be cancelled by heat lost above room temperature.

• A larger temperature change will reduce the percentage error.

## Measurement of specific heat capacity of water by an electrical method

## Apparatus



- 1. Find the of the calorimeter.
- 2. Find the mass of the calorimeter plus the water and use this to find the mass of the water. Note the initial temperature.
- 3. Allow current to flow until there is a temperature rise of about 10°C.
- 4. Switch off the power supply, stir the water and note the highest temperature.
- 5. Record the rise in temperature,  $\Delta T$ , and the final joulemeter reading Q.

## Conclusion

Electrical energy supplied = energy gained by water + energy gained by calorimeter  $\rightarrow Q = (mc \Delta T)$ water +  $(mc \Delta T)$ calorimeter

Where c = specific heat capacity

## Accuracy

- To improve accuracy we can begin by chilling the water. The heat gained below room temperature will be cancelled by the heat lost above room temperature.
- A larger temperature change will reduce the percentage error.
- If a joulemeter is unavailable, the energy, Q, can be calculate using the formula: Q = VItWhere V = voltage I = current t = time