

# RISE

*Catalysing Global Research Excellence*

## *Robotics Technology:* Driving Innovation, Transforming Future

**ReNeU's 1<sup>st</sup>  
Anniversary**  
Galvanising Research Excellence

**UiTM's Global Effort  
in Training Young Aspiring  
Neuroscientists**



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*Unleashing Potentials  
Shaping the Future*



# RISE

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## ABOUT THE MAGAZINE

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RISE Magazine is published by Office of the Deputy Vice-Chancellor (Research & Innovation) with the aim of highlighting the research and innovation on of experts from multidisciplinary 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 strive to elevate Universiti Teknologi MARA to global standards. This is an effort to promote research as a culture that should be embraced by everyone.

## ABOUT UiTM

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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 & Innovation) or known as TNCPI (*Timbalan Naib Canselor (Penyelidikan & Inovasi)*) serves a *Pusat Tanggungjawab (PTJ)* that navigates the research and innovation of university in achieving UiTM agenda. TNCPI office strives to mobilise the faculties, and campuses to move together and promotes cooperation among researchers in bringin UiTM as a leading global university of science, technology, and innovation by 2025.



# EDITORIAL TEAM

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# FOREWORD

## VICE-CHANCELLOR



To excel globally, research must be weighed in as a key factor to navigate the university's direction in making an impact. This is especially when focusing on translational research where society can benefit greatly from its findings.

Congratulations to the Office of the Deputy Vice-Chancellor (Research and Innovation) on the publication of this magazine, aptly called RISE. I am pleased to see that the COVID-19 pandemic has not dampened UiTM researchers' pursuit of their dreams. The contents of these pages allow active research and innovation activities be shared with our stakeholders, local and international collaborators.

As UiTM aspires to be a world-renowned university by 2025, I believe that our current research practises are on track. For example, the featured article in the magazine highlights the key success of robotic technology ventured by our researcher, Associate Professor Dr Hanafiah Yussof, who formed a start-up company to advance robotic technology in Malaysia. His contribution to the robotics industry, the Robot Rehabilitation System for Autism Therapy, is an example of innovation that can transform the future.

In our pursuit of changing the future, we at UiTM are cognisant of the current and future direction of research to facilitate research from different disciplines. We have researchers using drones for pineapple plantations, exploring hybrid rockets with Equatorial Space System (ESS), and researching sanitation, collection, and sewage/wastewater treatment systems with Indah Water Konsortium (IWK) Sdn Bhd, to name a few of the work we have been actively involved in.

Hence, we will continue to contribute and make progress associated with processes and knowledge pivotal for impactful research, especially in developing knowledge-based technology that benefit society.

Ultimately, I am confident that the publication of this magazine will further strengthen the visibility of UiTM research and innovation.

Thank you.

**PROFESSOR Ts. DR HAJAH ROZIAH MOHD JANOR**

Vice-Chancellor

Universiti Teknologi MARA

# FOREWORD

DEPUTY VICE-CHANCELLOR (RESEARCH & INNOVATION)



I would like to congratulate the editorial team on the release of RISE, a research magazine highlighting our research and innovation efforts and accomplishments. The magazine exemplifies our office's synergistic and collaborative efforts, as well as those of our researchers and article contributors, to advance the visibility agenda.

As the office in charge of research and innovation, we are constantly hoping that every research result and invention will benefit the community through translational research. Assoc. Prof. Dr Hanafiah Yussof's Robot Rehabilitation System for Autism Therapy, for example, has aided the autism community in improving communication. Even more proud that this endeavour resulted in the formation of a start-up company.

Despite the COVID-19 pandemic, UiTM researchers continued to conduct relevant research activities despite the uncertainty. The scale of the events varies from a small effort to install solar panels at a rural school and organise virtual conferences to the use of drones and precision agriculture technology on pineapple plantations. Notably, a Bioextreem solution capable of inhibiting 99.99 percent of bacteria and viruses was also developed.

