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**V-MIEX**

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VIRTUAL-MELAKA INTERNATIONAL INTELLECTUAL EXPOSITION

ROAD TO COMMERCIALISATION

**V-MIEX BOOK**



# V - MIIEX BOOK

## 'ROAD TO COMMERCIALISATION'

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# FOREWORD

ASSOC. PROF TS. DR MOHD RASDI ZAINI  
Rector  
Universiti Teknologi MARA (UiTM) Cawangan Melaka



Welcome to Virtual-Melaka International Intellectual Exposition 2022 (V-MIIEEX 2022). It is an honour for me on behalf of UiTM Melaka Branch to thank all of you for joining the programme and we are proud to inform you that this is the 12th year consecutively, UiTM Melaka Branch is organizing this exposition.

V-MIIEEX 2022 is a platform to improve the commercialization collaboration among industries and communities and at the same time, we also give the opportunity to academicians and students to share ideas and increase their potential innovation products with the industries and communities through their projects. This exposition also serves as a platform to cultivate and upload the nation's innovation culture by presenting new ideas and research by young people, especially from academia, universities, college, high schools, and primary school students.

The economy and development of the country faced a challenging phase in 2021 due to the Covid-19 pandemic. We faced changes in business, education, society, and lifestyle. However, the pandemic proved to be a blessing in disguise as it somehow gave people ideas which would be beneficial to improve their lifestyle and solve problems that might occur in the future. Besides, 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 the "Research, Innovation and Commercialization", this exhibition is organized to encourage more commercialization of products that are beneficial to scholars, industries, and communities to tackle such issues to improve our present and future life.

Since 2009, UiTM Melaka Branch has successfully become the organizer for this innovation exposition. We are not only successful in organizing the exposition, but I would proudly say that we have also successfully embarked on commercialized products. With the number of participants for this year's exhibition, we believe that more commercialized products will be produced in line with the theme for this year, "Road to Commercialisation".

This exposition would never happen without dedication, teamwork, and commitment. A round of applause should be given to the committee teams as 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.



**DR. NUR HAYATI BINTI ABD RAHMAN**  
Deputy Rector Research & Industrial Linkages  
Universiti Teknologi MARA (UiTM) Cawangan Melaka

It is a great pleasure to welcome all the participants and presenters to the Virtual Melaka International Intellectual Exposition (VMIIEX 22). I am delighted that through this periodic event, we managed to bring together scholars and professionals from various fields to engage through this virtual platform where ideas and breakthrough are discovered and leveraged for commercialization potential.

Since 2009 UiTM Cawangan Melaka has held twelve Invention and Innovation Design competitions and this year we are very honoured to have the second year of VMIIEX organized in digital platform. This has proven that despite the global challenges due to the recent pandemic, it is never an issue for UiTM Melaka to continuously organize this yearly prestigious event and to support the ministry's aspiration in leveraging creativity and innovation in the new norm.

VMIIEX 22 is organized with no sole objectives of accomplishing the University's KPI but instead we are determined to make this programme as the place to help heighten commercialization collaboration in research and innovation with the industry and community through joint exhibitions from various external organizations.

Our aspiration is to also provide exposure and opportunities to academic staff as well as students from public and private universities to engage in direct excellent scholarly activities with the industry and community through activities that can be measured and assessed. As for the Research and Industrial Linkages Office of UiTM Melaka, this exhibition is seen as the platform that can encourage active collaboration and knowledge transfer with industries; objectively to support various activities that will benefit all stakeholders from the various government agencies, local and international universities, industries and communities.

Through the theme of "Road to Commercialization" this year, V-MIIEX 22 is committed to have this event as a boulevard to inspire and cultivate creativity and innovation to the numerous levels of inventors through exposure on latest technologies, astonishing ideas and creative designs with great potential to be commercialized. For this year, we proudly introduce a special category which is the "Endemic Challenge" as the provision to the government of Malaysia's goal of moving towards the endemic.

To ensure that the competing products in this exhibition is not exclusively for the purpose of competition, V-MIIEX 22 is dedicated for the commercialization of highly potential innovation products, which is attained through its active collaboration with tailored needs industries. The commercialization effort was not for income generation purpose only but it aimed to spearhead the development of quality products in line with industrial needs and community benefit.

