



Prospering Lives

Issue 2/2022

UTM Pagoh Campus Edition





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Second Issue 2022 @ Universiti Teknologi Malaysia

eISSN No: 2735-0134

Coordinated by:

Office of Strategy and Corporate Affairs
Centre for Community and Industry Network

Designed & Published by:

Office of Strategy and Corporate Affairs
Bangunan Canseleri Sultan Ibrahim
Universiti Teknologi Malaysia
81310 Johor Bahru Darul Ta'zim

Tel: 07-5531168

Email: corporate@utm.my

eISSN 2735-0134

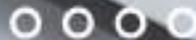


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Content

- 5 Foreword
- 6 Introduction
- 13 Stakeholder Engagement Program for Dam-related Disaster
- 15 Community-Based Disaster Risk Management at Yan, Kedah
- 20 Women and Child-Centered Disaster Risk Reduction and Resilience
- 22 Managing Waste Cooking Oil for a Sustainable Future
- 24 Mangrove School at Tanjung Piai Johor National Park
- 27 Rehabilitation of Paddy Field at Sungai Balang, Muar
- 29 Halal Layout for Food Product Premise
- 31 Halal Awareness and Guidance Program for SME Entrepreneurs in Tangkak
- 34 UTM-LoCARTic and Kolej Vokasional Sepang Collaboration in STEM
- 36 *Pemakanan Sihat, Sisa Dimanfaat*
- 41 Ask Dr STEM!: Boosting Interest on STEM
- 45 Massive Open Online Course for *Modul Keluarga Sejahtera Negeri Johor*
- 49 Sustainable Lifestyle through Planting and Monitoring Trees Online
- 51 Effective Microorganism Application to Treat Pollution



Foreword

Dear readers,

Welcome to the 2nd issue of UTM Prospering Lives for 2022, a magazine dedicated to featuring outstanding university-community collaboration projects undertaken by UTM researchers. The featured projects have impacted the community at large in various aspects. These impactful projects bring new perspectives on research, drive innovation and enrich education while serving the community. Specifically, these projects addressed common issues related to the community and proposed effective and innovative solutions for the betterment of the community.

This issue also highlights UTM Pagoh Campus accomplishments since its inception in June 2017. Situated in a lush green area, UTM Pagoh mainly focuses on innovative research projects headed by outstanding UTM staff and researchers from various expertise.

In line with our inspirations to ensure impact, the projects featured in this issue are compiled by UTM Pagoh Campus and Centre for Community Industry Network (CCIN), the centre that assists researchers in rating their projects.

Have fun reading the stories shared in this issue, and we hope this will inspire everyone to collaborate with us to empower the community.

Finally, I would like to thank the editors, writers, and the Prospering Lives Team!



Assoc. Prof. Ts. Dr. Dayana Farzeaha binti Ali
Director of Corporate Affairs
Office of Strategy and Corporate Affairs
Universiti Teknologi Malaysia

Introduction

UTM Prospering Lives

Universiti Teknologi Malaysia (UTM) is committed to what we do by bringing out the best of our people. We work together to achieve our common goals, to not only excel in academics but also expand our research and innovation beyond the campus.

UTM subscribes to the idea of Translational Research using our core strengths: Science, Technology and Engineering, applying the concept of applied knowledge to address industrial and societal issues. Apart from creating new knowledge and generating new insights, we work together with our partners to transform our academics to become entrepreneurs with impactful products to benefit the communities for years to come.

This publication intends to highlight exemplary activities that have impacted communities through Technology and Knowledge Transfer Programmes, University Social Responsibility Programmes and Service Learning Programmes conducted by UTM staff and students, which have all been designed to be in line with the Sustainable Development Goals (SDG) agenda.





UTM Pagoh Campus

Universiti Teknologi Malaysia Pagoh Campus started its operation in June 2017 after receiving its Certificate of Acceptance (CoAc) issued by Sime Darby Property Selatan Empat Sdn. Bhd. on 2 June 2017. The establishment of UTM Pagoh Campus was conferred by the Universities and University Colleges Act 1971 (Act 30) 12 September 2017 under the Ministry of Higher Education. The newest UTM campus with an area of 50 hectares and shared facilities integrated with Bandar University Pagoh, is located off the Pagoh interchange on the North-South expressway in the district of Muar, Johor.

Professor Dr. Mohd Raji bin Sarmidi was the first Campus Director appointed by UTM, followed by Dr. Cheng Kian Kai (2009 - 2021) and Professor Ts. Dr. Safian bin Sharif (2021 - present). UTM Pagoh campus is one of UTM's research entities focusing on developing innovative agritechology, wellness and green technology. UTM vicinity can accommodate 200 postgraduate research students specialising in research and innovation and incorporating cross-disciplinary expertise. Postgraduate students can fully utilise research facilities available conveniently under UTM Pagoh Campus lecturers or as co-supervisor.

There are three research centres in UTM Pagoh Campus, the innovation Center in Agritechology for Advance Bioprocessing (ICA), Malaysia-Japan Advance Research Centre (MJARC) and Low Carbon Transport with Imperial College London (LowCARTic). Soon, Disaster Preparedness and Prevention Centre (DPPC) will also establish a satellite laboratory at the UTM Pagoh campus in 2023.



Innovation Centre in Agritechology for Advanced Bioprocessing

<https://pagoh.utm.my/ica/>

Innovation Centre in Agritechology for Advanced Bioprocessing (ICA) provides unique opportunities for researchers, postgraduate students and industrial partners to carry out exciting research on food and agricultural technology. The research centre applies modern biotechnology to comprehensively study bioactive food products, nutrient-dense foods and sustainable agricultural technology. The findings are applied to medical, environmental, agriculture and food sciences, leading to innovative solutions.

