

## **Research & Innovation Newsletter**

Publication of the Postgraduate Studies and Research Office

Issue 2

April 2010



UBD staff and students at the national day parade on 23 February 2010 led by the Vice Chancellor.

### Launching of IP Policy

The UBD Intellectual Property Policy was officially launched on 17 March 2010 by the Guest of Honour, Yang Berhormat Datin Paduka Hjh Hayati binti Pehin Orang Kaya Shahbandar Dato Seri Paduka Hj Mohd Salleh, Attorney General of Brunei Darussalam.

#### Below is the Attorney General's speech in her launching the IP Policy of UBD.

Let me first convey my sincere appreciation to the Vice Chancellor for inviting me to officiate the launching of UBD's IP Policy this morning.

It is indeed an honour for me to be present and to speak at this special occasion. I do not intend to give a lengthy lecture on intellectual property as I do not profess to be an expert in the area. However, I must say that my attendance at the High Level Forum on Intellectual Property in Tokyo organised by the World Intellectual Property Organization recently has reignited and updated my knowledge and interest on the subject-matter. (The fact that, I did not fall asleep at any of the lectures, must be a positive indication of that)

Just yesterday morning, I shared my thoughts on IPR at the Opening of the Legal Year, so, some of what I say here may be a repetition. Barrack Obama, the President of USA, said 'Innovation and creativity are drivers of economic development, producing jobs and a better

standard of living'. A strong protection and enforcement of IP rights are critical components for economic growth and development. Jong-Yong Yun, Former Vice-Chairman, Samsung Electronics, put it more simply "No patent, No future!" Bill Gates gave a grim warning that "The future fight over Intellectual property rights had begun".

Ladies and gentleman,

The intellectual property system is one of the cornerstones of modern economic policy and a catalyst for development. It will increasingly become an important tool for sustainable development in this knowledge-based society of the millennium. Effectively managed, the system has considerable economic value, since intellectual property signifies advancing knowledge in the form of new ideas, techniques, designs, processes and products having economic and commercial potential. The socio-economic benefits stem from the enhancement of qualitative competitiveness through the use of the system which is a critical tool in development. An effective promotion and protection of IPR encourages creativity and innovation. IP theft kills innovations and creativity.

The Attorney General's Chambers, with its limited resources has been the 'informal' lead agency which assists to promote the protection and administration of intellectual property rights in Brunei Darussalam through the drafting of the necessary laws, co-operation with copyright owners, giving lectures to schools, universities, Government agencies and the public and conducting prosecutions of IPR infringement. I am confident that with the implementation of an independent patent system later this year, local inventors and innovators would be able to create, develop, and commercialize new technologies and innovations to their advantage.

At the risk of repeating myself, I repeat my call for the establishment of a formal lead agency for Brunei Darussalam or other suitable institution, to formulate policies akin to our national and international obligation tasked with the role to advise on and administer laws, to promote IP awareness and infrastructure to facilitate development of IP in Brunei Darussalam and serve as IP regulator and policy advisor. In Singapore, IPOS, (Intellectual Property Office of Singapore) is a statutory body under the Ministry of Law. Whilst Intellectual Property Corporation of Malaysia, the acronym, MYIPO, is now corporatised, from its earlier existence under Ministry of Domestic Trade and Consumer Affairs. In Korea, the Executive Office of the IP Strategy is under the Prime Minister's Office. These are just some models that we can consider.

I therefore applaud and congratulate the University for its bold initiative in setting up the Innovation and Enterprise Office (IEO) as I believe that dynamic, interactive links between industry and research and development (R&D) institutions (whether publicly funded or private) as well as research-based departments in universities should be encouraged and strengthened. Industry and enterprises in the private sector should also be encouraged to plough much greater funding in R&D. In this regard, the Attorney General's Chambers will continually render its support to the Universiti, *vis a vis* the Innovation and Enterprise Office (IEO). The IEO through its Patent Information and Documentation Unit (PIDU) will play an important role in encouraging a systematic use of patent information by researchers and business enterprises as patent search enables identification of both trends in R&D as well as the most recent and leading edge technologies. No doubt, IEO will face many challenges but I am confident that with perseverance and strong will, they will overcome those challenges.

