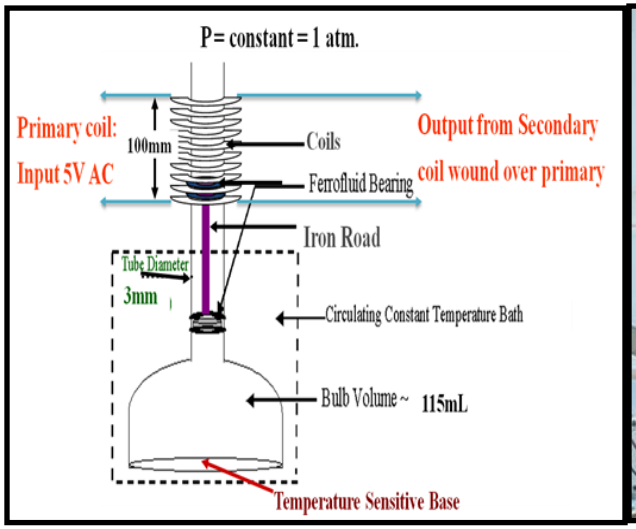
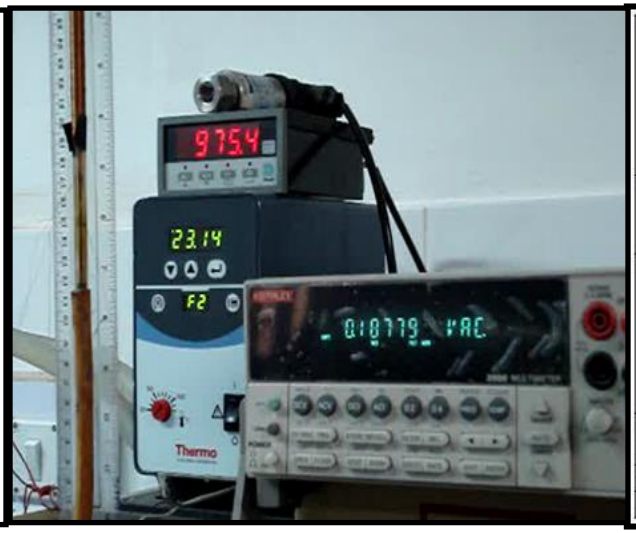
Name of Technology: Ferrofluid based temperature sensor, sensitivity 3.7 (± 0.2) mK

Summary: Ferrofluid based Temperature Sensor is a device capable of sensing minute changes in temperature and is based on Charles Law. The gas enclosed in the bulb expands with the increase in temperature, creating a pressure which lifts the lower ferrofluid bearing. This bearing provides very low friction , actuation and act as perfect sealer and is connected to another bearing at the top with iron rod and a primary, secondary coil arrangement. When the upper bearing moves in coil arrangement, change in EMF is sensed, which is directly proportional to change in temperature.





Fluid specification	Material= Fe3O4 Carrier liquid = Kerosene Magnetization = 300 Guess Viscosity = 20 cp Particle Size=10-15 nm Number Density= 1016/mL
Magnets	NdFeB,, Diameter=4mm, thickness=2.mm Magnetization=1000G
Windings	Copper coils, Gauge=40 Coil Diameter= 8mm Number of turns=1000 Number of coils =02 Coil length=100mm
Soft Iron Core	Diameter= 1mm Length= 70mm
Glass bulb	volume =115 mL
Capillary Diameter	5mm

Application: Used in Temperature standard Laboratories, Biomedical Application, Defense Sector

Advantages: 1. High sensitivity 2. Low cost 3. Eco-friendly

Choose the Readiness level of the Technology

Idea	Concept Definition	Proof of Concept	Prototype	Lab Validation	Technology Development	Technology Demonstration	Technology Integrated	Market Launch

Related Patents:

Patents No: 47 DEL 2009; Country: India; Publication Date: 19/04/2013; Grant Date: Awaited, Year of Introduction: Not available

Broad Area/category: Sensors

User Industries: Precision measurement instruments manufacturing, health sector.