

MELAKA
INTERNATIONAL
INTELLECTUAL EXPOSITION

MIIEX '24

12 JUNE '24

Dewan Taming Sari,
Universiti Teknologi MARA Caw. Melaka,
Kampus Alor Gajah, Melaka

*"Empowerment of Special
Needs through Invention
& Innovation"*

**EXTENDED
ABSTRACT**

MiiEX'2024

MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION 2024

**“EMPOWERMENT OF SPECIAL NEEDS THROUGH INVENTION AND
INNOVATION”**

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UiTM Cawangan Melaka

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78000 Alor Gajah

Melaka Bandaraya Bersejarah

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MiiEX'2024

MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION 2024

“EMPOWERMENT 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 Umami 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 (MIIEEX), 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.

MIIEEX 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 MIIEEX 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

Welcome to the Melaka International Intellectual Exposition 2024 (MIIEX '24). It is an honor 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.

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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.

MIIEX'24 ORGANISING COMMITTEE

COMMITTEE	NAME
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	BUSHRA ABDUL HALIM
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	SITI NAZIRAH BINTI OMAR
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	DR NORASHIKIN ADAM
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	FAIQAH HAFIDZAH BINTI HALIM
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	PN NOR HALAWAH AHMAD
	PN AZIRA RAHIM
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	AFZAN SAHILLA BINTI MOHD AMIR HAMZAH
	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;
3. 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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FinWear Transaction Bracelet

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Abstract

Safety and freedom are critical concerns for individuals with disabilities, especially when navigating public spaces. This abstract outlines the "FinWear Transaction Bracelet," a wearable technology designed to improve ease and security in daily transactions, with a special emphasis on increasing accessibility and assistance to individuals with disabilities. This unique gadget smoothly combines contactless payment capability, advanced health monitoring, and accurate location tracking features, providing customers with a complete solution for managing financial transactions and personal well-being. For those with disabilities, this technology provides a substantial improvement in accessibility and freedom. The bracelet simplifies transactions by eliminating the need to carry cash or cards, making payments easier and more manageable, particularly for people with mobility or dexterity difficulties. In addition to being a useful technical advancement, the "Track Transaction Bracelet" also serves a special purpose for the disabled people. The demand for wearable technology continues to expand across numerous consumer sectors, including consumers seeking convenience in transactions, health-conscious users, and those interested in personal security features. Through the incorporation of necessary features into a wearable gadget, this technology enables people with impairments to go through everyday life with greater independence and self-assurance. It offers a revolutionary tool for enhancing accessibility and lifestyle management for a wide spectrum of users; thus, its potential influence goes beyond convenience.

Keywords: Contactless payment, Wearable technology, Accessibility, Digital payments

1. INTRODUCTION

Tracking daily transactions is fundamental for maintaining control over our finances, achieving financial goals and ensuring financial well-being in the long run (O'Neill, Xiao, Bristow, Brennan & Kerbel, 2000). Unfortunately, it is not easy to track every single cent that we have spent on our daily basis since many people do not have extra time to take note of everything especially if they are using cash. With the aid of FinWear individuals can effortlessly record and categorize every financial transaction, even if it is only a cup of coffee purchased with cash. Tracking daily transactions is not just a task but it is a pathway to financial empowerment. By making it a daily habit, individuals can take control of their finances, paving the way for security and success. Thus, each transaction becomes a building block toward a brighter financial future.

2. OBJECTIVE

FinWear aims to offer convenience by enabling users, especially OKU people to manage their finances anywhere and anytime through wearable devices. It ensures accessibility for all users, including those with disabilities. The platform facilitates expense tracking, allowing users to monitor and set budgets. Real-time updates on financial transactions empower users to stay informed about their finances promptly. FinWear prioritizes privacy assurance, ensuring the security of users' financial information to mitigate concerns about data breaches or identity theft.

3. NOVELTY & INVENTIVENESS

The FinWear Transaction Bracelet stands out because it seamlessly integrates contactless payment technology, comprehensive health monitoring capabilities, and precise location tracking features into a single wearable gadget. Recent innovative payment methods, such as contactless payment, try to replicate the positive characteristics of cash (Trütsch, 2020). Hence, to further highlight this innovation, we added another new function in this device such as a safety button and voice command which will help disabled people to track their financial securely. This innovative technology was developed especially to increase the freedom and accessibility for individuals with disabilities. It offers a comprehensive solution that facilitates everyday activities and enhances individual wellbeing. The FinWear Transaction Bracelet revolutionizes how people with disabilities conduct financial transactions and navigate public spaces by combining critical capabilities in an easy-to-use and accessible way.

4. PRACTICALITY & USEFULNESS

FinWear is a wearable transaction service that integrates seamlessly with existing payment systems, allowing users to make purchases by scanning their bracelet, a feature particularly beneficial for individuals with disabilities (Sun, Zang, Huang, & Ildar, 2021). It tracks spending and expenses in real-time, helping users stick to budgets and providing instant updates on financial transactions to keep them informed. Enhanced security is ensured through biometric checks like fingerprint scanning, protecting against unauthorized transactions (Mohd, et al., 2023). The device also offers voice command functionality for hand-free transaction management, suitable for users with mobility issues or busy lifestyles. Alerts and notification about financial obligations and goals aid in effective financial management (Loh, Lee, Tan, Hew, & Ooi, 2019). Accessible features such as screen readers or tactile buttons cater to users

with different abilities, ensuring ease of use. Overall, FinWear is a practical, secure, and user-friendly financial management tool that adapts to diverse user needs.

5. CONCLUSION

The FinWear provides an innovative way to improve security and accessibility in day-to-day transactions, especially for people with disabilities. This cutting-edge device streamlines financial transactions and enhances personal wellbeing by fusing contactless payment, health monitoring, and location tracking functions. Its voice command and safety button integration increase its usability and user safety even more. The bracelet appeals to a wider audience seeking wearable technology that offers convenience, health monitoring, and security, in addition to fulfilling the needs of people with disabilities. The "FinWear Transaction Bracelet" stands out as a game-changing tool that gives users the confidence and independence to manage their finances and move through public spaces as the market for wearable technology continues to grow.

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