RMC Bulletin

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RMC Research Management Centre
Accelerating Excellence through Research and Innovation

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EDITORIAL Note

Welcome to the second edition of the RMC Bulletin. This bulletin circulates information on research and innovation endeavours in the university in order to keep the readers informed about the most interesting and recent results from funded researches and the progress of various activities carried out. In 2012 and 2013, RMC made several strides in the utilization of its allocated funds by holding workshops, seminars, a public lecture and most significantly facilitating members of staff to carry out research and innovation activities in its efforts to foster interdisciplinary research and promote innovation and invention ventures.

IUKL continues to create and sustain an environment of discovery that fosters learning and rewards creativity. As a tertiary education institution, IUKL is expected to play a central role in the research-innovation nexus, and effectively manage and govern that relationship. Through its full range of activities (seminars, workshops, and projects), the centre involves all its members and other collaborators with expertise on a range of issues - university research strategy and research funding, collaborative research with external partners, and international research cooperation. IUKL plays a core role in enhancing the academics' experiences in research and innovation activities in its efforts to support the country's strategic development.

RMC plans to continue paving the way towards elevating the cause of research, innovation, invention and cooperation among our academic communities. It will play a pivotal role not just in bringing research and innovation to a much higher level, but also in ensuring that the university records more achievement and success stories at the national and international levels.

We hope you find the information in the bulletin useful.

Assoc. Prof. Dr. Siti Maziha Mustapha
Director,
Research Management Centre

FOREWORD BY THE VICE CHANCELLOR

Education and research play a decisive role in the creation, dissemination and use of knowledge. They form an important foundation for innovation at all levels, which in turn drives the economic, social and cultural development of a country.

Infrastructure University Kuala Lumpur (IUKL) research activities have grown substantially in recent years. The university's successes in winning gold medals at National and International Innovation and Invention Exhibitions have proven its capacity and strengthened its commitment towards promoting excellence in research and innovation. IUKL aims to ensure that the full potential of the university in the production of knowledge, its transmission, dissemination and utilisation in technological innovation is realised, hence maximising its contribution to the enhancement of Malaysia's capacity building and development.

I hope that this issue of RMC Bulletin, rich in news and information on a myriad of research and innovation activities, will spur academic, non-academic staff and students of IUKL not only to delve into the exciting world of research but also to innovate products that contribute towards the enhancement of the socio-economic wellbeing of our country.

Together, we will strive to meet the aspirations of our researchers and the needs of the nation.

Prof. Dr. Roslan Zainal Abidin
Vice Chancellor, IUKL

Erosion Risk Potential Categorization in Langat River

The research is funded by Humic Tropic Centre Kuala Lumpur under Department of Irrigation and Drainage (DID) for the amount of RM 180, 000. The duration of the research is two years which is from January 2011 to December 2013. The research team members, led by Prof. Dr. Roslan Zainal Abidin, are Ir. Mohamad Ayob, Naimah Yusoff and Siti Noraini Ahmad. The research aims to determine and categorise the degree of erosion risk along Langat River with regards to rainfall erosivity and soil erodibility.

Educational Visit to Department of Irrigation Hulu Langat, Selangor

The study area of this research is Langat River, one of the principal rivers draining a densely populated and developed area of Selangor. Langat River flows from the main range, Banjaran Titiwangsa at the east of Selangor state, where it passes by three districts in Selangor state namely Hulu Langat, Sepang and Kuala Langat districts. The average annual precipitation is 2316 mm with a range of 1800 to 3000 mm. The upstream of Langat River has a steep riverbed gradients and the flow velocity in the river is fast. Riverbed material consists mainly of rock and stones, and the banks are gentle and covered with vegetation. When passing through the town of Hulu Langat, sedimentation and occurrence of minor bank erosion can be observed. Langat River flows between Cheras and Bangi through a highly urbanised area with many instances of bank erosion. At the confluence of the Langat and Semenyih Rivers, dredging and sand mining activities can be observed, and heavy sedimentation and severe riverbed erosion are evident.

From the confluence of the Semenyih and Langat Rivers, the water flows westward up to Chuah River, which has been dammed to form Putrajaya Lake. Langat River then passes through Dengkil and from this point and downwards, the riverbed gradient becomes gentler. Further downstream, Labu River flows into Langat River and river bank erosion is less obvious here, probably due to the low flow velocity of the river at this section.

Opening Ceremony of Seminar on Geospatial Disaster and UNESCO-Help Basin : Water Co-operation, Security and Geohazards on 17-18 June 2013

With rainfall data records from the year 2008-2010 for nine rainfall stations along Langat River, Daily Rainfall Amount analysis and 'ROSE' index software application (after the name of researcher ROSlan and Ezanee) were used to determine the erosion risk potential along Langat River bank. The results indicate that the highest rainfall erosivity risk based on the degree of 'ROSE' index, namely low, moderate high, very high and critical along Langat River is from the month of March to April and September to November that can trigger a gully or major rill erosion features along the river bank. As for the lowest rainfall erosivity risk, the occurrence is from the month of May to July that can trigger a sheet or minor rill erosion features.

Meanwhile, the soil resistance against erosion is termed

as soil erodibility and the value depends on several factors such as soil textural composition, soil infiltration level and organic matter content. Sieve analysis and hydrometer tests were conducted for all soil samples collected for every 2 km on both sides of the river bank and the "ROM" scale (after the name of researcher ROslan and Mazidah) is used to determine the degree of soil erodibility namely low, moderate, high, very high and critical. The results indicate that the soil erodibility with high, very high and critical category for both sides of Langat River bank were at the upper and middle stream of Langat River, which is at Hulu Langat and Sepang districts. Finally, the erosion risk along Langat River was categorised according to rainfall and soil chart, and it indicates that the highest and lowest category of erosion risk was critical level 3 (CL3) and moderate level 2 (ML2). In the study, the left bank of Langat River in Sepang district was identified as the most critical erosion risk whereby the right bank of Langat River in Kuala Langat experienced the least critical erosion risk. With this significant finding, suitable mitigating measures can be proposed to prevent prolonged serious conditions along the Langat River bank particularly in avoiding bank failure.

