

Issue #1 | November 2021



Catalysing Global Research Excellence



Driving Innovation, Transforming Future

ReNeU's 1st Anniversary

Galvanising Research Excellence

UiTM's Global Effort in Training Young Aspiring Neuroscientists





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Facebook: tncpi.uitm | Youtube: TNCPI UiTM Instagram: tncpi_uitm | Twitter: tncpi_uitm

Phone: 603-5544 2004 | E-mail: tncpi@uitm.edu.my | Web: https://tncpi.uitm.edu.my/

ADMINISTRATION

Prof. Ts. Dr Mohd Nazip Suratman

Deputy Vice-Chancellor (Research & Innovation) Office of Deputy Vice-Chancellor (Research & Innovation) nazip@uitm.edu.my 603-5544 2004

Dr Mohd Muzamir Mahat Head of Research Communication & Visibility Unit (UKPV) Research Communication & Visibility Unit (UKPV) mmuzamir@uitm.edu.my 603-5544 3097

Miss Nur Syazwani Ahamad Azahari Senior Statistician Strategic Information Unit wawa@uitm.edu.my 603-5544 3295

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 mobilse 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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Editors Nur Syazwani Ahamad Azahari – (Statistics & Information) Nazarul Wirda Baharuddin – (Content) Ts. Dr Judith Gisip – Guest Editor

Designers Muhammad Ammar Khaizuan Mohd Aizuddin Borhan Shah



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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





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 Benum 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) Universiti Teknologi MARA

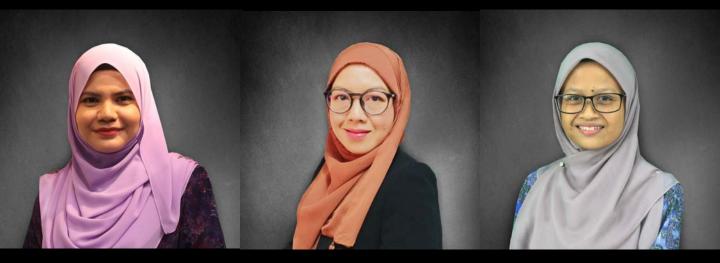


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Chief Editor Dr Mohd Muzamir Mahat

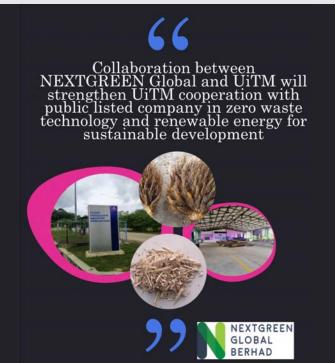
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Hutan Simpan Lembah Benum Exploration 2021



Fakulti Kejuruteraan Kimia





UNIZZOL hand sanitizer: the enchanting bouquet



WHO-recommended handrub formulation

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Pejabat Timbalan Naib Canselor (Penyelidikan dan Inovasi)

Articles

TNCPI UTM

#bevisible

Congratulations

PROF. DATIN DR HAPIZAH MD NAWAWI 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)

may https://bacpi.sim.edu/ry/

Unleashing Potentials

Achievements

f @inopi_uitm

(i) Mapping

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Global perspective of familial hypercholeste





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Founder, ChM. Dr Mohd Azri bin Ab Rani Post Doctoral, Kyoto University, Japan. PhD, Imperial College London, United Kindom. Master Science (Chemistry), UKM, Malaysia.

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drazrisperfume

Dr Azri's Perfume





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 Timbalan Naib Canselor

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 (Penyelidikan dan Inovasi)

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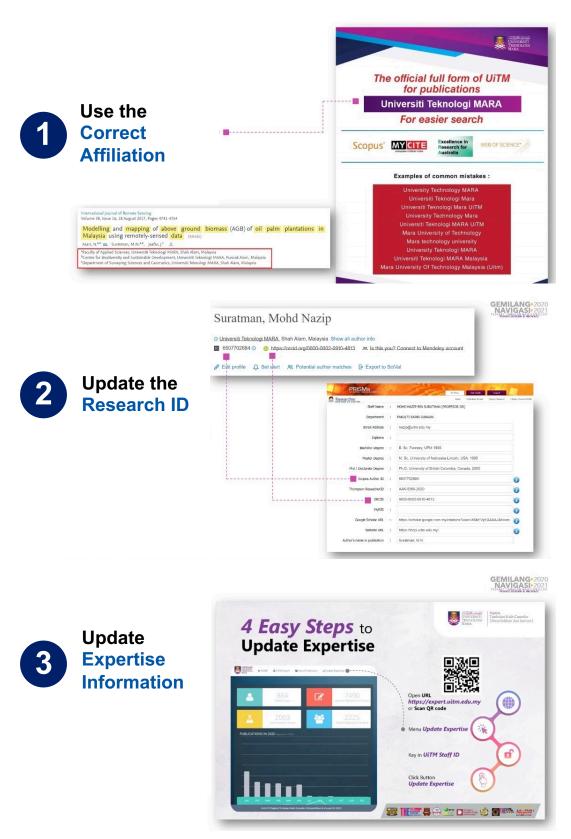




