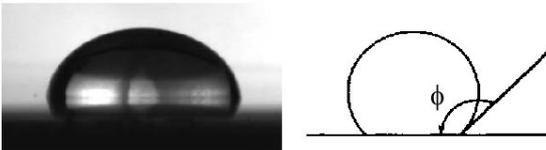


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CONTACT ANGLE MODULE

The contact angle provides valuable information about the surface composition. The shape of a sessile liquid drop on a solid support is determined by the balance between surface tension and gravity. Surface forces lead to a spherical shape of the liquid drop whereas gravity tends to flatten the drop. The contact angle is obtained by analyzing the shape of a sessile liquid drop on a solid support at the three phase contact line.



The contact angle module represents a natural extension of the MULTISKOP capabilities. It uses many existing hardware components of THE MULTISKOP such as framegrabber, CCD-camera, sample stage, computer etc. and is therefore a consequent extension of its capabilities. The contour of a sessile drop is analyzed and fitted to the Young-Laplace equation.

The following new hardware components are required:

- The syringe is fixed on top of the goniometer. It can be moved in x,y,z- direction.
- The sample cell minimizes evaporation effects and can be hooked up to a thermostat
- A diode array provides a uniform illumination of the droplet. The array is fixed on one side of the cell.
- An additional objective is required for the acquisition of the images.



A contact angle measurement requires the precise determination of the location of the three phase contact point. Many commercial programs demand further user input to solve this task but not our program CAM. The implemented contour tracing algorithm automatically distinguishes between drop and mirror image. This is fast, accurate and user friendly.