This research was beneficial in terms of providing a significant outcome on erosion risk potential for Langat River, and can be used as a tool in indicating the degree of river bank erosion with regards to soil erodibility and rainfall erosivity evaluation. Further to this, suitable rehabilitation programs have been proposed to prevent serious conditions along Langat River bank in the near future particularly stream bank erosion. Thus, it would benefit the country in terms of cost reduction in river bank protection. Besides that, the relevant authorities for the respective problematic erosion can take immediate actions to overcome erosion problem.

Apart from this, we also have organised two (2) conferences, namely:

1. Seminar on Geospatial Disaster: Water Related Problems on 4 - 5 June 2012.
2. Seminar on Geospatial Disaster and UNESCO-Help Basin: Water Co-operation, Security and Geohazards on 17- 18 June 2013.

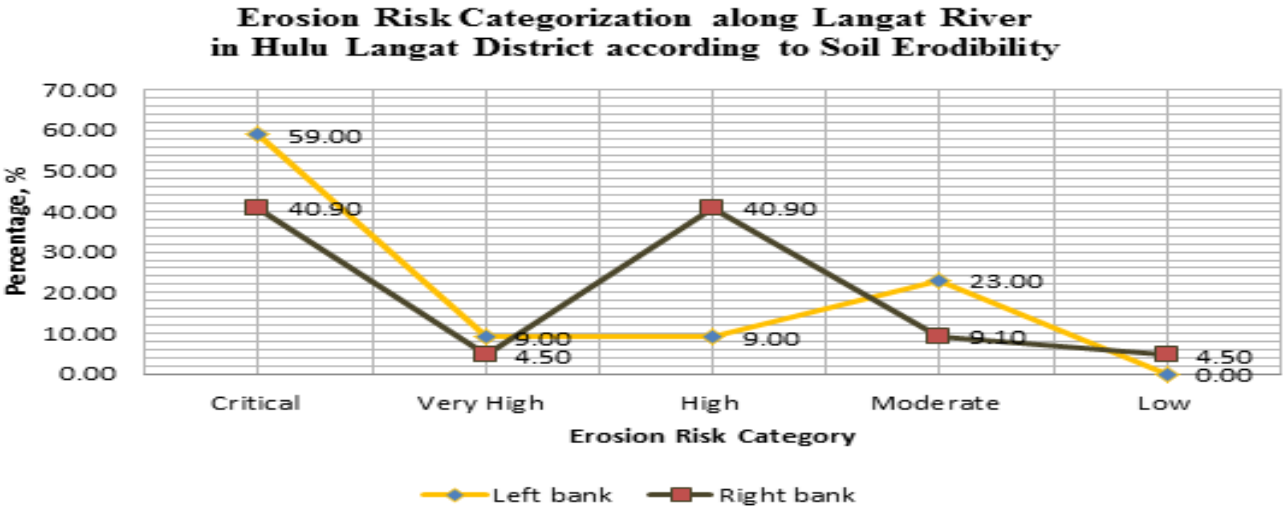
Erosion Features along Langat River

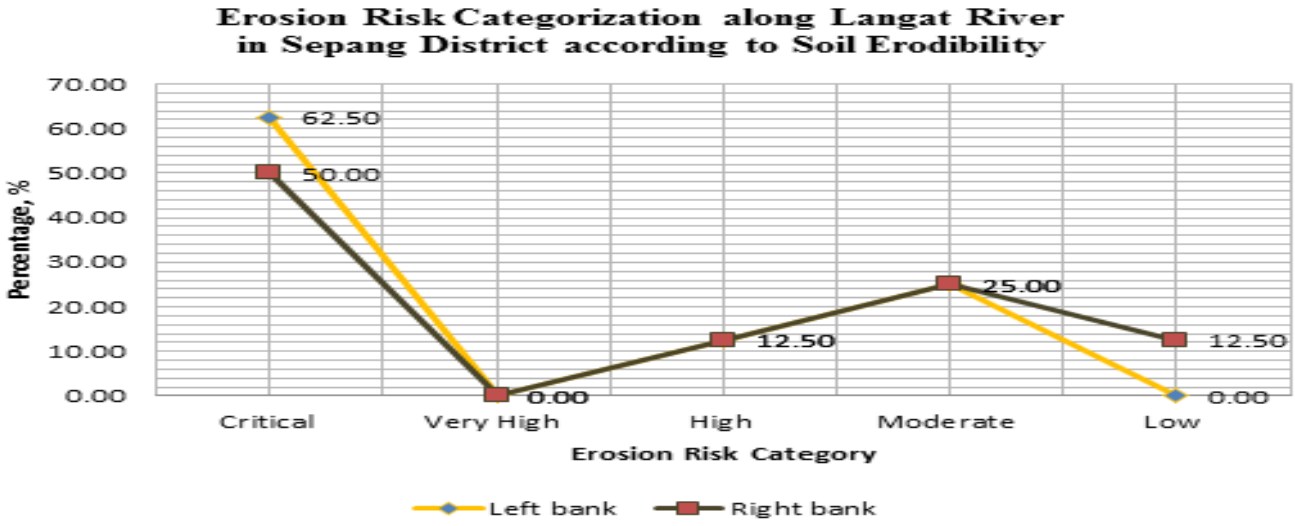
Study Area: Langat River Basin

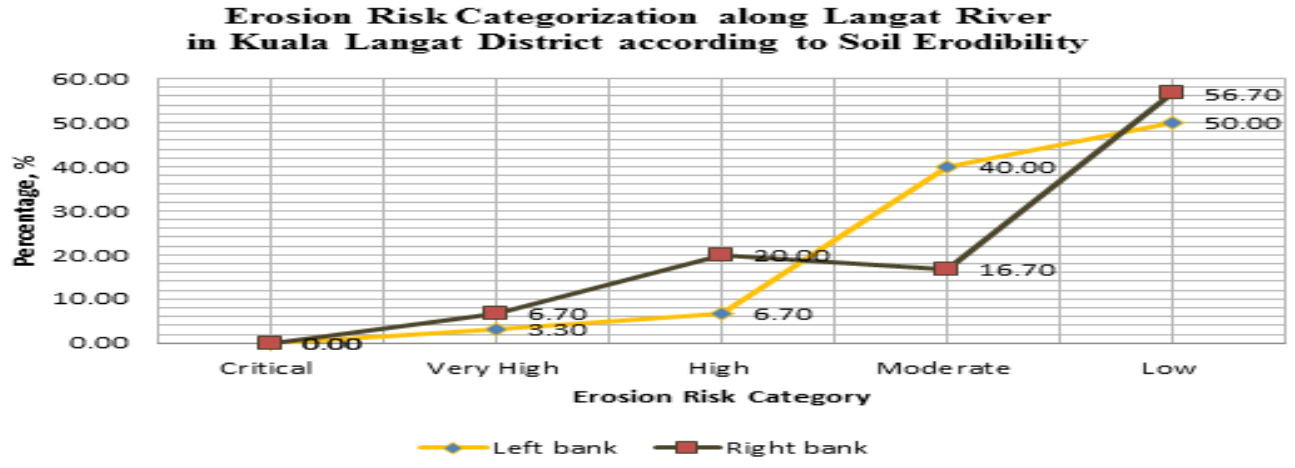
Site visit to Langat River at Kuala Langat District

In addition, three papers were presented and published: -

1. "River bank erosion risk potential with regards to soil erodibility" was presented in 7th International Conference on River Basin Management Basin, United Kingdom on 22 May 2013 and was published in Wessex Institute of Technology Press, UK.
2. "Soil erosion risk potential with regards to rainfall erosivity" was presented in the 12th International Symposium on River Sedimentation, ISRS 2013, Kyoto, Japan on 4 September 2013 and was published in CRC Press, Taylor and Francis Group " A Balkema Book."
3. River bank erosion with regards to rainfall erosivity. Infrastructure University Kuala Lumpur Research Journal, IUKLRJ, Vol.1 No.1, 2013.







Gamma Ray Irradiation Effects on High Temperature Superconductor Y-Ba-Cu-O with Nanomagnetic Particles Additions