I look forward to see and read the findings of the UBD academic staff published in the toptier international referred journals. I am confident that you can and will create the 'wow' factor. I wish UBD all the best in its journey towards achieving its long term vision to become a 'first class International University'

With the kalimah الله الرحين الرحيم it gives me great pleasure to officiate the launching of the Universiti Brunei Darussalam's INTELLECTUAL PROPERTY POLICY.

#### Below is the Vice Chancellor's speech during the launching of the IP Policy of UBD.

First and foremost, I would like to thank the Attorney General, Yang Berhormat Datin Paduka Hajah Hayati binti Pehin Orang Kaya Shahbandar Dato Seri Paduka Haji Mohd Salleh for gracing this occasion and officiating the Launch of the University's Intellectual Property Policy this morning.

Ladies and Gentleman,

Universiti Brunei Darussalam today, is moving from a teaching university, to a teaching, research and university of enterprise.

The long term vision of Universiti Brunei Darussalam is to become a "First Class International University with a distinct National identity" and a first class University for Bruneians.

During last year's convocation ceremony, His Majesty stated in his titah that he is proud and fully supportive of the development of research clusters in the University. Hence, I would like to encourage you to embrace His Majesty's support in our research initiatives and come on board to create an active and dynamic environment for research in UBD.

One strategic pillar to reach this vision is to generate world-class research. The University has taken a number of initiatives to promote research including amongst others by encouraging research amongst young academics, introducing research clusters and establishing research institutes.

The University has begun to carry out multi-disciplinary and transdisciplinary research in various areas with strategic and comparative advantage. I am pleased to inform you that we now have 10 research clusters aimed at raising awareness of different research projects in the University, and creating networks of scholars amongst staff locally and internationally. Our wish is to eventually see the transformation of these research clusters into research institutes.

The National Development Plan or RKN 2007-2012 has provided a special fund for Research in Science and Technology to cater for the needs of scientists in pursuit of new knowledge generation. Last year, we worked really hard and I am pleased to let you know that UBD has succeeded in securing a significant amount of funding from the Department of Economic Planning and Development for grant applications in four key strategic research thrusts: Energy, Biodiversity, Food Security and Asian studies which includes Malay Islamic culture.

It is hoped that from this research, academic staff will publish their findings in top-tier international refereed journals which will create a 'wow' factor.

Ladies and Gentlemen,

Research always comes with creativity and innovation. Both creativity and innovation thrive best when there is strong protection of Intellectual Property. Researchers, organizations and enterprises work best in an environment that enables them to protect their competitive advantage and be rewarded for their investment in new products, services and technology development. Typically, this involves obtaining Intellectual Property Rights including patents, trademarks, copyright and trade secrets.

UBD Researchers are actively looking for new inventions and innovations. It is pleasing to know that several projects in UBD have patent potential - all the more need to obtain Intellectual Property Rights.

Consequently, I am proud to announce that Universiti Brunei Darussalam will be setting up its very own Innovation and Enterprise Office or IEO, to better serve researchers at the University. The IEO will not confine its service to staff and students at the University but to other institutions of higher learning, organizations, enterprises and government agencies.

The IEO will be relevant to the local business development strategy for 2007-2017 in which it will become a one-stop agency for information, advice and commercialization of Intellectual Property Rights. This Office will work closely with the Attorney General's Chambers. The IEO will also train and educate students and staff in entrepreneurship, for competitions and in commercialization of Intellectual Property as some of its activities.

The main objectives of the IEO will be to facilitate researchers, entrepreneurs and organizations to obtain Intellectual Property Rights on their creations and innovations. It will also encourage research and innovation amongst academic staff, students, and small and medium entrepreneurs and provide confidence amongst inventors in novel product commercialization. The IEO will assist to nurture spin-offs and start-ups as well as foster industrial collaboration, incubators and facilitate the dissemination of knowledge to the community. Another objective of the Office would be to seek and secure funding for research, development and innovative activities; and to train and educate researchers and students on Intellectual Property Rights and entrepreneurship.