Therefore, it is a great honour for me on behalf of the Research and Industrial Linkages Office as well as the organizing committee to have all participants in this competition and I would like to express my highest gratitude especially to the Rector of UiTM Melaka and all strategic partners and sponsors for supporting the event.

To finish, I sincerely wish VMIIEX 22 a remarkable success. I believe that this will not be the only collaboration between UiTM Melaka and the respective partners and linkages, but a beginning of a long and fruitful cooperation in future.

Thank you very much.

*road to commercialisation...*

**WAN HASMAT WAN HASAN**  
Project Director V-MIIEEX 2022  
Universiti Teknologi MARA (UiTM) Cawangan Melaka



Assalamualaikum and Warmest Greetings.

It gives me an enormous pleasure, on behalf of the organizing committee to welcome all participants and presenters to the Virtual -Melaka International Intellectual Exposition 2022 (VMIIEX '22) with the theme "Road to Commercialisation". We are honoured and glad to welcome all participants to this biennial event.

This is the second time that we have organized this biennial event virtually. V-MIIEEX 22 is an innovation competition, in which, innovation products, ideas and systems related to various science and technological fields are exhibited as a solution for the presented problems.

V-MIIEEX22 expectantly will be a platform that gathers experts from academies, scientists, and researchers, locally and internationally, to contribute towards the growth of scientific and technological knowledge in each participant's specialisation and expertise.

The competition also serves as a platform to give fresh exposure to the various level of inventors, as well as to encourage the culture of innovation design focused on latest technologies and related to new norms technologies and inventions due to COVID-19.

V-MIIEEX 22 is also hoped to be an avenue for gathering and disseminating the latest knowledge on ideas and acquisition of innovation among the participants. It is hoped that the competition will be able to open the mind of the participants towards latest technologies and design. It is also in line with the government's aspiration to encourage innovation activities in Malaysia.

As a final note, I would like to congratulate my fellow committee members for their tremendous effort, which have been critical to the event's success. In addition, I would like to thank our co-organizer, event sponsors and supporters. Optimistically, we wish that all new knowledge that is discovered, invented, or innovated will drive towards our future sustainability.

Thank you.

# ABOUT V-MIIEEX

The world after COVID-19 is unlikely to return to the world that was. Despite the challenging pace during the pandemic, the strong rebound is expecting in this exciting year 2022. Malaysia is welcoming the great prospects ahead with positive impact on the country's economy and development. Hence, the hope for greater opportunities motivates for more creative thinkers to come up with innovative ideas that can be put forward to be harnessed to overcome similar problems in the future. V-MIIEEx 2022 is one of these platforms which contribute relevant ideas that could help communities of all walks of life cope with this pandemic.

UiTM has identified research, innovation, and commercialization to be among the core components and strategic effort towards becoming a well-known and prominent university. Aside from realizing this goal, with these components and efforts, fostering the development of knowledge, generating financial stability of the university, and producing knowledgeable academicians are also potentially achievable.

By having invention and innovation competition yearly, UiTM Cawangan Melaka is confident that it could further enhance creative and innovative abilities among staff and students. In support of the government notion which upholds the importance of innovation, UiTM Cawangan Melaka has taken the initiative of organising the Virtual Melaka International Intellectual Exposition (V-MIIEEx).

In instigating and nurturing the continuous culture of inventing and innovating, this event is an ideal platform for lecturers, administrative staff, students, and the public to showcase and commercialize their products or prototypes as well as novel ideas. The first IID which was held nationally in UiTM Cawangan Melaka in 2009, has successfully gathered and displayed more than 37 inventions and innovations. Accordingly, to continue this strong passion towards inventing and innovating, the IID competition should be continued and celebrated.

With that, the Division of Research and Industrial Linkages will be organising its 12th IID competition, the Virtual - Melaka International Intellectual Exposition (V-MIIEEx 2022) with the theme, 'Road To Commercialisation'. V-MIIEEx 2022 hopes to welcome 200 competing products to be showcased and commercialized, at the same time, attract attention of related and matching industry.

## Objectives

1. Encourage and instill 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 skillful 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.

