

MERDEKA
AWARD

Fostering a Culture of Excellence

2015

MERDEKA AWARD
2015

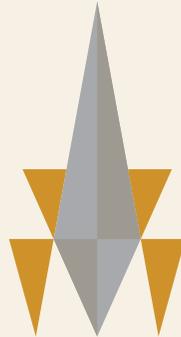
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M E R D E K A
A W A R D

The Merdeka Award aims to promote thought leadership and innovation, foster a culture of excellence, encourage a world view, thereby enhancing Malaysia's standing as a dynamic, competitive 21st Century Global Player in all key sectors from science and technology to the arts.

www.merdekaaward.my





SIX OUTSTANDING INDIVIDUALS CONFERRED 2015 MERDEKA AWARD



Merdeka Award Presentation Ceremony 2014

The Merdeka Award Trust, founded by PETRONAS, ExxonMobil and Shell, conferred the prestigious 2015 Merdeka Award to six outstanding individuals, in recognition of their achievements and contributions to the nation.

The year 2015 marks the eighth year in which individuals, both Malaysian and non-Malaysians, are being recognised for their outstanding work and enduring contributions to the people of Malaysia, in their respective fields.

Each year the Merdeka Award is conferred in five categories:

- Education and Community
- Environment
- Health, Science and Technology
- Outstanding Scholastic Achievement
- (and) Outstanding Contribution to the People of Malaysia

Each Merdeka Award recipient will receive a trophy, a work of art by Malaysian artist Latiff Mohidin and a cash award of RM500,000.

The selection of Merdeka Award recipients, which began in January 2015, was wide-ranging and thorough, with only the most outstanding accomplishments and contributions making it to the final round.

Since it was established in 2007, 28 individuals and two organisations have received the Merdeka Award.

For 2015, the Merdeka Award recipients are:

- **Education and Community: Tan Sri Dr Jemilah Mahmood**

For outstanding contribution to the development of humanitarian and international emergency relief.

Tan Sri Dr Jemilah was the driving force behind the establishment of MERCY Malaysia, one of the first nationally-grown humanitarian organisation that works both at home and internationally, harnessing the spirit of volunteerism and selflessness from Malaysians from all walks of life. In 2009, 10 years after she founded MERCY, Tan Sri Dr Jemilah left the organisation to focus on other areas of humanitarian development.

- **Environment: Emeritus Professor Dato' Dr Abdul Latiff Mohamad (Joint Recipient)**

For outstanding contribution to the research and understanding of plant taxonomy and conservation biology in Malaysia.

Professor Abdul Latiff is a pioneer and has been actively involved in the research of plant taxonomy and conservation biology. Currently serving as Emeritus Professor and Guest Scholar at Universiti Kebangsaan Malaysia, Professor Latiff's efforts have led to greater understanding of the field of taxonomy that is essential to the nation's rich biodiversity.

Professor Latiff has named a new genus of plant and 18 plant species new to science. He also has seven scientific plants and two animals named in his honour.

- **Environment: Professor Emeritus Tan Sri Dr Zakri Abdul Hamid (Joint Recipient)**

For outstanding contribution to the observation, analysis and assessment of biodiversity and ecosystem services, fostering the remediation and protection of the natural environment and promoting environmental sustainability in Malaysia and globally.

A researcher, educator, scientist and diplomat Tan Sri Zakri was awarded the prestigious Zayed International Prize in 2014, for his role in providing global leadership in the field of environment. He was awarded the prize for his international role in championing environmental issues, in particular, developing a number of key findings in the Millennium Ecosystem Assessment Report.

Tan Sri Zakri was also a recipient of the Langkawi Award in 1998. His achievements, particularly in his global role in championing environmental issues has highlighted to the wider community Malaysia's efforts in the realm of sustainable development. Tan Sri Zakri is currently Science Adviser to the Prime Minister of Malaysia.

- **Health, Science and Technology: Professor Datin Paduka Dr Khatijah Mohamad Yusoff**

For outstanding contribution in the field of microbiology and virology through a better understanding and diagnosis of the contagious and fatal viruses in poultry and the study of the potential of the virus in combating cancer cells.

Professor Khatijah is a virologist and microbiologist who is internationally recognised for her groundbreaking work in paramyxoviruses, in particular, Newcastle Disease Virus (NDV). She was the first person to sequence the complete L gene which encodes the polymerase, an important enzyme involved in NDV replication while doing her post-doctoral fellowship at the University of Newcastle-upon-Tyne, United Kingdom between 1985 – 1988.

Her research has now further expanded into the understanding of virus-cancer cell interactions. NDV is usually not harmful to normal human cells but it has a certain proclivity to home in on human cancer cells. Professor Khatijah is now directing her research to focus on the novel use of NDV as an anticancer agent as well as a carrier for anticancer drugs in targeted chemotherapies.

Her work has achieved international recognition, such as the UNESCO Science Laureate (2005) and the Distinguished Alumni Award from La Trobe University in 2008.

- **Outstanding Scholastic Achievement: Professor Dr Ir Mohd Ali Hashim**

For outstanding scholastic contribution in the research of separation processes and water and wastewater treatment and for his instrumental role in the setting-up of the Centre for Ionic Liquids.

The Founder and Head of University of Malaya Centre for Ionic Liquids (UMCiL), Professor Ali Hashim is a leading scholar and researcher in separation processes and green technology that includes bio-separations, ionic liquids, and water and wastewater treatment systems. In his scholastic career of 38 years, he has published more than 200 research articles in refereed international journals, including 173 ISI publications with an ISI H-index of 28 and he has filed over 20 patents, putting Malaysia on the map of separation processes and green technology research.

At the UM Centre for Ionic Liquids, Professor Ali Hashim has made several significant discoveries. In particular, he and his team have been successful in harnessing the high reactivity nature of the superoxide ions through generating and stabilising them in ionic liquids and reacting them with crude palm oil to produce a number of specialty chemicals.

- **Outstanding Contribution to the People of Malaysia: Dr Elizabeth Lesley Bennett**

For outstanding contribution to the conservation and management of wetland habitats and that of endangered wildlife in Malaysia through research, advocacy and policies.

Dr Bennett initially came to Malaysia in 1984 to undertake a research project on the proboscis monkey in Sarawak and later focused on the conservation and management of wetland habitats in Sarawak by working closely with the Sarawak Forest Department to protect areas of coastal swamp forest in Sarawak.

She initiated conservation education and awareness programmes for rural people living around critical areas of wetland habitat. This sanctuary is an important site in Sarawak for coastal forest wildlife. Dr Bennett is currently Vice President for Species Conservation at the Wildlife Conservation Society based in New York.

MERDEKA AWARD INITIATIVES IN 2015

Merdeka Award Grant for International Attachment

Launched in April 2012, the Merdeka Award Grant for International Attachment is a signature outreach programme that enables qualified Malaysians between the ages of 22 and 35 to participate in collaborative projects for up to three months at selected, internationally-recognised host institutions abroad.

Two grants are awarded annually to successful candidates in select disciplines, including Education and Community, Environment, Health, Science and Technology, Visual and Performing Arts, Heritage and Social Work as well as traditional disciplines such as Economics and Finance.

This year, the Merdeka Award Trust awarded two outstanding young scientists the 2015 Merdeka Award Grant for International Attachment. Recipients Ms Chua Ling Ling, 26, and Dr Mohd Sukor Su'ait, 30, will both have the opportunity to undergo a three-month attachment at an internationally-recognised institution. The attachment would enable them to establish research networks and working relationships with other experts in their fields, share knowledge, and build on the body of work in their respective areas of research.

Ms Chua's research seeks to understand how the gut microbiome interacts with the immune system and leads to the development of age-related illnesses and premature aging, while Dr Sukor's research will focus on fabrication of



Merdeka Award Grant recipients 2015 with Royal Patron



Ms Chua Ling Ling & Dr Mohd Sukor Su'ait

solid-state dye-sensitised solar cell (DSSC) utilising Malaysian commodities such as rubber, palm oil and seaweeds as solid polymer electrolyte. The aim of his study is to reduce the dependency of petrochemical based polymer for electrolytes application and replacing liquid electrolytes with solid polymer electrolytes in electrochemical devices for safe and environmental-friendly energy resources.

Ms Chua and Dr Mohd Sukor join 2014 recipients Dr Kamalan Jeevaratnam and Dr Lim Hong Ngee who were awarded the 2014 Merdeka Award Grant for International Attachment. Their attachment journey began this year with Dr Kamalan expanding his research in the area of cardiac cellular therapy using stem cells at Cambridge University, UK; and Dr Lim pursuing her aim of developing a smart nanotechnology-based breast cancer-testing scheme at the University of Toronto, Canada.

Dr Kamalan's attachment has availed him the opportunity to connect with and discuss potential partnerships with several experts and researchers across the UK. Leveraging on these networking opportunities, he aspires to share his new-found knowledge and expertise, train younger researchers, as well as collaborate with established Malaysian researchers in setting up a fully-equipped cardiac stem cell and electrophysiology laboratory in Malaysia.

Likewise, Dr Lim's attachment has equipped her with the technical and practical experience of managing a digital microfluidic system alongside other scientists. With this, she hopes to develop a lab-on-a-chip device that will simplify the method of breast-cancer testing and detection, which could potentially change the medical diagnostic worldwide.

The attachments are possible through the global network and reach of the three founding partners of the Merdeka Award – PETRONAS, ExxonMobil and Shell.

