

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

KM26 Jalan Lendu,

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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## **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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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.

## MIIEX'24 ORGANISING COMMITTEE

COMMITTEE	NAME
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	RIDZUAN ADLI BIN AZIDIN
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JURY SELECTION AND MANAGEMENT	EN NORAZLAN ANUAL
	PN AFZAN NOR BINTI TALIB
	PN NUR HIDAYAH ZAINI
	CIK FARIHA AIZA BINTI RAMLY
	PN NURUL AIN BINTI MUSTAKIM
	PN NOORZALYLA MOKHTAR
	PN ZATUL HIMMAH BINTI ABDUL KARIM
	CIK MUNA KAMEELAH BINTI SAUID
	PN NOR MASLIA RASLI SAMUDIN
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	SITI RAMIZAH JAMA
	SITI NURSYAHIRA ZAINUDIN
	BUSHRA ABDUL HALIM
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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;
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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<b>SALACHOLESTA (OBAT HERBAL KOLESTROL DARI KULIT SALAK) SEBAGAI UPAYA MENINGKATKAN KESEHATAN DAN PEREKONOMIAN DI KOTA PADANGSIDIMPUAN</b>	<b>1429</b>

## **Jayjay Coffee**

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### **Abstract**

Persons with disabilities are those who have long-term physical, or sensory impairments that, when combined with other barriers. JayJay Coffee was born out of a desire to simplify complex tasks and enhance user experiences, driving innovation forward. Our coffee maker is designed to deliver a smooth and delightful experience, guaranteeing that brewing your preferred cup of coffee is easy and straightforward. Our main goal in developing this product is to comply with applicable accessibility laws by making a coffee maker that can easily work for the blind or visually impaired when eating the legal standards. We want to see the best methods in our product, without relying on supervision. Our advanced coffee makers for the blind offer unique features such as voice recognition technology for easy operation, an easy-to-install magnetic cup placement system, and blind buttons for touch access. Our coffee maker is an easy way that allows anyone who is blind or visually impaired to make their own coffee. We intend to study government policies and programs that facilitate access and supporting technologies to ensure that our coffee makers meet the appropriate requirements and can qualify for benefits. In result, our unique coffee maker for the blind combines tactile controls, auditory feedback, and an intuitive design to enable self-sufficient coffee preparation.

**Keywords: Coffee, Blind, Maker, Accessibility, Technology**

### **1. INTRODUCTION**

The term "persons with disabilities" emphasizes that disability is a human experience that affects everyone uniquely, not an individual characteristic processes that prioritize accessibility and encourage autonomy in daily activities is important for people especially those with disabilities such as the blind (World Health Organization (WHO), 2020). The history of coffee brewing dates

back to at least the 15th century, and while the earliest methods involved boiling ground coffee in water, it took a long time for the concept of becoming dedicated coffee makers to begin (Wikipedia, 2024). Since then, many techniques have been developed and are still in use today. To create a unique brewing experience catered for people who are blind or visually impaired we created Jay Jay Coffee, a new product, where innovation meets accessibility. Our coffee maker has evolved with an understanding of the benefits of simplicity and freedom in daily tasks.

## **2. OBJECTIVE**

First and foremost, we want to ensure that anyone, especially people with disabilities, can use our coffee makers, which are designed in accordance with accessibility laws. By adding features like touch controls, clear instructions and audio prompts, we can make coffee preparation inclusive and accessible to everyone. Now, we want to ensure that technology is accessible so that people with disabilities can participate fully in everyday tasks and activities. To do this, we want to be inclusive in products and services. We also want the coffee maker to have an accessible design with features such as touch and auditory notifications, so that blind people can use it independently with confidence. This will ensure that they can enjoy the daily brew of coffee.

## **3. NOVELTY & INVENTIVENESS**

One creative way to help home baristas who are blind or visually impaired is to develop a touch-screen espresso machine (McCann, T, 2023). This device allows the user to feel the temperature and texture of the coffee grounds, vastly improving espresso production without the need for sight. The new design of Jayjay Coffee provides an equivalent way to help blind or visually impaired people brew coffee with confidence which includes a Braille button that can serve as an auditory cue for selected or currently selected items. The possibilities for education and employment available to blind readers of braille have been greatly influenced by these improvements in braille technology (National Library Service For The Blind And Print Disabled Library Of Congress, NLS). This feature allows blind users to access other features, such as temperature adjustments and coffee options, which are not available while viewing the display. The magnetic cup concept can also be modified to make the coffee cup stand out from the others and stand out more. This was also mentioned on the website discussing coffee capsules

(Corporate Coffee Solution, 2024). Being able to differentiate their cup of coffee from others allows them to avoid the mistake of using the wrong one. Lastly, this feature includes innovative voice recognition technology that allows users to use spoken commands to perform the brewing process. The technology also improves accessibility and autonomy by eliminating additives and providing optimized coffee brewing based on voice guidance.

#### **4. PRACTICALITY & USEFULNESS**

One of the main advantages of the design of the coffee maker is the quick turnaround time. Automated coffee can reduce blind times by eliminating the need for human intervention. Customers can spend more time on their business and less time on tedious coffee because of its effectiveness. A stand-alone coffee maker is easy to use and the learning curve is reduced by integrating all available features, improving ease of use. Finally, blind people who can learn how to use advanced technology can do coffee-making business. Developing skills with voice commands and analyzing coffee maker data can increase technical skills and maintenance capabilities.

#### **5. POTENTIAL FOR COMMERCIALIZATION**

Designed specifically for the blind, the coffee machine has great economic potential. It can completely change the way a team prepares coffee. Our innovation ensures accessibility and ease of use for people who rely on non-visual cues by adding features such as voice-guided instructions, and touch and auditory feedback. By responding to their needs, we expand to an important market group that coffee long overlooked by producers. Working with organizations that help the blind and using specific advertising strategies are two ways to reach this market. In addition, we can encourage corporate success and social resilience by securing government support for accessible technologies that meet accessibility guidelines. All in all, our new coffee machines are a unique response to the needs of the market while maintaining the principles of accessibility and social responsibility.

## 6. CONCLUSION

The blind coffee maker industry has tremendous commercial potential, and potential customers are available for innovation in both current and new technologies. Designing products that meet customers' unique requirements and interests and that are pleasant to use will be essential to success. So that's why it's so important for everyone, including the blind, to have a high-quality and accessible coffee machine. JayJay Coffee's technology makes coffee easy and requires no complicated equipment or experience, benefiting the blind. It is a practical and simple enhancement that adds interest to the coffee brewing process.

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