LCAM startup manual, Nikon Cell Observer microscope (A2.34)

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Information microscope: http://www.lcam-fnwi.nl/facilities/zeiss-axioscope-a1/

*Before using the Nikon CO microscope, the user (and co-workers) should have had the official intake discussion with the LCAM-staff, succeeded the LCAM-confocal training course & exam and had an individual training at the Nikon CO microscope. **Bookings** can be requested via cam.microscopy@gmail.com*

Start-up procedure Nikon CO

1. Switch on microscope (righthand backside of the microscope).

2. Switch on the Stage controller (leftside of microscope).

3. Switch on the small yellow handle of the LED diode unit (Black box). Only when one wants to use the 570 nm excitation line instead of the standard 555 nm line, one has to change the excitation filter by opening the box from the top (ask contact persons to instruct you).

4. Switch on the Filterwheel unit (switch located at the back side)
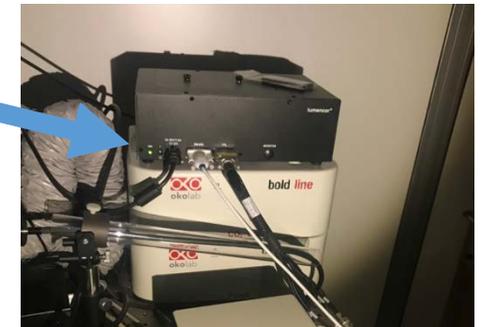
5. Switch on CO_2/temperature switch (on the left side of remote control). Default temp. is 37°C but the CO_2 level has to be manually adjusted. Be aware to put the green wired sensor <u>inside</u> of the sample box!!
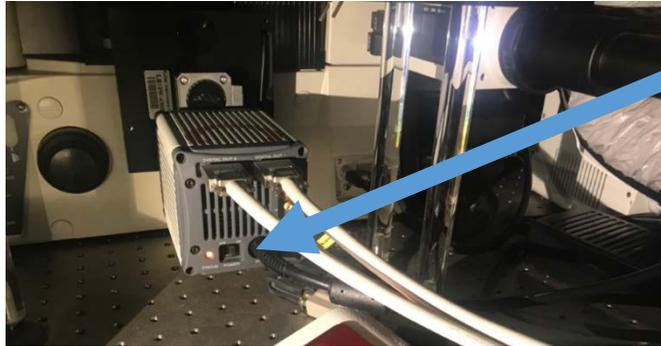
6. Switch on the Hamamatsu camera.

7. Switch on the computer.

8. Start the Nikon software NIS Elements (from desktop)

NIS-Elements
AR 4.51.01 …
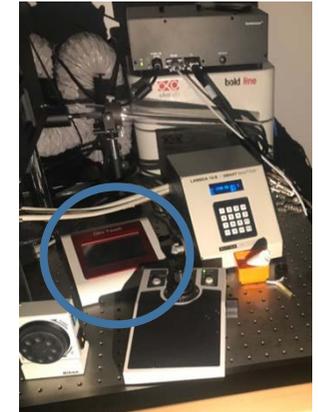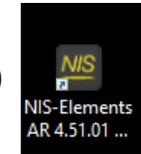
Data storage
<u>Never</u> store data on the local harddisk, all data should be stored at the dataserver. Data present on the local PC will be <u>deleted without further notice</u>. Be aware that the storage of data on the sever will be your own responsibility as well. Although there is a regular backup of the server we will not take any responsibility for lost or damaged data, so make backups yourself. Contact Mark Hink in order to get access to the data-server from your office computer.

Login using the **green** *Connect dataserver* icon at the desktop**:** Type your userID (UvAnetID), group and password. After succesful login a network drive U:\ will be visible where you should store your data.
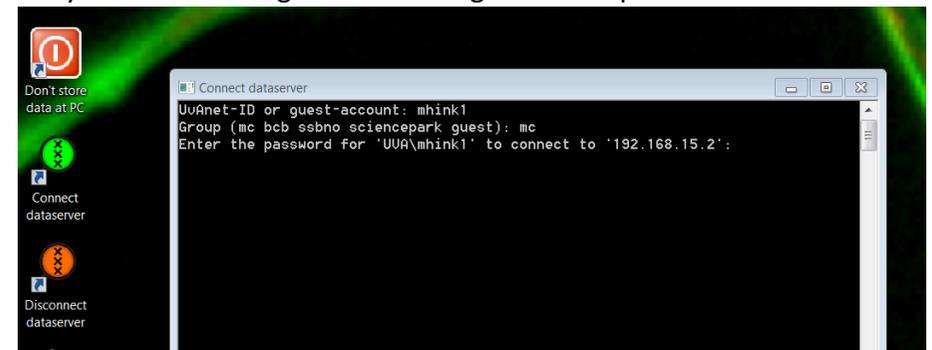
Basic handling of the Nikon CO microscope

When using oil immersed objectives: A small bottle of Nikon oil can be found nearby. In case the oil bottle is empty: **NEVER** use the immersion oil from other brands (Leica/Zeiss/Olympus) but contact Ronald or Dorus for a refill.

