## Numerical Investigation of Thermal Energy Storage System with Phase Change Materials

Authors : Mrityunjay Kumar Sinha, Mayank Srivastava

**Abstract :** The position of interface and temperature variation of phase change thermal energy storage system under constant heat injection and radiative heat injection is analysed during charging/discharging process by Heat balance integral method. The charging/discharging process is solely governed by conduction. Phase change material is kept inside a rectangular cavity. Time-dependent fixed temperature and radiative boundary condition applied on one wall, all other walls are thermally insulated. Interface location and temperature variation are analysed by using MATLAB.

Keywords : conduction, melting/solidification, phase change materials, Stefan's number

**Conference Title :** ICFMHTT 2017 : International Conference on Fluid Mechanics, Heat Transfer and Thermodynamics **Conference Location :** London, United Kingdom

Conference Dates : March 14-15, 2017