Institut Penyelidikan Perakaunan

Unleashing Potentials
Shaping the Future

INTERNATIONAL RESEARCH INVENTION, INNOVATION AND EXHIBITION (i-RIE 2021)

ACCOUNTING RESEARCH INSTITUTE
UNIVERSITI TEKNOLOGI MARA
1-2 JULY 2021

PROGRAMME BOOK

CO-ORGANIZERS:

INTERNATIONAL RESEARCH INVENTION, INNOVATION AND EXHIBITION

(i-RIE 2021)

"LEADING THROUGH INNOVATION"

VIRTUAL COMPETITION 1 JULY 2021

Accounting Research Institute (ARI)
Level 12, Menara SAAS
Universiti Teknologi MARA (UiTM)
40450 Shah Alam
Selangor, MALAYSIA

FOREWORD

The Accounting Research Institute (ARI) is honoured to host the International Research Invention, Innovation and Exhibition (i-RIE 2021). A huge gratitude to the conference committee for the swift implementation of the new norm in the online organization of i-RIE 2021. While the Covid-19 pandemic holds us out, it also allows us to host this virtual innovation exhibition through the facilities and technology that offers a similarly successful learning atmosphere in which participants can show their creative products and innovations.

This year's theme is "Leading through Innovation", reflects the innovation that can be utilised to help the improve the overall society's wellbeing and environment. There is an urgent need to encourage inventors through their inventions to show their imagination and vision for the country's future.

It is an exciting time for ARI as we continue to grow and face new challenges as a result of the Covid-19 pandemic. Despite recent challenges, our primary commitment to knowledge advancement remains unchanged. Finally, I would like to take this opportunity to thank all of the conference's co-organizers for their assistance. I would also like to thank the i-RIE 2021 Secretariat and Organising Committee for their hard work.

Best wishes

Professor Dr. Jamaliah Said

Director
Accounting Research Institute
Universiti Teknologi MARA Malaysia

EXECUTIVE SUMMMARY

i-RIE is an event which is set to attract researchers and industry practitioners from multiple domains from the social sciences to applied science and technology. i-RIE 2021 is the ideal platform for inventors to unveil research-driven inventions and innovations. It is an opportunity for experienced and novice researchers to showcase their research activities and expand their network of collaborators.

The event was open to inventors and innovators across the following categories:

- Junior Inventor category (participants aged 12 and below)
- Young Inventor category (participants aged 13 – 17)
- Industry category (currently attached to any organisation except as academics in higher learning institutions)
- Undergraduate and Postgraduate category (currently registered as students in higher learning institutions)
- Academics category (currently teaching in higher learning institutions)

ORGANIZING COMMITTEE

Advisor	Prof Dr. Jamaliah Said
Chairman	Assoc Prof Dr. Sharifah Norzehan Syed Yusuf
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Pitching Session	<u>Moderator</u> Assoc Prof Dr. Eley Suzana Kasim Dr Afzal Izzaz Dr Muhammad Nazmul Hoque Dr Taufik Sufian Dr Aziatul Waznah Ghazali <u>Technical Assistant</u> Puan Zulaikha Amirah Johari Cik Nuur Rajihah Razali Puan Nurhidayah Yahya Puan Nurul Suhainan Hassim Cik Nur Farina Safari

PANELISTS

First Round Judging to determine Gold, Silver, Bronze Award Winner.	Assoc Prof Dr. Norfarizal Mohamed
	Assoc Prof Dr. Norziana Lokman
	Assoc Prof Dr. Ramesh Nair
	Dr Farah Aida Ahmad Nadzri
	Dr Ruhaini Muda
	Dr Faridah Najuna Misman
	Dr. Juliana Mohamed Abdul Kadir
	PM Dr Raja Adzrin Raja Ahmad
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	Dr Dalila Daud
	Dr Hanafiah Hasin
	Dr Azlina Rahim
	Dr Nor Aishah Mohd Ali
	Dr. Shuhaida Mohamed Shuhidan
	Ts. Fatimah Zaharah Ali
	Ts. Dr Ekarizan Shaffie
	Dr Soliha Sanusi
	Assoc Prof Ir. Dr Huzaimy Bin Jusoh
Final Round Pitching to determine Best Invention Award.	Dr Intan Salwani
	Dr Soheil Kazemian (Edith Cowan University)
	Dr Nur Kamaliah Binti Mustaffa
	Assoc Prof Ts. Dr. Zulkifli Mohamed
	Associate Professor Dr. Nor Shaipah Abdul Wahab
	Assoc Prof Dr. Veera Pandiyan
	Assoc Prof Dr. Farha Ghapar
	Dr. Mohd Hanif Mohd Ramli
	Muhammad Nadzim bin Ahmad Azmi
	Mohamad Fazzil Naziri bin Abdul Karim

ABSTRACT

Junior Inventor Category

(Participants aged 12 and below)

ID: 01

ANANAS MAGIC STAIN REMOVER

Kautham A/L Solaiappan
Kavilasha A/P Muniandy
Manohj A/L Jaya Kumar
Jasper Vianney A/L Jerris
Sarves A/L Thangaraju
Sekolah Jenis Kebangsaan Tamil Nibong Tebal Pulau Pinang

ABSTRACT

In school found that it difficult to remove stains from school sinks and white boards. Some stains even cannot be removed by using commercial cleaner. Objective of this project is to show the effect of pineapple mixtures on the different type of stains and dirts. We collected the pineapple waste from restaurants and measured 400g of pineapple stems, leaves and peels were washed using the tap water. The finely chopped pineapple stems, leaves and peels were blended into thick watery paste using blender by adding 300ml distilled water respectively. The pineapple stems, leaves and peels extracts decanted off using cloth. The pineapple stems, leaves and peels extracts mixed, and the mixture poured into the bottles. The results showed that only a less amount of cleaning solution used to remove stains. We choosed the ananas magic stain remover effectively remove different type of stains and dirts. The pineapple waste contains Bromelain. Bromelain is protease enzyme which enables breakdown of macromolecules or stains. Morever pineapple peels and stem contain 0.39% citric acid and 0.254% oxalic acid. Oxalic acid effectively in removing ink, food stains any many types of stains. We assured that our product has its own novelty and uniqueness. There are no studies done before regarding the mixture of peels, stem and leaves of pineapple. The usages of these natural ingridients as stain remover can promote eco- friendly environment. Thus, this could decrease environmental pollution.

ID: 02

AUTOMATIC TABLE LIGHT CONTROLLER

Nikhita Tanigeswaran
SK Convent 1 Bukit Nanas

ABSTRACT

People always forget to turn off the light when they leave the house in the morning. This usually happens because everyone is rushing to get to work or send their kids to school. Through an innovative approach this problem can be solved. This solution effectively prevents electricity wastage and reduces fire hazards. This solution can also be used as a security device such as an intrusion deterrence in the house. This innovation does all the above in a small package of easily available hardware with a mixture of software to run it.

ID: 04

BIODEGRADABLE STRAW

Natalie Raj A/P Albert Raj
Sharvini A/P Akilan
Mireash A/L P Krishnan
Thirumeshwaran A/L Ramesh
Niranjanaa A/P Nagendren
Mogan A/L Yanasigeran
moganyanasigeran@gmail.com
Sekolah Jenis Kebangsaan Tamil Nibong Tebal Pulau Pinang

ABSTRACT

Malaysia is ranked the eighth worst country in the world for plastic use. The research by Malaysian government in the year 2019 showed that Malaysians are still big consumers of single-use plastic, with one in five using plastic straws daily. Plastic pollution has a direct and deadly effect on wildlife. Therefore, we decided to make a biodegradable straw. Objective of this project is to shows the suitability of using rice husk and tapioca flour to produce biodegradable straw. The methodology to prepare the biodegradable straw are first, grind the rice husk into powder form. Then, mix the mixture of rice husk powder and tapioca flour using a bowl. Add 100ml of water into the bowl. Next, mix everything until it dissolved finely using a spoon. Add the glycerin into the mixture and stir the solution until saturated in stove. Besides, Place the solution into a plate and keep it in oven for 10minutes. Take the solution and make into straw shape and dry it for two days. The biodegradable straw and commercial available plastic straw were buried in school compound for 60 days. After 60 days, the straws were taken out and analyzed. The appearance and weight of the straws were recorded. The results showed that the weight of the biodegradable straw had decreased by 90 % after 60days. On the other hand, the plastic remains intact without any weight loss. In this invention, the renewable and abundantly available the rice husk and tapioca flour are used to produce biodegradable straw. This has helped in reducing the pollution due to the usage of plastic straws. In the study, it was shown that rice husk and tapioca flour could be used to produce straws. Further, the produced straws are biodegradable and could potential prevent plastic pollution.

ID: 05

BIOEGGCELLENT

Aiza Aziemah bt Mazlan
Darynn Qalesya bt Mohd Yasrin
Siti Damia bt Muhamad Miswan Rosli
Nur Aniq Insyirah bt Mohammad Khaizan
Aiza Aziemah Bt Mazlan
Sekolah Kebangsaan Rasa, Hulu Selangor, Selangor

ABSTRAK

Penggunaan ubat gigi komersial di pasaran mengandungi pelbagai bahan kimia yang dipercayai dapat mencegah kerosakan gigi. Namun, banyak kajian terkini menunjukkan penggunaannya secara berterusan dalam jangka masa panjang mendedahkan kepada kesan sampingan berbahaya terutamanya kepada kesihatan dan alam sekitar. Kajian ini bertujuan untuk menghasilkan produk ubat gigi organik iaitu 'Bioeggcellent' menggunakan bahan buangan terbiodegrasi iaitu kulit telur ayam yang sering kali menjadi lambakan sisa buangan saban tahun. Ini merupakan suatu pembaziran yang terbesar kerana menurut kajian lepas, kulit telur ayam ini mengandungi pelbagai manfaat. Antaranya mengandungi 95% kalsium karbonat serta komposisi mineral yang dapat membantu menguatkan enamel gigi[1], mempunyai kadar penyerapan 64% lebih baik daripada kalsium karbonat tulen[2], merupakan sumber kalsium karbonat yang lebih baik daripada sumber tulen dimana ianya mengandungi tahap bahan toksik yang lebih rendah serta merupakan *'home suplement'* terbaik dimana separuh daripada kulit telur dapat membekalkan 1000 mg kalsium yang cukup untuk keperluan harian manusia setiap hari[4]. Selain kulit telur, Bioeggcellent ini juga dicampurkan dengan bahan organik lain seperti minyak kelapa, cengkih dan soda bikarbonat. Kesemua bahan ini dipilih agar setanding dengan kualiti dan keberkesanan ubat gigi komersial di pasaran dari segi fungsi seperti antibakteria, penyegar bau mulut, agen pemutih, dan pengawet semulajadi. Hasil dapatan data oleh Jabatan Kimia UPSI mendapati bahawa Bioeggcellent mengandungi kalsium karbonat yang dapat dijadikan alternatif untuk menguatkan gigi serta tidak mempunyai sebarang bahan kimia yang boleh memudaratkan pengguna. Penciptaan inovasi Bioeggcellent ini adalah merupakan salah satu usaha untuk mempromosi serta mendidik masyarakat dengan gaya hidup yang lebih selamat melalui penggunaan produk bebas bahan kimia supaya kesihatan dan persekitaran alam sekitar terpelihara.

ID: 06

BIOMASS ACTIVATED CARBON (BAC) FOR TOXIC DYES REMOVAL: TOWARDS A SUSTAINABLE ENVIRONMENT

[1.]Komathy Veerasinghan; [2.]Archanaa Buthiyappan;[3.]Collin Noel Pillay;[4.]Aaron Joel Pillay;[5.]Jeeven Raj a/l Jerenraj;[6.]Jeysen Raj a/l Jerenraj
E-mail address: Komathy2112@gmail.com
[1.]Sk St.Michael, 30000 Ipoh,Perak; [2.] Department of Chemical Engineering, Faculty of Engineering, University of Malaya, 50603 Kuala Lumpur, Malaysia.

ABSTRACT

The ultimate aim of this study is to develop a novel biomass activated carbon from three different agricultural wastes namely; Sugarcane bagasse, Coconut Husk and Banana Peel to remove the toxic dyes from aqueous solution. The surface morphology of the activated carbon was identified using Scanning Electron Microscope (SEM) analysis. The Fourier Transform Infrared (FTIR) Spectrometer was used to identify the functional groups. The effect of adsorbent dosage, absorption of different types of dyes, dye concentration and contact time on adsorption efficiency was studied. All the three activated carbon developed in this study shows a great adsorption efficiency between 33.2% to 76.8%. However, activated carbon developed from banana peel shows a higher adsorption efficiency compared to coconut husk and sugarcane bagasse. The banana peel also has a more porous structure compared to others. Therefore, this study proved that activated carbon developed from biomass have great potential to be alternative to that of commercial adsorbents to treat dye wastewater because of It can be concluded that this work has developed an effective, low-cost, and sustainable activated carbon for wastewater treatment.

Keyword: Sugarcane Bagasse; Coconut Shell; Husk; Activated Carbon; Dye; Adsorbent

ID: 07

BITTER GUARD BISCUIT

Revathi A/P Thanabalasingam, Tanusiyaa A/P Vijayan, Kaviyasri A/P Nagentheran, Thamil Kathir A/L Balamuralee, Ashlynn Sagaya Alfred, Mogan A/L Yanasigeran
moganyanasigeran@gmail.com
Sekolah Jenis Kebangsaan Tamil Nibong Tebal Pulau Pinang

ABSTRACT

According to a report, in the year 2020 in Malaysia, three in ten adults aged above 18 years have hypertension, while four in ten adults aged above 30 years have hypertension. Lately a big number of people being victimized due to high blood pressure. These patients are consuming modern medication to get their blood pressure controlled. Prevention is better than treatment. Therefore, we produced a natural bitter gourd biscuit which will be able to reduce the risk of getting high blood pressure or regulate the blood pressure. Objective of this project is to shows the effectiveness of the bitter guard biscuit in regulating blood pressure in human. The methodology to prepare the bitter guard biscuits are first pour 1 cup of fresh milk, 200 gm of margarine and 1 cup of sugar in a bowl. Beat the mixture. Then add 2 tsp of powdered bitter gourd, 1 tsp of vanilla essence, 1 and a half cup of all-purpose flour, 1 tsp soda bicarbonate and 1 tsp baking powder. Add in little water and mix the mixture into a dough. Take a round biscuit moulder and shape in your dough into round shapes. Preheat an oven for 180-degree Celcius and grease a tray and arrange the moulded uncooked cookies. Bake them for 30 minutes and let them for cooling, and the biscuits are ready to be served. The bitter gourd biscuits were served to 10 person for 10 weeks and their blood pressure was monitored regularly. The results showed that the blood pressure of the people served with bitter gourd biscuit dropped. This indicate that bitter guard biscuits are effective in regulating high blood pressure. The novelty of this study is that natural food is used as the prevention for high blood disease. Bitter guard biscuits helped to regulate hypertension problem. Besides, bitter guard biscuits also have high potential in reducing blood sugar, has cancer fighting properties and decreases blood cholesterol level.

ID: 08

COMPOST SHARPENER

Baanurekha A/P K Ravihchandran, Yashvinna A/P Gunasegar, Mikaasini A/P Muthalagan,
Yuvanraj A/L Murugen, Venmugil A/P Vijeh,
Baanurekha A/P K Ravihchandran
SJKT Bandar Segamat

ABSTRACT

Primary school kids are only allowed to use pencil in the school. Pencil always give them a best grip and let then to write with neat handwriting. Kids love to sharpen the pencil and make sure their pencil always Sharpe when they write. This is a compost sharpener which is make out of used mineral bottle, compost soil and sharpener to save our environment. Kids make more trash by sharpen the pencil. This is not including the color pencil. To make sure kids save their time to sharp the pencil at their place. More space to sharp their pencil. No need to spend too much for an expensive sharpener. Save our environment by compost the pencil trash.

ID: 09

NATURAL HANDMADE DISHWASHING SOAP BAR

Lineysha A/P Suthagar, Gautam A/L R. Devadass, Karthikha A/P Nantha Kumaran, Thanusujan A/L Kanapathy, Yeoghannath A/L Elango, Mogan A/L Yanasigeran
Moganyanasigeran@Gmail.Com
Sekolah Jenis Kebangsaan Tamil Nibong Tebal Pulau Pinang

ABSTRACT

Objective of this project is to study the effectiveness of natural dishwashing soap bar from paddy husk, lemon grass waste and lemon peel on greasy kitchen wares. First grind 50g of paddy husk till forming a husky powder using a grinder. Second place the grinded paddy husk in a bowl. Then Chop the lemon peel into small pieces. Grind the chopped lemon peel using a grinder. Chop the lemon grass waste into small pieces. Next grind the chopped lemon grass waste using a grinder. Strain the paddy husk, lemon peel juice and lemon grass waste juice using a strainer. Mix well the paddy husk powder and the strained juices. Boil the usage oil on stove. Mix the mixture into the usage oil. Mold the mixture into wooden block. We used observation to collect the data with observe before and after the washing curry grease and oily plates for finding result. The findings from the result shows that natural handmade dishwashing soap bar effectiveness towards cleaning curry grease and oily plates.

ID: 10

ECO AIR COOLER

Navelnasre A/P Poovanesan, Muvanan A/L Mathivanan, Shaarrvesh Vasudevan Jasper Vianney A/L Jerris, Javvinesh A/L Haritharan, Mogan A/L Yanasigeran
Moganyanasigeran@Gmail.Com
Sekolah Jenis Kebangsaan Tamil Nibong Tebal Pulau Pinang

ABSTRACT

The world is facing two serious environmental issues such as ozones layer depletion and global warming. One of the major causes is the refrigerant gas used in the equipment in conditioning industries. In fact, some studies predict that by 2050, roughly 25 percent of global warming will be caused by air conditioning. Besides ozone depletion occurs when chlorofluorocarbons and halons are released into the atmosphere. Objective of this project is to prove the effectiveness of the air cooler in conditioning the surrounding air. First, holes around the shoulder of a clay pot are drilled using a driller. The lip of the clay pot is closed using a polistrin. A fan is plugged on the top of the polistrin. Water is filled till the shoulder part of the clay pot. The fan is switched on and lastly read the temperature of water using thermometer. Based on observation and data results, the temperature of the surrounding air is decrease. Clay pot functions as a cooling medium. The clay pot and water hence lose heat, and this makes the water inside the pot cool. The natural air cooler effectively reduces the temperature of the surrounding air. The usages of these natural air cooler promoting eco friendly environment. Thus, this decreases environmental pollution and this invention also could safe our ozone layer that shields the earth from harmful ultraviolet rays generated from the sun from chloroflurocarbons that could affect the global climate.

ID 11

ECO NATURAL PESTICIDE

Dinesha A/P Moorthy, Lavina A/P Thangaraju, Santhos A/L Ellangovan, Divnesh A/L Loganathan, Resshma A/P Linga Rajan Mogan A/L Yanasigeran
moganyanasigeran@gmail.com
Sekolah Jenis Kebangsaan Tamil Nibong Tebal Pulau Pinang

ABSTRACT

In Malaysia, usage of chemical pesticide increases from year to year. Recently the Usage of restricted pesticide in Cameron highland led to pollution of water resources (News Straits Time on April 1, 2018). Besides, most of the chemical pesticides in the market are used to destroy insects in the plants. In this project the effectiveness of natural pesticide made of neem leaves, lemon peel, cinnamon, and salt water in preventing the pest attack in plants was studied. 100ml of each lemon peel water, neem water, cinnamon boil water and salt water were mixed into a beaker. 150ml of molasses is added into the mixture. pH of the pesticide was measured using pH meter. The efficiency of the natural pesticide was tested using two pots with three days sprouted okra plant. Pot X was sprayed with the natural pesticides, whereas Pot Y was left without spraying any pesticide. The plants were observed for 40 days and the appearance of the plants was recorded. The all part of plant that sprayed with the natural pesticide showed no insect attack. The natural pesticide proves its effectiveness in preventing pests in the plants. This product has its own novelty and uniqueness. The pesticide is eco-friendly where it is made of natural ingredients.

ID: 12

ECO POT

K. Maliga a/p Kalliappan, Shania Jesslyn Arul Dass, Manesha Kumaran, Abbinayaa Pannirselvam, Ruhban Komagan
Sjkt Ladang Sungai Ular

Eco Pot excellent for seeds starting transplants. It is 100% natural and biodegradable. Completely biodegradable pots make seed starting easy transplant seedlings pot and all, directly into garden, reducing transplant shock. Pots add nutrients to the soil as they degrade plants thrive in these pots. The cow dung mixed with neem and are pressed into pots using Eco Pot Machine. After planting in the garden, it provides, essential organic nutrients. Eco Pots produces healthier roots by air pruning creating lots of smaller finger roots. These roots absorb moisture and nutrients more efficiently so plant grows faster and stronger. An Eco Pot is an exciting high-performing alternative to plastic and peat pots. It gives you the benefits of manure and allowing roots to quickly expand and grow a stronger, healthier plant. We have also created Eco Pot Machine to produce more eco pots in a shorter period of time. At the same time, it will minimize the worker's time as well as worker's burden. This machine provides an opportunity to boost rural area people to earn something and improvise our agriculture as well as minimizing the cost of agriculture.

ID: 13

ECO STAIN REMOVER

Krishna Kumari A/P Subramaniam, Sahrvahnesh A/L Nagarajan, Risha A/P Sureh, Sanjannaa A/P Sivaguru, Janisha A/P Subramaniam, Mahaletchumy A/P Kumar
SJKT Ladang Sungai Ular, Kulim, Kedah.

ABSTRACT

The investigatory Project on Roselle Stain remover was conducted to determine the alternative product in removing the stain in utensil. This investigatory project research specially aims to make an alternative product in Clorox in removing stains. It also to protect the hands, our body skin and environment in the strong chemical that Clorox containing. The study tries to help the environment by substituting the chemicals used IN Clorox by using roselle syrup which is abundant in our country. The Roselle native homeland is in Southeast Asia. It can also lessen the expenses of people that will buy Clorox. It doesn't have a bad effect towards our enviroment and health and is make from something that is abundant in our country is very helpful.

ID: 14

FACE MASK BIN

Asmaa Aslam, Allysha Zulaykha Binti Mohamed Kham, Ayla Ilaria Binti Azlan, Sanjhana Shri A/P Vijendran, Nik Hariz Nik Hasnan
Asia Pacific Smart School Subang

ABSTRACT

The proposed designed is adapted from sanitary bin. It features environmentally friendly bin which provides around the clock protection against harmful bacteria and virus build up. We can take a next step by putting microbes to expedite decaying process and turn waste into compost. A person will need to place the used face mask on the inside lid without having expose to other used face masks in the bin.

ID: 15

FROG PUZZLE METHOD

Kanniamal A/P V.Gapaloo, Yogeswaran A/L Jaya Kumar, Yoogan A/L Sugumaran,
Malaletchumy A/P Balakirushnan, Vikneshwaran A/L Kamal
SJK(T) Ladang Nagappa, Jementah

ABSTRACT

The purpose of this research is to study the effectiveness of “Frog Puzzle” method in aiding the ability of Year 2 students to pronounce blending of phonics ‘CV (Consonant + Vowel) + CV’ in forming words. 4 remedial students with poor “CV + CV” pronounciation ability were selected as the research sample. The objective is to analyze the ability level of the students to pronounce the “CV + CV” phonic upon the application of “Frog Puzzle” method in their curriculum. The method of data collection was through student’s examination which indicates their score. The data was analyzed as descriptive statistic and distributed in the form of frequency and percentage. The findings from diagnostic examination of the data shows that the students were initial had poor ability of “CV + CV” phonic pronounciation and eventually got better with the introduction of “Frog Puzzle” method in curriculum for 2 weeks. Dale (2019) stated that teaching is more effective upon using educational gaming materials and increased the the reading ability among remedial students. Upon the “Frog Puzzle” method application, the finding shows that the student’s ability of “CV + Cv” phonic pronounciation increased. In the other hand, this research also shown that the systematic pre-planned teaching process with proper strategy can aid students in increasing their ability in education.

ID: 16

HERBAL PILLOW

Jeevaneswari A/P Kumaran, Ashwin Kumar A/L Ulaganathan, Darshen A/L Murugan, Mahasrii A/P Thiyagharajan, Ashvitha A/P Prakash, Mogan A/L Yanasigeran
moganyanasigeran@gmail.com
Sekolah Jenis Kebangsaan Tamil Nibong Tebal Pulau Pinang

ABSTRACT

Hypertension or generally known as high blood pressure is a common public health problem worldwide and is a well-known risk factor for increased risk of cardiovascular diseases, contributing to high morbidity and mortality. According of Star news report released on 5th August 2018, 29% of Malaysians having mental problems due to stress. This mental problem or depression has further increased since the health pandemic, CoVid-19. Therefore, we innovated herbal pillow. It is believed that the herbal pillow could calm down a person's emotions. Objective of this project is to prove the effectiveness of the herbal pillow in calming down a person's emotions. The methodology to prepare the herbal pillow are first, collect 500g Neem leaves, 500g of Vitex Trifolia leaves, and 500g of Ficus Religiosa leaves. Then, dried the Neem leaves, Vitex Trifolia leaves and Ficus Regiosa leaves under sunlight for five days. Next, blend all the dried leaves into powder form separately. Mix all the powder form solution in the pail. Pour all the mixture form into pillowcase until full. Lastly, Measure the weight of the pillow using a digital weighing scale. The herbal pillows were given to 10 persons to be used for several weeks. The results indicated that people using the herbal pillow felt relaxed and the pillow created a calmative condition. There are many ways to prevent the emotion problem. In this case, we chose herbal ingredients to be made as herbal pillow. It is natural and chemical free. Importantly it is produced from renewable sources and cost effective. Herbal pillow is able to calm down people emotion. Everyone can make it on their own. Besides herbal pillow is filled with the of natural ingredients and effectively relieve tension.

ID: 17

IMPROVING PUPIL'S SKILL IN CONSTRUCTING 'SIMPLE SENTENCES' BY USING 'SQUID TECHNIQUE'

Norafidah Binti Jasman, Nur Eiman Zinirah Binti Mohd Hisham, Nurbatrisha Binti Mohd Izwan, Mohamad Haziq Bin Rafi, Mdm. Norafidah Bt Jasman
SK Bandar Penawar 2, Kota Tinggi

ABSTRACT

Teaching writing is a process which has been a problem for many language teachers around the world. As writing skills is a component of language skill with important role in human life. The aim of this action research is to search for probable effects of ‘Squid Technique’ to be used to teach writing explicitly in class. Through this technique an individual can express his or her idea thought to achieve purpose and objective in writing simple sentences correctly. The research was conducted at SK Bandar Penawar 2 in the school year of 2020 while the population of research based on 7 pupils from Year 5 which come from different ability, different family background and different comprehension. This research was preceded, and data were collected by means of observation, pre-test and post-test and also a questionnaire. Analysis of pupil’s writing samples that pupils could write correct sentences in English and their English writing scores and abilities improved a lot after the action research had been carried out.

