

# Python Documentation

version

août 31, 2022



# Contents

<b>PHASE</b>	<b>1</b>
<b>Loading an image</b>	<b>1</b>
<b>Thresholding parameters</b>	<b>1</b>
<b>Hysteresis</b>	<b>1</b>
<b>Definition of analysis areas</b>	<b>2</b>
<b>Template manipulation</b>	<b>2</b>
<b>Memorizing Templates</b>	<b>3</b>
<b>« Properties » tab</b>	<b>3</b>
<b>Recovery of the data</b>	<b>3</b>
<b><i>Exit the module</i></b>	<b>3</b>
<b>Indices and tables</b>	<b>3</b>



# PHASE

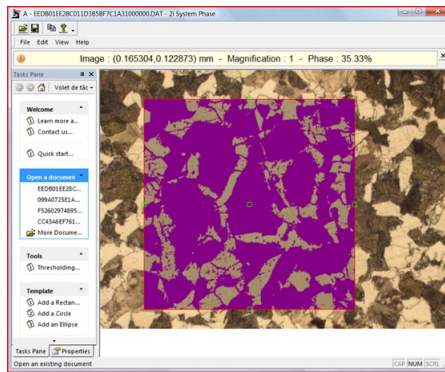
# BildoSoft

Bildosoft.com

2ISYSTEM Phase Module (in English)

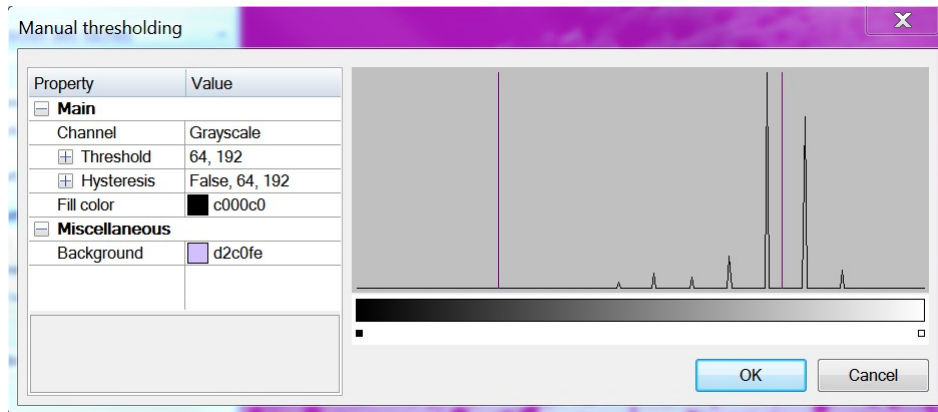
## Loading an image

Open Pegase Pro and Phase, drag the thumbnail corresponding to the image to be processed from the pegase album to the phase window, or load an image directly from the File menu.



## Thresholding parameters

The "thresholding" command in the "tool" menu is used to adjust the brightness ranges to highlight the required areas.

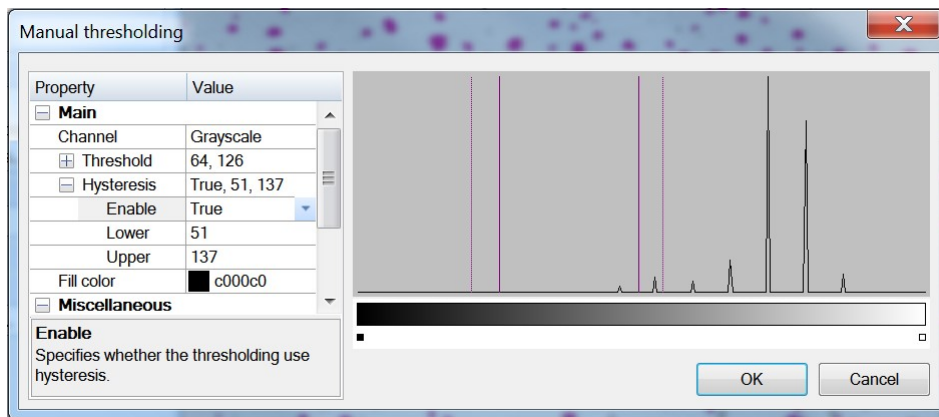


- Channel : allows you to work on one of the color components or on the luminosity. Choosing the "grayscale" channel means working on the image converted to monochrome (although the visualization is done on the original color image).
- Threshold: the pixels whose value is within this range are selected and appear in the color chosen by the user.

