

1. Title of the project:

To develop a smart indigenous sleeping bag with heating property for adventure/high altitude sports.

2. Novelty of product:

Developed product comes with embedded automatic active heating system which enhances the thermal insulation properties of sleeping bag and providing ultimate comfort to user. Developed sleeping has functionality such as waterproofness, Moisture management properties etc.. Currently, existing sleeping bags are unable to provide adequate thermal insulation properties to wearer for cold climatic conditions. Moreover, they do not meet with functional requirement such as breathability & waterproofness and moisture management properties. Currently, sleeping bags used for colder climatic conditions are only imported items. Therefore, developed sleeping bag will meet the requirement for colder climatic conditions cost effectively.

3. Publication and Patent

i. List of Research Publication

Publications:

Shishir Tyagi, Chetan Mahajan “To develop a smart indigenous sleeping bag with active heating property for cold climates” International journal of modern trends in Engineering and Research , Volume 05, Issue No. 12, pages 1-7, December 2018

Shishir Tyagi, Mechanism of heat and Physiological factors affecting thermal performance of Sleeping bag, WoolTech, Volume 04, Issue No. 02, Pages 06-08, April 2014

ii. Patent:

Patent on “smart indigenous sleeping bag with heating property for adventure/high altitude sports”. **Indian Patent Application no. 201821030130**

4. Name of the Industry partner:

M/s. Kanpur tent factory, Kanpur, M/s Raymond Ltd, M/s Bhavi Multifab Pvt Ltd, Mumbai