INDES 20 19

The INTERNATIONAL INNOVATION, INVENTION & DESIGN COMPETITION

REINVENTING THE FUNDAMENTALS

PROCEEDING

CASUARINA HOTEL, IPOH,
PERAK DARUL RIDZUAN, MALAYSIA

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Editors:	Noryanne Amer
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Emai*l: indes2019.inspired@uitm.edu.my*

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About INDES2019

The International Innovation, Invention and Design Competition

In order to realize the 11th Malaysia Plan (RMK 11) under 6 pillars of the mid-term reviews, in the quest for innovation, UiTM (Perak) is hosting an annual international event known as "International Innovation, Invention and Design Competition 2019" (INDES,2019) with the 8th hosting themed "Reinventing the Fundamentals".

INDES 2019 has become the platform for participants to present and showcase their product inventions, innovations and designs to the public as well as getting feedback to further improve and strengthen their product. This competition also seek to accelerate innovation, technology and entrepreneurship adoptions, as well as boosting the economy, politics, culture, social, and quality of infrastructures. To date, INDES 2019, has received an overwhelming response and as many as 156 participants consisting of lecturers and students from local and overseas universities, industry, researchers, and schools have registered so far. By having international participants, consequently, UiTM is able to support the 2019 Mandate of Minister of Education in promoting Malaysia as an international education hub.

There are six innovation areas: Education, Design and Creativity, Green & Sustainability, Social Sciences & Entrepreneurship and Science, Engineering & Technology. These areas can uphold nation's innovation culture by producing new research talents among young academics, educators, as well as university, high school and primary school students. By doing so, it is hoped that the innovation culture amongst Malaysian could be sustained. UiTM is exceedingly in continuously improving the organization of this competition so as to gear up for innovation and creativity, as well as to support UiTM's objectives in establishing the collaboration of external parties with UiTM and it nationals.

Rector of UiTM Perak Branch

It is an honor and privilege for me on behalf of UiTM, Perak Branch to welcome al lof you to INDES 2019. For the 8th year consecutively, UiTM Perak Branch is organizing the International Innovation, Invention and Design Competition (INDES 2019).

INDES 2019 is an innovation, invention and design competition aimed at inspiring professionals, and academics as well as non-academic staffs of colleges and universities at the national and international levels to showcase and promote their ideas, products and creativity for potential commercialization. In addition, this competition will serve as a platform to cultivate and uphold the nation's innovation culture by producing new research talents among young academia, universities, high schools and primary school students.

With the theme of *"Reinventing the Fundamentals"*, 156 talented participants from various fields of research and innovation will be able to congregate at this auspicious event. This year, INDES 2019 is highlighting the importance of generating innovation and creativity in line with the state-of-the-art technology for the future undertakings. Participants will also be able to showcase their products of commercial values at INDES2019.

Apart from that, this competition is hoped to serve as a foundation to develop networks and linkages among participants. The integration of views, products, systems, procedures or services is likely to reap new insights that can enhance new knowledge sharing and experience for future innovations, besides improving the quality of all the relevant fields.

The success of this competition depends significantly on the contribution, time, commitment and dedication of all the committee members. As such, I would like to extend my heartiest congratulation and sincere appreciation to the organizing committee members for their contributions and commitments in realizing INDES 2019. These have surely intensified the standard of this competition to a much greater height. Here, I would also like to take the opportunity to thank and congratulate all the participants near and far for making the effort to be here with us at INDES 2019.

Lastly, I wish everyone a pleasant competition and may the Almightly ALLAH bless our efforts and contributions so that they will be beneficial to the humankind at large. Thank you.

Associate Professor Sr. Dr. Md. Yusof Hamid

Rector of UiTM Perak

Deputy Rector Research, Industrial Linkages, Community & Alumni Networking of UiTM Perak Branch

It gives me immense pleasure to welcome to all honorable guests, professionals, academicians as well as non-academic staff from local and international schools, colleges, and universities to the International Innovation, Invention & Design Competition (INDES 2019) which is organized by the office of Reserch, Industrial, Community and Alumni Networking in collaboration with the Department of Business Management UiTM Perak Branch. Firstly, our university is very honored and delighted to support this event and I would like to personally welcome every one of you to INDES 2019.

As the chairman of the organizing committee, my sincere appreciation for the dedication which has been shown by the top management especially the Rector of UiTM Perak Branch, Associate Professor Dr. Md Yusof Hamid for his continuous support, guidance and encouragement in making INDES 2019 a reality.

INDES 2019 is seen as one of the perfect platform for innovators, young researchers, educators, inventors, as well as participants to congregate for the purpose of sharing knowledge, as well as exhibiting their innovative and creative ideas, products, systems, procedures, services or research findings in varous fields. This would be a step further in the effort of motivating the young generations toward embracing research and innovation cultures in the future.

To our international guests and participants, I hope that all of you would enjoy the delights that the State of Perak and Malaysia have to offer. Do take the time to sample the food and visit places of interests available. My sincere appreciation also goes to the organizing committee members of INDES 2019 and all the parties involved in ensuring the success of this event. For certain, without their hard work, dedication and synergies, INDES 2019 could not have been a reality.

I hope that all participants would take this golden opportunity to interact and establish your networking and hopefully potential future collaborations. I wish all that are present here today the best in your deliberations throughout the event.

Lastly, my gratitude and thanks go out to all of you for taking the time out of your busy schedule to be here with us at INDES 2019. I would also like to take the opportunity to wish all of you the best of luck.

Dr Nur Hisham Ibrahim

Deputy Rector Research, Industrial Linkages, Community & Alumni Networking of UiTM Perak

Head of Business and Management Department, UiTM Perak Branch

Assalamualaikum and Warmest Greetings.

It gives me an enormous pleasure, on behalf of the organizing committee members to welcome all participants and presenters to the International Innovation, Invention & Design Exhibition 2019 (INDES 2019). For this year's edition, the Department of Business Management of UiTM Perak has been given the opportunity to collaborate with the office of Research, Industrial, Community and Alumni Networking in hosting INDES 2019.

INDES 2019 is one of medium to unlock the door to future innovation in products. It is an endeavour to grasp the invention, innovation and design in producing and inspiring smart ideas, technologies, sources, education, business and creativities towards the future development of products. This platform also serves as an accelerator for young researchers, innovators, and inventors in showcasing their product innovations, and inventions of commercial values.

INDES 2019 is hoped to be an avenue for gathering and disseminating the latest knowledge on ideas and acquisition of innovation among the participants. It is also hoped that this effort will surely increase and enhance the capabilities of the participants to innovate and link theories and ideas into practice that will eventually lead to the development, innovation and creation of new products, services or systems.

Finally, I would like to congratulate my fellow organizing committee members for their tremendous efforts in organizing INDES 2019. Only ALLAH, the Almighty could ever repay you for your hard work, commitment, dedication and countless efforts in making INDES 2019 a success. Well-done everyone! I would also hope that INDES 2019 would accomplish all of its objectives and goals. On behalf of the organizers, I wish that all of the participants would have a memorable and enjoyable experience at INDES 2019 and may success be granted upon all of you.

Thank you very much indeed.

Nor Zarina Mohd Salim

Head of Business Management Department, UiTM Perak

THEMES

DESIGN AND CREATIVITY (DC)
EDUCATION (E)
GREEN & SUSTAINABILITY (GS)
SOCIAL SCIENCES & ENTREPRENEURSHIP (SS)
SCIENCE, ENGINEERING & TECHNOLOGY (ST)

CATEGORIES

CATEGORY A
PROFESSIONALS & ACADEMIC

CATEGORY B
STUDENTS OF HIGHER LEARNING INSTITUTIONS

CATEGORY C
STUDENTS OF PRIMARY & SECONDARY SCHOOL

CATEGORY C
STUDENT OF PRIMARY AND SECONDARY SCHOOL

CATEGORY D
UNDERGRADUATES FROM LOCAL AND FOREIGN UNIVERSITIES

IDEAS PRESENTATION COMPETITION

CATEGORY E
STUDENTS OF PRIMARY AND SECONDARY SCHOOL

LIST OF INNOVATIONS, INVENTIONS & DESIGN PRODUCTS

CATEGORY A

PROFESSIONALS & ACADEMICS

Design& Creativity(DC)

STUDYSmartSpace By SANSR V2.0: IDENTIFYING LEARNING SPACE IN IMMERSIVE VIRTUAL REALITY

Azizah Md Ajis, Siti Rasidah Md Sakip, Norhayati Kassim, Siti Syamimi Omar, Ruwaidah Borhan

Faculty of Architecture, Planning & SurveyingUniversiti Teknologi MARA, Perak Branch, Seri Iskandar Campus, Malaysia

azizah850@uitm.edu.my

ABSTRACT

Designing student's learning space such as library, smart classroom, student hub center, and etc. at academic institutions has always become a challenge for space designers such as interior designers, architects, facility managers, and space planners. Providing spatial settings that could accommodate a variety of learning behavior of students, task at hands, space preference will require thorough investigation at the programming stage of the design phase. Otherwise, the statistics of visitors will decline and the space unable to fully functional at its purpose. STUDYSmartSpace By SANSR V2.0 is a tool that was created to help the designers and to reduce the time- consuming process at the design stages of the project. The objective is to identify the preferred space with task at hands. The tools create phases of space identification by determining the 1) task or assignment that needs to be done and 2) spatial settings preference. Students experienced, through immersive virtual reality with their real body, choosing their preferred spatial setting to finish task or assignment given. Spatial settings provided in the VR were previously analyzed based on a survey conducted from the tool V1. By using this VR tool, space designers will have a better guideline and can provide necessary spatial settings for a variety of learning environments.

Keyword: student learning behaviour, spatial settings, learning environment, virtual learning

HARDWORK ADORABLE WOMAN APPLICATION (HAWA)

Liyana Ab Rahman, Norul Akma Mansor, Norhayati Zamri, & Fatimah Alwi

Universiti Teknologi Mara, Cawangan Perak, Kampus Tapah,
Tapah Road, Tapah, Perak

liyana748@uitm.edu.my, norul195@uitm.edu.my, norha266@uitm.edu.my,
fatim347@uitm.edu.my

ABSTRACT

Breastfeeding is a noble journey that gives advantage to both mother and baby. Breast milk contains optimal nutrition to support baby's growth and development. It also creates a psychological and emotional bond between mother and baby. As for mother, breastfeeding is a natural means of contraception and it is free from any complications for at least six months. In Islam, every child has an entitled right for breastfeeding and Quran recommends mother to breastfeed her baby until the age of two years for those who wish to complete the term. Not only that, government also supports breastfeeding through awareness campaign like Baby Friendly Hospital, provides ninety days of maternity leave, improves breastfeeding facilities at workplace and shopping center, and nursing mother also can claim tax relief up to RM1,000 for the purchase of breastfeeding equipment. Despite of the above advantages and supports, breastfeeding is not always easy especially for working mother who needs to balance between work and raising children. Lack of preparation, knowledge and moral supports from immediate family also contributes to the problem. Due to that, Hardwork Adorable Woman Application (HAWA) is introduced to help nursing mother to record stock of Expressed Breast Milk (EBM) and to keep track the consumption of milk per day for the baby. Besides that, this application also helps mother to monitor the flow of EBM stock (from chiller to freezer and vice versa) to ensure there is no wastage of milk, to avoid breast milk contamination or milk lost some of its nutrient. In conclusion, HAWA offers a simple application for EBM stock management as it has an easy user-friendly interface that can be used via smartphone. It is hope that HAWA can make breastfeeding journey more enjoyable, less stressful and at the same time give nursing mother the opportunity to focus more on her career.

Keyword: breastfeeding, expressed breast milk, nursing mother.

A003-DC

NATURAL DISASTER SURVIVAL KIT (NatDiSK)

MohdKhazli Aswad Bin Khalid, ZuraihanaBinti Ahmad Zawawi, Hasnan Bin Hashim, Dr. Alia Binti Abdullah Saleh

Faculty of Architecture, Planning and Surveying,Universiti Teknologi Mara Perak Branch, Seri Iskandar CampusMalaysia

khazliaswad@perak.uitm.edu.my

ABSTRACT

According to statistics from 2000 until 2018, the occurrences of natural disaster like flood and landslide have 14 hit in Malaysia during local tropical monsoon season and involves the death people. With heavy rainfall during october and march, the east coast of Peninsular Malaysia is seems most affected with destructive monsoon flood. There are two types of floods generally, which are the flash floods and monsoon floods. The flash floods normally occur at urban area with improper drainage and planning system. Another implication due to heavy rain is the landslide. When these disasters struck, people tend to panic and are trying their best to save their lives. However, we often tend to forget to bring the survival emergency equipment kits along with us when we rescuing ourselves. Therefore, this NatDiSK bag is specially designed to survivor life when waiting in rescue. The compartments bag to be inserted with those important identification documents, clothing & bedding, sanitation, tool & supplies, first aid kits, food and water.

Keyword: Survival kits, Natural disaster, Bag

GO-IEVENT

Mohd Nasurudin Hasbullah, Salahuddin Abdul Hakeem Abas, Prof Madya Dr Thuraiya Mohd, Dr Suzana Said, Neta Suredah Baharum

Universiti Teknologi MARA Perak Branch, Seri Iskandar Campus
FSPU, UiTM Cawangan Perak Kampus Seri Iskandar,
32610, Seri Iskandar Perak

nasur136@uitm.edu.my, hakem795@uitm.edu.my, thura231@uitm.edu.my, suzan863@uitm.edu.my, suredah@uitm.edu.my

ABSTRACT

A higher learning institution is a place of nurturing not only knowledge but also developing soft skill through many event platforms available that made possible within university environment. UiTM Perak Branch, Seri Iskandar Campus also promotes not only academic but also various activities that are organised by the staff, academic or non-academic, students either at local or international level. However, the events organized are currently isolated within each organiser and user can only be accessible through their dedicated websites or promotional pages. This creates a segregated structure that making finding information of such events difficult for users thus making the access and coverage limited to the interested participant and organisers respectively. In line with vision of Industrial Revolution 4.0 and Education 5.0, Event Canvas is created as an application to be integrated with the digital platform and act as a unified centre for users to search and navigate such event and for organisers to reach and manage their participant. This invention aims to create a seemless experience for interested participant and organisers to find information and register for the events. The application also will act as a promotional platform for the events to seek wider coverage of targeted participant.

Keyword*: digital platform, application, participant, seemless experience, navigation*

Education (E)

VOCABULARY QUIZ TRADE CARDS

Zarinatun Ilyani Abdul Rahman, Rafidah binti Abdul Karim, Nurfarhana binti Nasri, Nurul Nadwa binti Ahmad Zaidi, Rosli bin Abdul RAhman

Academy of Language StudiesUniversiti Teknologi MARA Cawangan Perak Kampus Tapah Perak,Malaysia

zarinatun@perak.uitm.edu.my

ABSTRACT

In this 21st century, the teaching and learning concept is focusing more on student-centered learning and teacher acts as a facilitator during the process. Most of the issues highlighted are circling around the school students' problems in conversing English and they are unable to work well in a group activity as well. Hereby, our team uses the implementation of cooperative learning model Fan-n-Pick for this innovated product. This product aims to enhance primary school students' vocabulary skills and encourage them to work well in group. This product features colourful stacks of cards to be played among four to five players in a group. Therefore, this innovated product is expected to have a good commercial value for primary school students, educators, or other sectors

Keywords: trade cards, cooperative learning, vocabulary, quiz, students

A002-E

VISUAL PLANNING TOOL FOR POSTGRADUATE STUDENTS TOWARD GOT

Dr. Sreetheran Maruthaveeran

Department of Landscape Architecture, Faculty of Design & Architecture, Universiti Putra Malaysia (UPM), 43400, Serdang, Selangor Darul Ehsan

sreetheran@upm.edu.my

ABSTRACT

Majority of the postgraduate students (PGs) have difficulties to visualise the whole research process which they need to engage to complete their studies. Nevertheless, the PGs might have their research proposal as reference, however there was nothing available that brought the information into a coherent, easy to manage whole where they can visualise in one image. As a result, visual tools such as the swimlane flowchart could be use by the PGs as a strategic research and writing tool towards achieving GOT. By using visual tools PGs also can visualise each of the study involves in their project in terms of method to be used, sample size, tools to conduct the study and even the number of papers with title that could be generated from each study from their research project. This is important, because the students would not be able to lose track of their research project. Visual tools like this could also be used as monitoring tools by the supervisors. With this the aim of this paper is to create as a visual research planning tool in order to assist the PGs to visualise their research from conducting the research up to the outputs that will be generated.

Keywords: Postgraduate, Swimlane flowchart, Graduate Schools, Graduate on time, Visual tools

TEACHINGAND LEARNING OF RESEARCH METHODS USING #HASHTAGS IN FACEBOOK

Dr. Sreetheran Maruthaveeran

Department of Landscape Architecture, Faculty of Design & Architecture, Universiti Putra Malaysia (UPM), 43400 Serdang, Selangor Darul Ehsan

sreetheran@upm.edu.my

ABSTRACT

Seminar on Landscape Architecture Research (LAN3903) is a course offered at the Faculty of Design and Architecture in Universiti Putra Malaysia (UPM) particularly for the year three Landscape Architecture students. This course was designed to provide the students with an introduction to research methods and to produce an appreciation of the research process. In order to arouse students' interest in research, #hashtag sharing, as an atypical individual assignment was introduced in this course. This innovative way of teaching enhances the students ability to read research papers, discuss about research methods, disseminate research findings, and connecting with audiences outside the context of traditional classroom. About 27 students were invited to pick three research articles that they find important and interesting from reputable journals and then to share a very brief summary or commentary (using not only plain text, but also image or video) via Facebook. By using the same #hashtag (i.e. #LAN3903), students and their peers can respond to the posts and discuss with each other immediately and transparently via the social mediaplatform.

Keywords**:** Facebook; hashtag; method;learning innovation; Universiti Putra Malaysia(UPM)

REVOLUTION ON ASSESSMENT FOR STUDENT MONITORING SYSTEM (I-RAS)

Mohd Samsudin Abdul Hamid, Md Rasul Mohamad Nor, Siti Hafizan Hassan, Nor Hafizah Hanis Abdullah, Fairus Azwan Azizan, Ahmad Syauqi Md Hassan, Mohd Azuan Tukiar, Shafienaz Ismail, Suhailah Mohamed Noor, Mohd Azrizal Fauzi

Faculty of Civil Engineering, Universiti Teknologi MARA Pulau Pinang, 13500, Permatang Pauh, Pulau Pinang, Malaysia

samsudin85@uitm.edu.my

ABSTRACT

Effectiveness of the programme is measured through the achievement of Course Outcomes and Programme Outcomes (COPO) throughout the total year programme offered. Problems occur when number of courses and lecturer are high in order to collect and analyzed the data manually. Furthermore, an engineering programme should implement Outcome Based Education (OBE) as a curriculum approach for the purpose of accreditation from Boards of Engineers Malaysia (BEM) through Engineering Accreditation Council (EAC). This is compulsory for diploma and bachelor degree program that offer in Universiti Teknologi MARA. Manual application of data collection has been implemented since 2010 and it was found that there is missing and miss interpretation of the calculation and analysis of COPO. Systematic, comprehensive and intergrated synchronize system called Revolution on Assessment for Student Monitoring System (i-RAS) was develop in this project to collect and analyzed COPO data correctly and automatically. As a result, this system produced as a paperless system because all the data was uploaded in the faculty website and it was automatically analyzed and the storage system safer than before. Furthermore, this system has been implemented at diploma level Faculty of Civil Engineering UiTM all campuses and degree level in UiTM Pulau Pinang.

Keyword: Course Outcome, Programme Outcomes, Engineering Accreditation Council, automatic analysis system.

BALANCE OF PAYMENT EDUCATIONAL GAMES (BOPEG)

Noormahayu Mohd Nasir, Zarul Azhar Nasir, Norasyikin Abdullah Fahami, Syamsul Ikram Mohd Noor, Mohd Afandi Abu Bakar, Mohd. Herry Bahador

Universiti Teknologi MARA Cawangan Perak Kampus Tapah Perak,Malaysia

noorm492@uitm.edu.

ABSTRACT

The Balance of Payment (BOP) topic in the subject of macroeconomics requires a high level of understanding amongst students. However, the performance of students on this topic is still unsatisfactory, indicating that students' understanding is still low. Hence, this product is developed for the purpose of helping students to understand the concepts and theories related to this topic efficiently. This product offers a more interactive learning method by using educational games approaches in the classroom rather than traditional methods. To measure the effectiveness of this product, several students were selected and divided into two groups; an experimental and a control group. Students in experimental groups were taught with the help of this product while students in control group were taught using traditional teaching methods. The learning test was then conducted to all students in both groups and the performance of the students in experimental group was better than the control group. Therefore, BOPEG had a high value and could be commercialized as a learning aid tool either at schools or in higher learning institutions.

Keyword: educational games, Balance of Payment, interactive learning, traditional learning

K-PAPER

Wan Nur Khalisah Shamsudin, Anith Liyana Amin Nudin, Nor Arseha Karimo, ²Lili Eliana Mohd Radzuan

Faculty of Art & Design,
Universiti Teknologi MARA Cawangan Alor Gajah, Melaka.
²Universiti Teknologi MARA Puncak Alam, Selangor

wnkhalisah@gmail.comanithliyana@gmail.com arsehakarimon12@gmail.com arsehakarimon12@gmail.com

ABSTRACT

Workbook is a platform used for the idea sketches. Sketches are one of the methods that are always practiced for idea development not only in art but also in science, mathematics and architecture. Sketches are often practiced by individuals or groups of students. The target group of this invention is mainly specifies on diploma graphic design student which focuses in learning symbol or logo design projects. K paper is an initiative invention creative workbook for the use of idea development and idea sketching. This workbook of paper has been developed specifically for graphic design students. K paper means *'okay'* which this paper is potential and able to help students developing a neat, balance and creative ideation. The whole concept of K paper do enable designer to compile and sketch any design process and ideation as a creative journal. It has a guideline template on the paper to help students neatly log the log idea balance and symmetry. The logo has several categories like symbol, wordmark, emblem, combination mark and letter mark. Each template has been develop for each category which mentioned as above according to the suitability and creativity. K paper, dot per inch your ideation withconfidence!

Keyword: graphic, symbol, logo, workbook, idea

A009-E

EASY MEMBERSHIP MANAGEMENT SOFTWARE FOR NON-PROFIT ORGANIZATION (EZ MEMBER)

Sunarti Halid, Nooriha Mansor (Dr.), Wan Razazila Wan Abdullah (Dr.)
Masetah Ahmad Tarmizi, Marina Ibrahim & Mohd Soffi Puteh

Faculty of Accountancy
Universiti Teknologi MARA Cawangan Perak Kampus Tapah
35400 Tapah Road,
Perak Darul Ridzuan, Malaysia

sunartihalid@gmail.com

ABSTRACT

Accounting software for non-profit organizations need to be able accurately handle membership fees. In addition, with limited funds for administrative tasks and strict reporting requirements, non-profit organizations can save time and money, while reducing the likelihood of reporting errors, by implementing the EZ MEMBER. This software module features a database for tracking membership data, membership levels, dues and payment history. It is applicable for use by arts and cultural organizations, club and associations, charitable foundations and other member-based organizations. At a minimum, an EZ MEMBER is a user-friendly system that easily search and share the database; customize membership levels and automate renewals; members can update their own info; and data is safe, secure and automatically backed up. Furthermore, the product has a great potential to be commercialized to all non-profit organizations through collaboration with The Registrar of Societies Malaysia (ROS).

Keyword*:* non-profit organization, membership fees

A010-E

REFLECTIVE PORTFOLIO AND INTERVIEW FOR MEDICAL STUDENTS

Nurashikin Moh Dat, Chan Choong Foong, Asma Aziz

University of Malaya Medical Education & Research Development Unit (MERDU)
Faculty of Medicine, University of Malaya, 50603, Kuala Lumpur

shikin85@um.edu.my
foongchanchoong@um.edu.my
asma89@um.edu.my

ABSTRACT

Continuing professional development (CPD) enables medical doctors to master the latest changes and improvements for healthcare. Meanwhile, reflective practices are an essential approach to practise effective CPD. Hence, medical students must learn to develop reflective practices. In the University of Malaya medical programme, Year 1 and Year 2 students use Reflective Portfolio and Interview (REIPO) to practise reflections based on their mentors' guidance. Year 1 students write the best and worst learning experience in their portfolios. They also reflect on management of their emotional responses on the most disturbing or moving clinical experience (e.g. interactions with patients). Written guidance is provided to students in order to reflect according to the Kolb reflective cycle. Meanwhile, Year 2 students read a selected article and write an essay according to 4R's model of reflection. Next, all students will present their reflection during an interview with their mentors. The mentors will assess the reflection and professionalism of the students before and during the interview. In conclusion, the REIPO helps students to link and construct the meaning of their future profession based on their current learning experiences. This is a personal growth of a medical student.

Keyword: medical students, reflective portfolio.

ACCOUNTING FOR PROPERTIES-QUICKCHART APP

Noor Saatila Mohd Isa, Yusnaliza Hamid, Norliana Omar, Irda
Syahira Khair Anwar, Farah Husna Mohd Fatzel, Salina Mad&
Salina Mad, Dr Ahmad Saiful Azlin Puteh Salin

Faculty of Accountancy, Universiti Teknologi Mara Perak Branch
Tapah Campus, Malaysia

noors464@perak.uitm.edu.my

ABSTRACT

Accounting standards have continued to evolve to strike the balance between providing meaningful information to the users and balancing up cost of preparing such information. However, there is growing concern that financial reporting has become overly complex. The complexity caused by financial reporting standards may derive from many factors, such as their length, the difficulty in understanding them, and the cost of applying their requirements. In the educational stream, students find that it is hard to understand the lengthy wordings in the standards. Therefore, this interactive application is designed to help students to understand the accounting for properties which falls under MFRS116 Property, Plant & Equipment and MFRS140 Investment Property. This application provides useful and precise guidelines to increase the level of their understanding. By using the application users will have a better knowledge in identifying whether the properties fall under which MFRSs. On top of that, this application is practical to accounting students when it provides the page of similarities and differences about these two MFRSs which long has been a confusing issue for students. Furthermore, the application contributes to the effort of making users learn standards of accounting in a different perspective rather than a classroom-oriented perspective.

Keyword: Interactive app, MFRS116, Property, Plant & Equipment, MFRS140, Investment Property, complexity, accounting standards.

A012-E

POCKET SCIENTIFIC CALCULATOR
GUIDEBOOK 2ND EDITION

Norani Amit,Noor Hidayah MohdZaki, Busyra Latif, Noor Aisyah Idris, Nur Hidayah Mohd Razali, NurdiaAzlin Ghazali

Faculty of Computer and Mathematical Sciences, UniversitiTeknologi MARA Cawangan Negeri Sembilan, Seremban 3, Malaysia

norani@uitm.edu.my , hidayahzaki@uitm.edu.my, busyra4042@uitm.edu.my, ,noora9995@uitm.edu.my, hidayah3849@uitm.edu.my, nurdia040@uitm.ed

ABSTRACT

Mathematics and statistics are the subjects where the use of calculator is very important. These subjects require students to know how to calculate using a calculator based on mathematical formulation. With such an important role, there is no specific slot for lecturers in scheme of work to teach the mathematical calculations by using calculator to the students. The main issue of this situation occurs when students can be easily misunderstanding the steps to input the data into calculator as there is no proper guideline for them. With regards to this issue, the pocket calculator guidebook was introduced to guide students to understand the use of calculator by following the step by step procedures and to increase the level of understanding for the students so that it become structural and easier. The potential user for this pocket guidebookare lecturers and students from sciences and social sciences backgrounds. In conclusion, this pocket calculator guidebook is portable, affordable in price and the material is also good. It is also the first scientific calculator application guidebook in UiTM for student sciences and social sciences.

Keyword: guidebook, guideline, calculator

COURSE SYLLABUS CONSTRUCTOR (PRELUDE 3.0)

Teh Zahariah Nasaruddin, Norakmarwati Ishak, Noraini Md Zain,

Wan Norizan Wan Ismail, Siti Sarah Mat Isa

Faculty of Architecture, Planning and Surveying
Universiti Teknologi Mara Perak Branch
Seri Iskandar CampusMalaysia

tehza084@uitm.edu.my

ABSTRACT

A course syllabus serves as a contract between an instructor and students that clearly outlines course details, designed to communicate expectations for the course and served as a guide on the learning process. The process of developing a syllabus can be a reflective exercise, leading the instructor to carefully consider his or her philosophy of teaching, the importance of the course, how the course fits in the discipline, what topics will be covered, when assignments will be due, and so on. This can be an enlightening but time consuming experience especially in using many files for a singular course, and in merging a few number of courses to compile as a single curricular. This is especially so if the course learning outcomes need to be measured against programme outcomes. When a syllabus reflects the instructor's feelings, attitudes, and beliefs about the subject matter, a new instructor for the course may not have the same reflective and this may cause disparity in knowledge articulation. This user friendly Course Syllabus Constructor (Prelude 3.0) tries to solve these issues, by offering a one-file course system, using basic spreadsheet application. It was first utilised in January 2013, and has been evolving since, to the current Course Syllabus Constructor (Prelude 3.0).

Keyword: Course syllabus, curricular, course learning outcomes, programme learning outcomes

CEM JUEGO VERSION 1.0

Nur'Ain binti Ismail, Asniza Hamimi Abdul Tharim, Noraidawati Jaafar, Nurul Huda Muhammad, Norbaizura Abu Bakar, Siti Nurhayati Husin

Faculty of Architecture, Planning and Surveying
Universiti Teknologi Mara Perak Branch Seri Iskandar Campus

nurainismail.uitm@gmail.com

ABSTRACT

The Construction Industry Development Board Malaysia ⇀ s (CIDB) recently launched the Civil Engineering Standard Method of Measurement (MyCESMM) to eliminates discrepancies and ambiguities in the bill of quantities for civil engineering works. Hence, it is essential for students as one of the potential industry players that enrolled in programme related to the construction to possess on the knowledge and principles of MyCESMM. However, it is challenges for lecturers to deliver the knowledge of MyCESMM to the students since the standard is lengthy in words, therefore it creates bore some in the teaching and learning process. Thus, the CEM Juego (Game for Civil Engineering Measurement) Version 1.0 is introduced to increase engagement and excitement of students in the class. CEM Juego Version 1.0 is adapted and innovated from Snake and Ladder game blended with the element of civil engineering measurement which covers all principles of MyCESMM stated in MS 2701:2018 Section 1 until Section 7. The students are required to answer all questions in the game and evaluation will be done by using the developed rubric. The CEM Juego Version 1.0 consist of the prototype version of a colourful board, a dice, twenty-five (25) questions card and rubric. This game is played by five (5) players within two (2) hours of time allocation in the class. CEM Juego Version 1.0 is developed for fun learning process thus create happiness to the students and lecturers. Subsequently, it is hoped that this game will assist the students to enhance their knowledge in fun way.

Keywords: Civil Engineering Standard Method of Measurement, Teaching and Learning, Students

CLIMATE CHANGE CHALLENGE (CCC) FOR SPECIAL NEEDS CHILDREN IN PRIMARY SCHOOL

Nor Bahiyah Omar, Norhayati Zamri, Amir Hakim Osman

Faculty of Accountancy, Universiti Teknologi MARA , Tapah Campus, Tapah Road, 35400, Perak, Malaysia

norba799@uitm.edu.my

ABSTRACT

Extreme weather conditions like El Nino and La Nina are not something new. The climate change has brought about such extreme weather patterns so much so contribute to other problems such as water stress, rising water-level, food shortages, mass species extinction and displacement of communities. The impacts of climate change affect everyone indiscriminately, population are disproportionately exposed to this risk. Although the topic of climate change seems very huge and complex to children, however there are among the vulnerable communities that exposed to this risk. Therefore, the knowledge and information regarding climate change should be embedded from the early stage education. For children, the concept is even more abstract. But the good news is that children are receptive to new information and there are fun ways to make real to them how climate is changing and what human are doing to make that happen. Acknowledge the importance of climate change information in early stage education, it drives the motivation to design Climate Change Challenge (CCC) games in one package three in one (3 in 1). With a target audience of Special Needs children in primary school, the CCC covers three types of games starting with a big W, i.e. What? Who? And Where. The objectives of this games are to educate and introduce climate change to a Special Needs children and how climate change importance to their daily life. As a result, CCC offers solution in being interactive and interesting knowledge transfer medium for the special needs children to understand on the current issues that effected the humanity globally. Finally, CCC promotes potential to be commercialized since Malaysia is on of the signatory to Paris Agreement, which given its commitments to promote climate change mitigation in order to reduced its carbon emission intensity per capital GDP by 45% by the year 2030. The first step towards this commitment is to start with the early education and knowledge transfer to the children against the impact of climate change risks.

Keywords: climate change, special children, primary school

DEWASAMEMBACA

Itaza Afiani Mohtar, Nur Suhaila Ismail, Zaaba Ahmad, Ini Imaina Abdullah,
Annisa Atikah Mohd Fadzli

Universiti Teknologi MARA, Cawangan Perak
Kampus Tapah

itaza328@uitm.edu.my

ABSTRACT

UNESCO estimates at least 750 million youth and adults still cannot read and write. This results in an exclusion of low-literate and low-skilled youth and adults from full participation in their communities and societies. Literacy is the foundation for learning and acquiring skills. With these skills, people can have greater participation in the job market which indirectly contributes to reduced poverty. The aim of this project is to enable access to free literacy education without the need to enroll in a full time course. The idea utilizes the internet and smartphone technology. A mobile learning application was developed. The modules in the application was developed based on andragogy theory. Ten respondents who are illiterate, participated in the usability testing process. Overall, all the respondents agree that the application is helpful and the content suits their need. As a conclusion, the application allows adults to increase their literacy skills, without having to enroll in a formal literacy class, at a minimal cost.

