



MINISTRY OF HIGHER EDUCATION

PRESENTATION SESSION #5



Facilities/Incentives to be covered:

CENTRE OF EXCELLENCES (HICoE) ACROSS UNIVERSITIES

Research & Development For Business

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MINISTRY OF HIGHER EDUCATION (MOHE)



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[1] INTRODUCTION

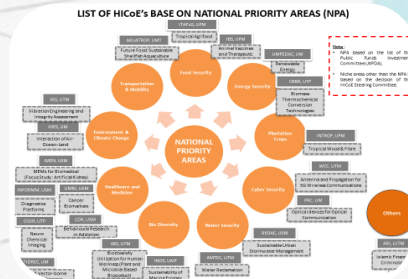
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WHAT IS HICoE?



HICoE ratings is awarded to highly performing Centre of Excellence (CoE), in the field of niche research



Nurturing achieving towards international standards as well as supporting the country's nine priority areas

WHY HICoE?



Drive HEIs research excellence in the field of niche research



HICoE as a leader in the field of niche research to national and international level



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HICoE VISION, MISSION & OBJECTIVE



HICoE Research and Innovation

To achieve the level of an internationally referred and acclaimed research entity in related fields

To lead the development of knowledge in related fields by conducting fundamental research and disseminating research findings through renowned platforms

- Provide basic knowledge for applied research and technology development
- Build a network of collaboration and sharing of resources and expertise with agencies from within and outside the country
- Become a renowned reference center in the field of niche research

VISION

MISSION

OBJECTIVE

HICoE Services

To offer research - based services that generate finance

To achieve the level of relevant research -based service entities, referred and acclaimed in related fields internationally

- Generate income and transfer knowledge through the services offered
- To become national reference center in the field of niche research
- Develop talent for continuity of the entity and needs of the country
- Leading a network of cooperation among HEIs and agencies in the field of niche

NATIONAL PRIORITY AREAS



Food Security



Energy Security



Plantation Crops



Cyber Security



Water Security



Biodiversity



Healthcare & Medicine



Environment & Climate Change



Transportation & Mobility

HiCoE proof of higher education institutions' effectiveness

By Professor Datuk Seri Dr Mohamed Mustafa Ishak - September 21, 2020 @ 4:09pm



Malaysia currently hosts 20 HiCoE that focus on a wide range of science-based areas since the programme's establishment in 2010. - NSTP file pic

