UNIVERSITI TEKNOLOGI MARA | Pusat Asasi

CREATIONS de UiTM

MEGA INNOVATION CARNIVAL 2020

For Knowledge and Humanity

ABSTRACT BOOK

6 - 8 MARCH 2020

CENTRE OF FOUNDATION STUDIES
UNIVERSITI TEKNOLOGI MARA
CAWANGAN SELANGOR KAMPUS DENGKIL

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CREATIONS de UiTM
MEGA INNOVATION CARNIVAL 2020

ABSTRACT BOOK

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CREATIONS de UiTM MEGA INNOVATION CARNIVAL 2020
ABSTRACT BOOK/
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PROGRAM OVERVIEW

CREATIONS de UiTM: Mega Innovation Carnival 2020 is one of the very own national level innovation competition organized by Pusat Asasi UiTM Cawangan Selangor Kampus Dengkil. Held in conjunction with Fiesta de Asasi and Asasi Open Day, CREATIONS de UiTM is also our mega project that showcases creativity and innovation skills among students. This competition involves 200 young inventors and students from foundation centres of public universities, matriculation centres and secondary schools across Malaysia.

Apart from that, STEM competitions and exhibition provides the opportunity to UiTM Centre of Foundation Studies students to participate and display their creativity.

This project is also a platform for the participants to enhance their knowledge through exhibition from invited agencies and sponsors such as Yayasan Inovasi Malaysia, Futurise, PETRONAS and others. In addition, visitors' awareness on innovation can be enhanced by listening to talks from the experts.

Visitors at Mega Innovation Carnival have the opportunity to join other activities such as Batik Canting, Arduino and Robotic Workshop and other interesting activities.

ALLOCATE

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ABSTRACT

The overflow of solid waste in Malaysia has become an issue at an alarming rate. According to Solid Waste Management and Public Cleansing Corporation (SWCorp) deputy chief executive officer (technical) Dr Mohd Pauze Mohamad Taha, said that the recycling rate in Malaysia last year is only 17.5% despite introducing the waste segregation programme, which highlights how serious food wastage is in the country. Most waste is sent to landfills and incinerators without properly managed and processed, contributing towards environmental issues factors. This becomes our problem statement. What can we do as inhabitants of this earth, to make the waste we produce daily that harms our planet into something useful and in turn reuse and reduce the resources consumed? In solving this issue, we have set a few objectives as a guideline for our innovation. These objectives include reduce and decrease the amount of solid waste produced by the nation, to eliminate the need for landfills and incinerators, promote and engage the community to practise sustainable living through a practical and easy method of waste disposal, to establish an efficient waste management and disposal system at any location, and to implement and promote the "net zero" movement to the society. In developing the product, we proposed that we create a recycling can consisting of multipurpose function to aid waste separation such as glass crusher and paper shredder integrated into the can to make recycling fun and effortless for users. Instead of a regular recycling bin which sophisticates waste separation, our innovation which focuses on easy use for consumers, would encourage and teach people from all walks of life to adopt recycling as their daily habit.

Keywords: Solid waste; management; separation.

ENTREPRENEURIAL TREASURE HUNT KIT: TREASUREPRENEUR

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ABSTRACT

Traditional technique of teaching is no longer relevant for new generation today. The necessity for fascinating teaching methods has become important since conventional methodologies do not promote soft skill enhancement. To comply to modern world, teaching methodologies must be diversified; able to provide an innovative and creative learning environment to the students. Learning will be more efficient if it is engaging and experiential. Therefore, the researchers designed an entrepreneurial treasure hunt kit game, name TreasurePreneur. This kit comprises a manual, a map, clue cards, info cards, instructions for participant and facilitator, and list of items related to ten (10) checkpoints to carry out 'a treasure hunt' type of game. Each game in every checkpoint is designed for a specific attribute related to entrepreneurship, which are; creative idea, financial management, branding, labelling, promoting, risk-taking, teamwork, courage and communication skills. All of these attributes are significant to an entrepreneur. Concise information regarding each entrepreneurial component is provided with the intention to educate the participants. One unique feature of this product is that it educates students while having fun in an adventurous and exciting way. A survey shows that participants enjoy and appreciate the creative approach in introducing entrepreneurial concepts to the beginners. To researcher's knowledge, this game is one of its kind and to date not available in Malaysian market. Therefore, the researchers believe that the product has a commercial potential and capable of proving that learning is not merely 'chalk and talk'.

Keywords: Educational based game; entrepreneurial mind-set, treasure hunt kit; entrepreneurship education; treasurepreneur.

MULTI-PURPOSE MOSQUITO REPELLENT GEL FROM PELARGONIUM CITROSUM EXTRACT

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ABSTRACT

Various plants have been recognized as an alternative for mosquito control due to the diverse of repellent compound. Pelargonium citrosum or "citrosa geranium" is one of the widely known “mosquito plant”. In Malaysia, this plant has been grown tremendously as an ornamental plant. Therefore, the purpose of this study is to formulate a mosquito repellent gel using Pelargonium citrosum extract through a cost-effective and eco-friendly method. Citropel, the name of the mosquito repellent gel itself is derived from the combining of citrosa, meaning “mosquito plant”, and repellent. The leaves extract of Pelargonium citrosum was collected by distillation process. Next, the leaf extracts were mixed with aloe vera gel (Guardian Aloe Vera Gel, Quarry Bay, Hong Kong) at the ratio of 1:1. The formulated product was then tested on an area of skin where it will be exposed in the mosquito rearing cage containing adult female mosquitoes, Aedes aegypti. The results were recorded by counting the number of mosquito bites. Citropel showed high repellent activities against the mosquitoes and Pelargonium citrosum extract is effective the control of mosquitoes. The estimated price for the formulated product is RM 7.00 per bottle of 50ml. Cost of production is RM 4.10 per bottle and expected profit margin is RM 2.90 for each bottle. In conclusion, the extract of Pelargonium citrosum extract is an alternative mosquito repellent for household use.

Keywords: Pelargonium citrosum; aloe vera gel; mosquitoes repellent.

QEACE

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ABSTRACT

Secara sedia maklum, produk Qeace dihasilkan bagi memudahkan sebahagian pihak dalam mengurus kebejatan yang berlaku ketika kemalangan jalan raya. Qeace berfungsi sebagai alat yang dapat melancarkan pergerakan kereta di lebuh raya apabila kemalangan berlaku. Sedia maklum dinyatakan, kemalangan sering berlaku mengakibatkan kesesakan lalu lintas dapat dibanteras dengan wujudnya produk Qeace yang telah diubah suai menjadi satu produk yang dapat menghalang pandangan orang ramai terhadap kemalangan yang berlaku sekitar lebuh raya. Idea Qeace diwujudkan untuk membantu pihak berkuasa yang bertanggungjawab dalam menguruskan kemalangan yang berlaku serta melancarkan perjalanan orang awam ke destinasi. Qeace berfungsi secara manual untuk memudahkan kerja perlaksanaan dalam menghasilkan produk tersebut. Pada masa yang akan datang, kami berharap produk Qeace dapat melancarkan fungsi secara automatik dalam masa yang sama setaraf dengan kemajuan teknologi di persada dunia.

E-PAY KVBP

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ABSTRACT

Sistem E-Pay KVBP dibangunkan untuk membantu para pelajar dalam menguruskan masalah kewangan pelajar, dan kehilangan atau kecurian duit. Di samping itu, ia dapat menukarkan pembelian makanan dan barang secara manual kepada Sistem E-Pay KVBP secara berkomputer dan mobile view dalam talian selaras dengan perkembangan teknologi semasa.

Keywords: e-pay KVBP; online pay.

MICROCONTROLLER BASED VEHICULAR SIMULATION EQUIPMENT

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ABSTRACT

A simulation is an approximate imitation of the operation of a process or system. A Simulation usually visualize and represents its counterpart of the simulation is based from for operation over time. Simulation is used in many contexts, such as simulation of technology for performance tuning or optimizing, safety engineering, testing, training, education, and video games. Often, computer experiments are used to study simulation models. Simulation is also used with scientific modelling of natural systems or human systems to gain insight into their functioning, as in economics. Simulation can be used to show the eventual real effects of alternative conditions and courses of action. Simulation is also used when the real system cannot be engaged, because it may not be accessible, or it may be dangerous or unacceptable to engage, or it is being designed but not yet built, or it may simply not exist. In the knowledge and safety industry, variation of simulation were used to train or indicate the danger of something or how an object or function works, for example, public transit company and such as bus and commuter services uses simulation combined with a simulator to train their employee to familiarize the employee with the equipment.

