
UNIVERSITI
TEKNOLOGI
MARA
2020
the.global.goals
SUSTAINABLE
DEVELOPMENT
GOALS

the stories

getting to know UiTM

13 autonomous state campuses

170k local and international students

Founded in 1956, Universiti Teknologi MARA (UiTM) is a mega public university in Malaysia. With its main campus in Shah Alam, the state capital of Selangor, UiTM has 13 autonomous state and 21 satellite campuses spread throughout the nation. UiTM is not only the largest university infra-structurally but also demographically with 169,364 local and international student enrolment supported by 17,706 academic and non-academic staff. With 526 academic programmes, ranging from foundation to postgraduate levels UiTM boasts of 26 faculties covering areas of specialisation from medicine to the arts.

Spanning the length and breadth of Malaysia, UiTM campuses are well equipped with modern facilities to accommodate its community's academic and research needs. UiTM currently offers 216 postgraduates programmes and has earned a reputation for research and teaching excellence over the last 6 decades. At UiTM you will experience the education and environment that will steer you on the right path towards a professionally rewarding and personally fulfilling future. Be inspired by the remarkable achievements of our students, staff and alumni, make global connections, develop your talents, pursue your passion and chase your dreams. UiTM is where you will be guided to make your mark not just for yourself but on the world around you.


526
academic programmes
18k
academic and non-academic staff
21
satellite campuses
14
13
1 UiTM Perlis Branch
• Arau Campus
2 UiTM Kedah Branch
• Merbok Campus
3 UiTM Pulau Pinang Branch
• Bukit Mertajam Campus
• Bertam Campus
4 UiTM Perak Branch
• Seri Iskandar Campus
• Ipoh City Campus
• Tapah Campus
5 Shah Alam Main Campus
6 UiTM Selangor Branch
• Puncak Alam Campus
• Puncak Perdana Campus
• Jalan Othman Campus
• Seksyen 17 Campus
• Sungai Buloh Campus
• Dengkil Campus
• Selayang Campus
7 UiTM N. Sembilan Campus
• Kuala Pilah Campus
• Seremban 3 Campus
• Rembau Campus
8 UiTM Melaka Branch
• Alor Gajah Campus
• Melaka City Campus
• Jasin Campus
9 UiTM Johor Branch
• Segamat Campus
• Pasir Gudang Campus
10 UiTM Pahang Branch
• Jengka Campus
• Raub Campus
11 UiTM Terengganu Branch
• Dungun Campus
• Kuala Terengganu Campus
• Bukit Besi Campus
12 UiTM Kelantan Branch
• Machang Campus
• Kota Bharu Campus
13 UiTM Sarawak Branch
• Samarahan 2 Campus
• Mukah Campus
14 UiTM Sabah Branch
• Kota Kinabalu Campus
• Tawau Campus


Photo by Joël Brunner on Unsplash

an anthem for the world

Dubbed as **the.global.goals 2020**, this report compiles the projects and programmes initiated by the university in 2019 and is the first Sustainability Report for Universiti Teknologi MARA (UiTM), Malaysia published by the Institute for Biodiversity and Sustainability Development (IBSD). It features researches, innovation, academic and community initiatives by the members of the university, alumni and some of them involved national and global partnerships.

The designs for the cover and each chapter have been specially crafted using both conventional 2D and 3D paper-crafts converted to a digital image with visual experience enhancement. Inspired by *"Rasa Sayang"* which literally means "feeling of love" – a popular Malaysian folk song that covers the Nusantara – Malay Archipelago, the designs capture and portray the spirit of the iconic song. Incorporating pantun quatrains known to all Malaysians, *Rasa Sayang* is the first song introduced to the children in schools or homes. This is the essence that underlie the designs created for this book.

The artwork showcased in this publication is a testimony of the collaborative effort of the curation team comprising artists, designers, curators, photographers and curatorial support whose common aim is to co-create, express and interpret all 17-SDG badges using their artistic talent, creative strength and synergistic spirit. Known as the song for harmony, *Rasa Sayang* acts as symbolic anthem for the world, a call to action for us to reconnect with the world through *Budi* - a Malay concept of social relationships; *budiman* (wisdom and good heartedness), *budi pekerti* (gentility), *budi baik* (generosity), *budi penyayang* (compassion) and *budi bicara* (tolerance).

the.global.goals 2020 is not just to impress us with the achievements and improvements made throughout the year but more importantly to inculcate in us the importance of commitment and perseverance in pursuing sustainability of our existence. Hence, this report serves to communicate our endeavours to support and uphold our principles as an academic institution.

Made with *"Rasa Sayang"* - May this journey bring us great blessings for tomorrow for what we did yesterday.


CANSELERI TUANKU SYED SIRAJUDDIN
UNIVERSITI TEKNOLOGI MARA

the road ahead

Over 64 years of existence, Universiti Teknologi MARA (UiTM) has produced professionals to serve the industry as well as contributed to the development and transformation of communities thus resonating well with the three components of the Sustainable Development Goals (SDGs) namely economy, social and environment.

Being a modern civic university spanning across Malaysia, UiTM strikes a balance between intellect and soul in the era of globalization through the embodiment of *BUDI* as the value in life throughout all its campuses and community. A Malay concept of social relationships, *Budi* encompasses *budiman* (wisdom and good heartedness), *budi pekerti* (gentility), *budi baik* (generosity), *budi penyayang* (compassion) and *budi bicara* (tolerance).

Despite the challenges wrought by the COVID-19 Pandemic, Universiti Teknologi MARA has remained steadfast and resilient in our commitment to deliver the best of education to our students and the best of ourselves to the community. Our strength lies in our agility to optimize our capacity and capabilities to adapt to the new norms and transform the way we execute our academic programmes to serve more than 169,364 students in a new environment called digital campus.

Today, we continue to expand our horizons to offer more than just education. With 35 campuses throughout the nation, our eminent professors, dedicated academicians, renowned researchers, highly determined students and professional administrators complete the dynamism of UiTM through the realisation of innovative initiatives that leave a significant impact on the world. Hence, translating our commitment towards synergizing the 17-Goals as underlined by the United Nations.

In many ways, we have generated a strong momentum for change, creating a meaningful effort by rewriting the possibilities and repurposing our creations, reconnecting the world through education. Indeed, our survival is the survival of the world, with that we present you **the.global.goals 2020** – our first Sustainability Report.

Emeritus Professor Datuk Ir. Dr. Mohd Azraai Kassim
Vice-Chancellor

research and innovation anchored in the global goals

The University is considered as one of institutional players that can help promote, support and ultimately contribute towards achieving the 17 Sustainable Development Goals (SDGs) of United Nation's global agenda. University researchers for one can conduct researches that advance the sustainability agenda as they have the knowledge, skills, understanding as well as opportunities to address and provide solutions to the challenges confronting the development of societies. Nevertheless, it is only one of the many avenues that can be activated for the achievement of the sustainability agenda.

In the case of Universiti Teknologi MARA (UiTM), we are fully committed to incorporating SDGs in our research and this is clearly proven through the allocation of internal research grants for the researchers throughout the UiTM system.

The SDG Triangle@UiTM is a research initiative recently introduced by the Office of Deputy Vice-Chancellor (Research and Innovation) that prioritises and facilitates the SDGs agenda for the university. Four unique study locations that form a triangle comprising Pahang National Park, Gunung Ledang National Park, Royal Belum State Park and Langkawi's Tuba Island in Peninsular Malaysia have been identified for this purpose. UiTM is looking to expand our strategic research partnerships as a means to increase synergy in SDGs achievements, in the hope to attract international researchers with similar interests.

At present, UiTM is working with many renowned universities to integrate SDGs agenda in a multitude of disciplines. Subsequently, this agenda will promote and develop new knowledge, technology transfer, enhance community and human capital development, encourage more entrepreneurship and small-medium enterprises (SMEs), and finally contribute back to the society through university social responsibility (USR) and social innovation.

SDGs are a global commitment. To ensure we accomplish sustainable development without compromising future generations, universities should anchor SDGs in research and innovation. Most importantly, impactful research findings must be translated to improve the community, industry, and the nation. These achievements are documented in this first SDG report **the.global.goals 2020**, to be used as a reference and guide by the university community and those who share similar concerns.

Professor Dr. Mohd Nazip Suratman
Deputy Vice Chancellor (Research & Innovation)

these are the global goals

The Institute for Biodiversity and Sustainable Development (IBSD) was setup in 2020 under the purview of the Deputy Vice-Chancellor for Research & Innovation's Office, Universiti Teknologi MARA (UiTM) to be responsible for coordinating and streamlining biodiversity and sustainable development projects and activities. The institute's functions include interconnecting and synergising technology and applied technology with trans-disciplinary research and biodiversity management, policies and laws and climate change.

The institute aims to involve staff and students, alumni, university's partners and other external stakeholders in academic, research and innovation initiatives and programmes as the concern for biodiversity and sustainability development should be a collective one.

This year we are initiating an inaugural report known as **the.global.goals 2020** bringing together all the initiatives organised and conducted by the university throughout the year of 2019. Consequently, this should establish IBSD as a leader in affecting positive changes in the world around us.

IBSD is committed to minimising the impact of destruction and degradation of our communities and environment by ensuring the effective implementation of our initiatives and programmes. Be it discovering novel findings or encouraging knowledge transfer, our strategy is to allow access to the report as it covers the sustainability performance of the campus. In this regard, we are taking a proactive approach by welcoming feedback, suggestions on improvements and insights from the perspective of experts and activists that can be considered for and included in our next publication. Together we can create a more sustainable community by rewriting the possibilities and repurposing our creations. These are the global goals, and we thank everyone who has been with us throughout this meaningful journey.

Professor Sr. Dr. Zulkiflee Abd Latif
Director
Institute for Biodiversity & Sustainable Development

research grants SDGs performance

2019		
SDGs	Total Grants	Total (RM)
1	19	588,798.00
2	46	2,155,785.94
3	339	25,022,028.39
4	137	5,404,643.16
5	8	152,900.00
6	30	1,004,956.90
7	25	2,404,706.00
8	171	10,479,794.82
9	480	28,144,570.88
10	19	573,800.00
11	224	9,896,503.53
12	90	4,189,805.95
13	27	1,111,075.00
14	31	1,093,303.56
15	104	5,287,794.78
16	89	3,942,663.00
17	246	25,856,473.90

Consultancy/Professional Services			Copyright & IP	Patent
SDGs	Total Count	Total (RM)	Total Count	Total Count
1	6	819,489.00	1	0
2	4	708,639.00	0	0
3	53	2,050,441.52	123	0
4	65	3,795,743.38	174	1
5	0	0.00	0	0
6	5	710,479.28	1	0
7	24	1,637,019.12	6	6
8	23	7,696,745.58	26	0
9	199	7,547,406.45	541	16
10	4	53,388.00	0	0
11	19	1,415,007.19	8	0
12	2	89,000.00	0	0
13	2	130,000.00	0	0
14	1	7,560.00	2	0
15	4	768,680.00	5	0
16	14	934,297.20	29	0
17	343	22,883,496.86	0	0


Universiti Teknologi MARA | MALAYSIA
uitm

End poverty in all its forms everywhere

Sustainable Fund to the Deserving

In line with its commitment to serve the most vulnerable members of society, the Zakat, Sadaqah dan Waqf Division of Universiti Teknologi MARA (UiTM) supported a team of dedicated postgraduate students from the Faculty of Business Management (FBM) as they carried out an outreach programme for young children and teens from the B40 community (low income earners). Sadaqah funds were provided for the organisation of the Kids Today, Leaders Tomorrow programme at the USJ16 Sri Tanjung Flats in Subang Jaya Selangor on Saturday, 5 October 2019.

The programme was conducted with the support of approximately 30 volunteers made up of undergraduates from the Faculty of Dentistry, UiTM, police personnel from the Royal Malaysian Police, fire and rescue personnel from the Fire and Rescue Department, students from Universiti Putra Malaysia (UPM) and Universiti Sains Islam Malaysia (USIM), as well as volunteers from HEART (Health Empowerment and Reform Team), a local NGO. The objectives of the programme were manifold. The primary objective was to provide children of the community with exposure to information on how to keep safe and be aware of socially acceptable norms of behavior. In addition, the programme also aimed to instil interest in science, and this is in line with national aspirations to have more students opt for the science, technology, engineering and mathematics (STEM) track.

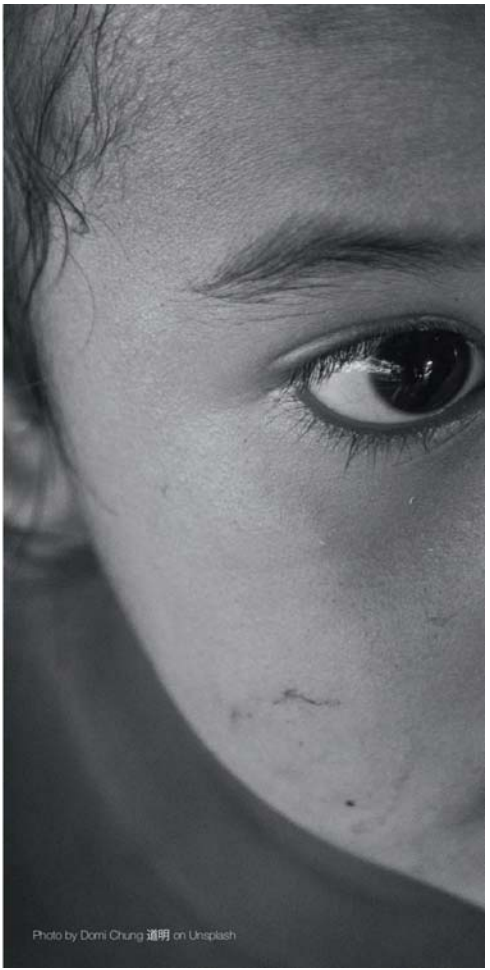


Photo by Domi Chung 道明 on Unsplash

The funding of this programme signals a paradigm shift in the approach taken by UiTM's Zakat, Sadaqah dan Waqf Division to disburse zakat, sadaqah dan waqf funds. In addition to ensuring the disbursement of funds to the deserving, the division is working closely with the Accounting Research Institute (ARI), UiTM to put in place an efficient and highly transparent route for the disbursement of funds. The division plans to continue its partnership with ARI to ensure that all future initiatives funds have measurable and sustainable outcomes which can be reported to stakeholders and the public at large.

https://news.uitm.edu.my/the-accounting-research-institute-joins-forces-with-the-zakat-sadaqah-and-waqf-division-of-uitm-for-funding-and-measuring-outcome-of-community-development-programme/

Spearheading Islamic Based Research Initiatives on Managing Poverty

Trickling into the idea of managing poverty issues, UiTM researchers are committed to lead the initiatives on ending the poverty cycle through the integration of Islamic approach in a modern way. Waqf and Zakat are a concept to assist and a mechanism to eradicate poverty from the community in Islamic ways. Under the Fundamental Research Grants Scheme by the Ministry of Higher Education, an integrated model in managing the waqf fund is to be developed.

There is also a study that is looking at the identification of *Asnaf* based on the multidimensional Zakat institutions in Malaysia. UiTM has been actively involved in optimising the threshold of *Kifayah* in the state of Pulau Pinang, which was privately funded by the Zakat state agency (Pulau Pinang). Having the two strong Islamic mechanisms *(waqf and zakat)* to end poverty, UiTM researchers have looked into integrating these two elements to a dynamic model that will anchor the sustainability of micro-takaful structure for handling funds for the B40 group (the bottom 40% household income classification).

Poverty Mitigation through Community Based Responsibility

In progressing towards becoming a high-nation status, the 2030 Sustainable Development Goals (SDGs) Agenda becomes a boost for Malaysia to carry out the sustainable development agenda. Extreme poverty is often focussed on urban spaces, and national and city governments struggle to accommodate the rising population in these areas.

Following the implementation of GST in April 2015, global sluggishness in growth, the outflow of investments and the fall in oil prices, the cost of living in Malaysia has continued to rise. Although the poverty rate has reduced from 1.7 % in 2012 to 0.6% in 2014, the Bantuan Rakyat 1 Malaysia payout has continued to increase from RM2.6 billion in 2012 to RM4.9 billion and RM5.9 billion in 2015 and 2016 respectively.

Indirectly, these figures show that 'hardcore poverty' may have decreased significantly, but 'poor' and 'relatively poor' may be on the rise due to increasing cost of living. The objective of this research is to examine the Community-Based Responsibility (CBR) framework in alleviating poverty and to achieve the SDGs Agenda specifically Goal 1: No Poverty and Goal 11: Sustainable cities and communities. This research intends to provide a more in-depth analysis on poverty by understanding its causes and the situation of the poor from their perspectives; and designing policies aiming to alleviate poverty.

It will focus on the new concept of CBR which is the process of developing active and sustainable communities based on social justice and mutual respect. The concept is part of CSR research which is not given full attention by the scholars. Using the AHP Analysis, the outcome of the research is a priority of preference criteria of social and economic needs among the poor community.

Academy of Contemporary Islamic Studies (ACIS) for the Realisation of the Asnaf Life Cycle Management

Asnaf means a party that is eligible to receive Zakat aid collected from Muslims. To create awareness of a strong and systematic realisation of the Asnaf Life Cycle Management, ACIS has been awarded a research grant to investigate multidimensional concepts to determine the underprivileged community by the Islamic law. This is crucial in order to guarantee the efficiency of the Zakat instrument in helping and reaching the right and deserving group of people. The research proposed a guideline that is hoped to be used as a reference by the Zakat institution in Malaysia.

