

RESONANCE

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**A Total of 6,830 Students
Graduating at UKM**

Message from the Vice-Chancellor

This is my last message as Vice Chancellor as I prepare to leave office on 31 December 2013. It has been a fruitful 7 years and 4 months which I will cherish forever with fond memories of the difficult and mostly good times that we shared together. I wish to thank all academic colleagues, students and staff for the meaningful farewells, accolade and thoughtful gifts that have been given to me over the last 2 months. Nothing is more touching than to know that one is special. Most memorable was the launch of my biography, Sharifah Hapsah: Inspiring Futures by HRH Tuanku Muhriz, our Chancellor.



I am deeply humbled that UKM Publishers have seen it fit to record my leadership and the contribution that I have made to medical and higher education over the course of my academic career. The achievements would not have been possible without the hard work and dedication of all the people who have worked with me at different parts of my career. It is more their achievement than mine.

In UKM, our tagline inspiring futures and nurturing possibilities has worked for me. My life has been touched by so many people and events in UKM that have personally transformed me. Together we have built on the strong foundation left by our predecessors to bring UKM to where it is now. We should be proud of the tremendous progress

in our transformation programme. Research, innovation and commercialization have scaled new heights. Our endeavour to produce competent graduates with a global outlook is evident in the delivery of an outcome based

curriculum with a focus on quality, innovation and entrepreneurship. Community engagement is ingrained as a mindset to steer our core missions of research, education and service to support bottom-up participatory societal development.

We should be proud that we have been accorded self accrediting status and autonomy to manage our financial, human resource and academic matters. We should be proud that we have maintained our research university status through two audit cycles. Our international mobility programmes have been successful in attracting students and faculty from all parts of the world. Most importantly, while we carry the UKM name internationally we never lose sight of our responsibility to uphold Bahasa Melayu as an academic language.

As we enter the new year, as always, we look forward to brighter prospects and greater excellence. I wish my successor Professor Datuk Dr Noor Azlan Ghazali all the best and he will no doubt enjoy the same cooperation and support that have been given to me.

Happy 2014. May Allah bless us all.

Prof. Tan Sri Dato' Seri Dr. Sharifah Hapsah Syed Hasan Shahabudin

RESONANCE

UKM International Bulletin

RESONANCE connotes dynamism and vibrancy. Resonance reflects our vision and philosophy, and it is also in tandem with our sister publication SENADA. As one of the research universities of Malaysia, dynamism is a virtue much prized by us for it ensures our pre-eminence in the field. Other aspects of campus life are not neglected. After all we are a community of scholars, support staff and students. The pulse and vibrancy of the whole community can be felt as you read through the pages of RESONANCE. Happy Reading.

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A Total of 6,830 Students Graduating at UKM

By: Saiful Bahri Kamaruddin, Centre For Corporate Communications

Photo: Centre For Corporate Communications



6,830 students graduating at 41st Convocations of The National University of Malaysia (UKM)

UKM has also now become the first choice of students from 64 countries. Since its establishment 43 years ago, the university has been able to maintain its status as a research university for seven years in a row. UKM has also responded to the aspirations of the National Transformation Plan which demands research universities build an innovation culture to contribute to economic growth and social well-being of the country and its people.

A total of 6,830 students of The National University of Malaysia (UKM) graduated at its 41st Convocation ceremony.

They were made up of 444 doctoral degree recipients, 4,205 masters, 306 medical doctors and dental specialists, 1,776 bachelor degrees and 96 graduate diplomas.

UKM Vice-Chancellor Prof. Tan Sri Dato' Seri Dr. Sharifah Hapsah Syed Hassan Shahabudin said with the new graduates the university's alumni now stands at 163,853 members.

Speaking at the first session of the convocation ceremony, Prof. Sharifah Hapsah expressed confidence the extensive network can contribute greatly not only to Malaysia but also to the whole world. UKM alumni have already established its overseas chapters in a number of cities and regions in their respective countries especially in Indonesia and Thailand.

UKM has worked with all parties from government, the industry and the community within and outside the country to explore new approaches to produce graduates with skills in innovation, technology management and entrepreneurship. Prof. Sharifah Hapsah said the new approach to integrate education with research programme and commercialisation of ideas will result in innovations that can be marketed.

That approach occurs in environments enriched with innovation and support in the development of prototypes, intellectual property registration and business model development. Students and researchers are also supported by investors and industry. UKM's Graduate School of Business - recognised as a top business school, has also introduced a number of methods that ensure graduates meet the current market requirements.

Programmes on Innovation and Entrepreneurship have been set up at the Bachelors and Masters levels, Prof. Sharifah Hapsah said.

Cloud Computing Technology Will Help Elderly Living Alone

By: Saiful Bahri Kamaruddin, Centre for Corporate Communication
Photo: Muhammad Izwan Azman, Centre for Corporate Communication

In the not too distant future, homes and buildings will use cloud computing technology to help elderly people who live alone and personalise education for individual children.

Professor of Applied Computer Vision at Kingston University in Britain, Professor Dr. Sergio A Velastin said in twenty years time such technology can be made easy for ordinary people but powerful enough to detect the health of the occupants of houses and replace teachers or tutors at home.

