

VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI 590018



A project report on
“DESIGN AND FABRICATION OF AUTOMATED SEED DRYER”
Submitted in partial fulfillment of the requirements for the degree of
BACHELOR OF ENGINEERING

In
MECHANICAL ENGINEERING

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CERTIFICATE

Certified that the project work entitled "DESIGN AND FABRICATION OF AUTOMATED SEED DRYER" is a bonafide work carried out by

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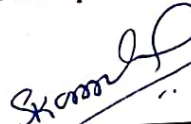
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ABSTRACT

Solar energy is the most promising renewable energy sources in view of its apparent limitless potential. Direct solar energy has been applied to grain drying for years. The sun and wind dry crops in the field, stack or windrow. Artificial drying has supplemented this process to increase the harvest rate during inclement weather or to minimize field losses. The solar drying system utilizes solar energy to heat up air and to dry any food substance loaded, which is beneficial in reducing wastage of agricultural product and helps in preservation of agricultural product. Based on the limitations of the natural sun drying e.g. exposure to direct sunlight, liability to pests and rodents lack of proper monitoring, and the escalated cost of the mechanical dryer, this project presents the design, construction and performance of a automated solar dryer for food preservation. In the dryer, the drying cabinet or chamber absorbs solar energy directly through the transparent walls and roof, also the blower that is used in the dryer reduces the moisture from the product to be dried. The results obtained during the test period revealed that the temperatures inside the dryer and solar collector were much higher than the ambient temperature during most hours of the day-light. The auxiliary solar power supply will reduce the usage of household power making this seed dryer a fully automatic one. Moreover this dryer can exhibited sufficient ability to dry food items reasonably rapidly to a safe moisture level and simultaneously it ensures a superior quality of the dried product.