

Where to find the Drop Shape Analyser DSA25

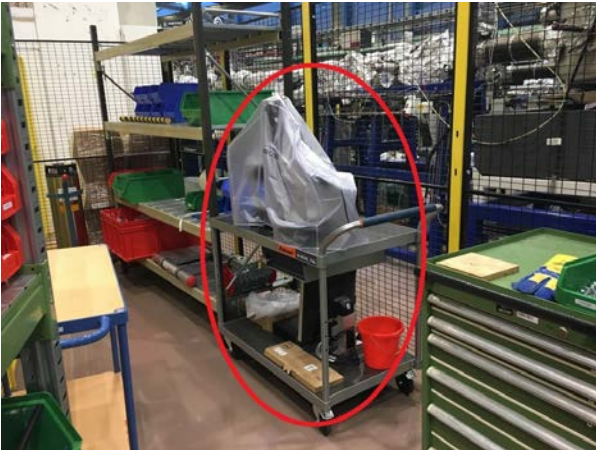


Figure 1. The Drop Shape Analyser 25 (DSA25)

To get access to the Drop Shape Analyser 25 (DSA25), you need to get an instruction by the staff in charge.

The DSA25 can be found in the so-called "Schlauch, please ask the "Hallendienst" (Tel. 12984) to hand it out to you.

Date	Name	Measurement
23.01.19	[Redacted]	Pendul drop (water / H ₂ O) Sessile drop (water / conductive)
23/01/19	[Redacted]	Sessile drop H ₂ O (sw)

Figure 2: The Lab Book

Please write down your name and the date in the lab book and describe shortly your experiment.

How the „cables“ should look like

Normally the cables should not be removed or changed by the user but only by the instrument responsible. Nevertheless, please check the correct installation of the cables before using the DSA25.



Figure 3: Installation of cables of the DSA25

Alignment

Before starting with your measurement, you need to be sure that your sample will be placed evenly on the sample table. Please use the spirit level to check that. You can find it in the drawer attached to the table.



Figure 4: Where to find the spirit level

Please adjust the feet of the DSA25 to align the sample position.



Figure 5: How to adjust the sample position

Do not forget to apply the brakes of the table trolley.



Figure 6: Brakes of the table trolley

How to start a measurement

Sign in with the following user parameters:

User: DSA25

PW: DSA25

Please double click the following icon, which you will find on the desktop of the computer:



Figure 7. Icon of the measurement program ADVANCE

The following Start Window will appear. It could take some time until the program starts, please do not worry!



Figure 8: Start window of the measurement program ADVANCE

The following interface will appear:

Kommentiert [SB1]: Muss noch erstellt werden.

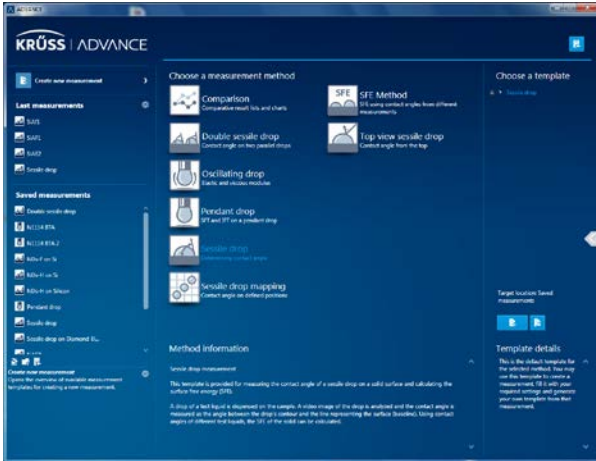


Figure 9. The Interface of the measurement program ADVANCE

The most important methods are the sessile drop and the double sessile drop:



Figure 10: The most important methods

Now please turn on the DSA25, you can find the button on the back of the instrument:



Figure 11: The Power on Button

A blue light will go on:

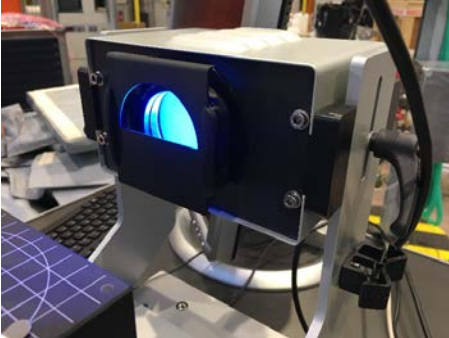


Figure 12: The lighting is on

To apply a droplet onto your sample you need to use a syringe. Before mounting the syringe onto the DSA25, one needs to measure the exact thickness of the needle. Please use the electronic micrometer, which you will also find in the drawer.