Keyword: mobile literacy, education

CEO FORTUNE

Farrah Nadia Baharuddin, Afni Anida Adnan, Alia Nadira Rosle,
Mohd Faizal Mohd Ramsi, Sufy Rabea Adawiya Idris

Universiti Teknologi MARA, Cawangan Negeri Sembilan
Kampus Rembau, 71150 Rembau, Negeri Sembilan

azonenadira@gmail.com

ABSTRACT

CEO Fortune is a board game that is invented based on basic functions of management which include planning, organizing, leading and controlling. The objective is to expose players to various management concepts such as motivation, communication and quality management through play in a fun setting. This board game is divided into four streets which are Mary Parker Follet, Henri Fayol, Peter F. Drucker and Frederick Winslow Taylor which has been assigned to Malaysia's top valuable companies based on several business sectors such as oil and gas, automotive, banking, retailing and many more. To play the game, each player is given RM500 and need to decide which street they each wish to own. The players continue moving around the board and start building their business empires by correctly answering the questions from the Question Bank. To add up on the uniqueness of the game, the Business Tycoon section will give an advantage to the players to expedite the winning process by answering questions related to current scenarios in the industry. Moreover, the Digital Billboard section will boost the value of their business empires. The first player who manages to buy all the companies on his chosen street is the winner.

Keyword: management, board game

A019-E

MOOC:EXERCISE METHODOLOGY AND PHYSICAL CONDITIONING FOR SPORTS

Nurul Hidayah Amir, Mohd Faridz Ahmad, Siti Jameelah Japilus

UNIVERSITI TEKNOLOGI MARA, Perlis Branch, 02600 Arau, Perlis

nurulamir3@gmail.com, hidayah131@uitm.edu.my, faridzahmad@uitm.edu.my, jamilahradzi@uitm.edu.my and sitijameelah@uitm.edu.my

ABSTRACT

As we move towards into a digital age, Massive Open Online Courses (MOOC) acts as a platform for learners to enhance knowledge and deemed to be more effective to be implemented. "Learning beyond the four walls" has been our main objective to provide a limitless medium for learners from the industry. The information provided in this application will be regularly updated in regards to physical activities that are relevant to Exercise Methodology and Physical Conditioning for Sports course and any related courses. It consists of updated information, guidelines, safety precautions, technique and prescription of exercise, quizzes and written assessment. As the application offers interactive features, learners are able to search for the information that suits to their need compared to the conventional learning method. Exercise Methodology and Physical Conditioning for Sports has been established for good 3 years. Throughout educating via this platform, learners were unable to communicate with instructors efficiently. Therefore, we have improvised conventional content into visual frequently asked questions to answer the common questions arise from each chapter visually. We hope this improvisation would enhance learners' understanding and assist in knowledge acquiring. Both learners and instructors will get fully benefits from this innovation and improvisation as its purpose is to educate via online learning in an attractive way.

Keyword: Massive Open Online Courses, Exercise Methodology and Physical Conditioning for Sports course, limitless medium, interactive features

RECYCLING AWARENESS KIT 3.0 (RAK 3.0)

Suhanom Mohd Zaki, Dr. Saifudin Razali, Mohd Faizal Azrul Azwan Mohammed,
Mas'udah Asmui, Musramaini Mustapha

Faculty of Business and Management, Universiti Teknologi MARA Pahang
Faculty of Electrical and Electronics Engineering, Universiti Malaysia Pahang

suhanomzaki@gmail.com

ABSTRACT

In Malaysia, it is estimated that the amount of recyclable materials discharged to the garbage disposal site annually is 2.3 million tons with an estimated value of RM900 million. In 2013, the country's total waste generation increased to 33,000 tonnes per day, compared to 19,000 tonnes per day in 2005. Due to this condition, the government through the National Solid Waste Management Department, Ministry of Urban Wellbeing, Housing and Local Government under the Solid Waste Management and Public Cleansing Act 2007 (Act 672) has required the separation of solid waste from 1 September 2015 to seven states including Pahang. Therefore, as one of the efforts to support the government's regulation in managing solid waste, a kids' learning aid named, Recycling Awareness Kit 3.0 or RAK 3. is developed. The RAK 3.0 is an innovation and continuity effort from the first Recycling Awareness Kit and RAK 2.0 introduced by our team. It contains a set of large flashcards on solid waste and ways to separate them and an upgraded electronic board game that related to solid waste management. The objectives of RAK 3.0 are to provide clear information on the process of separating solid waste produced at source in accordance with the composition of solid waste and to nurture good solid waste segregation practices among children so that they are exposed to waste segregation and disposal at their early age. It is hoped that awareness on solid waste separation at an early age may reduce increasing volume of waste generation to landfill and environmental pollution to maintain ecological balance.

Keywords: recyclable, garbage disposal

A021-E

EZNOMICS

Nik Suriati Nik Hassan[1], Norsilawati Mohd Hassan[2], Mazuin Mat Halif[3], Jamilah Laidin[4],
Zatul Himmah Abdul karim[5],Ts. Mohd Zafian bin Mohd Zawawi[6]

[1,2,3,5]Faculty of Business Management, Universiti Teknologi Mara Cawangan Kelantan
[4]Faculty of Business Management, Universiti Teknologi Mara Cawangan Kedah
[6]Faculty of Information Management, Universiti Teknologi Mara Cawangan Kelantan

[1,2,3,5,6]Bukit Ilmu, 18500 Machang, Kelantan
[4]08400 Merbok, Kedah

[1]niksu146@kelantan.uitm.edu.my, [2]norsi963@kelantan.uitm.edu.my, [3]mazui208@kelantan.uitm.edu.my,
[4]jamil138@uitm.edu.my, [5]zatul446@uitm.edu.my, [6]mohdzafian@gmail.com

ABSTRACT

Learning is an important process of obtaining knowledge but learning becomes unexciting process when the students are force to learn something that they are not interested to learn. According to Ivanova, A., & Smrikarov, A. (2009), the existing learning management systems could not anymore catch and hold the attention of students especially Generation Y and Z. The subject itself basically is not boring if the approach in teaching is interesting and able to attract student to engage with the subject. Therefore EzNomics was developed to facilitate students learn economics more effectively and efficiently. EzNomics contains seven chapters of lessons on Macroeconomics, which incorporates various multimedia elements such as text, graphics, animations, images, videos and audios. The innovation was design in DVD form and it was alternative eLearning tools that integrate interactive and comprehensive problem solving learning solution to help student interested and able to understand economics easier. Innovation in education or learning is important to stimulate a better result at the end of the learning process and it also promotes self-paced learning among students as stated by Kumar, M., Packer B., & Koller D. (2010). EzNomics can be commercialized to other institutions such as school, Matriculations and Polytechnicsinstitutions.

Keyword: [Learning, Teaching, Economics, Innovation]

Green & Sustainability (GS)

SUSTAINABLE ECO-FRIENDLY PLASTIC SAND BRICKS

Paran Gani, Ng Chuck Chuan, Lee Sin Li, Ang Kean Hua, Turkeswari Uvarajan, Nur Hanis Zulkernain

Faculty of Science and Technology
Quest International University Perak (QIU), No. 227, Plaza The Teng Seng (Level 2), Jalan Raja Permaisuri Bainun, 30250 Ipoh, Perak, Malaysiaparan.

paran.gani@qiup.edu.my

ABSTRACT

Typically, developing countries have improper solid waste management, with low waste collection rates and limited outlets for reusing potentially recyclable materials especially municipal plastic waste. Plastic waste has become so ubiquitous that it is now a serious threat to marine ecosystems and biota. Estimated that Malaysia had produced 0.94 million tons of mismanaged plastic wastes. There is a need to find the alternative solution to recycle the municipal plastic waste besides to conserve the environment. Reuse of plastics waste as construction materials is widely known. This invention will embark on the evaluating the plastic waste through intensive development of plastic sand bricks production; determining the best proportion of every type of recyclable plastic waste for the mass production; and identification of the additive to enhance the strength and fire resistant properties. Thus, the main aim of this invention is therefore to investigate the potential of recyclable plastic waste as production of sustainable eco-friendly plastic sand bricks. The discovery of novel proportion of mix plastic waste as a sand bricks isexpected at the end of the innovation.

Keyword: Plastic waste; bricks, eco-friendly; environment sustainability

ECO SHOWROOM

Siti Birkha Mohd Ali, Johari, N.S., Amirhosein Mehdipoor,
Md Hasanuzzaman, Nasrudin A.Rahim

UM Power Energy Dedicated Advanced Centre (UMPEDAC), Level 4, Wisma R&D UM, Jalan
Pantai Baharu, 59990 Kuala Lumpur,
Malaysia 2Institute of Graduate Studies, University of Malaya, 50603, Kuala Lumpur, Malaysia.
Faculty of Engineering and Life Sciences, Universiti Selangor, 45600, Bestari Jaya, Selangor.
Department of Building Surveying, Faculty of Built Environment, University of Malaya, 50603,
Kuala Lumpur, Malaysia.

*birkha@unisel.edu.my, noora_s@unisel.edu.my, amirhossin.me@gmail.com, hasan@um.edu.my,
nasrudin@um.edu.my*

ABSTRACT

The urgent need of reducing the amount of greenhouse gasses (GHGs) in the environment which contribute to global warming is driving the growing interest in the development of sustainable buildings. Sustainable building encompasses of material selection, opening, greenery elements, integrated renewable energy elements and many more. There are numerous research findings and aggressive development of the sustainable buildings that took place worldwide. Malaysia, not to mention is aggressively finding best practices to ensure the target of reducing its GHGs down to 45% is materialize by 2030. Numerous findings had proved that additional glazing layers had positively contributed toward lesser energy consumption in a building [1, 2]. In addition, the concept of 'green roof' has proof that energy consumption of one building can be reduced significantly [3, 4]. In this study, these two elements; i.e. the glazing material and 'green roof' are applied to a showroom conceptual building. A virtual showroom is designed using ArchiCAD 22 (one of the well-known BIM tool) and the energy evaluation was performed. The idea of this study is to demonstrate the impact of different glazing and roof materials for a showroom towards the reduction of carbon emission and energy consumption in Malaysia buildings.

Keywords: building information modelling, energy evaluation, glazing and green roof.

GREEN REVOLUTION: PAPERLESS RECEIPT

Nurul Najihah binti Mad Rosni[1,a], Maureen Neging[1,b], Adeline Engkamat[2,c],
Noor Syafiqah binti Mohd Sabri[3,d], Siti Zaidah binti Othman[1,e]
Valerie Chan Sue Lin binti Abdullah[4,f]

[1]Faculty of Civil Engineering,
[2]Faculty of Computer and Mathematical Sciences,
[3]Faculty of Architecture, Planning and Surveying,
[4]Academy of Language Studies,
Universiti Teknologi MARA, 94300 Sarawak, Malaysia

[a]najihah558@uitm.edu.my [b]maureenneging@uitm.edu.my, [c]adeline@uitm.edu.my
[d]syafiqah970@uitm.edu.my, [e]sitizaida@uitm.edu.my
[f]valcsl@uitm.edu.my

ABSTRACT

In Malaysia, a receipt is a proof of payment, received after a customer has made a payment and the vendor has confirmed the payment from the buyer. This is the norm and it is important that receipts are kept as evidence for tax exemption, exchange or for any other reasons. However, because of the different materials used for printing the receipts, the printout may gradually fade over time and cause the buyer to experience losses even if the receipt is still available. One potential solution to this problem is to produce a form of digital receipt, "Green Revolution: Paperless Receipt" which all vendors can issue as receipts for payments received. No receipt papers need to be given to the customers after they have made their purchases. If customers want physical receipts, all they need to do is to scan the QR code displayed on the screen at the counter using their smartphone and thereafter, the detailed descriptions of the items bought will be displayed. In general, this system will not only provide a new platform to help customers in managing their receipts, but it will also promote an environmentally sustainable practice for in-store shopping.

Keyword: paperless, receipt, environment

A003-GS

A NEW CLUTTER MODEL OF RELATIVE PERMITTIVITY FOR LNAPL CONTAMINATION EFFECT IN LATERITIC SOIL ON THE REFLECTED GROUND PENETRARTING RADAR SIGNAL.

Mimi Diana Ghazali, Othman Zainon, Siti Aminah Anshah, Noorfatekah Talib & Nursyahani Nasron

Department of Geoinformation, Faculty of Built Environment and Surveying, Universiti Teknologi Malaysia,81310 UTM Skudai, Johor.
Center of Study for Surveying Science and Geomatic, Faculty of Architecture, Planning & Surveying,Universiti Teknologi MARA, Perlis, 02600 Arau, Perlis.

mimidiana@uitm.edu.my, othmanz.kl@gmail.com

ABSTRACT

Proper characterisation of groundwater contamination in subsurface helps to improves effective remediation the contaminated sites. In this study, non-invansive Ground Penetrating Radar (GPR) was used to investigate the degree of effect light non-aqueos phase liquid (LNAPL) to soil moisture from the sample columns subjected to rapid soil water content measurement. The objective of the study was to evaluate and model the relative permittivity for porous media water and LNAPL content analysis in lateritic soil column using GPR. A series field survey measurements were conducted at lateritic soil contaminated area using the shielded antenna, 800MHz GPR. Sample columns water content was also measured simultaneously with GPR measurement using the soil moisture sensors. The relative permittivity was an estimate based on the determination GPR radar velocity. Verification of the relative permittivity result is obtained by calibrated vector network analyser (VNA). The model of the scattering parameter of relative permittivity for LNAPL contamination was performed using statistical analysis, analysis of variance (ANOVA). The schematic diagram exhibited the effect of relative permittivity LNAPL contamination in distort of lateritic soil moisture in ratio 2:1. To certain extend, the coverage of LNAPL propagation affects in the subsurface were examined and noticeable in short-term within 24 hours monitoring.

Keywords : LNAPL, relative permittivity, GPR, lateritic soil

BANANASWAT : APPLICATION IN BATIK INDUSTRIES

Nor Azliza Akbar, Amalina Amirah Abu Bakar, Nurhidayati Mat Daud, Sabariah Badrealam, Suhada Sabri

Universiti Teknologi MARA, Cawangan Pulau PinangKampus Permatang Pauh, Jalan Permatang Pauh13500 Permatang Pauh, Pulau Pinang

nurhidayatimd@uitm.edu.my

ABSTRACT

Dye industry is one of the industries that produce great income to economic growth in several countries around the world including Malaysia. However, the wastewater generated contains high organic and inorganic contaminants which exceed the standard effluent of industrial wastewater by Department of Environment. Recently, activated carbon is widely used in adsorption process due to large surface area and high adsorption capacity. Although it is advantageous as adsorbent media, the high cost of activated carbon caused researchers to find a cheaper alternative. This product aims to evaluate the capability of BananaSWAt as an adsorbent media. The potential use of BananaSWAt had been investigated using batch adsorption study. A series of batch study was conducted to determine the effect of varied dosage for range 0.2 g until 1.4 g and contact time for 15 minutes until 120 minutes. From the batch study experiment, it shows that more than 90 % dye was removed using 1.0 g of BananaSWAt within 90 minutes of contact time. Based on the result analysis, BananaSWAt has good potential for dye removal which can provide cost effective, eco-friendly and good resources for local batik industries. As a conclusion, BananaSWAt was recommended as an alternative and has potential to be commercialized.

Keyword: batik industry, industrial wastewater, activated carbon, adsorption, batch study

MOCOSHECA: MODIFIED COCONUT SHELL CARBON

Amalina Amirah Abu Bakar, Nuzul Fatin Abd Razak, Nor Azliza Akbar, Sabariah Badre alam, Nur Shafieza Azizan, Nurhidayati Mat Daud and Khairul Ammar Muhammad Ali

Faculty of Civil Engineering, Universiti Teknologi MARA, Cawangan Pulau Pinang, 13500, Permatang Pauh, Pulau Pinang.

amalina.amirah@uitm.edu.my, nuzulrazak@gmail.com, norazliza049@uitm.edu.my; shaba@uitm.edu.my, shafieza163@uitm.edu.my, nurhidayatimd@uitm.edu.my and khairulammar.ali@uitm.edu.my

ABSTRACT

Recently, the use of agricultural waste materials gained attention among researchers to study the effectiveness of adsorbent media in heavy metal treatment. In this study, application of coconut shell carbon and limestone also known as MOCOSHECA, as a modified adsorbent was used to remove copper (Cu) from industrial wastewater. A synthetic industrial wastewater sample containing 2 mg/L of copper was prepared using distilled water and standard solution of copper. Batch adsorption study was conducted to determine the effect of varied contact time (0 to 120 minutes) and pH (pH3 to pH7). The result shows that 98% of Cu was removed at 90 minutes of contact hour with 250 rpm for agitation speed and at an optimum pH of 5. This indicates that MOCOSHECA has a potential in reducing copper concentration in industrial wastewater and moreover could lead to reduce the concentration below drinking water standard which also provide cost effective, green and aco-friendly adsorbent in treating industrial wastewater. Thus, MOCOSHECA is recommended as an alternative adsorbent to be commercialized.

Keyword: Coconut Shell Carbon, Limestone, Modified Adsorbent, Copper, Batch Study

SMART COMPOSTER MACHINE

Assoc. Prof. Dr. Noor Yasmin Zainun, Assoc. Prof. Dr. Munzilah Md Rohani, Sr. Saifullizan Mohd Bukari, Muhammad Qusyairi Abdul Rahman, YM IR Raja Fairol Farouk Raja Abd.
Assiss

Universiti Tun Hussein Onn Malaysia (UTHM) 86400 Parit Raja, Batu Pahat, Johor.

nryasmin@uthm.edu.my

ABSTRACT

The use of on-site compost technology was suggested as a possible solution where having high transportation costs for biodegradable waste treatment. However, due to the extremely small capacity of projects, this application proved to be inefficient at the time, odour problems, maintenance issues, and cost efficiency issues. These previous cases offer insight and direction for the development of enhanced methodology for determining the viability of alternative composting strategies. The machine was design with 3 compartments arrange from top to below where; (1) grinder function to grind all food waste including bones such as chicken and fish bones; (2) blender function to blend all the waste together. In this compartment, 2 containers are place on left and right which contain effective microorganism (EM) and water. While the waste was blended, EM will be sprinkled inside and the heat will be stabilized using water. Digital heat control is provided so that user can set favor temperature. These will speed up the composting process; and (3) compressor- to compressed the waste and have both solid and liquid organic fertilizer as the output. The machine had been successfully commercialized to industry, Sarjani Agro Shop and had increasing the production of the company to 150%.

Keyword: compost, effective microorganism, heat, speed up process

EDIBLE STRAW

Zubainun Mohamed Zabidi, Nurul Aimi Zakaria, Ahmad Nazib Alias, Hana Rafifah Norazman, Nurul Ain Batrisyia Ahmad Tamzi and Siti Wajihah Mohd Nazri

Faculty of Applied SciencesUniversiti Teknologi MARA Perak BranchTapah Campus, 35400 Tapah RoadPerak D.R

zubainun384@uitm.edu.my

ABSTRACT

Malaysia government will start to ban plastic straw effectively by 2020. The main problem about plastic straw has always been that they are a single-use plastic, they create unnecessary waste, and it contributes to the pollution. To overcome this issue, an innovation has been made to replace the plastic straw with an edible straw for drink consumption. The benefits of having an edible straw is that are save to consume and it is biodegradable. Besides that, it is also good for health. For an example oat are high in fibre and the most nutritious whole-grain foods that a person can consume. There are three types of materials used in this experiment which are sugar, cream crackers and oats. The study of the performance of these three types of materials are examine. The result shows that oats can withstand the longest in all three solutions followed by cream cracker and sugar.

Keyword: edible straw, biodegradable, pollution, oat

Social Sciences & Entrepreneurship(SS)

P-MYTAHFIZ PORTAL

Dr. Norazmi Anas, Shahril Nizam Zulkipli, Mohd. Syukri Mohd Noor, Dr. Mohamed Imran Mohamed Ariff, Prof Madya Dr. Adnan Mohamed Yusoff, Dr. Muhammad Hafiz Saleh & Zuriani Yaacob

Akademi Pengajian Islam Kontemporari (ACIS)

Fakulti Sains Komputer & Matematik (FSKM), Universiti Teknologi MARA, Cawangan Perak, Kampus Tapah, 35400 Tapah Road, Perak, Malaysia

Fakulti Pengajian Quran dan Sunnah (FPQS),Universiti Sains Islam Malaysia, Bandar Baru Nilai, 71800 Nilai, Negeri Sembilan, Malaysia

Akademi Pengajian Bahasa (APB),Universiti Teknologi MARA, Cawangan Pahang, Kampus Raub, Felda Krau, 27600 Raub, Pahang, Malaysia

norazmianas@uitm.edu.my

ABSTRACT

P-MyTahfiz dikenali Private-Malaysian Tahfiz merupakan idea pembangunan portal berasaskanmodeltahfizpreneurbertujuanmeningkatkankelangsunganInstitusi Tahfiz Swasta (ITS) di Malaysia melalui penjanaan pendapatan aktiviti keusahawanan. Inisiatif kerjasama Universiti Teknologi MARA(UiTM), Institut Darul Quran, Jabatan Kemajuan Islam Malaysia (JAKIM), Majlis Agama Islam Negeri (MAIN) dan Institut Keusahawanan Negara (INSKEN) ini dilihat mampu menyelesaikan masalah piawaian infrastruktur, kebergantungan terhadap bantuan kewangan (kerajaan, dana wakaf & sedekah), isu akauntabiliti pengutipan dana awam dan kekangan sumber kewangan ITS di Malaysia. Portal ITS di Malaysia dibangunkan secara persendirian dan menfokuskan maklumat tadbir urus semata-mata disamping akses terhad, portal tidak stabil dan sukar dicapai oleh pengguna. Oleh yang demikian, P-MyTahfiz berfungsi sebagai medium maklumat digital produk keusahawanan tahfiz swasta dan perkhidmatanyangmemudahkanpenggunamendapatkansemuainformasimelaluisatuportal bersepadu. Rekabentukportalyangmesrapenggunadanmudah diaksesmenjadikannyasesuai untuk semua lapisan masyarakat disamping membantu dan menyokong produk dan perkhidmatan usahawan bumiputera tahfiz. Oleh itu, pembangunan portal P-MyTahfiz yang menonjolkan elemen keusahawanan sosial ini dilihat selari dengan Revolusi Industri 4.0 hasil transformasi tadbir urus tahfiz swasta secara digital bagi mencapai matlamat melahirkan Super Smart Society dalam Revolusi Industri 5.0 disamping mereaslisasikan Dasar PendidikanTahfizNegara(DPTN)yangmensasarkan 125,000 huffazmenjelangtahun 2050.

Keyword: P-MyTahfiz, Institusi Tahfiz Swasta (ITS), Tahfizpreneur, Portal

DIGITAL MARKETING PLAN APP (DiGMP) FOR STARTUPS

Hazliza Haron,
Department of Business Management, Universiti Teknologi Mara Cawangan Perak,
Kampus Seri Iskandar, Malaysia, Arsyad Ayub Graduate Business School,
Shah Alam Malaysia

Wan Marhaini Wan Omar, Nor Asma Mohd Zin
Faculty of Business Management, Universiti Teknologi Mara Cawangan Kelantan,
Kampus Kota Bharu, Malaysia, Arsyad Ayub Graduate Business School, Shah Alam, Malaysia

hliza457@uitm.edu.my, Whaini299@uitm.edu.my

ABSTRACT

Marketing plan is a written document that consist of specific and detail planning of a product venture. Its development is crucial prior to the launch of any offering into the market. This paper argues that conventional knowledge of marketing plan needs to be more emphasized. It is no longer adequate to be applied by the entrepreneurs and start-ups in the coming era of Industrial Revolution 4.0 (IR 4.0). Thus, the framework for the Digital Marketing Plan App or known as DiGMP is proposed to ease out the task of developing a thorough marketing plan for new local entrepreneurs. As this document is critically important for any new product launch and the lack of a user-friendly system available in the market, a minimalist app like DiGMP will be highly beneficial for new local entrepreneurs. It consists a user-friendly template which includes the basic elements of marketing plan like industry analysis, competitor analysis, customer analysis, marketing strategy (segmentation, targeting and positioning), marketing action plans, financial forecast, implementation and control. This app could also be suggested as a tool that can be used in any marketing courses that requires the development of a marketing plan.

Keyword*:* Marketing plan, digital marketing plan, product venture, startups.

A003-SS

ARCHIVAL AWARENESS IN HIGHER EDUCATION INSTITUTIONS (HEIS): EDUCATIONAL ARCHIVES PROGRAMME THROUGH A COLLABORATIVE PARTNERSHIP WITH HEIS OF MALAYSIA

Jannatul Iza Ahmad Kamal, E. R. K. Rafedzi, PhD
Nik Azliza Nik Ariffin, Jafalizan Md Jali

Faculty of Information Management, Universiti Teknologi
MARA, Malaysia

jannatul406@uitm.edu.my

ABSTRACT

The purpose of this study is to investigate the adoption of educational archives programme through partnership collaborations between the National Archives of Malaysia and Higher Education Institutions (HEIs) in Malaysia as an initiative for increasing archival awareness, especially in professional education and training aspects. This study highlights the range of opportunities that exist for the collaboration between the National Archives of Malaysia and both public and private higher education institutions (HEIs) in Malaysia. Thus, this study provides useful information for academics and HEIs to understand the big picture and develop long term collaborations with archive services as well as act as a bench marking tool for archives institutions to increase its visibility and knowledge on archives.

Keywords: Awareness, Archives Program, Archives, Higher Education, Information Management, Malaysia.

I-SYAMILAH

Shahril Nizam bin Zulkifli, Amin Hj Che Ahmatl, Muhammad Yusri Yusof@Salleh, Mohd Zahirwan Halim Zainal Abidin, Mohd Syukri Mohd Noorl, Norazmi Anas, Abd Munir Mohamed Noh, Muhd Imran Abd Razak

Universiti Teknologi MARA Cawangan Perak Kampus Tapah
35400 Tapah Road, Perak Darul Ridzuan
Universiti Teknologi MARA Cawangan Perak Kampus Seri Iskandar
Bandar Seri Iskandar, 32610, Seri Iskandar, Perak

shah4107@uitm.edu.my

ABSTRAK

"I-Syamilah" merupakan inovasi simulasi berpapan (board game) berkonsepkan soal jawap agama yang iinspirasikan daripada permainan Saidina dan Monopoly. Namun permainan ini berbeza dengan kedua-duanya kerana ia adalah simulasi kepada persoalan-persoalan agama yang berasaskan akidah, syariah dan akhlak. Perkataan syamilah (menyuluruh) dijadikan sebagai tema kerana ia menekankan keseluruhan merangkumi persoalan akidah (uluhiyyah, nubuwwah dan sami 'iyyat'), syariah (ibadah, muamalah, munakahat, qawa'id fiqh & maqasid syariah) dan akhlak (mahmudah & mazmumah). Justeru, permainan ini dapat memberikan kefahaman kepada para pemain unutk mempelajari cabang-cabang agama tersebut secara interaktif. Ia juga menekankan konsep targhib dan tarhib sebagai suatu motivasi dan ancaman kepada umat insan sebagai khalifah dan hamba di atas muka bumi Allah SWT. Permainan ini diharapkan dapat memupuk minat dalam kalangan umat Islam untuk mempelajari persoalan-persoalan agama secara interaktif melalui kaedah pembelajaran baharu yang bersifat holistik.

Keyword: Asas-asas Islam, Permainan Simulasi

OFF-CAMPUS STUDENT HOUSING: i-PREFERENCE

Prof Madya Dr. Thuraiya Mohd, Noraini Johari, Suwaibatul Islamiah Abdullah Sani
Lizawati Abdullah, Nurulanis Ahmad @ Mohamed

Faculty of Architecture, Planning and Surveying, Universiti Teknologi MARA
Perak Branch, Seri Iskandar Campus 32610, Perak, Malaysia

thura231@uitm.edu.my

ABSTRACT

The immense number of student enrolment creates high demand for student accommodation far exceeding the available on-campus student accommodation provided by universities and colleges forcing some students to reside off-campus instead. It is crucial to identify the off-campus student housing preferences who are the economically determinant group of people to accommodate differing tastes and affordability. This poster presents an innovative application named Off-Campus Student Housing i-Preference. This app enables the selection of attributes to suit individual preferences of different users. The development of the app is derived from the formulation of a structured model of off-campus student housing preferences. This model entails data collection through a survey conducted via random distribution of Likert scale type structured questionnaires among off-campus students in selected public and private universities within the State of Selangor. Data analysis uses SEM – PLS. Results from analysis indicate that the four main factors relevant to student housing preferences are: housing environment, location, housing quality, and housing accommodation. The i-preference app provides a set of guidelines for off-campus student housing preferences that is significant to local authorities, housing developers, Higher Education Institutions (HEIs), students' societies, and also the local communities to be the panacea for studentification issues.

Keyword: Off-campus students, Student housing, i-Preference, Student profiles, Structural Model

A006-SS

E-RESEARCH PLANNER ADS511: RESEARCH PROPOSAL \DEVELOPMENT AND TUTORIAL PLANNER

Mohd Ramlan Mohd Arshad, Dr. Mahadir Ladisma Awis, Mohd Nazir Rabun,
Nor Azira Ayob

Fakulti Sains Pentadbiran dan Pengajian Polisi Universiti Teknologi MARA Negeri
Sembilan, Kampus Seremban

mramlan2957@uitm.edu.my

ABSTRACT

ADS511 or Research Methodology and Data Analysis is essentially an important module that inserted into Bachelor's in Administrative Science program that provides concrete exposure for undergraduate which require the final year students to submit their research proposal. Thus, a form of guidance to help them is deemed as necessary to ensure a progressive research proposal and to avoid delay in completing their research proposal. The E-ADS511 Research Planner o can be used as a successful guidance for the students to complete their research proposal and their tutorial assignments on statistical analysis. Furthermore, the guides can be used by the students to check on the in-house format stipulated in the faculty academic circular with the objective of meeting the deadlines for full submission. This in fact will help the faculty objective of Graduating on Time can be achieved where indirectly reflects the University achievement. It gives both students and their respective supervisors an easy grasp of the various processes, approaches and application to research proposal compilation. The introduction of this Research Planner will offer great benefits to both parties, the supervisee and supervisor alike also direct and indirect parties involved in ensuring quality academic research may be produced.

Keyword: Research Methodology, Data Analysis, Proposal Development, Tutorial Planner

A007-SS

SISTEM APLIKASI FARAID DAN HIBAH

Dr. Mahanum Sulaiman, Nurul Hidayah Aziz, Syed Redzwan Sayed Rohani, Roslan Abd Wahab, Norhayati Sulaiman, Amizahanum Adam

Universiti Teknologi Mara, Cawangan Perak, Kampus Tapah,
Tapah Road, Tapah, Perak

hanum487@uitm.perak.edu.my, nurul863@uitm.perak.edu.my, syedr787@perak.edu.my, roslanawahab@perak.edu.my, norha481@perak.edu.my

ABSTRACT

Kebelakangan ini banyak kes tuntutan pusaka dibawa ke mahkamah kerana kegagalan waris menyelesaikannya secara baik hingga membawa kepada perbalahan keluarga. Pengurusan harta pusaka adalah satu keperluan terutama apabila wujud keadaan di mana pelaksanaan sesuatu perkara itu wajib kita tunaikan. Dalam konteks ini, Islam membenarkan kita untuk melupuskan harta atau memberi manfaat kepada orang-orang tertentu melalui instrumen wasiat dan hibah. Walaubagaimanpun, pelaksanaan kedua-dua instrumen ini adalah tertakluk kepada hukum syarak. Kesedaran mengenai kepentingan pengagihan harta secara tepat serta kekangan pengetahuan, juga kekurangan aplikasi pengiraan faraid merupakan focus utama kajian ini Oleh itu, kajian ini adalah membangunkan sistem aplikasi pengiraan faraid. Aplikasi yang pernah dibangunkan sebelum ini hanya membantu pengiraan harta bersih sahaja tetapi gagal mengambil kepentingan kewajiban penolakan hutang serta pengumpulan asset tidak disediakan. Oleh itu, aplikasi ini dibangunkan supaya dapat memenuhi keperluan pengagihan harta dengan mengambil kira segala asset terkumpul juga pembayaran hutang dan perbelanjaan dan seterusnya membantu pengagihan harta bersih mengikut pengiraan faraid. Aplikasi Faraid ini juga dapat diakses mengunakan mana- mana telefon pintar yang boleh disambungkan ke internet. Dengan inovasi ini, kami berharap membantu pembahagian harta pusaka sebelum dan juga selepas kematian seseorang islam yang telah di tetapkan di bawah Hukum Syarak ke atas waris-waris yang sah dan layak dengan mudah.

Keyword: pusaka, faraid, hibah

A008-SS

GRAB BAG: FLOOD SURVIVAL KIT

Sayed Muhammad Aiman Sayed Abul Khair,
Thuraiya Mohd (Prof Madya Dr.), Asniza Hamimi Abdul Tharim(Dr.), Mohamad Haizam
Mohamed Saraf, Farid Al Hakeem Yuserrie

Universiti Teknologi MARA Cawangan Perak, Kampus Seri Iskandar

*sayed705@uitm.edu.my, thura231@uitm.edu.my, asniz285@uitm.edu.my,
moham8841@uitm.edu.my, farid933@uitm.edu.my*

ABSTRACT

Flooding is a frequent hazard to life and property. In Malaysia, more than about 10% of the country is flood-prone. In this desperate situation, the flood victims immediately require emergency relief aid in the form of food and necessities. Based on newspaper reports and flood victim's experience, the emergency relief aid in the form of food and basic necessities arrived to the flood relief center more than 48 hours later and were not in accordance with the current needs and requirements of flood victims. Thus, the Flood Survival Kits (Grab Bag) invention has been produced to the community's as flood preparedness. An empirical study was conducted at the worst flood disaster of Kelantan, Malaysia which is along Sungai Kelantan to determine the essentials item needed and recommend significant input by victims. Questionnaire data of 500 victims of flooding as respondents was analysed quantitatively using descriptive statistics encompassing frequency distribution and percentages distribution form for univariate analysis. The findings indicate that the essential items that have highest rates needed in flood survival kits are identified such as food and water, clothing and footwear. The invention Flood Survival Kit/Grab Bag is one of their actions for helping their people to survive.

