



"UNLEASHING CREATIVITY, HUMANIZING INNOVATION"

ABSTRACT BOOK

10 April 2021

Centre of Foundation Studies Universiti Teknologi MARA Cawangan Selangor, Kampus Dengkil

ASiD Innovation and Creativity Day AICD2021

ABSTRACT BOOK

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PROGRAM OVERVIEW

ASASI INNOVATION AND CREATIVITY DAY 2021 is an annual event organized by Innovation, Commercialization, and Industrial Linkage Management Committee, Centre of Foundation Studies with this year's theme 'UNLEASHING CREATIVITY, HUMANIZING INNOVATION'. This year marks the first virtual innovation competition held that gives a platform and a chance for students to unleash their creativity and ideas toward humanity.

AiCD2021 provides an opportunity for lecturers to be advisors in scaffolding the students' innovative minds. This will be a platform for the lecturers the importance of innovation culture in their profession. It has attracted 61 teams to compete in 2 categories which are Science & Technology and Social Sciences. This shows a good picture of the Centre's effort in cultivating research and innovation at the grass-root levels. In doing so, AiCD2021 awards students' participation with Best Innovator, Best Video, and Most Like Video for both categories.

PET CARE APPLICATION

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ABSTRACT

Since the past few decades, keeping animals as pets have become a part of human life. Pets can be good companions and they can also bring pleasure as well as drive away loneliness. However, despite the joy of keeping animal as a companion, we also need to ensure that the comfort and basic needs of the animal are fulfilled because every animal has their own habitat and needs. Pet care and guide usually become a massive thing for beginner pet owners to cope with because they don't have any experience before. Due to this, pets usually do not get the treatment they are supposed to get. So, our project aimed to provide a platform for everyone to share their experience of taking care of animals in the form of social media. This will help people, especially pet lovers to gain knowledge about the pet that they want to adopt and pet owners to take the best care of their pets. This app of social media also will have extra features to track all the things like mealtime, sleep, and measurements of growth for your pets. In addition, this app will provide basic information and details of animal care. In conclusion, this app can bring a lot of benefits for the user and the pet. For example, after the use of this app, pet welfare will be better taken care of and users can also gain new knowledge about pets and know what is best for them.

Keywords: Pets; pet care; guides.

KNOWLEDGERIA SERIES

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ABSTRACT

Learning method can come in many ways. Nowadays, books and handouts may be less effective and they need to be supplemented with other materials. In this 21st century, the learning methods have to be changed to make lessons more interesting and for learning process to be effective. We observed that most teachers and lecturers make constant effort to conduct lessons in an interesting manner. For example, they conduct games for their students and perform quizzes. Based on all the observations, we have decided to create a product that can be utilized for educational purposes. We named our product 'KnowledgeRia Series'. The inspiration arises from a popular game which is known as 'Jutaria' game. Our main objective is to pledge a fun way of learning to the people. Hence, our focus is delivering the general knowledge to public. The game consists of a square gameboard with 56 cards of questions and special cards. The game comes together with a bluetooth speaker because the question can be distributed from the card or audio. Furthermore, we also provide a small board to list the marks and a manual template on how to play the game. Similar to the 'Jutaria' game, the most important thing is the dice and the piece token, but we design it in a character based on the topic of the game. The game contains two sets of different topics which include the general knowledge about biology and about facts. The benefits of our product are to enhance the knowledge, release stress and create competitiveness among the participants. Participants can also improve their listening skill as the questions can also be played from the audio. This product is suitable for everyone because the question is related to general knowledge. Thus, everyone can enjoy playing our product and gain new experience in the learning process.

Keywords: Knowledgeria series; learning; education; gameboard.

VECTOR'S TREASURE HUNT

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ABSTRACT

Physics is one of the most challenging subjects to be studied by the students from the level of secondary school up to the universities level. Besides, lecturers also feel the same way when they always failed to make students understand the lessons. In fundamental physics, vector is one of the most important core concepts that must be mastered by each student so that they will be able to cope with future lessons. Therefore, the concept cannot be skipped and needs to be well understood by all physics' students. This innovation can be used to help students to understand the concept in a fun and engaging way. The setup of the game is based on a treasure hunt game. Students need to answer the questions correctly in order to get another clue until they finally find the final treasure in this game. Interestingly, this can also be a self-learning when the solutions come out just after they choose the correct answer. In this way, they will learn and notice their mistakes when the correct answers are revealed. However, since the game's aim is to learn and not to punish, they will still have a chance to make another choice despite choosing the wrong answers. With that, it is expected that students can study physics in a fun way without losing any marks. The best part is when they manage to reveal the final treasure and when they are able to collect all the clues by answering all the questions. This self-learning game may help students especially students who are not interested in physics lessons. This simple development can also become an alternative for lecturers to develop any kind of other games for their students without involving messy coding and higher expenses.

Keywords: Vector; treasure hunt; clue; self-learning.

LOVE ALARM "WHERE LOVE CAN BE SEEN"

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ABSTRACT

It is very crucial to know others' feelings, emotions and attitudes. Other than avoiding conflict, the knowledge of knowing the inner side of others can also be used to influence people. This study will mainly bring the concepts and the theories of political psychology. The way they think about us, how they react to us and how they would respond to us. Many people today, especially adolescents, suffered in relationship problems. This happens due to lack of technique on how to read people's mind and also trust issue that can possibly occur. Adults would think that the problem does not matter but it does matter. Thus, in solving the problem this study will prepare a set of models on how to know whether someone likes, hates, pretends to like or pretends to hate us. It consists of the elements of bodily movement, eye contact and social media interaction. This model has its own standard of measurement that can be used by many people, especially adolescents in our country, Malaysia due to the dependency on cultural and social behaviour.

Keywords: Love; people; adolescent; social.

HORMONE IN ACTION

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ABSTRACT

Endocrine system is one of the five most difficult topics to learn other than matter cycles, aerobic respiration, cell division, and genes and chromosomes. There are a few causes that lead to learning difficulties such as students' learning and studying habits, as well as students' negative feelings and attitudes towards the topic. Hence, Hormones in Action is developed. It is a comic series that explains the mechanisms of action that happens in the human body. This comic takes place in a nation where all the hormones are the public servants that keep the nation safe and well-regulated. The hormones are characterized as human beings and sometimes robots! They receive and carry out instructions to solve and fix any problems that occur in the nation. This series is divided into episodes that are arranged by the disruptions that are commonly experienced by the human body, which as problems that occur in the nation. This comic is expected to engage students with low interest in reading long texts and help them to retain information as it is easier to remember visual graphics.

Keywords: Endocrine system; cartoon-based learning; effective learning.

ANTIBACTERIAL PRAYER GARMENT

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ABSTRACT

The world has been overwhelmed with the Covid-19 pandemic for about a year. We have been put under the Movement Control Order (MCO) that has been enforced by the government. Due to this lockdown, majority of the Muslims are not able to pray together or do activities at the mosque. So, this has inspired us to create something that can be used with highly guaranteed protection from virus infection which is antibacterial prayer garment. The main objective of this innovation is to make sure Muslims can perform congregational prayers in the right shaf without worrying about Covid-19 infection and able to carry out the demands of Allah S.W.T perfectly. The creation of this antibacterial prayer garment must go through two important procedures which include these procedures. First, infusing the silver in the fabric since silver ion is known as antibacterial agent and the second process is dyeing the fabric into a photosensitizer solution which will produce reactive oxygen species (ROS). All parts of the material are treated with antibacterial treatment despite the usage of two different materials. Our unique praying garment inhibits bacteria to create a sanitized environment at all times. The same fabric of this prayer garment will also be used to make prayer garments for Muslim men. Potential users for this product are all Muslims in Malaysia, especially those who live in the Red Zone area. The marketing potential is also high since Ramadan is around the corner and all Muslims will go to the mosque to perform Tarawih prayers. In conclusion, this antibacterial prayer garment is really beneficial for Muslims in Malaysia to immerse themselves in deep concentration and total humility when they perform their prayers without worrying about the transmission of the virus.

Keywords: Antibacterial; Covid-19; prayer garment; muslims; mosque.

LAWDYSSEY: LEGAL BASED BOARD GAME

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ABSTRACT

The traditional method of learning law is boring and dull due to the abundance of reading materials that students have to cope with. Thus, it can be difficult for the students to understand the content. The objectives of Lawdyssey are to make students understand the journey as a legal practitioner and the requirement to become a legal practitioner. Students can also experience the ups and downs as a legal practitioner by way of playing this board game. This newly designed Lawdyssey; legal board game is an interactive educational board game that will bring dull and dry law subjects to life. Experiential learning is an alternative method of learning as compared to the traditional method of learning. Apart from that, this newly invented Lawdyssey can be commercialized to all institutions that teach law subjects as part of their curriculum or study plan. With Lawdyssey, it will enhance students understanding of law subjects and their journey. Not only law students, but Lawdyssey can also be commercialized to the public at large to experience the journey as a lawyer because of its fun and interesting game. It will not only focus on law students but also on the public at large. In terms of novelty and originality, Lawdyssey is the first-ever board game that is designed to describe the journey of a legal practitioner in Malaysia.