Prof. Velastin, who also lectures at Universidad de Santiago in Chile, said the smart technology can even be linked to the house, where cloud computing can do certain tasks for the occupants or remind the owners what they should do for the day.

Prof. Velastin was in Malaysia to give a keynote address at the 3rd International Visual Informatics Conference organised by Institute of Visual Informatics, National University of Malaysia (UKM).

The Chilean-born researcher said in the case of a medical emergency, the system, which is on line, will give advice on what to do. If the owner is unconscious or disabled, it will contact emergency services.

An actual working system had been demonstrated in the United Kingdom recently as part of a research project using fibre-based sensors. The system may be limited for now, but eventually the homes which register for the service will be part of a huge network connected over the internet.

He said that such a system is necessary especially in Europe because hiring a full-time nurse or care-giver is becoming too expensive for most families.



Prof. Dr. Sergio A. Velastin

The home-based system would also be advanced enough to become a companion to the house-bound occupants, in which they can actually talk with the network and interact with the computer.

Prof. Velastin said at the same time, it will be commonplace for people to talk and interact with friends, business associates and seek advice from consultants from around the world through 3-D images that are so life-like you would think they are actually present.

It will be easy and economical to communicate with one another even over great distances via a digital



From left-Prof. Dato Ir. Dr. Othman A. Karim, Dato' Hj. Nasir Mat Dam and Prof. Dato' Dr. Halimah Badioze Zaman at the Opening Ceremony the Third International Conference on Visual Informatic (IVIC'13)

cloud network using three-dimensional imagery interfaces and avatars.

He said networks carrying the communications processes may be made to be intelligent enough to advice users who to contact and who to avoid, based on data from previous interactions.

An avatar is an incarnation, embodiment or manifestation of a person or idea. In computer technology, an avatar is an image that presents a person when communicating with others. The image could be the actual real-time capture or something else completely different devised by the user.

Cloud network is a combination of computing processes such as digital processing, communications and storage of data that are on separate external servers all over the world which are not on the users' personal devices.

An example is that of the smart devices which already exists, such as the internet refrigerator that can detect which food is in short supply and then inform the owner accordingly. He explained that in the near future, we might be able to have devices that can automatically place an order to a retailer for provisions needed in the house and pay the bills as well.

The concept can be extended to education, in which communications, artificial intelligence and digital imaging can be brought together to personalise teaching to a particular individual - even children who are alone.

Prof. Velastin is a visiting professor of the School of Computing and Information Systems, Kingston University in Britain.

He is generally acknowledged to be a leading authority in the field of digital imaging, smart notion and the analysis of human behavioural images in crowded situations.

He is also co-founder and Consultant at Ipsotek Ltd , a company that provides consultancy services for human monitoring using computer vision technology.

His current research interests are on automatic human detection especially in cluttered conditions, action recognition (eg for surveillance, assisted living, human-machine interaction), road traffic monitoring and embedded systems for image processing and computer vision.

Tuanku Muhriz Congratulates UKM

By: Saiful Bahri Kamaruddin, Centre for Corporate Communications

Photo: Centre for Corporate Communications

Tuanku Muhriz Ibni Almarhum Tuanku Munawir is proud of the ability of The National University of Malaysia (UKM) in instilling the spirit of innovation and inventions in its graduate and post-graduate students.

The UKM Chancellor congratulated the university's community and its leadership for successfully working together to uphold its good name through various successes, networking and its world-class expertise. Addressing the 41st Convocation of UKM, he called for its continuing efforts in its various programmes so as to face future challenges, especially at the international level.

He said the efforts should be regarded as preparations to produce graduates who are able to compete with other scholars and researchers in the world. "Thus UKM needed to come up with new methods and make new discoveries," said the Chancellor, who is the Yang di-Pertuan Besar of Negeri Sembilan Darul Khusus.

Such efforts are not just for the sake of university rankings carried out by international ratings agencies but is also part of the government's objective in helping raise the living standards of the people while stepping up trade.



*DYMM Yang di-Pertuan Besar Negeri Sembilan Darul Khusus,
Tuanku Muhriz Ibni Almarhum Tuanku Munawir*

He said the country needs citizens who are creative and innovative in industry and the high technology sector.

He expressed satisfaction that the Vice-Chancellor, Profesor Tan Sri Dato' Seri Dr. Sharifah Hapsah Syed Hassan Shahabudin has led the 200 member Association of Asia-Pacific Universities since December 2012.

Due to the hard work of UKM, it has been able to maintain its status as a research university for seven successive years. UKM had responded to the aspirations of the National Transformation Plan which demands research universities build a culture of innovation to contribute to economic growth and social well-being to meet its target of becoming a high-income developed country by 2020.

He reminded those who graduated that they should not be satisfied with their achievements so far but should continue to strive their utmost.

He also told graduates receiving their scrolls during the convocation that they should always be grateful to UKM wherever they go after this.

GST Needed To Reduce Fiscal Deficit

By: Saiful Bahri Kamaruddin, Centre For Corporate Communications

Photo: Centre For Corporate Communications

The Goods and Services Tax (GST) likely to be implemented next year as proposed in the 2014 budget tabled recently in parliament, will help ease the country's fiscal deficit.