Keyword: flood, flood survival kits, essential items, victims

REINVENTING MASLOW'S HIERARCHY OF NEED THEORY: AN EXPLANATION OF FEMALE LABOR FORCE-CHILD ABUSE NEXUS IN MALAYSIA

Nor Hidayah Harun, Nor Fadzilah Zainal,Mohd Noor Fawzi Baharum, Mohd Shahidan Shaari, Nur Salimah Alias

Department of Business Management, Universiti Teknologi MARA Pulau Pinang School of Business Innovation and Technopreneurship,
Universiti Malaysia Perlis

norhidayah510@uitm.edu.my

ABSTRACT

Child abuse has inevitably reached an epidemic proportion in numerous countries including Malaysia. A report by the Ministry of Family and Community Female's Development (2017) states that a total of 3,318 cases of child abuse with a household crisis and negligence of parents and guardians were reported from 2012 to 2016. This situation has merited extensive attention from researchers and thus a vast array of past literature embarked on investigations into it. However, none of them applied Maslow's hierarchy of needs to explain how female labor force is considered to be a potential determinant of child abuse. Therefore, this study aims to shed light on this matter by reinventing the theory and provide some explanation on how female labor force can contribute to a higher child abuse case in Malaysia by using ARDL bound testing approach.

Keyword: female labor force; child abuse; hierarchy of needs theory; ARDL

SUBIC
(START-UP BUSINESS IN CAMPUS)

Izmayani Binti Sa'Adin, Ahmad Bin Azmin, Suzaina Ismail

Universiti Teknologi Mara Cawangan Perak

izmayani@uitm.edu.my

ABSTRACT

Pendidikan dan keusahawanan merupakan dua aspek utama yang sentiasa diberi penekanan dalam usaha untuk menjadikan Malaysia sebagai sebuah negara maju yang berpendapatan tingi dan inklusif. Penerapan dan pendedahan kepada budaya dan nilai keusahawanan merupakan satu proses pembelajaran yang dapat membuka ruang dan minda pelajar supaya menjadi lebih kreatif, inovatif dan berdaya maju di mana aspek ini dijangka mampu untuk menjana inovasi, peluang pekerjaan dan pertumbuhan ekonomi yang lebih mantap pada masa hadapan. Hasrat Kerajaan meningkatkan bilangan usahawan yang benar-benar berkecimpung dalam bidang perniagaan boleh dicapai melalui pelbagai program keusahawanan melibatkan pelajar universiti awam. Bagi merealisasikan hasrat, MASMED UiTM Cawangan Perak meneruskan usaha untuk membudayakan keusahawanan di kalangan pelajar dengan mencipta Modul SUBiC (Start Up Business in Campus). Kumpulan sasaran adalah pelajar-pelajar yang berminat untuk memulakan perniagaan didalam kampus melalui pelbagai platform yang disediakan seperti Kshoppe, Mobile Pushcart dan Hub Keusahawanan. Mereka perlu melalui 4 modul utama; iaitu modul 1; pembentangan idea rancangan perniagaan secara menyeluruh. Modul 2, menyiapkan Rancangan Perniagaan yang meliputi elemen-elemen penting seperti butiran perniagaan, pemasaran, operasi dan kewangan. Modul 3, kaedah-kaedah pembiayaan kewangan manakala Modul 4 adalah proses pendaftaran syarikat. Setiap perjumpaan modul akan disertai oleh agensi-agensi luar yang terlibat seperti SSM, SME Corporation, FAMA, MARA, PUNB, dan pelbagai institusi kewangan.

Keyword: Modul, Keusahawanan, SuBiC, MASMED UiTM Cawangan Perak

STRATEGIZING SMALL BUSINESS PERFORMANCE: A MARKETING MODEL FOR MALAYSIAN SMALL BUSINESS FIRM

Sheerad Sahid, Nor Aishah Buang

Universiti Kebangsaan Malaysia
Bangi, Selangor

sheerad@ukm.edu.my

ABSTRACT

Marketing in small business firm is seen as a field of study that is quite difficult to find the answer. This is because it is difficult for small business firm to adapt conventional marketing theory that is normally developed for a large firm. Therefore, this study aimed to examine a strategic entrepreneurial marketing model (EMM) that will help in improving and strategizing business performance of Malaysian small business firms. The sample for this study is the owner-manager of small business firms in Malaysia. Data collection was carried out using self-administered questionnaire that was distributed via internet survey, mail and site visit to the entrepreneurs and SME fairs. Both exploratory and confirmatory factor analyses were used to assess the reliability and validity of each construct before the structural analysis was analyzed. The findings particularly indicate that the influence of EMM is a strategic way in overcoming not only resource limitations but also liabilities of the smallness and newness of a firm, that is associated with being unknown entities in which there is a lack of trust.

Keyword*:* entrepreneurial marketing model, marketing for SME, small business performance

Science, Engineering&
Technology(ST)

A001-ST

PREDICTIVE ANALYTIC EXPERIMENTS ON EMPLOYEE ATTRITION PARAMETERS: A COMPARISON BETWEEN DECISION TREE MODEL AND ARTIFICIAL NEURAL NETWORK

Hazlina Haron, Khu Khuang Han, Hazliza Haron

SEGi College Subang Jaya, Persiaran Kewajipan, Subang Jaya Selangor, alaysia
Uitm Seri Iskandar Cawangan Perak, Manjung Perak, Malaysia

*hazlinaharon@segi.edu.my, khukh96@gmail.com,
hliza457@uitm.edu.my*

ABSTRACT

In the wake of Artificial Intelligence and Big Data, companies are scrambling to get their hands on adopting them in their business. Artificial Intelligence, has put every industry on notice, whether in education, government, healthcare etc. This project revolves around the comparison between two AI algorithms, which is the decision tree model for the machine learning algorithm, and the artificial neural network for the deep learning algorithm, for predicting employee attrition. The main aim of this study is to experiment the predictive analytics processing towards staff attrition factors by applying and comparing two different machine learning algorithms; i.e decision tree model and neural network. This research investigates the current employee turnover factors through review papers, simulate real scenario and ideal scenario as a benchmark, evaluate the model and performance of the scenarios using two compared algorithms to seek out which is the best. Result shows decision tree model is better than artificial neural network.

Keywords: employee attrition, decision tree model, artificial neural network

A002-ST

APPLYING AUGMENTED REALITY TECHNOLOGY AS ONE OF LEARNING METHODS FOR ADHD CHILDREN USING FLASH CARD

Hazlina Haron, Choo Churn Hoe, Roslaily Muhammad

SEGi College Subang Jaya, Persiaran Kewajipan, Subang Jaya Selangor, Malaysia

hazlinaharon@segi.edu.my,
kleincch1994@gmail.com,
roslailymuhammad@segi.edu.my

ABSTRACT

Attention Deficit/Hyperactive Disorder (ADHD) symptom is crucial during pre-school. ADHD pre-schoolers have a slower reaction time and lower accuracy in answering question compared with normal pre-schoolers. Augmented reality (AR) learning style is not a good substitute to a traditional learning but it is a good fundamental for a real case study. AR mobile application is more suitable for children with dyslexia compared to ADHD because dyslexia children has the difficulty in learning. Pre-school learning is very important for pre-schoolers as they have the ability to learn and gain information very well. Teaching pre-school children is not an easy task because they are active, therefore using a fun and attractive learning style may help in reducing this problem. The aim of this project is to improve the current learning method with the adoption of AR technology. This system used Unity3D platform for the development and can be accessed by any device users. This project built a mobile flash cards system for ADHD symptom children through AR technology. This project specifically focuses on children with only ADHD symptom and it doesn't include children who are having ADHD symptom and also having other symptoms, such as autism, at the same time.

Keyword: augmented technology, learning methods

SMART CAR SERVICE APPS

Dr Hazliza bt Haron, Nurul Asma Husna bt Ramlan,
Muhammad Hilmi b Muhammad Nashir, Muhammad Iqram b Daud, Muhammad Izzat b Ishak

Faculty of Architecture, Planning and Surveying, Universiti Teknologi Mara Cawangan Perak, Kampus Seri Iskandar, 32610 Bandar Baru Seri Iskandar, Perak

Department of Business Management, Universiti Teknologi Mara Cawangan Perak, Kampus Seri Iskandar, 32610 Bandar Baru Seri Iskandar, Perak, Malaysia
Arsyad Ayub Graduate Business School,Universiti Teknologi Mara Shah Alam, Malaysia

hliza457@uitm.edu.my

ABSTRACT

All car owners are obliged to send their cars for service at a pre-determined mileage travelled depending on the brands and types of cars. The standard procedure would be for them to call up the car service centre and request for a service slot. Many a time, the car owners face difficulty in finding a slot that is convenient and one that fits with their own work or personal schedule. On the other hand, the customer service advisors are facing problems on the lack of staff to attend to the numerous calls for this matter. This smart car service apps is an application that lets the car owner to make own booking for service and choose the slots that they prefer. The apps will detail out the date, day and time including cost estimation once the owner click on the necessary type of service. This will be directly linked to the car service centre's system and the slot would automatically be locked. Next car owners would have to choose other available slots. This apps is convenient for both customers and the company. It saves time, enhances operation efficiency and heightens up customer satisfaction with the car service centre.

Keyword: smart car_service booking system, car service centre

A004-ST

LASER-DRIVEN HOT NEEDLE WITH DYNAMIC TEMPERATURECONTROL SYSTEM FOR PERCUTANEOUS HYPERTHERMIA CANCER THERAPY

Lim Kok Sing, Daryl Tan, Hani Hareiza Abd Raziff, Yeong Chai Hong, HarithAhmad.

Photonics Research Centre, University of Malaya, 60803 Kuala Lumpur, Malaysia.
School of Medicine, Faculty of Health and Medical Sciences, Taylor's University 47500 Subang Jaya, Selangor Darul Ehsan, Malaysia

daryltan@siswa.um.edu.my

ABSTRACT

There are several types of energy sources for local hyperthermia therapy, and radiofrequency ablation (RFA) is probably the most commonly used for cancer treatment. However, the irregular shaped of the heated area due to inhomogeneous heating is the major complication faced by RFA. In here, a prototype named "laser-driven hot needle" is able to overcome the problem by generating homogeneous heating. In addition, the prototype is developed to be user-friendly, cost-effective, fast and highly efficient. The laser ablation needle is a closed loop opto-electronic control system, consists of a 2 mm Fiber Bragg Grating (FBG) – optical fiber temperature sensor, a laser driven hot needle and a micro-controller. Based on real-time temperature input from the FBG sensor, the micro-controller can perform a dynamic PID control on laser intensity for a safe hyperthermia treatment. This developed prototype comprised of the diode laser showed that it can deliver laser energy via simple optical fiber. This laser is cheaper and much smaller than the conventional high power lasers used in other medical devices. In overall, the laser-driven hot needle is able to serve as medical instrument for local hyperthermia cancer therapy in a more complex and economical ways.

Keywords: local hyperthermia, medical laser device, cancer treatment.

A005-ST

A STUDY OF FACE RECOGNITION SYSTEM USING DEEP LEARNING ALGORITHM: AN IMPLEMENTATION IN ATTENDANCE RECORDING SYSTEM

[1]Roslaily Muhammad, [2]Vladislav Yugay, [3]Hazlina Haron

[1,2,3]SEGi College Subang Jaya, Persiaran Kewajipan, Subang Jaya Selangor, Malaysia

[1]roslailymuhammad@segi.edu.my, [2]vladsfull2000@gmail.com, [3]hazlinaharon@segi.edu.my

ABSTRACT

The attendance system is a common classroom activity in education organizations to check on the students' performances. One of the main issues in traditional attendance is authentication and provide inaccurate performance due to the possible fake records. To overcome these problems, the Face Recognition Attendance System has been proposed and developed. This project addresses the problem of the traditional method of the attendance recording process in educational organizations. It includes the in-depth research of Face Recognition approach. The investigation of different non-biometric and biometric technologies and methods have been considered in order to compare the available approaches with the chosen Face Recognition approach. This project adopts the pre-trained Convolutional Neural Network (CNN) algorithm due to the high accuracy rate and rapid performance reputation. The proposed system able to resolve the issues on traditional student attendance recording method and automate the whole process. The proposed prototype was built using Python programming language, computer vision, machine and deep learning libraries such as OpenCV, Dlib, face_recognition and HD UVC Webcam. Data collection was done among college students and lecturers in College SEGi, Subang Jaya. The result reached the highly satisfactory results in terms of system usability, user-friendliness, and accuracy of the system algorithm.

Keyword: face recognition, attendance system

DEVELOPMENT OF MODIFIED PPY-RG) COMPOSITE FOR SUPERCAPACITOR APPLICATIONS

Adibatul Husna Fadzil[1,2*], Rusli Daik[2,], Rosliza Ali[1], Nordiana Suhada Mohmad Tahirudin[1], Rozaina Saleh[1],
Karimah Kassim[3] and Oskar Hasdinor Hassan[4]

[1]*Faculty of Applied Science, Universiti Teknologi MARA, Cawangan Perak, Kampus Tapah, 35400 Tapah Road, Perak, Malaysia*
[2]*School of Chemical Sciences and Food Technology, Faculty of Science and Technology, Universiti Kebangsaan Malaysia,UKM Bangi, 43600, Selangor, Malaysia*
[3]*Institute of Science, Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia.*
[4]*Faculty Art and Design, Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia.*

E-mail:adibatul@perak.uitm.edu.my

ABSTRACT

Polypyrrole is a promising candidate for supercapacitor electrode due to its high capacitance, easy to prepare and low cost. However, it has a lot of limitation such as low electrochemical and poor cycling stability. Graphene oxide as a chemical oxidant and precursor for electrochemical supercapacitor has been increasingly explored due to the abundance of natural carbon sources, low cost, low density and extensive chemical functionalization. The preparation of conducting polymer and graphene oxide usually involves metal catalyst and harmful chemical reducing agents. A green synthesis method was introduced to produce composite electrode composed of graphene oxide intercalates with cetyltrimethylammonium bromide surfactant incorporated with polypyrrole. Graphene oxide can play role in polymerization of PPYRGOCTAB and PPYRGO composite by using sugar as reducing agent for the reduction of graphene oxide. The structural study of the prepared composite electrode by FTIR and RAMAN spectroscopy proved that pyrrole had been successfully incorporated into graphene. FESEM micrograph of the conducting polymer and RGO, shows that PPY chain are densely and uniformly coated on the surface of RGO. The composite electrode has higher stability by adding the the RGO to PPY proven by thermal analyses.

Keyword: *Green Synthesis, Polypyrrole, Reduced Graphene Oxide, Supercapacitor, Electrode*

SOIL STABILIZATION USING TILE WASTE AND CEMENT AS ADDITIVE

Mohd Izzat Joohari, Noraziyan Abd Aziz, Fairus Azwan Azizan, Nurhidayati Mat Daud

Universiti Teknologi MARA , Cawangan Pulau Pinang, Kampus Permatang Pauh, Jalan Permatang Pauh13500 Permatang Pauh, Pulau Pinang

izzatjoohari@gmail.com

ABSTRACT

It is well known that soft soil without any improvement is low in strength. Hence, to improve the compressive strength of the soil it is vital to increase the chemical and physical bonding of the soil by adding some additive. Cement and waste tile dust were used for this study as waste tile considered as recycled material which contributes to sustainable development. The pozzolanic reaction between cement with the soil increase the compressive strength and the tile dust will improve the physical bonding. The objective of this study is to evaluate the engineering properties of the soft soil using Unconfined Compression Test (UCT). Five different percentages of tiles dust varying from 15% to 35% with 5% interval were used. The result shows that 25% of tile dust content was the optimum value for a soil specimen to achieved higher strength compared to a control sample without additive. From UCT done, soil containing cement and tile dust provide higher compressive strength compared to soil without additive recorded at 1051 KN/m2 and 188 KN/m2 respectively. In conclusion, tile dust and cement able to improve strength of soft soil. This will help the engineer to design a safe pavement subgrade in the future.

Keyword: soft soil, compressive strength, cement, tile dust, Unconfined Compression Test (UCT)

AP FUNGUS FIGHTER

Tuan Noorkorina Tuan Kub, Assoc. Prof. Dr. Azian Harun

Department of Medical Microbiology & Parasitology,School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan.

tnkorina@usm.my

ABSTRACT

Ringworm infections are often present as skin lesion, itchiness, nail damage and hair loss. In Malaysia, the hot and humid weather are among the factors associated with the infections. There are a lot of antifungal drugs available in the market. However, the emergence of antifungal resistance among these drugs due to too low dosages or short treatment contributed to the treatment failure. These warranted the new discovery of antifungal agents from natural product. Andrographis paniculata (AP), locally known as Hempedu Bumi plant, is claimed to possess medicinal properties including antimicrobial activities. Therefore, namely AP Fungus Fighter, the AP extract was formulated and tested to evaluate the antifungal effect of the formulation against selected fungal pathogens causing ringworm infections. The results of antifungal effect onto animal model showed significant antifungal effects ($p < 0.01$) in AP formulation compared to negative control (untreated), while in vitro study also pronounced the similar antifungal effect. Therefore, AP Fungus Fighter has been further explored for its use as topical formulation in promoting the elimination of infections. Based on the favourable study outcome, the process of market validation for AP Fungus Fighter is carried out for further commercialization of this product. In addition, the AP Fungus Fighter formulation has been registered for its Copyright.

Keywords: ringworm infection, antifungal, Andrographis paniculata, topical formulation

LIGHT QUALITY MEASUREMENT TOOL (LiQMeT)

Adhilla Ainun Musir1, Siti Nurleena Abu Mansor2, Nurulzatushima Abdul Karim3, Juzailah Nur Yunus4, Raja Nor Husna Raja Mohd Noor5.

Faculty of Civil Engineering, Universiti Teknologi MARA Cawangan Pulau Pinang, 13500 Permatang Pauh, Pulau Pinang, Malaysia1,3,4,5
Department of Computer and Mathematical Sciences, Universiti Teknologi MARA Cawangan Pulau Pinang, 13500 Permatang Pauh, Pulau Pinang Malaysia2

adhilla.ainun@uitm.edu.my, sitin140@uitm.edu.my, nurulzatushima@uitm.edu.my, juzailah.nur@uitm.edu.my, rajanorhusna@gmail.com

ABSTRACT

Illumination level or lighting brightness is the important things needed in our daily life. Therefore, lighting system is needed to comply and achieve the minimum recommendations of Malaysia Standard. The objective of this project is producing the Lighting Quality Measurement Tool (LiQMeT). LiQMeT is an Excel basis system which is developed to provide instant and easy monitoring tools of lighting illumination level. The scope areas of the measurement of illumination levels were at various places in the building and infrastructures. The illumination levels for the selected places were obtained and the result was analyzed by using LiQMeT in order to comply with the Malaysian Recommendation Standard. The colour zoning of low, moderate and high of illumination level are shown in LiQMeT. As the result, there are places complying with the standard and some places failed to follow the minimum recommendation level. From this project, there are several places need to give attention and do fast correction action and maintenance especially for walkways and waiting area for a better lighting comfort to the people. The illumination level for these places were considered high and exceeds the minimum requirement of the standard.

Keyword: illumination; illumination level; light quality; standard; maintenance.

A010-ST

A012-ST

PIPEREMEDY

Hartini Yusof, Emiriatulemni binti Suhemi, Nurul Najwa binti Saleh, Shahrul Azam Abdullah, Nurul 'Izzah binti Mohd Sarmin

Faculty of Health Sciences, Universiti Teknologi MARA (UiTM) Selangor, Puncak Alam Campus, 42300 Puncak Alam, Selangor. Faculty of Mechanical Engineering, Universiti Teknologi MARA (UiTM), 40450 Shah Alam, Selangor. Faculty of Dentistry, Universiti Teknologi MARA (UiTM) Selangor, Sungai Buloh Campus, Jalan Hospital, 47000 Sungai Buloh, Selangor.

hartinieyusof@gmail.com emiriatulemnisuhemi@yahoo.com najwasaleh95@gmail.com saabdullah@outlook.com. izzahsarmin@salam.uitm.edu.my

ABSTRACT

PipeRemedy is a wound care regimen consist of antiseptic spray and gel. These plant-derived products have been formulated to heal open wound effectively by eliminating or inhibiting the growth of wound pathogens. Piper sarmentosum leaf extract is used as an active and natural ingredient in order to heal, reduce discomfort and provide relief from the very first use. Based on the scientific findings, the leaf extract contain phytochemical compounds responsible for antibacterial and antifungal activities. It have been clinically proven that pathogen were greatly reduced after applying PipeRemedy on wound. This water-based regimen is delicate to skin, non-sticky and absorbency rate is just a few minutes. The application of antiseptic spray followed by gel will quickly heal the sores or open wounds to prevent any wound infections. PipeRemedy will be an excellent alternative to chemically harsh wound products, thus, promoting the plant growth as natural resources in health care management.

Keyword: PipeRemedy, antiseptic spray, gel, wound, pathogen

THESIS WEB-BASED CONTENT FOR PPPSUG,
UITM PERLIS

Noorfatekah Talib, Nurhusna Amira A. Rahim, Siti Aminah Anshah, Mimi Diana Ghazali &
Nursyahani Nasron

Centre of Studies for Surveying Science and Geomatics,
Faculty of Architecture, Planning & Surveying, Universiti Teknologi MARA
02600 Arau, Perlis

fatekah@gmail.com

ABSTRACT

The demanding of an information about thesis management for a department of a university is rapidly increasing year by year. İn this study, all the data information is referred to the previous thesis management that is manually recorded. The aim of this project is to record all the thesis information systematically for PPSUG in UiTM Perlis branch. By applying web-based Geographic Information System (GIS) and programming language we were able to manage thesis management with linkage to all database, including the database of thesis, database of supervisor information and the map of the building plan for supervisor rooms and programming language; HTML, CSS and SQL to integrate data on the web. This web system is designed to be used by the Centre of Studies for Surveying Science and Geomatics (PPSUG), UiTM Perlis branch but with minor changes, it also can be used by any department of any university. The result will make way for an effective system integrating web-based GIS. The combination of web-based GIS and thesis, management system has many advantages which make the system more user-friendly and easier to access anytime and anywhere.

Keyword: thesis, information, management, system, web based

SLEEPY DRIVER ALERT SYSTEM

Mohammad Hadi Bin Abd Halim, Mohammad Al-Bukhari Bin Marzuki'
Mohd Arzo Bin Abu Bakar, Syed Muhammad Fuad Bin Sayed Abd Rahman,
Norazam Bin Aliman

Politeknik Sultan Azlan Shah,
35950 Behrang, Perak

hadilevin@gmail.com

ABSTRACT

Driving for long hours itself can lead a driver to anxiety and reducing driver focus. However, each driver performance may vary on some affecting factor. Driving while asleep can lead to diversion to upcoming direction lane, going off the road and loss traction or bump right on the vehicle ahead. Most of the accident case happens when driver star losing their focus and the vehicle loss their control. The best action can be taken to counter the problem of driving while asleep is by stopping the journey on the rest area by having a short nap for about 15 minutes and have a cup of coffee. However, how can we be aware of right before we are falling asleep accidentally or mostly known as microsleep? This is one of the reasons bus drivers who travel for a long distance required secondary driver as a rotation duty. To overcome this problem right into the root cause, the solution should be much closer to the driver providing active waking action in a brief time. The system works with a live camera acting as sensors to detect eye drowsiness of driver and sending data to a microcomputer. The microcomputer will calculate data as image processing and emit a suitable alarm to warn the driver for further action. The system is designed to serve great support for long hours of exhausting driving.

Keyword: sleepy driver, alert system

A016-ST

BIOSYNTHESIS OF IRON OXIDE NANOPARTICLES BY USING AZADIRACHTA INDICA EXTRACT AS A REDUCING AND STABILIZING AGENT

Nurul Izza Taib, Famiza Abdul Latif, Zakiah Mohamed, Nur Diyana Syazwani Zambri

Faculty of Applied Sciences, Universiti Teknologi MARA, Perak Branch, Tapah Campus, 35400 Tapah Road, Perak, Malaysia
Faculty of Applied Sciences, Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia

izza257@uitm.edu.my

ABSTRACT

The present work reports the successful synthesis of biosynthesized iron oxide nanoparticles (Fe_3O_4-NPs). Our synthesis method had utilized a much cheaper and less toxic iron precursor with environmental benign and non-toxic Azadirachta indica leaf extract was being used as a reducing and stabilizing agent. The formation was further confirmed with strong characteristic peak observed at 249 nm for Fe_3O_4-NPs through UV-Vis spectroscopy. X-Ray Diffraction (XRD) analysis showed that the nanoparticles are high purity with crystalline cubic structure phase in nature. Transmission Electron Microscopy (TEM) image displayed the synthesized Fe_3O_4-NPs were mostly spherical and oval shape with diameter was in the range from 9-14 nm which agrees with calculated Scherrer equation with average diameter of around 11 nm. The hysteresis loops of the nanoparticles were measured using Vibrating Sample Magnetometer (VSM) and the results showed a superparamagnetic behavior at room temperature, suggesting the potential applications for magnetic targeting drug delivery system.

Keyword: biosynthesis, iron oxide nanoparticles, Azadirachta indica, superparamagnetic

CARBON FIBRE REINFORCED POLYMER (CFRP) PARTIAL CONFINEMENT DESIGN for RC COLUMN STRENGTHENING MECHANISM

Ruqayyah Ismail, Fariz Aswan Ahmad Zakwan,
Hazrina Ahmad, Raizal Saifulnaz Muhammad Rashid, Goh Lyn Dee

Faculty of Civil Engineering, Universiti Teknologi MARA, Cawangan Pulau Pinang, 13500 Permatang Pauh, Pulau Pinang.
Department of Civil Engineering, Universiti Putra Malaysia, 43400 Serdang, Selangor Darul Ehsan.

ruqayyah812@uitm.edu.my, fariz838@uitm.edu.my, hazrina180@uitm.edu.my, raizal@upm.edu.my

ABSTRACT

Structural strengthening with Carbon Fiber Reinforced Polymer (CFRP) confinement has been commonly being used in structural strengthening and rehabilitation work widely. CFRP is a composite material that is known to be very strong and light material. However, the use of CFRP has several drawbacks as well such as cost, fragile and hard to repair. Furthermore, being a non-biodegradable material, it always triggered environmental and sustainable issue due to its hazardous manufacturing and disposal process. Therefore, by using partial CFRP confinement, the use of CFRP as strengthening material could be reduced. This research work is innovating the current design practice in CFRP structural strengthening by proposing partial confinement application. Finding from this research work has discovered, with partial CFRP confinement, concrete structure is still sufficiently strengthened with 71% strength enhancement. Optimum mechanism of the installation with varies CFRP strips spacing from the research work has managed to conclude sufficient contribution to the design of partial CFRP confinement for structural strengthening application.

Keyword: Carbon Fiber Reinforced Polymer, CFRP, Confinement, Strengthening, Rehabilitation

PIPERFEM

Hartini Yusof, Emiriatulemni binti Suhemi, Siti Fatin Sobirah Mohd Sharulzaman, Shahrul Azam Abdullah, Nurul 'Izzah binti Mohd Sarmin

Faculty of Health Sciences, Universiti Teknologi MARA (UiTM) Selangor, Puncak Alam Campus, 42300 Puncak Alam,
Selangor.
Faculty of Mechanical Engineering, Universiti Teknologi MARA (UiTM),
40450 Shah Alam, Selangor.
Faculty of Dentistry, Universiti Teknologi MARA (UiTM) Selangor, Sungai Buloh Campus, Jalan Hospital, 47000 Sungai Buloh, Selangor.

hartinieyusof@gmail.com, emiriatulemnisuhemi@yahoo.com, ftnadira@gmail.com,
saabdullah@outlook.com, izzahsarmin@salam.uitm.edu.my

ABSTRACT

PiperFem is a convenient and complete set of feminine care products which comprised of feminine wash and antifungal cream. The active ingredient of the products was fresh Piper sarmentosum or "kaduk" leaf extract. This local herb is commonly used in cooking but its benefits for feminine care are still unexplore. Therefore, a series of lab tests have been conducted on Piper sarmentosum leaf extract and interestingly, there were evidence show that the extract have dual actions, antibacterial and antifungal activities against pathogens. Furthermore, the Piper sarmentosum leaf extract has been tested for toxicity to ensure the safety of the products. The light-weight texture of Piperfem products do not contain any harsh chemicals and were clinically proven effective to keep women intimate area free from infections, itchiness and unpleasant odour, without causing any side effects to the consumers.

Keyword: PiperFem, feminine care, Piper sarmentosum, antibacterial, antifungal

QTALE – MANGOSTEEN RIPENING STAGES CLASSIFIER

Itaza Afiani Mohtar, Nur Shahidah Syazwani Ramli, Normah Ahmad, Zaaba Ahmad

UiTM Perak Branch, Tapah Campus, 35400 Tapah Road, Perak

itaza328@uitm.edu.my

ABSTRACT

The retail quality of mangosteen depends on the harvesting of the fruit at the right ripening stage. Mangosteen harvested too early or too late will compromise the quality and consequently affect the yield for the season. The ability to automate the classification of the ripening stages of mangosteen will help the farmers during the harvesting phase to determine under-matured, matured and over-matured mangosteen. This project proposes an automatic classifier to classify images of mangosteen according to its ripening stages. The classifier engine was developed using a V3 inception convolutional neural network. The classifier was able to achieve testing accuracy of 91.9%. It is hoped that this project will initiate the commercialization of this effort to assist the mangosteen industry.

Keyword*:* mangosteen ripening stages, classification, convulational neural network

A020-ST

NEURAL BUTTERFLY INDENTIFICATION SYSTEM (NBIS)

Zaaba bin Ahmad, Badrul Amin Bakri, Shahirah Mohamed Hatim, Lily Marlia Abdul Latiff,
Azmina Mohamed Zamani, Itaza Afiani Mohtar

Universiti Teknologi MARA , Cawangan Perak, Kampus Tapah

zaaba.ahmad@uitm.edu.my

ABSTRACT

Lepidopterology is a branch of entomology concerning the scientific study of moths and the three superfamilies of butterflies. The system aims to help biology students in identifying butterfly without harming the insect. In the studies of lepidopterology, the students normally need to capture the butterflies with nets and dissect the insect to identify its family types. Computer vision is a study on how computers can be used to make high-level comprehension from the input of digital image and videos. By utilizing the latest Image Processing technique, it can identify the correct species of butterfly with high accuracy by using layers of node in a Convolutional Neural Network (CNN). The work process starts with data acquisition (mining the butterfly image automatically from google image search), pre-processing (converting image format and rotation), analyzing and understanding digital images (group images into folders), and to make assumptions of the high complication data from the real world in the process of producing numerical information that can be comprehend by machines in order to form conclusions. Benefits of using CNN is to reduce the need for human and physical intervention in identifying each of the butterfly characters. This makes it easier to expand the database in the future. The image is acquired using Fatkun Batch Downloader to download large number of images. The project is develop using Tensorflow in Ubuntu operating system and interface is in HTML connected to the Python script via Flask. The results of the experiment show that CNN can identify with 92.7 percent of final accuracy with learning saturation (overfitting) of 500 cycle. While testing results shows 62.5 percent of accuracy in predicting new datasets

Keyword: moth, butterfly, insect

A021-ST

AUTOMATIC SIGN LANGUAGE TRANSLATION (ASLT) SYSTEM

Zaaba bin Ahmad, Mohamad Amar Mustaqim Mohamad Asri, Itaza Afiani Mohtar, Samsiah Ahmad, Khairulliza Ahmad Salleh

Universiti Teknologi MARA, Cawangan Perak, Kampus Tapah

zaaba.ahmad@uitm.edu.my

ABSTRACT

Sign language is a language that involves a movement of hand gestures. It is a medium for the hearing impaired person (deaf or mute) to communicate with others. However, in order to communicate with the hearing impaired person, the communicator has to have knowledge in sign language. This is to ensure that the message delivered by the hearing impaired person is understood. The Automatic Sign Language Translation (ASLT) System is an automatic Malaysian Sign Language translation system using Convolutional Neural Network (CNN) utilizing the You Only Look Once (YOLO) algorithm. Sign language images from web sources and recorded sign language videos by frames were collected. The images were labelled either alphabets or movements. Once the preprocessing phase was completed, the system was trained and tested on the Darknet framework. The system achieved 63 percent accuracy with learning saturation (overfitting) of 7000 iterations. Once it is successfully conducted, this model will be integrated with other platform in the future such as mobileapplication.

Keyword: sign language, hearing impaired person, deaf, communication

A022-ST

QUANTUM MULTICHANNELS FOR APPLICATIONS BEYOND CLASSICAL LIMIT

Rafael Julius, Abdel-Baset M. A. Ibrahim, Muhammad Syawal Abd Halim, Azrul Nizam Alias, Muhammad Hafiz Mohd Khalid, Zulfadli Mahfodz, Mohamad Hafiz Ahmad Tajudin and Mohd Ashmir Yahya

Faculty of Applied Sciences, Universiti Teknologi MARA (UiTM) Perak, Tapah Campus, 35400 Tapah Road, Perak, Malaysia
Faculty of Applied Sciences, Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia
Faculty of Computer & Mathematical Sciences, Universiti Teknologi MARA (UiTM) Perak, Tapah Campus, 35400 Tapah Road, Perak, Malaysia

rafaeljulius@uitm.edu.my

ABSTRACT

Quantum light has a great potential of applications for future optical technology such as an ultra-fast quantum computer and teleportation of energy across limitless distance due to its special properties of having tunable intrinsic noise and entangled states. One of the challenges in the field is the searching for a practical method of amplifying quantum effects like squeezing and entanglement. In order to develop impactful devices reflective of wide application areas, technical difficulties of generating quantum states need to be eliminated or at least minimized. This work communicates the potential of a newly developed configuration, viz. Quantum Multichannel as a mechanism for teleporting quantum states and suppressing the standard noise quantization. In these implementations, solutions for the Hamiltonians of the designs are obtained semi-analytically via normal- and symmetrical- ordered Phase Space Representation over hundred thousand trajectories. The results reveal the system as providing an effective way to manipulate squeezing and entanglement, especially in the compound-mode basis.

