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"Empowerment of Special Meeds through Invention & Innovation"

EXTENDED ABSTRACT

MiiEX'2024

MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION 2024

"EMPOWEREMENT OF SPECIAL NEEDS THROUGH INVENTION AND INNOVATION"

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MiiEX'2024

MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION 2024 "EMPOWEREMENT OF SPECIAL NEEDS THROUGH INVENTION AND INNOVATION"

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INNOVATION, INVENTION, AND DESIGN

FOREWORD BY THE RECTOR OF UITM CAWANGAN MELAKA



Professor Ts. Dr. Mohd Rasdi bin Zaidi Rector, Universiti Teknologi MARA (UiTM) Cawangan Melaka

Welcome to the Melaka International Intellectual Exposition 2024 (MIIEX '24). It is an honour for me, on behalf of UiTM Cawangan Melaka, to thank all of you for joining MIIEX '24. We are proud to inform you that this is the 13th consecutive year that UiTM Cawangan Melaka is organizing this exposition. Since 2009, UiTM Cawangan Melaka has successfully hosted this innovation exposition. Not only have we succeeded in organizing the exposition, but we have also successfully embarked on commercialized products.

2024 is a special year where MIIEX 2024 emphasizes the development of special needs. As we know, special needs indicate a limitation in a person's ability to engage in and benefit from various aspects, such as daily activities and education. Hence, with the theme "Empowering Special Needs Through Invention and Innovation," it is a platform for industries, professionals, academicians, students, and communities to share their innovative ideas and products to increase accessibility for those with special needs.

The successful implementation of MIIEX '24 is our joint success. This event was supported by the Melaka state government through YB Datuk Fairul Nizam bin Roslan, the EXCO of Science, Technology, Innovation, and Digital Communication. I also want to express my

gratitude to Universitas Negeri Padang, Indonesia, Universitas Muhammadiyah, Makassar, Indonesia, the International Association of Economic and Businesses (IAEB), Universiti Sains Islam Malaysia, Ibnu Ummi Maktum Research Center (UMMI), USIM, and The Southeast Asia Minister of Education Organization Regional Centre for Special Educational Needs (SEAMEO SEN) as our co-collaborators for MIIEX 2024.

The collaboration from various parties in MIIEX '24 is a platform that will improve cooperation and interweaving among industries, professionals, academicians, students, and communities in shaping their potential in developing innovation products. This exposition also serves as a platform to cultivate and uphold the nation's innovation culture by presenting new ideas and research by young people, especially from academia and universities. Indirectly, MIIEX '24 will encourage all inventors towards empowering Science, Technology, Engineering, and Mathematics (STEM), especially in primary and secondary schools.

The new digital landscape also inspires more innovation and new ideas that contribute to various activities, such as business and industries. As a university that encourages "Research and Innovation," we aim to foster more innovative products that benefit scholars, industries, and communities, addressing issues to improve our present and future life.

This exposition would never happen without dedication, teamwork, and commitment. A round of applause should be given to the committee teams, who are the backbone of this exposition. Their hard work, effort, and time made this exposition possible.

Finally, I would like to conclude this brief remark by thanking all the participants and stakeholders for joining the exposition. We hope that this collaboration never ends here.

Thank you.

FOREWORD BY THE DEPUTY RECTOR (RESEARCH & INDUSTRIAL LINKAGES)



Associate Professor. Dr. Nur Hayati binti Abd Rahman

Deputy Rector (Research & Industrial Linkages), Universiti Teknologi MARA (UiTM) Cawangan Melaka

With much passion and privilege, let me warmly welcome all of you to the Melaka International Innovation Exhibition (MIIEX), UiTM Cawangan Melaka's flagship event. I firmly believe that events such as these demonstrate the gradual evolution of this platform in terms of its significance and its governing principles within the sphere of learning and the broader scholarly society.