ICA facilities include:

- Biochemistry Laboratory
- Microbiology Laboratory
- Biorefinery Laboratory
- Soil Testing and Soil Quality Laboratory
- Food Development Laboratory
- KPT-UTM Halal Incubator

pH Meter at
Soil Testing
and Soil
Quality
Laboratory



SME entrepreneurs processing their products in
KPT-UTM Halal Incubator Pagoh Campus



Freeze Dryer

Malaysia-Japan Advanced Research Centre

<https://mjarc.utm.my/>

Malaysia-Japan Advanced Research Centre (MJARC) was established as an international research and development (R&D) centre in the field of Sub-Critical Water Waste Management System (SCW-WMS). MJARC is one of the first in South East Asia to operate a Multipurpose Recycling Machine for solid waste management. MRM can treat a variety of solid organic waste, such as food waste, biomass waste, and agricultural waste, to produce high-quality products, including organic fertilizers, soil amendment, and animal feed which benefit local farmers and breeders.



Multipurpose Recycling Machine

UTM-Imperial Low Carbon Transport Research Centre

 <https://www.utm.my/locartic>

UTM-Imperial Low Carbon Transport Research Centre (LoCARTic) is a collaborative research venture between Imperial College London and Universiti Teknologi Malaysia to spearhead research on low-carbon technologies for transport applications. The idea behind the establishment of LoCARTic stems from its underlying principle to contribute towards Human Capital Development, especially in training Master and PhD students. LoCARTic team from Johor and London have been collaborating on research projects, publications and technology developments. Among the facilities that are available at LoCARTic, UTM Pagoh Campus are Hot & Cold Flow Steady State Turbocharger Test and Advance Engine – Turbocharger Test.



Advance Engine-Turbocharger Test Facility



Hot & Cold Flow Steady State Turbocharger Test Facility

Disaster Preparedness & Prevention Centre

<https://mju.utm.my/dppc/>

Disaster Preparedness & Prevention Centre (DPPC) Satellite Laboratory will be one of the research centres at UTM Pagoh specializing in the field of testing and analyzing weather data that will be taken from the Compact Dual Polarimetric X-Band Doppler Weather Radar (XBPoI) as well as being a research centre related to rain simulation and ground motion that will use equipment Disaster Virtual Reality (VR) technology for the Rainfall Simulator application. This laboratory will also be a teaching and consulting laboratory that will be used for undergraduate and postgraduate programs in related fields.



The DPPC Satellite Laboratory will be established at UTM Pagoh Campus in 2023



UTM Pagoh Campus Projects

1. Stakeholder Engagement Program for Dam-Related Disaster

Executive Summary

Tenaga Nasional Berhad Research (TNBR) and Disaster Preparedness & Prevention Centre (DPPC) Malaysia Japan Institute of Technology (MJIT), UTM have participated in TNBR-UTM Stakeholder Engagement Program for Dam-Related Disaster (DRD) from 2011 until 2013 to promote dam-related disaster risk reduction among local stakeholders and the vulnerable communities that reside downstream of large dams in Perak, Pahang, Terengganu, and Kelantan.

The project empowered local stakeholders and vulnerable communities in reducing and preventing future dam-related disaster risk by providing a multi-stakeholder platform for information exchange, knowledge transfer, and capacity building in support of the Sendai Framework-driven activities for societal resilience transformation. This project also used science and technology, community-based innovation, and cross-sectoral partnership.

This project has developed a set of key recommended actions to strengthen policy, technical solutions and advocacy based on science and technology for building a DRD resilience society and a Training-of-Trainer (ToT) module for strengthening community resilience and preparedness towards dam-related disaster besides implementing ToT workshops.

Impact

- Empower local stakeholders and communities in disaster preparedness and resilience
- Enhance dam safety and improve emergency response plans for dams
- Promote the convergence of science and technology and foster innovation in Disaster Risk Reduction (DRR)
- Advocate DRR investment
- Enhance disaster awareness and preparedness
- Support the Malaysian government's commitment in Sendai Framework for DRR 2015-2030

Beneficiary

- Local stakeholders and vulnerable communities living downstream of large dams



Head of Project
Dr. Khamarrul Azahari Razak
Disaster Preparedness & Prevention Centre
khamarrul.k@utm.my





2. Community-Based Disaster Risk Management at Yan, Kedah

Executive Summary

In remembrance of the 1-year Geological Disaster Debris flow at Jeral Mountain, Yan, Kedah resulting in six deaths and causing more than 75 million direct economic losses, a multi-scale community-based disaster risk reduction for resilience program, specifically the debris-flow and sediment-related disaster, Community Based Disaster Risk Management (CBDRM) at Yan, Kedah has been set as a national benchmark in reducing the impact of debris flow to especially promote build-back-better at the vulnerable areas.

The project was a collaboration between the Disaster Preparedness and Prevention Center (DPPC), Malaysia-Japan International Institute of Technology MJIIT, UTM, and the Mineral and Geoscience Department (JMG), Geomapping Technology Sdn. Bhd. and was conducted from August until November 2022.

The project prepared a comprehensive module for capacity empowerment and community preparedness for future debris flow events. It has also developed a multi-scale disaster education program and disaster preparedness scheme for sediment-related disasters in Jeral Geopark. The project managed to educate the Yan community, including school students, in reducing the cascading impact of debris flow.

