Phase fraction calculation of microstructure using ImageJ

BY

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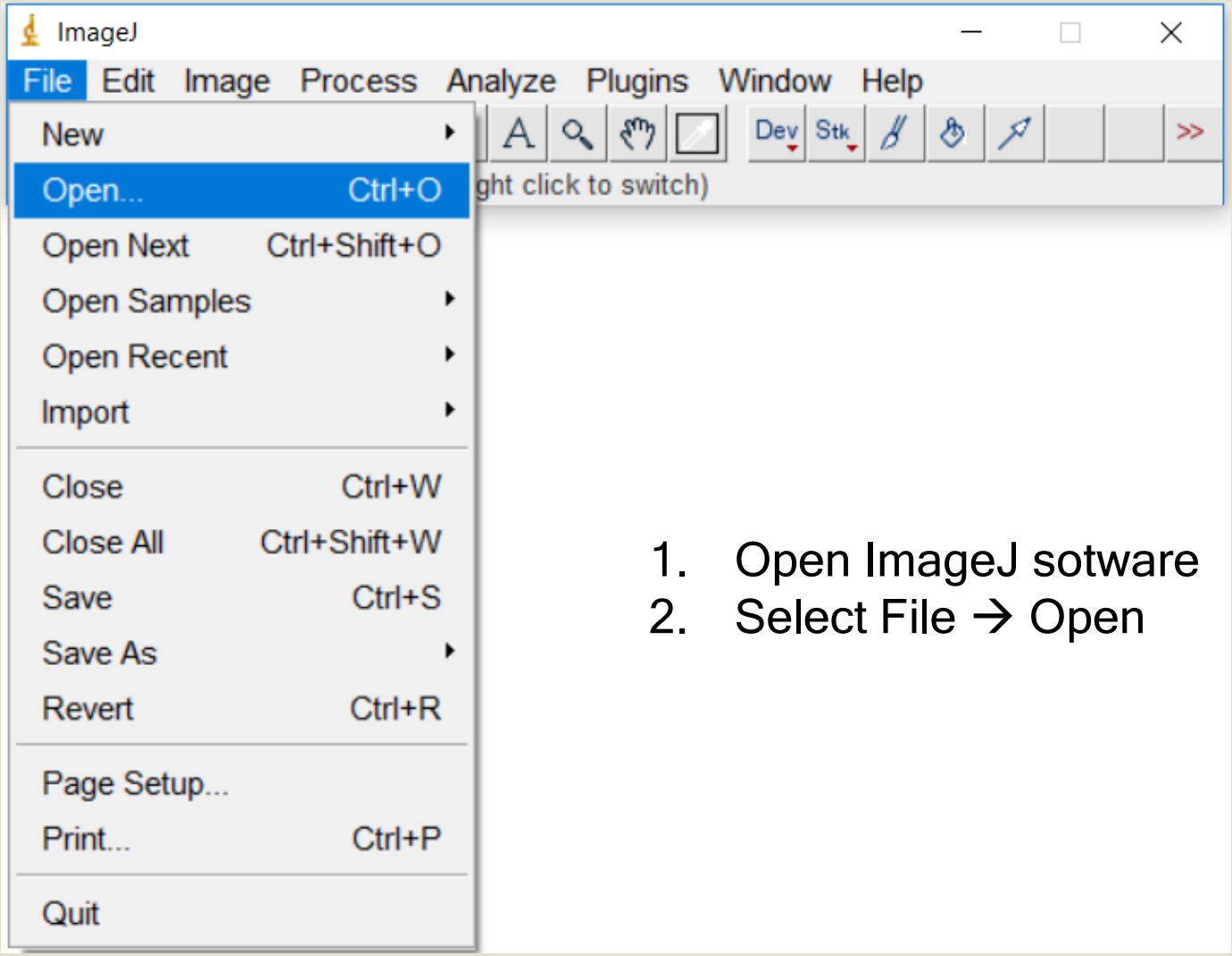
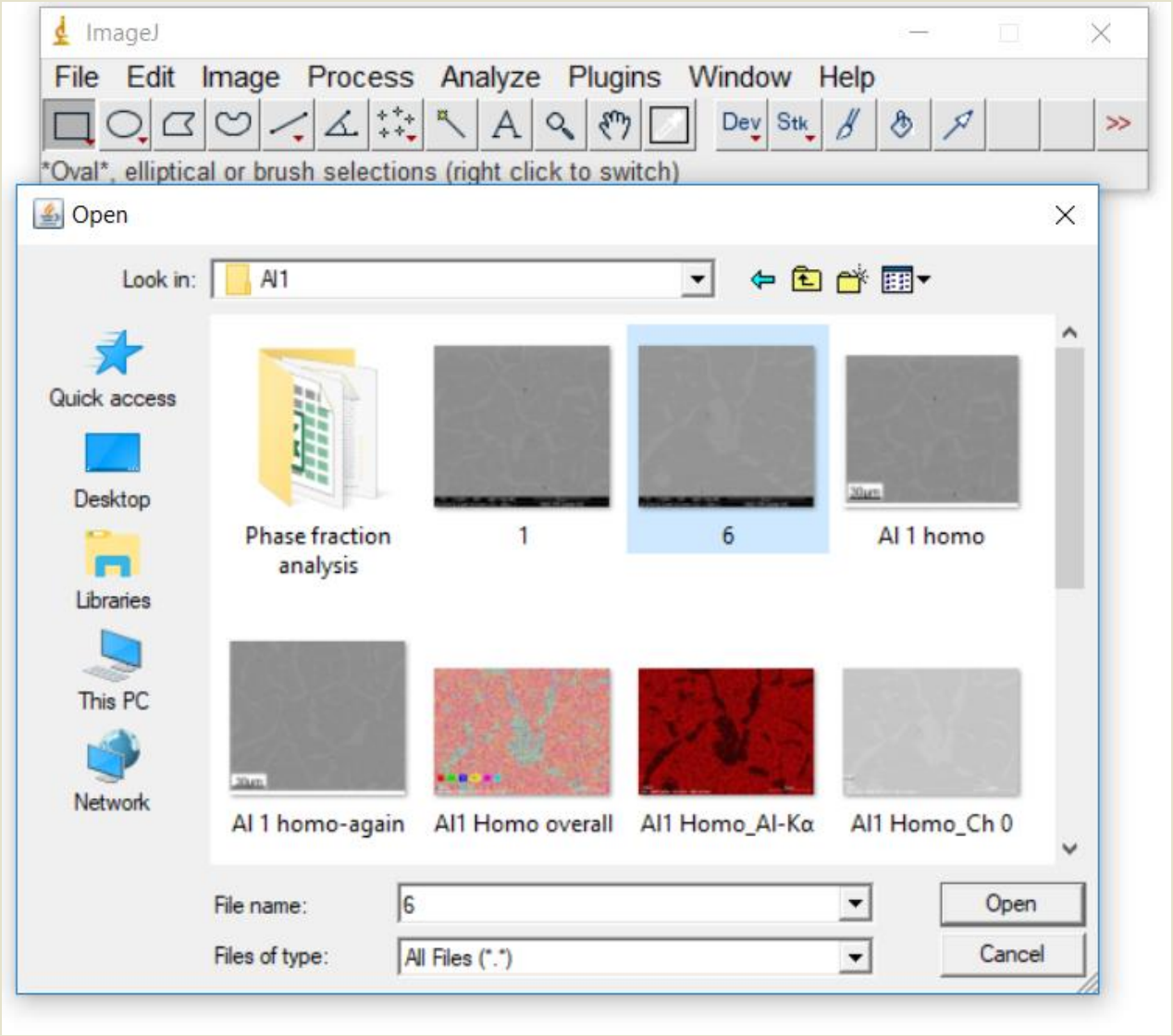
STEP-1