Ladies and Gentlemen,

The Innovation and Enterprise Office will consist of four main units and these units will be set up in stages.

The first unit of the IEO is the Intellectual Property Information and Advising Unit. This unit will assist applicants to write disclosure forms and provide assistance and advice on Intellectual Property as well as provide advice on Industry-University internship programmes and Industry-University linkages.

The second unit is the Intellectual Property Education and Entrepreneurship Unit, which will educate staff and others through training, workshops and so on, as well as educate students through internship and incubator projects during the Discovery Year. Among the functions and responsibilities of this unit are to provide education and training on Intellectual Property, patents, copyright and trademarks, as well as to train researchers, Inventors and Scientists in record keeping, patents search, application filing processes and so on. The unit also functions to develop, conduct and run entrepreneurship training and executive programmes.

The next unit is the Commercial Affairs Unit which will deal with organizations outside the University and will involve licensing, transfer of technology, negotiation and protection of contracts. The unit will function to liaise with business, industry and government associations to facilitate applied research in UBD. It will also be responsible for transferring technologies to industry commercialization and negotiate all aspects of agreements and commercial partnerships.

Last but not least is the Patent Documentation and Information Unit. This unit will work closely with the Attorney General's Chambers to check, search, publish and examine submitted patents and trademarks.

Ladies and Gentleman,

The introduction of this Intellectual Property Policy and the setting up of the Innovation and Enterprise Office marks an important milestone for the University. We are now one step closer in fulfilling our long term vision to becoming a "First Class International University with a distinct National Identity and a first class university for Bruneians".

On that note, I would like to take this opportunity to thank the Attorney General's Chambers, the Brunei Economic Development Board and the Department of Economic Planning and Development on their continued support to the University. Not forgetting, I would also like to offer my gratitude and congratulations to the Office of the Assistant Vice Chancellor (Research and Innovation) and the Office of Postgraduate Studies and Research for their hard work drafting the policy and bringing together all aspects of this event.

A copy of the UBD IP Policy document can be found on the UBD website at <u>http://www.ubd.edu.bn</u>.

Staff and employees of UBD are encouraged to come and discuss potential IP issues with the Office of AVC (R&I). Highly lucrative incentives await!!

### **Research Clusters**

There are now 10 research clusters at UBD:

Research Cluster	Cluster Leaders
Materiala	A/D Dr Datar Hing
waterials	Poter ng@ubd.edu.bn
	A /D Dr Ton Kho Shong
	A/P Dr Tan Kna Sneng
	Knasheng.tan@ubd.edu.bn
Energy	Dr Lim Chee Ming
	cheeming.lim@ubd.edu.bn
	Dr Sathyajith Matthew
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Modelling	Dr Saiful Azmi Hj Husain
and	saiful.husain@ubd.edu.bn
Simulation	
Environment	Gabriel Yong
and	gabriel.yong@ubd.edu.bn
Sustainable	Dr Bill Duane
Development	william.duane@ubd.edu.bn
1	
Science.	Alistair Wood
Technology	alistair.wood@ubd.edu.bn
and Society	
Ageing	Dr Oduola O. Abiola
88	Oduola.abiola@ubd.edu.bn
Obesity	Prof Mohd Moshaddeque
-	Hossain
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	A/P Dr Quintus Perera
	Quintus.perera@ubd.edu.bn
Cancer	Prof Mohd Mabruk
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Islamic	Dr Hj Ibrahim bin Hj Abd
Studies	Rahman
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	Dr Hi Ramlee bin Hi
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Youth	Dr Dk Norulazidah bte Pg
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	Prof Dr Keith Wood
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With the 10 clusters, all clusters are now closed and cocooned. Hopefully, a well developed cocoon can become a butterfly (a fully-fledged research institute).

A research workshop jointly organised by the Energy and Materials research clusters was held from 27-28 January 2010 in the Senate room which was attended by several top-ranking international experts in the field. In addition to some very interesting papers being presented, the foundations laid for were future cooperation in a number of areas. A closed door session was also held on 28 January to map out strategies to advance the clusters.

