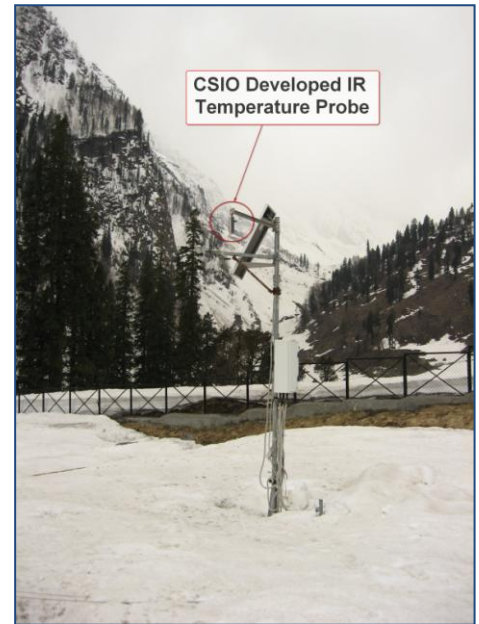


# INFRARED TECHNIQUE BASED SNOW SURFACE TEMPERATURE PROBE



Prediction of Avalanche occurrence demands the measurement of snow and meteorological parameters of the avalanche formation. For this purpose, specific kind of state of the art instruments and systems are needed. These must be capable of unmanned data collection from highly inaccessible areas in deep Himalayas. All the objects emit infrared radiations, which is generated by vibrations and rotations of atoms and molecules within the matter. As the temperature of the object increases, the molecular activity in the object increases causing the object to generate more energy. By using this concept CSIO has designed and developed an Infrared technique based snow surface temperature sensor which measures the snow surface temperature using non contact remote sensing method. It can be easily interfaced with any automatic weather station.

## SALIENT FEATURES

- Tight weather proof mechanical design.
- System can be directly interfaced to different Data Acquisition Systems.
- Sensor operable round the clock throughout the year, in high relative humidity upto 100% and wind speed of the order of 200 Km/h.

CSIO developed instrument installed at one of the SASE's observatory near Manali

## TECHNICAL SPECIFICATIONS

Range (Resolution)	: $\pm 50$ °C (0.1 °C)
Accuracy	: $\pm 0.5$ °C
Repeatability	: $\pm 0.1$ °C
Spectral band pass	: $8 < \text{wavelength} < 14$ $\mu\text{m}$
Sighting	: Line of sight
Field of View	: 4°
Output signal	: Voltage (0 to +5Vdc)
Response time	: 0.25 second
Emissivity	: 0.2 to 0.98 selectable
Power	: 10.5 to 14.0 Vdc, 20mA

## APPLICATIONS

Snow Cover Modeling for Forecasting of Snow Avalanche, Flood & Water Rise.



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