Panellists at a forum organised by The National University of Malaysia (UKM) agreed that introducing of the GST or Value Added Tax (VAT) is inevitable in order to slash the national debt which is now stands at nearly 55% of Gross Domestic Product (GDP).

The panellists were made up of Datuk Dr. John Anthony Xavier, a visiting professor of management at UKM's Graduate School of Business; Datuk Dr. Denison Jayasooria, Principal Research Fellow, at the Institute of Ethnic Studies (KITA) and Nor Zahidi Alias, chief economist at the Malaysian Rating Corporation Berhad (MARC).

Professor Datuk Dr. Noor Azlan Ghazali, who is Head of Economics and Management Cluster of the National Council of Professors also took part in the forum. He described the government's move to trim fiscal deficit by 3% at end of 2015 supported by various reforms on revenue generation and expenditure control, as bold and necessary.

The forum titled Fostering UKM Denizens to be Responsive to the Economy was moderated by Prof. Dr. Mansor Jusoh of the Faculty of Economics and Management. This was the second economic forum on the government's budget organised by the Dato' Onn Residential College.

Prof. Xavier said with only 16 per cent of workers paying tax, unsustainable oil revenue and trade liberalisation, GST is the only way to increase much-needed revenues. At present the Sales and Services Tax (SST) is used to collect revenue from businesses. Malaysia, he said, is a laggard when it comes to implementing GST. When Malaysia does introduce GST, it will be joining 160 other countries, or 80 per cent of the countries in the world, including seven other Asean countries which had already used the GST.

While many taxpayers may be more accepting, many others oppose the GST on the grounds that it is a "money machine" for the Federal Government. They argued that the government should not be given a lifetime pass to further raise taxes.

However, the bottom line is that the government needs to raise its revenue if it

wants to continue Malaysia's trajectory to becoming a rich nation.

Prior to joining UKM in 2012, Prof. Xavier was an Administrative and Diplomatic Officer (PTD) for 36 years in the Malaysian public service.

Dr. Denison, who is also a Human Rights activist, said the ordinary people would certainly appreciate the increased one-off hand-outs announced in the budget to ease their present hardships.

Prices of goods have already increased even before GST is implemented.



Prof. Datuk Dr. Noor Azlan Ghazali (left) with Prof. Dr. Mansor Jusoh

Hon PhD For Leading Economist Sulaiman Mahboob

By: Saiful Bahri Kamaruddin, Centre For Corporate Communications

Photo: Centre for Corporate Communications

One of the country's leading economists, Tan Sri Dr. Sulaiman Mahboob has been awarded an honorary degree of Doctor of Philosophy (Business Management) at the 41st Convocation of The National University of Malaysia (UKM).

Sulaiman, 65, who has retired from government service, was appointed non-executive Chairman of the Malaysian Investment Development Authority (MIDA). He is also Chairman of Jambatan Kedua Sdn Bhd (JKSB), the second Penang bridge.

In his citation, Deputy Vice-Chancellor (Academic and International Affairs) Prof. Datuk Dr. Noor Azlan Ghazali said the former civil servant had made a major contribution to the National Economic Action Council (NEAC) in efforts to overcome the 1997 Asian economic crisis.

Sulaiman was appointed Head of the NEAC Secretariat in 1998 for his expertise and skills as well as his extensive experience in economic management. He later moved to the Ministry of Domestic Trade and Consumer Affairs as Secretary General in 2001 and in

2006 was appointed as Director General of the Economic Planning Unit until his retirement in June 2009.

Despite his retirement, Sulaiman continued to serve in a number of agencies, including MIDA and several public universities.

He also held the position of Executive Director at the Malaysian Institute of Economic Research (MIER), an independent economic policy think-tank.

Sulaiman in his response said the process of economic development and management should also ensure that the quality of the environment is not compromised to ensure long-term sustainable economic and social growth.

He reasoned that economic growth which is not sensitive to environmental issues – is not real growth as economic growth should be enjoyed by all through a more even distribution of benefits.

He expressed confidence that policy-makers had been successful in their economic plans through better income distribution.



Tan Sri Dr. Sulaiman Mahboob

Hon PhD To Universitas Padjajaran Rector

By: Saiful Bahri Kamaruddin, Centre For Corporate Communications
Photo: Centre For Corporate Communications

The Rector of Universitas Padjajaran (UNPAD) of Bandung Indonesia, Prof. Dr. Ir Ganjar Kurnia has been conferred an honorary PhD (Education Administration) at The National University of Malaysia (UKM) 41st Convocation.

Prof. Ganjar who has been UNPAD's Rector since 2007 was instrumental in bringing about close cooperation between the two universities in various fields.

Among them are the implementation of the Indonesia-Malaysia Cultural Symposium (SKIM) which has continued to be held rotating between them for almost 30 years.

Prof. Ganjar has strongly supported collaborative partnerships in higher education, in particular conferences, research, exchange of expertise, benchmarking studies, exchange of students and academic programme implementation even before becoming Rector .

Responding to the award, the UNPAD Rector thanked UKM and pledged to further enhance UKM-UNPAD joint cooperation.

