innovation for sustainable growth

2012

RESEARCH
INVENTION
INNOVATION &
DESIGN

7- 8 NOVEMBER 2012

DEWAN TAMING SARI
UNIVERSITI TEKNOLOGI MARA
KAMPUS ALOR GAJAH
MELAKA

RIID 2012 RESEARCH INVENTION & INNOVATION DESIGN

Innovation For Sustainable Growth

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Abstracts
- Invention Category
- Innovation Category
- Design Category

Exhibition Concept
Sponsorship
Supported Institution
Acknowledgement

WELCOME MESSAGE

Assalamualaikum wbkt and Salam One Malaysia

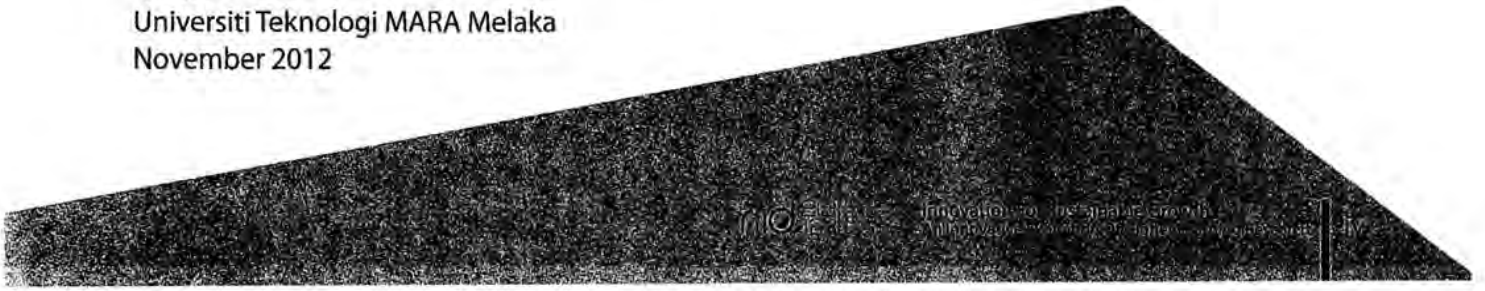
First of all, I would like to congratulate the Research, Industrial Linkages and Alumni Melaka for yet another successful organization of the Research, Invention, Innovation and Design (RIID) exhibition 2012.

This competition and exhibition is the fourth effort by the Research, Industrial Linkages and Alumni in exhibiting the outcomes of research, invention and innovation by our own versatile lecturers and students and also participation from other IPTAs, IPTS and Schools. I believe that 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 Research, Industrial Linkages and Alumni in the Melaka campus will continue to address the various challenges that we are constantly facing with a view towards multidisciplinary solutions. Hence, the present exhibition with the theme 'Innovation for Sustainable Growth' is appropriate, 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 organizing committee of Research, Invention, Innovation and Design (RIID) 2012 and each and everyone who has made this exhibition a reality. 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 for a job well done.

Yours sincerely,
Y.Bhg.Prof Madya Dr Mohd Adnan Hashim
Rector
Universiti Teknologi MARA Melaka
November 2012



BACKGROUND OF PENYELIDIKAN, JARINGAN INDUSTRI & ALUMNI (PJI&A)

PJI&A established in April 1980, started as the Research Management Unit (RMU) or IRDC and was formerly known as the Planning, Research and Development Centre. 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 Research and Consultancy Bureau in 1994 and on 15 July 2003 it became Institute of Research, Development and Commercialisation (IRDC).

With the mooting of the 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 became the Research Management Institute (RMI) to synchronise with UiTM's aspiration to become a Research University that will develop innovation activities and new research. In branch campuses RMI is known as RMU. The department of PJI was officially established in 2009 headed by its Deputy Director, Associate Professor Dr. Roaimah Omar. Under her guidance, Invention, Innovation and Design (IID) started with the RIID showcase in August 2009 and this was followed by the first IID exhibition and competition in October 2009.

