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Sustainability

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ABOUT THE MAGAZINE

RISE Magazine is published by Office of the Deputy Vice-Chancellor (Research and Innovation) with aims to highlight a research and innovation on multidisciplinary expert of fields in UiTM. It serves as a platform for researcher to showcase their high quality and impactful findings, activities and innovative solution through publication. Contribution of these ideas come from academicians, researchers, graduates and universities professionals who will enhance the visibility of research and stride to elevate Universiti Teknologi MARA to global standards. This is an effort to promote research as a culture that is accepted by all expertise.

ABOUT UiTM

Universiti Teknologi MARA (UiTM) is a public university based primarily in Shah Alam, Malaysia. It has grown into the largest institution of higher education in Malaysia as measured by physical infrastructure, faculty and staff, and student enrollment. UiTM is the largest public university in Malaysia with numerous campuses throughout all 13 states in Malaysia. There is a mixture of research, coursework and programmes offered to the students. Office of the Deputy Vice-Chancellor (Research and Innovation) or known as TNCPI (*Timbalan Naib Canselor (Penyelidikan dan Inovasi)*) serves as a *Pusat Tanggungjawab* (PTJ) navigate the research and innovation of university in achieving UiTM agenda. TNCPI office strives to mobilize faculty, and campuses to move together and cooperation of researchers to become a leading global university of science, technology, and innovation by 2025.

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FOREWORD

Bismillahirrahmanirrahim.

Alhamdulillah, all praises to Allah SWT and a heartfelt congratulations to the Office of Deputy Vice-Chancellor (Research and Innovation) on the publication of RISE Magazine (October Issue, No. 2) in promoting visibility for UiTM's research and its researchers.

I am thrilled to have witnessed a growing number of article publications and research innovations endeavoured by our fellow researchers. Thank you for all the effort, time, and energy that you have selflessly spent for the university.

The sustainability theme chosen for this edition is wise, apt, and timely. While striving to become a Globally Renowned University (GRU) and attaining Sustainable Development Goals (SDGs), we must ensure that our research activities are in line with the 17 goals set by the United Nations (UN) as well as the university's strategic plan.

UiTM is proud with the progressive development of renewable energy and currently 7 campuses are equipped with solar photovoltaic rooftops. This supports Malaysia's noble cause of becoming a carbon-neutral nation by 2050. Green Retrofit Framework for Sustainable Residential Refurbishment Project was also initiated with

plausible effectiveness to increase the number of green buildings and eventually will help reduce the emission of Green House Gases (GHG).

Our researchers have also begun to use Green Polysaccharides material for wound healing which is greener and environmentally benign. Other noteworthy projects are the use of Resistograph to assess the accuracy of Wood Density (WD) prediction, the application of 3D printing technology in simulating real experiences of halal animal slaughtering, as well as lipid reduction via systematic screening to make our planet more sustainable.

I am delighted with the research ambience that has now become an acceptable culture in UiTM. GRU2025 is definitely achievable with continuous effort and dedication made by members of UiTM as we work towards helping the nation and the world to achieving SDGs by 2030.

Thank you.

PROFESSOR DATUK TS. DR HAJAH ROZIAH MOHD JANOR
Vice-Chancellor
Universiti Teknologi MARA



FOREWORD

Congratulations to the editorial team on the publication of RISE magazine Issue 2, 2022, serving as a platform to showcase our pride in UiTM research and innovations.

We chose *Sustainability* as the theme for this edition. Despite its definition that may be contextual and vary across the field, we can't deny its essence and impacts on our daily life, and that every one of us should gracefully embrace.

Under this umbrella, we have witnessed an array of projects carried out by UiTM researches in various genres of research, driven to help the community in the short and long run. Flipping each page of this magazine and seeing how far we have become as a university sends unflagging goosebumps- signaling how proud I am to be part of this huge family.

Research has no longer been alien to us. We could see that the propagated activities in the quest of finding answers to problems have mushroomed over the years. It has become somewhat the bread and butter of academics other than teaching and learning. Its role has been significantly proven to elevate teaching community to a better level.

TNCPI Office seeks continuous support from every researcher, academician, and administrator to keep your momentum in doing research and innovations. Perhaps, through a stronger research ecosystem, this will help us to become a Globally Renowned University by 2025. We will keep providing supports, rewards and facilities needed in boosting the morale of our researchers.

Lastly, I hope RISE can be the front page of UiTM exhibiting the business that we are doing. Every time you go for a conference or any meeting with potential collaborators, please share RISE with them. We never know how much opportunities that will come knocking our doors just from that gesture.