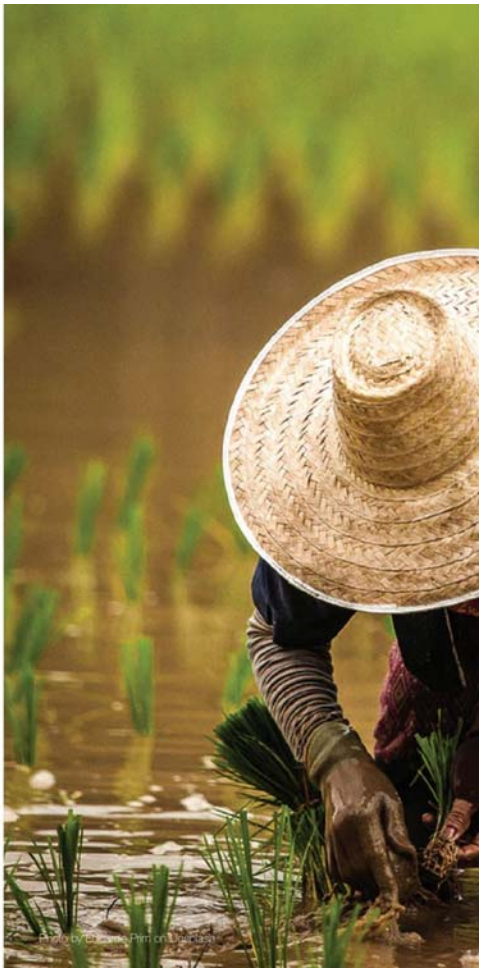

6
consultancy projects
RM819,489.00
19
research grants
RM588,798.00
1
copyright
Photo by Edmond Lou on Unsplash

End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Feeding the Needy

This program has been implemented as a charity program in the month of Ramadan by providing and distributing 100 units of food packages to UiTM students who are less fortunate through the 'Food for the Needy' program initiative. This 'Food for the Needy' program is an extension of the efforts of Academy of Contemporary Islamic Studies (ACIS) UiTM Sarawak Branch in an effort to help students who are in difficulty on campus.

Among others, the objective of this program is to help and alleviate the burden of students who are having difficulties in terms of daily needs, especially in food and drink. Donations for the less fortunate and needy campus residents were placed at 'Food for the Needy' cupboard shelves at strategic locations around the campus.



Universiti Teknologi MARA (UiTM) Food Bank Siswa Programme Launch

With the tagline Save & Don't Waste. Let Us Work Together To Feed The Hunger. This initiative was aimed to assist as well as educate our students of the importance of food supply and it is crucial that it is not to be wasted as well as to be aware of your surroundings and reaching out to our underprivileged friends and offer them a hand.

Food Bank Siswa Program has benefited 6,870 underprivileged students at 21 public universities since its initiation in February 2019. Yayasan Food Bank Malaysia targets to help some 20,000 students in 21 public universities by the end of 2019, before being expanded to another 103 private universities/colleges in 2020. The program also aims to foster the spirit of volunteerism among university students.

Cross-cultural Differences of Food Insecurity for Underprivileged Rural Communities and Disable People

Food security is built on four basic elements, namely availability, accessibility, utilization and stability. Accessibility is one critical element that still hinders food security progression and has affected millions of people world-wide. Any disruption to accessibility could eventually lead to food insecurity problems. Accessibility is ensured when all households have the capacity to obtain food in sufficient quantity, and quality where the accessibility is also well-known to depend on physical, social and country specific food policies. Food insecurity could be addressed through an experienced-based food insecurity scale. Therefore, it is high time for Malaysian researchers to dwell into a new tool that was recently introduced by the Food and Agricultural Organization (FAO).

In order to achieve that, UiTM researchers have been awarded research grants from the Malaysian Ministry of Higher Education to further transculturally validate that instrument specifically in poor rural communities. It is interesting to note that the information obtained from a well validated research instrument will gather more insight about real Malaysian family's struggles and hope to give a broader view not just about food availability but present family's strengths and challenges. The findings hope will ameliorate the food insecurity situation in our country by giving some insight to policy makers as they require a broad, problem solving approach to address the complexity of food security.

A Blockchain Concept for Mitigation Framework of Disable People by Co-integrated Poverty and Food Insecurity

Another research is dedicated on using blockchain concepts to co-integrate poverty and food insecurity mitigation framework for people with disabilities. People with disabilities (PWDs) are vulnerable and exposed to the risk of poverty and food insecurity because they are often unemployed or in a job that they do not earn much.

To address the issue, the government has developed a specific plan of action for PWDs, which requires participation of stakeholders from various sectors who have a bundle of resources and strategic capabilities. However, creating a dynamic, aligning and accommodating divergent goals across different stakeholders is rather a challenge.

While past studies are more interested in understanding the role of different stakeholders in addressing a complex social issue, this present study will investigate challenges faced by PWDs in achieving sustainable living and identifying unique strategic capabilities of stakeholders that can be utilized in addressing poverty and possible food insecurity among PWDs.

A qualitative case study with an interpretivist approach is the paradigm of this study. This study aims to introduce a new framework that co-integrate stakeholders from various sectors by adapting the blockchain technology concept. Although blockchain technology is often associated with crypto currency, the application can go further to cover multitude business and social arrangements.

https://www.foodbankmalaysia.org/fbs-universiti-teknologi-mara-sa-uitmsa/

https://m.youtube.com/watch?v=qNrEuBiU3qo

https://www.foodbankmalaysia.org/fbs-universiti-teknologi-mara-pp-uitmpp/

https://www.facebook.com/BeritaTV9/videos/396955414224277/


4
consultancy projects
RM708,639.00
46
research grants
RM2,155,785.94
photo created by jcomp - www.freepik.com


Photo by Markus Spiske from Pexels

Ensure healthy lives and promote well-being for all at all ages

Elucidation of Migratory Pathway-driven Dopaminergic Neuroregeneration in Teleost-based Parkinsons Disease Model

Parkinson's disease (PD) is strongly associated with loss of dopaminergic neurons (DpN) and a drastic decline in dopamine within the substantia nigra (SN). An adult zebrafish-based, 6-OHDA-induced PD model was recently established by the UiTM researcher led by Professor Dato Dr Abu Bakar Abdul Majeed aims to understand the biological processes underlying DpN regeneration and subsequently validate the DpN regenerative potential of adult zebrafish.

The present findings showed that 6-OHDA (25 mg/kg) had successfully ablated > 95% of the diencephalic (Dn) while maintaining a 100% survival rate of the zebrafish. Locomotor analysis (Figure 2) revealed that 6-OHDA-lesioned adult zebrafish were presented with significantly ($p<0.0001$) reduced speed (cm/s) and distance travelled (cm). Interestingly, lesioned zebrafish showed full recovery of Dn DpN 30-days post lesion.

On another note, following ablation of DpN in the Dn, new neurons produced during early proliferative activity were found concentrated in olfactory bulb (OB) and Pallium-Subpallium Border (Bor), while neurons produced during late proliferative activity were found concentrated mainly in the Subpallium (SPa) and Preoptic Area

Photo by CDC on Unsplash

(POA). Double pulse labelling was found presence of BrdU and EdU co-labelled cells at the junction between these areas, suggesting potential movement of newly produced cells from the frontal part of the brain towards the lesioned site. The present study, however, has yet to establish the exact pathway and movement of these migrating cells. This warrant pulse chase analyses using coronal sectioning of the brain.

Aedes and Dengue Combating Initiatives

Dengue fever has been on the rise in Malaysia over the past 40 years and mitigation approaches are being taken by many agencies. UiTM, Integrated Mosquito Research Group (I-MeRGe) understands that from the entomological point of view, dengue is hard to control due to the high prevalence of Aedes in both urban and suburban areas. I-MeRGe sees the need to mobilize the communities for the control of Aedes and the idea has been the central focus to Aedes Awareness Day (AAD). The idea to organise a community engagement programme was mooted not only to create awareness but also as part of I-MeRGe outreach effort to the community together with many other collaborators.

This comes from a realisation that the responsibility of eradicating Aedes mosquitoes is not merely the government's responsibility alone. Collaboration with municipalities is crucial to ensure funding and field engagement are likely. Malaysian Association of Environmental Health (MAEH) also sees the opportunity to collaborate especially when Dengue is the purview of environmental health practitioners.

The programme also makes it possible for I-MeRGe to share the findings from research with the community showing that a research entity can coordinate a successful event with relevant agencies in controlling Dengue. The AAD programs run in various forms from schools for awareness from a young age and to community programmes such as community clean up and running events. The Aedes Awareness Day (AAD) Road Tour went all over Malaysia according to zones and target Dengue hotspot areas. The Aedes Awareness Day (AAD) Series of Programmes are as follows:

1.	"One Bite, One Death" (School)
2.	Community Clean Up (Sub-urban community)
3.	Aedes 'Search and Destroy' (Sub-urban community)
4.	Dengue Fun Run (City of Kuala Lumpur)
5.	Dengue Awareness Week (School)
6.	Community-Based Activities on Vector Control (City neighbourhood)
7.	Aedes Extermination Campaign - "Ramadan without Dengue" (Sub-urban neighbourhood)
8.	School Attack (School)

Community involvement and networking with the public allowed for a community-centred approach to combat Aedes infestation. As an outcome of this approach, the larval indices and dengue cases reduced significantly and remained low. For example, in the Bandar Baru Klang zone, where one of the AAD programmes was held, the number of dengue cases dropped significantly. During the Epidemiological Week 12 and Epidemiological Week 13 the dengue cases were 16 and 13 respectively. After the AAD programme (which was held in Epidemiological Week 14), the reported cases dropped to 4 cases the following week.

The decline in dengue cases show that good housekeeping and destroying potential Aedes breeding sites keep the dengue cases at bay. I-MeRGe sees the potential of this control strategy through a community-centred approach and should be considered for these Dengue hotspots resulting in many other venues of the programme. Close monitoring of this approach is warranted for long term sustainability. Links to newspaper articles featuring AAD in reducing number of Dengue cases:

https://www.facebook.com/SekolahKebangsaanUsj2/posts/program-aedes-awareness-day-school-attack-2-mei-2019/1513555825447532/

https://www.sinarharian.com.my/article/22215/EDISI/Selangor-KL/Denggi-terkawal-di-Bandar-Baru-Klang

https://news.uitm.edu.my/uitm-sasar-pelajar-sekolah-rendah-untuk-cegah-demam-denggi-dari-akar-umbi/

Mental Health and Postpartum Research

Vulnerability does not just occur in financial and physical aspects, it is also a mental health attribute. However, a person with this kind of vulnerability is also a person with other weaknesses. To empower this group of people, a model is being studied to seek out how we can explore this group of people to their fullest potential. A model will be developed to empower individuals with mental health issues. Another mental health issue has also correlated with postpartum features and the well-being of new mothers. UiTM researchers have embarked on a mission in looking for a comparative study on the longitudinal health outcome and the wellbeing between different postpartum care practices in Malaysia.

Substantial Clinical Trial Grants

A Multicenter International Randomised Parallel Group Double-blind Placebo-controlled Clinical Trial of Empagliflozin Once Daily to Assess Cardio-renal Outcomes in Patients with Chronic Kidney Disease
Project Leader: Dr. Muhammad Iqbal bin Abdul Hafidz
Grants: Private funded by Klinsel Sdn Bhd, RM 178,200.00

EX9924-4473 - Semaglutide Cardiovascular Outcomes Trial in Patients with Type 2 Diabetes (Soul Study)
Project Leader: Prof. Dr. Rohana Abdul Ghani (RM 471,730.00)

Semaglutide Effects in Cardiovascular Outcomes in People with Overweight or Obesity (Select Study)
Project Leader: Assoc. Prof. Dr. Sazzli Shahlan bin Kasim (RM 577,052.75)
Grants: Privately funded by Novo Nordisk Pharma (M)

Improving Nutritional Well-being of Malaysians

Good nutrition contributes to optimal nutritional well-being of the population. This will directly improve productivity and eventually contribute to the economic development of the nation. Hence, improving health and nutritional well-being of the people is one of the strategic thrusts of the 11th Malaysia Plan (11th MP) (2016-2020).

The Nutrition Research Priorities in Malaysia (NRP) (2016-2020) was developed with the primary objectives of highlighting important nutrition research gaps and identifying issues that warrant further research, especially in the Malaysian context. In supporting this important strategy of the 11th Malaysia Plan, the National Plan of Action for Nutrition of Malaysia (NPANM) III (2016-2025) was established by the Ministry of Health under the purview of the National Coordinating Committee of Food and Nutrition (NCCFN), with active participation and consensus from all stakeholders in food and nutrition in the country.

The NPANM III included two researchers from Universiti Teknologi MARA (UiTM); Assoc. Prof. Dr. Safiah Mohd Yusof and Associate Professor Dr. Mahendran Appukutty. Among the Facilitating Strategies of the NPANM III for supporting the effective implementation and evaluation of nutrition programmes in the country is "Strengthening Food and Nutrition Research and Development". Hence to achieve a highly sustainable impact, a concerted effort that involves a systematic and comprehensive promotion of healthy eating and active living is greatly warranted to effectively ensure the health of the population. Such an endeavour requires multi-stakeholder engagements comprising the public, private and civil society stakeholders.

The four pillars of food and nutrition security which are availability, accessibility, affordability and utilisation of food will be addressed in the Plan. The overall achievements of the NPANM III, 2016-2025 will be reviewed by the end of the Plan (2025).

http://nutrition.moh.gov.my/wp-content/uploads/2016/12/FA_Buku_NRP.pdf


339
research grants
RM25,022,028.39
53
consultancy projects
RM2,050,441.52
123
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Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Success at University

The Research and Innovation Unit of the Faculty of Business and Management (UiTM) led by Dr. Norshima Humaidi, Deputy Dean for Research & Innovation formulated a Mentor – Protégé programme to enhance collaborative approach in assisting and advising junior lecturers in publications. The main aim of this initiative is to boost publications among faculty members. This Mentor – Protégé Programme, is hoped to be a sustainable platform to motivate and assist the academic staff to become productive authors.

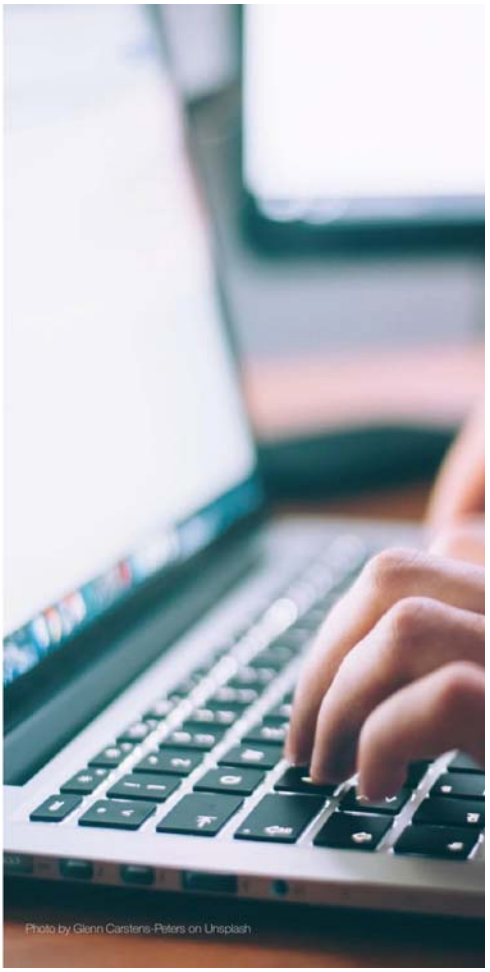


Photo by Glenn Carstens-Peters on Unsplash

Boosting Learning Outcomes in Suburban Schools

Known as the 'Speakables: The Final Chapter', the one-day programme that involved 23 committee members of the university's Public Speaking course, has helped 49 students from a sub-urban school in Negeri Sembilan to strengthen their communication skills. This is in line with the programme objective which aimed to enhance students' self-confidence and public speaking skills.

Speakables are series of academic community outreach projects that seek to improve English language proficiency among students in general. The programme was divided into three entertaining modules – Toastmasters, Island Hopping and Treasure Hunts that require participants to interact in English.

Sustainability Campus

Through the initiative of Sustainability Science Research Cluster (SUSci), Universiti Teknologi MARA (UiTM) had set 2019 to be the year that focused on preparing the campus toward achieving the eco-campus status and a more promising sustainable future. The official launching of Greenation@UiTM is the mark of the new era for the sustainability agenda in UiTM.

The core function of this committee is to engage and synergise the effort of all the stakeholders towards achieving world class sustainable best practices. Thus, realising the importance of sustainable campus which requires a holistic and trans-disciplinary approach as well as a network of campus community with surrounding community, the year 2019 was the new starting point with preparation of UiTM Eco-Campus Blueprint (UiTM-ECB).

The UiTM-ECB consists of six (6) clusters, namely setting and infrastructure cluster, energy and climate change cluster, waste cluster, water cluster, transportation cluster and education and research cluster.

https://greenation.uitm.edu.my/

UiTM is a Partner of MySUN - Malaysia Sustainable University Campus Network

Malaysia Sustainable University Campus Network, or better known as MYSUN is the Erasmus+ CBHE project that has an overall aim of promoting Malaysian university campuses as "living laboratories" for sustainability and energy efficiency. To support the Malaysian higher education aspirations; UiTM has become part of the living laboratories to increase the knowledge and skills of staff, to have accessibility to good practices developed in participating institutions, and to strengthen ability for collaboration both locally and at national level.

Associate Professor Dr. Norlida Jaafar and her team from the Faculty of Business and Management has successfully obtained Erasmus fund worth of RM374,141.90 recently, which indirectly made UiTM an enabler to students and staff mobility. A talk on the grant application has been carried out.

https://www.facebook.com/tncpi.uitm/videos/3128995513829250.

Rural Society Inclusivity

The mission statement of UiTM is to provide education to the underprivileged society and those communities where the ideal condition of education system is not well accessible and provided. The university recognises the potential of these students and desires to help them achieve their full potentials by providing them opportunities to be part of higher education society.

This effort begins as early as pre-school to primary and up to secondary school level. UiTM team has collaborated with a few partners namely the EMKAY Foundation and Khind Starfish Foundation to reach rural schools and children of the indigenous people. Few of the continuous programmes conducted for these groups include career guidance and prospects as well as English language enhancement activities.