Beneficiary

- Yan community that was affected by the geological disaster (debris flow)

Impact

- Prepare Yan community with an evacuation plan integrated with their local knowledge
- Educate the community with Disaster Risk Management



Head of Project
Dr. Khamarrul Azahari Razak
Disaster Preparedness & Prevention Centre
khamarrulki@utm.my



Disaster Educational Program at Sekolah Kebangsaan Longkasuk, Yan, Kedah



Mix and match game of essential items to be put in the ready-to-go bag when a disaster occurs



Students learn about map evacuation routes



Educational Disaster talk by Cik Anis Nasuha from JMG



The verification of the evacuation plan with the community at Kampung Setel, Kampung Pematang Keramat and Kampung Tohor



The visible disaster effect, as shown by M. Abdulkarim bin Sulaiman from JMO

A YEAR AFTER TROPICAL STORM YAKAM

PREPARING VILLAGERS FOR NATURAL DISASTERS

UTM, govt agencies training them to be local champions of disaster preparedness



Students at a disaster preparedness training session in a village in Sarawak.

BY CHAI YEE HOON

PHOTOGRAPHS BY CHAI YEE HOON

"I have a responsibility to my community," says a young boy in a blue shirt, looking at a map of his village. He is one of many children and adults who have gathered for a disaster preparedness training session in a village in Sarawak.

The training is part of a series of disaster preparedness training sessions organized by the Malaysian Disaster Preparedness Centre (MDPC) in collaboration with the Sarawak Disaster Preparedness Centre (SDPC) and the Sarawak State Government.



Construction of the Titi Hayun dam in Sarawak.

The training is part of a series of disaster preparedness training sessions organized by the Malaysian Disaster Preparedness Centre (MDPC) in collaboration with the Sarawak Disaster Preparedness Centre (SDPC) and the Sarawak State Government.

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Titi Hayun sato dam to be ready early next year

Construction of the Titi Hayun dam in Sarawak is expected to be completed by early next year. The dam is a concrete gravity dam with a height of 100 meters. It will be used for flood control and power generation. The dam is located in the Titi Hayun area of Sarawak. The construction of the dam is being carried out by the Sarawak State Government. The dam is expected to be completed by early next year.

Almost RM75m in flood repairs done, says district officer

By Chai Yee Hoon

More than RM75 million worth of flood repairs have been completed in Sarawak, says the district officer of the affected areas. The repairs include the construction of flood walls, the installation of flood gates, and the reinforcement of embankments.

The repairs were carried out by the Sarawak State Government. The repairs were completed by the Sarawak State Government. The repairs were completed by the Sarawak State Government.

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A young boy carrying a bundle across a riverbed in Sarawak.

'Strong currents swept away my child, grandparents'

By Chai Yee Hoon



Three people affected by the flood in Sarawak.

The flood in Sarawak has caused significant damage to the lives of many people. The flood has swept away many people's homes and belongings. The flood has caused significant damage to the lives of many people.

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	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Prayer	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Islamic	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Christian	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Buddhist	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Hindu	6:00	6:00	6:00	6:00	6:00	6:00	6:00
Sikh	6:00	6:00	6:00	6:00	6:00	6:00	6:00

Preparing villagers for natural disasters

By [Ika Zahri](#) - August 21, 2022 @ 8:18am



Department of Mineral and Geoscience planning and management director Abdulrah Sulaiman briefing TR Hayun folk at the community-based disaster risk management workshop.

YAN: "I have a bedridden mother at home. Please tell me what to do if disaster strikes again. How do I save her and my family?"

A woman, still shaken by the Aug 18 flood disaster in TR Hayun here a year ago, made the plea at a community-based disaster risk management (CBDRM) workshop held in this village at the foot of Gunung Jetai near Yan, Kedah.

The woman and residents in Yan and Merbok districts have carried on with their lives after the floods damaged some 1,000 homes, and killed six people, but they are still haunted by the tragedy.

The workshop is part of a series of programmes organized by the Universiti Teknologi Malaysia (UTM) Disaster Preparedness and Prevention Centre (DPPC).

3. Women and Child-Centred Disaster Risk Reduction and Resilience

Executive Summary

Disaster Preparedness and Prevention Center (DPPC), Malaysia-Japan International Institute of Technology, conducted a Women and Child-Centred Disaster Risk Reduction and Resilience project in June 2022 to empower women and children with disaster management. The project involved communities around Yan, Kuala Kangsar, Tumpat, Hulu Selangor, Georgetown and Mesilau.

DPPC emphasized focus group discussions, sharing sessions and interactive activities to ensure the project's success. Among the project initiatives that were carried out were Program Ramah Mesra Bersama Wanita Komuniti Yan, Program Pendidikan Bencana, and Program Pendidikan Bencana.

Impact

- Provide training and support to increase women's and youth's capacity and participation in disaster preparedness, recovery, resilience and climate change adaptation
- Strengthen and rebuild the social support structures that provide certain levels of security for women, children and youth
- Enhance the application of innovative techniques in climate change adaptation and disaster preparedness, response, and recovery for women, children and youth
- Increase women's and youth's leadership and gender equality in Disaster Risk Reduction (DRR) and resilience coordination mechanisms and networks
- Increase women's access to gender-responsive early warning systems, services, finance, and resilient infrastructure, livelihoods, and businesses
- Protect and promote the economic livelihoods of women
- Invest in actions that promote gender equality, women and youth empowerment in disaster risk reduction and management;
- Achieve gender equality, women, youth and children empowerment in Sendai Framework for DRR 2015-2030 and gender-responsive recovery in disaster recovery plans and process

Beneficiary

- Women
- Children
- Vulnerable communities



Head of Project,
Assoc. Prof. Sr. Dr. Siti Uzairiah bt Mohd Tobli
Disaster Preparedness & Prevention Centre
uzairiah.kl@utm.my





Parents and children participating in the related program



Children at the program exhibition

4. Managing Waste Cooking Oil Campaign for a Sustainable Future

Executive Summary

UTM Pagoh initiated a campaign to collect waste cooking oil (WCO) as a contribution towards the awareness of the importance of recycling. The initiative was organized by Kelab Rekreasi & Ukhuwah (KRU) UTM Pagoh, in collaboration with Perbadanan Pengurusan Sisa Pepejal dan Pembersihan Awam (SWCorp) Muar. This campaign was targeted towards the neighbouring Pagoh Jaya community and Pagoh Education Hub residents.

