

### Section III: Results

After testing, the results collected are as follows.

#### Freezing Water:

Four (4) TEC modules were initially used with three (3) fans to cool 0.7 liters of water. This design was not efficient as the delta temperature (temperature drop) was 10 degrees Celsius after a total of four (4) hours. The watt-hour consumption over this period was 590wH.

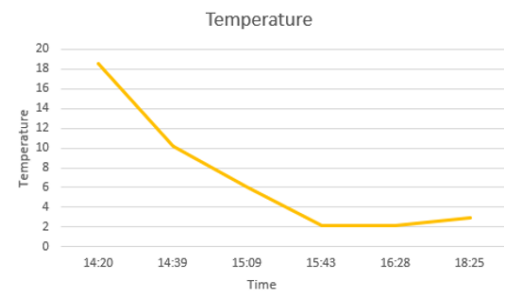
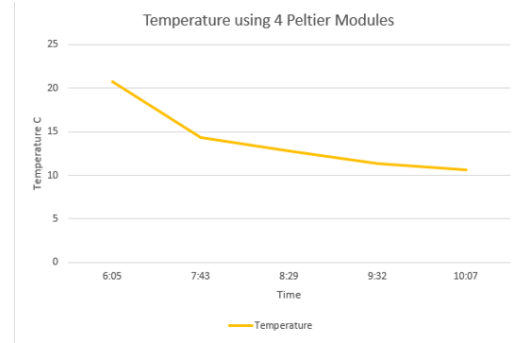
Subsequently, the heat sink and TEC configuration were adjusted, showing a drop of sixteen (16) degrees Celsius after 1.2 hours. The Watt-hour consumption over this period was 226wH.

#### Melting Paraffin:

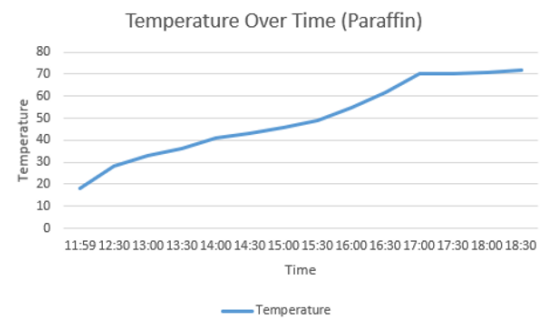
A heating coil was used to melt the paraffin wax. The delta temperature (temperature increase) measured was 54 degrees Celsius over a period of 6.5 hours. Paraffin wax was successfully melted.

#### Thermoelectric Generation:

More work needed.



**Figure 2:** Temperature graph from freezing test using four Peltier modules and 3 fans (top), and temperature graph from freezing test using new stacked configuration (bottom).



**Figure 3:** Temperature graph from heating test using heating coil. Delta temperature measured was 54 degrees Celsius.