National Education Plan Involvement

Associate Professor Rahidzab Talib, the CEO at Akari Software Asia Pacific Sdn. Bhd. UiTM Shah Alam is involved in the *"Kajian Impak dan Hala Tuju Pendidikan Digital Negara"*. This study aims to look into the effects and directions of Digital Education in Malaysia. It is fully funded by the Ministry of Education (MOE) with the grant of RM739,700.00.

This study is based on the MOE's education plan with programmes and projects that had already been implemented from 1999 until 2018. Five hundred schools were involved as the baseline input to establish and propose for the action plan until 2025. The discussions and analysis of findings also consider research reports nationwide and globally on the integration of ICT in teaching and learning particularly from those countries that had successfully implemented the use ICT in their school curriculum.

Better Futures Global

A total of 33 undergraduate students from the United Kingdom, the United States and China chose to volunteer for a good cause in a foreign land. Together with 11 students from Universiti Teknologi MARA (UiTM), 13 volunteers from Southern Connecticut State University, Liverpool John Moores University (10) and Shanghai Normal University (10) joined the Global Volunteering Programme organised by UiTM to conserve and sustain the environment.

Themed "Conserving their Home and our Home", they visited the Orang Asli at SK Sungai Tiang and Kampung Semelor in Pulau Banding, Belum Forest Reserve, and the Orang Utan Island Rehabilitation and Conservation Centre in Bukit Merah, Perak. The volunteers planted trees, taught English to Orang Asli children and cleaned up the orang utan centre, as well as helped to feed the primates.

https://www.nst.com.my/education/2019/08/516679/uitm-foreign-students-volunteer-good-cause

Academic Awards Recipients

Prof. Dr Hajah Nor Aziah Haji Alias
Director of Academic Development
The Academic Affairs Division (BHEA)

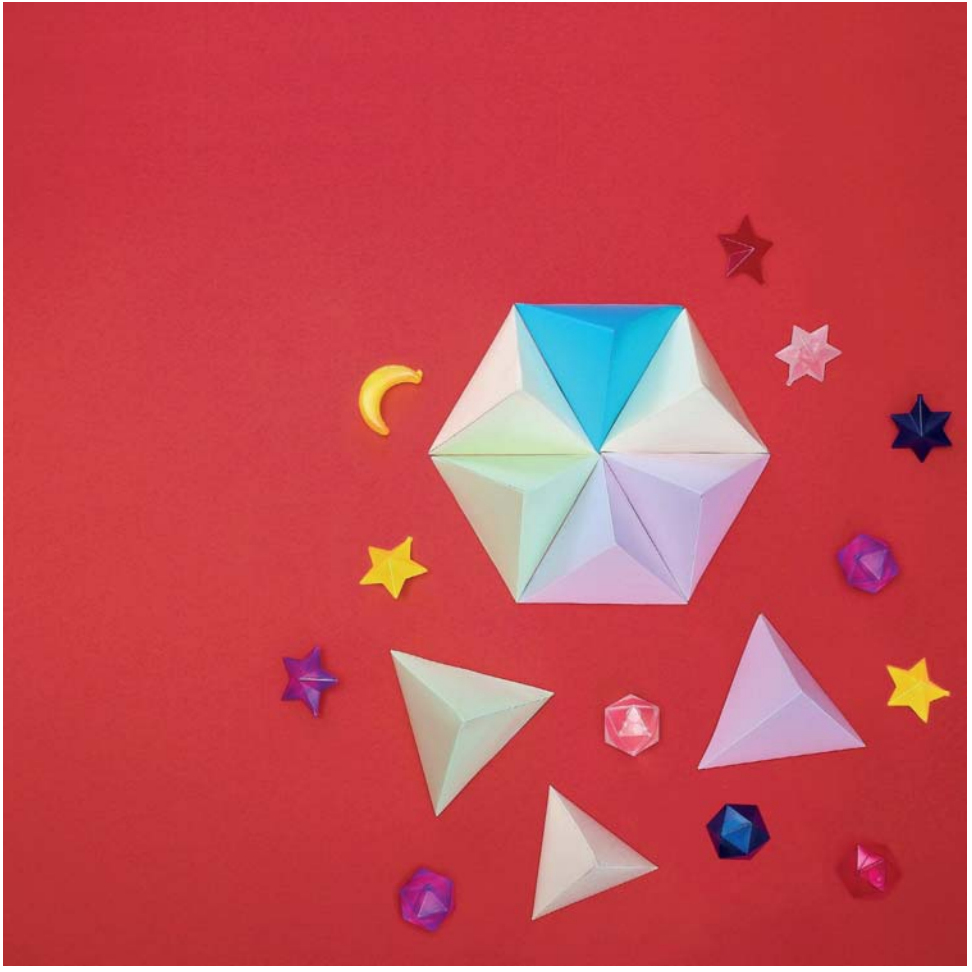
Gold Medal Award
EdTech Leadership in Asia for Tertiary Education

EduTECH Asia Awards 2019
5 November
Singapore

Patent

Cantilever Book Stand	**UI 2019004681**
An Educational Kit for Visualising and Measuring the Coriolis Effect	**UI 2019003615**
Service Robotic System for Servicing Facility and Method Thereof	**UI 2019004643**


137
research grants
RM5,404,643.16
174
copyrights
3
patents
65
consultancy projects
RM3,795,743.38
Photo by Bairn Hanif on Unsplash



5 GENDER EQUALITY

Achieve gender equality and empower all women and girls

Women in Islamic Finance

Professor Dr. Normah Omar, the Director of the Accounting Research Institute, Universiti Teknologi MARA (UiTM), has been named as one of the most influential women in Islamic finance by Cambridge IF Analytica.

She is the topmost professor in Financial Criminology in Malaysia. As the Top 3 Most Influential Women in Islamic Finance, Professor Dr. Normah Omar is a pioneer researcher in Islamic Financial Criminology, and her passion for research in the area has contributed significantly in realizing national aspirations to make Malaysia an Islamic financial hub.

Under her leadership, the Accounting Research Institute was awarded the status of Higher Institution Centre of Excellence by the Ministry of Higher Education Malaysia in 2010, and the centre continues to prioritize Islamic Finance in its high priority research agenda.

https://news.uitm.edu.my/ari-uitm-director-named-among-most-influential-women-in-islamic-finance/

Photo by Shane Rounce on Unsplash

Empowering Women in Chemistry

A Global Networking Event: IUPAC Breakfast was conducted at Faculty of Applied Sciences on February 12th, 2019. The Global Women's Breakfast event aims to assist women chemists to expand their network of contacts, both locally and internationally.

Women at different stages of their individual careers can inform each other about their career progress, and together explore opportunities, in professional development and in research and teaching horizons.

Organisations of all types namely universities, private companies, national chemistry societies, government laboratories, and other scientific organisations, as well as individual groups of chemists were invited to participate.

https://news.uitm.edu.my/empowering-women-in-chemistry-a-global-networking-eventiupac-breakfbvt8vfast/

https://fb.watch/1oWvkakdh6/

Women in Engineering

Professor Dr. Zuhaina Zakaria has been working in Universiti Teknologi MARA (UiTM) for more than 25 years and is currently a Professor in the Faculty of Electrical Engineering. Her main research interests are in the areas of power quality, load profiling and power system analysis and operation. She joined IEEE in 1999 and was elevated to Senior Member in 2013.

She is an experienced and committed member of IEEE Malaysia Section and was the chair of IEEE Malaysia Section from 2015 - 2016. She was also the founder for IEEE Malaysia Section-Women in Engineering Affinity Group which was formed in July 2007. Internationally, she was appointed by Region 10 Director as Region 10 Educational Activities Coordinator for 2017 - 2018.

She is also a committee member in MGA Geo Unit Operations Support Committee since 2018. For her outstanding contributions in IEEE, Professor Dr. Zuhaina Zakaria has received multiple awards including IEEE Malaysia Section Outstanding Volunteer Award for 2010, Honorable Mention for the 2018 WIE Inspiring Member Award and 2018 IEEE MGA Leadership Award. In 2019 she was awarded IEEE PES Chapter Outstanding Engineer Award.

Empowering Women and Leveraging their Qualities for Future Leaders

Merit has been the main virtue as an academic institution. To support the movement of equalities in gender, UiTM researchers have been aggressively looking into the "Peace for Women" campaign. Through this action, a small grant working on the Enhancing Resilience and Empowering Women and Girls in Shelters was awarded.

Another initiative is accelerating the balance between genders among academic leaders especially in higher education. This was materialised by a direct funding initiative entitled "Modelling Perceived Traits for Future Women Academic Leaders in Higher Education".

Recognition

Prof. Dr. Normah Omar
Director
Accounting Research Institute (ARI)

The GIFA Lifetime Achievement Award 2019
Global Islamic Finance Awards

16 September 2019

Assoc. Prof. Dr. Hjh Zuraeda Ibrahim
CA(M), CPA (Aust.)
Faculty of Accountancy

Vice President
Malaysian Institute of Accountants (MIA) - 2019/2021

19 September 2019


8
research
grants
RM152,900.00
Photo by Ryoji Iwata on Unsplash

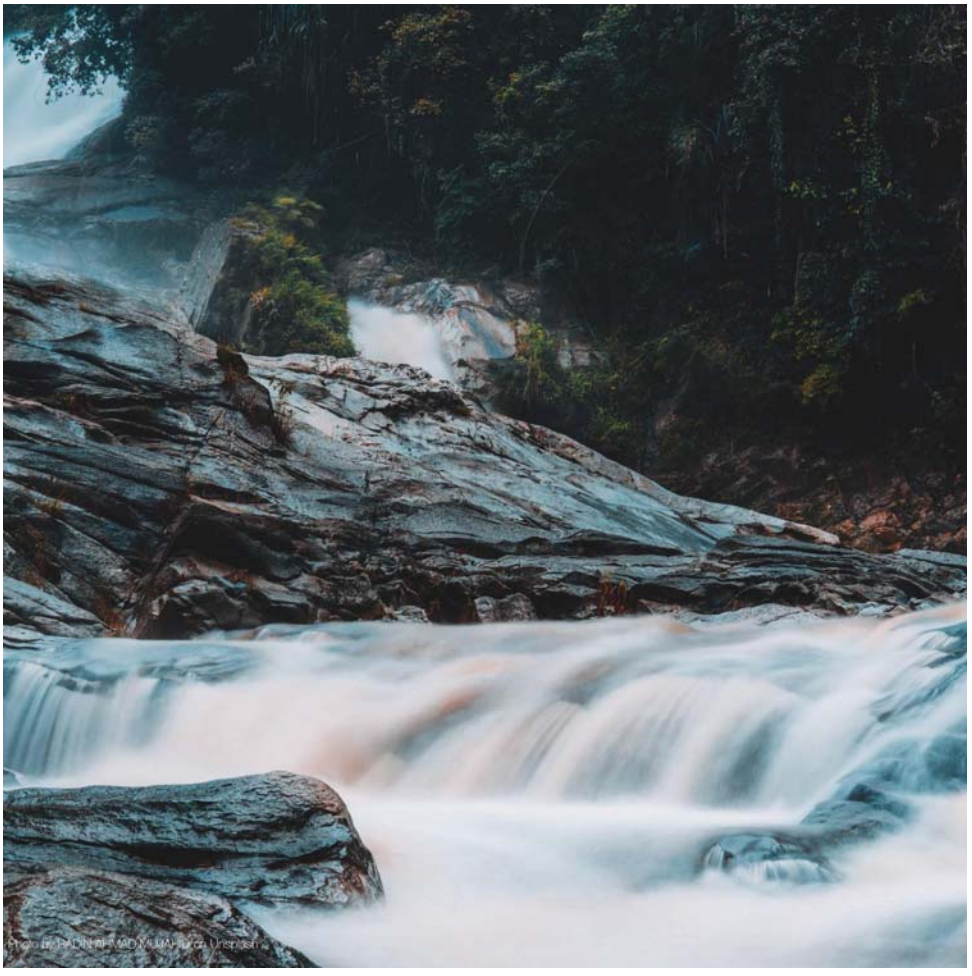


Photo by RADINAL MAULANA on Unsplash

Ensure availability and sustainable management of water and sanitation for all

Wastewater and Treatment Plant

The discharges of untreated industrial wastewater containing high amounts of heavy metal are highly toxic at low concentrations, and can accumulate in living organisms and affect human, animal and environment. Promptly, appropriate removal of heavy metal is crucial, but common traditional methods are suffering from high cost, sludge generation and energy consumption. Chitosan has attracted high consideration because of its capability to absorb various heavy metal ions due to its functional groups. Recently, the abundant local adsorbent known as kenaf also has many functional groups that enhance adsorption stability of chitosan.

Currently, with a grant worth RM 87,000.00, a group of researchers led by Dr. Nurul Fariha Lokman proposes adsorption method to remove Pb (II) ions in wastewater by new hybrid magnetic chitosan/kenaf/alginate/Fe3O4@SiO2 hydrogel composite using batch and continuous mode experiments. Characterization using Scanning Electron Microscopy (SEM), Transmission Electron Microscopy (TEM), Thermogravimetric Analysis (TGA), Differential Calorimetry (DSC) and Zeta Potential (ZP) analyses will demonstrate the physical and chemical properties of adsorbents that enhance the removal of the Pb (II) ions. For the adsorption capacity, the synthesize adsorbent is expected to boost up more surface binding with the Pb (II) ions.

Photo by Izuddin Helmi Adnan on Unsplash

Good stability while maintaining the higher adsorption capacity are highly demanded for adsorbents used in actual wastewater. On the other hand, the adsorption kinetic and mechanism of the synthesized adsorbent can be determined using the fitted models such as the non-linear models of pseudo-first order, pseudo second order, Langmuir, Freundlich, Weber and Morris intra-particle diffusion model.

The main outcome of this hybrid technology combination study leads into a stable adsorption capacity of Pb (II) ions removal. The successful outcomes of this proposal contribute to minimize the experimental work design, chemicals and time consumption. The outcomes are in-line with the National Priority Area in water security and Global Sustainable Development Goal concepts that contribute clean water and sanitation.

Another two projects embarked into the establishing of standard operating procedure of biological treatment method of the sewage treatment plant (led by Sr Dr. Ahmad Faiz Abd Rashid) and the design and performance evaluation of sewage treatment plant (led by Ts. Nurzawani Md Sofwan) in UiTM Sarawak campus.

Water Scarcity and Sustainability

For countries in Southeast Asia that mainly rely on surface water as their water resource, changes in weather patterns and hydrological systems due to climate change will cause severely decreased water supply. Warm weather triggers more water usage and aggravates the extraction of water resources, which will change the operation patterns of water usage and increase demand, resulting in water scarcity.

The occurrence of prolonged drought upsets the balance between water supply and demand, significantly increasing the vulnerability of regions to damaging impacts. A research led by Ir. Dr. Nur Asmaliza bt Mohd Noor from UiTM Pahang campus aims to perform an assessment of water scarcity-related drought index for water security in Malaysia.

River Rehabilitation and Clean Water Initiatives

Under the spirit of volunteerism, Mind the River: ServeU 2019 was organized in Kampung Bukit Kuching Tengah, Jeram, Selangor. The project was a joint collaboration of UiTM Student Representative Counsel, UiTM Volunteering Brigade, UiTM ServeU 1.0, Committe of Kampung Bukit Kuching Tengah (MPKK), and Team Selangor. The event was officiated by YB Datuk Seri Dr Dzulkefly bin Ahmad, the Health Minister of Malaysia on 2 November 2019. This activity was intended to create awareness on the importance of keeping our earth and rivers clean.

Professional Services for Water Resources Management

Led by UiTM Faculty of Civil Engineering, 6 consultancies projects were awarded by various agencies in looking at the water sustainable resources and management. It comprises Reports on Lembaga Urus Air Selangor (LUAS) and Research on the Management Sungai Kedah Catchment 2019-2029.

Researcher at this faculty are developing innovative solution on mitigating and maintaining the sustainability of water resources through a study and research to improve rainfall estimates and forecasts for sustainable water resource management especially for the state of Selangor and also developing an extended LUAS intelligent support system for sustainable water resource management for Sungai Langat. The overall consultancies project worth RM 710,479.28.

International Grants Recipients

Dr. Norhaslinda Nasuha
Puan Rasyidah Alrozi
Faculty of Chemical Engineering

The Kurita Overseas Research Grant
Kurita Water & Environment Foundation, Japan

15 September 2019


5
consultancy
projects
RM710,479.28
30
research
grants
RM152,900.00
1
copyright
Photo by Nathan Dumlao on Unsplash

7 AFFORDABLE AND CLEAN ENERGY

Ensure access to affordable, reliable, sustainable and modern energy for all

Sustainable Energy

UiTM Energy & Facilities Sdn Bhd (UEFSB) has collaborated with Petroliam Nasional Bhd (Petronas) New Energy to develop large scale solar photovoltaic power plants, on-campus energy optimisation and solar rooftop projects. UEFSB is a wholly owned subsidiary of UiTM Holdings Sdn Bhd (UHSB), the investment arm of Universiti Teknologi MARA (UiTM). Under this collaboration, both parties aim to leverage on each other's strengths and experiences to jointly develop and execute renewable energy and energy optimisation projects; to develop large scale solar photovoltaic power plants; to implement energy efficiency and optimisation programmes and subsequently, to install solar generators on the rooftop of selected buildings in UiTM campuses nationwide.

Photo by Riccardo Annandale on Unsplash

With over 30 campuses throughout the country, UiTM can potentially save up to 30 per cent on its annual energy expenditure. This collaboration will strengthen UiTM's competitive advantage in the higher education sector to become a premier university of outstanding commercial growth and moving towards a greater sustainable future. UHSB currently owns a 61 megawatt (MW) large scale solar photovoltaic power plant in Gambang, Pahang, which commenced operations on March 8, 2019, and is expected to generate over 80,000 MWh of clean energy per annum and yield RM650 million in revenue over the next 21 years.