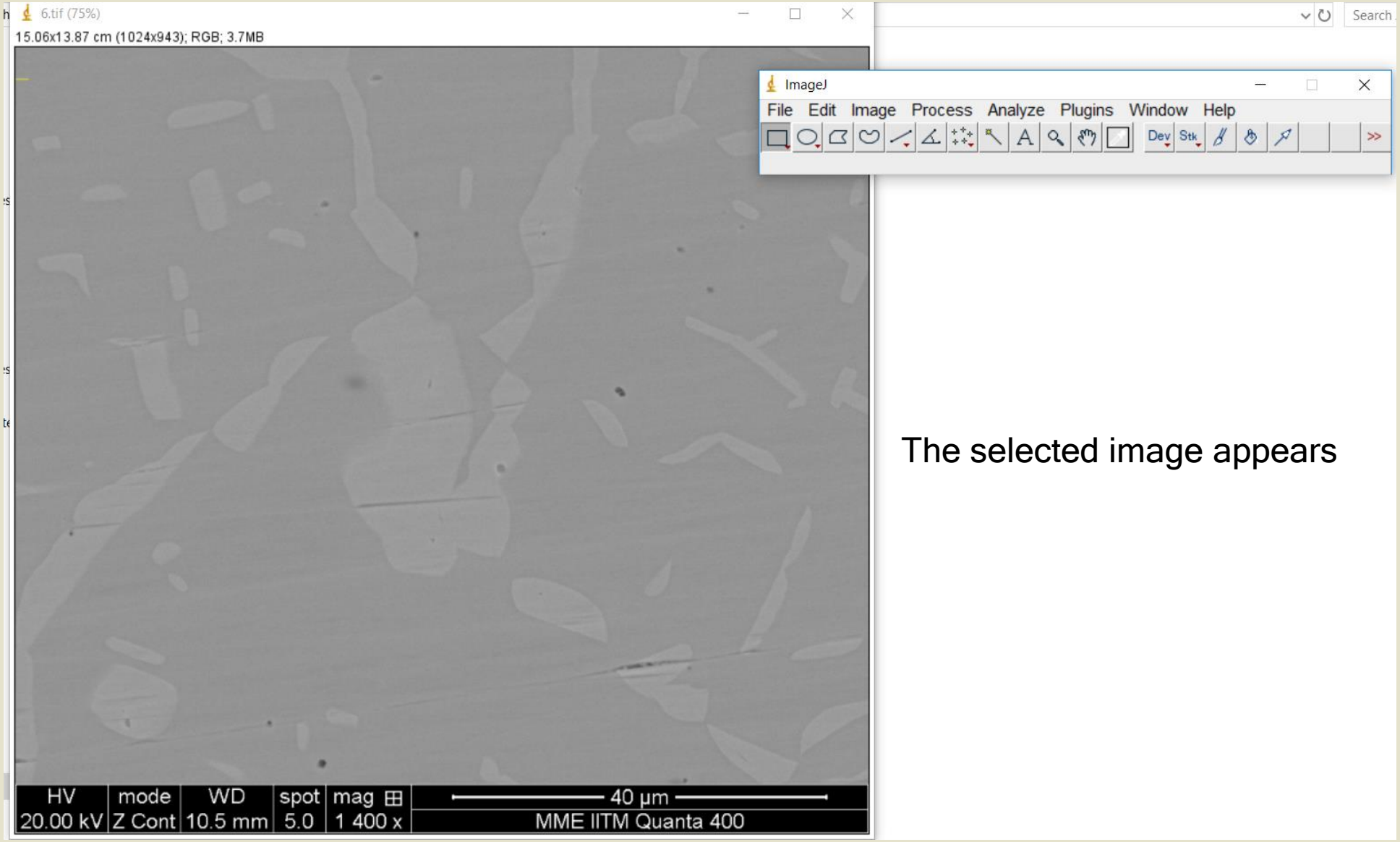
1. Open ImageJ sotware
2. Select File → Open

