

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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FOREWORD BY THE PROJECT DIRECTOR

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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.

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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i.	

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	FAIQAH HAFIDZAH BINTI HALIM
	NORSHAHIDATUL HASANA BINTI ISHAK
	HAZRATI ZAINI
	KHAIRUL NURMAZIANNA ISMAIL
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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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	MASLIZA BINTI MOHD RAZALI
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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

- 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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Skippers

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Abstract

In response to the growing demand for inclusive fitness solutions, we have developed an innovative product tailored for modern lifestyles: a skipping rope with a heart monitor wristband. Recognizing the need for convenient and accessible fitness tools that align with busy lifestyles, our product offers a seamless workout experience. By integrating advanced technology, including heart rate monitoring capabilities, into a versatile and portable exercise tool like a skipping rope, we empower individuals to prioritize their health and fitness goals amidst their daily routines. So, we integrated and attached a heart monitor wristband to the skipping rope in an innovative way, that is call "Skippers". People will find it easier to use because they won't need to wear a smart watch in order to record their workout or check their heart rate. Our solution is designed to cater to diverse lifestyles, ensuring that everyone can enjoy the benefits of regular exercise and maintain a healthy lifestyle, regardless of their schedule or commitments. Through innovation and a commitment to convenience, we aim to make fitness accessible to all and support individuals in achieving their wellness objectives.

Keyword: Skipping rope, heart rate monitor, fitness, lifestyles.

1. INTRODUCTION

The revolutionary skipping rope with heart rate monitor wristband that is called "Skippers" is an innovative fitness tool designed to elevate your workout experience like never before. This cutting-edge skipping rope integrates advanced technology to provide real-time monitoring of your heart rate as you exercise, transforming your cardio routine into a personalized and dynamic journey towards better health and fitness. Whether you're a beginner or a seasoned athlete, this smart skipping rope offers precise insights into your cardiovascular

performance, allowing you to optimize your workouts and achieve your fitness goals with confidence. Innovative methods to enhance training sessions and monitor crucial data are becoming possible thanks to technological advancements in the fitness and health tracking sectors. With the help of this cutting-edge product's many features—such as jump counting, calorie tracking, and real-time heart rate monitoring—users can take charge of their fitness journey and choose their workouts with knowledge.

2. OBJECTIVE

With real-time heart rate monitoring and data-driven insights, the innovative skipping rope with heart rate monitor wristband, known as "Skippers," aims to improve the efficiency and customisation of cardiovascular exercises. The goal is to enable users of all fitness levels to maximize their training sessions, track crucial metrics like jump count and calorie expenditure, and make educated decisions to reach their health and fitness goals by incorporating cutting-edge technology into the classic skipping rope exercise. The goal is to empower users to start a dynamic and customized fitness journey that encourages improved health, greater endurance, and overall fitness improvement by providing accurate monitoring of cardiovascular performance and personalized feedback. Furthermore, motivation and engagement are central objectives of this innovation. The real-time heart rate feedback offered by the skipping rope with a heart rate monitor wristband serves as a powerful motivational tool. Seeing immediate data on the intensity of their workouts encourages users to push themselves further, strive for personal bests, and stay motivated to achieve their fitness goals. This feedback loop not only enhances the efficacy of workouts but also fosters a sense of accomplishment and satisfaction, ultimately promoting long-term adherence to exercise routines.

3. NOVELTY & USEFULNESS

A rope called "skippers" that has a heart monitor bracelet adds a fresh twist to conventional workout regimens by fusing fitness tracking technology with a well-known object. This invention not only makes workouts more effective but also gives consumers insightful data about their cardiovascular health and performance indicators. People may track their progress over time, alter their fitness programme for optimal results, and maximise their exercise intensity by utilising real-time heart rate data. To further increase its uniqueness and use, our skipping rope with a heart monitor bracelet has other features including an automatic jump counter and a calorie

tracker. By fusing technology and custom, our creative solution not only meets the demand for accessible fitness options but also completely transforms how people think about working out. By fusing the classic allure of skipping rope exercises with a tracking features, we enable users to confidently and easily take charge of their health and well-being. Our product is ready to transform your workout routine and assist you in reaching your fitness objectives precisely and effectively, regardless of your level of experience. Whether you're a novice trying to get started on your fitness journey or an experienced athlete aiming for top performance.

4. PRACTICALITY & USEFULNESS

The skipping rope with a heart rate monitor wristband, branded as "Skippers," offers immense practicality and usefulness for individuals seeking convenient and effective fitness solutions. By seamlessly integrating advanced technology into a familiar exercise tool, this innovative product revolutionizes the way people approach their workouts. Firstly, the practicality of "Skippers" lies in its ability to provide real-time monitoring of heart rate during exercise. This feature allows users to gauge the intensity of their workouts and make adjustments as needed to optimize their cardiovascular performance. Whether aiming to improve endurance, track progress, or maximize calorie burn, the ability to access accurate heart rate data enhances the effectiveness of each workout session. Moreover, the usefulness of "Skippers" extends beyond mere heart rate monitoring. The inclusion of features such as an automatic jump counter and a calorie tracker adds value by providing comprehensive feedback on workout performance. Users can track their progress over time, adjust their fitness routines accordingly, and set achievable goals based on data-driven insights. Additionally, the portability and versatility of "Skippers" contribute to its practicality and usefulness. Unlike traditional fitness trackers or smartwatches, which may be cumbersome or require separate accessories, "Skippers" combines the functionalities of a skipping rope and a heart rate monitor into a single, compact device. This makes it easy for individuals to incorporate cardiovascular exercise into their daily routines, regardless of their schedule or commitments. In conclusion, "Skippers" offers a practical and highly useful solution for individuals seeking to prioritize their health and fitness goals amidst their busy lifestyles. By leveraging advanced technology and innovative design, this product empowers users to take control of their workouts, track their progress, and achieve their fitness objectives with precision and efficiency. Whether you're a beginner starting your fitness journey or an experienced athlete

striving for top performance, "Skippers" is poised to revolutionize your workout routine and support you in reaching your wellness goals.

5. CONCLUSION

In summary, our skipping rope with a tracker bracelet offers a special blend of creativity, practicality, and efficacy, marking a revolutionary development in the field of fitness technology. We have developed a system that exceeds expectations in terms of usefulness and usability while also satisfying the demands of current lifestyles by fusing classic exercise gear with cutting-edge monitoring capabilities. By being inclusive and accessible, we hope to democratize exercise and give people from all walks of life the confidence to put their health and wellbeing first. Regardless of your lifestyle—busy working professional, frequent traveler, or committed fitness enthusiast—our device provides an adaptable and portable way to easily integrate exercise into your daily schedule.