The theme for this year, "Empowering Special Needs Through Invention and Innovation," strongly connects to our mission of using research and technology to make a positive impact on the world we live in. Besides enforcing the message of diversity, this theme also reaffirms our focus on creating products to improve the lives of people with disabilities (PWDs). Such innovations are vital as only through focused constructive changes can society become more sensitive to the needs of all members.

MIIEX allows researchers, students, and industry professionals to come together, share their innovative research, and develop viable research partnerships. It has been great to see the enthusiasm of the participants and the efforts they put into their projects, which can offer various social and economic benefits. This is why one can state that MIIEX is a great

opportunity for creating connections between the academic environment and industry, facilitating the implementation of innovative and promising projects.

Finally, I would like to express my sincere appreciation to all the members and supporters of the organizing committee, all the participants, sponsors, and everyone involved in preparing this event. I want to express my gratitude for your commitment and involvement, as the success of MIIEX and the development of an active culture of innovation in our university and beyond is partly owed to your support.

Thank you

FOREWORD BY THE PROJECT DIRECTOR



Dr Zulkefli bin Muhamad Hanapiyah Senior Lecturer

Assalamualaikum and Warmest Greetings,

It gives me a great pleasure, on behalf of the organizing committee, to welcome all participants and speakers to the Melaka International Intellectual Exposition 2024 (MIIEX '24) with the theme "Empowering Special Needs Through Invention and Innovation." We are honoured and pleased to welcome all participants to this biennial event.

MIIEX '24 is a platform that gathers experts from local and international industries, academia, scientists, researchers, and the community to contribute to the advancement of scientific and technological knowledge. This knowledge helps develop disruptive innovation products that improve daily activities for businesses and the community, especially those with special needs.

MIIEX '24 provides an atmosphere for inventors of all levels to gain new exposure and collaborate. Indirectly, this promotes a collaborative and innovative culture that focuses on cutting-edge technologies and new standards in technology and creativity.

MIIEX '24 is anticipated to serve as an arena for participants to acquire and disseminate revolutionary information on ideas and innovation. It is intended that the competition will expose the contestants' minds to the latest technologies and designs, aligning with the government's goal of encouraging innovation in Malaysia.

Finally, I want to compliment my fellow committee members on their amazing efforts, which were vital to the event's success. In addition, I want to thank our co-organizers, event sponsors, and participants. Optimistically, we hope that all new knowledge discovered, invented, or innovated will lead us toward future sustainability.

Thank you.

FOREWORD BY MELAKA STATE EXCO OF SCIENCE, TECHNOLOGY, INNOVATION AND DIGITAL COMMUNICATIONS



YB Datuk Fairul Nizam bin Roslan

Melaka State Exco of Science, Technology, Innovation and Digital Communications

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The new digital landscape also inspires more innovation and new ideas that contribute to various activities, such as business and industries. As a university that encourages "Research and Innovation," we aim to foster more innovative products that benefit scholars, industries, and communities, addressing issues to improve our present and future life.

This exposition would never happen without dedication, teamwork, and commitment. A round of applause should be given to the committee teams, who are the backbone of this exposition. Their hard work, effort, and time made this exposition possible.

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Thank you.

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	MUHAMMAD FURQAN BIN AZHAR
	KHAIRUL AZHAR BIN LOCHMAN

ABOUT MIIEX'24

MIIEX'24 is an innovation competition annually organised by UiTM Melaka with the intention to bring together ideas and inspiration that could fit in for commercialization needs. This event creates a platform for researchers to establish networking, partnership and opportunities to collaborate with industries.

OBJECTIVES

- 1. Encourage and instil passion towards inventing and innovating among UiTM Cawangan Melaka staff, students and academicians of local and international higher education institutions;
- 2. Highlight distinguished talents of skilful inventors and exhibit intellectual products, inventions and innovations among local and private tertiary institutions, government and private agencies, including international participants;
- Become an effective Business Matching platform for participating research products, matching industries and partnering government agencies;
- 4. Recognise, inspire and promote invention and innovation products to be patented and commercialized;

5. Increase passion towards inventing and innovating through research and boost interests of government and non-government agencies to obtain consultancy services from a line up experts of higher education institutions and UiTM Cawangan Melaka.