STEP-2



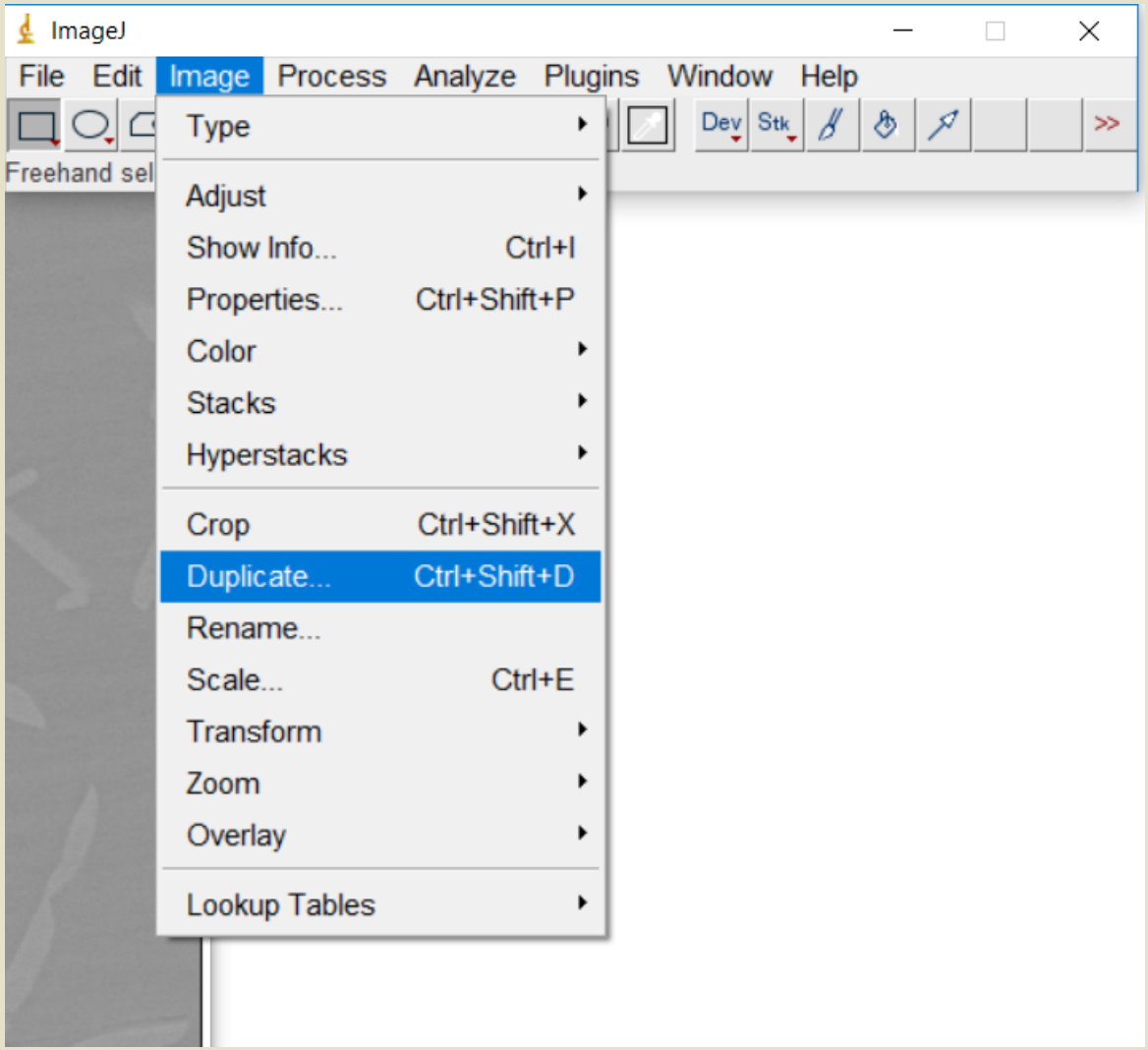
1. Select the required file
2. Click Open