Keywords: Simulator; flight; arduino; realism.

EZY TILING SPEADER

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ABSTRACT

Tiles are the last finishing for floor and walls. Tiles packaging is the main choice by the people. There are a few problems to install tile. The most common problem that occurs during tiles installation is the thickness of the mortar becomes uneven. To make the thickness the same during the installation would take a longer time. With the EZY TILING SPEADER (ETS) can make the installation of tiles work easier, faster and efficient. ETS can help to create installing tiles works more quality. It is because ETS have the guide that can make the amount of the cement usage becomes even. It is because the cement does not spread on the tiles surface and did not need to be cleaned after the installment. After using the ETS, workers do not need to worry about the surface of the tiles. The potential of the ETS product is for it to be used widely nowadays and in the future. Research has shown that a lot of people are interested in this product to be used widely in tiles installing work. With the ETS, workers do not need to use a lot of time to install the tiles. Hence, this product really has a high commercial value that suitable to be used by a lot of people. Therefore, with the EZY TILLING SPREADER project its can reduce the problems that occurs during tiles installation such as the labor works, time limit of the installation, the evenness of the thickness of the mortar and the quality of work.

AUTOMATED PITOT COVER (APC)

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ABSTRACT

The objectives of this project are to design,develop and demonstrate Automated Pitot Cover to reduce incidents of airplane crash and avoid the incidents of forget to remove the pitot cover. The project impact is to help the maintenance crew and pilot know about the status of the pitot tube cover.This product is automated, it is close and open by using an app that are connected to the phone.Also,This project can prevent miscommunication between groundcrew and pilot and increase company reputation as well as company profit. The project scope are for aviation industry that are specifically targeted the technicians,engineers and pilots.This product is to increase the safety of the aircraft because it is operated and monitored by using an app.

A VERSATILE AND SUSTAINABLE ADSORBENT FOR THE REMOVAL OF DYES POLLUTANTS FROM WASTEWATER

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ABSTRACT

Water pollution contributed by the textile industry has raised a major concern among environmentalists and researchers. The great amount of dyes used containing toxic substances like sodium chloride, toluene and benzene posed tangible harms to living organism. Different types of adsorbent are commercially used to capture dye in water bodies. Although the adsorbents have high capability in dye removal, another problem emerged concerning the wastage of adsorbent after it has been fully utilised. Therefore, Activated Carbon/Polyurethane (AC/PU) composite is synthesised and utilised in capturing dyes from aqueous solution. Later, a breakthrough innovation is proposed as the surface-terminated composite can be reused as a building block such as fencing and pavement. The mechanical properties of the AC/PU composite waste show comparable properties as other building blocks. The production of adsorbent from renewable materials and its proposed reusability are in line with the Sustainable Development Goals (SDG), which are Clean Water and Sanitation as well as Sustainable Cities and Communities. Hence, this composite is an important innovation in wastewater treatment as it provides cleaner effluent in the textile industry without causing secondary pollution.

Keywords: Polymeric adsorbent; surface modification; polyurethane flexible foam; functionalized activated carbon; wastewater treatment.

KLEVER KICKS

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ABSTRACT

The world is sometimes can be seen as a cruel and dangerous place for people with disabilities especially people that have lost their eyesight and becomes blind. As blind people are not able to see anything and they need some kind of device that can help them to walk and do other things in their daily life like normal people. The traditional device that has been used by blind people for many centuries is a stick to predict the obstacle near them according to (Strong, 2009)[8]. As research keep being developed, the assistance device for the blind people keep changing, in order to improve the effectiveness of the device. Our problem statement for this project is that, blind people sometimes become careless even though they are using traditional assistance device such as stick and this can lead to the great danger to their life. According to Direct Researcher, Christopher Hogan, from 2001 to 2004, on average, 40 blind people were hospitalised as the result of pedestrian accident (Hogan, 2008)[6]. Even though this issue can be considered as minor issue among our society, but it can be much worse in the future. In order to prevent and handle this issue, we invent a technological shoes, given name, "Klever Kicks". Basically, this shoes has two main purposes of its existence. Firstly, this shoes is able to assist the blind people whenever they are walking and secondly, this shoes is going to generate electric energy whenever it's user are walking. Technically, this shoes has two main mechanisms to make it become a functional device. The first mechanism act as energy producer which it is responsible as energy producer that can convert the kinetic energy into electric energy. The second mechanism of Klever Kicks is the sensor mechanism. The sensor mechanism is basically the most important component in this project which it can predict the obstacle or wall that is closed to the user by emitting a buzzer sound. The innovation of Klever Kicks can be seen as a unique and very effective product as we are using simple Arduino Board and it can convert the kinetic energy into electric energy by the help of piezoelectric effect. Klever Kicks is expected to become a high demand product as it is a product that can increase the effectiveness of assistance device for blind people with the help of technological device. This project is predicted to give public awareness to the society that it is important to develop the technology that are clean and do not contaminate environment as the Klever Kicks can generate electric energy without using any hazardous fuel. As the optimistic generation, it is important for us to make research and develop clean energy technologies that are safe to environment and future.

DISTRICT 4.0: PEER LEARNING SERVICE WEBSITE

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ABSTRACT

Students strive for success and never stop trying their best to gain more knowledge day by day. A way of gaining knowledge is attending to lectures, and tutorial classes as scheduled. But there are more than one way that are proved to be more effective to students which are self-learning and peer learning. The term self-learning according Malcom Knowlesto is “a process by which individuals take the initiative, with or without the assistance of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, and evaluating learning outcomes” [1] while the term peer learning refers to situations where peers support each other in learning processes. Peer learning occurs among peers from similar social groupings, who are not professional teachers, helping each other to learn and in doing so, learning themselves [2]. However the problems arise when there are possibility the group of students associating with each other have the same level of understanding towards the study issue that they are facing. Hence to overcome this problem, a website particularly for educational purpose consists of the potentially study partner information, audio books, learning videos and simple notes is created. This website prioritize the safety of the students in which the information of everyone on the website included their picture, full name, gender, the year they are studying in, what course they are taking and their speciality in subjects with evidences. In addition to that, there are reliable sources from which the lecture notes are attached and for visual study student, there are videos to be watched in order to understand certain subjects without them having the need to find a study partner or group. It is undeniable that this website is worth an investment as the solution to a better study life is all in one website fulfilling all the requirements needed and the changes to a better study life is only at the tip of your fingers.

Keywords: Self-learning; peer learning; audio books; learning videos; simple notes.

ECOPAVI 2.0

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ABSTRACT

The main aim of this project is to reduce the abundance of plastic waste that is rising in the present world and recycling it into useful products. To reduce the carbon emission that causes by the uses of cement in concrete production, we replacing it with rice husk ashes for concrete material. This invention uses plastic and agro waste to convert them into building materials, which is a key factor to reduce environmental pollution. At present, plastic waste is effectively converted into useful building materials like bricks, roof tiles, paving slabs, and retaining blocks etc. For this research, we are using plastic bags, rice husk ashes (RHA), gravel and sand to produce a composite pavement without cement. We are focusing to invent pavers for walkway, patio and landscape purpose. Since it is costly to approach a local brick manufacturer for lending the machine, we have designed and fabricated a paver's mould and manufactured it in a small quantity. In this study, the plastic was heated until molten before the sand and RHA were added in suitable proportions. It had a dark grey texture and an increased weight in the initial analysis. Therefore, the laboratory testing methods for compressive strength and structure of brick were conducted to compare EcoPAVI brick and a regular brick. In both tests, our brick had showed an increase in its strength. Composite pavements, when compared to traditional flexible or rigid pavements, have the potential to become a cost effective alternative because they may provide better levels of performance, both structurally and functionally. Furthermore, composite pavement structures can provide long-life pavements that offer good serviceability levels and rapid, cost-effective maintenance operations, which are highly desired, especially for high-volume and high-priority corridors.

Keywords: Plastic; sand; rice husk ashes (RHA); composite pavements; pavers; brick; compressive strength.

VIBRATING ROD

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ABSTRACT

From a person with a sight disability point of view, the simplest thing can be deemed as a challenge to them. One of the common everyday acts the unsighted deemed as challenging is crossing the roads. Thus, this innovation is designed to help the visually impaired to cross the roads safely by using their sense of touch instead of only relying on their sense of hearing. For this innovation to serve its purpose, the visually impaired has to hold on to the rod attached to the pole of the traffic light and wait for it to vibrate as a signal to cross the road. The commercial potential of this innovation is that it is friendly-user, reasonably priced and very beneficial to the disabled. In short, this advancement may assist with facilitating their burden to go across the street more safely without the assistance of anybody.

