



CERTIFICATE

**The highest altitude terrestrial
research station is 5383.99 m
(17,664 ft) achieved by The DRDO
Research Station (India) in Jammu
and Kashmir, India, as verified on 5
November 2016**

OFFICIALLY AMAZING™



Located at 17,664 ft, DRDO unit wants innovative tech for soldiers at Siachen

Leh lab gets Guinness listing

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A MIDST snow-capped mountains and treacherous passes of the Himalayas in Ladakh, a newly set-up research station has won laurels. The Extreme Altitude Research Centre (EARC) set up at Chang La by the Defence Research and Development Organisation has received the Guinness World Records certification for being the highest terrestrial research lab.

The station can accommodate up to 10 scientists along with a support staff of 10. Solar power will be the primary source of energy with back-up from diesel generators.

Located at an altitude of 17,664 feet, as certified by the Guinness, EARC is about a 1,000-ft higher than the previous record holder, Pyramid Laboratory, that is located at 16,571.52 ft at the base of Mt Everest. The EARC received its certificate in the UK a few days ago.

Located between Leh and the Pangong Tso lake, both popular summer tourist destinations, the construction of EARC took over three years to complete as scientists and workers had to negotiate a snow-bound terrain, and limited working periods when labourers can be employed. An extension of DRDO's Defence Institute of High Altitude Research (DIHAR), it is claimed to be the only facility of its kind in the world to test extreme altitude related technologies for military applications. Based at Leh, DIHAR is developing technologies for cold weather agriculture, animal husbandry, high-altitude physiology and associated subjects for the benefits of the armed



PHOTO COURTESY: DRDO

forces as well as the local villagers.

Several experiments are continuing in the lab. These include non-conventional sources of energy, electronic equipment and batteries, human physiology, clothing, mountain sickness, soilless micro-farming and portable greenhouses, bio-digestors and conservation and propagation of endangered extreme altitude medicinal plants. These experiments are aimed at improving human performance and habitability at extreme altitudes.

The centre will not only help in evaluating the efficiency of new technologies but also expedite user trials and induction in the Army. The equipment will undergo rigorous testing in actual climatic conditions. The DRDO plans to test the equipment for the strategic Siachen sector at EARC. Win-

ter temperatures at Chang La can fall as low as minus 40°C. Plans to allow civilian and foreign institutions to use EARC facilities are also on the anvil.

Last year DRDO scientists had tested a shelter at Chang La utilising solar heat harnessed during the day for heating rooms at night. But there is a catch: solar heat can be used only while the sun is out, shining. The shelter utilises phase-change materials (converting solid to liquid and vice versa with the change of temperature, thereby releasing heat) to store thermal energy collected from evacuated tube solar collectors. The arrangement has a greenhouse-based thermal trap area over the roof and utilises greenhouse concept for creating a tunnelling effect to trap solar heat in the shelter.