STEP-3



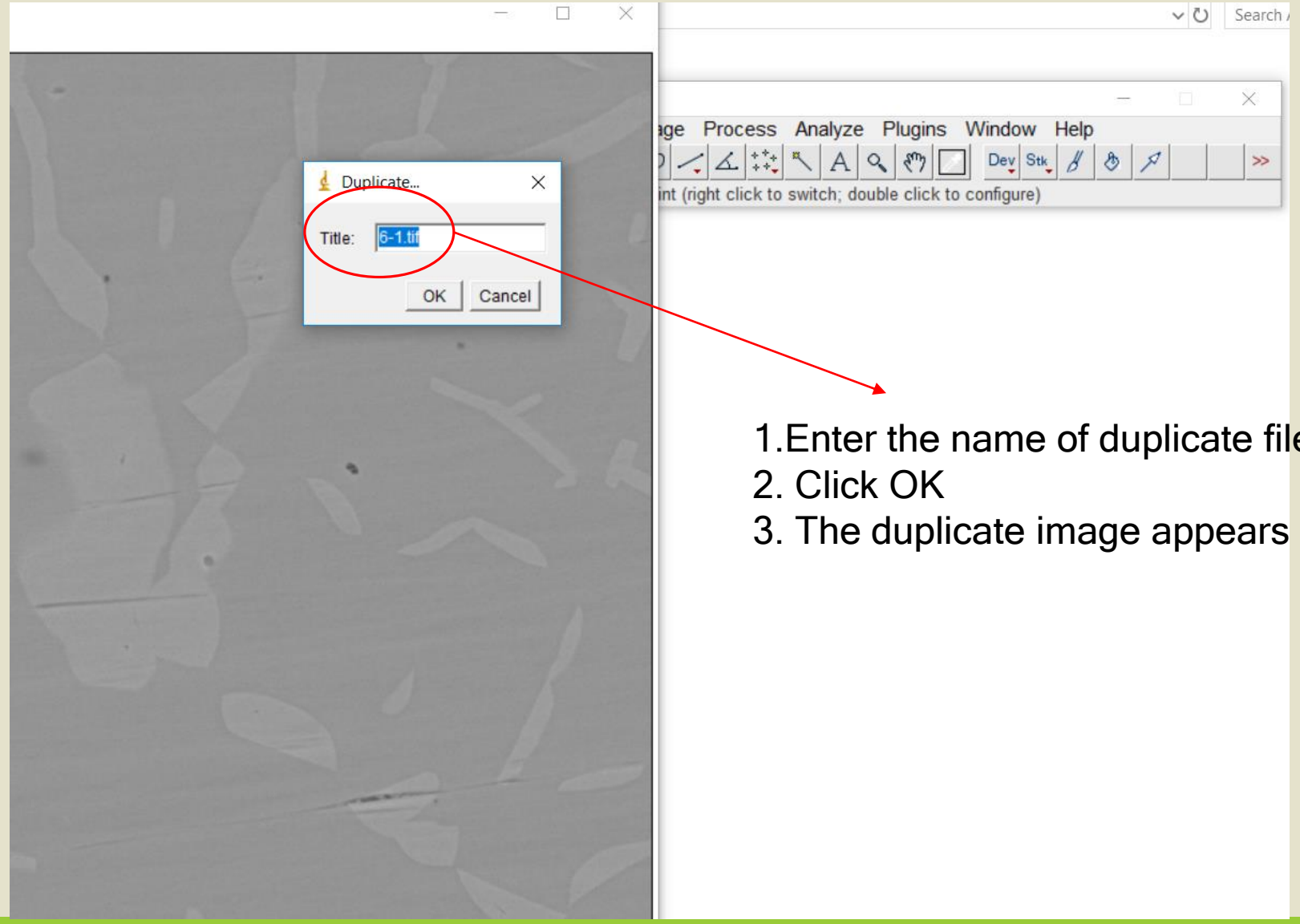
The selected image appears

STEP-4



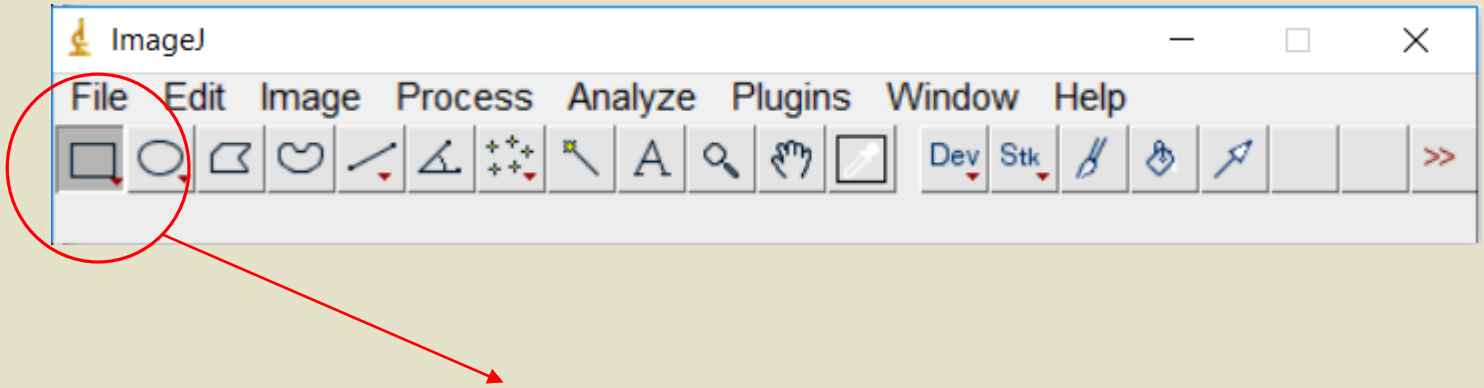
1.Select Image→Duplicate
2. Another copy of the image is created and file name prompt appears

STEP-5



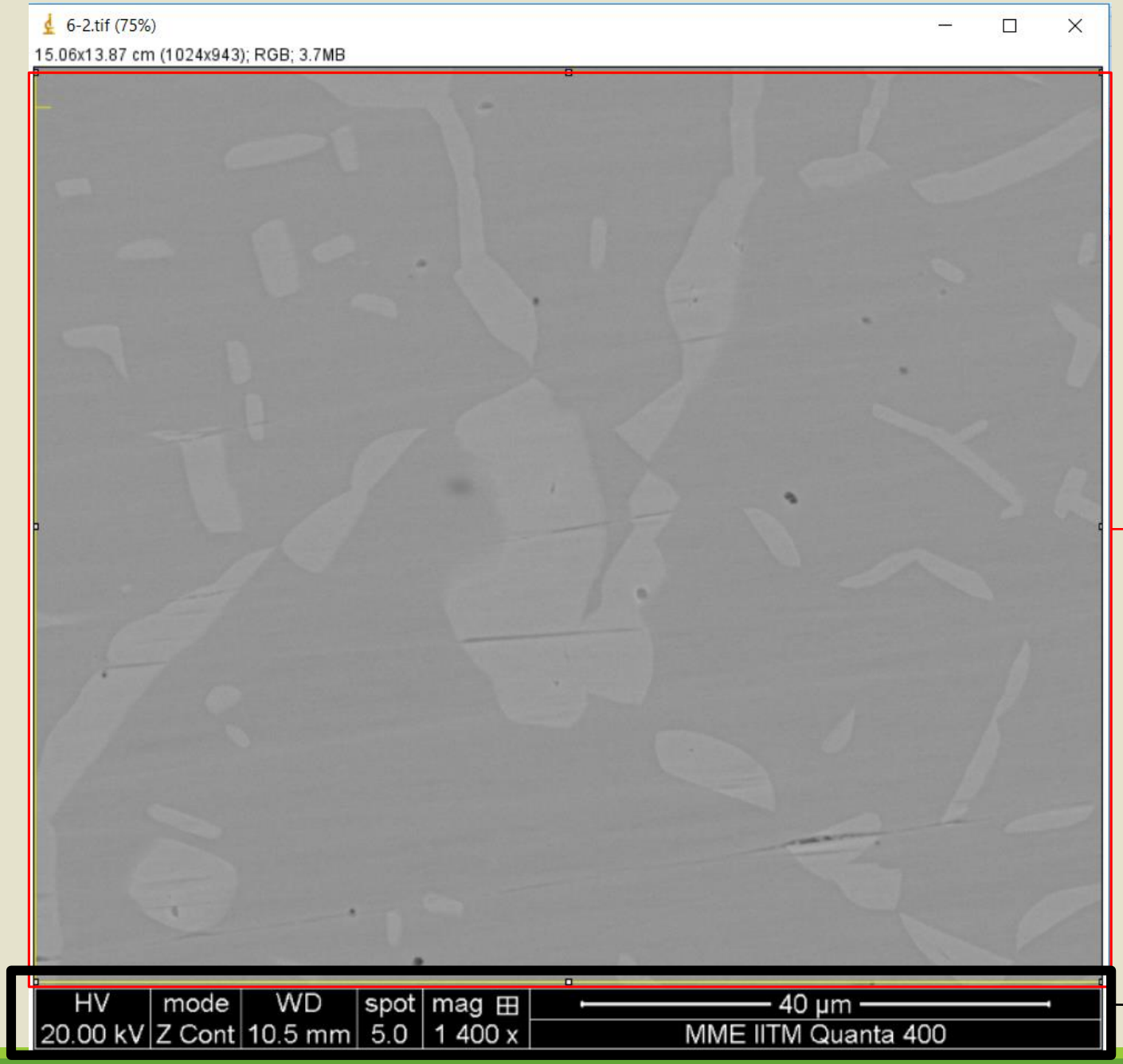
1.Enter the name of duplicate file (which is of your wish)
2. Click OK
3. The duplicate image appears