1. Open the *NIS Elements* window.
2. In case the standard acquisition windows are not open goto VIEW -> ACQUISITION CONTROLS and activate your favourite windows.
3. For the control of the microscope the *Ti Pad* window can be used. If it is not open already you can open it by a right mouse click having the mouse cursor positioned at the grey background of the NIS Elements main screen. Then select *Acquisition controls* and then *Ti Pad*.
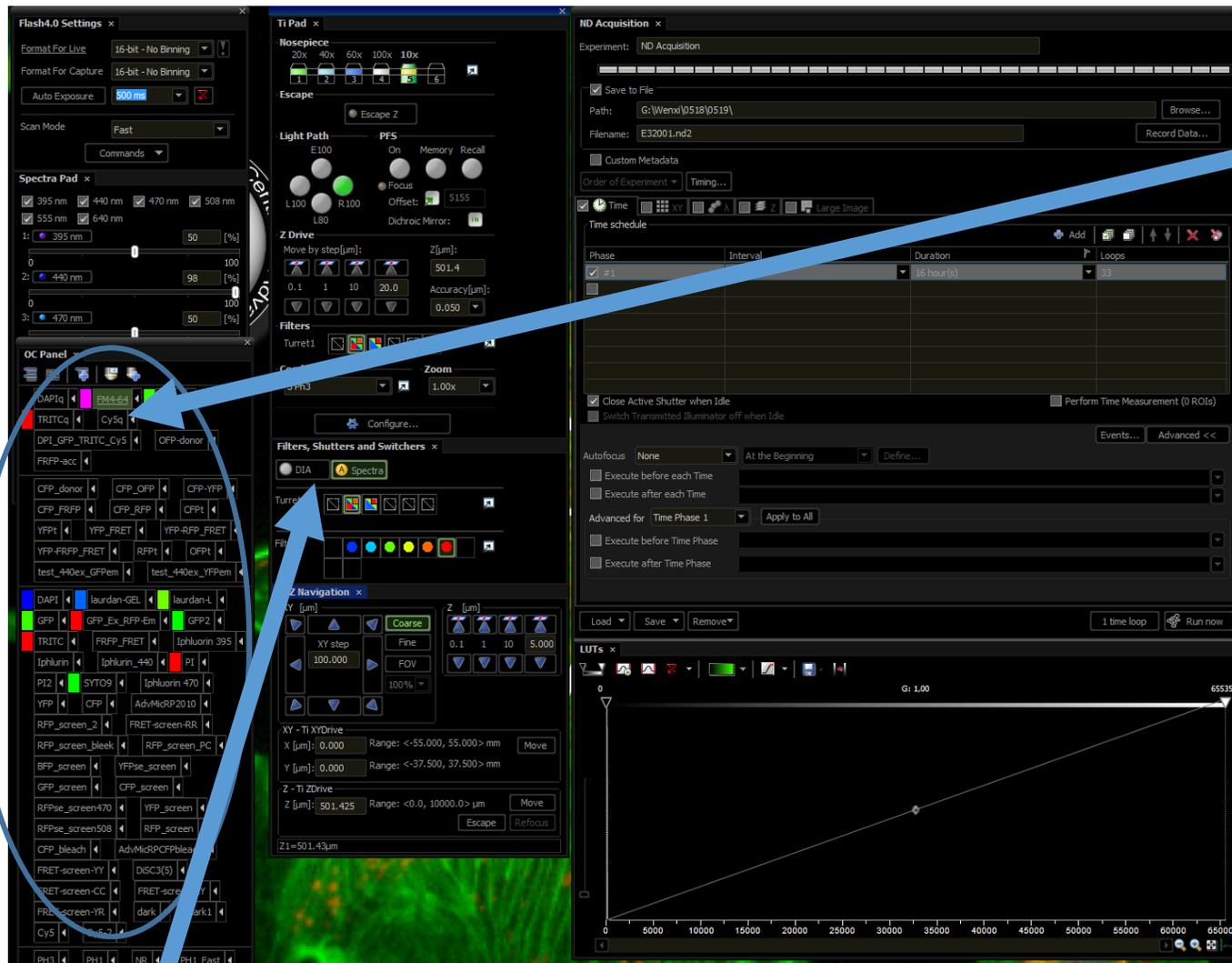
4. Select in the OC Panel the Optical configuration you would like to use (f.e. *GFP-screen*). When activated you will see in the middle panel the specs of that configuration, like which LED is activated, how much LED excitation power is used, which of the three filtercubes is active and which emission filter is in front of the camera.