Superconductivity was found on 8 April 1911 by Heike Kamerlingh Onnes from Leiden University. He discovered the zero electrical resistance of mercury at 3 K (-270 °C). Superconductivity, not a new form of electrical resistance, is a thermodynamic state in its own right, and this unique property cannot be explained by classical physics alone. In year 1987, the so-called high temperature superconductors (HTSC) were discovered. Yttrium Barium Copper Oxide (abbreviated YBCO) showed the critical temperature (T_c) at 93 K. It was the first HTSC to achieve superconductivity above the boiling point of nitrogen (77 K). The research into superconductors never stops. Many new types of superconductor were discovered after YBCO. Until today, the highest T_c was found in Mercury Barium Calcium Copper Oxide (135 K).

Superconductors can be used for various commercial applications, such as magnetic energy storage, Josephson devices and wire fabrication. In the past, the transport properties of the HTSC have been studied intensively due to the great potential as energy transport. However, low current carrying capacity leads to low transport critical current density.

In Malaysia, there are a few universities involving in research on superconductivity, such as Universiti Kebangsaan Malaysia (UKM), Universiti Putra Malaysia (UPM), Universiti Teknologi Mara (UiTM), Universiti Tenaga Nasional (UNITEN) and Infrastructure University Kuala Lumpur (IUKL).

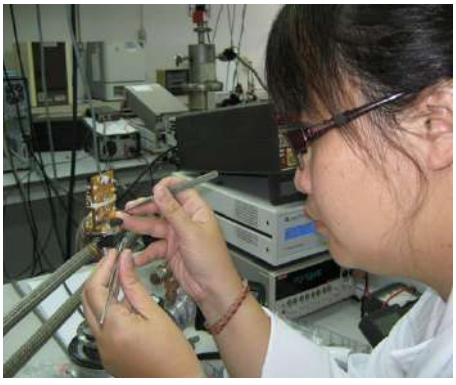
A research grant under Fundamental Research Grant Scheme (FRGS) has been awarded to Dr. Kong Wei and her team on January 2011. RM 74,000 was approved by Ministry of Higher Education (MOHE) for the project entitled "Gamma Ray Irradiation Effect on High Temperature Superconductor YBCO with Nanomagnetic Particles", for a period of 2 years. This project is led by Dr. Kong Wei and it is a collaboration between IUKL and UKM.

The objectives of this research project are to improve the current carrying capacity by introducing nano magnetic particles and to investigate the effects of gamma rays irradiation on superconductors $YBa_2Cu_3O_7$-δ (YBCO) with nanomagnetic particles. Superconductors YBCO with nanomagnetic particles addition, is prepared using solid state method. Nano magnetic particles Fe_3O_4 and NiO were added into YBCO superconductor powder at 0.01 – 0.05 wt.%. All samples were irradiated by 100 kGy gamma rays. The characterization on critical temperature (T_c), transport critical current density (J_c), crystal lattice structures and morphology were carried out before and after irradiation.

