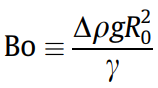
Methodology

Pendant drop tensiometry determines the surface tension from the shape of a pendant liquid drop deformed by gravity. The shape of a pendant drop depends on the Bond number (Bo), which is determined by the balance between the Laplace pressure and gravity.



The surface tension of a droplet can be calculated if the drop radius R0 at the apex and Bond number associated with the droplet can be determined. This can be determined from a droplet image by fitting the Young-Laplace equation. To make a picture of a pendant droplet a basic set up can be used, as is shown in figure …. To fit the image the drop profile needs to be extracted and normalized. This can then be fitted to a simulated droplet based on the bond number. This fitting process is shown in figure… It is important collect enough data to improve accuracy by averaging. In 1.5 seconds a very reasonable estimate for the surface tension of water was found (see figure…)