## **StraWella**

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### **Abstract**

According to National Geographic, one estimate suggests 500 million straws are used every day in the United States alone while in Malaysia, studies show about 30 million straws are used every day. The most obvious issue regarding straws is when the straws could have ended up in the wrong passageway and gotten lodged in the reptile's nostril. Those straws have contributed to the 5.25 trillion pieces of marine trash that have ended up in the ocean. Because plastic straw has brought a lot of harm to the environment, we are here with new ideas by bringing up three types of straws which are metal, paper and corn-starch straw as an effort to protect and maintain a healthy and clean environment for humans and animals in this world. Human behavior that often causes damage to nature will not run from making mistakes. However, awareness is also important to spread to as many people as possible so that this problem can be resolved quickly. StraWella is a combination of three types of straw that we can use without worrying about waste that is disposed improperly. The main concern of making this type of straw is that the material can be reused, recyclable and durable without polluting the environment.

Keywords: straw, metal, paper, corn-starch straws, environmentally friendly

### **1. INTRODUCTION**

In Malaysia, sea turtles are either endangered or critically endangered. According to the World Wide Fund for Nature Malaysia, the leatherback turtle population in Malaysia has decreased by more than 99 percent since the 1960s, while the olive ridley turtle population has decreased by more than 95 percent. Green turtle numbers in Terengganu, Malaysia's east coast state, and Sarawak, Malaysia's east coast state, have declined dramatically since 1970. Marine turtles are dying because they mistake floating plastic bags for jellyfish and swallow them. Straws also contribute to the issue by either following the same course as eaten conventional plastic or becoming lodged in a sea turtle's nose. In any case, this sea species will perish. Gut impaction and perforation are likely outcomes for sea turtles, since it is believed that more than half of all sea turtles have eaten plastic at some time in their lives. Through improper disposal, a straw made of plastic can end up in a lake or ocean, causing devastating effects on ecosystems and marine life. This is where metal, paper, and corn-starch straws were introduced. Which is that it will reduce plastic waste output and prevent what would otherwise be another piece of toxic plastic from entering the environment.

### **2. OBJECTIVE**

StraWella is invented to fulfill certain objectives which are to provide highly durable, reusable and recyclable straws as well as to eliminate the use of single-use plastic straws that are very harmful to the environment. It helps to protect the environment and protect endangered animals such as turtles that are negatively impacted by human activities. Other than that, StraWella is also invented to provide high-quality degradable straws that can be decomposed easily.

### **3. NOVELTY**

The three types of straws material that we want to introduce are metal, paper and corn-starch. Metal is stainless steel which is corrosion resistant where the metal stands strong against corrosion, rust and water stains thus it makes no worries to customers for hot and cold water because it is resistant to temperature of the water fill in. The second one is paper straw which has a specialty where it is biodegradable and it can completely decompose unlike plastic straws that took 200 years to be disposed of. We used high grade paper that won't have papery taste and can be recycled as well. Lastly, the third type of straw is corn-starch straw which is made from PLA, a bioplastic with cornstarch base. It is a sustainable natural resource without petroleum chemicals and for sure it is safe for consumers to use it. Cornstarch straws are bi-compostable and do not release any toxic gasses.

### **4. PRACTICALITY AND USEFULNESS**

StraWella is very suitable for all walks of life. As for the stainless-steel straw, it can be reused many times and it is very suitable for the youngsters that love to use straws while drinking. Paper and starch straw are very suitable for the old folks as most of them have difficulties using any hard straw in their mouth. Especially the starch straws, as it surprisingly can be chewed by the consumers. These kinds of straws also can be used in any occasion, event or any place. Whether at the restaurants, or cafes, it will be very convenient if customers bring their own straws to drink their beverages, as a lot of restaurants and cafes are not using any straws in order to prevent the plastic straws usage. These straws are also very easy to bring and use as the sizes are small and portable. This invention is also very eco-friendly as it can be degradable, reused and recycled.

### **5. CONCLUSION**

StraWella is seen to have great potential and eco-friendly value to be marketed globally. The product can easily market globally as most people are concerned about the longevity and survival of the earth and some countries have actually banned the use of single-use plastic. Strawella can help to save the environment and reduce the single-use of plastic that can potentially harm the environment. Therefore, the usage of StraWella can have a positive impact on the environment as well as the sustainability of the earth.

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