Director of the Centre for Academic Development, Prof. Dr. Ir Riza Atiq Abdullah OK Rahmat in his citation before the conferment described Prof. Ir Ganjar as an academic who believes in cross-border university education for the good of the community and the strengthening regional ties.

Prof. Riza said the UNPAD rector has done much to strengthen solidarity between UKM and the Indonesian university to develop academic cooperation and forge close ties between Malaysia and Indonesia. Prof. Ganjar was born in Bandung in 1956. He is an academic and cultural scholar of Bandung, West Java



Prof. Dr. Ir. Ganjar Kurnia receiving the Honorary Doctorate

and has served as professor of agricultural sociology at UNPAD.

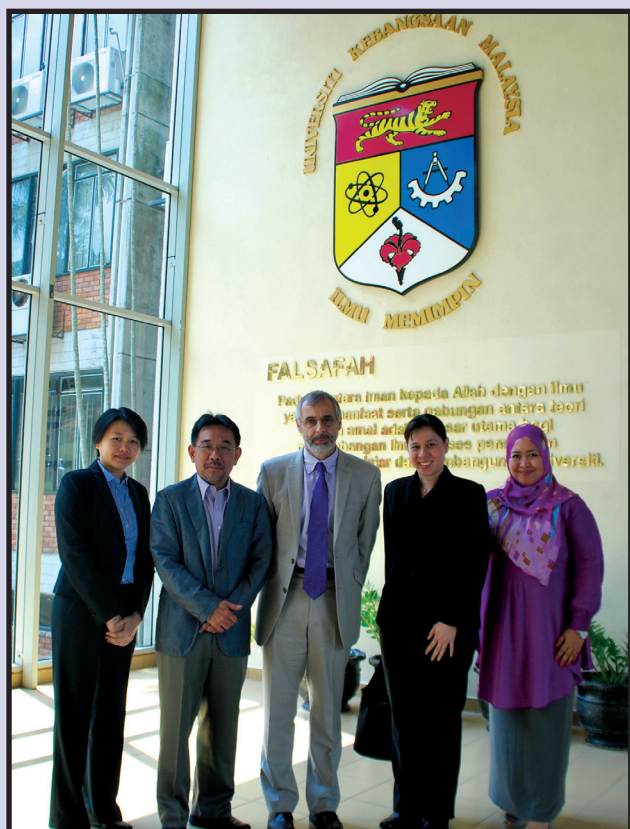
He graduated from the Faculty of Social Agricultural Economics, UNPAD in 1979 later obtaining his Masters in 1983 and PhD in 1987 from the University of Paris.

Before returning to serve in education, he was a cultural ambassador for Indonesia at the Indonesia Embassy in France. While in France he contributed to the promotion of the Sundanese culture.

Visits by Friends



3 October, 2013, Embassy of The Republic of Indonesia in Kuala Lumpur



8 October, 2013, International Office, New Castle University United Kingdom



11 October, 2013, Vietnam National University Ho Chi Minh City



8 November, 2013, Flinders University, Australia

Visits by Friends



13 November, 2013, SMA Islam Terpadu (SMAIT) Insantama, Bogor, Indonesia



13 December, 2013, Council of Saudi Chambers Arab Saudi



13 December, 2013, Sophia University, Japan

Industries Urged To Step Up Use of Agri-Wastes As Alternative Fuel

By: Saiful Bahri Kamaruddin, Centre for Corporate Communications

Photo: Ra'ai Osman, Centre for Corporate Communications



Prof. Dr. Sarani Zakaria

Malaysia should step up the use of wastes derived from the forestry, agriculture and plantation sectors for the production of alternative sources of energy and food.

A researcher of The National University of Malaysia (UKM), Prof. Dr. Sarani Zakaria said biomass known as Lignocellulose can be used to produce fuel that is free of petroleum, especially important now as the price of fossil fuel is rising or becoming unstable.

Delivering her inaugural lecture, Prof. Sarani said other than fuel for machinery, lignocellulose can meet

the demands of the food, health, textiles and other industries.

In the lecture titled Lignocellulose: Renewable Resources for Eco-Friendly Biopolymer Products, she said we have to use wood and plant resources which otherwise would become waste material because the processing can be done by industries at reasonable cost.

Prof. Sarani believes that lignocellulosic biomass is the raw material that is the crux of discussion and research in the 21st century, as it is easily available, cheap, plentiful and a sustainable resource.

She said Malaysia produces over 100 million tons of lignocellulose a year in which 94% is from of the oil palm sector, 4% from the timber industry and 1% from rice straw. This is an invaluable source of biomass for the economy.

This means that the spin-off products can yield worthwhile returns.

An example is the fermentation of lignocellulosic biomass to ethanol, a fuel that is an alternative to fossil fuels such as gasoline and diesel.

This biomass is a carbon-neutral source of energy and because it comes from plants, combustion of lignocellulosic ethanol does not emit carbon dioxide into the air.

One of the obstacles to the production of ethanol from biomass is that the sugars needed for fermentation of lignocellulose are trapped inside.