ERO SHIELD

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ABSTRACT

Project failure is actually a common thing or problem that happen due to troubleshooting process which is the project doesn't work like what we create and what we programme. Besides, error in write coding to the project normally happen because some of people might not familiar or skilful in write a coding. Back to the first problem which is about project failure. Project failure can happen because a lot of problem like, broken jumper wire, wrong coding and etc. We create a project that can fix or solve this kind of problem. Other than that, we also want to encourage people to involve in invention. We create a new shield and library that user friendly and can take people attention and interest. This project have high potential to commercial because this project not expensive, easy to use, easy to programme and etc. In conclusion, this project can assist people to invent their project, avoid from error and etc

BIOPLASTICS CONVERTIBLE FERTILIZERS (BCF)

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ABSTRACT

Plastic is globally known as one of the most useful materials in the world. Plastic products are durable, flexible and widely utilized in almost any field such as industry, agriculture, manufacturing and service. Although plastic products can meet the needs of human beings, they are non-biodegradable that cause environmental problems such as white pollution. The difficulties in recycling of plastic waste have received great attention. Recycling technology is an effective but it is incomplete measure to address these environmental issues. In regard to these issues, there is a need of sustainable and biodegradable materials at once. Such kind of materials are called ―Bio plastics. Therefore, an investigation has been carried out to synthesize bioplastic using recycled grass and tapioca starch. The characterizations have been conducted by using solubility and swelling tests. The results of solubility test of synthesized bioplastic discovered that it was insoluble in water, partially soluble in ammonia but completely soluble in sulphuric acid, acetone, ethanol and acetic acid. While, the results of swelling test for synthesized bioplastic showed that there was slight change when soaked in chloroform and methanol. Theoretically, bioplastics decompose without leeching chemicals toxics back into the soil and water that will make plants becomes more fertile as the bioplastic can act as a fertilizer concurrently. Hence, the synthesized bioplastic material has the substantial properties like zero engorgement and insolubility in water makes it valuable for commercial viability. Besides, the use of bio-waste resources will be the best raw material for bioplastics synthesis and make bioplastics become convertible fertilizers.

Keywords: Bioplastics; recycled grass; tapioca starch; fertilizer.

SMART-DETACHABLE SLING BAG

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ABSTRACT

Issue snatch thief cases in Malaysia are worsening. One among the explanation is because the attention of individuals in snatch thieves' issue is low. It can also be said that if it's never happened there on person, he or she is going to not realize the consequence. Some might say that they can use their pocket pant or blouse as the safe place to keep their belongings but there is some factor that make they still want to use the sling bag/handbag. The objective of this innovation is to prevent loss of belongings when snatch theft happened without getting injured with the new quality of sling bag. This innovation is an amendment from subsisting items such as sling bag to work better in tandem with time and environmental conditions. Our selection to innovate this item because of we have found new one of the solutions to provide peace and prosperity around us. We name our product as Smart-detachable Sling Bag. This product targeted to the consumer especially women to ensure the confirm of their safety of belongings and their own life when snatch theft happen with the good design and affordable price. Overall, this product with its specific design comes to provide more of the benefits that can help humanity in this new era of modernization and the important is Smart-detachable Sling Bag can low the risk of loss precious things when snatch thief happen.

Keywords: Smart-Detachable Sling Bag; affordable; prevent loss of belongings; snatch thief.

PORTABLE HIJAB STAND

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ABSTRACT

The team wanted to invent something that would really make a change towards people's lives. The problem of keeping hijabs ironed is a major problem to many women, so, a solution to this problem is a Portable Hijab Stand. This invention is designed to keep many hijabs ironed as it can hold many hijabs on the hooks and clips. This stand is also a need as it helps keep a house tidy and free of any hijabs here and there inside a house. At the same time, this hijab stand is made so that it is light-weight and foldable. This would definitely help entrepreneurs when setting up their hijab stall. One can also store it neatly when not in use. This hijab stand is certainly very important in a women's lives as a hijabi wears hijab every single day [7]. A survey was also conducted to investigate whether this product would be helpful or not. Based on the survey, about 70% of the participants stated that they are having troubles keeping their hijab ironed and eventually support the production of this product. The survey proves that this product will definitely very useful for women who wear hijab and wants to hang their hijab neatly to prevent it from wrinkling up.

Keywords: Portable hijab stand; lightweight; foldable; hijabi.

DUAL-LAYER PORTABLE DESK AND LUMBAR-FRIENDLY PILLOW-BAG

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ABSTRACT

Lower back pain is a widely known physical pain due to a slouchy body posture of a person. This slouchy body posture resulting from always slouching when performing tasks on desk. Hence, the objective regarding to our innovation is to improve bad body posture of a person which eventually reduce lower back pain problems and to decrease the tendency of people to have eye problems. We will present two in one product to achieve our objectives which is the dual layer desk and a lower back pillow. The desk comprises of two layer of desk which is the upper layer and the bottom layer. The upper layer of the desk can be adjusted in incline position while the bottom layer of it can be pulled outwards in non-inclined position. Both structures can promote sitting up straight when doing work on the desk. It is completed with a cylindrical glass light along the top of the desk to provide users with sufficient light when working in dim surrounding. The second product is a thick lumbar-friendly shape pillow that bulge outwards to fit the shape and space within the lower back of the user which supported by a long portable velcro strap. This pillow also can be functioned as sling bag. Our product is purposely made for anyone that is usually spending most of their time working on the desk. The desk and the pillow are made from composite material and linen fabric respectively that is light in weight which is very portable to bring it anywhere needed. Once we achieved our objectives through this innovation, there is no doubt that many people will have a good, confident body posture, less problems regarding to lower back pain and less people with eye problems while doing their work on the desk in no time.

Keywords: Body posture; back pain; dual-layer portable desk; lumbar-friendly shaped pillow.

FAMILELLE: GENETIC INHERITANCE EDUCATIONAL CARD GAME

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ABSTRACT

Genetic discoveries have become powerful tools in improving quality of life. The knowledge about gene allows us to explore details of all living organism at molecular level. Such understanding leads to enormous potential in various aspects of human life. In secondary school, students require to learn heredity and variation in science and biology subject. They are introduced to various terminologies such as gene, allele, genotype, phenotype, homozygous, heterozygous etc. Some students even struggling to relate the meiosis process with genetic inheritance. As temporary solution for this problem, students tends to memorize all terminology without understanding the whole concept. Famillele is a combination of Family and allele which describing the game clearly. This game requires basic understanding of Mendelian monohyrid inheritance. In this game, a baby was found with certain characteristics described. Players need to predict potential parents to the baby and write possible genotype of the parents on their card. Player with the most prediction win. Each baby can have more than one possible parent.

Keywords: Mendel; allele; monohybrid & genetic.

INSTANT WATER TURBINE GENERATOR (IWTUG)

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ABSTRACT

Energy is essential to life and without it, people would be left cold and hungry. Source of energy mostly comes from fossil fuels such as oil, coal and natural gas. Among these fossil fuels, oil is most consumed for energy conversion. Electricity is the most rapid produced energy in the world and using unrenewable sources to generate electricity. As world population continues to grow and the limited amount of fossil fuels begin to decrease, it's not possible to fulfill the energy demand. Since the demand is higher but the supply is limited and the oil price keep increasing thus user will have to pay a big amount bills. To overcome this arises problem, renewable sources such as water, sunlight, thermal and ect are using to produce an energy. By taking that approach, this paper come out an idea of using renewable energy and introduce a product so called Instant Water Turbine Generator (IWTuG). This product is user friendly, portable, lightweight, cheaper and using recycle materials that can generate electricity everywhere anywhere when needed as long as there is a water source. Furthermore it also can be used when in blackout. IWTuG consist of turbin, dynamo motor, electric board and water pipe as the main component. IWTuG are using the concept of hydroelectric generator used at dam to generate electricity. The innovation development in this product is using the recycle plastic spoon as a turbine. Spoon turbine converts the energy of flowing water into mechanical energy and motor converts this mechanical energy into electricity. The presence of electricity can be shown through the light up LED/bulb. The commercial potential is for Malaysia Community. As a conclusion, this product not only for home usage but applicable for camping activity.

Keywords: Instant Water Generator (IWTuG); renewable energy; electricity.

