

# RISE

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

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

**UiTM's Global Effort  
in Training Young Aspiring  
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# RISE

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## ABOUT THE MAGAZINE

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

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.



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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**

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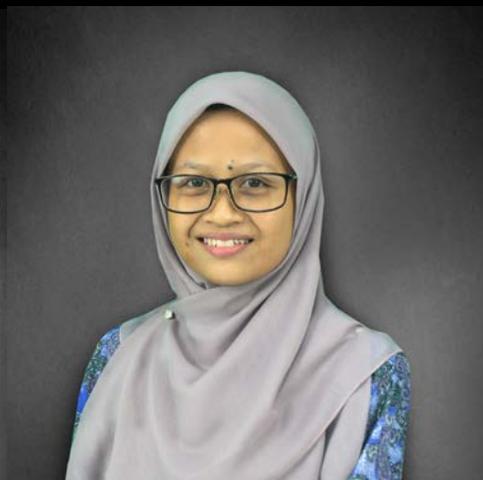
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# CONTENTS

NOVEMBER 2021

## FEATURE STORIES

Robotics Technology: Driving Innovation, Transforming Future	1
Hutan Simpan Lembah Benua Exploration 2021	7
Drone and Precision Agriculture Technology for Pineapple Plantation	9
A Project to Provide Solar-Powered Lighting Project to Rural Schools in Perak	10
Virtual Green Safe Cities Seminar (GRESA 2021)	12
Ads – UNNIZOL Hand Sanitizer	13
Good Bacteria That Lower Cholesterol: Myth or Truth?	15
MatE2U: Community Outreach by the Maternofetal and Embryo Research Group (MatE)	16
Nextgreen Global- UiTM Research Collaboration	17
IWK-UiTM Research Collaboration	18
Gait Recognition System for Mass Surveillance	19
Achievements	21
NANO-ElecTronic (NET) Research Group	22
Addressing Public Health Concerns Through University-industry Collaboration	24
Adaptive Strategies for Microbial Performance Through Optimization Approach	25
The Effectiveness of the ICQS Bukit Kayu Hitam and CIQ Sadao's 24-hour Operation	26
Green Event Research @ Borneo Jazz Festival	27
Ads – Dr Azri's Perfume	29

“

Collaboration between NEXTGREEN Global and UiTM will strengthen UiTM cooperation with public listed company in zero waste technology and renewable energy for sustainable development



”



17

Nextgreen Global- UiTM Research Collaboration

38

UiTM'S Global Effort in Training Young Aspiring Neuroscientists



# 42

High Energy Material Research Laboratory (HEMREL)



ReNeU's 1 <sup>st</sup> Anniversary – Galvanising Research Excellence	31
Potential of Fine Art Logistic Industry	33
Erasmus+ KA2: The Complexities of the Creation of a Validation Protocol for the Making4.0 Curriculum Between the Malaysian and European Education Systems	35
Clove, Habbatus Sauda, Neem and COVID-19	36
UiTM's Global Effort in Training Young Aspiring Neuroscientists	38
Ads - Paina (Pineapple Chili Sauce)	40
High Energy Material Research Laboratory (HEMREL)	42
Disruptions in Supply Chains and a Lesson from the COVID-19 Pandemic: A Retail Perspective	43
New Road-Side Speed Display Signs in Reducing Speeding Problem in Malaysia	45
The Data is Talking to You. Are You Listening?	46
Ads - UnaCoffee	48
Ads – RM Polypack Sdn Bhd	49



# 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**

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Smart Manufacturing Research Institute (SMRI)

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Design for Cancer and Diabetes)

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Deputy Vice-Chancellor (Research & Innovation)



# Congratulations

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





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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
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	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		

Area
  Sub-Area

# Clove, Habbatus Sauda, Neem and COVID-19

by Dr Che Puteh Osman and Dr Normala Abd Latip



**C**COVID-19 has claimed more than 3.7 million lives, with more than 174 million infections globally when this article is written. Malaysia is badly affected in this third wave of the COVID-19 pandemic, with nearly 2500 deaths reported from 1 May – 14 Jun 2021, averaging 60 deaths per day.

The healthcare system is overwhelmed, and many patients wait to get into the ICU units in hospitals throughout the country. With the number of infected people to be quarantined plummeting, the waiting time has increased. Some claimed they have to wait for seven days before they are sent to quarantine centres. This scenario subsequently increases the number of 'brought in dead' bodies to the hospital, where the patients die of COVID-19 when they arrive at the emergency rooms; either they were waiting to be admitted, or they did not realise they had contracted COVID-19 due to the high number of sporadic cases in the community.

Fear and fatigue due to pandemics can bring the best and the worst in people. Though well-meaning, some forwarded messages in mobile apps such as WhatsApp and Telegram, and social media such as Facebook and Instagram, are false and sometimes dangerous. Among the popular messages are the claims that Habbatus Sauda, clove, and neem leaves can cure COVID-19 infections. These plants found their way back into many centuries of traditional medicine and have been shown clinically to alleviate mild symptoms of several diseases, such as respiratory diseases.

Several clinical trials have shown that *Nigella Sativa* (Habbatus Sauda) alleviates cough, bronchitis, allergic rhinitis, and COPD. The antiviral activity of Habbatus Sauda has also been demonstrated against cytomegalovirus (CMV); avian influenza (H9N2); *Chistosoma mansoni* infection; Human Immunodeficiency Virus (HIV). However, there is no evidence that Habbatus Sauda can inhibit SARS-CoV-2, the virus that caused the COVID-19 pandemic. More studies on the precise mechanism of actions of Habbatus Sauda employing appropriate preclinical and clinical models would be essential toward the prevention and surveillance of COVID-19.