With these accomplishments, we will continue to support research efforts, particularly those aimed at developing knowledge-based technology with a social benefit in mind.

Finally, I believe that this magazine can serve as a platform for the visibility agenda by incorporating a wide range of science and research perspective, fostering more potential collaboration between UiTM researchers and local and international institutions and industries.

Thank you.

**PROFESSOR Ts. DR MOHD NAZIP SURATMAN**

Deputy Vice-Chancellor (Research & Innovation)

Universiti Teknologi MARA



# MESSAGE

## FROM THE CHIEF EDITOR



Alhamdulillah.

It gives me great pleasure to see this issue published. We received a massive and impactful submission to feature our UiTM community's research stories. Despite the difficult circumstances, 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. The publication of this issue would have been far more difficult to achieve without their contributions. Here, we feature Assoc. Prof. Dr Hanafiah Yussof of the College of Engineering's beautiful journey into robotic technology. I believe that robotics has always been on the national agenda for its true mission in helping people. We chose to focus on robotics to honour a UiTM researcher who has dedicated his academic

career to assisting society through technological advancements. To all researchers out there, we hope that his inspiring journey will rekindle our enthusiasm for research.

The inaugural issue of the RISE magazine also features research achievements and the multidisciplinary research areas in UiTM which support national priorities. Research Nexus UiTM (ReNeU) celebrates its first anniversary in 2021, marking a major milestone in its journey. Faculty of Pharmacy is making a global impact towards producing young aspiring neuroscientists. The exploration of Lembah Benua has highlighted the wonderful forest as a potential research station. The potential of fine art logistic industry is also of utmost importance towards making Malaysia as a top art market hub. These are some of the exciting research stories and I invite you to discover more in this issue.

We sincerely hope to bring you more research news from the UiTM family in the coming issues. Have fun reading!

### **DR MOHD MUZAMIR MAHAT**

Head of Research Communication & Visibility Unit (UKPV)  
Office of Deputy Vice-Chancellor (Research & Innovation)  
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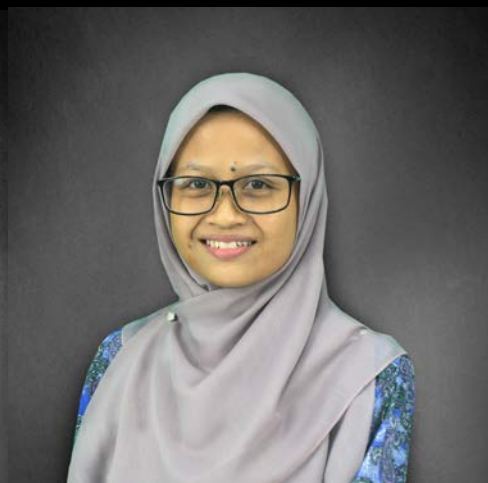
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Collaboration between NEXTGREEN Global and UiTM will strengthen UiTM cooperation with public listed company in zero waste technology and renewable energy for sustainable development



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# 07

Hutan Simpan Lembah Benum Exploration 2021



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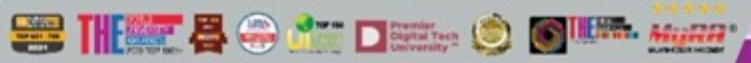
Faculty of Medicine  
Institute of Pathology, Laboratory & Forensic Medicine (I-PPerForM)  
and the Malaysian FH research team

on the successful publication in the flagship journal

**THE LANCET**

(Impact Factor: 79.321)

**Global perspective of familial hypercholesterolaemia:  
a cross-sectional study from the  
EAS Familial Hypercholesterolaemia  
Studies Collaboration (FHSC)**



## Achievements

# Congratulations

**Professor Dr Wong Tin Wui**

Faculty of Pharmacy &  
Smart Manufacturing Research Institute (SMRI)

Recipient of

**2021 TOP RESEARCH  
SCIENTISTS MALAYSIA (TRSM)**

(Precision Medicine: Precision Nanomedicine  
Design for Cancer and Diabetes)

from  
Deputy Vice-Chancellor (Research & Innovation)