GENEX-KIT

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ABSTRACT

The expression of gene into proteins is divided into two stages, transcription and translation. Transcription is the synthesis of mRNA (messenger RNA) using DNA strand as a template. Translation on the other hand is to synthesize a sequence of amino acids based on the nitrogenous base sequence in mRNA. GeneX KIT is designed to provide hands on learning tools for students to interact and learn. The GeneX KIT can accommodate 30 students at maximum with 6-5 person per group. It is suitable to be used in a classroom and as laboratory practice. It is equipped with an eraseable students' set which is easy to follow based on the instrction given. Hence, students will be able to practice genetic expression in a fun and entertaining way.

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Keywords: Transcription; translation; protein synthesis; genetic expression; educational kit.

THIRD EYE FOR THE BLIND

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ABSTRACT

Blind means unable to see with physical eyes. Common causes of blindness include diabetes, infections of the parts of the eyes, glaucoma, and inability to obtain any glasses. Visually impaired and blind people can still see a little light or shadows but cannot see things clearly. These people are called legally blind. They still need a lot of help to assist their daily activities. The main problems faced by visually impaired or blind people are moving or transporting from one place by another. Therefore we create an innovation called third eye for the blind that act as walking aid to solve their problems. This prototype consists of arduino system that can be attached together with the shoes. With this aid, blind people can live independent and enhance the confidence level to move around without helping from others.

Keywords: Visually impaired; blind; blind shoes; arduino.

DUST FREE MOVING ROBOT

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ABSTRACT

Dust is a dry powder consisting of tiny particles of earth or waste matter lying on the ground or on surfaces or carried in the air. Regular *cleaning* and vacuuming can prevent *dust* from building up. However, it often seems that no matter how much you *clean,* it keeps coming back. This contributes problems especially to housewives and carrier women in cleaning the dust on the floor and furniture at home. Carrier women are too busy at the workplace and feel tired when going home. They need a quick device that can be used for dust cleaning at home. Besides, housewives have a lot of works to do at home such as cooking, washing and cleaning. Therefore they need a new technology that gives lot of advantages in helping them to manage their household activities. Therefore we create an innovation called Dust Free Moving Robot to solve their problems. This product is designed based on arduino system. This dust free moving robot prototype was designed to make an easy, fast and comfortable process of cleaning the dust.

Keywords: Dust; cleaning; robot; arduino.

SMART SAFF

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ABSTRACT

The purpose of this project was to create a product that was able to ensure the saf of the jemaah at the mosque to be aligned and the gaps between them are closed. It uses sensors like a pressure sensor that is embedded within a translucent floor. It senses the pressure made by the jemaah. The floor was also fixed with coloured LED to provide an indication for the jemaah whether the saf is aligned or not. The green colour indicates the ‘saf’ is not closed and and the red colour indicates all the jemaah has closed the gaps between them and the saf is closed.

ZEUS CHARGER

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ABSTRACT

According to statista.com research by Statista Research Department, in 2016, an estimated 62.9 per cent of the population worldwide already owned a mobile phone and it will continue to grow to 67 per cent by 2019. Besides, according to article reader's digest which is 8 things that are killing your smartphone battery such as have too many application, phone too old and take a lot of photos. Nowadays, mobile phones are a necessary tool for mankind because it is our main communication tool and living in a healthy lifestyle also important to us. But the problem is those statement such as bringing our mobile phones during exercising are too inefficient because bringing mobile phones in our sports shorts pocket during the exercise will complicate our movement. Even though there is a pouch it is still inefficient for us to wear it during exercising. Besides, while exercising, for those who want to hear the song and even we didn't use our phones, over time our phones' battery will run out. From here, we have created a product innovation name "Zeus Charger" which is defined as an arm charger. The objective of this product is to ease our consumer in charging their cell phone by using their heat from his body and avoid our consumer from wasting time to find the plugin travelling. We are focusing our products generally for everyone that loves since our product function based on human body heat and the sunshine.This product seems perfectly suited to an active person that practice exercise or sports as their daily routine. This will increase users' accessibility to their mobile phone not only for emergency purposes, but they will also glad to see their phone's battery elevating at the same time.

I-THAHARAH

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ABSTRACT

The Fiqh Thaharah (purification) has a broad discussion which consists of thaharah haqiqiyah (purification of physical) and thaharah hukmiyyah (purification of spirituality). Abd Karim Zaidan, 1997). Observing thaharah or purification is obligatory upon every Muslim, and this is considered as one of the pillars of Islam. Therefore, a thorough understanding on purification is needed as it a prerequisite for the validity of all ‘Ibadah (Worship). Nevertheless, there is still exist perplexity among Muslims regarding the implementation of Fiqh Thaharah. Religious studies generally conveyed by traditional and less interactive teaching method. This makes the students feeling bored as it makes them difficult to understand the contents. Alternatively, the gamification approach needs to be integrated into the Teaching and Learning process in order to enhance Muslims’ understanding on the issues of purification. Thus, i-Thaharah is an innovation of boardgame that focuses on understanding Fiqh Thaharah based on as-Shafie sect. It is a new product that has been developed as a learning aid for a deeper understanding of the issue. One of the objectives of producing the product is to expose the public to the Fiqh Thaharah according to the Shafie sect. It is also to evaluate the level of understanding among Muslims through a fun yet educational games (edutainment) and become one of the alternatives to educate them. It would identify indirectly the relationship between public's level of understanding and practice in various Thaharah issues. Finally, it is an alternative medium for Teaching and Learning process of Thaharah as it is created in an interactive and user-friendly game.

BIO-INSPELTIC PLASTIC (B.I.P)

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ABSTRACT

The innovation and invention of BIO-INSPELTIC PLASTIC (B.I.P) is developed with same objective as in Malaysia Key Plan and Strategies which is encountered with green and biodegradable material. It is main purpose finding a new method and product to preserve and protect the environment. Since 18th industrial on plastic revolution, people get benefit and good on different types and utilization in plastic product. In a decade using plastic bag, the world has major problem to dispose this material as it is non-degradable and can cause another effect which may produce green-house carbon onto earth ozone if burning it. As lifelong of world environment concern, this GPB is significant material to replacing the function of grey material of plastic bag with its additional benefits, being safe and preserve the earth. A study of physical and chemical character is examined by handling the procedure of all ingredients of camphor, Cymbopogon, starch, glycerin and vinegar with appropriate ratio. Each of the ingredients has benefit on producing stability to the end product and namely as additive ingredients to stabilize its chain as a plastic bag. The novelty of this study is finding that the GPB be significance when the charcoal integrated with GPB as green biodegradable material in order the odor and smell problem can be encountered too.

Keywords: Biodegradable; green material; plastic ingredients; additive and stability.

HASYAF (HATI ISYARAT FLASHCARD)

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ABSTRACT

HaSya is a flashcard on Malaysian Sign Language (MSL) system. The main aim of the flashcard is to enable individuals of differing conditions to 'voice' their thoughts and communicate with others (Hajek & Slaughter, (2015)). It is also a tool for the public to communicate effectively with either the hearing impaired, hard / loss of hearing or speech impaired individuals in this challenging world (Maarif et. al, (2012)). Therefore, a basic and practical tool to 'voice' and communicate visually such as HaSyaF is timely. The objectives of HasyaF are to provide quality education to the society in relation to the United Nations (UN) Sustainable Development Goals(SDGs) No. 4 and also to provide innovative solution for both 'voice' and 'voiceless' members of the society to communicate so that 'no one is left behind' (Karbasi et. al, (2017)). Therefore, HaSyaF, a sign language flashcard in MSL would be significant and unique to Malaysia to help boost the use of 'Bahasa Malaysia' in both spoken and sign language. The effective use of the flashcard could provide significant impact on the society.

HANDS-ON OF TWO-SOLUTE MODEL IN CONCENTRATING URINE- A PROTOTYPE OSMOREGULATION TEACHING KIT

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ABSTRACT

Understanding how urine was concentrated in the human kidney by two-solute model were taught in the pre-university level. Most lecturers deliver their teaching in direct way or either by video presentation. One critical problem faced by students is lack of understanding to visualize the process that occurs in concentrating urine. Hence, a simple hands-on of two solute-model are designed to help students to gain insight on reabsorption of NaCl, water and urea at nephron of the human kidney. Students will also understand the physiology of mammalian kidney as a 'water conserving organ'. At the same time, students learned that during the process of producing concentrated urine, the osmolarity gradient of the interstitial fluid from the renal cortex to the renal medulla is maintained due to the involvement of vasa recta. To assess student's understanding, questionnaire survey was carried out on 10 students from Foundation in Science program. Our studies shown more than 60% of these students are fully understand two-solute model in kidney after they tried this teaching kit. The kit also has just obtained copyright.