Lignocellulose can be obtained mainly from biomass derived from wood and plants, such as fruit fibre, fruit bunches, rice straw, bagasse, stems and leaves. It is known as lignocellulose because its main chemical



Prof. Dr. Sarani explaining the biomass materials

component is cellulose and lignin in addition to some other chemical components such as hemicellulose.

Wood waste from the construction industry, sawdust and wood residues from sawmills; garbage such as boxes, paper, newspapers, office stationery, magazines and old books are sources of lignocellulose that are very useful.

Among the products successfully made by her and her research group from lignocellulose at the Faculty of Science and Technology were pulp, paper and paper magnets and polyurethane (a type of plastic).

She said that the products of the pulping process, chemical modification and synthesis of new materials, can be the engine of growth for industries such as

paper, textile, pharmaceuticals, polymers, automotive, plywood and others.

She expressed confidence that the use of lignocellulosic biomass will reduce forest logging exploration and problems of waste disposal by municipal councils.

Prof. Sarani was appointed lecturer at the materials science programme in UKM in 1995. She is an expert in the field of bioresources-based materials, especially from plant lignocellulosic material.

She secured several research fellowships and is currently serving as the head of the Science and Applications cluster for Evaluation at UKM.

Islamic Economy The Alternative To Flawed Western Capitalism

By: Saiful Bahri Kamaruddin, Centre For Corporate Communications

Photo: Ra'ai Osman, Centre for Corporate Communications

An economic system based on Islamic principles is the best alternative to the present structure which reflects Western capitalism which encourages social imbalances.

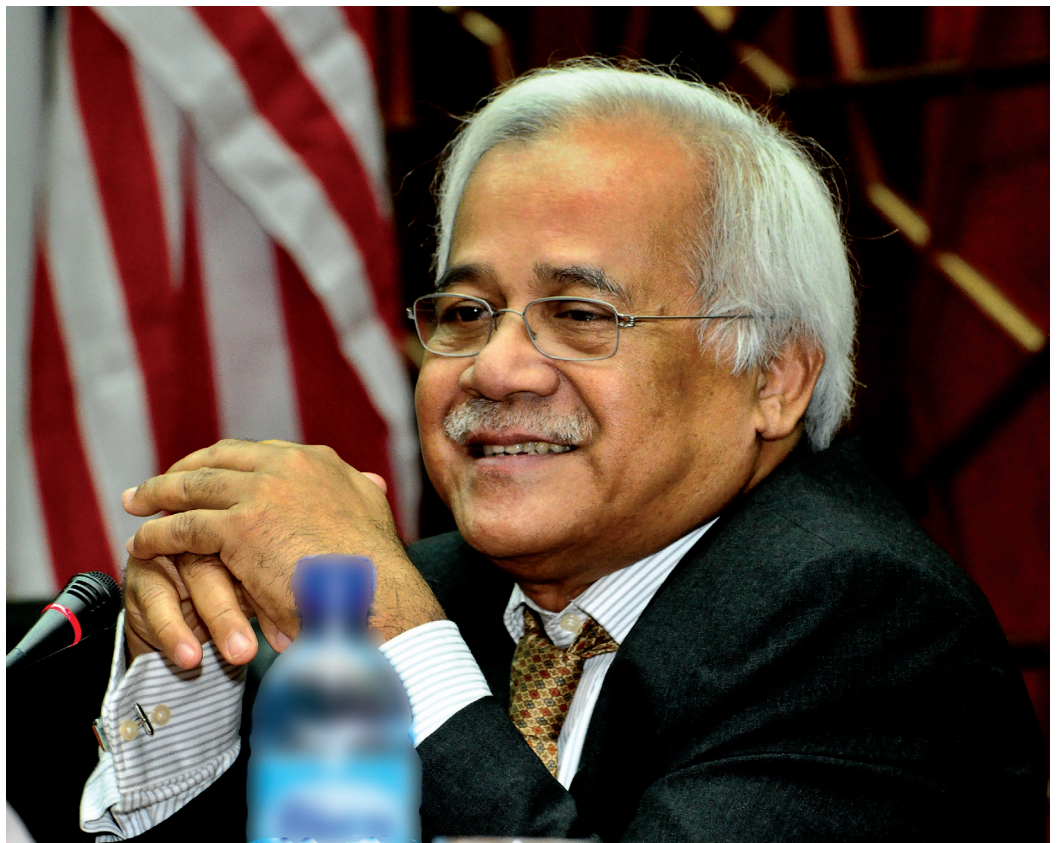
Adjunct Professor of Economics and Development Studies at Universiti Malaya, Tan Sri Dr. Kamal Salih said the current pursuit of a free market is flawed and only creates social and economic inequalities.

Speaking at the Ninth Ishak Shari Memorial Lecture on In Search of a New Economic Paradigm using the Malaysian Case, Dr. Kamal said an Islamic view of economics is more equitable and just for everyone.

The memorial lecture was organised by the Institute of Malaysian and International Studies (IKMAS) at The National University of Malaysia (UKM).

Dr. Kamal gave the example of consumption tax, which was first prescribed in Islam. Now it is known as the Goods and Services Tax (GST) or Value Added Tax (VAT). The principle is to charge on the consumption of goods and services at every stage of the supply chain, with the tax burden ultimately borne by the end consumer, unlike the existing sales and service tax (SST).

