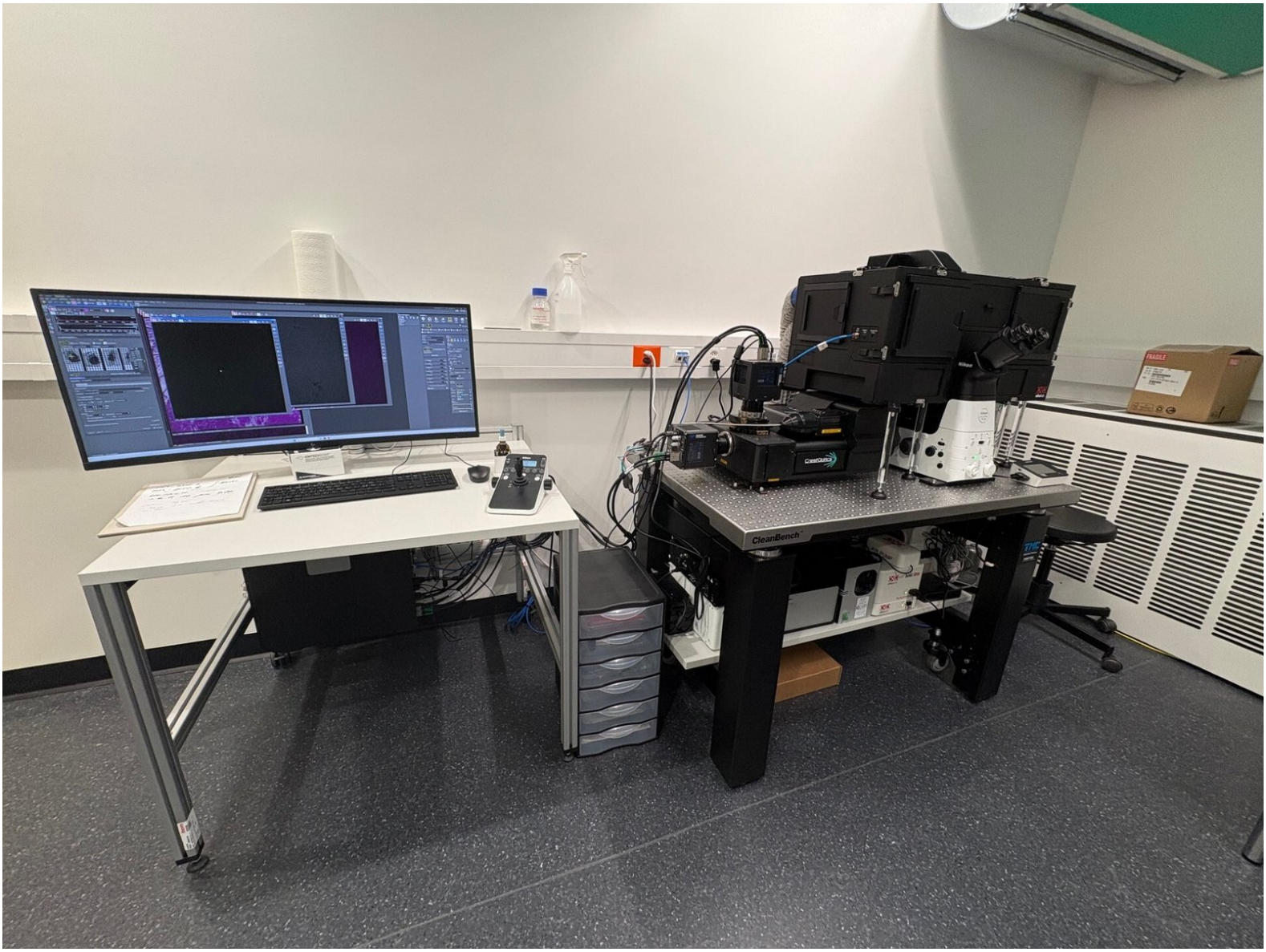
# Nikon SD 1 (Irchel): Start Up

Written By: z mbstaff

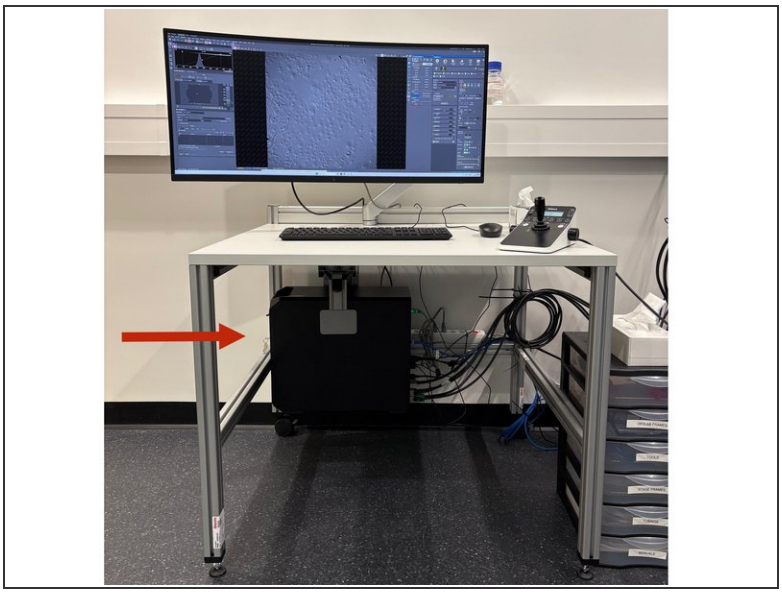


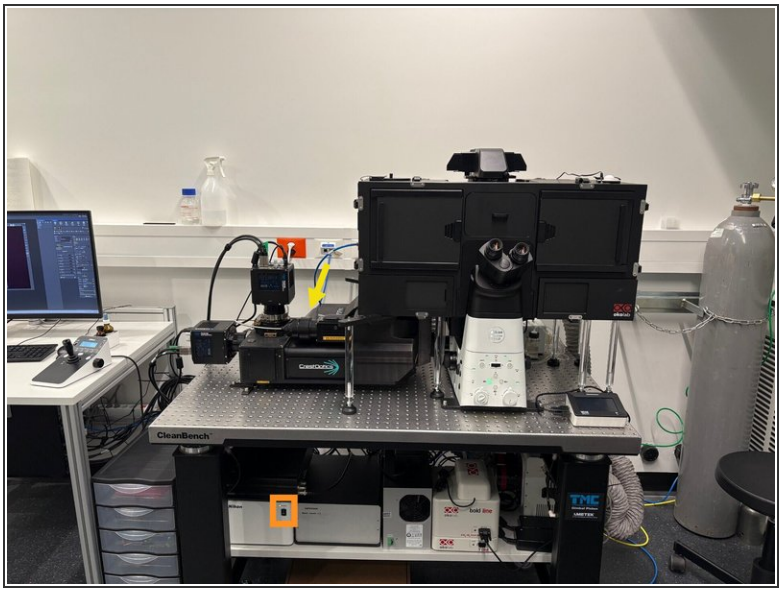
# INTRODUCTION

This guide will walk you through the startup process of the Nikon spinning disk confocal microscope, located at Irchel Campus, Room 42 F 66.

Please find more detailed information about this system in here.

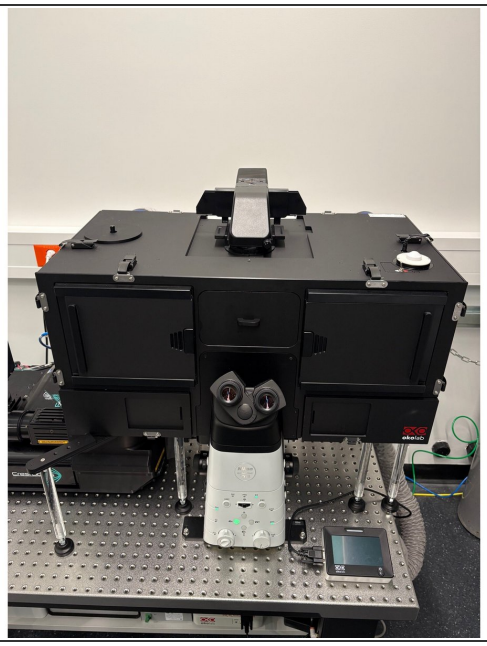
## Step 1 — Start the hardware components