STEP-6



Click on the rectangular box icon

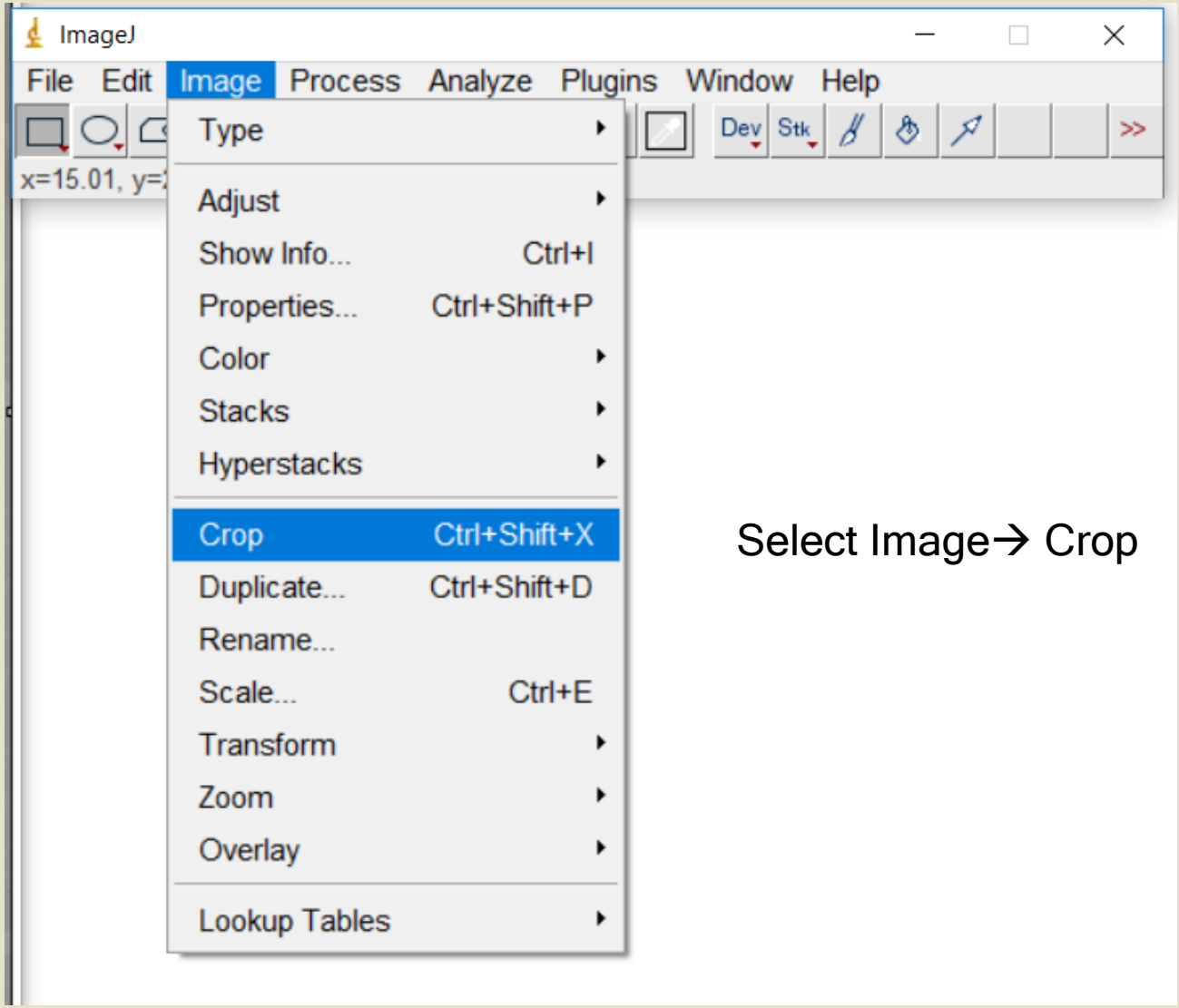
STEP-7



The area other than the bottom unwanted area is selected

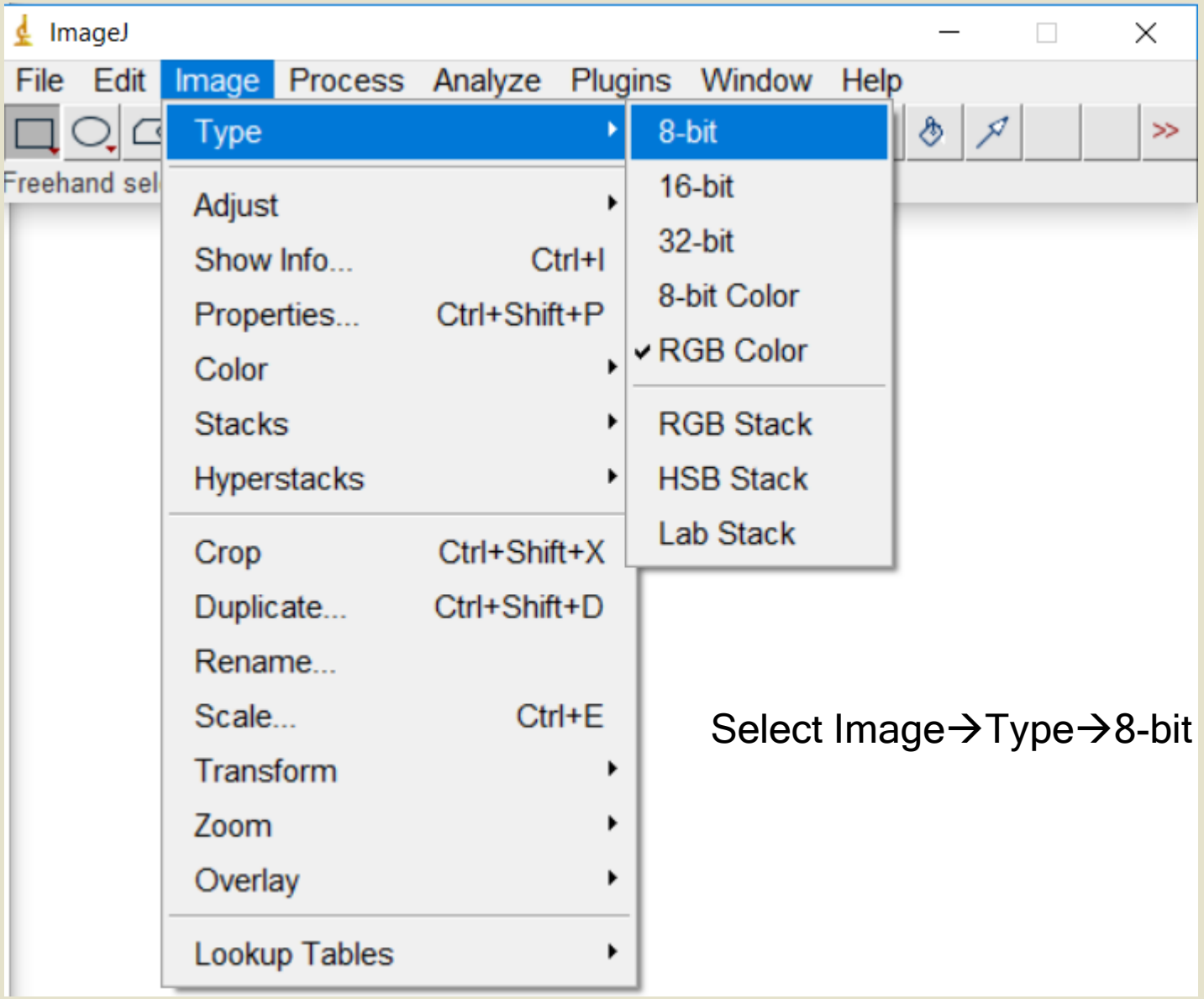
This area should not be counted for analysis

