VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama" Belagavi – 590018

Mini Project Report on

"IOT-BASED ARECA NUT DRYER"

Submitted in partial fulfillment of the requirements for the award of degree

BACHELOR OF ENGINEERING
IN
ELECTRONICS & COMMUNICATION ENGINEERING

Submitted By

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CERTIFICATE

This is to certify that the following students,

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has submitted Project synopsis on **"IOT-BASED ARECA NUT DRYER"** for VI Semester B.E. in Electronics & Communication Engineering during the academic year 2023-24. The mini project report has been approved as it satisfies the academic requirements in respect of Project work prescribed for the Bachelor of Engineering Degree.

Mini Project Guide	Mini Project Coordinator	HOD
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ABSTRACT

This project presents the development of an advanced and sustainable areca nut drying system using Internet of Things (IoT) technology. The system aims to enhance the drying process of areca nuts by integrating several components to ensure optimal drying conditions, improve quality, and reduce energy consumption.

The core of the system is a custom-designed steel drying chamber that accommodates the areca nuts during the drying process. Heaters are strategically installed on both sides of the chamber to provide consistent heat. The drying temperature is precisely controlled using an Arduino Uno-based thermostat. This setup ensures that the drying conditions are maintained within the optimal range for areca nut processing. A unique feature of the system is the inclusion of a scissor lifter at the base of the chamber. The lifter can raise the base, allowing the chamber's roof to open and expose the nuts to natural sunlight. This solar exposure is utilized to complement the electric heating, thereby reducing the overall energy consumption. By harnessing solar energy, the system not only cuts down on electricity use but also contributes to environmental sustainability. The system's integrationof solar power addresses multiple benefits: it enhances drying efficiency by utilizing both electric and solar heat sources, and it protects the nuts from adverse weather conditions, such as rain and dust, as well as from insect contamination. Additionally, the use of a scissor lifter ensures that the nuts are evenly exposed to sunlight, further improving drying uniformity.

Overall, this project demonstrates a significant advancement in areca nut drying technology by combining traditional heating methods with modern IoT solutions and renewable energy sources. The result is a more efficient, cost-effective, and environmentally friendly drying process that aligns with contemporary demands for sustainability and resource conservation.