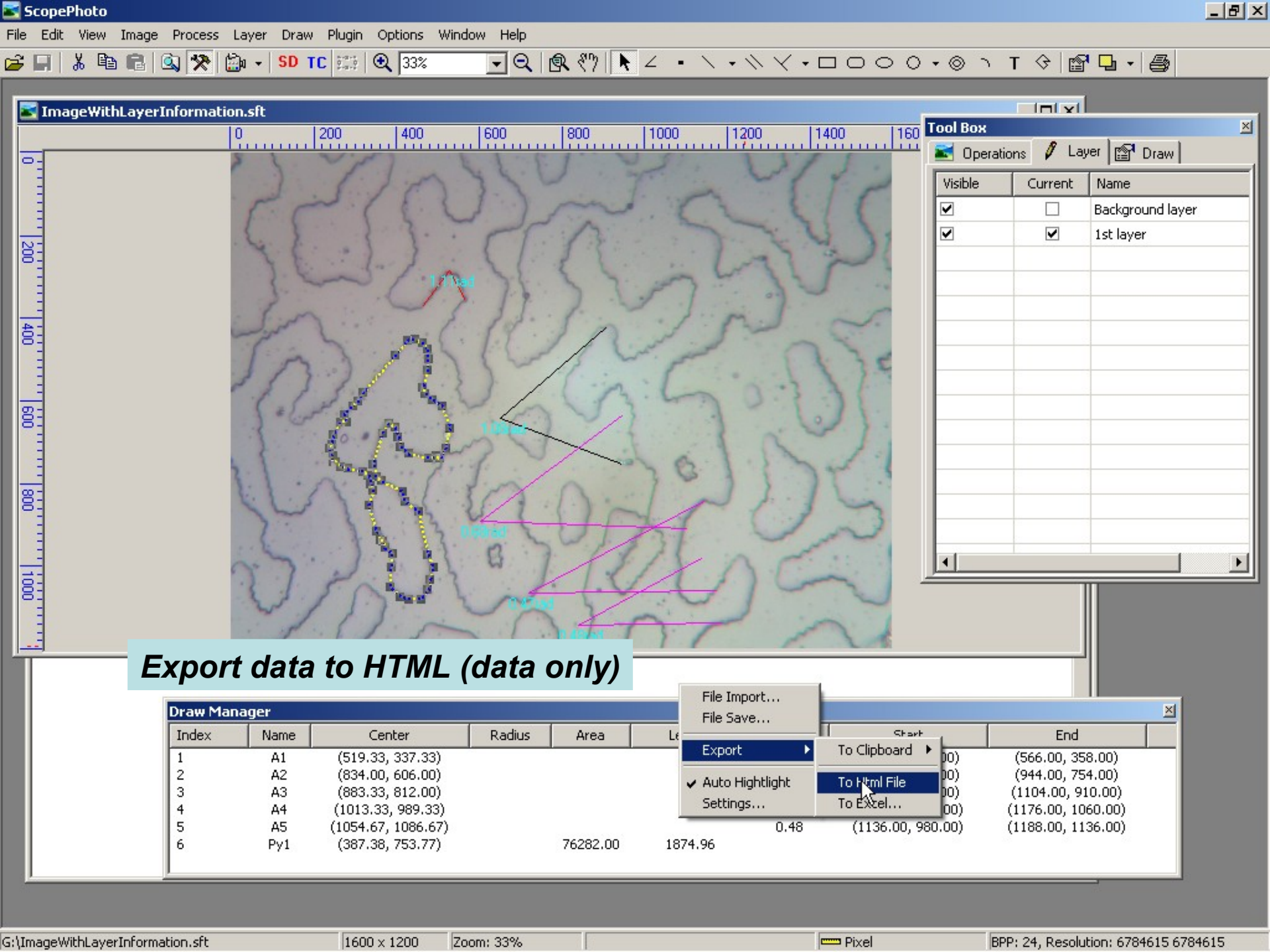
















Address C:\Documents and Settings\feihong\Local Settings\Temp\2.html

Go

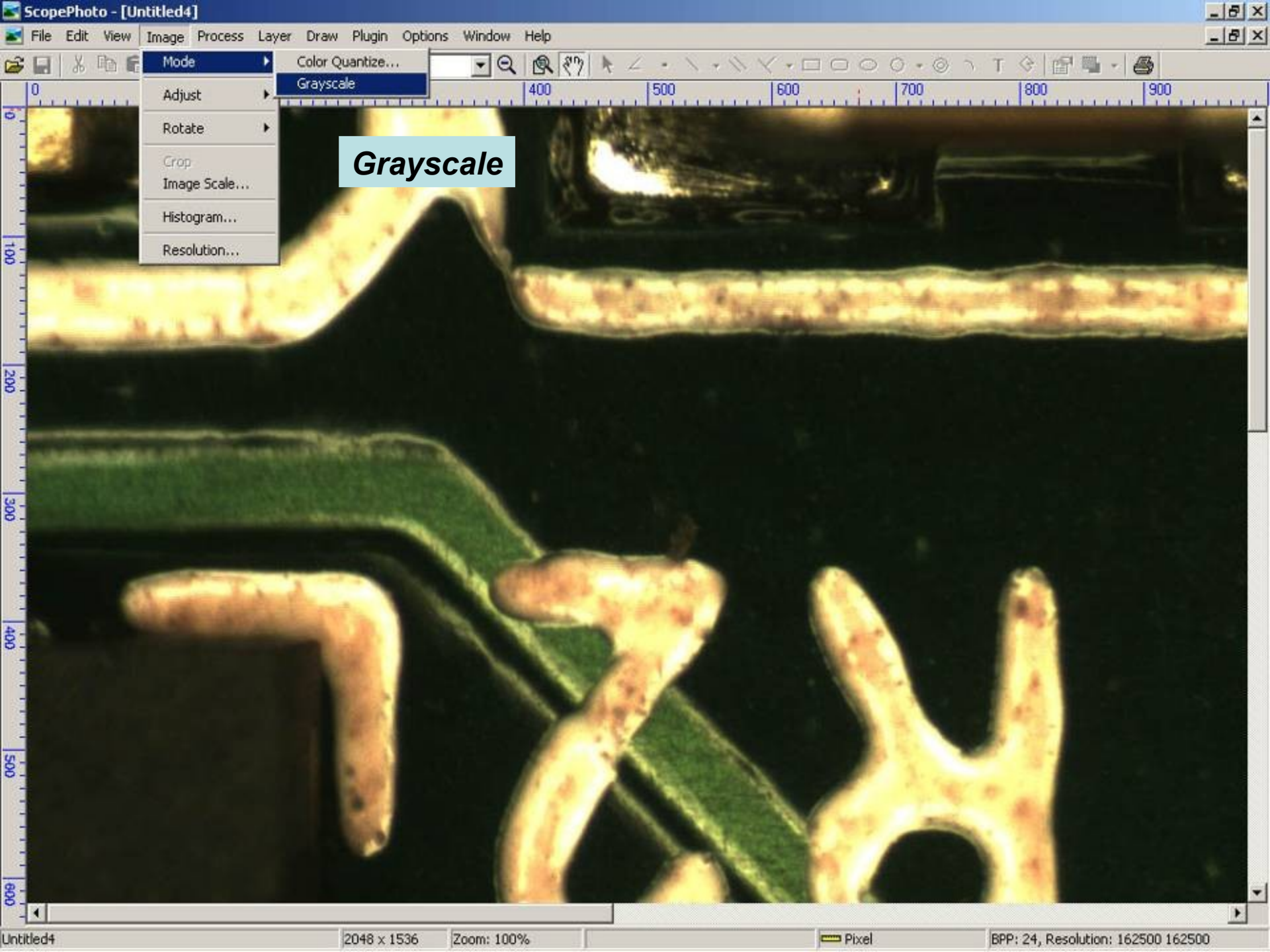
Links &gt;&gt;

Layer Name	Index	Name	Center	Radius	Area	Length	Angle	Start	End
1st layer	1	A1	(519.33, 337.33)	¶	¶	¶	1.11	(464.00, 370.00)	(566.00, 358.00)
	2	A2	(834.00, 606.00)	¶	¶	¶	1.08	(906.00, 422.00)	(944.00, 754.00)
	3	A3	(883.33, 812.00)	¶	¶	¶	0.68	(944.00, 636.00)	(1104.00, 910.00)
	4	A4	(1013.33, 989.33)	¶	¶	¶	0.47	(1144.00, 842.00)	(1176.00, 1060.00)
	5	A5	(1054.67, 1086.67)	¶	¶	¶	0.48	(1136.00, 980.00)	(1188.00, 1136.00)
	6	Py1	(387.38, 753.77)	¶	76282.00	1874.96	¶	¶	¶