Merdeka Award Roundtables



11th Roundtable



MERDEKA AWARD ROUNDTABLE



**ASSOCIATE PROFESSOR
DR GEORGE LEE ENG GEAP**
*Clinical Associate Professor of Surgery and
Consultant Urologist*

**HEALTH MATTERS:
CHALLENGES IN SUSTAINING
QUALITY & AFFORDABLE
HEALTHCARE FOR ALL MALAYSIANS**

Watch the Roundtable on Sunday,
August 9, 2015 at 6.30pm
on **ASTRO AWANI CHANNEL 501**

With repeats on:
Mon, **Aug 10, 2015 at 3.00pm**
Fri **Aug 14, 2015 at 3.30pm**



**SENIOR PROFESSOR
DATO' DR KHALID YUSOFF**
*Professor of Medicine and Honorary Senior
Consultant Cardiologist, Vice-Chancellor and
President, UCM University*

An initiative to promote excellence by



For more information, visit: www.merdekaaward.my



DATO' DR MOHD AZHARI YAKUB
*Chief Executive Officer and
Senior Consultant Cardiac Surgeon,
National Heart Institute (IHS)*

DR STEVEN CHOW KIM WENG
*Senior Consultant Dermatologist and President,
Federation of Private Medical Practitioners'
Associations, Malaysia*



SUEANN CHONG
*Editor,
Women's Health magazine*

10th Roundtable

The Merdeka Award Roundtables is a series of TV talk-shows designed to inspire debate and discussion on key issues of interest to Malaysians. Launched in August 2011, the Roundtables feature leading figures from Malaysia's corporate, academic and social spheres, coming together to discuss issues critical to the future of this nation.

In October 2015, the Merdeka Award Trust held its 11th Roundtable discussion on the topic, *"It takes two: Enhancing University-Industry Collaboration for Innovation & Growth"*. Five participating panelists constructively discussed the current divide between universities and companies to achieve closer, more strategic research

collaborations.

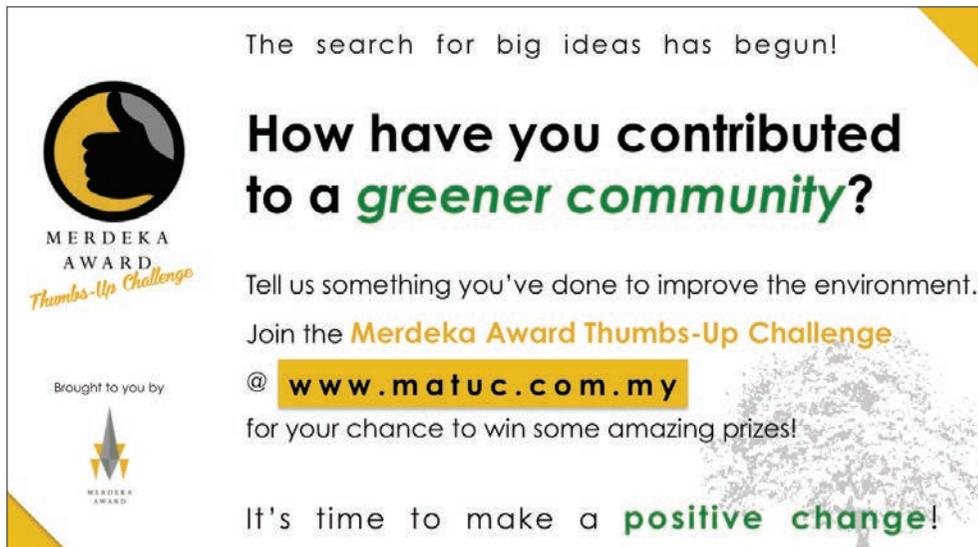
Prior to the 11th Merdeka Award Roundtable, two other Roundtable discussions were held this year. The 10th Merdeka Award Roundtable aired on August 9, 2015, highlighting the topic: *"Health Matters: Challenges in Sustaining Quality and Affordable Healthcare for All Malaysians."*

Malaysia's public healthcare system has gradually improved. However, the rapid expansion of the private healthcare sector has contributed to the uneven distribution of private health facilities favouring affluent urban areas. Will further expansion of the private health sector adversely affect public access to healthcare? The discussion stressed the need for a more integrated system between public and private healthcare providers.

The 9th Merdeka Award Roundtable, which aired on May 3, 2015, featured the topic *"Bridging the Rural-Urban Divide in Malaysia"*.

Malaysia has seen tremendous economic development and social progress over the years. With the majority of Malaysia's population now urbanised, there is a widening gap between the rural and urban communities. The panellists deliberated the ways in which the rural-urban divide can be overcome towards a more balanced and sustainable development of Malaysia.

Merdeka Award Thumbs-Up Challenge



The search for big ideas has begun!

How have you contributed to a greener community?

Tell us something you've done to improve the environment. Join the **Merdeka Award Thumbs-Up Challenge** @ www.mafuc.com.my for your chance to win some amazing prizes!

It's time to make a **positive change!**

Logo: MERDEKA AWARD Thumbs-Up Challenge
Sponsored by: MERDEKA AWARD

Thumbs-Up Challenge

The Merdeka Award Thumbs-Up Challenge is an initiative introduced to create a platform for all Malaysians to share impactful and sustainable ideas based on select themes.

Launched in May 2015, the first Merdeka Award Thumbs-Up Challenge on “*Caring for the Environment*” encouraged participants to contribute ideas that have been tested and put into action whether at home, at their workplace, within their neighbourhood or in their community. Three individuals stood out from the list of strong entries.

Baida Jane Hercus took home the Grand Prize for her contribution to the Free Tree Society Kuala Lumpur, which aims to green the city by encouraging more people to plant trees. She received an iPad Mini 3, while the 1st runner up, Jaron Keng Zi Xiang received an iPod Nano for his contribution to the Zero Waste Campaign which encourages recycling by providing a free e-waste collection service for the community at the University of Malaya (UM).

In third place was Ahmad Kamal Benjamin Osman for his contribution in implementing a vertical hydroponic system or window farm to encourage growing food from home using recyclable materials. He received a power bank.

The winners also received a Certificate of Award and a limited edition Merdeka Award flash-drive.

Following its debut, the Second Series of the Merdeka Award Thumbs-Up Challenge on “*Preserving Our Malaysian Culture*” was announced in November 2015.



Baida Jane Hercus



Jaron Keng Zi Xiang

Reflecting the Merdeka Award categories and Merdeka Award Roundtable discussion topics, the themes of the Challenges are selected to provide Malaysians with the opportunity to inspire others to contribute to the nation, be it in Education and Community; Environment; Health, Science and Technology; Heritage; the Arts or other areas of outstanding contributions.

Merdeka Award Facebook



As social media grows to be a valuable communication and networking tool, the Merdeka Award has established an online presence via Facebook as a platform to reach out to Malaysians by sharing the latest news and regular updates on events, initiating discussions on hot topics, and running contests. The page is growing steadily with 4-5 postings per week, with a strong following from several key organisations and individuals.

With statistics showing that approximately 15 million people in Malaysia use Facebook on a daily basis, the Merdeka Award is able to reach the Post-Merdeka Generation (young professionals and academics), to promote initiatives such as the Merdeka Award Grant for International Attachment, Merdeka Award Thumbs-Up Challenge and invitation to watch the latest Roundtable recordings. The number of applications for the recent Merdeka Award Grant and views for the Roundtable sessions have increased with the support of Facebook.

The page also provides a platform for followers to share their feedback, comments, questions and new ideas relating to the Merdeka Award and its initiatives. For instance, potential applicants of the Merdeka Award Grant are able to post any questions

they may have about the application procedures.

The frequency and consistency in sharing informative and insightful posts provides the Merdeka Award the opportunity to inspire the online community. The page serves well as a medium for creating brand awareness in addition to the official Merdeka Award website (www.merdekaaward.my). The Merdeka Award Facebook page is also a good source of up-to-date information for members of the media.

Nomination & Selection

The nomination and selection of Merdeka Award recipients are administered by the Board of Trustees and six committees – five Nomination Committees and one Selection Committee.

The Board of Trustees comprises two representatives from PETRONAS and one representative each from ExxonMobil and Shell, as well as two independent members.

The Board of Trustees and the various committees go through a long and rigorous selection process that reflects the high ideals of the Merdeka Award.

The committee members are made up of eminent Malaysians and non-Malaysians, bringing with them a wealth of knowledge, experience and expertise to allow them to nominate and select outstanding individuals and/or organisations that have laboured tirelessly, with great sincerity and conviction for the good of this country and its people.

Each year, the committee members will deliberate, examine the merits and finer qualities of each nominee, and in the end, identify those who stand above and beyond the rest, in their embodiment of the Merdeka spirit.

Categories & Recipients 2015

EDUCATION AND COMMUNITY CATEGORY

Tan Sri Dr Jemilah Mahmood

For outstanding contribution to the development of humanitarian and international emergency relief

ENVIRONMENT CATEGORY

Emeritus Professor Dato' Dr Abdul Latiff Mohamad (Joint Recipient)

For outstanding contribution to the research and understanding of plant taxonomy and conservation biology in Malaysia

&

Professor Emeritus Tan Sri Dr Zakri Abdul Hamid (Joint Recipient)

For outstanding contribution to the observation, analysis and assessment of biodiversity and ecosystem services, fostering the remediation and protection of the natural environment and promoting environmental sustainability in Malaysia and globally

HEALTH, SCIENCE AND TECHNOLOGY CATEGORY

Professor Datin Paduka Dr Khatijah Mohamad Yusoff

For outstanding contribution in the field of microbiology and virology through a better understanding and diagnosis of the contagious and fatal viruses in poultry and the study of the potential of the virus in combating cancer cells

OUTSTANDING SCHOLASTIC ACHIEVEMENT CATEGORY

Professor Dr Ir Mohd Ali Hashim

For outstanding scholastic contribution in the research of separation processes and water and wastewater treatment and for his instrumental role in the setting-up of the Centre for Ionic Liquids

OUTSTANDING CONTRIBUTION TO THE PEOPLE OF MALAYSIA CATEGORY

Dr Elizabeth Lesley Bennett

For outstanding contribution to the conservation and management of wetland habitats and that of endangered wildlife in Malaysia through research, advocacy and policies

Education and Community

Awarded to individuals and/or organisations to honour exceptional thinking and research in strengthening the educational infrastructure of Malaysia, in elevating the level of education and in benefiting the marginalised.