Fakulti Sains Gunaan Fakulti Pengurusan Hotel dan Pelancongan BITCOM



Be Visible! Do the following...



The Data is Talking to You.

Are You Listening?

by Nur Syazwani Ahamad Azahari



magine you have a problem to solve. Based on readings and observations, a solution for the problem can be suggested. However, assumptions without testing, observations without information, data without analysis and decisions without proof will only cause questions and fail to convert this critical data analysis process to information and knowledge.

The data is talking to us. Do data raise questions, such as what is the most common or expected observation? Which group contributed more to the problem? What does the data look like? Although these questions are simple, they must be answered to turn raw observations into information that we can use and share.

Statistics is the study that deals with the collection and analysis of data. It is mostly used to keep records, calculate probabilities, and provide knowledge. Basically, it helps us understand the world a little bit better through numbers and other quantitative information. Statistical knowledge helps us use the proper methods to collect the data, employ the correct analyses, and effectively present the results. Statistics are a crucial part of how we make discoveries in science, make decisions based on data, and make predictions.

Statistics play a significant role in our daily lives, even without us knowing. To be more specific about the importance of statics in our lives, here are some occasions that happen in real life.

- Everybody watches weather forecasting. Have you ever thought about how you get that information? There are some computer models built on statistical concepts. These computer models compare prior weather with the current weather and predict future weather.
- Researchers mostly use statistics. They use their statistical skills to collect the relevant data. Otherwise, it results in a loss of money, time, and data.
- In the financial markets, statistics also play a significant role. Statistics are the key to how traders and business people invest and make money.
- Statistics play a significant role in the medical field. Before any drug is prescribed, scientists must show a statistically valid rate of effectiveness. Statistics are behind all the studies of medical statistics.
- Statistical concepts are used in quality testing. Many companies make many products daily, and every company should make sure that they sell the best quality items. Nevertheless, companies cannot test all the products, so they use statistics.

- In everyday life, we make predictions. For example, we keep the alarm for the morning when we do not know whether we will be alive in the morning or not. Here we use statistics basics to make predictions.
- Doctors predict disease based on statistical concepts. Suppose a survey shows that 75%-80% of people have cancer and cannot find the reason. When the statistics become involved, you can better understand how cancer may affect your body and whether smoking is its primary reason.
- A news reporter predicts the winner of an election based on political campaigns. Here, statistics play a substantial part in determining who will be your government.
- Statistics data enable us to collect information from all over the world. The internet is a device that helps us collect information. The fundamental concepts behind the internet are based on statistics and mathematics concepts.

Nowadays, a combination of studies across fields will spark an impactful result that helps forecast what will happen in the future and makes life easier. The application of statistics in machine learning allows software applications to predict outcomes without being explicitly programmed to do so. Machine learning algorithms use historical data as input to predict new output values. Most of us have experience using the Waze application while driving or commuting from one place to another. This application is an example of the use of a combination of statistics and machine learning. It helps predict the traffic situation, suggests the best time to move, and gives alerts on the speed limit.

Learning and applying statistics in our everyday life will help in better and effective decision making, especially for researchers who are involved a lot in finding the best solution to solve their scientific problems.



