

Zeiss LSM510 short start up manual

Always subscribe in the agenda before using the microscopes

- When the microscope is switched off
 1. Remove the dust cover from the microscope
 2. Switch on the whole system with the remote control switch
 3. Start the computer when it doesn't start automatically
- Login with your account name and password
- Activate the LSM software by clicking the icon AIM
- Select <Scan New Image> (if it's not already activated)
- Press <Start Expert Mode>
- When error messages appear send a message to Gert van Cappellen (w.vanCappellen@erasmusmc.nl)
- Press the <Acquire> button in the LSM510 Expert Mode panel
- Press the <Config> button in the LSM510 Expert Mode panel
- Press the <Config> button in the Configuration Control windows and select the dye combination you want to use and press Apply. The Configuration Control window is shows all mirrors, filters and detectors that are applied
- Very short an message may appear telling that the lasers you need are not switch on
- Press the yellow Excitation button in the Configuration Control panel and look for the laser lines with a thick mark in front
- Press the Laser icon. When one of the laser lines is 458 and/or 488 and/or 514 you have to switch on or activate the Argon laser in the following way:
 1. Press the <On> button. When the <On> button is greyed out you first have to press the <Standby> button. Wait until you can press the <On> button (about 30 sec)
 2. Increase slowly the Output (%) until the Tube Current is about 6.1 A
- Switch on the other lasers (HeNe1, HeNe2, Titanium Sapphire) when you need them
- Close the Laser Control panel
- Put your cells/slides on the microscope and press the <Micro> icon. When you need the mercury lamp switch the mercury lamp on (don't forget to switch off the mercury lamp, because most people do not use the mercury lamp, check the agenda)
- Put the sliders on the microscope in the VIS position by hand (Ee1209) or software
- Click on the <Transmission> button in the Microscope Control window
- Or use the desired Fluorescent filter Block by pressing the desired button in the microscope control window
- After finding your specimen put the microscope sliders in the LSM position (manual or on screen)
- Click <Scan> in the LSM510 Expert Mode panel to open the Scan Control window
- Select Channels tab and fill in the desired pinhole (same optical slice thickness for all colours and pinhole diameter at least 1 Airy Unit)
- Click <Find> button, this regulates the detector Gain, Ampl. Offset and Ampl. Gain. Now a image should appear on the screen
- Probably your specimen is not at the right Z-plane, click Z-Stack tab and click on the <Range> button
- Place the green line on the desired level in the XZ image
- Click on <Find> again to make a nice 2D image
- Use <Crop> in the Image windows to zoom in on the parts you want to image
- Press Z Stack in the Scan Control panel if you want to make a Z-Stack
- You can use the <Z Slice> button to find the optimal Interval between the images (Z-steps, half of the confocal plane)
- The <Range> button will do a Z-scan in the middle of the image



- Press <Start> to make a 3D stack, press <XY Scan> to make a single image
- Save your images with the <Save> button of the image window

Ending your microscope session

- Press <File> in the LSM510 Expert Mode panel and choose <Exit>
- When there still are lasers running the system will ask you if you want to switch off the laser, check the agenda to see if the next user needs some of the activated lasers
- Press <Exit> from the intro screen
- If you switched off the Argon laser the system will tell you have to wait 5 min before switching down the complete system
- Switch off the mercury lamp (when used and the next user doesn't use it)
- Restart the computer when another user is coming
- Shutdown the computer when you are the last user
 1. After some time the computer will tell you that it is safe to switch off the computer
 2. **Don't do this yet!!**
 3. Wait until the fan of the argon laser stops working (the noise will reduced considerably), this will take about 5 min. after switching off the Argon laser
 4. Switch off the complete system with the remote control switch
 5. Put the dust cover on the microscope (not over a hot mercury lamp, on the back side of the reversed microscope)



26-1-2005, Gert van Cappellen