TAN SRI DR JEMILAH MAHMOOD



PROFILE

A trusted humanitarian, Tan Sri Dr Jemilah Mahmood was the driving force behind the establishment of MERCY Malaysia, the most successful nationally grown humanitarian organisations that works both at home and internationally. Born in Seremban in 1959, Tan Sri Dr Jemilah credits her parents for her early interest in community service, “I grew up in a family that was very much involved in helping others. We used to live in a house that had families living with us. My parents had no hesitation helping people – they were very generous and kind.” Her early education at Assunta School in Petaling Jaya, also encouraged her passion and interest in community service. “I had the opportunity to be under a fantastic headmistress – Sister Enda Ryan.”





Tan Sri Dr Jemilah obtained her Doctor of Medicine from the National University of Malaysia in 1986 and her Masters in Obstetrics and Gynaecology in 1991. She also obtained her Fellowship from the Royal College of Obstetricians and Gynaecologists in the United Kingdom and completed a business studies programme at the International Management and Development Institute (IMD) in Lausanne, Switzerland. In 1999, after several years of a successful private practice at Ampang Puteri Hospital, Tan Sri Dr Jemilah began to yearn for something more. “I woke up one day and thought - I love my patients, I love what I do, but I am not being true to what I really want to do.” She initially considered joining Médecins Sans Frontières but soon realised that, given the geopolitical shifts of the day, there would soon come a time when it would be very



Treating villagers in Cambodia, 2002

difficult for the conventional Western organisations to get access to people affected by crisis. She felt strongly that there was a need to build capacity and a network of organisations to fill that gap. Encouraged by her husband and family, Tan Sri Dr Jemilah began exploring setting up a humanitarian organisation that could address this need. As she says: “I wanted to be a catalyst with the hope that other organisations would follow suit.”

Founded in 1999, MERCY Malaysia works both at home and internationally, harnessing the spirit of volunteerism and selflessness from Malaysians from all walks of life. Throughout her 10 years at MERCY Malaysia, Tan Sri Dr Jemilah was responsible for providing the strategic direction of the organisation and, also, transforming it from a small-scale non-governmental organisation to one that is

highly-respected today. Her stewardship saw the organisation involved in various engagements such as delivering support in emergencies, developmental work in post-emergency tasks such as emergency medicine, disaster risk reduction as well as long-term measures such as ways to strengthen health care systems. This can be seen after the devastating 2004 Indian Ocean Tsunami in Indonesia where MERCY Malaysia was responsible for the establishment of a nursing college in Aceh and the rebuilding of the provincial hospital in Nias, receiving the highest accolades from the Government of Indonesia. Besides Indonesia, MERCY Malaysia also helped to provide assistance and rebuild areas affected by conflict and natural disasters in numerous countries from Sudan, Afganistan, Sri Lanka, Philippines and Myanmar to name a few.



Nutritional Programme in West Darfur



With Aceh tsunami survivors



In Aceh post-tsunami, 2004

In order to ensure that MERCY Malaysia performed to the highest standards at all times, she constantly found new ways to improve the organisation's capabilities in light of the ever challenging environment of disaster response. For instance, MERCY Malaysia was among the first (in 2002) to introduce Total Disaster Risk Management including Community Based education at MERCY Malaysia, well ahead of other international organisations. This method allowed MERCY Malaysia to go beyond simply responding to disasters and conflicts towards a more holistic approach that encompasses prevention and preparedness as well as recovery

and reconstruction. The Total Disaster Risk Management methodology was later adopted by many organisations in the country, region, and globally. Passionate about education, she was also on the Board of Trustees of Teach for Malaysia.

Riding on her expertise in MERCY Malaysia, Tan Sri Dr Jemilah moved on to co-found the Asian Disaster Reduction and Response Network (ADRRN), which aims to enhance the capacity development of local NGOs. The network currently has 50 national NGOs as members and it aims to improve the standard of disaster response through capacity building, knowledge sharing and networking. ADRRN remains a leading network providing education and policy support in disaster preparedness, climate change and humanitarian response and recovery.

Tan Sri Dr Jemilah's passion in bringing the unique brand of Malaysian humanitarianism and leadership to locals and those abroad also led her to serve on the boards of various international organisations such as The International

Council of Voluntary Agencies (ICVA), Save the Children UK, and was on the Council of the Overseas Development Institute UK. She was the inaugural Chair of the UK Humanitarian Innovation Fund Grants Panel and remains an active member of the United Nations Disaster Assessment and Coordination Team (UNDAC).

Ten years after she founded MERCY Malaysia, Tan Sri Dr Jemilah left the organisation to focus on other areas of humanitarian and development. In August 2009, she joined the United Nations and was appointed as the Chief of Humanitarian Response at the United Nations Population Fund (UNFPA). During her early days, she reorganised the management of "UNFPA's Emergency Response Fund" and instituted quality assurance and accountability through development of policies and guidelines. Shortly thereafter, she led the development of the Second Generation Humanitarian Response Strategy that provided for humanitarian response with development and an accompanying results management framework to

allow for performance evaluation. She continued to bring change through the development of standard operating procedures, monitoring frameworks and improved communication tools and guidance. At UNFPA, she was able to position the organisation positively during major humanitarian crises such as that in Haiti and Pakistan and also by raising awareness on the special needs of women and girls through strong advocacy and communication skills.

In recognition of her efforts, Tan Sri Dr Jemilah has been the recipient of numerous awards both locally and internationally. She is the recipient of four Royal awards namely DPMP Perak, DIMP Pahang, PJJ from the Yang di-Pertuan Agong and PSM that carries the title Tan Sri. Internationally, her leadership and commitment to quality assurance and accountability has led to MERCY Malaysia becoming the first Asian NGO and third NGO globally to be certified for humanitarian accountability awarded by Humanitarian Accountability Partnership International in 2007. She was also the recipient of the East Asia Women's Peace Award (Humanitarian Section) from the Philippines in August 2003. In November 2005, Tan Sri Dr Jemilah was one of the recipients of the Her World Women Award. In May 2013, she also became the first recipient of the Isa Award for Service to Humanity. Established by HM King Hamad bin Isa al Khalifa, the King of Bahrain, the Isa Award is given to outstanding world humanitarian leaders. In October 2013, she was awarded the Brand Laureate "Woman of the Year Brand Icon Leadership Award".



With Assistant Secretary General & Deputy Emergency Relief Coordinator Kyung-wha Kang

Tan Sri Dr Jemilah also holds honorary doctorates from the International Islamic University of Malaysia and Universiti Kebangsaan Malaysia.

Tan Sri Dr Jemilah headed the World Humanitarian Summit Secretariat based at the United Nations headquarters in New York from 2014 until November 2015. She was recently appointed as the Under-Secretary-General of the International Federation of the Red Cross and Red Crescent in Geneva where she will oversee partnerships as well policy, knowledge management, communications and innovation.

CONCLUDING REMARKS

A leading humanitarian, Tan Sri Dr Jemilah has been a leading catalyst and driving force behind the establishment of Malaysia's first nationally grown and globally renowned humanitarian organisation that works both at

home and internationally. Her deep understanding of the complexities of cross-cultural issues in the humanitarian and geopolitical arena and particularly with those surrounding the Muslim world has made her a strong voice of tolerance as well as advocacy on a wide range of issues. MERCY Malaysia, through Tan Sri Dr Jemilah's leadership, has become a model for civil community organisations in Asia, Africa and the Middle East. MERCY Malaysia's success has motivated several organisations in these regions to improve their professionalism and influence. Tan Sri Dr Jemilah's subsequent positions at the United Nations has brought Malaysia's unique brand of humanitarianism to the global arena. In this regard, Tan Sri Dr Jemilah's contribution to the development of humanitarian and international emergency aid personifies the enduring *Spirit of Merdeka* which is about fortitude, perseverance and the independence of thought in a globalised world.

Environment

Awarded to individuals and/or organisations to honour the development, research and application of new technology and practices in renewing and protecting the environment.



EMERITUS PROFESSOR DATO' DR ABDUL LATIFF MOHAMAD



PROFILE

Emeritus Professor Dato' Dr Abdul Latiff Mohamad is a pioneer in the research of plant taxonomy and conservation biology. Born in Kelantan in 1948 he received his early education at the Parang Puting National School and Merbau English School in Kota Bharu, Kelantan. He attended secondary school at the Sultan Ismail College and later continued his studies at University of Malaya (UM) where he obtained his Bachelor of Science. It was at UM where, inspired and encouraged by his lecturer and mentor the late Dr BC Stone, he began to take an interest in plant taxonomy. In September 1974 he went to the University of Reading, England where he received his Masters of Science in Pure and Applied Plant Taxonomy and, subsequently, his PhD in Plants Systematics. Professor Latiff returned to Malaysia in 1978 and assumed a position as lecturer at Universiti Kebangsaan Malaysia.





