

## Specific Heat of Solids



### General Aim

Determination of specific heat capacity of different materials.

### Method

Mixtures method

### Learning Objectives (ILOs)

- Define the specific heat capacity.
- Set up an experiment to determine the specific heat capacities of three samples of different metals.

### Theoretical Background/Context

When a heat interchange takes place between two bodies initially at different temperatures, the quantity of heat lost by the warm body is equal to that gained by the cool body, and some intermediate equilibrium temperature is finally reached. This is true provided no heat is gained from or lost to the surroundings. In this case, we can apply the principle of conservation energy

Heat lost by hot body = heat gained by the colder body

From which we can easily calculate the specific heat capacity of the required solid material.

### Principle of Work

Heating a solid to a higher temperature (approximately 80 C), then mix it with a certain quantity of water placed in a calorimeter of known material. Recording the masses of the used water, calorimeter, and solid, and the initial and final temperatures will be used to determine the specific heat of the used solid.