Keyword: quantum entanglement, squeezing, quantum states engineering

A MATHEMATICAL APPROACH TO FORECASTING MALAYSIA CENTRIFUGED LATEX PRICES WITH JUMPS

Zawin Najah Hamdan and Siti Nur Iqmal Ibrahim

Institute for Mathematical Research, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia Department of Mathematics, Faculty of Science, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia

iqmal@upm.edu.my

ABSTRACT

Agricultural commodity prices may exhibit jumps due to weather conditions or political announcements. Hence, this study aims to forecast future prices of centrifuged latex in Malaysian market by applying the geometric Brownian motion (GBM) with jumps. We calibrate the jump parameters using daily closing prices of centrifuged latex at noon from 2 December 2013 until 28 November 2014, obtained from the official website of Malaysian Rubber Board. Numerical tests show that between GBM and GBM with jumps, the latter produces more accurate forecast prices for a short-term period.

Keyword**:** Forecasting, geometric Brownian motion, jumps, centrifuged latex.

A025-ST

BIODEGRADABLE AND BIOCOMPATIBLE POLYHYDROXYALKANOATES MICROSPHERES AS MATRIX FOR ENCAPSULATION OF CAESALPINIA BONDUCELLA EXTRACT

Hema Ramachandran1, Dhurka Devi Nageratnam1, Ashok Gnanasekaran2 1Faculty of Science and Technology,

Quest International University Perak, Ipoh, Perak
2, Faculty of Medicine, Quest International University Perak

hema.ramachandran@qiup.edu.my

ABSTRACT

Drug delivery system (DDS) is a well-known and rapidly growing field in the medical and biotechnology lines due to its ability to direct drug to specific site or organs. It can eradicate the possible side effects of toxic drugs, enhance bioavailability and allow controlled release of drugs. Previously used polymers like silicone, have been reported as possible cancer causing agents. Thus, preparation of DDS requires nontoxic, biodegradable and biocompatible polymer to increase the treatment efficiency as it reaches the market demands. Polyhydroxyalkanoates (PHAs) are widely used biopolymer as matrices for drug encapsulation as they are nontoxic, will provide a slow, steady release of drugs and can be removed via metabolic path. Caesalpinia bonducella is widely used in Ayurveda especially in the fertility regulation in female and has been considered as an important remedy for the treatment of uterine fibroid. However, controlled release of Caesalpinia bonducella extract has not been explored yet. Therefore, study on preparation of PHA-based microspheres loaded with Caesalpinia bonducella extract by double emulsion solvent evaporation technique would open an intriguing opportunity to ensure homogenous distribution of the drug within the

polymer matrix and a better control of drug release while maintaining the biodegradability and biocompatibility of PHAs.

Keyword: Drug delivery system, Polyhydroxyalkanoates, Caesalpinia bonducella and Microspheres

E-PPT PLANNER

Nor Zarina Mohd Salim
Department of Business Management, Universiti, Teknologi MARA Cawangan
Perak Kampus Seri Iskandar, Perak Malaysia

Assc. Prof. Dr. Aini Jaapar
Director of *Pra Pengajian Tinggi* (PPT)
Universiti, Teknologi MARA, Shah Alam Malaysia

Department of Business Management, Universiti, Teknologi MARA Cawangan Perak
Kampus Seri Iskandar, Perak Malaysia
Nursaadatun Nisak Ahmad,

Nazri Mohamad
Shahirah Mohamed Hatim
Azmina Mohamad Zamani
Faculty of Computer and Mathematical Sciences, Universiti Teknologi MARA Cawangan Perak,
Kampus Tapah, Perak Malaysia

ABSTRACT

Based on the three credits of a unique program called *Mengubah Destini Anak Bangsa* (MDAB) and now known as *Pra Pengajian Tinggi* (PPT) is being established by UiTM as a social responsibility. The main objective of the program is to assist the SPM leavers who could not secure a place in universities due to lack of merit. Two areas are being offered under the PPT program that are the pre-diploma in commerce and pre-diploma in science at 13 UiTM branches. Since the number of PPT students is increasing in each campus, the UiTM management needs to provide a standardised platform to enable a systematic students' management process. Various procedures and academic activities need to be carried out in a short study duration that is 14 weeks/1 semester. Apart from academic registration management, allowance management, lecture timetable management, on-going students' performance monitoring and PPT teaching staff's management can be managed within one virtual platform. Hence, e-PPT Planner is established to enhance PPT management throughout UiTM branches in Malaysia.

A026-ST

COACHING ASSESSMENT SYSTEM (CAS)

[2]Dr. Ida Rosnita Ismail, [1]Dr. Nursaadatun Nisak Ahmad, [3]Dr. Wan Mohd Hirwani Wan Hussain, Assoc. Prof. Dr. Azman Ismail

[1]Department of Business Management, Universiti Teknologi MARA Cawangan Perak, 32040 Kampus Seri Iskandar, Perak, Malaysia
[2]/[3]UKM - Graduate School of Business, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor Darul Ehsan, Malaysia
Faculty of Economics & Management, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor Darul Ehsan, Malaysia

azisma08@gmail.com

ABSTRACT

Management Coaching Role is the management's mentoring style that links the role of immediate superiors and employees in an organisation. Findings of a recently conducted study highlight that the relationship between MCR and self-efficacy is able to influence employees' behaviour. This is in line with the government's aspiration, as illustrated in the fifth pillar of 10th Malaysia Plan (10MP), that clarifies the importance of quality human capital can contribute to the improvement of country's economics and productivity. The third pillar in the Human Resource Development Strategic Plan (PSKSM 2016-2020) also clarifies the importance of managing quality employees through coaching method for the purpose of improving work performance. The role of immediate superiors in mentoring employees is highly required as they are the closest individuals to the employees. Nevertheless, the coaching structure within systematic working hours is yet to be introduced in the public service sector of the Malaysian federal government. Therefore, this Coaching Assessment System is introduced to assess the mentoring practice carried out by immediate superiors with their supervised employees. The system also able to assist the Public Service Department in improving tasks effectiveness and employees' performance through the enhancement of management role in mentoring employees at the workplace.

Keywords: MCR, management mentoring, employees' performance, public service.

A028-ST

DRIVER BEHAVIOUR CHARACTERISATION FOR EXPRESS BUS SAFETY ENHANCEMENT USING SMART SAFETY INDEX MAPPING SYSTEM

Abdul Hadi Azman, Salvinder Singh Karam Singh, Wan Aizon w Ghopa, Hawa Hishamuddin, Muhamad Razuhanafi Mat Yazid, Shahrum Abdullah, Dzuraidah Abd. Wahab, Ahmad Kamal Ariffin Mohd Ihsan

Faculty of Engineering and Built Environment,
Universiti Kebangsaan Malaysia,

hadi.azman@ukm.edu.my

ABSTRACT

Express buses are important in Malaysia. It is cheap and has a large connection network between cities, hence its large use across the country. However, it is common news to hear reports of bus accidents in Malaysia. According to Malaysian Institute of Road Safety Research, MIROS data, a total of 1855 bus accidents were reported in Malaysia between 2012 and 2015. This is an alarming statistic. Therefore, it is important to increase the safety of these buses as it relates to the public safety. The objective of this innovation is to assess the influence of bus drivers on bus accidents, characterise their driving behaviours and develop a smart mapping system to obtain a safety index. Through surveys, the relationship between the behaviour of express bus drivers and express bus accidents were investigated and characterised. Other factors such as bus driver's salary, punctuality, level of fatigue, driving behaviour, working environment, company, and age were also studied. An in-depth study was performed to clearly identify the problems, investigate the characteristics of bus accidents in the country and determine critical issues highlighted in driving behaviour from the investigated accidents to enhance the safety of express buses.

Keyword: driver, safety

E-CEMETERY

Nursyahani Nasron[1], Azlizan Adila Mohamad[2], Noorsazwan Ahmad Pugi[2]

[1]Centre of Studies for Surveying Science and Geomatics,
Faculty of Architecture, Planning & Surveying, Universiti Teknologi MARA, 02600 Arau, Perlis
[2]Faculty of Architecture, Planning & Surveying, Universiti Teknologi MARA, 32610 Seri Iskandar, Perak

Email: nursy6864@utim.edu.my, azliz1122@uitm.edu.my, noors240@uitm.edu.my

ABSTRACT

Digital data is necessary nowadays. Traditional method using logbook is no longer relevance in term of querying, updating, analyzing and managing which it can be challenging and time costing. The growth of Augmented Reality (AR) gives huge benefits in this digital era. AR is the integration of physical and virtual contact using the current technology generated by computers based to represent the real world characteristics or location. E-Cemetery is a web-based and AR system of the cemetery that shows the actual location of the grave lot using geo-location database visualization with complete information of the grave. This system will helps the beneficiaries or visitors to find the location of the grave lot using internet and mobile phones. The cemetery information system also can assists the grave management in term of the accuracy and managing the grave lot data for reference purposes as well as future use.

Keyword: e-cemetery, augmented reality, web-based, geo-location database

CAPRIBOS MULTINUTRIENT BLOCK

Nor Dini Rusli, Khairiyat Mat, Hasnita Che Harun, Mohd Mahmud, Mira Panadi

UNIVERSITI MALAYSIA KELANTAN

nurdini@umk.edu.my

Premium Multiblock is also known as urea molasses multi-nutrient block, a solid form comprising local ingredients such as agroindustrial by-products. Premium Multiblock provides continuous supply of energy, protein or non-protein nitrogen (NPN), minerals and vitamin. It acts as a supplementary feed and not as the main diet of ruminants. Supplementation of molasses in the form of block ensures the continuous licking and slow release of nutrients. Premium Multiblock supplementation is a convenient method and practice in term of packaging, storage, transport and ease of feeding. It was tested in animal feed trial for 100 days using crossed Saanen lactating goats. Cost benefit ratio in goats supplemented with Premium Multiblock was better as compared to commercial mineral block (CMB). Its supplementation provides high economic returns to the farmer with the increase of milk yield.

Keyword: nutrient, solid form, multiblock

CATEGORY B

STUDENTS OF HIGHER LEARNING INSTITUTIONS

Design
& Creativity (DC)

B001-DC

MINI EGGS CLEANER MACHINE

Norfaizem Bin Ibrahim, Ismail Fitri Bin Ibrahim,
Mior Syahir Bin Mior Hawari, Rahmat Syarifan Bin Mahsan.

Kolej Kemahiran Tinggi MARA Balik Pulau,
Genting, 11000 Balik Pulau
Pulau Pinang

Ismailfitri.ibrahim@mara.gov.my

ABSTRACT

It will occupy a long time to wash egg in a large quantity and the hand will soak in the detergent containing a chemical causing a skin irritation. After doing some research, we come out with a new innovative product named Eggs Cleaner Machine. This product can wash half carton of eggs between 10 to 20 seconds by using the customized tray containing 15 slots of eggs. The rotating brush powered by DC motor will wash up and down of eggs with water and soap. It can reduce a lot of time and energy to wash an eggs.The main objective for this project which is to produce a portable eggs cleaner machine and shorten the time of washing eggs in large quantity.The benefit for the user is can save energy by avoiding wash an eggs one by one using hand and the last objective is to avoid the hand from exposed to chemical of detergent in a long term when washing eggs. The skin irritation symptom like hand eczema can be avoided.

Keyword: mini, eggs cleaner, machine, cleaner, Mini Eggs Cleaner Machine

B002-DC

MULTIPURPOSE TELESCOPIC LADDER

Ahmad Asyraf Ahmad Ramdan, Adlan Hakimi Abdul Hamid, Adib Syazwan Ahmad Zahri,
Natasha Ahmad Nawawi, Noor Aniza Nordin, Siti Shareeda Mohd Nasir, Nor Azirah Mohd Fohimi

Universiti Teknologi Mara, Cawangan Pulau Pinang
Kampus Permatang Pauh, 13500 Permatang Pauh, Pulau Pinang

shareeda.mn@p.pinang.uitm.edu.my

ABSTRACT

Ladder is one of the important things to help human to do their job at unreachable places, but it is big, heavy to carry and consume a lot of space to store. Furthermore, the biggest problem is when the ladder is high enough to reach a place, consumer would face a problem on carrying a lot of tools together with them. The objectives of this innovation are to fulfil and satisfy the consumer convenient demands. Morphological table method is used to analyze the perfect combination of the components of the project by analyzing the shape and form of the product by representing and exploring all relationships and up to 10 types of different combination of the component so that multidimensional problems could be solved in effective way. The ladder is used to reduce time, cost and space as well. To reduce the problem, the lightweight product and a combination of ladder and tool box are needed. The ladder needs to be extendable and are attached along with the toolbox. This multipurpose telescopic ladder is a perfect solution to suit the existing consumer problem.

Keyword: ladder

DESIGN AND FABRICATION OF JIG FOR CYLINDRICAL WORKPIECE FOR MILLING MACHINE

Muhammad Hanan Mohd Ismail, Norasikin Hussin1, Dzullijah Ibrahim,
Nur Hayati Mohd Yahya, Mat Rasid Abas, Farrah Noor Ahmad

Faculty of Mechanical Engineering, Universiti Teknologi MARA, Cawangan Pulau Pinang, 13500
Permatang Pauh, Pulau Pinang.

norasikin245@gmail.com

ABSTRACT

Design and fabrication of jig was one of the requirement in today manufacturing process. The function of the jig is to hold and clamp the workpiece. As known as, the milling machine is in need of a jig to clamp the square and cylindrical workpiece. However, the FKM workshop not provide the jig in order to clamp the cylindrical workpiece. Then, it is difficult to user. To overcome the problem, this case study is focusing on the fabricating of the jig for milling machine. In addition, this jig can be used to produce a variety of holes in cylindrical workpiece. In order to achieve the objective, a survey and benchmark has been carried out. The conceptual design has been applied in order to choose the best design. The SolidWorks ver. 2018 was used to analyse the static structure of the jig. This jig is applicable for load in below 70N. This jig is made from aluminium alloy and can be used in FKM workshop to hold and clamp the cylindrical workpiece. Finally, this jig can assists the users especially students in order to producing holes in cylindricalworkpiece.

Keyword: jig, cylindrical, milling, workpiece

B004-DC

MULTIFUNCTIONAL BATIK CUTTING BOARD

Widya Dewi Rahmawati, Muhammad Zul Kifli Azis Aji, Rr. Siti Muslihah, M.Sc. Khoirina Noor Anindya SE, M.Sc

Diploma Program, Faculty of Economy, Universitas Islam Indonesia
Jalan Kaliurang Km 14.5, Umbulmartani, Ngemplak, Sleman, Daerah Istimewa Yogyakarta, Indonesia, 55584

maisaroh@uii.ac.id

ABSTRACT

In this era, rapid changes occur in people's lifestyles that tend to be practical in consumption needs. On the other hand, to fulfill a practical lifestyle requires a tool that can help to fulfill those needs. So there is an business idea to make multifunctional batik cutting board. The advantages of this product can be used as a pad for cutting food ingredients, putting pieces of material, smartphone backrest, and wall decoration.Multifunctional batik cutting board is made with quality wood and well designed so that it is safe and comfortable when used. Besides having its main function as a cutter, its batik paintings also add an aesthetic impressions so that it can be used as a wall decoration. The products we sell, besides producing profits, also preserve the culture of wooden batik. Multifunctional batik cutting board can be used by students, also suitable for housewives. This item is sold at a price of IDR 20.000. The producer uses plastic for their packaging and can be ordered directly through our social media or come directly theirstore.

Keyword: cutting, multifunction, wood, decoration.

B005-DC

DOCTOR DO

Regita Nurina Salsabila, Lutfi Roal Barkah, Tri Bowo Arestu, Kadek Yoga Darma Putra,
Fawwaz Daffa Muhammad, Muhammad Faris Fauzy

Universitas Brawijaya

regitamars@gmail.com

ABSTRACT

Doctor DO (DD) is an Information and Communication Health System based on Android Game for people with disabilities that focuses on: 1. Handling mental health and psychological education for people with disabilities based on games, 2. Submitting matters related to information and communication, asking questions about health for disabilities to doctors and health educators. DD is equipped with several unique and innovative features such as DD Based 1 and 2, GASiNG (General Counseling), DD Sharing, and ENGGRANG (Entrepreneur Caring System). It is hoped that Doctor Do can help people to improve on their mental health.

Keyword: Doctor DO, Mental Health, Disabilities, Game

TRADITIONAL TEXTILE OF KAIN PUNCA POTONG DESIGN IDENTITY

Nani Hartina Ahmad[1], Nazlina Shaari[2], Noor Azizi Mohd Ali[3], Muhammad Pauzi Abd Latif[4]

[1,2,3]Faculty of Design and Architecture, Universiti Putra Malaysia (UPM), Serdang, Selangor, Malaysia
[1]Faculty of Art and Design, Universiti Teknologi MARA Kelantan, Machang, Kelantan, Malaysia
[4]International Institute of Islamic Civilisation and Malay World (ISTAC), Kuala Lumpur, Malaysia

fatina8277@gmail.com

ABSTRACT

Kain Punca Potong (KPP) is a Malay traditional textile is derived from a combination of creative patterns, design, motifs and the value of gold within a community. All these factors determine their commercial and aesthetic value of creating a design characteristic identity in the context of the multi-ethnic and cultural. Generally, there is no evidence that the characteristics of KPP design identity can be generalized based on the production process. The purpose of this research is to develop a conceptual framework based on the literature review in identifying the design identity of KPP to use on creativity and motif that represents Kelantan's weaving. A conceptual framework for identifying the design identity of KPP is important to preserving the Malay traditional fabrics. The content analysis and KJ methods will be used to build the conceptual framework in establishing a design concept. A literature review has been carried out to identify the existing frameworks related to design and motif selection and implementation of pattern characteristic in KPP for the weaving industry. The findings (or results) of the work should be formulated to support the conceptual framework and this research will provide the overall aesthetic of design identity of KPP.

Keyword: design studies, characteristics, identity, weaving, aesthetic value

B007-DC

R-3D GEOMETRI KIT

Mohd Razip Bajuri, Dr. Siti Mistima Maat

Universiti Kebangsaan Malaysia

p88303@siswa.ukm.edu.my, sitimistima@ukm.edu.my

ABSTRAK

Pengajaran dan pembelajaran geometri tiga dimensi dalam kalangan pelajar sekolah rendah dan menengah merupakan aspek asas yang penting dalam mata pelajaran matematik. Kegagalan pelajar menguasai konsep geometri pada peringkat tersebut boleh menyebabkan penguasaan pelajar dalam bidang berkaitan sains, teknologi, kejuruteraan dan matematik (STEM) akan turut terjejas dan seterusnya hasrat negara untuk mencapai sasaran nisbah 40 : 60 antara pelajar menceburi bidang kesetaraan dan sains akan sukar dicapai. Atas kesedaran tersebut suatu reka bentuk alat pembelajaran dan pengajaran yang berasaskan ciri-ciri Do It Yourself (DIY) telah direka bentuk. Alat yang direka bentuk mempunyai ciri-ciri fleksibel, mudah di bawa, dan murah menyebabkan ia mempunyai potensi yang tinggi untuk disebar luaskan penggunaannya dalam kalangan pelajar dan guru. R-3D Geometri Kit juga menekankan aspek pembinaan pemikiran pelajar dengan cara pembuktian melalui pengukuran pepenjuru dan sisi geometri bagi tujuan menamakan sesebuah bentuk geometri. Dengan cara tersebut aspek pembelajaran secara penghafalan dapat dielakkan, sebaliknya pelajar akan lebih memahami konsep geometri 3D dengan lebih jelas. Untuk tujuan menentukan keberkesanan penggunaan R-3Dgeometri kit, satu kajian tindakan telah dijalankan dalam kalangan 40 orang pelajar tahun 6 sekolah di daerah Hulu Langat. Hasil kajian tersebut mendapati 85% kumpulan pelajar kumpulan yang didedahkan menggunakan penggunaan R-3Dgeometri kit berkebolehan menamakan jensi-jenis dan ciri-ciri geometri 3D dengan betul berbanding kumpulan kawalan sebanyak 40%. Dengan potensi saiz pasaran dalam kalangan guru dan pelajar yang amat luas bagi sekolah-sekolah di Malaysia, R-3D Geometri Kit dijangkakan mempunyai aspek kebolehpasaraan yang tinggi untukdikomersialkan.

Katakunci: Geometri, 3D, pembelajaran penerokaan

NAVHELM: HELMET INTEGRATED SMART NAVIGATION

Arif Azamuddin Bin Abdul Halim, Dr. Noreen Izza binti Arshad

Universiti Teknologi PETRONAS

arifazamuddin97@gmail.com

ABSTRACT

Motorcyclist especially food delivery motorcycle rider is lacking a navigation guide compared to car driver as the traditional way is not very effective which is by mounting a phone to the handle of the bike. This project is to provide a new way of a motorcyclist rider to navigate through the road using augmented reality that is integrated to the helmet so motorcyclist rider can get more clear and safer way of navigating. A mobile application is also developed to provide an interface and menu for this project. Furthermore, this project also has some helpful features such as voice recognition for typing addresses and speed limit alert. Food Delivery rider is expected to be having a more efficient way of navigating and able to deliver a better service by using all the features combined. By using Augmented Reality, this project is being more relevant to Industrial 4.0 as Augmented Reality is the one of nine pillars of Industry Revolution 4.0.

Keywords*: helmet, smart navigation, navhelm*

Education (E)

B002-E

CRACKLY

Muhammad Aizat Farhan Muzakkir, Noor Hasnul Amry Noor Amirulmustaquim,
Muhammad Nur Fahmy A. Razak, Muhammad Farih Abdul Razak,
Muhammad Firdaus Maarop, Siti Aishah Taib, and Norhisyam Jenal

Universiti Teknologi MARA Cawangan Johor Kampus Pasir Gudang
Jalan Purnama, Bandar Seri Alam, 81750 Masai, Johor

Aishahtaib.elc@gmail.com

ABSTRACT

Crackly is a game that is inspired by the famous Monopoly game by Hasbro. While Monopoly focuses on gain and loss in property trading, Crackly focuses on fun ESL language learning process. This game is unique as it directly and heavily focuses on the usage of nouns according to these 3 types: collective, countable and uncountable nouns. The board of the game consists of several types of spaces that are represented by several brilliant colours with each colour representing a different task. This feature makes this game attractive to youngsters. Other than emphasizing the players' listening skills, the players also benefit greatly from the game by reviewing and improving their knowledge on nouns in the English language. Therefore, the game can be used as one of the teaching materials in the schools or universities to attract ESL students to learn English in a fun way and increase their understanding in the usage of nouns. As the game is suitable to be played by people of all ages, it has the potential to be commercialized and sold at toy stores or bookstores.

Keyword: board game, ESL game, language game, nouns

B003-E

DROP IT: WHAT WILL COST U?

Anis Amyza Zainal, Nur Fatheeha Zainal Abidin, Nur Azlin Sofia Mohamed Noordin,

Noor Shahirah Suhaila Kamal Suhaili, Norhayati Zamri

Faculty of Accountancy
Universiti Teknologi Mara Perak Branch, Tapah Campus
Malaysia

Yatiebest7@gmail.com

ABSTRACT

Accounting students face challenges to comprehend the fundamental of cost accounting for example classification of costs according to their nature, behaviour or function. However there is a necessity to apprehend the basic cost accounting because it will be valuable as students will apply in advanced subject. However, students nowadays are less interested in reading books, doing exercises or any other traditional method of study. They feel that there are too much things to be absorb and understand. Hence, DROP IT: What Will Cost U? draws in thoughts to assist students in mastering basic cost accounting through interactive method of learning. It provides an interesting way of learning where students can see how to classify a cost with the use of colours, pictures and some other objects as a teaching and learning tool. With introduction of this game, we hope that the game will guide accounting students to effectively comprehend the basic costaccounting.

Keyword **:** Basic cost accounting, education, games.

B004-E

VISUAL BASIC INTERFACE WITH ARDUINO APPLICATION TRAINING KIT

Mohd YusriBin Mohd Yunus, Muhammad Safwan Bin Saad, Mohammad Alif Hilmy Bin Muhamad, Nur'ain Hannani Binti Helmi, Mohamad Hasruzairin Bin Mohd Hashim

Kolej Kemahiran Tinggi MARA Balik Pulau 11000 Balik Pulau, Penang

yusri.yunus@mara.gov.my

ABSTRACT

Visual Basic is software that is often used by programmers in developing a graphical application based on graphical user interface (GUI). For students in Electronic or Mechatronics engineering, they use Visual Basic for interface with the controller and widely used in producing a system capable of being controlled by computers. In KKTM Balik Pulau, most of the students use of Arduino as a controller and interface with Visual Basic. Tutorials on Visual Basic and Arduino are widely available on the internet for reference purposes. However, the method to interface between Visual Basic and Arduino is extremely poor and the details of the methods are not provided. Therefore, the Visual Basic Interface With Arduino Application Training Kit has been developed to provide a more effective guidance and teaching tools to facilitate students to understand the interface process between Visual Basic and Arduino. Before this, students had to search for various references before they could apply for their final project. With this innovation, it was able to provide a particular guide assisted by a complete job sheet. In addition, this teaching kit is also suitable for individuals who are interested in producing their own projects. Hopefully this innovation will boost the reputation of TVET in ourcountry.

Keyword: Visual Basic, Interface, Arduino Application, Training Kit

IDIOMS HUNTER: JOURNEY BEYOND WORDS

Nur Syuhada Iman binti Abdul Talib[1], Wardina Zalia binti Hariulnizam[2],
Alif Hakeem bin Khairul Faizi[3], Nur Alyani binti Khairol Anuar[4],
Muhammad Irfan bin Mokhtar[5]

[1,2,3,4,5] Universiti Teknologi MARA (UiTM) UiTM Cawangan Johor, Kampus Pasir Gudang,
Jalan Purnama, Bandar Seri Alam, 81750, Masai, Johor Darul Takzim

[1]*nsiman11.nsi@gmail.com* [2]*dinazalia31@gmail.com* [3]*alifhakeem2000@gmail.com*
[4]*nural7146@johor.uitm.edu.my* [5]*muham7133@johor.uitm.edu.my*

ABSTRACT

English literacy among ESL learners normally centres around the capability of learners to communicate in English competently. However, it is often a problem for ESL learners when the communication involves the use of idioms. Idioms are figurative language where meaning cannot be taken literally. However, idioms rarely being included in the lesson of English as many teachers choose to let learners learn them on their own. Learning idioms can be a dreadful experience for ESL learners as idioms are commonly used by native speakers and not oftenly used by ESL learners. Thus, a board game called 'Idioms Hunter: A journey beyond words' was designed with the objective of helping ESL learners to acquire better knowledge of idioms. This board game was inspired by the famous snake and ladder board game. However, 'Idioms Hunter' will give players better experience as they will be playing to solve the mission by answering questions on idioms. This educational game will work as a stimulant to catch and captivate students' attention in learning idioms.

Keyword*:* Idioms, Treasure, Board game, English, ESL

B006-E

E-HISTORY: MALAYSIAN HISTORY MOBILE APPLICATION

Nurul Hani Hassan, Masurah Mohamad, Nur Anisah Hassan, Hurul Ain Hassan

Faculty of Computer and Mathematical Sciences
Universiti Teknologi Mara Perak Branch, Tapah Campus
Malaysia

hanihassan96@gmail.com

ABSTRACT

Despite being a compulsory subject that needs to be taken by Malaysian upper secondary school students, Malaysian History subject can be considered not as popular as other subjects. Based on the conducted survey, the respondents agreed that the way of teaching and learning should be changed to suit the modern's day standard instead of using textbook. The students feel that reading textbook is unappealing for them especially when they need to study by themselves outside the classroom. To be able to achieve this idea of changes, the project developed an interactive application that can help students learn Malaysian History subject in a much more interactive environment. The application is built using Sketchware which builds Android application directly on mobile devices. The project combines JAVA and Sketch programming language to develop this application. Based on the survey conducted on thirty-one students, sixty-one percent of the students strongly agree that this application is easy to use and interactive since it combines audio, videos and pictures to attract the students into the world of Malaysian History. As the result, students can easily memorize, understand and most importantly, appreciate the Malaysianhistory.

Keywords**:** Mobile application; interactive; Malaysian history; education.

B007-E

WHAT ARE THE ATTRIBUTES OF HIGH AND LOW ACHIEVING MEDICAL STUDENTS? A MACHINE LEARNING DECISION TREE VISUALIZATION APPROACH

Bee-Ling Fang, Chan-Choong Foong, Jamuna Vadivelu Medical Education and Research

Development Unit (MERDU),
Faculty of Medicine, University of Malaya, 50603 Kuala Lumpur, Malaysia

blfang@siswa.um.edu.my

ABSTRACT

Medical education today is inherently complex because of the multidimensional nature of medical curriculum and many challenges encountered by schools and students. There are a number of cognitive and non-cognitive attributes contributing to performance of medical students. Hence, predicting the applicants' success and failure in medical schools has gained increasing attention, noteworthy that the admission is highly competitive among a large pool of applicants. Using machine learning decision tree, this study integrated multiple attributes (i.e., data sources such as admission interview and admission, personality test, motivation and learning approaches inventories) to provide reliable information and more precise estimates on determine the attributes of high and low achieving students. The results reported that, a high achieving students is likely associated with the attributes of intrinsic motivation, low neuroticism personality, high admission test scores, high admission interview scores and older age. The results also demonstrated relatively high predictive power and prediction confidence, 0.6327 and 0.9034, respectively. Application of decision tree as an evidence driven decision making tool could provide fundamental insights for medical school to decide on admission criteria, student selection policy and detection of academically-at-risk students.

Keyword: attributes of low and high achieving students, decision tree, prediction, medical schools

B008-E

FASHABUNNIESTAN WONDERLAND

Nor Barizah Nordin, Anis Sabrina Ahmad Nazar, Nadiah Afifa Abdullah Shuhaimi,
Intan Shafiqah Adleena Rozhan & Sunarti Halid

Faculty of Accountancy
Universiti Teknologi MARA Cawangan Perak Kampus Tapah
35400 Tapah Road, Perak Darul Ridzuan, Malaysia

sunartihalid@gmail.com

ABSTRACT

Cost classification refers to a complete and transparent idea of separation of expenses in the different sector as like manufacturing cost, product cost, sunk cost, variable cost, direct cost, and indirect cost. Classifications of cost are a vital part of a company. It is almost impossible to operate a business without understanding it properly. However, many of the students lack the ability to identify the types of cost based on the correct classification. As for the solution, we created a game card that is called Fashabunniestan Wonderland. This game card is a compilation of UNO card and Happy Family game card. However, the content is about cost accounting to help the students to identify the types of cost based on the correct classification. This game is suitable for all the students that take MAF 151 subject. Students can play this game whenever they have some free time, together with their friends. They can play anywhere and anytime. To make this game more interesting, we make some punishment card for those who cannot provide the correct answer. Furthermore, this game also tests students' knowledge in preparing the coststatement.

Keyword: cost statement, decision-making

B009-E

ARWORE (AUGMENTED REALITY WORLD CULTURE) AS A CULTURAL IDENTITY LEARNING MEDIA FOR INCLUSIVE EDUCATION

Rofifatul Hanifah, Luailik Mushoffa Satifri, Catur Nur Agustina Wulandari, Ismi Nurul Azizah

Yogyakarta State University
Jl. Colombo No.1, Karang Malang, Caturtunggal, Kec. Depok, Kabupaten Sleman, Daerah Istimewa Yogyakarta 55281

rofifatulh9@gmail.com

ABSTRACT

Education is a right for all human beings. It is important to fulfill. The quality of education needs to be felt by all people with a variety of conditions, including those with disabilities. This refers to the notion of inclusive education. Inclusion education is a term echoed by UNESCO derived from the word Education for All which means friendly education for all, with an educational approach that seeks to reach everyone without exception (Herawati, 2016: 1). An education that is closely related to life is culture. The world is shrinking and the capacity to understand cultural diversity is indispensable, all cultures have functions even though their values are different (www.kompasiana.com). Thus, we make an innovation namely ARWORE to help children in understanding cultural identity of various nations. ARWORE is a learning media for inclusive education in the form of map that uses braille code, sentences, and an augmented reality picture card. The method of this writing is ADDIE, it stands for analysis, design, development, implementation, and evaluation. Hopefully, this learning media can help both normal and disability children to learn the world cultures through a unique media.

Keyword: culture, education, inclusive

MENSTRUAL CARE GUIDANCE

Nadiah Bt Mohd Fauzi, Nur Iffah Imanina Bt Mohd Zulfikri,
Nurul Annissa Nathasha Bt Junaidi, Amira Nadhirah Bt Johaidi,
Madam Rosilah Bt Abdul Wahab.

Centre Of Occupational Therapy, Faculty Of Health Sciences,
Universiti Teknologi Mara, Puncak Alam Campus,
42300 Puncak Alam, Selangor, Malaysia.

nurulannissanathasha@gmail.com

ABSTRACT

Menstruation is a sign of puberty for women. Most women will face puberty at the age of 8 to 15-year-old however the onset could be differed (Quint, 2014). During menstruation, women are required to use pad or tampon to absorb the menses for hygiene purpose, however no proper education was taught to them on how to use it. For most women, they happen to discover on how to use the pad or tampon by themselves. However, that is not the case for all of them. If normally develop women tend to misuse it, then special needs women are more likely to do so. Due to that, our main concern are women with special needs as they tend to face this difficulty even more and at higher risk for not being hygiene. To overcome this problem, we come out with Menstrual Care Guidance '*Penjagaan Diri Ketika Haid' Module* as a guide tool. This project is to help young women to prepare themselves to face menstruation before reaching puberty especially for those with special needs. Our goal is to allow this module to be included in the special education syllabus however, all young women are free to use this module as a learningtool.

Keyword*:* menstruation, Menstrual Care Guidance, special needs women

B011-E

VISUAL COGNITIVE SKILLS BOX - EARLY EDUCATION INTERVENTION IN VISUAL COGNITIVE SKILLS

Rosilah Wahab, Aina Nadhirah Azmi, Amani Ibrahim, Fatihah Aina Azmi,
Nurul Amirah Hamzan.