The University promoted him to Associate Professor in 1983 and to the position of full Professor in 1991. Being a pioneer at the University he was tasked to head the newly established Department of Botany. The faculty saw his potential in administration and he was soon made a Deputy Dean at the Faculty of Life Sciences, and later Dean of the Faculty of Life Sciences. When the science-based faculties were restructured in 1999 he was made the Deputy Dean of the Faculty of Science and Technology and later Dean of the faculty before he retired. He also served as Associate Director and Director of the Institute for Environment and Development.

His almost 40 years of research on Malaysian flora, plant taxonomy and biodiversity has led to the advancement of knowledge that includes the

understanding of the science of taxonomy and conservation biology and, also, the importance, value and benefits of environmental conservation in Malaysia. Professor Latiff has headed various projects on plant taxonomy, ethnography and phytochemistry of natural products. He has also managed to secure funds from the bilateral co-operation of Malaysia-Japan initiatives and also Flora Malesiana Foundation to build the human resource capacity of botanical research in Malaysia. The University of Leiden in the Netherlands has also expressed interest in his research and he was granted a Research Fellowship for the Revision of Malesian Vitaceae Project in 1985.

With the support of the Forestry Department in Peninsular Malaysia, Academy of Sciences Malaysia, and



Preserved plant specimens

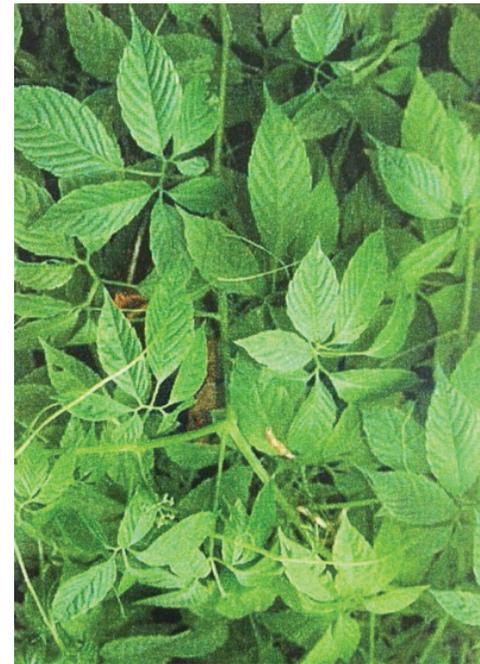
UKM, Professor Latiff has led more than 30 scientific expeditions in various states throughout Malaysia. The expeditions carried out investigations into the physical, biological and socio-economic environments. Upon completion of every scientific expedition, Professor Latiff has conducted scientific seminars to explain his findings. Over the years, he has published more than 546 scientific papers, of which 246 are in ISHF listed journals. He has also published more than 300 publications as chapters in books and as papers in proceedings. He was also a lecturer at both undergraduate and graduate levels in the Faculty of Science, UKM between 1979 and 2014. His efforts have led to the transfer of botanical knowledge to more than 35 students who are now teachers and lecturers, research officers and other science professionals in the country.



Professor Latiff has also worked tirelessly to raise awareness on environmental conservation as he says: "It is difficult to put a value on the importance of conservation." He has been elected as a member of the Working Group on Urban Ecosystem; Sub-Committee of Malaysia Man And Biosphere; Chairman, Sub-Committee on Flora and Fauna; Malay Culture Project and the Inter-University Biology Terminology Committee, Dewan Bahasa dan Pustaka (DBP). He is also a Trustee and the Chairman of the WWF Malaysia Board and member of the Malaysian Delegation to UNESCO World Heritage Site Conference. Over the past few decades, he had also given advice

to various parks in the country such as Perlis State Park, Gunung Stong State Park in Kelantan, Royal Belum State Park in Perak, and Sabah Foundation.

Professor Latiff's expertise is also in demand by regional and international organisations. He has been the Executive Council Member for the Asian Network for Biological Science; Member of the Scientific Committee for Botany, Pacific Science Association and also the Multi-lateral Steering Committee for Plant Resources of South East Asia (PROSEA). Through these appointments, he has been able to accelerate the environmental agenda for the decision makers so that



Cayratia pterita

policies that will ensure environmental sustainability can be implemented.

Throughout his 40 years in research, he has named one new genus of plant, *Nothocissus*; 18 plant species new to science that include *Rafflesia azlanii*, *Rafflesia tengku-adlinii*, *Dendrobium terengganuensis*, *Cissus sumatrana*, and numerous new records to the Flora of Malaysia that include *Vatica sarawakensis*, *Madhuca palembanica*, *Cissus aristolochiodes*. Professor Latiff also has seven plants and two animals named in honour of him. His efforts have led to greater understanding of taxonomy as a field which is essential for the rich biodiversity of the country.

Professor Latiff was a recipient of the Malaysian-Toray Award for Science and Technology in 1995 for his works in plant taxonomy and ethnobotany



In Taipei

and plant diversity. He also received the Tokoh Alam Award from the Faculty of Environmental Studies at Universiti Putra Malaysia (UPM) and Citra Award from UKM, both in 2005. He was also the recipient of the Langkawi Award in 2004.

Professor Latiff currently serves as Emeritus Professor and Guest Scholar at Universiti Kebangsaan Malaysia. He is currently writing a book on the Iconic Researchers of the University commemorating UKM's 45th Anniversary in 2015.

CONCLUDING REMARKS

The first Malaysian to graduate with a PhD in Higher Plant Taxonomy, Professor Latiff has dedicated his professional life to the study and development of plant taxonomy and biodiversity. A firm believer in sustainable development for a balanced quality of life, Professor Latiff is resolute that he will continue nurturing the next generation of researchers in the field of taxonomic and botanical research. At present, he still mentors his former students who are serving either at local universities as lecturers and associate professors and at research institutions as research officers. He tells young Malaysians that in order to succeed they must “work hard.” He says: “While there are no shortcuts to anything if you work hard you will succeed.”

A dedicated researcher and a pioneer in his chosen field Professor Latiff's unerring commitment to research and the understanding of plant taxonomy and conservation biology personifies the *Spirit of Merdeka* and its pursuit of excellence and contribution to the nation.



Environment

Awarded to individuals and/or organisations to honour the development, research and application of new technology and practices in renewing and protecting the environment.



PROFESSOR EMERITUS TAN SRI DR ZAKRI ABDUL HAMID



PROFILE

A tireless supporter of environmental issues that include biodiversity policies and sustainable development, Professor Emeritus Tan Sri Dr Zakri Abdul Hamid has had a distinguished career in science. Widely known as a researcher, educator, and scientist he has made a lasting contribution to the observation, analysis and assessment of global biodiversity and ecosystem services. Born in Pahang, in 1948, Tan Sri Zakri trained as an agricultural scientist at Malaysia's College of Agriculture. He received his Diploma in 1969 and, in 1972, completed his Bachelor of Science from Louisiana State University. In 1974 he received his Masters of Science from Michigan State University followed by his PhD in 1976.



Tan Sri Zakri has played a significant role in global environmental leadership. He is the founding chair of the United Nations Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). He is also one of the 26 members of UN Secretary-General Ban Ki-moon's elite Scientific Advisory Board (SAB). His work has contributed to raising awareness amongst global leaders of the relationship among living organisms, the interdependence of life and the global environment and the common nature integrating these inter-relationships. Passionate about sustainable development, he says: "The key component is nature and what can be done to sustain the planet. My job revolves around meeting leaders where negotiations are made. It is really enlightening to meet leaders with similar interests in environmental issues. We all share the same conviction to do something noteworthy. It's inspiring to meet scientists, politicians, captains of industries, non-governmental organisations and major stakeholders who share a similar interest in the pursuit of sustainable development."

Tan Sri Zakri is also known for his work as co-chair of the 2005 UN Millennium Ecosystem Assessment (MA) – a ground breaking study in which he was instrumental in developing a number of the report's key findings. From 2000 to 2005 Tan Sri Zakri, along with Sir Robert Watson (2012 Blue Planet Laureate) co-chaired the Board of the landmark UN Millennium Ecosystem Assessment, one of the world's largest-ever scientific collaborations involving over 2,000 leading scientists from 95 countries in a



Zayed International Prize for the Environment

comprehensive synthesis and analysis of the state of the Earth's ecosystems, with summaries and guidelines for decision makers. The MA was a ground breaking scientific assessment to understand ecosystems and their services, the drivers of ecosystem changes, and the consequences of ecosystem changes for human well-being. The MA popularised the idea of essential "ecosystem services" – the point that nature provides humanity with many cost-free services such as water purification, and underscored the need to understand how that works and what role different species play in the process.



With Japan PM, Mr Shinzo Abe at STS Forum, 2015



Rio Chief Justices Conference, 2012

The integrated assessment measured 24 ecosystem services, concluding that only four have shown improvement over the last 50 years, 15 are in serious decline, and five are in a stable state overall, but under threat in some parts of the world. Former UN Secretary-General Kofi Annan, in his Millennium Report, hailed the MA as “an outstanding example of the sort of international scientific and political cooperation that is needed to further the cause of sustainable development.” Subsequent analyses detailed significant impacts of the MA on the work of international conventions and agencies in research directions and priorities, in post-secondary courses and curricula, and in the work of several regional, national and sub-national governments.

