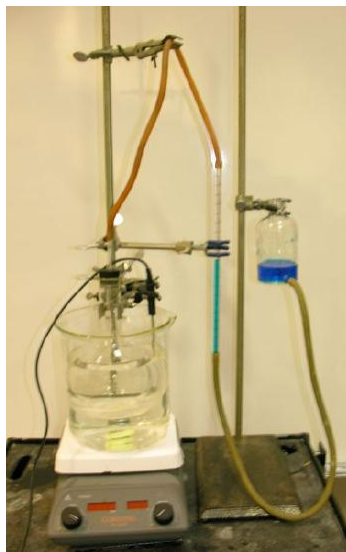# 9.8.1: Lecture Demonstration

Demonstration of Charles' Law

The volume of a 1 L Florence flask and rubber hose is 1125 mL (fill with water, get volume, then empty). The flask is connected to a 15 mL Pipette used as a water manometer, which in turn is connected to a leveling bulb. The flask is immersed in a 3 L low form beaker of room temperature (25°C) water, and the manometer connected, and the levelling jar adjusted so the water levels are equal and $P_{gas} = P_{atmosphere}$. Read the volume. About 30 g of ice is added to the water to lower the temperature a degree or two. The water levels are adjusted, and the new volume determined.

Calculate $\Delta T/\Delta V$ = ~0.267 °C/mL

To reach V = 0, must decrease 1125 mL * 0.267 °C/mL = 300 °C

Absolute zero = 25°C - 300 = -275°C