Keywords: two-solute model; reabsorption of NaCl, water and urea; concentrated urine; nephron; vasa recta.

ARDUINO-BASED RAKAAT COUNTER

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ABSTRACT

The daily prayer is one of the five main pillars of Islam. However some people face problems when trying to perform the daily prayers. One of the main problems is sometimes forgetting which rakaat they are on. This mostly applies to young children and elderly people. The product uses common arduino components such as the arduino uno, a touch sensor and an L2C LCD, as the most basic construction. The product is modular, meaning it does not come with a sajadah, and can be carried relatively easily around due to its small and compact size. Currently, as of writing this paper, there are no products such as this being sold, only startups and crowdfunding. If push comes to shove, this product aims to help people in their prayers instead of being a product, so a diy kit is plausible

Keywords: Arduino; prayer: automated: counter.

'DE CESSABIT': THE CALMING NECK PILLOW

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ABSTRACT

Most students experience significant amounts of stress, and this stress can take a significant toll on health, happiness, and grades. Many students feel a sense of needing to relieve stress but with all of the activities and responsibilities that fill a student's schedule, it's sometimes difficult to find the time to try new stress relievers to help dissipate that stress. Hence, a neck pillow is innovated to be as a stress reliever beneficial to students and other potential users. This neck pillow is named 'De Cessabit' which is a Latin word that means the calmness. It is stuffed with rice, cotton wool and essential oils using a sock as its cover. The choices of essential oils available for 'De Cessabit' are lavender, roman chamomile and rose. As we all know, inhaling the aromas from the essential oils are known to have potential health benefits for example based on studies, lavender scent is believed to help promote calmness and wellness. This special feature is what makes this neck pillow different from variety of neck pillows available on the existing market.

Keywords: Neck pillow; innovation; stress reliever, calming effect; essential oils.

AQUA GRADU DETECTOR

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ABSTRACT

Water is one of the sources that play an important role in our lives. Apart from drinking it to survive, people uses water for cooking, washing bodies and washing clothes. Almost every home in Malaysia has a water tank for the purpose of water storage. Due to this, water leakage in water tank is considered as a serious problem since it affects most activities in our daily lives. Therefore, an innovation called Aqua Gradu detector is designed to detect a decreasing of water level especially in tank for a purposes of the early prevention of water leakage. By using this detector, water wastage and power consumption can be reduced. This system is build based on arduino and also can be programmed to shut off the flow of the water into the tank to prevent a leakage become worst.

Keywords: Tank detector; water level; arduino.

B.B: INTERACTIVE BUSY VOCAB BOX

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ABSTRACT

A needs analysis survey conducted among the students taking ELC080 in Pusat Asasi, UiTM Dengkil found that one of the primary concerns among them is their lack of vocabulary in English. Although vocabulary acquisition is largely to be deemed self-taught, a suitable method learning is still needed to ensure its success. This is the fundamental idea behind the design of the B.B-Interactive Busy Vocab Box. Using this box, ESL learners can use the given root words and, by using the analogy of a tree and lego building, “grow” their vocabulary by adding prefixes and suffixes. The novelty of the product is that it is a portable, one-of-a-kind interactive box that help ESL learners engage in active learning activities by providing a hands-on experience for the learners. The commercialisation aspect of the product lies in its ability to be appealing for all ages and level of ESL learners. The content of box can easily be tweaked to suit the needs and objectives of its users, be it parents, teachers or the learners themselves.

Keywords: ESL Learners; vocabulary building; interactive learning; active learning.

INFAK2020

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ABSTRACT

The art of giving is always being a part of the Muslim community culture because by giving it will purify the heart. Over the years the way we collect the donation are remained the same over the years even though technology itself has grown exponentially. Then the question remains how we can improve the way we collect donation at the masjid and the security of the money itself. Our main objective of this project is to integrate between technology and Islam, making a more convenient. The project is equipped with an Arduino inside compact with a tracking device, IR sensor, a motor and a RFID sensor. Over project is aimed to be commercialise at newly build masjid, modern masjid, masjid that goes renovation. Lastly, we hope that this project could affect the community and set a way to implement the usage of technology in an everyday duty as a Muslim.

3'S BIOMETRIC FINGERPRINT LOCK SYSTEM OF A BRIEFCASE

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ABSTRACT

Nowadays, the term of wireless communication technology has developed rapidly in our country, as it becomes the most important mediums of transmission any information through the air without requiring any cable or other electronic conductor wires from one device to other devices. A biometric fingerprint is a high technology that applies identity of a person. A transducer that change a biometric treat of a person into an electric signal. During traveling or working, people often use a padlock to lock their luggage or briefcase. They can easily broken the padlock, forget the password from padlock or their belongings might easily stolen by the thieves without being noticed. Less security and lacks of safety while using a manual padlocks. This project was studied to figure out these problems using smart, simple and secure biometric fingerprint lock system. The first objective of study is ensuring a safety's of users personal belonging. The second objective is promoting the smart fingerprint system at the affordable price and lastly is creating a simple but friendly smart fingerprint system. An arduino set is setup to make it works with a sensor of fingerprint scanner is connected together and coding is arranged inside a briefcase. The government parties, civilians group and managers in banking sectors are the main target of our commercial potentials having this product. These groups carry their briefcase to keep the confidential documents, personal belonging or money plate inside it securely. In conclusion, to enhance this biometric lock better a GPS tracker with high heat resistance and auto lock system will be developed in future. Nevertheless, the creativity skill in dealing with a new approaching in innovation can be enhanced and also develop the critical thinking skill to solve problem in science, technology, engineering and math (STEM) learning as guided by Malaysia Education Ministry.

Keywords: Biometric; fingerprint; GPS tracker; auto lock system, arduino.

KAIN SARONG BATIK

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ABSTRACT

'Kain Sarong Hybrid' is a product made of kain sarong batik attached on a pair of pants, centered for women of all ages and conditions such as pregnant, teenagers and the old. This product was created to preserve culture of wearing 'kain sarong batik' among today's generation as a majority of them favour wearing pants over kain sarong. This is due to many of them felt that wearing them constricts their movement. So, the product have a zip in the middle to counter this problem. It also has a belly band for the benefit and comfort of women, especially pregnant women. Furthermore, the 'Kain Sarong Batik' can be detached from the pants as it is not sewn together. It can be worn at home and outdoors.

TORCH-SCOPE

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ABSTRACT

Light or visible light is electromagnetic radiation within the portion of the electronic spectrum that can be perceived by the human eye. Basically, a torchlight is a small electric light which is powered by batteries and which you can carry in your hand. On the other hand, a telescope is an optical instrument that makes far away objects look closer. How can we put those instruments into a single tool that can be afford by most people? In our project, we aim for a torchlight that can provide a brighter and more focus light that can travel in a longer distance. Other than that, we also want to allow people to experience the usage of a telescope at a very low cost. Then, we want to compile both of the function of the torchlight and the telescope into one instrument. The usage of a magnification glass can help us to achieve our objectives and it is as simple as that. This product can be very attractive to many people, despite their ages or social status, as it is really affordable and do not burn a hole in their pocket. The potential of this product being on the market is really high as they are no similar product that can be seen anywhere. This product has a significant implication for people to be exposed to the application of physics in our daily life. This product can also make people's life easier as it is a combination of two products in one.

SMART RAILING WARDROBE

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ABSTRACT

Many portable and lightweight wardrobes were designed until recently to equip with small spaces and busy people. Folding clothes and organize them in a wardrobe are distracting chores for certain people. Smart Railing Trails Wardrobe is designed to overcome the problems and to ease the house chores. A lightweight, portable and foldable wardrobe install with a railing trails system that will automatically organize the folded clothes inside the wardrobe is the main focus of this project. It has potential commercialization value since the wardrobe is one of the necessary items in each home. This wardrobe will cut time-consuming since folding and organizing clothes are done sequentially. Thus, no more excuse for laundry chores.

Keywords: Portable; lightweight; foldable; wardrobe.

MAGNETIC ZAPPING CIRCUIT – LEARNING KIT

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ABSTRACT

Magnetic Zapping Circuit is a learning kit for students that are learning about the series and parallel circuit. This product can help teachers to visualize the current and voltage inside series and parallel circuit more clearly. The product consists of two boards; series circuit and parallel circuit complete with replica of resistor and battery, magnetic bullets and magnetic bar. Furthermore, it will increase understanding of student in circuit concept. They will be more excited to learning more about physics.