UHSB has also commenced development of its second 31 MW large scale solar photovoltaic power plant in Pasir Gudang, Johor. The solar plant, when ready in the first quarter of 2020, is expected to generate over 40,000 MWh of clean energy and yield RM315 million in revenue over 21 years, with the potential of avoiding 28,000 tonnes of carbon emission every year. By 2020, UiTM, via the two large scale solar power plants with a combined capacity of 92MW, will be contributing to almost four per cent of renewable energy production in Malaysia.

UiTM Solar Power

The green sustainable and responsible investment (SRI) sukuk for a solar power project undertaken by Universiti Teknologi Mara (UiTM) continues to hold a good credit rating. Malaysian Rating Corp Bhd (MARC) has affirmed its AA-IS rating on UiTM Solar Power Sdn Bhd green SRI sukuk of up to RM240 million, with a 'Stable' outlook.

The green sukuk is the result of collaboration between the Securities Commission Malaysia, Bank Negara Malaysia and the World Bank Group. The underlying aim is to develop an ecosystem to facilitate the growth of green sukuk and introduce innovative financial instruments to accommodate global infrastructure needs and green financing.

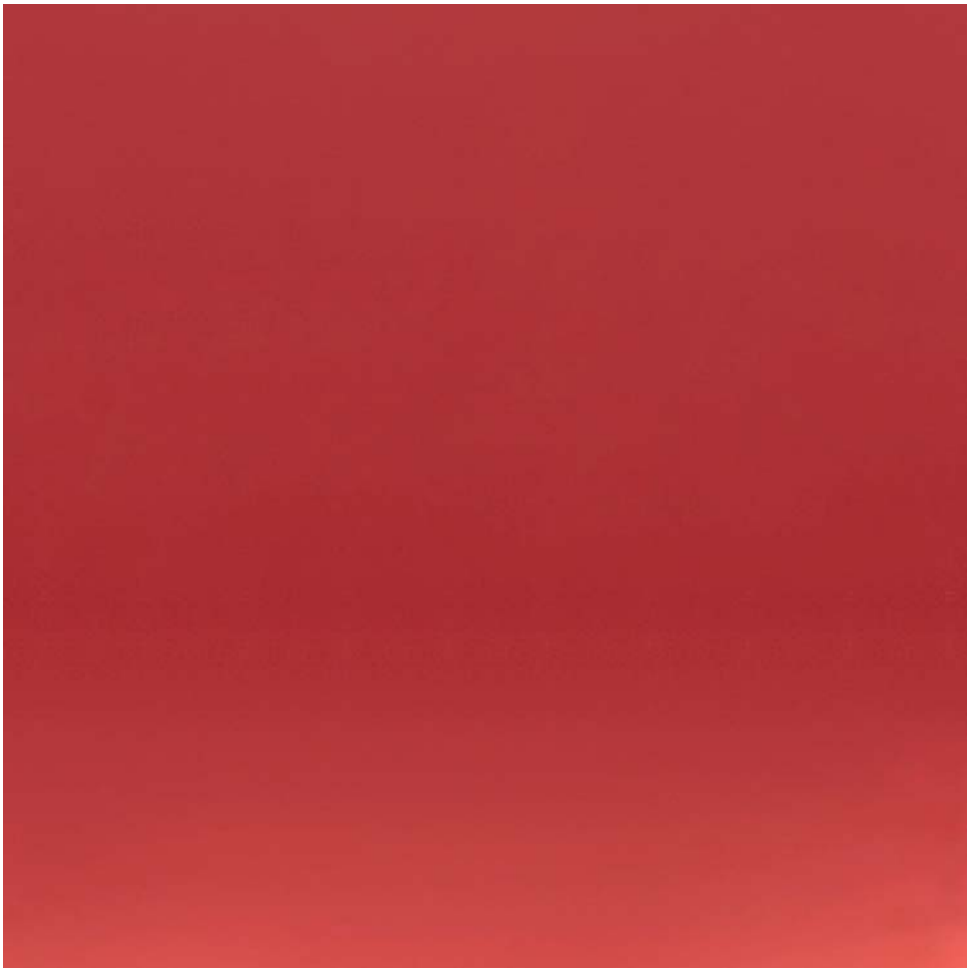
Classification and Mitigation of Complex Power Quality Problems in Energy Storage System (ESS)

In recent years, microgrid (MG) technology has been implemented in the electrical distribution system to maintain the continuity of supply originating from nearby photovoltaic systems (PV) and energy storage systems (ESSs). Nevertheless, there is an issue with the use of a power electronic inverter as a connecting device between ESS and MG that will engender a complex power quality problem to load in MG. The second problem is that the load in MG usually will experience the voltage interruption during an intermittent operation of PV.

The third problem is that a reverse power flow will disrupt a grid operating system as a result from the implication of PV output power exceeding the remaining amount of non-tripping load in MG. UiTM Solar Energy Research (U-SER) Institute with a grant worth of over RM 500,000.00, led by Assoc. Prof. Dr. Muhammad Murtadha is looking for solutions to classify the complex power quality problems of the energy system storage (ESS) and to accurately extract the fundamental component of power or voltage at DC-link using random forest (RF) controller scheme through unified power quality conditioner (UPQC). Integrating the ESS and PV with the UPQC provides active power capability to the network.

The main benefit of ESS integrated with UPQC is that it makes the system capable of supplying and absorbing active power from the PV. Although renewable energy is not completely reliable due to its environment-dependent feature, integrating an ESS will nonetheless solve the problem of the lack of renewable energy resources. As a compendium, this research project provides significant output that can be referred to the robust performance of proposed technique in solving the complex power quality problems in ESS and MG that is in-line with the Malaysia Industrial Revolution 4.0 (IR4) under the main technology pillar of "System Integration", and also Sustainable Development Goals (SGD) 7 & 12.


24
consultancy projects
RM1,637,019.12
25
research grants
RM2,404,706.00
3
patents
6
copyrights



8 DECENT WORK AND ECONOMIC GROWTH

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

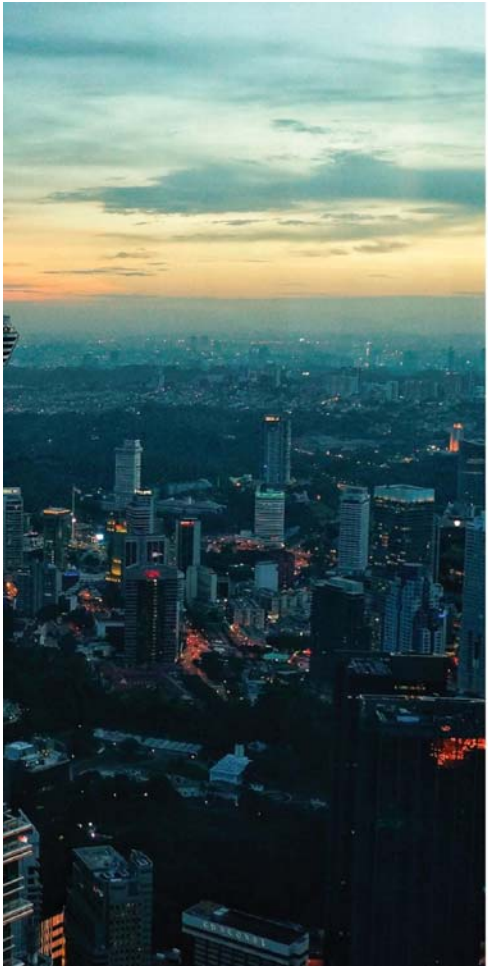
Successful Entrepreneurship Programme

Bilut CIMB Islamic Entrepreneurship Programme (BiCEP) is an entrepreneurship programme organized by the Faculty of Civil Engineering, in collaboration with the Faculty of Business and Management, Faculty of Computer and Mathematical Sciences, and UiTM Raub Campus. This programme, with a total fund amounting to RM 1 Million has been awarded to the Faculty of Civil Engineering, by CIMB Islamic for the benefits of the Felda Bilut settlers.

This two-year programme has been sculpted to educate, guide and groom Felda Bilut settlers to become successful entrepreneurs. A total number of 24 participants have attended a mentor-mentee session of the programme, where they were briefed on the purpose of developing a business proposal as well as the planning, organizing, developing and ultimately, submitting their business proposal for seed funding to start up their businesses.

https://fka.uitm.edu.my/v2/index.php/2-uncategorised/470-bilut-cimb-islamic-entrepreneurship-programme-mentor-mentee-session

Photo by Paweł Szaniawiec on Unsplash



Technology and Prototyping for the Sustainable SMEs

In the fast-changing world that we live in today, it is widely accepted that creativity and innovation are crucial for business to succeed. While creativity is the ability to produce new and unique ideas, innovation is the execution of that creative idea. When adequately fostered, creativity and innovation create inventive problem solving for your business or your audience.

Think of technological innovations! They solve day-to-day problems and make life more convenient for all. A research led by Dr. Rohana bt Zur under the Prototype Research Grant Scheme (PRGS), Ministry of Higher Education, found that through utilisation of advanced computer aided design, the prototype production of creative garments for SMEs can be materialised.

Apart from technological innovations, the adoption of technology for the SMEs is equally important. For adoption of technology, Dr. Shukriah Sa'ad was awarded direct funding from the ASEAN Federation of Accountants worth RM 83,718.25, to conclude the accounting professional technological competency skills (APTCS) of SMPs.

Enhancement of Entrepreneurship through Attributes Model

Small business entrepreneurs in Malaysia are facing many challenges especially in sustaining their business. In tackling this issue, Assoc. Prof. Dr. Abdul Kadir Othman and his team proposed to address the limitation of the existing model and to propose the comprehensive model to determine the attributes of successful small business entrepreneurs in Malaysia.

With grant amount of RM94,700.00 the objectives of the study are to propose a small business entrepreneurship model that can contribute to small business entrepreneurship success; to identify valid and reliable instrument to assess small business entrepreneurship attributes; to investigate the contribution of small business entrepreneurship attributes to small business entrepreneurship success; to examine the scores of small business entrepreneurs on the identified attributes and to propose strategies to overcome the limitations to small business entrepreneurship success.

The proposed model will serve as reference or guidelines for future endeavour to come out with specific modules to groom entrepreneurs on each identified successful attribute. It is expected that the research project can contribute in reducing the loss faced by the number of small business entrepreneurs in the B40 group and subsequently will contribute to the growth of the economy of the country.

Malaysian Academy of SME & Entrepreneurship Development (MASMED)

Today, entrepreneurship receives a great emphasis from higher learning leadership as an important intervention that helps the higher learning institution to overcome unemployment among graduates. MASMED as one of the centres in UiTM has been given a very important role to create an ecosystem that enables students and graduates to become entrepreneurs.

MASMED's vision is to transform lives through entrepreneurship which aims to change the mindset of the students to be more independent in terms of searching for a job and not only be able to create jobs for themselves but for other graduates as well. They will directly contribute to wealth creation and more importantly, they will be trained to embrace a high level of integrity in their entrepreneurial activities.

Besides establishing a conducive ecosystem in realising the vision, MASMED will focus seriously on strengthening entrepreneurship activities in UiTM and increase the number of students and graduate entrepreneurs. As a result, it would lead to a significant impact and more visible in entrepreneurial activities in UiTM. Hopefully, this will make UiTM a leading higher learning institution in entrepreneurship and indirectly elevate UiTM's world university rankings.

https://masmed.uitm.edu.my/v5/index.php

Awards Recipients

Faculty of Business & Management
Bachelor of Business Administration in Islamic Banking degree programme

Best Research and Education
in Islamic Finance & Halal Certification

The Best Islamic Finance Qualification Award
in Islamic Finance & Halal Certification

The Global Islamic Finance Awards
Cape Town, Africa
16 September 2019

Professional Services and Consultancies

Various faculties and research institutes in UiTM have worked together in undertaking a total number of 23 consultancy projects valued at RM 7,696,745.58, to provide expert advisory services to the local authorities, private agencies and the government.

Some of the projects that have been carried out by UiTM experts include *Penulisan Laporan Ekonomi Negeri Johor 2018-2019*, led by Faculty of Science Computer and Mathematics, *Kajian Fisibiliti Pasar Tani Kekal (Ptk) Di Cameron Highlands, Pahang and Cadangan Penyediaan Pelan Perniagaan FRIM PCS Untuk Institut Penyelidikan Perhutanan Malaysia (FRIM)* Kepong Selangor Darul Ehsan, led by the Faculty of Business Management and finally Program Realiti Televisyen Ceo@Faculty Bhg Hub Industri led by the Faculty of Communication & Media Studies.

Our research institutes have joined in the pursuit and they have successfully secured a significant number of consultancy projects through the INTUGLO.COM - A Go Global Market Access and Business Solution Platform (MITRANS, CIMB Islamic UITM Entrepreneurship Programme Benefiting (IISEM) and Social Outcome Fund (SOF) Project (ARI).

Certifications and Bespoke Programme

Certificate in Investment Analysis Intermediate Level
MASMED

Executive Certification in Investment Analysis for MTDC Officers
MASMED


23
consultancy
projects
RM7,696,745,58
171
research
grants
RM10,479,794.82
26
copyrights

Build resilient infrastructure, industrialization and foster innovation promote inclusive and sustainable

Robotic Innovation for Sustainable Industrialization

Automated Media and Growth Optimization System (AMGOS) is a unique high-throughput robotic system, specifically designed as an automated chamber for mixing of liquid media or chemicals and also acts as a robotic growth chamber used to optimize newly formulated media for growth enhancement of microalgal cells, effective microbes, platelets, plant and animal tissue cultures in a miniature scale fashion (max volume of 150 µL) via the use of 96 microwell plate. For media or chemical mix optimization, via the used of 'Design of Experiment' (DOE) system such as Response Surface Design or other experimental designs, the 8 channels robotic pipettors (Liquid Handling System or LiHa) on AMGOS can be programmed to conduct pipetting and mixing of chemicals accordingly in the 96 microwell plate.

Photo by Rob Lambert on Unsplash

For optimization of cell growth or cellular products production, cells that have been inoculated in the microwell plates with experimental media can be placed on the shakers equipped on AMGOS for cell agitation. Cellular growth or cell products accumulation dynamics detection can be conducted via the use of Robotic Manipulator Arm or RoMA on AMGOS to transport the microwell plate to an advanced spectrophotometer for the determination of optical density as a cell growth/cellular products monitoring proxy. Real-Time Growth/Cellular Products Dynamic Monitoring System provided on AMGOS allows the growth dynamics monitoring in real-time basis.

In terms of commercialization, industries that used AMGOS services comprise of Tenaga Nasional Berhad Research (TNBR) (approximately RM 500,000 research consultancy works for microalgae media optimization), Bellus Terra Sdn. Bhd. (up to a maximum RM 2.5 million for effective microbes media optimization), establishment of a start-up company, Wisdom Creation Industries Sdn. Bhd. to produce algal-cheese-cream wafer (in the process to obtain RM 4 million fund from MTDC and other investors) and Agroclone Sdn Bhd for optimization of woody plant tissue culture.

https://www.astroawani.com/berita-malaysia/mikroalga-mampu-selamatkan-pencemaran-bauksit-di-kuantan-89237

Empowering Community through Innovation

In an effort to nurture the culture of innovation and design in the field of teaching, learning and other related fields among educators, students, and the public, Universiti Teknologi MARA Kelantan and the Ministry of Higher Education, organized 2nd Kelantan International Learning and Exhibition 2019 (KILIEx 2019). This event provides a prestigious platform for educators, students, and the public to participate and showcase their innovations and designs through a digital platform.

https://news.uitm.edu.my/2nd-kelantan-international-learning-and-exhibition-2019-kilex-2019/

Institute of Infrastructure Engineering and Sustainability Management (IIESM), Universiti Teknologi MARA

This institute is established to dedicate excellence in creation of knowledge through postgraduate programs, innovation in research and leadership in professional services. IIESM focuses on research in all civil engineering disciplines with the aim to solve infrastructure and environmental engineering problems in a more sustainable way and introduce new state of the art technology.

This is evident through its research activities and collaboration with other academic institutions, government, and non-government agencies as well as its partners in the industry at national and international levels. The inter-discipline and multi-discipline collaboration with Civil Engineering and other fields of sciences had indeed advanced to a new level of perspective that gained growing confidence and respect by the industries. This had enriched research quality of the institute and had created synergies across disciplines.

Concerted efforts through this establishment has led to the commercialization of products, patents, awards, indexed publications, and consultancies. IIESM has a highly dedicated team of researchers with a strong passion for furthering the cause of teaching and research. These researchers have outstanding research contributions in their own fields of specialization, the details of which are available in the relevant web pages. They welcome dedicated students for pursuing their cutting-edge research and offer state of the art consultancy in Infrastructure engineering and sustainable management which strengthens IIESM services to the nation.

IMPROVING MALAYSIA KNOWLEDGE
TOWARDS A WOOD AND FURNITURE INDUSTRY 4.0 - MAKING 4.0
Project Leader: Assoc. Prof. Dr Shahriman b Zainal Abidin
Grants: Project funded by the EU Commission (RM489,382.40)

https://iiesm.uitm.edu.my/

Sustainable Development Railway Infrastructure

Transportation infrastructure has an enormous impact on sustainable development. The importance of rail transportation project is due to the essential role and high priority of rail transportation in improving infrastructures and creating a balanced and sustainable development. The vital role of rail transportation in Gross Domestic Product (GDP) and its necessity for development in economy, trade, industry, agriculture, financial and social sectors cannot be overstated.

The advantages of rail transportation over road transportation for transportation of large quantities of cargo and passengers remain apparent, especially for long distances include significant reduction in energy consumption, significantly higher safety and positive effects on the environment due to reduced fuel consumption and reduced cost of transportation. For this, Keretapi Tanah Melayu Berhad (KTMB) has awarded a project worth RM229,850.40 to Malaysia Institute of Transport (MITRANS), UiTM to look at Track Access Capacity Across the KTMB Rail Network.

High Capacity Buses

Public transportation can support higher density land development, which reduces the distance and time people need to travel to reach their destinations, which in turn leads to lesser emissions from transportation. Sharing rides through public transportation can save fuel. It also decreases the need for constructing more transportation infrastructure, manufacturing new vehicles, and extracting more fossil fuels that lead to further energy savings and fewer environmental impacts.