SACHET

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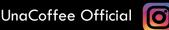
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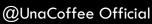
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Acknowledgements

Ts. Dr Judith Gisip Faculty of Applied Sciences, UiTM Shah Alam Robotics Technology: Driving Innovation, Transforming Future

> Dr Mohd Muzamir Mahat Research Communication & Visibility Unit (UKPV) *Hutan Simpan Lembah Benum Exploration*

Dr Muhammad Asraf Hairuddin School of Electrical Engineering, College of Engineering UiTM, Campus Pasir Gudang, Johor Drone and Precision Agriculture Technology for Pineapple Plantation

Dr Nur Azfahani Ahmad Faculty of Architecture, Planning & Surveying UiTM, Campus Sri Iskandar, Perak A Project to Provide Solar-powered Lighting to Rural Schools in Perak

> Dr Siti Rasidah Md Sakip Faculty of Applied Sciences, UiTM Shah Alam Virtual Greensafe Cities Seminar (GRESC 2021)

Prof. Dr Kalavathy Ramasamy, Assoc. Prof. Dr Lim Siong Meng, Dr Faezah Sabirin & Nur Syakila Rohawi Faculty of Pharmacy, UiTM, Campus Puncak Alam Good Bacteria That Lower Cholesterol: Myth or Truth?

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Assoc. Prof. Dr Siti Noor Hajjar Md Latip Research Nexus UITM, ReNeU (Energy & Environment) NEXTGREEN GLOBAL-UITM Research Collaboration

Assoc. Prof. Dr Aidah Jumahat Research Nexus UiTM, ReNeU (Industrial Technology) IWK-UiTM Research Collaboration

Dr Fakhrul Hazman Yusoff Faculty of Computer & Mathematical Sciences, UiTM Shah Alam Gait Recognition System for Mass Surveillance

Assoc. Prof. Ir Ts. Dr Mohamad Hafiz Mamat School of Electrical Engineering, College of Engineering UiTM, Shah Alam NANO-ElecTronic (NET) Research Group

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Dr Nurdiana Samsulrizal

Research Nexus UiTM, ReNeU (Health & Wellness) Faculty of Applied Sciences, UiTM Shah Alam Addressing Public Health Concerns Through University-Industry Collaboration

Assoc. Prof. Dr Khalilah Abdul Khalil

Faculty of Applied Sciences, UiTM Shah Alam Adaptive Strategies for Microbial Performance Through Optimization Approach

Prof. Dr Roshima Said

Assoc. Prof. Dr Mohd Rizaimy Shaharudin Accounting Research Institute (ARI), UiTM Faculty of Accountancy, UiTM, Campus Sungai Petani, Kedah Faculty of Business and Management, UiTM, Campus Sungai Petani, Kedah The Effectiveness of the ICQS Bukit Kayu Hitam and CIQ Sadao's 24-hour Operation

Assoc. Prof. Dr Norol Hamizah Zamzuri Research Nexus UiTM, ReNeU (Social Creativity & Innovation) Faculty of Business and Management, UiTM Selangor Green Event Research @Borneo Jazz Festival

Prof. Dr Nooritawati Md Tahir

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Assoc. Prof. Dr Rafeah Legino Research Nexus UiTM, ReNeU (Logistic & Transportation) Faculty of Art & Design, UiTM Shah Alam Potential of Fine Art Logistic Industry

Prof. Dr Shahriman Zainal Abidin Research Nexus UiTM, ReNeU (Logistic & Transportation) Faculty of Art & Design, UiTM Shah Alam Erasmus+ KA2: The Complexities of the Creation of a Validation Protocol for the Making4.0 Curriculum Between the Malaysian and European Education Systems

Dr Che Puteh Osman & Dr Normala Abd Latip

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Director Research Management Centre (RMC) Faculty of Pharmacy, UiTM Campus Puncak Alam *UiTM's Global Effort in Training Young Aspiring Neuroscientists*

Dr Shahril Anuar Bahari

Business Innovation & Technology Commercialization Centre (BITCOM) Faculty of Applied Sciences, UiTM Shah Alam *High Energy Material Research Laboratory (HEMREL)*

Prof. Dr Jaafar Pyeman Prof. Dr Veera Pandiyan Kaliani Sundram Institute of Business Excellence (IBE) Faculty of Business Management, UiTM Selangor Disruptions in Supply Chains and a Lesson from the COVID-19 Pandemic: A. Retail Perspective

Dr Khairul Khaizi Mohd Shariff

Microwave Research Institute (MRI) New Road-Side Speed Display Signs in Reducing Speeding Problem in Malaysia

Miss Nur Syazwani Ahamad Azahari

Strategic Information Unit, Office of the Vice-Chancellor (Research and Innovation), UiTM The Data is Talking to You. Are You Listening?









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