Keywords: Legal practitioner; experiential learning; board game; law.

MOKSHA PATAM ; ACADEMIA

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ABSTRACT

A traditional board game of snake and ladder that most of us have played before but with a little twist of knowledge. The idea sparks when the discussion on ways to boost students' grades was held. After some research, it is believed that some students find it hard to study, some even say it's boring that they are not able to concentrate for such a long period of time. The board game concept was chosen as it is easy to understand the rules and everyone can play. The main objective of this innovation is to create an alternative for students who struggle with learning traditionally which is by sitting and reading books as well as doing exercises. Therefore, by improvising this game, it will not only help the students to make studying fun but also able to strengthen the bond among peers. There are some chances of this innovation being commercialized, but perhaps it has to be further modified. From this project, we hope to be able to help more people on gaining knowledge and build a better society.

Keywords: Board game; academic; students.

3D BIM INTERPRETER APP

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ABSTRACT

Nowadays, most people find it hard to interact with a deaf person as they have minimal knowledge and have no understanding about sign language. There are approximately 40,000 deaf people living in Malaysia and the majority of non-deaf Malaysian have problems interacting with them. This situation is quite difficult to overcome as Bahasa Isyarat Malaysia (BIM) is not taught in school. Therefore, we have come up with the idea of creating an application to solve this major problem among the members of society. The concept of this application is to make use of a 3D animation that has the abilities to interpret texts into sign language itself. The objectives of this application is to build overall communication skills in many aspects including body and emotional language as well as promoting sign language to be learned by others especially children. The 3D BIM Interpreter App will be able to assist and narrow the communication barrier among individuals. Thus, it can surely nurture compassion between deaf people and the society. The users can approach deaf people easily and make them feel comfortable to interact. Hence, it can help deaf people to feel more inclusive in the society.

Keywords: Sign language; deaf; 3D animation; apps.

WISE JENGA

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ABSTRACT

Wise Jenga is an innovation of Jenga in which the player must answer questions correctly in order to skip a turn. The concept of Jenga was chosen because it is an entertaining game that could be played by individuals from pre-university level and below. Wise Jenga will be able to improve student's critical thinking by sharpening their ability to solve problems. Some students find it difficult to study mathematics and science which require a higher level of critical thinking. The dull environment during the learning session causes ineffective teaching methods. The purpose of the "Wise Jenga" project is to make students be more competitive. "Wise Jenga" also encourages students to fully participate in the learning process which is more fun and exciting. The outcome of this project is students will be able to improve their level of understanding in the subjects. Besides that, this project also gives benefits to society such as allowing creativity, promoting curiosity and enhancing better decision making in real life. This innovation can be upgraded into a mobile application where people from around the world can play together by exchanging questions. Wise Jenga is divided into three sets which consist of 'Easy', 'Medium' and 'Hard' levels of Mathematics, Biology and Physics topics. Wise Jenga is able to help sharpen students' minds in their ability to solve problems and develop the students' critical thinking. Upon instilling Science, Technology, Engineering, Art, Math (STEAM) in the "Wise Jenga" project, students will be able to increase their competency, as well as interest in future careers in STEAM-related fields, in line with the purpose of STEAM itself. In conclusion, "Wise Jenga" is an effective way to develop student's knowledge in the subjects.

Keywords: Wise Jenga; mathematics and science learning based game; steam.

ENGSY /'ıŋzi /: ENGLISH MADE EASY

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ABSTRACT

It has come to mind that e-learning that is recently enforced across the world is challenging students' capabilities to stay in focus especially in language learning. Be it the adolescence students or young adults, nobody can escape from distractions that are engulfing them, nonetheless of the disturbance being intended or fortuitous. Following this issue, interactive educational games seem to be the best mechanism for language learning as it is proven that games have engaging factor that can help triggers students' attention (Moku, 2018). As the subjects under the course of Teaching English as Second Language provide students with many components of studies for them to absorb, it is unequivocal that attention span is deemed required in making sure that they are on track. According to Frontiers (2017), a region in a gamer's brain that is responsible for attention span can be stimulated easier than a non-gamer's which result them to possess better focus in sustained or selective attention. Hence, it may be agreed that the interactive board game "ENGSY /'mzi /: ENGLISH MADE EASY" is apt to cater the students' need of attention stimulator for language learning as it challenges player's knowledge, especially in English language. Through "ENGSY /'ıŋzi /: ENGLISH MADE EASY", players will be exposed to further knowledge as it covers a wide range of aspects in English studies such as reading, listening, speaking, grammar and vocabulary skills. Thus, a better understanding alongside great results can be obtained in a fun way with learner's attention remain unwavering throughout the learning process.

Keywords: Game; learning; language; attention; english.

VISIONARY INVENTIVE WORKBENCH

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ABSTRACT

Visionary Inventive Workbench is an all-around innovation created to ease our work as students, teachers, office workers and many other organizations. Its versatility allows the users to do their work wherever they are even in hot and dark places without having to bring many items separately such as a clock, lamp, fan, power bank and mirror. The mechanism used behind this invention is folding, where we can fold this Visionary Inventive Workbench into a small box that can save space if it's not being used. Other than that, a solar panel is used by absorbing light energy to convert it for electrical energy (AC current) to supply energy to the accessories provided. For every group of individuals, the use of this Visionary Inventive Workbench is very suitable to facilitate their lives. Individuals who work can use it to do work with comfort at home. Students can also take advantage of this to make their learning easier and convenient. It will make them more focused on doing their work and studying when they use this product, as sitting on their own table help them to build a productive research area and allow them to develop. It is not only restricted to those employers and students, because it can also be used to find knowledge and also to read books for anyone who wants a cozy spot. It clearly shows that for any group of people, this Visionary Inventive Workbench can be presented because it has its own features that can improve human's life.

Keywords: Workbench; solar energy; eco-friendly; studying; multifunctional.

GREEN MILIEU: A COMPOST BIN STARTER KIT

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ABSTRACT

In Malaysia, people in major town and cities enjoy systematic and scheduled waste collection handled by local councils. This service however is rarely available to the people in rural areas. As a result, waste were disposed by open burning and some were dumped into the river which may affect living condition, environment quality and welfare of the people. Hence, a starter kit for a compost bin is introduced as an alternative waste disposal method which is suitable not just for people in rural areas but also people in the cities. A compost bin is a container that holds compostable materials in place while they decompose. Based on studies, almost half of the food waste in the average rubbish bin could have been composted. It makes this product perfect for any household as composting is an excellent way of treating solid waste and and the product can later be used as organic material to enrich the soil. Besides, it saves money, reduces resources and protects the environment. This starter kit consists of a compost bin, compost starter and soil. The novelty of this product lies on its capability to accelerate the compost process as compared to the existing compost bin in the market. Therefore, this product will be able to promote green-lifestyle as it helps people to manage their waste in the most friendly-environmental way.

Keywords: Compost bin; composting; solid waste; environment.

EFFECTIVE CONTROLS OF RIVE WEEVILS USING AROMATIC HERBS 2.0

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ABSTRACT

Rice weevils (Sytophilus oryzae) is one of the most destructive pantry pests causing significant loss of rice and other cereals during storage. Usually, female rice weevil will infest the kernel of rice by using strong mandibles. Hence, the larva inside the kernel get their diet inside the kernel. The current practice to control the infestation of rice weevil is by using nonenvironmental friendly-synthetic compound. Since chemical products are often associated with harmful effects, this pest will lead to economic and domestic problems. Focus of this research to investigate the insecticidal and repellent activity of selected aromatic herbs against rice weevils and to identify the three best aromatic herbs that show highest repellency for potential alternative control of rice weevils. Screening test was conducted on nine aromatic herbs to test the efficiency to prevent the rice weevils for 16 hours. Five herbs were selected for simple water extraction. Hydrobeads were used by immersing it into the extraction. The hydrobeads then was coated by using tea bag. Result shows that kaffir lime, onion, lemongrass, curry leaves and mint are the best five herbs that can be used as repellents for rice weevils. These herbs show the highest percentage of rice weevil avoiding the aroma. Only onion, kaffir lime and mint that still have the presence of scent after simple water extraction process.

Keywords: Rice weevils; repellent activit; herbs; hydrobeads.

ORGACOAT: A NOVEL GREEN CORROSION INHIBITORS

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ABSTRACT

Corrosion inhibitors are commonly used in industries involving mild steel to protect steel from rust and corrosion. In many industries, mild steel is one of the most preferred materials due to its availability for many applications and cost effectiveness. Acidic solutions are extensively used in industries and usually detrimental to mild steel and give rise to significant financial losses. Chemical corrosion inhibitors are used on the metal surface to prevent the corrosion of mild steel. Unfortunately, most of these compounds are very expensive and bio-toxic organic compounds, which cause serious toxicity problems. OrgaCoat is a newly green inhibitor to improve the corrosion activity especially for mild steel applications. OrgaCoat is made up from henna leaves extract and domestic waste. Thus, the objective is to investigate the performance of OrgaCoat as an eco-friendly and low-cost anti-corrosion agent. Henna consists of four main constituents which are Lawsone, gallic acid, D-glucose and tannic acid. These four constituents combined with active compounds from mango peels could act with the metal cations and be absorbed on the metal surface to protect the metal from corrosion. The compounds present in the OrgaCoat extract form a corrosion inhibitive layer and the inhibitor can be adsorbed on the metal surface through oxygen atom of lawsone and active compound of mango, which are the main constituent present in OrgaCoat extract. Since corrosion inhibitors are widely used in the industries, it is strongly believed that OrgaCoat can be a competitor to the typical inhibitors. Henna leaves and domestic waste are being used as corrosion inhibitors because the extracts from Henna leaves were found to be cheap, environmentally friendly, and good corrosion inhibitors. Since it is made up from organic compounds, OrgaCoat is a biodegradable corrosion inhibitor and will produce less waste.

