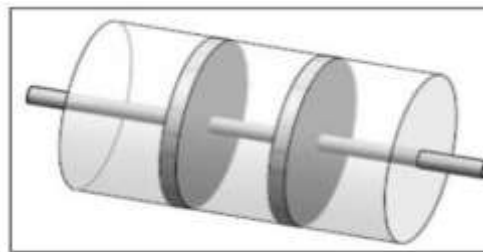


LATEN HEAT STORAGE SYSTEM

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Abstract – This project is indeed window with a compressive study of the technical and theoretical aspect LATEN HEAT STORAGE SYSTEM all the topics convert in this report are essential for the completed understanding and survey of the title. A significant amounts of heat wasted 8n Manufacturing process electricity generations, chemical and industrial process . recovery and resuse of this energy through storage can be useful in conventional of energy. In the present study, a double pipe heat exchangers has been design has fabrication for of low temperature industrial vastag heat recovery using fase change material (PCM) praffin wax (PW) . Experiment wear performed for two different mass flow rate and inlet temperature of heat transfer flued (HTF)is maintained at constant in charging process. The effect of mass flow rate on the performance of the systeam was studie.C calculations for amount of heat storage and release during charging(melting of PCM)and discharging (solidification of PCM) and heat discharging efficiency wear also made . The experimental result show the facibility of using PCM at storage media in heat recovery system.



Keywords – Belt, Damper,

1. INTRODCUTION

Thermal energy storage with phase change material is one of the most efficient way of storing available energy because of its advantages advantages such as poviding higher providing higher heat storage capacity, l peer storage temperature isothermal opration and less storage space. Thermal energy storage system can assimilate energy as sensible heat storage because of its high storage density with smaller temperature swing. However many partial problem are encountered with laten heat storage due to low thermal conductivity, variation in thermo-physical properties under extended cycals phase segregation sub-cooling incoungreat melting, volume change and high cost. Over the last decade, A number have been studies have performance to examine to overall thermal behavior and performance of examine the overall thermal behavior and performance of varies laten heat thermal energy storage systems. This studies focus on the melting/frissing problem of the PCM and on the convective heat transfer problem of the HTF used storage and or receive energy (solidification)from the unit. Resently serval experiment have been cundect in order to study the thermal characteristics of praffin during solidification and melting process.

2. MATERIAL USED

2.2 Phase Changing Material

The thermal storage release technology based on the use of phase change material PCM wich process a grate capacity of accumulation energy for considering as heat storage media, has raised and important practical intrest. This material are used in application wear it is necessary to store/release energy takes to the temporary phase change between the offer and demand of thermal energy.

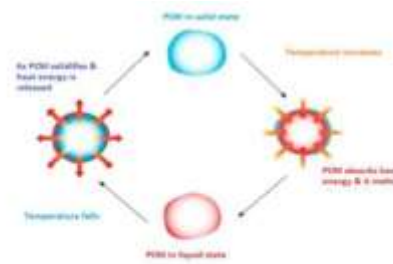


Table - 1 Material Specification

Sr. No.	PART NAME	MAT.	QTY.
1	Outer Shell	Insulated plastic	1
2	Test Tube	Insulated plastic	40
3	Nicrome wire Heater	Copper wire	1
4	Wooden plates	Wood	2
5	Piping	PVC	NA
6	Valves	Gate	2
7	Temp Controler With Sensors	NA	2
8	Thermocuouple-Temp Indicators	Silicon	2
9	Connector-coupling	MS	1
10	CPU Fan	NA	1
11	Candels	Parraffin Wax	40
12	Fastener&Other Accessories	NA	As Per Req.

3. LITERATURE REVIEW

Enhancement is achieved by use of metal screen/spheres placed inside the phase change material (PCM), which is paraffin wax and result in increasing the effective thermal conductivity of combined media of PCM and metal screens/spheres.

Investigate the thermal characteristics of paraffin wax with an embedded nano size copper oxide (CuO) particles. 40 nm means size CuO particles 2.5 and 10% by weight were dispersed in PCM of this study. The result suggested that the thermal conductivity enhanced 6.7% and 7.8% in liquid state.

4. ADVANTAGES

1. It works on solar energy, it does not pollute the environment.
2. High efficiency.
3. We can control and adjust temperature easily.
4. High energy storage capacity and isothermal nature.
5. It can store 5-14 times more heat than conventional storage units.



5. APPLICATION

1. Thermal energy storage
2. Safty :Temperature maintains in the room with computer woh electrical appliance
- 3 .Food agro industry wine,milk,product
4. spacecraft thermal system
5. s hokar power plant



6. CONCLUSION

After compressive study of TES (Thermal Energy Storage) system with diffrent application it can be concluded that their is need of press is resource in this zone.The efficient of energy can be active with good system performance and reliability .The thermal performance of paraffin wax is generally enhance with inserting copper strips and twisted copper strips.

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