Faculty of Health Science
Universiti Teknologi Mara, Selangor Branch, Puncak Alam Campus
Malaysia

amaniibrahim97@gmail.com

ABSTRACT

Visual cognitive impairment is one of the main issues involving the special education students. This impairment causing them to have difficulties in school such as copying from whiteboard, having less attention during learning process, maintaining visual focus especially at near point, problems with reversal when writing or reading, has difficulty in discriminate size, colour pattern, left and right, poor spatial organization, poor visual memory and many more which in the context of school. Visual perception play important role in the development of cognitive and motor perception skills. It brings a variety of different functions with the way of integrative. This Visual Cognitive Skills Box contain various activity of visual cognitive and was designed to overcome the problem faced by the learning disabled students in their visual cognitive function. Due to lot of problems at school, students tend to have low motivation and difficult to involve in social with other peers. Having problems in visual perception also may lead to other problems as well and unfortunately, the symptoms of visual can be very delicate and may as well change over time. This box is suitable for student with special need as it covered the elements of visual cognitive function and it is beneficial to train the student in improving their visual cognitive skills. Apart from that, this box can be one of the teaching aids for teacher as it is simple and practical to be use to help student with visual cognitive impairments.

Keywords **:** Visual cognitive; intervention; learning disability students; impairments.

Green& Sustainability (GS)

B001-GS

E-PASSIVE DESIGN STRATEGIES AND PERFORMANCE [VERSION 2]

Jamaludin Muhamad [Ar.]a, Fazidah Hanim Husaina, Fadhlizil Fariz Abdul Munira, Hayroman Ahmad[Dr.]b, Azhan Abdul Aziz[Dr.]a

a Department Of Architecture, Faculty Of Architecture, Planning And Surveying, Universiti Teknologi Mara [Perak]
b Department Of Building, Faculty Of Architecture, Planning And Surveying, Universiti Teknologi Mara [Perak]

jamal121@uitm.edu.my, fazid896@uitm.edu.my, fariz170@uitm.edu.my, hayro724@uitm.edu.my, azhan850@uitm.edu.my

ABSTRACT

Passive design is one of the keys to sustainable buildings. In this sustainable design criteria, the use of natural element adapted to the building is made more eco-friendly. This design is a weather response that is natural ventilation and natural lighting to maximize comfort and health for building users while minimizing energy consumption. Designing a building, understanding the environmental knowledge, including energy sources needs to be taken into account, due to the failure to understand the achievement of this design by using solar energy as well as wind gusts to provide heating and cooling of indoor space to reduce or dispose of heating or cooling needs mechanically. The orientation and opening of the building need to be precise in order to optimize the natural energy. Using building model as well as a computer application system can better understand the design of the building is more environmentally friendly and sustainable. The implications of this e-passive design will result in more accurate and efficient decisions. Next will be able to improve the design of environmentally friendly buildings. Through the application of e-passive design used for mobile phone and also the building model has helped many designers to better understand the importance of this ventilation and natural lighting in the interior of the building.

Keyword: Passive design, sustainable, Orientation

B003-GS

INNOVATION OF FRUITION COOLANT

Mohd Zulfadli Adenan, Mohd Hafizi Mahmud, Nurul Fatma Norazmi, Hairena Norashikin Sharip, Rafidah Supar, Lyana Syahirah Mohd Yamin

Centre of Medical Imaging, Faculty of Health Sciences, Universiti Teknologi MARA Selangor Branch,
Puncak Alam Campus, 42300 Kuala Selangor, Selangor, Malaysia

mohdzulfadli@uitm.edu.my

ABSTRACT

As cooling system plays integral roles in controlling the temperature of the car's engine, an invention of the cooling fluids that is less hazardous and gives many benefit has become our highlight. Without good radiator coolant, an auto engine would overheat extremely fast, leading to mechanical breakdown. Most coolant contains hazardous chemical which is ethylene glycol that lead to environmental pollution and affect human health. Nowadays people prefer to use plain water to cool down their car's engine as it is very affordable. Unfortunately, contamination will presents during cooling process as water can produce rust. Therefore, a fruition radiator coolant is created using watermelon as the main ingredient due to higher water content that is 91%, more affordable, environmental friendly and not commercialized yet. Besides, sodium benzoic is used as the preservative while ammonium sitrate is added to prevent rust. Based on the experiment that has been done, fruition radiator coolant shows the best result compared to the other radiator coolant. Thus, it is proven that our product can give many benefit to society as well as environment and we hope that our product can solve many problems that may occur in engine system when using normal radiator coolant.

Keywords: radiator coolant, watermelon, water content

B004-GS

BIOMASS DRY CELL

Kamariahtul Izual binti Mohamed Tahir, Nor Azlinda binti Muhammad Azami,
Nurbatrisyia Iman binti Mohd Faizal,
Aisyah binti Salimi

Kolej Vokasional Lebuh Cator Ipoh Perak

inovasi.kvlc@gmail.com

ABSTRACT

Fossil fuel sources are getting reduced because they are used in large quantities. This increasingly expensive oil price makes it harder to meet global energy demands in the future. Carbon materials used in batteries and supercapacitors are often derived from non-renewable resources under harsh environments. This does not stop the search for more sustainable and eco-friendly alternative energy sources. The project succeeded in producing batteries that use salts and biomass materials. Carbon plates from industrial timber crumbs combined with aluminium plates from used aluminium containers, salt water as an electrolyte and hydrogel from disposable diapers are used in produce Drycell Biomass. The chemical reactions have succeeded in generating electric current. Each plate in the battery produced is capable of producing 0.45 - 0.7 volts of electricity . This battery is a good source of energy for rural areas that are difficult to obtain conventional energy sources. Although the resulting current is still small , it is sufficient to provide energy for small-powered electric appliances. More research will be done to increase this battery output. It is interesting to see that wastes that were previously considered worthless may be key to the problem of producing electricity in the future.

Keywords: biomass energy, biodegradable, renewable energy, battery

BIONAT- A BIOHYBRID OF KAPOK/BANANA WASTE AS A NEW ALTERNATIVE OIL FILTER FOR FISH CAGE FARMING

Mohammad FarhanAbdullah, Mohammad bin Abdullah, Muhammad Hazman Hasnan, Muhammd Danial Abd Jalil, Ammad Amirul Adlyi Mohamed, Ahmad Sufyan Zafri Zilani

Fakulti Kejuruteraan Kimia
Universiti Teknologi MARA Cawangan Johor , Kampus Pasir Gudang,
81750 Masai Johor

moham3767@johor.uitm.edu.my

ABSTRACT

Pasir Gudang become a developing of oil industry these days caused the increasing of oil and chemicals spill that turn to oil and water pollution especially at ocean if the problems not overcome immediately. This factor also can affected tourism and fish farming sector in Pasir Gudang area, especially near with industry area. Hence, the studies have been carried out to improve the fish farming industry through natural resources as organic absorbent filter in removing oil spill in water. BioNat as an integrated oil trap column was developed as an organic filter in removing oil waste. The BioNat was designed as a biofilter that consist of treated kapok and banana peel waste. This organic powder was chosen because it is abundantly available as a waste and possess desirable sorption characteristics. The BioNat was prepared by treating the kapok and banana peel waste with special chemical to removed impurities and increase the porosity of it lumen, followed by drying and oil removal evaluation. BioNat demonstrates high oil uptake, good reusability and extractability towards variety of oil waste such diesel, vegetable oil, lubricant oil, silicon oil etc. Because of that reason, the BioNat has the potential to be used as an oil spill cleansing tools

Keywords: Biokap , Kapok, Banana , Oil, EcoTourism , Tanjung Piai

GLAMNUCIFERA'S PAD

Mohamed Syazwan bin Osman, Nurliyana Mohd Nordin, Nurliyana Nazzira Mohd Fadzil, Dr. Siti Aminah Md Ali, Mohamed Syazwan Osman

Universiti Teknologi MARA Cawangan
Pulau Pinang

ABSTRACT

Throughout the years, sanitary pads have become vital to all the women. Nowadays sanitary pads had come with varieties of design and feature but most of the sanitary pads used are from the recycled papers that use chemical substance for bleaching process. Some of sanitary pad emitted toxic chemical which can negative health effect to user in long time of period. Thus, in order to overcome this problem the natural source of pad which undergo safe treatment process had become there replacement of the sanitary pad. The natural sources are being chosen to minimize the usage of sanitary pads among the women nowadays. This awareness has encourages the natural pads to be produced in order to fulfil the desired. The usages of the natural fibres are used in this project as the main absorbent agent for the natural sanitary pads. The mixtures of the sugarcane bagasse, oil palms empty fruit bunch and coconut husk are main raw materials. All of the sources have to undergo the alkaline treatment and others process to transform the wastes into the useful products. The mixtures will then be combined with others materials or fabrics for the making of the natural sanitary pads.

Keyword: sanitary pad, bleaching process, recycled paper

B009-GS

CORPORATE REAL ESTATE SUSTAINABLE MANAGEMENT (CRESM) MODEL

Sr. Nurul Sahida Fauzi, Dr. Ashrof Zainuddin, Sr. Dr. Nor Nazihah Chuweni,
Sr. Noraini Johari and
Prof. Sr. Dr. Abdul Hadi Nawawi,

Faculty of Architecture, Planning and Surveying, Universiti Teknologi MARA, Perak Branch, Seri Iskandar Campus, Seri Iskandar, 32610 Perak, MALAYSIA

Faculty of Architecture, Planning and Surveying, Universiti Teknologi MARA (UiTM), 40450 Shah Alam, Selangor, MALAYSIA

ochidsahidafauzi@gmail.com

ABSTRACT

The emergence of corporations dabbling in sustainable real estate investment has caused a shift in corporate real estate management field from the conventional way of managing a property to a more systematic approach involving high technology. This is due to the need for sustainable buildings to comply with certain requirements in order to maintain their green certification while at the same time improving their business performance. Many discussions mentioned that sustainable buildings are capable of improving business performance. However, most of these discussions did not specify which element of sustainable buildings significantly contributed to business performance and business goals. This research attempts to discover the relationship between sustainable corporate real estate and corporate sustainability in order to determine the most significant element of sustainable real estate influencing overall business performance. A sustainable triple bottom line theory was used as a guide. A questionnaire survey was carried out involving 100 combinations of corporate real estate managers, property managers, facility managers, operation managers, building managers, and financial managers that are directly involved in managing green corporate real estate. Data was then analysed using Smart PLS. Results indicate six out of nine elements of sustainable corporate real estate that significantly affect business performance. They are energy management, workspace management, internal green management, innovation management, human satisfaction management and workplace management.

Keyword: corporate real estate management, corporate sustainable goals, green office building

B011-GS

TOOTATOO
(DESIGNING PILLAR USING ARCHITECTURAL UNIT AND SUSTAINABLE ELEMENT FOR DECREASING SOCIAL PROBLEM)

M.Orbit Gemilang; Raden Rara Lulu F; Ahmad Try I; Haura Ulya N; Vanisa Nakita Purwandhanto

Architecture Study Program, Science and Technology Faculty, 'Aisyiyah University of Yogyakarta
Jalan Ring Road Barat No. 63, Gamping Nogotirto, Daerah Istimewa Yogyakarta 55592, Indonesia
Email: arsitektur@unisayogya.ac.id

ABSTRACT

Stunting is a failure of growth in children due to long-term malnutrition. An area is considered chronic if the prevalence of stunting is above 20% (WHO). The latest data shows, Indonesia's prevalence of stunting reaches up to 29.6%, stunting becomes an emergency situation recently affecting economic and social issues in the country. Food waste becomes one of the biggest world major issues. FAO 2018 reports that 1.3 billion tons of food goes to waste every year. As a consequence, this issue needs to be supported with comprehensive and innovative design by creating TooTaToo, an abbreviation for Arabic words (To'aamun, Ta'aawun and Tuqoosimun), means helping by giving foods. Giving and sharing something become a common socio-cultural value and written in Al-Qur'an (Al-Baqarah: 261). TooTaToo is able to provide staple food such as rice. It is expected to be the ease for give and take activity. TooTaToo will be placed in a public place, particularly in Surau which is generally used as a main gathering place for Islamic social activities. By this means, the more staple food spread easily the more likely prevalence of stunting decreases. TooTaToo uses human behavioral mapping and sustainable architectural design approach.

Keywords: sustainable architectural design, stunting, giving staple food

B012-GS

ECOFARM: SMART AQUAPONICS SYSTEM UNIT IOT FOR THE INDIGENOUS COMMUNITY

Shabila Binti Shoib, Arif Azamuddin Bin Abdul Halim,
Ap Dr Noreen Izza Binti Arshad

Universiti Teknologi PETRONAS,
32610 Bandar Seri Iskandar, Perak Darul Ridzuan

eylabella97@gmail.com

ABSTRACT

There have been a significant number of the indigenous people in Malaysia that are still depend on the agriculture and fishery activities as the source of their family income since most of them live in within or in the forest areas. Due lack of knowledge and technology development in their village area, they are still using the traditional farming methods which caused the production of crops and fishes are slower compared to the modern farmers which are using more sophisticated technologies on their farms. Therefore, this project is proposed to apply aquaponics technique that raising both fishes and plants symbiotically integrated with IOT to help the indigenous farmer gain a better visibility and control over their farms through mobile application. This project will utilise several types of sensor to read values of real-time conditions in the farms connected to Node MCU that will send the date to the server. A mobile application will be developed to receive the data from the server in real-time and display it to the indigenous farmer. The implementations of this project will be carried out in phase using Rapid Application Development (RAD) method. The motivation of this project is to make the indigenous people relevant to Industrial Revolution 4.0 and can be a training platform for them to develop social entrepreneurs.

Keyword: aquaponics, ecofarm

Social Sciences & Entrepreneurship(SS)

AYO-INVEST: INVESTMENT APPLICATION ANDROID BASED FOR MANIFESTING AGRICULTURE 4.0 ERA

Ahmad Fahrudin, M. Arif Arrahman, Mukhaddam Muhammad,
Agustin Wilujeng, Shafa Karima Az-zahra

Brawijaya University
Veteran Street, Ketawanggede, Lowokwaru, Malang City, East Java, Indonesia 65145

Akhmadfahrudhin@gmail.com

ABSTRACT

Indonesia is a country which economic system is driven by several sectors, especially agriculture. Agricultural sector is one of considerable sources of income for the Indonesian people and even has a considerable impact on state revenues. However, the benefits of the agricultural sector that are quite large for Indonesia aren't directly proportional to the results of their products. One of which is funding in the agricultural sector that is less efficient and fulfilled. The solution to this problem of funding in the agricultural sector can be overcome by investment from society, especially the young-millennial people with a high interest in investing. However, this is hampered by the availability of investment facilities. Based on these problems created Ayo-Invest as a means of funding in the agricultural sector with the peer to peer (P2P) lending method. Ayo-Invest offers collaboration between investors and farmers in the form of investment packages that offer competitive returns. The fund management systems and users are supported by artificial intelligence (AI), which is provides product recommendations for investments that are suitable for investors and farmers. Therefore, Ayo-Invest can be the best one to develop agriculture sector from funding field to manifest industrial revolution 4.0.

Keyword: Agriculture, Investment, Ayo-Invest

B002-SS

E-QUA: COMMERCIAL VIVARIUM PLATFORM IN MULTI CHOICE, F- READY TANK AND CUSTOM MADE

Moh. Miftachul Hadi[1], Inpita Casuarina Eqisetia Utari[2], Ifa Sufaichusan[3], Datu Puan Absa4 and Galih Laksita Adi5

Brawijaya University
Veteran Street, Malang City, East Java 65145, Indonesia

inpitaaja@gmail.com

ABSTRACT

Vivarium is an ecosystem that is placed in a container. Vivarium is divided into several groups, such as aquariums, terrariums and paludariums. Currently the aquarium is developing and is only classified as aquascape. Malang City has an aquascape community with more than 10,000 followers. Not only aquascape, the concept of an artificial plant ecosystem which is often called a terrarium is a hobby that is beginning to be in demand today and has been followed by more than 2000 people, while for the paludarium it is still less well known by many people. This student creativity program, focusing on providing a platform for enthusiasts in the form of platforms called E-QUA. E-QUA is a social network in the form of a website that connects creators with buyers without the need to meet face to face. E-QUA comes with multi choice, ready tanks and custom made that make buyers can make designs according to their wishes and choices offered with the desired budget. E-QUA is promoted through social media accounts and E-QUA will also hold workshops and education for the public.

Keywords: Vivarium, Aquarium, Terrarium and Paludarium

B003-SS

BHACAKEKOK: INNOVATION OF CAKE MAKING BASED CULTURE ENTREPRENEURSHIP

Nuanisa Hanatita, Sahlia Nita, Maisaroh. SE., DRA. Sri Mulyati M.Si Diploma Program,

Faculty of Economy,
Universitas Islam Indonesia
Jalan Kaliurang Km 14.5, Umbulmartani, Ngemplak, Sleman, Daerah Istimewa Yogyakarta, Indonesia, 55584

maisaroh@uii.ac.id

ABSTRACT

Starting from our limitations as boarding children who want to create a cake business that is simple in the manufacturing process, as well as innovative in their products, then we made a new product innovation in the form of simple cakes nobaked. The advantages of our products are various variants of taste, such as chocolate, tiramisu, greentea, oreo, beng beng, and cake shapes using tourist destination icons in the city of Yogyakarta. The cakes we produce are made from safe and halal quality ingredients consisting of biscuits arranged according to consumer tastes. Using the chocolate topping that we melt and we freeze. As well as a sprinkling of gold powder that gives the cake its own aesthetics. With quality food ingredients, and safe for consumption. The immediate benefit gained by consumers is to taste cakes with different sensations, can be used as souvenirs, and as a way to introduce tourist destinations in the city of Yogyakarta. The packaging of our products uses vacuum packaging to last long without using preservatives. For our purchases, the price is IDR 20,000 - IDR 30,000.

Keyword: cake, food, culture entrepreneurship, inovation, variants product.

B004-SS

ETHNIC STRIATED WOVEN FABRIC WOF
(*WOVEN FABRIC*)

Bagus Jaka Pratama**,** Mellyna Cahyani**,** RR. SITA Dewi Kusumaningrum SE., MPM.,
Sukardi, SE., MM.

Diploma Program, Faculty of Economy, Universitas Islam Indonesia
Jalan Kaliurang Km 14.5, Umbulmartani, Ngemplak, Sleman, Daerah
Istimewa Yogyakarta, Indonesia, 55584

el.aiyubbi@uii.ac.id

ABSTRACT

Indonesia is a tropical country with a variety of plants. One of the banana trees that thrives in every region of Indonesia. Banana trees can be used as a combination of lurik. Wof ethnic lurik woven fabric *(woven fabric)* is a lurik woven fabric with a combination of banana tree fiber into a more unique and interesting form so that it can be known to the community The purpose of this business is to empower the community economy and introduce lurik to everyone, especially the younger generation in this millennium era , then lurik can become an Indonesian national cultural identity and can develop in foreign countries. The making of Lurik woven fabrics includes 3 stages, namely the production process of banana fiber intake, weaving and marketing. The advantages are not hot when used, the durability of the fabric can reach 4-5 years. The uniqueness of this product is utilizing the surrounding environment that is no longer used, such as the banana tree midrib. The products are converted into shirts, bags, souvenirs and wallets. The price of the product is Rp. 70,000 - Rp. 300,000. Having a middle to upper class target market, sales made are distributing to boutiques and hotels in various regions, online marketing through Instagram, etc.

Keyword **:** Socio Culture Enterpreneurship, Woven Fabric, Banana Fiber.

B006-SS

NONI ICE CREAM

Syafiqur Rizal,Desi Sriyana, Mutia Suciningsih, Mellisa Fitri Andriyani SE., MM.,
Arief Darmawan, SE., MM.

Diploma Program, Faculty of Economy, Universitas Islam Indonesia
Jalan Kaliurang Km 14.5, Umbulmartani, Ngemplak, Sleman,
Daerah Istimewa Yogyakarta, Indonesia, 55584

el.aiyubbi@uii.ac.id

ABSTRACT

Noni plants (Morinda citrifolia) are widely grown in Indonesia. This fruit has many benefits but has an unpleasant smell and taste. Noni`s contains high antioxidant that can counteract free radicals. it is good for health, but is not popular in society. Finally, innovation has been developed by making noni fruit ice cream as an alternative way of noni's consumption. The composition of this product is dominated by noni fruit mixed with pandan leaves and java sugar. Dried noni under the sun light and then pound it. Mix all the ingredients and packing it. For consumens, the way to make Noni ice cream is quite easy, by mixing the powder with boiled water next stirring it constantly, if the mixture has begun to expand and thicker, put it at room temperature for 5 minutes. Last put in the freezer. The price of this product is Rp. 10,000. The innovation of this product is expected can become a new business opportunity for the communities, especially for the middle and lower classes and beneficial for health.

Keywords : Social Science and Entrepreneurship, Noni, Healthy Food.

THE USE OF RAMBUTAN SKIN AND CORN HUSKTO
BE THE EFFICACIOUS TEABAG

Nur Azuraa, Rima Adha Alfa, Novi Nurwidyaningsih, Aidha Trisanty, SE. M.SI,
Dityawarman El Aiyubbi M.E.K

Diploma Program, Faculty of Economy, Universitas Islam Indonesia Jalan
Kaliurang Km 14.5, Umbulmartani, Ngemplak, Sleman, Daerah Istimewa
Yogyakarta, Indonesia, 55584

el.aiyubbi@uii.ac.id

ABSTRACT

RAJANA tea is the tea that uses the waste of Rambutan skin in its production as the herbal tea and waste of corn husk as the alternative for the teabag purposely to reduce the waste of rambutan skin and corn husk in the environment of community. The background of this writing is a consideration that rambutan is a seasonal fruit in which in its season, the skin of this fruit is neglected as most of the societies have no idea about the benefit of rambutan skin. This product become rare as it can only found in long term as rambutan comes in certain season. Meanwhile, corn husk is used as the alternative of teabag that commonly contains the chlorine that can bring a bad effect on health in a long term. Rambutan skin has many benefits such as to decrease the cholesterol, prevent early aging, treat diarrhea, prevent caner and treat the fever. Corn husk also has many benefits including to prevent kidney stones, improve blood learning abilities, control diabetes, and reduce cholesterol.

Keyword: Rambutan Skin, Corn Husk, and Teabag

B007-SS

B008-SS

PELPI BAG

Tasya Dygtha Salsabella, Nadia Imt Luqiana, Andhini Indah Cahyaning Adilla,
Diana Wijayanti, SE. M.SI

Diploma Program, Faculty of Economy, Universitas Islam Indonesia,
Jalan Kaliurang Km 14.5, Umbulmartani, Ngemplak, Sleman, Daerah Istimewa Yogyakarta,
Indonesia, 55584

el.aiyubbi@uii.ac.id

ABSTRACT

Pelpi bag is a bag made of banana fronds. As an agricultural country with various types of fruit plants including banana trees, Indonesia has an enormous potential in the production of pelpi bags. Banana midrib are called multipurpose because each of its part has benefits such as banana midrib. It contains much of textured, and strong fiber, showing the potential to be developed into an innovative product useful to reduce banana stem waste, by developing products in the form of bags that are ready to use, unique, useful, and friendly to the environment. Banana midrib has two parts that can be utilized, namely the inner side and the outer side. In the making process banana midrib is dried naturally using the sun's heat. Then, the banana midribs are produced to be a bag using two techniques: by namely a twisting technique with a 1mm twisting size using the outer part of the banana midrib. The second technique is weaving technique using the inner banana midrib in tree in the form of sheets, then shaped into a bag. For the sustainability of production, innovation in the design of product models are carried out based on the market developments. The marketing process is carried out through the direct sale by producers and indirect sales through various information media.

Keyword*:* Potential, Innovation, Waste Utilization, Marketing

NIACRASS BAG: BAG MADE OF WATER HYSCHINTH FIBER

Bagas Wahyu Nusantara, Risya Ayumiridha Wardani, Arya Gifari Putra Mustakim,
Faiza Salsa Billa, Dityawarman El Aiyubbi

Diploma Program, Faculty of Economy, Universitas Islam Indonesia
Jalan Kaliurang Km 14.5, Umbulmartani, Ngemplak, Sleman, Daerah Istimewa Yogyakarta,
Indonesia, 55584

el.aiyubbi@uii.ac.id

ABSTRACT

This project aims to create one of the new innovations in fashion by making sling bag that is comfortable and simple to use. Niacrass bag is a bag made by using water hyacinth fiber as the main ingredient in its manufacture. Growing a lot in Bantul area, water hyacinth is highly potential to be utilized. In addition, the fiber of water hyacinth is known very good in its use for fashion industry. Seeing the large potential of water hyacinth. We choose this plant as the basic ingredients in making niacrass bag. The manufacturing of this bag does not use the common weaving method but uses a weaving process that is able to produce a much finer fiber quality. For this. this bag has more values compared to other crafts. Each bag will be offered for Rp. 40,000/ 3 USD. With this innovation, it is expected to help the government in reducing unemployment rate and optimizing the empowerment in community surrounding. The marketing strategy is carried out with the first two methods of entrusting products to MSMEs, creative houses and participating the products at the Yogyakarta Regional Creativity Festival. The second method is done by selling products at the marketplace.

Keyword: Innovation, Fashion, Water Hyacinth Fibbers, Marketing, Bag

B010-SS

HERLINA TEA: HERBAL TEA MADE OF PINEAPPLE SKIN WASTE

Bagas Wahyu Nusantara, Estu Pujiarsih, Ayu Annisa, Davin Anathoriq Hirdopo,
Aidha Trisanty, SE., MM

Diploma Program, Faculty of Economy, Universitas Islam Indonesia
Jalan Kaliurang Km 14.5, Umbulmartani, Ngemplak, Sleman, Daerah Istimewa Yogyakarta,
Indonesia, 55584

el.aiyubbi@uii.ac.id

ABSTRACT

Herlina tea is one of the new breakthroughs in culinary, especially herbal drinks. It is made of pineapple skin waste processed into herbal drink that provides many benefits for the body including to strengthen the immune system, as an antioxidant and being bacteriostatic. Nowadays, there are many wastes of pineapple skin in environment surrounding; yet the community has not been able to use it optimally. Therefore, innovation is made by making herbal drinks derived from pineapple skin waste that can give many benefits for the body, so this herbal drink can be one of the people's choices in creating a healthy life. The potential of this product will rapidly grow in community considering that this type of product is not found so far in market, its healthful properties, and the main raw material of this product is also very easy to obtain. These then can make this product able to compete in the market. With this Herlina tea, it is expected to reduce the level of environmental pollution caused by pineapple skin waste, increase the number of jobs, and make pineapple skin waste into economically valuable herbal teas.

Keyword*:* invention, pineapple skin, herbs, waste

B011-SS

TEH KULIT JERUK "AYU JELITA"

Anggika Puspita Nuginingsih, Faiz Rasyid A, Febi Satria I.B,
Varellya Regita W, Afuan Fajrian Putra

Diploma Program, Faculty of Economy, Universitas Islam Indonesia
Jalan Kaliurang Km 14.5, Umbulmartani, Ngemplak, Sleman, Daerah Istimewa Yogyakarta,
Indonesia, 55584

afuan.putra@uii.ac.id

ABSTRACT

Indonesian people are known to like tea drinks which are served when gathering with relatives and friends. Therefore, tea innovation is needed which not only warms the atmosphere when gathering, but also nourishes the body. We present orange peel tea which is good for health and beauty. This tea is an innovation of tea with raw materials from a combination of orange and ginger skin. Orange peel, which is usually only a waste, turns out to be processed into high-healthy, healthy tea. Orange peel has important nutrients such as vitamin C which is good for the skin and B1 which converts carbohydrates into nutrients. Orange peel also contains pectin which affects the absorption of the stomach and intestines by binding to bile acids so that it can reduce fat absorption and control cholesterol levels. This orange skin tea is combined with ginger which is useful to help the digestive system work, reduce joint inflammation, fight the respiratory system, launch the circulatory system, and enhance the immune system. Consuming this tea will help beautify the skin, ideal and healthy body weight. The orange skin tea business will also empower the wider community from the process of collecting raw materials, production, and distribution which is more emphasis on online marketing.

Keyword: The, Orange Skin, Ginger, Beauty, Healthy, Empowerment

B012-SS

RENDANG PAKIS

Elfa Nuriyana, Sabiha Harun Mokoagow, Resa Eka Fariski,
Salisa Mulya Nur Hidayah, Tatik SE., M. AKT

Diploma Program, Faculty of Economy, Universitas Islam Indonesia
Jalan Kaliurang Km 14.5, Umbulmartani, Ngemplak, Sleman, Daerah Istimewa Yogyakarta,
Indonesia, 55584

tatik.pawiro@uii.ac.id

ABSTRACT

Rendang is a typical Indonesian food with a high taste with spices that are rich in spices. In 2017 rendang is the most delicious food in the world according to the CNN travel website. Rendang usually uses meat-based ingredients, whereas consuming too much meat is not good for the body. Therefore, we make rendang from the main ferns which is suitable for vegetarians, so they can still enjoy the taste of rendang with the main ingredients of healthy vegetables. Fern leaves have the benefit of preventing cancer and free radicals. Our innovative Rendang pakis is also combined with skipjack tuna which contains nutrients such as vitamin A, calcium, protein, iron, and omega 3. The incorporation of fern leaves with skipjack fish is very healthy for consumption. Developing the rendang pakis business is not only economically profitable, but also preserves Indonesian specialties.

Keyword: *Rendang, Typical food, Fern leaves, Skipjack fish, Healthy food*

B013-SS

AKULIN
(MINYAK KULIT DURIAN)

Calvin Anggoro, Devina Putri Rahayu, Eka Nurdina Inayatus Sholeha,
Muhammad Cahyo Rahadi,Anggita Hayu Muktisari,Yestias Maharani, SE., M.ACC

Diploma Program, Faculty of Economy, Universitas Islam Indonesia
Jalan Kaliurang Km 14.5, Umbulmartani, Ngemplak, Sleman,
Daerah Istimewa Yogyakarta, Indonesia, 55584

yestias.maharani@uii.ac.id

ABSTRACT

Durian (*Durio Zibethinus*) is one of the fruits that is loved by many people. It has the strong smell and the soft meat make people very like to consume it, but the people cannot take an advantage of a durian maximally. They only eat durian meat and throw the durian skin away so it becomes waste which has no benefits. Few people know that the waste of durian is beneficial. Durian skin has many ingredients that can be used as medicines, such as a rubbed oil. The method we use in processing durian waste into rubbing oil is the method of filtration and distillation separation. The screening process is carried out in triplo then put into a round bottom flask for the distillation process, from this process the contents in the rubbing oil are obtained. This rubbing oil is useful for removing boils, abdominal pain medications, preventing mosquito bites, and smoothing the skin. Through the manufacture of durian skin rubbing oil, it is expected to reduce the amount of durian skin waste and utilize durian skin waste as traditional healthy massageoil.

Keyword: durian skin, filtration, distillation, rubbing oil

B014-SS

DEVELOPMENT OF PROBOLINGGO MANGROVE ECOTOURISM BASED ON SOCIAL CAPITAL AT PILANG BEACH

Ahmad Hafidul Ahkam[1], Firda Avcarina[2], Viona Faiqoh Hikmawati[1], Khairul Maghfirah Hasanah[1], Nadhifa Ummulhusna Dyah Wikantyasti[1].

[1.] Faculty Mathematics and Natural Science, Department of Biology, Brawijaya Univerity.
[2.] Faculty Economic and Bussines, Department of Accounting, Brawijaya University.
Malang, Indonesia.

Hafidul.ahkam01@student.ub.ac.id

ABSTRACT

The role of Mangrove ecosystem and local community can be used in order to build a planning and conceptualize sustainable development in mangrove ecotourism. Probolinggo has a large natural mangrove area on the North Coastal. The Pilang Beach was a part of it and has not developed yet for its potential mangrove tourism destination. Data collecting by field observation, in depth interview, and literature study then synthesize with descriptive analysis method. Developing mangrove ecotourism clearly contributes to mangrove conservation. Additions of tourist attractions needed for the sustainable use of mangrove ecotourism as a tourist attraction, like mangrove for food and agriculture education, and processing mangrove for other product. It's substantial for the local community and tourist to understand the mangrove characteristic and involved on mangrove conservation program. The social condition of the local community greatly influence the result of ecotourism management, a number of grant needed to initiate a program and development. The success of developing also requires high involvement from the community through strong motivation, fair allocation of work, benefits among the member, good relations among members, and comprehensive external networking to strengthen social capital. Therefore, the sustainability of this study increases as the value of social capital increases

Keyword: Mangrove ecotourism development, social capital, Pilang Beach

B015-SS

HYBRID BIOFILTER MODEL FOR ECOTOURISM TANJUNG PIAI NATIONAL PARK

Nurul Fazlika Syahira Abdullah, Mohammad Abdullah, ,
Nur Mubinah Md Ariff, Nurin Nasrin Mazalan, Nur Shafiqah Ahmed

Fakulti Kejuruteraan Kimia
Universiti Teknologi MARA Cawangan Johor , Kampus Pasir Gudang, 81750 Masai Johor

moham3767@johor.uitm.edu.my

ABSTRACT

The developing of oil industry these days especially in south of Malaysia (Johor) caused the increasing of oil spill that turn to oil and water pollution especially at ocean if the problems not overcome immediately. This factor also can affected tourism sector in Malaysia, especially near with industry area. Hence, the studies have been carried out to improve the tropical costal such mangrove tree and Pokok Api-Api through natural resources as organic absorbent filter in removing oil spill in water. Biokap as a hybrid biofilter was developed as an organic filter in removing oil waste that can pollute tourism area. The Biokap was designed as a biofilter that consist of treated kapok and banana peel waste. This organic powder was chosen because it is abudantly available as a waste and possess desirable sorption characteristics. The Biokap was prepared by treating the kapok and banana peel with special chemical to removed impurities and increase the porosity of it lumen, followed by drying and oil removal evaluation. Biokap demonstrates high oil uptake, good reusability and extractability towards variety of oil waste such diesel, vegetable oil, lubricant oil, silicon oil etc. Because that reason, the Biokap has the potential to be used as an oil spill cleansing tools. It is important to ensure the ecotourism area clean with the environmental pollution in order to increase the number of visitor that come and stay at Tanjung Piai area.