ID: 19

LET'S SPELL IT RIGHT (LeSPIR) DIGITAL SPELLING APPLICATION

Mohd Saharudin Bin Setapa, Muhammad Zulharraz Bin Zulkhairy, Muhammad Faheem Azfar Bin Mohd Pisol, A'isy Sofyan Bin Mohd Salehuddin, Wan Najmi Zafri Bin Zawawi
SK Putrajaya Presint 11(1), Wilayah Persekutuan Putrajaya

ABSTRACT

Let's Spell It Right (LeSPIR) Digital Spelling Application is an innovation on enhancing year 4 pupils sight words recognition as a way of improving pupils' skill in spelling. Most pupils tend to misspell words during spelling activity. Misspelling of words occurs because pupils did not recognize the words spelling structure or also known as orthography. This innovation aimed to identify the effectiveness of LeSPIR and pupils' interest in using LeSPIR. Participants are required to use the application by spelling different words by arranging letters correctly throughout the action. The words used in the application are selected from the common words in the textbook and are listed according to different categories. Pupils also used the dictionary, audio and quiz which is built in with the application to help them complete the spelling. After four times using LeSPIR, participants were able to spell words correctly by recognizing its spelling structure and they enjoyed using the game. Overall, the impact of using LeSPIR enabled pupils to reduce errors in spelling. For further improvement, it is suggested that pictures can be used when introducing words to pupils so that the spelling structure of those words can be recognized accurately.

ID: 20

MAGIC BRICK

Deshani A/P Murugan, Shivagguru A/L Givan, Gautham A/L Munian Visparan, Elakiya A/P Thuraisingam , Nyanasri A/P Gogilathasan, Mogan A/L Yanasigeran
moganyanasigeran@gmail.com
Sekolah Jenis Kebangsaan Tamil Nibong Tebal Pulau Pinang

ABSTRACT

The need for bricks in Malaysia is increase from year to year. Therefore, we came up with the idea of making magic bricks. Rice husks and bamboo skin are the main ingredients used in the magic bricks. They are renewable and abundantly available throughout the year. Objective of this project is to investigate if the strength of the brick made of rice husk and bamboo skin is higher than the current bricks in market. The methodology to prepare the magic bricks are first grind the rice husk into powder form. Then, grind the dried bamboo skin into powder form. Mix soil and cement with adding the water. Add the grinded rice husk and bamboo skin into the soil and cement mixture. Pour the mixture into a rectangle mould. Lastly, dry the brick under the sun. The compressive strength of the bricks made from rice husk and bamboo skin, and commercially available bricks were determined using compressive strength machine in USM. Besides, both bricks were dropped from 100 meters height to study the strength of the respective bricks. The compressive strength test showed that the magic brick has higher compressive strength compared to the commercial brick. The other test, where the bricks were dropped from 100-meter height was also showed that magic brick has higher strength than commercial brick. The novelty, in this study, we combined the renewable and abundantly available natural ingredients to invent bricks. The magic brick made from rice husk and bamboo skin displaced a higher compressive strength compared to commercial brick.

ID: 21

MAGIC CONVERTER

Baanurekha A/P K Ravihchandran, A. Harigesh Naidu, S. Tiviya, G. Kirthana, K. Neshateni
SJKT Bandar Segamat

ABSTRACT

Learning Mathematics aims to know, apply (do) and appreciate and cultivate mathematics (May & Stone 2010). Pupils are confused by the topic of measurement, mass and volume of a liquid. To change units without memorizing the measurements and operations involved. The effectiveness of this innovation with usability reinforced repeatedly by students including while studying at home. This magic converter is used to convert all the topics from measurement such as length, mass and volume without making any maths calculation. It can be spread through some intermediary such as Facebook, WhatsApp and Telegram. This magic converter can be 100% commercialize. This is our first competition that we join to recognize our magic converter.

ID: 22

MAGIC WRISTBAND

Shathviikaa A/P Jayachandran, Ebenezer Abishega Raj A/L Sargunawaran, Devisha A/P Gunaraj, Sharvesh Vaarman A/L Sandara Dass
Sekolah Kebangsaan Guru Kalgidhar, Ipoh Perak

ABSTRACT

The COVID-19 pandemic, which is widely known as the Coronavirus Pandemic, is an ongoing global pandemic. It causes severe acute respiratory syndrome to those who are infected by the virus. The virus was first identified in December 2019 in Wuhan, China. The World Health Organization declared a Public Health Emergency of International Concern regarding COVID-19 on 30 January 2020, and later declared a pandemic on 11 March 2020. Till this date, more than 148 million cases have been confirmed, with more than 3.12 million deaths attributed to COVID-19. Personal hygiene is the key to stop the spread of this pandemic. Guidelines and Standard Operating Procedures were derived and made compulsory for all to be followed. Wearing facemask and protective gear, frequently washing hands and feets, and social distancing are the major precautionary methods that have been advised for the public. Alternatively using sanitizers are also encouraged in order to prevent this virus from spreading from one and another. The objective of this project is to enable school children to have easy access to the hand sanitizer instead of walking to the teacher's table to get it. To ensure that parents are not burdened with the cost of buying hand sanitizers as it is made of recyclable materials. The magic wristband is unique and convenient as it is easy to assemble at a very cheap cost. It can also ensure that each child uses the hand sanitizer to protect themselves from the deadly virus.

ID: 23

MAKE-KEY: The Sensing Piano

Asraf bin Harun Narasid, Luthfil Hadi bin Mohd Fairuz, Iris Sofea binti Mohd Zafifi, Nur Syamila Damia binti Mohd Suhaimi
Sekolah Kebangsaan Bandar Penawar 2, 81930, Kota Tinggi, Johor

ABSTRACT

Make-Key: The Sensing Piano is an education's innovation tool for music subject that focusing on the concept of melody while integrating all senses to gain the exact solfege pitch. The tool is the combination of natural materials, electric circuit and digital apps. As most pupils having the problem in singing with the exact solfege pitch, this innovation project is created as an attempt for the level 1 pupils in acquiring it, to make the learning of Music Subject holistically implemented by involving the simultaneous sense in doing the activity and to create a fun and meaningful learning experience. The novelty aspect of this project is displayed through its difference from the common digital piano. The Make Key product utilize the auditory sense and the sensory of touch while playing it. Furthermore, this project brings benefit to the users. Apart from helping the pupils to acquire the exact solfege pitch, the element of fun learning is also indirectly implemented in the classroom. The pupils might not realize that they are in the process of formal learning as the atmosphere is relax and easy-going. Other than that, this project also brings benefit to the society as it indirectly gives positive impact to the early-childhood development process. The use of Make-Key tool helps them in enhancing their psychomotor and cognitive skills. The whole process of using this tool need them to practice their physical coordination (psychomotor) and think (cognitive) to hit the exact pitch solfege. Last but not least, The Make Key innovation project is uniquely different from the other children learning materials that are available at the market. As the cost of the product is affordable and mainly use natural materials around us, it is much more convenient in terms of practicality. It is clearly portrayed that this project has high potential to be commercialized in the market.

ID: 24

MICRO:BIT SMART BATTERY TESTER

Thivya Tarshinii A/P Suresh
SJKT Nilai

ABSTRACT

One of the most remarkable and novel discoveries in the last 400 years was electricity. We might ask, “Has electricity been around that long?” The answer is yes, and perhaps much longer. Its practical use has only been at our disposal since the mid to late 1800s, and in a limited way at first. Creating a simple battery is quite easy, the challenge is that making a good battery is very difficult. Balancing power, weight, cost, and other factors involves managing many trade-offs, and scientists have worked for hundreds of years to get to today’s level of efficiency. BATTERY USAGE IN THE NEW NORM. Reading the body temperature is one of the essential SOP rules that everyone needs to follow during this pandemic. Most of the organizations or individuals are using a hand-held temperature scanner which function with batteries. If the voltage of the battery use is low and expired, thus, will affect the performance of temperature sensing. Therefore, the importance of battery tester is essential.

ID: 25

MOBILE-DASO

Ain Insyirah binti Mohd Arif, Ain Safiyyah binti Mohd Arif dan Ain Syuhada binti Mohd Arif.
Sekolah Kebangsaan Sultan Idris II

ABSTRAK

Kami merupakan murid Sekolah Kebangsaan Sultan Idris II, Kuala Kangsar, Perak. Kami namakan inovasi kami MOBILE-DASO yang bermaksud dapur solar yang mudah alih dan digerakkan. Dapur ini menggunakan tenaga solar untuk memasak dan dilengkapi dengan pelbagai ciri berkesan untuk memerangkap dan mengumpul tenaga haba bagi memasak makanan di dalamnya. Lebih menarik apabila dapur ini dimuatkan ke dalam beg terpakai supaya ia mudah digerak dan dialihkan. Idea ini terhasil apabila kami dapati sukar untuk memasak jika berkelah di luar rumah. Kami kurang mahir untuk menyalakan api, tambahan pula ibu bapa tidak membenarkannya disebabkan oleh faktor keselamatan. Bagi mengatasi masalah tersebut, maka terciptalah dapur solar kami yag hebat iaitu MOBILE-DASO. MOBILE-DASO adalah inovasi kami yang belum pernah dicipta oleh orang lain. Kami telah menggunakannya dan terbukti ia sangat berkesan. MOBILE-DASO sangat sesuai digunakan oleh semua orang untuk memasak resepi ringkas dan memberi impak positif kepada masyarakat kerana ia menggunakan tenaga solar (tenaga diperbaharui) yang tidak menyumbang kepada pencemaran malah secara tidak langsung dapat mengurangkan penggunaan sumber tenaga yang tidak boleh diperbaharui (gas memasak). Selain sangat berfungsi, ia sangat mudah digunakan serta tidak melibatkan kos bahan api. Berdasarkan faktor-faktor tersebut, MOBILE-DASO mempunyai nilai tinggi untuk dikomersilkan.

ID: 26

MY COCOCRUMBS

Sharifah Norakhil Binti Syed Loed 1 *, Ku Syafiqah Arina Binti Ku Shahril 2 , Ku Syakirah Auliya Binti Ku Shahril 3 and Rosnani Binti Abd Wahid
Sekolah Kebangsaan Undang Jelebu
shakhilnadirah@gmail.com

ABSTRAK

Serdak roti atau serbuk roti adalah sisa roti kering yang digunakan utnuk menyadur atau menyalut makanan bergoreng seperti naget, jejari atau produk bebola. Biasanya serbuk roti kering diperbuat daripada roti kering yang telah dibakar atau dipanggang untuk menghilangkan kelembapan roti tersebut dan mempunyai tekstur berpasir dan berserbuk. Penggunaan serbuk roti ini adalah bertujuan untuk mengurangkan penyerapan minyak ketika proses penggorengan. Hampas kelapa merupakan satu produk hasilan kelapa yang terhasil daripada industri pemprosesan santan kelapa selepas proses pemerahan santan dilakukan terhadap isi kelapa. Pada kebiasaannya hampas kelapa dijadikan bahan utama dalam pemprosesan tepung kelapa dan nata de coco. Kandungan hampas kelapa yang tinggi kandungan karbohidrat iaitu 45.3 % dan kandungan protein 19.8% dan serat 12.2% menunjukkan bahawa adalah berlaku pembaziran sumber sekiranya hampas kepala ini dibuang begitu sahaja. Oleh itu, idea penghasilan My Cococrumbs merupakan inovasi kepada penghasilan serdak roti yang dihasilkan daripada 100% hampas kelapa. My Cococrumbs ini dihasilkan melalui proses pengeringan, pengisaran, dan pembungkusan. Hasilan produk ini dilakukan ujian penilaian deria dan mendapat maklumbalas yang positif daripada pengguna awam di mana ciri-ciri utama serdak roti iaitu kering, rangup dan produk kurang berminyak setelah digoreng dikekalkan dan menggunakan pembungkusan yang sangat mesra pengguna. Hasilan ini boleh dipasarkan di dalam negara seterusnya boleh dikembangkan di seluruh Asia Tenggara kerana hampas kelapa boleh didapati dengan sangat murah, mudah, tidak bermusim dan tiada harga pasaran.

Keywords: serdak roti, serbuk roti, hampas

ID: 27

PADDY HUSK, SOY BEAN WASTE AND BANANA PEEL FERTILIZER

Suresh A/L Thangaraja, Abhinnayaa A/P Kalaikumar Laavaneya A/P Kalaiarasan, Thanushri A/P Thanabalasingam Kashwini A/P Govindarajoo
Mogan A/L Yanasigeran
moganyanasigeran@gmail.com
Sekolah Jenis Kebangsaan Tamil Nibong Tebal Pulau Pinang

ABSTRACT

The utilization of chemical fertilizer in agriculture sectors may end up in environmental issues such as water pollution, soil pollution and air pollution. Further, the production of these chemical fertilizers could potentially release by-products such as ammonia, carbon dioxide and methane which will cause air pollution. Objective of this project is to prove the effectiveness of using green fertilizer produced from paddy husk, banana peel and soybean fertilizer on plants. The methodology to prepare the fertilizer are about 50g of paddy husk was crushed to form a husky powder using a grinder. Then the crushed paddy husk was placed in a bowl. The banana peels and soybeans were dried under sunlight for four days. Next, the dried banana peels and soybeans were chopped into small pieces. The chopped banana peels and soybeans were crushed separately using a grinder to form powder. Then, the 3 different powders were mixed to form a homogenous mixture. Next, water is added to the powder mixture to make a dough. The dough was flattened and mold into cube shape. Lastly, the cube shape fertilizer dough was kept under sunlight for few hours to dry. The efficiency of the eco fertilizer was tested using two pots with okra seeds. The soil in Pot A is mixed with the fertilizer invented, where as Pot B is the control without any fertilizer. We measured the height of the plants after a few weeks. The product has its own novelty and uniqueness. The fertilizer is eco-friendly where it is made of waste materials, easily biodegradable and save to the environment. The outcome of this work shows that the fertilizer produced from banana peel, paddy husk and soybean is effective in enhance the growth of okra plant.

ID: 28

PEMBANGUNAN PERANTI PENJERAKAN FIZIKAL (i-GAP)

Muhammad Atiq Bin Hashim[1], Muhammad Afiq Bin Hashim[1], Amirul Aiman Bin Abdullah[2] dan Amir Yusoff Bin Abdullah[2]

[1]Sekolah Rendah Kebangsaan Kg. Jawa, [2]Sekolah Kebangsaan Dato' Hashim (2)

ABSTRAK

Kajian ini bertujuan untuk membangunkan sebuah peranti penjarakan fizikal iaitu i-GAP untuk kegunaan individu. i-GAP merupakan sebuah peranti yang dipasang bersama-sama sebuah jam tangan untuk memastikan keberfungsian dan fleksibalitinya. Ia diprogramkan untuk mengesan penjarakan yang telah ditetapkan beserta pengesanan suhu badan manusia bermula 36°C. Sensor Arduino dan sensor inframerah (IR) merupakan tunjang utama dalam penghasilan i-GAP untuk membolehkan pengguna mengesan sebarang refleksi. Peranti i-GAP akan membunyikan penggera sebagai peringatan kepada pengguna dalam konteks penjarakan fizikal yang tidak dipatuhi. Pengguna boleh menetapkan fungsi peranti tersebut mengikut kesesuaian dan mematikan penggera setelah ia memberi refleksi kepada ketidakpatuhan penjarakan yang telah ditetapkan. Umum sedia maklum bahawa penjarakan fizikal merupakan SOP yang telah ditetapkan untuk mengelakkan penularan virus COVID-19. Namun, segelintir pihak mengambil sikap acuh tidak acuh terhadap kepentingan menjaga penjarakan fizikal ini. Justeru, objektif utama i-GAP dicipta adalah untuk memberi peringatan dan mengajar golongan anak-anak terutamanya untuk sentiasa menjaga penjarakan. Pembangunan i-GAP merupakan idea asal penyelidik muda ini. Ia terhasil melalui pengalaman dan pemerhatian daripada situasi yang dialami. i-GAP sememangnya membantu pengguna dalam memastikan penjarakan fizikal dipatuhi. Ia juga mampu mengelakkan penularan virus COVID-19 sekaligus menerapkan sikap bertanggungjawab dalam diri individu dan masyarakat. Penggunaannya dilihat mampu memberi manfaat yang banyak kepada masyarakat dan negara. Sebagai contoh, pelajar akan terdidik untuk sentiasa menjaga penjarakan bersama kawan-kawan, Jemaah haji atau umrah masih boleh mengerjakan ibadah tersebut dengan mengikuti SOP penjarakan fizikal yang telah ditetapkan. Ia juga memiliki kebolehpasaran yang tinggi memandangkan penjarakan fizikal merupakan SOP yang perlu dipatuhi oleh manusia diseluruh dunia demi mencegah penularan COVID-19. Cadangan masa depan pengkaji adalah untuk menjadikan peranti ini boleh digunapakai untuk mengesan penjarakanfizikal ditempat umum seperti di pasar malam dan tempat tumpuan ramai agar kepatuhan kepada penjarakan fizikal dipatuhi.

Kata Kunci: i-GAP, peranti, sensor, Arduino, inframerah, penjerakan fizikal, penggera, COVID-19

ID: 29

PORTABLE RECYCLE TROLLEY

Ashraf Iskandar Asha'ri, Muhammad Auff Hafizol Ismail, Nur Ariana Qalesya Hafid, Qistieyna Nur Syahzanani Mohd Syafizan, Nur Hanania Irdina Norhakim
SK Taman Bukit Kempas

ABSTRACT

This project conducted to overcome the problem faced by the Recycle Team in our school. Every year, they will conduct several recycle programmes. The Portable Recycle Trolley (PoRTy) will help them to manage the program more effectively. The PoRTy is spacious, can be moves so that they can bring it to the front of school on collecting day and be kept at temporary place neatly before the recycle truck come and collect the items. Our small school did not have any specific room to store all the items, and the recycle bins provided are too small. Besides the four wheels under it, the PoRTy also have special wheels to climb the different level of surfaces. Furthermore, it also can be folded when not in used. So, the trolley takes less space to be stored. This PoRTy really benefits the recycle team as it can save their energy, save their time and the most important thing, it solved the storing place issues. It can be placed at any temporary place neatly. This trolley will make it easier for parents to drop off the recycle items without their child need to carry the heavy things into the school. This will encourage them and also the society to support our Recycle Programme and will bring to the environment friendly.

ID: 30

RAIN TO WATER

Muhamad Nur Aman Muhamad Bahagia, Nur Qistina Qaisya Sa'idin, Muhammad Naqiuddin Irzan, Callista Jazel A/P James Issachar, Qisya Nabilah Mohd Azli
SK Taman Bukit Kempas

This project conducted to overcome waste in pipe water for watering plants in school. In our observation before, our school gardeners will water the plants around the school twice a day. They will use a long hose to water plants. This eventually results in the high use of pipe water in watering the plants. As the result, the school water bill is high. The idea is to collect rain water in a big container and water the plants automatically using several pipes with spreading system periodically. As we know the rainwater is cleaner, natural and priceless. The 'Rain To Water' mechanism consist of three parts. They are the lid, the container and the water flow. As for the lid, we put Rain Detector powered by Solar Panel. This Rain Detector will detect the rain and open the lid to store the rain. Once full, it will be closed automatically. By having this, it will help to avoid any mosquito breeding. Apart of that, we put a small iron net as a filter so that the water in the tank is clean. For the tank, we provide the Pump System powered by the solar panel as well. This pump system will pump out the water from the tank to water plants when the Start button is pushed. Then the water will be pump out the water plants by splashing the water to plants. This mechanism will benefit the gardener by reducing the amount of work need to be done and make the work become easier. This project will also reduce the amount of school water bill. Moreover, saving water means save the environment by reducing the emission of Carbon Dioxide gas to the air. This will also overcome global warming issues.

ID: 31

ROBOTIC TABLE (Rb Table)

Sidharthean A/L Puspanathan, Varun A/L Thayananthan, Sharwin A/L Loganathan, Seshaamitran A/L Vijei Kumar
SJKT Chettiars, Ipoh, Perak

ABSTRACT

An innovation is an idea that has been transformed into practical reality. For an education, this is an idea, process, or learning concept, or combinations that have been activated in the learning environment and produce new product for the society. The meaning “Innovation is the creation, development and implementation of a new product, process or service, with the aim of improving efficiency, effectiveness or competitive advantage.” It also improves education because it compels students to use a higher level of thinking to solve complex problems. They are many ways to encourage innovative thinking among students like me. Encourage, practice hands-on learning, established a creative environment and support collaboration among teachers and students. The Rb table (Robotic Table) was designed through an idea from year 5 sciences textbook. The title referred to is machine.

ID: 32

SABUN ORGANIK

Rathesh Rajamohan, Allysa Jeevamalar a/p Albert, Yogissh a/l Chandrasegaran, Jaivandhanaa a/p Agilan, Yashvaasin a/l Rajasekaran

SJKT Ringlet, Tanah Rata, Pahang

ABSTRAK

Projek inovasi “sabun organik” merupakan satu projek inovasi yang terhasil daripada pendamik Covid 19 yang telah melanda dunia pada tahun 2019. Oleh yang demikian, projek inovasi ini tercetus adalah untuk memberi kesedaran kepada semua murid dan warga Sekolah Kebangsaan Senai Utama tentang penjagaan diri dengan menggunakan “Sabun Organik” yang telah dihasilkan oleh murid daripada SK Senai Utama. Celik kesihatan atau health literacy (HL) adalah kemampuan menerima, memproses serta memahami maklumat dan khidmat asas kesihatan untuk digunakan bagi menggalakkan dan mengekalkan kehidupan yang sihat. Mereka yang celik lebih tahu bagaimana mereka seharusnya menjalani kehidupan yang sihat dan memahami maklumat tentang kesihatan serta mendapatkan penjagaan kesihatan yang sepatutnya. Menurut Institut Perubatan Akademi Nasional Amerika Syarikat, golongan yang tidak celik kesihatan mempunyai tahap kesihatan 1.5 hingga 3 kali lebih rendah dan kurang mengambil langkah pencegahan dalam menangani penyakit berbanding mereka yang celik. Untuk mempromosikan gaya hidup sihat serta maklumat yang tepat berkaitan kesihatan, ia memerlukan satu pelan komprehensif dan efektif yang melibatkan semua murid dan warga sekolah dengan penggunaan “Sabun Organik” yang dibuat daripada minyak terpakai dan bahan lain yang selamat untuk dihasilkan.

Kata Kunci: Sabun organik, kebersihan diri dan alam sekitar

ID: 33

SLAM DUNK RECYCLING

Roshini A/P Surendran, Yuvasre A/P Ganesh, Ajay Kumar A/L Sashikumar, Prakash A/L Renganathan

ABSTRACT

Malaysia is one of the most successful countries in transition. Steady economic growth and low unemployment rates driven by stable political conditions and plenty of resources making Malaysia on a par as a developed country. Malaysia is experiencing rapid industrialisation and urbanisation giving the adverse effects on the environment from the increasing waste generated. Besides, waste generation rates also increase due to the demand of Malaysian for quality of life increases. Based on a research by (Mohd Dinie Muhaimin Samsudina and Mashitah Mat Dona) at present, poor solid waste management has become the prime environmental problem in Malaysia. As cited by (Jayashree Sreenivasan et al.) Solid waste is one of the three major environmental problems in Malaysia. It plays a significant role in the ability of Nature to sustain life within its capacity. Currently, over 23,000 tonnes of waste is produced each day in Malaysia. However, this amount is expected to rise to 30,000 tonnes by the year 2020. The amount of waste generated continues to increase due to the increasing population and development, and only less than 5% of the waste is being recycled. Thus we can comprehend that the amount of waste produced in Malaysia is rapidly increasing over the year and a very minimal amount of wastage is being recycled.

ID: 34

SMART DRIVE THRU

Muhammad Nafiz Idlan Mohd Nazry, Mohammad Wafiq Ziqri Mohd Nazry, Yusuf Zulhilmi, Nur Kasih Mohd Zaki, Nur Alisya Afrina Mohd Zaki
SK Jalan Raja Syed Alwi

ABSTRACT

Smart Drive Thru ini merupakan satu sistem gabungan teknologi bluetooth, kepada peranti iTag menggunakan perisian cTracing kepada telefon pintar dan placard. Apabila waris murid sampai ke sekolah untuk mengambil pelajar pulang, waris hanya perlu mengaktifkan perisian cTracing dalam telefon pintar. Seterusnya bunyi beep yang nyaring akan berbunyi pada peranti iTag yang terdapat pada murid. Murid akan 'alert' dengan kehadiran ibu bapa melalui bunyi beep dan mengetahui bahawa ibu bapa telah sampai ke kawasan sekolah.

ID: 35

SMART DUSTER

Muhammad Muizuddin Muhamad Azman, Muhammad Haiqal Ajwad Hasmizal, Muhammad Haiqal Mahyuddin, Nur Damia Maisara Abdul Manan
SK *Batang Benar, Mantin, Negeri Sembilan*

ABSTRACT

Whiteboards are an essential classroom tool that allows teachers to accommodate students of all learning styles. The purpose of a whiteboard is to visualize thoughts, concepts, write down ideas, explain and teach, to plan and create in the group and many other things. Whiteboards are great for younger students who still have spelling bees and quizzes. Students are more likely to retain information when they hand-write it down.Not only are whiteboards a great way to engage students, but they're cost effective and better for the environment. The purpose of this project is to over come two issues that always occur in the classroom. First issue is happen to the pupils who are short. They are not able to clean the board properly due to their lack of height. Second issue is missing white board duster. There is no specific place to keep the duster in our classroom and its always misplace everyday. It is hoped this project will overcome the issues above.

ID: 36

SMART FRUIT TREE ORGANISER (SMAFTO)

Anantarajoo s/o Selvarajoo, Elamathi d/o Murugan[2], Jai Vandhanaa d/o Agilan[3], Rathesh Rajamohan[4], Yogissh s/o Chandrasegaran[5], Yashvaasin s/o Rajasekaran[6]
SJKT Ringlet

ABSTRACT

The main goal of the Smart Fruit Tree Organizer (SMAFTO) was to develop a fruit bagging mechanism and fruit plucking mechanism that is manually operated by a single user with use of simple electrical operated hardware. The use of SMAFTO to cover fruit by bag is promoting organic way farming to control insects and pests. The SMAFTO is uniquely designed with an adjustable pole mechanism, making it capable to reach fruits at different heights. The device is also equipped branch cutter that makes the user to cut small branches of tree. Each component of SMAFTO is designed ergonomically to reduce fatigue, stress and to require minimal amount of strain. The tool is targeted for farmers and homeowners therefore, the entire assembly easy, making easy to transporting and priced at an affordable cost of RM 8.00. The SMAFTO also have some limitation and the future upgrades can be done to overcome the limitation.The product has won gold awards in GoGif 21, Ethic 20, i-finog 19 respectively

ID: 37

SMART KIOSK

Ahmad Harith Darwisy Ahmad Fauzi, Muhammad Syahir Iskandar Shafarullah, Haiqal Que Mukhriz Hairul Nizam, Amir Hazim Harman
Guru Penasihat: Eddy Kusmizan Abd Manan
SK Jalan Sungai Besi 1

ABSTRAK

Projek inovasi bahan bantu mengajar merupakan suatu kaedah mencari jalan menambah baik sesuatu bahan untuk menjadikan ia lebih berkualiti dan berkesan dalam mencapai objektif. Kelab Doktor Muda SK Jalan Sungai Besi (1), Kuala Lumpur memilih untuk menghasilkan 'SMART KIOSK' sebagai projek inovasi bahan bantu mengajar. Secara umumnya, 'SMART KIOSK' merupakan kiosk pelbagai guna bagi memudahkan Doktor Muda untuk menjalankan aktiviti pendidikan kesihatan kepada rakan sebaya. Objektif utama penghasilan projek inovasi ini adalah untuk memastikan aktiviti pendidikan kesihatan kepada rakan sebaya dapat dijalankan dengan mudah dan lebih berkesan. Idea mereka cipta 'SMART KIOSK' ini terbentuk melalui pemerhatian Doktor Muda yang mendapati kesukaran menjalankan aktiviti pendidikan kesihatan bersama rakan sebaya kerana tidak mempunyai bahan bantu mengajar sesuai, tiada kiosk pameran dan rakan sebaya kurang jelas dengan aktiviti yang dijalankan. Berdasarkan temubual bersama 30 orang rakan sebaya, Doktor Muda mendapati seramai 23 orang menyatakan kurang jelas dan kurang faham dengan maklumat yang disampaikan oleh Doktor Muda kerana sukar mendapat gambaran yang jelas. Projek inovasi bahan bantu mengajar ini bermula sejak tahun 2020 dengan proses awal iaitu perbincangan bersama guru penasihat bagi mencari kaedah yang sesuai bagi menyelesaikan masalah yang dihadapi. Hasil dari perbincangan tersebut, proses lakaran awal 'SMART KIOSK' telah dilakukan. Kurang dari RM40 diperuntukan dalam penghasilan 'SMART KIOSK' kerana bahan yang digunakan terdiri dari bahan guna semula dan bahan kitar semula. Bahan inovasi yang telah siap ini telah menjalani sesi percubaan bersama warga sekolah sebelum digunakan dalam beberapa aktiviti Kelab Doktor Muda. Antara 5 skop utama modul Kelab Doktor Muda yang boleh menggunakan bahan inovasi ini adalah seperti demonstrasi mencuci tangan, memberus gigi dengan betul, pengiraan indeks jisim tubuh, kesihatan mata dan makan secara sihat. Hasil dari temubual bersama rakan sebaya, mereka bersetuju dengan menggunakan 'SMART KIOSK', sesi pembelajaran lebih mudah dan berkesan.