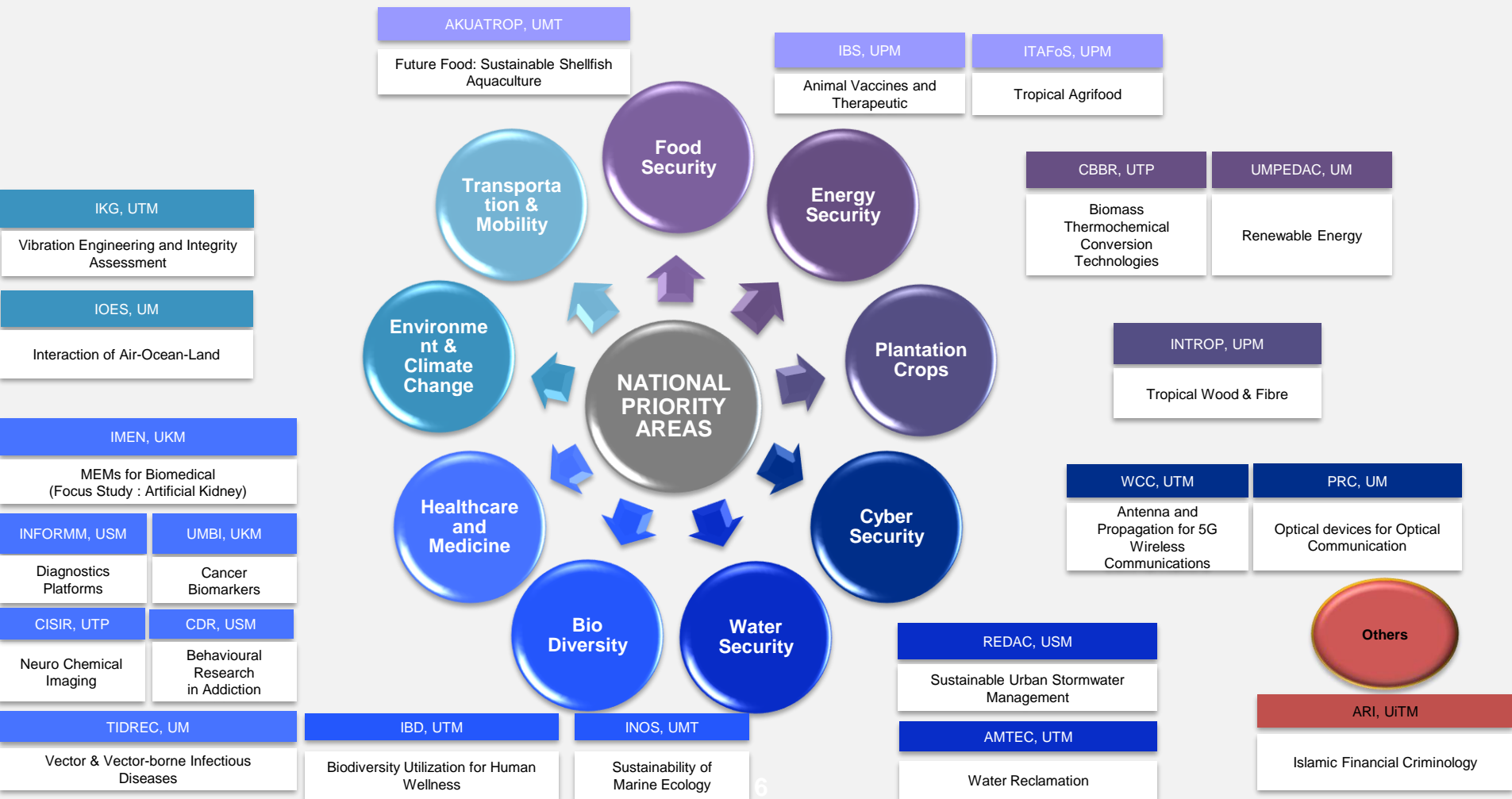
YEAR after year, university rankings make the headlines. Some love rankings, while others spew harsh criticisms on the idea that the quality of education is quantifiable. The back and forth debate on this issue occurs without fail – so much so that many risk falling into a tunnel vision of Malaysia's higher education institutions (HEIs).

Let us instead turn our attention to an important aspect of Malaysia's HEIs that deserves some limelight, namely the Higher Institution Centres of Excellence (HiCoE). They are established within universities and are part of the Higher Education Ministry's (MoHE) programme, spearheaded by the Higher Education Department.

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21 HICOE'S MAPPED TO NATIONAL PRIORITY AREAS (NPA)





LIST OF HICoE

BATCH 1 2010	BATCH 2 2012	BATCH 3 2014	BATCH 4 2015	BATCH 5 2016	BATCH 6 2019	BATCH 7 2020
<p>UMPEDAC, UM (Renewable Energy)</p> <p>UMBI, UKM (Cancer Biomarkers)</p> <p>IBS, UPM (Animal Vaccines and Therapeutic)</p> <p>INFORMM, USM (Diagnostics Platforms)</p> <p>CDR, USM (Behavioral Research in Addiction)</p> <p>ARI, UiTM (Islamic Financial Criminology)</p>	<p>INOS, UMT (Sustainability of Marine Ecology)</p>	<p>PRC, UM (Optical devices for Communication)</p> <p>IOES, UM (Interaction of Air-Ocean-Land)</p> <p>REDAC, USM (Sustainable Urban Stormwater Management)</p> <p>IMEN, UKM (MEMs for Biomedical - Focus Study : Artificial Kidney)</p> <p>WCC, UTM (Antenna and Propagation for 5G Wireless Communications)</p> <p>CISIR, UTP (Neuro Chemical Imaging Under Biomedical Image Analysis)</p>	<p>AMTEC, UTM (Water Reclamation)</p> <p>IKG, UTM (Vibration Engineering and Integrity Assessment)</p>	<p>INTROP, UPM (Tropical Wood and Fibre)</p> <p>ITAFoS, UPM (Tropical Agrifood)</p> <p>IBD, UTM (Biodiversity Utilization for Human Wellness - Plant and Microbial Based Bioproduct)</p>	<p>TIDREC, UM (Vector & Vector-borne Infectious Diseases)</p> <p>CBBR, UTP (Biomass Thermochemical Conversion Technologies)</p>	<p>AKUATROP, UMT Future Food: Sustainable Shellfish Aquaculture</p> <p>Future Food: Sustainable Shellfish Aquaculture</p>