The **Lower and Upper** values correspond to the two limits of this range and are symbolized by vertical lines. You can either enter the values by hand or move the cursor with the mouse (place yourself on it, keep the left mouse button pressed while moving it).

## Hysteresis

By setting the "Enable" property to "True" the software adds 2 cursors



The main cursors define the “root” pixels. From these root pixels the software will extend the selection to all pixels that touch them and whose value is included in the interval defined by the 2 hysteresis cursors.

Therefore, isolated pixels whose value is between the hysteresis thresholds and the main thresholds will not be selected, whereas if they had touched pixels selected by the main thresholds they would still have been selected.

**This has the effect of expanding the objects and the objects only.**

The “Fill color” parameters are used to choose the color of the selected pixels.

## Definition of analysis areas

When the program is opened, the analysis is done on the whole image. It can be reduced to a part of the image by using a “template”.

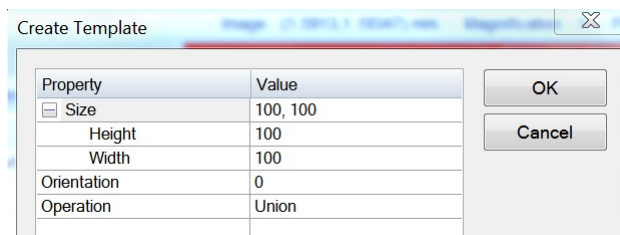
- Definition of a “**Template**” :

There are 3 types: rectangle, circle and ellipse.

In all cases, the dimensions of the template must be entered and the unit is the millimeter.

**Important** : The dimensions to be entered depend on the magnification chosen (“**properties**” and “**magnification**” tab) because the “**templates**” are projected onto the image after magnification. You can therefore choose to work in real space by working at magnification 1 or in the enlarged space (frosted) if you enter the magnification used to take the photo.

If you don’t see your “**template**” it is because the values entered are inconsistent with the magnification set in the “**properties**” tab. It is then either much larger than the image or much smaller and in any case invisible.



You can put more than one “**template**” on an image. Their combination is then managed by the “**operation**” parameter. By default “**Union**” allows to count the total surface of the stacked templates.

## Template manipulation

Small punches appear at the center and at the edge of the objects.

- Move a Template :

Click with the left button on the fist in the center of the template and move the mouse while holding down the left button. By holding down the “**Alt**” key the Template is centered where you left click.

- Rotate a template :

Do as for moving a template but select one of the side handles and hold down the “**ctrl**” key.

- Select a Template among several:

Use the right click of the mouse to select/deselect.

## Memorizing Templates

- The “Save As” menu allows you to save as many Templates as you need. The last used Templates appear in the “Open a Template” zone or are accessible by direct search of the file on the disk via “More Templates...”
- The ROI menu\*\* is used to draw the analysis zones. It is possible to delete a zone individually by selecting it with the Select ROI command and then clicking on the “Delete” button.

## « Properties » tab

This tab is used to set the dimensions and magnifications.

The Image part is automatically filled when the image comes from Pegase Pro. But for an image coming from an external file, the user will have to enter the calibration of the image in the form of a horizontal and vertical resolution in pixels per millimeter.

This information gives the dimension of the pixel which will then be multiplied by the “magnification” parameter before being projected in the Template plane (if there is one).

The information “**Shapes**” determines the color of the various elements used in the module.

## Recovery of the data

- Interactive recovery of data: the menu “edition/copy” gives access to two commands. These commands put in the clipboard either the image with its ROI, or the value of the corresponding phase %.
- Interactive data retrieval: An automation add-on allows to access these data by programming. To see the content, load it for example in excel and consult the object explorer.

## *Exit the module*

When leaving the module the data is automatically saved with the original image file. The original image is never altered.

## Indices and tables

- **genindex**
- **modindex**
- **search**