ID: 38

SMART PLANNING FOR COMMUTING (SPC)

Nur Sara Aleesha Mohd Nadzaruddin
SK Alam Damai, Cheras

ABSTRACT

Smart Planning for Commuting (SPC) is the integrated system for public transport commuters to have a proper real-time planning in managing their travelling plan for commuting from their houses to their workplaces or any other destination. The project manager for this project is Nur Sara Aleesha from SK Alam Damai, Cheras, Kuala Lumpur. This SPC platform is using special tracking devices that will install in public buses and at train stations such as LRT & MRT to track their schedule of arrival. The commuters (users) need to install a special mobile application to set their destination, track the possible time for the buses to arrive at the bus stop and to see what the possible earliest time for them to take the LRT or MRT as per their plan. They can view the total fares and make a payment via the e-wallet. The current problem is the commuters have a major difficulty to plan their travelling since they must guess the arrival time of the buses at their location. It is even worst, and time wasted if they do not know that there is a disruption of public transports due to the traffic jam or the transports broke down. The objectives of the system are to assist the commuters to track the possible time or schedule for the public transport, the real time tracking for commuters to better plan their journey, avoid the time and energy wasting, and to check the active status of the transport arrival. For the novelty, this system shall be the first in Malaysia and the current infrastructure in Kuala Lumpur, such as internet connection, Wi-Fi and GPS can support the system implementation. Many benefits of the system to users such as easy to plan, track and monitor the journey, fast to get the status of the schedule, and easy plan for other alternative if there is a disruption for their main transport. To the society, the system can reduce the traffic jam when the public transport become more efficient, increase the usage of the public transportation and effective integration between buses and trains. For commercialization potential, with the increase of public transport usage can increase the revenue of the transport provider and reduce the subsidize burden of the government. The system also is integrated with the electronic payment system. Within the limited knowledge, no award has been received so far since the system has yet to be implemented in Malaysia and majority of any Asian countries. This new idea of innovation should bring a greater benefit in improving the utilization of public transport and can greatly reduce traffic congestion in the city.

ID: 39

SOCIAL DISTANCING TAG

Sarah Alhena Asyrul[1], Safiya Alhana Asyrul[2], Wan Nur Damia Arissa Wan Mohamad Ikhwan Affendy[2], Wan Nur Rahimah Rawdah Wan Seman[3], Wan Nur Azizah Zahra Wan Seman[3]
Advisor: Wan Mariana Wan Mansor, Wan Nurdiyana Wan Mansor
SK Tok Jiring[1], SK Seri Payong[2], SK Jabi[3]

ABSTRACT

Currently Malaysia are undergone into Recovery Movement Control Order phase and social distancing compliance is very important. There may be people who are not sure how far it is 1 meter. So, we developed a simple tag indicator to sense object distance in front.

ID: 40

STARFIRES WATER DISPENSER

Zara Zukaidi, Amanda Farisya Mohd Rashdan, Nur Farisya, Jazmeera Rahma Jefri
Sk Batang Benar, Mantin Negeri Sembilan

ABSTRACT

- We were encouraged by our teacher, Puan Hazlin to join this competition.
- After many sessions of discussion via online, we decided to go with the idea of a simple water dispenser in the classroom.
- Why water dispenser in the classroom? Because during pandemic COVID-19, this water dispenser will limit the movement of the kids.

ID: 41

SUSTAINABLE GREEN CITY

Lim Zi Suen, Jayden Cheng Wei Zhe, Jaybriel Cheng Yu Zhe, Lim Zi Xiang
Sekolah Sri Tenby Setia Eco Park Malaysia

ABSTRACT

Nowadays many developed countries have adopted the Green Cities concept as a strategic tool to combat environmental challenges & climate change impacts. This concept should be no exception to our major cities such as Kuala Lumpur, Penang, Johor. One of the very important key strategic aspect has to do with sustainability considerations ie. how to maintain a green concept and solve major city problems such as flash floods in KL with minimum maintenance cost.

ID: 42

T & I – TAP AND IDENTIFY PROJECT

Noraqlan Rifqi Bin Norazmi, Sarah binti Mohamad Noor, Mohd Farhan Haniff bin Ab Rahman, Ahmad Faiz Bin Mohd Sabri, Nurhaida Dayana Binti Khairul Arifin and Nur Sara Danisha Binti Nasri

Sekolah Kebangsaan Paya Jakas , Jementah, Segamat, Johor

saramny@gmail.com, farhanhaniff88@gmail.com

ABSTRACT

This innovation was implemented to help the students of Year 6 in primary school generally in answering Science Paper 1 and Paper 2 UPSR about the physical characteristics efficiently and effectively. This innovation is to help students identify correctly and describes the physical characteristics of plants using the easiest way to understand this matter. The board game is alike innovation involves of circuit that the players need to tab to the correct cards. After that if the answer is correct, the LED will lights on and the sound will appear and identify the correct physical characteristics of certain plants. The players will identify the physical characteristics of plants with the correct picture The players will put the physical characteristics card into the i-THiNK map (tree map). A total 21 of Year 6 students were chosen as the respondents in this investigation. According to the reflection results that conducted shows that the failure of students to understand and answer questions based on the topic given happened are actually due to the weakness of remembering or less information about Science Theory Learned. This game also helps teachers delivering the teaching and learning process in accordance with the PAK21 goals. The teaching and learning process of activity uses some card game teaching method to provide assistance for students to master the topic better, fun and finally able to answer questions with success.

Keywords: Science Subject in Primary School, Board game, Identifying answer using card, Reacts with LED and buzzer, Putting card on tree map,

ID: 43

THE PICKUP PRO BY THE GREEN PEACE

Ahmad Aydden Irshad Ahmad Farid, Ameer Mohd Shahmeen
Sekolah Sri Tenby, Setia Eco Park

ABSTRACT

In Malaysia, rivers are vital for nature and human society, major cities also have been established and flourished along rivers. However, major river management issues are linked to water quality. High levels of pollution of river waters have occurred in states with large numbers of industrial areas and factories such a in Selangor, Johor, Penang and Perak. The three most common anthropogenic activities that cause river water pollution are industrial area, sewage, agricultural activities and animal husbandry activities. Water pollution has very negative effects on public health. A lot of disease are resulted from drinking or being in contact with contaminated water, such as Diarrhea, Cholera, Typhoid, Dysentery or Skin Infection. In areas where there are no available drinking water, the main risk I dehydration. Because that we come up with The Pickup Pro that is The Helical Rotor, The Rubbish Collector, and The Dustbin. The Helical Rotor will rotate when water flows through the drain. It will stop the rubbish from going to the river/sea. The floating barrier will hold and prevent the rubbish from going back into the flow. The rubbish will float to the rubbish collector. The flows of the water in the drain will rotate the wheel and the belt. As the belt moves, it will scoop the rubbish and transfer it to the dustbin. The rubbish is then recycled and can be processed into new products. This product will by having free flowing drains, floods can be mitigated. Therefore, garbage and waste can be properly disposed and water bodies like lake, rivers, sea and oceans are saved and preserved from pollution. Lastly, animal habitats and the environment are protected.

ID: 44

THE VOICE BOOK

Jivendra A/L Pandian, Jananni Dhas A/P Mangaladhas
SJK(T) Ladang Segamat

ABSTRACT

Inovasi ini dihasilkan bertujuan untuk mengatasi masalah murid pemulihan dan tahap 1 dalam matapelajaran matematik. Terdapat murid yang lemah dalam membaca arahan yang ada dalam soalan matematik tetapi pandai dalam menyelesaikan matematik tersebut. Oleh itu “The Voice Book” ini dicipta untuk membantu murid sedemikian agar mereka turut menyertai kelas matematik mereka. Bagaimana “The Voice Book” ini membantu murid ialah, setelah murid diberi latihan dalam bentuk kertas, langkah pertama mereka perlu membaca arahan yang diberi untuk menyelesaikan latihan matematik tersebut. Tetapi masalah yang dihadapi oleh murid ialah mereka tidak dapat membaca arahan itu dengan betul dan oleh itu mereka tidak dapat membuat latihan tersebut. Tetapi dalam inovasi “The Voice Book” ini, latihan – latihan yang diberi disertakan arahan yang jelas dengan suara murid dan guru. Tambahan lagi, bagi latihan-latihan yang agak sukar, disertakan arahan, dan contoh video bagaimana selesaikannya dengan jelas. Apabila murid mendengar dan menonton video yang diselitkan sekali mereka boleh selesaikan latihan tersebut dengan mudah. Dalam “The Voice Book” ini juga disertakan latihan tambahan dan lagu sifir agar murid boleh mengakses sendiri. Perkara yang utama dalam “ The Voice Book” ini tidak perlukan sambungan internet dan boleh digunakan dalam semua gadjet hanya dengan scan QR code dan link yang disediakan.

ID: 45

YAM 2.0: SUSTAINABLE LIVESTOCK FEED

Maryam Binti Muzamir
SK (P) Methodist, Kuantan
maryambintimuzamir@gmail.com

ABSTRACT

Malaysians produce 15,000 tonnes of food waste every day. Avoidable food waste 3,000 tonnes daily. Food that was edible before it was thrown. 3,000 tonnes of food can feed 2.2 million people more than the population of KL. Unavoidable food waste 12,000 tonnes daily. Food that was inedible before it was thrown. An average Malaysian household of five- speed RM900 a month on food and throws away RM225 of food a month. This amount could buy seven 10kg bags of rice, 132 litres of RON95 petrol and unifi 30Mbps plan RM199/mth.

ID: 46

KIDS (KIDS PERFORMANCE DASHBOARD)

Mohamad Aniq Danish Bin Mohamad Jamil
Sekolah Kebangsaan Bandar Baru Rawang

ABSTRACT

PANDEMIC COVID 19 have change the way education was delivered to the student. Since the country was in the Movement Control Order 3.0 (MCO), all the classroom activity need to be conducted through online platform (Pelaksanaan Pengajaran Dan Pembelajaran Di Rumah (PdPR)). This indirectly give a burden to the Parents especially who need to Work from Home (WFH). Monitoring children's online homework could be very demanding and tiring. Besides, without proper monitoring and lacks proper performance measure the children have high tendency to waste their time playing games and watching youtube. This will give significant bad impact to their growth and mental development. KIDS (Kids Dashboard System) can provide the solution for this problem. It provides an interactive monitoring system that can assist the parent to effectively monitor their kid's academic performance as well as non-academic performance (i.e. hafazan, reading, cleanliness, attitude, discipline). The interactive indicators of performances is the main attribute of this product innovation. It will motivate both parent and kids to monitor the performance in a fun way. This will increase children willingness to perform voluntarily. KIDS also help to burst children motivation to achieve the performance set by parent and can easily visualize through the interactive features in KIDS. Besides that, KIDS help to promotes healthy competition amongst sibling in achieving the performance measures set by the parent. This indirectly encourage the children to achieve the target voluntarily.

ID: 47

Pocket Pizza On-The-Go: B.E.S.T

(Balance, Easy, Swift, Tasty)

Salwa Farihah Saifuddin & Syazaa Faqihah Saifuddin
SERI ABIM Sg. Ramal

ABSTRACT

Malaysia is famous as culinary heaven. In February 2021, Malaysian Ministry of Health (MOH) has published the Malaysian Dietary Guidelines and Food Pyramid. The food pyramid consists of four (4) levels that represents five (5) food categories. Level 1 (base) is the main source of vitamin and minerals such as fruits and vegetables, and public is recommended to eat plenty of them. Carbohydrates such as rice, bread and noodle are at Level 2. Public is advised to eat them adequately. Two categories of food, namely fish, poultry, meat, and legumes; and milk and milk products are in Level 3. It is recommended to eat these types of food in moderation. Located at the top (Level 4) of the pyramids are fats, oil, sugar, and salt. These types of food shall be taken in small amount to avoid health issues such as obesity, diabetes, hypertension, and cancers. Public is also recommended to consume 6-8 glasses of plain water daily to maintain hydration especially during the current pandemic period. Despite the dietary guidelines provided by the MOH and World Health Organization (WHO), UNICEF report on Children, Food and Nutrition: State of the World's Children 2019, highlighted that Malaysia is facing two (2) main threats relating to nutrition, stunting and obesity. This is mainly caused by children not eating the right food or enough of the right food. It was argued that families just provide any food they can to fill their tummies and ignoring the nutritional facts. This new invented recipe is aiming to provide a balanced food in line with the Malaysian Food Pyramid as published by the MOH of Malaysia. It is easy to be prepared and packed. Even junior chef can prepare the pocket pizza. On average, "Pocket Pizza On-The-Go" only requires 5 minutes of preparation for tasty food yet delicious and scrumptious. Pocket Pizza On-The-Go has the potential to resolve various issues relating to providing healthy and balanced food. It solves the issue of time consumption in preparing the food especially for busy families staying in the city and urban areas. As the size of the Pocket Pizza is relatively small, and the pizza "toppings' is hidden in the pocket, it is easier to pack the food and have it on-the- go. The pizza can also be wrapped in an aluminum foil to maintain the freshness of the pizza. Containing bread, tomatoes, pineapple, chicken, and cheese, this pocket pizza is irresistible for everyone. Want to make it healthier? You can always add more vegetables such as mushroom, onions, capsicum, and many more.

ID: 48

DEEP OCEAN SOAP

Amelia Ruhel.
Moulsecoomb Primary School, Brighton, United Kingdom.

Nur Aina Althafunnisa Binti Abdul Rahman,
Sekolah Kebangsaan Sungai Kapar Indah, Klang, Malaysia

Faris Naufal Bin Irwan Iswadi,
Sekolah Kebangsaan Taman Sri Gombak, Selangor, Malaysia

Zahra Kirana Nugroho,
Khanza Anindya Nugroho,
Pondok Pesantren dan Madrasah Bidayatussalikin, Indonesia

ABSTRACT

Deep Ocean soap contained the Moroccan Argan Oil which is high in omega fatty acids, vitamin E, and linoleic acids, all of which help to soothe dry areas, hydrate your skin, and even decrease acne. It also may be used to lighten the skin. It can help with dark patches and other hyperpigmentation issues. Not only that, is suitable for all skin types. The peppermint essential oil in the ingredient, is a well-known folk treatment for a variety of ailments. It is said to have soothing properties. Flatulence, menstruation cramps, diarrhoea, nausea, depression-related anxiety, muscular and nerve pain, the common cold, and indigestion are all treated with it.

ID: 49

HONEY BEE SOAP

Amelia Ruhel.
Moulsecoomb Primary School, Brighton, United Kingdom.

Nur Aina Althafunnisa Binti Abdul Rahman,
Muhammad Hajid Bin Hairul Iswandy,
Muhammad Hazim Bin Hairul Iswandy,
Sekolah Kebangsaan Sungai Kapar Indah, Klang, Malaysia

Faris Naufal Bin Irwan Iswadi,
Sekolah Kebangsaan Taman Sri Gombak, Selangor, Malaysia

ABSTRACT

Honey soap is wonderful for dry or damaged skin because of its antioxidant and humectant qualities. It also good to treat acne because the usage of raw honey that has the antibacterial and antioxidant qualities help destroy germs that cause acne and speed up the healing process. It may also help oily and acne-prone skin because of its antibacterial and antiseptic properties. Honey is a natural humectant, which means it keeps your skin moist but not greasy. Because humectants remove moisture from the skin without replenishing it, this is the case. Another active ingredient in our soap is amla powder. Amla is high in antioxidants and vitamin C, both of which aid in skin whitening and complexion lightening.

ID: 50

ORANGY SPARKLY CLEANER

Sofia Amber & Erina Arissa
Mansfield State School, Brisbane

ABSTRACT

Australia generated 75.8 million tonnes of solid waste in 2019, which was a 10% increase. Over half of all waste was sent for recycling (38.5 million tonnes), while 27% was sent to landfill for disposal (20.5 million tonnes). An estimated 931 million tonnes of food, or 17% of total food available to consumers in 2019, went into the waste bins of households, retailers, restaurants and other food services. The weight of this waste equals to 23 million fully loaded 40-tonne trucks and that is a lot. Therefore, we feel that it is important to help manage our waste in a better way. Do you know that we can convert our waste to something better? Such as “Orangy Sparkly Cleaner”. Since we are orange lover, we always collect the orang peels, until one day we find it too many. So, we decided to change it into something useful. And it Works!. We now enjoy making our own *Orangy Sparkly Cleaner*. We not only reduces the waste amount, we also manage to reduce our house expenses. We use *Orangy Sparkly Cleaner* by spraying it to any greasy surface, then wipe them off using a cloth. It is safe and smells nice too. And now, we have a little helper, my little brother. He just loves the smell.

ID: 51

TEDDY NIGHT PERFUME OIL

Khanza Anindya Nugroho

Zahra Kirana Nugroho

Pondok Pesantren & Madrasah Bidayatussalikin, Indonesia

Nur Aina Althafunnisa Abdul Rahman

Muhammad Hajid Hairul Iswandy

Muhammad Hazim Hairul Iswandy

Sekolah Kebangasaan Sg Kapar Indah, Malaysia

ABSTRACT

The ingredients in Teddy Night Perfume Oil help kids to fall asleep at night. This perfume is easy to formulate as kids can add their favourite essential oil. The basic ingredients in our perfume that contain nutty oil may also benefit the skin in several ways. Ancient Chinese and Ayurvedic practices have used almond oil for centuries to help soothe and soften the skin and treat minor wounds and cuts. Almond oil has numerous health benefits. It is anti-inflammatory, and this relaxes your eyes and helps you sleep better and fast if you apply it near your eyes area. Lavender, another ingredient in our formula, one of the more popular essential oils, is most commonly used for relaxation and sleep. When used before bed, studies have shown that lavender oil can help you fall asleep and improve the overall quality of rest. Begin applying our Teddy Night Perfume Oil an hour or so before turning in for the night.

ABSTRACT

ID: 52

TUTTY FRUITY PERFUME OIL

Khanza Anindya Nugroho

Zahra Kirana Nugroho

Pondok Pesantren & Madrasah Bidayatussalikin, Indonesia

Nur Aina Althafunnisa Abdul Rahman

Muhammad Hajid Hairul Iswandy

Muhammad Hazim Hairul Iswandy

& Sekolah Kebangasaan Sg Kapar Indah, Malaysia

We use all pure and natural ingredients such as sweet almond oil, rose geranium essential oil, orange essential oil, bergamot essential oil, and vanilla essential oil. The formulation is super refreshing and promotes alertness and vibrant energy for kids to start their day in school. This delicate and sweet perfume oil can be used as an aromatherapy to elevate mood and alleviate stress. Rose geranium essential oil is also used to promote emotional stability, suitable for the formulation of perfume targeting young kids.

ID: 53

AMAZING POT

Anandya Izza Putri Maharani Himawan
PPPA Daarul Quran, Indonesia

ABSTRACT

Kids have an endless imagination and they come up with new ideas all the time, because that's how they learn about the workings of the world. They can put their unique ideas to work as DIY allows them creative self-expression. DIY promotes cognitive development and develop oneself problem solving ability. An Amazing Pot is the DIY project that can increase kids' ability to use their creativity wisely and increase their ability to innovate. The project requires material at low budget such as cement, vaselin or vegetable oil, water, glove and plastic glass. Besides that it also help to increase kid awareness on the needs to go green by recycling.

ID: 59

RAINBOW INTERACTIVE QUIZZES

Erina Arissa & Sofia Amber
Mansfield State School, Brisbane

ABSTRACT

Online learning has been so challenging for students around the world. It has becoming more challenging for us, the primary school children. We miss our friends and teachers, especially the classroom environment. Online learning is not as fun as physical classroom. Therefore, we asked our teachers to conduct an interactive learning. 74% of teachers have digital game-based learning to enhance their lessons (Juraschka, 2019). 93% of class time is spent on class tasks when using game-based learning (Juraschka, 2019). We are so thankful that our teachers had try making it fun. However, we find it lacking because we think that making it colourful will be more interesting. So, from there, we came with an idea of having this “Rainbow Interactive Quizzes”. Rainbow Interactive Quizzes allows us to have a healthy competition with friends at real time. Not only with colorful features, it also is accompanied by music and there is a 15-minute restriction. One session can only be done for 15 minutes, to avoid us from getting board. We believe that this Rainbow Interactive Quizzes will not only benefit us, but others of all age since it is interesting and allow interactions among the players. However, for now, we are using the easily available platforms such as kahoot, quizzlet, gimkit and many more. In the future, we plan to build a website that compile this platform and include youtube videos and scoreboard side by side.

ID: 60

Creative Painting

Riddhi Nitin Nile.
Holy Angel's Convent School, India.

ABSTRACT

The ability to be creative is vital to the success of our children and the well-being of our world. Research indicates that a child who is exposed to the arts acquires a special ability to think creatively, be original, discover, innovate, and create intellectual property—key attributes for individual success and social prosperity in the twenty-first century. Art is an activity that can employ all the senses—sight, sound, touch, smell, and taste., thus increase children ability to be creative thinker.

Young Inventor category

(Age 13 – 17)

ID: 01

SOCIAL DISTANCING DETECTOR AND FACE SHIELD WITH TEMPERATURE SENSOR

Norul Huda Binti Wan Mohd Sawapi, Muhammad Abdullah Afiq Bin Asrullizam, Nur Aisyah Binti Asrullizam
a.afiqtmk@gmail.com
MRSM Sultan Azlan Shah

ABSTRACT

Novel coronavirus has spread rapidly worldwide since it began. Covid-19 was declared as a pandemic by the World Health Organization (WHO) where over a 100 million confirmed cases and at least two million people have lost their lives. New research from MD Anderson shows that by practicing social distancing can reduce the risk of coronavirus spread by 65% and prevented more than 1.5 million cases of COVID-19 in a two-week period. Social Distance Detector (SDD) using HC-SR04 ultrasonic sensor. It uses SONAR to determine the distance of an object. It emits ultrasound at 40,000Hz (40kHz) which travels through the air and if there is an object or obstacle on its path it will bounce back to the module. The principle underlying this technology is that speed of sound in air approximately constant. Thus, estimating time for sensor reflection allows knowing the distance to the object due to the proportionality relation. It offers excellent non-contact range detection with high accuracy and stable readings. SDD can measure the distance to a wide range of objects regardless of shape, colour or surface texture they are also able to measure an approaching or receding object. Therefore, Social distancing detector can get wide applications where physical or proximity detection is required indoors and outdoors i.e. in schools, shopping malls, workplace and it is also very useful to give signals to avoid obstacles or dangers for example signal to blind people, snatch thief etc. Due to the recent increase in Covid-19 cases measuring body temperature is equally important as social distancing. The intelligent face shield detector (FSTS) equipped with non-contact temperature sensor called MLX90614 to detect body temperature. This face shield with temperature detector aims to accurately measure human body temperature and maintain social distancing and avoiding any direct contact with people. If the person who wear the intelligent face shield temperature sensor, has a fever the LCD will show the temperature reading with sad emoji face. If the person have normal temperature so the LCD will show the temperature reading with smiley emoji.

Keyword: Proportionality, Pulse, Sensor, Social Distancing, Temperature.

ID: 02

ECO-FRIENDLY FOAM FOR A GREENER WORLD

Abu Aswatudali Syawal Bin Muhammad[1], Fathin Syahira Binti Jamal Sazly [2], Nur Izzah Binti Mohamad Yusoff[3], Aleeya Natasha Binti Ahmad Shaberi[4], Muhammad Jazlan Mohd Jafri[5]
syawal90@smskb.edu.my
SM Sains Kepala Batas

ABSTRACT

Packaging plays an important role in the lives of every human on earth. “Wherever there is a packaged product, there is packaging waste”. Packaging waste has created an increasingly significant harm to the environment. The various types of materials used for packaging have several significant adverse impacts on the environment. The main objective of this research is to produce the easiest and most environmental friendly solution to solve the environmental problem of disposal the various synthetic packaging foams which are non-degradable and hard to decompose by using a very simple ingredients. Natural rubber which is latex and eggshell has been selected as main ingredients in making biodegradable foams. The eggshell was crushed into powder using a grinder. The eggshell was added in the latex and poured into the desired mould. The gelled foam was cured in a hot air oven at 105 ^{0}C for 2 hours. The foam was stripped from the mould and washed thoroughly with distilled water to remove excessive non-reacted material. The cured foam was dried in the oven at 80 ^{0}C for 8 hours. After 6 months, we observed our sample by using a scanning electron microscope (SEM). For the natural weathering test, there are formation of cracks and propagation on our biodegradable foams. While for the soil burial no sign of any existence of microbes on the synthetic foam as it is biodegradable and low-cost product. This natural rubber latex foam can be also be work as valuable packaging foam product which can be able repeatedly used compared to the synthetic packaging which is petroleum based that will run out one day in the future.