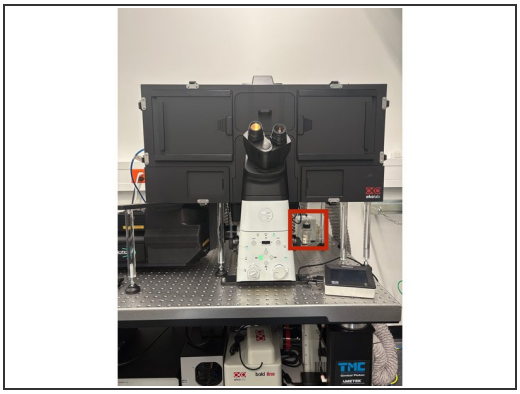
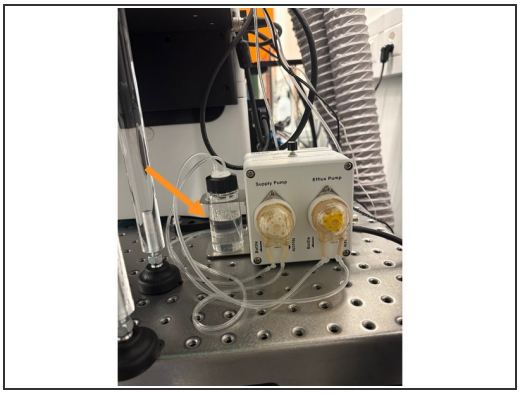
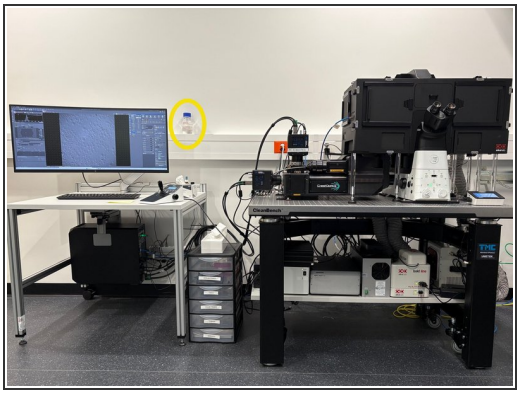
- The PC should never be switched off, but if yes find the switch here.
- Start the **microscope controller** below the optical table
- Start the **spinning disk unit**

## Step 2 — Optional - Environmental Control



- Follow this guide if you need to turn on environmental control for live cell imaging.

## Step 3 — Check water level in dispenser

- Localize the water dispenser
- Check if there is enough water in the bottle.
- If not, find a bottle on the wall and fill the water dispenser.

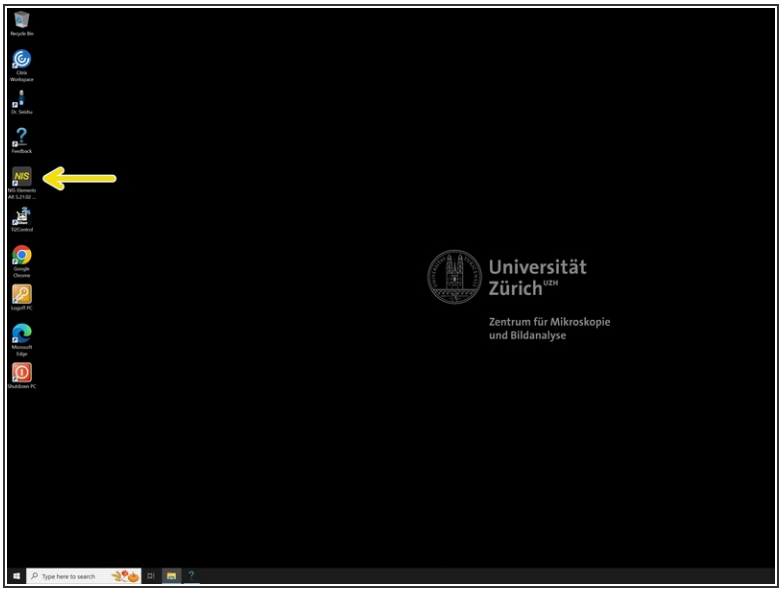
ⓘ *If you see that there is almost no water left in the bottle, please let the ZMB staff know!*

