

# LEICA POLYMER MICROSCOPE

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## Personal Protective Equipment (PPE):

- Gloves
- Lab Coat

## Equipment/Materials Needed:

- Glass slides
- Camera Attachment
- Lamp for opaque samples



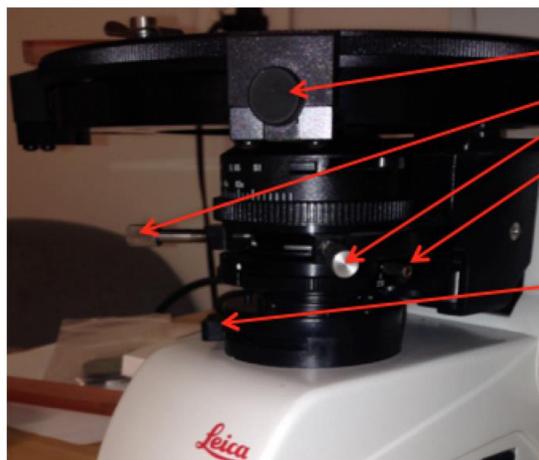
## Calibration:

1. Remove dust bag and plug in microscope
2. Turn on using switch on the right side of the microscope
3. Turn on camera (if attached to other microscope, use **metric** Allen key size 3 to remove and replace camera)
4. Make sure camera is turned on and in PC mode
5. Open EZ Leica program (EZ LAS) software
6. Place calibration slide on platform, while centering the circles

7. Using lowest magnification focus and center the calibration scale
8. Increase magnification and refocus until desired magnification is focused (desired magnification must be consistent with magnification for sample images)
9. Focus and capture image of the calibration scale
10. Go to processing in EZ Leica program (LAS EZ) and click calibrate near the bottom left of the screen
11. A scale bar will appear with an arbitrary length, resize this to match up with the scale bar using the mouse to drag the ends and the text box to enter the length (smallest ticks = 1 micron, larger ticks = 10 microns, entire scale = 100 microns)
12. Add scale bar to image by clicking "show" under scale bar

## Basic Use of Microscope

1. Place sample under microscope using a glass slide and clips, or if imaging a solid sample, it can rest above aperture
2. To adjust brightness of light use thumb wheel on the left side of the microscope
3. To adjust aperture use the slide near the base of the microscope (above where Leica is printed in red)
4. To rotate the stage turn the knob on the right side of the stage to the left and to lock it back in place turn knob to the right
5. To adjust focus use large knobs for coarse focus and small knob for fine focus



- Loosen/tighten stage rotation
- Shift stage/light orientation
- Loosen/tighten rotating polarized lens
- Open/Close aperture

## Polarizing Lens

1. Ensure that polarizing lens at the base of the microscope above the aperture slide is set to  $0^\circ$
2. If it is not set at  $0^\circ$ , loosen screw on the right side of the base and rotate until 0 is below the dot
3. Focus sample using knobs on the sides of the microscope and adjust light using brightness and aperture
4. Switch to Analyzer mode by switching from O (off) to A (analyzer). This is located below the eyepiece on the front face of the microscope
5. To rotate sample under polarized light loosen the knob and rotate entire stage
6. To rotate lens and leave sample stationary, loosen screw on the right of the microscope and rotate the polarizing lens

## Bertrand Lens Operation

1. Center focused sample under microscope
2. To help center, use right eye piece, which has a coordinate system and the centering keys which are stored behind the microscope above the handle
3. Place centering keys on either side of the objective lens in use and rotate to move sample to center
4. To check if your sample is centered properly, rotate stage and readjust as needed
5. Once sample is properly centered increase brightness and turn on Bertrand Lens by switching from O (off) to BL (Bertrand Lens)
6. If the sample is not properly centered you can adjust again using the centering keys on each side of the O/BL switch

## Cleaning and Maintenance:

1. Stage can be cleaned with isopropyl alcohol