THEME

'EMPOWERMENT OF SPECIAL NEEDS THROUGH INVENTION AND INNOVATION'

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EZTote Bag

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Abstract

An innovative tote bag designed specifically for students that addresses the issue of having limited space for organization while on the go. The bag's unique structure enables clients to increase the amount of space it can hold by simply unzipping the relevant area whenever extra space is required. The storage pocket can be carefully folded and zipped back when not in use, reducing the bag's overall size and keeping it sleek. Our objectives are to provide students with a practical and versatile solution for their storage needs, enhancing organization and convenience in their daily lives. The novelty of our design lies in its ability to offer expandable storage without compromising on style or functionality. Crafted with durability and usability in mind, our tote bag offers a fresh approach to traditional carry-all solutions. Our tote bag has the potential to be widely adopted by both students and professionals, which might have a big impact on increasing everyday life efficiency and organization. Additionally, its innovative design and practicality make it highly suitable for commercialization, offering opportunities for modern people looking for efficiency and flexibility in their daily carry, whether it's for textbooks, laptops, or everyday items.

Keywords: students, storage, tote bag

1. INTRODUCTION

In a world where students are burdened with the weight of books, laptops, notebooks, and pencil boxes, finding the perfect bag is not just a luxury but a necessity (*Menon, 2022*). The struggle of navigating through crowded hallways with bulky bags has led us to innovate. Introducing the EZTote Bag, a game-changer in the realm of student accessories. Designed to alleviate the daily challenge of limited space, our EZTote bag isn't just about folding; it's a revolution in compact storage. With an array of compartments meticulously crafted to accommodate all your essentials, from textbooks to tech gadgets, this bag maximizes efficiency without compromising on style. Say goodbye to the frustration of lugging around multiple bags and hello to the simplicity of streamlined organization.

2. OBJECTIVE

The objective of our innovation, which is the EZTote Bag, aims to reduce costs for students through reducing the need to purchase different bag sizes. For instance, most students will have different bags for laptops and bags for classes (*Devanarayanan et al., 2017*). To make it user-friendly and save their money, we produce bags that are foldable and have a lot of compartments for them to put a lot of things like a water bottle, laptop, prayer clothes, prayer mat, and so on, and just bring one bag to classes. The EZTote Bag currently comes in two color options.

3. NOVELTY & INVENTIVENESS

The canvas bag known as the EZTote Bag has a design that is both multipurpose and adaptable. Include features that allow this EZTote Bag to be used in a variety of ways to adapt to different carrying needs. You might use it in a variety of ways. For instance, the EZTote Bag's design allows it to easily fold into a small size for storage when not in use. However, if you need to fit additional items inside, you may open the zip inside the bag, which splits into two sections for shopping or travel.

4. PRACTICALITY & USEFULNESS



These EZTote Bags are ideal for both adults and students because of their easy-to-fold and carry design, which also allows for hands-free use. Students can use EZTote Bags for shopping, carrying, beach bags, and more. They are also useful when they need to pack and head to university before returning to their hometown. To meet a range of tastes and requirements, they come in a variety of colors and patterns such as dark blue and nude. The cost of the EZTote Bag varies according to the fabric selected, making them reasonably priced as well *(Pettingill & Pettingill, 2022)*. The bags' easy cleaning and sun-drying ensures that their quality will not deteriorate over time. These EZTote Bags are a practical and stylish option for brand advertising since they can be personalized with team colors or other designs and also are perfect for traveling or commuting because they are small in size and simple to fold up and store when not in use.

5. CONCLUSION

The EZTote Bag is an important innovation in the field of student accessories, offering a useful and adaptable alternative to the conventional problem of limited space. EZTote Bag improves daily organization and convenience by effectively combining expanding storage with a simplified design. The EZTote Bag has the potential to change the way people approach daily carry by becoming an essential for students and professionals alike due to versatility and practicality. For those looking for efficiency and flexibility in their daily routines, the price, durability, and practicality make it a desirable option.

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