LIST OF HICoE

BIL.	IPT	HICoE	NICHE	RATING YEAR
1.	UM	UM Power Energy Dedicated Advanced Centre (UMPEDAC)	Renewable Energy	2010
2.		Photonics Research Centre (PRC)	Optical devices for Communication	2014
3.		Institute of Ocean and Earth Sciences (IOES)	Interaction of Air-Ocean-Land	2014
4.		Tropical Infectious Diseases Research & Education Centre (TIDREC)	Vector & Vector-borne Infectious Diseases	2019
5.	UKM	UKM Medical Molecular Biology Institute (UMBI)	Cancer Biomarkers	2010
6.		Institute of Microengineering and Nanoelectronics (IMEN)	MEMs for Biomedical (Focus Study : Artificial Kidney)	2014
7.	USM	Institute for Research in Molecular Medicine (INFORMM)	Diagnostics Platforms	2010
8.		Centre for Drug Research (CDR)	Behavioral Research in Addiction	2010
9.		River Engineering and Urban Drainage Research Centre (REDAC)	Sustainable Urban Stormwater Management	2014
10.	UPM	Institute of Bioscience (IBS)	Animal Vaccines and Therapeutic	2010
11.		Institute of Tropical Forestry and Forest Products (INTROP)	Tropical Wood and Fibre	2016
12.		Institute of Tropical Agriculture and Food Security (ITAFoS)	Tropical Agrifood	2016
13.	UTM	Wireless Communication Centre (WCC)	Antenna and Propagation for 5G Wireless Communications	2014
14.		Advanced Membrane Technology Research Centre (AMTEC)	Water Reclamation	2015
15.		Institute of Noise and Vibration (IKG)	Vibration Engineering and Integrity Assessment	2015
16.		Institute of Bioproduct Development (IBD)	Biodiversity Utilization for Human Wellness (Plant and Microbial Based Bioproduct)	2016
17.	UiTM	Accounting Research Institute (ARI)	Islamic Financial Criminology	2010
18.	UMT	Institute of Oceanography and Environment (INOS)	Sustainability of Marine Ecology	2012
19.		Institute of Tropical Aquaculture and Fisheries (AKUATROP)	Future Food: Sustainable Shellfish Aquaculture	2020
20.	UTP	Center of Intelligent Signal & Imaging Research (CISIR)	Neuro Chemical Imaging Under Biomedical Image Analysis	2014
21.		Centre for Biofuel and Biochemical Research (CBBR)	Biomass Thermochemical Conversion Technologies	2019



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[2] SUCCESS STORY

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IMPACT TO THE SOCIETY

UM POWER ENERGY DEDICATED ADVANCED CENTRE (UMPEDAC), UM

Rural Electrification – Ensuring Long Term Sustainability through Community
– Aligned Renewables Empowerment (CARE).



Stand-alone installation
of micro PV inverter
using a prototype.



Community Project with the
residents of Kampung Sg.
Merah, Sarawak in 2016 to
2019 through a joint venture
with NGO, Lightup Borneo.

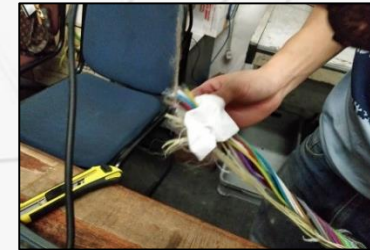
Develop user manuals as a
reference for residents as well
as system monitoring and
maintenance training.



