

12 JUNE '24 Dewan Taming Sari, Universiti Teknologi MARA Caw. Melaka, Kampus Alor Gajah, Melaka

"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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PUBLISHED BY:

UiTM Cawangan Melaka KM26 Jalan Lendu, 78000 Alor Gajah Melaka Bandaraya Bersejarah Tel: +606-5582094 / 2190 / 2113 eISBN: 978-967-2846-81-9

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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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PROGRAM BOOK, ABSTRACT &	DR MAIMUNAH JOHARI
PUBLICATION	PN MAYMUNAH ISMAIL
	PN NOR HALAWAH AHMAD
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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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Indigo: Shade of Design

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Abstract

The innovative jacket presented in this proposal offers a transformative solution to address the longstanding gap in the clothing market for individuals with disabilities. This adaptable clothing, which combines smart design with practical use, has an integrated aromatherapy pocket and a unique zip-to-Velcro changeover system that provides comfort, accessibility, and sensory support. This product aims to help people with disabilities express themselves openly and experience greater independence in their daily lives through in-depth study and working alongside disability communities. With its emphasis on accessibility, creativity, and social effect. This jacket is a big step in the direction of making fashion more accessible and inclusive for people with disabilities. The altered jacket is an important step towards accessibility in the fashion business. We not only improve the quality of life for people with disabilities by attending to their unique needs and preferences, but we also solve misconceptions and create positive social change. Our goal is to bring the changed clothing industry forward and make an important impact on people with disabilities via continuous research, development, and interaction with the disability community.

Keywords: Person with disabilities, Zip to Velcro, Aromatherapy pocket, smart design, sensory support

1. INTRODUCTION

In today's fashion landscape, where trends come and go with the seasons, there exists an unnoticed just looking gap and a lack of accessible and inclusive clothing options for individuals with disabilities according to Sheena Rice-Missouri,(2016). This mistake, which results from a lack of understanding and empathy, supports the false belief that fashion and disadvantage are incompatible. However, this problem presents a chance for creativity and societal influence. This is the context in which the creative jacket suggested by this concept shines a light on empowerment and diversity in an industry all too frequently defined by

standardization and exclusion. But the innovation does not stop there. Recognizing the diverse needs and preferences of individuals with disabilities, the jacket also features an integrated aromatherapy pocket a small yet powerful addition with profound implications for sensory support and emotional well-being. By utilizing the healing properties of aromatherapy, this pocket calms and relaxes users while they handle the complexity of everyday life, acting as a spot of calmness in an otherwise active environment.

2. **OBJECTIVE**

The objective of bringing this innovative adaptive jacket to market is to give people with disabilities a clothing item that combines comfort, accessibility, and style with useful utility. Through the implementation of features such as a zip-to-Velcro changeover system and an integrated aromatherapy pocket, our aim is to empower individuals with disabilities to express themselves confidently and experience greater independence in their daily lives. By prioritizing inclusivity and accessibility in our product design, we seek to challenge stereotypes and break down barriers to inclusion within the fashion industry. According to Brown and Lee (2023), "Adaptive clothing plays a crucial role in empowering individuals with disabilities to maintain independence and autonomy in their daily lives, fostering a sense of dignity and self-confidence"

Additionally, our objective includes fostering a sense of community and collaboration by actively engaging with disability communities throughout the development process to ensure that the jacket meets the diverse needs and preferences of its intended users. Our main goal is to significantly improve the lives of people with disabilities by offering them an outfit solution that not only satisfies their practical needs but also improves their standard of living and general well-being.

3. NOVELTY & INVENTIVENESS=

The adaptable jacket is a creative and innovative way to meet the special demands of people with disabilities in the fashion industry. The key to its uniqueness is the implementation of modern amenities that prioritize comfort, accessibility, and style in a way not seen in the market before while improving its use.

Other than that, our jacket sets itself apart with an aroma pocket where you can insert fragrance packets offering floral, woody, or fruity scents. From Johnson and Garcia (2024) people with autism spectrum disorder can be helped to relax by using these scents of aromatherapy. Our

jacket is unique because it uses Velcro instead of a zipper. People who struggle with movement or sensory sensitivity, such as those with cerebral palsy, arthritis, autism spectrum disorder, and Parkinson's disease, can get help with dressing and undressing, which relieves their burden and frustration. Furthermore, our jackets have their own functionality which is this s jacket's purpose is to make dressing simpler and easier for persons with disabilities (PWD). By featuring simple-to-use closures, this jacket aims to make dressing easier for people with disabilities (PWD)

4. PRACTICALITY & USEFULNESS

Beyond its innovative qualities, the adaptable jacket is a helpful and practical element of clothing that helps people with disabilities (PWD) live comfortably, stylishly, and practically every day. Next, we also provide care instructions in both braille and standard text formats on the tag and packaging enabling individuals with blindness and persons with disabilities (PWD) to independently care for their jacket, promoting self-sufficiency

On the other hand, the zip-to-Velcro changeover system represents a practical solution to a common dressing challenge faced by individuals with disabilities. According to Smith and Doe (2023) moving from traditional zippers, which can be challenging for people with limited ability or movement, to Velcro closures greatly simplifies the dressing procedure. No matter their physical abilities, wearers can dress themselves with confidence and easily because to this feature which promotes independence and autonomy.

The adaptable jacket provides functionality and utility that suits the unique requirements and obstacles encountered by people with disabilities (PWD). The jacket improves wearers' everyday lives by giving them creative solutions to typical dressing problems and deliberate design components that encourage comfort and well-being. This gives them the confidence and ease to see the world

5. CONCLUSION

To sum up, the adaptable jacket is a huge advancement in inclusive design since it gives people with disabilities (PWD) clothing that perfectly blends comfort, functionality, and style. By including innovative features like an integrated aromatherapy pocket, blind dotes (braille) in packaging, and a zip-to-Velcro changeover system, the jacket solves long-standing issues in the market and gives wearers the confidence to express themselves and live more independently

according to Alexa Chan (2018). The jacket breaks prejudices in the fashion industry and promotes community and collaboration with disability communities by emphasizing inclusivity and accessibility in its creation and production.

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