Thank You.

PROFESSOR TS. DR NORAZAH ABD RAHMAN

Deputy Vice-Chancellor (Research & Innovation)
Universiti Teknologi MARA

MESSAGE FROM THE CHIEF EDITOR

Alhamdulillah

It gives me great pleasure to see RISE issue # II published. We have received a huge number of impactful submissions to be featured as our #KeluargaUiTM's research stories. Despite the difficult circumstances of post-covid19, UiTM researchers are proactive in carrying out research activities and events within their respective capacities.

Allow me to express my heartfelt gratitude to all of the authors of the articles in this magazine. Not to forget all editorial members who worked hard to ensure its publication was on schedule. The publication of this issue would have been far more difficult to achieve without their contributions. In this edition, we feature seven researchers from both science and technology and social sciences disciplines with their views and experiences in sustainability-related research and their efforts for mobilising sustainable development. Also, RISE II presents the achievements of the multidisciplinary domains by distinguished UiTM research groups.



I believe that sustainability should be the nucleus of any research agenda. Prominent researchers around the world are focusing on the call to address global livelihood and wellbeing. Hence, we at UiTM should embed and embrace the principles of Sustainable Development Goals in our research efforts.

To all researchers out there, we hope that the amazing stories in RISE II will rekindle our enthusiasm for research. We sincerely hope to bring you more research news from the #keluargaUiTM in the coming issues. I invite you to discover RISE II and be inspired. Enjoy reading!

ASSOC. PROF. DR MOHD MUZAMIR MAHAT

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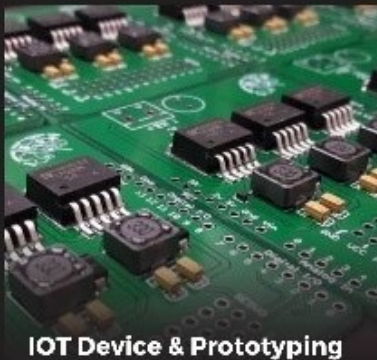
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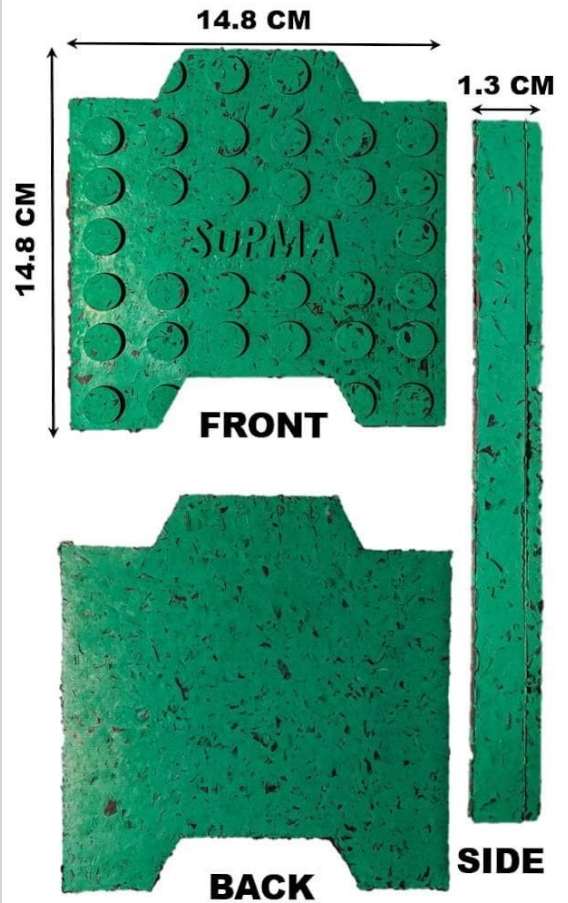
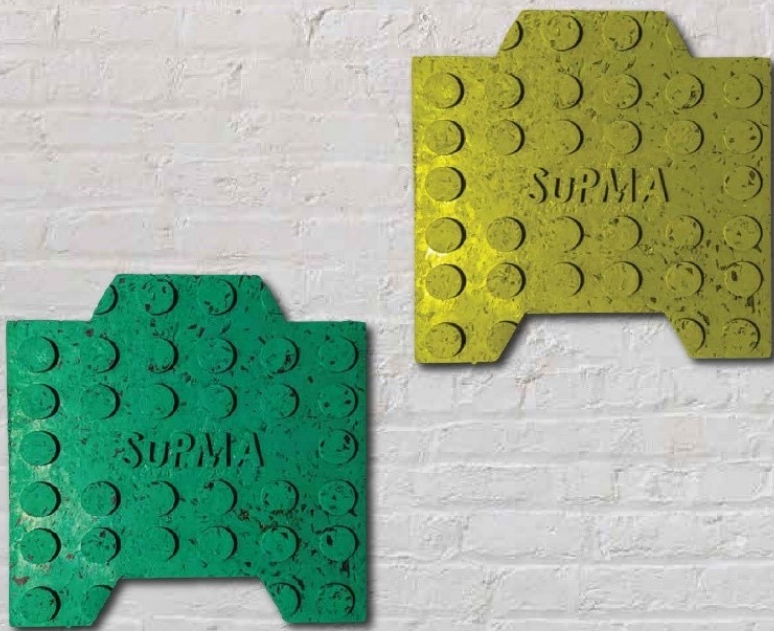
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Issue and Challenges of Completing an International Research Grant:

A reflection of the project on Food Security and Sustainability

The research project has brought me to Japan to conduct the research whilst providing me with new experiences in a distant environment. In highlighting the experiences, I was exposed to adapting to new social skills in new cultures, building self-confidence, and maintaining relationships in various social and work environments. Despite the success of the project and the new things I learned along the way, it all came with many challenges, and one of them was the language barrier, which I personally considered the toughest to overcome. To deal with the issue, I had to hire a translator, especially to help me with the data collection. Overcoming all odds, I made friends with a Japanese person who helped me with my research. With her assistance, my research progressed with fewer problems, particularly during the data collection process that required me to conduct interviews with farmers in the rural parts of Japan. Revisiting such an experience, I had very little expectation that the farmers would tolerate my presence on their farms, knowing the fact that I am a researcher, an academic, and worst still, a stranger from a foreign land. However, with the help of a local friend who partakes in the data collection process, the determination I had to complete the study, and the social skills I learned along the way, the research went on well and successfully.



Assoc. Prof. Ts. Dr Abdul Rahman Salli
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The experience I have gained over the years in research writings and projects has earned me enough credit to be appointed as one of the Associate Professors at Universiti Teknologi MARA, Sarawak Campus. Such experiences were built on my interest in agribusiness and agriculture sustainability – two sub-areas in agriculture that I perceive as my research forte. With a strong research background and determination to explore further, I applied for the Sumitomo Foundation Grant, the first international grant under my belt, and succeeded on the first attempt. I am so blessed to have acquired the grant for the proposed project on Food Security and Sustainability: Exploring Malaysian and Japanese Youth Participation in Agriculture, which was completed successfully.



In highlighting the research project, it focuses on exploring the participation of youth in agriculture in both countries—Malaysia and Japan. The findings revealed that in the Malaysian context, the majority of the participants claimed that they were involved in agriculture to primarily earn their living whilst fulfilling their passion for agriculture. Another finding highlights the role of family support, which had been providing them a better understanding of their roles and responsibilities, while family coaching helped them to significantly improve their knowledge through experiences, attitudes, and skills. The majority of participants agreed that they needed to work hard to earn a good living from their agricultural activities. Therefore, the economic factor in terms of good income generation is another pivotal factor for them to strive for the best.

In Japan, all participants indicated that their main reason for being involved in agriculture is to sustain their livelihood, and they considered farming as something that they are passionate about. Family support and socioeconomic factors are important ways to earn income and provide support to your family. Other factors such as family tradition and working environment had a significant impact on their decision to be in the industry. It was also found that if the current youth farmers can prove themselves to be successful in the agricultural industry, more youth will be attracted to participate and dwell in the industry.

However, there are barriers and challenges faced by the participating farmers in Malaysia and Japan. They have to deal with high production and operating costs such as machinery and technologies. The participants also claimed that they are vulnerable to dealing with natural risks such as floods, typhoons, climate change, plant diseases, and pests, which are variables beyond their control.

Based on the findings above, it can be asserted that the psychological factor also plays a pivotal role in sustaining the involvement of young farmers in the agricultural environment. In this context, the farmer's motivation was induced by both internal factors (e.g., passion, family tradition, and socioeconomic) and external factors (e.g., family support, working environment, and mentoring and coaching). Moreover, all participants highlighted that these factors affect the way they perceive, think, or behave toward the agricultural sector, making them attracted to the agricultural business environment. In essence, the findings become an instrument to map the comparison between those who are interested in agriculture and those who are not in the industry, while providing the government and private sectors a glimpse of ideas to formulate an action plan to engage these youths into the agriculture sector.