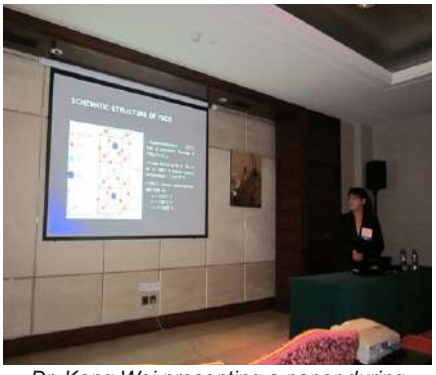
Before gamma ray irradiation, nano particles Fe_3O_4 and NiO were found to enhance the superconducting and transport properties at low amount of addition (0.02 - 0.03 wt%). The T_c of both Fe_3O_4 and NiO added samples were increased after the gamma ray irradiation due to the induced oxygen displacement in both Cu-O planes and Cu-O chains. By gamma ray irradiation, current transport properties are expected to be enhanced through the strengthening of vortex pinning energy. However, J_c of both Fe_3O_4 and NiO added samples were degraded after the gamma ray irradiation. The suppressing of J_c is suspected due to the radiation damage dependent and vacancy diffusive movements in ceramic YBCO samples. It can be concluded that the transport properties were enhanced by nano particles addition but not gamma ray irradiation.

This research has provided quantitative and qualitative recommendations on the nanomagnetic additions and gamma ray irradiation which support this material for the fabrication of superconductors wire and cable in the near future. The outcome from this research has contributed a better approach to produce low cost wire and cable with high carrying capacity.

Dr. Kong Wei is working on the electrical resistance measurement



Dr. Kong Wei is making connection by four thin wire (Four Point Probe)



Dr. Kong Wei presenting a paper during 20th International Conference on Composites or Nano Engineering (ICCE 2012)

Aquaculture Potentials in Malaysia

Scallop (Agropecten irridans)

Marine aquaculture has become an important sector that generates billions of dollars in revenue for the Malaysian economy. In 2011, Malaysia produced over 400,000 metric tonnes of marine products valued at MYR 2.37 billion through aquaculture (Department of Fisheries, MOA). Under the Economic Transformation Plan (ETP), the Ministry of Agriculture (MOA) through its "High Impact Project for Aquaculture Industrial Zone (HIP ZIA)" program has further approved vast track of coastal areas for the development of industrial-scale marine aquaculture projects.

Infrastructure University Kuala Lumpur (IUKL) in collaboration with the Fisheries Research Institute (FRI) in Pulau Sayak, Kedah has explored the commercial feasibility of scallop aquaculture in Malaysia and has jointly embarked on the first research project into scallop aquaculture using imported bay scallop (Agropecten irridans), a temperate scallop species from Shandong, China. The research project investigated the adaptability (temperature, salinity and local feed) of the temperate species in a new environmental setting under strict laboratory control for commercial production of this tasty bivalve. With this innovative research program, IUKL hopes to increase the promotion, production and downstream processing of scallop products through aquaculture activities in Malaysia.

A Memorandum of Understanding was signed on 24 November 2011 between the President of IUKL, Prof. Dr. Zulkifli Abdul Hamid and the Director General of Fisheries Malaysia, Y. H. Dato' Ahamad Sabki B. Mahmood for a joint research collaboration on bay scallop larviculture and grow-out production. This was followed by the renovation and upgrading of research facilities in FRI for the project work according to specifications laid down by the China counterparts. One research assistant and one general worker were also employed and stationed at FRI to oversee the research work conducted. After the renovations and the test run of the facilities were completed, feed for the scallops were prepared using the local phytoplankton species. Four phytoplankton species were cultivated, i.e. Isocrysis, Pavlova, Chaetoceros and Tetraselmis for this purpose. The scallop broodstocks with veterinary health certification were then imported to Malaysia from China where necessary approval was obtained from the Biosecurity Unit of the Department of Fisheries, Malaysia, Malaysian Quarantine & Inspection Services (MAQIS), and the Fisheries Development Authority of Malaysia (LKIM).

On 6 June 2012, the project team received two consignments of scallops comprising 53 live pieces of scallop broodstocks and 100 nets of spats (juvenile scallop). The scallops were immediately delivered to the FRI facility in Pulau Sayak where spawning was conducted the following day. The project team members discussed and agreed to gradually shorten the holding temperature by 1˚ C every day for the adult scallops and 1 ˚C in two days for the spats. As of today, all the adult scallops and spats adapted to 29 ˚C without the use of the water chiller system and air conditioning. Scallops acclimatisation, adaptation and larviculture were thus a great success.

Live scallop broodstocks received on the 6 June 2012

Ten fibre glass tanks in cold room with capacity of 300 L each

A month after the scallop arrival, the project team began to prepare the research facilities for spats grow-out experiments. Inland ponds were renovated to simulate open sea conditions in Pulau Sayak and in Ban Merbuk which is 30 km away from the FRI. Similar trials were also conducted in raceway and round tanks with a recirculation system at the institute centre.

FRI and IUKL experts reported the first successful larviculture of scallop species from China. The locally spawn larvae had better growth and survival parameters as compared to imported spats from China. The results of the larviculture data indicate the successful development of the first technology platform for scallop hatchery production in Malaysia.

However, despite having suitable and optimal water quality parameters, technical difficulties were encountered during scallop grow-out stage with high spats mortalities in the pond culture system due to poor water exchanges. Experiments conducted in the recirculation raceway system demonstrated better success with batches of spats reaching mature sizes. The scallops are currently still kept under biosecurity isolation by the Fisheries Research Institute for monitoring and further observation.