The campaign aims to reduce the environmental impact of improper disposal of WCO and encourage the population to be more environmentally conscious. The collection point of the WCO for the related community was set up at UTM Pagoh. SWCorp will recycle all the collected WCO.

Nearly 600kgs of waste cooking oil were collected between April to November 2022. The campaign successfully formed a collaborative network between government agencies and the community to promote UTM's social responsibility and eco-conscious behaviour.

Beneficiary

- Residents and Food & Beverages entrepreneurs in Taman Pagoh Jaya and Pagoh Education Hub

Impact

- Reduce the environmental impact of improper disposal of waste cooking oil
- Increase environmental awareness among the Pagoh Education Hub residents
- Form a collaborative network between government agencies and the Pagoh Education Hub community to control the disposal of waste cooking oil



Head of Project
Nurhamieza Md. Huzir
Malaysia-Japan Advanced Research Centre
nurhamieza@utm.my



The first batch of waste cooking oil collected from Taman Pagoh Jaya Community



100 kgs of waste cooking oil sold to SWC.org in October 2022



The initiative was promoted to the community through posters and banners

5. Mangrove School at Tanjung Piai Johor National Park

Executive Summary

The Mangrove School project was conducted as part of corporate social responsibilities on Sustainable Development Goals facilitated by UTM Pagoh Campus in collaboration with the industry and support from the government. The project was made possible through the allocation of RM25,000.00 funded by the All-Party Parliamentary Group Malaysia on SDG.

The projects' module was formally launched as the first of its kind in Malaysia for 54 students and ten teachers from Tenby International School, co-facilitated by the staff of Johor National Park Corporation. The one-day module, which was held on 19 October 2022, incorporated several elements for indoor and outdoor experiences, such as games, workbooks, presentations and hands-on activities specific to Tanjung Piai Johor National Park.

Designed based on the concept of education through gamification, the module that is suited for all ages is hoped to spread and increase environmental awareness, specifically the importance of sustaining mangroves and reducing the impact on mangroves as its supports numerous ecosystems for food and shelter besides acting as natural infrastructure for healthy coastal zones.

Beneficiary

- Tenby International School students and teachers

Impact

- Create awareness and encourage the preservation of mangrove ecosystem to support biodiversity and well-being of all walks of life

Achievement

- Received funds from All-Party Parliamentary Group Malaysia on SDG worth RM25,000.00



Head of Project
Dr. Nazrin Abd Aziz

Innovation Centre in Agritechology for Advanced Bioprocessing
nazrin.abdaziz@utm.my



Demonstration on mangrove seedling planting



Ice breaking game



Hands-on activities by one of the students



Nature exploration by groups



Interactive Mangrove game



Certificate presentation by Tanjung Riai Johor National Park

6. Rehabilitation of Paddy Field at Sungai Balang, Muar

Executive Summary

Rice is one of the staple food in the world. The quality of rice grains highly depends on the soil quality and paddy field management. Poor soils contributed to lower crop yields. In order to increase paddy yield, soil rehabilitation and the introduction of the industrial revolution (IR 4.0) are required among local farmers. In 2021, Malaysia-Japan Advanced Research Centre (MJARC), in collaboration with Sungai Balang, Muar, Johor community, promoted organic farming by implementing organic fertilizer and adopting the industrial revolution (IR 4.0) in the paddy field.

The project involved the utilization of organic fertilizer on one acre of paddy field located in Sungai Balang. The organic fertilizers were made from subcritical water (SCW) technology utilizing agro-industrial waste. Throughout the project, local farmers were introduced to the application of solid organic fertilizer as a soil amendment and liquid organic fertilizer as nutrient enrichment on paddy crops.

Farmers were also exposed to IR 4.0, such as using a transplanter to replace manual seed planting, the application of a drone to reduce time during spraying fertilizer and using mobile monitoring devices to monitor the soil quality. At the end of the project, the paddy yield was recorded to increase to 400%, which increased the crop productivity and income generation among local farmers.

Impact

- Increase awareness among local farmers towards sustainable and smart farming
- Increase farmer's income
- Contribute to circular economy strategy by converting agricultural waste into value-added products such as organic fertilizer
- Sustainable paddy growth using organic fertilizer and smart agricultural management

Beneficiary

- Local farmers in Sungai Balang
- Stakeholders in Sustainable Agriculture



Head of Project
Ts. Dr. Pramila a/p Tamunaidu
Malaysia-Japan Advanced Research Centre
pramila@utm.my



The application of organic fertilizer for soil rehabilitation



The use of automation during paddy field cultivation.



The application of a drone for foliar spraying



Healthy paddy produced by organic fertilizers

7. Halal Layout for Food Product Premise

Executive Summary

Jamaliah Juri Enterprise is a small mid-sized enterprise (SME) established in 2007 and located in Sri Bengkal, Batu Pahat, Johor. The company produces local food products such as Kerepek Jejari Udang, Kerepek Bawang, Rempyek and Kerepek Pisang.

