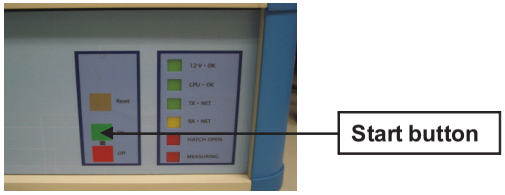
Tutorial for the dynamic light scattering system & Measurements

How to switch on the device:

- The SpectroSize 300 is simple to switch on, just be sure that the device is connected to a computer with the operating system Linux and the software is installed accordingly
- to switch the system on just press the start button



- after both, the computer - PC or Laptop - and the DLS instrument are switched on, it takes a few minutes until the laser and the cuvette holder has reached its working temperature

How to prepare a sample:

- the sample will be measured in small cuvettes of different types.
  For example:

- usually the cuvettes are stored in a box or in a 70% ethanol solution to prevent contamination caused by microorganisms. To avoid any denaturating or contamination of the protein, the cuvette should be cleaned just before a DLS measurement

Material required:

- cuvettes, 3 small beakers (< 80 ml), pipettes (10 µl, 200 µl) and its tips paper towels, gloves, DLS-Device, compressed nitrogen or air, Ethanol, dest. Water

Set up:

- fill a beaker with 20 ml of dest. water and a second one with 5 - 10 ml Ethanol. The third one is for the liquid waste

Preparation of measurements:

- take the cuvette carefully out of its storage vessel with e.g. soft tweezers. Avoid contacts with solid surfaces, you may accidentally scratch the surface of the cuvette
- invert the open end to a paper towel until the cuvette is empty
- fill in ~100 µl of Ethanol and press up and down for several times to clean the cuvette inside. Than take out the Ethanol and put it to the waste (beaker). Invert the cuvette on the towel till all ethanol is gone
- fill in ~100 µl of dest. water to rinse the cuvette. Take out the water with the 200 µl pipette and also waste it. You should repeat this step three times to be sure that Ethanol is entirely removed and will not influence your measurement
- to avoid dilution of your sample it is better to dry the cuvette. Thus blow out the residue of water by pressured nitrogen or air. It is recommended to do it before you begin your measurement
- now the cuvette is ready to be used. For a standard measurement a volume of 20 µl is sufficient and recommended
- pipette slowly, avoiding any bubbles inside the cuvette. Bubbles will disturb the measurement significantly
- turn the key to open the hatch, for safety it will also switch off the laser diode
- carefully place the cuvette in the basement. Important: the matt black side of the cuvette must point to the left. Close the hatch and lock it. The laser diode will be now switched on. The DLS system and sample are now ready for the measurement