IMPACT TO THE INDUSTRY

PHOTONICS RESEARCH CENTRE (PRC), UM

Optical Cable Testing Services for Wuhan Fiberhome International - Telekom
Malaysia



Wuhan Fiberhome International is one
of the leading optical cable suppliers
for Telekom Malaysia. In 2019, Wuhan
Fiberhome has procured the services
of this center for testing the
specifications and quality of optical
cables supplied to Telekom Malaysia.





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IMPACT ON OVERSEAS COLLABORATION NETWORKS

CENTRE FOR DRUG RESEARCH (CDR), USM

International Grant



International grant from the National Institutes of Health (NIH), United States of America.



RM5.8j pertingkat perubatan HIV/AIDS

Oleh MOHD. KHUZAIRI ISMAIL
perpustakaan@usm.my

■ PULAU PINANG 23 OKT.

PENYELIDUK Universiti Sains Malaysia (USM) terus mendapat keyakinan saintis antarabangsa selepas dipilih untuk menerima kerjasama penyelidikan dalam bidang HIV dan AIDS.

Terbaharu, penyelidikan USM dari Pusat Penyelidikan Dadah dan Ubat-ubatan yang ditubuhkan oleh Prof. Dr. Mohd. Khuzairi Ismail, telah dipilih menerima geran berjumlah RM5.8 juta daripada Institut Kesihatan Kebangsaan

sebagai projek perubatan bagi menyokong pesakit yang bergantung kepada dadah dan yang menghidap HIV/AIDS.

"Model penjagaan yang diperkenalkan dan dihidai itu akan melibatkan kedua-dua aspek klinikal dan aspek sosial pesakit yang bergantung kepada dadah dan yang menghidap HIV dan AIDS."

Kajian yang memakan masa selama lima tahun itu akan dijalankan secara kerjasama dengan penyelidikan daripada Pusat Penyelidikan Dadah dan Ubat-ubatan yang ditubuhkan oleh Prof. Dr. Mohd. Khuzairi Ismail, telah dipilih menerima geran berjumlah RM5.8 juta daripada Institut Kesihatan Kebangsaan

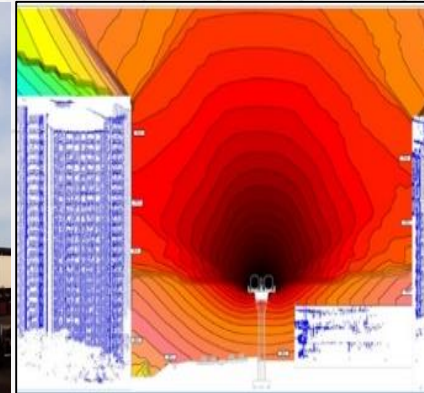
The achievements of CDR researchers in obtaining international grants amounting to RM 5.8 million to conduct research on the best medical methods for drug addicts and people living with HIV and AIDS.



IMPACT TO THE NATION

INSTITUTE OF NOISE & VIBRATION (IKG), UTM

Klang Valley MRT Sg Buloh Kajang Line Detailed Noise & Vibration Analysis & Mitigation Design



The project is implemented together with MMC-Gamuda KVMRT (PDP). Involves detailed analysis and design of impact mitigation measures for Sg Buloh Kajang Line involving 8 viaducts and 2 underground works.





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IMPACT TO THE NATION

TROPICAL INFECTIOUS DISEASES RESEARCH & EDUCATION CENTRE (TIDREC), UM

MS ISO/IEC 13485 Certification for Severe Dengue ELISA Kit (SDenDetect), a Diagnostic Kit to Determine Severe Dengue in Dengue Patients



The kit produced by TIDREC and researchers from the Department of Pharmacology, Faculty of Medicine, UM successfully obtained MS ISO/IEC 13485 certification in December 2019.



INSTITUTE OF MICROENGINEERING AND NANO-ELECTRONICS (IMEN), UKM

IMENGiTi Approved For Testing On Humans



The Artificial Kidney Project of the Institute of Micro and Nanoelectronic Engineering or IMEN-GiTi has entered a testing phase to test the functionality and effectiveness of the prototype.