As co-chair of the MA and Director of the Institute of Advanced Studies – United Nations University (a position he held from 2001 to 2008) Tan Sri Zakri inspired and initiated the landmark Japan Satoyama-Satoumi Assessment (JSSA) which focused on ecosystem services. This undertaking involved over

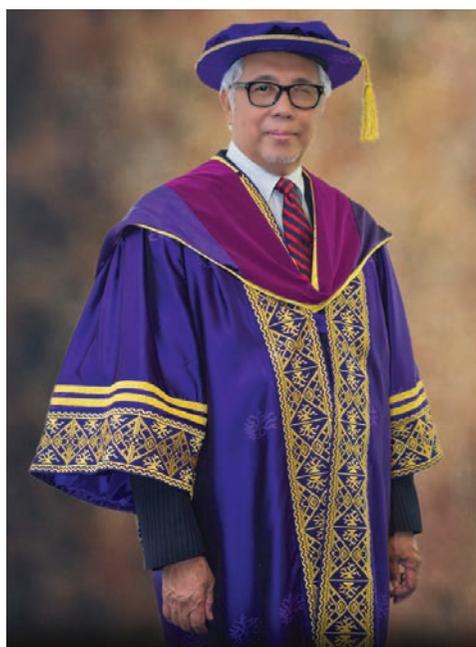


UN University – Institute of Advanced Studies, 2007

200 scientists, both from the natural and social sciences, from universities and research institutions in Japan. The JSSA was governed by a multi-stakeholder board and governmental advisory committee that represented key “users” across national and local scales.

The excellence of the MA and the Japanese Ecosystem Assessment led to the establishment of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) and the election of Tan Sri Zakri as its founding Chair at its first

plenary meeting of 105 Member States, held in January 2013 in Bonn, Germany. A strong believer that “science should be used to make policy better,” Tan Sri Zakri was the driving force behind the IPBES, created to bridge the gap between scientists and policy makers, providing up- to-date, accurate, impartial data and scientific information to enable the formulation of better policy response in managing biodiversity. Informed, timely policy response is important to safeguard the biodiversity and ecosystem services essential for human



Honorary Doctorate of Science, 2013

well-being and the sustainability of our fragile planet for both current and future generations. IPBES is recognised by both the scientific and policy communities as an authoritative new platform to address existing gaps and strengthen the science-policy interface on biodiversity and ecosystem services.

In 2014 Tan Sri Zakri was awarded the prestigious Zayed International Prize for the Environment for his role in providing global leadership in the field of environment. He was awarded the prize for his global role in championing environmental issues, in particular, developing a number of key findings in the Millennium Ecosystem Assessment report. Tan Sri Zakri was also a recipient of the Langkawi Award (1998). Three species have been named after Tan Sri Zakri: a beetle (*Paleosepharia zakrii*), a cicada (*Pomponia zakrii*) and a pitcher plant (*Nepenthes zakriana*).



Putrajaya Waterworld, 2006

CONCLUDING REMARKS

As a scientist, educator and researcher Tan Sri Zakri has made a lasting contribution to the observation, analysis, and assessment of global biodiversity and ecosystem services. In doing so he has fostered the remediation and protection of the natural environment and promoted environmental sustainability.

Tan Sri Zakri's achievements, particularly in his global role in championing environmental issues has highlighted, to the wider community, Malaysia's efforts in the realm of sustainable development. A passionate advocate for sustainable development he recognises that "sustainable development for Malaysia is poverty elimination – it is about promoting human well-being."

While he maintains that "science, technology and innovation can be an engine for our economic development" Tan Sri Zakri is also a strong believer that "development must be tempered with a respect for the environment." He has led efforts to develop a global assessment of biodiversity and its ecosystem services to provide scientific relevant policy advice for world leaders. His contribution has at its core an inclusive and integrated methodology and approach, a global perspective, and a long-term vision that has and will lead to further development. In this regard, his unerring commitment to protecting the natural environment and promoting environmental sustainability personifies the *Spirit of Merdeka* and its pursuit of excellence and contribution to the Nation.

Health, Science and Technology

Awarded to individuals and/or organisations to honour the creation, development, support and application of new and innovative technology that improve the lives of people everywhere.



PROFESSOR DATIN PADUKA DR KHATIJAH MOHAMAD YUSOFF



PROFILE

Professor Datin Paduka Dr Khatijah Mohamad Yusoff is a highly respected academician and a much acclaimed virologist who has distinguished herself through her extensive work on the Newcastle disease virus (NDV), a poultry virus. Professor Khatijah was born in Penang in 1956. After receiving her early education there, she won a Colombo Plan Scholarship to La Trobe University, Australia, for her tertiary education where she graduated with a First-Class Honours in Microbiology in 1979. She then won a La Trobe University research scholarship to complete her PhD on “Genetic and molecular analysis of plasmid RP1: Interactions with prophage B3 and aspects of conjugal transmission.” In 1985, her post-doctoral fellowship at the University of Newcastle-upon-Tyne, United Kingdom, opened up for her the world of paramyxoviruses and she was the first person to sequence the complete L gene which encodes the polymerase, an important enzyme involved in NDV replication while doing her post-doctoral fellowship.



Her research has now further expanded into the understanding of virus-cancer cell interactions. NDV is usually not harmful to normal human cells but it has a certain proclivity to home in on human cancer cells. Professor Khatijah is now directing her research to focus on the novel use of NDV as an anticancer agent as well as a carrier for anticancer drugs in targeted chemotherapies. In doing so, she is unraveling exciting mechanisms of NDV-cell interactions in the use of NDV in the treatment of cancers. Her research team is developing various forms of delivery systems using the lactic acid bacteria and nanobiotechnology into cancer cells through recognition of surface display of tumor associated antigens.

As an exponent of Science, Professor Khatijah's five-year stint as the Deputy Secretary General of Ministry of Science, Technology and Innovation (MOSTI) gave her an opportunity to promote science through policies and development of a strong framework in managing Science in the country. She was instrumental in re-activating the Office of the Science Advisor to the Prime Minister, establishing the National Science and Research Council, the Nanotechnology Directorate, the National Bioethics Council, and the National Institutes of Biotechnology. She was also involved in the drafting of the National STI Policy, Science Act, Oceans Policy, Space Policy, and Nanotechnology Policy. These various policies have had far-reaching consequences in enhancing Science and, moreover, contributed to the Nation's sustainable competitive advantage.



Professor Khatijah is a strong believer in the need to translate science into tangible benefits for people around the world. This opportunity came when she was head-hunted to sit on the Board of Trustees of the international Livestock Research Institute (ILRI) based in Kenya and Ethiopia. This organization, supported by governments and philanthropists, is dedicated to bringing science to poor farmers in Africa.

As a teacher in science, Professor Khatijah is a dedicated lecturer who has received the Excellent Service Award on several occasions from Universiti Putra Malaysia (UPM). A strong believer in the need for a “community of researchers” she enjoys teaching students and, through the interest instilled in them, many of her undergraduate students have continued their studies to the postgraduate level and have themselves become academicians. She has served on various committees, particularly in the development and promotion of teaching and learning as well as in scientific research. Together with her colleagues, she has supervised over 130 postgraduate students, 110 of whom have graduated.



Zakri Award from Genetics Society of Malaysia, 2013

Professor Khatijah has contributed to the growth of UPM through the various posts she has assumed. She was promoted to Associate Professor in 1994 and became a full Professor in 2001. She served as the Head of the Department of Biochemistry and Microbiology in 2000 at the Faculty of Science and Environmental Studies. Instrumental in establishing the Faculty of Biotechnology and Biomolecular Sciences (BioTech) at UPM she became BioTech's first Deputy Dean for Research and Graduate Studies from 2004 till 2006 before she was promoted to Dean. In 2007, Professor Khatijah became the first woman to be appointed as the Deputy Vice-Chancellor for Academic and International Affairs at UPM. In 2015, she was recognised as Tokoh Pekerja under the Management and Professional (Academic) Category.

Professor Khatijah's work has been recognised both nationally and internationally. She was accorded UNESCO's Carlos Finlay Prize for microbiology in 2005, the second Asian scientist to receive such an honour. She was earlier honoured by the Houghton Trust to deliver the 3rd Houghton Lecture at the XIIth World Veterinary Poultry Association (WVPA) Congress in 2002 for her contributions to the poultry industry, the first Asian scientist to be bestowed such an honour. In 2008, she received the Distinguished Alumni Award from her alma mater, La Trobe University,



Exhibition at Planetarium Negara, 2012



With Nobel Laureate Walter Kohn in Italy, 2010

the ninth person to receive this honour from over its 120,000 alumni. She was recently identified as one of the top 20 most influential women in science in the Islamic World for 2014 by Muslim-Science.Com. She was elected as a Fellow of the Academy of Sciences Malaysia in 2007 and a Fellow of the Islamic World Academy of Sciences in 2008 and The World Academy of Sciences (TWAS) in 2010, often elected to their Councils. She is recently elected as the Vice President of TWAS.



Professor Khatijah has also received a number of awards including the National Young Scientist Award in 1990 by the Ministry of Science, Technology and Environment. She has since received many prizes, medals and other recognitions notably the Australian Education Achievement Award 2013, Zakri Award in 2013, Mendel Lecturer in 2009 and Microbiologist of the Year Award in 2009. In 2006, HRH the Sultan of Selangor bestowed her the Royal Award “Dato’ Sultan Sharafuddin Idris Shah” (D.S.I.S.) which carries the title “Datin Paduka”. In 2010, La Trobe University awarded her DSc (*honoris causa*).

