

# *Optimizing Innovation for Global Commercialization*



# ***Optimizing Innovation for Global Commercialization***



Copyright © 2013  
Division of Research,  
Industrial Linkages & Alumni (PJI&A)  
Universiti Teknologi MARA Melaka

Email: [riid2013@melaka.uitm.edu.my](mailto:riid2013@melaka.uitm.edu.my)  
Web: [www.riidmelaka2013.com](http://www.riidmelaka2013.com)

## **Optimizing Innovation for Global Commercialization**

Research, Invention, Innovation Design

### **Published by**

Division of Research, Industrial Linkages & Alumni (PJI&A)  
Universiti Teknologi MARA Melaka

Tel 606 - 5582313  
Email riid2013@melaka.uitm.edu.my  
Website www.riidmelaka2013.com

### **Chairman**

Assoc. Prof. Dr Roaimah Hj Omar

### **Chief Editor**

Shafezah Abdul Wahab

### **Writers**

Siti Najah Raihan Sakrani  
Shahril Anuar Abd Ghalim

### **Abstracts**

Sulaiman Mahzan  
Mohd Ab Malek Md Shah  
Nur Syuhada Mohamad  
Mohd Fajil Abdul Batau  
Khalilah Ibrahim

### **Design**

Anith Liyana Amin Nudin  
Norsharina Samsuri

### **Copyright 2013**

Division of Research, Industrial Linkages & Alumni (PJI&A)  
Universiti Teknologi MARA Melaka, Km 26 Jalan Lendu,  
78000 Alor Gajah, Melaka

All Rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without permission of the copyright holder.

ISBN 978-967-0637-02-0



<b>BACKGROUND</b>	<b>4</b>
of Research, Industrial Linkages & Alumni	
<b>RIID 2013</b>	<b>5</b>
objectives	
<b>CHRONOLOGY</b>	<b>5</b>
of RIID	
<b>FOREWORD</b>	<b>6</b>
message by Chief Minister Melaka	
<b>FOREWORD</b>	<b>7</b>
by Rector of UiTM Melaka	
<b>FOREWORD</b>	<b>8</b>
by Director of AKEPT	
<b>PROGRAMME</b>	<b>9</b>
Tentative	
<b>RIID COMMITTEE</b>	<b>10</b>
member	

<b>ABSTRACTS</b>	
Invention: Staff Category	<b>12</b>
Invention: Student Category	<b>38</b>
Innovation: Staff Category	<b>50</b>
Innovation: Student Category	<b>133</b>
Design: Staff Category	<b>174</b>
Design: Student Category	<b>184</b>

<b>LIST OF</b>	<b>193</b>
acknowledgement	

<b>SPONSORS</b>	<b>194</b>
-----------------	------------



to  
n  
to  
n  
n  
n  
n

# background of RESEARCH, INDUSTRIAL LINKAGES & ALUMNI

## Objectives

- To promote world-class research.
- To administer, coordinate and provide service for research development, consultation and research publication.
- To provide assistance in exploring new subjects and identify niche area of interest.
- To disseminate information and provide ample training in research, consultation and publication of research.
- To ensure innovation, quality research, consultation and publication are maintained.
- To assist in research publication for high impact journals.

## Vision

To become the leading administrative centre for research, development, consultation and world-class research publication.

## Mision

To enrich the academia, creative ability and innovation through quality service.

Division of Research, Industrial Linkages and Alumni or known as PJI&A started as the Research Management Unit (RMU) or IRDC and was formerly known as Planning, Research and Development Centre which was established in April 1980. However in September 1987, IRDC was restructured with its heightened importance in research and consultation in UiTM and was divided into two units, Research and Consultancy Centre (RACC) and Planning and Evaluation Unit. This centre was then renamed to Research and Consultancy Bureau in 1994 and went through another name change to become Institute of Research, Development and Commercialisation (IRDC) on 15 July 2003.

With the mooted of the post of Deputy Vice Chancellor in March 2008 to take over the intellectual property and commercialisation portfolio, IRDC was given the responsibility to maximise innovation and increase the number of research which will later be published in high impact journals. Ensuing this, on 31 July 2008 IRDC was changed to Research Management Institute (RMI) to synchronise with UiTM's aspiration to become a Research University that will develop innovation activities and new research. It was only in 2011, that RMI became the Research, Industrial Linkages and Alumni Division (PJI&A), headed by its Deputy Rector, Associate Professor Dr. Roaimah Omar. Under her tutelage, Invention, Innovation and Design (IID) was born in 2009.

