



**Birla Institute of Technology & Science, Pilani**  
Pilani Campus

**CERTIFICATE**

This is to certify that the thesis entitled "**CO<sub>2</sub> Refrigeration System in Warm Climate: Experimental Investigation, Parameter Optimization and Supermarket Application**" submitted by **Nilesh Purohit**, ID. No. **2014PHXF0010P** for award of Ph.D. degree of the Institute embodies original work done by him under my supervision.

Signature (Supervisor):

**PROF. (DR.) MANI SANKAR DASGUPTA**

Professor, Department of Mechanical Engineering,  
BITS Pilani, Pilani campus

Signature (Co-Supervisor):

**DR. DILEEP KUMAR GUPTA**

Assistant Professor, Department of Mechanical Engineering,  
IIITRAM, Ahmedabad, Gujarat

**Date:** 31/12/2018