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



*"Flourish and Nurturing Sustainable
Innovation for a Prosperous Nation"*

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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)
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(A-SS033) MULTILAYER OF INFLATABLE PILLOW

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ABSTRACT

A MULTILAYER INFLATABLE PILLOW is a combination of multilayer air compartments that are put inside one big pillow and can be filled by air easily. The multilayer will allow the users a choice of comfort based on their preferences. Its is also can be rolled and folded into a smaller size to fit in your normal backpack and be used for travel purposes. Whether you want to fill it by air machine or by your own mouth, the pillow can be used no matter what because of its convenient size. Its also can prevent the users from getting any neck pain or headache when they are not using the normal cushion pillow.

Keyword : Multilayer Inflatable Pillow, Rolled and Folded, Convenient Size, Prevent

1.0 INTRODUCTION

The increase in travel activities in Malaysia right now has sparked many ideas to create products that will give the users less work compared to the existing products. The travel activities include overseas travel, traveling inside the country by car and outdoor travel activities So the customers in the market are demanding for products that will simplify their daily activities and make their travel activities a lot more easier. Our company has come out with the innovation from the normal inflatable pillow and turning it into a pillow where the users are allowed to select their own level of comfortness and be washed and dry in less than 1 hour. For someone that loves to travel, they can bring this pillow everywhere because of its flexible shape that can be rolled and folded into a smaller size and will fit inside their normal backpack or hand carry bag. This pillow also helps the users with their body posture and prevents them from getting a neck pain and headache while sleeping or in sitting position. That is also the reason why we choose to create this multilayer pillow because the users also can pump the air inside for sleeping use and use it as a neck pillow. For a family member that is traveling by car and wants to bring their pillow along without using so much space in their car, this is the solution for the problems where you can put it inside your backpack and use it when arriving at your destination.

2.0 OBJECTIVE

Our product innovation here is not only focusing to meet the customer demand but we are also aiming to help reduce our customer burden while travelling. Not only they need to focus to bring their needs, but the users also need to consider their essential items like pillow. So for someone that are more likely to have a problem to bring pillow while traveling, this is the solution. For someone that loves to travel by flight and

wanted to bring their pillow together without adding so much weight and getting extra charged by the airline company, they can consider our product as their best solutions. As for the outdoor activities lover that afraid that their pillow will get dirty while using it on the ground, they do not have to worry anymore if they use this product. It is because the pillow is build by mixing few materials like polyethylene and cotton, it makes the product are washable and can be dry less than 1 hour but without sacrifice the comfortness. Without realizing this is the product that can be use in the room, car, flight and jungle. Not to forget, this product will also assist and help the users with their body posture while sleeping and reduce the chances of them form getting the neck pain and headache.

3.0 METHODOLOGY

Our product is different from any other inflatable pillow because of its structure where there are 3 different air compartments that can be filled up separately according to the user's preferences. All 3 compartments then combine inside one large compartment to make it look like a normal pillow. All 3 compartments are made of polyethylene the material that is used to make the inflatable pool and it has high thickness making it hard to be penetrated by anything when being used in outdoor environments. The outer surface was made out of a combination of polyethylene and cotton to provide not only a penetrate-proof surface but also the comfort for the users. The combination of the materials also takes the consideration for the pillow to be clean and wash easily when needed.

There are a variety of shapes for the pillow to provide the customer with a choice that they want. The shapes are focused on helping the users with their head placement and body posture. It will make the users feel comfortable when using the pillow for a long period of time. It also gives flexibility when the users want to use it on any surface that they want.



Figure 3.0 : Multilayer inflatable pillow

4.0 RESULTS

Based on the survey that has been conducted, the product manage to proof it's purpose and most of the users use the product for travelling and outdoor activities. The users also show satisfaction about out comfortness because more than half of the users stated that the pillow is giving high comfortness while being used. There are few recommendations suggested by the respondents that can be use for development purposes

5.0 CONCLUSION

For the summary of our product explanation, it is easy to say that this is the game changer for the pillow industry and also a big spark in traveling and outdoor activities where finally there is a pillow that can fit inside their bag and also maintain their body posture and avoiding the users from getting any back pain and headache. This is also an effective solution not only for convenient purposes but also to fulfill the market demand.

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