Another economic concept originated from Islam is the limited liability partnership (LLP), in which some or all partners have limited liabilities. It therefore exhibits elements of fair partnerships



Tan Sri Dr. Kamal Salih

and corporations. In an LLP, one partner is not responsible or liable for another partner's misconduct or negligence. This is different from the traditional unlimited partnership where each partner has joint and several liability. In an LLP, some partners have a form of limited liability similar to that of the shareholders of a corporation.

He said the present capitalist system has made Malaysia too dependent on foreign investment, which could hurt the economy if there is a downturn in those investor nations.

The Western capitalism system, he said, had not



brought social justice to society. There is no real “middle” class, as half of the population is at the bottom of the income ladder with only 21.5% of the income against the top 10% of the population who have up to 32% of the total share. The remaining 40% of the population owns 46.5% of the wealth. It would appear that half of the population - regardless of race - make less than even the middle class. This gap has remained steady for the past three decades and there is little chance of there being a more balanced income distribution, Dr. Kamal said.

The capitalist economies are also defined by ownership, power and livelihood disparities between capitalists and workers. The Capitalist system is inherently unequal and exclusionary and lack impetus to foster more inclusiveness. He said many scholars are now reviewing the Islamic worldview to make it more relevant to the current situation.

Proof of the relevance is the success of Islamic finance and banking in leading the way, in which even the West is beginning to adopt. Already some scholars

are anticipating some convergence with conventional banking – without the usury.

Present at the lecture was IKMAS director Prof. Dr. Rashila Ramli. Director of the Institute of Ethnic Studies (KITA) Distinguished Prof Shamsul Amri Baharuddin made the introductions to the lecture.

The Ishak Shari memorial lecture series was named after Prof Ishak Shari (1948–2001), a noted scholar and researcher originally trained as an economist. Prof. Ishak always looked beyond his discipline and embraced the social sciences as a whole particularly social justice.

Starting as a lecturer in 1972, he rose within the ranks to become Professor of Development Economics in 1991, Dean of the Faculty of Economics (1988-1990) and Dean of the Centre for Graduate Studies (1994-1997). In 1997, he was appointed Director of IKMAS, a social science research institute at UKM, a post he held until his death. Prof Ishak’s leadership helped turn IKMAS into a respected regional centre for globalisation and transformation studies.

Malaysia Set To Become Warmer And Receive Higher Rainfall

By: Saiful Bahri Kamaruddin, Centre for Corporate Communications

Photo: Ikhwan Hashim, Centre for Corporate Communications

Malaysia is likely to be warmer and experience higher rainfall throughout this century due to climate change.

Climatology researcher of The National University of Malaysia (UKM) Prof. Dr. Fredolin Tangang said the country has so far this year seen a rise in average temperatures and heavier rainfall compared to the same period in previous years.

Giving a lecture about the key findings of the Fifth Assessment Report by the Inter-Governmental Panel on Climate Change (IPCC), he said the rainfall will be more intense although the frequency might not change much.

Prof. Fredolin said the average temperature of Malaysia is likely to increase by between 3 to 5 degrees Celsius by the end of the century based on projections.

Prof. Fredolin, who is Vice-Chairman of the IPCC working group for developing countries, explained that the country's seas are also becoming warmer and the water level rising because of climate change.

He is a Fellow of UKM's Research Centre for Tropical Climate Change System (IKLIM) of the Faculty of Science and Technology (FST) and the first and only Malaysian elected to the IPCC post. He is also a Fellow of the Academy of Science Malaysia (ASM).

Present at the lecture and dialogue session was FST Dean, Prof. Dr. Shahrir Ahmad and IKLIM Head, Associate Prof. Dr. Mohd Talib Latif.

Prof Fredolin said the IPCC report last year had predicted that extreme weather events such as super typhoon Haiyan - which ravaged and devastated central Philippines earlier this month – could become more common. Super typhoon Haiyan is acknowledged as the worst ever since records began.

He cautioned against complacency by Malaysians who might think that typhoons don't occur here. What is of concern is that tropical cyclones are common in the Philippines, Vietnam and southern China. These nations are important to Malaysia because we import essential items such as rice from them. Any natural disaster in those regions could hurt us economically in the long run.

The IPCC report, which was authored by 259 researchers from all over the world, had warned that climate change can cause mass human migrations and eventually economic disruptions beyond the borders of the affected nations.

Prof. Fredolin explained that IPCC agreed unequivocally that climate change is not just a cyclical event but caused by human activities.

The rise in the use of fossil fuel is increasing the global levels of carbon dioxide and thus causing global warming.

Climate change, he said, doesn't necessarily mean that all regions experience higher temperatures. What happens is that wet regions become wetter and arid areas become drier such as increasing desertification in sub-Saharan Africa. Also the so-called temperate nations may experience colder winters and warmer summers.

The IPCC is a scientific intergovernmental body set up at the request of member governments. It was first established in 1988 by the United Nations to provide comprehensive scientific assessments of current scientific, technical and socio-economic information worldwide about the risk of climate change caused by human activities.