Keywords: Corrosion; inhibitors; mild steel; henna leaves; biodegradable.

MULTIFUNCTIONAL TABLE TENNIS DOOR

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ABSTRACT

In the midst of the pandemic, many daily activities are forbidden and one of the activities including sport activities, are restricted especially in crowded places. This has limited friends and family spending time together doing what they love the most. Hence, we decided to invent a 'multifunctional tennis table door' that can be installed in any household. This product can solve problems such as saving space in a household, enjoying sport activities indoors to avoid being infected by the outbreak and unleashing hidden talent among children. A multifunction table tennis door is designed mainly for buyers to stay active despite staying at home. The concept of this innovation used the concept of torque. Instead of having only table tennis, the other side of the door is a chalkboard for children to unlock their creativity. Due to safety reasons we added four table stands to ensure the table tennis door is more sturdy when it is rotated ninety degrees. This innovation also includes a safety lock as safety precautions especially in a household with preschoolers or infants. The product is meant to be household friendly as it does not take up much space and can act as a medium to fill the boredom during free time. It is very convenient considering the installment and the price of the product is affordable. Nowadays, successful business innovations and creative activities are increasingly on demand in the world wide market. We believe this innovation can go far as it is very convenient and multifunctional. The target market would be households with kids or young adults. This innovation would be highly on demand in the entertainment field. In conclusion, the unique characteristics of our innovation which include multifunctional, affordable and easy to be installed will definitely rock the market and impress people from over the world.

Keywords: Multifunction; innovation; torque; safety.

HEAT PLATE

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ABSTRACT

In this sophisticated era, some people like housewives, students, and workers commonly prefer to work multiple jobs at certain times. The scenarios nowadays facing the Covid-19 pandemic may force them to take up the jobs as daily activities. For example, the workers use laptops or computers as a device or equipment to complete their jobs and this applies to students as well. Therefore, while having online classes or meeting, they can enjoy drinking too. By incorporating multiple works with portable equipment concept, we create an extra essential for people's advantage. Consequently, we grasp a word 'drink' as our main ideas to design a new heat plate. This device can keep coffee, tea or any hot drink at a constant desired temperature. Besides that, the device works on heat water up to 100°C. This device applies an electricity energy. Furthermore, this heat plate acts as a heat exchanger to transfer heat temperature. Mobility is seen as the essential factor to our community especially the respective teachers, lecturers, businessmen and students. Moreover, due to its small size, in average 15 cm diameter, this heat plate is easy to carry everywhere to work, travelling, camping and leisure time. This plate supplies a small maximum power of 18W, then a low energy is produced by it. Due to its lower power, the temperature being absorbed is below 100°C, thus the user safety is guaranteed plus it is a user-friendly because it is easy to clean. This product is invented to facilitate the office workers who are constantly exposed in an open air-conditioned 10 hours per day so they can enjoy a cup of hot drink while working. A specialty of this invention is to maintain the drink's temperature either by slowing down the cooling process of hot drinks, or heating your drinks up to 55°C.

Keywords: Heat; device; temperature; mobility.

SHOES ON DEMAND

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ABSTRACT

Footwear is an outer foot cover created by human beings. When human beings came into being, while standing, walking, or even running, they were expected to defend themselves from slippery and rough terrain. The risks associated with slipping and falling are related to the material of the footwear and the geometric design of the sole. Do you realize that every new shoe, particularly those with plastic or leather soles, can have frustratingly slippery soles, similarly with older shoes that are easily worn from years of wear and tear in a very short period of time? As insignificant as it may appear, it is actually a major cause of injury, with over one million reported slip, trip, or fall injuries each year in Malaysia. So, to reduce the number of tossed worn out shoes, a few innovations on the soles are made. The ultimate goals for this innovation include promoting and raising awareness among people about the importance of having a high-quality shoe for daily activities and safety. Therefore, this product prefers to make shoe soles by enhancing the materials in order to solve this problem. Vulcanized rubber is a high-quality rubber and able to fix the problem of worn out shoe soles. The natural rubber is combined with sulfur to produce the vulcanized rubber then continue with the heating process on it. By using the best rubber to make the soles of shoes from crepe rubber, it will give you the bounce you need as it is shock absorbent in your move. This product targets users ranging from the enforcement officers, Grabfood and Foodpanda drivers, sports or laborers which require them to walk and move frequently. The invention will offer them extra efficiency and comfort in daily work by providing environmentally friendly materials and reasonably priced products.

Keywords: Footwear; soles; vulcanized rubber; shoe; safety.

SUPERB NINJA HELMET

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ABSTRACT

Accidents involving cars and motorcycles are unstoppable especially motorcycles because they do not have extra protection like cars. Superb Ninja Helmet considers all aspects which are design and safety features. The purpose of this product is to improve the safety of the rider as this product has a prismatic rear-view mirror that can help rider to see in wider range and clearly in day or night. This helmet consists of color changing LED which can protect the bikers from being involved in accidents at night. Expanded Polystryrene foam is used to reduce collision impact during accidents. The addition of GPS can auto send the details of accidents that happen with accurate location while an ultrasonic sensor can detect an obstacle in its range then it will vibrate to notify the riders. Aerodynamic shape of the helmet, can help the rider move faster during riding and prevent undesired lift forces at high speeds. The plastic buckle located at the chin part of the helmet can prevent helmet detachment when the accident occurs. For this project, we target people who love to go riding or travelling with their motorcycles regardless of their genders and age and especially people who have eye problems. Moreover, we focus our marketing efforts on people with higher incomes as the price is quite high. We plan to improve our innovation such as adding Siri for IOS users and Alexa for Android users. This can be an opportunity to attract international investors to invest in our innovation and commercialize this product to a higher level and expand our market as this helmet can also be customized to cater to the needs of Formula 1 drivers. In conclusion, we hope this innovation will enlighten the riders to prioritize their safety.

Keywords: Safety; accident; helmet; rider.

NOR-V BIOCARE SET

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ABSTRACT

Several factors have been identified as the causes of the soil problems. Due to these problems, humans have created a new solution by inventing fertilizers. According to the technology circulation, the use of chemicals in improving the efficiency of fertilizers has been a choice instead of organic fertilizers. Massive use of synthetic fertilizers not only harm human's health and the environment but also damage the living organisms in the soil organisms play vital roles in the soil. However, their importance is not prominent and neglected. As well as the nutrients, the soil organic matters that could increase the nutrients and living organisms in the soil while improving the soil fertility and plant health. The effectiveness of the set is tested on the problematic soil sample. The result showed that the number of living organisms in the soil has increased and the plant growth rate has improved. Thus, this product is very effective for agricultural activities. Overall, this product prioritizes environmental sustainability through its ability to to foster awareness among the public and encourages them to stop relying on chemicals.

Keywords: Soil problems; synthetic fertilizer; living organisms; product set; organic matters.

SOLAR MOBILE PHONE

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ABSTRACT

There are two types of energy resources which are renewable and non-renewable resources. When we talk about energy resources, we cannot deny that solar energy from the sun is the major renewable energy resource. In Malaysia, the solar energy concept is usually applied to solar panels to light up our homes, streets and industrial buildings. Mobile phone which is the vital medium required in today's modern era has more cons than pros in terms of energy and electricity. This leads us to improve these current mobile phones and turn them into solar mobile phones. This solar mobile phone can help to solve the problem regarding high energy consumption that leads to costly electricity bills. Besides, we want to contribute to preserving our earth by not letting our charging of mobile phone routines constantly emit harmful radiation to the surroundings. On the other hand, we are very sure that our product has its own commercial potential as mobile phone has become a worldwide necessity. Our product has its own feature that make it worth competing with other gadgets in today's market. Firstly, this solar mobile phones have solar panel at the back. When it exposed to the sunlight, the cell generated electricity and can charge our mobile phone. Secondly, it is light and portable to bring it anywhere as we applied a lighter solar panel on it which is 5.8x3.8cm of length and about 11g for one piece. So, it is easier for the user to bring it with them everywhere and this solar panel produces 0-140mA as output current and 2V for working voltage. In conclusion, solar mobile phone is indeed an alternative method to experience a modern life in a green way.

Keywords: Smartphone; solar; eco-friendly; technology.