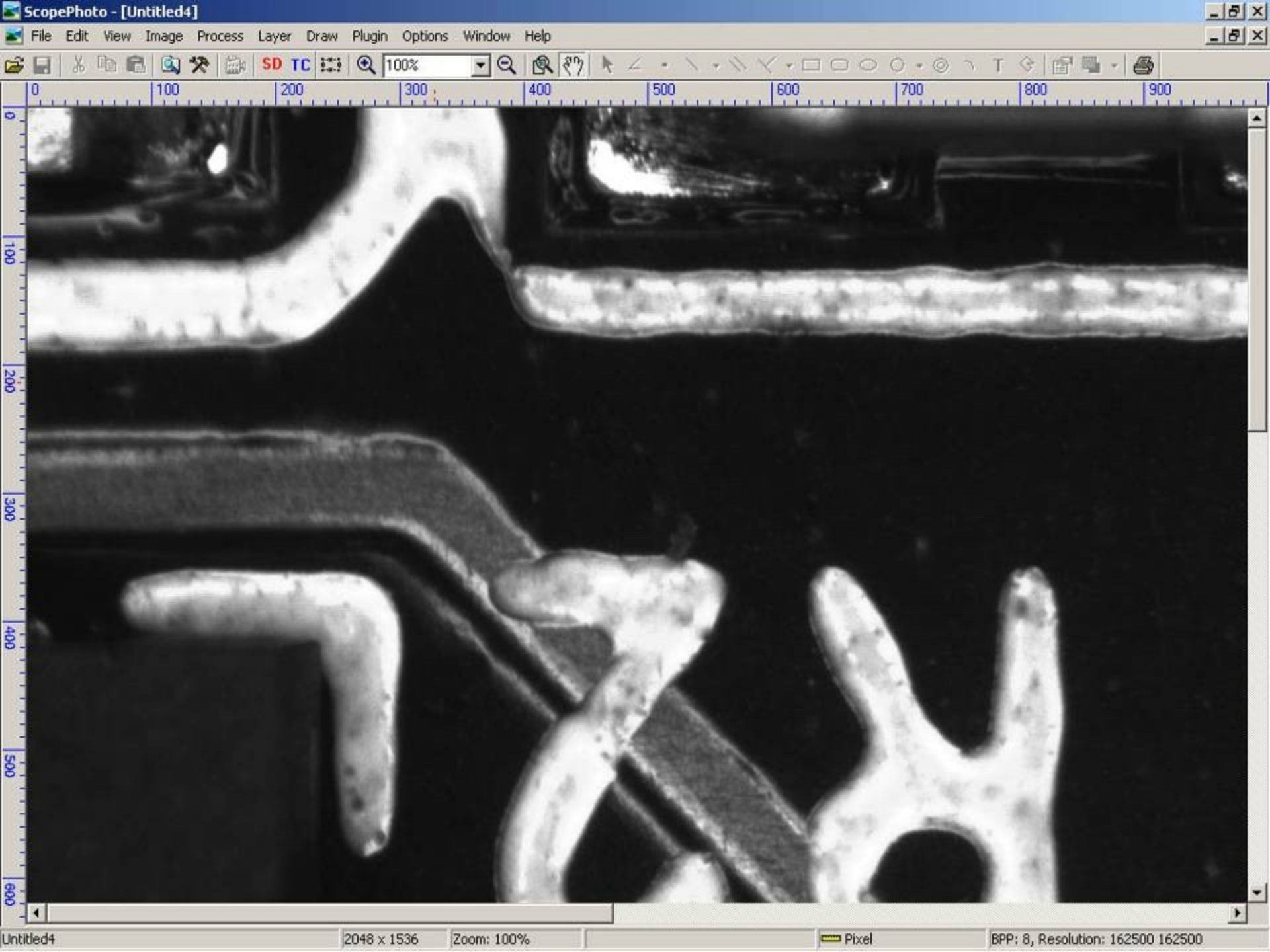
Length Unit:Pixel, Angle Unit:radian

# ***Image Processing***

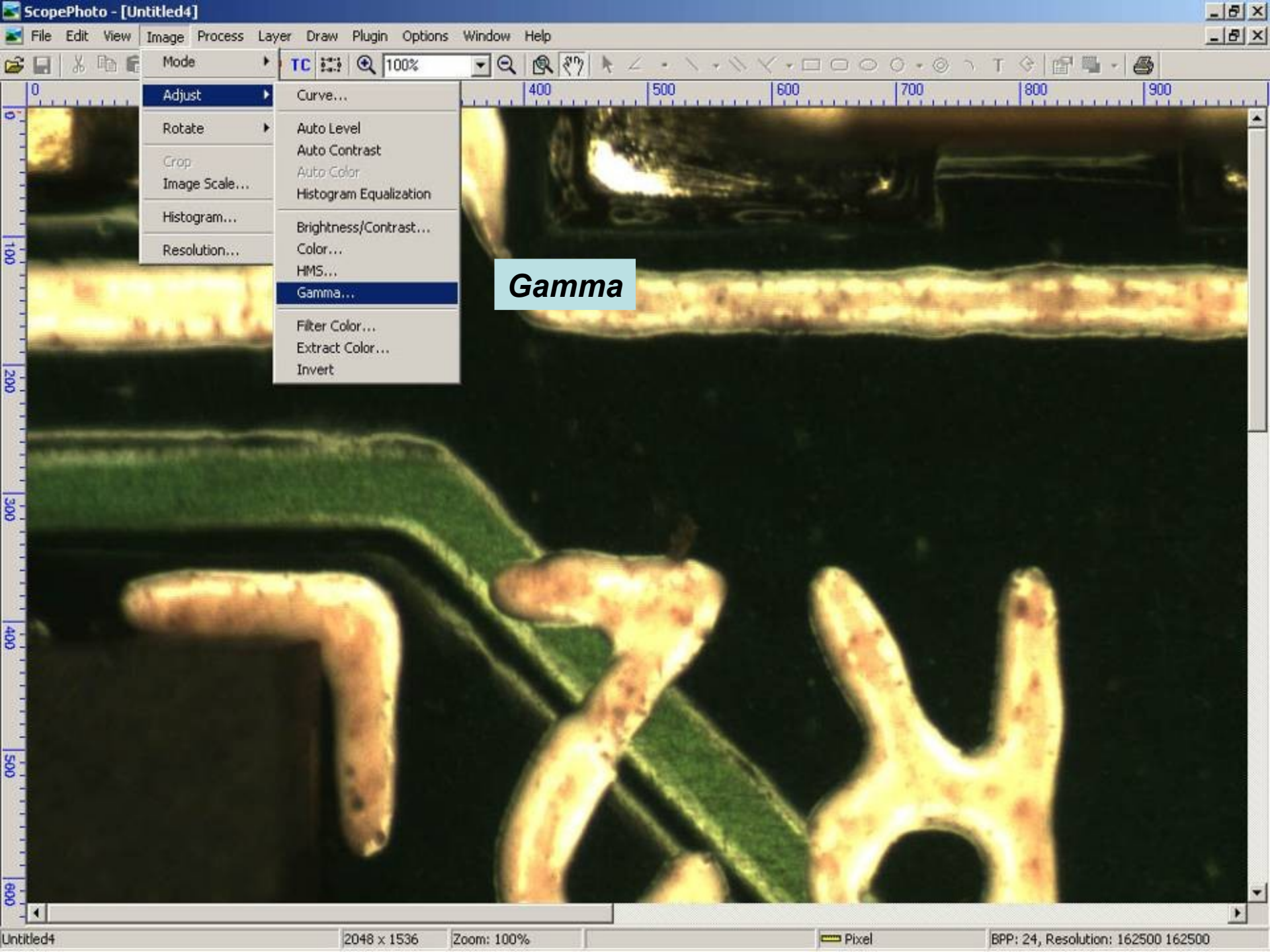


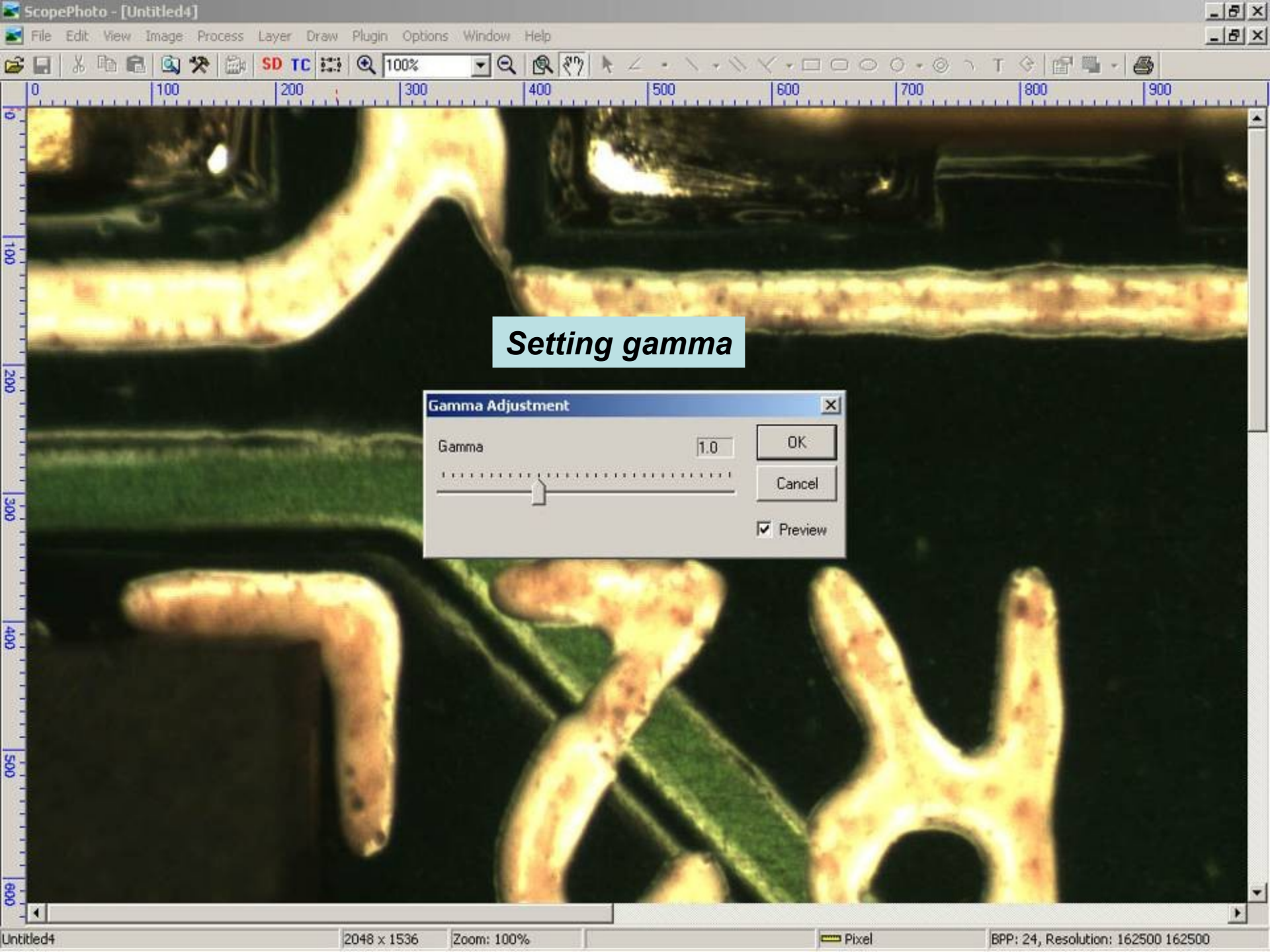


Grayscale

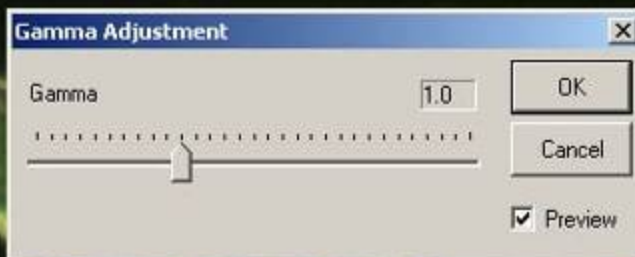




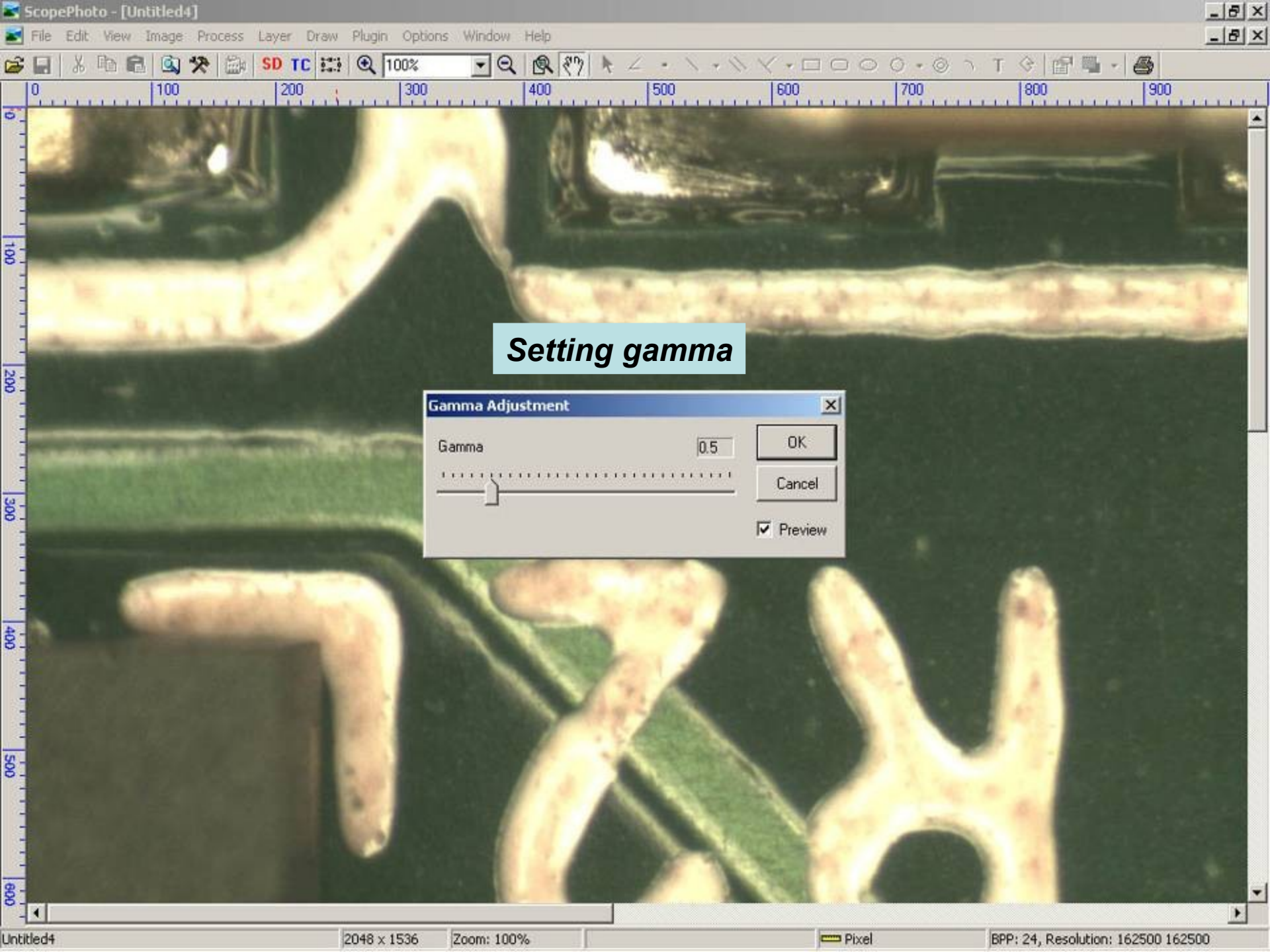




*Setting gamma*





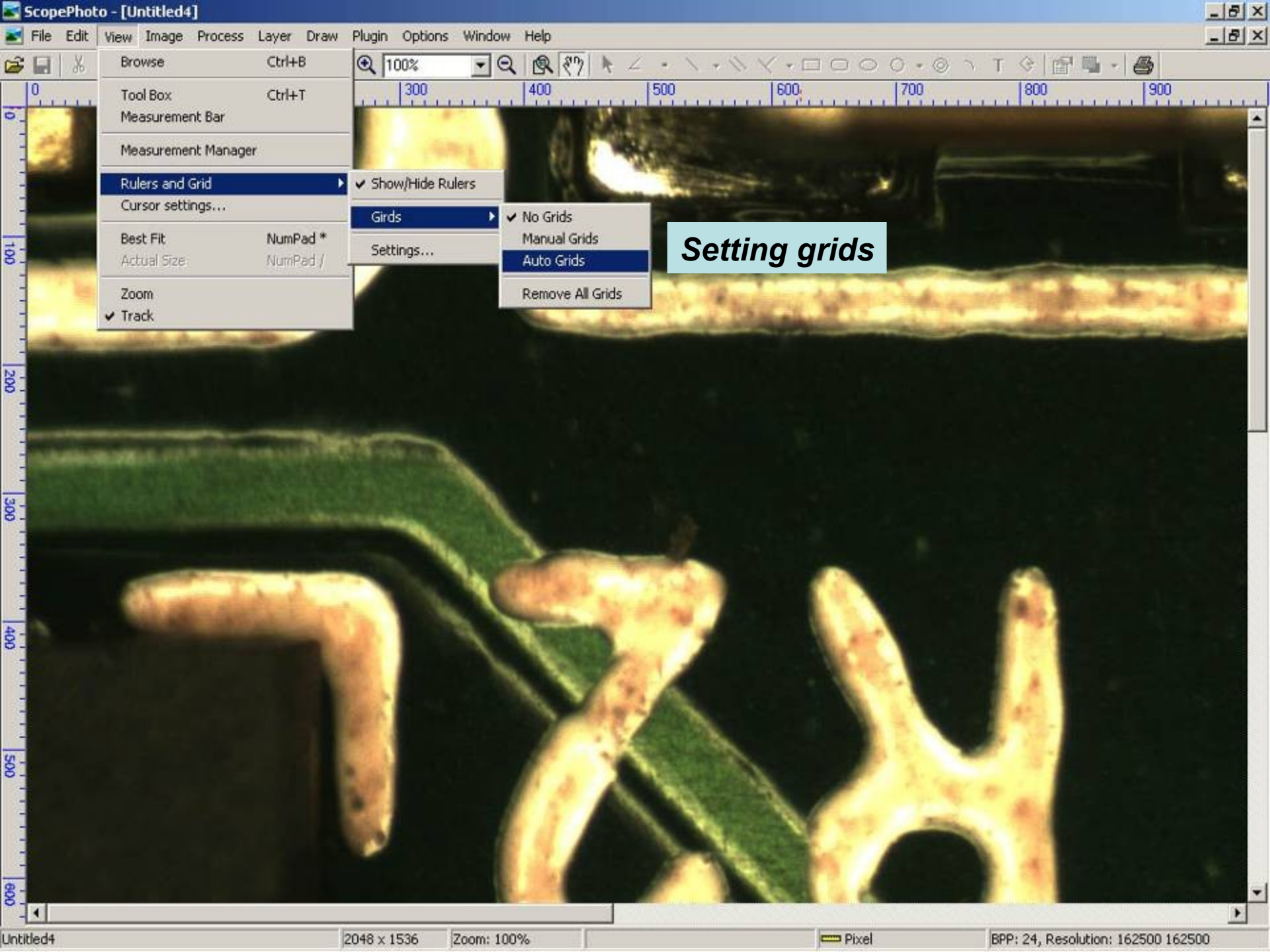


*Setting gamma*

**Gamma Adjustment** [X]

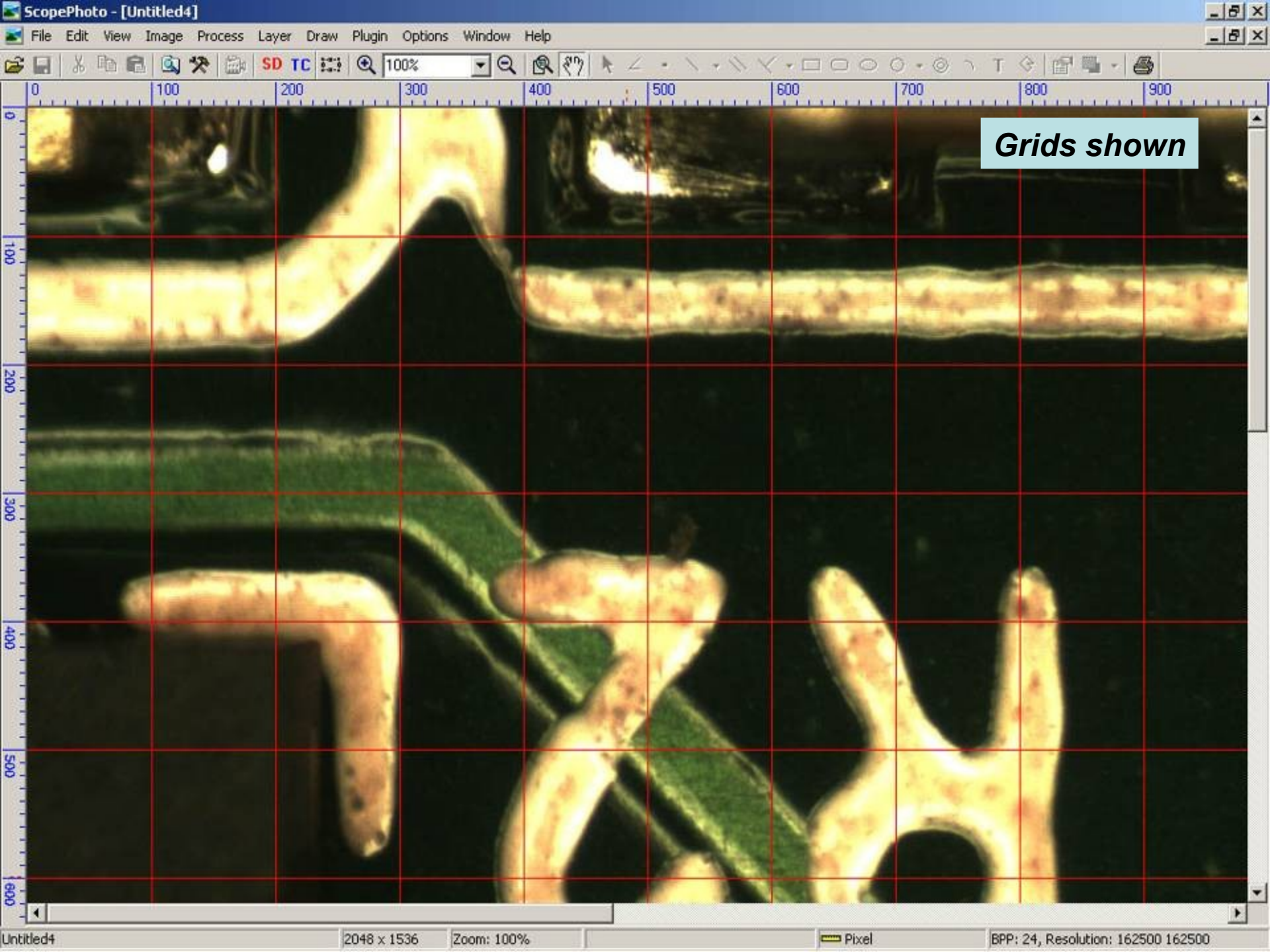
