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Thermal Waves experiment as it used to run (AKA: *where does your data come from?*)

YOU NEED TO RUN THIS .PPTX IN ‘PRESENTATION MODE’ TO BE ABLE TO WATCH THE VIDEOS

Thermal Waves – Equipment used in the Lab

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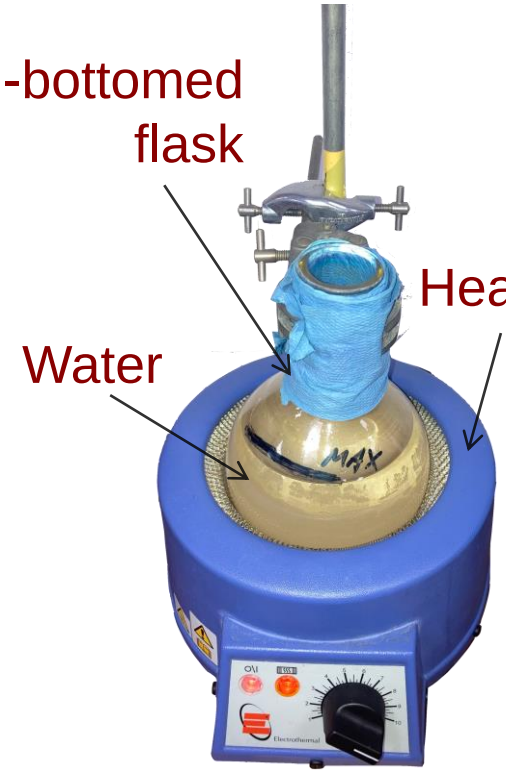
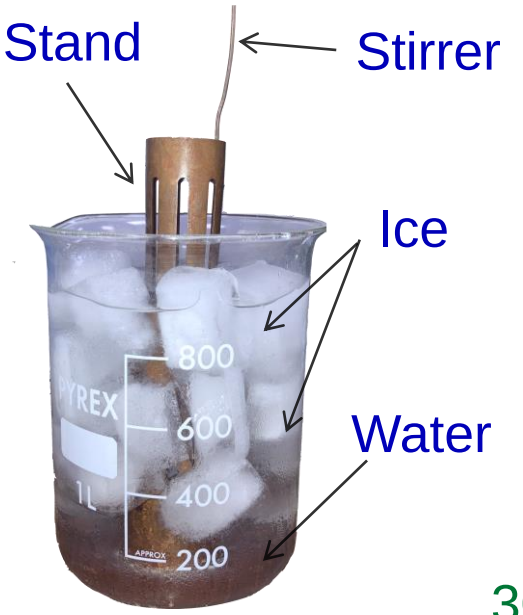
HOT BATH (100˚C)



COLD BATH (0˚C)