The different divisions or units in PJI&A are responsible to manage, monitor and conduct research in science and technology, management and social sciences, consultation, financial assistance for consultation, innovation, publication and Information for Research and Consultancy (INFORAC). PJI&A also conducts seminars, workshops and roadshows to encourage, motivate and train the academic and non-academic staffs in research and consultation, securing research grants and projects, to manage good financing and publish research in a responsible and ethical manner.

# RIID2013 OBJECTIVES

## General Objective

To display research, invention, and design from various institutions (IPTA/IPTS) that can be commercialised for global benefit

To culturalise research and innovation through the sharing of expertise and commercialised, creative and innovative ideas

To instill interest and encouragement to the public towards research, invention and innovation that poses as a medium for the nation's development.

## Specific Objective

To identify and promote new and inventive discoveries that are commercialised, creative, and innovative from various institutions (IPTA/IPTS) all over Malaysia.

To select discoveries and new invention to be contested in the national and international level.

To uphold the reputation and image of UiTM as a well-known pioneer in innovation and invention in the national and international level.

# CHRONOLOGY OF RIID

## RIID Showcase

7 August 2009,  
Dewan Kuliah 2,  
UiTM Melaka.



## 1<sup>st</sup> IID LET'S IID

13 August 2009,  
Dewan Bendahara,  
UiTM Melaka.



## 2<sup>nd</sup> IID Enculturation Of Research & Innovation

5 October 2010,  
Dewan Bendahara,  
UiTM Melaka.



## RIID 2013 Optimizing Innovation For Global Commercialization

16 - 17 December 2013,  
Dewan Taming Sari,  
UiTM Melaka.



## RIID 2012 Innovation for Sustainable Growth

7 - 8 November 2012,  
Dewan Taming Sari,  
UiTM Melaka.



## DERIA 2011 Sound, Image & Object

21 - 22 July 2011,  
Mini Stadium Bistari,  
Ayer Keroh, Melaka.

foreword message by

## CHIEF MINISTER MELAKA



**YAB Datuk Seri Ir. Haji Idris Haron**

*Chief Minister Melaka  
December 2013*

***Assalamualaikum wbk and  
best greetings Salam 1Malaysia,***

And foremost, I would like to congratulate Research, Industrial  
Parks and Alumni Centre (PIAC), Universiti Teknologi MARA  
(UiTM) Melaka for yet another successful organisation of this  
rich, Invention, Innovation and Design Exhibition 2013 (RIID

In an era of globalisation, the Malaysian government is stepping  
up its efforts in developing the country and its people, be  
ing by launching a holistic socioeconomic development programme.  
Our Prime Minister Datuk Seri Mohd Najib Tun Abdul Razak  
has introduced a massive transformation agenda in implementing the  
programme with its approach and philosophy. The Prime Minister has  
also outlined five-key strategic thrusts under the 10th Malaysia  
Plan (10MP) to enable Malaysia to become a high-income and  
developed nation by 2020.

Therefore, the National Key Results Area (NKRA) and the Key  
Performance Index (KPI) were introduced towards achieving vision  
2020. While moving towards achieving a developed country status,  
Malaysia needs to draw up a new approach which emphasises on  
quality human capital, innovation and creativity. The government in  
addition has to operate as competitive corporation.

I would like to congratulate UiTM Melaka for supporting the  
country's vision by hosting RIID2013 competition and exhibition.  
With its theme Innovation for Sustainable Growth, this event is a  
positive initiative to encourage professionals and academicians  
alike to enhance their knowledge and practical skills and these are  
parts of their contribution for the nation's building.

When research activities are conducted continuously, it is expected  
that more innovations will be generated. UiTM Melaka's initiative  
is highly commendable as it manages to attract 340 products to  
be displayed and competed at this event. It is hoped that this event  
will serve as a catalyst in enhancing the roles of professionals in  
various industries.