PJI&A is mainly responsible to manage, monitor and facilitate researchers in conducting their research in the area of science and technology, management and social sciences. It also provides consultation services to researchers and assisting them in their research claims. PJI&A also conducts seminars and workshops to encourage, motivate and train the academic and non-academic staff in research and consultation, securing research grants and projects, to manage good financing and also manages entrepreneurial and alumni activities.

Objectives

- To promote word-class research.
- To administer, coordinate and provide service for research development, consultation and research publications.
- 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 disseminate information and provide ample training in research, consultation and publication of research.
- To provide related service through the latest technology.
- To assist in research publications for high impact journals.

Vision

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

Mission

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

INTRODUCTION TO RIID 2012

Innovation activities can be considered as an important mechanism for the nation's progress. RIID2012 Melaka anchors on the objective to produce individuals who are capable of formulating creative ideas and be highly competitive. UiTM is an institution which primarily puts emphasis on an innovative culture among its staff and students to form a critical thinking society, possessing creativity skills and elevated knowledge. Aligned with the government's aspiration to cultivate innovation, UiTM Melaka has taken the initiative to organise RIID2012 Melaka Innovation Festival.

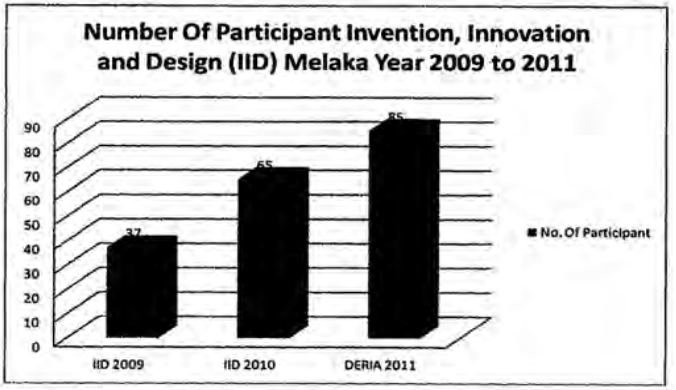
To raise the status of local universities globally or among the KPI which has been determined by the Ministry of Higher Education (MoHE) and to achieve the status of Research University, the total number of innovation being produced by a university is of utmost importance. Innovation is a vital catalyst to attain the status of a developed nation in the year 2020. Parallel to this, UiTM Melaka is carrying the nation's aspiration through innovation programmes wherein the staff and students' creativity and innovative abilities could be brought to greater heights through competitions and innovation exhibitions held every year.

To consistently produce innovation, IID competitions can act as one of the ideal channels or medium to ensure students, lecturers, administrative officers and the public to exhibit or display their products or prototype as well as new ideas that contain commercial values. The first IID held at UiTM Melaka level took place in 2009. It successfully exhibited more than 37 products. To continue the innovation culture within the campus community, IID competitions should be maintained.

The number of participation showed an encouraging response with 45 products being exhibited in the following year. The third IID known as DERIA 2011 was given a new facelift with an estimation of nearly 100 products that competed. Therefore, the Research, Industrial Linkages and Alumni Division (PJI&A) suggested organising the 4th IID in 2012. The IID competition this year is known as RIID2012 with the theme 'Innovation for Sustainable Growth'. The theme is chosen as innovation is believed to be the main impetus for growth that would spearhead the nation towards becoming a high income developed nation.

Therefore, the Research, Industrial Linkages and Alumni Division (PJI&A) has suggested to organise the 4th IID in 2012. The IID competition this year is known as RiiD2012 with the theme ***'Innovation for sustainable growth'***.