Congestion relief from transit also saves fuel as vehicles stuck in gridlock waste fuel and generate emissions. As part of UiTM knowledge transfer effort, Malaysia Institute of Transport (MITRANS), UiTM, shared its expertise in completing a research on Pilot Study of High Capacity Buses in Malaysia. This project was valued at RM 63,857.71 and was awarded by Scania Malaysia.

New Highway Infrastructure Development

The implementation of sustainability in highway construction is vital since economic, social development and environmental protection is expected globally. In the newly developed DASh Highway, Malaysia Institute of Transport (MITRANS) UiTM, has been commissioned by Elcorp Technology Sdn Bhd (RM 108,244.00) to be engaged in the Coring and Laboratory of Pavement and Soil Samples from the Dash Highway. MITRANS expertise and facilities were used for the soil sampling and testing.

International Consultancy Services for Lamongan Water Supply Scheme Indonesia

Assoc.Prof Ir Dr. Lee Wei Koon and Dr. Jazuri Abdullah from the Faculty of Civil Engineering (FCE), UiTM were appointed as external consultants to Airis Engineers Sdn. Bhd., undertaking an engineering consultancy service for the validation and troubleshooting of hydraulic models for the proposed Lamongan water supply scheme Indonesia. The project is financed by Matrade Services Export Fund (SEF) which assists Malaysian Service Providers (MSPs) to undertake activities to expand and venture into the international market.

One of the key objectives of SEF is to raise the profile of Malaysia at the international level as a competent service provider and brand Malaysia as a supplier of services. The principal of Airis Engineers, Ir Syed Ismail Syed Yusoff, identified the potential to introduce water reticulation in Lamongan Regency in East Central Java, Indonesia, where the primarily rural residence still depends largely on untreated groundwater. However, the lack of data on population, water demand and topography over the vast aerial extent of rural Indonesia presents itself as an immense engineering challenge.

Under the scope of the project, our expertise in FCE, provided services in discretizing the terrain, satellite imagery analysis to estimate rural built-up area and hence, water demand estimation, training, development and troubleshooting of EPANET water supply network model. The project was completed at the end of 2019. A technical paper entitled "Basin-wide water demand estimation using RGB color detection of built-up area from satellite imagery" was submitted and accepted for presentation at the 1st International Recent Trends in Engineering, Advanced Computing and Technology Conference 2020 (RETREAT) in December 2020.

The Development of New Pole Design for Tenaga Nasional BHD (TNB) Distribution System

The Finite Element Method (FEM) has become an industry standard modelling tool for structural design, analysis, and research. As with any modelling method, the complexity of a finite element model is driven by the intended use of its results. Capabilities of FEM span from basic physical understanding of a complex structure or system to accurate quantitative analysis of the response of a system to a set of inputs.

A number of typical uses of a finite element model are described below in order of increasing model complexity. The most basic use of a finite element model is to provide a physical understanding of a system. Four staff from the Faculty of Civil Engineering (Azmi Ibrahim, Azerai Ali Rahman, Aruan Efendy Mohd Ghazali and Salmizi Jaafar) were engaged by the TNB Research to develop new pole design for HV 33kV, 11 kV ABC Line, communication line and street light for TNB distribution system (project valued at RM 220,000.00). In this project, the 3D Finite Element model used in the analysis has been described briefly.

The objectives are to investigate the effect of displacement and stress distribution on composites poles using ANSYS; to investigate the effect of displacement and stress distribution on concrete poles using STAAD PRO and lastly, to design the concrete stump according to the analysis obtained. The final report describes the modelling of the new TNB poles with different materials (composites and concrete pole system) and the parameters chosen for the materials are mentioned too. The optimization had also been included in the analysis and explained in detail.

Electronic Document Management System (EDMS) at Malaysian Technology Development Corporation Sdn Bhd (MTDC)

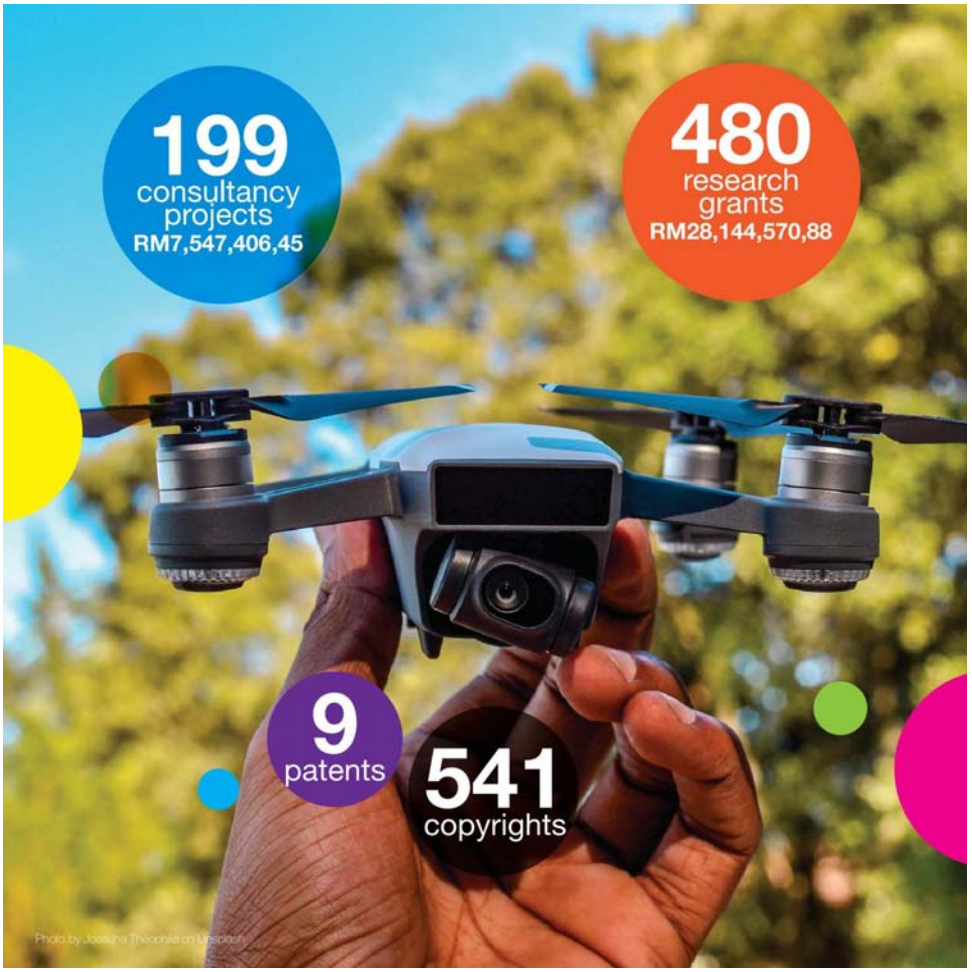
The MTDC's EDMS V3 is a record management system aimed at managing MTDC's electronic record in concordance with the standard set by National Archive of Malaysia. The project, valued at RM 347,520.00, was led by two lecturers from the Faculty of Information Management (Assoc. Prof. Dr Azli Bunawan and Assoc. Prof. Ts. Dr Safawi Abdul Rahman) and a freelance IT personnel.

The roles of the researchers were to prepare architectural designs of the EDMS V3 system. The development of MTDC's EDMS V3 was established in 2 stages. Each stage consists of 2 phases. In Stage 1 (Phase #1 and Phase #2), basic functions such as metadata definitions, security level and access control were established.

Stage 2 of MTDC's EDMS V3 involved enhancement that includes appraisal and retention schedule (Phase #3), and this is followed by workflow, reporting and disposition stage (Phase #4). With this enhancement, the MTDC EDMS V3 operates in a complete record management life cycle in which it is capable of storing and retrieving of document and record, performing the automatic alert on disposal schedule, and generating a proper report for each of the function and feature.

Patents

A Method of Producing Amorphous Silica from a Biomass	PI 2019002497
A Method of Producing a Brick Composition	PI 2019000180
Self-Locking Woven Conductive Fabric	PI 2019000542
Anode, Cathode and Electrolyte Compositions for Proton Conducting Fuel Cell (Pcfc) Button Cell and Method of Manufacturing Thereof	PI 2019005767
Neo-Flame Fire Starter	PI 2019004304
Electric Turbo Compounding System with Dual-Stage Cooling Assembly for Internal Combustion Engine	PI 2019003918
Cantilever Book Stand	UI 2019004681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541
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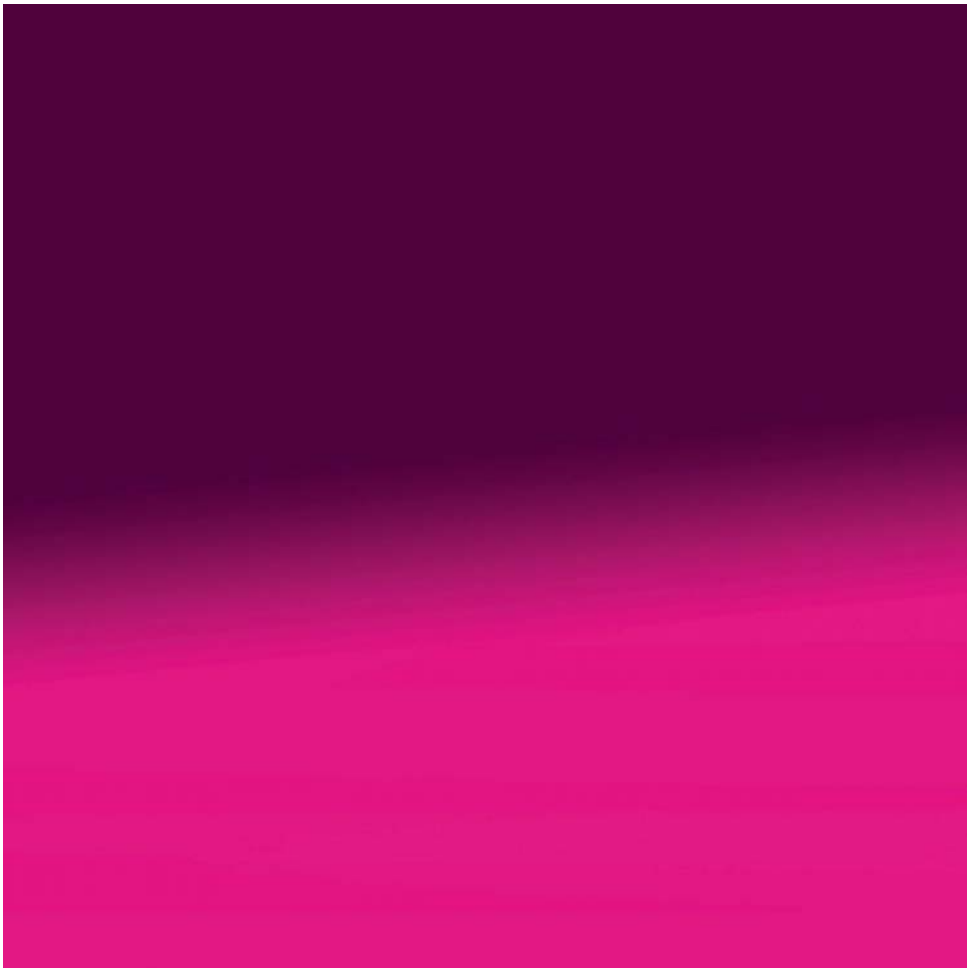
Photo by Joshua Théophile on Unsplash



Reduce inequality within and among countries

Global Volunteering Programme: UiTM, Foreign Students Volunteer for Good Cause

While many young people were enjoying summer holidays in their own countries, 33 university students from the United Kingdom, the United States and China chose to volunteer for a good cause in a foreign land. Together with thirteen students from Universiti Teknologi MARA, ten volunteers from the Southern Connecticut State University, ten from the Liverpool John Moores University, and ten from the Shanghai Normal University, joined the Global Volunteering Programme organised by UiTM last month.

Themed "Conserving their Home and our Home", the programme aimed to support efforts towards the conservation and sustainability of the environment. The volunteers visited the Orang Asli at SK Sungai Tiang and Kampung Semelor in Pulau Banding, Belum Forest Reserve, and the Orang Utan Island rehabilitation and conservation centre in Bukit Merah, Perak.

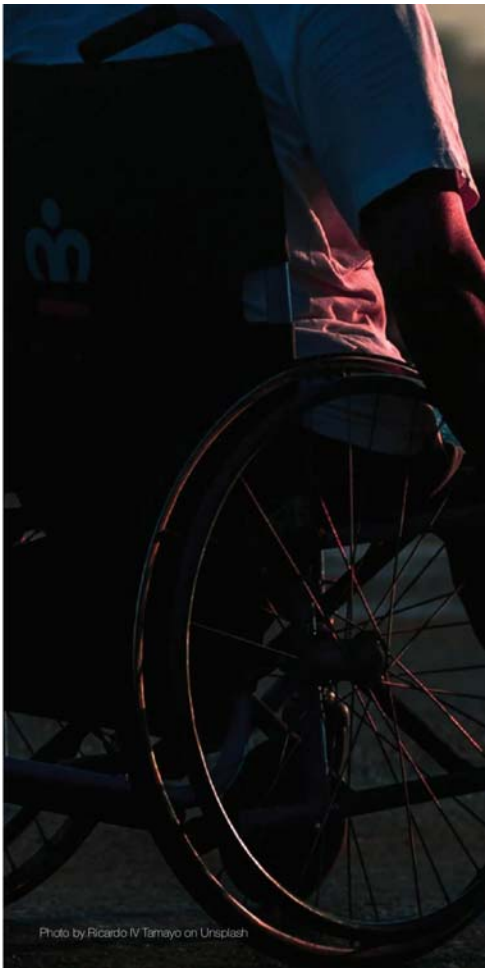


Photo by Ricardo IV Tamayo on Unsplash

The volunteers planted trees, taught English to the Orang Asli children and cleaned up the orangutan centre, as well as helped to feed the primates. The activities aimed to raise awareness among the volunteers on the significance of conserving Orang Asli culture and saving the endangered orangutan in Malaysia. This programme brought the outside world to the Orang Asli community and exposed them to the intriguing atmosphere and experience of communicating and interacting with foreigners. It is an effort by UiTM to enlighten and encourage them to be part of modernisation, offering them an equal opportunity to succeed.

https://www.youtube.com/watch?v=5C0c0Ah53T8

https://www.nst.com.my/education/2019/08/516679/uitm-foreign-students-volunteer-good-cause

Sustainable Rural Community Economy

The idea of sustainable rural planning relates to the concept of sustainable development and how planning could be used as a tool to achieve sustainable rural development. Sustainable development entails meeting the needs of the present generations without compromising the ability of future generations to meet their own needs.

The concept of sustainable rural development emerges out of an increasing environmental awareness, and the acknowledgement of the interrelationships between economic, ecological and social wellbeing. In making such an effort, Dr. Norhayati Hussin has secured RM83,900.00 to push the aspiration of mobilising rural communities and resources towards sustainable economic development.

Urban Poor Community (B40) Outreach Programme and Research

The Faculty of Computer Science and Mathematics has successfully organised another community outreach programme on Saturday, 28 April 2019. The award-winning 1 Telecenter 1 Community (1T1K) Outreach Programme currently in its fourth cycle reached out to the community of Seksyen 24 Shah Alam and Amanah Ikhtiar Malaysia via an entrepreneurial workshop on e-commerce.

The workshop was conducted by Puan Nur Atiqah Rochin Demong and Puan Norfadzilah Abdul Razak of Alibaba Global Ecommerce Talent Group, with 21 facilitators comprising our very own student volunteers. The participants, who were offline entrepreneurs, found the workshop to be an eye opener in expanding their businesses to the wider market. The student volunteers, on the other hand, found the overall experience fulfilling as they were able to give back to the community via knowledge sharing. This effort may ultimately reduce the gap that exists between the urban poor community and others.

https://fskm.uitm.edu.my/v4/index.php?option=com_content&view=article&id=603:the-award-winning-1-telecenter-1-community-1t1k-outreach-program&catid=21&Itemid=205

Developing a Progressive Indirect Tax Model from the Perspective of Good Tax Policy to Enhance the Well-being of Low Income Group (Bottom 40)

Since the 1970s, the Malaysian government has focussed on sustainable development of the country by improving the economic well-being of its society. In September 2015, Malaysia reaffirmed this commitment along with other United Nations countries by implementing the 2030 Agenda for 17 Sustainable Development Goals (SDGs), focusing on the bottom 40 per cent of households (B40).

Unfortunately, the implementation of Goods and Services Tax (GST) on 1 April 2015, followed by Sales and Services Tax (SST) 2.0 on 1 September 2018 impacted the B40 group, thus hindering the achievement of the SDGs. The public, especially the B40 group, claimed that indirect tax is regressive and burdensome (MIER, 2018). Cash transfer through Bantuan Sara Hidup was ineffective in resolving the issue of the high cost of living and inequity. Therefore, to rectify this issue, it is timely for Malaysia to have a progressive indirect tax (Adamu et al., 2017) to decrease inequality and consequently increasing the B40 group's disposable income.

The objectives of the study are to investigate the regressive structure of the current SST 2.0, determine the impact of SST 2.0 on the B40 income group; and develop a progressive model of indirect tax from the perspective of good tax policy. Led by Dr. Nadiah Abd. Hamid with a grant value of RM 78,900.00, this study will apply a mixed method approach with a questionnaire survey given to respondents from the B40 income group, a focus group discussion and interviews with tax authorities, policymakers and representatives of the B40 community.

The data will be analysed using the SmartPLS and NVivo software. The outcome of the study should provide useful feedback to relevant policymakers and tax authorities in designing a progressive indirect tax model. Policymakers should consider the effect of the new SST model on the B40 group and propose relevant social safety net programmes to enhance economic well-being and eradicate inequity.

