

**Name of the Technology/Product : Snow Moisture & Density Measurement System**

<b>Laboratory Name</b>	CSIR-Central Scientific Instruments Organisation, Chandigarh
<b>Brief Profile of Technology/Product</b>	<p>PORTABLE INSTRUMENT FOR IN-SITU MEASUREMENT:</p> <p>A fork shaped microwave resonator of stainless steel material is used as sensor. Resonant frequency &amp; 3dB bandwidth of sensor in snow are measured. These electrical parameters are used to determine the complex dielectric constant of Snow (<math>1 - 3.0 (\epsilon')</math>, <math>1 - 0.15 (\epsilon'')</math>). Further more the density (<math>0 - 0.6 \text{ g/ccm}</math>) &amp; liquid water content of snow (<math>0 - 15 \% (\text{Vol})</math>) are calculated using empirical equations. All the computations are performed by microcontroller based electronic unit. The Computed liquid water content and density of snow are displayed on LCD and are logged in NVRAM. The stored data can be transferred to PC using RS-232C interface. Its measurements are fast and reliable as there is no Snow sampling involved in measurement process. Also sensor prongs of sensor are thin enough so that snow does not get compressed.</p>
<b>Returns/Benefits</b>	It is used for wetness/ moisture and density profiling of snowpack.
<b>Validation Level</b>	Field tested prototype
<b>IPR Status [also indicating the status of the patent (if any) in 2015]</b>	No patent is applied so far
<b>End product price (if not available, estimated price)</b>	Approx. Rs. 3,00,000/-

<b>Technology/Product Collaborator</b>	In-house development under SASE-DRDO sponsored project
<b>Relevance of Technology in present times</b>	It can be used to study snowpack properties for snow avalanche forecasting and flood prediction.
<b>Similar technology/product developed</b>	Available in international market.
<b>Picture of the technology/product (if any, with good resolution)</b>	