GCODe Mini

Usage Manual

Software

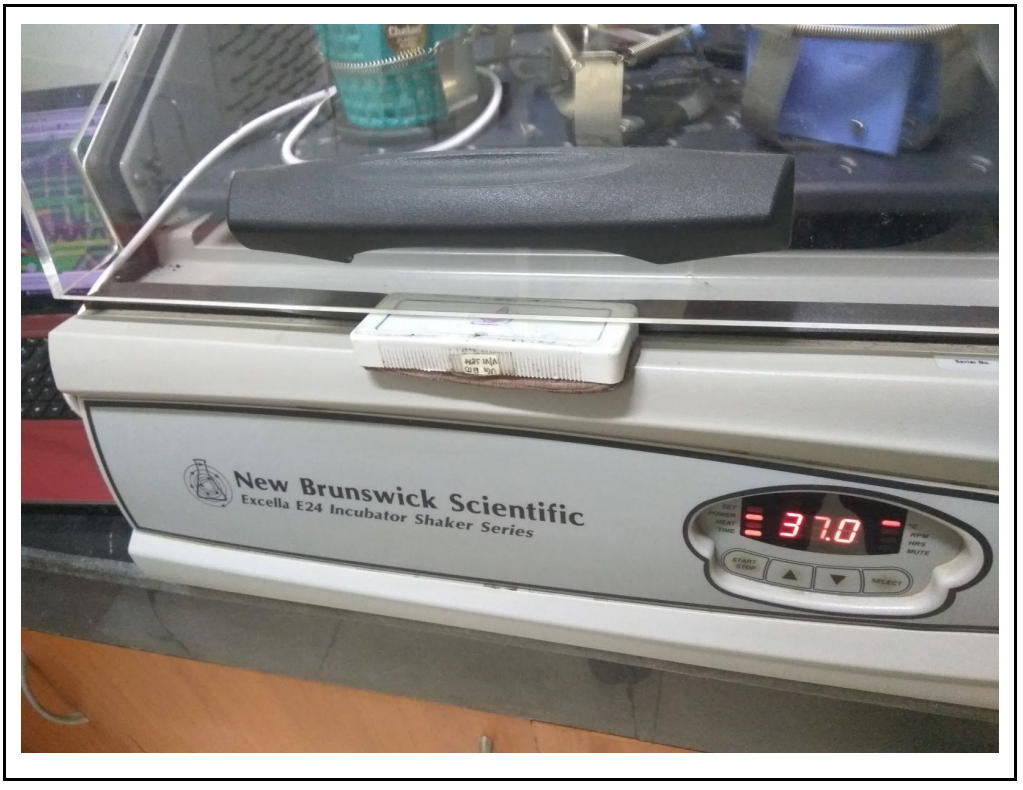
The software can do four things:

1. **Run a growth curve**: Takes OD readings at specified intervals as many times as you like, and shows a graph of the OD in real time. It outputs the data into a .csv, and sends you a notification when the growth curve is complete.
2. **Message every dX OD**: Sends you a notification every time the OD rises by dX. Eg: Send a notification every 0.1 OD.
3. **Message every dT time**: Sends you a notification every dT minutes.
4. **Alert when OD reaches a setpoint X**: Sends you a notification when the OD reaches a specified value. Eg: Send a notification at 0.6 OD so that we can catch the cells in log phase.