Professor Khatijah acknowledges with great appreciation that her success has been achieved through continuing great contribution and support from her colleagues, students, funding agencies and members of her family thus making this a meaningful and rewarding journey.



Khatijah and Khalid with their children Zul & Azzah



With colleague & students

CONCLUDING REMARKS

Currently the Dean of the Faculty of Biotechnology and Biomolecular Sciences at UPM, Professor Khatijah’s work has been recognised both locally and internationally. This in turn has made her and Malaysia widely known on the global front for contributions in microbiology. Her message to young Malaysians looking to make an impact in their field is to “never give up, value the importance of teamwork” and, finally, “do something that they love.”

As a researcher, Professor Khatijah’s early work established the molecular biology of the Newcastle disease virus (NDV) with the determination of the first complete sequence of the L gene, epitope mapping of the haemagglutinin-neuraminidase and fusion proteins, and the molecular biology of local NDV strains including the challenge strain AF2240 and a heat stable vaccine strain V4(UPM). In this regard, her work and research in the field of microbiology and virology through a better understanding and diagnosis of contagious and fatal viruses in poultry and the study of the potential of the virus in combating cancer cells embodies the *Spirit of Merdeka*.

Outstanding Scholastic Achievement

Awarded to a scholar conducting or playing
a major role in academic research resulting
in significant discovery.



PROFESSOR DR IR MOHD ALI HASHIM



PROFILE

Professor Dr Ir Mohd Ali Hashim combines leadership in academia and a central role in the shaping of Malaysia's research policies in a unique career that has spanned a full four decades. Born in Kedah, in 1950, Professor Ali graduated with a BSc (Hons) in Chemical Engineering from the University of Aston, United Kingdom, in 1975. He continued his studies at the University of Birmingham where he obtained both his MSc in Biological Engineering and, in 1979, his PhD in Chemical Engineering, in the area of solvent extraction. His research in water and wastewater treatment began when he returned to Malaysia and was appointed as a lecturer at the University of Malaya (UM). As he says, "At the time there was very little research funding. Looking around I saw an opportunity to get funding working on the major problem of the time -water pollution." In addition, he realised that further studies on this issue could prove useful in addressing pollution scenario in the palm oil industry, which was a very relevant problem during those early years.





Professor Ali's pioneering work during the 1980s and 1990s in the field of colloidal gas aphanes (CGAs) and adsorption resulted in the aggregation of research talents in Malaysia, turning it into a centre of excellence in this field. One remarkable quality of the CGAs, a type of stable microbubbles, is that they can be generated in one place and then transported elsewhere by conventional equipment such as pumps. Owing to their small sizes and surface charges, these bubbles ascend slowly in a flotation cell and facilitate attachment of particles to their surfaces. Thus clarification of suspensions such as palm oil fibres from palm oil mill effluent, emulsified oil from oily wastewater, fine cellulose fibres from paper mill wastewater and

fine cells from fermentation broth can be efficiently undertaken. These works involving fundamental and mechanistic studies not only received high accolades but they also generated research publications that are of significance to the scientific community to date.

Professor Ali's prominence in the research community led to a short but impactful stint in Government where he spearheaded the formulation of the Second National Science Policy. It was also during his time at the Ministry of Science Technology and Environment (MOSTE) that he became "interested in finding new solvents that are friendly to the environment". His interest in finding "a replacement to

traditional solvents that can be used in the chemical industry" eventually led to his subsequent work with ionic liquids.

Upon his return to academia, Professor Ali built on his previous work in green technology to address the growing environmental problems resulting from the country's rapid industrialisation. He galvanised the research efforts in this area by establishing the University of Malaya Centre for Ionic Liquids (UMCiL) – one of only three such centres worldwide. At UMCiL, Professor Ali's innovative works resulted in several patents. In particular, he and his team comprising multidisciplinary researchers from chemical engineering and chemistry conducts advanced research on synthesis and application of a new generation of green solvents. These are ionic liquids (ILs) and deep eutectic solvents (DESs) which have immense significance in petroleum refining, biodiesel production, palm oil refining and energy applications. His team has also been successful in harnessing the highly reactive nature of the superoxide ions through generating and stabilising them in ILs and subsequently reacting them with crude palm oil to produce a number of speciality chemicals. Aside from cost-saving, the use of ILs and DESs could also reduce safety concerns through using lower operating temperature and pressure. DESs, on the other hand, can also be employed in biodiesel production and purification through processing of acidic crude palm oil, low-grade palm oil and mixed industrial palm oil. Professor Ali and his team are working in close collaboration with the Imperial College London, Delft



With postgraduate students at Chemical Engineering Dept UM, 2013

University of Technology, King Saud University and Monash University. Current research projects include the synthesis and modelling of ILs and DESs, their applications in electrochemistry and catalysis as well as applications in acid gas capture and liquid membrane.

Recently, through international collaborations, he has developed an in-situ groundwater treatment technology for the benefit of the poor population living in underdeveloped rural areas. This sustainable technology is simple, highly reliable, uses eco-friendly components, generates zero waste and is replicable in the developing countries. A 10,000 litres per day water treatment plant has been installed in Kota Bharu in collaboration with Air Kelantan Sdn Bhd. This initiative is being replicated in Vietnam and Cambodia and has attracted

the attention of Salcon Engineering Berhad.

As the Chairman of the pre-High Impact Research (HIR) Committee, Professor Ali has also involved himself in guiding the direction of research in UM. The Committee is entrusted with the management of RM590 million in research funding from the Ministry of Higher Education and over the past four years these projects have contributed 78.7 per cent of the high impact research papers from UM. This is crucial to further improve the global ranking of the university. Since the formation of this Committee, UM has seen its ranking jump from 207 in 2010 to 151 in 2014. As Professor Ali has previously been appointed to research and academic positions in renowned centres of learning such as Kyoto University,



Pilot Lab at Chemical Engineering Dept UM, 2014

University of Cambridge, University of Oxford and Harvard University, he has established strong partnerships with talented scientists who have later contributed to Malaysian research in the form of foreign collaborations and the mentoring of Malaysian students.

CONCLUDING REMARKS

The senior-most Professor of Chemical Engineering in Malaysia, Prof Ali was appointed a Fellow of the Institute of Chemical Engineers (IChemE UK), the most prestigious professional body internationally in this field in 1996 and was chosen as its first Country Chairman in 2006. He is also a Fellow of Institution of Engineers Malaysia, Professional Engineer of the Board of



Pupil at Sultan Badlishah School, 1967



With family in South Island, New Zealand, 2002



Junior Lecturer at UM, 1980



Research Fellow at Kyoto, 1984

Engineers Malaysia, Chartered Engineer of Engineering Council UK and Fellow of the Academy of Sciences Malaysia. In 2001, he was awarded the National Science Award, the highest scholastic accolade at that time.

Professor Ali is actively involved in the mentoring and supervision of young scientists at the University. He has also trained a large number of professional engineers, policymakers and researchers through specialised courses on topics such as environmental impact assessment, quantified risk analysis, water treatment, wastewater treatment, water recycling and reuse. Today, he continues to serve in various boards and committees dealing with academic promotions, curriculum reviews, institutional accreditations, chartered memberships, thesis examinations, conferences, reviews of research proposals from within Malaysia and abroad and many more. Professor Ali has published more than 200 research articles in refereed international journals, including 173 ISI publications with an ISI h-index of 28 with a total citation of 2,458 and has filed over 20 patents, putting Malaysia on the map of separation processes and green technology research.

A leading scholar and researcher in Chemical Engineering, Professor Ali's pursuit of excellence in the research of separation processes, water and wastewater treatment and his instrumental role in setting up the UM Centre for Ionic Liquids, is a reflection of the innovative and pioneering *Spirit of Merdeka*.

**Outstanding Contribution
to the People of Malaysia**

Awarded to a citizen of any nationality and/or foreign
organisation to honour substantial contribution to
Malaysia or to the lives of Malaysians.



DR ELIZABETH LESLEY BENNETT



PROFILE

Dr Elizabeth Lesley Bennett was born in London in 1956. She obtained her Bachelor of Science from the University of Nottingham in 1977, and in 1978, she came to Malaysia to conduct field research on banded langurs for her Doctorate from the University of Cambridge. However, the proboscis monkey, a fascinating leaf monkey found only in mangrove forests on the island of Borneo, soon caught her eye, so in 1984, as soon as she had obtained her Doctorate, she came straight back to Malaysia. At the time very little was known about this unique species. “As an undergraduate student, I became deeply fascinated by primate ecology and behaviour, which led to my choosing to study this for my PhD. That involved more than two years of field research in Peninsular Malaysia on banded langurs - a relative of the proboscis monkey. During that time, I visited a colleague in Sabah and saw proboscis monkeys for the first time. Not only did I nearly fall out of the boat with excitement, but also realised that they were more extreme in terms of their behaviour and ecology than the other related species. Crucially, they were also a threatened species about which very little was known, so if they were to be conserved, we had to know more about them. So all of those threads came together in my deciding to study them.”



Maludam, Sarawak



Nagarahole National Park, India

Proboscis monkeys are endemic to the jungles of Borneo, never straying far from the island's rivers, coastal mangroves, and swamps. They are a highly arboreal species and will venture onto land only occasionally to move between areas of forest in search of food. Unfortunately, Borneo's most threatened landscapes are home to these highly specialised primates. The rampant clearing of the region's mangroves and rainforests for timber, settlement, and oil palm plantations has depleted huge tracts of their habitat. The fragmentation of the monkeys' range means they are

being forced to descend from the trees more frequently and often must travel perilously long distances to find food. Over the last 40 years, proboscis monkey populations have plummeted. They are currently protected from hunting or capture in Borneo and are listed as an endangered species.

