



## INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

Materials Management Division  
Powai, Mumbai- 400 076

**For PR No.1000016192 (RFx No.6100000478)**

### **Technical Specification for Drop Volume Tensiometer**

- A) The instrument should be capable of fully automatic measurements of the dynamic interfacial tension of liquids meet the following specifications:
1. Measuring range of 100-0.05 mN/m
  2. Resolution of at least 0.001mN/m
  3. Capable of Falling Drop as well as rising drop mode for Interfacial Tension and Falling drop for Surface Tension measurement
  4. Temperature control by external refrigerated circulating bath for measurement range of: -10°C to 90°C
  5. A minimum sample volume of 20ml
  6. Syringe Drive flow rate of 0.27 to 1980  $\mu\text{L}/\text{min}$  with resolution of 0.001  $\mu\text{L}$
  7. High precision capillary preferably made of Tungsten carbide with pyramidal shape and wall thickness of 17  $\mu\text{m}$  or equivalent
  8. Auto-refill function to ensure the entire measurement can be done without any intervention. It should allow to work at different flow rates.
  9. The temperature control block should be common for both the phases, so that the measurement is performed at the same temp for both phases, the temp sensor is installed in this block to measure the accurate liquid temperature.
  10. The instrument should be a compact device to have all the control in one cabinet with associated software in PC.

#### **B) Refrigerated Cooling Bath:**

The system should be delivered with a Refrigerated circulating bath working from -10 to 100degC. **Give heating and cooling wattage**

#### **C) PC:**

A controller PC with latest i7 processor, 8 GB RAM and 1 TB HDD, with min 23ind display should also be delivered with the unit.