Keyword**:** Biokap , Kapok, Banana , Oil, EcoTourism , Tanjung Piai

B016-SS

AMALGAMATED THEORY APPROACH IN DETERMINING FACTORS CONTRIBUTING UNDESIRED CONTRACTUAL BEHAVIOR OF CIVIL ENGINEERING PROJECT KEY PARTICIPANTS

[1]Wan Norizan Wan Ismail, [2]Hamimah Adnan, [1]Natasha Khalil, [1]Siti Sarah Mat Isa, [1]Siti Nor Faizah Ab Malek

[1]Faculty of Architecture, Planning and Surveying, Universiti Teknologi Mara Perak Branch, Seri Iskandar Campus, 32610, Perak
[2]Faculty of Architecture, Planning and Surveying, UniversitiTeknologi Mara Shah Alam, 40450 Shah Alam, Selangor, Malaysia

wanphd2016@gmail.com, mimad856@gmail.com, natashakhalil29@gmail.com

ABSTRACT

Construction processes involve inter-firm relation. This inter-firm relation needs contract as a standard way of protecting the contracting parties against opportunistic behavior and other risks in business relations as well to govern project implementation. Unfortunately, although there are many types of established standard forms of contract available for adoption yet the problems associated with undesired contractual behaviour of key participants are still replete in construction industry in Malaysia such as delay in payment, delay of work progress, poor communication among project participants, unauthorized instructions and many more. This eventually leads to conflict and litigation as well as unsatisfactory project performance. Due awareness on this issue, this paper contributes by determining the underlying factors causing undesired contractual behavior of civil engineering project key participants. The determination process was based on Transaction Coat Theory (TCT) and Relational Contract (RC) considering the characteristics of projects, the quality of Standard Form of Contract (SFoC) used and the individual participants' attitudes. By gaining a better understanding of the relations between the characteristics of the projects, the quality of SFoC and individuals attitudes, strategies can be better configured and targeted to help achieve the desired civil engineering project outcome. Therefore, the outcome of this study provides stakeholders with information on factors, which, if properly understood, can make undesired contractual behavior of project key participants less likely.

Keyword*:* Civil Engineering, Contractual Behavior, Transaction Cost Theory, Relational Contract

B017-SS

FACTORS THAT AFFECTING THE TRANSITION OF PROPERTY INVESTMENT THROUGH SALE AND LEASEBACK INVESTMENT

Nur Lesya Firsya Bt Johaimi Ling[1],
Mohd Hasrol Haffiz Bin Aliasak[2] and Kartina Alauddin[3]

[123] Faculty of Architecture, Planning & Surveying,
Universiti Teknologi MARA Perak Branch, Seri Iskandar Campus,
Seri Iskandar, 32610 Perak, MALAYSIA

[1]*E-mail address: nurle187@perak.uitm.edu.my*

ABSTRACT

Sale and leaseback is known as a volition way in investment for the owner of the property to raise money or to free up the owner's equity for other uses, while maintaining use of the facility. In Malaysia, Real Estate Investment Trust (REITs) is one of institutional investor adopting the sale and leaseback approach for the wide range of new technologies of investment to enhance the value of the investment. The aimed of this project is to revolutionize the property industrSuh, by switching the design of physical assets investment from direct investment to indirect investment under which connected to the factors that influence the property investment yield by analyzing and responding to the information received. The research uses a content analysis method to analyze data, which is gathered from literature and previous studies. Based on the analysis, this project is an integration of factors of yield in sale and leaseback framework. The result of the study would be a useful guide to Real Estate managers in developing countries towards using sale and leaseback as one of the alternative ways to increase the revenue of the property investment.

Keywords*:* Sale and Leaseback, Yield, REITs, Real Estate, Finance, Property Investment

FM SEVPRO-FACILITIES MANAGEMENT FRAMEWORK FOR SERVICE PROVIDERS

Farhan Md Dahlan, Ashroff Zainuddin,
Mohd Hasrol Haffiz Aliasak, Suhaila Ali

Faculty of Architecture, Planning & Surveying
Universiti Teknologi MARA Perak Branch

farha221@perak.uitm.edu.my

ABSTRACT

There is a need to improve service delivery quality of Management Corporation in order for sustainability quality of urban apartment living. The purpose of this study is to develop key performance indicator (KPI) for service delivery quality of Management Corporation as its critical success factors (CSFs) which could increase the quality service of the Management Corporation maintaining apartments. This study uses a literature review to identify the CSFs for service delivery quality of the Management Corporation that would satisfy tenants of apartments. The result of the study would include KPI as the CSFs for service delivery quality of the Management Corporation managing and maintaining apartments. The results are expected to lead towards potential variables to develop KPI as its CSFs and theory for the testing hypothesis for CSFs for Management Corporations' service delivery quality in apartments. This study contributes to propose a framework for KPI for service delivery quality as its CSFs for apartments. It is in order to for sustainability quality urban apartment living in the facility management context.

Keyword: Key performance indicator, critical success factors, strata living

B021-SS

MR HANDY APPS – MAINTENANCE SERVICES

Nur Lailatul Husna Bt Mohammad Yusof, Nur Hazwani Zolkifly, Nor Marini Mohtar,
Farrah Dina Abd Razak, Nor Samsinar Kamsi

UiTM Perak, Kampus Seri Iskandar, 32610 Seri Iskandar, Perak

husnaR84@gmail.com

ABSTRACT

The importance of an effective maintenance services cannot be overlooked as it plays such an important role in the effectiveness of our daily activities. It is required to effectively reduce waste and run an efficient, continuous manufacturing operation, business or even the service operation at our home. The cost of regular maintenance is very low when it is compared to the cost of a major breakdown at which there is no production. Mr Handy Apps is an application that offers all kind of home services and repair related jobs. This application is the most convenient and hassle-free way to get your maintenance services work done as it runs for 24 hours a day that provide an unlimited operation hour to be access by the users. With well trained and background verified professional vendors, it will assure that all electrical, plumbing, carpentry, or even appliance repair and other needs are taken care of. Through the apps, people can make a booking, track status of the booking and rate the provider on the go. It is believed that the apps will help people to experience a brand new way to get all the home services and repair jobs done whenneeded.

Keyword*:* maintenance service, online apps, repair related jobs, convenient

Science, Engineering& Technology(ST)

ENHANCED DYNAMIC RANGE FBG ACCELEROMETER

Waldo Anak Udos, Lian Jie Yi, Nurul Asha Mohd Nazal, Ir. Dr. Lim Kok Sing, Ir. Dr. Ong Zhi Chao, Prof. Datuk Dr. Harith Ahmad

University of Malaya, Jalan Universiti, 50603 Kuala Lumpur Malaysia

ABSTRACT

This study demonstrates the time domain and frequency response of the FBG accelerometer at implied excitation signals. From the frequency response results, the resonance frequency of the accelerometer will be determined. The method of suppressing the resonance frequency will be studied to enhance the range of broadband signal. One of the methods that will become the focus of this study is by using magnetic damper. By doing so, this will result of enhanced dynamic range of the FBG accelerometer. This study can be used to improve and increase the sensitivity and increase the efficiency of the FBG accelerometer. Enhanced dynamic range FBG accelerometer can be used as a sensor which can be a substitution to conventional electrical sensors, and it is usable for structural dynamic measurement which is important for structural integrity aspect and able to foresee any possible hazards. By enabling to predict possible risks, we can take early precautions and preventive steps to overcome such threats. It can be used for piping system and industrial machinery such as engines and turbines, and pumps and compressors.

Keyword: accelerometer, time domain

B004-ST

FSW OF AL THIN PLATE (1.5MM)

Azman Ismail[1,2*], Mokhtar Awang[2], Fauziah Ab Rahman[1], Bakhtiar Ariff Baharudin[1],
Tuan Muhammad Nurkholish Tuan Anuwa[1], Muhammad Izzat Abdul Razak[1],
and Mohd Jasmin Zainuddin[1].

[1]Universiti Kuala Lumpur, Malaysian Institute of Marine Engineering Technology,
Lumut, Malaysia,
[2]Department of Mechanical Engineering, Universiti Teknologi PETRONAS,
Seri Iskandar, Malaysia.

Email: azman@unikl.edu.my

ABSTRACT

Friction Stir Welding (FSW) appears as a promisingly weld joining method that enables to diminish material waste, prevent radiation and harmful gas emissions that usually associated with the fusion welding processes. This welding technique makes use of a non-consumable welding tool to generate frictional heat, stir and join two plates together below the melting points. Thin plate section of aluminium introduces a unique challenge. Instead of proper setting, there is a need for proper tool shape to successfully produce a good thin aluminium platejoints.

Keywords: material waste, radiation, harmful gas emission, thin plate

B005-ST

UNIVERSAL CONTROLLER SYSTEM

Mohd Hanafiah bin Yusoff, Nasraan Shah bin Mohamed Nasser,
Muhammad Aiman bin Zamzuri, Muhammad Ilyas bin Roosli,
Izzat Asyraff bin Md Ghazali

Kolej Vokasional Lebuh Cator, Ipoh, Perak

inovasi.kvlc@gmail.com

ABSTRACT

In daily life, humans have a close relationship with a control system such as controlling fan speed, television, autogate, access door and others. This "Universal Controller System" project was developed for the purpose of diversifying and integrating existing control systems in the market. The basic development concept used by the "Universal Controller System" project is the concept of closed loop control system. Most of the control system in the market only focus on one concept and maintenance cost are relatively high and did not provide fast solution if they have any problems with the system. The project's development objective is to provide a low cost control system, easy maintenance and optimize time to create a sustainability system. "Universal Controller System" has 5 major control systems and communication – electrical control systems, electronic control systems mechanical control systems, programming control system and communication control systems. The main achievement of this "Universal Controller System" is to improve the security of our country and to develop automation within our country which is the foundation of the Industrial Revolution 4.0 (IR 4.0) and to improve the education sector to access lifelong learning.

Keyword: controller, closed loop control system

AUTOMATED IRRIGATION SYSTEM FOR
HOME PLANT AND GSM

Zarul Azlan bin Mohd Zini, Haikal Hanis bin Maskuri, Syed Syazani Imran In Syed Muzafar, Danish Firas bin Khairul, Saiful Bahri Mat Sillah

Kolej Vokasional Lebuh Cator, Ipoh, Perak

inovasi.kvlc@gmail.com

ABSTRACT

Plants require enough water resources to be healthy and fertile. Excess quantities of water or the lack of water supplied to the plant can cause the plant to wither and die. This project focuses on how to develop an automatic watering system using Arduino REV 3 ATMega 328P and A6 Global System for Mobile Communications (GSM) so that the plants can be watered at the right time with the correct quantities. This home-based system is to facilitate people in watering plants without involving any human energy. This project uses a tube watering system as it watered the tree in the pot. In addition, this project also uses Arduino Uno as a system controller. It is programmed to track soil humidity levels and supply water to plants and at the same time GSM sends the information to users. Typically, watering sessions will be done three times a day. When the soil moisture is below 70%, the water pump will suck the water from the tank and will start the watering session. It will stop watering when the soil moisture level reaches 70%. The sensor used for this project is "Moisture Soil Sensor". This sensor will read the moisture level in the ground. The LCD screen will show data when the soil is dry and wet. The project is also equipped with a "pH Sensor" which can detect the rate of fertilizer reductions in the soil and fertilizers will also be automatically generated if detected.

Keyword: irrigation system, home plant

B007-ST

SMART BELL

Abdul Razak bin Mat Isa @ Zainal, Muhammad Irfan bin Zulkifli,
Muhammad Fakri Syakirin bin Khairurizan, Ghazali Mat Nor

Kolej Vokasional Lebuh Cator Ipoh Perak

inovasi.kvlc@gmail.com

ABSTRACT

An excellent alternative to manual timekeeping with automated ringing for the bell.Smart Bell Control System has introduce automatic school bell timer is specially designed for Educational Institutions and Industries where the bell timer plays a critical role in running the day. The timer can be set to ring up automatically or manually. The device shows the real time clock during normal operation along with manual facility. It is fully local products ,trouble free long life ,heavy duty as compare to any such type of products. No manpower needed to ring bell.

Keywords: automatic school bell, bell timer

B008-ST

KLIK MERAPI : APPLICATION OF LOCAL TOURISM DEVELOPMENT BASED ON HALAL TOURISM IN THE ERA OF INDUSTRIAL REVOLUTION 4.0

Galih Refa Sugiarto, Husein Faisal Ridho, Muhammad Hanif Priardanto, Selfira Salsabilla SE., MAk, Dra Marfush M.Si. Ak.

Diploma Program, Faculty of Economy, Universitas Islam Indonesia
Jalan Kaliurang Km 14.5, Umbulmartani, Ngemplak, Sleman, Daerah Istimewa Yogyakarta, Indonesia, 55584

el.aiyubbi@uii.ac.id

ABSTRACT

Today's growth is positive in helping economic growth. According to Dadang Rizki Ratman, SH. MPA in 2014 (Deputy for Destination Development and Tourism Investment Midwives), Indonesian tourism contributed 9% to GDP (Gross Domestic Product), and increased foreign exchange in the amount of Rp. 140 Trillion. At present Indonesia is ranked 2nd in the world that applies halal tourism. Indonesia's Potential Indonesia's tourism potential is one of them Merapi mountain tourism in Yogyakarta. However, this tour does not have many people and still has many difficulties in its development. The author wants to develop this tour by utilizing sharia-based information technology. The author's idea is to name the KLIK MERAPI Application. This application was created to help tourism marketing of Merapi, English language development and entrepreneurship of the Merapi slope community, integrating application-based Merapi tourism and assisting the provision of Islamic-based investment. In its implementation, the author needs financial support and licensing. This idea is expected to solve tourism problems, increase community income, increase the GDP of the Sleman region and create new jobs.

Keyword: Tourism, Halal, KLIK MERAPI application, Islamic investment, economy.

B009-ST

EVENT EASY (E-asy) : APPLICATION FOR EVENT INTEGRATION DEVELOPMENT IN YOGYAKARTA BASED ON INDUSTRIAL REVOLUTION 4.0

Jessica Felicia Yafi Ainwa, Galih Refa Sugiarto, Rayfi Mohammad Latif, Muhammad Rizqi Az Zayad, Yestias Maharani

Diploma Program, Faculty of Economy, Universitas Islam Indonesia
Jalan Kaliurang Km 14.5, Umbulmartani, Ngemplak, Sleman, Daerah Istimewa Yogyakarta, Indonesia, 55584

el.aiyubbi@uii.ac.id

ABSTRACT

Today the demand for services for an event is growing rapidly in Indonesia, one of which is in Yogyakarta. Various events in Yogyakarta such as workshops, music concerts, weddings and etc. Requests for event needs are very much needed such as event services, decorations and sponsorship searches. But the search for event needs is still done separately. The author wants to integrate event needs in a platform that utilizes information technology. The idea of writing a business plan discusses the solution to problems in obtaining event needs. The idea of this platform is named Event Easy (E-asy). This application was made to make it easier for event organizers to get event services such as MCs, chefs, singers and etc. In addition, it is also possible to obtain loan for event equipment and sponsorship search. E-asy is the idea of developing a digital-based platform that connects event organizers with event needs focused on B2B e-commerce. This business model is a business model that connects various segments. This idea is expected to solve the problems of event organizers, improve the economy of the community and become new jobs.

Keyword: Event, Event Easy Application, Event Organizers, Economy

B010-ST

PRO VAC (PROTEASE VACUUM): UTERUS RESIDUAL CLEANER DEVICE BY USING PROTEASE ENZYME

Rizky Senna Samoedra, Fikriya Novita Sari, Setyaki Kevin Pratama,
Raka Maulana Yufa, Muhammad Zainurrahman

¹Biology Department, Faculty of Mathematics and Natural Sciences, Brawijaya University
²Physics Department, Faculty of Mathematics and Natural Sciences, Brawijaya University

Corresponding Author E-mail: risesamoedra@gmail.com

ABSTRACT

Abortion in Indonesia occurred around 1,5 million people each year. Uterus after abortion often cause complications. The methods to clean up residual tissues on uterus after abortion using MVA and D&C. Both methods have weaknesses for being expensive and can cause inflammation on healthy tissues around it because they don't work specifically. Provac aims to optimize the process of cleaning up residual tissues within uterus without causing inflammation on healthy tissues around it by designing a protease vacuum. Method are uterus condition check and cervix opening by dilation. Next ProVac engine is turned on, then the tip of ProVac is directed to the area of residual tissues and covered by the tip of ProVac. Inject protease enzyme to hydrolysis on residual tissues. Wait till reacted and the enzyme liquid filled with hydrolyzed residual tissues sucked until it's clean. Protease enzyme to hydrolyze residual tissues within uterus without causing breakdown of healthy tissues around it. ProVac is a more efficient solution to clean up residual tissues on uterus because it's simple and works specifically on residual tissues without causing inflammation. ProVac has a potential to be implemented in taking care of abortion patients and distributed all around Indonesia.

Keywords : Abortion, protease, ProVac, uterus, vacuum

B011-ST

WHEELCHAIR LANE AS A SOLUTION FOR RAISING ACCESSIBILITY AND INDEPENDENCE OF DISABLED PEOPLE TO CREATE DISABLED-ACCESSIBLE PUBLIC AREA

Ajeng Mareta Astiyani, Aldi Dwi Putra, Fikriya Novita Sari, Nuril Maulidiah Maghfiroh, Andro Syahreza

Department of Biology and Department of Physics, Faculty of Mathematics and Natural Sciences, Brawijaya University Malang, East Java

Corresponding Author E-mail: ajengmaretaastiyani@gmail.com

ABSTRACT

Indonesian Labor Organization states that around 82% of disabilities people are live below the poverty line, thus preventing them to access the latest supporting technologies. Physically disabilities people commonly are the manual wheelchair users. But, manual wheelchairs lack improves users independence. Then compounded by the lack of accessible public facilities. The purpose of creating this lane for wheelchair users are to improve their access and mobility in public areas. The method is wheelchair lane will be applied on the sidewalk using an AC motor with large torque as a driving line, a Control Box (CB) placed in a wheelchair to control the wheelchair to stop, go forward, or escape from the lane, and also the Steering Box (SB) is on the track to arrange the wheelchair to stay on lane. The wheelchair will be linked to SB that has servo driven valve. This valve can be connected or released from the chain that rotated by an AC motor. This lane has potential to applied in various country. Creating the wheelchair lanes will also support the SDGs in the 2030 agenda with target on providing accessible public area and ensure disabilities people to can participate more in society.

Keywords: disabled, wheelchair.

B012-ST

COMPARISON OF HYDROPHILIC AND HYDROPHOBIC COMPOUNDS WITHIN SALAM LEAVES EXTRACT (SYZIGIUM POLYANTHUM) AND YELLOW ROOT (ARCANGELISIA FLAVA MERR.) FROM BOILING AND MACERATION EXTRACTION AGAINST BACTERIA ON NIRA WATER

1Fathul Aziz, 1Ayu Biakhlaqir Rossa, 1Setyaki Kevin Pratama, 1Dian Siswanto

1Biology Department, Faculty of Mathematics and Natural Sciences, Brawijaya University

Corresponding author : *Fathul1600@gmail.com*

ABSTRACT

Nira water are raw materials for the creation of brown sugar and can be obtained from coconut tree. Nira water can be easily fermented by microbes. The most common method used to prevent fermentation is by the addition of detergent to nira water container. This method is dangerous for human health because it can induce cancer. This research aims to know the effect of hydrophilic and hydrophobic compounds within salam leaves extract and yellow root extract to prevent fermentation on nira water by bacteria. The hydrophilic and hydrophobic compounds within salam leaves and yellow root are extracted by boiling and maceration. The extract obtained through boiling is centrifuged and then used for the disc diffusion method. The extract obtained through maceration is concentrated by removing its solvent using rotary evaporator, then used for disc diffusion method. The disc diffusion method is done for three times. The results show that the yellow root extract obtained through boiling and maceration have the widest bacterial growth induction zone diameter as wide as 3 cm, 4 cm, and 3cm. While the widest bacterial growth induction zone diameter from the salam leaves extract is as wide as 1 cm, 1,5 cm, and 2 cm from both extraction methods. Bacteria identification from the nira water sample is what needs to be done next to know what bacteria species that grows in petridish.

Keyword : bacteria, brown, root, salam, sugar, yellow

B014-ST

REDUCTION OF ISI AND TIME COMPLEXITY USING CLS-DFE TECHNIQUE WITH INVERSE MATRIX METHOD FOR STF MIMO OFDMA SYSTEM

Siti Maisurah Sulong, Prof. Madya Ts. Dr Azlina Idris, Noorazlina Mohamid Salih, Prof. Madya Ts. Dr. Darmawaty Mohd Ali

Faculty of Electrical Engineering
Universiti Teknologi MARA, Shah Alam, 40000 Selangor

sitimaisurah91@gmail.com

ABSTRACT

OFDMA is a multiuser of digital modulation technique used to increase wireless transmission rate. As a one of promising technique, OFDMA still suffer from a few types of interference especially ISI. ISI is an interference that occurs due to the multipath propagation and can distort signal efficiency. ISI can be simply stated as overlap of previous symbol with next symbol and will process the signal that contains noise in it. Cascaded Least Square (CLS) with Decision Feedback Equalizer (DFE) had been proposed in this research in order to mitigate ISI in OFDMA system. CLS is combination of two adaptive algorithms which are Least Mean Square (LMS) and Recursive Least Square (RLS). Although RLS is one of the best adaptive algorithm but it still suffer from high complexity. Wireless system should use algorithm that ran quickly and used available computing resources efficiently. Running time of an algorithm need to be considered in order to reduce cost when being implemented to hardware. Due to that reason, inverse matrix method is implemented for RLS instead of using basic RLS in order to overcome disadvantage of time complexity in RLS. For equalization technique, DFE as a non-linear equalizer is used because of its performance which is not enhancing noise during simulation. The combination of CLS with DFE can minimize ISI better compare to conventional LMS and RLS alone. This research also justified that combination of STFBC with MIMO antenna enable to mitigate ISItoo.

Keyword: OFDMA, ISI, CLS, DFE, STFBC, MIMO, time complexity, equalizer

B015-ST

"CT-PAMSE" MECHANISM WITH PERSEA AMERICANA MENTEGA VARIETY SEED EXTRACT AS AN EXTERMINATE OF AEDES AEGYPTI INSTAR III LARVAE IN TUB"

Kiki Riska Novelia, Cintya Paramitha, Kartika Ayu Prabaningrum,
Khairul Maghfirah Hasanah, Alya Shafira Amalia.

Faculty of Mathematic and Science
Brawijaya University, Jl. Veteran, Ketawanggede, Kec. Lowokwaru, Malang, JawaTimur 65145
Indonesia

Khairul.maghfirahhs@gmail.com

ABSTRACT

Dengue fever is a world disease that has taken 50 up to 100 million infected every year. A solution that have been adapted to control the growth of *Aedes aegypti* larvae by using abate, but abate has negative impact for environment and its own users, so we found the capability natural larvacide from *Persea americana* mentega variety seed extract utilized by CT-PAMSE. The objective: to analysis the influence compound of avocado mentega variety seed in *Aedes aegypi instar III larvae* death and find the concentration effectiveness on the number of *Aedes aegypti instar III larvae* death utilized by CT-PAMSE.The method: laboratory experiments and designing CT-PAMSE devices. The results is avocado seed extracts containing saponins, triterpenoid and tannin to kill larvae and it showed that avocado seed extracts can killed 10 larvae in 2 hours while abate killed 10 larvae in 10 hours, the application analysis of CT-PAMSE with 1% concentration can kill 25 *Aedes aegypti instar III larvae.* The design of the tools consists of avocado seed extract reservoirs and waterways in the innerside of tub. CT-PAMSE 100% effectiveness if the extract used dried avocado seeds so it can terminate the mosquito's life cycle and prevent dengue fevermaximally.

Keyword*:Avocado seed extract, CT-PAMSE, dengue fever.*

THE ULTIMATE TOOLBOX

Nik Muhammad Syahmie Sukri, Muhammad Fathan abdul Nahar, Nurrusshifa Rusli
, Syidatul Akma Sulaiman, Nurulnatisya Ahmad, Siti Khadijah Alias

Universiti Teknologi MARA, Cawangan Johor, Kampus Pasir Gudang, Jalan Purnama, 81750 Masai Johor

syidatul.akma@gmail.com

ABSTRACT

In this project "The Ultimate Toolbox" was designed and fabricated using recycle drum barrel and comply with the 5S concept. The reason for fabricating this toolbox because there is not enough compartment inside the existing toolbox and some workers experienced trouble while finding the right tools as the tools are scattered around. Moreover, they also faced difficulties to carry around the heavy tools at their workplace. Therefore, the invention of the existing toolbox is improved by modifying the toolbox according to the problems faced by the workers. The toolbox was designed to have more inside compartments and the compartments were divided into different sections to store and organize the tools. Besides that, the toolbox is attached with wheels for easy moving. The motor was used to rotate the compartment inside the barrel. Moreover, the door can be open by pressing the push button located at the outside of the barrel and can slide smoothly with the help of bearing. The compartment comes with complete labelling to store and organized the tools according to its types and functions. Hopefully this invention will ensure safety and give convenience for the workers atworkplace.

Keyword*:* ultimate toolbox, barrel, compartment, motor, push button,bearing, tools.

MAGICAL FOOD COVER

Jalalluddin Bin Murad, Maizura Binti Meor Zawawi, Nurul Shazana Abd Rani,
Ahmad Asyraf Bin Ahmad Zaim , Muhammad Akmal Bin Ali,
Muhammad Ikhwan Bin Rozali

Faculty Of Accountancy
Universiti Teknologi Mara Perak Branch, Tapah Campus
Malaysia

maizu169@perak.uitm.edu.my

ABSTRACT

Magical Food Cover is an innovative design of a prototype Tudung Saji that involves both hardware and software development. Magical Food Cover is an effective Tudung Saji designed to maintain the food warm and to protect food from pests like flies. This Magical Food Cover helps people to keep their food warm and it is portable to bring anywhere. Magical Food Cover uses an Arduino microcontroller to produce an automated function. The main parts of this project consist of chassis, 2 sensors which are temperature sensor LM35 and limit switch sensor as an inputs, the Arduino Uno and 2 bulbs as an outputs. This is to ensure the warming process operates more efficiently and effectively. This project uses 240V 100W bulb as a heating element. The bulbs are activated by the LM35 sensor detected temperature below 50 celcius. Then, the bulbs will automatically off when temperature reaches upper 50 celcius.

Keyword*:* Food warm, food warmer, arduino

ACCURACY ASSESSMENT OF PHOTOGRAMMETRIC PRODUCT DERIVED FROM UAV IMAGERY FOR VARIOUS APPLICATIONS

[1]Suzanah Abdullah, [2]Khairul Nizam Tahar, [3]Mohd Fadzil Abdul Rashid,
[4]Izrahayu Che Hashim, [5]Mohd Najib Husain,

[1345]Faculty of Architecture, Planning and Surveying, Universiti Teknologi Mara Perak Branch,
Seri Iskandar Campus, 32610, Perak
[2]Faculty of Architecture, Planning and Surveying, Universiti Teknologi Mara Shah Alam,
40450 Shah Alam, Selangor, Malaysia

*suzan156@uitm.edu.my, nizamtahar@gmail.com, abrfazil@gmail.com, izrah696@uitm.edu.my,
najib1979@uitm.edu.my,*

ABSTRACT

Presently, the UAV is a technology that has a capability to replace many conventional flying, with significant gains the less cost in data acquisition, without loss of quality of aerial imagery and topographic data and can obtain very high resolution imagery in data processing. UAV can be used in various applications such as large-scale topographic mapping, mapping slopes, rivers, beaches, archaeological sites and so on. UAV provides low-cost, rapid deployment method to obtain high-resolution aerial photography on areas of varying size. UAVs provide an alternative to traditional monitoring techniques that can be used in a variety of situations and locations. Furthermore, this technology has become recognizable in measurement and surveying technique to obtain spatial information. This technology has been widely used by many types of researches that involved in disasters, 3D modelling and mapping. However, the accuracy of UAV is still questionable due to less ventured. Therefore, the accuracy of photogrammetric product becomes the focus of this study. In this study, the UAV DJI Phantom 4 pro was used as a platform to acquire aerial digital images of single tree canopy. This study adapts in quantitative method that implement the experimental process in data acquisition and the aerial digital images were acquired at low altitude. The circle and stereo camera view is employed to capture the images of the object during the flight. The aerial digital images were processed using photogrammetry software to produce photogrammetric product. Each product is evaluated for accuracy assessment using Root Mean Square Error (RMSE) equation.

Keyword*:* UAV, Photogrammetric, Technology, Accuracy

THE FINGERPRINT PRESENCE CONNECTED WITH INTERNET OF THINGS (IoT) IN INDUSTRIAL REVOLUTION 4.0

Satria Rizki, Nur Kholish Mujib, Dhani Irfan Nugroho, Ardian Cahya Pratama, Yovita Jovanika

Faculty of engineering, Faculty of mathematics and natural science, Faculty of language and arts
Yogyakarta State University, Yogyakarta
Indonesia

satriarizki.2017@student.uny.ac.id

ABSTRACT

The Industrial Revolution 4.0 nowadays carries several themes starting from robotics, automation, and internet of things (IoT). The application of IoT has become a common thing in the various sector of human life. For this reason, we proposed IoT application for the presence system in a company especially in a factory. The factory presence generally is based on the fingerprint presence, however, the system is still conventional and it still included as an offline system because the data is only saved in a memory embedded in the microprocessor. Therefore, we proposed a fingerprint presence of integrated with IoT to complete and improve the effectiveness of fingerprint presence product that has already exist in the market. The application of the product is pretty simple by using thingspeak as a server. Furthermore, the data that displayed on the software will automatically updated when a new employee do the presence. Moreover, we also add a lateness feature as a tool of anticipation for the employee who often arrives at day time and permission feature when the employee cannot attend for work. We hope the product that we develop can produced and used widely and even become as standardized in a company.

Keyword: IoT, presence, fingerprint, application

B020-ST

ELECTRONIC VEHICLE NUMBER PLATE FOR SMART INSPECTION, SAFETY, AND REGISTRATION SYSTEM

Linesh Raj Kumar Chandran, Associate Professor Dr Malathy Batumalay,
Dr. Deshinta Arrova Dewi, Rubinya a/p Sekar

Center of Emerging Technologies in Computing (CETC)
Faculty of Information Technology (FIT)
INTI International University

deshinta.ad@newinti.edu.my

ABSTRACT

A vehicle number plate is a unique alphanumeric number that is created to associate the vehicle registration number with the owner of the vehicle within a state or province in a country. The number plate is frequently used by government bodies as a reference for official occasions of such as vehicle registration, inspection, renewal of tax, insurance or others. The current number plate is made from metal or plastic that is attached to a vehicle and does not serve any other purpose but to exhibit the vehicle number explicitly. Contrariwise, a smart vehicle system should allow any parts of the vehicle to be connected with other devices through integration and information communication. This triggers an idea to exploit the vehicle number plate to be more functional than what was before.

Keyword: vehicle number, safety, smart inspection, registration system

B021-ST

EPOXIDIZED NATURAL RUBBER (ENR) MODIFIED BITUMEN AND ASPHALT MIXTURE

Nur Izzi Md Yusoff, Ahmad Nazrul Hakimi Ibrahim, Ramez Al-Ezzi Abduljalil Al-Mansob,
Muhamad Razuhanafi Mat Yazid, Amiruddin Ismail, Muhamad Nazri Borhan,
Norinah Abd. Rahman

Department of Civil and Structural Engineering,
Faculty of Engineering and Built Environment,
Universiti Kebangsaan Malaysia,
43600 Bangi, Selangor

ahmadnazrulhakimi@gmail.com

ABSTRACT

Recently, polymer is the most popular modifier used to improve the performance of bitumen and asphalt mixture. Epoxidized Natural Rubber (ENR)-modified bitumen (ENRMB) is the combination of ENR and base bitumen using melt blending technique. The ENR material in this study was obtained from the Malaysian Rubber Board under the trade name of ENR 50, with 53% epoxidization and passed through 2.36 mm mesh sieve (before shearing). The application of ENR as a bitumen modifier reported the improvement of the properties of the bitumen such as viscosity, stiffness, strength, and elastic behaviour. The improvement of the bitumen properties is directly provided an advantage to the asphalt mixture. The special mixed design has improved stiffness and durability, and decreased rutting and fatigue which conventional asphalt mixture has not able to achieve. This ENR modified binder and asphalt mixture can be considered to be economically effective. The ENRMB has great potential to be promoted as a new generation of high quality of paving material.

Keyword: polymer, epoxidized natural rubber,

B022-ST

INNOVATION OF "TRAPPER BIRDS" FRUIT FLY TRAPS WITH BASIL LEAF ATTRACTANTS

Samudra Zulqifli, Cintya Paramitha, Faizal Muhammad Zubair,
Ervan Andi Wijaya, Femi Tasani

Faculty of Mathematics and Natural Sciences, Brawijaya University
Veteran Street, Malang, East Java, Indonesia

femi.tasani@gmail.com

ABSTRACT

Apples have high economic value. Farmers complaint when bad weather, fruit flies attack will increase, then apple production decreases. The purpose of this study was to design and assemble TRAPPER BIRDS in reducing fruit flies attack (Bactrocera sp.) on apple plantations. The methods used are experiment and literature study. This device is intended to facilitate apple farmers to trap fruit flies by controlling attractants related time and temperature. The device has a temperature gauge, an attractant timer to notify the time of attractants expiration, and a GSM module that can send reminder messages to the farmer's cellphone when attractant level is set to 0.6 ml, 1.2 ml, and 2.4 ml. Farmers will replace the attractants. Compared to the conventional tools that can trap 312 flies, TRAPPER BIRDS can trap 494 flies. Therefore, when bad weather occurs, this device can increase the number of apples protected from flies by 14.5 tons and 1.5 tons of poor quality apples. If it is sold for 1 kilogram, the average price of a good quality apple is Rp. 10,000 and the price of poor quality apples is Rp. 3000. The profit that partners can purchase is Rp. 65,500,000 every year.

