4TH EDITION

E-EXTENDED

ABSTRACT

INTERNATIONAL AGROTECHNOLOGY INNOVATION SYMPOSIUM (i-AIS)

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19 June 2023

Faculty of Plantation and Agrotechnology UiTM Cawangan Melaka Kampus Jasin

Published 2023
Faculty of Plantation and Agrotechnology
Universiti Teknologi MARA Cawangan Melaka Kampus Jasin
77300 Merlimau Melaka.

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Mode of access Internet

https://sites.google.com/view/ais2023/publication

Perpustakaan Negara Malaysia Cataloguing -in – Publication Data

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ABOUT FACULTY OF PLANTATION AND AGROTECHNOLOGY

The Faculty of Plantation and Agrotechnology was established in 2010 at Universiti Teknologi MARA (UiTM). The mission of the faculty is to play the vital role of producing well-trained professionals in all areas of plantation and agriculture-related industries at national and international levels.

Bachelor of Science (Hons) Plantation Technology and Management is a three-year program that strongly emphasizes the various aspects of Production Technology, Management, and Information Technology highly sought after by the agricultural and plantation sectors. Students in this program will be fully trained to serve as professionals in the plantation sector and related industries. They will have ample opportunities to fulfill important positions in the plantation industry such as plantation executives. This program provides a strong balance of technology and management courses essential for the plantation industry such as management of plantation crops, soil fertility, plantation management operation, plantation crop mechanization, and agricultural precision. As an integral part of the program, students will be required to undergo industrial attachment to gain managerial skills in the plantation industry.

The faculty is highly committed to disseminating, imparting, and fostering intellectual development and research to meet the changing needs of the plantation and agriculture sectors. With this regard, numerous undergraduate and postgraduate programs have been offered by the government's intention to produce professionals and entrepreneurs who are knowledgeable and highly skilled in the plantation, agriculture, and agrotechnology sectors.

PREFACE

International Agrotechnology Innovation Symposium (i-AIS) is a platform to be formed for students/lecturers/ staff to share creativity in applying the knowledge that is related to the world of Agrotechnology in the form of posters. This virtual poster competition takes place on the 1st of December 2022 and ends on the 8th of January 2023. This competition is an assessment of students in determining the level of understanding, creativity, and group work for the subject related to agrotechnology and being able to apply it to the field of Agrotechnology. The i-AIS 2022 program takes place from December 1, 2022, to January 8, 2023. The program was officiated by the Dean of the Faculty of Plantation and Agrotechnology, namely Prof. Madya Ts. Dr. Azma Yusuf. The program involves students from faculties of the Faculty of Plantation and Agrotechnology (FPA)and HEP participating in i-AIS 2022, namely, the Faculty of Education and Pre-Higher Education. This program involves the UiTM student and some of the non-UiTM students which come from the international university and the local university. Two categories are contested, namely UiTM and non-UiTM. To date, students from these programs have shown remarkable achievements in academic performance and participation in national as well as international competitions.

This competition is an open door for the students and lecturers to exhibit creative minds stemming from curiosity. Several e-content projects have been evaluated by esteemed judges and that has led to the birth of this E-Poster Book. Ideas and novelties are celebrated, and participants are applauded for displaying ingenious minds in their ideas.

It is hoped that such an effort continues to breed so that there is always an outlet for these creative minds to grow.

Thank you.

Dean
On behalf of the Organizing Committee
Conference Chair
Universiti Teknologi MARA
Faculty of Plantation and Agrotechnology
http://fpa.uitm.edu.my

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SOLAR SEED DRYER WITH AUTOMATIC TRACKING

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ABSTRACT - The Solar Powered Seed Dryer is new and innovative technology basing on blending Solar Thermal and Solar Photovoltaic Technologies. In our project the solar panel is used to convert the light energy to electrical energy by photovoltaic method. The machine, solar seed dryer, we introduce through our project is mainly useful for drying seeds, fruits and wherever moisture contents. In our project, the solar seed dryer consists of four main parts such as solar panel, battery, heating element and blower. The blower is used to passing the hot air to the required place, so that the moisture contents in the place was removed. The size of our project is also portable. So we can move the ground dryer to any place very easily. Also an auto tracking system is introduced in our project so that the solar panel tracks the sunlight and changes its direction automatically. This is helpful throughout the day. The sunlight can be made to fall on the solar panel all the time.