Keyword: *Foam, biodegradable, scanning electron microscope*

ID: 03

OIL PALM FRONDS ECO ENZYME (EzcOPF)

Azainora Binti Ahmad, Ikmal Danel Bin Roslan, Nur Danisha Binti Shahiban, Muhammad Ameerul Aqief Bin Jefere, Nurul Amiratul Athurah Binti Abdul Hisham
azainora@smskb.edu.my
SM Sains Kepala Batas

ABSTRACT

Elaeis guineensis or oil palm is one of the most cultivated commercial plants and the most important product form Malaysia that helped to innovate our agriculture and economy. The high amount of palm oil used in industries have contributed to major biomass waste issues. One of the wastes is the fronds of the palm oil. Thus, this study aims to maximise the utilisation of oil palm fronds (OPF) waste which contain high amount of simple sugar, it's radical scavenging (antioxidant) activity in promoting anti-aging, it's sugar as a substrate to be fermented with organic waste to produce OPF enzyme (EzcOPF). The objectives include the OPF sugar and OPF waste as main source of substrate to produce EzcOPF, highlighting the advantages of OPF as an alternative to existing cleaning agents and also to maximize the utilization of OPF to avoid wastage of biomass. The OPF sugar was profiled using High Performance Liquid Chromatography (HPLC) analysis. The efficacy of their antioxidant activity was conducted via DPPH (2,2-diphenyl-1-picrylhydrazyl) radical scavenging assay. Gallic acid was used as the standard and the result was expressed in the percentage of radical scavenging activity (RSA). From HPLC results, it showed that the concentration of qlucose in OPF (6.7%) is higher compared to other commercialised sugar [sugar cane (2-4%) and nipa palm (0.13%)]. The antioxidant study showed that OPF juices yielded higher activity in water (34.67%) compared to ethanol (27.37%). From our Cleaning Efficacy Test, we found that our EzcOPF is also comparable to other existing cleaning agents in cleaning the dirt (oil and mud). The OPF juice and OPF sugar is a highly potential substance that acts as a substrate to produce OPF enzyme. Based on that, the novelty of OPF eco Enzyme is that it is produced using OPF sugar and OPF waste instead of domestic waste (pineapple, papaya and apple skin). This product is made with 100% organic OPF waste which is safe for daily use,. From HPLC analysis, it is proven that OPF syrup has the potential to be a commercialised sugar with many advantages. OPF shows the highest antioxidant capacity compared to other commercialised sugar, which promotes the anti-aging activity. Thus, OPF enzyme produces from OPF waste and OPF sugar can be used as a multipurpose eco-friendly cleaning agent to clean traces of oil, grease, stain and dirt, reducing irritation to users like people that are sensitive to chemicals and act as an additive to improve the cleaning efficacy of the existing soap/ detergent. Apart from being a household cleaning agent, EzcOPF can also generate extra income for society like oil palm farmers as our product has a potential to be commercialized because Malaysia has unlimited sources of OPF with lower cost of raw material (OPF waste) and lower investment cost (traditional method). Conclusion, if we are able to utilise the waste to a better purpose instead of just leaving it to rot after the harvesting season, we can generate additional income for the country and at the same time provide a greener future for our country's oil palm plantation sector.

ID: 04

BIO-DRESSING: FABRICATION OF ELCTROSPUN NANOFIBROUS WOUND DREEINGS FROM BIOMASS WASTES FOR ULCER AND WOUND TREATMENT

Joel Pang Kai Chen, Dannisa Naneng binti David, Emily Grace Chan Shu Yen
joellpang@gmail.com
SMK Batu Lintang, Kuching

ABSTRACT

Malaysia is notorious for having one of the highest rates of diabetes in Asia, and one of the highest rates in the world, nest to Saudi Arabia. (Thea Star, 2018). This study aims to investigate the efficacy of using biomass wastes as precursors to fabricate novel nanofibrous wound dressings to be applied in the medical field via electrospinning. The goal of the investigation is to aid the treatment of ulcers and wound which result in mass epidemics using natural and economical methods. Experiments will be carried out to find types of biomass wastes which possess anti-bacterial properties and characteristics of biopolymers such as fish scales, prawn shells, bamboo calm shells, and chicken feet. Further studies will involve testing of the effect of the increase in voltage and flow rate on the rate of electrospinning and the optimum concentration of biomass wastes to solvent in order to produce optimum nanofibers. Lastly, the biomass wastes will be compared with commercial wound dressings in terms of their efficacy in inhibiting the growth of microorganisms. Commercial bandages not only are non-biodegradable but have also exhibited low oxygen exchange rates and with lower anti-bacterial capabilities. Unfortunately, conventional wound dressings like gauze only possess limited basic functions. Biomass wastes are excellent option as wound dressings to be applied in the biomedical filed as they are natural, biodegradable, non-toxic and possesses anti-bacterial properties. The precursor material are abundant and cheap. When applied in the biomedical sector, biomass-waste derived nanpfiber wound dressing will result in better healthcare and treatment for patients. Therefore, biomass waste are promising alternatives to wound dressings with anti-bacterial properties and enhanced oxygen exchange rates. These nanofibrous wound dressings have high potential for biomedical applications for the treatment of diabetic ulcers and cellulitis to increase the quality of healthcare and hence contribute towards economical growth of the country.

ID: 05

CHARICA+ BIOLARVICIDE

Noor Azmah bt Abd Wahab, Airene Najiha bt Azhari, Amierah Khairein Hannan bt Azhari, Ftahin Natasha bt Hashim, Nur Raihanah bt Ismail, Wan Aisar bt Wan Aziz
nazmah.wahab@gmail.com.my
SMK Bukit Rangin, Kuantan, Pahang

ABSTRACT

Dengue and dengue hemorrhagie fever are caused by a dengue virus, which are transmitted to humans through the bite of infected adult *Aedes sp*. mosquito. Nowadays it is much preferable of using chemical such as abate to kill the larvae of *Aedes sp.* This is because it is easier to be found and purchase. Charica+ is the first biotechnology-environmental friendly made up from the extract of papaya seeds and lime peel. It is very practical integrated equipment to kill the larvae of Aedes sp. in order to have the healthy and comfortable environment. Charica+ is the procedure of killing mosquito larvae to prevent dengue cases from increasing. Papaya seeds and lime peel which often goes as bi-products has been proved contain phytochemicals such as alkaloids, saponins, flavonoids, tannins, polyphenols, essential oils and limonide that can act as larvicide. The objectives of the invention is to use papaya seed and lime peel as natural, safe and eco-friendly larvicide, to investigate the effectiveness of the combination of papaya seeds and lime peel extract to kill the larvae of Aedes sp in various concentration and to reduce the high rate of dengue fever in Malaysia. This product is economically practical and easily handled without causing any side effect to mankind and can be the alternative to reduce the high rate of dengue fever in Malaysia. It is contain no artificial chemicals and it is produced from natural materials. Using plant based larvacidal may be toxic to insects and mosquito but they do not pose any adverse effects to the environment and humans. The using of biolarvicide has many advantages. It can be biodegradable, thus can reduce the pollution of water and soil. Beside, biolarvicide has low toxicity towards human and mammals. The market for this product is large due to the increases of dengue cases in Malaysia.

ID: 06

SYNTHESIS AND PURIFICATION OF WASTE COOKING OIL INTO BIOFUEL USING BIOMASS ACTIVATED CARBON TOWARDS A SUSTAINABLE ENVIRONMENT

[1] Chloe Wong Kai Lin;[2] Teoh Yoong Ler;[3] Lau Ying Xin;[4] Ong Wei Ji
Komathy Veerasinghan
Komathy211@gmail.com
SMJK Ave Maria Convert Ipoh

ABSTRACT

Because of rapid fossil fuel depletion, increasing future energy demand, the global warming and climate change due to the exhaust emission of the fossil fuel, search for finding the alternative solution regarding the energy has been put forward. Presently, petroleum meets around 98% of the entire demand in transportation sector and it is accountable for the harmful CO 2 , NO 2 , HC and particular matters thus resulting the global warming at an alarming rate. Study report shows that the transportation sector is responsible for the global warming of about 13.5%.Global CO 2 emissions increased from 21000 million tonnes in 2000 to 30276.1million tonnes in 2019. Transportation sector is one of the major components of globalization and makes a vital contribution to the economy. Furthermore, it plays a crucial role in daily activities around the world. Unfortunately, this activity consumes major energy and uses most of the limited non- renewable energy creating a negative impact on living environment. The ultimate aim of this study is to develop biomass activated carbon (BAC) derived from agricultural waste namely: - sugarcane bagasse, coconut husk and banana peel is tested as a heterogeneous catalyst in the transesterification of waste cooking oil (WCO) with methanol to produce biofuel. BAC was characterized using scanning electron microscope (SEM) and Fourier transformed infrared (FTIR). The effect of different operating parameters, namely operation time (30, 60, 120 and 180 min), alcohol-to-oil molar ratio (4:1, 6:1, 8:1 and 10:1) and catalyst loading [0.5, 1, 2, 3 and 5% (w/w)] was investigated. Results showed that increasing the operational time, the alcohol-to-oil molar ratio and the catalyst loading increases the production of biofuel. The optimum conditions were found to be 2 hours of heating, 1:6 alcohol-to-oil ratio and 1 w/w % catalyst loading. Under optimum conditions, the conversion to biofuel reached 97.3 % for the waste cooking oil synthesized and purified with NaOH/BAC. The properties of the obtained biofuel characterizes such as density, viscosity, flash point, pour point and cloud point were measured giving promising results.

ID: 07

2 IN 1 SUNGLASSES

Muhammad Harith Haikal, Muhammad Lutfan, Dania Zulaikha, Eisya Maryam Noor, Asmaa
SM Sains Tapah

ABSTRACT

Bad guys sneaking behind innocent victims. For example, you are walking alone and someone is following you but you don't know it. Then that person pickpockets you. With this glasses, it can prevent that from happening. Problem statement this situation is hard to see what's behind us. The objectives to make glasses that can look front and back. Also to protects our eyes from sunlight. The benefits to the society with 2 in 1 sunglasses, get to decrease the rate of pickpockets and help bikers see behind them. Which 2 in 1 sunglasses also can helps the user to be aware of their surroundings, keep users' belonging safe, and the users feels more comfortable in public and abandon place. This product has commercialization potential like has more benefit than regular sunglasses and also suitable for all ages.

ID: 08

Backpack Organizer X

Clement Lau Jing Juang, Jeremy Ling Sing Ang, Patrick Chew Soon Ming, Wong Kuing Gah, Chan Chew Wair
Cccwair@Hotmail.Com
SMK Sacred Heart Sibu

ABSTRACT

From the feedback from students in SMK SACRED HEART SIBU, their backpacks are always in a mess no matter how hard they try. Most of them are frustrated, still facing difficulties in keeping their things organized. There are several problems reached out to us. Firstly, how to get the most out of the backpack storage? Secondly, how to save time on searching for stuff? Thirdly, how to make improvements over the ordinary backpack? Therefore, we have come up with a lifesaver, BACPACK ORGANIZER X. BACKPACK ORGANIZER X is made from the corrugated plastic board, plastic files, pushpin and pins which is quite common in daily life. This project is designed to get users' backpacks organized at ease to leave a good impression to other besides preventing cringe when scrabbling around in the bag for stuff. This project can assist the user to find his/her desired stuff in right place easily. Moving onto the social aspect, our country's economy can be bolstered up if all the citizen minimize their time wasted on scrabbling for stuff as a means to maximize their productivity. This invention has high commercialization potential in the future because it is highly compatible with any backpacks. It is also customizable as it comes with three colour options: red, green and blue colour. Adjustability is also another vital selling point because its X-mechanism is flexible for users to decide how the orientation of their backpacks is based on the needs. There is so far no award/recognition received for this newly invented project.

ID: 09

POSTURE RECOGNITION CHAIR (PRC)

Nurul Syazwani Ismail, Wan Muhammad Haziq Wan Sallehuddin, Muhammad Israq Salmi, Nur Dalilah Nasir, Irdina Aisyah Mohd Sani
iSekolah Menengah Sains Kepala Batas, 13200 Kepala Batas, Pulau Pinang

ABSTRACT

Good posture can help us in many ways such as stand, walk, sit, and lie in positions that place the least strain on supporting muscles and ligaments during movement and weight-bearing activities. Based on research conducted by Columbia Asia on 2020, there are many side effects when we are practicing bad posture in our daily life. The study showed 15.3% of the overall study population and 32.6% of those aged ≥71 years had osteoporosis. The prevalence of osteoporosis among women (18.9%) was higher than men (11.5%).Since COVID-19 pandemic has made a lot of Malaysian conduct their work at home and home based learning, Posture Recognition Chair (PRC) would come in handy to improve our posture from getting other health issues such as scoliosis. There were 3 phases in this study which are; The Preliminary study, The Design and Development and Evaluation Phase. A preliminary study was conducted to observe sitting posture in our community. The study showed that 60% of the respondent were unaware of their sitting posture. From this findings, the PRC was designed and developed as an alternative to reduce the problem of bad posture, neck and back pain and numbness. The product came with the sensor to make a beeping sound when it recognizes the bad posture within 30 seconds. By that, it alerts users to sit in proper way. It will lessen the probability of bad posture among users and encourages a better posture. PRC also is convenient, affordable, and easy to install and carry and foster awareness of the users. PRC also has been tested among users and the findings showed that after using PRC, amount of users suffered from back pain and neck strain caused by bad posture has decrease by 40%.It showed that PRC can helps users to decrease back pain problem. For future planning, PRC is proposed to be commercialized through health chair manufacturing factories, websites, social media and through health campaigns. We believe that this thing does seem simple but has a big impact in the future.

ID: 10

INTELLIGENT CIGARETTE SMOKE DETECTOR

Anastasia Myskina Binti Abdullah, Nabilah Tee Binti Mohd Hakim Tee, Pearly Chan Yee Han, Wong Tian Xian, Miithiilesh A/L Sivan
SMK Tun Fatimah Hashim

Smoking among students in the school in Malaysia is very worrying. According to the Malaysian Ministry of Health (KKM) through the Oral Health without Smoke (KOTAK) programme last year, about 68,321 secondary school students were detected smoking. This number is very worrying and if it is not cured, it will get worse. Therefore, INTELLIGENT CIGARETTES SMOKE DETECTOR (ICSD) is one alternative to overcome this problem. ICSD was built to reduce the problem of students who smoking in school compound especially in the toilet. If the students got arrested, they will be sent for counselling to quit smoking. ICSD is build using Arduino technology and GSM module 900A. This combination of technologies allows ICSD to detect cigarette smoke and send a short message service (SMS) to the smartphone of the discipline teacher. This amazing product can bring lot of advantages to everyone in this school especially to the discipline unit.

ID: 11

EASY MACHINE

Muhammad Faris Akhtar, Wan Muhammad Ammar, Muhammad Ikhwan Anas, Adam Elias, Wan Muhammad Amir
SMKA Wataniah, Jerten Terengganu

ABSTRACT

Nowadays most people do not carry cash however they carry cards like credit cards and debit cards. Consumers have problems when they want to use vending machines because they do not carry coins or cash. Our objective is the product can be used by debit card users. Through an inventive problem solving process, mechanical design and electrical design were selected to be combined to produce the EASY MACHINE product design. . This product has also received positive feedback from users who have tested this product.

ID: 12

FISH FEEDER AUTOMATIC

Wan Mariana binti Wan Mansor [1]*, Nur Ain Sofea Iqlima binti Mohd Baharuddin [2], Alya Syafiqah binti Aladin@Syukri[3] dan Ridwana Rifiah binti Azaha[4]
Sekolah Menengah Kebangsaan Agama Wataniah
mariana@namesnaw.com

ABSTRAK

Kegiatan perikanan merupakan satu bidang yang tidak asing lagi bagi masyarakat dek kerana bidang ini telah berkembang luas. Tambahan pula, dalam era yang mengutamakan pembangunan dan produktiviti masyarakat, setiap detik dan saat amat penting sehinggakan ada pepatah Melayu yg mengatakan bahawa masa itu emas. Demikian itu, aspek inovasi dan teknologi telah menjadi titik tolak bagi setiap bidang yang diceburi, termasuklah bidang perikanan. Didapati bahawa individu yang mengusahakan kegiatan perikanan seringkali mengalami masalah terlupa memberi makanan ikan dan makanan ikan diberikan secara tidak teratur. Menerusi kajian yang dilakukan, masalah tersebut muncul disebabkan individu terlalu sibuk dengan kerja dan rutin harian yang sangat padat. Berkaitan masalah tersebut, kami telah mencipta satu produk inovatif yang dapat mengganti peranan tenaga manusia sekali gus menjimatkan masa pengguna. Produk itu dinamakan 'Fish Feeder Automatic' yang mana menggunakan aplikasi teknologi, iaitu reka bentuk mekatronik. Fish Feeder Automatic juga disokong oleh aplikasi digital, iaitu magnetcode. Menerusi kajian penggunaan Fish Feeder Automatic ini, ramai pengguna telah memberi maklum balas positif memandangkan produk ini dapat berfungsi secara automatik dan dapat dikawal dalam jarak jauh melalui akses telefon pintar. Oleh yang demikian, produk yang dihasilkan dipercayai akan berjaya menarik minat dan mendapat sambutan dari para pengguna sekiranya berjaya dipasarkan dalam pasaran disebabkan ia ialah produk mesra alam sekitar dan harga yang mampu milik.

Kata Kunci: automatic, mekatronik, magnetcode, mesra alam

ID: 13

SCHOOL-SCALE MICROBE BIOREACTOR KIT: INTRODUCING FERMENTATION TECHNOLOGY TO THE SECONDRY SCHOOLS

Luqman Hakim Ahmad Firdaus [1], Assaiyidah Aisyah Faisal [1], Wan Abd Al Qadr Imad Wan Mokhtar [2], Rahayu Ahmad [1*]

[1] *Halal Action Laboratory, Kolej GENIUS Insan, Universiti Sains Islam Malaysia, 71800, Nilai, Negeri Sembilan, Malaysia*

*Corresponding author: rahayu@usim.edu.my

ABSTRACT

The declining number of students interested in Science, Technology, Engineering and Mathematics (STEM) based on the Bett Asia Leadership Summit and Expo 2019 in Kuala Lumpur poses worry towards the future of research and development in Malaysia. Coinciding with Chapter 6 of Form 5 Science Subjects related to food technology and manufacturing, the development of this knowledge was shifted to kit- bioreactor innovations that apply microorganism fermentation technology in the production of food products such as cultural beverages, antibiotics, food preservatives and even pharmaceutical products such as vaccines and alcohol. This innovation aims to increase the transfer of knowledge among secondary students in the field of biology and biotechnology by creating a school-scale microbial bioreactor kit (ScMBK). ScMBK is a laboratory-scale bioreactor functioning with the fundamental parameters of industrial-scale bioreactors (airflow, impeller) which easily demonstrate microbial growth to secondary school students. Based on verse 10:61 in the Al-Quran, Allah stated that He controls the microorganisms invisible to the naked eye up to the atomic level proven since the creation of the microscope. Previous research reported the importance of microorganisms and fermentation technology in human product development. The introduction of microorganism and fermentation technology is easily understandable by conducting exhibitions and demonstrations towards secondary school students using the invented ScMBK. ScMBK is an efficient approach to attract high school students to endeavor in the science stream and enhance the interest in the biotechnology research field. The assembly of ScMBK includes materials needed, media preparation, sterilization techniques, installation, and maintenance. The process throughout the methodology of the project involves the reproduction of ScMBK where the replication of microorganisms such as bacteria and mushroom mycelium take place. Monitoring techniques and sources of contamination that may affect the cultivation of microorganisms in the ScMBK.

Keywords: *Bioreactor-kit, secondary schools, fermentation technology, microorganisms*

ID: 14

HYGIENIC TRAVEL SOAP FROM DABAI FRUITS OIL

[1]Nur Husnina Muhanurul, [1]Nur Fatin Nabilah Faizul Azuar, [1]Liyana Amalina Adnan, [1]Rahayu Ahmad

[1]Halal Action Laboratory, Kolej GENIUS Insan, Universiti Sains Islam Malaysia, Bandar Baru Nilai, 71800 Nilai, Negeri Sembilan, Malaysia

Corresponding author: liyanamalina@usim.edu.my

ABSTRACT

Malaysia is truly one of the blessed countries in this world as it is enriched with tropical and beneficial fruit such as Dabai fruit (Canarium odontophyllum) which can be prominently found in Sarawak. Dabai fruit has been extensively studied and utilized for health and beauty, owing to its richness in antioxidant compounds. However, there has been no report on the utilization of Dabai fruit for production of soap. In this research, pure oil of Dabai was successfully extracted using rotary evaporator and mixed with NaOH for saponication (soap-making) process. The characterization of antioxidants from Dabai fruits oil was conducted using attenuated total reflectance-Fourier transform infrared spectrometers (ATR-FTIR). Dabai fruits oil soap was designed like a small ball size to avoid spreading of germs between users and to optimize the coverage area during hand-washing as it can be rolled in between fingers. Moreover, the soap has been innovated with fast-dissolving feature to facilitate hand washing activity with no residue. This can also create a portable and user friendly soap for people to enhance frequent hand-washing culture during travelling.

Keywords: *Canarium odontophyllum*, travel soap, antioxidants

ID: 15

BIODEGRADATION OF METHYLENE BLUE DYE BY TRICHODERMA RESEI SP

[1]Damia Izani Rizaimi, [1]Liyana Amalina Adnan, [1]Rif'ah Sahira Sazali, [1]Rahayu Ahmad
[1]Halal Action Laboratory, Kolej GENIUS Insan, Universiti Sains Islam Malaysia, Bandar Baru Nilai, 71800 Nilai, Negeri Sembilan, Malaysia
Corresponding author: liyanamalina@usim.edu.my

ABSTRACT

Trichoderma reesei sp is an anamorph fungus that is vitally used in industry as it secretes cellulase, an enzyme responsible for degradation of cellulose which makes fabric such as jeans soft and comfortable to wear. Therefore, in this research, *Trichoderma reesei sp* has been used for degradation of methylene blue and the results recorded high rate of mycelium growth of 100% and 100% of methylene blue biodegradation by day 6 in culture medium. Since methylene blue dye exhibits harmful and toxic properties which its disposal could lead to water pollution, fungi treatment is found as most immaculate compared to other technologies in our current timeline. Agar medium was prepared in the laboratory which consists of glucose (20g/L) and nutrient agar (20g/L). At a subsequent time, liquid medium was prepared by adding 20 g/L glucose, 20 g/L yeast extract, and 50 mg/L of methylene blue into distilled water to calculate the percentage of methylene blue dye biodegradation before proceeding with the effect of physico-chemical parameters analysis in terms of concentration of carbon source and nitrogen source. By keeping pH 8 and temperature of 37ºC constant, the optimum concentration of carbon source (5mg/L, 10 mg/L, 15mg/L, 20mg/L, 25mg/L, 30mg/L) is determined by contrasting the concentration corresponding to nitrogen source determination. Methylene blue biodegradation in optimum conditions was then analysed using UV-vis spectrophotometry. The biodegradation of methylene blue ensures sustainability of ecosystem in water, thus preserving our environment for future generation. This research has been presented at Insan Junior Researcher International Conference 2021 (IJURECON 2021)

Keywords: Methylthionimium chloride, mycelium growth, biodegradation, physico-chemical parameter

ID: 16

SAM (SIMPAN-KEEP, AGIHAN-DISTRIBUTE, MEMEGANG-HOLD)

Tan Xin Thung
SMK Green Road (Kuching, Sarawak)

ABSTRACT

SAM was invented to perform three major carpentry workflows in one tool. Carpentry works often require finding the correct size of screw or nail, distribute it to the position and drive the screw while holding the screw threads with own hands; or holding the nail with own fingers while hammering the nail with other hand.

ID: 17

BUBBLE BLAST POP

Asiah binti Jusoh, Nur Aisyah Saadah Binti Ismaizam, Norsyafiqah Binti Ahmad Azizi, Nur Ghinaa Faadiyah binti Eza, Nur Liyana Dahiyah Binti Mohd Rizal, Balqis Batrisyia Hadizam
[1]*Bukit Rangin Secondary School, 25150, Kuantan, Pahang*

ABSTRACT

The excessive usage of non-biodegradable materials ought to be avoided to safeguard the environment as they do not break down easily. Studies have shown that glasses and plastics have been widely used by people around the globe nowadays. Biodegradable materials with high composition of chemical components namely sodium alginate and calcium lactate promise the users the best solution to the current issue. Therefore, the aims of this project are to raise people's awareness about the benefits of calcium lactate as well as to encourage people to use eco-friendly products that are safe to be used in daily lives. In this project, the edible bubble is formulated by combining calcium lactate, sodium alginate and water to avert and replace the use of glass bottles in perfume production and plastics for toothpaste and hand sanitiser productions, which subsequently bring numerous benefits to our health. Edible bubble is used to produce organic toothpaste by mixing it together with baking soda, essential oil, salt, turmeric, and lavender. Besides, organic and non-alcoholic perfume is created by mixing. Meanwhile, sanitiser is produced from the combination of edible bubble, aloe vera gel, cinnamon, clove, rosemary, eucalyptus essential oil, and any flavour essential oil that fits the mood. These products can easily be used and everywhere and any time and they can burst easily by squeezing them. Besides, they are long-lasting, eco-friendly and suitable to be utilised for all ages and genders with multifunctional uses. These products lead to green consumption and great environment sustainability with numerous benefits in the future.

Keywords: sodium alginate, calcium lactate, biodegradable, eco-friendly

ID: 18

MAKING AIR CONDITIONERS MORE SUSTAINABLE

Sofea Ain Nanne
Sri Tenby Penang

ABSTRACT

I will be using a split unit air conditioner to present my ideas. I will be harnessing water and electricity from the split unit air conditioner to make it more sustainable. Harnessing electricity from Kinetic Energy (DC), Thermal Energy (TEG) and Condensation

ID: 19

GREENTORS: A GREEN CORROSION INHIBITORS

[1]Alyaa Amani binti Nezrul Hisyam, [2]Hanis Hayani binti Hasnizam, [3]Kamil Zharfan bin Mohd Azmi, [4]Ahmad Is'ad Hafiz bin Mohamed Faizal, [5]Nursyazlien Eryna binti Junaidy
Advisor : Mdm Asnor Samiza binti Mohd Salleh
SMK Bukit Rangin, Kuantan, Pahang

ABSTRACT

Corrosion is deterioration of metals due to spontaneous electrochemical reactions. In many industries, mild steel is one of the most preferred materials due to its availability for many applications and the cost is relatively low. There are different methods to prevent the corrosion of mild steel, among which the addition of chemicals called corrosion inhibitors is the most economical way. Many of the available commercial inhibitors used in various corrosive media are highly toxic. Some of them have been reported as carcinogenic. In view of these observations there exists a need for development of eco-friendly (green) corrosion inhibitors. Henna leaves and domestic waste are being used as corrosion inhibitors and named as GreenTors. Henna consists of four main constituents which are Lawsone, gallic acid, D-glucose and tannic acid. These four constituents combine with active compounds from outer brown peels of onion (Allium cepa) and orange peels (citrus sinensis) could act with the metal cations and absorbed on the metal surface to protect the metal from corrosion attack. The extracts from Henna leaves were found to be cheap, environmental friendly and good corrosion inhibitors. The recycling of this domestic waste such as onion and fruits peel into valuable product would offer economic and environmental benefits. Newly green inhibitors to improve the corrosion activity especially for mild steel applications. The objective of this invention is to investigate the performance of GreenTors as anticorrosion agent. This product is natural plant and domestic waste, low cost, environmental friendly, biodegradable and can be mixed with paint to form coating agent. The development of green and biodegradable corrosion inhibitors is a promising alternative. Natural products, in addition to their environmentally friendly and ecologically acceptable nature, are inexpensive and readily available. They do not contain heavy metals or toxic compounds.

ID: 20

COGON-OSE

Tan Zi Shan, Yogarajan A/L Rammudo, Pem Zhi Xuan, Teo Min Ru, Sow Xin Yi
SMK Dato' Bentara Dalam

ABSTRACT

Cogon grass is an invasive and non-native plant that mainly consists of sharp leaves and rhizomes which grow under the soil. It's rapid production of seeds and rhizomes allows it to spread throughout a large area quickly. Nowadays, the overgrown cogon grass affects the appearance of the environment. The society has to spend a lot of money to remove it. However, we believe that throwing away cogon grass is a waste of natural resource. This is because cogon grass stores water, sugar and nutrients in its rhizomes underground for survival. We believe that we can utilize the rhizomes of cogon grass as the source of sugar production. Thus, in this project, we are going to discuss the possibility for us to extract sugar from the rhizomes of cogon grass and could this sugar overcome the negative impacts of cogon grass to the society?