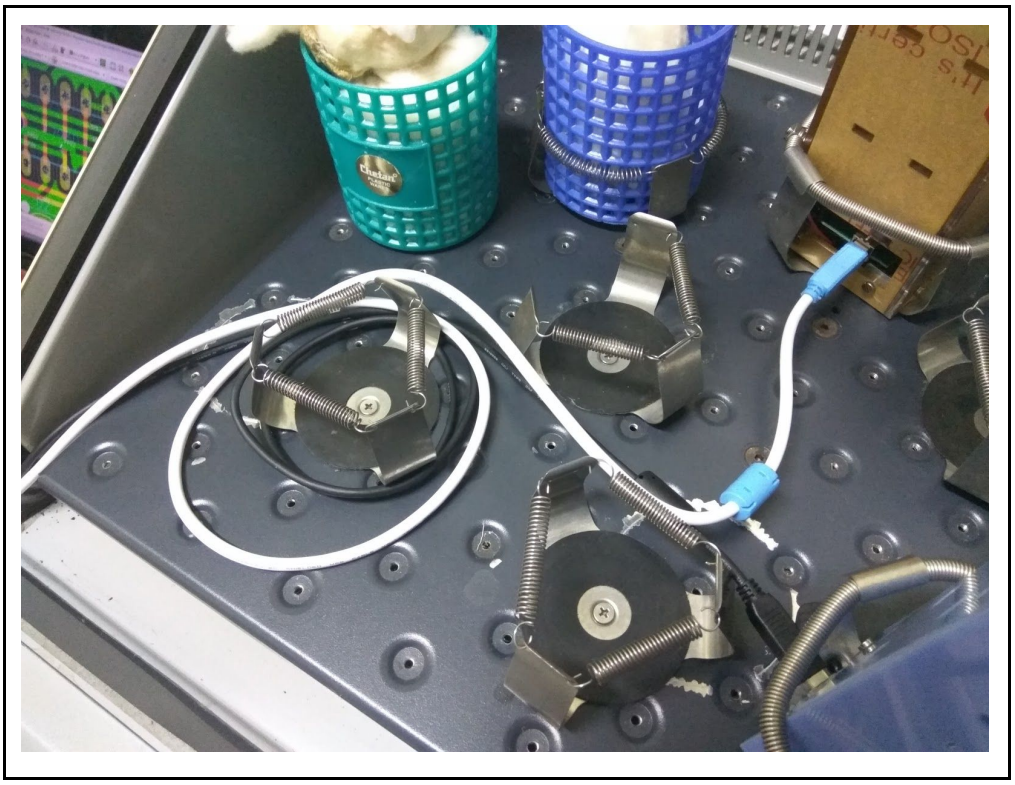
Running a growth curve with your GCODe Mini

1. The Mini needs to be at a constant temperature to give you reliable readings. To ensure temperature stability, incubate it for at least 2 hours (at the temperature you will use it at) before putting in the blank reading - preferably overnight though.
2. Connect the USB cable to the device.

    Your shaker/incubator might require you to prop the lid open a little so that the USB cable can go through. If you prop it open just a centimeter or two, the incubator will probably still be able to reach the required temperature.



    You should wrap the cable around something in the shaking platform so that the USB port on the device does not have to bear any strain.



3. Connect your USB cable to the PC and start the software.
4. Pour in your blank medium into the test tube.
5. Click on the task of your choice. Hit OK to take the blank reading.
6. Take your test tube out, add your inoculum, and put the tube back in the machine.
   Round test-tubes have significantly different lengths at different angles - and just turning the tube will lead to a different OD.
   In order to minimise error, you must use the same test tube to blank, and make every effort to keep the test-tube back in exactly the same orientation. If this error is not acceptable to you, you may consider blanking against the inoculum itself, which usually has an almost negligible OD (~0.05)
7. Hit next to start the task.
8. If you're running a growth curve, you can click on the save icon to save your graph.
9. There will be a .csv file in the same folder with the name you selected. You can open it in your favourite data analysis programme (Microsoft Excel, LibreOffice Calc, SciDAVis etc) and plot it again, if you like.
10. Normalise these readings using the final OD reading and a spectrophotometer reading (provided that the final reading is less than 1 OD). That is, you should scale all the readings so that the final reading is equal to the spectrophotometer OD.
    This is because the test tube you are using (and its angular position) will affect the readings; if it is only the qualitative shape of the graph you want, you don't have to do this
    But if you want quantitatively accurate results, this normalisation will give you accurate numbers.