SEJADAH DARUSSALAM

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ABSTRACT

The overall purpose of the product is to strengthen the foundation of Muslims in terms of faith and knowledge and provide facilities to all groups, especially the elderly. The challenges that we encounter during this research is to identify the problems that most people had when doing their worship and identify how to make this sejadah more convenient and simply performing other 'sunnah' activities by sitting on this prayer mat. This product can be half folded to let the user rest their back on this prayer mat. Apart from that, it also comes with an earphone jack that would allow users to hear the Quran and Selawat while on this prayer mat. Next, this product is built in with an attar dispenser that would facilitate the user to use the attar before prayer as sunnah. The novelty of the product is brought with the ittar dispenser. This product also comes with a memory card filled with daily remembrance of Selawat and al Quran which can be placed on the slot and heard on the speaker on the prayer mat. The product is useful for providing convenience to all groups, especially the elderly. The marketability is targeted at all ages and races who are Muslims to facilitate them to perform amal jariyah. This product also focuses on marketing in the country and also online. As compared to other existing products, this product is foldable, ideal, light, and comfortable to use. It is sold at an affordable price. Last but not least, this product is provided with a bag so it is easy to carry anywhere. In conclusion, this product is very useful for all Muslims, especially for the elderly. With this product, it is hoped that all Muslims will be more focussed and comfortable to do their worship.

Keywords: Innovative; smart; user-friendly; futuristic.

ECO CLEANER ROBOT

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ABSTRACT

Eco Robot Cleaner is an environmentally friendly robotic vacuum made from recycled materials to build a robotic vacuum. The idea actually came from a Xiaomi Mijia Mi Robot Vacuum which was produced and sold by Xiaomi company, but for university students like us, the price for that product is very expensive. So, this has motivated us to create a cheaper robot cleaner produced by using recycled items. Basically, our product is made from a combination of a bottle and remote control cars. The bottle is transformed to become a vacuum and to ensure our product is able to move, as we place a remote control car that is no longer in use. So we can control it by using remote control while cosily sitting on the sofa. Moreover, our innovations are not created to work just like an ordinary vacuum, but we design it to facilitate our daily tasks, especially as university students. In conclusion, we are sure our product can help you to clean your house or room.

Keywords: Environmental friendly; robot; engineering; innovation; recycled items.

CHIROAID-PRO

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ABSTRACT

In confronting the Movement Control Order (MCO), the Malaysian government has initiatively established and empowers Work-From-Home (WFH) and Online Distance Learning (ODL) in response to the pandemic. Volitionless, we somehow need to cope with the discomfort and complications such as back pain simply due to incorrect sitting posture. Profoundly, this project endeavors to innovate ChiroAid-Pro, a device that can assist our posture while working unremittingly. ChiroAid-Pro comprises of parts namely, 'cross-back brace' and 'long-line brace'. Both features provide support to the alignment of the spine and help the shoulder to relax. There is also 'lower-back click', a strap that keeps the device intact to the body. As a whole, this device implements Airbag Technology that aids systolic blood pressure by inflating and deflating them to create compression. Previous studies proved that compression can help muscle and bone to recover itself from injury. In comparison to the existing posture corrector device, ChiroAid-Pro offers novelties that are yet to be commercialized. This includes mechanism to reduce excessive pressure to the body, vibration that will notify us if our posture is incorrect, safety strap that prevents us from falling, wide range of medical applications, and a variety of product colors. In terms of marketability and commercialization, we target to fulfill the growing customer demand for a new upgraded design that can offer better quality than the existing one. With this in mind, every part of the device was reviewed and every possible augmentation was discussed. There is huge potential especially towards target markets such as students, office workers, online gamers, and those with bad posture. In short, ChiroAid-Pro is a very salient device that can open up new hope for those who are suffering from bad posture or wanted to prevent it. On this basis, it is hoped that ChiroAid-Pro can be commercialized soon.

Keywords: Posture; spine; airbag technology; vibration; pressure.

SMART DOOR PROTOTYPE USING KNOCK PATTERN

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ABSTRACT

Coronavirus pandemic has given a great impact to society and lives globally. Due to the pandemic, most of the countries in this world are moving towards digital transformation in their daily activities and businesses. Nowadays, the use of Internet of Things (Iot) technology has developed around the world. It is because all aspects in human's life utilize IoT technology to increase the quality of life. Moreover, most of the appliances today have faced digital evolution, such as smart doors. In order to use these smart doors, the user does not have to use keys to open the doors. Thus, users can prevent misplaced key situations. There are many projects developed on smart doors such as using smart cards, pin code, thumb print and others. We realize that the security level of the existing smart door was low. In any case, when a stranger tries to break the smart door, it means that our home is in danger. The objective of this project is to improve the traditional door lock and as the alternative of the existing smart door technique, which can detect the pattern of your knocks at the door and will only open the lock if the knocking pattern matches with the correct pattern. Thus, this project employs 'knock patterns or beat' with a siren security system to unlock the door using an Arduino Uno microcontroller. We improvise the door with smart security and a knock pattern system by adding an alarm siren to control our home security. It works when there is any pressure exceeding the pressure that we have set in the door security program. For instance, the robber will use any tools such as hammer to open the door. For example, when the door receives bigger pressure from a tool like hammer, the smart door system will detect and produce an alarm as a distress signal. Basically, our door is equipped with a smart and secure system. Furthermore, a buzzer is used to capture and activate the door knock sequence to control unlocking the door lock. The door will unlock when it receives the same knock pattern stored in the program. We have also changed the function of the buzzer instead of output to input which is used to detect and record the knock pattern. For commercial potential, this smart and secure door system will convince the people that they do not need to worry about their home security. The way that they can open the door has been upgraded. Results from testing the prototype show proper control unlocking door's function can be performed from several different knock patterns or beats.

Keywords: Smart door ; security; alarm; knock pattern; unlock door.

AQUAPHR V1

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ABSTRACT

In planting plants using an aquaponic system, plants are very dependent on nutrients found in water and pH value. The pH value becomes one of the parameters that determine the yield. The pH value for aquaponic must be maintained in the range between 5.5 to 6.8. In an aquaponic system, the water is treated with nutrients to stimulate plant growth which makes it hard water. This creates a basic environment for the plants and will hinder its yield and growth affecting the productivity of the farm. To maintain the pH of the environment, the water is treated with an acidic solution and the pH will be measured every hour. This is a time-consuming process to maintain the pH of the system. This time-consuming process would hinder the productivity of the farmers which would lead to a lower yield and affect the potential revenue to be made. An automation system is designed to keep the pH constant at a predetermined range and has been set as the objective of this innovation. AquapHR V1 is a pH regulator which is designed to autonomously monitor the pH level of an aquaponic system. It is designed to keep the pH at a predetermined range to better allow the aquaponic system a greater yield and growth. The product uses an Arduino wired up to a pH meter to detect the pH level of the hard water in the aquaponic system. When the pH meter is at a certain unwanted range, it will trigger the motor to turn the pump for a predetermined time which will add the solution in a required volume into the water system so that the pH of the water will come back to the required pH range. The pH is remeasured to check if the pH is at the required pH range. It is believed that the presence of this automation system would be beneficial to the farmers in managing the water conditions in the aquaponic plant system in a simple and fastest way. In turn, they would produce quality and better yield, increasing productivity and revenue.

Keywords: Aquaponic; pH range; arduino; AquapHR V1; pH regulator.

ACTIVATED CARBON / POLYURETHANE FOAM (AC/PU)

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ABSTRACT

Dye is one of the pollutants in Malaysian river system due to the presence of the batik/fabric industries in our country. This causes water pollutions in the river which leads to endangering the aquatic life. The purpose of this product is to prevent this phenomenon from being a major problem in our country. This product will be utilised to adsorb dyes in aqueous form. This product is considered as an environmentally friendly product as we used palm kernel shell as our source for activated carbon and palm kernel oil polyol for our polyurethane (PU) foam. The activated carbon will be embedded on the surface of the PU foam for it to become a functionalised composite. In this case, the foam acts as carrier for the activated carbon so that the use of the AC/PU foam in order to adsorb dye could be done easily rather than merely implementing activated carbon. This innovation could become a new solution for the removal of dyes from the river as the cost is rather lower compared to expensive treatment methods. This is because the source of this product is from renewable resources which is palm kernel. In addition, with Malaysia being the second leading producer of palm oil worldwide, palm kernel is a resources that we always have. Thus, reducing the cost of producing the AC/PU. Besides that, we are aiming to promote our innovation to some of Malaysia's leading textile manufacturers especially. The industrial facilities can utilize our innovation to treat the water mixed with the dyes in their water plant before discharging it into the water resources or river. Summing up, the producing of dye absorbent from the waste of palm oil could solve the problem of dyes in the river with lower costs compared to other treatment method.

Keywords: Dyes; textile; water pollution.