ID: 21

E_Z MASK

Dr.Deviki Muniandy, Sam Hui Ying, Yeat Jing Rong, Azah Juneena Binti Ahmad and Loi Huang Bin
SMJK Ayer Tawar, Ayer Tawar, Perak

ABSTRACT

The coronavirus-19 (COVID-19) pandemic has created serious challenges to global health (Esposito, 2020). Masks have been recommended as a potential tool to tackle the COVID-19 pandemic since the initial outbreak in China (Wang, 2019). Evidence exists that the use of face masks prevents contracting and transmitting COVID-19 (Chu, 2020). Surgical face masks and N-95 face masks are effective, but cloth face masks have been recommended for use by the general public in order to preserve the supply of surgical or N-95 masks for medical personnel (Esposito, 2020). Wearing surgical masks in public could help slow COVID-19 pandemic's advance; masks may limit the spread of diseases, including influenza, rhinoviruses and coronaviruses (University of Maryland, 2020). Tight-fitting N95 respirator has filtering capacity superior to surgical masks, they have lower breathability and may cause discomfort after hours of wearing. The surge in demand for surgical masks and respirators has led to a global shortage of supply and raw materials. As a result, many people have resorted to making their own masks, recycling used masks, or settling for masks offering less protection than actually needed. Researchers and industry players have therefore been working hard to address the issue of shortage, as well as to enhance the protection afforded by existing mask models (Chua, 2020). The measures to prolong life of disposable masks, and the invention on reusable masks should be encouraged (Feng, 2020). In order to that, this innovation aim to develop face mask from the plant waste and inserted various flavours. This innovation provide the environmental friendly face mask and also enjoyment to have the smell in their face mask. In addition, it provides opportunity to make own face mask easily and cheap. Users can enjoy the flavour/ smell. The flavour provided are good for breathing system. No artificial elements mixed. Users also can try to produce their own (Manual preparation will be given). Environmental friendly which is using green technology. Easy to prepare by all. Can help from transmission of diseases. Naturally prepared. So no harm. "Do it yourself" face mask should be encourage to all to make sure the spread of any diseases can be prevented with their own effort.

ID: 22

E-FLEXI GREEN COOKER

Chung Se Meang, Boon Shu Ting, Chong Sio Wen, Low Yan Chun, Liew Jie Kang
SMK Lake

ABSTRACT

E-Flexi Green Cooker is an effective, easy to use, eco-friendly and flexible green cooker that is made up of simple and recycling materials such as paper box, coconut fibre and kapok. It apply science concept such as principles conservation of energy, reflection, refraction and greenhouse effect that harness the sun ray and use them to create a source of heat to cook food and drink in short time.

ID: 23

XCELLENT LUMIBRITE

Chung Sze Meang, Celeste Trinity Anak Nathan, Grace Liew Jia Xuan, Emmanuel Anak Patrick, Bertrand Conna Anak Ignatius Felix
SMK Lake

ABSTRACT

Xcellent Lumibrite is a specially designed device to supply alternative light source at any time at home. This device is made up of drum light, parabolic reflector, extendable stand, heavy base and simple circuit with solar cell. This lamp can be used as creative table lamp which the user able to change the drum light and the cover of base based on their needs, favourites or festivals. In addition, it also can be a blackout kit during power failure and torch light to light up deep down narrow area. This innovation is based on the concept of reflection and refraction. The height of light source can be adjusted to provide a bigger surface area of brightness.

ID: 24

X-SHAKE

Joyce Puyang Maurice Utap, Kong Xiu Ying
SMK Merbau, Miri

ABSTRACT

Based on our personal experiences and interviews with some students at our school, we found out that most of the school chairs and tables are shaky due to the uneven flooring. The students complained that shaky table and chair cause them to lose focus in class, especially when they need to jot down notes quickly. They also claimed that they felt discomfort in their necks and shoulders as they had to sit in a rather fixed position to prevent the chairs or tables from shaking. According to an article published in “Work: A Journal of Prevention, Assessment, and Rehabilitation,” senior lecturer on ergonomics and safety at Harvard University, Jack Dennerlain said that shaky chairs and tables cause long term problems for students, such as permanent neck and back damage, headaches and an eventual lack of focus.

ID: 25

MINI FOLDABLE SAFETY LOCK

Chung Sze Meang, Grae Liew Jia Xuan, Caleste Trinity Anak Nathan, Douglas Chai Jing Cheng, Rachel Chai Juen Yaw
SMK Lake

ABSTRACT

Mini Foldable Safety Lock is one of the device which can be used for deadbolt and lever door lock when the user especially women and children need second protection and avoid the problems of intrusion when they stay alone at home, hostel or hotel. The Mini Foldable Safety Lock is made up of plastic material, polystyrene, acrylic and magnet. This safety lock can be folded into smaller size and it is portable, adjustable, easy to use and are able to use at anywhere.

ID: 26

PLANTYPOST-SMART COMPOST FERTILIZER

Ayu Zerlina Zamzuriadi, Aina Fatanah Mohd Dzulfathi, Athirah Ridzuan, Ahmad Illyas Akashah Mohd Ifaizal, Jazmina Aishah Rahmat
SMK Bukit Rangin

ABSTRACT

The role of fertilizers in food production is usually underestimated. Fertilizers are food for plants. Fertilizers replace the nutrients that crops remove from the soil. Without the addition of fertilizers, crop yields and agricultural productivity would be significantly reduced. Chemical fertilizers are being used in higher amounts in order to increase the crop yield. Therefore, the use of chemical fertilizers as the main source area of the garden has been used up to now increasingly expensive. Unfortunately, the usage of chemical fertilizers has led to several issues such as serious soil degradation, nitrogen leaching, soil compaction, reduction in soil organic matter, and loss of soil carbon. This has made the environmentalists to switch over to organic farming. Organic farming is the production of unpolluted crops through the use of biofertilizer and biopesticides which provide optimum nutrients availability to plants, keeping pathogens and pest in control. Composting has been used as a means of recycling organic matter back into the soil to improve soil structure and fertility. The composting process has received much attention in recent years because of pollution concerns and the search for environmentally sound methods for treating waste. Composting aims to stabilization of waste for land filling, volume and mass reduction of solid waste and return of organic substances to the natural cycle. Plantypost - Smart Compost Fertilizer is a kind of fertilizer that has been produced from the decomposition of organic materials. Plantypost is a vary among compost fertilizer in Malaysia because it was made from salvinia plant. Materials used ratio 1 (sawdust): 1 (hay): 1 (salvinia fresh): 0.5 (land). Salvinia is a kind of plant that ignored and dislike by the farmer because of its effect on the aquatic ecosystem. The present of Salvinia in the ecosystem had decrease the underwater oxygen rate and sunlight. Salvinia was chosen as the main ingredient as it had high micronutrients elements, especially potassium (1.20% nitrogen, 0.100% phosphorus and 4.10% potassium). The quality of compost at 50 days after fermentation contained nitrogen, phosphorus, and potassium contents of 1.34, 0.100, and 5.50 percent, respectively. Plantypost helps farmers by reduce the cost of purchase of chemical fertilizer. Plantypost is very practical integrated equipment to increase the plant resistance to pest, fungus and other decease in order to have the healthy and comfortable environment. It is contain no artificial chemicals and it is produced from natural materials. The market for this product is large due to the expand of domestic and industrial area in Malaysia. Plantypost adds nutrients to the soil, introduces valuable organisms to the soil, reduces landfill waste and good for the environment. Plantypost also act as pollution remediation and prevention.

ID: 27

A GREEN WAY TO PREVENT DENGUE USING CURRY LEAVES

Arianna Sofea Armi, Muhammad Hafiz Azrai, Alieya Natasha, Nurul Qistina, Syed Naquib
Sekolah Menengah Kebangsaan Abdul Rahman Talib Jalan Alor Akar Kuantan 25250 Pahang, MALAYSIA
Advisor: Mohd Rozali Bin Senik
Email: rozali@smart.edu.my

ABSTRACT

According to World Health Organization (WHO), Malaysia has recorded a total of 2013 dengue cases with 92 deaths in 2016 compared to a lower number of dengue cases in 2015. This increasing trend is an alarming concern to the country. Therefore, action should be taken in controlling the disease by controlling the vector. Larvicidal is an insecticide that is specifically targeted against the larvae stage of an insect. Even though there are numerous researches on the usage of natural products for eradicating mosquitoes, the larvicidal effect of curry leaves essential oil on mosquitoes have never been reported. As such, the main objective of this study is to determine the larvicidal effects of curry leaves essential oil on Aedes aegypti. The leaves of the Murraya koenigii (curry leaves) were collected from a local orchard in Kuantan and were hydrodistilled for 6 hours using Clevenger type apparatus. Stock solution was prepared by dissolving the essential oil with ethanol and from the stock solutions, different test concentration of 10 ppm, 50 ppm, 100 ppm and 200 ppm were prepared. The larvicidal activity tests were carried out according to the standard WHO procedure. Twenty five third instar larvae were released in 150ml test solution and control simultaneously. The larvae in each solution were then left for 24 hours and 48 hours and numbers of dead larvae were counted. A hundred percent mortality was achieved at 200ppm after 24 hours and at 100 ppm after 48 hours. Although the curry leaves showed larvicidal effect against the Ae. aegypti, however no morphological deformities were observed as compared to the positive control (abate). These results indicated that the curry leaves essential oil exhibited larvicidal effects on the larvae of Aedes aegypti.

ID: 28

D-PLANTING POT

Hoong Dao Chuan[1], Eng Sea Han[2], Koh Boon Ping[3], Soh Chee Yan[4], Lee May Yan[5]
[1]*SMK Kamarul Ariffin, Labis, Johor.*
E-mail: kelab.inovasi.semekar@gmail.com

ABSTRACT

Labis, Segamat area is popular with the King of fruit, durians. We can notice that durian trees are standing everywhere at Labis. When durian seasons, almost all the residents will throw the durian peels around Labis such as beside the road or farm, even in the drains you can find the durian peels.This evenly not only will have the effect of the breeding of mosquitoes and flies, but also will emit the unpleasant ordor and carbon dioxide gas into atmosphere, so it may cause the other feel inconvenience and also influence everyone around Labis. Besides, the non-perishable polybags are face in the same problem, some residents in Labis usually will just throw them beside the road or outside the house, so it may defame beautify of environment and Labis's reputation. The aim of this innovation is to reduce the problem of throwing durian peels anywhere and reuse the durian peels to produce the new things. The name of this product is D-PLANTING POT. It is an eco- friendly and biodegrable planting pot made by durian peels. Durian peels contains cellulose and the fibres found in durian peels are rough and tough so its suitable to become a planting pot. The ingredients we use to make D-Planting Pot need to be made into pulp by refining, soaking and grinding. The resulting pulp will be filtered to filter out excess water. Wet pulp will be pasted onto a container to build shape. It is about RM10.00 was required for this innovation project to make the filter. As a result of the innovation, the Pulp is rough and can be make to a planting pot. Although that is hard to build the shape of it, this is worthy to try. This planting pot are biodegradable and perishable. In conclusion, D-Planting Pot can be made from durian peels and can replace poly bag in daily life.

Keyword: *Durian peels, Polybag, D-Egg Holder*

ID: 29

D-EGG HOLDER

Hasya Farwizah Hilfina binti Rosli[1], Rosmalia binti Ibrahim [2], Harresh A/L Ramesh Kumar[3], Nur Akma Shahira binti Mohd Raof[4], Nurul Amira Natasha binti Zaaidi[5]
[1]*SMK Kamarul Ariffin, Labis, Johor.*
E-mail: kelab.inovasi.semekar@gmail.com

ABSTRACT

Labis, Segamat area is popular with durian. We can notice that durian trees are standing everywhere at Labis. When durian seasons, almost all the residents will throw the durian peels around Labis such as beside the road or farm, even in the drains you can find the durian peels. This problem not only will cause the breeding of mosquitoes and flies, but also will emit the unpleasant ordor and carbon dioxide gas into atmosphere, so it may cause the other feel inconvenience and also influence everyone around Labis. Besides, the non-perishable paper or plastic egg holder are face in the same problem, some residents in Labis usually will just throw them beside the road or outside the house, so it may defame beautify of environment and Labis's reputation. Hence, the aim of this innovation is to reduce and tackle the problem of throwing durian peels anywhere and also reuse the durian peels to produce the new things.The name of this product is D-EGG HOLDER. It is a eco-friendly egg holder that made of durian peels. Durian peels contains cellulose and the fibres found in durian peels are rough and tough so its suitable to become an egg holder. The ingredients we use to make D-Egg Holder need to be made into pulp by refining, soaking and grinding. The resulting pulp will be filtered to filter out excess water. Wet pulp will be pasted onto a plastic egg holder to build shape. It is about RM10.00 was required for this innovation project to make the filter. As a result of the innovation, the pulpsare rough and can be made to egg holder. Although that is hard to build the shape of it, this is worthy to try. This egg holder are biodegradable and perishable. In conclusion, D-Egg Holder can be made from durian peels and can replace plastic or paper egg holder in daily life.

Keyword: *Durian peels, Egg Holder, D-Egg Holder*

ID: 30

USING COMPUTER-BRAIN FOR REHABILITATION PURPOSES FOR AMPUTATED AND PARALYZED PATIENTS

Muhammad Danish Addie Halim1, Chee Yee Heng[2], Nik Ameer Faiq Nik Muhd Aslan[3]
Kolej GENIUS@Pintar Negara, Universiti Kebangsaan Malaysia
m.danish.addie@gmail.com [1], m000869@geniuspintar.ukm.edu.my [2],
nicknaf297@gmail.com [3]

ABSTRACT

The numbers of major amputations and paralysis cases have been on the rise in the late years due to accidents or diseases. This has resulted in the creation of robotic prosthetic limbs for amputees and functional electrical stimulation (FES) technique using TENS machines manually to revive the failed muscles. However, these methods are only suitable for a small amount of targeted community due to the difference in the amount of damage done to the body and the heavy dependence on manual operations. Our research proposes using brain waves to directly control prosthetic limbs and TENS machines (muscle stimulations) in order to produce certain movements. We found this idea to be highly possible and has the potential to further improve the current rehabilitation system. Contrary to current technology that collects impulses from neurons of the residual limbs (damaged/failed part of the limb), brain waves are collected and converted to proportional limb movements, hence this method can be used by patients with different cases and damages done to their body. To prove the possibility of this proposed idea, actual brain waves are collected from a healthy person while attempting certain movements. Using fractal analysis technique, the data is analyzed to identify the pattern of brain signals emitted when attempting a specific movement. Knowing that, we can identify the movement attempted by amputees or paralyzed patients even though no movement is done as long as the brain is healthy and functional. Thus, their brain signals can be processed by prosthetic limbs or TENS machines to produce movements.

Keywords: Computer-Brain Interface, Electroencephalogram, Rehabilitation

ID: 31

REM - H0 (Remote House)

Roeswaran A/L Sandarasagaran, Arulnathan A/L Subramaniam, Kiren Raj A/L Tamotaran, Kabileshwaran A/L Ganash, Niranjan A/L B.Saravanan
SMK Methodist, Telok Datok, Banting

ABSTRACT

The invention of television has revolutionised the entertainment industry. Bolstered by technological enhancement such as digital broadcasting, surround system and streaming services, television is an essential device for all households. Application of television with other peripheral devices require the usage of remote controllers and often, we tend to misplace the controllers. Remote-House is developed specifically for those facing the above mentioned problem. This invention contains a microcontroller coupled with switches and buzzer. Removal of the remote controller from the Remote-House platform, activates the device and a buzzer will be set-off after a predetermined time period. This alarm can be disabled by placing the remote controllers back to their designated slot.

ID: 32

TBORNEO

Macryaen Ghaney Anak Jawie, Law Zhe Yen, Natalie Gituen Liso
SMK Riam Miri, Sarawak

ABSTRACT

Monosodium Glutamate (MSG) is a common food additive used to enhancer the flavour with an “umami” taste. It is made from fermentation of glutamic acid and requires a high cost, high maintenance and labour. MSG is a flavour enhancer, that is commonly used in Asia. However, some people are sensitive to MSG and suffer from MSG syndrome when they consume the MSG. Hence, the objective of our project, the “T-Borneo” is to produce food flavour enhancer that is made from the Tubu leaves that can replace the MSG. We use Tubu leaves as our product because it has an umami taste similar to MSG but with some important nutrients such as ash, protein, fiber, fat, carbohydrate and energy and also moisture, that are essential to our body. Our product is purely natural and consumer will not suffer from any side effects after tasting it. Besides, it is cheaper to produce. The method of making this product is as follow. Firstly, the Tubu leaves are plucked from its twigs and a damp cloth is used to clean the Tubu leaves. After the leaves have been cleaned, the midline of the Tubu leaves are plucked so that the leaves can be blended to produce a fine powder. Then, the Tubu leaves are placed under the sun for 3 hours at 27°c above according to the weather temperature. This is because the more the temperature rises the less time it takes for the Tubu leaves to be dried. Next the dried Tubu leaves are blended to form a coarse powder. The Tubu powder is then filled into the plastic bottle. Finally, the mass of each plastic bottle is measured. Our future plan is to convert Tubu powder into Tubu cube to reduce the usage of plastic bottles and to enable it to be carried anywhere. Thus, by adding the Tubu cubes to various types of cooking, they are potentially enhancing their tastes. As a result, a variety of dishes from soups and pasta to gravy and sauces will taste even better.

ID: 33

HERBS MRI

Ong Song Wei[1], Wong Ye Shiow[2], Er Jia Yin[3], Tan Qian Yin[4], Than Yu Xuan[5]
[1]*SMK Kamarul Ariffin, Labis, Johor.*
E-mail: kelab.inovasi.semekar@gmail.com

ABSTRACT

Labis is a rural town surrounded by rubber plantation, oil palm plantation and orchards. The warm and damp state of climate makes the area a potential mosquito breeding grounds. Residents cannot avoid themselves from the mosquito bites either outside or inside the room. Besides, the traditional mosquito repellent will emit unpleasant odour, so it may cause the other feel inconvenient. Therefore, dengue fever is indeed a major health problem for the local residents. Hence, the aim of this innovation is to reduce the spread of dengue fever, at the same time safe for human and environment. The name of this product is HERBS MRI. It is an eco- friendly mosquito repellent made from citrus peel, wormwood and lemongrass. According to the studies, all of these ingredients can act effectively in the mosquito repelling activities. The ingredients we use need to be made into power by blending. Then, all the ingredients will be mixed and built into a cone-shaped product. No cost was required for this project. As the result, Herbs MRI can be ignited and produce smoke that fend off the mosquitoes. In conclusion, Herbs MRI is made of herbs and citrus peel, in addition to replace the traditional mosquito repellent in our daily life.

Keywords: Herbs, Citrus peel, mosquito repellent, Herbs MRI

ID: 34

BARIO TUTU' SOAP (BTS)

Helga Hurin Anyie, Evelyn Joyce Anak Anthony Sham, Macryaen Ghaney Anak Jawie, Cheryl Elvira Andy, Gabriellyn Norwie Anak Guri
SMK Riam Miri, Sarawak

ABSTRACT

This invention aims to help people who suffered from skin diseases and people with sensitive skin. This product is suitable for everybody as it is purely organic and most importantly, it is very affordable! More specifically about the aim: (i) tto ensure the health of our skin. A healthy skin complexion is very important as it boost our confidence level in the public and increase the quality of life so it is very important for us to take good care of our skin, and (ii) to increase the awareness of protecting the nature. This product is 100% from nature and our mother earth needs to be protected so that our source ingredient for the product would not be polluted.

ID: 35

SENSORGENIX

Siti Hajar Muhammad Syafiq Lau, Muhamed Dzur Kaef Shah Minan, Muhammad Qashri Sharkawi *Mohamad Safri, Ong Hui Ling, Muhammad Alif Azizi*
Sekolah Menengah Tunku Putra-Help

ABSTRACT

Dear Universiti Teknologi MARA, We at Sekolah Menengah Tunku Putra-HELP are proud to introduce our latest product, Sensorgenix, a sensor that works to assist us in enforcing the Standard Operating Procedure (SOP). We can guarantee that we never compromise our quality standards, and it is one of the best in the market at present.

ID: 36

MECHANICA NAVITAS EL ELECTICIA

*Priyasini Vilayan, Sharifah Nurliyana Binti Syed Mohd Firdaus, Yasmin Malihah Binti Shahariza, Damia Qistina Binti Norazmi, Fatin Nabihah Binti Massudi
Sekolah Menengah Sains Seri Puteri

ABSTRACT

Demand for electricity in the world would continue to increase as the world population and socio-economic also grow. However, the present sources of generating electricity (fossil fuel) have become a threat to human existence through the emission of carbon dioxide. According to Institute for Energy Research, electricity generated from this source has been estimated to 80% of the total world electricity generated. Mechanica Navitas El Electricia (MNE) is a prototype that describes the mechanism of mechanical energy. In scientific terms, mechanical energy is defined as the sum of potential energy and kinetic energy. Sound waves could also be used to generate electricity as it is a type of mechanical energy which has never been put up to be used as a form of electric generator. Sound can be defined as a vibration that propagates as an audible wave of pressure, through transmission mediums such as gas, liquid or solid. This research aimed to design and develop a device that has the ability to convert noise into electricity and store it for emergency use. Other than that, we are determined to describe the circuitry and design architecture of the prototype. Lastly, this project was carried out to determine the sound decibels to be harvested to create power and how much electricity the prototype produces. In this project, we convert sound waves which is in the form of vibration to electrical signal which later is generated through transducers. As we use sound energy in our daily activities, it could give us abundance of ways to decrease the rising percentage of pollution. The prototype works when the presence of sound works as a switch to light up a LED light. The prototype uses an Arduino nano board to show the similar concept of how sound can be used to generate electricity. We had to use an external source which is a 9V battery as the sound waves are not capable to supply much energy to the phone charger. If this project is proven to generate electricity, then a better model could be built without any external source and will be installed in areas which have high levels of sound frequency such as highways, schools and malls to generate the sound waves produced by even the slightest sound such as the snapping of fingers. All in all, this project helps to overcome the environmental issues involving electric generation globally.

Keyword: electricity, sound energy, vibration, prototype

ID: 37

USING TRADING MARKET SIMULATION AS A MEANS TO CULTIVATE INTEREST IN FINANCE AMONG YOUTHS

Muhammad Danish Addie Halim[1], Mohamad Fadhlullah Faiz Badul[2], Maizatul Nadhiyah Mohamad Nadzri[3], Maisarah Muhamed Rostam[4], Muhammad Danish Danial Mohd Faisal[5]
Kolej GENIUS@Pintar Negara, Universiti Kebangsaan Malaysia
m.danish.addie@gmail.com [1], fadhlullahfaiz4@gmail.com [2], Maiii.nad04@gmail.com [3], sarahrostam17@gmail.com [4], danishdanial0409@gmail.com [5]

ABSTRACT

Due to the recent pandemic, we realized that it is essential for everyone to have a passive income. Trading in the stock market is getting more attention as it is one of the best sources of passive income due to its flexibility and possibility of high returns. Due to the previously-mentioned statement, this project was intended to develop an application that simulates the stock market in real-time. The application will be a training ground for beginners and those who want to familiarise themselves with the stock market. Users can use the application at no cost as it is just a simulation of the actual market. Thus, the users will not be at a loss even if their portfolios are doing substandardly. To ensure the accuracy of the stock market, we are using the market's updates from IEX Cloud, a financial data infrastructure platform that connects developers and financial data creators. We believe that by using this application, more people — especially the younger generation — will be interested in trading in the stock market. In this post-industrial society, it is critical to prepare the youth for their financial management. It is so that they won't make a decision which they will regret later on in life. To conclude, we believe in this application's potential as it can be commercialized not just domestically; but internationally as the market is not just limited to Malaysia's.

Keyword: Application, Finance, Simulation, Stock Market

ID: 38

PROJECT SMART ROAD TOLLING SYSTEM

Wong Jen Nam, Goh Yi Wei, Jared Ong Kang Jie, Ling Chin Wei
Pusat GENIUS@Pintar Negara, Malaysia

ABSTRACT

Technology is evolving at a faster rate than ever before, and it is requiring less time to become broadly embraced by the general public. As an example, it took around 10,000 years to progress from writing to printing press, yet just 500 years to develop to email. Now, it appears that we are entering a new era, the AI (artificial intelligence) era. We strive to employ this AI technology to come up with a unique solution to daunting situations, as modern problems require modern solutions. This innovation was inspired by a problem we have noticed everyday — the massive amount of traffic congestion. Besides, negative effects include delays in schedules, wasted fuel, wear and tear in vehicles, increased chances of accidents and various road rages. We identified two main causes for this problem. The first one being tollway traffic. In this scenario, vehicles have to slow down or completely stop for the toll collection. Additionally, the amount of tolls and roads are not parallel, resulting in traffic diversions. Besides that, parking lots are also one of the reasons. Huge parking lots can be very confusing for a lot of people. Parking toll gates are also quite inefficient for the same reason as tollway collection. In our research, we aim to Increase the effectiveness of traffic systems, to reduce the amount of carbon emissions as well as improve the security of the current tollway systems. Besides individuals, our system is able to provide benefits to society as a whole. First of all, since this system utilises AI as its core, it can quickly adapt to new changes and situations. As a result, toll collection would become faster and more efficient, which would directly reduce traffic congestion that is the source of both minor and major inconveniences for large masses. This would also help reduce global warming, as the more time the vehicles spend on the road, the less greenhouse gases that will be emitted. If we were to compare existing toll systems such as Touch N Go or RFID, which requires you to buy a tag or card, our system intends to only use existing license plates from the vehicles. Since every vehicle is already equipped with a license plate upon purchase, it means that to implement this new system is almost free of charge. This would, in return, allow for easier changes and implementation to be made on the market.

ID: 39

D HANDICRAFT PAPER

Muhammad Fakhrul Razzi bin Md Noor[1], Teo Jing Yu[2], Muhammad Syahid bin Roslan[3],
[1] SMK Kamarul Ariffin, Labis, Johor.
Email : kelab.inovasi.semekar@gmail.com

ABSTRACT

Labis, Segamat area is popular with durian.We can notice that durian trees are standing everywhere at Labis. When durian seasons, almost all the residents will throw the durian peels around Labis such as beside the road or farm,even in the drains you can find the durian peels.This problem not only will cause the breeding of mosquitoes and flies,but also will emit the unpleasant ordor and carbon dioxide gas into atmosphere, so it may cause the other feel inconvenience and also influence everyone around Labis. Besides, paper made from tree. The more paper is used, the more trees will be cut down. This situation causes our environment to be unbalanced. To reduce the problem, we are looking for alternative sources for producing paper. The product of this innovation is D HANDICRAFT PAPER. The purpose of this innovation is to produce a kind of paper made from a mixture of durian and lemon grass. Lemon grass is mixed into D HANDICRAFT PAPER to be used as an aroma that prevents mosquitoes interrupt during sleep. For this purpose, we produce a lampshade. Durian skins are used as materials as they are readily available. In addition, Labis is a major place for durian producers. The method used to make D HANDICRAFT PAPER is “semichemical pulp”. All the ingredients need to be pulp by cutting, soaking, steaming, and cooling. The resulting pulp will be filtered to filter excess water. Wet paper will be left dry and flattened. No cost is needed for this innovation projects. The result of innovation gets rough paper. The resulting paper is not suitable to be written but is ideal for making art paper such as cards, lampshade, picture frames and cup pad. In conclusion, D HANDICRAFT PAPER can be produced from a mixture of durian, and lemon skin and the results can be used in daily life.