5. Use DIA to activate the transmission lamp (from the top) and/or SPECTRAL for the LED illumination (from the bottom).
6. Optimize LED-power and exposure time for optimal image quality.
7. Use the black manual controller on the table, leftside of the microscope, to change the power of the transmission lamp.

8. Setting up a Z-stack in the *Capture Z-series* window
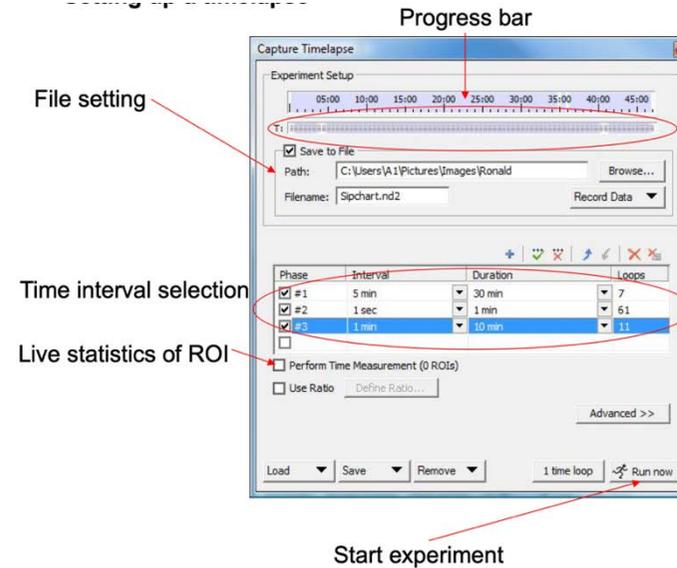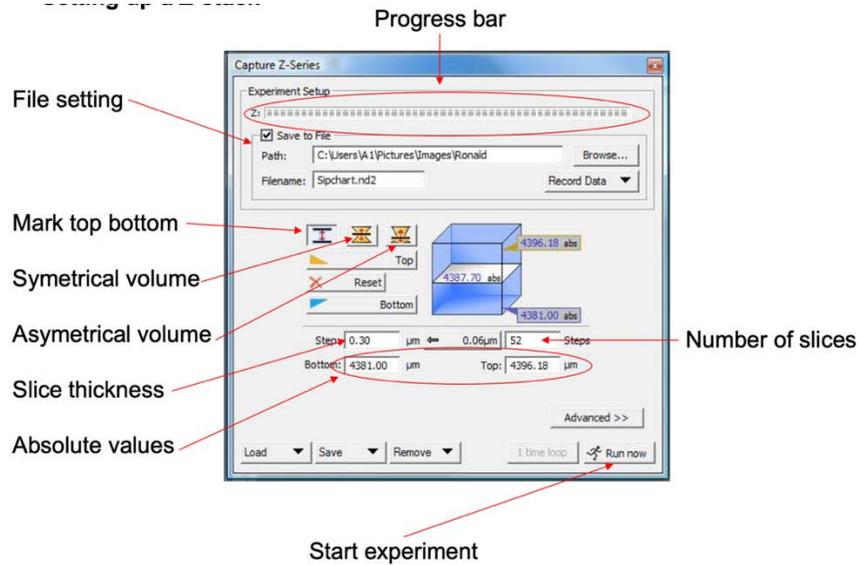
9. ……… Setting up a timelapse sequence in the *Capture Timelapse* menu.

Switching off procedure of the Nikon CO microscope

1. Shut down NIS Elements software.
2. Logoff using the red *Disconnect dataserver* icon at the desktop.
3. Switch off the LED unit.
4. Put the CO_2 level to 0% and then switch off the Okolab CO_2/temperature controller.
5. Switch off the camera.
6. Switch off the filter wheel controller.
7. Switch off the Nikon microscope body.
8. Switch off the stage driver unit.