

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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	FAIQAH HAFIDZAH BINTI HALIM
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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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Multipurpose Kitchen Tool

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Abstract

Cooking is an essential daily activity, but for beginners, it can be daunting due to challenges in accurate ingredient measurement and temperature monitoring. To address these issues, we introduce the Multipurpose Kitchen Tool, a revolutionary device designed to simplify the cooking process. This innovative tool combines the functions of a measuring cup, spoon, thermometer, and weighing scale into one convenient device. Its digital display provides precise readings, ensuring accurate measurements for cooking success. With its practical design and multifunctionality, the Multipurpose Kitchen Tool enhances the cooking experience for both novice and experienced cooks alike. Commercialization of this product offers cost-effectiveness and space optimization, making it an attractive option for various distribution channels including online marketplaces, kitchenware stores, and specialty retailers.

1. INTRODUCTION

Cooking is a necessary daily activity. It gives people the means to fuel their bodies and share delectable meals with loved ones. Cooking can be considered as the art of cooking food by heating items and blending different kinds of spices. The meal needs to go through some sort of heating procedure in order to be consumed (Ali, Y., 2023). On the other hand, some foods are suitable for eating raw and some are not. The purpose of this Multipurpose Kitchen Tool for those who are beginners in cooking. The Multipurpose Kitchen Tool highlights the measurement procedure involving utilizing a standard measurement tool, such as a measuring spoon, cup and thermometer. The function of Multipurpose Kitchen Tool is to calculate and determine the precise

amount of a component needed (Cohen, G.,2013). Because it will determine the food's taste, texture, and size, the measurement process is crucial (Telling., 2021).

2. PROBLEM STATEMENT

The ability to cook varies greatly throughout people. While some people may have little experience in the kitchen as children, others may grow up in homes where cooking is a regular pastime. People who are beginners in cooking usually do not know how to ensure the accurate ingredient measurement. Beginners need a guideline that can help them in terms of measuring cups, spoons, and temperatures. Next, beginners tend to face challenges in cooking where they may have problems in following the food safety guidelines. They may not monitor the cooking temperatures correctly. When it comes to cooking, beginners may miss any important steps or ingredients in cooking due to their lack of experience or culinary knowledge (Kring, L., 2023)

3. OBJECTIVE

To make measuring ingredients for cooking easier and more practical with different measuring units appearing in cookbooks

To make sure the ingredients were fully cooked by measuring the internal temperature by following the food safety guide

To make sure all ingredients are well measured for a better cooking and fail-proof dishes based on the cookbook

4. NOVELTY AND INVENTIVENESS

Due to the importance of measurement tools for the beginner to learn how to cook, the Multipurpose Kitchen Tool has been innovated from the available measurement cups in the market. This Multipurpose Kitchen Tool operates on dry cells and measures temperature and weight using electrical equipment. It has a digital screen that shows readings depending on whether a cup, tablespoon, or thermometer adaptor is used. The Multipurpose Kitchen Tool's cylinder-shaped body and comfortable handle make it simple to use features like MODE, TARE, ON/OFF, and C°/F° for temperature unit conversion. (Pennanen, L,2019). It can also be used as a

culinary thermometer and weighing scale. Detachable parts, like a teaspoon, measuring spoon, and thermometer adaptor, are incorporated into the design of the gadget to facilitate storage and minimize its footprint in the kitchen.

5. PRACTICALITY AND USEFULNESS

By simplifying the cooking process and providing precise measurements, Multipurpose Kitchen Tools improves the overall cooking experience for users. Novice cooks gain confidence in the kitchen, while experienced chefs appreciate the convenience and efficiency it offers. The all-in-one design of the cooking helper tool reduces the need for multiple kitchen gadgets, saving users time and effort in meal preparation. With its integrated features, users can complete cooking tasks more efficiently, allowing them to focus on other aspects of meal planning and preparation. The modular design and multifunctional capabilities of Multipurpose Kitchen Tools make it versatile and adaptable to a wide range of cooking scenarios. Whether baking, grilling, or sautéing, users can rely on the cooking helper tool to meet their measurement and temperature monitoring needs. (Kaya, S., 2023)

6. COMMERCIALIZATION

The Multipurpose Kitchen Tool has great potential for commercialization because this Multipurpose Kitchen Tool serves a certain function, plus it serves two functions of weighing scale and thermometer. With its various functions, our Multipurpose Kitchen Tool has space optimization and multifunctional tools where weighing scale and thermometer are all-in-one. Our product has the multipurpose element, it usually will gain a lot of attraction, as it's cost-effectiveness. A weighing scale and thermometer can be made in one product that offers cost savings. The Multipurpose Kitchen Tool can be sold through various distribution channels, including online marketplaces, kitchenware stores, specialty retailers, and direct-to-consumer channels. Exploring multiple distribution channels allows you to reach a broader audience and maximize sales potential.

7. CONCLUSION

As a conclusion, The Multipurpose Kitchen Tool is a versatile tool designed to simplify the cooking process for novice cooks. It combines a thermometer, measuring cup, and spoon, offering accurate ingredient measurement and temperature monitoring. The intuitive interface and compact size make it easy for beginners to navigate. This tool empowers novice cooks to experiment with recipes and gain confidence in their culinary skills, making the cooking experience more accessible, enjoyable, and rewarding.

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