NATURAL PLASTICINE

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ABSTRACT

Banana plant (Musa acuminata) is a common versatile plant in Malaysia, where every part of the plant such as leaf, trunk and the fruit itself can be used to make many useful things. In this project, we focus on ways to make use of the banana peel as it is rarely used. The banana peel is one of the main ingredients in making this natural plasticine by processing the banana peel into fine powder. We chose plant-based colouring such as butterfly pea flower and pandan leaves instead of normal food colouring to minimize the usage of chemical substances in the making of natural plasticine. Can we use natural ingredients to make plasticine? The objective of this innovation is to make use of the banana peel into plasticine while using natural plant-based colouring. The banana peels were cut into small pieces and left in the sun to completely dry. The dried banana peels were grind into fine powder and mixed with wheat flour, corn flour, water and a spatula of salt. The salt is added as a preservative to make the plasticine last longer. Oil is added during the making of the plasticine to smoothen the texture. Lastly, natural colouring is added to the plasticine to attract buyer's interest. Our innovation has potential to be commercialized as the plasticine can be used by all ages and used in school for learning purposes. In addition, the usage of plant-based colouring will increase commercial value of the plasticine by attracting consumers with various colours while maintaining the natural ingredients of the product and its economical price. To conclude, normal plasticine is mainly made from different chemical substances. However, our innovation emphasized the usage of natural ingredients in the making of natural plasticine to reduce the consumption of chemical substances in our life.

Keywords: Natural; banana peel; plasticine; chemical; plant-based.

RADAR OBJECT DETECTING SYSTEM (RODS)

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ABSTRACT

In this advanced period, security and reconnaissance of our home are some of the main issues. Intruders are more mechanically mindful and have completed thefts utilizing savvy devices like gas-cutters, keen antilock frameworks and some more. For such interlopers, it's easier to disengage CCTV or any kind of camera observation which has a roundabout association with the advanced video recorder and a data set worker living at home. Accordingly, existing frameworks need to alter and propose methodology to efficiently recognize any sort of robbery. In this project, brilliant home security called Radar Object Detector System (RODS) are planned and developed based on a coordinated structure of sensor, alert and redid equipment to detect suspicious activity around the house. RODS work at two unique levels: through programming interface and through an equipment interface. For programming interface level, Arduino UNO is utilized to program the microcontroller. At the equipment interface level, an ultrasonic sensor is used in RODS that acts like a radar sweeping to detect intruders in the range of 30cm around the house. Property holders will be quickly notified by the alarm if there is a suspicious subject entering their home. The commercial potential is narrowed down to users in Malaysia not only for residential areas but also for commercial buildings such as shops and warehouses. In conclusion, RODS is cost effective, efficient, user friendly and can significantly increase security to make our life safer.

Keywords: Radar Object Detector System (Rods); ultrasonic sensor; arduino uno.

TILAPATCH

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ABSTRACT

People seemingly suffer from and much less severe form of burn injuries in daily life, accidents like getting scalded, no matter by hot water or by touching hot objects around your household. Our team came up with TilaPatch which is a form of a patch that is not only able to supply collagen to daily accidental burn injuries but subduing the effects of heat on the injury by absorbing heat out of it. With the idea to infuse the Marine Collagen Peptides (MCPs) from the skin of Nile Tilapia Fish (Oreochromis Niloticus) in powder form with glycerin, hydrogel polymers, and rose water, Tilapatch came to fruition to give access to a biomedically advanced way of treatment. This product is not only focused on speed recovery. TilaPatch helps a lot in retaining moisture with the help of anti-inflammatory properties. As a result, the patch does not only help with cell development but also with absorbing heat from the skin. The end goal of TilaPatch is to create a product that is suitable for simple daily lifestyle while giving a highly effective treatment especially for housewives and individuals who are mostly exposed to fire.

Keywords: Tilapia; patch; collagen; burn.

SMART SOLAR GRASS CUTTER

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ABSTRACT

Having a grass cutter is a must in gardening or agricultural activities. A grass cutter is a machine which utilizes blades to cut the grass making the surface to an even height. Various conventional grass cutters such as typical modern gasoline and petrol powered have been widely used. However, it consumes a lot of energy and produces pollution such as sound pollution and air pollution by the combustion of the engine which would cause serious effects on the user's health. It also requires continuous maintenance which is inconvenient for the users as they would be busy with their work. Thus, we invented a smart solar grass cutter which is fueled by solar energy, a fully automated system without the need for any human interaction and smartly controlled to avoid obstacles to address these problems and ease the users in keeping their grassfields neat. This solar grass cutter is designed with a muffler as the silencer to reduce noise pollution and ultrasonic type sensor to detect and avoid obstacles. It also comes with a compartment to collect and clean the mowed grass with additional functions of timer to let the users set the usage time, metal detector to detect dangerous things while mowing the grass as well as the Global Positioning System tracker. This product is personalized for personal use, especially for those who own backyard-landscaped houses and public facilities with small grass field areas. This can further enhance our market as the community is able to have this smart solar grass cutter that can ease their work at a worthwhile price. It could be concluded that this project could be very useful because of its benefits as it is also an "eco-friendly" product. This product will create a more peaceful environment for society.

Keywords: Solar; mower; grass; cutter; automated.

DWI-USABLE PARKA

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ABSTRACT

The surrounding temperature varies in different locations in the world. The reason for this is that the radiant energy from the sun hits the earth at different angles at different locations causing a varied heat distribution on the earth's surface. This also explains the reason why some countries are cold throughout the year while some are hot. People wear different clothes to adapt in various environments. For example, thick clothing is worn normally in cold countries like Russia and Canada while thin clothing is worn casually in hot and tropical countries like Malaysia and Africa. From the situation observed, we decided to improvise and innovate the clothes that can be used for any season throughout the year. A parka is defined as a type of coat with a hood, often lined with fur or faux fur. This is particularly effective in very cold, windy weather. People usually wear a parka during cold weather as it is a great thermal insulator and keeps the wearer warm for a long period. Hence, we innovate the parka that will be suitable for hot weather as well. The objective of the project is to reduce the money spent on buying seasonal clothes. A thermal concept is applied in our innovation We changed the parka's materials with cotton and wool to give the effect of cooling. The parka is also equipped with velcro material, so cool packs and hot packs can be attached to the parka. The additional feature of our cloth is that people who use it can manually control the parka's temperature according to their comfort. We predict the parka will get a good response from traveller as now there is a vaccine to prevent covid-19 from spreading and the parka will help them to reduce their expenses.

Keywords: Dwi-usable; parka; thermal concept.

GAMING VACUUM CLEANER

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ABSTRACT

Cleanliness is one of the most important aspects of life and it needs to be nurtured from an early age. Children or teenagers sometimes tend to neglect their surroundings as they are busy playing video games or watching television. Therefore, to re-instil the spirit of the younger generation to practice hygiene practices in daily life, the project called 'Gaming Vacuum Cleaner' has been created to attract their interest. The process of making this project started by installing all the tools needed at the specific parts of the body of the vacuum. Then it continued by testing how it can work properly. The speciality of the vacuum is that it has the same function and design as a remote-control toy car which can grasp young children's attention. Furthermore, this vacuum is unique as it uses recyclable materials such as plastic bottle, box and ice cream stick that we believe can help to save the environment. This vacuum can also help to conserve energy as it uses a rechargeable battery as a source of energy. Hence, the target market group for this product is the children as well as teenagers as they spend most of the time playing with remote control car. Therefore, little innovation has been done to achieve the objective. To conclude, children will be able to help their parents as well as to learn the importance of maintaining cleanliness in daily life. Those who have been accustomed to the attitude of prioritizing hygiene will naturally practice this attitude no matter where they are, whether at home or at public places.

Keywords: Vacuum; innovation; recyclable; children; cleanliness.

BACK- TO- SCHOOL HYGIENE KIT

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ABSTRACT

Covid-19 continues to spread globally and in Malaysia, the number of new cases reported daily is alarming with the cumulative coronavirus infections at about 300,000 cases. It has become a major cause of concern for everyone and the reopening of schools during this pandemic making parents concerned about their children's safety towards Covid-19 infections. The awareness of maintaining good hygiene among the children need to be practised and parents play an important role in keeping them in check. Good practice in sanitization among the school children will lower the risk of them getting infected. To help spread the awareness of Covid-19 including maintaining good hygiene practices, a back-to-school hygiene kit is introduced. The purpose of the hygiene kit is to ensure that children always keep themselves cleaned and sanitized as to prevent virus transmissions in schools. This kit is designed with a combination of refillable masks, a hand sanitizer and a wet tissue compartment in an easy carry-on bag. Children will find it easy to put on their masks, clean up and apply hand sanitizer during school hours without having to recall the whereabouts of each item in their school bags. Such practicality of this hygiene kit will bring good impact to ensure the preparedness to prevent the spread of Covid-19 towards school children and parents. Additionally, this kit is also environmentally friendly as it uses single usage of plastics especially in packaging the masks and wet tissue. This modest design can also be used for all ages.

Keywords: Hygiene kit; sanitization; school children; awareness; Covid-19.

PET'S E-FEEDER

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ABSTRACT

Having a pet is one of the lifestyles and also one of the forms of expressing love to animals. Each individual has a different pet and a different care routine. The basic need for a pet is adequate food and drink. However, because of the busy routine, it becomes very difficult to care for pet especially the provision of pet food and drink for working individuals. The project has the objective of providing food and drink for pet automatically in a clean condition without the presence of the pet owner. This project explains designing and developing an automatic pet feeder that comes with the client/server application. This automatic pet feeder uses the ultrasonic sensor placed in front of the device to sense the presence of the pet. The pet owner usually overlook this issue with an un-solving dangerous solution by overfilling the food dish with a very large quantity of food thus food is prone to contamination if left for a long time. The cat feeder is capable of keeping the water and food clean until the cat wishes to eat. It has a cover for a bowl that closes and opens automatically. The presence of a pet is detected by the sensor and the cover is opened which enables only the pet to access the food. Pet's e-Feeder is believed to get higher attention to the pet owner as this will help them in managing their pet while they are out working. It is also believed that the presence of this cat feeder would be beneficial to both the cat owner and the cats in managing the daily feed in the fastest way without any burdens.

