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MARA

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RISE

Catalysing Global Research Excellence

Go Green for Our Future
Innovation, Transformation &
Sustainability

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Shaping the Future**



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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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In our interview with Professor Ts Dr Mohd Nazip Suratman, we gained greater perspectives on sustainability, facing challenges in conducting research and rising above them, and insights to a prosperous future in the field of forest management. "Sustainability refers to the ability for us to maintain and sustain natural resources so that the future generation can also enjoy the resources. In my area of specialisation, the goal is sustainable forest management. This refers to the ability for the present generation to enjoy a certain amount of harvests, while at the same time being able to avoid the destruction of natural resources, so that the produce and harvests can be maintained to be enjoyed by the future generation. The important question is: what can we do to enable the future generation to enjoy the produce or the harvest at our current rate of use of resources? We are borrowing our earth from our grandchildren."

As a prolific researcher with more than 30 years experience at national and international level, Professor Mohd Nazip has explored and ventured into uncharted territories. Every journey offered various sets of challenges and he rose above them every time. He commented on the importance of having systematic studies when conducting research. Furthermore, temporal aspects of execution of policies should not be undermined. "Policies take time to incorporate findings from studies. There are differences between how things are in policies, and how they actually are in the field," he commented based on his observations and experience. "Passion is important - be passionate about sustainability conservation," Professor Mohd Nazip added when asked about ways to overcome challenges in conducting research.

Expressing his confidence on the sustainability of his research field, he highlighted the importance of aligning the research with the global agenda. An important step taken in UiTM is establishing the Institute for Biodiversity & Sustainable Development, which was timely to focus on biodiversity and diversity. "Sustainability, climate change, biodiversity laws - they impact various disciplines, and scientists. Therefore, everyone has to work together. Joint efforts are needed."

In terms of progress in the field of sustainability in the next twenty years, Professor Mohd Nazip anticipates that the field of sustainability in UiTM has to expand, with greater focus and more comprehensive in character. He views that UiTM has a bright future in sustainability, citing examples such as numerous research on Taman Negara, and an academic course offered to the undergraduate students - Bachelor of Science (Hons) in Biodiversity Management that offers targeted learning on biological diversity.

"Impact ranking is a goalpost on research standards and achievements. We are tracking the path to be in keeping with other international universities," Professor Mohd Nazip shared his view on research progress and being an international player in the research field. With regards to the United Nations Sustainable Development Goals (SDGs), he views the SDGs as shared ideals and should bring everyone to the question on how to achieve the 2030 goals - as "our earth is a beautiful planet to live" he pointed.

"Sustainability: A Balancing Act Between Conservation and Development"



Professor Mohd Nazip aptly spoke about the importance to be steadfast with the requirements that need to be complied with, in order to protect the earth and its resources. "With the advancement of technology, the data will not lie. The research is here to stay. Be alert, as the world is watching. There are important obligations and commitments, such as from Kyoto Protocol & REDD+ (Reducing Emissions from Deforestation and Forest Degradation from Developing Countries). SDGs give the right signal to reduce carbon emission - leading to a better planet," he remarked and demonstrated his care and compassion to the fate of the environment while remaining hopeful.

As for his final remarks to the aspiring researchers - "to be a good teacher, you have to be a good researcher. Conduct your teaching activities based on research," he concluded.

Researcher:

Professor Ts. Dr Mohd Nazip Suratman

Professor of Forestry at the Faculty of Applied Science
Associate Fellow at the Institute of Biodiversity and Sustainable Development
Universiti Teknologi MARA

