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An Experimental work on the Effect of Using New Technique of Thermal Energy Storage of Phase Change Material on the Performance of Air Conditioning Unit

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## Highlights

- A technique uses cold energy storage of PCM at night to raise AC efficiency at day.
- Initially, air temperature exit from vertical PCM plates is smaller than horizontal.
- The COP of the AC unit with PCM plates is greater than that without PCM plates.
- Using PCMs decrease the condenser pressure and raise evaporator cooling capacity.
- Vertical and horizontal PCM plates reduces AC power by 9.8% and 11.2% respectively.

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