R= research, I = invention, I= innovation, D= design = RIID



1st IID: LET'S IID 2009

Gold Medal

1. Asmaradana (Video clip) by FSKM
2. Pinggan Rasmi Istana Melaka by FSSR
3. Rekabentuk Maskot dan Logo SUKMA 2010 Melaka by FSSR
4. eXtention-C by FPN
5. CD Interactive Cartoons on Sexual Education for Young Children by FSSR
6. Grammar Mania – A Game For The Language Classroom by FPEND
7. Dara Pujaan (Short Film) by FKPM
8. Kalkulator Zakat Mudah Alih @zakatfon by IKAZ
9. Smart Easel by FSSR
10. Dhobi Wallah – The Last Laundrette Mohican (Documentary) by FKPM
11. e-Inventori ICT System by FSKM

Silver Medal

1. Teguh 11 by FSSR
2. Songket Rasmi Negeri Melaka by FSSR
3. Workout with English by FSKM
4. Smart Drawing Board by FSSR
5. i-Masjid by IKAZ
6. Photo Gallery 2009, The Good, The Bad and The Ugly:Journey of Emotions (Sweats of Heart;s Desire) by FKPM
7. Dulang Bekas Kuih Raya 1 by FSSR
8. MyPJI-Portal by FSKM
9. Academic Predication Model Neural Network for Computer Sciences Students in UiTM by FSKM
10. Mobile Archery Scoring System by FSKM
11. e-Aduan ICT System by FSKM

Bronze Medal

1. Sistem e- GL Staf by FSKM
2. Postcards as Affective Image Makers for Melaka Tourism by FSSR
3. Impact of Economic Growth on Air and Water Pollution in Malaysia by FPP
4. Snakes and Ladders (Literature) by FPEND
5. Reka Bentuk Komunikasi dalam Penjenamaan Semula Identiti dan Imej Lokasi Pelancongan di Negeri Melaka (Melaka River Cruise) by FSSR
6. Photo Gallery 2008, The Good, The Bad, The Ugly: Journey of Emotions (Life) by FKPM
7. Malaysian MotoGP 2009 Booklet by FFPM
8. Penghasilan Functional Sculpture/Decorative Objects/Design Object (Terendak Lampu Hiasan) daripada Logam Terpakai/Terbuang dengan Teknik Kimpalan Beracuan by FSSR
9. The Sale and Purchase Agreement: Creating and Innovative Glossary to Make It More Comprehensive
10. KOMIK: Catatan SI MAHASITUA by FSSR

Faculty with the Highest Number of Participation Category: FSSR

Best Booth Category: Asmaradana (Video Clip) by FSKM

Best Poster Category: Kalkulator Zakat Mudah Alih @zakatfon by IKAZ

DERIA 2011

Best Interactive Category:
2nd Group, Noor Suhaida binti Aziz / Nornadia binti Jonari, UiTM Melaka

Best Young Inventor Category:
QI FIND (Qiblat Finder for the Blind)
Mohd Alif bin Mansor (L), Sek.Men.Keb. Teknik Kuala Lumpur

Best Invention Category (Open):
Welca Troly OK2011
Mohd Firhan bin Morni (L), UiTM Shah Alam

Best Invention Category (Student):
Automatic Observer Vehicle
Zulkarnain bin Jamak (L), Politeknik Ungku Omar

Best Innovation Category (Open):
Smart Ampoule Breaker
Amiruddin bin Mohd Yusuf (L), Hospital Segamat

Best Innovation Category (Student):
PSC: A Public Sector Comparator (PSC)
Khairizam Ismail (L), UiTM Shah Alam

Bronze Medal
Best Design Category (Open):
Portable Stool for "Home n Garden"
Zulkarnain bin Hassan (L), UiTM Perak

Best Design Category (Student):
Jelajah Melaka-Muar
Nasya-Nani bt Mat Isa (L), UiTM Melaka

Best Booth:
Pesanan Khidmat Masyarakat 'Kawan'
Muhammad Azril Izuan bin Ramlan (L), UiTM Melaka

Best Poster:
QI FIND (Qiblat Finder for the Blind)
Mohd Alif Mansor (L), Sek.Men.Keb. Teknik Kuala Lumpur

