



## Experimental Performance Study of Helical Coil Thermal Storage Unit Filled with PCM

P. Sundaram<sup>1\*</sup>, Rahul Kumar Tiwari<sup>2</sup>, Sanat Kumar<sup>3</sup>

Department of Mechanical Engineering, SRM University, Kattankulathur,  
Chennai, India.

**Abstract :** The present work is an experimental performance of helical coil thermal storage unit filled with phase change material (PCM). Paraffin is considered as a storage material. An experimental testis conducted in order to study the characteristic of PCM during charging and discharging process at various parameters such as inlet heat transfer fluid temperature and volume flow rate of heat transfer fluid (HTF) as water. The temperature of the PCM measured and examine the charging and discharging process of PCM. The effect of inlet HTF temperature, volume flow rates and the thermal effectiveness are analyzed. The result of the present study is concluded that the volume flow rate is not much effect on the discharging phase compared to the charging phase.

**Keywords :** Helical coil thermal storage unit, PCM, Melting and solidification.

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