UNIVERSITI TEKNOLOGI MARA

JIIICaS 2024
JOHOR INTERNATIONAL INNOVATION, INVENTION COMPETITION AND SYMPOSIUM

PROCEEDINGS OF JOHOR INTERNATIONAL INNOVATION INVENTION COMPETITION AND SYMPOSIUM 2024 (JIIICaS 2024)

"Flourish and Nurturing Sustainable Innovation for a Prosperous Nation"

JIICOS 2024
JOHOR INTERNATIONAL INNOVATION, INVENTION COMPETITION AND SYMPOSIUM

Editorial Board

e ISBN: 978-967-0033-25-9

Published in Malaysia by
Universiti Teknologi MARA Cawangan Johor
Kampus Pasir Gudang
81750 Masai

Preface

In the name of Allah, the Almighty who gives us the enlightenment, the truth, the knowledge and with regards to Prophet Muhammad (peace be upon him) for guiding us to the straight path. We thank to Allah for giving us guidance and strength to write this e-book.

This e-book compiles the extended abstracts that submitted to Johor International Innovation Invention Competition and Symposium 2024 (JIIICaS2024), where JIIICaS2024 is a virtual platform for all creative minds to share and present their invention and innovation. Each abstract gives a brief background on the innovation or project.

We hope that this e-book will help the readers to get to know the innovation done by the students and get some ideas to develop future innovation products.

Foreword Rector

Assalamualaikum warahmatullahi Wabarakatuh, Salam Sejahtera, Salam Malaysia MADANI and Salam UiTM Dihatiku.

In the name of Allah, the Most Gracious, the Most Merciful.

It is a great honor to welcome you to the Johor International Innovation, Invention, Competition, and Symposium 2024 (JIIICaS 2024). This event connects various disciplines, focusing on education and engaging educators, students, researchers, and innovators from all walks of life.

Innovation is not just about ideas; it demands perseverance, creativity, and determination to turn those ideas into reality. The remarkable projects showcased today highlight the dedication and spirit of all participants. Initiatives like this not only explore new technologies but also cultivate skills and leadership among our youth. At Universiti Teknologi MARA (UiTM) Johor Branch, we are fully committed to fostering a dynamic culture of innovation, promoting the commercialization of new products, and encouraging meaningful collaborations with industry and society.

As we celebrate this event, I would like to extend my heartfelt gratitude to all sponsors, judges, the College of Computing, Informatics and Mathematics, UiTM Pasir Gudang Campus as the event organizer, as well as to the researchers and participants for their hard work in making this event a success. Let us continue striving for innovation and excellence. May the ideas presented today inspire us and lay the groundwork for future achievements.

Thank you.

Associate Professor Dr. Saunah Zainon
Rector
Universiti Teknologi MARA (UiTM)
Johor Branch

(A-ST015) SHOE RACK WITH DRYER FUNCTION

Nur Kamarliah Kamardin[1], Mohamad Syafie Zainal[2], Ahmad Idzwan Yusuf[3], Ana Syahidah Mohd Rodzi[1], Ahmad Faiz Zubair[1], Nur Addin Ariff Zaihar[3]

[1]Mechanical Engineering Studies, UiTM Cawangan Pulau Pinang Kampus Permatang Pauh
[2]Mechanical Engineering Studies, UiTM Cawangan Johor Kampus Pasir Gudang
[3]Civil Engineering Studies, UiTM Cawangan Johor Kampus Pasir Gudang

Corresponding author: nurkamarliah@uitm.edu.my (Nur Kamarliah Kamardin)

ABSTRACT

Malaysia's climate has an almost uniform temperature, high humidity and a lot of rain leads many people struggle to dry their shoes, especially on rainy days. While there are many shoe racks on the market, there are few options that can both store and dry shoes simultaneously. This project's main objectives are twofold: first, to design a shoe rack with a built-in dryer function, and second, to analyze the mechanical systems involved in its implementation. By achieving these goals, the project aims to help people dry their shoes quickly, solving the problem of damp shoes especially on rainy days. SolidWorks software was used to design and analyze this product whereas welding and screws technique was utilized to connect the frame. The heating coil, fan and iron wire mesh were used as a drying function for the shoe rack. As a result, the shoe rack will store and dry shoes simultaneously without negatively impacting the environment. This shoe rack saves time and shortens the drying process, making it an ideal solution for those in need of quick shoe drying, especially on rainy days.

Keywords: Shoe Rack, Dryer Function, Shoe

1.0 INTRODUCTION

Malaysia’s climate, characterized by consistent temperatures, high humidity, and frequent rainfall, often makes it difficult for people to dry their shoes, particularly on rainy days. Although there are many shoe racks available, few can both store and dry shoes at the same time. This project aims to address this issue with two main objectives: designing a shoe rack with an integrated dryer and analyzing the mechanical systems required for its implementation. By achieving these goals, the project seeks to provide a quick solution for drying shoes, especially during rainy weather, without harming the environment. This innovative shoe rack will save time and expedite the drying process, making it an ideal solution for those needing fast shoe drying.

2.0 OBJECTIVE

The goal of this project is to create a device to help people dry their shoes quickly, solving the problem of damp shoes especially on rainy days. Thus, the objective of this project is to design an efficient shoe rack with dryer function and analyze its mechanical systems.

3.0 METHODOLOGY

Figure 1 shows the product of the shoe rack with dryer function. The steps to use the shoe rack with dryer function device are as follows:-

1. Insert the electric plug into the wall socket. Turn on the socket as shown in Figure 2.
2. Insert the shoes into the shoe rack as shown in Figure 3.
3. Close the door after inserting the shoes. Turn on the machine and turn the timer to run the shoe dryer as shown in Figure 4.
4. If the timer has done, take out the shoes. If the shoes do not fully dry repeat step 2

Figure 1: Product of shoe rack with dryer function

Figure 2: Switch on the socket to turn on the shoe rack

Figure 3: Insert the shoes into the shoe rack

Figure 4: Close the shoe rack's door and run the timer

4.0 RESULTS

The device's innovation is expected to save time and shorten the drying process, making it an ideal solution for those in need of quick shoe drying, especially on rainy days. Also, this device will store and dry shoes simultaneously without negatively impacting the environment

5.0 CONCLUSION

This project successfully created a shoe rack with a dryer function that will help people dry their shoes quickly, solving the problem of damp shoes on rainy days without negatively impacting the environment. The shoe rack also will save time and shorten the drying process, making it an ideal solution for those in need of quick shoe drying, especially on a rainy day.