The Modelling and Simulation Research Cluster held a workshop and seminar on 22-25 February 2010. The workshop "Modelling and Simulation: entitled. Agro-Technology Opportunities", was held on 24 February at the Rizqun Hotel. There was also a closed door session to strategise the further development of the cluster, as well as a site visit to the Brunei padi growing region. The cluster has interests food technology, in environmental management and inventory management.

A meeting was held on 13 March 2010 at the Institute of Medicine organised by the cluster on Ageing.

The Science, Technology and Society Research Cluster is undertaking pilot studies for several research projects, in the areas of science education, research policy and the Internet.



Distinguished speakers posing with local hosts during the Energy and Materials research clusters workshop.



The guest of honour, Pehin OKSU Dato Seri Setia Awg. Hj. Yahya bin Begawan Mudim Dato Paduka Hj. Bakar, Minister of Industry and Primary Resources, for the Modelling and Simulation Workshop taking a critical look at one of the posters.



Hmmm..How to simulate mathematically the growth of a padi plant?

All of you will have heard of the research clusters which have been started at UBD. However, it may be the case that not everybody is quite clear about what the clusters are and what they are doing.

The research clusters have been set up by the university as part of its drive to promote research.

It is important to realise that these research clusters will not necessarily follow one specific model, but what they have in common is that they are multi-disciplinary and multi-faculty. Gradually, over the next few years, it is hoped that these clusters will produce significant research in their areas.

Each cluster is going to develop in its own direction and the successful clusters may grow in future into Research Centres like Kuala Belalong Field Studies Centre or into a research institute.

At the moment, these clusters are still in their infancy and they need your support to grow. If you are interested in joining any cluster the members would be interested in hearing from you. But anybody who wishes to join must be prepared to get involved and take part in research.

Although the clusters are multidisciplinary, they are not just talking shops, but active research groups who will produce, it is planned, multi-disciplinary research which further enhance UBD on the international research map.

#### **Research Projects Approval**

At the last meeting of URC (CORE) on 30 January 2010, the following research projects were approved subject to amendments and/or clarifications:

Proponent	Title of project
Dr Linda Lim	Analysis of nutrient
Biaw Leng	compositions of the
	flesh and seeds of

	Artocarpus
	Champeden.
Dr Tan Ai Ling	Electrochemical
	studies on Schiff base
	Ligands and their
	transition metal
	complexes.
A/P Dr T. B.	Green chemistry
Tennakoon	using clay catalysed
	oxidation Arenes
	with hydrogen
	peroxide.
Dr Hj Gamal	Memperkasa
Abdul Nasir Hj	pengajaran bahasa
Zakaria	Arab di sekolah
	menegah
	Kementerian
	Pendidikan.
Prof. Dr Victor	Spline approximation
Didenko	of boundary integral
	equations.

The next meeting to consider research proposals by PSR (Business) is tentatively scheduled for 14 April 2010. Staff can submit their research proposals to the AR, Office of AVC (RI) at the Chancellory.

#### Science and Technology Research Fund Matters

On the matter of the Science and Technology Research Fund round 2, proponents were informed that they can begin preparing for whatever they need to start their projects, like specifications for equipment, hiring of RA, etc and submit these requirements to the AR, Office of AVC (R&I).

The PSR has hired two project officers starting 1 April 2010 to assist researchers in their research activities. We like to welcome Dk Hjh Noryoul Elia Fatimah bte Pg Hj Ibnu Basit and Dyg Rena bte Hj Aliuddin. They will be going round to researchers to assist them in procurement and administrative matters related to their research funding. It is hoped that with this assistance from the officers, the burden of administrative matters will be taken off the researchers and they can concentrate on their core business of doing innovative research.

Below are the research projects from round 1 of the S&T fund for your information.

