Optimizing Innovation for Global Commercialization

Optimizing Innovation for Global Commercialization

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

Email: riid2013@melaka.uitm.edu.my
Web: 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

ISBN 978-967-0637-02-0

UNIVERSITI TEKNOLOGI MARA | RIBU RESEARCH INNOVATION BUSINESS UNIT

contents

background of

RESEARCH, INDUSTRIAL LINKAGES & ALUMNI

Objectives

- To promote word-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 mooting 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.

1st IID LET'S IID
13 August 2009,
Dewan Bendahara,
UiTM Melaka.

2nd IID Enculturation Of Research & Innovation
5 October 2010,
Dewan Bendahara,
UiTM Melaka.

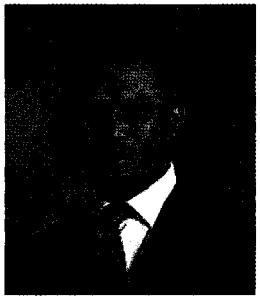
DERIA 2011 Sound, Image & Object
21 - 22 July 2011,
Mini Stadium Bistari,
Ayer Keroh, Melaka.

RIID 2012 Innovation for Sustainable Growth
7 - 8 November 2012,
Dewan Taming Sari,
UiTM Melaka.

RIID 2013 Optimizing Innovation For Global Commercialization
16 - 17 December 2013,
Dewan Taming Sari,
UiTM Melaka.

foreword message by

CHIEF MINISTER **MELAKA**



YAB Datuk Seri Ir. Haji Idris Haron

Chief Minister Melaka
December 2013

ɪmualaikum wbk and
est greetings Salam 1Malaysia,

nd foremost, I would like to congratulate Research, Industrial ;es and Alumni Centre (PJIA), Universiti Teknologi MARA l) Melaka for yet another successful organisation of this rch, Invention, Innovation and Design Exhibition 2013 (RIID

era of globalisation, the Malaysian government is stepping efforts in developing the country and its people, be ucing a holistic socioeconomic development programme. ɔur Prime Minister Datuk Seri Mohd Najib Tun Abdul Razak uced a massive transformation agenda in implementing the ɪmme its approach and philosophy. The Prime Minister has utlined 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 It 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.

foreword by RECTOR

Associate Professor Dr. Adnan bin Hashim

Rector
Universiti Teknologi MARA Melaka
December 2013

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, PJIA 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
DIRECTOR OF **AKEPT**

Prof. Dr. Mohd Majid Konting

Director
Higher Education on Leadership Academy (AKEPT)
December 2013

Assalamualaikum wbkt and Salam 1Malaysia

First of all, I would like to congratulate the Research, Industry Linkage and Alumni Division (PJIA) Centre Universiti Teknologi MARA (UiTM) Melaka for yet another successful organisation of the Research, Invention, Innovation and Design Exhibition 2013 (RIID 2013).

This competition and exhibition is the fifth effort by the Research, Industrial Linkages and Alumni Centre in exhibiting the outcomes of research, invention and innovation by our versatile lecturers and students. It's encouraging to see that the competition has also attracted participation from other IPTAs, IPTS and schools. I believe this exhibition is definitely a good avenue for them to participate actively and progress collaboratively in the field of innovation and research. I am confident that the PJIA UiTM Melaka will continue to address the various challenges that we are constantly facing with a view towards multidisciplinary solutions. This year's theme of Innovation for Sustainable Growth is appropriate timely and I am certain that this exhibition will bring about more collaborative research and publication.

I therefore would like to take this opportunity to extend a big 'Thank You' to the RIID 2013 organising committees and those who have contributed directly or indirectly in making this exhibition a big success. I wish all researchers, lecturers and students a meaningful and enriching experience in coming up with new and innovative inventions. I wish to end with a note of thanks to the Research, Industrial Linkages and Alumni Centre for a job well done.

THE TOP 5 ENTREPRENEURS

Rafidah Binti Abd Karim; Farahidatul Akmar Binti Awaludin; Nurul Huda Binti Saad; Fazlin Binti Awaludin

Universiti Teknologi MARA Perak; Universiti Teknologi MARA Melaka; A n Reka Co.

Recently, our country has encouraged more people to be involved in Small Medium Enterprises (SMEs) and become an entrepreneur. Thus, our group has designed a product which can help people to envision their mind, encourage and educate people to become an entrepreneur in future. The special feature about this product is a fun and educational role-playing game (RPG) that can play in a small group. Besides that, it is suitable for students to enhance the entrepreneurship education and also for language learning. Moreover, this product also would instill entrepreneur skills and entity values for entrepreneurships. This product provides people and also students' experience through playing this simulation game of real-world business. The innovative product is expected to have a good commercial value for young learners, educators, potential entrepreneurs and also for the government and private sectors.

Potential of Latex in Closed Loop Impedance Blood Pump

Mohamad Mazwan Bin Mahat ; Dr Juri Saedon; Izdihar Tharazi; Farrahshaida Mohd Salleh

Faculty of Mechanical Engineering, Universiti Teknologi MARA Shah Alam

The final product successfully invented is latex based tube that used to be installed in a novel valveless pump fabricated in- house using laboratory equipments at the Universiti Teknologi MARA(UITM). It is aimed to pump blood in one direction to mimics the main function of the heart which equipped with a one-way valve to ensure flow in one direction. In order to explore the potential of latex as driving energy force in valveless impedance pump to provide pulsation flow, three experimental study carried out which consists of major steps namely design process, test rig setup and data acquisition. Experimental results indicated that latex induced flow tend to propagate wave lead to a continuous flow and it showed that there was a wide range of circumstances in which the pumping occurs, including changes in the position of the actuator, size and pinching frequency. From the experimental results obtained, the behaviours of latex material in the valveless pump can be explained in terms of the complex interaction between the propagating/reflecting waves and the volume suction due to the motion of the elastic tube. The final product outcome from this experiment can be used as a model for a new concept in circulatory support system for cardiac patients.