Innovation Centre in Agritechology for Advanced Bioprocessing (ICA), specifically Halal Incubator Ministry of Higher Education (KPT) – UTM, was established to assist the company in pursuing Halal Certification for their products which were produced from their own premises. The project had successfully implemented a Pilot Project with the company by providing the premise layout according to Halal Certification's criteria.

The company was also granted RM25,000 by the Department of Agriculture (DOA) in the form of a special grant to upgrade the premise based in accordance with Halal standards. Additionally, training sessions was also given to ensure the company fully mastered preparing the documentation of their products needed to obtain JAKIM Halal Certification.

Impact

- The company establish their own Halal Layout and Halal Documents
- The company obtain JAKIM Halal Certification

Beneficiary

- Entrepreneurs from Jamaliah Juri Enterprise in Batu Pahat

Achievement

- RM25,000 grant awarded by the Department of Agriculture



Head of Project

Ts. Dr. Nor Zalina binti Othman

Innovation Centre in Agritechology for Advanced Bioprocessing
norzalina@utm.my





The company's premises before the renovation process



Halal training session at the company's premises



The company's premises upgraded its ceiling based on the Halal layout

8. Halal Awareness and Guidance Program for SME Entrepreneurs in Tangkak

Executive Summary

Tangkak, Johor is known for its Small Mid-Size Enterprise (SME) industry, specifically in producing local food and beverages such as bahun, frozen kueh, local chips and more. The district is also part of a tourist attraction. Located 36 km from UTM Pagoh Campus, the KPT-UTM Halal incubator is an opportunity to develop more SME entrepreneurs in Tangkak.

The Innovation Center in Agritechology for Advanced Bioprocessing (ICA), UTM Pagoh Campus, in collaboration with District Office Tangkak, Holistics Lab Sdn. Bhd. and Centre for Community and Industry UTM has successfully implemented the Halal Awareness and Guidance Program for 20 SME entrepreneurs at District Office Tangkak on 16 and 17 October 2022.

An in-house course was conducted to provide competencies on the Halal Awareness Program, Halal Documentation Module, Halal Layout Module, Labeling Food Act 1985 and Halal issues and Challenges in Malaysia. The program also included a visit to KPT-UTM Halal Incubator for practical sessions. To serve as a continuation of the program, Otak-otak Ledang Enterprise and Kerepek Ledang HQ, were chosen by Ts. Dr. Nor Zalina Othman and Assoc. Prof. Ts. Dr. Harisun Ya'akob in which their product prototypes will be co-developed by UTM.

Impact

- SME entrepreneurs were able to implement the knowledge imparted
- Two SMEs were able to test and market new product offerings

Beneficiary

- 20 SME Entrepreneurs in Tangkak



Heads of Project
Ts. Dr. Nor Zalina Othman
Innovation Centre in Agritechology for Advanced Bioprocessing
norzalina@utm.my



Prof. Madya Ts. Dr. Harisun Ya'akob
Department of Bioprocess and Polymer Engineering
harisun@utm.my



Two Days of Halal Awareness and Guidance Program at District Office Tangkak



New prototype formulation for Keropak Otak-Otak for Otak-otak Ledang Enterprise



SME owners visiting KPT-UTM Halal incubator at IITM Campus Pagoh

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25 Usahawan Tangkok Terima Bimbingan Pensijian Halal

Pejabat Pengkaji Halal yang Beroperasi Formasi 2014 (PH2014), Pusat Pengkaji Halal dan Halal (PPHH) Sekolah Pengkaji Halal dan Halal (SPHH) dan Pejabat Pengkaji Halal dan Halal (PPHH) telah mengadakan sesi bimbingan pensijian halal kepada 25 usahawan Tangkok Terima Bimbingan Pensijian Halal.

2024-2025 & 2026 - Sesi Bimbingan dan Konsultasi Halal kepada usahawan Tangkok Terima Bimbingan Pensijian Halal. Program ini bertujuan untuk membimbing usahawan Tangkok Terima Bimbingan Pensijian Halal dalam menguruskan proses pensijian halal dan memastikan produk mereka memenuhi syarat-syarat pensijian halal. Sesi bimbingan ini akan diadakan pada 2024 dan 2025. Usahawan Tangkok Terima Bimbingan Pensijian Halal akan menerima bimbingan dan konsultasi mengenai proses pensijian halal dan memastikan produk mereka memenuhi syarat-syarat pensijian halal.



9. UTM-LoCARTic and Kolej Vokasional Sepang Collaboration in STEM

Executive Summary

Kolej Vokasional Sepang (KVS) students participated in FI in School Malaysia competition by the Ministry of Education Malaysia. Thus, KVS collaborated with UTM-LoCARTic in the field of Science, Technology, and Mathematics (STEM) to provide the technical knowledge of FI Engineering for the competition.

The KVS FI car model for the competition was also tested in the UTM Aerolab wind tunnel. The collaboration exposed the KVS students to engineering activity, research and development at UTM. The competition also adapted the importance of the sustainability concept to educate the students.

From this collaboration, KVS became the national champion in 2022 and participated in the world-level competition as Malaysia's representative.