***Assalamualaikum wbkt, Salam 1Malaysia  
and Salam UiTM Sentiasa Di Hatiku.,***

I would like to welcome our honourable guests, professionals, and academicians from schools, colleges and universities to the 5th Research, Invention, Innovation and Design 2013 (RIID 2013) competition proudly organised by the Research, Industry Linkage and Alumni Division (PJI A) Centre Universiti Teknologi MARA (UiTM) Melaka.

In line with the government's aspiration to nurture and cultivate innovation, UiTM Melaka has taken the initiative to organise RIID 2013 Melaka Innovation Festival. One of the main objectives of the event is to raise the status of local universities globally. To achieve the status of a Research University (RU), one of the criteria is to emphasise on high impact innovation research which leads to invention of new business models, or innovative processes. This would result in an improved efficiency of the organisation and contributes towards better quality of life.

Since innovation is a vital catalyst to attain the status of developed nation in the year 2020, UiTM Melaka is heading the nation's call to attain aspiration through innovative programmes with staff and students. These creative and innovative abilities could be brought to greater heights through competitions and innovation exhibitions held annually. During this two-day event, a talk on innovation will also be held. Innovation is one of the key factors that could push the economy forward. In line with the strategic thrusts, the RIID 2013 competition will serve as a platform for researchers to expand their researches into innovations while becoming a venue for them to showcase their products, prototypes and new ideas.

This competition also serves as a platform for students, lecturer's administrative officers and the public to demonstrate their products or prototypes as well as sharing new ideas for commercial value. Therefore, PJI A decided the Optimizing Innovation for Global Commercialization as our theme for this year 5th Research, Invention, Innovation and Design 2013.

I am proud to announce that the number of participants in this event has increased to more than 300 participants compared to the previous year event. I would like to extend my sincere thanks and gratitude to the committee members who have persistently given their full commitment to this event.

I wish all the participants all the best in the competition.

foreword by  
**RECTOR**



**Associate Professor Dr. Adnan bin Hashim**

*Rector  
Universiti Teknologi MARA Melaka  
December 2013*



## **FUTURISTIC AND SOPHISTICATED GARMENT FOR DISABLE PEOPLE FUTURISTIC AND SOPHISTICATED GARMENT FOR DISABLE PEOPLE “TITANIUM SPIRIT”**

Mr Koe Wei Loon; Fatin Nabilah Binti Abdullah

*Universiti Teknologi MARA Kampus Bandaraya Melaka*

The adaptive or multifunction garment in the category of smart casual wear for disable people and normal people which design to helps disable reduce the difficulties and time consuming to wear clothes besides less option on fashionable garment suit to their size. The advantage is, it is can be wear by disable and normal people which people don't know where is the special openings to counter their problems. In addition, it can be used suit to their disabilities or cover piece when they use wheelchair, sleep, or while they want to change the cloth. The fabric used will be comfortable and odourless such synthetic cotton, PD Interlock Jersey, PD Drill Korea Mix and PD Suiting. This multifunction and adaptive garment have secret opening at certain place which helps the user enjoy, easywearing, comfort, less time consuming and be an independent person. Our aim is to provide solutions and reduce problems facing by disable people. We will produce product suit to their problem, starts from fabric selection that have special opening by using buttons, velcro, zipper, string or special folds where it is particularly benefits well the janitor. We have high commitment to support this community by our product while makes them feel motivated on their lacknesses like resistant, confident, courage, eager and many more besides offering attractive fashion.

## **BuQu version 2.com**

Renee Rabiam Deng; Maizatul saadiah mohamad; Farhi Razali; Intan Suriani bt ahmad ismail; isna Razilah Bt Mohd Ishak ; Nurul hayati Basiron@abdullah; Nurul athirah bt Anuar; Nur zakiah bt Abdul razak;

*Universiti Teknologi MARA Kampus Bandaraya*

Students always face difficulties in finding textbooks, manual, workbook, notes or past semester collection from the senior. Most prefer to buy second handbooks compared to a new one because buying textbooks from the senior is much cheaper which are sold normally for half price. However not all senior and junior know each other and this create a limitation of contact between both parties. BuQu version 2. Com is actually a second version for BuQu.com. We upgrade the web and distribute questionnaire to get some feedback from the users. This also a platform for students to advertise and act as a search engine for the buyer to view any available textbooks and other academic material collection from the senior. Students can advertise their books easily, as using this website it helps to reach more people who are interested.