MOJO WIPER

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ABSTRACT

Fan is the "Must" electric appliance that needed in every house.The most reason why people buying a fan because we can control the temperature in a room and it can keep you cool.Not just that, fans also creates a breezy feeling, which make us more comfortable while using a fan, especially when the weather is too hot.Moreover, the price for fans is more cheaper and It will save your money as well.However, some of us easily get annoyed with the fan because of the dust from the fans. Dust happens when the blade rotate, thus the frictional forces rub againts the air , this knocks electron around, causing the blades to build up a net change.Futhermore, The charged dust particles then stick to the charged areas of the blade.So, dust doesnt collect on the blades simply by falling or landing on them.Despite of it, some people who got a sensitive eyes, nose, and skin will easily irritating while using a fan that have a lot of dust on a blade. Appearantly, it could make a decreased on a fan speed, because of the interaction between air frictional n dust on the blade.Fan Wiper removes dirty dust without needed to standing on the risky shaky ladder.Double-handed fan ceiling clener easier and faster your houseworks without using much energy moreover you did not have to hurt your neck chin up all the time cleaning the fan on the high ceiling. This project presents finite element based durability assessment for a new ceiling fan blade cleaner. The objectives of this project are to create a portable, versatile and ergonomic ceiling fan blade cleaner and to create equipment that easy to operate. Microfibre and plastic material were studied in this thesis which commonly used in industry. The structural three-dimensional solid modelling of ceiling fan cleaner was developed using the solid work software. The acquired result present both of ceiling fan blades surface is cleaned when used microfibre cloth that can trap the dust. The dust and cobwebs from blade is free to fall into the dust-box. The durability assessment results are significant to improve the component design at the early developing stage. The speciality of this product, we are using a bicycle brake as our main material. While using this product we applied the brake system which is more convenient. When we squeeze the brake level of the handle bars.Thin metal cables will pull the small calipers, forcing thick rubber to press the wood to clean the fan. So, that we can clean the fan easily and effectively. The results can also significantly reduce the cost and time to market, and improve product eliability and customer confidence. This purpose of this project is to lighten the burden especially housewives and the cleaners.

REHAL NEO

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ABSTRACT

Rehal Neo is one of the innovation inspired by the original rehal available in the market. It is created for everyone especially for the disabled including the blinds to give convenience for them to read al-Quran. With the creation of Rehal Neo, it will be easier for the visually disabled groups to place their al-Quran while reading it. This is because, the Braille al-Quran is physically heavy, thick and big compared to the normal cited al-Quran. The design of Rehal Neo which is flexible, made with lightweight materials, is portable for the OKU groups to handle and carry around since the design are made similar like a briefcase. Moreover, Rehal Neo has the added values which the making of Rehal Neo uses the electronic component combined with hinge that will simplify the uses of the rehal by only pushing the button to automatically open the briefcase into rehal shape and push the button once again to keep it back close as a briefcase when the are not in-used. This is contrary to the original available rehal in the market since the original one are usually heavy, make it hard for the OKU groups to carry them around everywhere. The results of this innovation is giving a big advantage to all types of groups, not only for the normal people, but also the OKU groups including those who are visually disabled.

Keywords: Rehal Neo; innovation; OKU; visually disabled group; lightweight; portable.

CURACURE

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ABSTRACT

Therapeia means cure in Greek. Our product promotes cure for small wounds or minor injuries. It is a sugar-based plaster for wound that could stop bleeding as the antiseptic qualities of the sugar helps to clean it, while simultaneously aiding the blood clotting process. As we all know, infection is a really serious problem caused by an open wound. Therefore, Therapeia will not only stop bleeding of a wound but it will also treat and protect the wound until it heals without leaving any scar. Therapeia's speciality compared to other products is that it will not leave any scar during the healing process. This is because sugar can prevent the buildup of the stringy kind of collagen that creates scar tissue. Instead, sugar forms a mesh-like collagen structure that brings the skin's surface back to normal and allows it to heal. For the patch, melted water, sugar, beeswax and coconut oil are mixed and let to hardened naturally. Then the cream is put on a plaster. For more optimal healing, the plaster should be worn for several days.

PLEGADORA

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ABSTRACT

'Plegadora' is one of the innovation inspired by the original simple shirt folding machine available in the market. It is invented for everyone especially for students, housewives, travelers and for all people that need to fold their laundry. Many especially students encounter a significant problem in managing time. They are too busy with myriad of assignments and need to allocate less time for their daily chores like folding shirts. Students also need to put extra effort in order to fold their clothes neatly. Therefore, we came up with a product named 'Plegadora' . This innovation aims to help students manage their garments practically. Less effort is also needed hence students will not only save their time but also their energy. 'Plegadora' is an intergrated product that combine mechanical aspect and electronic aspect by using Arduino. This eco-friendly component requires a specific coding to generate its movement and being control by a push button to start the folding process. It is undeniable that folding machine already exists in this era. However, they have their own pros and cons as he regular ones are less convenient while the expensive ones are hardly affordable by everyone. 'Plegadora' contrarily is cost effective yet less effort is needed.

CYCLE TO WASH

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ABSTRACT

C2W stands for cycle to wash is a manual washing machine. It works as simple as A B C, it requires by turning the pedal mechanically similar to a bicycle pedal. It is quite useful and very suitable for any range of age especially to students because of their limited in time, they can use C2W and can manage to do things such as studying, do school works and their life routines without worrying about their pile of dirty clothes. As for college students, we can assume in one week students need to spend in rm2-rm3 for laundry and might costing more money for a whole year of their studies. This problem is quite big consider that not all college students come from wealthy family, so with the presence of C2W it might cut their life expenses especially on their laundry. Other than college students, C2W can also be very advantageous for villagers or people with short of electrical sources. It can help them to manage their time and money better without causing any damage to mother's nature.

Keywords: pedal mechanical concept; washing machine; shorten life expenses; manage time.

COCO-T SEED BAR

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ABSTRACT

Coco-T Seed Bar is an organic base that helps farmers to accelerate the growth of plant seedlings. It is an alternative to plant because of the time taken to grow plants using Coco-T Seed Bar is faster the ordinary plant growth. Coco-T Seed Bar is eco-friendly because it does not use any chemical substances that can harm the composition of the soil and at the same time affect the plant. Coco-T attracts beginner farmers who want to plant vegetables or fruits as 'home-made' one.

TAJWINO

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ABSTRACT

These days, most Muslims are not practical in the study of tajweed to have a proper recitation of Al-Quran. This is because of less encouragement in the study of tajweed rules and uninteresting teaching-aids to help this study. Hence, this is where the innovation of Tajwino based on the UNO card game will play its role in helping Muslims to have better approach in studying tajweed as it makes teaching and learning process much more fun. This product focuses on 'Nun mati and Tanwin' rules. Besides, this product also can help in studying the rules of 'Mad Jaiz Munfasil, Mad Jaiz Muttasil, Ikhfa Syafawi, Izhar Syafawi and a few others. Tajwino will act as an interesting teaching aid that is suitable to be used for all people regardless of age. Moving forward, parents can also use this product as way to attract children in studying tajweed rules. The process of learning while playing will supposedly be much easier and efficient if it was collaborated with a game that build up the mind.

Keywords: Tajweed rules; teaching aid; teaching and learning.

PLASTIC BRICK

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ABSTRACT

Today's world is seeing an increase in waste that is causing damage to the earth. The earth is exposed to the extremely polluted environment if the waste is not properly managed. The main objective of this innovation is to reduce the current plastic waste that is rising rapidly throughout the years while producing a building material that can be use in the building and construction industry. This work uses Polypropylene (PP) which is a type of thermoplastic that can easily be found in plastic waste. It can be re-moulded and recyclable to create other materials which in this case a prototype plastic brick. The plastic brick was processed to mix with other materials as fillers. These include waste rubber powder and calcium carbonate ($CaCO_3$). From previous research papers and articles, it is found that these fillers can significantly improve the properties of polypropylene (PP). Therefore, it is concluded that, these plastic bricks have the potential to meet market needs in order to replace standard clay bricks. To support the government's call for recycling of waste, this innovation has the potential to help reduce plastic waste, resulting in a product that can be categorized as a green technology product.

Keywords: Polypropylene; calcium carbonate; bricks; building; rubber.