Keywords: Pet; food feeder; ultrasonic sensor; smart system.

MASQUE

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ABSTRACT

Masque is an innovation from a common mask with a few additional features. As we know, the common mask that people wear to prevent the spreading of viruses can cause skin breakout due to infection of bacteria. It is worse when the person is dealing with sensitive skin. Therefore, the main objective of this innovation is to prevent mask acne and at the same time can avoid the spreading of the virus. One of the ways to prevent acne is by maintaining our skin hydration. So, this mask will provide the pockets to place the gel patch which is to provide hydration for the skin. Other than that, this mask consists of two layers which are waterproof at the outer layer and sweat absorbent at the inner layer. The material of this mask is made from AIRism cotton which is very comfortable and gentle to the skin. So, it will reduce the friction between mask and skin. That is why the Masque is good to prevent skin from breakout and at the same time can prevent the spreading of the virus. This extraordinary mask is highly marketable because there are less competition and high demand especially during this pandemic, it satisfies customers who are concerned about their skin condition. In the future, we might be able to collaborate with Uniqlo and Duck as they are also selling masks and with our innovation, their masks will become a bestseller.

Keywords: Mask; acne; virus; hydration; airism.

MOTION SENSOR

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ABSTRACT

Security is one of the factors when deciding on a suitable residence. However, it is limited depending on the structure of the residence, cost, and effectiveness of security products on the current market. Most flats and apartments resident's security rely solely on the grill door and padlock. Modern days allow home intruders to bypass these security measures easily without alerting the resident and nearby neighbour. Our concern for the communities leads us to develop a compact yet portable security product. The idea of small electronic devices in deterring home invasion is proposed to improve the community's security. The product uses Infrared Sensors to detect the movement of the grill door. It will be small enough to ease the installation on the grill door. Its portable properties make it easier to carry around. The device's mechanism will send out an alerting signal to the house's residents of the incoming person at the door when the grill door is being opened. Besides home security, it can also be used for schools, hostels, and shops to prevent theft. Other potential users are livestock farmers to register the number of livestock each day. Finally, the product that we have developed is hoped to ensure the well-being of our society.

Keywords: Infrared sensor; motion; portable; Arduino Uno.

XSTORE: EASY STORAGE SYSTEM

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ABSTRACT

One of the major problems faced by most retailers is that they do not have a bar code system to determine the number of stocks left at the store. Besides, they also do not have many workers. Based on these problems, we have invented a product that we think is quite necessary nowadays. This product includes a system to help the retailers always ensure that their items are always available on the sales shelves. Our invention named XStore that uses Arduino Uno is a system that connects through the electronic circuit with the items and the retailers' smartphone via Bluetooth. The purpose of inventing this product is to automatically check the stock items and determine the items that have finished by using the software. This product is using a wireless system as it uses Bluetooth that enable the retailers to monitor the items at a long distance which is 10 meters. This product uses Bluetooth module to produce a wave at 10 meters. The distance is very suitable for small retailers because we are focusing more on small retail shops. The product has a simple design and does not need big space. By selecting the suitable resistors, we can stabilize the output produced by Arduino Uno. Furthermore, we also add a buzzer to the system. If the items have stocks that are less than the amount that has been set, the buzzer will make a sound that indicates that the items need to be filled at the sales shelves. We also add an LCD Display at every Force Sensitive Resistor (FSR). FSR is used to weigh the items on it. The amount of the items left will be shown on the LCD Display. Our product is fully electronic. Hence, the product is small but can weigh the items on the FSR.

Keywords: Retail; storage; bluetooth.

SPEECH RECOGNITION SECURITY SYSTEM

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ABSTRACT

A speech recognition system is a biometric recognition-based security system that requires specific voice command to unlock a door. Physical key such as bit key is inconvenient to carry around; small and tend to be lost or worst stolen; takes longer time and more force, and easily jammed. Different doors have a different set of keys therefore carrying a lot of keys is troublesome. A traditional lock cannot keep a historical record of whom access the door. Other biometrics recognition such as fingerprint, facial and iris are static and replicable. The objectives include making security more convenient, higher accessibility, more secure, and able to work at any temperature. Arduino UNO is used for the internal electronic circuit. This part makes up both input and integration section. Instructions for Arduino are coded and software such as Arduino Voice Controller is used. We connected it to a car door lock actuator as the locking and unlocking mechanism. It has high commercial potential as it is versatile; more efficient and are ready if any security breach occurs; cheaper and affordable; able to keep a log record of access; long term beneficial. It has a positive impact on society as it improves security measures, decrease crime rate and makes individual feel safer. It can also improve the way of living as this system are more accessible, convenient and user friendly. The product is a simplified version of existing product in the market. In turn, overall this security level will be improved and increase safety.

Keywords: Door lock; speech recognition; security; coding; biometric recognition.

ANTI-ANT EXTENDABLE TRASH CAN

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ABSTRACT

The 3Rs program refers to Reduce, Reuse and Recycle. Due to this our society can reduce the amount of garbage to go into landfills and we can protect our environment. Therefore, we take initiative to create one innovation by combining two ideas and we named it "Anti-Ant Extendable Trash Can". The purpose of this innovation is to show concern for environmental issues and to maintain the cleanliness of the surrounding area that is related to waste management. The objective is to minimize the space according to the garbage content. Sometimes, we have to experience difficulties when the rubbish exceeds the limit. "Anti-Ant Extendable Trash Can" has two functions which are an adjustable bin and has a sticky sheet of anti-insects. With the spiral-shaped design, we can stretch the dustbin and adjust the capacity. The maximum height is 51cm so we can put more rubbish into it. Next, it can also maintain the cleanliness of the surrounding area from insects. This can be shown by the appearance of insects in or near the dustbin after the trash has been thrown into it. Thus, this problem can be solved by placing a sheet of anti-insect adhesive at the bottom of the dustbin. The insects such as ants will not come near or get into the trash. Due to this, we can put the dustbin everywhere without worries about the insects. Besides, creating this product can save time on the production process and fast transportation process. This product has the potential to be marketed in convenience stores to attract customers such as housewives, cleaning workers, teachers and office workers. This is because this product has many advantages that make it easier for the users. Therefore, the cleanliness of the rubbish bin and the surrounding area can be fully maintained.

Keywords: 3Rs program; cleanliness; trash can; anti-insects; waste management.

GREENHOUSE SHOE RACK

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ABSTRACT

A greenhouse is a building that is used for the development of ornamentals and food crops with a glass or plastic roof and sidewalls. This upgraded product, Greenhouse Shoe Rack will be slightly different from other shoe racks which allow the shoes to dry even during bad weather. A greenhouse shoe rack is chosen as the product where it involves the concept of a greenhouse to dry shoes in any weather. The sun enters the greenhouse during the day, and the glass walls trap the sun's heat, which warms the air inside the greenhouse, even keeping the greenhouse warm overnight. There are few problems stated in this project when Malaysia is said to have two peak seasons, rainy seasons and hot weather where some people will have difficulty drying their shoes in winter. Other ordinary dryers cause noise pollution and global warming which will lead to hearing loss if used for extended periods and also causes high electricity bills. Therefore, this project is innovated to evade all weather conditions throughout the year to get a proper shoe dryer as well as to prevent environmental pollution. To make this product, a shoe rack is modified by covering the shelve with some polyethylene plastics to create greenhouse effects and some other modifications added to make sure it is portable such as wheels. This product is very suitable for families with school children and working parents in order to save their time and cost. Furthermore, it is also an environmental-friendly product that will benefit both humans and the earth. Simply put, a greenhouse requires you to make an initial investment, but the money you spend is well worth it in the long run. With so many benefits, you can see why owning a greenhouse is a judicious idea.

Keywords: Greenhouse; rack; shoes; dryer.

SUPER CHAIR

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ABSTRACT

The background of this project is based on the innovation of chair that can be used during online classes or using the laptop. During this pandemic, most of the students and teachers are having online learning classes. They will spend more time on the desk rather than going to the class like before. Other than that, the number of people playing online games on their laptop or computer is increasing in this century. All these behaviours and habits will lead to back pain and their back will crouch as they age. The objectives of this product are to avoid people who spend most of their time on the computer from having back pain in the future and give them a good posture in sitting. We innovate the chair with the addition of the vibrator on the chair connected to the sensor that will vibrate if the posture of the user is wrong. Furthermore, we add a desk that can support a laptop or books and also a power bank. The chair can be folded and brought anywhere. This product is potential for the students, teachers and gamers who are using the laptops every day. In conclusion, this product is very beneficial to everyone even if the pandemic is over, other people who prone to work with their computer can still use it because it is very affordable and comfortable to use.