Keyword: Durian peels, D HANDICRAFT PAPER

ID: 40

AUMENTAR

Raiesa Ameerah binti Zulhasmi, Zafirah binti Zakaria, Nur Irdina Farhana binti Muhd Irfan, Nurul Rahwani binti Razlye, Fatin Nadjwa binti Nur Firdaus Seet
Sekolah Menengah Sains Seri Puteri

ABSTRACT

In this day and age, gardening has been said to be a waste of time due to busy schedules. After we have made some research on why many people have stop gardening, we found out that gardeners suffer from the plants being neglected. We truly believe that this problem can be overcomed. Plants will become unhealthy due to environmental factors. Firstly, some plants will start to wilt if they receive too little or too much water. This happens when the gardeners do not have the time to actually check the soil moisture. They will just water the plants according to schedule without really knowing what the plant requires. Other than that, the temperature and humidity of the surrounding air plays a vital role in ensuring the plant stays healthy. Without the right temperature and humidity, the plant is more prone to wilt. Additionally, pests are a big problem when it comes to gardening. It is quite difficult to overcome this problem if gardeners do not monitor the plant frequently. Pests can spoil the plant very quickly if action is not taken. Therefore, we came up with an idea to solve this problem by innovating a tool to detect the soil moisture, temperature and humidity by using sensors. We created a product called Aumentar. The word ‘Aumentar’ means boost in Spanish. This system includes a soil moisture sensor, temperature and humidity sensor, a P2P IP Camera, and a Wifi module.

ID: 41

ORYZA SATIVA TECTUM (OST)

Aisha Najiha Norman Zairi, Sri Hannah Zafirah Izzadin, Khayrin Jamila Johar, Nurul Adriana Mohd Zamzuri, Nursyazani Mohd Zanuri
Sekolah Menengah Sains Seri Puteri

ABSTRACT

The main objective of this project is to maximize the use of rice straw by creating an affordable and an eco-friendly building material instead of disposing them by open- burning that will contribute to global warming. This project is called Oryza Sativa Tectum which means rice straw roof. Oryza Sativa Tectum is made with rice straw and white kaolin clay. The main component which is rice straw itself is a natural fiber consisting of great thermal mass to improve indoor air quality. The second main component in this project is the white kaolin clay which boasts thermal mass to reduce energy demands. Oryza Sativa Tectum is made by mixing these two main components with some water to form a dough, let it dry for a few days and the dry dough is baked in the oven. This product has a potential to be commercialized among building's developer and builder since it is a high-quality product with many benefits. It is also will be sold with reasonable price which developer always looked for. We believe that it is important to develop new product with high-quality novelty. Therefore, Oryza Sativa Tectum is created because rice straw is known for its other uses but not as building materials. When more products are created using rice straw, the potential for rice straw fields to be burned by the fire after harvest will be reduced.

ID: 42

IMPLEMENTATION OF MACHINE LEARNING IN 3-DIMENSIONAL DATA VISUALIZATION

Muhammad Danish Addie Halim[1], Asyraaf Aqasha Mohd Fadzir[2], Nur Hanis Suraya Supiyan[3], Yasmin Hani Zailaini[4]
Kolej GENIUS@Pintar Negara, Universiti Kebangsaan Malaysia
m.danish.addie@gmail.com [1], as.aqasha24@gmail.com [2], hanissuraya464@gmail.com[3], ysmnzln@gmail.com [4]

ABSTRACT

Machine Learning is a field that concerns the improvement of the computer's algorithm automatically through experience and by the use of data. Data visualization is an interdisciplinary field that deals with the graphic representation of data. Data visualization is significant not just on the industrial level; but in our day-to-day life as well. Numbers and raw data — especially on a large scale — are unintuitive and cannot be easily comprehended by everyone. Therefore, it is of the utmost importance to figure out a way to visualize the data in its best form. We believe that Machine Learning can improve our current understanding of data and its manipulation including on how to illustrate it. Based on the previously-mentioned reasoning, this project is developed to investigate the foundation of data visualization. The potential of using Machine Learning in data manipulation is also investigated in this project. In the process of our investigation, we developed an application that visualizes molecular structure in 3-Dimension. Based on our prototype, we found out that Machine Learning can improve data visualization in terms of precision, comprehensibility, and computational efficiency. By the end of our research project, we can see that applying Machine Learning in data manipulation is very beneficial as it gives us the ability to visualize our data better, which improves our understanding of the data. Furthermore, it also provides us the flexibility to manipulate the data to suit our needs.

Keywords: Machine Learning, Data Visualization

ID: 43

BIODEGRADABLE FIBRE-REINFORCED RADIANT BARRIER

Chung Sze Hui, Lee Pei-Zhe, John Wong How Kai, Yeng Song Lin
SMK Heng Ee

ABSTRACT

According to Europe Space Agency (ESA), many countries are experiencing hot climate. Occupants in residential buildings and interior of cars experience high levels of thermal discomfort due to the intense and long hours of solar radiation that causes the indoor temperature to rise. For example, Malaysia is a tropical country and its weather is hot throughout the year. The weather is getting warmer than usual weather due to the El Nino weather pattern (Malaysia Meteorology Department, 2009). Thus, the most efficient way of insulating the heat is to install radiant barrier under the roof top (Tatum, 2005). Insulating the house may help to maintain a comfortable living environment by maintaining inside temperatures and reducing energy costs (Holcombe, 1983). Good insulation reduces the amount of heat entering the home and car on warm days and reducing the amount of heat loss on cold days. A house or car with insulation can reduce heating and air conditioning costs. This translates to massive savings on energy bills and a lot less pollution due to less energy usage.

ID: 44

SUSTAINABLE GREEN CHEMICAL AND FUEL PRODUCTION FROM MUNICIPAL WASTE

Sharifah Nur Irdina Binti Syed Izam, Nurul Amna Syufia Binti Mohd Othman, Nur Sofia Balqis Binti Rospi, Vida Adriana Richard,
Advisor: Mohd Rozali Bin Senik
SMART, Kuantan, Pahang Darul Makmur, Malaysia
Email: rozali@smart.edu.my

ABSTRACT

Municipal waste, consists of 43% organic waste, 25% plastics, 23% paper and 9% other can be converted via torrefaction and catalytic pyrolysis for greener conversion and producing fuel and chemical product like gasoline, charcoal, and fertiliser. The objective of this investigation is to study the effect of municipal waste source to liquid fuel and chemical production. In this research, food waste, plastic waste, agriculture waste and papers were used to be converted into fuel, charcoal, ash and chemicals. The catalyst from oil palm ash was used in pyrolysis to produce liquid product including fuel where a feed of 10:1 feed ratio of sample to catalyst was fed into the reactor and pyrolyzed at 400°C. On the other hand, food waste was fed into a reactor and torrefied at 300°C to produce charcoal. The calorific value, moisture, octane number (RON) of the liquid fuel was also determined. The composition of the liquid product was also determined. Higher liquid fuel (48%) was achieved when catalyst was used. The liquid fuel from plastic waste had low moisture content that in the range of 2.35%– 2.97% and gasoline calorific value ranging from 2885.36 cal/g - 4209.31 cal/g were obtained. The conversion of municipal waste to charcoal (from food waste), liquid product including fuel and gas product that rich in flammable hydrocarbon like methane are useful and can be used as energy resources. This technology may also preserve and protect the environment by managing and converting the waste to valueable product. In conclusion, a low energy and cheaper alternative fuel and chemical production can be done via torrefaction and catalytic pyrolysis.

ID: 45

HERBAL MOSQUITO REPELLENT

Leeviessha A/P Marapu Bogu Naidu
Sekolah Menengah Kebangsaan Sultan Badlishah
leeviesshanaidu@gmail.com

ABSTRACT

Herbal mosquito repellent preparations (Liquid vaporizers,Absorption base& water removable base ointments) were formulated,prepared & evaluated to study the mosquito repellent effect of citronella oil(Cymbopogon nardus) & peppermint oil(Mentha piperita).PEG 200 and deodorized kerosene oil were incorporated to study the rate of vaporization from the preparations. Vaporizes containing deodorized kerosene oil were appreciated for mosquito repellent effect.The present study deals with the preparation and evaluation of citronella and peppermint oil vaporizers and a combination of both essential volatile oils along with the preparation and evaluation of absorption base ointments and water removable base ointments.Citronella oil and peppermint oil had good amount of vaporization. The hybrid preparation was prepared by using the combination of both vaporizers of citronella and peppermint oil. The prepared hybrid vaporizer was satisfactory found to have a good rate of vaporization. Absorption base ointments, when removable base ointments, when applied on the skin showed longer duration of action and were better appreciated by the volunteers than when compared to water removable base ointments.Partitioning and non partitioning of citronella and peppermint oil among the fatty/ oily ingredients of the absorption and water removable ointment bases was attributed for the slow release of the oils from the preparation.

Keywords: Citronella oil,peppermint oil,deodorized kerosene, Absorption ointment bases,water removable ointment bases.

ID: 46

ASTLET & ASTBOX

Hadi Faizal bin Mohd Rosely[1], Rania Maisarah binti Ameer 'Az[2], Fatin Umairah binti Ismail[3], Nur Hanis Hanania Saha[4], Areesa Najwa Hazlan[5], Wan Wardatul Aiman Wan Raselan[6]
Sekolah Menengah Sains Seri Puteri

ABSTRACT

Astlet and Astbox is an innovation that helps busy working parents monitor their asthmatic children from time to time so they could take precautionary steps to prevent unwanted incidents. Astlet and Astbox consists of sensors that help in detecting triggers of an asthma attack thus notify the parents of the child, and it is also an invention based on Internet of Things (IoT) that is beneficial for easier monitoring. Using the Blynk App, Astlet and Astbox could be monitored from anywhere at any time by the parents of the asthmatic child. This innovation is based on the concept of preventing an asthma attack from occurring by eliminating the triggers, in our case bad air quality and unsuitable temperature and humidity rate, so the child would not be having an asthma attack. This innovation is also introduced to reduce cost used by hospitals or emergency retrieval unit to treat a child's asthma attacks, and also provide easy monitoring for parents so busy working parents have the chance to be updated on how their asthmatic child is when they are not present there.

Keywords: healthcare, asthmatic children, Internet of Things (IoT), working parents, monitoring

ID: 47

Electric Light Generator

Divya Priyadarshini Moorthi
Sekolah Sri Tenby Seti Eco Garden

ABSTRACT

In technical usage a replaceable component that products LIGHT from ELECTRICITY is called a lamp. Lamps are commonly called LIGHT bulbs. For example, the incandescent LIGHT bulb lamps usually have a base made of ceramic metal glass or plastic. Which secures the lamp in the socket of a LIGHT fixture.

ID: 48

AUTOMATIC HAND SANITIZER

Daneswaran Nathan, Khirthanashree Nathan
Sekolah Sri Tenby Setia Eco Garden

ABSTRACT

Automatic hand sanitizer helps to remove or destroy potentially harmful micro-organisms, prevent the hands in becoming a vector of cross infection, and render the hands socially clean in order to continue the delivery of health care. If the people use our product the liquid will not be waste, it would give us the correct level of the liquid.

ID: 49

YUCAVA

Daniel Anak Dennis, Nurnaziha Binti Hasmady
Sekolah Menengah Kebangsaan Riam Miri, Sarawak

ABSTRACT

Plastic spoon take about 1000 years to decompose in landfills and contribute to land, water and air pollution. Our objectives is to produce biodegradable Yucava spoons which made from Cassava. Yucava can be use as the organic fertiliser that produce marconutrient and micronutrient such as calcium, iron, manganese, phosphorus and the potassium to the soil that needed by healthier growth of plant. Yucava spoon is green technology that is enviroment friendly, to overcome land, water and air pollution and will the best resolution to reduce the uses of plastic spoons in the world.

ID: 50

SPATIUM CAUTIO

Thevasree A/P Pilehnthiran[1], Nur Aisya binti Che Zulkifli [2], Ain Nursuffiya binti Azlan[3], Syafiqah Aqilah binti Suriadi[4] and Sanchitha A/P Sangkar[5]
Sekolah Menengah Sains Seri Puteri

ABSTRACT

Teachers face the problem of ensuring the students maintain the minimum distance required to meet the safety standards at school among students during the COVID-19 pandemic because students fail to estimate the accurate distance between themselves bound to physical limitations. Spatium Cautio is an innovation that helps students in maintaining minimum distance according to the Standard Operating Procedures (SOP) which has been declared by the Health Ministry of Malaysia during the pandemic of COVID-19. This innovation is programmed in the form of tag for the convenience of the students. Meanwhile, the objective of this project is mainly to increase the efficiency of students maintaining social distance and ease the responsibility of teachers which is to ensure the students maintain social distancing among themselves during schooling hours. The components are ultrasonic sensor, buzzer, led light, Arduino maker uno and jumper wires. Ultrasonic sensor on the prototype can detect the distance of 1 meter by emitting ultrasonic sound waves and converts the reflected sound into an electrical signal. Then, the signal will be sent to the buzzer to create vibration and the LED light will lit brightly. Hence, the individual will be alert to mind their social distancing. As for novelty, Spatium Cautio is a prototype meant to tackle the spread of pandemic among educational institutions bound to rules of these institutions and limited budget estimation.Other commercialized products appears to be a breach of school rules in Malaysia which bans phones in school while schools in the rural area face complications to access stable internet connection as well as advanced technology. Thus, Spatium Cautio tackles all of these complications and is the best alternative for students to stay safe despite attending school in this period. This prototype is a user-friendly product as it is in small size that will ease students to wear it. Besides, this product does control the spread of the virus among students. Other than that, this portable innovation does prevent students from talking closely with each other. For society, Spatium Cautio is an environmentally-friendly product and does not emit greenhouse gases that will cause pollution to the environment. Our innovation saves time for teachers as they don't need to observe the students continuously. Lastly, our project can prevent the emergence of new cluster in institutions since the r-naught value, a mathematical term that indicates how contagious an infectious disease is, can be reduced. In terms of cost-efficiency, Spatium Cautio is an affordable and worthy choice for society. This product can be sold at RM 40 per unit as the components used in this product are easy to obtain. The product targets school students to be aware and safe. Spatium Cautio is a newly founded project through various research and trials. This project was recognised in two competitions which were Virtual Expo of Innovation Product and System Design (ViDE) 2020 and International Digital Innovation and Invention Challenge (IIDIC) 2021 with silver award. Spatium Cautio is a promising project that will help the nation get through the struggle in reducing the daily COVID-19 cases and to make school a safer place.

Keywords: distance, tracker, 1 meter, students, awareness

ID: 51

ECOWRAP

Shreeyaa A/P B Manalan[1]*, Nur Alysha Syahirah Binti Rizal[2], Sarah Adriana Binti Izwan[3], Nur Farah'ain Binti Mohd Redzuan[4], Chiu Bee Han[5]
[1,2,3,4,5] *Sekolah Menengah Sains Seri Puteri*
anisdiyana@seseri.edu.my

ABSTRACT

The Movement Control Order has accelerated the popularity of e-commerce and increase the number of use of bubble wrap. The pop-able plastic packaging has been used since 1957 and it is harming the environment ever since. Bubble wrap can take more than 500 years to decompose, depending on the size. We hereby would like to introduce our product, Ecowrap, an eco-friendly packaging material made of biodegradable materials such as starch, vinegar and water. In general, starch-based plastics are more cost competitive than alternative bioplastics. The objective is to innovate and develop bio-based plastic made out of starch and vinegar that will be environmental friendly. The novelty is our bioplastic has seeds attached to it and if this bioplastic is thrown, not only can it decompose but the seed can eventually grow into a plant. The benefits of this bioplastic to the user is that it does not contain additives that are harmful to health, such as phthalates and this bioplastic does not change the flavour or scent of the food contained. The benefit of this project to the society is that bioplastic aids in directing plastic waste from landfills and can help to reduce the cost of landfill. Besides that, bioplastic is made out of renewable resources and can lower the prices and demand for fossil fuel. This can help to reduce the dependency on limited fossil resources. However, consumers have the perception of these products as easily damaged and the inferior quality, judging from the ingredients used. Therefore, we will start promoting the product by explaining a thorough exposure regarding the quality and the ability to withstand resistance like weight and heat and to get trustable reviews from our consumers through e-marketplaces such as "Shopee". This product is prompt to be purchased by online business sellers as they need a wrapper to secure their products.

Keywords: eco-friendly, bubble wrap, starch, bioplastic, environment

ID: 52

NEIGHBORHOOD WELFARE AND SECURITY SYSTEM-NeWS

Harrezz Hawan Mohammad Hanafiah, Muhammad Nazheef Mohd Nadzaruddin, Adel Imran Ahmad Shazli
Sekolah Sultan Alam Shah
harrezhazwan@gmail.com, mnazheef123@gmail.com, adelimranshazli@gmail.com

ABSTRACT

The unpleasant experience of insecurity through increased residential crime disrupts the healthy living of a peaceful community. The Neighbourhood Welfare and Security System helps to improve the current neighbourhood security by integrating multiple layers of security and hardware. Integration of robot, drone, and camera will ensure a more robust, quick, and efficient system. This will lead to a more peaceful holistic environment for the community.

ID: 53

INVIGORATING STUDENTS' INTEREST IN ASTRONOMYBY APPLYING MACHINE LEARNING IN PHOTOMERTY OF EXTRATERRESTRIAL BODIES

Muhammad Danish Addie Halim[1], Maisarah Muhamed Rostam[2], Syaza Nur Dhia Khairul Anuar[3], Arief Nazmie M. Yuni[4], Nabilah Huda Nor[5]
Kolej GENIUS@Pintar Negara, Universiti Kebangsaan Malaysia
m.danish.addie@gmail.com[1], sarahrostam17@gmail.com[2], syazanurdhia@gmail.com[3], arief12ok@gmail.com[4], nabilahhudanor@gmail.com[5]

ABSTRACT

This project was developed to create an astronomy-themed application that uses Machine Learning to detect extraterrestrial bodies as one of its features. The development of the application is on the basis that there aren't many students who are thrilled and eager to learn about astronomy. One of the underlying causes might be the lack of material and resources related to the field in the school syllabus. Based on the problem we've listed; we aspire to create an application that can act as an all-in-one hub for astronomy-related content. The features include constellation identification from images uploaded by the user, forums and quizzes, and resources such as a list of competitions, reading materials, and online courses. The possibility of using Machine Learning in photometry was also investigated in the development of the application. Since there is a lack of application being developed not just in astronomy; but in education as a whole, we believe that by being one of the first developers in the field, we can revolutionize the education system in Malaysia to better suit the Industrial Revolution 4.0 and Vision 2025. We believe that by using this application, more people will be interested in astronomy. Furthermore, the development of our application prototype made us confident in our application commerciality, not just domestically; but internationally.

Keywords: Astronomy, Application, Machine Learning

ID: 54

WHERE R U

Erdina Siti Aisyah Mohd Rashidi, Erfan Darwish Shah Mohd Rashidi
Sekolah Menengah Kebangsaan Seksyen 7 Shah Alam

ABSTRACT

Schoolchildren, particularly those in primary school, value safety and security at school. Parents are having difficulty locating their children after school hours have ended. After school, the children enjoy playing in the classroom, in the toilet, in the surau, behind the school, and elsewhere inside the school site. Parents are often forced to wait a long period outside the school gate before being able to locate their children, forcing them to enter the school. As a result, it is difficult for teachers and parents in finding their children once school hours have ended. Indeed, electronic gadgets, such as smartwatches and smartphones, are prohibited from being brought to school and children have no access to a public phone to call their parents to let them know where they are. Furthermore, because the school does not give all parents easy access to the school area, and because some parents work, this creates further difficulty for parents rushing back to their offices. The innovation aims to alleviate parents' concerns regarding their children's whereabouts and safety, as well as to assist the parents in finding their children location at the tips of their fingers. Moreover, the study aims to reduce delay or shorten the time it takes for parents to find, track, and locate their children when they are not present at the pickup place. The innovation makes use of the existing tracking location technologies and the applications are used on mobile phones to track down and locate children. As a result, this innovation concept or prototype gadget is for tracking school children's whereabouts so that parents may find or locate them after the school day is over. This approach gives benefits to the users since the current pandemic covid 19 situations encourage students to return to school right away rather than staying at school for a longer length of time after school, and parents must pick up their children very away. Besides, it is user-friendly, and parents will spend less time looking for their children. Indeed, for society, it is widely available and easy to access the software through either an android or an iOS device. In term of commercialization potential, the target market, which consists of schoolchildren and their parents, is already in place. And it has no expiry date and easy to keep.

ID: 55

AUTO HAND SANITIZER

Chua Ming Joon, Yap You Bin, Lim Xin Han, Ng Jie Xian, Loke Poon Sam
SMJK Chi Wen

ABSTRACT

School authority encounter the problem of non-complying with SOP such as preparing hand sanitizer for students in school to contain the transmission of COVID-19. According to World Health Organization, transmission of the COVID-19 virus can occur if an individual has an indirect contact with objects used by the infected person. This product is suitable for students in the school. It is handy for all students in the school by avoiding contact from on to another. It helps in reducing the transmitting of the virus.

ID: 57

WIFI- DRIVER-W7

M. Adibil Muchtar
MAN 2 Cianjur Jawa Barat, Indonesia

ABSTRACT

Video mengisahkan tentang bagaimana cara menginstal Driver Wifi pada Windows 7. Penguna computer terutamanya remaja sering menghadapi masalah untuk mengkoneksi computer ke internet. Komputer tidak bisa terkoneksi ke internet dengan menggunakan Wifi karena belum terinstal driver Wifi. Video ini menunjukkan tutorial cara mengintal driver wifi pada windows 7. Dengan panduan tutorial ini pengguna akan lebih mudah dalam menginstal driver wifi pada windows 7 karena dijelaskan secara langakh demi Langkah. Ia sangat bermanfaat bagi masyarakat yang kesulitan dalam menginstal driver wifi pada windows 7. Tutorial ini telah ditonton 8 ribu kali di YouTube.

ID: 58

UTP TYPE STRAIGHT DAN CROSSOVER

Azril Hidayatullah
SMK Plus Ashabulyamin Cianjur Jawa Barat – Indonesia

Video ini mengisahkan IT solusi bagaimana pemasangan Kabel UTP Type Straight dan Crossover. Tutorial ini menunjukkan cara-cara mensetting kabel UTP dengan konektor RJ-45 agar bisa digunakan untuk menghubungkan berbagai perangkat keras jaringan kepada computer dengan membangun jaringan LAN. Mensetting (mengurutkan warna-warna yang berbeda) ujung kabel UTP dengan menambahkan konektor RJ-45.

ID: 59

STRAIGHT WIRING

Azril Hidayatullah
SMK Pasundan 1 Cianjur Jawa Barat, Indonesia

ABSTRACT

Video ini mengisahkan IT solusi bagaimana pemasangan Kabel UTP Type Straight dan Crossover. Tutorial ini menunjukkan cara-cara mensetting kabel UTP dengan konektor RJ-45 agar bisa digunakan untuk menghubungkan berbagai perangkat keras jaringan kepada computer dengan membangun jaringan LAN. Mensetting (mengurutkan warna-warna yang berbeda) ujung kabel UTP dengan menambahkan konektor RJ-45.

ID: 60

RACING GAME TO STOP THE SPREADING OF COVID-19

Nur Indah Ryndiani Binti Mohamad Rashidi
Commonwealth Secondary School, Singapura

ABSTRACT

Pandemic COVID-19 have changed the way education was delivered to the student. Children around the world are being affected by physical separation, quarantines, and school closures as a result of the spread of coronavirus disease (COVID-19). During these unprecedented times, one of the key concerns for parents is how much time their children spend in front of technology. Besides, without proper monitoring the children have a high tendency to waste their time playing games and watching YouTube. Children's energy must be redirected from video games, movies, online games, and other forms of entertainment to something more useful. As COVID 19 victims increase in numbers, there is an urgent need to increase children awareness on COVID-19, thus enable them to practice new norm and contribute to the effort to stop COVID-19 infection. This product is one of its kinds which can help the children enjoy playing the games while increasing their knowledge on COVID-19. The race will be more challenging as the kids need to answer the question on COVID-19 along the race.

ID: 61

SUSTAINABLE DAYCARE MODEL FOR SENIOR CITIZENS

Khumairah Ramadhani Nasution
Al Kautsar Junior High School, Bandar Lampung, Indonesia

ABSTRACT

World Health Organization (WHO) reported that population in South-East Asia Region is ageing rapidly. In 2017, the proportion of people aged above 60 years in South-East Asia was almost 10%, and it will be increased to 13.7% and 20.3% by the year 2030 and 2050, respectively. Question of who is to care for the senior citizens is becoming a bigger concern among the younger generations. Millennials are becoming more educated, and career driven, they are juggling between their own families and challenging profession. Many was left wondering if they do have time to care for their elderly parents as well. It is common to have daycare centres for the children, but it is almost impossible to find daycare centres for the senior citizens. Therefore, having a sustainable daycare model especially for senior citizens is crucial to ensure the rights of the elder parents are protected. By having a sustainable daycare model, the younger generations may focus on their demanding career during the day while their elder parents are well taken care of. At night, they may spend their quality family time with their younger children and elder parents. At the daycare centres, the senior citizens may spend their times doing physical activities such as exercises, physiotherapy, and gardening; spiritual activities such as attending religious classes and motivational talks; social activities such as socializing with other senior citizens; and mental activities such as sudoku and simple games sessions. The daycare centre for senior citizens is beneficial for various stakeholders such as for senior citizen their welfare is taken care of and they may still spend quality family time with their children at night. On top of that, forthe working adults with elder parents they can still focus on their career during the day and not neglecting their responsibilities as a child. Business owner has an opportunity to venture into this new business sector while providing job opportunities for the local the communities. Ultimately it also helps the Government to possibly reduce budget for maintaining the old folks' homes.

ID: 62

BAMBOO CHARCOAL SOAP

Diah Putri Utami, Surya Aliefqi Putra Sanjaya, Ahmad Luki Adinata, Fajar Hanif Habiburrohman.
Pondok Pesantren dan Madrasah Bidayatussalikin

Irfan Hazim Bin Irwan Iswadi.
Sekolah Menengah Sains Tengku Abdullah, Malaysia.

Bamboo Charcoal Soap contained the active ingredient of Tamanu Oil that is high in fatty acids, which can help keep your skin hydrated. It also includes antioxidants, which protect the body from free radical damage. Tamanu oil is said to protect the skin from the sun damaging UV radiation. Hyperpigmentation is treated using this product. This essential oil has skin lightening effects, making it excellent for decreasing hyperpigmentation. Another active ingredient is the bamboo chacoal soap base that we use in the making of this soap. Because bamboo charcoal can absorb toxins, pollutants, and free radicals, it may be used as a powerful skin cleanser. This means that after using bamboo charcoal soap, your skin will be healthier. Bamboo charcoal may also destroy all viruses on contact as a cleaner. This is the best product for teenagers.

ID: 63

MUSLIM_BESTPRACTICE_INDEX

Diah Putri Utami, Surya Aliefqi Putra Sanjaya, Ahmad Luki Adinata, Fajar Hanif Habiburrohman.
Pondok Pesantren dan Madrasah Bidayatussalikin

Irfan Hazim Bin Irwan Iswadi.
Sekolah Menengah Sains Tengku Abdullah, Malaysia.