Diamond Award:
Smart Ampoule Breaker
Amiruddin bin Mohd Yusuf (L),Hospital Segam

PROGRAMME TENTATIVE

Date : 7 November 2012 (Wednesday)

TIME	TENTATIVE
8.15am	Registration
9.00am	Exhibition and Judging (Session
11.30am	Cultural Presentation
12.00pm	Lucky Draw I
1.00pm	Rehat / Makan Tengahari
2.30pm	Pameran & Perjurian (Sesi II)
3.00pm	Mind Challenging Game
4.00pm	Lucky Draw II
5.00pm	Adjournment
5.10pm	Registration for Tour of Melaka City
5.30pm - 11.00pm	Optional : River Cruise Melaka/ Jonker Street/Taming Sari

Date : 8 November 2012 (Thursday)

TIME	TENTATIVE
8.15am	Registration
8.30am	Arrival of Guest Speaker
8.35am	Breakfast
9.00am	Genovasi Briefing
10.00am	RIID 2012 Exhibition
11.00am	Lucky Draw 3
12.30pm	Break/ Lunch
2.00pm	Innovation Talk by Animosta Studios S/B
3.00pm	Arrival of PM Zulkifli Abdul Majid (Director of RIBU)
3.20pm	Welcome Prosession for VVIP, Rector and Deputy Rector UiTM Melaka
3.25pm	National Anthem and Wawasan Setia UiTM
3.30pm	Doa Recital
3.40pm	Opening Presentation
3.45pm	Speech by Chairperson of RIID 2012, UiTM Melaka
3.50pm	Speech by Rector
4.00pm	Official Opening and Closing bby PM Zulkifli Abdul Majid (Repsenting Assistant Vice Chancellor (Research) , RMI UiTM Shah Alam)
4.20pm	Launching Gimmics – Multimedia Presentation
4.25pm	Visit to Exhibition Booths
4.40pm	Press Conference
5.00pm	Award Presentation
5.35pm	Closing Ceremony
5.40pm	Photograph Session
5.45pm	Tea Break

COMMITTEE RIID 2012

- **Certificate**
  Ustz Husnul Rita bt Aris
  Pn Siti Hajar Abd Aziz
  Noofazreen Binti Mohd Aris
  Mariam Farhana
  Adibah Binti Bahori
  Pn Zaiton Hasan
  Cik Rabiah Ibrahim

- **Audio Visual and ICT Equipment**
  Puan Rohayu Hj. Ramli

- **Refreshment**
  Ustazah Noraini Ismail
  Vani a/p Tanggamani
  Siti Anis Nadia binti Abu Bakar
  Puan Siti Rohana binti Daud

- **Event Manager**
  Saloma Emang
  Zarina Begum Ebrahim
  Nurul Ain Mustakim
  Muna Kameelah Sauid
  En. Mohd Hatta Mohd Yatim

- **Logistic and Tour**
  Akmal Adanan
  Tania Maria Tangit
  Noor ibtisam Abdul Karim
  Abu Zaireen Abu Hassan
  Norfaezah Khalet

- **Montage**
  YM Tengku Shahril Norzaimi Tg. Hariffazillah

- **Video and Photographer**
  Shahril Anuar Abdul Ghalim

- **Innovation Talk**
  Pn Ilya Yasnorizar Ilyas
  Nadia bte Abdullah

- **Food Stall**
  Prof Madya Zaihan Abd. Latif
  Puan Nor Hamiza Mohd Noor

- **Judges**
  Prof Madya Dr Maheran Katan
  Dr. Shafinar Ismail
  Pn Alisa Ibrahim
  Pn Suhailah Kassim
  Ainaa Idayu binti Iskandar
  Azlin Zanariah binti Bahtar
  Nur Hidayah binti Zaini
  Nurhaslinda Hashim
  Ahmad Syaifullizan Zulkeefly
  Sulaiman Mahzan

