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## A REVIEW ON MODELLING OF SOLAR FOOD DRYERS WITH THERMAL ENERGY STORAGE

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Food drying is an energy-intensive operation that results in the removal or reduction of the moisture content of different foods for storage, quality retention, and enhancement purposes. In developing countries, open solar drying is one of the major methods adopted for the preservation of agricultural products due to the availability of solar energy at little or no cost, especially in Africa. Open sun drying is not as effective as solar drying using a solar collector in terms of the quality of the product, and the reduced drying period, thus different types of solar dryers have been developed in recent years. The absence of solar energy at night and cloudy periods has led to the development of thermal energy storage (TES) for solar dryers. This stored solar thermal energy can be utilized for drying at night and cloudy periods. The aim of this article is to review various thermal energy storage systems used in solar dryers with a particular emphasis on numerical models aimed at enhancing the efficiency and cost of TES. Different types of models and numerical results of TES systems for solar dryers will be presented. These models include finite difference, computational fluid dynamics (CFD), and artificial neural network (ANN) models.

Keywords: Modelling, Thermal Energy Storage (TES), Solar Food Dryer

### Apply to be considered for a student ; award (Yes / No)?

No

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MSc

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