Keywords: Online class; laptop; back pain

HOMEMADE PORTABLE AIR CONDITIONER

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ABSTRACT

Chlorofluorocarbons are a major fact of ozone depletion. These chemical gases have been widely used as refrigerant and air-conditioning. These chemical gases are dangerous to our ozone because they release chloride ion. The chlorofluorocarbons are banned from used and it has been replaced with fluoroform that suites for air conditioning. Unfortunately, the air conditioner motor is already pricy including its gasses. The air conditioner is not portable as well. Then we take this advantage and started to invent a product that able to provide thermal comfort as well as portable. The name of our product is the Homemade Portable Air Conditioner. This mini air conditioner is produced based on a mini portable fan, copper tube, plastic bottle, motor pump and the cooling agent is cold water. This homemade portable air conditioner cost less electricity and contain a very minimalist feature. Thus, our product can function really well with a simple features that make it easier for mankind as well as friendly to nature. Nowadays, an air conditioner can be found at many places due to demand for thermal comfort as we are facing hot weather every day. Hence, the air conditioner has become one of our essentials supplies on daily basis. Our main target for this product is the students where they can use during class that have less air flow. We also targeted travellers who travel a lot in various weather. Not to forget, food hawkers can sell their food at the roadside peacefully without thinking about the hot weather. Thus, we believe that creating this homemade portable air conditioner with minimal and safe features that we offered could solve the problem stated above, make it easier for mankind and friendly to nature.

Keywords: Weather; portable; air conditioner.

SMART SHOES

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ABSTRACT

Our main purpose is to encourage many people to be healthier and have a productive day with the best technology ever. In conducting the project, we realised that people love jogging and they need a change in their lifestyle. Other than that, an exclusive product may increase their confidence to wear a variety of outfit as our product is not only environment friendly but also very fashionable. This product is created especially for those who love jogging and need to set up their step. Hence, we created a product named Smart Shoes. In Smart Shoes, some devices that can be removed easily are installed at the back of the shoes that function as the system to calculate steps, the duration and distance in kilometres that users go. We include an accelerometer, gyroscope, battery, light, button, sensor, Bluetooth module and pressure sensor. For the shoes, we make them with core-tax, synthetic and PVC materials. With these materials, we can cover the devices from being wet when they are used in rain or when users get caught up in flood. As the technologies evolve rapidly, our team decided to create a shoe that will meet the expectations of the generation nowadays. This means our target market is technology enthusiasts and jogging lovers. As our product comes with a modern design and exquisite colour, we believe that this shoe is easy to sell and profitable. This shoe is very easy to handle as the user only needs to turn on the power button and charge it to maintain the battery's power. In the nutshell, this shoe is one of the initiatives to encourage our community to stay in healthy shape as the technologies are getting more advanced day by day.

Keywords: Sensor; smart; shoes; jogging; exclusive.

HUMAN RESPIRATORY MODEL

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ABSTRACT

The overall purpose of the study is to enhance laboratory learning materials. There is a shortage of realistic and fun laboratory learning materials available. The product intends to promote labs to be effective and worth doing to boost the student's understanding of the concepts, relationships, and processes being used in the experiments. The basic design of the replica resembles real human anatomy including the organs. The idea is by making it like a soft toy so that the student can learn and understand the real human respiratory system. A cloth that resembles skin will be used and will be sewn with two zippers as a way to open the skin and expose the inside of the human anatomy. The organs will be attached to another with a Velcro so the student can see the organ separately. The major findings are that innovation is easy and reproducible. For example, Velcro is used as the main material that is abundantly available and affordable. Next, students' understanding of the procedure and the topic will be improved because all of them will be able to conduct a hands-on experiment by using their own soft toy rather than sharing in a group. Other than that, the instructor can freely demonstrate the procedure of the experiment in greater detail. The main target group for this innovation is specifically for science stream students. This activity may help students to improve their confidence level and ensure the student become more independent as they can freely explore without fears they might disrupt the internal organs. Finally, it also helps students to carry out the experiment in an interesting and enjoyable way rather than rely on conventional laboratory materials. In conclusion, this innovation project will benefit as one of the teaching and learning tools.

Keywords: Laboratory; soft toy; respiratory; anatomy; organ.

ANTI -DEFAULT PRAYER MAT @ MY SEJADAH

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ABSTRACT

Prayer is a pillar of religion and is one of the most emphasized acts of worship in Islam. It is certain for a believer to keep their prayers wholeheartedly so that every prayer performed is without any flaws and accepted by Allah S.W.T. One of the negligence that often occurs is forgetting the number of rak'ahs in prayer that cause the emergence of self-doubt resulting in the loss of devotion in prayer. Besides, when we travel, it is causing difficulty for us to find gibla direction. There are a lot of apps that can help us find the gibla direction. However, opening the app from our smartphone might take a couple of minutes and sometimes the apps get crashed. Therefore, we improvise an innovation that can help the Muslims overcome the problems. Our innovation named Anti-Default Prayer Mat @ My Sejadah can help the Muslims overcome the problem of negligence in prayer especially when they forget about the rak'ahs they had performed. It can also help the Muslims find the gibla direction quickly. A sensor is installed at the knee region that can detect movement when a person prostrates. Each prostration will display the number of prostrations that have been performed on the digital screen. We also installed a gibla compass that can find the gibla direction when the prayer mat is laid out. Moreover, we developed an app that can connect with the prayer mat via Bluetooth that acts as an ibadah tracker after we perform the prayer. Our innovation can be commercialised to all Muslims regardless of age as the prayer mat's price is affordable and has various benefits. To conclude, our innovation can help the Muslims maintain the quality of their prayers and reduce the feeling of doubt when they forget the rak'ahs in their prayer.

Keywords: Prayer; mat; sensor; digital

SMART DONATION BOX KIT

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ABSTRACT

Donating has been a part of our culture for decades. There are many ways where donations are being held, one common method is by placing donation boxes in public. However, placing donation boxes in public is risky as it would cause them to be prone to thieves. Thus, we have proposed a solution to overcome this issue. The purpose of our innovation is to create a device that can prevent the donation box from being stolen. Our project, Smart Donation Box Kit (SDBK), is a device equipped with sensors and modules, capable of monitoring donation boxes with minimal help from the user. It consists of an esp module, gps module, led module, buzzer and shock-sensor, working together to observe the donation box's condition and communicate with the user. SDBK will send a notification to the user via an app if it is being moved to another location unwantedly or/and when it is being shaken by outsiders. The users are also able to see the device's coordinates through the app. Together, these two main functionalities provide a sense of assurance to the users that their donation boxes are in a safe condition. This would significantly reduce the chances of their donation box being stolen. This benefits users as they would no longer be worried and can instead focus on doing other activities. Furthermore, crime rates would decrease as potential thieves would get caught if they attempt to steal the device. SDBK is targeted for people who value security, ones that are concerned about their donation boxes' safety such as mosques' managements and charity organizations. SDBK can also be commercialized as a safety device for vehicles with an addition of a relay. Hence, SDBK promises multiple benefits to various audiences alongside keeping donations safe and intact from lurking thieves.

Keywords: Smart Donation Box Kit; app; donate; security; thieves.

VERTICAL AXIS WIND TURBINE

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ABSTRACT

The overall purpose of the product is to harness the low wind speed condition from oncoming traffic to generate electricity. A conventional wind turbine cannot generate electricity in an area that has low wind speed condition because most of the wind turbines required a minimum speed of 4 m/s to generate electricity. Besides, a lot of areas in Malaysia are not fit for the wind turbine to generate electricity. To overcome the problem, we innovate the conventional wind turbine which specifically makes a change on it from the old one to a vertical axis wind turbine where it can harness the low-speed wind to generate electricity. It has 3 helical blades that are connected by the composite support arms that attach the blades to a vertical rotor shaft where these blades feature a helical twist. Besides, there is a generator below a vertical rotor shaft. It is a unique wind turbine because it is stackable where it can be upgraded conveniently from time to time and replaceable for a purpose of maintenance work. One of the benefits it brings to the society is that the vertical axis wind turbine is cheaper than the conventional one. Also, it has a lesser risk to people and birds. Also, it can offer cheaper electricity for urban and suburban areas. It is not suitable to be sold for family houses as they get near to zero wind in an urban area. However, high rises buildings in the urban area have a higher potential of using it as a power supply so our market would be more suitable for these building's owner. Overall, we believe this innovation would bring benefits to the global citizens and in the future. Not only it will lower the cost, but also help to save energy from using renewable sources.

Keywords: wind turbine; low wind speed condition; electricity; conventional.