MESCOLARE WARDROBE

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ABSTRACT

This product is called as “Mescolare Wardrobe” as it is a multipurpose wardrobe. This wardrobe can be used as a wardrobe and a cloth drying rack. All kind of things can be dry-ed by hanging the at the pole inside such as blouse, shoes, towel, trousers and etc. As the clothes are all dry, a dust-cover curtain can be used to cover the whole rack and it is ready to use as a wardrobe. This product is very convenient for people who are busy in their daily life and does not have any time to do house chores or someone who want to save money. This can be very useful for housewives, educated person, busy people, students and people who has small house. This kind of wardrobe will be very useful as many people doesn’t have much time to do house chores and to those who want to save some space in their small house or rented house. This wardrobe has a lot of benefits as it can help us to save both money and time. It is also can make it easier for people who are busy and it also doesn’t take much space. Next, this wardrobe is a movable wardrobe that can be moved wherever we want as it has wheels and it is very stable.

AMOSECTKIT

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ABSTRACT

Insects such as flies and mosquitoes are such an annoyance to everyone. It causes discomfort towards people and one of the main source of diseases. Common insect repellent that we often see on sale is electronic and aerosol. Nevertheless, we found that electronic insect repellent consume higher cost and are not eco-friendly. Hence, we present to you "Amosectkit" which consists of insect repellent gel and spray that are eco-friendly , non-toxic, affordable and travel-friendly. This product is made from a mixture of basil and lemon. This product are made to bring comfort to people in the same time can protect themselves from insects everywhere they go. Furthermore, it produces nice herbal smell. The objectives of this product is to replace hazardous insect repellent with safer and eco-friendly insect repellent to save the environment .This product is designed to be used by traveller and students as it can be carried everywhere at low costs. The commercial potential is for Malaysian community. The conclusion that we can made is that this product are universal as everyone can used it well and it is eco-friendly.

Keywords: Insects; diseases; eco-friendly; environment; traveller.

ROOF COOLER

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ABSTRACT

This innovation project titled 'Roof Cooler' focuses on issues that have been faced by most of Malaysian. Malaysia is situated in the equatorial doldrum area, which causes the country to have tropical climates throughout the year and high humidity and abundant rain. On a sunny day, the average temperature in Malaysia is around 27℃ and 32℃. The temperature can cause discomfort for someone who is staying in a house. Usually, to reduce the temperature inside a house, people will tend to use fans. However, the usage of fans is not effective as it is just circulating warm breeze around the house. The usage of air conditioners might seem helpful but it uses a lot of energy to operate during a hot day. Therefore, the project intends to aid in reducing the average house temperature during a hot day with the use of green energy and renewable sources. The project is an innovative way that can be used to reduce the temperature in the house and keep the house cool even on a sunny and dazzling day. The project consists of a system that works using solar panels as the sources of energy, a water tank to collect water during rain, a waterpump and a Light Dependent Resistor(LDR). This project fulfilled a global goal in Sustainable and Development Goals set by the United Nations. The goal achieved is SDG-7 which is affordable and clean energy as the whole systems will use renewable sources which is light energy to operate.

CAMPING T-LIGHT

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ABSTRACT

Camping is an outdoor activity involving overnight stays away from home in a shelter, such as a tent or a recreational vehicle. However, there are two common problems faced by the campers which are electricity supply shortages and unnecessarily insect distraction. Currently, torchlight is considered as an important tool used to light up the darkness. However, light emitted from an ordinary torchlight is in a focused direction and incapable to brighten up the surrounding. Therefore, an invention named 'Camping T-light' is introduced as the solution. The design of the Camping T-light is based on the Tyndall effect, whereby there is a scattering of light as a light beam passes through a colloid. Next, in order to solve the second problem, an insect repellent aroma which is citronella grass is attached to the Camping T-light, thus will help reduce the distraction of insects such as mosquitos and ants. The Camping T-light is made of recyclable and affordable tools including bottle cap, hook, light bulb, battery, colloid substance such as milk creamer, and a sack of citronella grass aroma. To build this Camping T-light, a hook is attached to the cap by inserting the tip of the hook through the cap. Following that, a light bulb is attached to the hook, and it is placed under the cap. Next, the citronella grass aroma is solidified, wrapped in a plastic and added into a small sack. In conclusion, this product is an alternative in solving problems of current torchlight as well as help reduce unwanted waste in the country.

Keywords: Camping; lamp; Tyndall effect; colloid; torchlight.

FLOS POTENTIA

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ABSTRACT

Flowers are always regarded as a symbol of love, beauty and gift of nature. People often use flowers to portray their feelings and happiness. In such events likeweddings, graduations, and valentine's day, people express their appreciations towards loved ones with bouquet of fresh flowers. However, these flower bouquets only last for a certain period of time. Therefore, a product named 'Flos Potentia' is introduced to preserve the freshness of the flowers and make them last longer. The list of possible ingredients tested to make this product are water, glycerine, soda water, sugar, vinegar, shirt whitening and aspirin. A specific size of container is used to place the flowers with the solution or substance. This experiment needs a prolonged observation whereby it must be conducted in a period of time that has been set. Based on the observation and results from the experiments, glycerine gives the best preservation to the flowers.

Keywords: Flower; preserver; glycerine; aspirin; shirt whitening; vinegar; sugar.

PARTO VACUUM CLEANER

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ABSTRACT

Environmental pollution is a serious problem that threatens the survival of mankind. One of the activities that can reduce the environmental pollution is by recycling the waste materials. Recycling is the method of regaining, reprocessing, and reusing of the waste materials that would be thrown away. The most commonly recycled materials include paper, glass, plastic, and metals. Using various types of waste materials, a simple, small size, battery operated and user friendly portable vacuum cleaner was designed. This vacuum cleaner is suitable to be used by children in order to educate them about cleanliness and also by adolescent and adult especially when the cleaning involves the tiny surfaces or holes. The vacuum cleaner, Parto Vacuum Cleaner main components include axial fan, dust compartment, sucker tube and 9V DC. Since the construction of the Parto Vacuum Cleaner is simple, children can even do it by themselves (DIY method). Parto Vacuum Cleaner is an effective, simple and low cost vacuum cleaner suitable to be used when cleaning tiny surfaces or holes has a potential to be patented and commercialized.

Keywords: Plastic bottle; aluminium can; DC battery; vacuum cleaner OLEO COCOS.

OLEO COCOS

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ABSTRACT

Some people pour grease and cooking oil directly down their drain. Grease accumulation inside drain pipes is a major, yet surprisingly common plumbing problem. This is because when grease and oil interacts with water, it will coagulates and attaches itself to the interior of pipes. Over time, these deposits can restrict water flow and eventually clog that will block the entire drain pipe and could lead to the water overflowing out of the sink. Regarding to this problem, superhydrophobic and superoleophilic materials such as modified raw cotton, natural fiber material, organic adsorbent and nanotubes have a significant role in treating the oil spillage. An activated carbon is one of organic adsorbent that has been used as an absorber to trap the oil spillage due to its high surface area, low density, excellent mechanical properties, good chemical stability, environmental friendliness and large pore volume. Therefore, an invention named 'Oleo cocos' is introduced as the solution. In this study, the activated carbon was formed from coconut shells by carbonisation process followed by wet impregnation with calcium oxide and grinded to form powder. The powder was then tested for the adsorption efficiency in a simulated drainage system. The activated carbon from coconut shells has demonstrated an effective adsorption capacity. Thus, this product can be used by the community for daily routine by preventing the clog of plumbing system and reducing the cost of maintenance. Thus, this product is an alternative to solve the problems of community and reduce the waste in our country.

Keywords: Coconut shell; activated carbon; oil; absorber.

ORGANIC PEST REPELLENT

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ABSTRACT

The overall interest in environmentally safe pest control methods and the rise of insecticide resistance in pest populations have prompted research on insect repellents in recent years. In homes and urban environments, the pests are the rodents, birds, insects and other organisms that share the habitat with humans and that feed on and spoil possessions. Control of these pests is attempted through exclusion, repulsion, physical removal or chemical means. Some pesticides may cause cancer and other health problems in humans, as well as being harmful to wildlife. Therefore, an alternative pest repellent has been developed by using cinnamon and clove oil in order to make movement of the insect away from an odor source without direct contact and direct contact. The organic pest repellent (cinnamon and clove) was extracted using methanol solvent. The filtered extracts were then evaporate using centrifugal rotary evaporator to get the paste. This paste was mixed with a small amount of methanol. The results showed that, an ant is move away from the food that has been sprayed with Organic Pest Repellent in the surrounding plate of food. This product is environmental friendly and chemical free for the usage in the household.