ABSTRACT

Islam is a legalistic religion. The Holy Quran contains the fundamental laws. In the earliest Muslim community in Medina, the Prophet Mohammad understood and put these laws into practise. According to Islam's framework, rulers and governments gain legitimacy by being even more rule-abiding than individual Muslims are required to be. Our team opted to classify countries as Muslim or non-Muslim in order to examine Islamic practise. We use the Organization of the Islamic Conference (OIC) as our criterion for categorising countries. The Organization of the Islamic Conference is made up of 57 countries. Despite the fact that a change in membership qualifications is being explored, these 57 countries are commonly regarded as Muslim countries. Do these countries' human rights, social justice, economy, and governance practises reflect Islam's teachings? What is their "Islamicity" level, to put it another way? The Muslim BestPractice Index is designed to provide both an answer to this question and a strategy for improving a country's "Islamicity."

ID: 70

MYJIHADJOURNEY

Diah Putri Utami, Surya Aliefqi Putra Sanjaya, Ahmad Luki Adinata, Fajar Hanif Habiburrohman.
Pondok Pesantren dan Madrasah Bidayatussalikin

Irfan Hazim Bin Irwan Iswadi.
Sekolah Menengah Sains Tengku Abdullah, Malaysia.

ABSTRACT

MyJihadJourney is a tool that allows you to chart your path to jihad. The purpose of this tracker is to keep track of daily activities that occur on a daily basis. The voyage can also be divided into months and years using the tracker. The tracker will help users with their daily activities linked to their quest to become a better Muslim. The tracker, on the other hand, was not designed to make comparisons with other people because the path to jihad is a private and personal one. Nonetheless, the tracker's report can urge users to strive to be a better Muslim in the future in a consistent and uncomplicated manner. The software is appropriate for both Tahfiz students and members of the general public.

ID: 72

C19_Tracker

Anniz Marsyah binti Muhamad Hirman & Ryan Zachary Bin Abdullah
Swiss Cottage Secondary School, Singapura

ABSTRACT

Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus. The majority of COVID-19 patients will experience mild to moderate symptoms and will be able to recover without the need for additional treatment. Contact tracing is critical for swiftly identifying people and their contacts, as well as preventing resurgence, in order to limit the number of infections. Contact tracing is the procedure of identifying all people with whom a COVID-19 patient has had contact in the previous two weeks. It appears to be simple, but in actuality, the task might be considerable. To ease the process, we will need a system for tracking down and following up with contacts, as well as a functioning laboratory, a method for reporting data, and people to track down and follow up with contacts, provide support if they require quarantine, and treat them properly. Real-world applications exist for data-driven technology such as contact tracing apps, symptom checkers, and other data-driven solutions. C19_Tracker is a tool for public health practitioners and field responders that simplifies time-consuming contact tracing duties such as initial case investigation, visualising transmission paths, and contact follow-up.

ID: 73

Y174: COVID_19_Games Board

Mohamed Alief Ashidiq Bin Mohamad Rashidi
Hillgrove Secondary School, Singapura

ABSTRACT

Children around the world are being affected by physical separation, quarantines, and statewide school closures as a result of the spread of coronavirus disease (COVID-19). During these unprecedented times, one of the key concerns for parents is how much time their children spend in front of technology. As a result of the pandemic, millions of schoolchildren throughout the world are now continuing their education online, resulting in additional screen time for children. To make matters worse, lockdown limitations and social distancing measures have taken away children's access to outside games and pastimes. Since parents are unable to let their children to go outside to keep them occupied and burn energy, most parents are looking for new ways to relieve boredom and release pent-up energy. For parents, the main goal is to redirect their children's energy from videogames, movies, online games, and other forms of entertainment to something more useful and less taxing on their eyes. Hence, our team comes up with this new COVID_19_Games Board which can be used by the children to relieve their boredom and pent-up energy while reducing their screen time. The games board is a fantastic way to keep the children occupied, entertained, and productive all at once. The board contains 40 spots which begins and end with the “Home”. The games' concept is closely related to Covid 19, in that the games will need the player to apply their knowledge of Covid 19's rules and regulations. This way, parents can make sure that children learns and keep up to date with any issues related to Covid 19.

INTERNATIONAL RESEARCH INVENTION, INNOVATION AND EXHIBITION (I-RIE 2021)
"LEADING THROUGH INNOVATION"

UNIVERSITI TEKNOLOGI MARA
Institut Penyelidikan Perakaunan

Higher Learning Institution & Industry

ID: 01

MODIFICATIO OF KITCHEN MICROWAVE FOR INDUSTRIAL USAGE

Walisijiang.Tayier, Ir.Dr.Shamini Janasekaran, Vin Cent Tai
Centre for Advanced Materials and Intelligent Manufacturing, Faculty of Engineering and Built Environment, SEGi UNIVERSITY

ABSTRACT

Aluminum, copper and titanium are common lightweight materials. These materials are widely used in automotive and metal manufacturing fields due to low cost, high corrosion resistant, good mechanical strengths and superior wear properties. To contribute towards sustainable environment, metal wastes from the lightweight materials are tackled by using conventional metal joining techniques such as fusion welding, soldering, spot welding and brazing. However, the conventional metal joining processes generate fumes which may cause harmful effects on operators and air pollution. Meanwhile, the more energy waste is generally produced during conventional welding process. The present study will focus on the improvement of microstructure and mechanical properties of lightweight materials using a novel technique of microwave hybrid heating processing to join. The effects of microwave modification on the metal joint will be investigated and compared with that of the conventional joining techniques. The microwave hybrid heating can reduce energy wastes, due to rapid heating and short reaction times during the process.

Keywords: Lightweight materials, Microwave irradiation, Hybrid hearting system.

ID: 02

CONCEPTUAL ILLUSTRATION OF HEMOSTASIS AND THERAPEUTIC ANTICOAGULANTS

Assoc. Prof. Dr. Uday Younis Hussein Abdullah, Assoc. Prof. Dr. Marwan Saad Azzubaidi, Dr. Omar Emad Ibrahim, Assoc. Prof. Dr. Aqil Mohammad Daher, Prof. Dr. Harmy Mohammad Yusof
udayyounis@unisza.edu.my
Universiti Sultan Zainal Abidin (UniSZA)

ABSTRACT

The significance of acquiring proper knowledge on the hemostasis and its related disorders will be reflected during the professional life of medical and paramedical staff. So far, the traditional method used to present the hemostasis system and its disorders are lacking simplicity and keywords emphasis. The current illustration is an attempt to display the crucial mechanisms leading to imbalanced hemostasis and their consequences, comprehensively and without pitfalls. Moreover, theses illustrations comprehensively relate the components of the hemostasis adopting combination mnemonics and creating a map-like display aiming to enhance it with mnemonics that help learners to effectively and conveniently recall multiple levels of fundamental knowledge. Comprehension of hemostasis is complex especially at the educational levels. Therefore, simplifying this complex process in an integrated illustration combining all components of the hemostasis, is a novel approach with clinical and academic applicable values. In addition to decreasing the difficulties in understanding hemostasis disorders, these illustrations contribute to outlining the principles of clinically significant hemostasis disorders.

ID: 03

CONCEPTUAL ILLUSTRATION OF THE IMBALANCED GLOBIN CHAINS PRODUCTION AND ITS RELATIONSHIP WITH THE CLINICAL PHENOTYPES AND HEMOLYSIS IN THALASSEMIAS

Assoc. Prof. Dr. Uday Younis Hussein Abdullah, AP Dr Marwan Saad Azzubaidi, Prof. Dr. Harmy Mohammad Yusof, Dr. Omar Emad Ibrahim, Prof. Dr. Teh Lay kek
Universiti Sultan Zainal Abidin (UniSZA)

ABSTRACT

This illustration is a schematic representation of imbalanced globin chain production in beta and alpha thalassemias compiled in an integrated approach that is easy to recognize, remember and understand. Moreover, this illustration sheds light on the role of the in excess globin chains in the clinical phenotypes' manifestations. The major problem in thalassemia is the reduced production of one or more globin chains with continuous production of the other globin chains. This lead to imbalance of the globin chains production with subsequent accumulation in erythrocytes and their precursors as excess free globin. The hallmarks of the thalassemia are the globin chain imbalance that leads to intramedullary (ineffective erythropoiesis) and extramedullary (peripheral) haemolysis which are the two primary mechanisms causing anemia in patients with thalassemia and their subsequent pathophysiological mechanisms.

ID: 04

GREEN ENERGY INDEX (GBI)-BASED WIRELESS HOME AUTOMATION SYSTEM USING IOT

Anas Javaid, Abdul Elaah Mazin, Omar Sherif
SEGi UNIVERSITY

ABSTRACT

This project presents the initial design and development of a Green Energy Index (GBI) based Wireless Home Automatic System using IOT. This system is develop to provide energy savings for home using different ideas like water harvesting, plant irrigation, solar system, controlling the heating/ventilation as well as lighting of the house and to provide a safe and smart security system. The basic idea is to keep the project green and at the same time to keep it versatile and updateable according to the trends in the smart home industry.

ID: 05

TEACHING AND LEARNING OF RESEARCH METHOD THE FUN WAY BY USING #HASHTAGS IN FACEBOOK

Ts. Dr. Sreetheran Maruthaveeran
Department of Landscape Architecture, Faculty of Design & Architecture, Universiti Putra Malaysia (UPM)
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 paper, discuss about research methods, disseminate research findings, and connecting with audiences outside the context of traditional classroom. About 41 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 media platform. Towards the end of the semester, the lectures received positive feedback from the students e.g. Some students say that now there are more aware of what journal is and how to find it for their future projects or assingments. Another student shared his view by saying it also save time because by using hashtags we can gather many journal articles from the other classmates on the same issue.

Keywords: Facebook; hashtag; method; learning innovation; student centered learning (SCL)

ID: 06

ViVac UPM: ORAL FISH VACCINE AGAINST VIBRIOSIS

Ina Salwany Md Yasin[1], Mohammad Noor Amal Azmai[1], Mohd Zamri Saad[1], Mohamad Aslah Mohamad[1], Muhammad Amir Danial Zahaludin[1], Monir Md Shirajum[1], Nurhidayu Al-saari[2]

[1]Institute of Bioscience, Universiti Putra Malaysia, [2]International Islamic University Malaysia

ABSTRACT

Aquaculture industry is expending rapidly in Malaysia, supplying approximately 427,015 tons of products with an estimated value of RM 3 billion. However, intensification for the purpose of commercialization in aquaculture industry leads to disease outbreaks and health issues among cultured fishes. Vibriosis is one of the notable disease causing high economic impacts to aquaculture worldwide. In 1990s, vibriosis was reported to affect various cultured marine fishes in Malaysia, leading to USD 7.4 million losses. More recently, in Asian shrimp culture alone, vibriosis was reported to cause losses at USD 1 billion. Vibriosis is generally referred to as a systematic bacterial infection caused by the bacteria from the family Vibrionaceae. It is associated with intensified farmed marine fishes, leading to severe economic losses in aquaculture industry worldwide. In Malaysia, vibriosis that is caused by *Vibrio harveyi, V. alginolyticus and V. parahaemolyticus* has been reported to cause several outbreaks that lead to massive economic losses in marine cultured fishes, especially in grouper, Asian seabass and snapper. Following understandings on the epidemiology and pathogenesis of vibriosis, we then developed, tested and evaluated our newly developed feed-based vaccine against vibriosis, both at laboratory and field level known as ViVac UPM. This vaccine cross-protect against the common *Vibrio spp., particularly V. alginolyticus, V. harveyi* and *V. parahaemolyticus* that were found frequently infecting cultured fishes in Asia. Interestingly, the feed-based vaccine significantly helps the farmers in applying the vaccine in terms of cost, technical skills and labor works. Besides, this vaccine incorporates palm oil as adjuvant, making it cheaper in cost, compared to commercially available adjuvanted vaccine in the markets. Subsequent field testing in cultured groupers showed that this vaccine significantly reduces the fish mortality and rate of Vibrio isolation, and at the same time improve the growth and antibody levels of the fish, compared to non-vaccinated fish groups.

ID: 07

ARTIFICIAL INTELLIGENT OF WEB-BASED GIS FOR INVESTMENT DECISION SUPPORT SYSTEM (AI-GIS)

Marhamah Rafidi, Siti Noor Nadiah Rafidi, Jamaliah Said, Eran Sadek Said Md Sadek, Farha Abdol Ghafar, Fazlida Md Razali & Naila Erua
Accounting Research Institute, Universiti Teknologi Mara (UiTM)

ABSTRACT

AI-GIS aimed to visualize the potential location for investment by artificially visualized good location based on five parameter, namely financial development, political stability, risk of corruption, trade of openness and Covid-19 cases. AI-GIS was also developed to visualize the casual effect of five parameter in artificial intelligent map by using web-based GIS platform. In term of practice, AI-GIS would suggest a better location for investor to visualize the information for the decision support system. The development of AI-GIS would also give insight vision to the target group such as, investor, government, financial institution, share broker and so on. Nevertheless, the cost-effectiveness, user-friendly, insightful visualization represent prominence factors made AI-GIS system prominence in detecting the location that were hit by issues of corruption, financial collapse, and Covid-19 cases. As a result, the red flags projected by AI-GIS system will facilitates them in re-strategising their business.

ID: 08

OCCUPATIONAL AND SAFETY ELECTRONIC RISK MANAGEMENT SYSTEM (OSerm)

Dr Marziana Madah Marzuki[1*], Dr Mohamad Rahimi Mohamad Rosman[2], Dr Hatinah Abu Bakar[3], Dr Wan Zurina Nik Abdul Majid[4], Dr Khalid Abdul Wahid[5], & Mohd Zafian Mohd Zawawi[6]
[1,4]Faculty of Accountacy, Universiti Teknologi MARA Cawangan Kelantan
marzianamadah@uitm.edu.my, wzurina@uitm.edu.my
[2,5,6]Faculty of Information Management, Universiti Teknologi MARA Cawangan Kelantan
rahimimr@uitm.edu.my , awkhalid@uitm.edu.my , zaffian@uitm.edu.my
[3]Faculty of Business and Management, Universiti Teknologi MARA Cawangan Kelantan
hatin463@uitm.edu.my

ABSTRACT

Occupational Safety and Health (OSH) concerns with safety, health, and welfare of people at occupation. Mitigating risk at workplace has been identified as a mechanism to help the organizations to proactively manage OSH risks and monitoring in a continue and conscious way the risks associated with their organization strategic objectives. Nevertheless, the accident cases at workplaces keep increasing. It has been identified that the existing risk management system such as Enterprise Risk Management System is too general and has different nature to cater for OSH. Therefore, the purpose of this study is to propose specific electronic risk management system for OSH that can help the organizations to implement OSH risk management process which starting from identifying OSH risk till monitoring it to ensure that the organizations can minimize the OSH risks and hence can overcome accidents at workplace.. This system can help the organizations to manage their OSH risk efficiently and eventually help them to achieve their strategic objectives.

Keywords: Occupational, Health, Safety, Risk, and Management.

ID: 09

CREATE IT -AN END-TO-END UPSKILLING EDUCATION TECHNOLOGY PLATFORM WITH BLENDED LEARNING SYSTEM TO REDUCE COMPETENCY GAP

Rea Qinthara Dikatio[1)], Syahrul Robbiansyah[2)], Syarfina Estiana Zahira[3)], Fadhel Vidyansyah[4)], Nikita Fortuna Rombe[5)], Rizma Khansa Zulfa[6)]
Telkom University, West Java, Indonesia

ABSTRACT

According to the Indonesia statistical bureau & CORE Indonesia (Center of Reform on Economics) stated that Indonesia has reached a 20% young unemployment rate. One of the reasons for this case is due to the mismatch between job creation and the qualifications of new graduates. The data on the open unemployment rate (TPT) shows that the percentage of unemployed youth is dominated by those with middle and upper education, making it the biggest in Southeast Asia, is something that really brought us today. From many causes of that phenomena, we find the most vibrant issue, that it happened because of a gap between the formal education output and what Industry really needs in the Industrial 4.0 era. So that the Competency Gap occurs. Even In the past one year, We've been iterating various Business Models From Talent Pool to Co-Learning. Which has become our Unfair advantage to help us understand our user's pain poin better. So we combined our previous solution to become a one stop solution to help young people to discover their purpose, to set their career path,and bridge the gap between what is not taught at school, and what skills needed at hence. We invent Create It as the the first End-to-End Blended learning platform in Indonesia that focuses on Digital Creative Upskilling with best practice learning Experience, We combines self-paced learning & Live masterclass. Create It is currently targeting 10% of total Fresh Graduates & College Students Indonesia to Aim one hundred seventy four Rupiah with 60% hiring ratio. And all of that, we also penetrate our blended learning system to the youth in underprivileged areas with co-working activation by collaborating with the government. The business model is offering subscription fee with 30% Royalty to the Instructor and Commission Shares to the Mentors. We are a complement in this Industry, instead of competing in the red ocean. Because we can combine the two-way interactive learning with self-paced methods at a more affordable price. We are a complement in this Industry, instead of competing in the red ocean. Because we can combine the two-way interactive learning with self-paced methods at a more affordable price. Throughout this past 1 year, Create It has grown organically, with multiple collaborations with multi-sector partners that have helped thousands of young people through dozens of educational programs with broad social impacts in the field of digital literacy education.Various empowering feedback we have obtained, most of them really get our value proposition where the curriculum that we have made is very easy to implement and best practice. From those multiple feedback, it really convinced us to continue to make more impact in the future, by continuing collaborating with multi sector stakeholders. that hopefully, together, we can democratize high quality upskilling education access throughout Indonesia.

Keywords: Education Technology, Upskilling, E-Learning, Blended Learning, Career Preparation.

ID: 10

ENVIRONMENTAL MANAGEMENT ACCOUNTING SYSTEM (EMAS) IN ASSESSING ENVIRONMENTAL PERFORMANCE

Nik Herda Nik Abdullah, Nur Afifa Nazary, Suha Munawar
School Of Accounting And Finance, Faculty Of Business And Law, Taylor's University, Malaysia.

ABSTRACT

Environment issues are now a growing concern to everyone all over the world. Every day, there are many news or articles that reported different kinds of environmental issues. These environmental issues resulted in enormous amount of harm to natural resources, biodiversity, sustainability, and human health, which has become one of the top priorities and concerns of the nations. Considering all of the reasons mentioned above, many companies have initiated different considerations in making decisions. Management accounting today is no longer the traditional management accounting, where it emerge to environmental management accounting, seeing as environmental management accounting has begun to receive significant attention. As many companies care about the environment and wanted to achieve long-term sustainability, these companies have started to implement environmental management accounting. Environmental management accounting is a method which is intended to assist managers in making better decisions for cleaner production. Thus, environmental management accounting will minimize business expenses, as it will help the managers to recognize and assess hidden costs and eventually boost the company financial performance as when the costs decrease, the profit will increase, the profit will increase, as well as helping the company financial performance as when the cost decrease, the profit will increase, as well as helping the company in attracting more customers and achieving long-term sustainability since the company is now more concern on environmental issues. However, the use of environment management accounting is still at a lower level due to the sophistication of analysis and cost identification. Therefore, the need of specific system on environmental management accounting is essential to assist the companies to analyze the environmental performance. The Environmental Management Accounting System (EMAS) is a software to performance. The use of EMAS will be a benefit for the company to assess environmental performance. It will also help a company to save cost, as well as improving shareholders value and better reputation. It will also help a company to save cost, improve product pricing, achieve resources optimisation, innovation, and cleaner production, as well as improving shareholders value and better reputation. The development of EMAS is based on the approach developed for the United Nations Division of Sustainable Development (UN DSD).

ID: 11

HUMANISING GOVERNANCE THROUGH ETHICS SELF EVALUATION USING ETHICS TOOLKIT APP

[1]Jayalakshmy Ramachandran, [2]Geetha Subramaniam, [3]Angelina Yee Seow Voon
[1]University of Nottingham Malaysia, [2]Segi University, [3]City University
[1]Jayalakshmy.rama@nottingham.edu.my, [2]geethamaniam@gmail.com,
[3]Angelina.yee@gmail.com

"Ethics is knowing the difference between what you have a right to do and what is right to do." ~Potter Stewart

ABSTRACT

Ethical performance is crucial for corporate citizenship and can be enhanced only though individual and collective virtues. However, recurring incidences of corporate scandals have questioned corporate accountability. One effective way of humanising governance is through ethical self-evaluation. Existing corporate governance guidelines lack ethical perspective where they have become mere tick-box measures with no real implications in curtailing fraud. The Ethics toolkit app aims to identify the extent to which employees practice ethics at work using a mobile app, to determine the limitations faced by individuals in applying ethical practices using a mobile app and to provide a support system to enhance employees' ethical behavior using a mobile app. The Ethics Toolkit App is a mobile app designed for an employee to self-evaluate and monitor ethical performance. There are two parties in this mobile app – the employee who self-evaluates at workplace and the employer who records the ethical performance. The app will benefit both employees and employers. The employees will be able self-evaluate themselves in terms of responsibility and accountability and identify the extent to which they practice ethics at the workplace. On the other hand, the employer will be able to monitor and record the ethical performances of employees on an annual basis. The niche and user-friendly mobile app will allow every employee to be responsible and accountable for their actions in their respective roles. Additionally, it will enable organisations to create a bottoms-up approach to corporate governance rather than the current top-down approach thereby helping to reduce incidences of fraud. The app will help to record one's ethical performances anytime of the year and identify shortcomings in undertaking their roles ethically. The shortcomings can be addressed on a timely basis through appropriate support system. This will not only help the employee grow within the organisation but also boost employee morale, collectively leading towards corporate citizenship. Even the app is not an organisation specific app. It can be used by all organisations and will be particularly helpful for listed companies to protect shareholders' funds through enhanced stewardship. It also contributes towards Malaysian Shared Prosperity Vision 2030 in nurturing responsible and sustainable institutions. A basic survey of the usability of this app has revealed that most of them feel that the app of this type will be useful. The researchers have identified potential collaboration with a local bank, a private company as well as Government agency.

Keywords: Ethics, Ethical performance, Corporate Governance, Mobile App, Self-Evaluation

ID: 12

NETWORKING RELATIONSHIP FRAMEWORK FOR MICRO-ENTREPRENEURS BUSINESS CONTINUITY POST COVID-19

Assoc. Prof Dr. Eley Suzana Kasim, Assoc. Prof Dr. Sharifah Norzehan Syed Yusuf, Dr Dalila Daud
Accounting Research Institute, Universiti Teknologi Mara (UITM)

ABSTRACT

COVID-19 challenges faced by micro-entrepreneurs threatened the sustainability of their business. Our innovation presents a novel IDEA on how to strategise a longer-term solution by modelling a networking relationship framework for micro-entrepreneurs. The framework postulates that an effective networking relationship between micro-entrepreneurs and their suppliers and customers, supported with digitalisation, will facilitate business continuity and eventual survival of their businesses. This can be achieved through both self-led and government-led support. This framework introduces the “Self-Led Support” idea to complement entrepreneurial mindset of micro-entrepreneurs and ongoing government support. “Self-Led Support” refers to any self-initiated activities led by the micro-entrepreneurs in connecting with and maintaining a good relationship with their suppliers and customers. With “Self-Led Support”, micro-entrepreneurs are internally driven to be proactive, willing to invest money and time, and more importantly willing to learn new things. These include self-upskilling activities, maintaining own customer database, diversifying into more profitable businesses and embark on self-led digitalisation effort. Digitalisation in connecting the supply chain links with suppliers and customers is crucial to strengthen and maintain business continuity throughout the pandemic and presents the way forward for micro-entrepreneurs in the future.

ID: 13

HYBRID MLRA DASHBOARD

Yusarina Mat Isa[1], Aziatul Waznah Ghazali[2], Nur Aima Shafie[1], Zuraidah Mohd Sanusi[1], Razana Juhaida Johari[1], Jamaliah Said[1]
[1]Accounting Research Institute, Universiti Teknologi Mara
[2]School Of Management, Universiti Sains Malaysia

ABSTRACT

Hybrid MLRA Dashboard provides a one-stop centre integrating self-assessment tool for the staff to assess their capability, as well as training platform for the staff to upgrade their knowledge and skills. This integrated one-stop centre is a special feature that distinguishes Hybrid MLRA Dashboard from the other risk assessment applications available in the market, combining both the 'soft' and 'hard' infrastructure. The Hybrid MLRA Dashboard is practically beneficial given that money laundering risk is atypical business risk, and several adapted modules need to be customized into the model to provide a specific risk-response model. This product also offers a framework for the relevant institutions in guiding their recruitment and training programs for their staff, particularly those involve in screening the customers for money laundering risk. The Hybrid MLRA Dashboard is potentially promising given that these institutions involved are continuously threatened as a conduit for money launderers, thus having competent staff would significantly contribute to mitigate the exposure to money laundering risk. It is envisioned that this product would be commercially viable for the adoption in the overall framework money laundering risk assessment.

ID: 14

VIRTUAL ONLINE CAMPING PROGRAM (VCP) ENHANCES LEARNING EXPERIENCES OF STUDENT TEACHERS' DURING LOCKDOWN PERIOD

Malathi Balakrishnan, PhD., Aliyas bin Said., Bushro bt. Ali, PhD., [4]Maznah bt Shaari., [5]Azman b. Hassan., [6]Mohammad b. Seman, PhD., [7]Faisal b. Karim PhD., [8]Mohamad Hamzah b.Sarimun., [9]Rohimi b. Jamel., [10]Varugheese C., Saraswathy Vellasamy
Institut Pendidikan Guru, Kampus Bahasa Antarabangsa, Kuala Lumpur

ABSTRACT

The purpose of this innovation approach is to gauge the enhancement of learning experiences via VCP among student teachers of the Institute of Teacher Education, International Languages Campus during the lockdown period. Thus, this online teaching-learning platform mode has become very apparent and played an integral part among all educational institutions during the lockdown period. Therefore, the introduction of VCP was implemented with multi-component and socio-cultural activities with the expectation to bring profound impacts on student teachers' characters, behavior and morale. This program also encompasses the characteristics that suits and demands student teachers, where selected student teachers' participated in non- outbound face-to-face interactive environments from various locations across the country due to pandemic breakout. This VCP did also incorporated the teacher's syllabus that emphasizes on the character building domains; to ensure that these student teachers' would eventually attain; spirituality strength, ethics; knowledge and good practice; accountability and trustworthiness; being independence and resilience; inculcate decision making abilities; self-esteem, creativity and innovative ideas. These student teachers were fully engaged with generic characteristics of the program schedule by inspiring them to perform their role dutifully in various aspects and situations. A qualitative research method was adopted by collecting and analyzing non-numerical data through the usage of video analysis, observation checklist and reflective journal to gather in-depth insights of the concepts, opinions, or experiences in this program. During discussions, challenges of the program and of how student teachers' adapted to themselves into new norms, were taken into account. In conclusion, the findings of this innovative approach exhibited the level of understanding of how the participants were able to derive meaning from their surroundings, of how their meaning influences their character and behavior through their executions of their innovative thinking skills. Therefore this innovative approach can be applibale in similar situations in higher education institutions.