Gamma

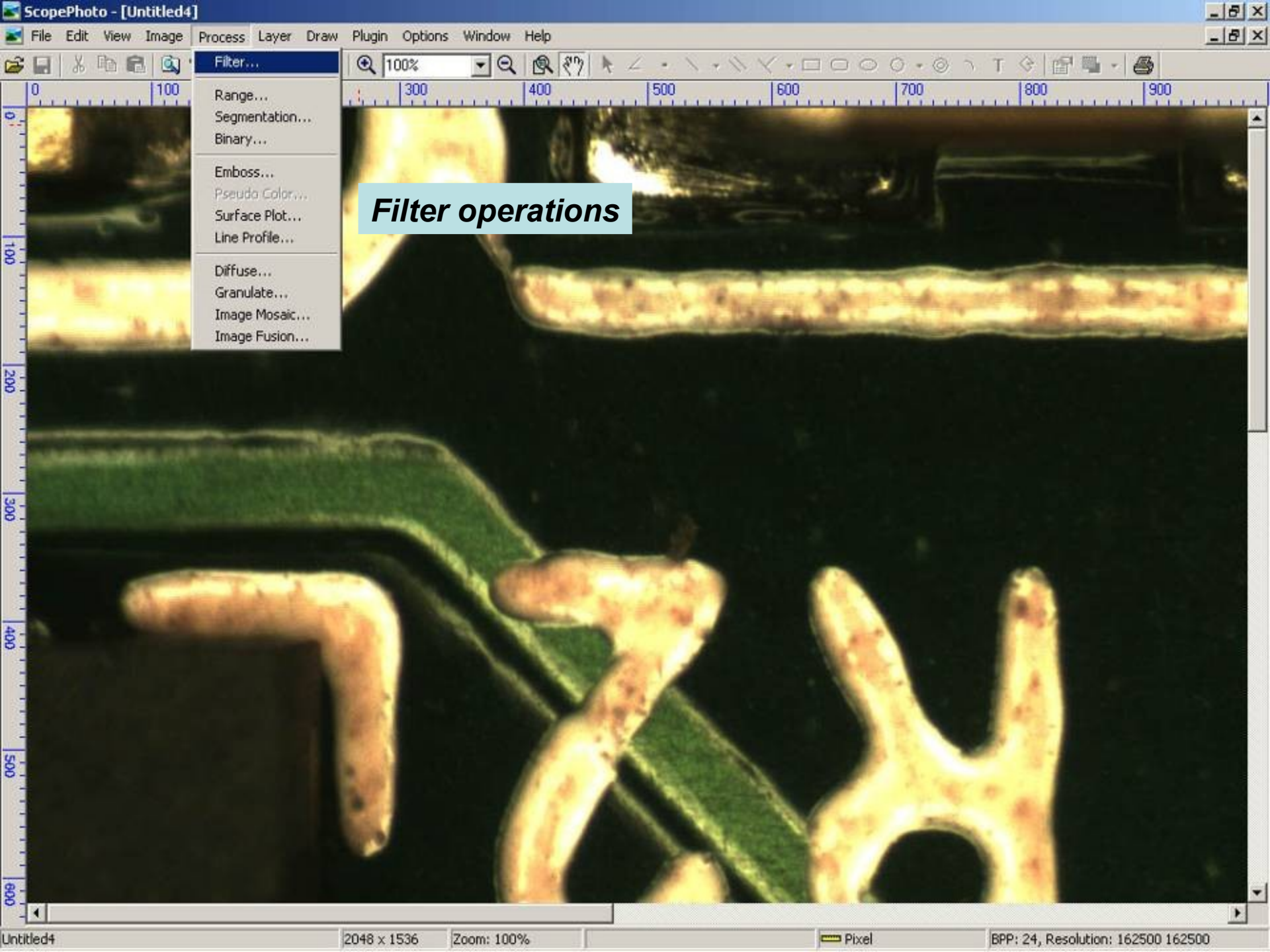
☒ Preview



Setting grids

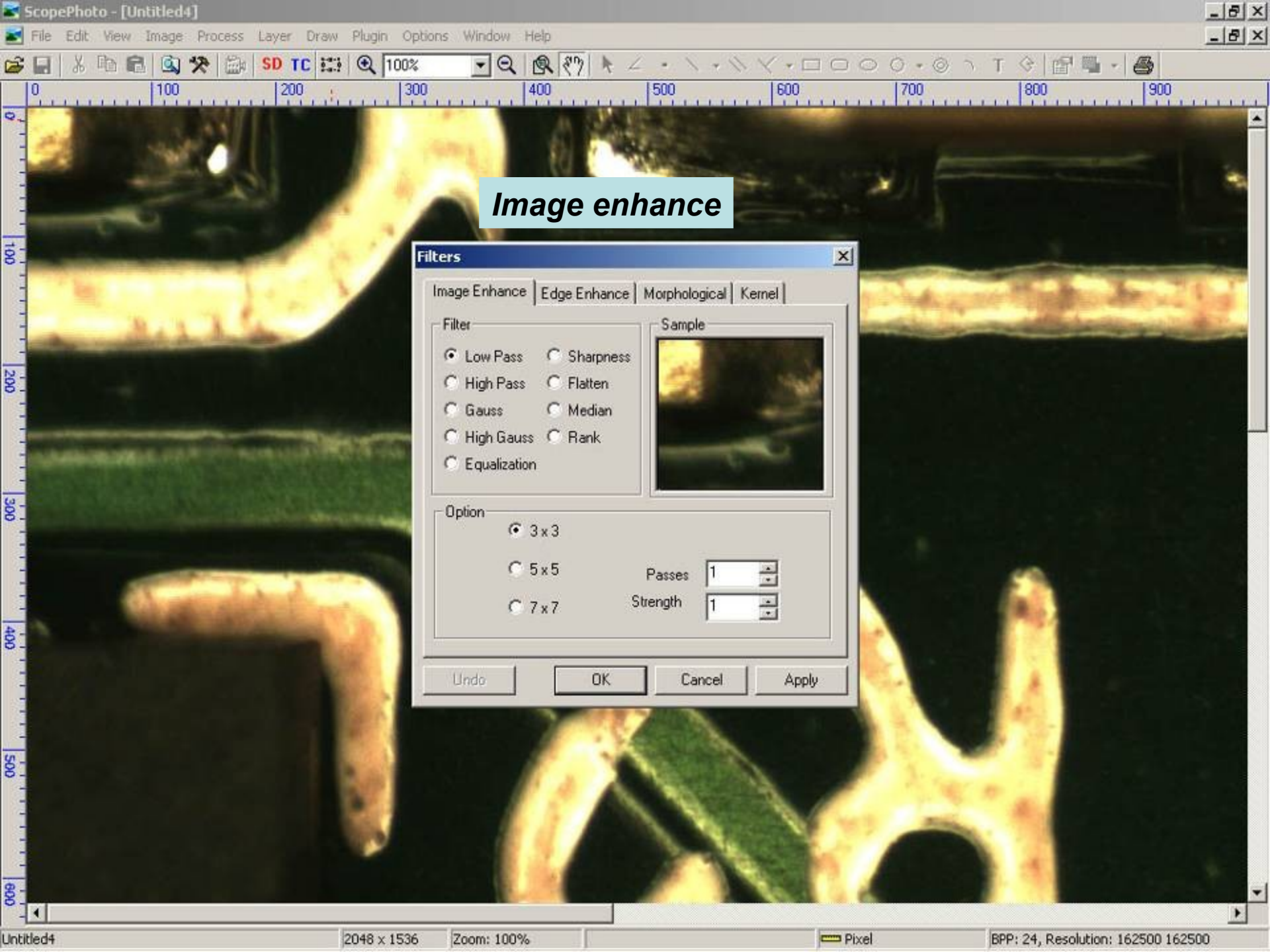






*Filter operations*





*Image enhance*

**Filters**

Image Enhance | Edge Enhance | Morphological | Kernel

Filter

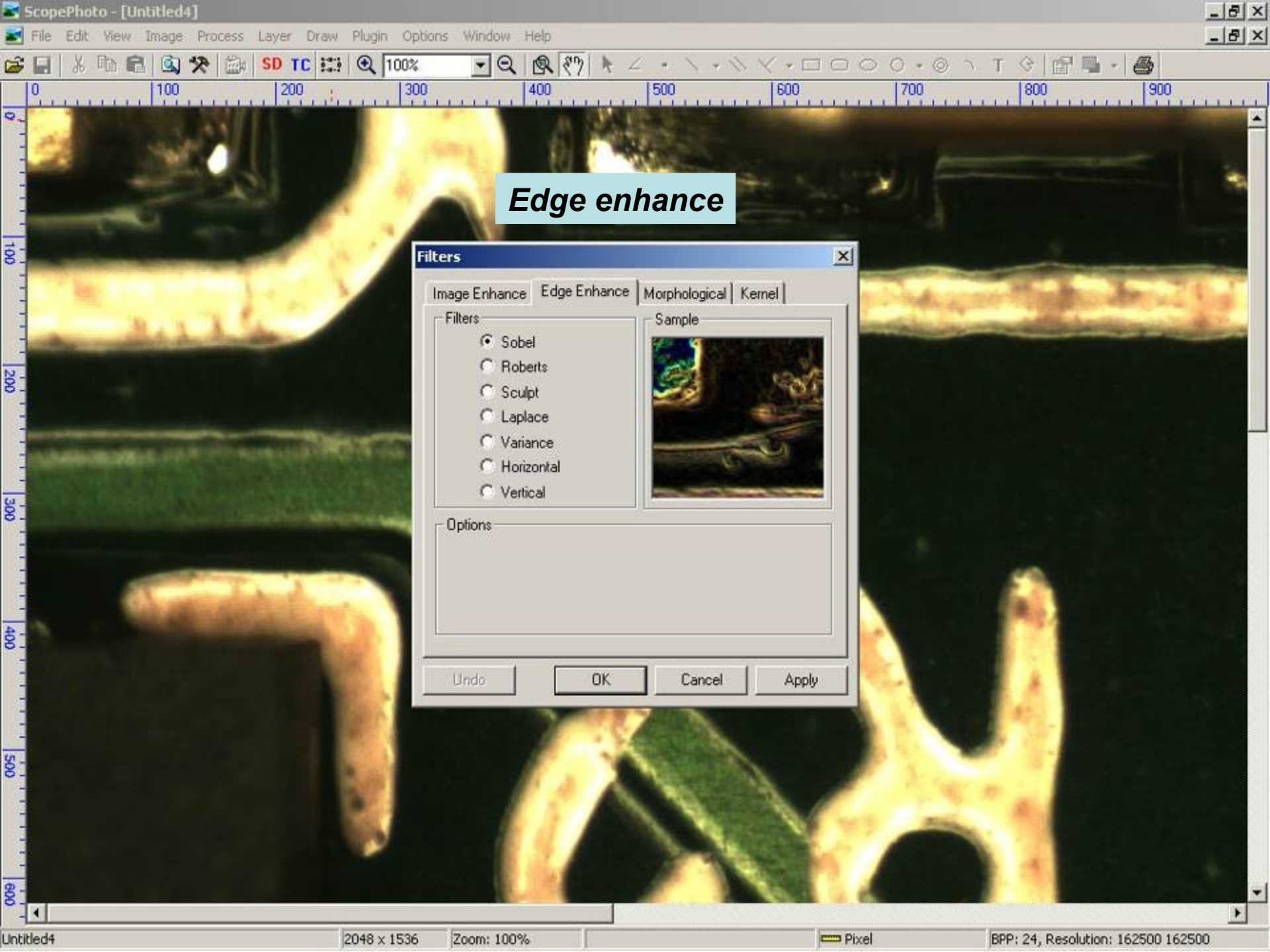
☒ Low Pass    ☐ Sharpness  
☐ High Pass    ☐ Flatten  
☐ Gauss    ☐ Median  
☐ High Gauss    ☐ Rank  
☐ Equalization