MOU signing ceremony in Putrajaya between KLIUC & FRI PS on 24 November 2011. From left: Dr. Zainoddin Jamari (Senior Research Officer, FRI PS), Y. H. Dato' Ahamad Sabki B. Mahmood (Director General of Fisheries Malaysia), Prof. Dr. Zulkifli (President KLIUC) & Prof. Dr. Roslan (Vice President KLIUC)

The Aquaculture Project Joint Committee Meeting in FRI PS

Steel Fibre (SteFib) Column

Date of Approval: 5 July 2013
Budget Approved: RM 300,000.00

Group Photo at Teraju Precast Construction Sdn. Bhd.

The research and development sector nowadays are trying to find innovative ways and new materials to be used in the construction industries in order to get a long-life of building performance without ignoring the safety factors. Presently, Steel Fibre (SteFib) Column will be used as partial replacement to replace the shear reinforcement in column. Since SteFib needs to add some concrete during its mixing process, it should help reduce time and cost of the construction. However, the normal concrete mix design with grade 30 will be used without any additive in the SteFib Column. SteFib will be used as a scattered reinforcement in the concrete column either to fully replace the shear reinforcement without using any steel bar or fully replace the shear reinforcement by using the steel bar in column.

In the first stage, a few set of column will be casted in Teraju Precast Construction Sdn. Bhd. as this company has been invited as a collaborator from the industry for this project. The main reason for this decision is to save time and to reduce cost of preparing the samples. In total, 80 samples will be prepared with a few different sets of column details as shown in Table 1, while Table 2 and Table 3 show the Gantt chart and milestone for the entire project. Further discussion among the group members will be carried out to decide on samples testing.

SIZE	TYPE		PROPOTION OF STEEL FIBRE (No of Sample)					REMARK
			Concrete Grade: 30				Concrete Grade: 50	
			0%	50% (+ Link)	100% (No. Link)	Steel Fibre as Reinforcement	Steel Fibre as Reinforcement	Testing Procedure
150 X 150 X 2000mm	SOLID		2	2	2	2	2	Compression
			2	2	2	2	2	Bending
150mm in Ø X 2000mm			2	2	2	2	2	Compression
			2	2	2	2	2	Bending
150 X 150 X 2000mm	HOLLOW		2	2	2	2	2	Compression
			2	2	2	2	2	Bending
150mm in Ø X 2000mm			2	2	2	2	2	Compression
			2	2	2	2	2	Bending

Table 1: Column Works Planning

Activities	2013												2014												2015											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Literature search and review																																				
Sample identification																																				
Design																																				
Material strength properties																																				
Construction of samples																																				
Samples testing																																				
Results analysis																																				
Structural analysis																																				
Report writing																																				
Pre-commercialise																																				
Submit report																																				

Table 2 : Gantt Chart for the Entire Project

Activities	2013												2014												2015											
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Completion of literature search and review																																				
Completion of samples identification																																				
Completion of samples design and ready for construction																																				
Completion of material strength properties test																																				
Completion of construction and ready for test																																				
Completion of samples testing																																				
Completion of results analysis																																				
Completion of structural analysis																																				
Completion of report writing																																				
Filling for pre-commercialise																																				
Completion of research report and ready to submit																																				

Table 3: Milestone

Column mould facilities

Column ready to be installed

Casting Bed

One of the projects under Teraju Precast Construction Sdn. Bhd.

SteFib won Silver Medal at IUIIC 2013

First meeting at Teraju Precast Construction Sdn. Bhd.

3rd IUKL Innovation and Invention Competition (IUIIC 2013)

The IUKL Innovation and Invention Competition 2013 (IUIIC 2013) was held on 11 September 2013. This event witnessed 74 teams consisting of IUKL staff and students and external participants from prominent universities, colleges, polytechnics, MRSMs, Science Secondary Schools, and National Secondary schools showcasing their products.

The event was officiated by Y. Bhg. Datuk Abu Bakar Bin Mohamad Diah, Deputy Minister of Science, Technology and Innovation, Ministry of Science, Technology and Innovation (MOSTI).

Y. Bhg. Datuk Abu Bakar Bin Mohamad Diah testing the product- Buckle Alert Motorcycle Helmet

Below is the summary of winners.

Gold Award

No.	Title of Invention	Institution
1	Q4U - Virtual Queuing System	Infrastructure University Kuala Lumpur
2	Muscle Strength, Speed, and Power Endurance Exercise & Assessment Protocol: Endurolift Protocol	Universiti Pendidikan Sultan Idris
3	Multipurpose Training	Universiti Pendidikan Sultan Idris
4	Jack Hang Door	Politeknik Merlimau
5	PINGO (Pinball + Bingo)	Universiti Pendidikan Sultan Idris
6	SPFOR-Kit (Sports Formation Kit)	Universiti Pendidikan Sultan Idris
7	i-Vine Cuka Bonggol Pisang Dari Induk Semulajadi	Kolej Vokasional Teluk Intan
8	i-NatYeast Yis Semulajadi Dari Buah-Buahan Kering	Kolej Vokasional Teluk Intan
9	Z-Filter	Sekolah Raja Perempuan Taayah Ipoh
10	Green Matbakh 2.0	Sekolah Raja Perempuan Taayah Ipoh

Silver Award

No.	Title of Invention	Institution
1	Design of Multi-Layered Microstrip Moisture Sensor For Rice Grain	Infrastructure University Kuala Lumpur
2	Bracelet Vibration	Politeknik Shah Alam
3	Wakaf Puzzle	Infrastructure University Kuala Lumpur
4	Flexible Signboard - Flexisign	Politeknik Merlimau
5	SYM (Show Your Mind)	Infrastructure University Kuala Lumpur
6	Portable Wheelbarrow	Politeknik Merlimau
7	Piling Tool Graph Set	Politeknik Merlimau
8	Multipurpose Portable Desk	Politeknik Merlimau
9	Alat Penapis Pasir F.A.R.I	Politeknik Port Dickson
10	StiFeb Square Column	Infrastructure University Kuala Lumpur
11	Cutting & Bending Link Handtools	Politeknik Merlimau
12	New Recycling Method of Compact Disc	Sek. Men. Sains Pokok Sena, Kedah
13	Mesin Pemotong Buah Tembikai Elektrik - E-Melon	MRSM Kubang Pasu
14	Little Kiddo Bottle	MRSM Tun Abdul Razak