Cooperation With Cambridge Varsity For Research On Climate Science

By: Saiful Bahri Kamaruddin, Centre For Corporate Communications

Photo: Ikhwan Hashim, Centre For Corporate Communications

The National University of Malaysia (UKM) is to cooperate with an entity of the University of Cambridge to carry out research into climate science in Asia.

A cooperation agreement was signed between the Cambridge Malaysian Education and Development Trust (CMEDT)

in association with the Malaysian Commonwealth Studies Centre (MCSC) at the British university

and UKM to formalise the collaboration. Trustee and Joint Executive Chairman of CMEDT/MCSC, Tun Ahmad Sarji Abdul Hamid signed on behalf of the trust while Vice-Chancellor, Prof. Tan Sri Dato' Seri Dr. Sharifah Hapsah Syed Hasan Shahabudin represented UKM.

The signing was witnessed by Professor Emeritus Lord Julian Hunt, the visiting fellow of the MCSC and UKM Deputy Vice-Chancellor (Academic and International Affairs) Prof. Datuk Dr. Noor Azlan Ghazali. Lord Hunt is also Chairman of Cambridge Environmental Research Consultants Ltd, a company that does consultancy work on environmental research.

The cooperation agreement will establish the Asian Network for Climate Science and Technology (ANCST), which will, among others, promote disaster prevention and climate resilience in Asia through capacity building and outreach programmes. The web portal of the ANCST was also launched at the function.

Tun Ahmad Sarji, who is also UKM Pro-Chancellor, said the agreement was timely as Asia experiences most of the natural disasters in the world and referred to the recent super typhoon Haiyan, which ravaged and devastated central Philippines earlier this month which could become more common.

Super typhoon Haiyan is acknowledged as the worst ever since records began.

Tun Ahmad Sarji

noted that the fifth report by the Inter-Governmental Panel on Climate Change (IPCC) in September projected that increases in rain related to the monsoon was quite likely in East, South and Southeast Asia.

Budget for the research will be provided by CMEDT/MCSC to mobilise partnership among several universities and research centres in Malaysia and the region.

Through the cooperation agreement, UKM's South-East Asia Disaster Prevention Institute (SEADPRI) will serve as the coordination centre for ANCST. In her welcoming remarks, Prof. Sharifah Hapsah said SEADPRI is a suitable choice to lead the national consortium of universities in conjunction with the Academy of Sciences Malaysia to carry out the research.

She said the cooperation agreement was also aimed at supporting academic and research activities through staff exchanges and collaborations of common interest.



UNIVERSITY OF CAMBRIDGE

No Conclusive Method In Detecting Breast Cancer Causing Genes

By: Saiful Bahri Kamaruddin, Centre for Corporate Communications
Photo: INBIOSIS

Research by The National University of Malaysia (UKM) indicated that no single method of obtaining data to detect genes that cause breast cancer can be conclusive. Director of UKM Medical Molecular Biology Institute (UMBI) Professor Dato' Abdul Rahman Jamal said his research showed that a series of tests, or integrative genomic analysis can be more successful in discovering breast cancer-related genes.

Prof. Rahman was presenting his paper, Dissecting Breast Cancer Carcinogenesis Through Integrative genome Analysis, at the close of the two-day second Asian Regional Conference on Systems Biology (ARCSB). The conference was co-organised by UKM's Institute of Systems Biology (INBIOSIS).

Prof. Rahman, who is also Professor in Paediatric Haematology, Oncology and Molecular Biology, noted that several articles had reported data from single profiling studies on different subsets of patients with different results, thus giving wrong conclusions. He said that studies done at the molecular level can give a better insight into the pathway of the disease.

Genes are particles in cells, contained in chromosomes and made of DNA (deoxyribonucleic acid). DNA contains the instructions for building proteins. And proteins control the structure and function of all the cells that make up a human body. He said a focus group of breast cancer patients were analysed by several methods, including DNA methylation, gene expression and copy number variation (CNV). CNVs - a form of structural variation — are alterations of the DNA of a genome that results in the cell having an abnormal number of copies of one or more sections of the DNA. CNVs may indicate the presence of cancer-producing cells.

DNA methylation is a process that plays a crucial role in the development of nearly all types of cancer. Gene

expression is the process by which information from a gene is used in the synthesis of a functional gene product.

Prof. Rahman together with another researcher Dr. Norfilza Mokhtar recruited 87 women for the study with an average age of 55.9 years old. As normal breast tissues were difficult to obtain, they used a ratio of 1:3 of normal and cancer tissues. Each of the datasets were compared in pairs, followed by an integrative analysis of all three datasets.

He concluded that the study showed that the highest accuracy of cancer gene testing was obtained by the integrative analysis of all three datasets when compared to the tests done in pairs. He also admitted that more experiments needed to be done, in order to provide a better statistical outcome of the tests. Researchers with better equipment in developed nations may be able to help, he said.

However, the best form of treatment for cancer is prevention. He advised women aged forty and above to submit to mammogram tests. Mammography is the process of using low-energy X-rays to examine the human breast and is used as a diagnostic and a screening tool. The goal of mammography is the early detection of breast cancer. About 5% to 10% of breast cancers are thought to be hereditary, caused by abnormal genes passed from parent to child.