Keyword*:* Apple, Attractant, trapper birds

SEMI-AUTOMATED FLOUR SIEVING & MIXING MACHINE

Muhammad Khairul Anuar Mohd Zawawi, Mohammad Faizal Shaffie,
Muhammad Syahmi Sedi @ Rosdi, Norhisyam Jenal, Nurul 'Ain Haris, Siti Aishah Taib

Faculty of Mechanical Engineering,
Universiti Teknologi MARA Cawangan Johor Kampus Pasir Gudang
Jalan Purnama, Bandar Seri Alam, 81750 Masai, Johor.

hisyam0324@uitm.edu.my

ABSTRACT

The advancement of technology in food industry has improved the food processing system thus providing efficient ways of supplying food to the consumers. This is the reason for the development of this semi-automated flour sieving and mixing machine that will assist home cooks and those involved in small and medium enterprises (SME) cookery or bakery. These consumers face a dilemma because the existing automated sieving machines in the market are relatively big and more suitable for the bigger industries while a manual sieve is too small and requires repetitive hand movement which is less ergonomic in the long run. Therefore, the 2 main objectives of this innovation are to create a semi-automated flour sieving and mixing machine and to develop a working prototype that is capable to refine flour for baking and cooking purposes. It is also unique and special because it is easy to handle and has low maintenance costs. Other than that, by shortening the sieving time, it allows the users to increase productivity. The materials utilised in the making of this machine are properly selected for safety reasons and affordability. It is hoped that this innovation is the solution to the aforementioned problem in the food industry.

Keyword*:* sieving, mixing, semi-automated machine, prototype

B025-ST

CLEAF RIVELER : CITRUS LEAVES (*Citrus hystrix*) AS RICE WEEVILS (*Sitophilus oryzae*) NATURAL INSECTICIDES

Annis Safira N. A., Zhenia Ayu N. P., Adzral Alamsyah, Mas Adam L. C.

Brawijaya University
Veteran Malang Street, Malang, East Java 65145

annissafira97@gmail.com

ABSTRACT

Citrus leaves synthesize secondary metabolites which is volatile molecules that can repel insects. This study aims to create an environmentally friendly organic product to eliminate rice weevils (*Sitophilus oryzae*) in order to maintain the quality of rice during the storage process. Rice is a staple food in several countries, especially in Asia. Storage of rice for a long time during distribution causes changes in the morphology of rice both in color, shape, easily rancid, and the appearance of rice weevils, resulting in a decrease of rice quality and consequently rice cannot be consumed. Citrus leaves contain geraniol, methyl heptenone, limonoid and flavonoids act as a natural insecticide for rice in the storage process. The type of research used is quantitative descriptive, with the experimental method. Citrus leaves are dried and crushed roughly, then put in a breathable bag. Tests were carried out on 200 grams of white rice each and put 10 rice weevils on each rice with 5 repetitions. The parameters measured were time and percentage mortality of rice weevils. The results showed that citrus leaves (*Citrus hystrix*) proved effective in expelling and killing rice weevils (*Sitophilus oryzae*) without causing a decrease in the quality of rice.

Keyword*:* citrus, insecticides, rice weevils

B026-ST

A MODIFIED MONTE CARLO SIMULATION TO EVALUATE AMERICAN STYLE OF ASIAN OPTION UNDER JUMP-DIFFUSION PROCESS

Siti Nur Iqmal Ibrahim, Mohamed Faris Laham

Institute for Mathematical Research
Universiti Putra Malaysia, 43400 UPM Serdang, Selangor

mohdfaris@upm.edu.my

ABSTRACT

Asian options is a financial contracts written on the average price of an underlying asset that plays an important role in the price risk management of commodity derivatives. While, an American style of Asian option gives its holder the right to exercise the option at any time up to its maturity. In this study, we derive a pricing formula for American-style of Asian option with jump diffusion process and develop an evaluation algorithm that is based on Monte Carlo simulation method. Numerical results demonstrate the usefulness of Monte Carlo simulation to price a complex option and the convergence of this method.

Keyword*:* Monte Carlo simulation, Asian option, Jump-diffusion Process

B027-ST

INNOVATORY PINEAPPLE LEAVES FIBER EXTRACTION BLADE FOR FIBER EXTRACTION MACHINE

Prof. Madya Ir. Ts. Dr. Mohamed Thariq Hameed Sultan, Muhammad Imran Najeeb, Mohd Edyazuan Azni, Ahmad Hamdan Ariffin, Adi Azriff Basri, Syeed Saifulazry Osman Al-Edrus and Mohd Lufti Mohd Tawil

Institute of Tropical Forestry and Forest Products (INTROP)
Institute of Tropical Forestry and Forest Products (INTROP), Universiti Putra Malaysia, 43400 UPM Serdang, Selangor Darul Ehsan, Malaysia.

Email: *thariq@upm.edu.my*

ABSTRACT

The objectives of the design improvements are to fasten up the extraction process and having more fine fiber where finer fiber gives better properties. The novelty in this design are the number of blades used on the both rollers. By increasing the number of blades, there will be more contact area between the roller and the fiber. With this, it will help to fasten up the fiber extraction process. On top of that, the manual combing process of fiber after the extraction are not needed to be performed as now the fiber produce are finer. This shows that the new design had skip a process towards achieving fineness fiber moreover, as the extraction time per leaf are reduced, there will be more leaf can be extracted in a particular period besides having a better quality of fiber. The impact on this improvement surely will help local farmers to gain extra income by converting waste from their crops into wealth. The fiber produced are high in demand as nowadays the industries were shifting from using synthetic materials to environmental friendly materials such as in research and development centers, composite industries, automotive parts industries, textile industries and etc.

Keyword*:* Pineapple Leaf Fiber, Fiber extractor machine, Fiber

B028-ST

PUTRA UAV:
NOVEL BIO-DEGRADABLE NATURAL FIBRE COMPOSITE MATERIAL

Prof. Madya Ir Ts. Dr. Mohamed Thariq Hameed Sultan, Mohd Edyazuan Azni, Muhammad Imran Najeeb, Ahmad Hamdan Ariffin, Adi Azriff Basri, Syeed Saifulazry Osman Al-Edrus,Mohd Lufti Mohd Tawil and William Robert Alvisse

Institute of Tropical Forestry and Forest Products (INTROP)
Institute of Tropical Forestry and Forest Products (INTROP), Universiti Putra Malaysia, 43400 UPM Serdang, Selangor Darul Ehsan, Malaysia.

edyazuan@unikl.edu.my

ABSTRACT

Putra UAV is biodegradable drone which is made from natural fibre. The frame of the drone is made of composite material known as kenaf. In details, the whole structure of the drone consists of double deck of kenaf frame, motor, blade and battery. This proposed prototype development project is the continuation from the HICOE grant, which focused on the structure of quad copter drone. In the project, the team had successfully developed a biodegradable double deck kenaf frame for drones. Compared to the current plastics and synthetic composites used, the developed materials possess high strength to weight ratio, cheaper, lighter in weight and low conductivity. The biodegradable kenaf drone known as Putra UAV had been developed with the collaboration of Malaysia Unmanned Drones Activist Society (MUDAS). The Putra UAV had been filed for Industrial Design (ID). In expanding the potential of the biodegradable drone, several other aspects had been proposed in this current project.

Keyword*:* Bio-material frame, Kenaf, biodegradable

CATEGORY C

STUDENTS OF PRIMARY AND SECONDARY SCHOOL

Design & Creativity(DC)

EASY WATERPROOF SHOES COVER

Kwan Enn Yeu , Tan Zhi Qi ,Yap Zen Teng, Chang Zi Hang , Issac Wan Liangyi

SJKCChukai Kemaman
Jalan Jakar, 24000 Chukai, Kemaman,Terengganu

sjkcchukai@gmail.com / meecin1982@yahoo.com

ABSTRACT

Have you ever encountered a situation like this ? You wear a new shoes out for meeting your friends. Then, it rains. Your shoes get wet and all muddy and you feel dreadful. After that, it gets worse when your socks are wet and you feel like your feet are soaking in the water. This makes you feel uncomfortable and your feet get wrinkly after some time. To prevent all these problems, we have invented this " Easy Waterproof Shoe Cover" to save both your shoes and your feet. This multifunctional shoe covers offer you a great chance to stay dry and clean when walking in the rain. There are a few key features of these invention .First , the shoe cover has got a protective waterproof cloth to prevent the body of your shoes from getting wet. Second , the shoe is made of rubber so that you can walk comfortably. Third , there's a small lamp at the front part of the shoe. It Suitable for the pupils, they can use the shoe covers when camping, during jungle trekking, the pupils can protect their shoes from getting dirty ormuddy.

Keyword : cover , shoe , lamp , waterproof , clean , protect shoe , comfortable

C003-DC

MIC MOP

Lee Guan Hua , Woo Hoe Yen, Kua Yee En, Kua Yan Hao, Woo Keh Han,
Wong Jayvie

SJK C Chukai Kemaman
Jalan Jakar, 24000 Chukai , Kemaman, Terengganu

meecin1982@yahoo.com / sjkcchukai@gmail.com

ABSTRACT

People living in the modern world live a hectic life, rushing here and there. so many things to do in just one day! All these make life stressful, but you don't see it right away. The stress builds up slowly, from a small sand pile turning into a huge mountain in the end! Stress is a serious problem in your life. So we need prevent it from hurting us. Prevention is better than cure. Hence, stress needs to be flushed out from our body from time to time. How can be reduce stress? Doing physical work is one good way of distressing. Physical work does not only mean exercising. It can also be cleaning the house, moving the lawn, washing the cars and watering the plants. Another way of distressing is to entertain yourself. Listening to or singing songs, playing games or watching your favourite movies can enhance your mood. Knowing these effective ways of destressing we have invented the MIC MOP, a destressing tool that combine physical work and entertainment together . this MIC MOP allows you to move, clean and enjoy at the same time, providing another level of destressing experiences.

Keyword: mic, mop , relax , reduce stress

Education (E)

C001-E

PERISIAN I-MATHZ

Goh Kok Ming, Muhammad Amirmuhaimin Abdullah Sani, Muhammad Adamzulhilmi Abdullah Sani, Mohd Saiful Akif Saiful Effendi, Nur Syifaa Adawiyah Mohd Fauzi

SJK (C) Chi Sheng (2) 34140,
Rantau Panjang, Perak

Corresponding author's email address: kokming888@gmail.com

ABSTRACT

The Computer Algebra Systems (CAS) such as Mathematica, Maple, MuPAD, MathCAD have potential to facilitate an active approach to learning, to allow students to become involved in discovery and to consolidate their own knowledge, thus developing conceptual and geometrical understanding and a deeper approach to learning. Emergence of such mathematical tools and its ability to deal with most of the undergraduate mathematics cannot be ignored by mathematics educators. We believe that mathematics teaching can be made much more interesting, inventive and exploratory using the i-Mathz. The i-Mathz is mathematical software that uses GeoGebra freeware with an interface that makes it extremely easy to explore, visualise, and solve mathematical problems. It brings technology into mathematics education and brings the benefits of mathematical software development to the classroom and into the hands of teachers and students. With i-Mathz, students are not forced to choose between mathematical power and usability, making it the ideal tool for education.The respondents were chosen based on the document analysis and the diagnostic test. The respondents were 4 boys and one girl. The Pretest, Post test, observation and 3 topical exercises were the instruments used to collect data. The data collected was presented in the form of table, graph and percentage. The results showed that the application of i-Mathz was success in assisting the respondents to learn mathematics concepts. The recommendation for further research is to integrate the Android software with the i-Mathz.

Keyword: Mathematical Software, GeoGebra, i-Mathz,

DADU ADAM

Adam Amir Hakim, Nur Qasrina Mohd Faizal Irwan, Amir Hakim Osman

SK Toh Tandewa Sakti
Jalan Kelab, 35000 Tapah, Perak

amirhakimosman@gmail.com

ABSTRACT

DADU ADAM adalah permainan kanak kanak yang membantu pemain untuk menambah ilmu pengetahuan serta membuat ulangkaji. Permainan ini direka mengikut subjek-subjek yang dipelajari di sekolah untuk tahap satu. Selain itu, DADU ADAM juga menerapkan nilai-nilai murni dalam permainan dan menggalakkan pembelajaran secara berkumpulan. Ini menerpati ciri-ciri pengajaran dan pembelajaran abd ke 21 yang disarankan oleh kementerian. Permainan ini menggabungkan subjek-subjek seperti matematik, sains, bahasa melayu, bahasa inggeris dan juga adab-adab dalam kehidupan seharian. DADU ADAM mendapat sambutan yang sangat baik di sekolah-sekolah dan mampu untuk meningkatkan minat pelajar-pelajar sekolah rendah dalam akademik. Permainan ini telah dinaik taraf dan ditambah dengan elemen-elemen yang lebih menarik dan dinamik dan mampu untuk membantu pelajar untuk focus dalam apa yang sedang dipelajari dalam permainan ini.

Keyword*:* Permainan, pengajaran dan pembelajaran

Green & Sustainability (GS)

C001-GS

AQUA-BIN COLLECTOR (ABC)

Nadira binti Ismail, Busyra Huda Balya, Muhammad Zul Amsyar Mohd Dzulkifli, Muhammad Ihsan Ros Azman, Azmahanis Ahmad Loothpi

SMK Toh Muda Abdul Aziz, Sungai Siput
Perak

ABSTRACT

This research aimed to create a smart and mobile tool to collect the floating garbage named as Aqua-bin Collector. The design concept similar like a boat operated using a belt conveyor used to collect the garbage such as plastic bottles, beverage cans, food wrappers, paper bags, straws, (marine debris) etc. It was built 80% from recycle waste materials such as mineral bottle, acrylic sheet, polystyrene and used toy car wheels. A solid sensor detector was put at the edge conveyer base. It will operate the motor only if the object detected. The collected garbage then falls into the garbage tank. Aqua-bin Collector can be move easily control by handphone. It is found that the garbage able to be trap and collected. The implication of this research to minimize river pollution that caused by pollutants such as garbage throwing from nearest residential, sediments, and construction waste using economical and green technology tool hence maintainedsustainability.

Keyword: aqua-bin, collector

C002-GS

ECO MULCH MATT FROM BANANA TRUNK

Choo Fang Yi , Lee Jun Xi , Ong Hui Yee ,Hing Eve, Tan Qi Sheng ,Ong Hui Jun

SJKC Chukai Kemaman
Jalan Jakar, 24000 Chukai, Kemaman

meecin1982@yahoo.com / sjkcchukai@gmail.com

ABSTRACT

Present invention uses old banana tree trunk as a material for making mulch mat. It is a material spread around or cover a plant to enrich or insulate the soil. Eco Mulch Matt is important to your tree's health because: Eco Mulch Matt insulates the soil helping to provide a buffer from heat and cold temperatures. With mulch covering the soil, it helps retaining the moisture of the soil, thus maintaining a steady water source for the plant. Eco Mulch Matt keeps weeds out by preventing its growth . This reduces the root competition between our plants and further encouraging their growth. Eco mulch matt is environmental friendly as we use old banana tree trunk for making the matts. This reduces the crop waste and save the cost of handling the crop waste. While the mulch mat can be use generally for many type of crops but specially for Hibiscus sabdariffa (Roselle) seeding.

Keyword *:* banana tree trunk , mulch matt , cold temperatures , moisture, root competition, environmental friendly

NATURAL OMEGA EGGS

Panneerselvam A/L Thangavelu, Karthikan A/L Saravana Kumar, Dharshan Raj A/L Paneer Selvam, Sree Lakshmy Jey A/P Jeyagobi, Arrun Kumar A/L Muvaeinthiran, Tinish Raj A/L Paneer Selvam

SJK (T) Ladang Blue Valley,
39007, Tanah Rata, Cameron Highland, Pahang

sjktbluevalley@gmail.com

ABSTRACT

Nutritious meals containing various natural supplements provide good health and energy. One of best-known nutrient is Omega oil that feeds the need of repairing tissues, build antibody and prevent certain diseases. Omega is found in natural resources such as nuts, salmon and egg. Egg is an easily available Omega supply. To produce such Omega eggs is being highly researched globally. In Malaysia, poultry fields go through such researches to produce omega eggs in high quantity. However, compared to conventional eggs, omega eggs are expensive in the Malaysian market. Therefore, this study discovers the production of Omega eggs through self-nurtured hens. It also aims to explore the effectiveness of the produced Omega eggs towards human health benefits. Data were gathered through experiments, observations and survey. Research findings reveal that the Omega eggs were produced through self-nurtured hens within 2 months' time frame with less cost using organic herbs feed. Results also portrayed that respondents who consumed the Omega eggs received beneficial health goodness. The good fats helped them stay energetic in fulfilling tasks besides maintaining blood glucose and cholesterol levels. Hence, researchers believe that the essential intake of self-nurtured Omega eggs preferred by the locals due to its insights in being produced naturally, affordable and consumed by almost people at all ages to truly possess its advantages.

Keyword: Omega, egg

NATURAL FABRIC DYE

Pavitthra A/P Arulchelvan, Saarvin A/P muhunthan, Harven A/L Palanisamy,
Janani A/P Theagarajan, Sharanya A/PSanmugam, Rubenthiran A/L Pubalan

SJK (T) Ladang Blue Valley, Cameron Highland
Pahang

sjktbluevalley@gmail.com

ABSTRACT

Fashion and style in clothing are being upgraded newly every moment. Colours, patterns and shapes play significant role in attracting new customers to try, buy and use the apparels. Latest designs have been introduced in the Malaysian fabric industry. There are variety of fabric dye colours used in the making of these clothing. However, most fabric dyes are made up of chemicals which continuous usage prompts skin rashes besides contaminating the water resources in which its by-products are released into. This study aims to explore fabrics made of natural colours and its effect on human living. Natural waste from coffee beans, pomegranate, onion peels, beetroot, tea bag, coco pit and papaya were used in the experiment to produce natural dye fabrics. Results showed that the fabrics were safe to be used for a long duration while being attractive and fragrant. The various natural colours' fabrics contributed to healthy skin and stylish living with designs infused in it. Researches suggest for the continuous usage of these natural dyed fabrics considering human health and preserving the nature from being further polluted by potential harmful substances found in chemical dyes.

Keyword: natural, fabric dye

C004-GS

Science, Engineering & Technology(ST)

C001-ST

SMARTHOME

Hanna Maria Mohamed Imran , Khadijah Mohd Mazanni,
Airyz Qhalisa Danish Ahmad Zamdi

Sekolah Kebangsaan Tarcisian Convent, Jalan Abdul Manap 30100, Ipoh,
Perak, Malaysia.

ABSTRACT

Smarthome let you do things such as turn your lights on, turn of your fan and aircond-system from anywhere and at any time using your smartphone. It is more than just convenience. This invention helps you to save on heating and energy costs. Smarthome will also keep your house safe. If there is someone trying to break into your house, you will get a notification on your phone. SmartHome alert us when there is suspicious activity detected. PIR sensor is used to detect these suspicious activities. Smarthome is all about a single click, to take care of your home.

Keyword: smarthome,

C002-ST

ECO DUST VENTILATOR

Farah Amira binti Kasim

SMK Toh Muda Abdul Aziz

ABSTRACT

The air quality around the world is increasingly deteriorating causing a variety of airborne illnesses. 'Eco-Dust Ventilator' is a tool that works to clean air around especially in small rooms. It is 34 cm X 20 cm X 26 cm. It is equipped with three layers of air filters namely active carbon, cotton and soft nets. Fine mesh can trap large particles and particles. While cotton can prevent smaller sized dust. Active carbon is used to clean air by removing other harmful and toxic gases. The Eco-Dust Ventilator is constructed of waste materials, environment-friendly, user-friendly and cost-effective. Based on the studies conducted, Eco-Dust Ventilator has successfully reduced the level of air pollution by proving the deterioration of dust content in the location used. Eco dust works with power bank or can also use direct flug. this process uses only waste material for itsproduction

Keyword: dust ventilator

C003-ST

OSMO PLANTO

Abdul Halim Che Yusoff [1,*], Alia Sukari[1], Muizzuddin Saifulrehan[1] , Adam Danial Muhamad Sukri[1],

Mohammad Farhan Mohd Johar[1], Muhamad Danish Mirza Marsyafudin[1],

Muhammad Rizq Ridzuan Khairulnizam[1]

[1]Maktab Rendah Sains Mara Pengkalan Chepa,
MRSMPC Taman Orkid, 16100 Kota Bharu, Kelantan

[*]Abdul Halim Che Yusoff: ahalim.yusoff@mara.gov.my

ABSTRACT

This research contains studies of composition of the soil towards its *humidity* and *resistance*. This study is performed to obtain the value of resistance of the soil when its humidity is optimum. Therefore, a copper and a zinc plate are exerted into the soil acted as a probe to detect the resistance in the soils. The optimum moisture of the soil is detected. Its range of resistance when its optimum humidity is between 1219 ohm to 1235 ohm. The Arduino sensor is programmed to maintain the soils moisture by sensing the sol moisture and send the impulse to the watering mechanism to release the water when it detect the resistance greater than 1235 ohm which means the soil is dry. This mechanism will ensure the soil to maintain its moisture at all the time since it will water the plant automatically when the moisture of the soil is not at optimum level. The system is upgraded to be controlled by using smart phone to be monitored remotely. This engineered product will promote the optimum usage of water in agriculture industrial in order to produce optimum plant growth without having trouble with the watering schedule when using this *moisture maintainer* called Osmo Planto.

 Keyword: *humidity; resistance; Arduino; moisture; maintainer*

CATEGORY D

UNDERGRADUATES FROM LOCAL AND FOREIGN UNIVERSITIES

Green & Sustainability (GS)

NAPAST (NANO PULSED PLASMA TECHNOLOGY) AS INORGANIC TRASH MANAGING EQUIPMENT TO SOLVE HARD DECOMPOSE TRASH

I Wayan Wira Yuda, Daniel Tohari, Ester Wijayanti Putri,
Shafa Karima Az-zahra, Rahmadin Akbar Jannata

University of Brawijaya
Jl. Veteran Malang, Ketawanggede, Kec. Lowokwaru, Malang, East Java

Yudaartha9@gmail.com

ABSTRACT

The increasing population has an impact on the problem of the amount of trash produced. The increasing amount of trash is caused by a lack of effort in improving the trash management system. An effort to handle organic waste is currently managed into compost. Whereas, inorganic trash is managed as handicraft and recycled into the plastic. However, this system has not been effective enough because of the imbalance of inorganic waste with the number of garbage processing workers. Based on the occur problems, NAPAST (Nano Pulsed Plasma Technology) innovation was created to overcome the trash problems. NAPAST is equipment for managing inorganic trash that is difficult to decompose in nature and the output of this equipment will not cause harmful effects for the environment. Smoke burning will give high voltage by a tool that can create plasma so that harmful compounds in the smoke will be ionized. Ionization ions will be pulled towards the polarization plate. It serves to attract charged ions so as not to re-reactive when binding to the gas contained in the environment. Polarizing plates that have been filled with charged ion can be managed by authorized institutions in processing radioactive atom from smoke burningcombustion
.

Keyword : Inorganic, Environment, Plasma, Ionization

D002-GS

BAKIS (BANANA PEELS COOKIES) : AN ALTERNATIVE HIGH FIBER SNACK FOR OBESE

Aji Nugroho[1], Dedi Kurniawan[1], Anisa Nur Azizah[1], Shinta Anindita Latanggang[1], Setianingsih[1]

[1]Universitas Negeri Yogyakarta
Jalan Colombo 01 Yogyakarta, Indonesia

shinta.aninditafbs2016@gmail.com

ABSTRACT

Banana is a commodity that easily cultivated and developed in Indonesia. With a harvest area of 94 million ha, Indonesia is the 12 largest banana producing country in the world (Ministry of Agriculture, 2016). Usually people directly consume the banana and there is no optimal utilization of the banana peels. So far, the use bananas is only limited to the fruit, even though the banana skin has potential as a fiber-rich food source. According to Emaga et al. (2007), ripe bananas with yellow banana peels had a total fiber of 51.9%. The result of this research can be an alternative solutions to obesity in Indonesia which in 2018 amounted to 21.8% (Riskesdas, 2018). Processing banana peels into flour can be substituted on cookies to increase the fiber value. Therefore, this research is aim to [1] make fiber-rich cookies from banana peels, [2] Increase people's fiber needs and [3] alternative healthy snacks prevent obesity. The methods we use are [1] processing banana peels into flour, [2] prepare materials and tools, [3] making snack bar, then [4] organoleptic test. Therefore the product "BAKIS" can be categorized as a healthy snackproduct.

Keyword**:** banana peels, fiber, cookies

D004-GS

THE SCIENTIFIC UTILIZATION OF CORNCOB AND LIMESTONE POWDER WASTE AS ADDITIVE MATERIALS IN THE CREATION OF CONCRETE

Tiara Titania, Dedi Kurniawan, Amara Meila Putri Bianca, Annisa Nur Hayati, Kurniawan Sukresna

Yogyakarta State University, JI Colombo No. 1 Depok, Sieman, D.I Yogyakarta

titaniatiara@gmail.com

ABSTRACT

Indonesia is an agricultural country with most of its populations working in agricultural sectore. One of agricultural products that is easily found in Indonesia is corn. Generally, Indonesian people utilize corn grains, whereas there is a part of corn that is rarely utilized that is, corncob. In addition, Indonesia is a country which has a considerable area of limestone. One of the regencies in Yogyakarta with the considerable limestone is Gunung Kidul. The limestone is usually utilized as building materials that in the end of its production also produces waste in the form of limestone powder. Therefore, the purpose of this study aims to utilize corncob waste and limestone waste to be produced as a raw material for a additive material for concrete production. The selection of the materials is based on the data obtained that corncob ash contains 60% of silica, 40-45% of selulosa, 10-20% lignin and while the limestone is rich of $CaCO_3$. The process of making concrete was undertaken by using mixing the basis material, adding an additive material and hardening method. The results of the experiment indicated that concrete production of the combination resulted a concrete with solid structural specifications and high value of compressive strength.

Keywords: Limestone, Waste, Concrete, Silica, Corncob

Science, Engineering & Technology(ST)

E-WET (ELECTRIC WASTE DETERGENT SYSTEM)
AS ALTERNATIVE POWER SOURCE FOR HYDROPONIC AGRICULTURE

Wahyu Wijayanto, Johan, I Wayan Wira Yuda, M. Arif Arrahman, Ester Wijayanti Putri

University of Brawijaya
Jl. Veteran Malang, Ketawanggede, Kec. Lowokwaru, Malang, East Java

wijayantowahyu24@gmail.com

ABSTRACT

Today the world focuses on sustainable development that involves a lot of land. This resulted in decreasing number of land for agricultural purposes. this condition is worsened by the pollution of the environment due to household industrial waste such as detergent from laundry. Based on data from Indonesian Central Bureau of Statistics agricultural land in Indonesia has only 7.1 hectares left in 2018. Efforts that have been made by farmers to overcome this are hydroponic planting, but hydroponics often lack UV light as a growth factor for plants photosynthesis. This UV light requires an electricity source that makes the farmers have to spend excessive costs. Based on the existing problems, a solution in the form of the use of detergents as a source of electrical energy to make UV light can be an alternative. The system used based on the principle of galvani cells can convert detergent waste into electrical energy. Electrolyte substances from solutions of detergents through spontaneous oxidation reduction processes will be converted into electrical energy which can turn on UV light using LED (Light Emitting Diode). The UV light obtained will be used as an effort to increase hydroponic productivity in low intensity solarenvironments.

Keyword: Detergent, Hydroponic, Electricity, UV

D003-ST

(IHASCO) IMPAIRED HEARING AUGMENTED SPEECH RECOGNITION - ANDROID BASED PLATFORM FOR HEARING-IMPAIRED COMMUNITY WITH SPEECH RECOGNITION AND AUGMENTED REALITY TECHNOLOGY

Muhammad Alan Nur

Computer Engineering, Electronics Engineering Polytechnic Institute of Surabaya
Kampus ITS, Jl. Raya ITS, Keputih, Kec. Sukolilo, Kota SBY, Jawa Timur 60111

alan@ce.student.pens.ac.id

ABSTRACT

hearing limitations in deaf people inhibit information access quickly and precisely. It takes other parties to help provide information when communicating. the rapidly developing technology today has a significant impact on all aspects of human life. Speech Recognition is one of technology that can recognize sound and convert it into text, normally called speech-to-text, while the use of Augmented Reality in this application that we created is used to make real-time "live-transcription" that has been processed using Speech Recognition. This application can help people with hearing impairments or deaf people to be able to see the "live-transcription" in real-time when people are talking with them. To use IHASCO, users only require a Virtual Reality Glass then plug their mobile phone into it. IHASCO now has 2 language options, Indonesia and English that can recognize and convert speech-to-text into live-transcription. Based on the result needs and analysis design that has been done previously, IHASCO can be used as communication aids for deaf using Speech Recognition and Augmented Reality Technology. so that, this application expected to be useful for deaf people as an alternative conventional hearing aids which more effective, cheap, and realible.

Keyword : Speech Recognition, Augmented Reality, Android, Hearing-Impaired.

INECK: SMART TECH NECKLACE BASED ARTIFICIAL INTELLIGENCE FOR TOTAL DEAFNESS EDUCATION

Adama Hoppy Natalusfi

University of Brawijaya
Jl. Veteran Malang, Ketawanggede, Kec. Lowokwaru, Malang, East Java

ABSTRACT

Contributing to the Sustainable Development Goals in the 4.0 era, especially the education section, the notion of integration between inclusive education and disruptive innovation needs to be considered. World education methods that deliver the lesson by speech are believed to be less effective toward deaf. A larger picture of the problem is, the substantial amount of the community in general and also intellectuals who barely understand the sign language which is the primary language used by the deaf. The inclusive education solution that the writer has to offer is an innovation in the form of a **Ineck** : an assistive learning technology based Artificial Intelligence. The idea is quite simple and innovative : The Ineck works as a voice receiver and convert it into vibration from the direction of sound. This method is effective as a notification for deaf about sound's direction. Ineck also integrated with application on smartphone named "**Deafriend**". Deafriend has four features such as *Daily Mode*, *Deaf Mode*, *Speech to Text*, and *Pronunciation Training*. Those features require artificial intelligence to process sound input. This innovation can make deaf people independent in daily activities.

Keyword: smart tech, artificial intelligence

D008-ST

IN-STALLER : INTEGRATED SMART TRASH-CAN WITH AN ANDROID CONTROLLER SYSTEM FOR ORGANIC AND INORGANIC HOUSEHOLD TRASH PROBLEMS.

Daman Budi Priyanto, Urnik Rokhiyah, Fara Novilia Putri, Ahmad Najih Daroini, Abdul Mudjib Sulaiman Wahid

University of Brawijaya
Veteran street, Malang, East Java, Indonesia

damanpriyanto@student.ub.ac.id

ABSTRACT

Trash is a classical problem in every countries and the managing trash especially organic and inorganic trash still being developed in developing countries until now. The large amount of trash is directly related to human activities, so if that problems cannot be processed properly, will cause various problems such as health, environmental, and social problems. Many solutions are offered to solve the trash problem, but that solution is less efficient in terms of time, method and financial. Based on this problem, we made IN-STALLER, a Smart trash-can with an Android controller system for organic and inorganic household trash problems. IN-STALLER is a trash-can that consists of two parts which organic trash will be processed into compost and inorganic trash will be recycled into plastic ores. IN-STALLER has several functions including as a monitor and controller tools which all processes of trash recycling are integrated with an android application that equipped by any features such as level of trash's capacity, the monitor recycling process like composing and cracking plastic time, and the call IN-STALLER officers to collect and sell compost and plastic ores with price is specified in the application.

Keyword : Trash, Trash-can, Android, Compost, Plastic Ores

CATEGORY E
IDEAS PRESENTATION

STUDENTS OF PRIMARY AND SECONDARY SCHOOL

Education (E)

MySRI PLANNER

Nik Ainul Mardhiah Mohd Fadzali[1], Tengku Nur Aina Qistina Tuan Mohd Norhafiz[2], Tuan Noorkorina Tuan Kub[3], Mohd Bahri Izeroil[4]

[1]Sekolah Rendah Islam Al-Qari, Taman Al-Qari, 16150 Kubang Kerian, Kelantan.
[2]Sekolah Kebangsaan Iskandar Perdana, 32610 Seri Iskandar, Perak.
[3]Department of Medical Microbiology & Parasitology, School of Medical Sciences, Universiti Sains Malaysia, 16150 Kubang Kerian, Kelantan.
[4]Maahad Addeniah, Jalan Taman Meru 12, Taman Meru 2B, Fasa 4, 30020 Ipoh, Perak.

tnkorina@usm.my

ABSTRACT

In Islamic primary school, most of the students need to learn a lot subjects related to Islamic and academic subjects. These include Hadith, Tauhid, Fekah, Akhlak, Akidah, Sirah, Quran Memorization, Arabic Language, as well as academic subjects; Malay Language, English Language, Science and Mathematics. Becoming an excellent students in Islamic primary school especially to success in Ujian Pencapaian Sekolah Rendah (UPSR) examination, needs the students to plan their time management wisely in order to mastery all the Islamic and academic subjects. Time management is a difficult task for primary school students as it requires a lot of time and intensive work. The paper-based planner is still widely used, however the hardcopy form is not an interactive way in organizing primary school students activities. A schedule e-planner namely MySRI Planner (My Sekolah Rendah Islam Planner) would be a significant help to the students, as they could even set reminders for their school activities, homework, and their Quran recitation and memorization. The MySRI Planner is an idea of a handy app for Islamic primary school students especially in level 2 (Years 4 to 6) to help them organize assignments, examinations, reminders, and daily revision timetable in a fast and simple way. A special feature of this e-planner is the fun and colorful planners with its built-in calendar for highly optimization of revision planning, quran recitation and quran memorization plan which allow students to decorate and get organized. This e-planner can guide students so they can easily set and achieve goals throughout theyear.

Keyword*:* Islamic primary school, e-planner

Science, Engineering& Technology(ST)

E-MERIT UPU

Mohamad Aiman Syakirin, Nor Zarina Mohd Salim,
Dayang Nurellis Irdina Binti Mahfuzrazi

SMK Seri Iskandar
No 14 Jalan Gemilang 3 Taman Gemilan 3, Taman Gemilan, Seri Iskandar

aimansyakirin03@gmail.com

ABSTRACT

The Policies and Criteria for Selection for public university (UA) Admissions, Polytechnics, Community Colleagues and public skills training institutions (ILKAs) are based on merit scores which include academic scores, co-curriculum scores and socio- economics status. Those who fail in the UPU application may appeal and if they fail, the candidate may not have met the criteria for selection of appointments but they do not know that the reasons for their application failure may be due to insufficient merit. Therefore, this application is important for SPM graduates and students who will be facing SPM to focus on the main lesson in their respective streams. In addition, this app will also help teachers to decide which subjects need to focus on achieving high merit scores. As such, the app is very keen to increase the percentage of applicants to IPTAs throughout Malaysia.