Dr Bennett conducted the first ever detailed study of the ecology and social organisation of the proboscis monkey, sponsored by the Wildlife Conservation Society (WCS) and WWF Malaysia. The study resulted in the determination

of the status and habitat needs of the monkey as well as recommendations for their conservation. The results of her study were published in the book: "The Proboscis Monkeys of Borneo." Co-authored with Francis Gombek, the book was published in 1994 by Kota Kinabalu based Natural History Publications.

Dr Bennett then focused on the conservation and management of wetland habitats in Sarawak by working closely with the Sarawak Forest Department to protect areas of coastal swamp forest in Sarawak. She also



With dusky langur

initiated conservation education and awareness programmes for rural people living around critical areas of wetland habitat. This sanctuary is an important site in Sarawak for coastal forest wildlife as certain species like the proboscis monkey depend on areas both inside and outside the boundary of the sanctuary.

From 1989 onwards, Dr Bennett has worked full-time for the Wildlife Conservation Society (WCS), including from 1992 to 2002 as the Director of



Longhouse meeting

WCS's Malaysian Programmes. The Wildlife Conservation Society was founded in 1895 as the New York Zoological Society and currently works with governments and other partners to conserve more than two million square miles of wild places in more than 60 countries around the world. As Director of WCS Malaysian Programmes Dr Bennett focused her attention on the unsustainable harvest of wild animals from the forests of Sarawak and Sabah, which threatens the existence of many species. She conducted research on the impact of hunting on wildlife - the first study of its kind in the region. The comprehensive study involved investigating the types and extent of hunting, its importance to local people, effects on wildlife populations and management implications.

She then worked with the Sarawak Forest Department in 1995 to develop "A Master Plan for Wildlife in Sarawak," a comprehensive policy document that detailed all the steps needed to conserve and manage wildlife in Sarawak. The Master Plan was adopted as official policy

by the Sarawak Government in 1997 and was the first such comprehensive plan for wildlife to be done for any country in the world. In reflecting on some of the challenges faced when developing the plan she says: "Probably the two greatest challenges were finding how best to balance the needs of wildlife with those of local rural communities whose lives are intertwined with the wildlife and forests, and second, in building support for the key recommendations. On the other hand, we knew that the science behind the recommendations was solid, we had an excellent team of people working on it with deep expertise in its social as well as biological aspects, and we had strong support throughout from senior-most levels of the Sarawak Government."

In 1997, Dr Bennett was seconded from Wildlife Conservation Society (WCS) to the Sarawak Forest Department as the Head of Wildlife Master Plan Implementation Unit to coordinate the implementation of the Master Plan. The two main themes of the plan were wildlife conservation in different



At CITES CoP16

categories of land and control of unsustainable hunting. The outcome of the implementation of the plan was an integrated conservation programme including writing and implementing new wildlife and national parks legislation and extending and upgrading the management of Sarawak's system of protected areas where two new laws were implemented - The Wildlife Protection Ordinance (1998) and the National Parks and Nature Reserves Ordinance (1998). Implementation of the ordinances involved state-wide conservation education and enforcement programmes, formal training for government staff, the creation of important new protected areas, and reduction in sales of shotgun cartridges. Major publicity, conservation education, and enforcement programmes

were then carried out repeatedly in the rural and urban areas. Within five years, almost all visible commercial wildlife trade disappeared from the major markets in the cities and smaller towns. The Sarawak case shows that unsustainable commercial wildlife trade can be curtailed through the combination of education programmes, strong laws, and effective enforcement.

Dr Bennett has published widely with more than 120 scientific and popular publications including seminal publications on hunting in tropical forests and illegal wildlife trade. Thirteen (13) of the publications were published in Tier 1 journals (high impact factor journals), such as Conservation Biology, Science, Trends in Ecology and Evolution, PLOS Biology, Emerging Infectious Diseases, Annals of the New York Academy of Sciences and BioScience.

She currently serves as the Vice-President of Species Conservation at the Wildlife Conservation Society in New York.

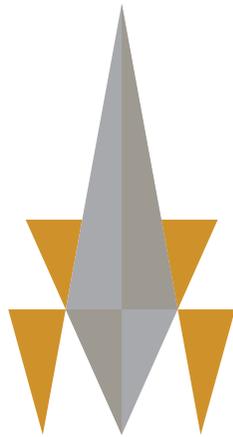
CONCLUDING REMARKS

Dr Bennett's work has contributed significantly to the conservation and management of wetland habitats and, also, to the endangered wildlife in Malaysia through research, advocacy and policies. In recognition of her work in Malaysia, she was awarded the Pegawai Bintang Sarawak (Order of the Star of Sarawak – Officer) by the Sarawak State Government in 2003 and, also, the Member of the Most Excellent Order of

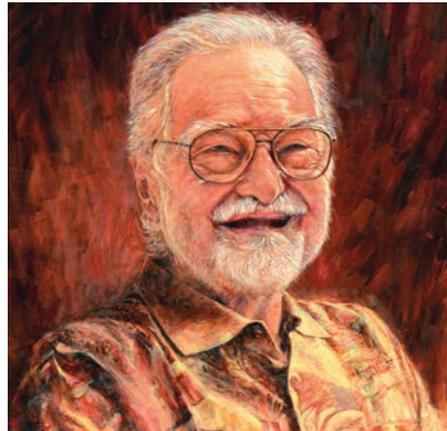
the British Empire (MBE) by Her Majesty Queen Elizabeth II in 2005. Having spent many years in Malaysia, her message to young Malaysians striving to achieve excellence and contribute to the Nation is: "Malaysia is a unique and highly special country. It is a land of stunning natural beauty from its mountains and forests to its coastal islands, with some of the most magnificent plant and animal species on the planet. Its warm tropical environment also makes it highly productive for growing agricultural and forestry crops. Combined with that is Malaysia's hospitable and industrious people, with rich cultures, high levels of education and global outlook, which mean that Malaysia is also a centre of arts and industry. In many ways, within that context, the country is at a cross-roads. Will further development mean the loss of its natural heritage? Or can they be in balance? I firmly believe that they can be in balance, and that Malaysia is in the ideal position to demonstrate that - to itself, and to the world."

A committed and passionate advocate for wildlife conservation Dr Bennett's wide ranging work in environmental conservation and her extensive research on endangered wildlife in Malaysia embodies the *Spirit of Merdeka*.

Merdeka Award Past Recipients



MERDEKA
AWARD
2008



EDUCATION AND COMMUNITY
**Royal Professor Ungku Abdul Aziz
bin Ungku Abdul Hamid**

For outstanding contribution to the eradication of poverty, rural economics, the development of Tabung Haji and in the field of education



ENVIRONMENT
Malaysian Nature Society (MNS)

For outstanding contribution to the Belum-Temenggor Forest Complex Conservation Initiative.



**HEALTH, SCIENCE AND
TECHNOLOGY**

**Nipah Virus Encephalitis
Investigation Team from The Faculty
of Medicine, University of Malaya
(Joint Recipient)**

For outstanding contribution to the discovery and understanding of the causes, effects and control of the Nipah encephalitis viral infection



**HEALTH, SCIENCE AND
TECHNOLOGY**

**Professor Emeritus
Dato' Dr Khalid Kadir
(Joint Recipient)**

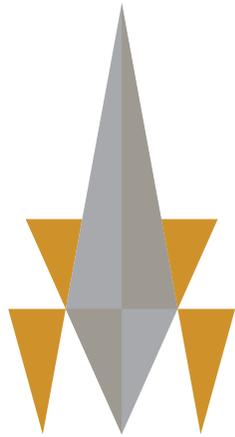
For outstanding contribution to the study and understanding of diabetes and the relationship between hormones and stresses in various tissues



**OUTSTANDING CONTRIBUTION TO
THE PEOPLE OF MALAYSIA**

Datuk Leslie Davidson

For outstanding contribution in the introduction of the pollinating insects *Elaeidobius kamerunicus* from Africa to the oil palm plantations in Malaysia, leading to the rapid development of the palm oil industry.