PTFE CYLINDER

Thermal Waves – Diagrams Used in the Script

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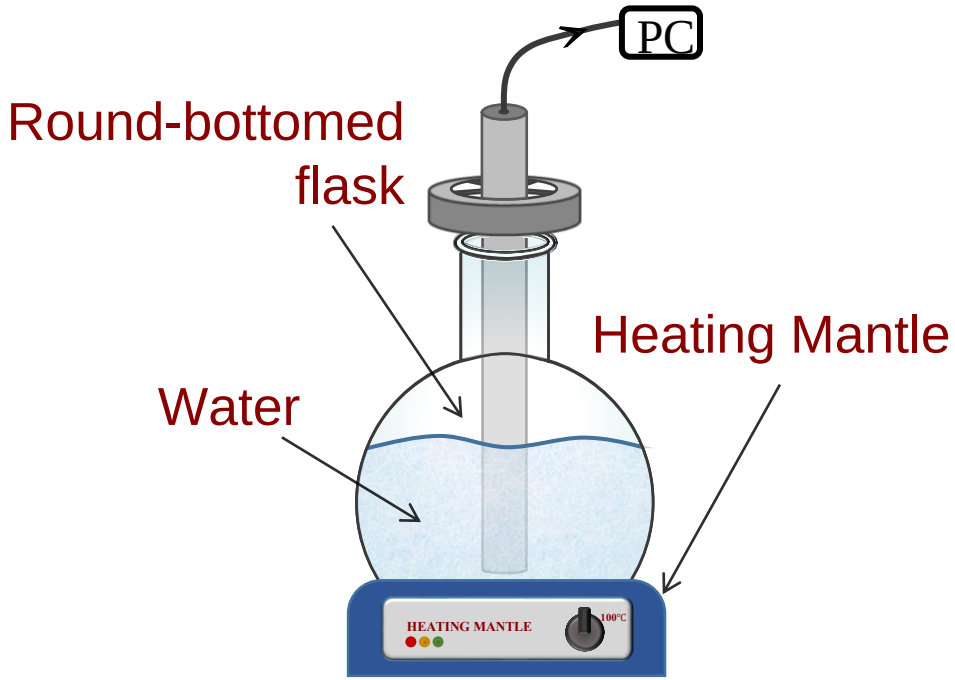
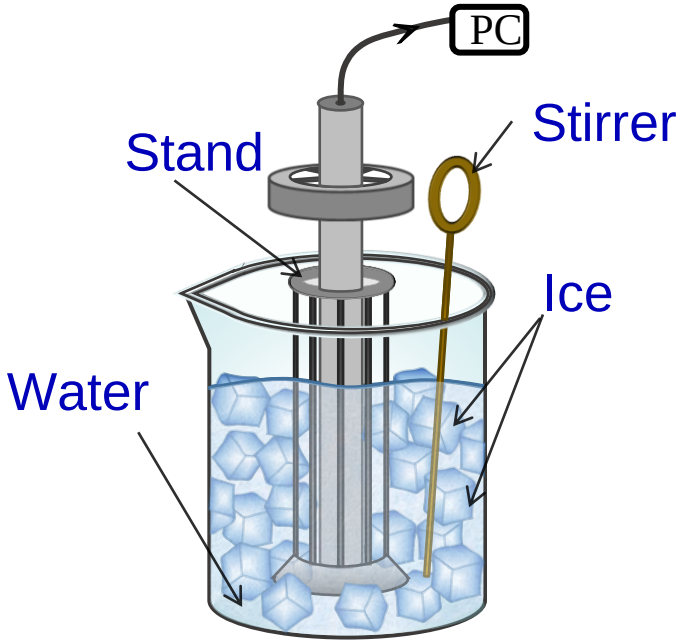
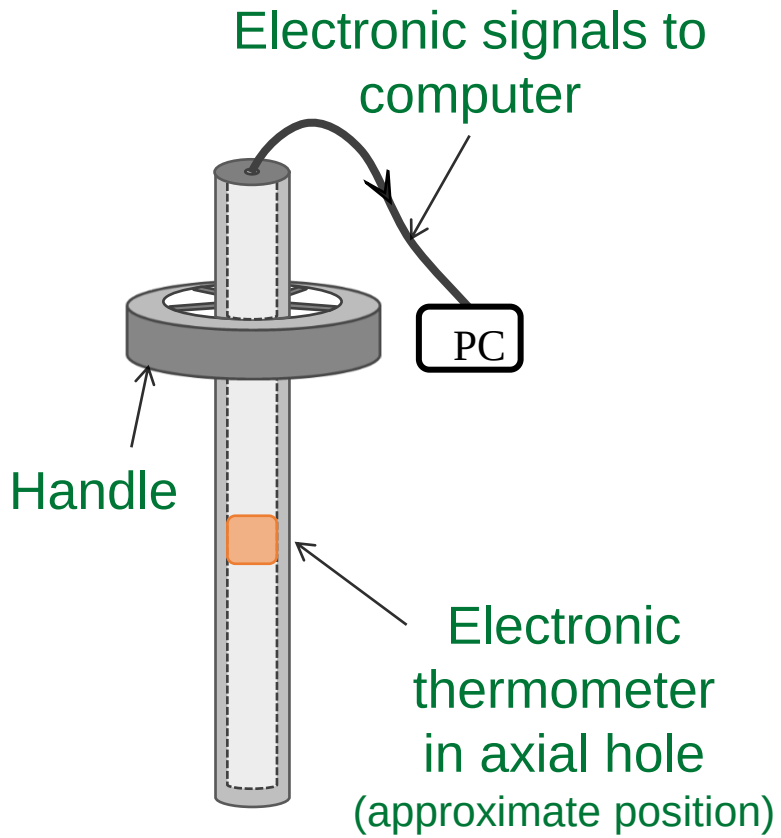
HOT BATH (100˚C)



COLD BATH (0˚C)



PTFE CYLINDER



Thermal Waves – Experimental Method

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This short clip shows the cycling of the cylinder between the hot and cold baths.

- Note that when in the cold bath, the ice-water mixture is constantly stirred to avoid the build up of a warmer layer of water in the vicinity of the PTFE cylinder.
- No stirring is needed in the hot bath due to the rising bubbles from the boiling water.
- The program used for data acquisition produces two beeps:
  1) the first one when there's 4s left in the bath
  2) the second one when it is time to change the cylinder from one bath to another