Keyword: selection, academic scores

Green&
Sustainability(GS)

E001-GS

GREEN TECH OIL ABSORBENT: THE EFFECTIVENESS TO GET RID OF OIL SPILL

Nurul Huda Kasim, Aleena Cristie Agustin, Prajeeva Rao Ganganaidu, Nor Saharifah Najwa, Mohd Ikhmal Kamis Sukri

SMK Syeikh Abdul Ghani, 35500 Bidor, Perak.

nurulhudasmksag@gmail.com

ABSTRACT

The statistic of water quality in the year 2017 shows only 38.6% clean water sources are available in Malaysia. The frightening situation is mostly caused by oil spills. Thus, an alternative to overcome this issue is invented using green technology which is biodegradable and low cost materials which known as Green Tech Oil Absorbent. This study also examined the effectiveness of Green Tech Oil Absorbent which mainly compose of Kapok's fiber to absorb different types of oil sample; used engine oil, used gasoline and used petrol. The results shows Green Tech Oil Absorbent able to absorb oil at 92-98%, indicated that this green invention is effective to get rid the oil that floating on the surface of water. Hence, it create the potential of low cost biodegradable material to be used in conserving natural water resources.

Keyword: innovation, water pollution, green technology, biodegradable, oil absorbent material

RECYCLING VENDING MACHINE

Adam bin Amir Hakim, Nur Qaisara Qasrina binti Mohd, Amir Hakim Osman

SK Toh Tandewa Sakti
Jalan Kelab, 35000 Tapah, Perak

amirhakimosman@gmail.com

ABSTRACT

The idea is to provide recycling vending machines at various places to encourage recycling among Malaysians. It works like normal vending machine but instead of cash, we will insert trash. In return, we will get a reward depending on the place we are at. The vending machines might cost a lot, however, it is very much cheaper than the cost of repairing the environment due to the waste that we made.

Keyword: Recycle, vending machine

LIST OF INDES 2019 RESULTS

LIST OF INDES 2019 SPECIAL AWARDS

Winners (The Best Overall Award - Diamond Award)

THE 8TH INTERNATIONAL INNOVATION, INVENTION & DESIGN COMPETITION (INDES) 2019

NO	ID	AWARD	PROJECT TITLE	INSTITUTIONAL
1	B027-ST	THE BEST OVERALL AWARD – DIOMAND AWARD	INNOVATORY PINEAPPLE LEAVES FIBER EXTRACTION BLADE FOR FIBER EXTRACTION MACHINE	INSTITUTE OF TROPICAL FORESTRY AND FOREST PRODUCTS (INTROP), UNIVERSITI PUTRA MALAYSIA

WINNERS (BEST OF THE BEST AWARD)

THE 8TH INTERNATIONAL INNOVATION, INVENTION & DESIGN COMPETITION (INDES) 2019

NO	ID	AWARD	PROJECT TITLE	INSTITUTIONAL
1	A008-SS	BEST OF THE BEST IN CATEGORY A; PROFESSIONAL AND ACADEMICS	GRAB BAG: FLOOD SURVIVAL KIT	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
2	B027-ST	BEST OF THE BEST IN CATEGORY B; STUDENTS OF HIGHER LEARNING INSTITUTION	INNOVATORY PINEAPPLE LEAVES FIBER EXTRACTION BLADE FOR FIBER EXTRACTION MACHINE	INSTITUTE OF TROPICAL FORESTRY AND FOREST PRODUCTS (INTROP), UNIVERSITI PUTRA MALAYSIA
3	C002-E	BEST OF THE BEST IN CATEGORY C; STUDENTS OF PRIMARY AND SECONDARY SCHOOLS	DADU ADAM	SK TOH TANDEWA SAKTI

LIST OF INDES 2019 SPECIAL AWARDS

Winners (The Best in Theme Award - CategoryA)

THE 8TH INTERNATIONAL INNOVATION, INVENTION & DESIGN COMPETITION (INDES 2019)

CATEGORY A				
NO	ID	AWARD	PROJECT TITLE	INSTITUTIONAL
1	A020-E	BEST IN THEME EDUCATION	RECYCLING AWARENESS KIT 3.0 (RAK 3.0)	UNIVERSITI TEKNOLOGI MARA CAWANGAN PAHANG
2	A030-ST	BEST IN THEME SCIENCE, ENGINEERING AND TECHNOLOGY	CAPRIBOS MULTINUTRIENT BLOCK	UNIVERSITI MALAYSIA KELANTAN
3	A007-GS	BEST IN THEME GREEN AND SUSTAINABILITY	SMART COMPOSTER MACHINE	UNIVERSITI TUN HUSSEIN ONN MALAYSIA
4	A008-SS	BEST IN THEME SOCIAL SCIENCES AND ENTREPRENEURSHIP	GRAB BAG: FLOOD SURVIVAL KIT	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
5	A005-DC	BEST IN THEME DESIGN AND CREATIVITY	go-iEvent	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK

LIST OF INDES 2019 SPECIAL AWARDS

Winners (The Best in Theme Award - CategoryB)

THE 8TH INTERNATIONAL INNOVATION, INVENTION & DESIGN COMPETITION (INDES 2019)

CATEGORY B				
NO	ID	AWARD	PROJECT TITLE	INSTITUTIONAL
1	B005-E	BEST IN THEME EDUCATION	IDIOMS HUNTER: JOURNEY BEYOND WORDS	UNIVERSITI TEKNOLOGI MARA CAWANGAN JOHOR
2	B027-ST	BEST IN THEME SCIENCE, ENGINEERING AND TECHNOLOGY	INNOVATORY PINEAPPLE LEAVES FIBER EXTRACTION BLADE FOR FIBER EXTRACTION MACHINE	Institute of Tropical Forestry and Forest Products (INTROP), Universiti Putra Malaysia
3	B003-GS	BEST IN THEME GREEN AND SUSTAINABILITY	INNOVATION OF FRUITION COOLANT	UNIVERSITI TEKNOLOGI MARA CAWANGAN SELANGOR
4	B015-SS	BEST IN THEME SOCIAL SCIENCES AND ENTREPRENEURSHIP	HYBRID BIOFILTER MODEL FOR ECOTOURISM TANJUNG PIAI NATIONAL PARK	UNIVERSITI TEKNOLOGI MARA CAWANGAN JOHOR KAMPUS PASIR GUDANG
5	B007-DC	BEST IN THEME DESIGN AND CREATIVITY	R-3D GEOMETRI KIT	Universiti Kebangsaan Malaysia

LIST OF INDES 2019 SPECIAL AWARDS

Winners (The Best in Theme Award - CategoryC)

THE 8TH INTERNATIONAL INNOVATION, INVENTION & DESIGN COMPETITION (INDES 2019)

CATEGORY C				
NO	ID	AWARD	PROJECT TITLE	INSTITUTIONAL
1	C002-E	BEST IN THEME EDUCATION	DADU ADAM	SK TOH TANDEWA SAKTI
2	C003-ST	BEST IN THEME SCIENCE, ENGINEERING AND TECHNOLOGY	OSMO PLANTO	MRSM PENGKALAN CHEPA
3	C002-GS	BEST IN THEME GREEN AND SUSTAINABILITY	ECO MULCH MATT FROM BANANA TRUNK	SJK (C) CHUKAI KEMAMAN, TERENGGANU
4	C002-DC	BEST IN THEME DESIGN AND CREATIVITY	EASY WATERPROOF SHOES COVER	SJKC CHUKAI KEMAMAN

LIST OF INDES 2019 GOLD AWARDS

Winners (Gold Award - Category A)

THE INTERNATIONAL INNOVATION, INVENTION & DESIGN COMPETITION (INDES) 2019

NO	ID	PROJECT TITLE	INSTITUTIONAL
		CATEGORY A	
1	A008-SS	GRAB BAG: FLOOD SURVIVAL KIT	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
2	A020-E	RECYCLING AWARENESS KIT 3.0 (RAK 3.0)	UNIVERSITI TEKNOLOGI MARA CAWANGAN PAHANG
3	A030-ST	CAPRIBOS MULTINUTRIENT BLOCK	UNIVERSITI MALAYSIA KELANTAN
4	A004-ST	LASER-DRIVEN HOT NEEDLE WITH DYNAMIC TEMPERATURE CONTROL SYSTEM FOR PERCUTANEOUS HYPERTHERMIA CANCER THERAPY	UNIVERSITY OF MALAYA
5	A021-E	EZNOMICS	UNIVERSITI TEKNOLOGI MARA CAWANGAN KELANTAN
6	A004-SS	I-SYAMILA	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
7	A027-ST	COACHING ASSESSMENT SYSTEM	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
8	A020-ST	NEURAL BUTTERFLY INDENTIFICATION SYSTEM (NBIS)	UNIVERSITI TEKNOLOGI MARA
9	A028-ST	SMART SAFETY INDEX MAPPING SYSTEM FOR EXPRESS BUS	UNIVERSITI KEBANGSAAN MALAYSIA

(Winners (Gold Award - Category A) Continued

10	A021-ST	AUTOMATIC SIGN LANGUAGE TRANSLATION (ASLT) SYSTEM	UNIVERSITI TEKNOLOGI MARA
11	A007-GS	SMART COMPOSTER MACHINE	UNIVERSITI TUN HUSSEIN ONN MALAYSIA
12	A008-E	K PAPER	UNIVERSITI TEKNOLOGI MARA, CAWANGAN MELAKA
13	A014-E	COURSE SYLLABUS CONSTRUCTOR (PRELUDE 3.0)	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
14	A018-E	CEO FORTUNE	UNIVERSITI TEKNOLOGI MARA CAWANGAN NEGERI SEMBILAN
15	A005-SS	OFF-CAMPUS STUDENT HOUSING: I-PREFERENCE	UNIVERSITI TEKNOLOGI MARA
16	A007-SS	SISTEM APLIKASI FARAID DAN HIBAH	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
17	A002-GS	ECO SHOWROOM	UNIVERSITY SELANGOR
18	A001-SS	P-MYTAHFIZ PORTAL	UNIVERSITI TEKNOLOGI MARA, CAWANGAN PERAK
19	A019-E	MOOC: EXERCISE METHODOLOGY AND PHYSICAL CONDITIONING FOR SPORTS	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERLIS
20	A005-DC	GO-IEVENT	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK

21	A016-ST	BIOSYNTHESIS OF IRON OXIDE NANOPARTICLES BY USING AZADIRACHTA INDICA EXTRACT AS A REDUCING AND STABILIZING AGENT	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
22	A019-ST	QTALE - MANGOSTEEN RIPENING STAGES CLASSIFIER	UITM CAWANGAN PERAK
23	A017-E	DEWASAMEMBACA	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
24	A006-SS	E-RESEARCH PROPOSAL DEVELOPMENT AND TUTORIAL PLANNER	FSPPP UITM
25	A018-ST	PIPERFEM	UNIVERSITI TEKNOLOGI MARA (UITM)
26	A005-GS	BANANASWAT: APPLICATION IN BATIK INDUSTRIES	UNIVERSITI TEKNOLOGI MARA CAWANGAN PULAU PINANG
27	A012-E	POCKET SCIENTIFIC CALCULATOR GUIDEBOOK 2ND EDITION	UITM CAWANGAN NEGERI SEMBILAN

Winners (Gold Award - Category B)

THE INTERNATIONAL INNOVATION, INVENTION & DESIGN COMPETITION (INDES) 2019

CATEGORY B			
NO	ID	PROJECT TITLE	INSTITUTIONAL
1	B027-ST	INNOVATORY PINEAPPLE LEAVES FIBER EXTRACTION BLADE FOR FIBER EXTRACTION MACHINE	INSTITUTE OF TROPICAL FORESTRY AND FOREST PRODUCTS (INTROP), UNIVERSITI PUTRA MALAYSIA
2	B015-SS	HYBRID BIOFILTER MODEL FOR ECOTOURISM TANJUNG PIAI NATIONAL PARK	UNIVERSITI TEKNOLOGI MARA CAWANGAN JOHOR KAMPUS PASIR GUDANG
3	B021-ST	EPOXIDIZED NATURAL RUBBER (ENR) MODIFIED BITUMEN AND ASPHALT MIXTURE	UNIVERSITI KEBANGSAAN MALAYSIA
4	B015-ST	CT-PAMSE" MECHANISM WITH PERSEA AMERICANA MENTEGA VARIETY SEED EXTRACT AS AN EXTERMINATE OF AEDES AEGYPTI INSTAR III LARVAE IN TUB	FACULTY OF MATHEMATIC AND SCIENCE, BRAWIJAYA UNIVERSITY
5	B005-E	IDIOMS HUNTER: JOURNEY BEYOND WORDS	UNIVERSITI TEKNOLOGI MARA CAWANGAN JOHOR
6	B028-ST	PUTRA UAV: NOVEL BIO-DEGRADABLE NATURAL FIBER COMPOSITE MATERIAL	INSTITUTE OF TROPICAL FORESTRY AND FOREST PRODUCTS (INTROP), UNIVERSITI PUTRA MALAYSIA
7	B020-ST	ELECTRONIC VEHICLE NUMBER PLATE FOR SMART INSPECTION, SAFETY, AND REGISTRATION SYSTEM	INTI INTERNATIONAL UNIVERSITY
8	B017-SS	FACTORS THAT AFFECTING THE TRANSITION OF PROPERTY INVESTMENT THROUGH SALE AND LEASEBACK INVESTMENT	UITM PERAK
9	B007-DC	R-3D GEOMETRI KIT	UNIVERSITI KEBANGSAAN MALAYSIA

(Winners (Gold Award - Category B) Continued

10	B012-E	VISUAL COGNITIVE SKILLS BOX - EARLY EDUCATION INTERVENTION IN VISUAL COGNITIVE SKILLS	UNIVERSITI TEKNOLOGI MARA CAWANGAN SELANGOR
11	B004-ST	FSW OF AL THIN PLATE (1.5MM)	UNIKL MIMET
12	B003-GS	INNOVATION OF FRUITION COOLANT	UNIVERSITI TEKNOLOGI MARA CAWANGAN SELANGOR
13	B001-GS	E-PASSIVE DESIGN STRATEGIES AND PERFORMANCE [VERSION 2]	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
14	B007-E	WHAT ARE THE ATTRIBUTES OF HIGH AND LOW ACHIEVING MEDICAL STUDENTS? A MACHINE LEARNING DECISION TREE VISUALIZATION APPROACH	UNIVERSITI OF MALAYA
15	B004-SS	ETHNIC STRIATED WOVEN FABRIC WOF (WOVEN FABRIC)	UNIVERSITAS ISLAM INDONESIA
16	B025-ST	CLEAF RIVELER : CITRUS LEAVES (CITRUS HYSTRIX) AS RICE WEEVILS (SITOPHILUS ORYZAE) NATURAL INSECTICIDES	BRAWIJAYA UNIVERSITY
17	B006-DC	TRADITIONAL TEXTILE OF KAIN PUNCA POTONG DESIGN IDENTITY	UNIVERSITI PUTRA MALAYSIA
18	B001-SS	AYO-INVEST: INVESTMENT APPLICATION ANDROID BASED FOR MANIFESTING AGRICULTURE 4.0 ERA	BRAWIJAYA UNIVERSITY
19	B004-E	VB INTERFACE WITH ARDUINO APPLICATION TRAINING KIT	KOLEJ KEMAHIRAN TINGGI MARA BALIK PULAU
20	B006-SS	NONI ICE CREAM	UNIVERSITAS ISLAM INDONESIA

21	B005-ST	UNIVERSAL CONTROLLER SYSTEM	KOLEJ VOKASIONAL LEBUH CATOR
22	B009-SS	NIACRASS BAG: BAG MADE OF WATER HYSCHINTH FIBER	UNIVERSITAS ISLAM INDONESIA

Winners (Gold Award - Category C)

THE INTERNATIONAL INNOVATION, INVENTION & DESIGN COMPETITION (INDES) 2019

CATEGORY C			
NO	ID	PROJECT TITLE	INSTITUTIONAL
1 24	C002-E B002-SS	DADU ADAM E-QUA: COMMERCIAL VIVARIUM PLATFORM IN MULTI CHOICE, READY TANK AND CUSTOM MADE	SK TOH TANDEWA SAKTI BRAWIJAYA UNIVERSITY
2 25	C002-DC B012-SS	EASY WATERPROOF SHOES COVER RENDANG PAKIS	SJKC CHUKAI KEMAMAN UNIVERSITAS ISLAM INDONESIA

3	C001-E	PERISIAN I-MATHZ	SJK (C) CHI SHENG (2)
4	C003-ST	OSMO PLANTO	MRSM PENGKALAN CHEPA
5	C002-GS	ECO MULCH MATT FROM BANANA TRUNK	SJK (C) CHUKAI KEMAMAN, TERENGGANU

LIST OF INDES 2019 SILVER AWARDS

Winners (Silver Award - Category A)

THE INTERNATIONAL INNOVATION, INVENTION & DESIGN COMPETITION (INDES) 2019

CATEGORY A			
NO	**ID**	**PROJECT TITLE**	**INSTITUTIONAL**
1	A004-GS	EMPIRICAL MODEL OF RELATIVE PERMITTIVITY FOR DIESEL CONTAMINATION EFFECT IN LATERITE SOIL ON GPR SIGNAL	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERLIS
2	A015-ST	SLEEPY DRIVER ALERT SYSTEM	POLITEKNIK SULTAN AZLAN SHAH
3	A008-ST	AP FUNGUS FIGHTER	UNIVERSITI SAINS MALAYSIA
4	A002-E	VISUAL PLANNING TOOL TOWARDS GOT	UNIVERSITI PUTRA MALAYSIA (UPM)
5	A011-E	ACCOUNTING FOR PROPERTIES - QUICKCHART APP	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
6	A016-E	CLIMATE CHANGE CHALLENGE (CCC) FOR SPECIAL NEEDS CHILDREN IN PRIMARY SCHOOL	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
7	A003-SS	EDUCATIONAL ARCHIVES PROGRAMME THROUGH A COLLABORATIVE PARTNERSHIP WITH HEIS OF MALAYSIA	FACULTY OF INFORMATION MANAGEMENT, UITM
8	A017-ST	CARBON FIBRE REINFORCED POLYMER (CFRP) PARTIAL CONFINEMENT DESIGN FOR RC COLUMN STRENGTHENING MECHANISM	UNIVERSITI TEKNOLOGI MARA CAWANGAN PULAU PINANG
9	A006-GS	MOCOSHECA: MODIFIED COCONUT SHELL CARBON	UNIVERSITI TEKNOLOGI MARA CAWANGAN PULAU PINANG

Winners (Silver Award - Category A) Continued

10	A003-DC	NATURAL DISASTER SURVIVAL KIT (NATDISK)	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
11	A001-E	VOCABULARY QUIZ TRADE CARDS	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
12	A015-E	CEM JUEGO VERSION 1.0	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
13	A009-SS	REINVENTING MASLOW'S HIERARCHY OF NEED THEORY: NEGATIVE IMPACTS OF FEMALE LABOR FORCE-CHILD ABUSE LINKAGE IN MALAYSIA	UNIVERSITI TEKNOLOGI MARA CAWANGAN PULAU PINANG
14	A011-SS	STRATEGIZING SMALL BUSINESS PERFORMANCE: A MARKETING MODEL FOR MALAYSIAN SMALL BUSINESS FIRM	UNIVERSITI KEBANGSAAN MALAYSIA
15	A001-DC	STUDY SMART SPACE BY SANSR V2.0: IDENTIFYING LEARNING SPACE IN IMMERSIVE VIRTUAL REALITY	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
16	A012-ST	PIPEREMEDY	UNIVERSITI TEKNOLOGI MARA (UITM)
17	A022-ST	QUANTUM MULTICHANNELS FOR APPLICATIONS BEYOND CLASSICAL LIMIT	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
18	A010-SS	SUBIC (START-UP BUSINESS IN CAMPUS)	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
19	A026-ST	E-PPT PLANNER	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
20	A025-ST	BIODEGRADABLE AND BIOCOMPATIBLE POLYHYDROXYALKANOATES MICROSPHERES AS MATRIX FOR ENCAPSULATION OF CAESALPINIA BONDUCELLA EXTRACT	QUEST INTERNATIONAL UNIVERSITY PERAK

Winners (Silver Award - Category B)

THE INTERNATIONAL INNOVATION, INVENTION & DESIGN COMPETITION (INDES) 2019

NO	ID	PROJECT TITLE	INSTITUTIONAL
		CATEGORY B	
1	B004-GS	BIOMASS DRY CELL	KOLEJ VOKASIONAL LEBUH CATOR
2	B011-SS	TEH KULIT JERUK "AYU JELITA"	UNIVERSITAS ISLAM INDONESIA
3	B008-DC	NABHELM : HELMET INTEGRATED SMART NAVIGATION	UNIVERSITI TEKNOLOGI PETRONAS
4	B011-E	MENSTRUAL CARE GUIDANCE	UNIVERSITI TEKNOLOGI MARA CAWANGAN SELANGOR
5	B010-SS	HERLINA TEA: HERBAL TEA MADE OF PINEAPPLE SKIN WASTE	UNIVERSITAS ISLAM INDONESIA
6	B014-ST	REDUCTION OF ISI AND TIME COMPLEXITY USING CLS DFE TECHNIQUE WITH INVERSE MATRIX METHOD FOR STF MIMO OFDMA SYSTEM	FKE UITM SHAH ALAM
7	B005-GS	BIONAT- A BIOHYBRID OF KAPOK/BANANA WASTE AS A NEW ALTERNATIVE OIL FILTER FOR FISH CAGE FARMING	UNIVERSITI TEKNOLOGI MARA CAWANGAN JOHOR
8	B001-DC	MINI EGGS CLEANER MACHINE	KOLEJ KEMAHIRAN TINGGI MARA BALIK PULAU
9	B005-DC	DOCTOR DO	UNIVERSITAS BRAWIJAYA

Winners (Silver Award - Category B) Continued

10	B026-ST	A MODIFIED MONTE CARLO SIMULATION TO EVALUATE AMERICAN STYLE OF ASIAN OPTION UNDER JUMP-DIFFUSION PROCESS	UNIVERSITI PUTRA MALAYSIA
11	B006-GS	GLAMNUCIFERA'S PADS	UNIVERSITI TEKNOLOGI MARA CAWANGAN PULAU PINANG
12	B003-E	DROP IT: WHAT WILL COST U?	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
13	B007-ST	SMART BELL	KOLEJ VOKASIONAL LEBUH CATOR
14	B017-ST	MAGICAL FOOD COVER	FACULTY OF ACCOUNTANCY UNIVERSITI TEKNOLOGI MARA PERAK BRANCH, TAPAH CAMPUS
15	B019-ST	THE FINGERPRINT PRESENCE CONNECTED WITH INTERNET OF THINGS (IOT) IN INDUSTRIAL REVOLUTION 4.0	YOGYAKARTA STATE UNIVERSITY
16	B006-E	E-HISTORY: MALAYSIAN HISTORY MOBILE APPLICATION	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
17	B019-SS	FM SEVPRO-FACILITIES MANAGEMENT FRAMEWORK FOR SERVICE PROVIDERS	UNIVERSITI TEKNOLOGI MARA PERAK BRANCH
18	B023-ST	SEMI-AUTOMATED FLOUR SIEVING & MIXING MACHINE	UNIVERSITI TEKNOLOGI MARA CAWANGAN JOHOR KAMPUS PASIR GUDANG
19	B012-GS	ECOFARM: SMART AQUAPONICS SYSTEM WITH IOT FOR THE INDIGENOUS COMMUNITY	UNIVERSITI TEKNOLOGI PETRONAS
20	B004-DC	MULTIFUNCTIONAL BATIK CUTTING BOARD	UNIVERSITAS ISLAM INDONESIA
21	B013-SS	AKULIN (MINYAK KULIT DURIAN)	UNIVERSITAS ISLAM INDONESIA

Winners (Silver Award - Category C)

THE INTERNATIONAL INNOVATION, INVENTION & DESIGN COMPETITION (INDES) 2019

CATEGORY C			
NO	ID	PROJECT TITLE	INSTITUTIONAL
1	C003-GS	NATURAL OMEGA EGGS	SJK(T) LADANG BLUE VALLEY, CAMERON HIGHLAND, PAHANG
2	C001-ST	SMARTHOME	SEKOLAH KEBANGSAAN TARCISIAN CONVENT
3	C001-GS	AQUABIN COLLECTOR	SMK TOH MUDA ABDUL AZIZ, SUNGAI SIPUT, PERAK

LIST OF INDES 2019 BRONZE AWARDS

Winners (Bronze Award - Category A)

THE INTERNATIONAL INNOVATION, INVENTION & DESIGN COMPETITION (INDES) 2019

CATEGORY A			
NO	ID	PROJECT TITLE	INSTITUTIONAL
1	A006-E	REVOLUTION ON ASSESSMENT FOR STUDENT MONITORING SYSTEM (I-RAS)	UNIVERSITI TEKNOLOGI MARA CAWANGAN PULAU PINANG
2	A006-ST	THE DEVELOPMENT OF MODIFIED PPY-RGO COMPOSITE FOR SUPERCAPACITOR APPLICATIONS	UNIVERSITI TEKNOLOGI MARA
3	A003-ST	SMART CAR SERVICE APPS	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
4	A001-GS	SUSTAINABLE ECO-FRIENDLY PLASTIC SAND BRICKS	QUEST INTERNATIONAL PERAK
5	A010-E	REFLECTIVE PORTFOLIO AND INTERVIEW FOR MEDICAL STUDENTS	UNIVERSITY OF MALAYA
6	A002-SS	DIGITAL MARKETING PLAN APP (DIGMP) FOR START UPS	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
7	A005-ST	A STUDY ON FACE RECOGNITION SYSTEM USING DEEP LEARNING ALGORITHM: AN IMPLEMENTATION IN ATTENDANCE RECORDING SYSTEM	SEGI COLLEGE SUBANG JAYA
8	A002-ST	APPLYING AUGMENTED REALITY TECHNOLOGY AS ONE OF LEARNING METHODS FOR ADHD CHILDREN USING FLASH CARD	SEGI COLLEGE SUBANG JAYA
9	A010-ST	LIGHT QUALITY MEASUREMENT TOOL (LIQMET)	UNIVERSITI TEKNOLOGI MARA CAWANGAN PULAU PINANG

Winners (Bronze Award - Category A) Continued

10	A008-GS	EDIBLE STRAW	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
11	A009-E	EASY MEMBERSHIP MANAGEMENT SOFTWARE FOR NON-PROFIT ORGANIZATION (EZ MEMBER)	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
12	A029-ST	E-CEMETERY	UNIVERSITI TEKNOLOGI MARA
13	A003-GS	GREEN REVOLUTION: PAPERLESS RECEIPT	UNIVERSITI TEKNOLOGI MARA CAWANGAN SARAWAK
14	A013-ST	THESIS WEB-BASED DATA CONTENTS FOR PPSUG UITM PERLIS BRANCH	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERLIS
15	A007-E	BALANCE OF PAYMENT EDUCATIONAL GAMES (BOPEG)	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
16	A001-ST	PREDICTIVE ANALYTIC EXPERIMENTS ON EMPLOYEE ATTRITION PARAMETERS: A COMPARISON BETWEEN DECISION TREE MODEL AND ARTIFICIAL NEURAL NETWORK	SEGI COLLEGE SUBANG JAYA
17	A023-ST	A MATHEMATICAL APPROACH TO FORECASTING MALAYSIA CENTRIFUGED LATEX PRICES	UNIVERSITI PUTRA MALAYSIA
18	A004-E	TEACHING AND LEARNING OF RESEARCH METHODS USING #HASHTAGS IN FACEBOOK	UNIVERSITI PUTRA MALAYSIA (UPM)
19	A002-DC	HARDWORK ADORABLE WOMAN APPLICATION (HAWA)	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
20	A007-ST	SOIL STABILIZATION USING TILE WASTE AND CEMENT AS ADDITIVE	UNIVERSITI TEKNOLOGI MARA CAWANGAN PULAU PINANG

Winners (Bronze Award - Category B)

THE INTERNATIONAL INNOVATION, INVENTION & DESIGN COMPETITION (INDES) 2019

CATEGORY B			
NO	ID	PROJECT TITLE	INSTITUTIONAL
1	B009-ST	EVENT EASY (E-ASY) : APPLICATION FOR EVENT INTEGRATION DEVELOPMENT IN YOGYAKARTA BASED ON INDUSTRIAL REVOLUTION 4.0	UNIVERSITAS ISLAM INDONESIA
2	B011-ST	WHEELCHAIR LANE AS A SOLUTION FOR RAISING ACCESSIBILITY AND INDEPENDENCE OF DISABLED PEOPLE TO CREATE DISABLED-ACCESSIBLE PUBLIC AREA	BRAWIJAYA UNIVERSITY
3	B016-SS	AMALGAMATED THEORY APPROACH IN DETERMINING FACTORS CONTRIBUTING UNDESIRED CONTRACTUAL BEHAVIOR OF CIVIL ENGINEERING PROJECT KEY PARTICIPANTS	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
4	B008-SS	PELPI BAG	UNIVERSITAS ISLAM INDONESIA
5	B012-ST	COMPARISON OF HYDROPHILIC AND HYDROPHOBIC COMPOUNDS WITHIN SALAM LEAVES EXTRACT (SYZIGIUM POLYANTHUM) AND YELLOW ROOT (ARCANGELISIA FLAVA MERR.) FROM BOILING AND MACERATION EXTRACTION AGAINST BACTERIA ON NIRA WATER	BRAWIJAYA UNIVERSITY
6	B022-ST	INNOVATION OF "TRAPPER BIRDS" FRUIT FLY TRAPS WITH BASIL LEAF ATTRACTANTS	BRAWIJAYA UNIVERSITY
7	B003-SS	BHACAKEKOK: INNOVATION OF CAKE MAKING BASED CULTURE ENTREPRENEURSHIP	UNIVERSITAS ISLAM INDONESIA
8	B007-SS	THE USE OF RAMBUTAN SKIN AND CORN HUSK TO BE THE EFFICACIOUS TEABAG	UNIVERSITAS ISLAM INDONESIA
9	B021-SS	MR FIXER	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK

Winners (Bronze Award - Category B) Continued

10	B008-ST	KLIK MERAPI : APPLICATION OF LOCAL TOURISM DEVELOPMENT BASED ON HALAL TOURISM IN THE ERA OF INDUSTRIAL REVOLUTION 4.0	UNIVERSITAS ISLAM INDONESIA
11	B011-GS	TOOTATOO: (TO'AAMUN | TA'AAWUN | TUQOOSIMUN) DESIGNING PILLAR USING ARCHITECTURAL UNIT AND SUSTAINABLE ELEMENT FOR DECREASING SOCIAL PROBLEM	UNIVERSITAS 'AISYIYAH YOGYAKARTA
12	B001-ST	ENHANCED DYNAMIC RANGE FBG ACCELEROMETER	UNIVERSITY OF MALAYA
13	B018-ST	ACCURACY ASSESSMENT OF PHOTOGRAMMETRIC PRODUCT DERIVED FROM UAV IMAGERY FOR VARIOUS APPLICATIONS	UNIVERSITI TEKNOLOGI MARA, SERI ISKANDAR
14	B009-E	ARWORE (AUGMENTED REALITY WORLD CULTURE) AS A CULTURAL IDENTITY LEARNING MEDIA FOR INCLUSIVE EDUCATION	YOGYAKARTA STATE UNIVERSITY
15	B009-GS	DEVELOPING CORPORATE REAL ESTATE SUSTAINABLE MANAGEMENT (CRESM) FOR GREEN BUILDING OFFICE PREMISES	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK
16	B002-DC	MULTIPURPOSE TELESCOPIC LADDER	UNIVERSITI TEKNOLOGI MARA CAWANGAN PULAU PINANG
17	B002-E	CRACKLY	UNIVERSITI TEKNOLOGI MARA CAWANGAN JOHOR
18	B014-SS	TANNIN UTILIZATION FROM ANACARDIUM SP. FRUIT WASTE AND MELALEUCA SP. FOR ECO INK WHITE BOARD MARKER	BRAWIJAYA UNIVERSITY
19	B010-ST	PROVAC (PROTEASE VACUUM) : UTERUS RESIDUAL CLEANER DEVICE BY USING PROTEASE ENZYME	BRAWIJAYA UNIVERSITY
20	B016-ST	THE ULTIMATE TOOLBOX	UNIVERSITI TEKNOLOGI MARA
21	B008-E	FASHABUNNIESTAN WONDERLAND	UNIVERSITI TEKNOLOGI MARA CAWANGAN PERAK

Winners (Bronze Award - Category C)

THE INTERNATIONAL INNOVATION, INVENTION & DESIGN COMPETITION (INDES) 2019

NO	ID	PROJECT TITLE	INSTITUTIONAL
		CATEGORY C	
1	C003-DC	MIC MOP	SJKC CHUKAI KEMAMAN
2	C004-GS	NATURAL FABRIC DYE	SJK(T) LADANG BLUE VALLEY, CAMERON HIGHLAND, PAHANG
3	C002-ST	ECO DUST VENTILATOR	SMK TOH MUDA ABDUL AZIZ

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REINVENTING THE FUNDAMENTALS
THE 8th INTERNATIONAL INNOVATION, INVENTION & DESIGN COMPETITION
Thursday, 19 September 2019
Casuarina Hotel, Ipoh

Preparation Before

GUEST OF HONORS

Prof. Dr Mohd Nazip Suratman

DEPUTY VICE- CHANCELLOR

Research and Innovation of Universiti Teknologi MARA, Malaysia

PREPARATION OF INDES, 2019

PREPARATION

Strong collaborationS from students and committee members has brought tremendous success to INDES 2019.

REGISTRATION OF PARTICIPANTS

WELCOMING OUR PARTICIPANTS

BOOTHS EXHIBITIONS

CONGRATULATION TOALL WINNERS

PROJECT:

INNOVATORY PINEAPPLE LEAVES FIBER EXTRACTION BLADE FOR FIBER EXTRACTION MACHINE

by :

INSTITUTEOFTROPICALFORESTRYANDFORESTPRODUCT(INTROP), NIVERSITIPUTRAMALAYSIA

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