



UNIVERSITI
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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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**Unleashing Potentials
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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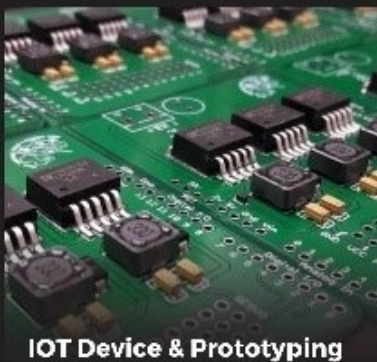
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'Building a Healthy Nation via Precision Health at Integrative Pharmacogenomics Institute (iPROMISE)'

Precision Health leverages cutting-edge technologies to develop treatment and prevention strategies tailored to an individual's genetic makeup, environment, and lifestyle. Precision Health focuses on prediction, prevention, and precisely treatment of disease using individualized health strategies. They are that aligned with the vision and mission of ensuring that all individuals maintain good health and, as a result, our consequently productivity of the local population and longevity.

At iPROMISE UiTM, we apply the cutting-edge omics related skills and knowledge to develop advanced bioinformatics pipelines and genotype-phenotype database. These are carried out to help realise the implementation of Precision Health in our communities to help sustain and make our communities resilient. We were involved in a National Surveillance Program to sequence SARs-COV-2 virus, the latter is known to have caused huge impacts on the health of the populations, as well as the economy of various countries. We also believe that the adoption of Precision Health is critical in our fight against COVID-19 and other communicable and non-communicable diseases. Winning the war against COVID-19 will be easier when the immunity status of the *Rakyat* is known. As the immunity of an individual is governed by his / her genetics, having the personal genome profile of an individual will help predict risk[s] of contracting COVID-19, the extent of severity of the contracted disease; as well as, possible response of the individual towards vaccine, and treatment. This will allow the doctors to strategise and personalized treatment to unfortunate individuals who might be infected with COVID-19. Lesson ought to be learnt in terms of our proactiveness to prepare our country to face similar challenges that may occur in the future. Having the genome database of our own *Rakyat* is therefore an important strategy, to protect the nation from unforeseen future diseases.

With the advancement of technologies and applications of big data in Industrial Revolution 4.0., there is a big wave of global efforts to make healthcare affordable, accessible and targeted. More rapid and accurate prediction of disease risks allows targeted preventive strategies to avoid high disease burden in the country and to build a sustainable economy and population. As prevention is better than cure in the long run, transformation of Malaysia healthcare system which incorporates genomics medicine is inevitable. We have partnered with healthcare industries to deliver precision health to the communities in achieving resilient communities.