Thermal Waves – Data Acquisition Software

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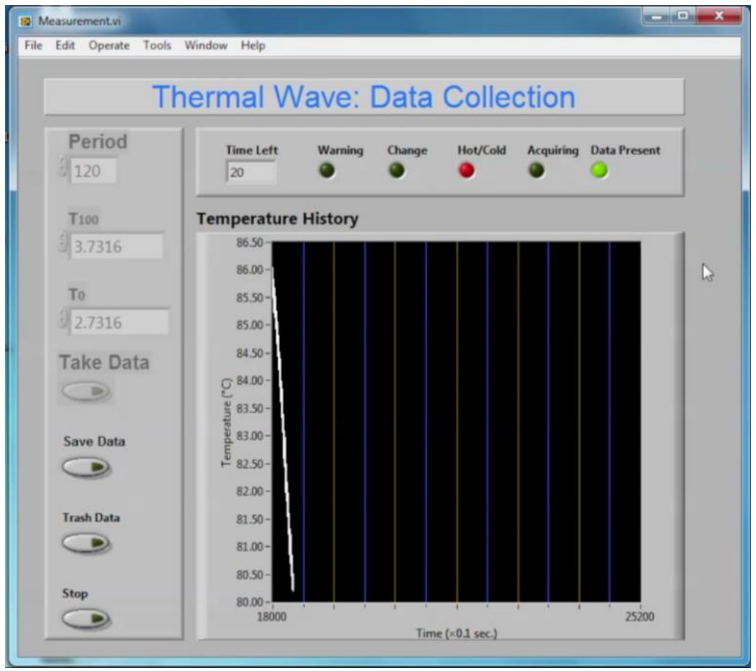
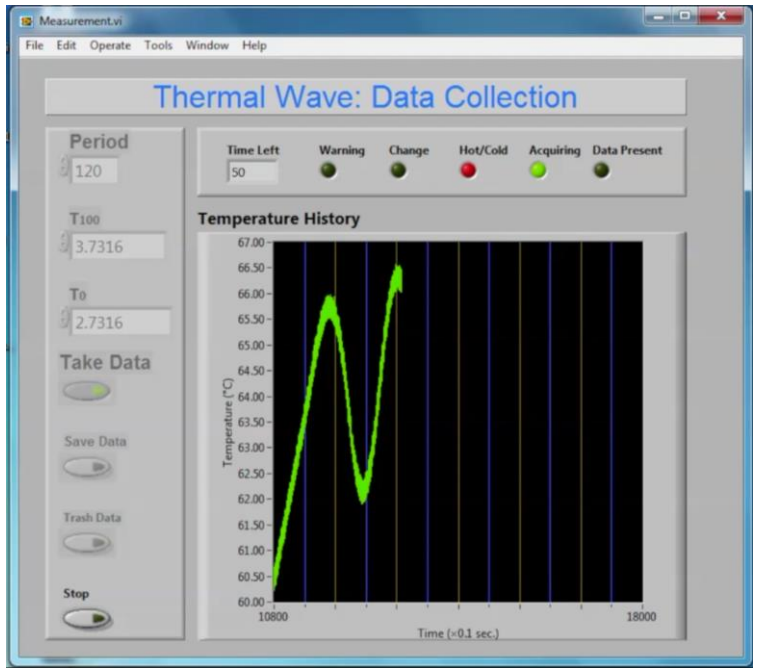
These short clips show how the data acquisition software looks like.

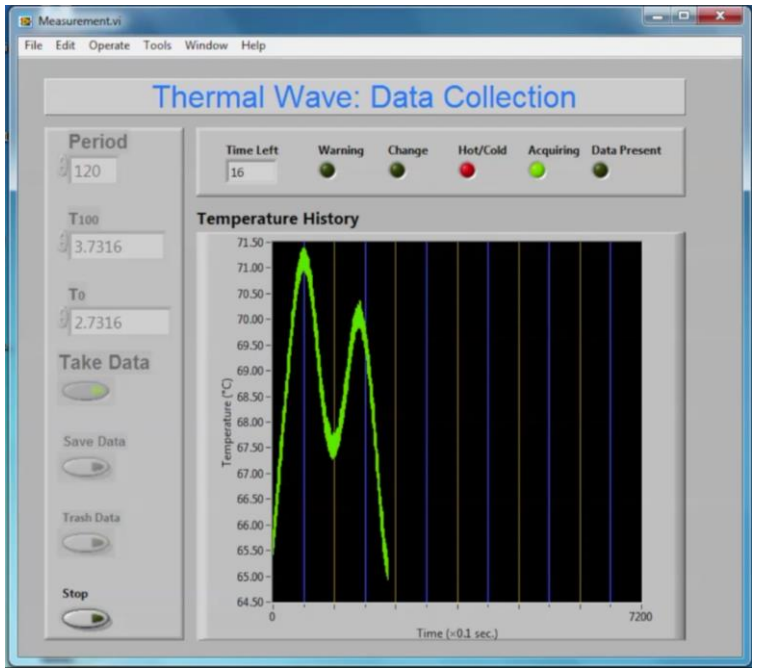
(recorded for a square wave period of 2 min. and 20x speed)



Strong temperature transient



Strong temperature transient



Slightly more stable