Beneficiary

- Kolej Vokasional Sepang Students

Impact

- Expose to low carbon research and technology to students

Achievement

- Kolej Vokasional Sepang awarded as FI in Schools Malaysia Virtual National Champion



Advisor of Project

Mahadhir bin Mohammad

UTM-Imperial Low Carbon Transport Research Centre
mahadhir.mohammad@utm.my



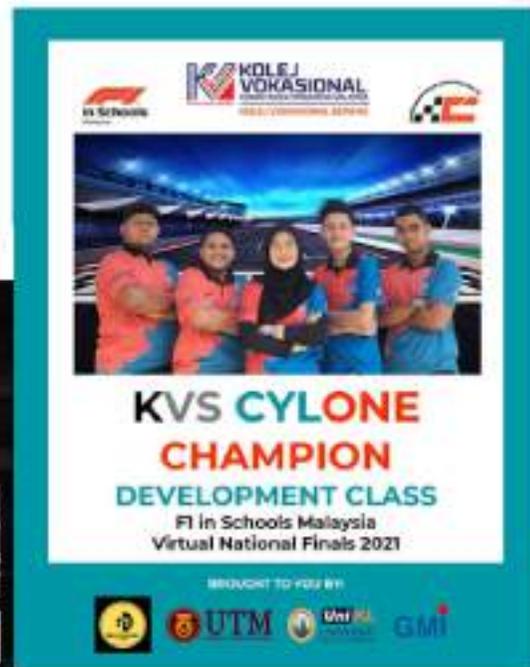


Kerjasama UTM LoCARTic & KV Sepang Dalam Bidang STEM Lahirkan Sang Juara

Insightful Stories and Researcher Stories | Published: 11/01/2022 | 17 minutes of reading

Posted: October 2020, UTM LoCARTic telah mempromosikan kerjasama dengan UniversitiKV Sepang (UVM) di dalam bidang STEM, khususnya dalam pembangunan (STEM).

Kerjasama ini telah melahirkan kepada pertandingan F1 di sekolah dan sistem F1 di UniversitiKV Sepang yang telah menghasilkan dan pertandingan dunia untuk UTM dan UVM. Pertandingan F1 di sekolah ini telah menghasilkan juara dunia.



10. Pemakanan Sihat, Sisa Dimanfaat

Executive Summary

'Program Jom Sihat: Pemakanan Sihat Sisa Dimanfaat' was held on 28 August 2022 at Sekolah Kebangsaan (SK) Ledang, Tangkak Johor, to provide exposure on a good and healthy eating style to school students from SK Ledang, SK Sri Tangkak, SK Payamas, SK Slalang, SK Sri Maamor, SK Bukit Banjar, SK Bandar Tangkak, SK Bekoh, Sekolah Jenis Kebangsaan Cina (SJKC) Chi Ming (1), SJKC Chi Ming (2), and Sekolah Jenis Kebangsaan Tamil Jalan Slalang. The program, which emphasized on the application of quadruple helix (University-Industry-Government-Community) element, was organized by ICA UTM in collaboration with UTM Community and Industry (CCIN), Sekolah Kebangsaan Ledang, and Education Office of Tangkak District.

The half-day program included a seminar session, a practical session, and a science and technology exhibition. The seminar explained the theory of nutritional food, halal, and Effective Microorganisms (EM) technology to participants. The use of EM helps expedite the process of recycling organic solid waste into high-value organic fertilizer that can be applied for sustainable agricultural development. During the practical session, participants had the opportunity to prepare bokashi from organic solid waste as a source of fertilizer. The bokashi will be used for the project of 'Kebun Kita' at Sekolah Kebangsaan Ledang, which consist of five types of plant which were brinjai, okra, watermelon, water spinach and pumpkin.

Beneficiary

- 195 students from 11 school around Tangkak district

Impact

- Expose students to the use bokashi as organic fertilizer
- Expose students to theory on nutritional food, halal, and Effective Microorganisms (EM) technology



Heads of Project
Ts. Dr. Cheng Kian Kai
Innovation Centre in Agritechnology for Advanced Bioprocessing
chengkiankai@utm.my



Ts. Dr. Nicole Leong Hong Yeng
Innovation Centre in Agritechnology for Advanced Bioprocessing
hongyeng@utm.my



Knowledge Transfer Program for 195 school students in Tangkak, Johor



Science and technology exhibition



Students learnt to make bokashi



Students learnt to prepare Effective Microorganism Activated Solution (EMAS)



Seminar Talk about Healthy Food for students

Community Engagement Star Rating

Community Engagement (CE) Star Rating is a tool used to evaluate the impact of community project implementation. Impact needs to be measured to assess the effectiveness of the exchange of expertise and research results through innovative projects run jointly by academic staff, researchers and business partners from the industry and target community. This is to ensure that every project implemented successfully brings positive changes to the community.

Impact Measurement for CE Star Rating





CE Star Rating Projects

11. Ask Dr STEM!: Boosting Interest on STEM

Executive Summary

A knowledge and skills transfer program, ASK Dr. STEM! program was an initiative to boost interest in STEM as a chosen stream. The program was in the form of continuous online interactive, hands-on talk cum workshop supported with interactive STEM kits, aimed at transferring the knowledge and skills of civil, mechanical, electrical, electronic and chemical engineering by UTM staff to primary and secondary school students.

The program resulted from UTM's collaboration with the Ministry of Science, Technology and Innovation, Ministry of Education, Pusat STEM Negara, six secondary and primary schools, Setiaawangsa Member of Parliament Office, the Institution of Engineering and Technology (IET), Estiva Home Sdn. Bhd. and GD Express Sdn. Bhd. The program benefited 200 primary and secondary school students in Klang Valley through engineering knowledge diffusion activities in empowering and sustainably adopting STEM concepts and applications in their daily lives.