STEP-8



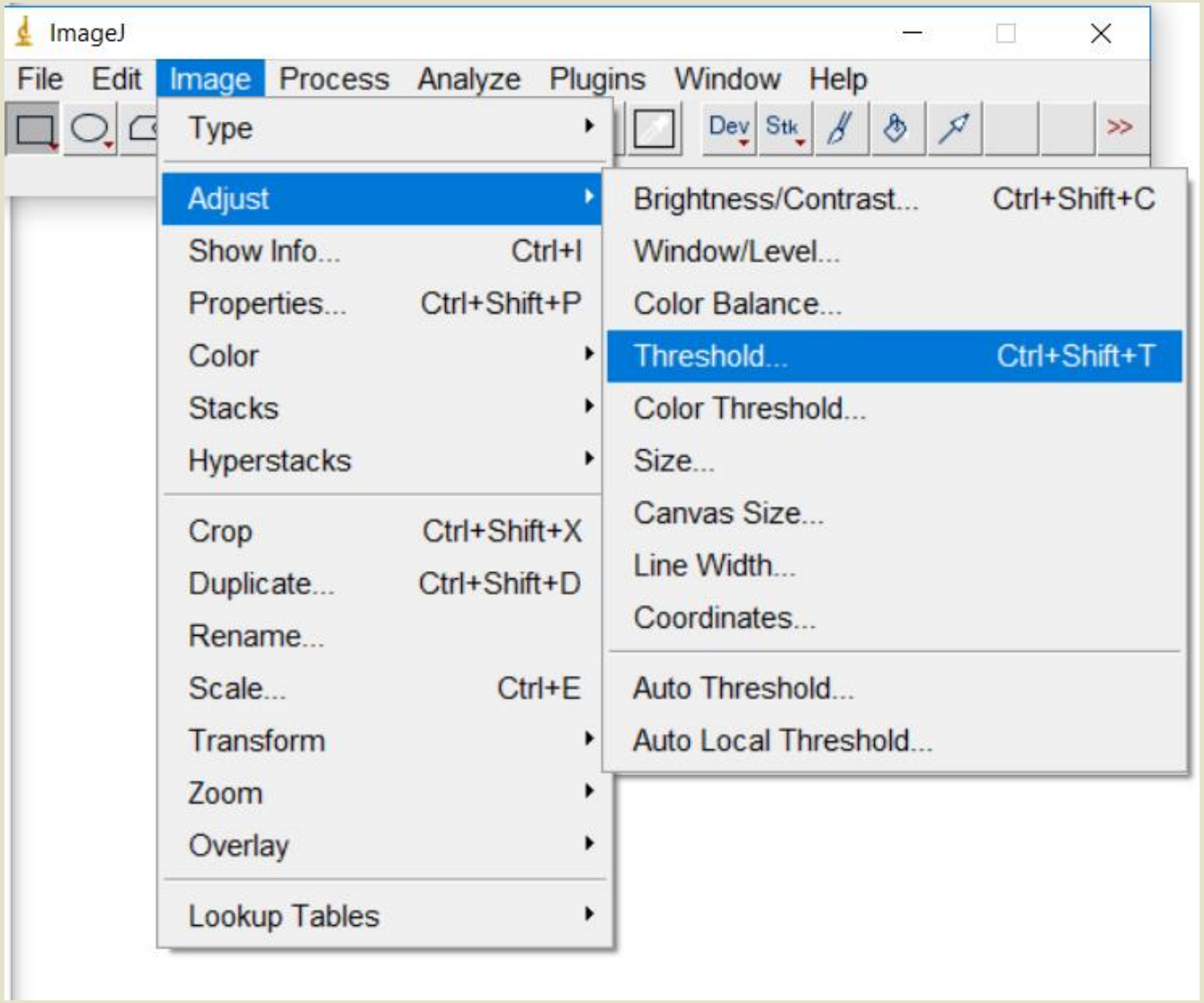
Select Image→ Crop

STEP-9



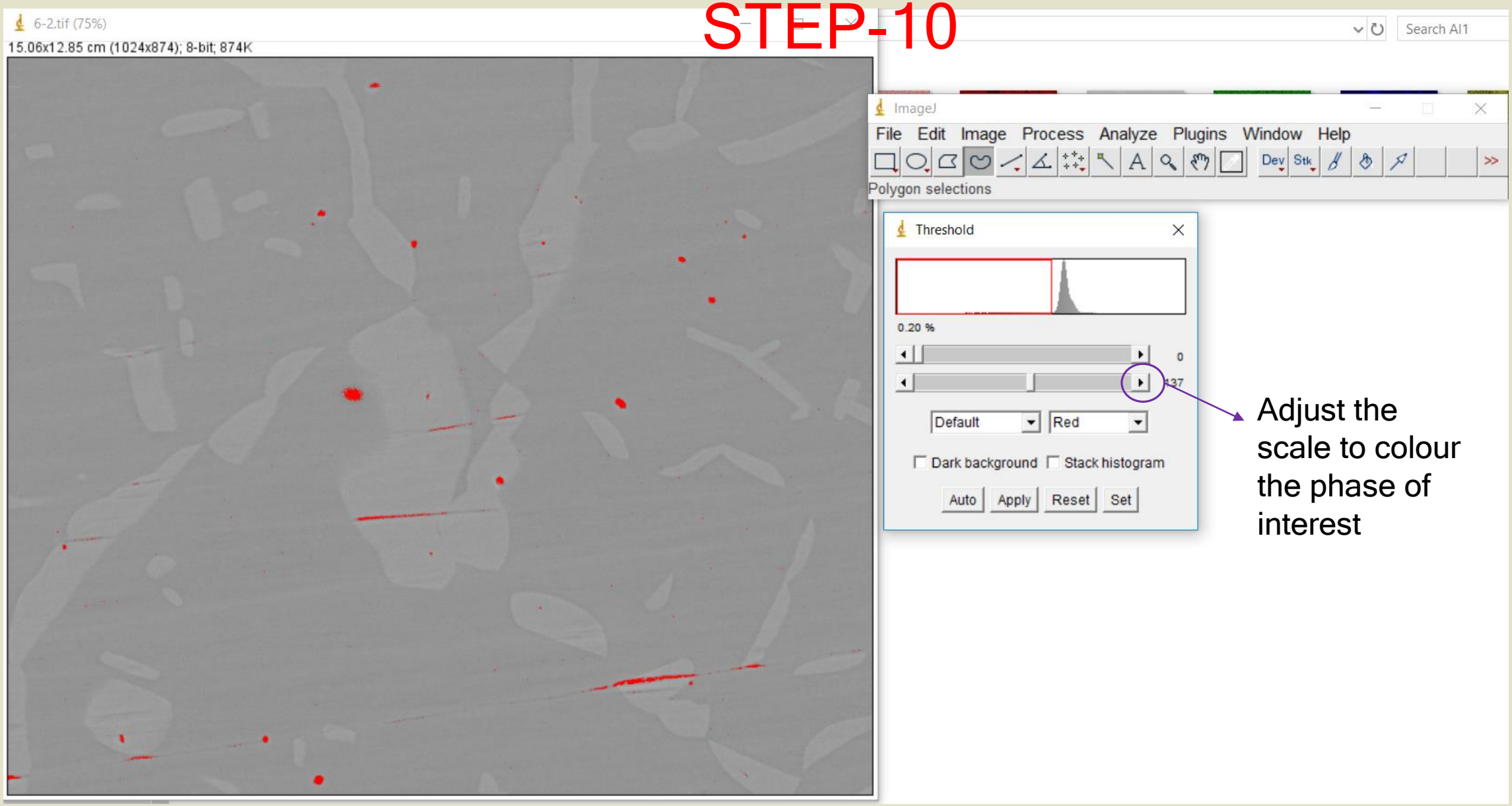
Select Image→Type→8-bit

STEP-10

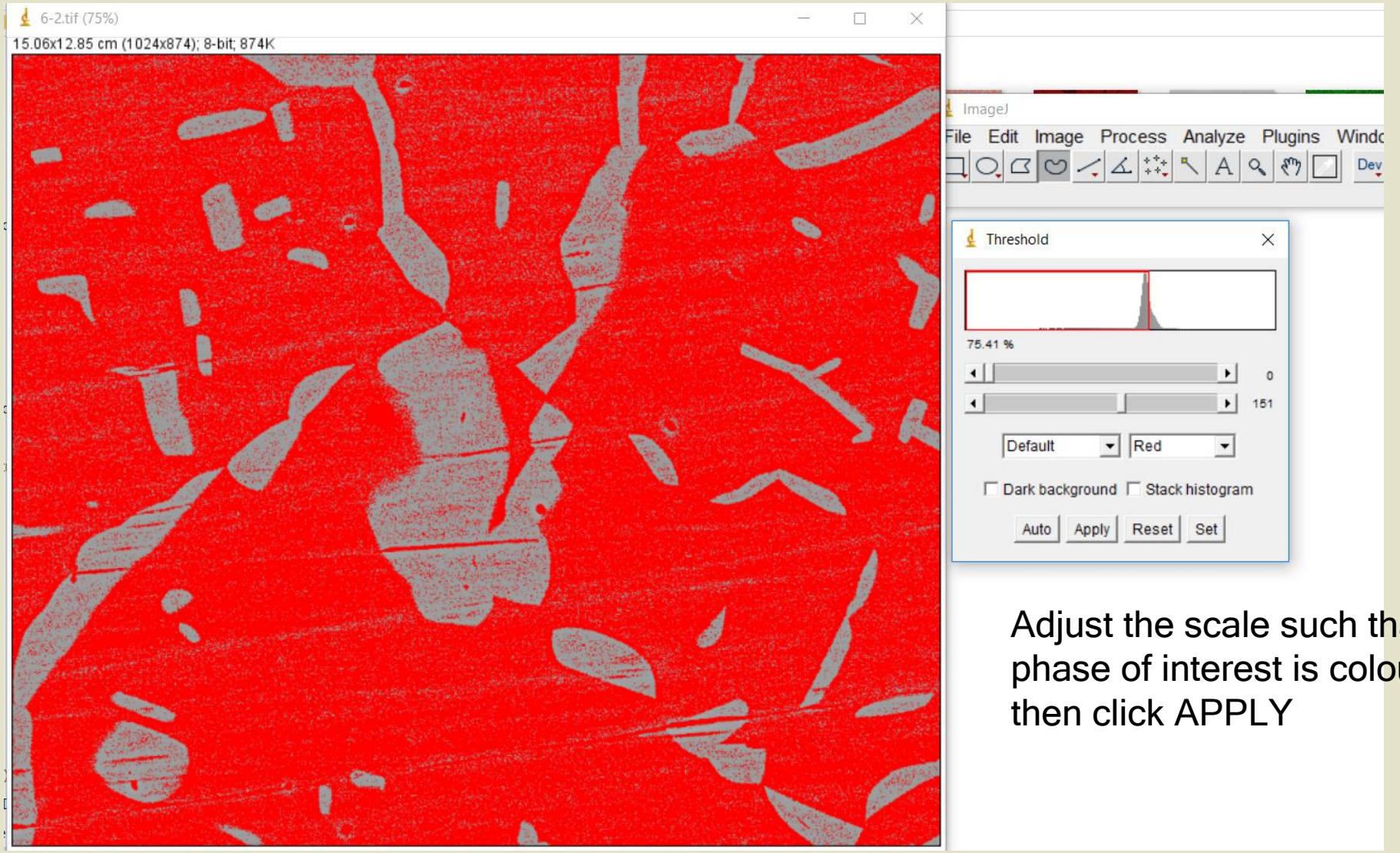


Select Image→Adjust→Threshold

STEP-10

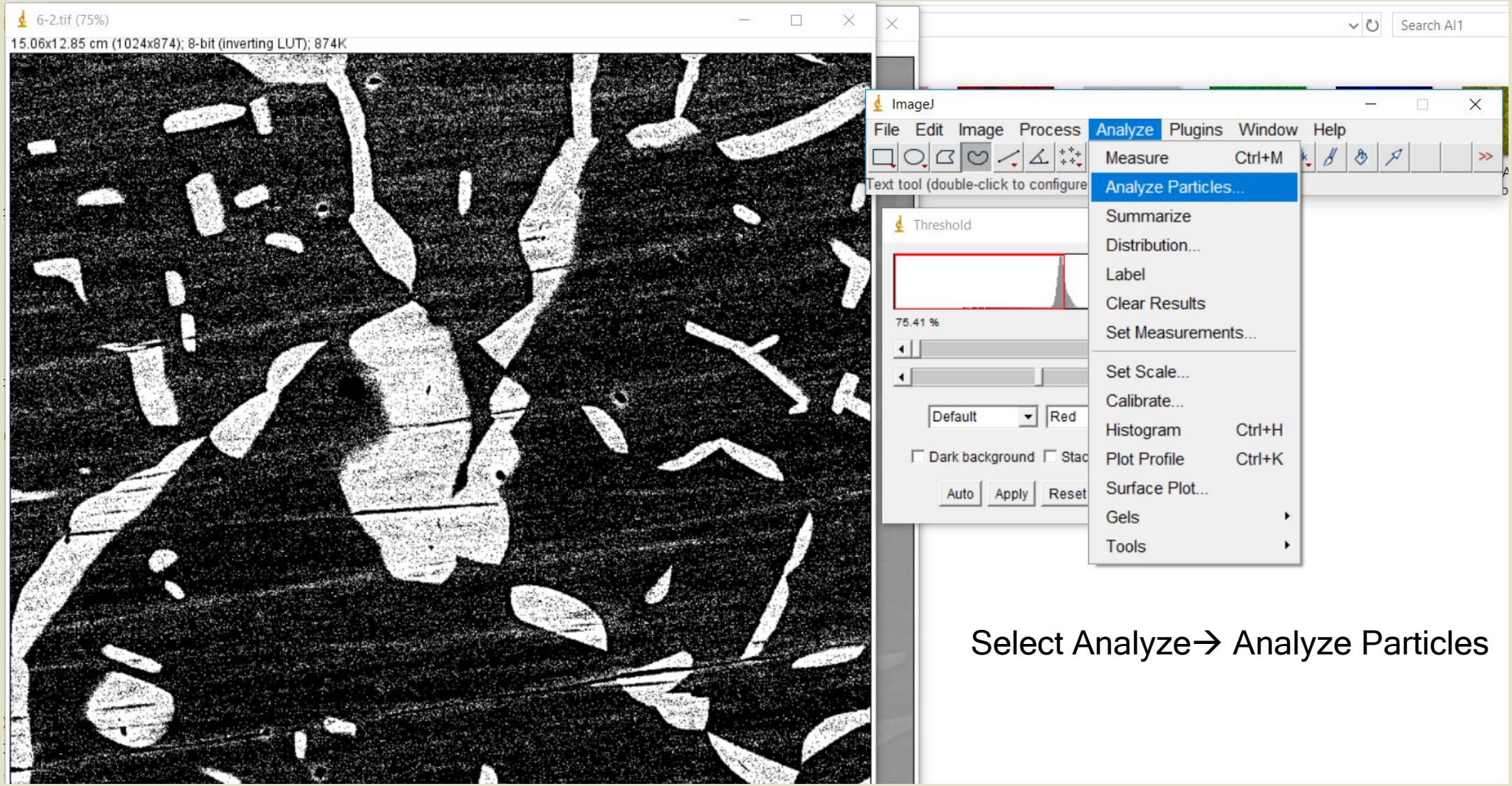

6-2.tif (75%)
15.06x12.85 cm (1024x874); 8-bit; 874K
Search AI1
ImageJ
File Edit Image Process Analyze Plugins Window Help
Polygon selections
Threshold
0.20 %
0
137
Default
Red
Dark background