Keywords: solar pannel,seed dryer,tilt mechanism,qualityand quantity

INTRODUCTION

Solar tracking system project had been widely employed by the other giant company like BP Solar, Yingli Green Energy, Kyocera, Q-Cells, Sanyo, Sharp Solar, Solar World, Sun Power, and Suntech. Now, many people use solar energy or photovoltaic energy as an alternative power because it's free and renewable. As we can see now, the payment charge for an electricity had been risen rapidly because the increasing of gas price. Many researchers have tried to find the alternative energy to replace the gas. One of the alternative energy that we can use is photovoltaic energy. Photovoltaic energy is the most promising and popular form of solar energy. In solar photovoltaic's, sunlight is actually converted into electricity. This is very different from a conventional understanding of solar power as only a way of heating water. Photovoltaic, now the biggest usage of solar energy around the world, is briefly explained below:

Sunlight is made of photons, small particles of energy. These photons are absorbed by and pass through the material of a solar cell or solar photovoltaic panel. The photons 'agitate' the electrons found in the material of the photovoltaic cell. As they begin to move (or are dislodged), these are 'routed' into a current. His, technically, is electricity – the movement of electrons along a path. Solar panels made of silicon to convert sunlight into electricity. Solar photovoltaic are used in a number of ways, primarily to power homes that are inter-tied or interconnected with the grid Wire conducts these electrons, either to batteries or to the regular electrical system of the house, to be used by appliances and other household electrical items. In many solar energy systems, the battery stores energy for later use. This is especially true when the sun is shining strongly.

Photovoltaic power was first discovered by a French scientist‟s Antoinc Becquerel in 1839. The first working solar cell was successfully made by Charles frits in 1882. It was made of thin sheets of selenium and coated with gold. The use of solar panels for generating electricity and heat seems relatively like new development, it has actually been widely used to generate power since early 1900‟s. In 1954 bell laboratory mass produced the first crystal silicon solar cell. The bell PV cell converted 4% of the sun‟s energy into electricity a rate that was considered the cutting edge in energy technology. Scientists continued to reinvent and enhanced on the design of the original silicon cell and were able to produce a solar cell that was capable of putting 20% return electricity rate.In the late 1900‟s as awareness grew in the science community about the effects of global warming and the need for renewable energy sources, scientists continued to refine the silicon PV and by early 2000 they were able to make a solar cell with 24% electricity return. In just seven years scientists were again able to increase the electricity return of silicon solar cell using space age materials.

By 2007, modern silicon PV solar cells were operating with 28% electricity return. Each photovoltaic cell producesa small amount of electricity so they are wired together into panels to provide enough current (D C) power so it must be converted to alternating current (AC) with the aid of an inverter.

MATERIAL AND METHOD

The solar sun rays through the glass in the solar pannel , located on the top of panal stand The Solar Panal Is Used To Converting this sunlight into electrical energy by photovolatic method .The energy stored in 12v battery The hot air passes throught The Trays Carries The Moisture From The Product The impeller fan exhaust the air containing mositure Spur gear and dc motor is used for auto tracking mechanism

The main material l were used in this project was sola pannel battery12v and air blower which contains heating coil inside that to produce hot air.AS the sun moves ,the sun ray are tracked and control unit operates the motor . The power from motor Is transmitted to the solar panal through a set of gears the spur gear are used to reduce the speed of motor.

Hence as the moves ,the motor rotates and finally the solar panal tilts accordingly.This auto tracking mechanism helps to achieve maxium power from the solar radiation throughout the day

RESULTS AND DISCUSSION

As the result we will get a dried product of the material The time were noted which was comparatively less Compare to the traditional solar dryer. The quality and quantity was more compare to traditional Solar dryer The automatic tilt system was effectively collected the Sunrays as much as possible.

This project was very helpful in future and it have lot of Scopes as it was Renewable energy there was no energy Sacrcity which was naturally available.And this project was cost friendly compare to the Traditional solar dryer.and time efficient

IMAGE AND FIGURE

CONCLUSION

In conclusion remarks of our Project Work,let Us add a few more lines about our impression project work . the chief adavntages of our system is that ,simple ,portable type,low cost solar seed dryer when compared to other dryer which are available in market . operating principle of solar dryer is also very easy. We can move the dryer from one place to another place very easily.

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e ISBN 978-629 -97220-6-9

9 786299 722069

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(online)

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