Inclusive Playground Aimed at Children with Disabilities

Playing is a vital component for children development in terms of the affective, psychomotor and cognitive skills, social interaction and creativity. All children, including those with disabilities, have the rights to experience play for their development. However, presently children with disabilities often face problems at public playgrounds, entertainment as well as amusement areas, due to the lack of amenities to cater to their special needs.

According to the Social Welfare Department (2018), out of the 27 million population of Malaysia, there are about 900,000 children below 15 years old with different disabilities who need special care and facilities in public areas. The responsibility to cater to this need falls under the Ministry of Women, Family and Community Development (MWFCD). Various approaches and strategies have been reviewed to achieve the goal of the Malaysian Plan of Action for People with Disabilities 2016-2022, in line with the government's Persons with Disability (PwDs) policy and the 11th Malaysian Plan (RMK11).

Led by Dr. Lilawati Ab Wahab, this research aims to develop a sustainable design of inclusive playgrounds for children with disabilities. The research intended to use quantitative and qualitative methods by using questionnaires, observation and interviews with the children with disabilities, parents and all stakeholders responsible for this development. The model design resulting from the research will ultimately help to ensure that above all, children with disabilities will have the right to play in these inclusive playgrounds safely and thus contribute to Malaysia's social sustainability and development.

Investigating the Myths, Challenges and Problems of the Orang Asli Education Path in Taman Negara Pahang

The Orang Asli (OA) has been described by many researchers to have been marginalized in terms of education. However, there is also evidence that shows that the Malaysian government has put in a tremendous effort to uplift the education level of the Orang Asli. Nonetheless, after decades of effort, the number of OA children who have completed their education up to the tertiary level has been extremely minimal.

Led by Dr. Badli Esham Ahmad under the Fundamental Research Grant Scheme (FRGS), this research intends to unravel the reasons why the OA in Taman Negara (of the Batek and Semoq Beri tribes) are lacking in their participation in formal education. It will also look at the involvement of the parents in ensuring the continuation of schooling among the OA children. The research will employ a qualitative approach with semi structured interviews and non-participant observation as methods of data collection.

Data will be analysed using the Constant Comparative Method in a recursive manner in which data will be analysed exhaustively to ensure that everything has been taken into account. Findings from the study can be used to develop a model that can be implemented in the education system to attend to the OA of Taman Negara. In addition, the findings from this study can form the basis upon which other models of learning can be developed to tackle the issue of lack of interest in education among other tribes of OA in the country.

On-campus Facilities and Assistance for the Disabled

As UiTM researchers are moving forward with inclusivity efforts for children with disabilities, UiTM has also embarked on the establishment of a unit that will be responsible for the welfare of students with disabilities. Together with this establishment, a new policy on students with disabilities in UiTM has been developed.

https://www.malaysiakini.com/news/502299

https://hea.uitm.edu.my/v3/index.php/downloads/infographic/121-polisi-pelajar-kurang-upaya-uitm1


19
research
grants
RM573,800.00
4
consultancy
projects
RM53,388.00
Photo by Noorulabdeen Ahmad on Unsplash

Make cities and human settlements inclusive, safe, resilient and sustainable

Sustainable Transport

The University is committed to promoting the use of sustainable modes of transport and encourages staff and students to use active modes of transport, such as walking and cycling, and public transport.

Universiti Teknologi MARA (UiTM) students can now travel to their campus for free with the additional stops at UiTM campus by Smart Selangor Free Bus (the SA04 bus route). This was in line with the goal of the Shah Alam City Council (MBSA) in becoming a public transportation-friendly and low carbon city by 2030. MBSA is allocating RM1.4mil a year for the SA04 route.

Photo by Ant Rozetsky on Unsplash

Windstorm Hazards Index Integrated with Location-based Data Analytics for City Dwellers

Multiple hazards often simultaneously occur in one extreme weather event. Approximately all the cities in this world are exposed to more than one hazard. Monitoring and forecasting of events, intensities, and the evolution of extreme hydrometeorological events have become critical to many humanitarian agencies and governments in their efforts to prepare, mitigate, and manage disaster response to save lives and limit damage.

However, the exposure, sensitivity and spatial distribution of hazards are very hard to understand. Therefore, a research led by Assoc. Prof. Sr. Dr. Siti Aekbal Salleh aims to address alternative approaches to assessing the predominant winds danger to urban residents and constructions. The objectives are to determine winds-related hazards using indicators that are influencing the underlying patterns discerned and associations of spatial complexity and meteorological parameters; and to develop a windstorm hazards impact index for urban areas.

Due to extreme weather events, it is important to study our spatial patterns of behaviour including health and social implications, and the dependence on these extreme weather events. It has been reported that many residential estates on the west coast of Selangor have experienced extreme winds that posed a danger to its residents. There seems to be a pattern in the location of these extreme weathers. Therefore, from this study, adaptation strategies can be drawn and policy makers can make the right decision to minimise the impact of climate change on the urban community.

As tools continue to evolve, data analytics promise new and focused ways to mitigate risk and provide relief to emergency-stricken areas. Likewise, the analytical effectiveness brought into the next generation planning will continue to rely on identifying themes and linking information that advances disaster response and establishes the best-case scenario for respondents and survivors.

A Proposed Model of Green City Concept: An Analysis of Local Governance in Melaka

The Asian Development Bank (ADB) is proud to have worked with Melaka to develop its roadmap, the Green City Action Plan. Recently, a public-private partnership installed 100,000 LED street lamps along the Alor Gajah-Melaka Tengah-Jasin Highway, which will improve road safety and reduce carbon dioxide emissions.

The urban landscape has also changed. Walkable neighbourhoods with mixed-use development have increased foot traffic and reduced car use. Melaka's transformation is the result of meticulous planning, a comprehensive approach supported by government policies and projects, private sector engagement and citizen initiatives. Under the Fundamental Research Grants Scheme (FRGS), Dr. Thenmoli A/P Vadeveloo and his team are working on the analysis of local governance in Melaka that aims to propose a model for a Green City Concept.

Integrating Government, Private Sectors and Community Initiative Model in Urban Services with Reference to Urban Solid Waste Management in Malaysia

Solid waste management in Malaysia has faced many changes since a few decades ago. Prior to a federalised system, solid waste management and public cleansing were the responsibilities of local authorities, handled by small subcontractors as waste management service providers. However, an increase in management cost and issues in payment of subcontractors drastically reduced efficiency of management.

In 2007, the federal government decided for full privatisation at the Southern and Central Zone as soon as the Solid Waste and Public Cleansing Management Act 2007 (Act 672) came into force. The authority governing solid waste and public cleansing shifted from state government and local authority (PBT) to the federal government where management cost will be shared between these two parties. The dwindling trust in the efficiency of the federal government underlies the disagreements between key stakeholders.

The local authorities (PBT), especially those in the states that are not in agreement with the federal government, are unconvinced of the accountability and transparency of the federal government and corporation in providing a better and more efficient waste disposal service. UiTM researchers led by Dr. Puziah Ahmad under the FRGS grants scheme have embarked on a study in integrating a model of key players in the solid waste management in Malaysia for a more effective mechanism of delivery and budgeting system.

The key stakeholders involved are the government, the private sectors, and the community. The research investigates the underlying issues and the tools of implementation and delivery for a better coordinated and synchronised management.


19
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RM1,415,007.19
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RM9,896,503.53

Ensure sustainable consumption and production patterns

Plogging

Plastic pollution has become a worldwide environmental concern as statistics show that we produce 300 million tonnes of plastic every year, and around 8.8 million tonnes of it are discarded into the oceans. As a result, millions of marine species are adversely affected, many of which are on the verge of extinction. It is estimated that by 2050, there will be more plastic in the ocean than fish.

To raise awareness about the importance of keeping our earth clean and practising responsible consumption and production, UiTM SERVEU 1.0 in collaboration with the Student Representative Council, UiTM Volunteering Brigade and other partners organised a one-day event called plogging. The term is a combination of two words: jogging and the Swedish phrase 'plocka upp,' meaning pick up. In the event, participants picked up litter while jogging.

Biodegradable Plastic Use

Due to environmental concerns, plastics are being banned throughout the world. Single-use plastics have been banned in some countries including Malaysia. In September 2018, the Minister of Energy, Science, Technology, Environment and Climate Change (MESTECC) announced the banning of single use plastics in some states of Malaysia which commenced in 2019 and this included the use of drinking straws.

Polyethylene (PE) and polypropylene (PP) drinking straws are widely used, and even though paper straws are better alternatives than plastic straws, they lack durability in water. However, for food packaging and storage containers, the type of plastic used are Photo and Oxo-degradable plastics. These types of plastics use PE and PP which contain degradable additives to increase degradability. Assoc. Prof. Dr. Rahmah Mohamed and her team had successfully come up with an innovation that used natural additives which are non-toxic and safe for consumption, and compounds had been made and filed for patent in 2010.

The researcher was able to transform the masterbatches into injection moulded food containers and cutleries using the NR photodegradable resins and comply with SIRIM standards. Working with TycoPlus, this method is being used to produce polybags and food packagings. Besides using degradable natural additives, new standards are implemented to increase the Green component in plastics. Businesses are required to adhere to new policies on biodegradable standard packaging which includes having a higher percentage of biodegradable components in plastics for packaging and getting certified eco-label by SIRIM Bhd.

Patent

A Method of Producing a Brick Composition	PI 2019000180
Neo-Flame Fire Starter	PI 2019004304


12
consultancy
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RM89,000.00
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research
grants
RM4,189,805.95
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patents
Photo by Castorly Stock from Pexels

Take urgent action to combat climate change and its impacts

Top Climate Change Report

Universiti Teknologi MARA (UiTM) recently marked a significant milestone after being named as one of the 35 partner institutions listed in the "Lancet Countdown: Tracking Progress on Health and Climate Change 2019", a report published annually in The Lancet. The report provides an assessment on the health effects of climate change, developments in the implementation of the 2016 Paris Agreement, and the health implications of these actions.

It draws on the expertise of climate scientists, ecologists, mathematicians, economists, social and political scientists and doctors. The Lancet is one of the world's most prestigious general medical journals with an impact factor of 53.102. UiTM was given the honour to launch this year's report. Held at UiTM Puncak Alam on December 12, the event comprised a series of climate change talks and a health exhibition.

https://www.nst.com.my/education/2019/12/550896/uitms-role-honoured-top-climate-change-report

http://www.lancetcountdown.org/2019-report/

Tree Planting

UiTM staff have been actively involved in tree planting initiatives that provide carbon sinks and conserve the natural biodiversity. In celebration of the World Planting Day, staff from all branch campuses took part in the tree planting initiatives simultaneously on the 21st of March 2019. Staff of UiTM Sarawak Branch, UiTM Sabah Branch, UiTM Melaka Branch, UiTM Perlis Branch, UiTM Pahang Branch participated in department or faculty-led tree planting initiatives around the Samarahan, Mukah, Kota Kinabalu, Jasin, Arau and Jengka campuses.

Morphological Regularities of Solar Burst during Solar Activity due to Geomagnetic Storm and its Effect to the Geomagnetic Induced Current (GIC) Level and Climate Change

Climate change has a very close connection with the behaviour of the Sun's activity, especially Solar Flares and Coronal Mass Ejections (CMEs). A geomagnetic storm is a major disturbance of the Earth's magnetosphere that occurs when there is an efficient exchange of energy from the solar wind into the space environment surrounding the Earth. These storms result from variations in the solar wind that produce major changes in the currents, plasma, and fields in the Earth's magnetosphere. The solar wind conditions that are effective for creating geomagnetic storms are sustained (few hours) periods of high-speed solar wind, and most importantly, a southward directed solar wind magnetic field at the day side of the magnetosphere.

A three-year research led by Assoc. Prof. Dr. Zety Sharizat bt Hamidi, in collaboration with University Malaya and Universiti Sultan Zainal Abidin (UniSZA) aims for low frequency solar observation. This project under the International Space Weather Initiative research, specifically eCALLISTO network, aims to study the inner corona structure of the Sun by observing helioseismology, and the impact in the Equatorial Region. The Compound Astronomical Low-cost Low-frequency Instrument for Spectroscopy and Transportable Observatory (CALLISTO) network, that has been installed at the National Space Centre will be used to study the Solar Flares and CMEs and their associated solar bursts. Severe solar flares and CMEs occurrences can disrupt telecommunication equipment such as mobile phones and even damage satellites.

The expected outcome of this research will lead to new information on the effect of morphological regularities of solar burst and GIC (Geomagnetic Induced Current) on the national power grid system.

Innovative Solution and Formulation of CO2 Emission Reduction

Puan Syazana Mohamad Pauzi conducted a research entitled The Role of Metal Oxide and Bacterial Cellulose Incorporated in Hybrid Polymer Membrane for Simultaneous Adsorption, Hydration and Biocatalytic Reduction of CO2. This study attempted to elucidate the role of metal oxide and bacterial cellulose which will be hybridised into a polymer membrane, in the context of CO2 adsorption and hydration mechanism respectively. The study could derive a new fundamental knowledge in membrane technology with regards to CO2 sequestration and biocatalytic reduction in one reactor.

On the other hand, Dr. Azil Bahari bin Alias ventured into the Monte Carlo simulation on CO2 transport diffusion and phenomena for newly developed absorbent material (hydrogel biochar composite). Many materials have been synthesized and reported in the literature for CO2 separation; however a proper understanding of the thermodynamic and transport properties of CO2 adsorption in microporous materials is essential for the development of emerging gas separation technologies. The use of molecular simulation such as Monte Carlo (MC), molecular dynamic (MD) and density functional theory (DFT) has been increasingly popular in adsorption study in porous materials. An experiment of CO2 adsorption by various blended Hydrogel Biochar Composites (HBC) will also be conducted to facilitate the simulation.

Finally, the work will focus on reconciliation of the simulation results from MC to the experimental data for newly developed materials of various blended HBC. The work will give better fundamental understanding of transport phenomena and mechanism of CO2 adsorption in HBC. In addition, Dr. Ahmad Razi Bin Ramli is developing a framework for mitigating CO2 emissions from the Malaysian road transport sector. The research intends to identify Market and Incentive Based (MIB) measures that can be adopted to cap road transport emissions. Once identified, a survey will be conducted to obtain feedbacks on the mechanism that can be used to implement the measures. The absence of discussions with regards to MIB measures in the context of national policy indicates the existence of a gap that is to be bridged by this research.

The research is expected to propose a framework for mitigating CO2 emissions from the road transport sector. Since emissions are a consequence of the fuel consumed, the proposed framework would be targeted at the demand/consumption side. This is in line with Focus Area B for growth and sustainability as highlighted in the 11th Malaysia Plan. Additionally, the framework will provide guidelines for the mechanisms used in mitigating the demand-side of road transport emission, which can then be applied for the Malaysian road transport sector.

Profiling Geomagnetic for Space

Geomagnetically induced currents or GICs is the major consequence of the space weather perturbation. GIC enters the power grid and causes unusual real and reactive power flows, voltage fluctuations, frequency shifts, undesired relay operations, high third-harmonic currents and telemetry and supervisory alarm failures. This means that the GIC gives a high impact threat to the national power grid regardless of the latitude.

For that reason, with a FRGS grant of RM94,000.00, Assoc. Prof. Dr. Mohamad Huzaimiy Jusoh is conducting a fundamental research on GIC and developing an empirical profiling of geomagnetically induced current due to space weather as well as studying its effects on Malaysia's bulk-power system.

The main objectives of this study are to investigate the significance of solar-terrestrial parameters that influence GIC, to establish the real-time monitoring parallel data transmission of measured GIC DC current by using current clamp meter at the bulk-power system and to provide a detailed datasheet with the technical characteristics of GIC which include transformers, transmission lines, shunt reactors, series capacitor, substation ground grids, and GIC blocking devices. The outcomes of the study can be used by the electrical service provider for maintaining the national bulk-power grid performance.

Construction Equipment Idling Greenhouse Gasses

Construction operations commonly utilise a large range of equipment that generates a considerable amount of greenhouse gas (GHG) emissions. Continuous efforts have been made to determine the efficient solutions in reducing emissions of GHGs from construction operations. Equipment idle time is considered as a non-productive time that increases the fuel use and emissions.

Reducing idle time in operation implies the opportunity to improve productivity, cost efficiency, and emissions reduction. In response to this need, with a FRGS grant of RM 74,200.00, Dr. Nur Kamaliah Mustaffa aims to examine the influence of equipment idling time on emissions for different construction operations. Specifically, the research aims to achieve the following objectives;

1) to identify the effect of equipment idling time on emissions and

2) to formulate emission estimation through incorporating the effect of equipment idling in construction operations.

In order to achieve the objectives, field studies will be conducted to estimate the cycle time of equipment operation modes. Queuing theory and Monte Carlo simulation will be used in this research to formulate the idling effect on emissions. The consideration of the idling effect in emissions estimation of construction operations will provide effective measures towards reducing the emissions of GHGs.

In the context of Malaysia, this proposed research will be significant to the National Priority Area for 11th Malaysia Plan (2016-2025) under Environment and Climate Change area. In addition, the research will be in line with and conform to the National Policy on Climate Change (NPCC) towards developing an efficient approach in improving emission reduction schemes and combating climate change.