Bronze Award

No.	Title of Invention	Institution
1	Checker Sport (Chec Sport)	Universiti Pendidikan Sultan Idris
2	Volleyball Coaching Kit (VC - Kit)	Universiti Pendidikan Sultan Idris
3	Biomimicry Emergency Shelter (Leaves)	Infrastructure University Kuala Lumpur
4	Water Filter LCD Monitoring System (WELL)	Politeknik Shah Alam
5	IUKL Multistorey Car Park - the 'ecomimicry' Modular System Design	Infrastructure University Kuala Lumpur
6	Biomimicry (Tree) Emergency Shelter	Infrastructure University Kuala Lumpur
7	Malacca Travel Guide Application	Politeknik Muadzam Shah
8	Smart Cleaner Fenestra (SCF)	Politeknik Merlimau
9	Magnetic Turbine Car	Infrastructure University Kuala Lumpur
10	Home or Car Air Purifier	Infrastructure University Kuala Lumpur
11	Portable Water Cooler	Politeknik Shah Alam
12	Academic Social Network	Infrastructure University Kuala Lumpur
13	Bricklayer Tool	Politeknik Port Dickson
14	Jigs Formwork For Pad Foundation	Politeknik Merlimau
15	Disc Brake Automatic Lock	Politeknik Shah Alam
16	Keropok Lakse	Politeknik Sultan Abdul Halim Muadzam Shah, Jitra Kedah
17	Automated Pet Cage	Infrastructure University Kuala Lumpur
18	Buckle Alert Motorcycle Helmet	Infrastructure University Kuala Lumpur
19	Nanodroids, Solution for Cardiovascular Disease	Infrastructure University Kuala Lumpur
20	Menghancurkan Kacang Tanah	MRSM Kubang Pasu
21	Pencegahan Kesan Buruk Akibat Banjir	MRSM Kubang Pasu
22	D3D Project (Drawing 3 Dimension Project)	MRSM Tun Abdul Razak
23	Ash Brick	MRSM Tun Abdul Razak
24	Pemotong Kacang Panjang	MRSM Kubang Pasu

Opening ceremony of IUIIC 2013

Winners of IUIIC 2013

Y. Bhg. Datuk Abu Bakar Bin Mohamad Diah listening to the participant's explanation of the product

Workshop on Designing Research Proposal for Grant Application

Research Workshops were held to provide a platform for researchers investigating various topics to present their work and receive feedback from selected panel members. The goal was to produce research proposals that can secure research grants from MOHE and other sources of funding. The first workshop, Designing Research Proposal for Grant Application, was conducted on 13 February 2012. The guest speaker was Prof. Sr. Ir. Suhaimi Abdul Talib, Assistant Vice Chancellor (Development, Facilities, Management and ICT), UiTM. Sixty-six staff members attended the workshop. Another Research Workshop was held at Avillion, Port Dickson from 29 to 30 November 2012. Thirty-seven lecturers participated in the workshop. Five panel members from UPM and one from UKM were the facilitators at the workshop. Research proposals for applications to the Research Acculturation Collaborative Effort (RACE), Fundamental Research Grant Scheme (FRGS), Exploratory Research Grant Scheme (ERGS) and Prototype Research Grant Scheme (PRGS) were refined and made ready for submission.

Prof. Sr. Ir. Suhaimi Abdul Talib giving a talk to the participants on Designing Research Proposal for Grant Application Workshop, at IUKL

Participants and panel members deep in discussion at the Research Workshop, Avillion, Port Dickson

The 3rd IUKL Research Workshop was held at Mahkota Hotel, Malacca, 5 – 6 December 2013. A total of twenty-seven lecturers joined the workshop in preparing sixteen research proposals. RMC invited four panel members from different fields from UPM through the assistance of RMC UPM. The summary of research workshop is as follows.

List of Panel Members Invited:

Prof. Dr. Abdul Azim Abd Ghani	Panel (ICT)
Assoc. Prof. Dr. Ismi Arif Ismail	Panel (SS)
Prof. Dr. Hasanah Mohd. Ghazali	Panel (Biotechnology)
Prof. Dr. Robiah Yunus	Panel (Engineering)

Summary of Research Proposals and Participants:

Faculty/Unit	No. of Research Proposal	No. of Participants
CPS	1	1
FASF	2	4
FCMIT	2	3
FBA	3	6
FACE	6	9
FABE	2	4
TOTAL	**16**	**27**

Participants concentrating on the presentation by panel members

Opening remark by
Assoc. Prof. Dr. Siti Maziha Mustapha, Director RMC

Scenes at IUKL Research Retreat 2013

IUKL Public Lecture Series
" Innovation Makes You Fly Higher"

With a lot of positive energy and enthusiasm, on Wednesday, 12 December 2013, IUKL Public Lecture Series was successfully delivered by Y. Bhg. Datuk Dr. Hong Lee Ping, PJN, a member of Board of Governors, Infrastructure University Kuala Lumpur (IUKL). The public lecture entitled "Innovation Makes You Fly Higher" began with a brief introduction of the importance of innovation for the economic development and advancement of a state and nation. He gave some examples of utilizing innovation for the rapid development and great success of an enterprise, the etymology of innovation, misused terms for innovation, definition of innovation, innovation process, innovator's characteristics, innovation culture and environment. The importance for nurturing children's interest on innovation while they are young was also discussed.