Prof. Rahman explained that analysing the genes that cause breast cancer is quite challenging because it is a heterogeneous and phenotypically diverse disease. This means that it involves many kinds of genes interacting with each other which produce characteristics that are quite complex and diverse.

Breast cancer is the most frequent form of cancer found in women not only in Malaysia but the whole world.

UKM Won ASEAN Energy Award For The Fourth Time

By: Rejal Arbee, Centre For Corporate Communications
Photo: Dato' Dr. Prof. Kamaruzzaman Sopian

The National University of Malaysia (UKM) has again won the ASEAN Energy Award for this year, the fourth time since its inception in 2001.

UKM won the award organised by the ASEAN Centre for Energy (CACE) under the ASEAN Renewable Energy Project Competition (Special Submission Category) for the Solar Assisted Hot Water Heating System set up at the UKM Medical Centre. It is the largest solar hot water system in Malaysia.

The award was presented by Mr. Daniel B. Poneman, Deputy Secretary of Energy, US Department of Energy; one of the ASEAN dialogue partners during the 31st ASEAN Ministers of Energy Meeting in Bali, Indonesia on Sept 25.

Director of UKM Solar Energy Research Institute (SERI), Prof. Dato' Dr Kamaruzzaman Sopian and Prof. Dr. Syed Zulkifli Syed Zakaria of UKM Medical Centre (UKMMC) received the award on behalf of UKM. Khalid Mokhtar, CEO of Zamatel Sdn Bhd, UKM's industrial collaborator for the solar hot water heating system was also present at the ceremony.

Prof. Kamaruzzaman said with this year's award, UKM has become the first university to win the award for four times since its inception in 2001.



Prof. Dato' Dr. Kamaruzzaman Sopian receiving the ASEAN Energy Award

The annual competition is to recognise outstanding works in the areas of renewable energy development comprising of hydro, wind, biomass, geothermal and solar as well as best practices that contribute to energy efficiency in the region.

The first ASEAN Energy Award won by UKM was for its Thermal Storage for the UKM Air Conditioning System. The second was for the Solar Hydrogen Eco House and the third for the Portable Power Fuel System.

The large scale solar assisted hot water heating system was installed at UKM Medical Centre (UKMMC) by SERI and Zamatel with a funding of RM2 million under the Technofund scheme of the Ministry of Science, Technology and Innovation.

He said the system has a life span of about 15 years with a payback period of just 2.9 years.

Prof. Kamaruzzaman said a team from SERI, UKMMC and Zamatel Sdn Bhd designed, installed and commissioned the system. The design has since been copyrighted under the name i-PANAZ ©.

Facts & Figures

About the University

Date of Establishment

- 18 May 1970

Campus Size

- Bangi Main Campus 1,100 hectares
- Kuala Lumpur Campus 20 hectares
- UKM Medical Centre 22 hectares

FACULTIES

- Islamic Studies
- Science & Technology (Restructured 19 July, 1999)
- Social Sciences & Humanities (Restructured 15 Nov., 2001)
- Medicine
- Economics & Management (Restructured 11 April, 2004)
- Law
- Engineering & Built Environment
- Education
- Health Sciences
- Information Science & Technology
- Dentistry
- Graduate School of Business
- Pharmacy

Year of Establishment

- 18 May, 1970
- 18 May, 1970
- 18 May, 1970
- 18 May, 1972
- 1 Jan, 1974
- 1 Feb., 1984
- 1 Nov., 1984
- 16 Oct., 1986
- 1 Sept., 1992
- 1 Oct., 1994
- 26 June, 1996
- 10 Oct., 2007
- 1 June, 2008

INSTITUTES

- Institute of The Malay World and Civilisation (ATMA)
- Institute for Environment and Development (LESTARI)
- Institute of Malaysian and International Studies (IKMAS)
- Institute of Microengineering and Nanoelectronics (IMEN)
- UKM Medical Molecular Biology Institute (UMBI)
- Institute of Space Science (ANGKASA)
- Institute of Systems Biology (INBIOSIS)
- Solar Energy Research Institute (SERI)
- Fuel Cell Institute (SELFUEL)
- Institute of Islam Hadhari (HADHARI)
- Institute of Ethnic Studies (KITA)
- Institute of Climate Change (IKP)
- Institute of Visual Informatics (IVI)
- Institute of Ear, Hearing and Speech (I-HEARS)

Year of Establishment

- 1 Dec., 1972
- 1 Oct., 1994
- 1 April, 1995
- 1 Nov., 2002
- 1 July, 2003
- 1 August, 2003
- 1 July, 2005
- 1 July, 2005
- 1 July, 2006
- 1 May, 2007
- 8 Oct., 2007
- 1 April 2011
- 1 Mei 2011
- 2013



Resonance connotes dynamism and vibrancy. Resonance reflects our vision and philosophy, and it is also in tandem with our sister publication SENADA. As one of the research universities of Malaysia, dynamism is a virtue much prized by us for it ensures our pre-eminence in the field. Other aspects of campus life are not neglected. After all we are a community of scholars, support staff and students. The pulse and vibrancy of the whole community can be felt as you read through the pages of RESONANCE. Happy Reading.

Editorial Team