

Impact of a Solar System Designed to Improve the Microclimate of an Agricultural Greenhouse

Authors : Nora Arbaoui, Rachid Tadili, Ilham Ihoume

Abstract : The improvement of the agricultural production and food preservation processes requires the introduction of heating and cooling techniques in greenhouses. To develop these techniques, our work proposes a design of an integrated and autonomous solar system for heating, cooling, and production conservation in greenhouses. The hot air produced by the greenhouse effect during the day will be evacuated to compartments annexed in the greenhouse to dry the surplus agricultural production that is not sold on the market. In this paper, we will give a description of this solar system and the calculation of the fluid's volume used for heat storage that will be released during the night.

Keywords : solar system, agricultural greenhouse, heating, cooling, storage, drying

Conference Title : ICTESMM 2022 : International Conference on Thermal Energy Storage Methods and Materials

Conference Location : Barcelona, Spain

Conference Dates : December 15-16, 2022