

### 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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**ABOUT MIIEX'24** 

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

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.

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Thank you.

#### **MIIEX'24 ORGANISING COMMITTEE**

COMMITTEE	NAME
PATRON	PROFESOR DATUK DR SHAHRIN BIN
	SAHIB@SAHIBUDDIN
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DEPUTY PROJECT DIRECTOR III	PN WAN HASMAT BINTI WAN HASSAN
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	DR IRFAH NAJIHAH BINTI BASIR MALAN
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	MOHAMAD SHAFIEI AYUB
	MOHD ARIFF MUSTAFA
	FAHMI SAMSUDIN
	MOHD HAFIFI MOHD SUPIR
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	MOHD AZAHAR
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	WAN NUR KHALISAH SHAMSUDIN
JURY SELECTION AND	EN NORAZLAN ANUAL
MANAGEMENT	PN AFZAN NOR BINTI TALIB
	PN NUR HIDAYAH ZAINI
	CIK FARIHA AIZA BINTI RAMLY
	PN NURUL AIN BINTI MUSTAKIM
	PN NOORZALYLA MOKHTAR
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	CIK MILFADZHILAH MOHD JAMIL
	PN NUR HAZWANI BINTI MOHAMAD ROSELI
	PN GLADYS SEBI ENTIGAR
i.	

	PN NASHRAH BINTI TALIB
	CIK SITI NURUL IZZA HASHIM
REGISTRATION AND	DR. SITI FEIRUSZ BINTI AHMAD FESOL
PARTICIPATION	SITI RAMIZAH JAMA
	SITI NURSYAHIRA ZAINUDIN
	BUSHRA ABDUL HALIM
BIRO MEDAL & CENDERAHATI	PN SYUKURRIAH IDRUS
	SITI NAZIRAH BINTI OMAR
	RAFIDAH ABDUL AZIZ
	MASTURA AYOB
	INTAN LIANA BINTI SUHAIME
	DR NORASHIKIN ADAM
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	FAIQAH HAFIDZAH BINTI HALIM
	NORSHAHIDATUL HASANA BINTI ISHAK
	HAZRATI ZAINI
	KHAIRUL NURMAZIANNA ISMAIL
SPONSORSHIP	DR MOHD SYUKRI BIN ABDULLAH
PROGRAM BOOK, ABSTRACT &	DR MAIMUNAH JOHARI
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	PN NOR HALAWAH AHMAD
	PN AZIRA RAHIM
	NORLINDA TENDOT ABU BAKAR
	AFZAN SHAHILLA AMIR HAMZAH
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	DR MOHD SUFIEAN BIN HASSAN
	ENCIK KHAIRI BIN KHAIRUDDIN
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	DR SITI NUR IZYANDIYANA BINTI AB HADI
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	ERRATUL SHELA ESHAK
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	MUNIRAH BINTI MOHD JIDI
	MASLIZA BINTI MOHD RAZALI
TECHNICAL & VENUE	EN MAZ IZUAN BIN MAZALAN
	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**

- 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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#### AromaZen Handkerchief for Individuals with Autism

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#### **Abstract**

The 'AromaZen Handkerchief,' an innovative creation made from soft bamboo fabric, indicates of calm in a world where sensory overload represents an everyday issue for individuals with autism. This bamboo soft fabric, delicate material that is hypoallergenic and devoid of harsh scents or irritating elements may be helpful. This handkerchief has a luxuriously smooth texture that feels pleasant against the skin and lowers the chance of irritation. Other features may include hypoallergenic and ultra-soft bamboo fibres. Additionally, this handkerchief is convenient to carry along and is multipurpose, serving as a handy companion for wiping tears, wiping sweat, or which provides comfort to the senses. In addition, sweet scents like chamomile are used, which are frequently used to promote relaxation and have a calming effect on autistic people who are sensitive to fragrance. In the world of supporting individuals with autism, there's a need for better tools to help them stay calm and comfortable. That's where 'AromaZen Handkerchief' comes in. It's a new product that combines the calming power of aromatherapy with a soft bamboo fabric. Our goal is to create something that helps people with autism feel more relaxed and at ease in their daily lives. There is a lot of opportunities for commercialization for this handkerchief, such as in healthcare institutions. 'AromaZen Handkerchief' could be sold in bulk through partnerships with healthcare organizations that work with people with autism, such as hospitals, treatment centres, and institutions. Napkins for use in therapy sessions, educational institutions or sensory rooms may be purchased by these institutions. One of the valuable advantages of making a soft sensory handkerchief for people with autism is empowerment. By giving them things that meet their sensory needs, people with autism can gain more control to help them feel more confident in their surroundings.