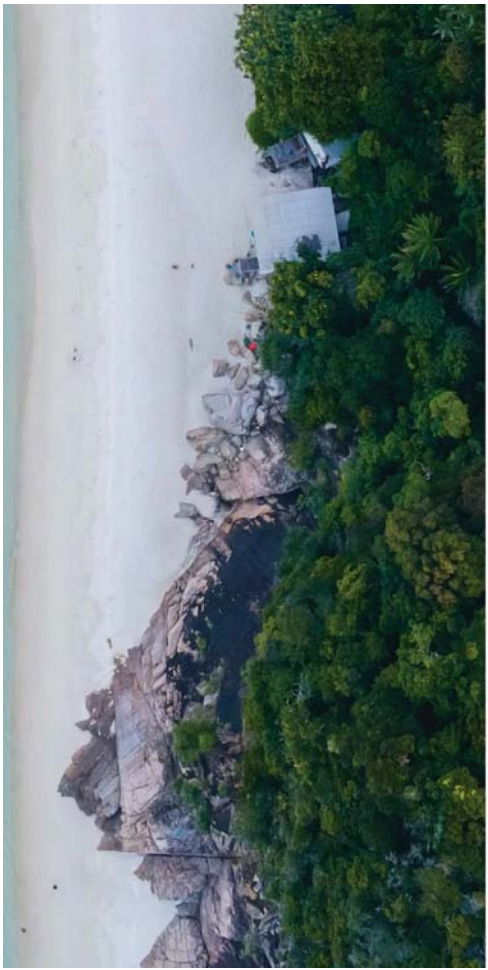

27
research
grants
RM1,111,075.00
2
consultancy
projects
RM130,000.00
Photo by Afiq Junaid from Pexels

Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Effect of Salt Concentration on the Degradation of Microplastics in Marine Microalgae-microbial Fuel Cell (mMFC)

Plastic waste materials post long-term damage to the marine ecosystem, marine-based economic sectors, and aquatic environments. Fragmentation of plastics to micro-plastics which has a severe global impact, has been detected in the world's oceans. With a national grant of RM 51,200.00, Dr. Norhafezah Kasmuri and her colleagues aim to study the degradation of microplastics in marine microalgae-Microbial Fuel Cell (mMFC) under the effect of salt concentration.

The study involves examining the effect of salt concentration in the mMFC in utilizing microplastics as a carbon source. The microplastics from a water body are oxidized and decomposed by aerobic bacteria to produce nutrients. The microalgae use these nutrients as an energy source. The microalgae in this mMFC are used as a bio-cathode while the anode chamber consists of microorganisms isolated from marine seawater.



The growth kinetics of the marine microalgae-bacteria consuming microplastic, under the effect of different salt concentration, is studied in both chambers by measuring the optical density. Any electric current generated is detected by a digital multimeter and the degrading performance of microplastics is evaluated by GC-MS, SEM and FTIR. From this research, the characteristics of the marine microalgae-bacteria and the biochemical changes of microplastic are ascertained. Thus the interaction of themarine microalgae-bacteria with microplastic salinity condition is better understood and established.

Improving the Health of Island Ecosystem

In conjunction with Malaysia's 62nd National Day, the Marine Research & Excellence Centre (MAREC), UiTM Perlis, together with the Department of Fisheries Malaysia, Marine Park Malaysia, Teluk Keke Campsite and Dive Buddy Malaysia, organized the Beach/Underwater Cleanup Programme and launched the Smart Technology Transfer Programme of Fish Aggregating Device (FAD) in Teluk Keke, Pulau Perhentian between 31 August and 1 September 2019.

The volunteers managed to collect 45 and 13.2 kilogrammes of trash during the beach and underwater clean-ups respectively on the first day. The following day, they successfully deployed several reef balls (FAD - Fish Aggregating Device) as part of the Dive Buddy House Reef (Adopt a Home) programme. Salute to all the clean-up heroes for making a difference during Merdeka Day, working together to make Pulau Perhentian a clean, safe and better place to live.

https://www.facebook.com/415051442165035/videos/470974667078083/

https://youtu.be/WQan8oQChJ0

Sustainability of Marine Life

The Department of Fisheries (DOF), Kedah, MAREC-UiTM, LESTARI-UKM and Lafarge worked together to preserve marine resources in Dangli Waters of Langkawi UNESCO Global Geopark by empowering 20 fisheries communities from Kubang Badak, Tanjung Rhu, Black Sand, Telok Yu and Telok Ewa through the Ecosystem Approach for Fisheries Management (EAFM).

https://www.facebook.com/415051442165035/photos/pcb.953244961679011/953244741679033/?type=3&theater

31
research grants
RM1,093,303.56

1
consultancy project
RM7,560.00

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Necrobiome Community Structure and Soil Chemistry Profiles Associated with Penguin Carcasses and their Correlation with Bone Density under Antarctic Climate

Research Leader: Dr. Heo Chong Chin
Grants: Yayasan Penyelidikan Antartika Sultan Mizan (YPASM)

The impact of the research - the identification of the necrobiome - could be used for forensics and archaeological purposes to enhance the understanding of animal migration, geology, and adaptation to extreme environments. The findings will also

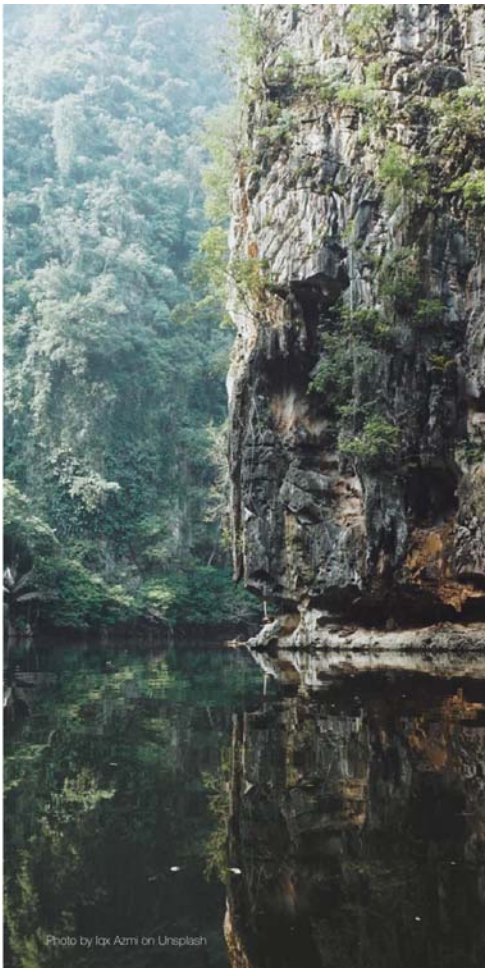


Photo by Iqx Azmi on Unsplash

enhance the understanding of soil nutrients in the polar region as they undergo an effective nutrient cycle in an extreme environment. This fundamental concept unlocks the possibility of cultivating crops on icy lands in the future and is vital to ensure sustainable food production in agriculture worldwide.

"...polar biodiversity, global food security and forensic archeology.", Heo (2019)

https://www.nst.com.my/education/2019/12/546837/malaysians-antarctica-necrobiome-research

https://headtopics.com/my/malaysians-in-antarctica-for-necrobiome-research-10078383

Biodiversity Day

In conjunction with the United Nations (UN)-sanctioned International Day for Biological Diversity on May 22, EcoKnights co-organized a half-day event with Gamuda Land, in collaboration with UiTM Perak, under the Gamuda Parks (GParks) Ranger initiative. The event was held at Menara Gamuda, PJ Trade Centre. With the theme "Our Biodiversity, Our Food, Our Health" set by the UN, this year's celebration focused on understanding biodiversity in transforming food systems and improving human health as the foundation for our food and health.

The event also highlighted the GParks Ranger programme, an environmental education initiative by Gamuda Parks in partnership with EcoKnights, supported by Gamuda Land, which aims to instil environmental awareness and empowerment among the younger generation.

https://gparksranger.com/gparks-ranger-biodiversity-day/

SDG Triangle@UiTM

Universiti Teknologi MARA (UiTM) is taking steps to formulate a more impactful strategy by introducing a framework for research excellence that focuses on research, publication, consultation, innovation and commercialization. This is in keeping with the UiTM2025 Strategic Plan launched in early 2020, consisting of six thrust areas - industrial technology, cyber technology, health and well-being, logistics and transportation, energy and environment, and social creativity and innovation.

The university has allocated a sum of RM2 million to researchers to carry out 116 internal projects based on the Sustainable Development Goals (SDG). This is part of UiTM's contributions in the achievement of the SDGs in line with its aspirations to be one of the world's leading universities by 2025.

The SDG Triangle@UiTM, comprising four main research locations, is UiTM's strategic initiative to produce a sustainable development impact. The four locations include Pahang, Ledang, and the Royal Belum National Parks and Tuba Island, Langkawi. One of the projects conducted in Pulau Tuba, Langkawi, that was implemented in line with the SDG for gender equality, involved empowering women to generate family income through potential activities.

https://www.youtube.com/watch?v=qzXyoKjKWf4&feature=youtu.be&fbclid=IwAR3t8THxpYYHn4Xbtoqj0oBRN5S3wI_RbBMS-6IP-XbDVPmJFJD7piQ6tHg

https://www.facebook.com/tncpi.uitm/photos/uitmonnewssdgsuitm-perkasa-penyelidikan-berteras-pembangunan-lestariuniversiti-t/2892173347555718/


104
research
grants
RM5,287,794.78
4
consultancy
projects
RM768,680.00
Photo by Ravin Rau on Unsplash

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Towards Good Governance and Strong Institution

Every year, the government allocates a huge investment in the Higher Education Institute (HEI) sector, aiming to empower it through research activities. Research grant funding is crucial in achieving high revenue growth through high quality education at all levels. As a matter of fact, Return on Investment (ROI) is often used to measure total return on investment compared to investment costs.

However, it is difficult to calculate ROI from KPM grants which are mainly fundamental based grants, as the main outputs are publications and talents (intangibles). A research project entitled A Framework To Estimate Return On Investment (ROI) From Funding Of Research, Development, Commercialization And Innovation (RDCI) In Malaysia: Methods And Protocols is currently undertaken under the purview of the Deputy Vice Chancellor Office (Research and Innovation).

This research aims to establish a framework for all funded research to recontribute to the institution, funders and community. Although this is the first nationwide attempt to formulate the ROI of a research funding scheme in Malaysia, it remains to be seen whether ROI is a suitable measurement of success. On the other hand, UiTM's Accounting Research Institute (ARI) has been assigned to study good governance of the palm oil industry involving individual farmers.

ARI has been the referral centre for Islamic governance and leadership development programme, offering various training courses at professional and managerial levels. Apart from being an industrial based reference point, UiTM provides programme management consultancy for local institutions such as the Management Science University (MSU). UiTM is also involved in a review and technical competencies development programme for the secretaries of PETRONAS.

Involvement in Sustainable Management of Islamic Institutions

UiTM researchers have a strong involvement in the design and development of a prototype system known as the Smart Tahfiz Accounting Application Software (STA2S) and the WAQF Performance Tracking System. Smart Tahfiz Accounting Application Software (STA2S) is an accounting software that can standardise the preparations of accounting and reports of Private Tahfiz schools (PTS).

Accounting record and disclosure is a mechanism for accountability and transparency. Reporting ensures that the entity provides appropriate information of its operations (accounting and non-accounting) to various stakeholders. It will also be a medium of transparency for Shari'a compliance assessment on both inter-human and environmental transactions. Although *Enakmen Kawalan Sekolah-Sekolah Agama Islam* (EKSA) requires religious schools to prepare and submit accounting reports to the regulatory bodies, it has not been fully enforced for PTS. In addition, there is no standard reporting format enforced on PTS even though there are 547 non-profit based PTS in Malaysia.

Hence, each school practises its own method of recording and maintaining accounting records. As such STA2S development is needed and timely. This ongoing software development is in tandem with the efforts to strengthen the governance and operation of Tahfiz institutions. WAQF Performance Tracking System on

the other hand assists the tracking of the implementation and management of WAQF. A strong Waqf system will not only complete the standardisation of a comprehensive Islamic financial system that supports a more equitable distribution of wealth and ensures justice, but will also utilise Islamic financial services, particularly in the management and investment of Waqf funds.

Youth and Students Leading SDGs Field Advocates with World Merit at UiTM

The one and only students association registered as World Merit Council in Malaysia was established in UiTM. World Merit is an international non-profit organisation that confronts complex global issues by building confidence, raising aspirations, and connecting diverse people of merit. Its vision is to unleash an upcoming generation who will create waves of change.

By the same virtue, World Merit UiTM, established in 2019, aims to empower peer programmes that hinge upon synergetic social actions and mutual engagements. This will drive the UN to achieve its goals of nurturing young leaders to become Global Citizens by the target date of 2030. The activities and initiatives that were driven by this students association can be accessed via its social media network. Through this association, students could voice their opinions, make statements and create impact for achieving global goals.

https://worldmerit.org/councils/

https://www.instagram.com/worldmerituitm/?hl=en

https://twitter.com/worldmerituitm?lang=en

https://www.un.org/en/academic-impact/page/capacity-building

http://ild.uitm.edu.my/v5/

https://www.un.org/en/academic-impact/page/capacity-building

Internal Human Resource Development and Capacity Building

Capacity building is a measurable improvement of an organisation's ability to fulfil its mission through a blend of sound management, strong governance, and dedication to assess and achieve results. Capacity-building is defined as the "process of developing and strengthening the skills, instincts, abilities, processes and resources that organizations and communities need to survive, adapt, and thrive in a fast-changing world." (https://www.un.org/en/academic-impact/page/capacity-building) The Institute of Leadership & Development (http://ild.uitm.edu.my/v5/) is an inhouse institute responsible for organizing and determining the required set of competencies for the staff of UiTM.

As UiTM begins its academic march on revolution 4.0, it has also embarked on the insightful exploration of Education Revolution 4.0: Assessing Knowledge Sharing Intention Among Academic Staff. An essential ingredient in capacity-building is transformation from within that is generated and sustained over time; transformation of this kind goes beyond performing tasks to changing mindsets and attitudes. (https://www.un.org/en/academic-impact/page/capacity-building) Its vision is to change the world by nurturing and maximizing the talents of both students and professors.

The Establishment of Greenation@UiTM

The official launching of Greenation@UiTM marked a new era for the sustainability agenda in UiTM. The core function of this committee is to engage and synergize the efforts of all the stakeholders towards achieving world class sustainable best practices. Its vision is to establish UiTM as a Smart and Safe Eco-Friendly Lifestyle educational institution by embracing the national and global sustainability agenda. Its mission statement is to cultivate a sustainable ecosystem in UiTM through value- based governance in upholding green talents that will benefit the nation.

The four main objectives are to incorporate creativity and innovation of sustainability through teaching, learning and research for the development of green talent; to transform sustainable governance in managing goal setting, execution and performance management of the institution; to be committed in protecting and enhancing a green campus ecosystem and finally to leverage the university engagement and expertise in community well-being, quality of life and environment inclusively. The greenation committee e-book can be accessed through this link:

https://greenation.uitm.edu.my/images/ebook/eBook%20Greenation_new.pdf

Quality Improvement and Assessment for Students

Career Centre of The Year Award
(Public University)
7 November 2019

GrandMalaysia Graduate Recruitment Award 2019
7 November 2019

Premier Digital Tech Institution
Most Engaged University
Early Adopters Institute
Best University in Curriculum Embedment
28 November 2019


89
research grants
RM3,942,663.00
29
copyrights
14
consultancy projects
RM934,297.20
Photo by Deva Darshan from Pexels

17 PARTNERSHIPS FOR THE GOALS

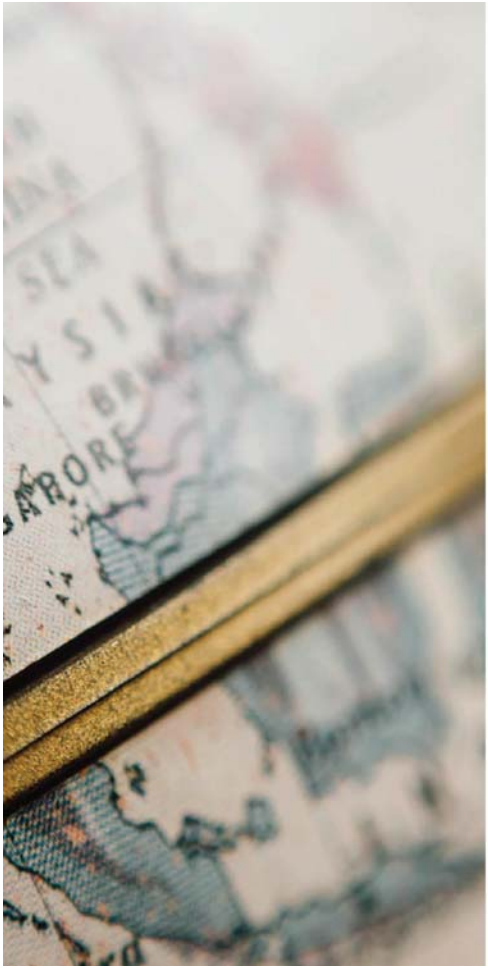
Strengthen the means of implementation and revitalize the global partnership for sustainable development

UiTM-led Team to Conduct Antarctic Research

FIVE researchers from three universities are embarking on a 22-day expedition from South Korea's King Sejong Station in Antarctica as part of a study of nutrient recycling in the polar region. The team is led by forensic entomologist Dr. Heo Chong Chin of UiTM Faculty of Medicine. His team members are UiTM medical microbiologist Associate Professor Dr. Jamal Hussaini, UiTM medical radiographer Hafizi Mahmud, Universiti Malaya geneticist Dr. Lucas Low Va Lun and Universiti Malaysia Terengganu soil chemist Dr. Siti Sofo Ismail.

The purpose of the research is to understand the ecology of carrion decomposition in Antarctica and apply this knowledge in the conservation of polar biodiversity, global food security and forensic archaeology. The impact of the research which is the identification of the necrobiome could be used in forensics and archaeological purposes to enhance the understanding of animal migration, geology, and adaptation to extreme environments.

Photo by CHUTTERSNAP on Unsplash



The findings will also enhance the understanding of soil nutrients in the polar region as it undergoes an effective nutrient cycle in an extreme environment. This fundamental concept is vital for agriculture worldwide to ensure sustainable food production, and it is possible that in future, humans may be able to cultivate crops on icy lands.

https://www.thestar.com.my/news/education/2019/12/22/uitm-led-team-to-conduct-antarctic-research

UiTM Media Studies Gets a Boost with Al Jazeera Partnership

Through this partnership, UiTM plans to give students a head start in the global media industry. This collaboration asserts UiTM's priority to build close bilateral relations with global partners and provide an opportunity to exchange views on various matters of interest. With the signing of a Memorandum of Understanding with Al Jazeera, the Faculty of Communication and Media Studies (FCMS) UiTM researchers and experts will have the opportunity to gain and share knowledge on the future of communications and media, including its innovative foundations, management, training and other related components.