Principal	Title of research
Investigator	
Dr Siti Hana Muharram	Brunei Healthy Hearts: Sourcing strategic Halal antioxidants.
Dr Kazimierz Becek	Development & Establishment of a Global Elevation Data Testing Facility (GEDTF).
A/P Dr Chandratilak De Silva Liyanage	Energy and Eldercare using Smart Monitoring, Control and Communication (SMCC).
Dr Joseph K. Charles	Small Mammal community structure in relation to vegetation heterogeneity, food abundance and predator pressure in pristine and disturbed kerangas forests in Brunei Darussalam.
Dk Dr Nurolaini Pg Hj Muhammad Kifli	Survival of Cervical Cancer Patients In Brunei Darussalam.
A/P Dr Frank Nickols	Controlled Force Artificial Muscle Servomechanism for Biomimetic Robots.
A/P Dr Zohrah Haji Sulaiman	Molecular Phylogenetics of Commercially Important Fishes (Family Scombridae) in Brunei Darussalam and Southeast Asia.

A/P Dr Kushan Tennakoon	A Preliminary investigation on the structural and functional attributes of parasitic plants (Mistletoes and Dodders) in Brunei Darussalam: A Step Towards Broadening Horizons on the understanding of plant- plant interactions in Borneo.
Dr Ayodele Olofinjana	Development and operational characterization of Lead- free solders.
Dk Dr Nurolaini Pg Hj Md Kifli	Knowledge, Perceptions and Attitudes on Pap Smear Test Amongst Bruneians.

### **Research Activities**

## Simulation of kicking skill...in football that is.

Football is arguably the number one spectator sport in the world. Each and every year football squads and clubs progressively try to improve their team's performance by formulating better team strategies and skills for their players. In general, one of the basic requirements for every player is the ability to kick a ball towards a target with good accuracy (if it is for passing/delivering the ball), or accuracy with power (if it is for shooting Conventionally, to improve for goal). your skill in kicking a ball you need to practice on a real pitch and this usually follows a process of "trial and error". However this research suggests a more systematic method of training by focusing on the posture and motion of the footballer's feet as a result of simulating the kicking. Using the system, the coach and player would have the opportunity to

empirically analyze kicking style and ability by using data and sensory information, and thus to decide how to make any improvements necessary.

UBD researcher, Dr. Pg. Mohd. Iskandar, from the Applied Physics group has developed a low-cost sensing system which enables footballers to simulate or test their kicking skills, accuracy and power. The system mainly comprises a sensory surface steel plate and a goal post for data collection, data acquisition and signal conditioning system, and a PC for signal processing and visualization (see Figure 1). Prior to each test (simulated kicking) the system is able to generate high-level output information such as speed, trajectory and displacement of the ball, whether the posture is correct or not, and suggestions for improvement in posture.



Figure 1. The system was tested in one of the laboratories in the Science Faculty

#### The Hardware

Six regions were identified on the plate for analysing force distribution exerted by the supporting foot during kicking. The regions are the front forefoot, right forefoot, left forefoot, back hindfoot, right hindfoot and left hindfoot. Six reflective sensors (non-contact sensors) were used to measure the plate deflection in the regions (see Figure 2). The goal post has an array of 16 by 16 lasers and a counter of 16 by 16 laser detectors, which were incorporated along the x-axis and y-axis (see Figure 3). Each laser is positioned so that the beam hits the detector. These detectors will produce a 'high' signal when the beam is received, and a 'low' signal when there is no beam (blocked by the ball). The real-time signal will then be used to calculate the trajectory, displacement and speed of the ball.



Figure 2: Overview of the heart of the steel plate.



Figure 3: Total of 32 sensors incorporated along the vertical and horizontal posts.

#### Testing

Figure 4 shows a right legged subject kicking a ball. The trajectory, displacement, speed and force distribution (from the six regions) of the right leg were recorded and visualised using a PC (see Figure 5). The results can be analysed and interpreted further.



Figure 4. A subject performing a simulated kick.



Figure 5. Results for interpretation and further processing.

#### **UBD Talk Time**

A/P Dr Peter Hing gave a talk on "Innovation in research" on 10 March 2010.

The next talk on innovation will be delivered by Dr Mona in April 2010.

Prof. Ranjan gave a talk on his recent research leave to the UK on 20 March 2010.