## Step 4 — Log in with your CORE credentials




- Pres *Ctrl + Alt + Del* and log in with your CORE credentials

## Step 5 — Start the NIS-Elements

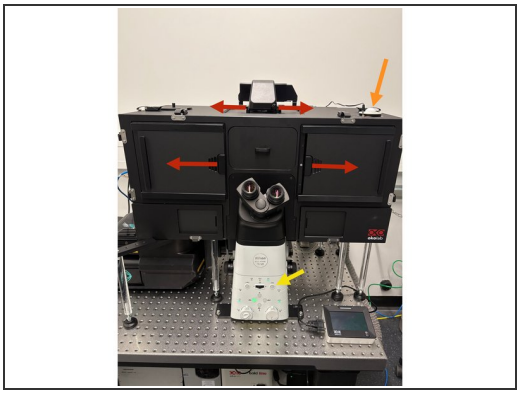
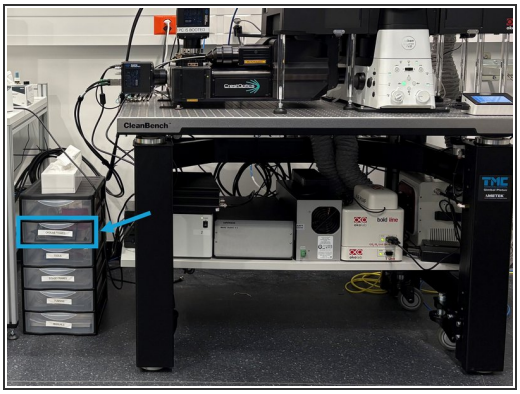
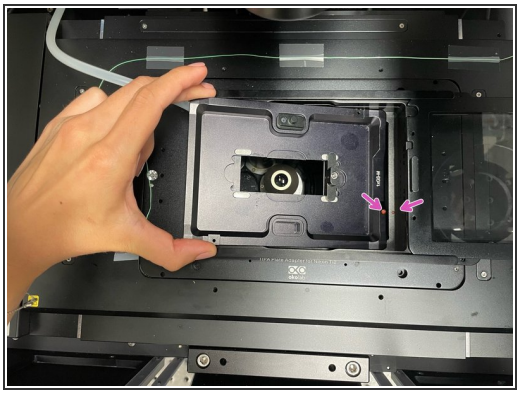






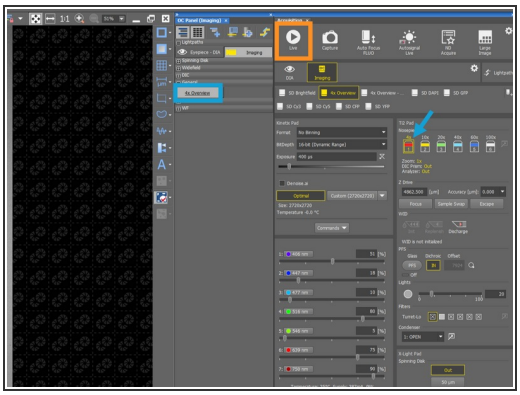
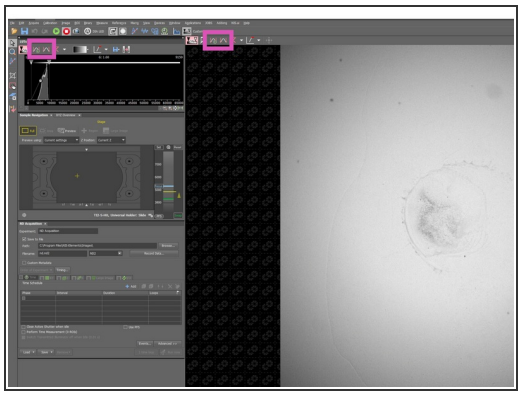
- Star the ***NIS-Elements*** SW
- Star the software either in single or dual camera mode.
  - *Note: For Dual Cam is there a beam splitter at 561 nm: You can use that for dye combination like DAPI/AF647 or GFP/Cy3. But not for DAPI/GFP*

## Step 6 — Place your sample

- Open the black environmental control box to access the stage.
- Turn on the light in the box, if needed.
- Make sure that the objective is in the lowest position. If you are not sure, engage the escape button and reset the focus position by holding that for another 2-3 sec.
- Lean back the condensor arm.
- Choose the frame insert from the tower - drawer Okolab frames
- Place the insert into the stage and ensure that the red dot on the insert aligns with the red dot on the stage in the same corner.
  - *Insert the sample holder as indicated in the image. Inserting it with the longer (horizontal) side first can cause resistance and potentially damage the piezo stage.*
- Mount your sample and move the stage that the objective is below the sample.

