Using a DigiMelt - how to operate the Digital Mel-Temp device:

1. Turn on the DigiMelt using the “on-off” switch located on the back left-hand side of the device. The device will turn on, and read the ambient (current) room temperature.

2. Load the sample to be melted into a capillary tube. Invert the capillary tube, press the open end of the tube into a small amount of crystals and turn right side up again. Be sure you are using the smallest amount of crystals possible - still visible to eye - and pack to remove air pockets. To pack the crystals, either drop the capillary tube, sealed end down, through a plastic tube or use the “tube tapper” provided with the device. To use the tube tapper, place the capillary tube in one of the three holes provided (sealed end down) and push button labeled “tube tapper”. The tube tapper will vibrate briefly, causing your crystals to fall to the bottom of the tube. Probably good to repeat either of these packing methods a couple of times to ensure that a good packing has occurred.

3. Place the capillary tube in one of the three slots used for the melting process, sealed end down. The slots for the analysis are found directly above/behind the eyepiece at the top of the device. Check that you can see the bottom of your capillary tube through the eyepiece. Up to three samples may be melted at a single time.

4. Prepare the device for your “melting point run”:
   a. Set the temperature at which you wish to begin watching your sample for melting: Press the yellow “Start Temp” button and use the up and down arrows (on the blue buttons labeled 2 and 3) to set the desired starting temperature. If you hold the buttons down firmly, the temperature will jump by values of 5 to more quickly arrive at the value you wish to begin at. Press “Start Temp” again to lock in your value. During this time, the light next to “Start” will be on.
b. Set your rate of heating: Press the yellow “Ramp Rate” button and use the up and down arrows to set how quickly you want the device to heat up during the melting process. Press “Ramp Rate” again to lock in your value. Use 20 degrees/minute for a fast “ballpark” run and 1 or 2 degrees/minute for a slow accurate run. During this time, the light next to “Ramp” will be on.

c. Set the temperature at which you wish to end your melting point run: Press the yellow “Stop Temp” and use the up and down arrows to set the desired temperature at which the device can stop heating your sample (must be above their projected melting point). Press “Stop Temp” to lock in your value. During this time, the light next to “Stop” will be on.

5. Press the green/red “Start/Stop” button to preheat the device to your starting temperature (the Preheat light will be on).

6. When the Ready light comes on, press “Start/Stop” to begin your melting point analysis. The “Melt” light is on.

7. Watch your sample during your run. To record data, you need to push one of the blue buttons (labeled 1, 2 or 3). You can use any of the buttons to record data in but to avoid confusion, if you put your sample in the first of the three slots (the left one), you should record all of your data using blue button “1”.¹

8. When your sample begins to melt, push the appropriate blue button firmly. The Data light will then be lit. A tiny “bleep” sound will be heard when the data button is pushed to record information. If you pushed blue button #1, this first piece of data is labeled “L1”.

9. When your sample just finishes melting, push that same blue button again.² For blue button #1, this second piece of data is labeled “L2”.

10. When your run is finished, press the green/red “Start/Stop” button to stop the run instead of letting the Mel-Temp device continue to heat. This allows the device to begin cooling more quickly should you or someone else need to use the instrument again.

11. To retrieve your data, press the blue button that you used to record your data. If you recorded two temperatures, push the button once for the first piece of data, then again for the second piece of data. Be sure to record this information in your notebook.

¹ This avoids confusion should you need to melt two or three samples at the same time (the second slot corresponds to #2, in the center, and the third slot corresponds to #3, right side). The digital recorder will record the first data point as L1, c1 or r1 (corresponding to left, center and right).

² You can push any of the buttons corresponding to 1, 2 or 3 up to four times total (example: button #1 records the data as L1, L2, L3 and L4) so should you err in judgment or have a moment where your finger “slips” and you push the button too soon, you can continue your run and ignore the erroneous data value when its retrieved.