Sample

Option

☒ 3 x 3    Passes: 1  
☐ 5 x 5    Strength: 1  
☐ 7 x 7

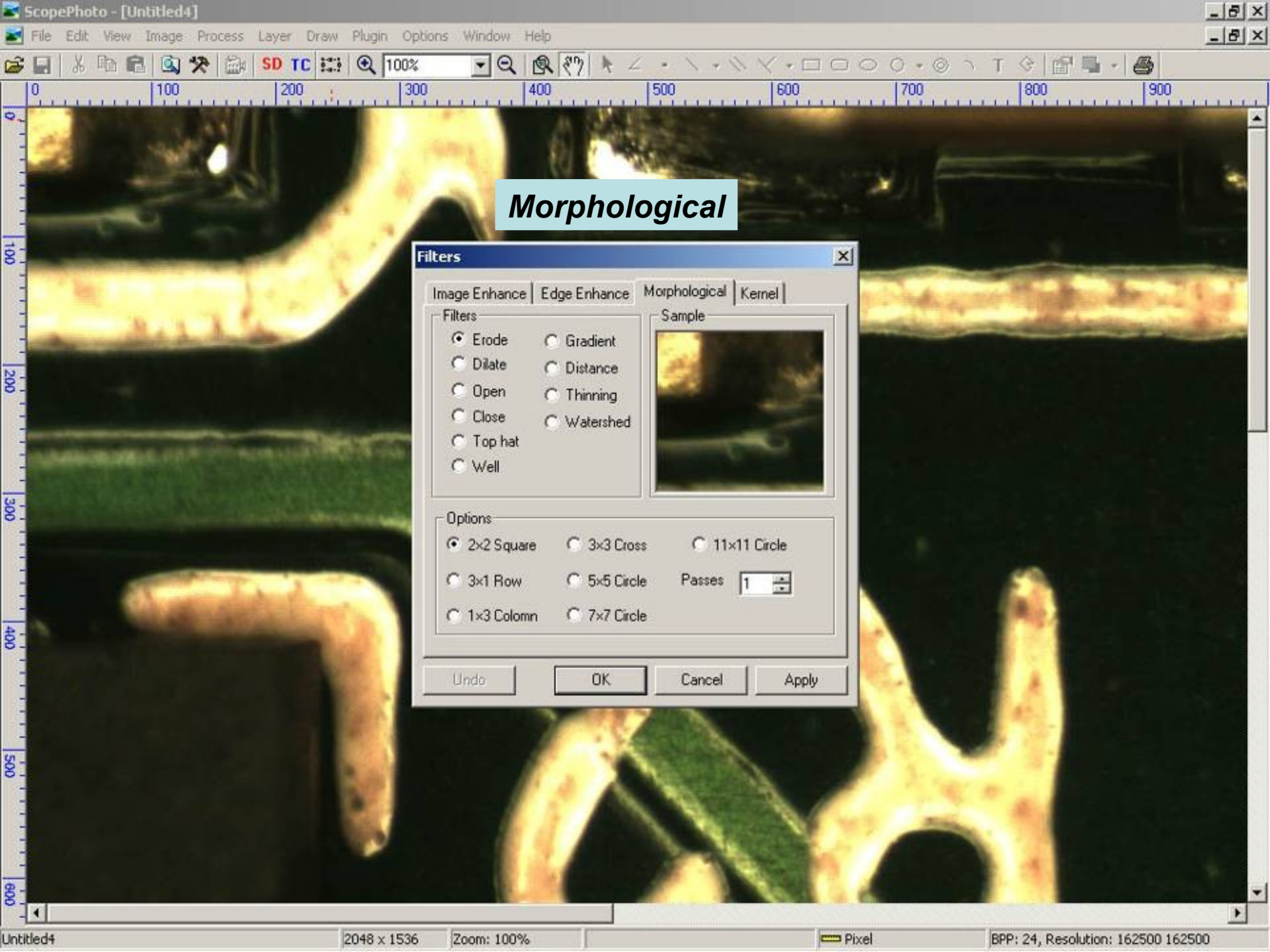
Undo    OK    Cancel    Apply



*Edge enhance*







*Morphological*

Filters

Image Enhance | Edge Enhance | Morphological | Kernel

Filters

☒ Erode

☐ Dilate

☐ Open

☐ Close

☐ Top hat

☐ Well

☐ Gradient

☐ Distance

☐ Thinning

☐ Watershed

Options

☒ 2x2 Square

☐ 3x1 Row

☐ 1x3 Column

☐ 3x3 Cross

☐ 5x5 Circle

☐ 7x7 Circle

☐ 11x11 Circle

Passes

1

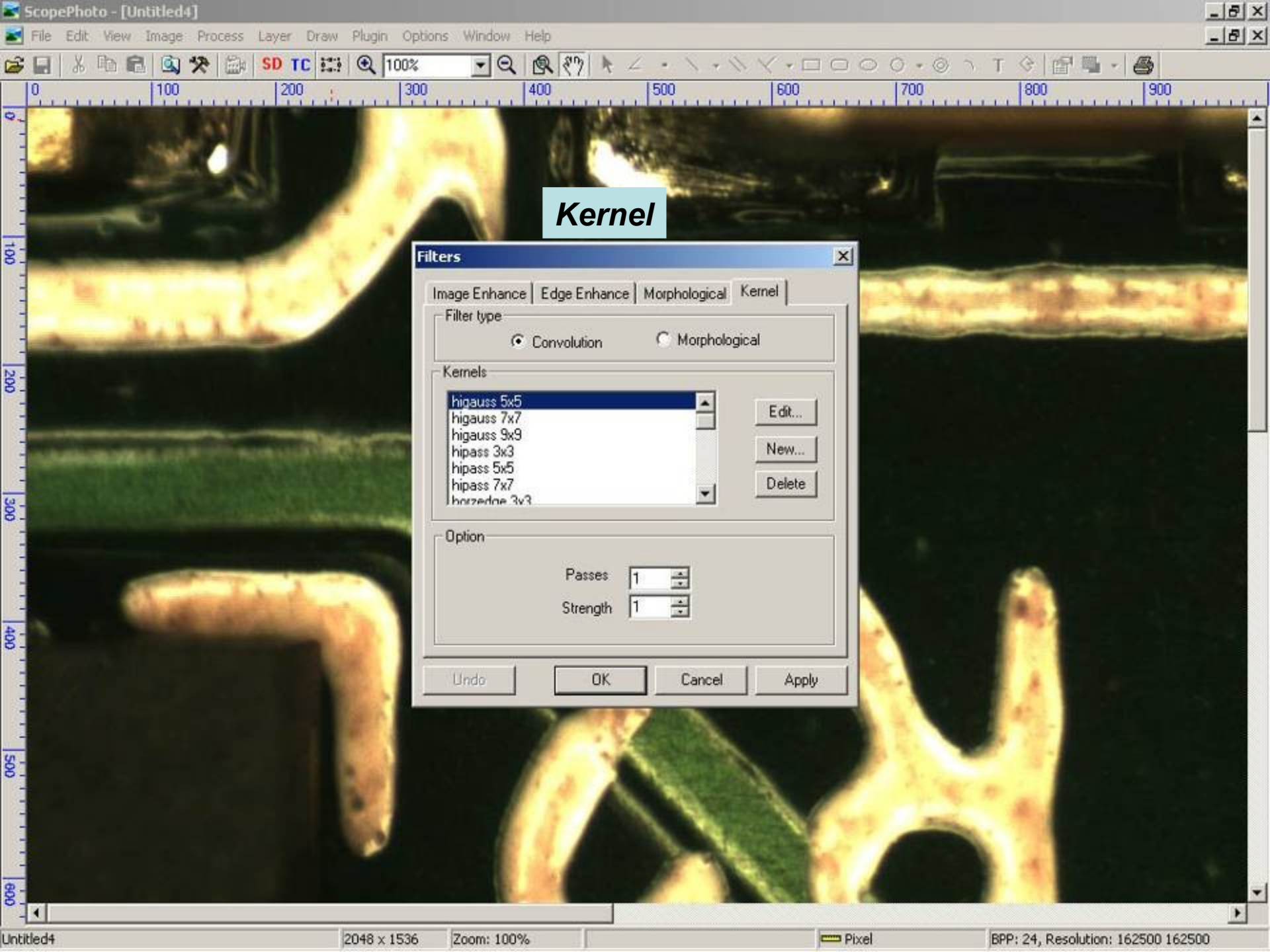
Sample

Undo

OK

Cancel

Apply



*Kernel*

**Filters**

Image Enhance | Edge Enhance | Morphological | **Kernel**

Filter type

☒ Convolution ☐ Morphological

Kernels

- higauss 5x5
- higauss 7x7
- higauss 9x9
- hipass 3x3
- hipass 5x5
- hipass 7x7
- horzedge 3x3