# Congratulations

**Professor Dr Wong Tin Wui**

Integrative Pharmacogenomics Institute  
(IPROMISE)

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\*Source: PLoS Biol 18(10): e3000918. <https://doi.org/10.1371/journal.pbio.3000918>

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# NANO-ElecTronic (NET) Research Group

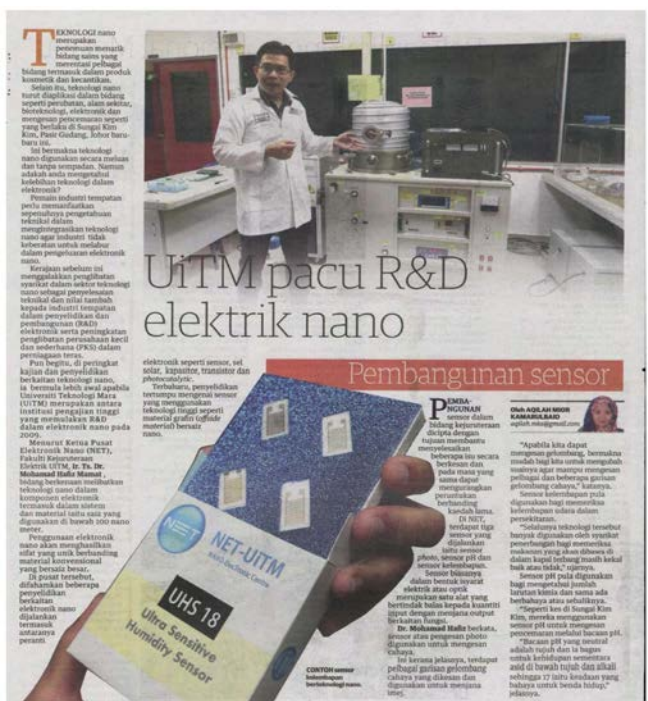
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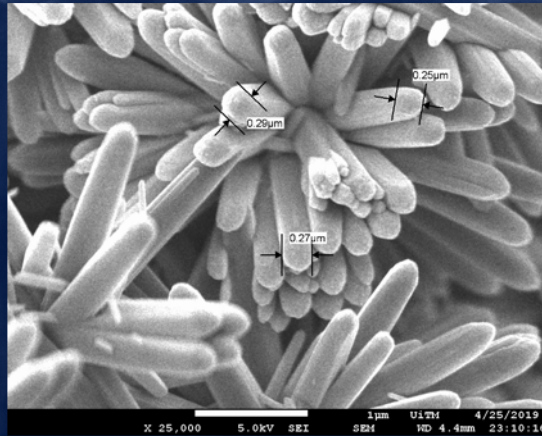
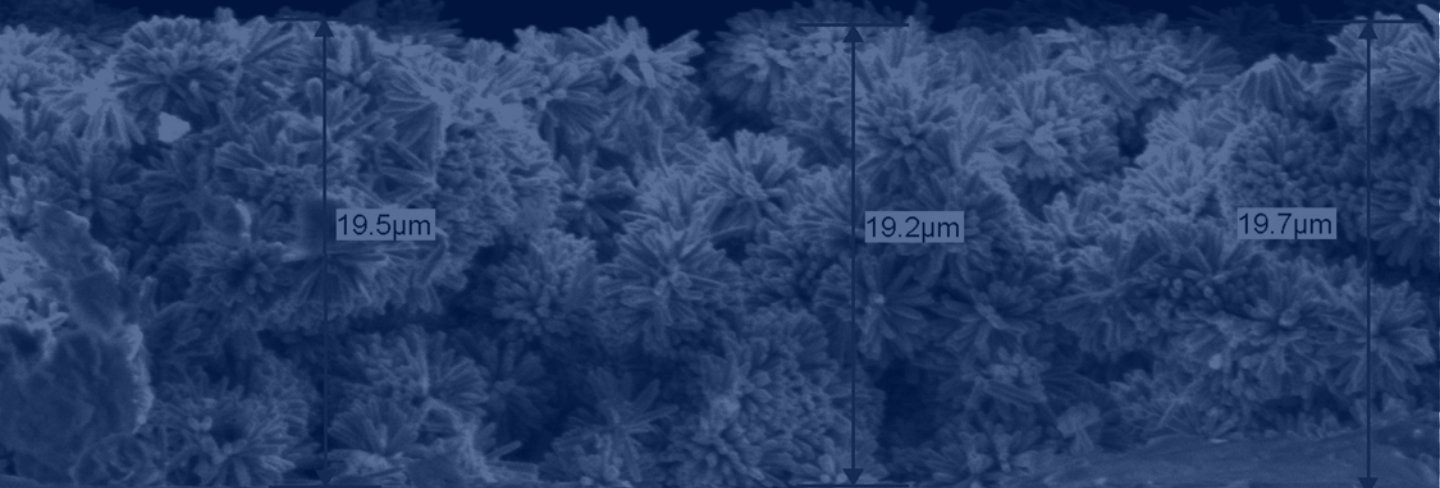
**T**he NANO-ElecTronic (NET) Research Group is one of the active research groups in the School of Electrical Engineering, College of Engineering, UiTM conducts nanotechnology-related research with high-end nanofabrication facilities. This research group is embarking on research related to the synthesis and deposition of electronic nanomaterials, the development and fabrication of nanodevices, and the characterization of nanomaterials and nanodevices. The research is extensively conducted by the staff, researchers, and students using various equipment, including RF/DC magnetron sputtering, electron-beam/thermal evaporation, Chemical Vapor Deposition (CVD), and electrochemical deposition systems.

