

## Polygeneration Solar Air Drying

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**Abstract :** Over 85% of industrial dryers are of the convective type with hot air or direct flue gases as the drying medium. Over 99% of the applications involve removal of water. In this study, the performance of a solar air heater with the recovery of the absorbed heat by the metallic concentrator sheet itself besides the normal heat accumulated by the receiver at the focus of the concentrator for generating drying air by convection at a low to medium temperature range is discussed. The system performance through thermal analysis & the performance of a model achieving the required temperature range is also investigate in this study. Over 85% of industrial dryers are of the convective type with hot air or direct flue gases as the drying medium. Over 99% of the applications involve removal of water. In this study, the performance of a solar air heater with the recovery of the absorbed heat by the metallic concentrator sheet itself besides the normal heat accumulated by the receiver at the focus of the concentrator for generating drying air by convection at a low to medium temperature range is discussed. The system performance through thermal analysis & the performance of a model achieving the required temperature range is also investigate in this study.

**Keywords :** dryer, polygeneration, moisture, equilibrium, humidity

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