- **Facility and Equipment**
  Puan Norliyah Munjat
  En. Izwan Sham Izhar
  En. Saiful Hamzah Abd Rahim
  En. Alias Tompang
  En. Mohd Radzie Mohd Ramli
  En. Mohd Hazrie Tahar
  En. Mohd Nor Rajian
  En. Mohd Suhaimi Abdul Rahman
  En. Razul Sharif
  En. Mohd Sufian Md Ali
  En. Faizul Ab. Razak
  En. Ahmad Nasrin Mansor
  En. Yahya Abdul
  Pn. Murni Abu
  En. Amran Abdul Razak
  En. Nor Azizan Abdullah
  Pn. Nor Hidaya Baba
  Cik Siti Husnima Md Husin

- **Writers and Editors**
  Prof Madya Dr. Roaimah Omar
  Pn. Norbaiti binti Tukiman
  Mohd. Shaleh Mujir
  Affifah Fadhlullah
  Dr. Geraldine De Mello
  Pn. Mahdalela Rahim
  Pn. Afidah Bidin
  Isma Izza Mohamad Esa
  Pn. Rafidah Abdul Karim
  Nurul Huda Mohamad Saad

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riid 2012 RESEARCH INVENTION & INNOVATION DESIGN

Acknowledgement

Research Innovation And Business Unit (RIBU) UiTM Shah Alam

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Division of Administration, UiTM Melaka

Division Of Academic Affairs (HEA), UiTM Melaka

Division Of Student Affairs (HEP), UiTM Melaka

Division Of Facility and Infrastructure Developement (BPF) UiTM Melaka

Treasury Department, UiTM Melaka

Corporate Office, UiTM Melaka

Residence & College Management UiTM Melaka

Security Unit, UiTM Melaka

IPTA, IPTS, College & School

All UiTM Branch Campus

Division Of Research, Industial Linkages And Alumni (PJIA)
Universititi Teknologi Mara (UITM) Melaka

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Web : http://melaka.uitm.edu/riid2012

81. Nio Films For Electrochromic Windows

Fakulti Sains Gunaan
UiTM Shah Alam

Siti Zairyn Fakurol Rodzi, Dr. Yusairie Mohd

Abstract

The purpose of this study was to prepare nickel (II) oxide (NiO) thin films for electrochromic materials application (smart windows) using electrodeposition method. By adjusting the electrodeposition conditions, two different types of NO films were produced; smooth and porous films. The films exhibit electrochromic effect (their optical transmittance changes from transparent to grey colour) by applying electrical voltage. The results showed that the smooth NiO film has excellent chemical stability, good switching colour, good adhesion on ITO substrate and high stability in electrolyte. The preparation of NiO films using this technique can be considered as the most convenient and cost-effective process. The NiO films have high potential for development of smart windows that are the forefront of emerging energy-saving advances in building technologies.

82. Oil Palm Kernel Shell Waste As Adsorbent For Removing Heavy Metal in Waste Solution

Fakulti Kejuruteraan Kimia
UiTM Dungun Terengganu

Nur Syafiqah Zainudin, Norkamruzita Saadon, Nor Ashikin Yusof, Noorasyidah Othman, Amin Nor Rashdan A. Raaman, Mohammad Abdullah

Abstract

Malaysia is one of the largest producers of palm oil in the world with its wide areas of plantations. Its industries generate a lot of lignocellulosic biomass annually, which can be a very promising alternative source of renewable energy. Hence, more research has to be ventured so that the biomass will not be wasted. This includes the palm kernel shell (PKS). In this study, activated carbon from PKS is used to remove heavy metal, specifically copper, which can be found in most of the industrial wastewater and has been proven harmful to the environment. This method is cheap since the raw material is the biomass waste, which is available abundantly throughout the whole year. It is believed that this method is able to boost Malaysian economy since the unwanted biomass from wide areas of oil palm plantations could be used efficiently. Eventually, Malaysia could protect its environment from the harmful effects of pollutions.