Stack histogram
Auto
Apply
Reset
Set
Adjust the scale to colour the phase of interest

STEP-11



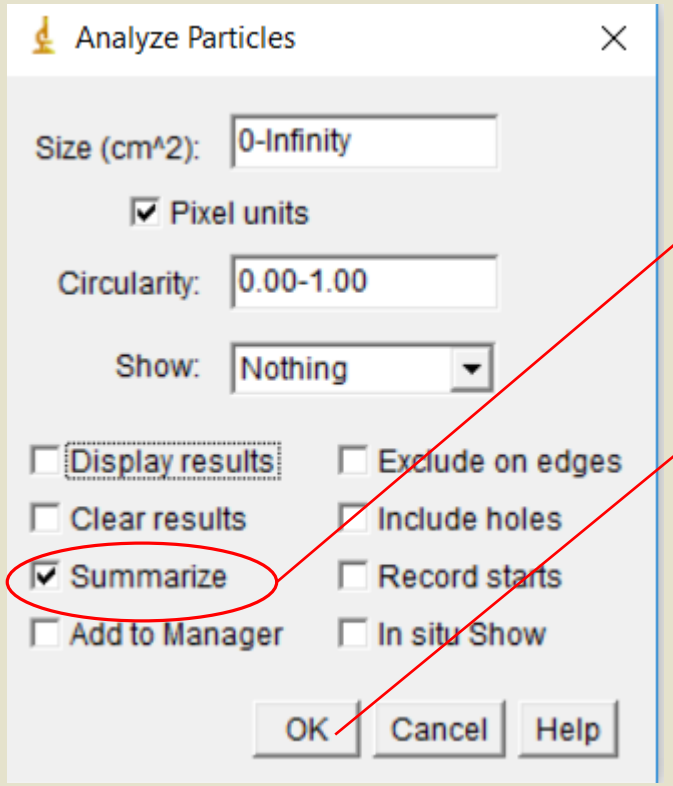
Adjust the scale such that only the phase of interest is coloured red and then click APPLY

STEP-12



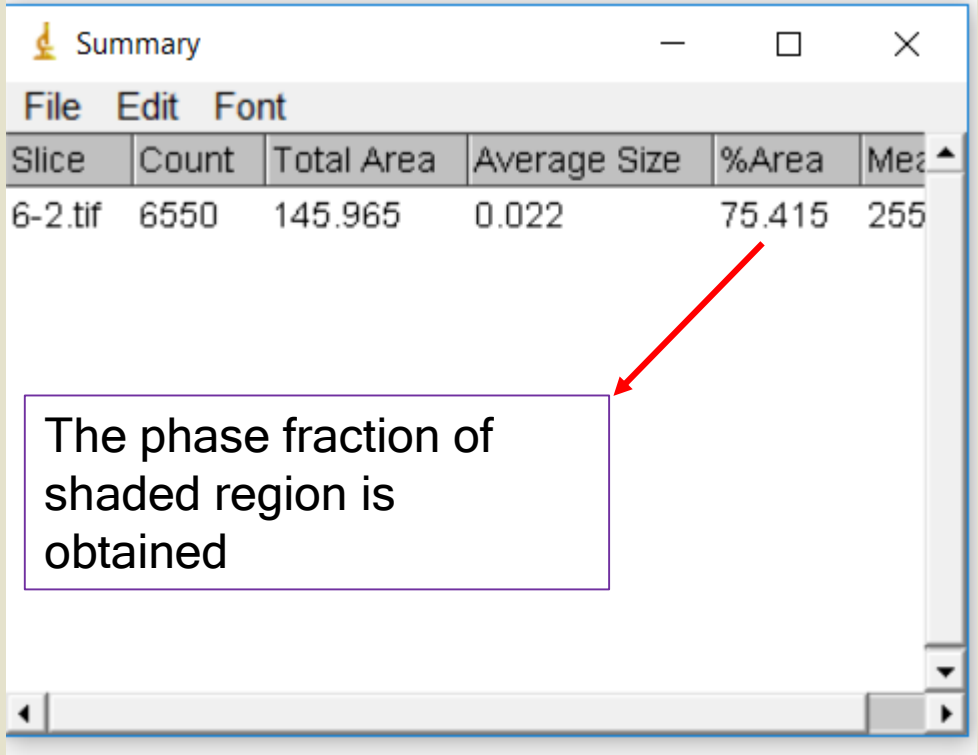
Select Analyze→ Analyze Particles

STEP-13



1.Ensure that “summarize” option is checked

2.Click OK



The phase fraction of shaded region is obtained

CAUTION

- The above procedure should be carried out for a large number of images taken in the same magnification and the average value should be reported.
- The obtained phase fraction will vary for different threshold values. Hence, it is necessary to choose the optimum threshold value which shades only the region/phase of interest.
- The images chosen for analyses should be clear and free of scratches.
- If the phases don't have a sharp contrast difference, it will be difficult to get accurate results.