During the session, attended by external guests from Institut Penyelidikan Pembangunan Belia Malaysia (IPPBM), ASTIN College, internal staff and students, Y. Bhg. Datuk shared the encouragements he had received for some of his creative works and innovative views that he put forward during his childhood and younger days which had influenced him to develop and become an innovative person. This part of the lecture really appealed to the audience, and it was evident as they actively participated in the question and answer session to get further explanation on the topic that they were interested in. Y. Bhg. Datuk answered them cheerfully as a reflection of his satisfaction after sharing his valuable experience with the audience who were mostly young university students.

Y. Bhg. Datuk. Dr. Hong Lee Ping, PJN receiving the souvenir from Prof. Dr. Roslan Zainal Abidin

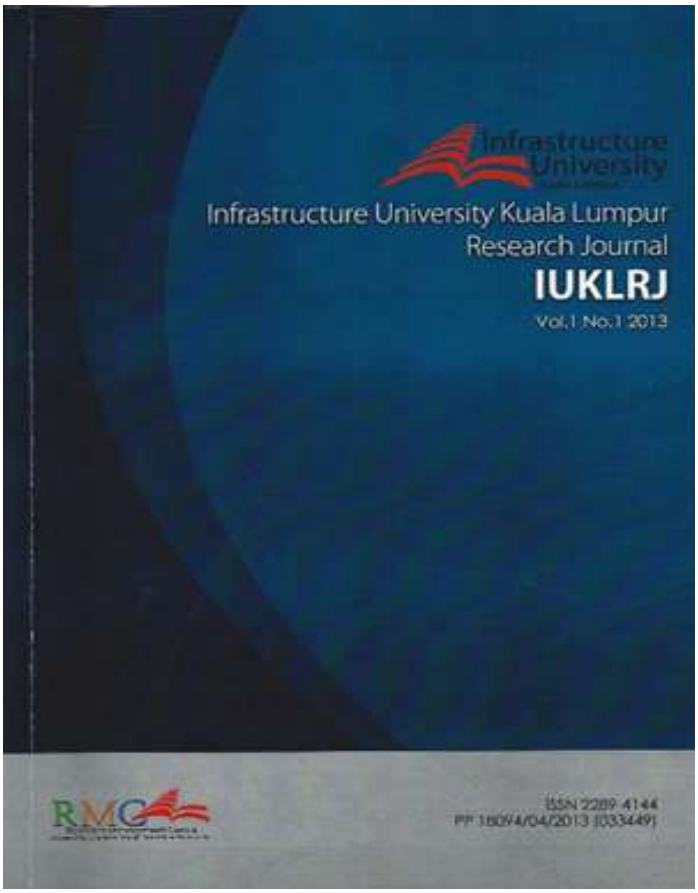
Participants of the Public Lecture Series

Y. Bhg. Datuk Dr. Hong Lee Ping, PJN, a member of Board of Governors, Infrastructure University Kuala Lumpur (IUKL) giving a talk to the participants

IUKL Research Journal (IUKLRJ) Vol.1 No.1 2013

The Research Management Centre has taken the initiative to produce a research journal in order to provide a platform for researchers to publish their research findings, keep our readers abreast of the current researches, and support researches that would serve the community and the nation.

The Infrastructure University Kuala Lumpur Research Journal (IUKLRJ) is published yearly. It is a peer-reviewed scholarly journal and is distributed nationwide. IUKLRJ serves as a convenient way to stay up to date about the most interesting and recent findings and analysis of the work of researchers associated with the university. Each journal issue presents variety of topics by putting forward specific research findings from different fields.



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International Trade Fair "IDEAS – INVENTIONS – NOVELTIES" - iENA

In November 2012, RMC was given approval to bring the product that won the gold medal for the Environmental and Renewable Energy category at ITEX 2012 to the iENA – International Trade Fair "IDEAS – INVENTIONS – NOVELTIES" at Nuremberg, Germany, 1 to 4 November 2012. "Go Green Alum Sludge Pot" was chosen to compete at iENA. The invention not only solves the disposal problem of alum sludge into the environment, but also produces a useful product from alum sludge that is more economical and environmentally friendly. It was indeed a big challenge to enter the competition at iENA 2012 because nearly 800 inventions from 30 countries from all over the world were presented at iENA. IUKL won a Gold medal for "Go Green Alum Sludge Pot". Winning a GOLD medal in iENA 2012 was indeed a significant step for facilitating the growth of research and innovation at IUKL.

Choong Choe Earn receiving the Gold medal from the iENA organizer

Choong Choe Earn and Assoc. Prof. Dr. Siti Maziha Mustapha, Director of IUKL Research Management Centre, sharing the proud moment on the red carpet at iENA-International Trade Fair, Nuremberg, Germany (1-4 November 2012).

Patenting Journey Begins

A Gold Award winner at iENA - the "Go Green Alum Sludge Pot" is now at the initial stage of patenting journey. On 13 June 2013, PINTAS IP Group was officially appointed as IUKL consultant for this purpose. As a complementary to this appointment, PINTAS IP Group has conducted Research & Commercialisation Seminar: From Research & Development (R&D) to Patenting on 10 July 2013. As of 22 November 2013, PINTAS IP Group is in the stage of drafting a patent specification.

Malaysia IHL Business Plan Competition 2012 (MIBPC 2012)

The first competition which the university took part in was the Malaysia IHL Business Plan Competition (MIBPC 2012) organized by Multimedia Development Corporation (MDeC). Six groups participated in the competition after they attended the MIBPC Regional Workshop with the purpose of learning about the important elements of a business plan, and how to prepare an effective MIBPC business plan write-up. One of the business ideas was shortlisted and it won one of the top three prizes.