Keywords: handkerchief, autism, bamboo, sensory, everyday issue

#### 1. INTRODUCTION

The term "AromaZen" combines the terms "aroma" and "zen." 'Aroma' represents pleasant aroma, while 'Zen' refer to bamboo, which has become known for its determination strength, and flexibility. Within 'AromaZen,' it can represent the ideas of using scents to gain inner calm and power. For those with autism, the reliability of bamboo combined with calming aromas can create a peaceful environment. A uniquely created product called the AromaZen Handkerchief is intended to offer comfort as well as support to those with autism. It has soothing scents that can aid in promoting relaxation and lowering anxiety, and it is composed of soft, delicate materials. With the handkerchief, people with autism can interact with various textures and smells as a sensory aid. They may always carry it with them, which gives them a feeling of warmth and safety. One excellent tool that may be used to help those with autism create a calming and comfortable environment is the AromaZen Handkerchief.

#### 2. OBJECTIVE

The objective of the 'AromaZen Handkerchief 'project is to develop and introduce an innovative sensory support product tailored for individuals with autism. This handkerchief will harness the therapeutic benefits of aromatherapy and the gentle touch of bamboo fabric to provide portable and effective sensory comfort. By combining these elements, our goal is to enhance relaxation, promote emotional regulation, and improve the overall well-being of individuals with autism. Through this project, we aim to address the unmet needs in sensory support and contribute to a more inclusive and supportive environment for individuals with autism

#### 3. NOVELTY & INVENTIVENESS

Our project was inspired by real-life experiences within the autism community, particularly families like Adam's autism family, who have shown that holding comforting objects can bring relief. We also noticed that pleasant scents have a calming effect on tantrums. With this insight, we set out to create the 'AromaZen Handkerchief.' Crafted from soft bamboo fabric and infused with calming scents, our handkerchief offers a gentle solution for managing sensory challenges. Its hypoallergenic properties ensure that it's gentle on sensitive skin, providing comfort without irritation. Plus, its compact size makes it convenient to carry for calming support wherever you

go. By combining the soothing power of touch and scent, the 'AromaZen Handkerchief' aims to enhance the wellbeing and comfort of individuals with autism. It's a simple yet innovative solution designed to bring moments of tranquility and peace to those who need it most. Experience the transformative potential of sensory support with our 'AromaZen Handkerchief,' created with care to make a difference in the lives of individuals with autism and their families.

#### 4. PRACTICALITY & USEFULNESS

The AromaZen product innovation provides multiple ways in which it is useful and practical. First of all, it gives autistic people a sensory aid that can ease anxiety and encourage relaxation. The handkerchief's infusion of relaxing scents can produce a calming atmosphere that is supportive and comforting. Furthermore, people can bring handkerchiefs with them everywhere they go due to its portability, which gives them a sense of comfort and security in a variety of circumstances. The overall goal of the AromaZen product innovation is to improve the quality of life and overall well-being of people with autism by providing a useful and practical tool for sensory stimulation and relaxation.

#### 5. CONCLUSION

In conclusion, the 'AromaZen Handkerchief' offers a unique solution to address the sensory challenges faced by individuals with autism. Combining the soothing properties of aromatherapy with the gentle touch of hypoallergenic bamboo fabric, this innovative product aims to promote relaxation and comfort in daily life. With potential applications in healthcare institutions and therapeutic settings, there is a significant opportunity for commercialization through partnerships with organizations that support individuals with autism. By providing tools that cater to their sensory needs, such as the 'AromaZen Handkerchief,' we can empower individuals with autism to feel more confident and at ease in their environments.

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