X 30,000 5.0kV SEI 100nm UiTM SEM 2/2/2017 WD 6.0mm 12:22:38

The electronic nanomaterials are specially designed and developed to improve the nano device's performance based on their unique characteristics resulting from a nanosize of less than 100 nm. These unique characteristics are confirmed through numerous characterization techniques such as electron microscopy, current-voltage (I-V) measurement, ultraviolet-visible-near infrared (UV-Vis-NIR) spectroscopy, and impedance spectroscopy. Subsequently, the nanodevice performance is investigated through nanodevice measurement systems. Among the nanodevices developed at NET are humidity sensors, optical sensors, and solar cells. The group also received several awards in national and international innovation competitions, including the gold medal at MTE2020, MTE 2019, ITEX 2020, and PECIPTA 2019. The research group was also awarded several research grants from KPT and other agencies and has published over 500 research papers indexed in Scopus.







X 2,000      5.0kV SEI      10µm UTM      4/30/2019  
LM      WD 7.0mm      15:36:36

This block contains technical parameters for the SEM image above. It includes magnification (X 2,000), voltage (5.0kV), detector (SEI), scale bar (10µm), UTM, date (4/30/2019), mode (LM), and working distance (WD 7.0mm) with a timestamp (15:36:36).







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Dr Azri X His Student	Daus Husny	Fresh-Musky-Fruity	Unisex	NOT200703739K
My Subject	Organic Chemistry	Sweet-Fruity-Floral	Unisex	NOT200703741K
My Love	Ayla	Sweet-Vanilla-Chocolate	Unisex	NOT210900275K
Crush	Najla	Flowery-Musky	For Her	NOT200703738K

Founder,

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Dr Azri's Perfume



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# UiTM Research Strength Supporting National Priorities



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	02	Smart Manufacturing		02	Big Data & Data Analytics		02	Sick Care
	03	Plant and Process		03	Cyber Security		03	Rehabilitative Care
	04	Construction & Infrastructure		04	Robotics & AI		04	Genomics
		05		Smart Sensors	05		Non-Communicable Disease	
<b>Logistics and Transportation</b>	01	Transportation	<b>Energy &amp; Environment</b>	01	Water Security		<b>Social Creativity &amp; Innovation</b>	01
	02	Logistics & Halal-hub		02	Renewable Energy	02		Islamic Finance Fintech
	03	EV-AV,		03	Environment & Climate Change	03		Socio Innovation
	04	UAV, Aviation		04	Solar Technology	04		B40-Talent
		05		Biodiversity	05	Entrepreneurship & Artrepreneur		
		06		Food Security	06	Socio-Economic		

