

Common Manual for Photolithography by Leica DMI8 Confocal Laser Scanning Microscope

(This is a simplified version that focuses mainly on routine operation. For advanced operations, please first consult Mr. ZHENG Jing, u3003383@connect.hku.hk)

1. Scope

1.1 This document provides operating procedures and requirements to Photolithography by Leica DMI8 Confocal Laser Scanning Microscope. **Some common operation should refer to the Manual for Confocal Laser Scanning Microscope.**

1.2 You should be authorized by Dr. Tang, properly trained by Dr. Tang's group member and pass oral examination before operating the system

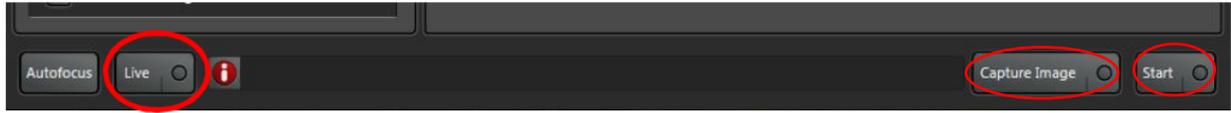
2. Operation Instruction

2.1 Turn on the confocal system and place the samples, the photoresist cover side face down.

2.2 Choose the 20 times lens in the touch screen, turn on the PMT2 detector with display color **gray**, set the detection range (about 600 nm to 700 nm), autoselect the beamsplitter, turn up the intensity of 638 nm light to 0.1%, set the format to 512 X 512, set the speed to 1000.

2.3 Click "Live" to preview the sample. Find the focal plane and best display quality (the whole field of vision is brightest) by changing the **Focusing (Z axis)** and Smart Gain. Locate the interest area by changing the **XY axis** and zoom the observe field if necessary. Then click "Stop" to finish the preview.





2.4 Set the format to 2048 X 2048, set the speed to 400. Then click “Capture Image” to capture single image. Then turn down the intensity of 638 nm light to 0%.

2.5 Turn on the ROI; use the basic shapes tool to design the pattern of interested; click  to open an interface to select interested light of ROI (choose 405); turn up the intensity of 405 nm light to 60%; set the “frame average” to 3.

2.6 Turn down the Z position about 7-10 um. For example, if the z was 1290 um now, you should turn it down to 1283 um - 1280 um.

2.7 Click the “Capture Image” to finish the exposure.

2.8 Turn off the ROI and turn up the z position to focal plane.

2.9 If any more sample, repeat the step 2.2 to restart another pattern. If finished, take out your sample and close the system.



Question:

1, How to place the sample?

2, How many micrometers need to be lower than the focal plane.