It also opens up the possibilities for student internships at Al Jazeera's headquarters in Doha, Qatar. Al Jazeera Deputy Director General Dr. Mustefa Souag expressed the possibility of extending another milestone collaboration with UiTM that emphasised training and knowledge-sharing beyond media and journalistic practices. This will eventually open a new horizon for students and staff to explore other fields in the media set up, such as engineering, technology and financial business. The Al Jazeera Week included a forum themed "Digital Media: Crossing to the Future", as well as a four-day training organised by Al Jazeera for 100 selected students.

https://www.nst.com.my/education/2019/10/532559/uitm-media-studies-gets-boost-al-jazeera-partnership

https://institute.aljazeera.net/en/news/ajmi-launches-%E2%80%9Cal-jazeera-week%E2%80%9D-malaysia

Better Futures for Universities across Continent Partnership for Better Education and Volunteerism

Better Futures Consortium is a partnership of modern civic universities pioneering ways to enhance students' success and advance sustainable development through collaborations and shared practices in intercultural education. The Global Volunteering Programme was hosted by the Office of International Affairs (OIA), UiTM, jointly organised by EMKAY Foundation Malaysia, a philanthropic organisation that provides aid especially to those living on the fringes of developed areas. Their assistance is divided into five main categories namely education, healthcare, sports, development, religion as well as social welfare.

In the Global Volunteering Programme, UiTM GESTURZ curated a video of important images for documentation and future showcase, as well as organised the promotional plan. During the closing ceremony, an experience sharing session was held by four representatives of a consortium of institutions, and a video that captured moments during the programme was broadcast. Better Futures Consortium conducted other programmes as well in 2019 which included the Shanghai Summer Camp (hosted by SHNU) in Shanghai, China; and World Merit (hosted by LJMU) in Marrakesh, Morocco.

The synergy between the institutions bore witness to a fruitful partnership in promoting experience-led learning as well as addressing current concerns among members of institutions (SDG4). UiTM students and other participants at the World Merit Summit 2019 in Marrakech, Morocco volunteered for the ISeeYou Foundation, a charitable organization that supports charitable activities.

https://youtu.be/5C0c0Ah53T8

Food Security and Sustainability: Exploring the Malaysian and Japanese Youth Participation in Agriculture

Project Leader: Dr Abdul Rahman bin Saili
FUNDED BY THE SUMITOMO FOUNDATION (RM 34,324.24)

This project explored both Malaysian and Japanese youth participation in agriculture. The findings of a research conducted in Malaysia revealed that the majority of participants' involvement in agriculture is to primarily earn a living and fulfil their passion. Another emerging theme included family support which provides them with better understanding of their roles and responsibilities, while family coaching helps them to significantly improve their farming knowledge through experiences, attitudes, and skills. Most participants agree that they must work hard to acquire a desirable income or target from their agricultural activities. Therefore, the economic factor in terms of good income generation is pivotal for success.

In Japan, all participants shared that besides their passion, their main reason for being involved in agriculture is to sustain their livelihood. Family support and socio-economic factors also play important roles in earning income and supporting families. Other contributing factors such as family tradition and working environment are significant in their involvement in the industry. If the current youth farmers can prove themselves to be successful in the agricultural industry, more youth will be attracted to participate in this industry.

https://qswownews.com/volunteers-from-china-uk-us-gather-at-global-volunteering-programme-hosted-by-uitm-malaysia/

However, there are barriers and challenges faced by both Malaysian and Japanese participants. They must deal with high production and operating costs such as expensive machinery and technologies. The participants also claimed they are vulnerable to natural risks such as flood, typhoon, climate change, diseases and pests, which are beyond their control.

These findings indicate that psychological factors play a crucial role in sustaining youth farmers' involvement in agricultural environments. In this context, a farmer's motivation is induced by internal factors; passion, family tradition and socioeconomic, and external factors; family support, working environment and mentoring and coaching. All participants highlighted that these factors affect the way they perceive, think, or behave in relation to the agricultural sector, hence, enticing them into the agricultural business environment. The findings would become an instrument of a comparison between those who are involved or interested in agriculture and those who are not in the industry, while providing government and private sectors sound ideas to formulate an action plan for engaging youths in this field.

Smart Partnership for Smart Urban Farming (V-SUrF) and Innovative Approach of Soil Nutrient Mapping

An industrial based solution grant worth RM83,000.00 from the Malaysian Technical Forum Berhad (MTSFB) was awarded to Dr Raseeda Hamzah to develop a V-SUrF, a pallet planter equipped with an IoT platform for smart urban farming. The Proof of Concept (PoC) consists of sensors, a controller and water pump together with a mobile application for growing vegetables at private home balconies. The commercialisation of this research will support urban farming initiatives and encourage people to grow their own food.

A sum of RM175,000.00 was successfully secured from Sarawak Multimedia Authority (SMA) by Associate Prof Dr Hasmah Mohidin for a research on non-invasive method of soil sampling using drones integrated with Multispectral sensors. This sampling technique is meant to replace the invasive site sampling and enable the detection of soil nutrients for better crop management.

Dengue and Aedes Collaborative Efforts and Partnerships by Integrated Mosquito Research Group (I-MeRGe) UiTM

The participation of health offices, municipalities, environmental health organisations, research entities and schools in keeping the neighbourhood clean would send a message to the public that stopping the spread of dengue is a shared responsibility of all parties. The health offices and municipalities provide the main funding annually for community work. I-MeRGe provides the manpower (i.e. students) to execute the event starting from the planning stage to the running of the event.

Each AAD (Aedes Awareness Day) programme is unique. For example, I-MeRGe published easy-to-understand modules and booklets on Dengue for schools. Educational games were used in the modules to attract school children to the subject matter. The Malaysian Association of Environmental Health (MAEH) provides some financial assistance as well as trainers to educate school children, teachers, and the public on the risks of Dengue and how to stay protected. The list of collaborators is stated below:

1.	Kuala Lumpur City Hall
2.	Subang Jaya Municipal Council
3.	Klang Municipal Council
4.	Primary school in USJ, Subang Jaya, Malaysia
5.	Secondary School in Perlis, Malaysia
6.	Community of Sg. Udang Klang, Malaysia
7.	Kg. Seberang Baruh Kuala Terengganu, Malaysia
8.	Community of Nilai, Negeri Sembilan, Malaysia
9.	Community of Residensi Warnasari, Puncak Alam, Malaysia

Collaboration with the district health offices and municipalities was necessary to gain access to communities. Several health offices and municipalities (Perlis Health Office, Kuala Lumpur City Hall, Subang Jaya Municipal Council and Klang Municipal Council) were delighted to work with UiTM and provided the financial assistance for the programme. Malaysian Association of Environmental Health (MAEH) also contributed minimal financial assistance and together with Dengue experts, provided advice to the community. MAEH is a non-governmental association, a professional body representing practitioners in the field of environmental health that is keen on environmental health initiatives. As an Associate Member of The International Federation of Environmental Health (IFEH) and a training centre registered under the Chartered Institute of Environmental Health (CIEH) UK, MAEH provides consultation and training to organisations and individuals in fields related to environmental health.

Collaborative Research with Industries, Private Agencies and International Funds

Research conducted at UiTM has been envisioning SDGs. A total of 274 grants awarded to UiTM were acquired through mutual partnerships with the industries, private agencies and international players. Some of UiTM's biggest partners are private agencies like Klinsel Sdn Bhd that funded a clinical test worth RM178,200.00 and Novo Nordisk Pharma (M) that funded two clinical tests (EX9924-4473 - Semaglutide Cardiovascular Outcomes Trial in Patients with Type 2 Diabetes and Semaglutide Effects in Cardiovascular Outcomes in People with Overweight or Obesity) with sum value of grants of RM471,730.00 and RM577,052.75 respectively.

In terms of the number of grants, partners worked closely with UiTM in achieving SDG 9 with 51 projects of the value a little over RM6 million followed by SDG 3 with 43 projects worth over RM 5.4 million. These were followed by SDG 11, SDG 4 and SDG 15. Despite the number of grants, about 20% (approximately RM5.8 million) of the total was pooled in SDG 8 even though only 18 research projects were granted. This SDG wheel exhibits the magnitude of partnerships that have been forged to achieve shared goals.

*(*Refer to the appendices for more information on the clinical trials mentioned)*

Partnership in Professional Services and Consultancies

This SDG wheel shows the number and total value of professional services and consultancies mapped to each goal indicating the performance of SDGs at UiTM. The year 2019 witnessed over 300 consultancy projects awarded to UiTM, comprising 254 clients and partners with a sum value of RM 22,883,496.86. Amongst the clients, the biggest contributor was at SDG 9 consisting of projects which were mainly innovative services and products. One hundred and ninety-nine projects with value over RM7 million, spearheaded SDG 9, followed by SDG 4 with 65 projects worth RM3,795,743.38, and SDG 3 with 53 projects valued at RM2,050,441.52. SDG 8 shows a contradictory pattern. Even though there were only 23 projects secured, the value of these projects was over RM7 million.

SDG 17

The 254 number of companies or clients established through the 343 partnerships indicates the trust endowed on UiTM by returning clients to conduct new projects. One of the returning clients was Sustainable Energy Development Authority (SEDA) Malaysia that re-engaged UiTM for a training course, organised by the Faculty of Applied Science. The course was the Off Grid Photovoltaic (OGPV) System Design Course and Grid Connected Photovoltaic (GCPV) Systems Design. Another project was on Design, Develop, Supply, Deliver, Install, Test, Commission, Train and Maintenance of a National Solar PV Monitoring and Performance Database. In addition, the Accounting Research Institute (ARI) received returning clients (Malaysian Institute of Supply Chain) for the consultancy project entitled Good Governance of Palm Oil Industry: Case Study of Individual Small Farmer and Sustainable Value Network: Case of Independent Smallholder Palm Oil Farmer.

*(*Refer to the appendices for the list of partners)*

consultancies / professional services SDGs performance


246
research
grants
RM25,856,473.90
343
consultancy
projects
RM22,883,496.86
Photo by Ian Stauffer on Unsplash
MARA | MALAYSIA
uitm

list of consultancy, contract research and professional services partners

No.	Partners
1	Acotec Sdn Bhd (Low Kai Tong)
2	Acoustro Corporation Sdn Bhd (Mr David Kher)
3	Agensi Inovasi Malaysia (Aim) (Ho Tsok Shien)
4	Airasia Berhad (Hamdan Mohamad)
5	Airis Engineers Sdn Bhd (Ir Syed Ismail Syed Yusoff)
6	Ajinomoto (Malaysia) Berhad (Lau Chin Mun)
7	Akademi Pengajian Bahasa Uitm Shah Alam (Puan Ezurya Bt Rathi)
8	Akademi Pengangkutan Jalan Malaysia (Hashim Borham)
9	Akademi Pkns Sdn. Bhd. (Tuan Haji Idris Ishak)
10	Arena Pesona Enterprise (Nik Mohd. Fahmi Rj. Berahim)
11	Asia Edu2ur Resources (En Shukri Ishak)
12	Asian Football Confederation (Dato Winsdor John)
13	Asnatech Planning Consultant Sdn Bhd (Tpr Hj Ahmad Tarmizi Husin)
14	Associate Media Network Sdn. Bhd. (Nurul Ain Mustaffa)
15	Auto Antenna Manufacturer Sdn Bhd (Mohd Khairi Rahmi)
16	Avanzado Brillante Associates Plt (Ahmad Naqiuddin Mohamad)
17	Bahagian Hubungan Industri, Kementerian Pendidikan Tinggi (Prof. Madya Dr. Arham Abdullah)
18	Bahagian Perancang Ekonomi Negeri Johor (En Shamsul Haini)
19	Bank Pembangunan Malaysia Berhad (Ahmad Najme Yusuf)
20	Bank Simpanan Nasional (Fatin Alawiyah Amiruddin)
21	BBSB Holdings Sdn Bhd (Mr Poon)
22	Behn Meyer Chemical (M) Sdn Bhd (Pn Hanifa Begum Mohd Ghani)
23	Bellus Terra Sdn Bhd (925048-D) (Mohamad Aidil Jantan)
24	Bestsonic Engineering (Lee Chee Jiun)
25	Bio-Collagen Technologies Sdn Bhd (Azleena Al-Jefrri)
26	Bw Scaffold Industries Sdn Bhd (Mohd Rifaai Bin Che Rani)
27	Caa Engineering Consultancy (Ir Chee Kok Wah)
28	Caidmark Sdn Bhd (Ahmad Najmuddin Bin Assanah)
29	Capital Envoy (M) Sdn Bhd (Nor Farhana Binti Jasmi)

30	Carbon Tech Global Sdn Bhd (Nurul Ain Binti Azmi)
31	Ccecc - Max Joint Venture (Contractor Of Lot 2 Of Dcrp) (Mr. Rayhanur Rahman Chowdhury)
32	Celcom Axiata (Fadzly Kamaruzaman)
33	Ceteau Malaysia Sdn Bhd. (Nor Farhana Binti Jasmi)
34	Cima Sea Asia Sdn Bhdp.;P'poukl Bv Jh (Rushdan Rozlan)
35	Cimb Islamic Bank (Ken Mohamed Faiz Kamal)
36	Commonwealth Tertiary Education Facility (Ctef), Universiti Sains Malaysia (Professor Dato Dr Morshidi Sirat)
37	Construction Industry Development Board (Cidb) (En. Muhammad Syaiful Ahdat Bin Muhammad Fetri)
38	Daehan Rehabilitation Services Sdn Bhd (Michael Lim)
39	Daya Awana Industri Sdn Bhd (David Foo)
40	Daya Secadyme Sdn Bhd (Adli Md Noor)
41	Daya Secadyme Sdn Bhd (Haji Akmal Yahya)
42	Eastern Pretech (Malaysia) Sdn. Bhd (Ir. Chu Kh)
43	Eftech Drilling Solutions Sdn Bhd (Mohamad Sukor Zainal Abiddin)
44	Elcorp Technology Sdn Bhd (Ir Dr Shakor Ramat)
45	Ems Test Measurement Sdn Bhd (Mohd Zulhairi)
46	Euro Facade Tech Manufacturing Sdn. Bhd. (Muhammad Fizzi Bin Borhani)
47	Evenfit Consult Sdn Bhd (Ir Ku Mohammad Sani Bin Ku Mahamud)
48	Excel Engineering & Construction Sdn Bhd (Siti Nornaliza Hana Binti Mohammed Nor)
49	Fakulti Kejuruteraan Upm (Dr Farzad Hejazi)
50	Farmasia Sdn Bhd (Zohrah Razak)
51	Ferntea (Malaysia) Sdn Bhd (Mhurugan @Calvin)
52	Fkx Film Sdn. Bhd. (Azahari Abdul Hamid)
53	Football Association Of Malaysia (Fam) (Mr Samuel Siew)
54	Foxboro Malaysia Sdn. Bhd. (Wan Azraei Wan Husain)
55	Gaya Murni Sdn Bhd (Mr Koh Kok Keong)
56	Geocon Engineering Sdn Bhd (Mohd Asmawi Johar) (Mohamed Azizi Md Ali)
57	Geodetic Solution Sdn Bhd (Soeb Bin Nordin)
58	Geores Resources Sdn Bhd (Che Abdul Shukor Setapa)

59	Get Services Sdn Bhd (Mahadi Bin Abd Hamid)
60	Global Science Sdn Bhd (Tan Yew Wern)
61	Gm Klang Wholesale City (Norsuhaida Binti Othman)
62	Grunchem Tech Sdn Bhd (Mohd Suib Bin Mohamad Zawawi)
63	Hbg Fluxr Digital Sdn Bhd (Vence C.)
64	Human Factors And Ergonomics Society Malaysia (Hfem) (Prof. Dr. Shamsul Bahri Mohd Tamrin)
65	Human Voyage (Zafran)
66	Ideal Engineering Laboratory Sdn Bhd (Mr Yee Lip Chuan)
67	Ieee Malaysia Section - Control System Society (Ramli Adnan)
68	Iexplotech Enterprise (Sa0428744-K) (Dr Mohd Anuar Mat Isa)
69	Individual (Zuhalinatul Ta'asiah Binti Salleh)
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university impact rankings for the SDGs

The establishment of Sustainable Development Goals (SDGs) in 2015 was based on a 15-year agenda where world leaders were called to action and where they agreed to commit to fighting inequalities, ending hunger and poverty, promoting well-being, as well as building a sustainable society by 2030.

As a modern civic university, Universiti Teknologi MARA (UiTM) embodies the goals of sustainability through its offering of quality education in eradicating poverty and elevating the quality of life for the marginalised communities even in its inception 64 years ago. However, the recently established sustainable committee in 2018 is seen as a move to facilitate the synergised initiatives and reach out further into communities to become socially and economically self sufficient. In the recent University Impact Ranking by Times Higher Education (THE), UiTM was ranked in the category of 401 – 600 and this is an impressive achievement as it is the first time that the university is participating in the THE ranking which measures the global performance of universities against the SDGs.

This global recognition is proof of UiTM's effectiveness in implementing the various initiatives and efforts taken in its pursuit to become a Globally Renowned University by 2025. It is this aim for continued growth of the university through the achievement of SDG goals and the global status that will create a more sustainable and progressive impact on the university's performance across teaching, research, knowledge transfer and international outlook.

Sustainable Development Goal*	Our Ranking
Overall ranking for impact	401 – 600
SDG 3 – Good health and well-being	301 – 400
SDG 4 – Quality education	101 – 200
SDG 5 – Gender equality	74

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This project is spearheaded by the Institute for Biodiversity and Sustainable Development (IBSD), Universiti Teknologi MARA (UiTM) and made possible by UiTM Curation team comprising staff, students, alumni and led by UiTM GESTURZ.

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