Operation of Goniometer
(Contact Angle & Surface Tension Measurement)

Coral name: Goniometer
Model: Firsttenangstroms (FTA32)
Location: Nanofab, Building 215, Metrology Bay
Contact: Lei Chen (x2908)
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OVERVIEW:
The Firsttenangstroms (FTA32) goniometer provides video-based contact angle and surface tension measurements. Contact angles are measured by fitting a mathematical expression to the shape of the liquid drop and then calculating the slope of the tangent to the liquid drop at the liquid-solid-vapor (LSV) interface line. Computer software liquid drop shape analysis gives the contact angle without operator intervention or judgment.

APPLICATIONS:
Contact angle and surface tension for adhesion, cleanliness, wetting, biocompatibility.

SPECIAL NOTES OR RESTRICTIONS:
- Must be trained and qualified to use the tool.
- Any new liquid other than water must be approved by Nanofab staff.

SAFETY PRECAUTIONS:
- Never touch the lens on the camera
- Handle samples on the stage with gloves and/or tweezers.
- Report any malfunction of the tool to the Nanofab staff.
Operation

- Remove the cover on the lens.
- Turn “ON” the computer if it is “OFF”.
- Double click the “FTA32” icon on the desktop to start the operation.
- Click “OK” to enter the program
Choose test fluid and place in syringe. Water is used in most cases because it is safe and forms a high, easily observed, contact angle on most materials. For other liquids, please consult contact engineer for feasibility.

Lock the syringe in the house tightly.
- Click “Video” to show the image (see below).
- Lower the needle to the view window and adjust the focus until clear.

![Video Interface](image)

- Load the sample on the holder and adjust the stage height to bring it into the view window.
- Adjust the light and focus on the drop until clear and then click the “Snap Shot”
• Define the contact angle analysis based on your need in the above window

• Click “Contact Angle” to calculate the data (see below)

• Export the image from file menu and save it to the user folder.
END STEPS:

- Raise the syringe back to the normal position.
- Remove any liquid other than water from syringe.
- Close the software.
- Cover the camera lens.
- Leave the computer ON

For any further data analysis information please check the User Manual next to the tool.