Certain active ingredients of Habbatus Sauda and its oil have also shown beneficial immunomodulatory effects by augmentation of immune responses related to T lymphocytes and natural killer cells. However, though Habbatus Sauda can be used to alleviate the symptoms, one must proceed with caution. Those with chronic diseases such as chronic kidney disease must not try herbal medicine, especially Habbatus Sauda, without clearance from their doctors.



Even though some evidence suggests Habbatus Sauda may treat respiratory problems, there are some discrepancies in the dosage, indications, contraindication, and combination therapies that require more standardisation before Habbatus Sauda can be used as standard therapy for respiratory problems.

Recently there was a viral video on how the steam from cloves can treat covid-19. Cloves have long been used in traditional medicine and for culinary purposes, and they serve to produce an essential oil known for its use in food flavorings, traditional medicine, and perfume production since ancient times. The clove essential oil finds applications in dental care, including treating gum infections, burns, and respiratory and digestive disorders.

Cloves have traditionally been used as respiratory aids, and spices are one of the ingredients in teas in tropical Asia to help with coughing. Moreover, it is customary in Asia to chew cloves to treat soreness in the throat and inflammation of the pharynx.

Cloves, or its scientific name *Syzygium Aromaticum*, contains eugenol, a naturally occurring sesquiterpenoid in its volatile oil. Eugenol inhibits the 5-lipoxygenase enzyme, an enzyme responsible for producing leukotrienes, mediators in many inflammatory-related diseases such as asthma, bronchitis, and allergic rhinitis.

Although there are numerous studies on the immunomodulatory activity of cloves, the studies are still preliminary and experimental. To date, no clinical trial on COVID-19 has been reported. Though inhaling steam from boiling water containing cloves may not be harmful, the hot steam may irritate nasal passages.

There are some claims that *Azadirachta Indica* (neem) leaves can cure covid-19. Some even suggest drinking boiled neem leaves daily to prevent COVID-19 infections. However, depending on the number of neem leaves used, this practise can be harmful. In addition, there are numerous reports on the toxicity of neem intake, especially among young children.

Neem contains Azadirachtin as a principal compound. Azadirachtin is mainly found in neem seed oil. In an animal study, Azadirachtin stimulated an immune response to bacterial infection, but the immune response was not specific. Although neem has been shown in studies to have antiviral and antibacterial activity, no study has shown it to be effective against SARS-CoV-2.

Nature is a source of structurally diverse natural products, the chemical compounds produced by living organisms. Through observation, trial, and error, humans found the best medicine from nature. With scientific advances, scientists learn from nature and use the knowledge for the betterment of humankind. Many prescription drugs today come from nature, mainly plants. In difficult times today, man seeks answers from nature, but unsubstantiated claims can be harmful, even though they are of natural origin.

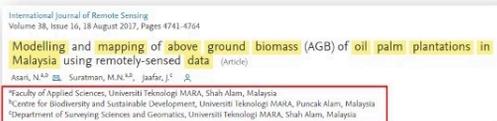




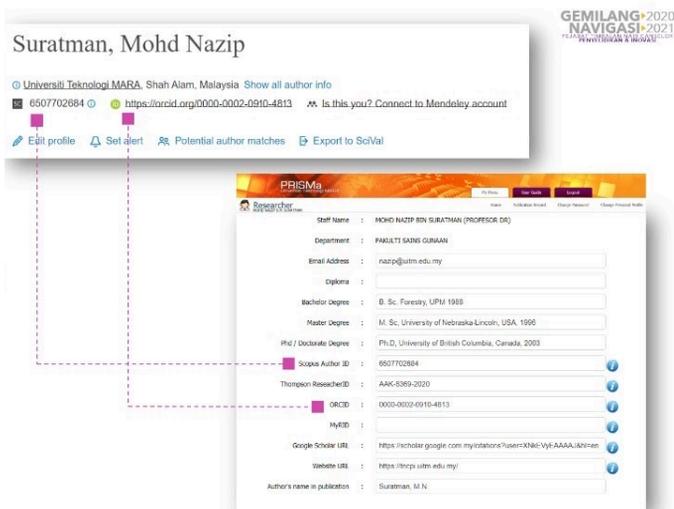
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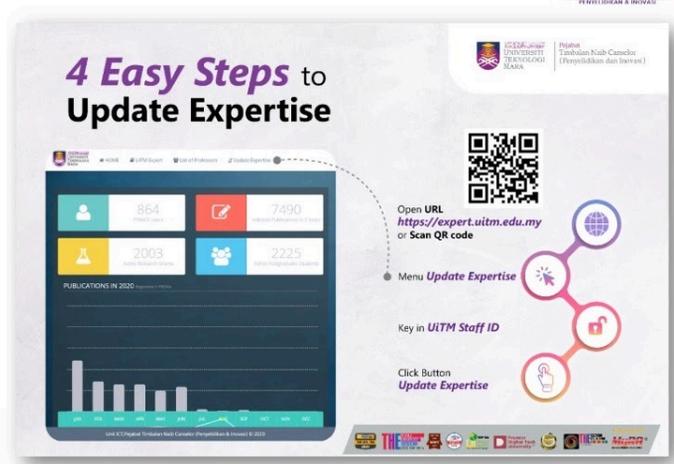
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*Clove, Habbatus Sauda, Neem and COVID 19*

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

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

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