OIL FERTILIZER

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ABSTRACT

A fertilizer is any material of natural or synthetic origin that is applied to soil or to plant tissues to supply plant nutrients essential to the growth of plants. An existing fertilizer is found not environmental friendly, expensive and hazardous to plants and animals. The environment was exposed towards air and water pollution. Therefore, this study has come out with an innovation named “Oil Fertilizer” that have a significant role in supply the nutrients to the plants. The oil fertilizer is introduced as the green technology in overcoming the negative effects from the chemical fertilizer. In this study, the wasted oil was putted in a container. Then, pandan and kaffir leaves were blended together. The solution was filtered through sieving process. The eggs were smashed to get the egg yolk. Then, the egg yolk, the solution of pandan and kaffir leaves and the wasted oil were mixed and stirred together to get the oil fertilizer. This eco-friendly innovation will be a stepping stone towards providing our next generation with a pollution free environment, high quality fertilizer and safety pesticides.

Keywords: Oil; pollution, nutrients; fertilizer; environment.

FEED FORMULATION IN CHICKY CRUNCH PRODUCTION

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ABSTRACT

It is essential to provide chickens with feeds that can contribute to their optimum health to bread a healthy chicken. However, some of the commercial chicken feeds available in the market have issue with their Halal status. The ingredients might contain enzymes that originated from the swine's stomach. Besides that, harmful chemicals such as roxarsone are added as the food additives because the feed's formulation lacks in nutrients. These two issues are the major concerns in the commercial chicken feeds. Thus, a new formulation of chicken feed, "Chicky Crunch" is introduced to overcome problems in the commercial chicken feed. The main ingredients in Chicken Crunch are made up from the waste materials such as palm kernel cake, rice bran, eggshell and bitter bean weed. Palm kernel cake is a good source for protein while rice bran and eggshell are the source for the carbohydrate and calcium, respectively. Apart from that, nutrients from bitter bean weed offer a good immunisation boost for the chicken. Hence, these ingredients will nourish the chicken with all the diets needed. The process of making the Chicky Crunch involves the blending of all the materials, kneading the blended materials and drying under the sun. The chicken feed was then tested to a group of chicks to see their growth's effect. The well-fed chicks grew healthier after a few weeks. In conclusion, this new feed formulation brings a solution in creating an alternative chicken feed that is free from harmful chemicals, rich with indispensable nutrients and most importantly contains Halal materials.

Keywords: Chicken feed; palm kernel cake; waste material; halal; nutritious.

GALEXIO SPACE GAME

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ABSTRACT

Educational games for children have been widely used in supporting learning in-side and out of school and a growing interest have appeared for the potential to deliver effective and engaging learning experiences. Educational games are important elements to maintain children interest motivation and immersion. There is variety of educational board games and that intend to assist users to achieve various educational goals. However, the present popular board games such as Monopoly, Uno and Sahiba are fun rather than learning centered. In order to overcome this problem, an innovative board game namely Galexio Space Game is designed to cater both fun and learning. The game set consists of dice, nine planets, solar systems set of questions, buying-trading stars and it needs at least two players. This educative game would inculcate interest in astronomy among children and has a potential to be patented and commercialized.

Keywords: Astronomy; board game; adventure; learning; galaxy.

AUTO-MAT DRYER

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ABSTRACT

Home accidents cases in Malaysia are contributed by falls on the same level that due to slipping, tripping and stumbling. Home injury mainly happened because of not fully dried foot that led to slipping. The standard foot mat used at home is not user friendly because it can lead to slippery. One of the main problems the inconvenient foot mat is always in wet condition. Therefore, an invention named AUTO-MAT Dryer is introduced as an alternative way to upsize the drying capability compared to standard foot mat. The main components of AUTO- MAT Dryer include nichrome, polyvinyl chloride (PVC), rubber sheet, fans and 12V DC. This foot dryer is designed by adding axial fan, heating element powered by electric and activated by a mere of touch and pressure. This foot dryer is able to minimize the home injury caused by slipping and falling. The AUTO-MAT Dryer is an effective, simple, low cost and has a potential to be patented and commercialized.

Keywords: Foot dryer; home injury; economical; slippery.

MULTIFUNCTIONAL INTELLIGENT ASSISTANT (MIA)

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ABSTRACT

Noisy classes, bully, and skipping classes are the most common problems in teachers' life. All of these happen when the teacher is absent and while teacher need to go out from the classroom because of some important matter. We created a project that can fix and prevent all of these problems. We created a new invention that can keep an eye at the students during class session when the teacher is absent. This project has high potential in commercial market due to its low budget material, high quality build, and promising potential. In a nutshell, this project can provide assistants for teachers during class and examination session.

ECO-FRIENDLY ORGANIC FERTILIZER

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ABSTRACT

The purpose of this innovation idea is to implement and modify the idea of making our own compost for planting which is an eco-friendly method that ensures the growth of the plants to be as healthy as possible. Thoughts were of course wondering around in our minds of how can we resolve the problem of the need of people to make their own compost to plant, instead of buying the high quality fertilisers in the market just for the sake of keeping the plants at their home in the most healthy state, so that they can consume healthy and clean source of fibre in the end of the day. It is an undeniable fact that humans will throw the food waste in their bins at home everytime after meal and then throwing them away into the garbage can. In Malaysia, about 3000 tonnes of food waste are being thrown away to the landfills everyday [Syahirah Abd Razak, 2018]. In order to reduce this issue, we came out with the idea of using the food waste and then turn it into a compost where it will act as a fertiliser to be given to the plants, giving the plants the nutrients they need. We would widely suggest this to those who plants where a healthy compost is indeed what they need to keep the plants healthy. In addition, this project will also be helpful for those who lives in condominiums as they would not need to carry the whole sack of fertiliser up their condominium. This project indeed is made to ease the lives of the people where they do not need to waste money on buying fertiliser when they can actually make their own.

VERTICALLY INTEGRATED FISH FARMING BUSINESS MODEL

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ABSTRACT

Solar energy industry has experienced a surge of growth in the past few years. In 2012, there was 76 percent increment of solar installations compared to the previous year. As of 2013, the solar industry boasts 8,500 megawatts of solar capacity and creates more than 119,000 jobs in the United States. Despite of its massive growth, it may not be able to replace fossil fuels. There are still several barriers that could hold solar energy back. There are several challenges faced by solar industry. The biggest challenge for solar industry is this industry requires a lot of space and land for the solar panel installation. The limitation of space and land causes an increasing of property demand as it also used by animal and plant farming industries. Thus, this limitation will lead to the increasing of property price and cost for solar industry operation. Based on the data from Gading Kencana Solar Farm located at Ayer Keroh, Melaka, about 1.5 acre of land needed to produce 1 Megawatt of solar energy. In this project, we are focusing on reducing cost for the solar farm project so that it can be a more profitable business to the entrepreneurs. In our prototype (3D plan), both fish farming and solar industry were combined to form one vertically integrated fish farming industry that can give huge advantages towards environment and the industry itself. Fish farming has been chosen because this industry frequently uses large area of fishponds. It is very suitable for the installation of floating solar panels to reduce the dependency of land. This combination will make this industry more savings and profitable as we can harvest two types of product which are electricity and fish in the same area simultaneously. In our business model, we also show the way to reduce fish processing and delivering cost by using electricity which produced by the solar pl

AR-RUMMAN LIPSTICK

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ABSTRACT

Lip balm is a very useful ornament. It can be used by both gender, man and woman. It acts as a protection through moisturising dried tissue and protect the area from adverse environmental factors which reduces pain and allows the lip tissue to heal. Lip balm is made up of natural beeswax, organic coconut oil, liquid vitamin E, jojoba oil, shea butter and essential oil (optional). Muslim women usually face a problem regrading the cosmetic product due the certain product contain not permissible ingredients. Organic and muslim friendly lip balm become high demand. It used the natural and permissible ingredients to produce the lip balm. Lip balm can be found in form of stick in plastic tube or in form of liquid in small plastic container. The usage of plastic container is not eco-friendly. Recently lip balm and lipstick product used paper tube as its containers. It is shows that people are concern about the environmental problem. Usually lip balm is not fully used by consumers. Thus it can lead to cosmetic product waste. The innovation of common lip balm into lip balm in form of wax paper is more easy to use and eco-friendly. Organic lip balm in form of waxed paper is more easy to use and target market is for all women and men especially for muslim people. The innovation would reduce cosmetic product waste, help muslim people to use organic lip balm.

Keywords: Organic lip balm; wax paper; reduce cosmetic product wast

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