SMART DATA LOGGER FOR PH-CP REMOTE MONITORING SYSTEM



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SAGA INTERNET OF THINGS (IOT) GATEWAY SYSTEM



IOT in Agriculture



IOT in Aquaculture



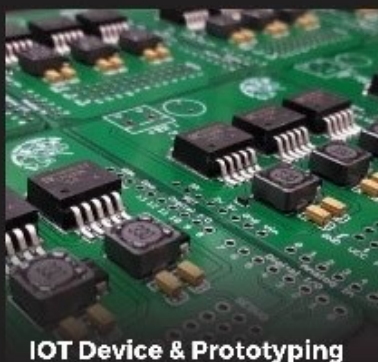
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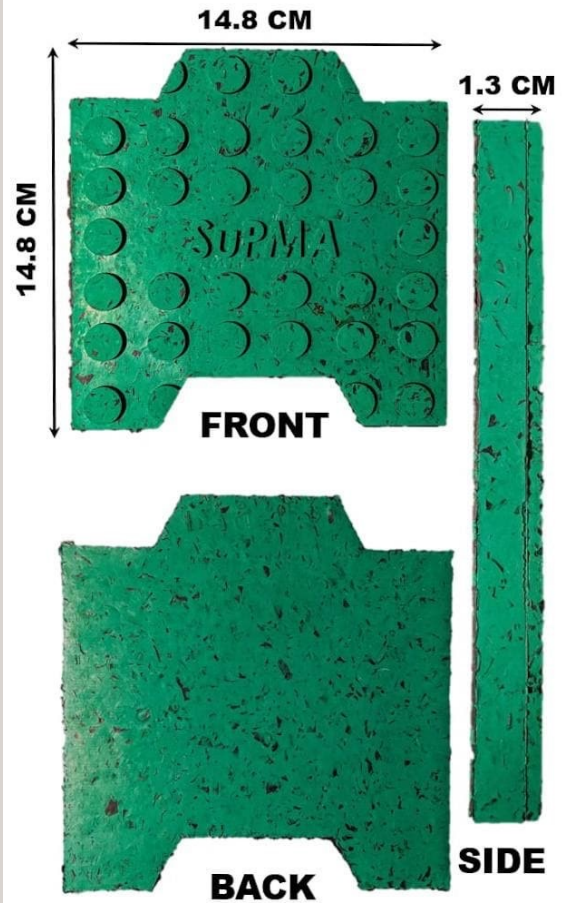
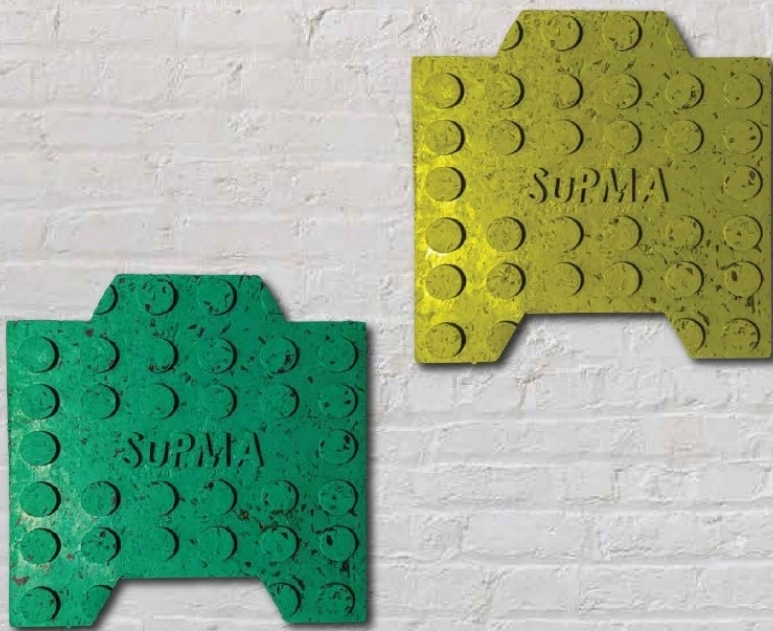
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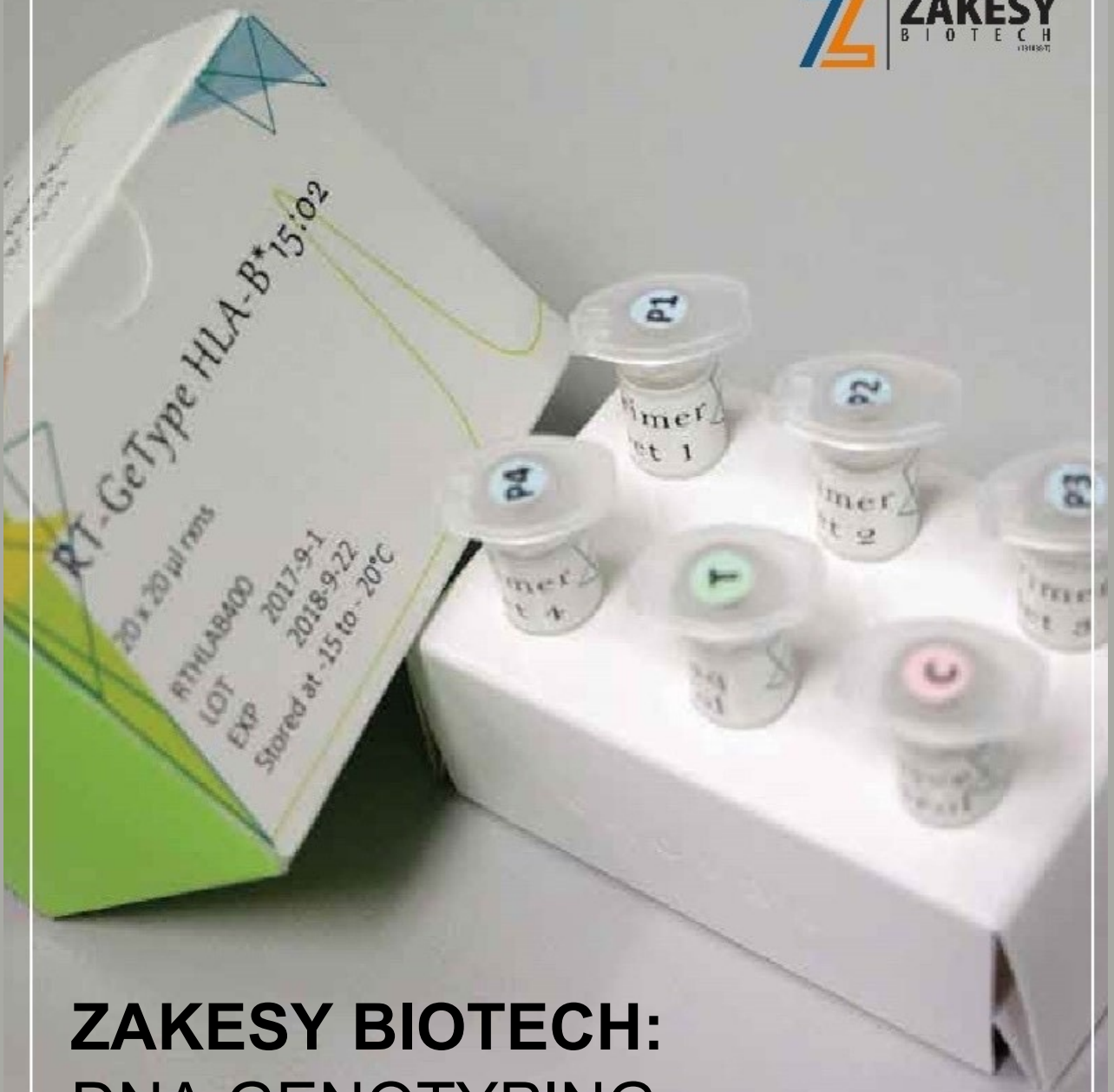
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