At the end of the program, the students have shown improvement in their STEM knowledge and skills by not only creating more interest and appreciation towards STEM but also improving the quality of life and solving problems without relying on UTM or others. The students were also able to transfer knowledge and skills, such as making their engineering-based glider, solar car, heat exchanger and concrete product, to other students, families and the community at large.

Beneficiary

- 200 primary and secondary school students in Klang Valley

Impact

- IET has officially established the IET STEM Officers 2021-2023 due to the positive feedback of the program
- Students transfer the knowledge and skills to other students, families and the community at large



5 STAR RATING PROJECT



Head of Project
Assoc. Prof. Ts. Ir. Dr. Syuhaida Ismail
Razak Faculty of Technology and Informatics
syuhaida.kl@utm.my





Preparation of 200 "Ask Dr STEM" kits and modules by UTM



School students showed high interest, appreciation and participation towards Ask Dr STEM program



Supplementary activities after the online interactive "Ask Dr-STEM!" to empower students independently sustain STEM applications and transfer STEM knowledge and skills to other students





School children showed increased STEM knowledge and skills throughout Ask Dr STEM program

12. Massive Open Online Course for Modul Keluarga Sejahtera Negeri Johor

Executive Summary

Yayasan Pembangunan Keluarga Darul Ta'zim (YPKDT), in collaboration with UTM, had taken on the initiative to develop an engaging online and digital teaching method using the concept of "Massive Open Online Course (MOOC)" in introducing and elevating the Modul Keluarga Sejahtera Negeri Johor (MKSNJ). MKSNJ was developed in 2019 through the feedback and synergy of various relevant agencies, as well as the views of academic scholars in contributing ideas during the development process of the modules.

In this upskilling program, several training sessions were conducted for YPKDT female mobilizers to familiarise them with the MOOC platform and thus allow them to use it confidently while promoting MKSNJ to the community. The study on the effectiveness of MOOC-MKSNJ has also been conducted and received good feedback. By developing MKSNJ in an online e-learning platform or MOOC-MKSNJ, it can facilitate access to this family module learning among the community, especially in the state of Johor.

Beneficiary

- 58 YPKDT female mobilizers
- Four YPKDT district officers
- Johor community

Impact

- Mobilizers understood the MKSNJ better to share with the targeted community
- Mobilizers learn how to use the MOOC platform easily
- Mobilizers were able to figure out suitable activities to be applied during conveying MKSNJ to the targeted group
- Johor community able to practice MKSNJ as an enrichment towards their parenting knowledge

Achievement

- Received funds from YPKDT worth RM29,000.00
- Memorandum of Agreement with YPKDT worth RM80,000.00
- Recipient of Silver Award (Academic) at Faculty Science Social and Humanities (FSSH) Research & Innovation Competition 2021
- Recipient of Gold Medal at the invention, Innovation & Design on e-Learning Competition 2022



5 STAR RATING PROJECT



Head of Project
Assoc. Prof. Dr. Mohd Fauzi bin Abu @ Hussin
Academy of Islamic Civilisation
mohdfauzlabu@utm.my



MOOC-MKSNJ Training-of-Trainer (ToT)



Introduction to MOOC through a webinar session

The project won Silver Award at FSSH Research & Innovation Competition 2021



The project won Gold Medal at the Invention, Innovation & Design on e-Learning Competition 2022



MOOC-MKSJ online display

○ ○ ○ ○

Bengkel 'TOT' Modul Keluarga Sejahtera Negeri Johor (MKSJ) Anjuran CFIRST dan YPKDT

UTM NEWSHUB



Bengkel 'TOT' Modul Keluarga Sejahtera Negeri Johor (MKSJ) Anjuran CFIRST dan YPKDT

Academic/Research/Advancement Faculty of Social Sciences and Humanities, General | By Nur Hafiza Haniffi Alif Rahman 2 2 | 2020/2021

Modul Keluarga Sejahtera Negeri Johor (MKSJ) merupakan satu modul pembelajaran yang memperkaya ilmu dan pengetahuan dalam bidang kejuruteraan sosial masyarakat. Modul ini sebagai sebuah modul yang berorientasikan kepada pemertanian keluarga yang optimum.

Modul yang dibangunkan mengartikan pembekalan yang berorientasikan dengan keupayaan responden dan tenaga kerja yang terlibat dalam perancangan dan pelaksanaan modul ini yang juga berorientasikan kepada kecekapan dan kualiti modul ini.

Modul MKSJ ini telah dibangunkan oleh kerjasama bersama Pusat Penyelidikan Riset dan Inovasi (PIRIS) dan Institut Penyelidikan dan Kemajuan Masyarakat (KEMAS) Universiti Teknologi Malaysia (UTM) dan Kementerian Pembangunan Keluarga (KEMK) bagi membolehkan modul ini dapat diakses oleh semua pengguna.

13. Sustainable Lifestyle through Planting and Monitoring Trees Online

UTM, together with the Local Authority of Iskandar Puteri, Medini Iskandar Malaysia, Ambassador Club Rimba (NGO), and Iskandar Resident Housing Malaysia, had conducted a technology transfer project. The project attracted 1,700 participants among primary and secondary school students and 100 participants among Rumah Iskandar Malaysia residents. The project introduced an innovation, Geotrees, for reporting tree planting and care.

Geotrees has proven to be a successful platform for transferring knowledge of using technology in planting, particularly to a digitally literate community. The use of Geotrees as a reporting platform and monitoring activities promotes more tree planting activities carried out by individuals who have constraints to attend a physical tree planting campaign. This project is in line with the Malaysia Greening Campaign 2021-2025, with a target of 100 million trees planted in Malaysia.