MERDEKA
AWARD
2009



EDUCATION AND COMMUNITY
Tun Fatimah Hashim

(Joint Recipient)

For outstanding contribution to the empowerment of women in Malaysia and for protecting and securing economic opportunities for women through advocacy



EDUCATION AND COMMUNITY
Dato' Lim Phaik Gan

(Joint Recipient)

For outstanding contribution to the empowerment of women in Malaysia and for protecting and securing rights and economic opportunities for women through advocacy



HEALTH, SCIENCE AND TECHNOLOGY

Professor Datuk Dr Halimatun Hamdan

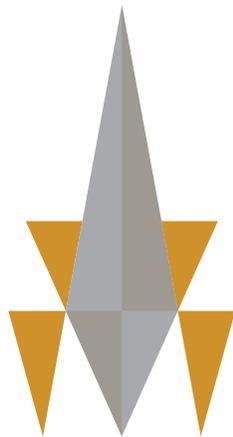
For outstanding contribution in the development and application of Maerogel as a commercially viable multi-purpose material



OUTSTANDING SCHOLASTIC ACHIEVEMENT

Dato' Seri Ir Dr Zaini Ujang

For outstanding study and scholarly contributions in the various environmental initiatives concerning water supply, sewage, river rehabilitation and industrial ecology



MERDEKA
AWARD
2010



EDUCATION AND COMMUNITY
Datin Paduka Mother A Mangalam
A/P S Iyaswamy Iyer

For outstanding contribution in promoting the welfare of the underprivileged and for fostering national unity



OUTSTANDING SCHOLASTIC
ACHIEVEMENT

Academian Emeritus Professor
Dr Yong Hoi Sen

(Joint Recipient)

For outstanding contribution to the development of basic and applied knowledge of Genetics, Molecular Biology, Biological Systematics, Evolutionary Biology and Biological Diversity of Malaysian flora and fauna



OUTSTANDING SCHOLASTIC
ACHIEVEMENT

Distinguished Professor
Dr Harith Ahmad

(Joint Recipient)

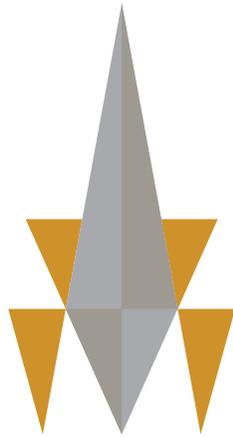
For outstanding contribution in research and promoting the development of photonics in Malaysia



OUTSTANDING CONTRIBUTION
TO THE PEOPLE OF MALAYSIA

Tan Sri Just Faaland

For outstanding contribution to the advocacy of equitable growth through eradication of poverty and reduction of socio-economic polarisation



MERDEKA
AWARD
2011



ENVIRONMENT
Dato' Dr Kenneth Yeang

For outstanding contribution to the development of design methods for the ecological design and planning of the built environment



**OUTSTANDING SCHOLASTIC
ACHIEVEMENT**

Professor Dato' Dr Goh Khean Lee
(Joint Recipient)

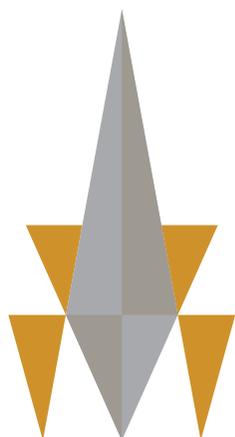
For outstanding contribution in elevating the study and practice of gastroenterology and hepatology in Malaysia to global standards



**OUTSTANDING SCHOLASTIC
ACHIEVEMENT**

Professor Dr Mak Joon Wah
(Joint Recipient)

For outstanding fundamental and applied research in parasitology and parasitic diseases, public health and pathology



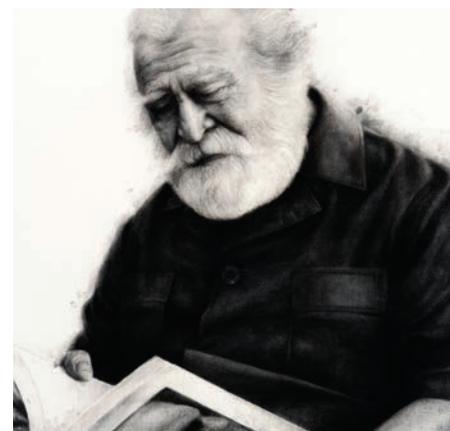
MERDEKA
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**HEALTH, SCIENCE AND
TECHNOLOGY**

**Academician Tan Sri Emeritus
Professor Datuk Dr
Augustine Ong Soon Hock**

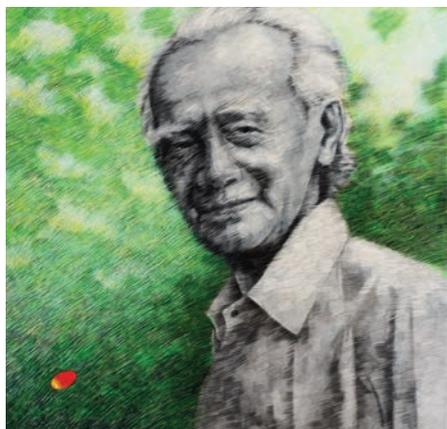
For outstanding contribution to the research and development of the chemistry and technology of palm oil and for his significant role in advocating and promoting the Malaysian palm oil industry to the world



**OUTSTANDING SCHOLASTIC
ACHIEVEMENT**

**Tan Sri Professor
Dr Syed Muhammad Naquib al-Attas**

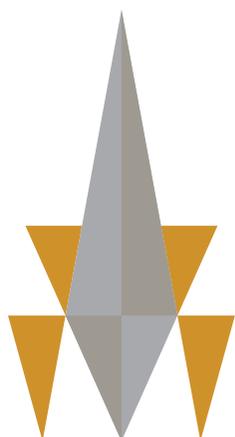
For outstanding contribution to the scholarly research in the area of Islamisation of contemporary knowledge and of Muslim education



**OUTSTANDING CONTRIBUTION
TO THE PEOPLE OF MALAYSIA**

Dr Engkik Soepadmo

For outstanding contribution to the research and conservation of Malaysia's forest plant diversity



MERDEKA
AWARD
2013



EDUCATION AND COMMUNITY
Tan Sri Dato' Seri Utama Arshad Ayub
(Joint Recipient)

For outstanding contribution in shaping Malaysia's education landscape through the development of professional education, education reforms and innovation that have resulted in education becoming more accessible to Malaysians.



EDUCATION AND COMMUNITY
Raja Tan Sri Dato' Seri Utama
Muhammad Alias Raja Muhammad Ali
(Joint Recipient)

For outstanding contribution to rural development and rural reform through organising successful land settlement projects (FELDA) for the many landless, rural population in Malaysia.



ENVIRONMENT
Dr Lim Boo Liat

For outstanding contribution to the conservation of Malaysia's biological diversity through the study, understanding and control of vector-borne diseases and the relationship between diseases and the environment; and for advocating the protection of our natural heritage.



HEALTH, SCIENCE AND TECHNOLOGY
Tan Sri Dato' Dr Yahya Awang

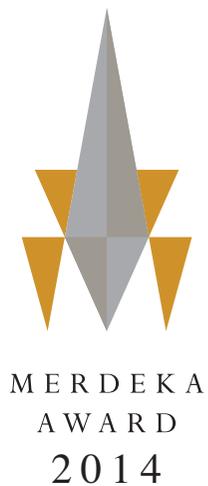
For outstanding contribution to pioneering the development of clinical research and cardiac surgery in Malaysia and for his instrumental role in the establishment of the National Heart Institute (IHN).



OUTSTANDING SCHOLASTIC ACHIEVEMENT

Emeritus Professor
Dato' Dr Lam Sai Kit

For outstanding contribution to scholarly research and development in medical virology and emerging infectious diseases including dengue.



EDUCATION AND COMMUNITY

Datuk Mohd Nor Khalid (Lat)

For outstanding contribution to the promotion and pluralism of Malaysia's cultural identity through the use of cartoons and for the promotion of understanding and respect among Malaysia's diverse ethnic communities.



ENVIRONMENT

Mohd Khan Momin Khan

For outstanding contribution to wildlife research and conservation through the setting up of captive breeding centres as well as for pioneering and successfully managing the human-wildlife conflict in affected areas.



HEALTH, SCIENCE AND TECHNOLOGY

Datuk Dr Choo Yuen May

For outstanding contribution to the development of novel, efficient and green processes for the palm-based industry through research and commercialisation of various technologies.



OUTSTANDING SCHOLASTIC ACHIEVEMENT

Professor Dr Abdul Latif Ahmad (Joint Recipient)

For outstanding contribution to the scholarly research and development of technologies in the areas of polymer science, wastewater treatment and membrane separation technology.



OUTSTANDING SCHOLASTIC ACHIEVEMENT

Professor Dr Ahmad Fauzi Ismail (Joint Recipient)

For outstanding contribution to scholarly research and development of technologies for commercialisation in membrane performance for both gas separation, and water and wastewater treatment.



OUTSTANDING CONTRIBUTION TO THE PEOPLE OF MALAYSIA

Dato Sri Gathorne, Earl of Cranbrook

For outstanding contribution in pioneering research and conservation of Malaysia's forest biodiversity and the ecology and biology of Malaysian mammals and birds, and for advocating environmental conservation.

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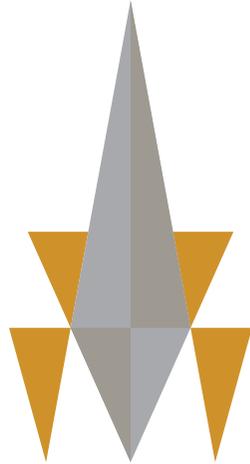
Outstanding Scholastic Achievement

Professor Dr Abdul Rahman Mohamed
Professor Dr Ahmad Fauzi Ismail
Professor Dato' Dr Goh Khean Lee

Outstanding Contribution to the People of Malaysia

Michelle Gyles-McDonnough
YAM Tunku Zain Al-'Abidin ibni Tuanku Muhriz
Dr Zakariah Abdul Rashid

The Logo and Trophy



M E R D E K A
A W A R D



Designed by Dato' Johan Ariff, the trophy is a three dimensional version of the Merdeka Award logo. It expresses convergence and ascension, the same qualities celebrated in the achievements of the Merdeka Awards winners. The trophy also represents environmental concerns in the form of a plant shoot *Rebung*, transparency, ethics, and the glorious five decades of Malaysian independence.

An Artistic Vision of Excellence



This Latiff Mohidin sculpture incorporates the kinetic element of a rotating ball symbolising freedom. The sculpture rests on a granite base denoting strength and fortitude. The piece also incorporates the traditional elements of *Sulur Bayur* underscoring heritage and *Pucuk Rebung* signifying excellence.



