

**Project PI:** **Manojit Samanta**

**Project Title:** Geosynthetic Reinforced Infrastructure in Seasonally Frozen Regions of India,

**Name of Client:** Indian Institute of Technology Jammu, Jammu & Kashmir, Jagti, 181221, 0191-2570283 (National Technical Textile Mission, Udyog Bhawan, Rafi Ahmed Kidwai Marg, Rajpath Area, Central Secretariat, New Delhi,

**Objectives:** Evaluate how freeze-thaw cycles affect the tensile strength of geosynthetics used in road infrastructure.

Evaluate effect of freeze-thaw cycles on the traffic load performance of geosynthetic reinforced pavements under simulated conditions in laboratory.

Assess effect of freeze-thaw cycles on the mechanical behavior of small-scale geosynthetic-reinforced pavement sections in the laboratory.

Monitor performance of geosynthetic reinforced pavements and retaining structures constructed in high-altitude areas for at least one annual cycle to observe the effect of real-world temperature variation.

Develop a reduction factor to account for freeze-thaw effects on geosynthetics' tensile strength in seasonally frozen regions