23rd International Invention, Innovation and Technology Exhibition (ITEX'12)

For the first time, the University participated in the 23rd International Invention, Innovation and Technology Exhibition (ITEX'12). The two winning teams from the University's Innovation and Invention Competition in 2011 were given the opportunity to compete and showcase their products. The inventions "Reclamation Reuse of Alum Sludge" won a Gold medal and "College InterComm" won a Silver medal. This was a proud moment because it was the university's first attempt at competing in such a grand event and was successful in being at par with other champions.

Winners, Muhammad Azree (left) and Choong Choe Earn (right) with their medals at their exhibition booth at ITEX 2012

Participants together with RMC members at the booth

Malaysia IHL Business Plan Competition 2012/2013 (MIBPC 2012/13) Regional Workshop

IUKL with the help of MDEC (Multimedia Development Corporation) has successfully conducted 2 and 1/2 days workshop from 18 to 20 January 2013 to brainstorm for new ideas to prepare our students for the MIBPC 2012/13 (MSC Malaysia-IHL Business Plan Competition 2012/13). This workshop managed to discover two groups of students for Business Plan (BP) category and 3 groups for Business Idea (BI) category.

Participants presenting their business plans at the MIBPC 2012/13 Regional Workshop

myPrinters Won Silver Award in Research Invention, Innovation and Design 2012 (RIID 2012)

'myPrinters' won a silver medal at Research Invention, Innovation and Design 2012 (RIID 2012), organized by UTEM, Melaka from 7 to 8 November 2012. This invention was developed by Muhamad Azree Abd Rahim, Diploma in Information Technology student, Suhaila Sardi, Head of Innovation and Commercialisation, RMC, and Hasnani Hassan (team advisors). It was another leap towards promoting myPrinters as the first Cloud Printing Service Solutions in Malaysia.

It was also selected as one of the Top 5 Ideas for Digital Malaysia – Corporate Accelerator Program, organized by Telekom Malaysia, MDeC and StartUpMalaysia.org.

Muhammad Azree holding the Silver medal won

'myPrinters' at Research Invention, Innovation and Design 2012 (RIID 2012)

Muhamad Azree explaining the product to the judges

Muhamad Azree receiving the Silver medal from the organizer

Participation in Ikon Varsiti by Berita Harian-myPrinters

Berita Harian with the collaboration with the Ministry of Higher Education Malaysia organized an event and competition for Higher Learning Institution students in search for the 'Ikon Varsiti' (University Icon). The participation was open for all students from any Higher Learning Institution with great achievement in their studies (minimum CGPA must be 3.5 and above) and active in most activities in the institution. Muhamad Azree, Diploma in Information Technology entered his product "myPrinters" in this competition. After the first selection process, myPrinters has been selected as the top 3 participants in the category of 'Kejuruteraan Teknologi' (Technological Engineering) competing with two post-graduate students from Universiti Teknologi Malaysia in this category. This selection was done by the board of juries from Malaysian Professors Board (MPN). Winners were selected based on online voting and paper cut voting. Even though this product was not selected as the winner, IUKL is proud that this project made it to the final round.

Muhamad Azree shaking hands with Menteri Pengajian Tinggi, Y. B. Dato' Seri Mohamed Khaled Nordin

Team members with Vice Chancellor of IUKL, Prof. Dr. Roslan Zainal Abidin

Team members with their product

Team members with replica of the newspaper

IUKL Innovation and Invention Competition 2012 (IUIIC 2012)

The IUKL Innovation and Invention Competition 2012 (IUIIC 2012) was held on 26 September 2012. A total of 42 teams competed, comprising teams from IUKL and external participants from prominent and established universities. The gold medal winners were – myPrinters, a product from School of Information Technology Infrastructure and i-Garden from School of Engineering and Technology Infrastructure.

Below is the summary of winners.

Gold Award		
No.	**Title of Invention**	**Institution**
1	MyPrinters	Infrastructure University Kuala Lumpur
2	i-Garden	Infrastructure University Kuala Lumpur
3	Laser Lining Device	Universiti Teknologi Petronas

Silver Award		
No.	**Title of Invention**	**Institution**
1	IUKL Racing Kart	Infrastructure University Kuala Lumpur
2	Automatic Roof Cooler	Infrastructure University Kuala Lumpur
3	A new Approach of Thin Solid Film Hard Coating Titanum Chromium Nitride for Improving the Surface Integrities of Aerospace AL-7075-T6 Alloy.	Universiti Malaya

Bronze Award		
No.	**Title of Invention**	**Institution**
1	Portable Information Kiosk Design	Infrastructure University Kuala Lumpur
2	The Tablet - Staircase to Heaven	Infrastructure University Kuala Lumpur
3	Ambulance Call Service	Infrastructure University Kuala Lumpur
4	Solar Bag	Infrastructure University Kuala Lumpur
5	Laptop with Built-in Charger	Infrastructure University Kuala Lumpur
6	Tyro	Infrastructure University Kuala Lumpur
7	Auto Lubricating System (Alusy)	Universiti Teknologi Petronas
8	Emergency Water Purification	Universiti Teknologi Petronas

Scenes at IUKL Innovation and Invention Competition 2012 (IUIIC 2012)

One of the participants explaining about her product to IUKL Vice Chancellor Prof. Dr. Zulkifli Abd. Hamid and the Director of RMC, Assoc. Prof. Dr. Siti Maziha Mustapha

Happy moments of the winners with IUKL Vice Chancellor Prof. Dr. Zulkifli Abd. Hamid and the Director of RMC, Assoc. Prof. Dr. Siti Maziha Mustapha

Exhibition area at IUKL Multipurpose Hall


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