Keywords: Character-building, learning experiences, virtual online camping, student teachers'

ID: 15

PUJASERBA

Mutia Putri Widodo, Raihan Sulaiman, Faren Nabhan Salman, Aulia Salsabila Manan Putri
School Of Economics And Business Telkom University, Indonesia

ABSTRACT

Domestic investment continues to dominate the food and beverage sector,.The sector has managed to rebound quickly from the impacts of COVID-19 during brief windows of opportunity. Since the abolition of large-scale social restrictions in mid-June 2020 which permitted consumers to dine in at restaurants, restaurants in the Greater Jakarta Area saw their number of visits soar by 35% and 45% in July and August respectively. The full extent of the impact of the re-implementation of PSBB in Jakarta in early September 2020 – which allows restaurants and cafes to serve takeaways only – on the sector remains to be seen. According to Indonesia's Hotel and Restaurant Association, or Perhimpunan Hotel dan Restoran Indonesia (PHRI), takeaways contribute to only 10% of restaurant sales.With dine-in activities prohibited, it may no longer be sustainable for many restaurant businesses to continue operations by relying solely on takeaway and online delivery demand. Pujaserba aims to help restaurant, or in this context is canteen, serve dine-in again. Compared to usual scheme Pujaserba is a smart canteen self ordering website concept. This Smart canteen is web based application, but user can access our application through their mobile. User can choose take away feature, no need to queue. Also user can order in any food court according to their current location. The benefit to the user are they no need to queue, no need to do lots of interaction with waiter or cashier and we provide automatic transaction using e-wallet. Online platforms are central in the digital transition of economies and societies, and the pandemic has strengthened their role. They provide important channels for growth to SMEs “going digital”. Eventually, our product (Self-Ordering Smart Canteen) has not been widely applied or used, with all the features hopefully it is will give hope to the food industry especially SMEs to rise from the adversity.

ID: 16

LIBRARY APPLICATION SYSTEM IAB CAWANGAN SABAH (APLIKASI SISTEM PERPUSTAKAAN IAB CAWANGAN SABAH)

En Madzani @ Saidie bin Nusa, Pn. Jamilah binti Othman, Pn. Cheong Shaw Mei, Dr Melati binti Jilon, Pn. Hayati binti Omar
Institut Aminuddin Baki Cawangan Sabah

ABSTRACT

It is undeniable that the Information and Communication Technology (ICT) has brought about a tremendous significant impact on the human civilization – and subsequently making dynamic changes in society. Globalization and rapid technological change has also led to the concepts of a borderless world, liberalization of global information, and global learning. Education is the key to development while the comprehensive integration of Information and Communication Technology (ICT) into education is the key to complement and generate support to teachers' professional development and students' learning skills. The integration of ICT in teaching and learning can take place not only in the classroom but also from anywhere and at any time. Continuous and comprehensive ICT integration will enhance the use of educational resources and improve the quality of education – and it is therefore the Malaysia Ministry of Education has given a significant priority and emphasis on the above mentioned matter – particularly the importance of ICT literacy among the students and teachers alike. As technology has undergone significant progression that benefits many, including educational stakeholders – the application of smartphone has also increased significantly. Smartphones, the internet-enable devices incorporated with computer applications and software, are among the eminent breakthroughs in this latest century – with its sophisticated, dynamic and high portability features – users would have the space and platform to the accessibility of information anytime anywhere (Al-Barashdi et al, 2015; Al-fawareh dan Jusoh, 2014). In addition, smartphones are also embedded with the computer like capacity providing tremendous amounts of facilities to the users (Lay-Yee et al., 2013; Weinberg, 2012). In this regard, Institut Aminuddin Baki Sabah Branch has developed a Library Application System of which can be used via smartphones to access a variety of learning material available in the library online repository. The application developed has been integrated into Google Play (Android); and is able to be accessed from any location at any time by the users. The application is also known as "Apps Perpustakaan" - and has a vast potential to fulfil the requirements and preferences of the prospective clients as follow: (i) for ease of accessibility for book reservation and loan; (ii) facilitate the accessibility to the reading material related to Educational; (iii) leadership and Management (ELM); (iv)being the fundamental and supporting pillar to National Reading Decade; and (v) provide and facilitate the avenue for the clients to contribute and procure relevant reading material.

ID: 17

SPVCNets: STREPTOCOCCUS PNEUMONIAE VACCINE CANDIDATES DEPLOYED FOR NETS' INDUCTION; TOWARDS THE DEVELOPMENT OF NOVEL, LEAST TOXIGENIC, HIGHLY IMMUNOGENIC, AND COST-EFFECTIVE S. PNEUMONIAE VACCINE CANDIDATE

Muhammad Hassan[1], Atif Amin Baig[1], Marina Binti Yusoff[1], Ahmad Zubaidi Bin Abdul Latif[1], Nordin Bin Simbak[1], Mohd Khairi Bin Zahri @ Johari[1], Mohd Adzim Khalili Bin Rohin[1], Yeo Chew Cheing[1]
[1]faculty Of Medicine, Universiti Sultan Zainal Abidin (UniSZA)

ABSTRACT

Globally, Streptococcus Pneumoniae (S. pneumoniae) remains a significant public health problem in causing invasive diseases. This Gram-positive bacterium causes more morbidity and mortality worldwide as compared to other infections. Annually, a total of 1.6 million deaths occurred due to pneumococcal diseases; out of them, 0.7-1.0 million are children (less than five years of age) because of their immunocompromised state. In Malaysia, pneumonia is considered the sixth most significant cause of death. Among the virulence proteins of S. pneumoniae, alpha-enolase and endonuclease-A (endA) possess a pivotal role in the retrogression and progression of pneumococcal diseases, respectively. Where alpha-enolase evokes neutrophil extracellular traps by binding on neutrophils to enhance its activity during the innate immune response, contrarily endA evades strategy to ruin NETs phenomena by degrading them into pieces. Currently, 94 serotypes of S. pneumoniae have been identified, while available vaccines of pneumococcal diseases, i.e., PPSV-23, PCV-7, PCV-10, and PCV-13, can target only 23, 7, 10, and 13 invasive serotypes, respectively. Moreover, serotype switching and escalating antibiotic resistance due to the natural competency of S. pneumoniae have raised alarming situations for public health worldwide. We knocked out cell-surface alpha-enolase and endA of S. pneumoniae to elucidate the mechanism of NETs involved in entrapment and destruction of S. pneumoniae. These specialized vaccine candidates have been recoginzed by MyIPO and peer-reviewed journals (BMC Open and DARU) and won medals (gold and bronze) in MPI exhibitions. The comparative study of wild-type and mutated strains allows insight into the molecular function of NETs independent of alpha-enolase and endA effect, phagocytosis (for mutant alpha-enolase), and correlation of S. pneumoniae immunogenicity. Our vaccine candidates are novel, least toxigenic, cost-effective, environmentally safe, and highly immunogenic vaccine candidates of S. pneumoniae independent of age restriction and serotypes, which is the main drawback of current vaccines.

ID: 18

QUALITY REPORTING ASSESSMENT SYSTEM FOR NON-PROFIT ORGANISATIONS 4.0 (iQRA 4.0)

[1]Assoc. Prof Dr Ramesh Nair, [1]Prof Dr Roshayani Arshad, [1]Dr Ruhani Muda, [2]Dr Nor Bahiyah Omar
[1]Accounting Research Institute, Universiti Teknologi Mara
[2]Faculty Of Business Management, Universiti Teknologi Mara Tapah Campus

ABSTRACT

The success of any NPO-driven initiative hinges on access to finances provided by external entities which include government agencies and profit-driven private corporations. However, accessing funds is a complex process which requires both NPOs and the funding organisations to mull over various factors such as reputational risk as they join forces as part of social alliances (Bocquet, Cotterlaz-Rannard, & Ferrary, 2020). Funding partners rightfully demand that NPOs provide information which can allow them to assess the effective delivery of the social initiatives they are supporting. As part of social alliances, NPOs and funding agencies need to agree upon the outcomes and projected long-term impact of planned initiatives. This needs to be followed by action on the part of NPOs who need to design a focused impact assessment framework, put into place a plan for action, initiative the project, and then finally report outcome. However, despite increasing pressure to measure and report performance, NPOs are still failing because of a lack of capacity and capability (Bach-Mortensen & Montgomery, 2018). This challenge frames the focus on the present study as we examine existing assessment and reporting practices of Malaysian NPOs for the activities which they carry out. In addition, we also test a framework for assessing and reporting outcomes and propose a refined framework which will contribute to helping NPOs gain stakeholder trust and ensure their sustainability. Although websites provide NPOs with an excellent platform for enhancing stakeholder confidence and establishing trust among existing and future collaborators, many NPOs have failed to adopt proper web-disclosure practices (Lee & Blouin, 2019).

ID: 19

GOOD GOVERNANCE ISLMAIC INDEX (GGII) FOR ISLAMIC NPOs

PM Dr Norziana Lokman, PM Dr Nor Farizal Mohammed, PM Dr Sharifah Norzehan Syed Yusuf
Accounting Research Institute, Universiti Teknologi Mara

ABSTRACT

The governance of Islamic non-profit organisation (NPOs) has to address two core responsibilities. The first is to fulfil its social mission and the second is to ensure the organisation operation is transparent, accountable and sustainable. These responsibilities relate to the fiduciary responsibility that a board of trustees, also known as a board or management committee, has for being accountable and responsive towards the expectation of the stakeholders of the NPO. Public trust and confidence are essential aspects of NPO sustainability, so it achieves the social mission that their stakeholders and community respect. Furthermore, as Islamic NPOs, the ultimate responsibility and accountability are to the Almighty Allah SWT.

ID: 20

POLITICAL CONNECTION FIRM DETECTION

PM Dr. Nor Balkish Zakaria, Nurul Alin Azmi, Prof Dr. Zuraidah Mohd Sanusi

ABSTRACT

Political Connection Firm Detection is designed based on the comprehensive definition of political connection that has been found and widely used in accounting journals. A comprehensive definition of political connection firms checklist is vital for the researcher and stakeholders to identify whether firms have politically connected or not with the politician. This tool is motivated by the problems that arise due to the dropped of traded share price faced by public listed firms in Malaysia during the 13th general election. These firms faced a huge dropped in share price due to the political connection that existed in the firms. Moreover, prior studies have found politicians in the boardroom can divert a firm's fundamental objectives to politician's objectives (Abdul Rahman & Salim, 2010). Furthermore, anecdotal evidence has found politically connected firms have low firm performance (Johnson & Mitton, 2003); low level of corporate transparency (Leuz & Oberholder-Gee, 2006); worst financial reporting quality (Chen, Ding, & Kim, 2010); and poor corporate governance (Ofir, 2017). Therefore, political connection firms detection is specifically designed to help stakeholders, especially investors to protect their interests from the expense of politician's objectives. This checklist was constructed and developed based on the early study by Johnson and Mitton (2003) until a recent study by Wong and Hooy (2020).

ID: 21

MYFIN_ANALYSIS AN EDUCATIONAL TOOL FOR FUTURE ACCOUNTANTS

Dr Norazida Mohamed, Associate Professor Dr Nor Farizal Mohammed, Associate Professor Nor Balkish and Associate Professor Dr Norziana Lokman

Accounting Research Intitute, Univeriti Teknologi MARA

ABSTRACT

MyFin_Analysis is the tool for future accountants to provide basis for change in accounting education in encouraging more active students' involvement. The students' participation is critically needed along the line with the need to supply the accounting professions with graduates who possess wider skills and competencies. Active students' engagement, in fact, is seen by several educationalists as an essential ingredient to students learning experience and the developing of lifelong learning skills. Drawing from our own experiences, the product illustrates how problem-based and peer-assisted learning tasks can help promote many of the skills and competencies so desired by educationalists, professions, employers and universities alike. The product also provides students, the skills and experience on the effectiveness of analysing the financial statements in the real world. These learning tasks help to develop those attitudes, skills, and knowledge. Consistent with much of the evidence in the general education literature, and in comparison, with more traditional lecture-tutorial based courses, the student over-whelming feedbacks support the use of action-oriented learning tasks.

Keywords: Financial Analysis, lifelong learning, problem-based learning, skill development.

ID: 22

IGCE DASHBOARD FOR PUBLIC HLIs: PLUG AND PLAY

Farah Aida Ahmad Nadzri, Norhayati Mohamed, Shuhaida Mohamed Shuhidan
Accounting Research Institute, Universiti Teknologi MARA (UiTM)

ABSTRACT

Worldwide, costs to produce university graduates continue to rise, and public higher learning institutions (HLIs) in Malaysia are generally expected to reduce reliance on government resources raising the issues of accountability and autonomy. Therefore, there is a need for public HLIs to be financially sustainable by managing their operational costs more effectively and generating income from the third stream such as waqf, endowment, and commercial activities. Considering the limited evidence on the public HLI's cost-effectiveness, the Income Generation and Cost Effectiveness (IGCE) Dashboard is developed to help the public HLIs to be financially sustainable. Using the IGCE Dashboard, the public HLIs may conduct simulation on the targeted surplus or breakeven point; targeted income generation; targeted cost-efficiency; the targeted number of local and international students based on the programs and levels of education; and targeted percentage of tuition fees based on the calculated cost per students. Not just assisting the management of the public HLIs to manage their cost more efficiently, the dashboard may also act as a tool to guide the management on deciding the most suitable tuition fees that shall be charged to their local and international students according to their programs and levels of education. By using the dashboard, the management of the public HLIs may strategize to move from a system that is highly dependent on government resources to a system that is focused more on the outcomes and contributions from the stakeholders at large.

ID: 23

I-VIVA

[1]Maslinawati Mohamad, Ph.D, [2]Fatin Amira Jelani, [3]Hairul Suhaimi Nahar, Ph.D
[1]Accounting Research Institute, Universiti Teknologi MARA, Malaysia,
[2]Universiti Teknologi MARA, Malaysia
[3]Sultan Qaboos University, Oman

ABSTRACT

We design the i-viva to help the administrative personnel the viva processes. It is the first version of our innovation in postgraduate administration in the aspect of viva monitoring processes. This initiative is the first version before we develop a more sophisticated version of tracker in the future. This version is a free version and its available for the any administrative staff to use and to be able to before effective and productive in their day-to-day work. This template I the initiative to help staff in the postgraduate department to coordinate and to monitor the process of viva monitoring to make sure students are able to have their viva session 8 to 10 weeks after their thesis submission. All of the staff in the postgraduate department would be able to get updates on the progress and can together monitor the process. We use the Trello platform for the template. Consists of 8 cards and checklists to guide any administrative personnels to monitor the viva processes. This will help the staff to be more productive and systematic in monitoring the process.

ID: 24

AMLFIU EVALUATION MODEL

Salwa Zolkaflil, Normah Omar, Sharifah Nazatul Faiza Syed Mustapha Nazri, Fazlida Mohd Razali

Accounting Reseaarch Institute, Universiti Teknologi MARA, Malaysia

ABSTRACT

Financial intelligence plays a vital role in this era as globalization and advancement in technology have triggered money launderers and terrorist financiers to operate across borders. In this context, combating of money laundering and terrorism financing are key concerns that requires special attention of each country as it is clear that both money laundering and terrorist financing threaten the integrity of a country's financial system. Having a proper institutional arrangement to collect or receive financial information related to activities of various institutions is a fundamental requirement. Hence, financial intelligence unit (FIU) was introduced to collect and receive financial information or intelligence related to activities of various institutions in preventing money laundering activities. This study introduces AMLFIU Evaluation Model, an assessment tool in assessing the effectiveness of FIU in fulfilling its roles as the competent authority in combating money laundering activities. Practically, this model offers the requirement that will be assessed by the FATF in assessing the technical compliance and effectiveness in the AML Regime. Therefore, it will benefit the countries in ensuring that their FIU is effective and fulfil the evaluation requirement during the FATF Mutual Assessment. This is a pro-active measure that will benefit the member countries to ensure that their country is performing well as per the FATF recommendation. Thus, AMLFIU Evaluation Model would significantly contribute to mitigate the money laundering activities, by enhancing the function of the FIU in each country. The users will also be able to detect which areas that requires improvement in order for them to achieve high level of effectiveness in the FATF Mutual Evaluation. It is envisioned that this model would be beneficial to all countries in ensuring its sustainability in this challenging world.

ID: 25

INFORMATION SECURITY DIAGNOSTIC SYSTEM (ISDS)

Fazlida Mohd Razali, Jamaliah Said, Razana Juhaida Johari, Salwa Zolkaflil, Syuhada Jasni
Accounting Research Institute, Universiti Teknologi MARA

ABSTRACT

Covid-I9 has changed the way of doing business. When most of the business activity was conducted via online platform, organisation's data were exposed to the susceptibility of Information Security Risk (ISR). Work from Home (WFH) norm compel most companies to evade their information security control, thus jeopardize the confidentiality and integrity of the organization's information. PWC's Global Economic Crime and Fraud Survey 2020 reported that for the past 24 months the highest fraud cases experienced by the business is cybercrime and the number is expected to be growing in 2021. Obviously, to sustain and stay competitive in the post-COVID period, ISR specifically cybersecurity must be addressed and mitigated efficiently. Substantial growth in the number of reported cybercrime signals lapse in "Information Security Management" in an organization. Lacks key corporates governance actor's (BOD, Head of Risk Management Department and Internal auditor) competencies and coordination results in poor information security management. The practice of working in 'silos' lead to increase exposure to cybersecurity threats. Observing the growing vulnerability of the InfoSec threats to the organization's sustainability, the ability to quickly mobilize the right combination of resource is crucial. As the first line of defence in an organization, the competencies and coordination of main corporate governance actors is crucial to minimize the exposure of information security risk to the organizations. This could be the best preventive measures that could effectively mitigate the ISR. Information Security Diagnostic System (ISDS) provides holistic measures of corporate governance actor's quality (mainly BOD, Risk Management Officer and Internal Auditor) by integrating both dimensions of quality namely, input (competence and objectivity) and output (information security risk judgment performance). The first of it kinds, this innovation helps the organization to evaluate existing and potential staff in term of their competencies (i.e. experience, IT Self-Efficacy) and conflict management style. Interestingly, the system also provides real time evaluation on the individual staff's ability to assess the risk associated with Information Security Risk. Ultimately, ISDS helps an organization to retain and recruit the right combination of resources. The combination of competent key corporate governance actor and highly coordinated functions will minimize the "silos" practice in information security risk management, thus increase the effectivene of ISRM.

ID: 26

INTEGRITY SELF-ASSESSMENT TOOL (ISAT)

Afzal Izzaz Zahari[1,*], Jamaliah Said[1], Yuserrie Zainuddin[2], Nurisyal Muhamad[3]
[1] *Accounting Research Institute, Menara SAAS, Universiti Teknologi MARA, 40450, Selangor*
[2]*Universiti Malaysia Pahang, 26600 Pekan, Pahang,*
[3] *Kolej Universiti Poly-Tech MARA, Taman Shamelin Perkasa, 56100, Wilayah Persekutuan, Kuala Lumpur*

ABSTRACT

Integrity assessment and evaluation tool can be an integral part of a standard-based accountability system and performance improvement. When designed accurately, executed proactively and properly implemented, the effects will be beneficial for the organisation. The main objectives of the tool are to categorise the levels of integrity, risk assesses the levels of integrity, and evaluate the levels of integrity violation of the person in the organisation. The tool would have the power to improve organisational performance, identify leaders with strong levels of integrity, and mitigate probable information related to integrity violations. The studies of integrity are timely contemporary issues that deserve scientific attention. The building of sophisticated models and empirical investigations in their own right are opportunities for society to improve on their understandings of human and organizational behaviour. The integrity assessment tool provides an opportunity for useful strengthened evaluations for governments, private institutions, and individuals employees to improve each of their core values towards integrity. The integrity self-assessment tool is based on the evaluation of the twelve core values of integrity which are then scored based on the respondent's input data. Current research includes exploring the components of integrity, the relationship between integrity and ethics, and the investigation of integrity violations. Through the evaluation of individual integrity, the tool will demonstrate how it differentiates from current leadership or ethical tools of assessment. The tool evaluated components would then help assess and improve the levels of integrity of the individual that would then improve organizational performance.

Keywords: Accountability, Assessment, Integrity, Leadership and Performance

ID: 27

INTEGRITY ASSESSMENT SYSTEM FOR PUBLIC SECTOR EMPLOYEES

[1]Afzal Izzaz Zahari, [1]Jamaliah Said, and [2]Nurisyal Muhamad
[1]Accounting Research Institute, Menara SAAS, Universiti Teknologi MARA, 40450, Shah Alam, Selangor
[2]Kolej Universiti Poly-Tech MARA, Taman Shamelin Perkasa, 56100, Wilayah Persekutuan, Kuala Lumpur

ABSTRACT

There have been alarming issues with regards to healthcare fraud and corruption. The events of integrity violation constantly show abuse of power, bullying, malpractice and ethical misconducts that are commonly highlighted in the healthcare industry. The Ministry of Health Malaysia was allocated RM 30.6 billion under Budget 2020, and Malaysia scored 95 out of 100 of which Malaysia ranked first in the Best Healthcare in the World category of 2019 International Living Annual Global Retirement Index. This indicates that the medical industry especially in the public sector health care is one of the highly vulnerable sectors that are exposed to any ill will of misconduct. This tool aims to examine whether these three factors affect the levels of personal integrity which affects occurrences of integrity violations. The tool will evaluates the hypothesised relationship between the phenomenon of leadership, culture, systems and integrity in the public healthcare.

ID: 28

A FRAMEWORK TO EVALUATE THE EFFECTS OF IT CAPABILITY ON ORGANISTIONAL RESILIENCE

[1]Norhayati Mohamad, [1]Jamaliah Said, [1]Sharifah Norzehan Syed Yusuf and [2]Fauziah Yusof, [1]Afzal Izzaz Zahari

[1]Accounting Research Institute, Menara SAAS, Universiti Teknologi MARA, 40450, Shah Alam, Selangor

[2]Kolej Universiti Poly-Tech MARA, Taman Shamelin Perkasa, 56100, Wilayah Persekutuan, Kuala Lumpur

ABSTRACT

The unexpected environment characterizes the contemporary service industry and poses greater risks to organizations that have concerns about both their business sustainability. The increase of demand for tertiary education as a result of increase in the nation's population has increased the number of private higher learning institution (PHLI). In Malaysia, it is estimated that RM1.3 billion of revenue is expected from PHLIs to the national economy. However, Covid19 pandemic outbreak has led to imminent collapse that could permanently close half of the country's private institutions. This leaves only a few of strong backers to financially guarantee their survival. Recent report highlighted that there are 55 percent of private universities are making losses. The purpose of this framework is to explore the factors that can facilitate resilience in Malaysian Private higher learning Institution (MPHLI). Based on Organizational capability Theory this study aims to examine whether highest order capability namely IT capability contribute to resilience of PHLI. This study will integrate new variable (IT capability) into Dynamic Capability Theory. Past studies using Dynamic Capability Theory, under-emphasis the important role of IT capability in promoting organizational Resilience. The importance role of IT capability is more prominent due to Covid19 pandemic that restrict human movement. The inclusion of IT capability will advance academic theory contributes towards the existing pool of knowledge.

ID: 29

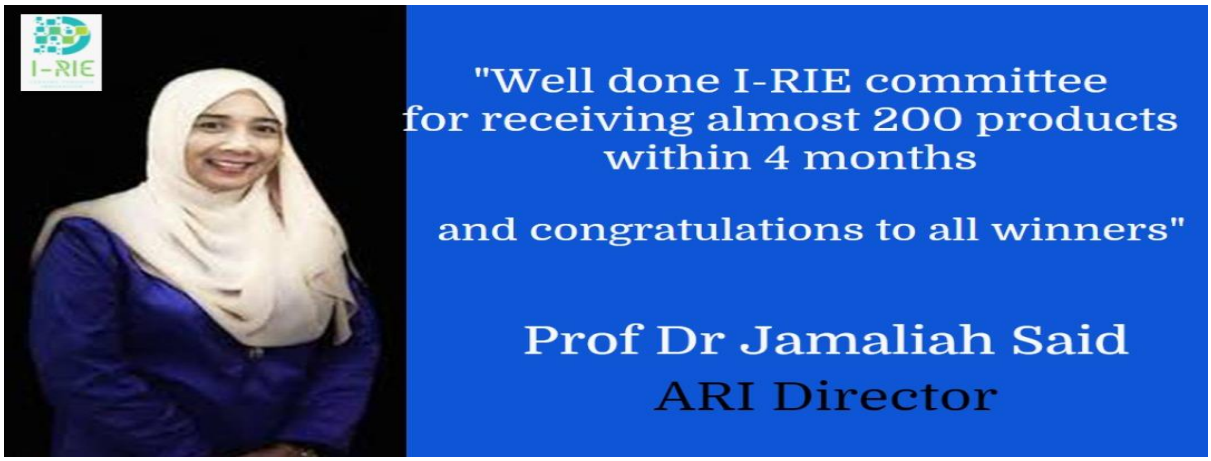
INFINITE PURITY TECHNOLOGY

Mr. Jason Kuan Kok Fong, Ir. Dr. Lai Chin Wei, Mr. Wong Weng Heng, Mr. Brendan Wong Mang Hoo, Ms. Olivia Kwan Chui Leng
Titanium World Technology Sdn. Bhd.

ABSTRACT

Titanium World Technology Sdn Bhd (TWT) is the manufacturer of SMARTCOAT™ Nano-TIO2 that eliminates harmful bacteria and germs that causes spread of diseases and odours. Malaysia based, TWTM has a very strong R&D team to produce a wide range of products to enhance the services and developed the business overseas in countries like Thailand, Singapore, Europe, Macau and India. Conventional disinfectant product such as alcohol vaporizer and air freshener become ineffective after a period time, resulting it to be useless to battle microbes. A single coating of SmartCoat™ applying to surfaces helps provides a long term anti-bacterial environment, enhancing the indoor air quality and microbial protection around the clock. SmartCoart™ a premium Nano TiO_2 Solution is non-toxic and approved by food testing laboratory of the United States Food & Drug Administrative (FDA), CE Certified. It objectives of creating aGreen Lifestyle and to enhances indoor air quality by decomposing harmful substances that cause allergies and sickness. In Peroxide, enhanced version of SmartCoat™ Lite, which contain Hydrogen Peroxide- an active ingredient to disinfect Novel Coronavirus (Covid-19), is also customer-designed meeting National Environment Agency (NEA, Singapore) standard in preventing viral infection. Through our research and global market development over 15 years, own novelty development of Infinite Purity Technology - a state-of-the-art green purifying system designed predominantly for Hospitality Industry. With the combination of SmartCoat™ and ECA-water, it's able to provide a new level ecological footprint to the industry – by reducing chemical usage, water consumption and plastic waste. SmartCoat™ embraces photocatalyst technology and works effectively under any light source and ventilation to activate its oxidative ability to instant self-disinfect. It can be easily applied onto any surface using an electrostatic sprayer. This system is programmed to remove toxic detergents from cleaning and replace with ECA-water. The electrolyzed solution is effective and nature-friendly with any cleaning protocol. It helps greatly by simplifying cleaning cycles with lesser water usage, reducing the usage of harmful cleaning chemical, and personal protective equipment. Infinite Purity Technology is tested and recognized extensively in South East Asia, Unite State of America and European Union. It assists business owners to experience significant ROI especially on cost saving conditions with lesser chemical and water usage. Infinite Purity Technology also helps to reduce the impact on our planet by enhancing and hybrid the overall hygiene procedure and universal bacteria protection processes.

SPECIAL THANKS



Accounting Research Institute (ARI)
Level 12, Menara SAAS
Universiti Teknologi MARA (UiTM)
40450 Shah Alam
Selangor, MALAYSIA