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MIDA

IMPACT TO THE ACADEMIA

ACCOUNTING RESEARCH INSTITUTE (ARI), UiTM

ARI
ACCOUNTING
Research Institute
Higher Institutions' Centre of Excellence (HICoE)

**UNIVERSITI
TEKNOLOGI
MARA**
Higher Institutions' Centre of Excellence (HICoE)

Recognition to the Academy at the International Level:
2nd Most Influential Women in Islamic Business and Finance 2019

This award recognizes the dedication and passion in promoting Islamic financial criminology and contribution in helping Malaysia achieve its aspiration of becoming an Islamic financial hub.





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[3] WAY FORWARD

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NEW NICHE OF HICoE



15 Aktiviti Pertumbuhan Ekonomi Utama / Key Economic Growth Activites (KEGA)

KEGA 1

Hub Kewangan Islam
2.0

KEGA 2

Ekonomi Digital

KEGA 3

Revolusi
Perindustrian Ke-4

KEGA 4

Industri Kandungan

KEGA 5

Hub ASEAN

KEGA 6

Hub Halal dan
Makanan

KEGA 7

Komoditi Malaysia
2.0

KEGA 8

Pengangkutan,
Logistik & Mobiliti
Lestasi

KEGA 9

Ekonomi Pesisiran &
Maritim

KEGA 10

Pusat
Kecemerlangan

KEGA 11

Tenaga Boleh
Baharu

KEGA 12

Ekonomi Hijau

KEGA 13

Pertanian Pintar &
Bernilai Tinggi

KEGA 14

Perkhidmatan
Termaju & Moden

KEGA 15

Malaysia Truly Asia

SUSTAINABLE DEVELOPMENT GOALS





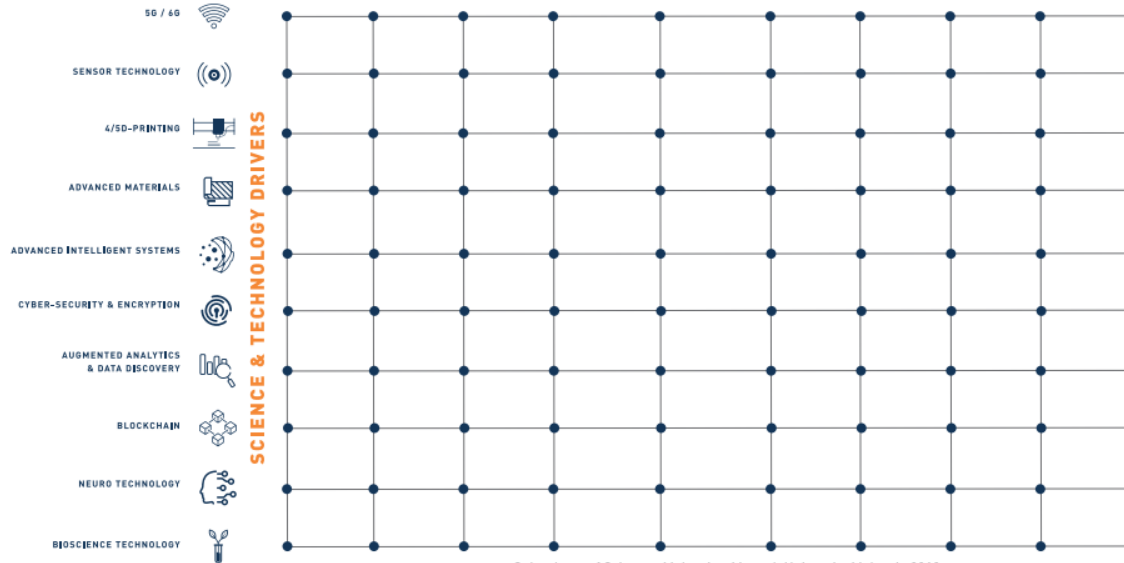
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MIDA

10/10 MySTIE
FRAMEWORK

Building the Horizontal & Enabling
the Vertical in the Ecosystem

MALAYSIAN SOCIO-ECONOMIC DRIVERS



Each Science &
Technology Driver
should explore
core technologies
& applications for
the 10 Malaysian
Socio-economic
Drivers

Driving Fundamental
& Translational Research

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Each Malaysian Socio-economic Driver should explore how the 10 Science &
Technology Drivers will value-add and enhance their global competitiveness



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THANK YOU

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