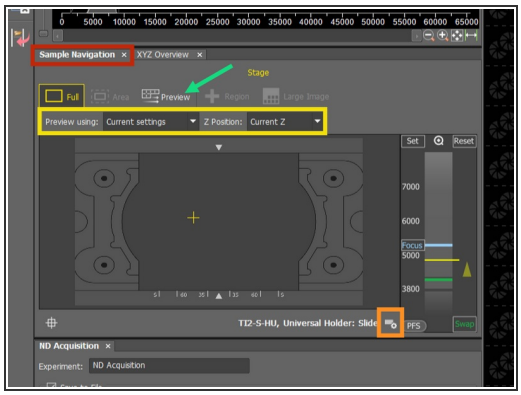
## Step 7 — Focusing

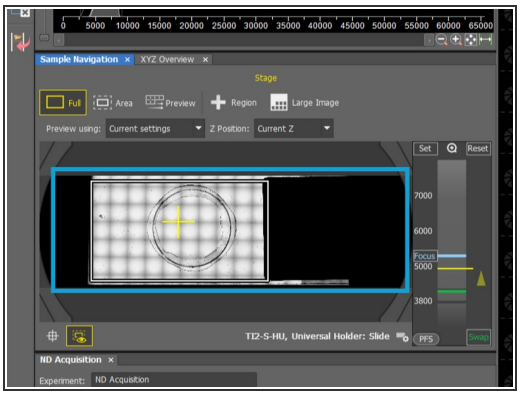


- Choose the **4x Overview** OC and make sure 4x magnification lens is selected.
  - Go Live
  - Press the **Autoscale** button (**Histogram with Play** icon.) This will ensure that the Histogram will be scaled and you won't miss the sample even with a weak signal.
  - *Alternatively, you can also select 4x objective and WF fluorescence channel for the overview if BF does not provide good contrast for sample localisation*
- Go up with the objective rotating the knob towards yourself.
  - The number of arrows indicates you the speed of movement. (3 arrows = fastest)
  - You can change the speed with this button
  - *Start with 3 or 2 arrows and go up carefully, until you will hear gentle beeping with which microscope indicates you are near to the focal plane. Then change the speed to 1 arrow and find your focus.*

## Step 8 — Sample navigation

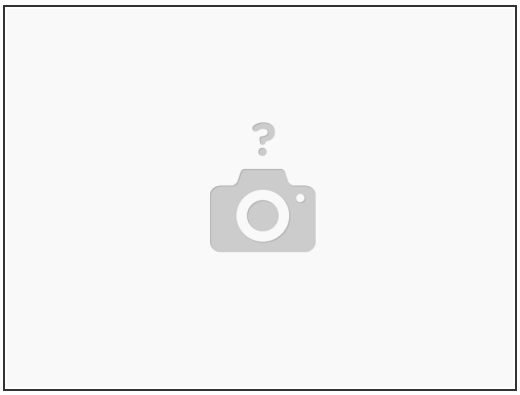




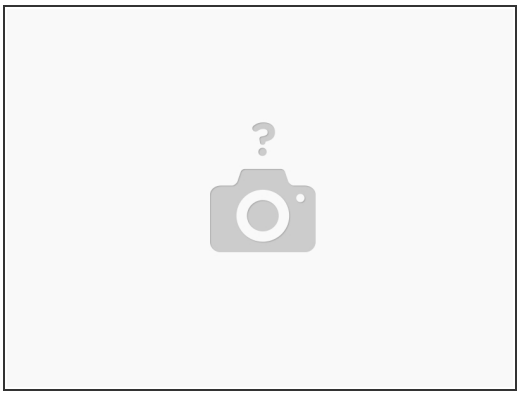

- Once you focused on the slide/sample, localize the **Sample Navigation** tab
- Choose from the sample holder - if you cannot find the exact same one, choose from the most similar one.
  - ⓘ For '4-slide holder' choose *Unknown holder Full area*. For 1-slide or dish use TI-2-SU Universal Holder. For well Plate use the Ti2-S-HW
- Choose **Current settings** and **Current Z** position - this will use the last used OC, which you used for focusing in previous step.
- Click on **Preview**
- Microscope will acquire a tilescan, which you can use later for the navigation in the sample

## Step 9 — Few more things to pay attention to:



- 1.5x / 1.0x lens - otherwise it will change the pixel size
- ND filter on the top for BF
  - Check whether you see the green sticker
  - You may consider to insert the ND16 if you are using *WF Brightfield OC*
- Close the environmental box. If it is not closed and there is a light in the room it can increase the background

## Step 10 — Follow-up guides



- You can continue with the help of other guides:
  - Setting up a profile
  - Acquistion in XY and Z
  - Large image

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