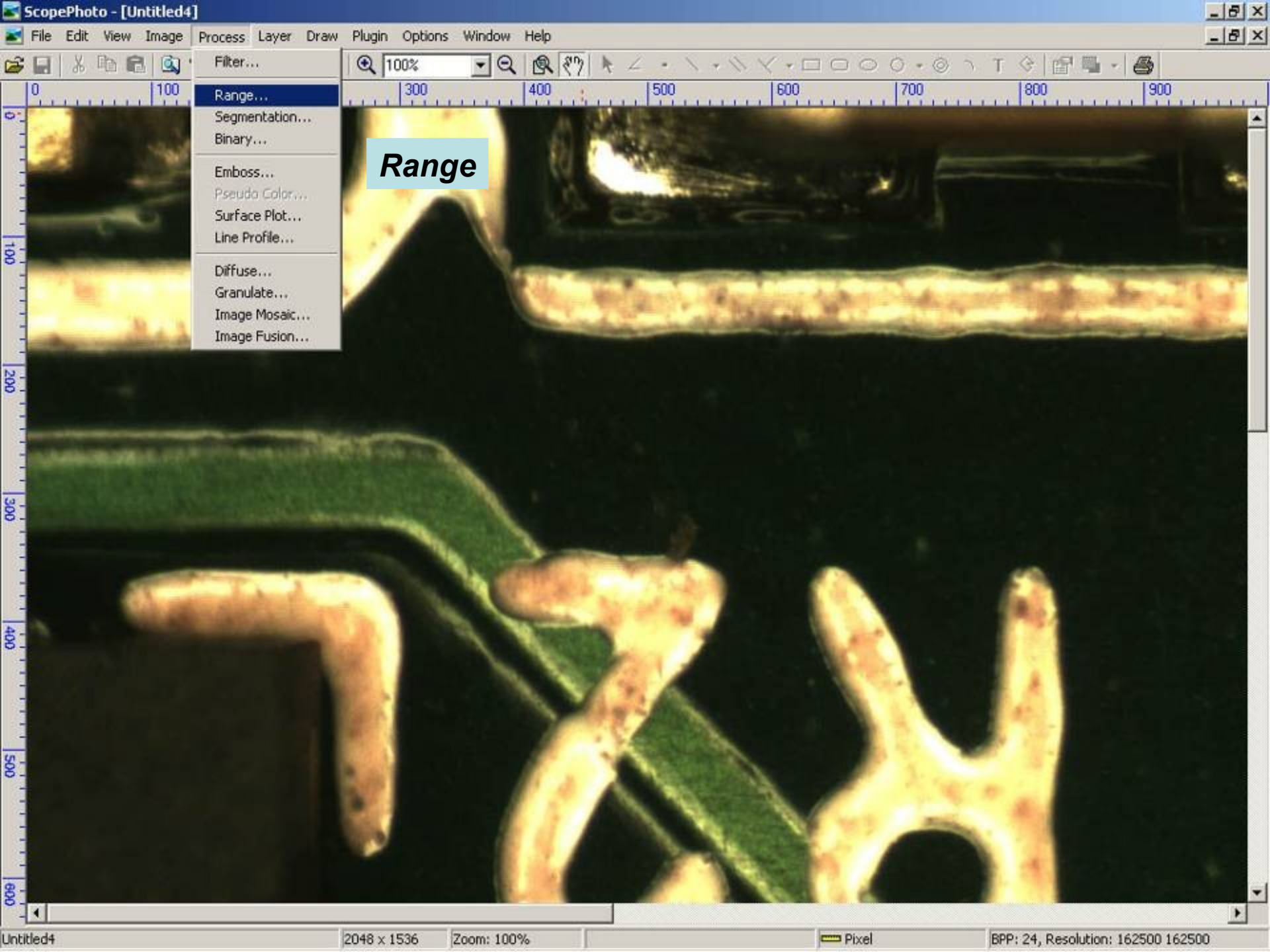
Edit...  
New...  
Delete

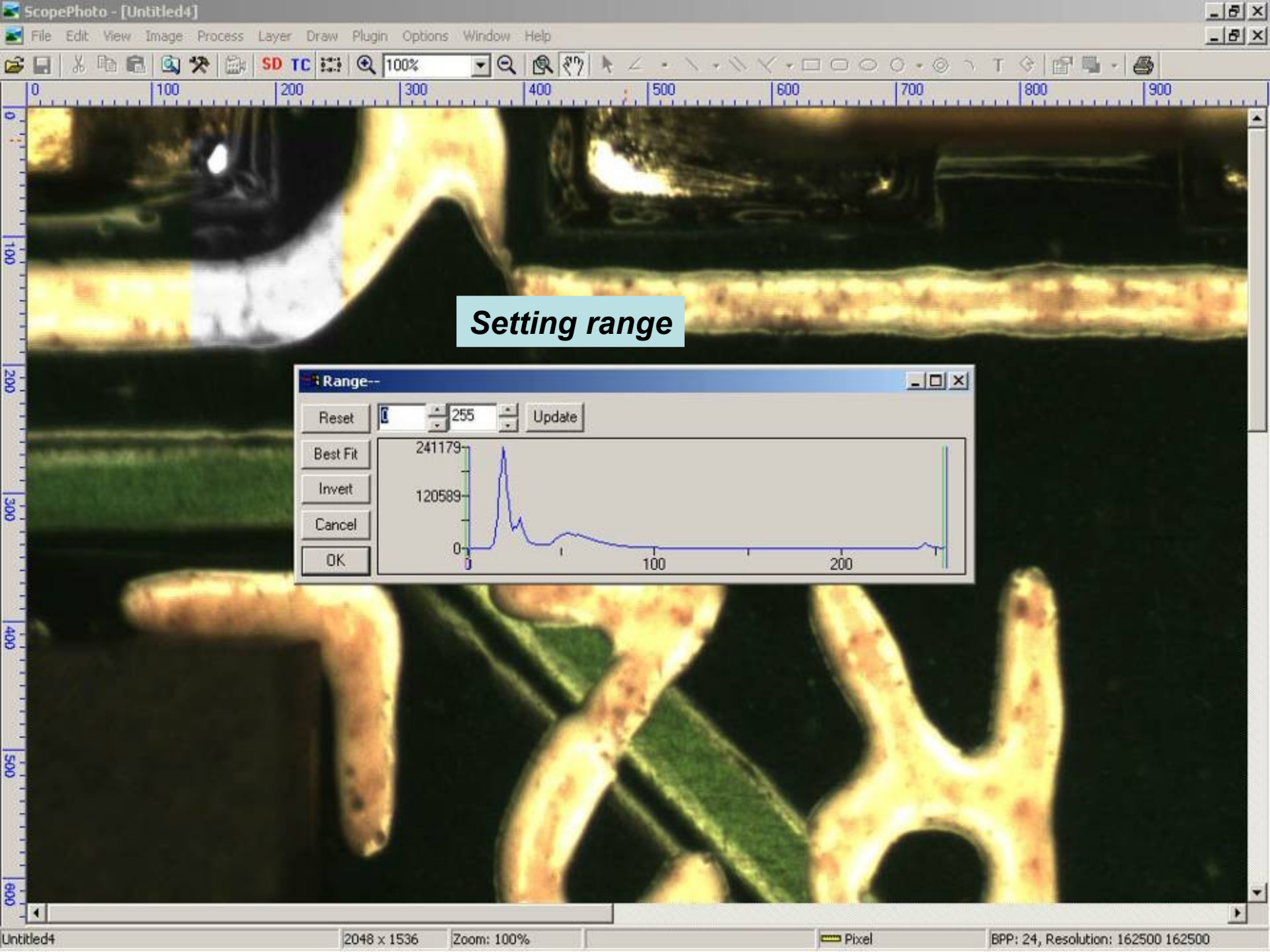
Option

Passes: 1  
Strength: 1

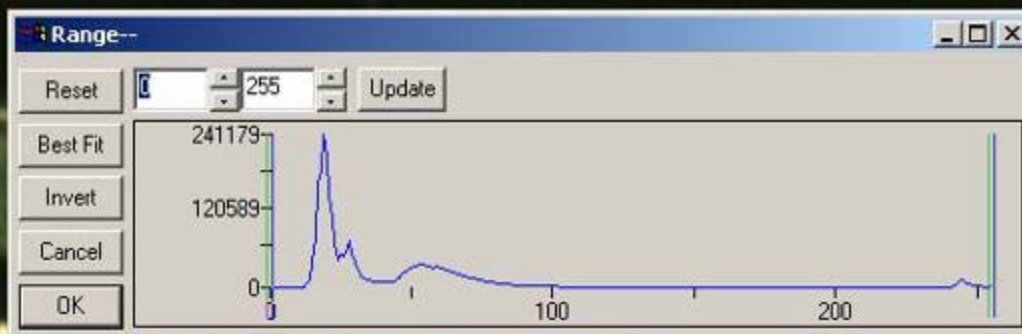
Undo OK Cancel Apply



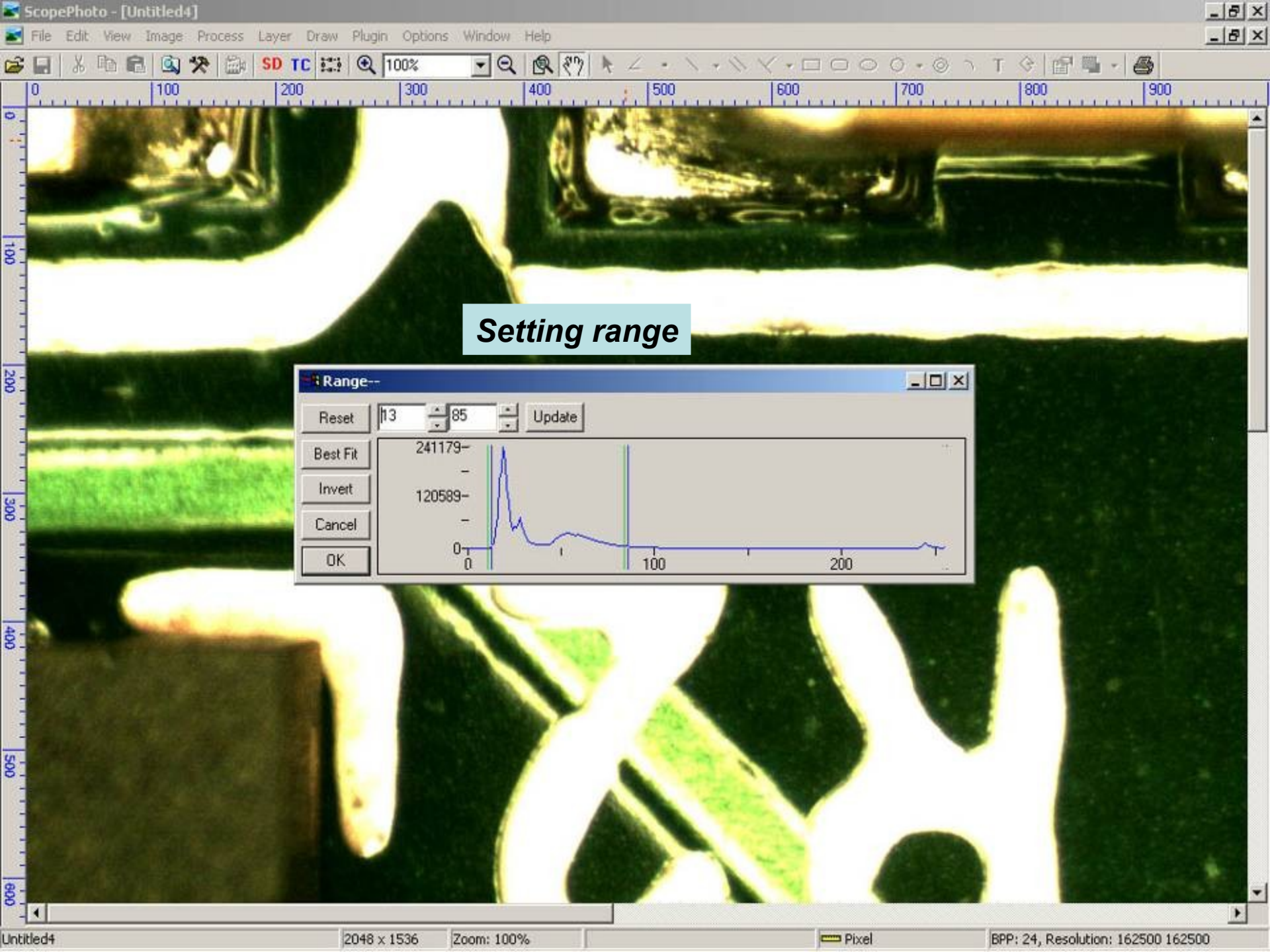




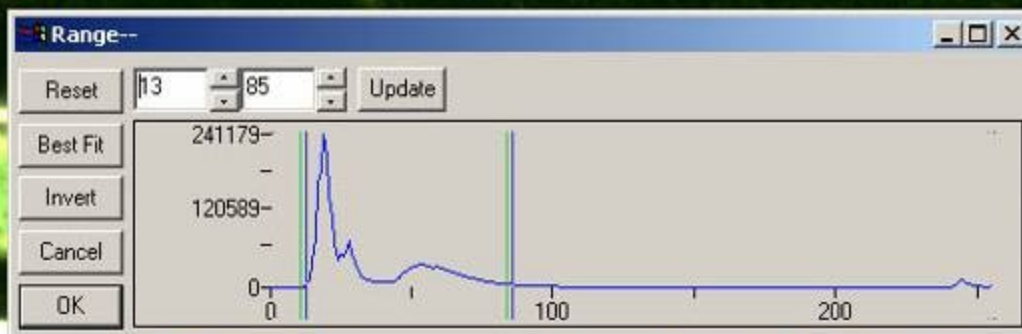
