TITLE :
SATURATION TEMPERATURE AND PRESSURE

2.0 OBJECTIVE :

To determine the relationship between saturation temperature and pressure.

3.0 THEORY :

When a mass of water is heated, its temperature increases accompanied by a small increase in volume and small bubbles will be formed on the heating surface and are of lower density than the surrounding water hence rising but the water being cooler will extract some energy from the steam bubbles which will immediately collapse. With further increase in temperature of water the steam bubbles will be able to completely rise to and escape from the waters surface. The water mass will be in very turbulent state of steam formation called boiling and while it continues the temperature remain constant independent of the quantity of heat transferred to the water. Boiling temperature is called the saturation temperature and as long as there is water present and at constant pressure, it is impossible to increase the temperature beyond the boiling point. Steam with small droplets of water in suspension is called Wet steam and that without droplets of water in suspension is dry steam. Dry Saturated steam is steam in which all the suspended water droplets have been converted to steam and becomes completely transparent. A further transfer of heat to the dry saturated steam produces a temperature rise and the steam becomes superheated steam, this being the last phase of the transformation of water into steam.