Impact

- -Encourage low-cost plant activities by using a mobile application
- -The project impact analysis can be obtained fast through proof of activity reporting tree planting in the Geotrees system.

Achievement

- Received "in kind" sponsorship from Duta Rimba@Jungle Ambassador Club, Kuala Lumpur, worth RM2,060
- Won Gold Medal IDEX (UITM) 2021
- Won Silver Medal INoEx (USM) 2021
- Won Silver Medal INATEX (UTM) 2021

Beneficiary

- 1,700 school students
- 100 Residents of Rumah Iskandar Malaysia



5 STAR RATING PROJECT



Head of Project
Sr Gs. Dr. Nurul Hawani Idris
Faculty of Architecture and Built Environment
hawani@utm.my





18.04.2021



1.10.2021

Project participants carried out plant care activities

14. Effective Microorganism to Treat Pollution

Executive Summary

ICA, together with Community and Industry Network (CCIN) UTM, Zenxin Agriculture Sdn. Bhd, EMRO Malaysia Sdn. Bhd. had conducted a knowledge transfer of the Effective Microorganism (EM) Application program on June 2019 at UTM Pagoh Campus. To date, 100 participants in the community around Muar and Pagoh, including primary school students and teachers, had involved in the program.

Effective microorganism (EM) is beneficial microorganisms which exist in nature, such as lactic acid bacteria, yeast and phototrophic bacteria. Healthy soil and clean water are maintained by the diversity and balance of the community of microorganisms within them. In recent years, EM Mudball events have been held every year around the world as a community effort to mitigate polluted rivers and ponds. Muar river plays a central part in the livelihoods of rural people in Pagoh and is an essential resource for food and water security. Therefore, educating the community on water pollution and mitigation with EM is crucial.

This program provided knowledge transfer via a workshop session. The workshop gave related fundamental knowledge, including EM roles in the environment, issues of water pollution and mitigation of water pollution with EM. Participants had the chance to make EM Activated Solution and EM mudball. After the workshop, a mudball throwing ceremony took place as an effort to water pollution mitigation. At the end of the workshop, participants understood the importance of mitigating water pollution and were able to apply EM in daily activities with the knowledge given.

Beneficiary

- 100 participants from schools, colleges, universities, and the local community around Muar and Pagoh, Johor

Impact

- Participants gained EM knowledge after the program and were able to apply it in their daily activities

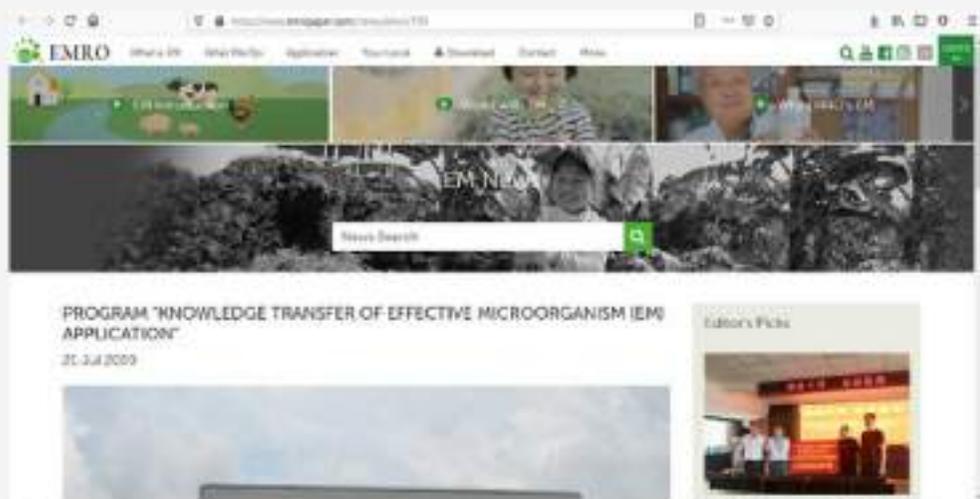


3 STAR RATING PROJECT





Participants making EM Mudball





ACKNOWLEDGEMENT

Coordinated by:

Office of Strategy and Corporate Affairs | Centre for Community and Industry Network (CCIN) | UTM Pagoh Campus

Advisors:

Assoc. Prof. Ts. Dr. Dayana Farzeeha Ali | Assoc. Prof. Dr. Johari Surif | Prof. Ts. Dr. Safian Sharif

Editors:

Dr. Mahani Stapa | Mohd Farid Rahmat | Rohaizan Khairul Anuar
Fatin Nabihah Rosli | Nur Mazdiana Noor Azizaman

Authors:

Assoc. Prof. Ts. Ir. Dr. Syuhaida Ismail | Assoc. Prof. Dr. Mohd Fauzi Abu@Hussin
Sr Gs. Dr. Nurul Hawani Idris | Dr. Leong Hong Yeng | Nur Syamimi Ab. Hamid
Muhammad Hazim Yusof | A. Rafidah A. Mohd Yunus | Zulaikha Saboro | Nurhamieza Md Huzir
Mahadhir Mohammad | Mohd Fadhirul Saminan | KhairilAnuar Mohd Hanim | Azlina Abd Jamal
Noraishah Hassan | Mohd Razi Johan | Abd Salihul Halim Wagiman | Muhammad Rahmat Naim Ab Rahman

Designers:

Norfarhawa Khairi | Shakela Jamion

And all those who have contributed directly or indirectly in the process of producing this publication.
Thank You!



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**Office of Strategy and Corporate Affairs
Universiti Teknologi Malaysia
81310 Johor Bahru, Johor
corporate@utm.my**



Innovating Solutions