Setting range

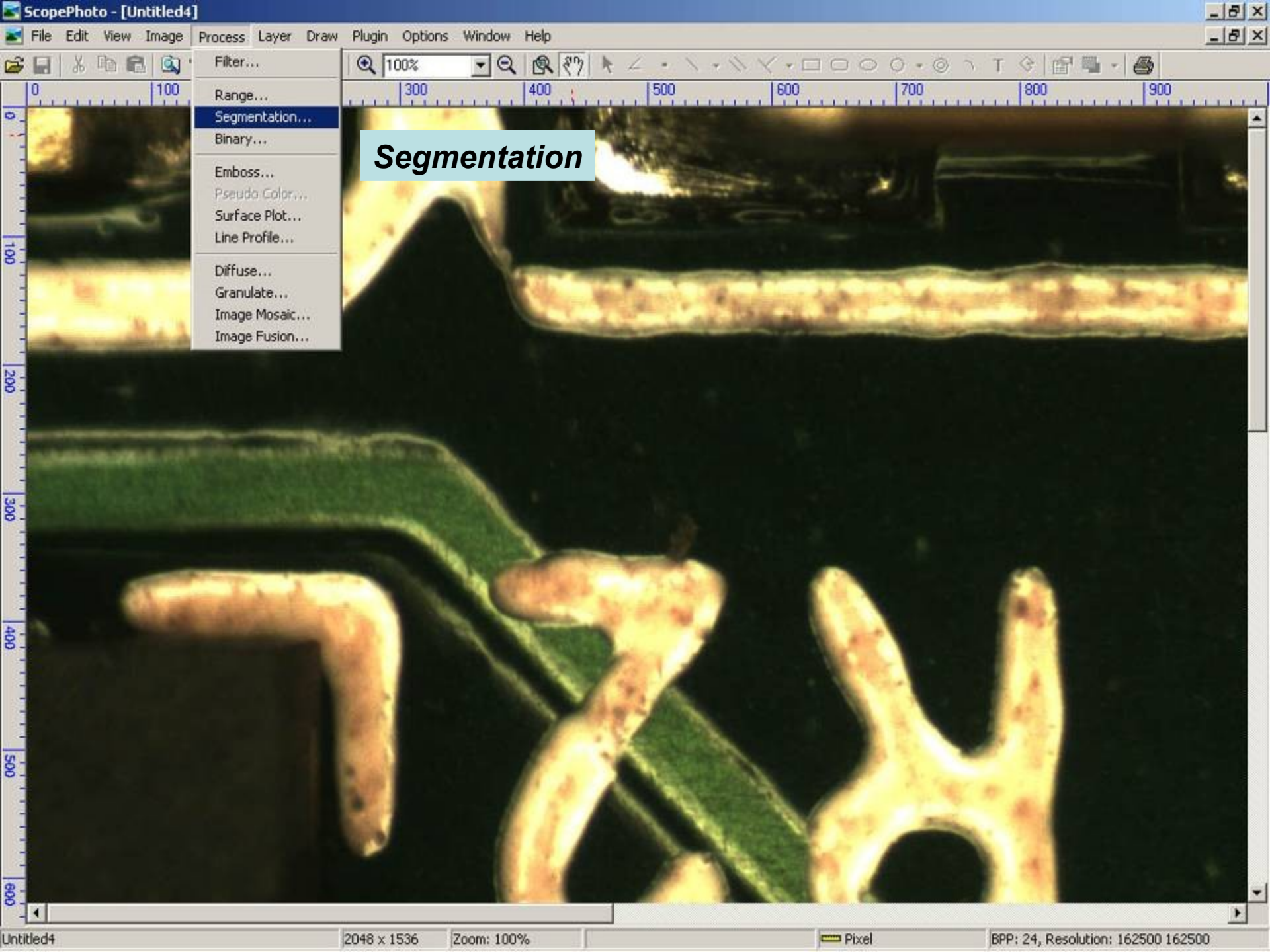






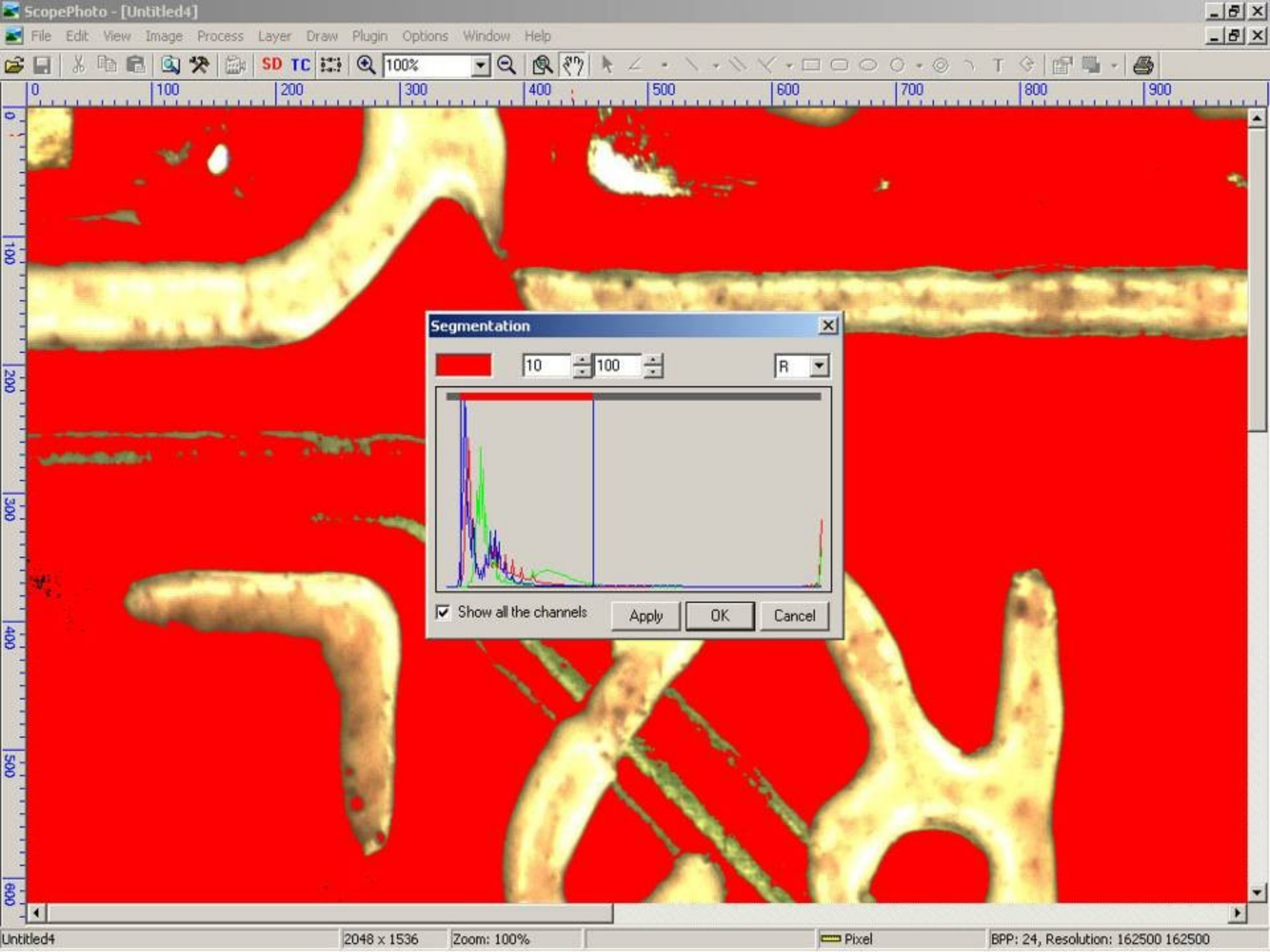
Setting range

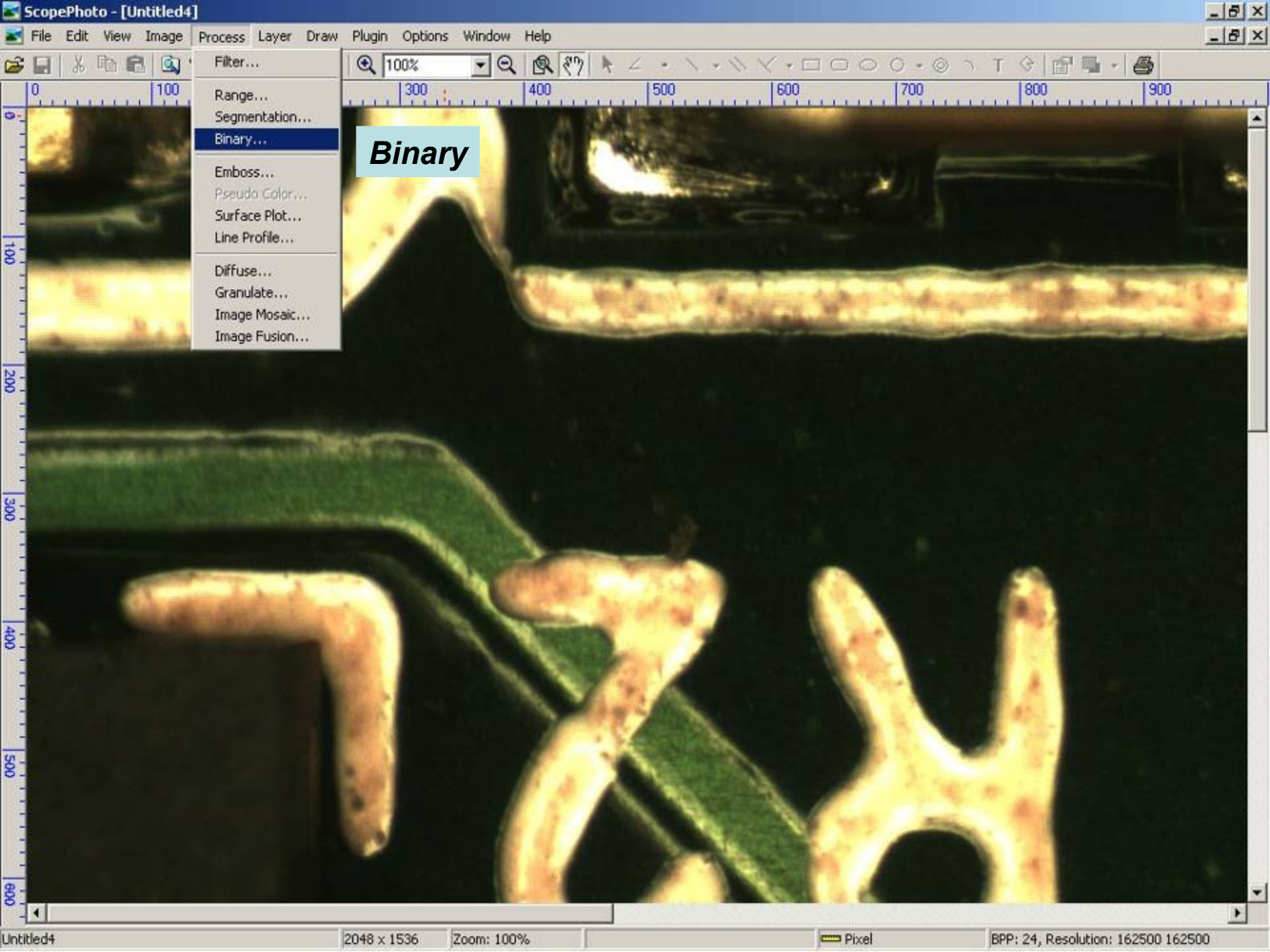




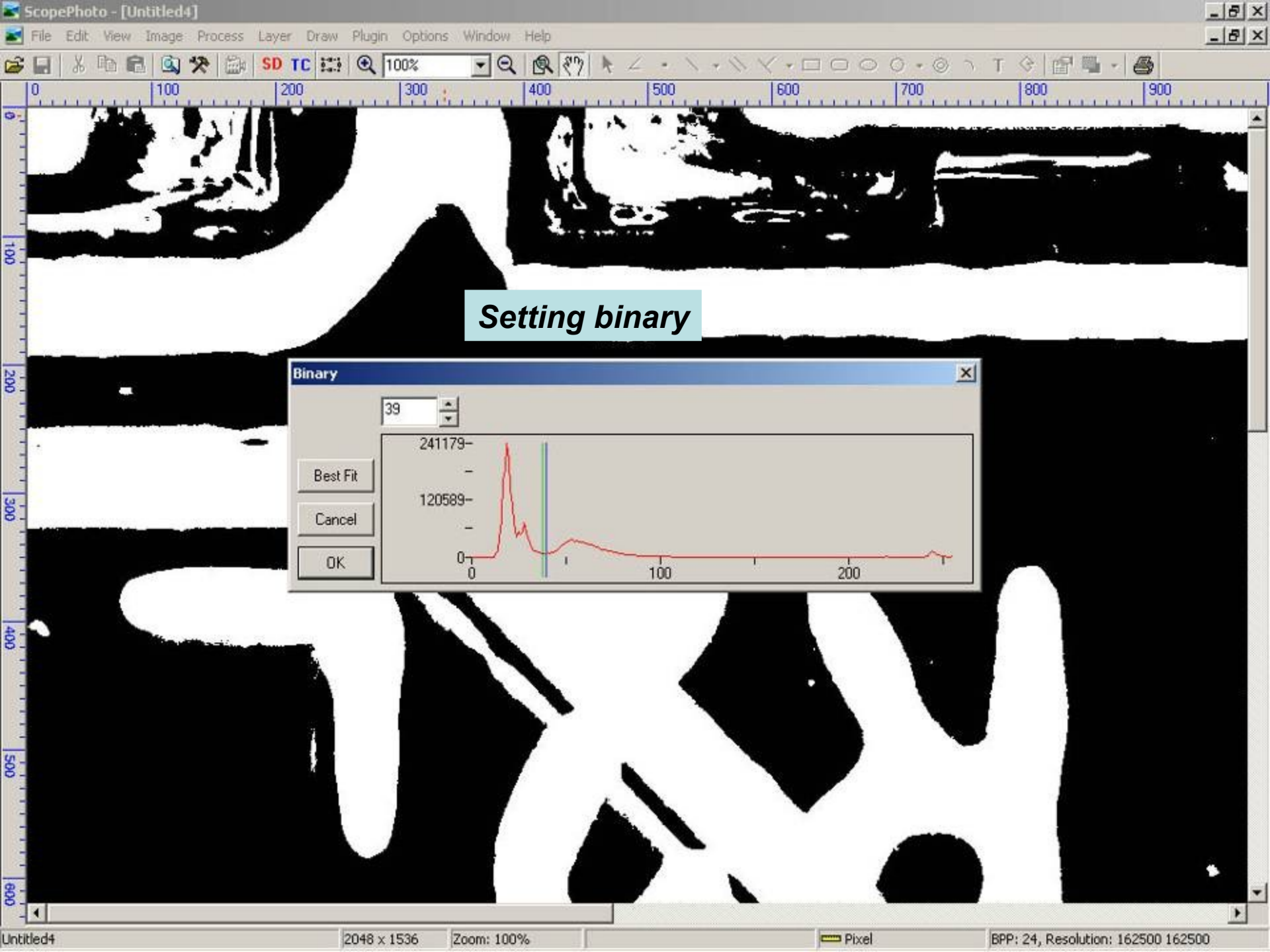
Segmentation



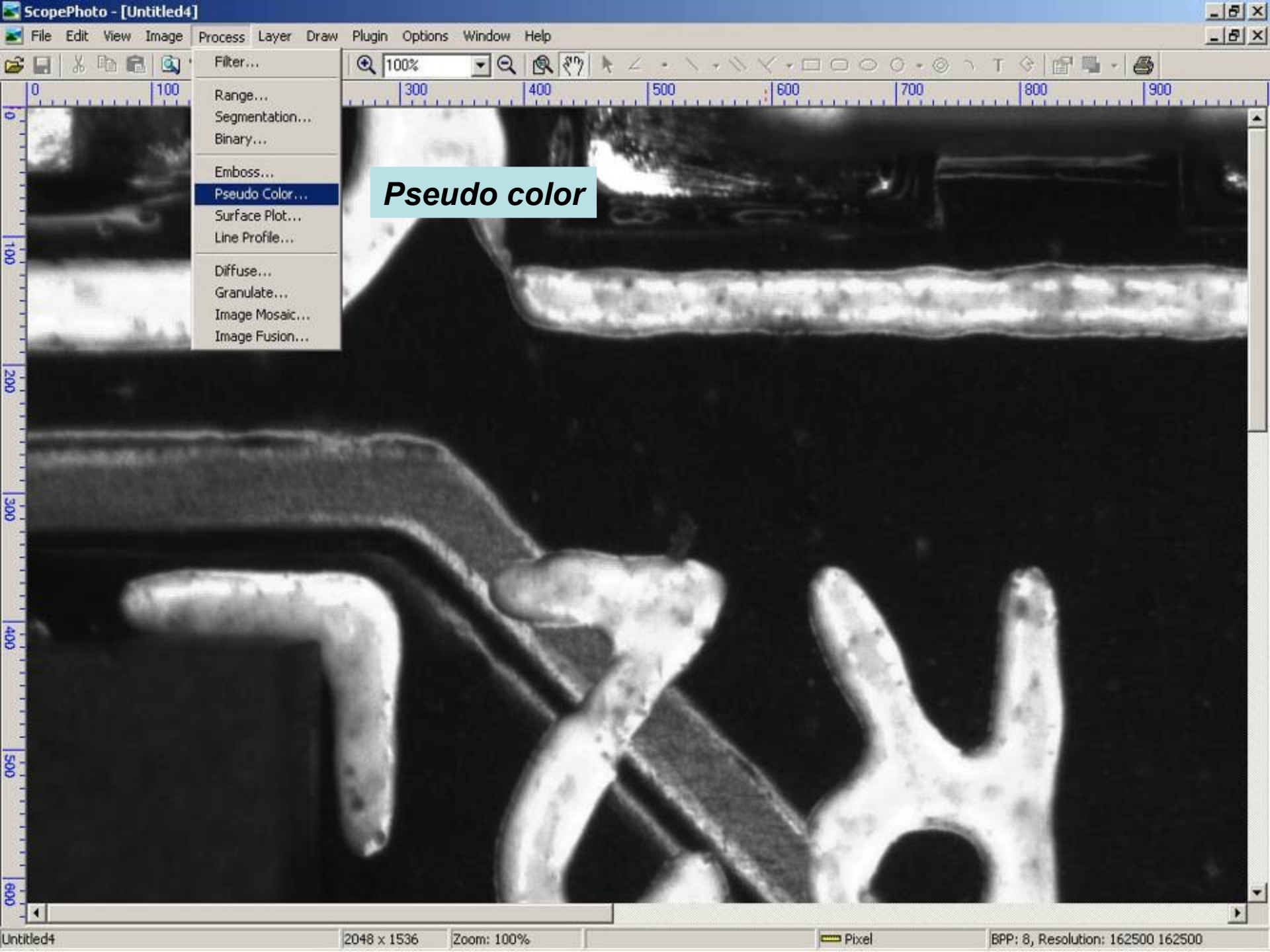