Dr Hj Ibrahim hold a discussion on the Islamic Studies Research Cluster on 24 March 2010.

If you would like to give a talk in Talk Time, you are most welcome. Please contact the AR, Office of AVC (R&I).

#### **Postgraduate Academic Matters**

## Intake for August 2010 and January 2011 for postgraduate studies.

The closing date for applications is now extended to 3<sup>rd</sup> May 2010 for August 2010 intake and 4<sup>th</sup> October for January 2011 intake.

#### **Postgraduate scholarships**

There are now available 100 UBD international postgraduate scholarships in addition to the normal scholarships for 2010. Staff are encouraged to advertise these 100 international scholarships as these graduates will also be able to assist staff in their teaching and research activities. Further information can be obtained from the Office of PSR, the Office of AVC (E&I) and the UBD website.

E-mail enquiries can be sent to: office.psr@ubd.edu.bn

#### Visiting academic schemes

There are now available visiting professorships, adjunct professorships, adjunct associate professorships and adjunct lecturers schemes. These are equivalent to other reputable university schemes.

Further information can be obtained from the dean of your faculty.

#### Amendment to "Research and Innovation Newsletter, Issue 1, October 2009"

#### **BRIDEX Exhibition 12-15 August 2009**

Dr Mani Levasan from the Language Center accompanied the staff and students of UBD in exhibiting their project which is also part of her joint research project.

## Some current research undertaken by staff.

Dr Irene Cheong	School students'
_	beliefs and intended
	actions about global
	warming.

# POSTGRADUATE PROGRAMMES IN



For more information please contact:

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Visit us at http:// www.ubd.edu.bn for further information.

Universiti Brunei Darussalam (UBD) invites suitable applicants for enrollment into postgraduate programmes by research and course work leading to Masters and Doctoral degrees for August 2010 and January 2011 intakes.

Recognised internationally, UBD is located at the Heart of Borneo in South East Asia with vibrant and conducive socio-cultural environment. It offers rigorous academic training in postgraduate level with research opportunities leading to internationally accredited degrees. Join to experience a diverse and thriving academic environment and partnership with world renowned universities towards cutting edge research.

Attractive scholarships are available on a competitive basis especially for research degrees. The closing dates for applications are **8 May 2010 for August 2010 intake and 4 October 2010 for January 2011 intake**. Visit our website for further information on admission requirements and scholarships.

#### AREAS FOR MASTER BY RESEARCH AND PhD PROGRAMMES: MASTER BY COURSE WORK PROGRAMMES:

- School Leadership
- Education
  - Pedagogic/Educational Design Research
    Lesson/Learning Study Research
- Energy Studies
- Biodiversity and Environmental Studies
- Brunei Studies. Asian Studies
- Malay Language and Linguistics, Malay Literature
- English Language and Linguistics, English Literature
- Applied Linguistics, Geography, Geomatics
- History, Historical Studies
- Fine Arts, Communication and the Media
- Sociology, Anthropology
- Sustainable Development
- Sciences, Petroleum Geo-science, Computer Science
- Biology, Biotechnology, Chemistry, Mathematics
- Medicine, Health Sciences, Laboratory Medicine
- Economics, Business Administration
- Information Systems, e-Business/e-Commerce/e-Government
- Human Resource Management, Marketing
- Public policy and Management
- o Islamic Banking, Finance and Economics

- Master of Science in Primary Health Care
- Master of Public Health
- Master of Science in Energy Studies
- Master of Science in Petroleum Geo-science
- Master of Education (with specialisation)
- Master of Teaching (with specialisation)
- Master of Counselling
- Master of Business Administration
- Master of Economics
- Master of Public Policy
- Master of Environmental Management
- Master of Arts in English language and Linguistics
- Master of Arts in Historical Studies
- Master of Arts in New Media
- Master of Arts in Radar Remote Sensing, GIS and GNNS
- Master of Arts in History (Malay-Medium)
- Master of Arts in Malay Language and Linguistics
- Master of Arts in Malay Literature
- Master of Arts in South-East Asian Studies