Figure 13: The electronic micrometer

Once you measured the diameter of the needle, you can mount it to the DSA 25:

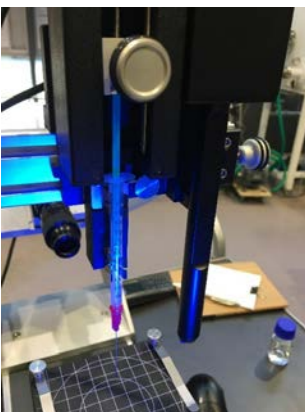


Figure 14: Mounting of the syringe

To start the measurement please click on “Create New Measurement” or Choose a template”, not on the icon itself. The following window will appear:

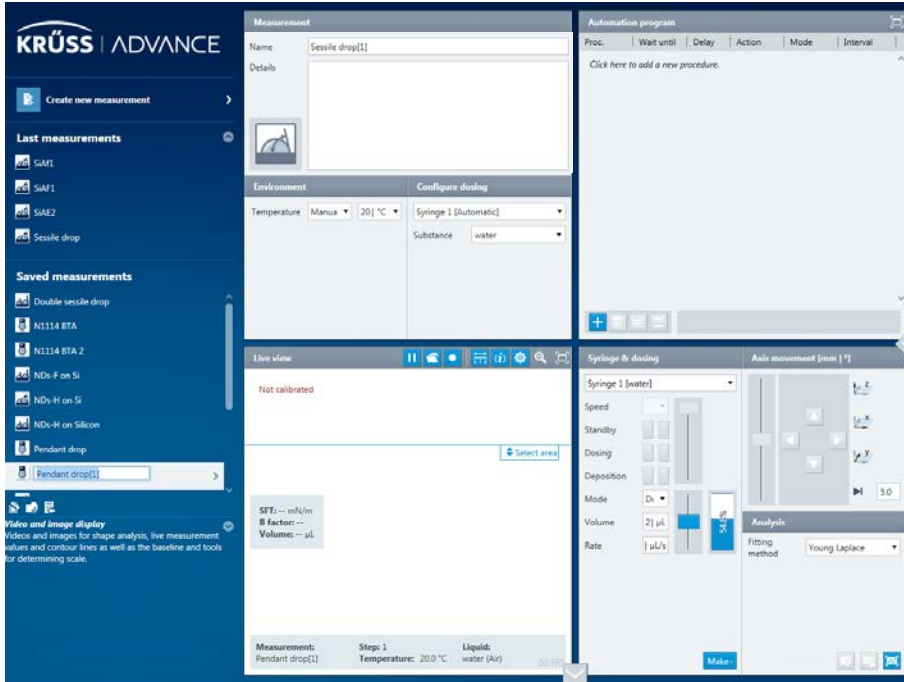



Figure 15: Sessile Drop measurement interface

To adjust the camera please first click on . Adjust the camera as follows and try to focus the image you can see on the monitor:



Figure 16: Where you can adjust the camera

Click on  to select the region of interest/area as can be seen in the following Screenshot:

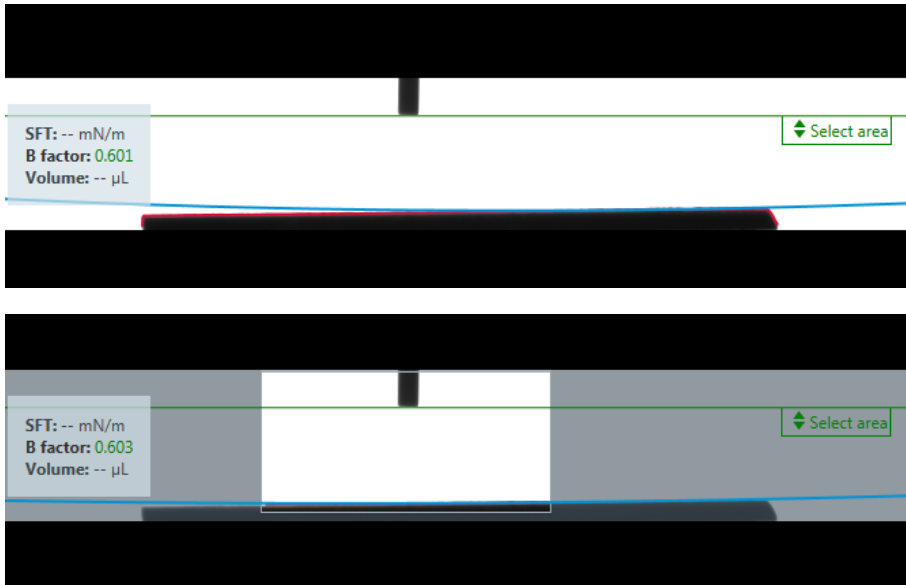



Figure 17: How to select the area of interest

Please click on  to calibrate the system.

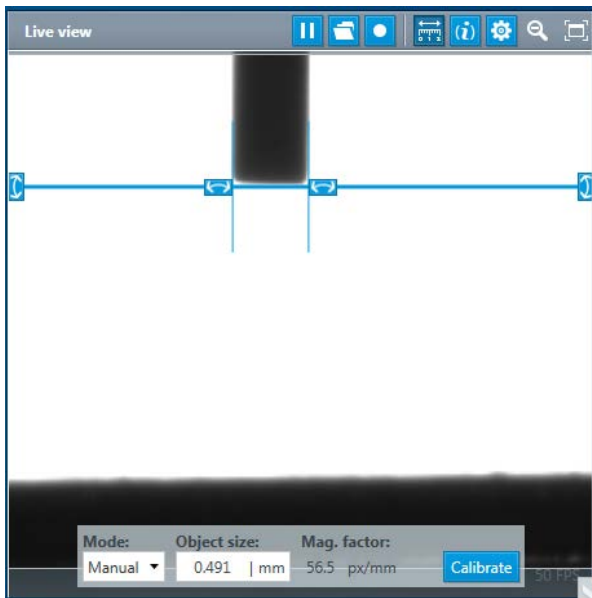



Figure 18: How to calibrate the system

Please enter the measured thickness of the needle and click on Calibrate.

Now you can finally make a drop. Please go to the following window and click on  which means “make a drop”:

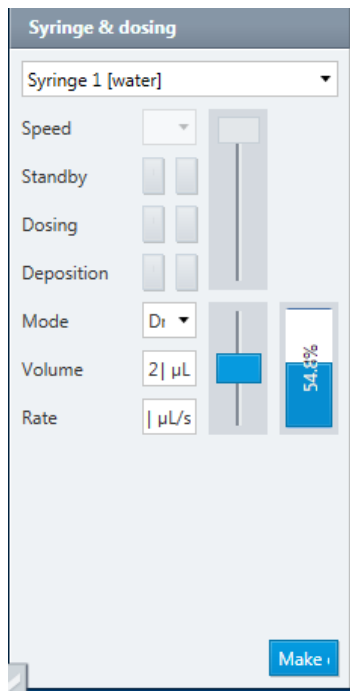


Figure 19: Interface for making a drop

Here you can adjust the volume and rate of your drop. Please edit again the region of interest after making the drop (See Figure 20).

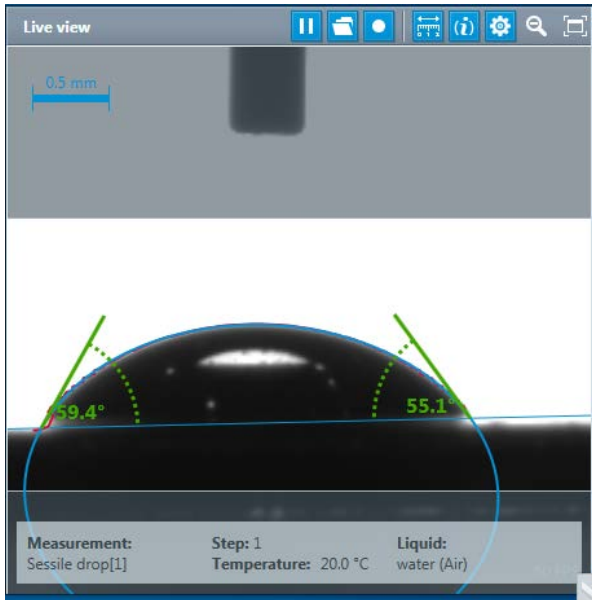


Figure 20: Measuring the contact angle between droplet and surface

The baseline is set automatically. If you are not OK with the baseline, you can set it manually.