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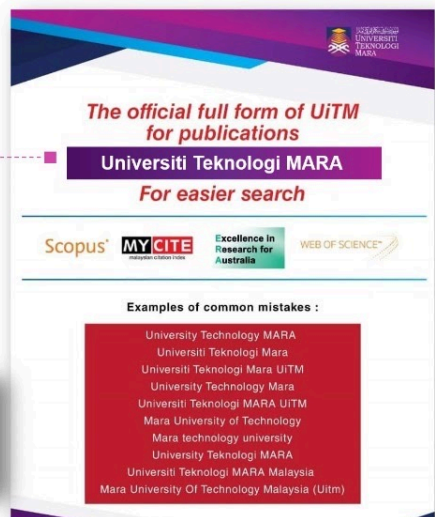
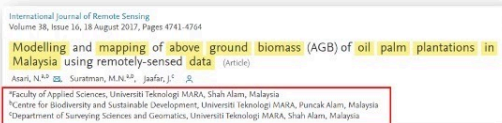




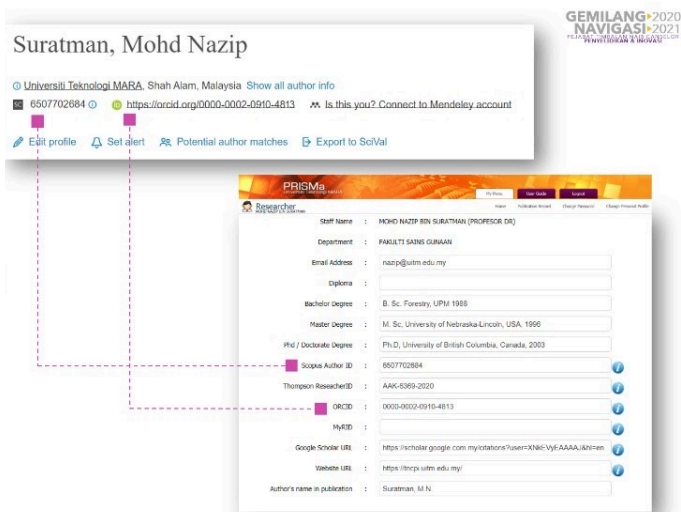
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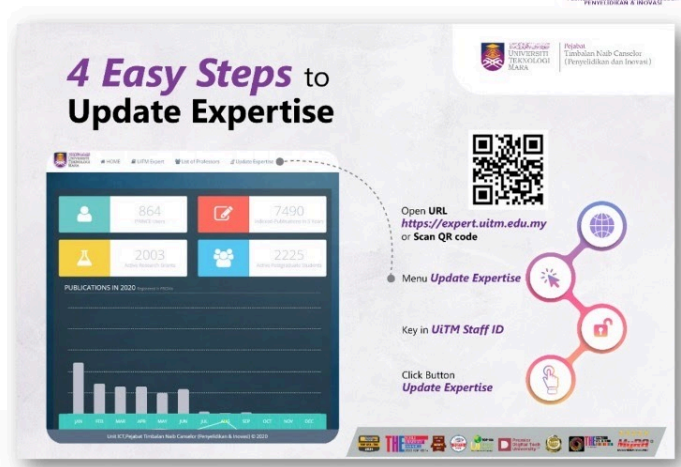
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*Addressing Public Health Concerns Through University-Industry  
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*Clove, Habbatus Sauda, Neem and COVID 19*

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*New Road-Side Speed Display Signs in Reducing Speeding Problem in Malaysia*

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*The Data is Talking to You. Are You Listening?*





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