Researcher:
Prof. Dato' Dr Mohd Zaki Salleh
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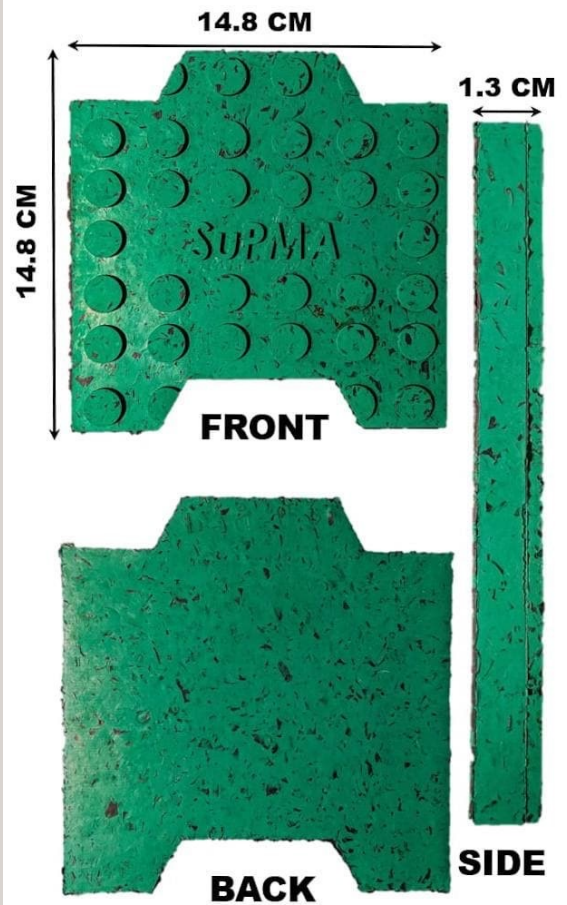
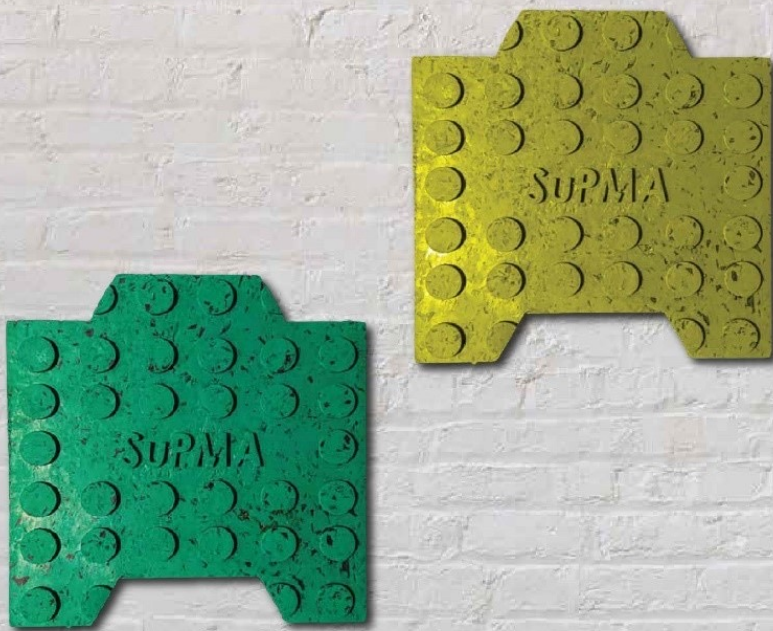
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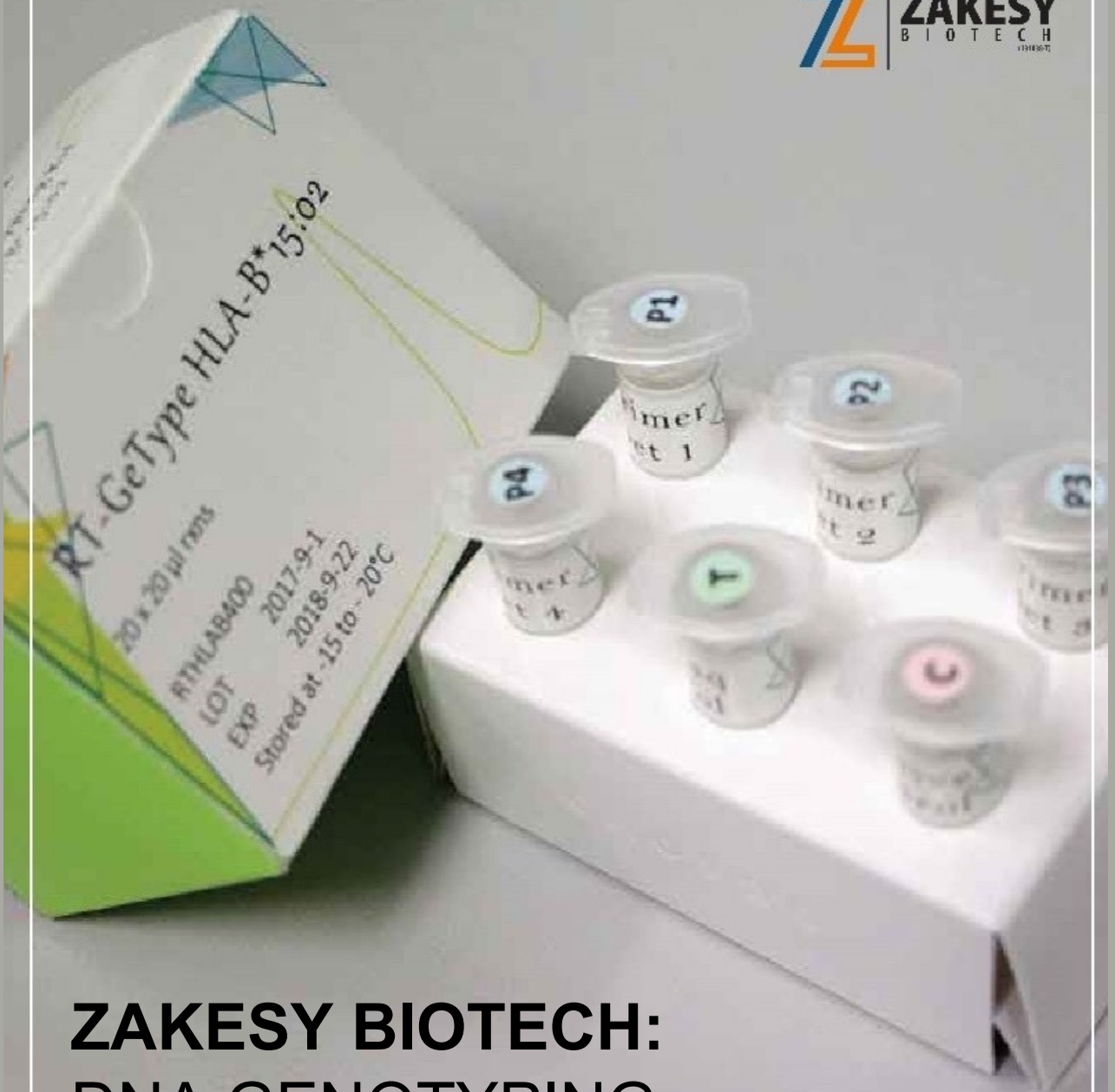
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