The research project is completed successfully, and now I am focusing on another international research project entitled A Comparative Study of Smart Farming Adoption Among Farmers in Malaysia and France. I hope this new research project will enhance my research skills and make me a sound researcher. Pursuing a career in research and academia can be daunting at the same time. Regardless of one's field, it can be highly competitive, with challenges at every stage. This includes the uncertainty of grants and fellowships, maintaining work-life balance, and publishing in high-impact journals. To uphold my motivation, the following quote serves as the source of motivation that I am keen to share; "Believe in yourself and all that you are. Know that there is something inside you that is greater than any obstacle." —Christopher D. Larson





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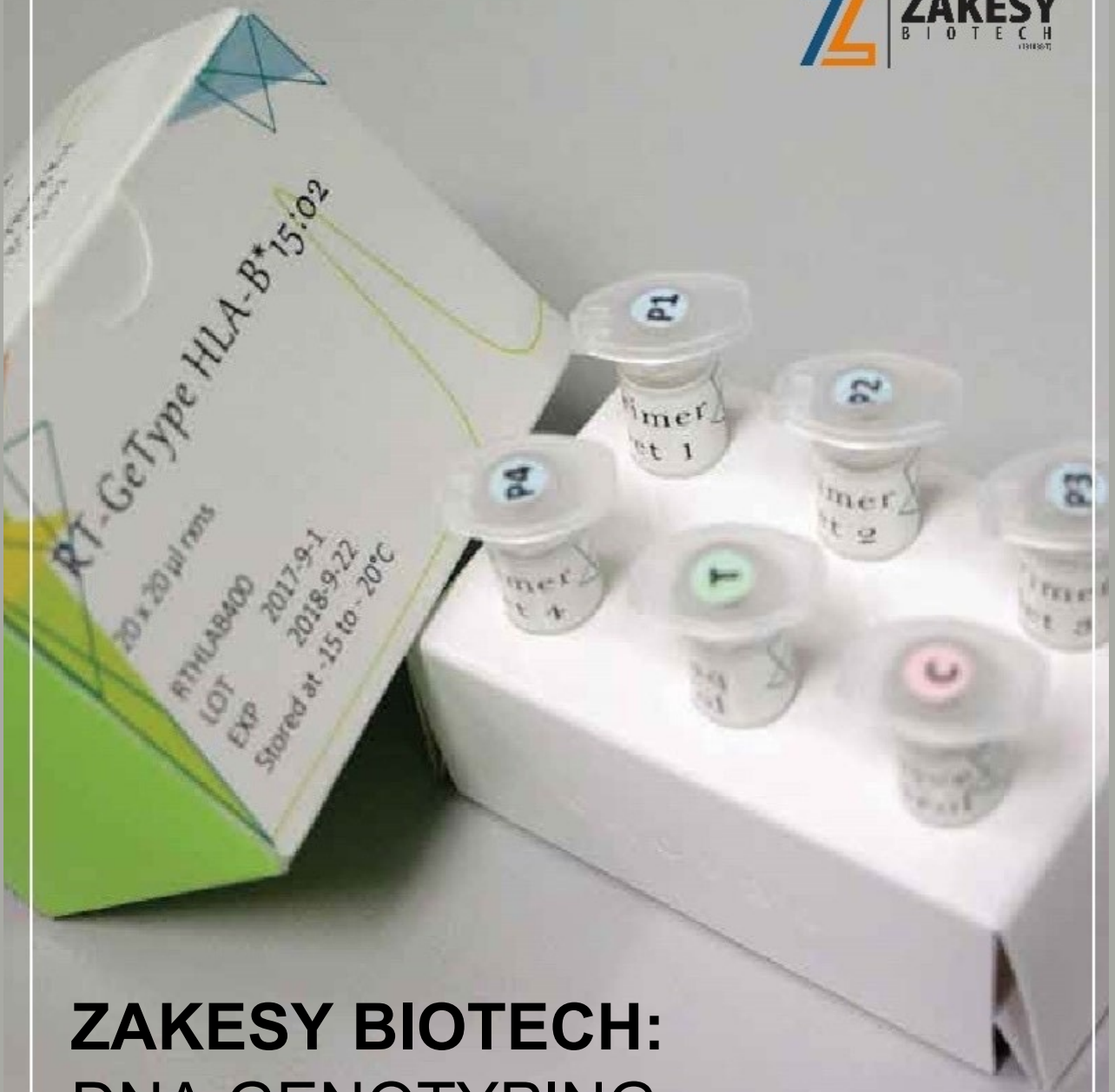
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