

April 5, 2002

Vitrobot

Vitrification of suspensions

Semi-automatic fast freezing of thin films of suspensions under controlled temperature and humidity.

Switching the system on.



Figure 1

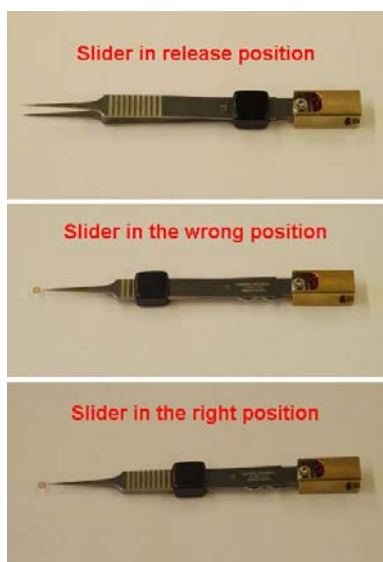


Figure 2

- 1 Make sure the liquid nitrogen/ethane vessel is not on the lift before you switch the system on.
- 2 Open valve on the wall for air pressure to operate the blotting mechanism.
- 3 Switch PC on. Wait till the startup process has finished.
- 4 Double click on the VR icon to start the vitrobot software.
- 5 The system will initialize and put the tweezer down
- 6 Press “place new grid” (plunger will move to mounting position for the tweezer)
- 7 Mount a grid in between the tweezer tips and slide tweezer with little spring pointed at you over the v-shaped end of the plunger. See Fig 2 for position of the slider on the tweezer. Put slider in the first slit on the tweezer.
- 8 Adjust to the temperature you need (range from 6 °C to 50 °C)
- 9 Set your desired values for the parameters, or load your start settings.
- 10 Toggle OFF the “auto raise ethane lift”
- 11 Adjust humidity to 100%, but toggle ON the “humidity off during blotting”
- 12 Start filling the outer ring and ethane vessel with liquid Nitrogen to cool down. This will take some time before the liquid Nitrogen settles. Then remove the liquid from the inner space and start filling it with ethane gas.
- 13 Once ethane liquifies raise the flow and fill the space just about 2mm below the edge.



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- 14** Take up 3 to 5 μ l sample in a pipet; start the application process and apply the sample once the tweezer is down in the chamber, through the opening in the left side of the vitrobot.
- 15** Hit the foot pedal again to start the blotting and automatic plunging.
- 16** Remove the tweezer from the plunger and transfer the grid to the grid-box sitting in the liquid Nitrogen outer ring of the ethane vessel.
- 17** Take up a new grid and start again at step 7.

Switching the system off.

- 1** After last blotting procedure put the tweezer back and bring it in the chamber.
- 2** Press the x box upper right corner (ends VR program)
- 3** switch computer off (do not leave it on over night!!)
- 4** close air pressure valve on the wall