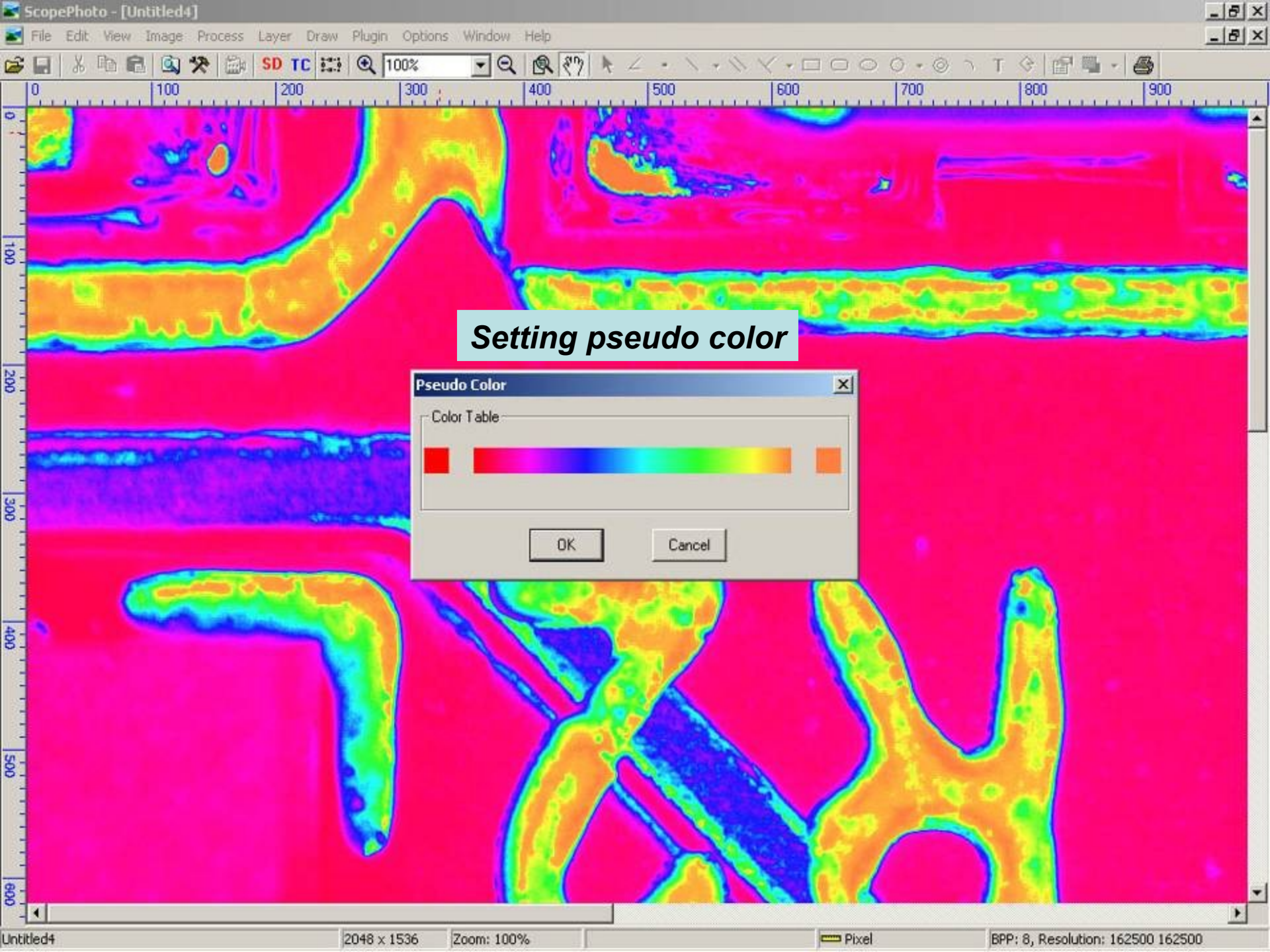


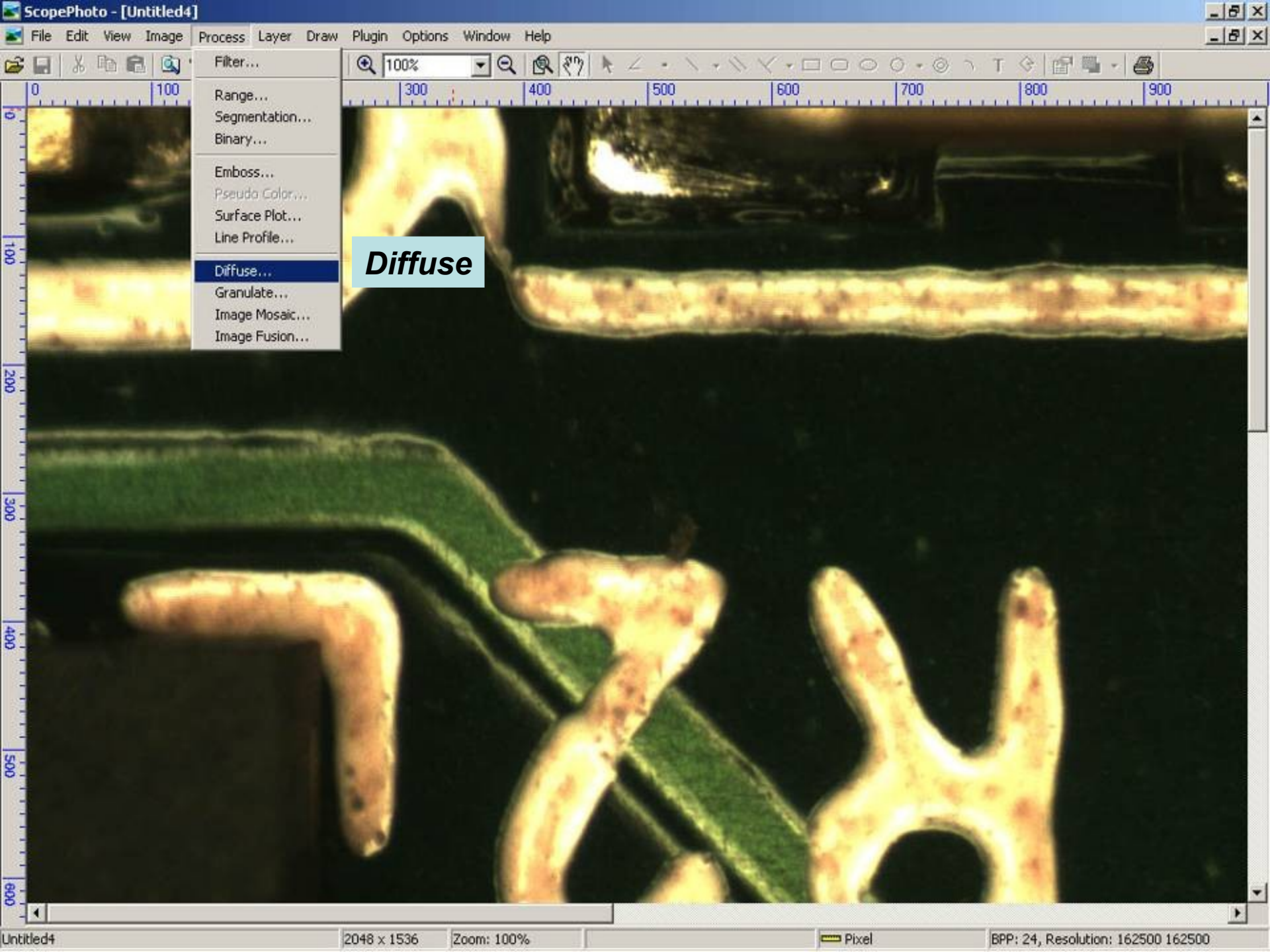
*Setting binary*



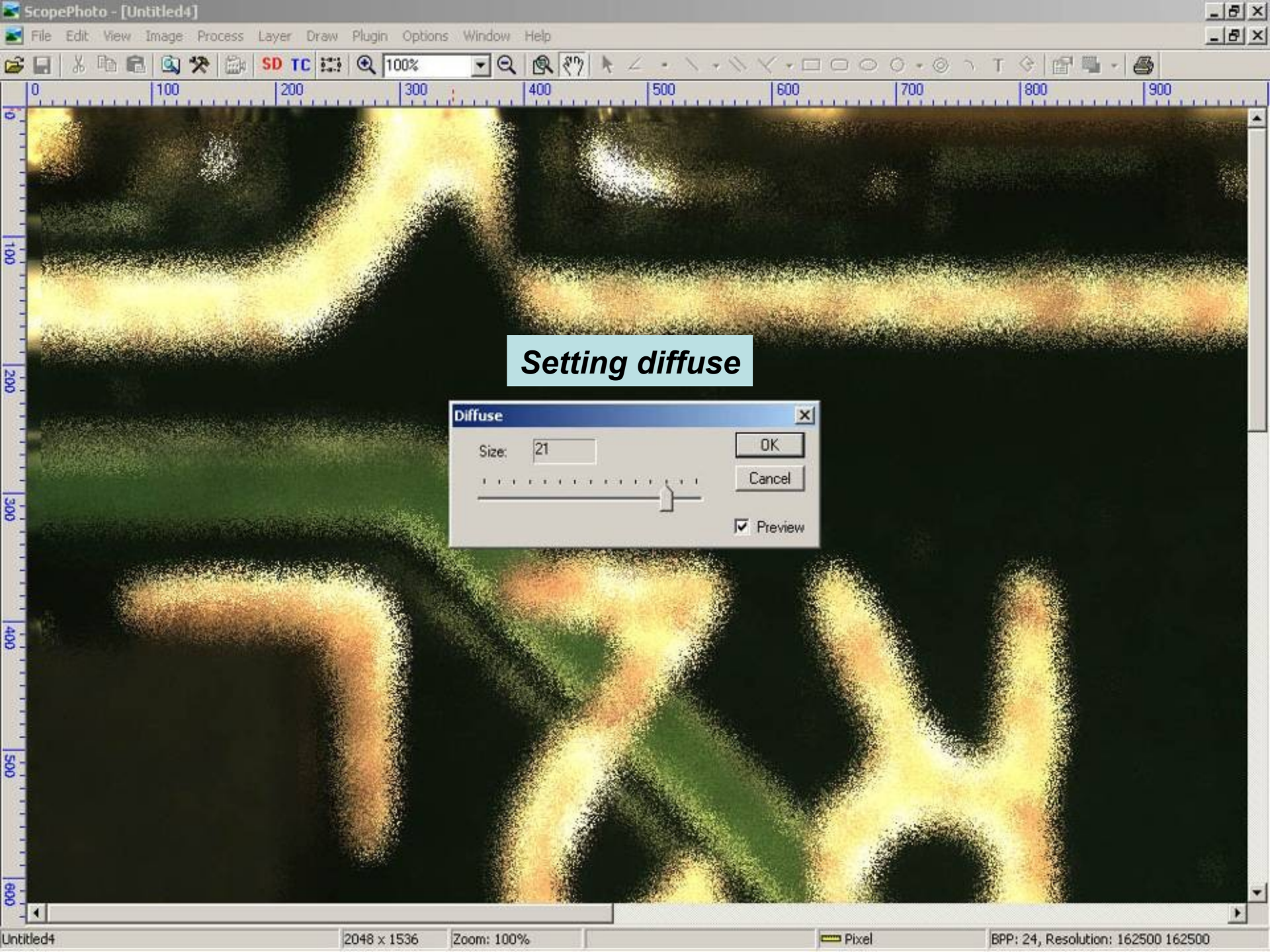
*Pseudo color*











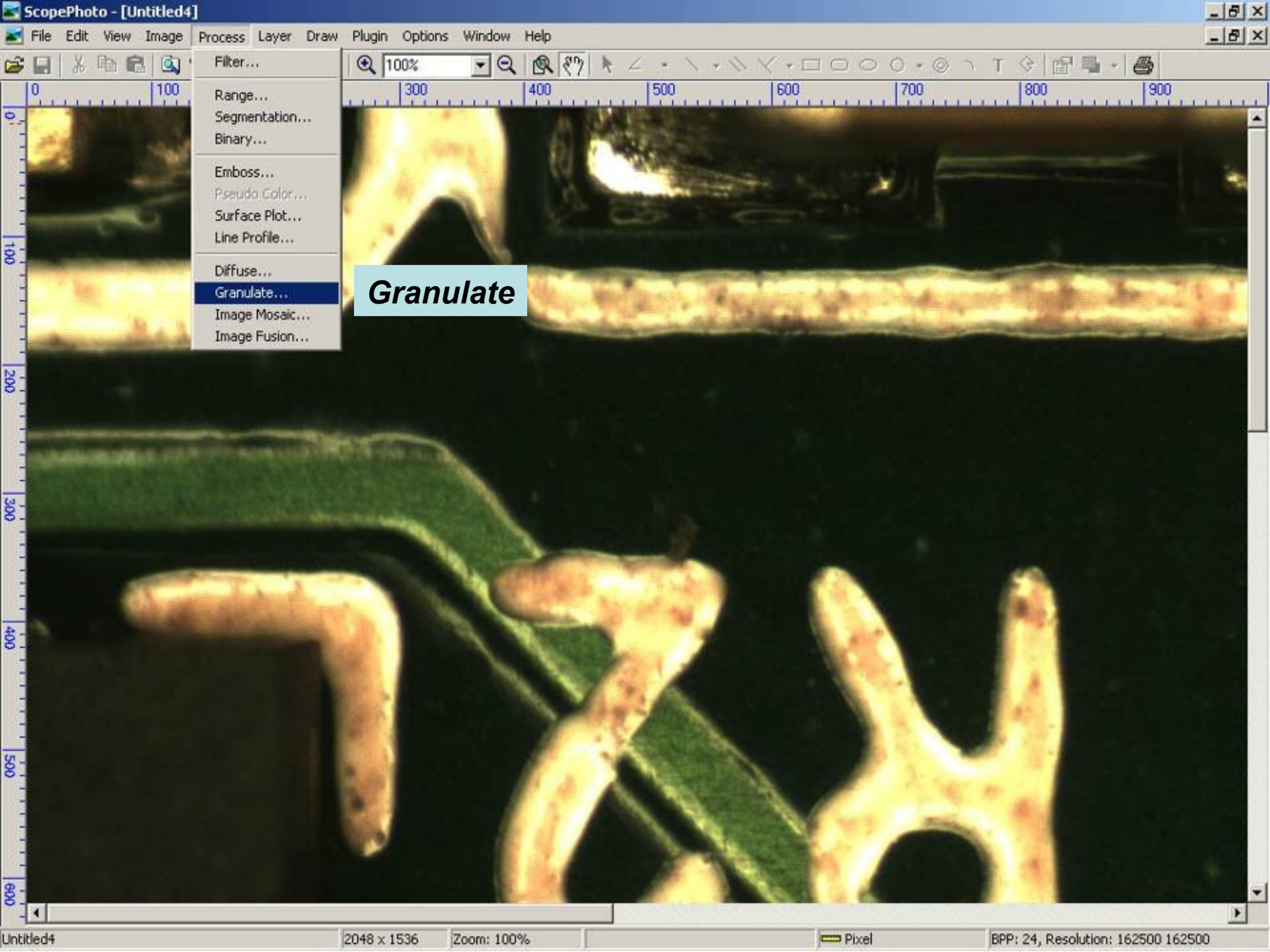
## Setting diffuse

**Diffuse** [X]

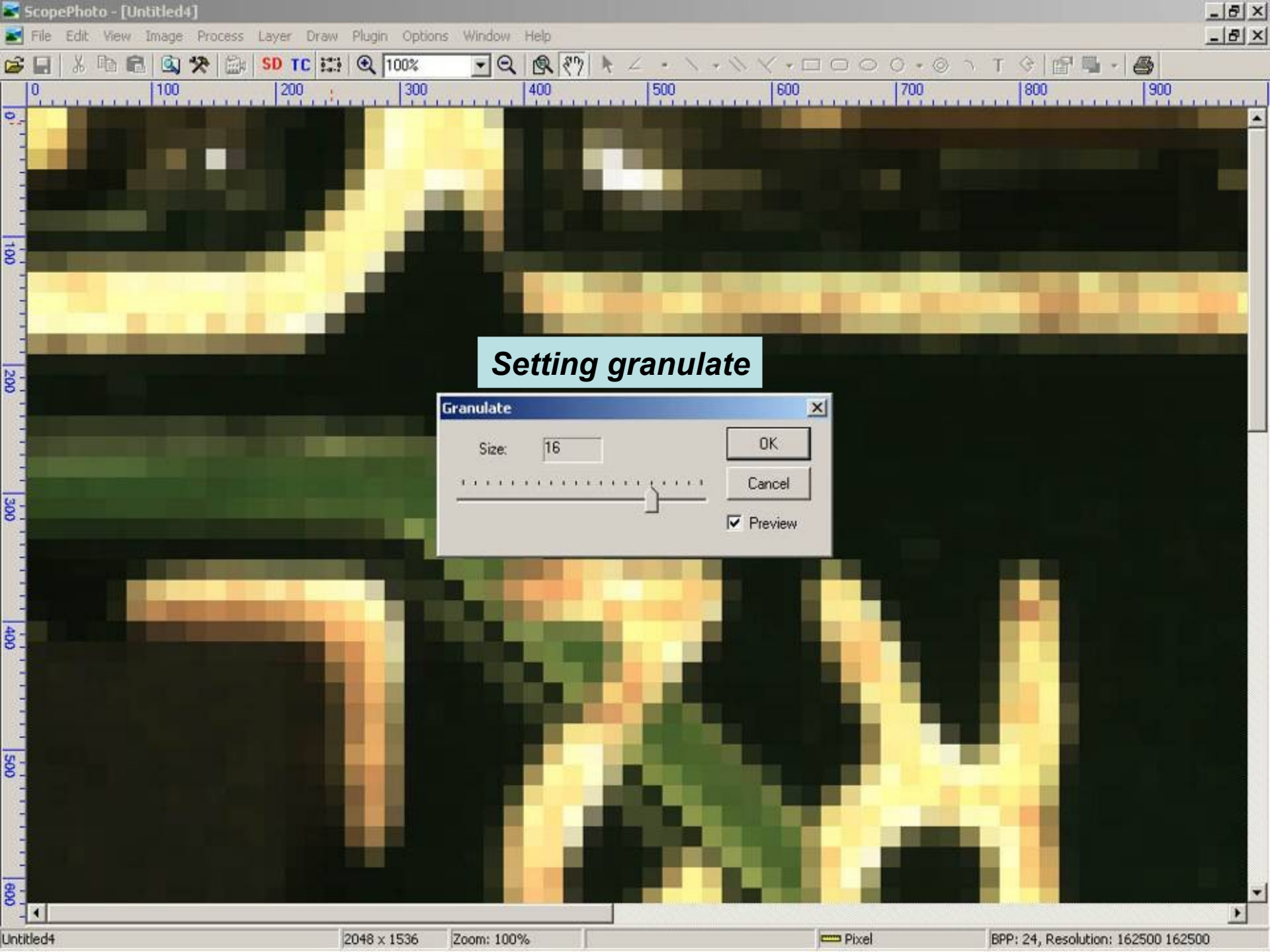
Size:

☒ Preview

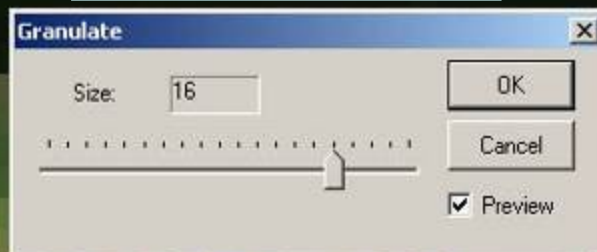






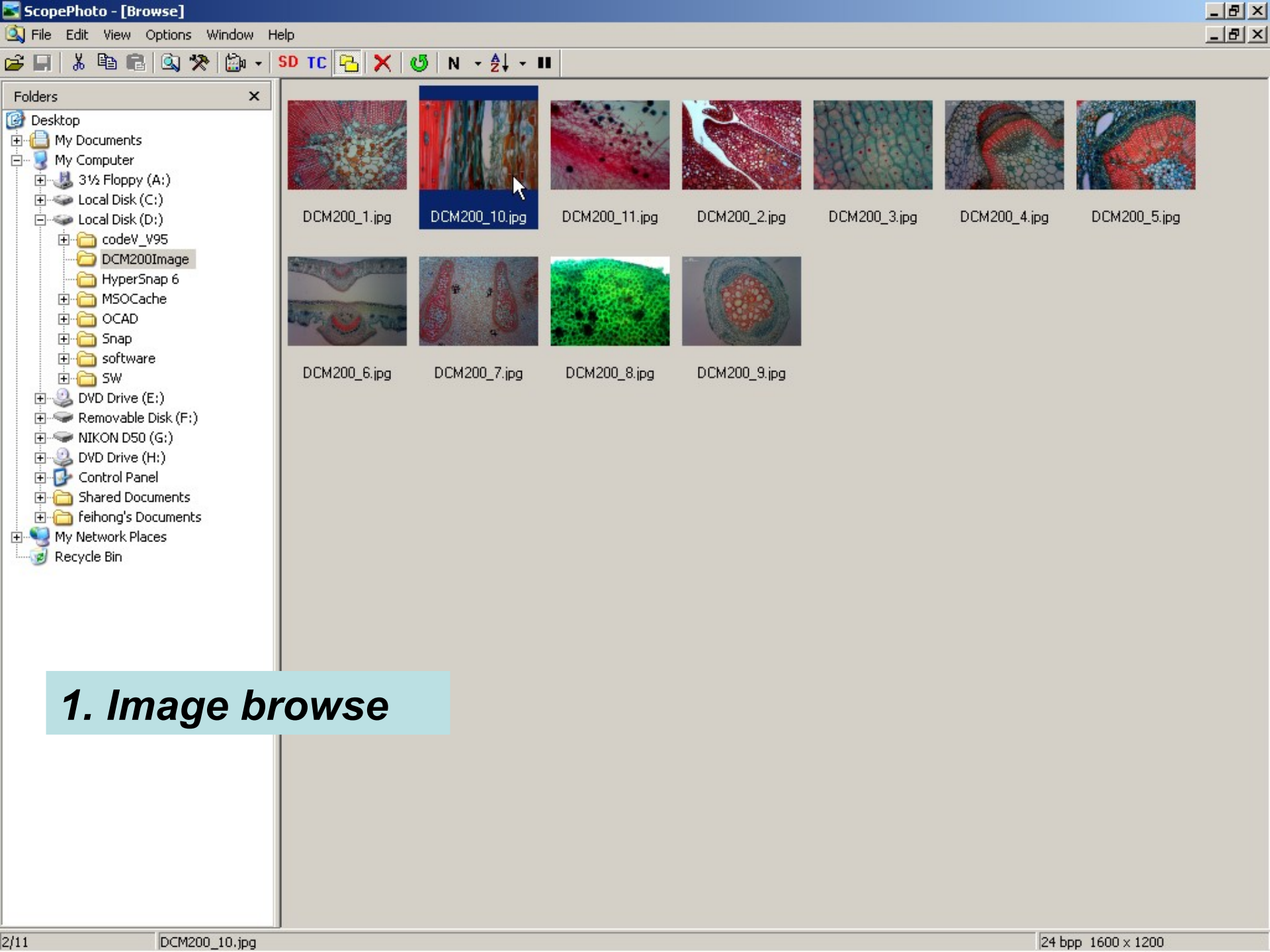


## Setting granulate



***Image browse***

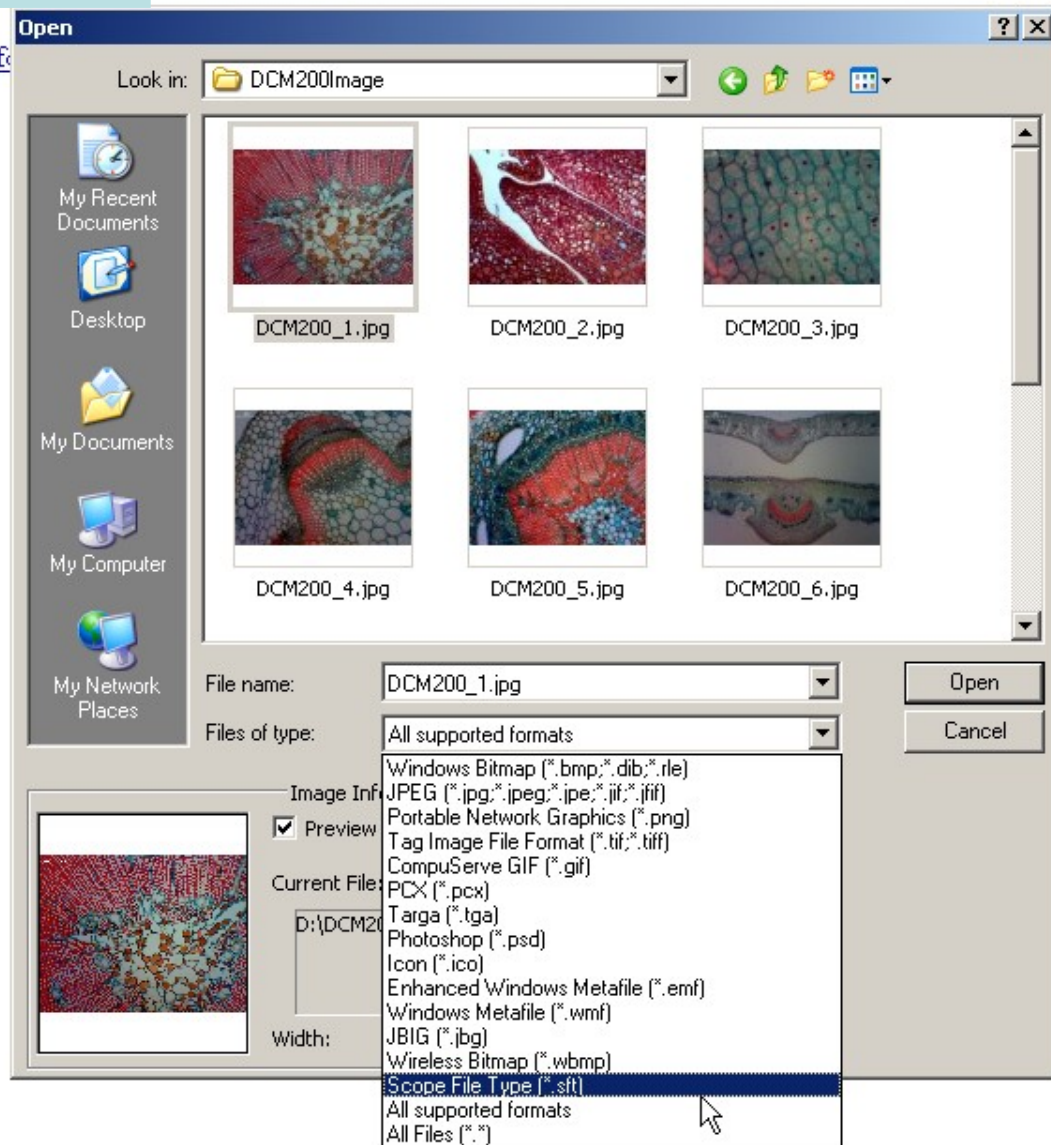




## 1. Image browse

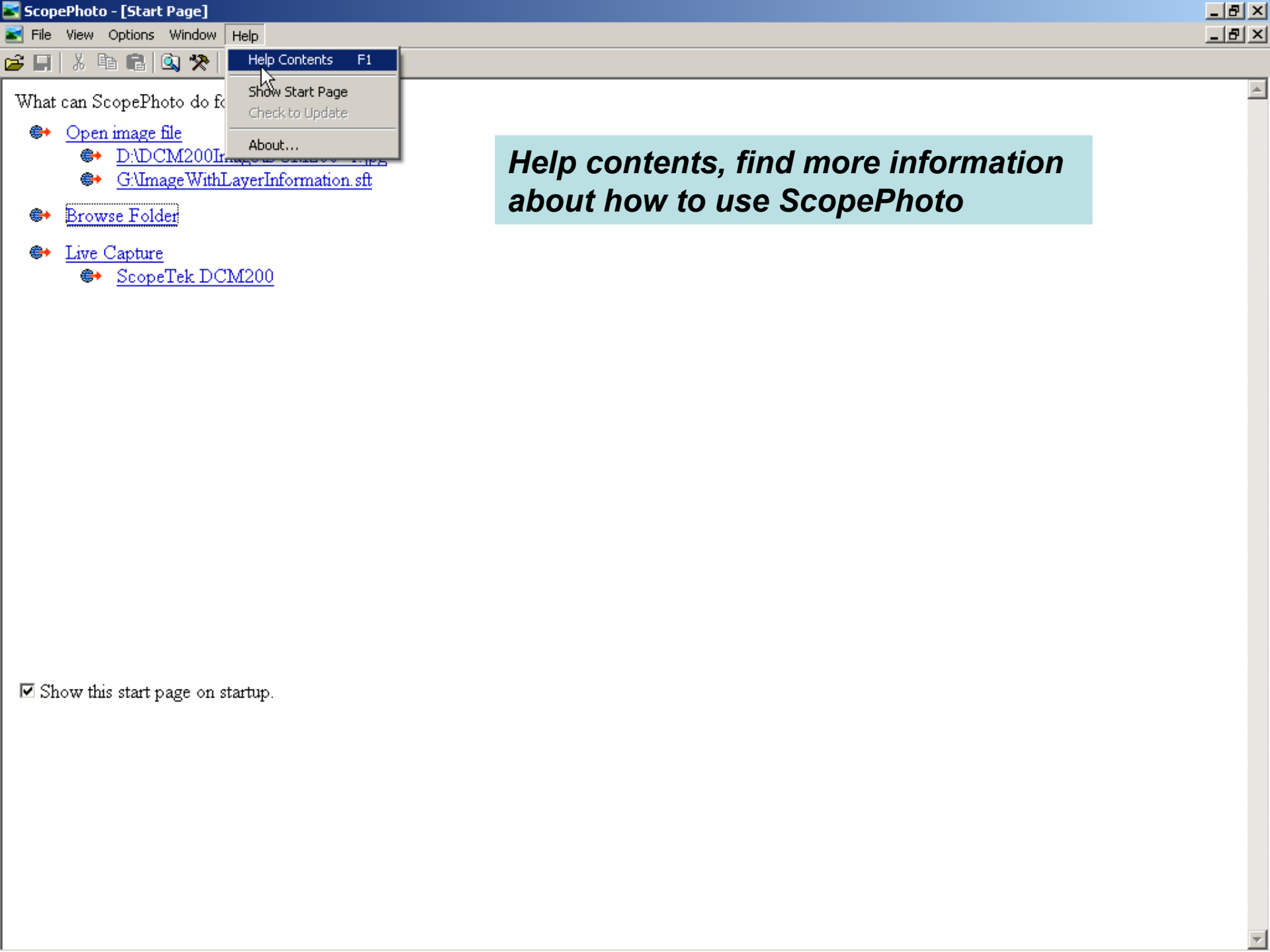
## 2. Image open

- Open image file
  - G:\Image\WithLayerInfo
- Browse Folder
- Live Capture
  - ScopeTek DCM200



☒ Show this start page on startup.








*ScopePhoto 3.0*  
for Image Processing

## Quick Index

This is a quick index of ScopePhoto application . This index is designed for those who wish to master the ScopePhoto operations in a short time.


How to display the  
video from the video  
devices?

1. To get the video from [Twain Acquire](#) (its shortcuts are  and  on [Image Window Toolbar](#) ).
2. To use [DirectShow Capture Technique](#). Its shortcut is  .
3. File->Import Image->[DirectShow Capture....](#)
4. File->Import Image->[Twain Acquire....](#)

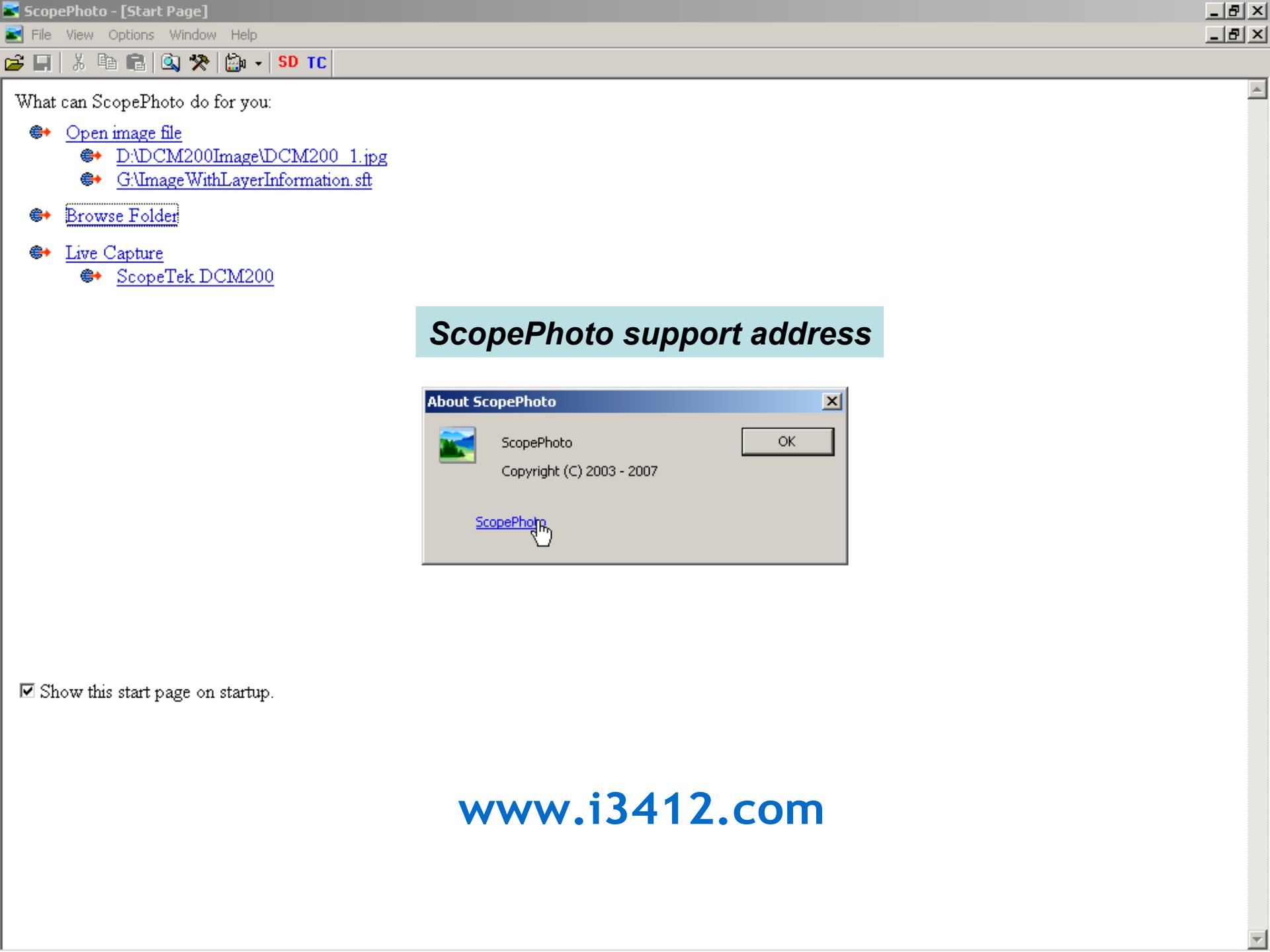
How to define the  
Software Power ?

1. Display the video using [DirectShow Capture Technique](#) first.
2. According to [Software Power Setup](#) to define your own **Software Power** step by step.

How to perform the measurement operation (we use term **Draw** in the

1. Define your own **Software Power** according to [Software Power Setup](#), otherwise, the unit will be **Pixel** only for the captured image.
2. Select the right **Software Power** from  list on [DirectShow Capture Window Toolbar](#) and let this **Software Power** equal to your real microscope objective lens power you are using to capture the image .
3. Capture an image using  button on the [DirectShow Capture Window Toolbar](#).
3. Make a new layer on the **Background layer** using [Draw->New](#) menu or [Tool Box Layer Page](#). The [Draw Toolbar](#) and [Draw](#) menu will become active.





What can ScopePhoto do for you:

- [Open image file](#)
  - [D:\DCM200Image\DCM200\\_1.jpg](#)
  - [G:\ImageWithLayerInformation.sft](#)
- [Browse Folder](#)
- [Live Capture](#)
  - [ScopeTek DCM200](#)

***ScopePhoto support address***



☒ Show this start page on startup.

[www.i3412.com](http://www.i3412.com)