To start the measurement please click on “Click here to add a new procedure”:

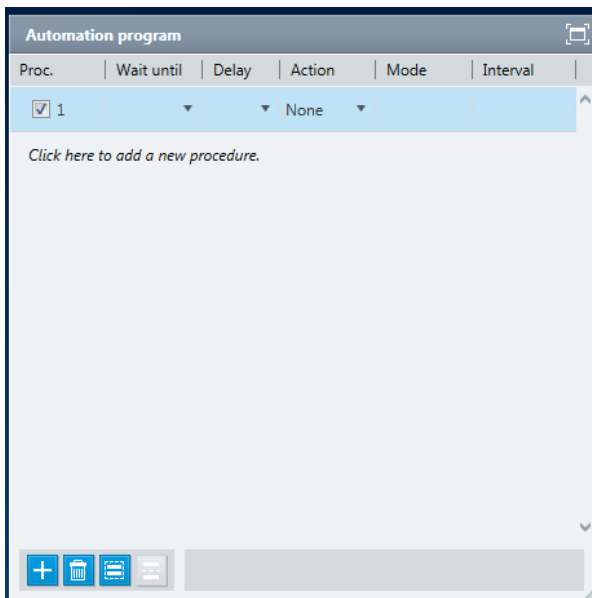


Figure 21: How to start a new measurement

Choose your parameters and click on one of the following icons:



Figure 22: How to start a new measurement

Please DO NOT touch the table during the measurement!

After the measurement is finished, the following data sets will appear:

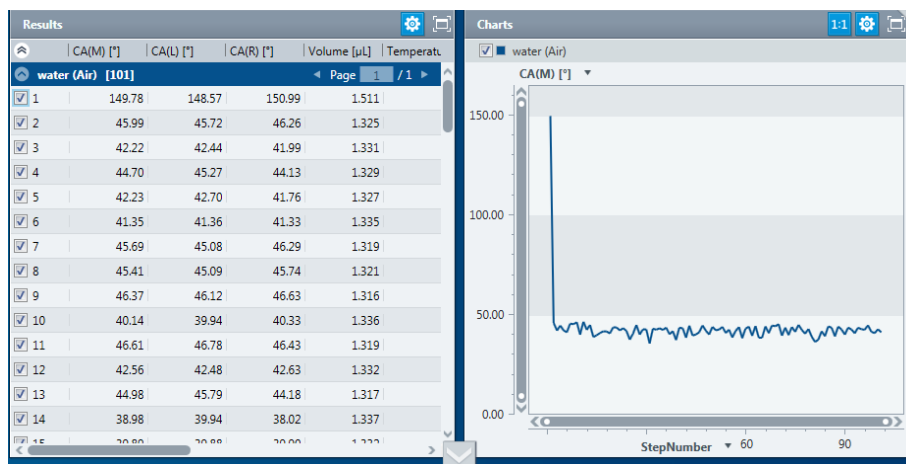


Figure 23: Interface after a measurement

You can suppress obviously wrong data like the first point, which was caused by shaking the table:

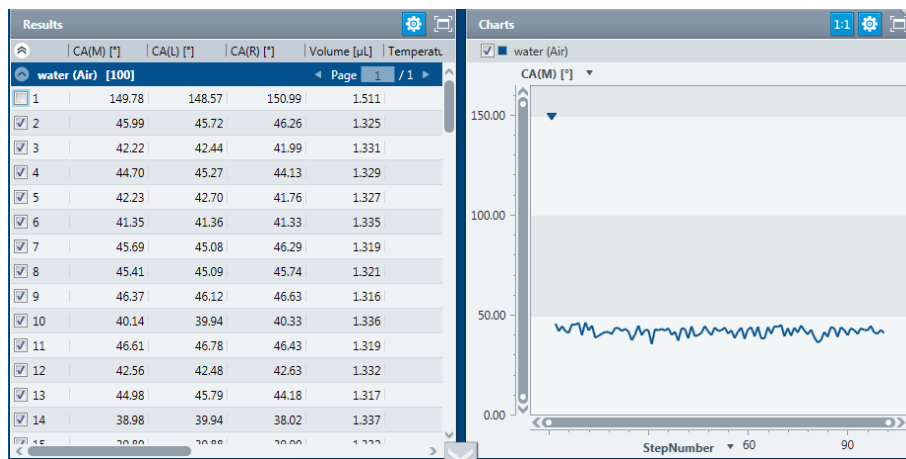


Figure 24: How to suppress wrong data points

Please check the measured volume, in case it decreases your droplet evaporated during the measurement. You need to make a new droplet and start the measurement again.

For further evaluation of your data you can insert the type of liquid your droplet is made of:

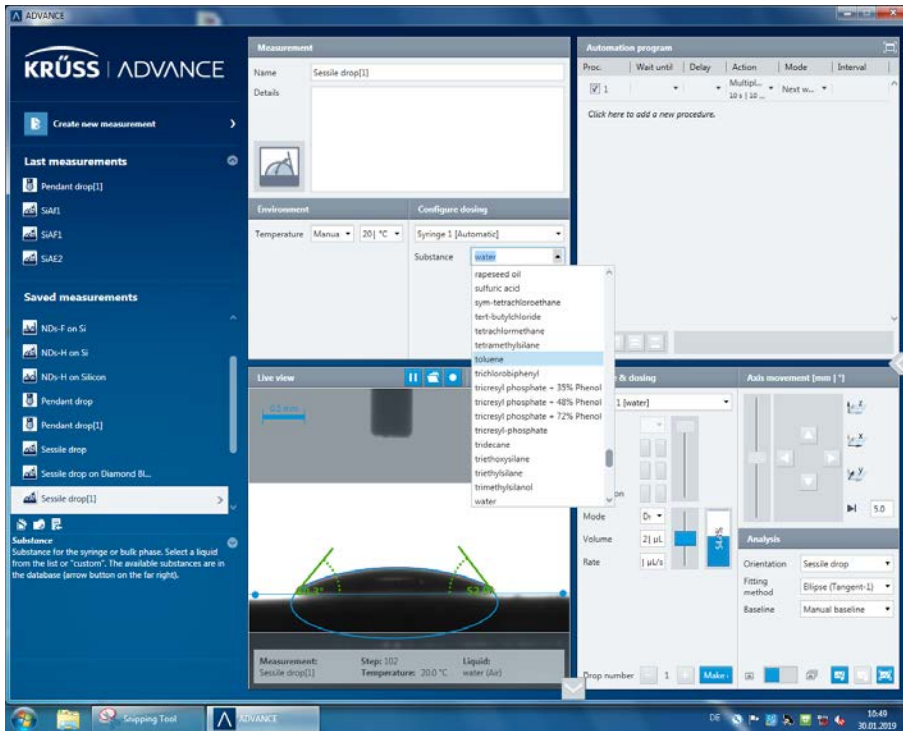


Figure 25: adding the type of liquid your droplet is made of

To save the data please click on the following arrow:

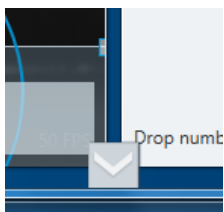


Figure 26: How to get to further functions of ADVANCE

Until you see the following export window:

The image shows a user interface for data export and reporting. It is divided into two main sections: 'Export' and 'Report'.
1. **Export Section:** Located at the top, it features a dark header with the word 'Export'. Below it, there is a label 'Output format' followed by a dropdown menu currently showing 'Excel'. A blue button labeled 'Export' is positioned below the dropdown.
2. **Report Section:** Located below the Export section, it has a dark header with the word 'Report'. It contains a label 'Output format' followed by a dropdown menu showing 'Simple report template'. At the bottom of this section, there are three blue buttons: 'Preview', 'PDF', and 'Print'.

Figure 27: Export of your data

You can export your data as PDF or xy-file.