SMART SHOE LUGGAGE (SSL)

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ABSTRACT

Smart Shoe Luggage (SSL) innovation is to help the users to ease the burden of packing their shoes for travel purposes. This is one major problem that leads to this product innovation since shoes are harder to pack compared to clothes. The benefit of this product is it produces a technology that facilitates human life especially for travellers and business people who are frequently scheduled for business trips. Another benefit of this shoe luggage is the shoes can be packed without getting damaged. This is because the shoes will not be packed along with other stuff, so they will not be overlapped and compressed. Furthermore, the luggage also comes with an Auto-Following Device. Users can download an app on their smartphones called 'Shoes It' and the luggage can connect to the app via Bluetooth. After it is successfully connected, the luggage will automatically move by itself and follow the users' smartphone. Furthermore, this newly invented shoe luggage assures the safety of the contents which includes installed GPS and an electric shock security device. Our target market is people who love to keep shoe collection. Generally, this product is targeted to all communities especially families since it is needed when travelling or going back to their hometown. Specifically, this product is targeted to athletes, travellers and business people due to its capability to maintain the shoes' freshness and cleanliness, store a bundle of shoes and eases the users to carry the shoes around. Hence, this luggage will ease our daily lives. The product will be promoted on social media such as Instagram, Facebook, and Twitter. Besides that, we even provide a module on how this thing works as a guide for the user. We use these mediums because we are sure they will be shared rapidly among people.

Keywords: Smart shoes luggage; portable; auto-following device.

SUPER IRON

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ABSTRACT

The electric iron is an invention that has been a necessity in today's life. We can see the chronology of the iron from the traditional version until the latest version. The Electric Iron that had been commercialized does not have the safety requirement and features to fulfil the consumer needs. The purpose of this innovation is to increase safety and provide a convenient way for consumers to iron their clothes. From this research finding, we have found that the traditional electric iron has a lack in the shape and material of the soleplate, the safety requirements when it comes to the circuit breaker, and the pressure of steam from the iron itself. Thus, we have considered making some modification from the traditional electric iron into the new iron called Super Iron that fulfil the consumer needs. We have been using the new soleplate material, which is titanium coated with ceramic soleplate, changing the base of the soleplate to increase the pressure of the steam, adding new features of the good safety which include a hand detection switch and other features that make the ironing process hassle-free chores. This innovative product is suitable for anyone; especially for kids who are within the range of nine (9) years old above. We also found that this modification of the electric iron can glide onto the fabrics easier and the accidents involving fabrics are reduced. The hand detection included in the super iron is the first innovation of the electric iron on the market. The hand detection will switch on the circuit and this will avoid any accidents if the iron is in contact with any fabrics. It can save time for people to iron their clothes and they can get a rest a bit longer to face the next day.

Keywords: Electric iron; super iron; soleplate.

MOI EZPAD

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ABSTRACT

MOI EzPAD is an innovative product, as an attractive learning tool on how to identify a Moment of Inertia for irregular section represents by the intended function. Most of the student have a problem identifying what, which, how and when of their MOI if given to them in a variety of region. MOI EzPAD is known as Moment of Inertia Easy Pad, with the purpose to help a beginner using this friendly learning tool to examine their MOI. The student can impose this MOI EzPAD onto the respective region, they will be directed in the coding phase to exhibit all the important element in the Moment of Inertia formula. MOI EzPAD prototype is designed with features of self-learn, consist of a transparent cover incorporated with mechanical navigation. This mechanical navigation is important to indicate the main element which must be considered onto the intended shaded region. This prototype is modeled with lightweight and transparent material which is convenient and portable to bring everywhere. The mechanical navigation uses light emitting diode (LED) stick that is placed on either horizontal and vertical axes which depend on the given problem. The concept of LED stick will help student to make attention to reference location then allocating the second LED stick to the acquired position on the shaded region. Student can modify and replace the second LED stick; two indicators will exist when the second LED stick is moving which are distance and differential area. MOI EzPAD is very useful especially to an engineering student in the pre-university, diploma and degree level. This product can be commercialized to the university and polytechnic students as the target market. In conclusion, this MOI EzPAD will give many benefits to end-users with a reasonable cost of the product, targeting one student with one or more MOI EzPAD.

Keywords: Moi Ezpad; learning tool; moi ezpad prototype; moment of inertia.

LIFE POCKET

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ABSTRACT

What is a life pocket? The "Life pocket" is innovated to supply the basic needs of living for human beings which is pure water. The purpose of this invention is to allow you to get pure and safe water to drink anywhere at any time, especially in critical situations as it gives us a chance to survive by consuming the pure water gained from seawater. Perhaps a life pocket is small in size, convenient and portable which means it is easy to bring wherever we want. Besides, the objective of this invention is to observe the ability of water evaporation and condensation and also to promote an affordable portable water purifier as a survival kit. This idea is generated from the problem statement of ship-wrecked sailors dying because of consuming too much saltwater because our body cannot process and filter seawater very well and we should avoid drinking it. Airplane crashes that commonly happens in the ocean will have survivors ride the safety raft while waiting for rescuers. For the time being, they will use a lot of energy that consumes a lot of water molecules and will make them suffer from dehydration. Therefore, we create an affordable water purifier consists of three parts which are an inverted pyramid shape for the upper part, cube shape for the lower part, and cone shape for the container that are foldable and made of polyethylene terephthalate and aluminium foil which really helps in producing higher amount of pure water. Our target market for commercialization is suitable for backpackers, fisherman, cruise ships and airlines because they might have the potential of being stranded in the middle of the sea. In conclusion, the life pocket can increase the chance to survive as hypertonic dehydration caused by drinking seawater can be avoided.

Keywords: Dehydration; condensation; polyethylene; evaporation; seawater.

MUL-MOENUS TOOTHBRUSH

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ABSTRACT

A toothbrush is an oral hygiene instrument used to clean teeth, gums and tongue. We have created an innovation of multi-purpose toothbrush with special functions to ease one's life. Few problems arise for a toothpaste and toothbrush to work separately such as both toothbrush and toothpaste will take a lot of space or sometimes the toothpaste is squeezed excessively for a single brush. Some people tend to rinse their mouths directly under the tap which is difficult. The objective of this project is to help users save space and rinse their mouth easily. The innovation development of this product is first, we put the plastic tube behind the toothbrush which is the way of toothpaste from the tank and brush. Secondly, we put the plastic tank of the toothpaste at the tip of the toothbrush for the storage of toothpaste. We put a valve at the top of the plastic tube and press it at the bottom of the plastic tank to exert pressure on the toothpaste due to pushing the toothpaste from the tank to the brush. Lastly, we put a small size plastic tube in front of the toothbrush. We believe it has high commercial potential, especially for travellers as it is space efficient. It is also good for children because it is easy to use. The novelty of a mul-moenus toothbrush is, it has the 3-in-1 function which stores and provides toothpaste, brush teeth and rinse. All in one that makes our life easier and organized. The benefits society can gain is it can save more space for other things. It can also avoid wasting toothpaste and more people can easily rinse their mouths after brushing their teeth. In conclusion, this innovation is very beneficial for society to organize their stuff in a better way.

Keywords: Innovation; toothpaste; toothbrush; rinse.

AKHLAQ

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ABSTRACT

'AkhlaQ' is an application in which gaming meets education. It is created to explore a new world of education to cater to the younger generation. This application provides basic knowledge of Islam which includes 'Akhlak', 'Jawi' and 'Ibadat'. Due to several issues regarding teenagers' bad behaviours, this application is created to educate children about Islam so that they will be filled with a lot of knowledge when they grow up. This application is aimed at children aged 4 years old and above. With technological based learning, this might be one of the learning processes as children can feel joy while learning. Children have to choose one character and complete the challenges given. The characters are really child friendly and all the challenges are related to Islamic basics. In this case, parents do not have to worry to let their children use this application. At the same time, it could also lessen the burden carried by the parents as some of them might be really busy and do not have enough time to teach their children about Islam basics. 'AkhlaQ' will be commercialized through App Store and Play Store which are easy to access with the selling price of RM12.17 and to cover minimum loss 21 users per day are needed. To conclude, this application could be one of the best way to educate children about the basic of Islamic knowledge and it is also easy to access.

Keywords: Fun learning; Islamic; children; basic knowledge.

TEMPORARY TYRE SYSTEM

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ABSTRACT

In this current era, the development of technology is growing faster over time. The development of technology has helped many people to ease their daily tasks by solving problems while reducing the burden borne by humans in a short time. The invention of technology has been greatly innovated by consumers to meet their satisfaction according to their needs. We can state that the changing technology has improved a lot due to human needs. Hence, our goal is to create an innovative product that can relate to human's daily life when dealing with various problems especially when on the road. As far as we know, there are many problems that we have to face when on the road such as hectic traffic jams, hot weather, road damage and worst of all is the condition of our transport while on the road, for example, flat motorcycle tires. In a hectic situation our group has designed a product that is able to solve the problems faced by users and make their work easier and faster. Our product is called "Temporary Tyre". This temporary tyre can replace our flat tire so that we can take our motorcycle to a nearby workshop. The design of this product consists of two static wheels and one rotary wheel, an adjustable place to install a flat tire on it and a tire lock to keep the static flat tire on it. In conclusion, this innovation is able to help people out there in making their problems easier and quicker to be solved.

Keywords: Temporary tyre; flat tyre; balancing.

AUTOMATIC RECYCLER DUSTBIN

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ABSTRACT

The rapid population growth has increased household wastes. Food wastes with high moisture and organic matter content are likely to emit odours because of the decomposition process. The management of odour must be prioritised to ensure the comfort of nearby residents and to avoid air pollution. The objectives of this product are to control the odour of stored food waste and separate easy and hard decompose materials. The odour can be reduced by using baking soda which has been proven scientifically can reduce the odour by about 70%. Baking soda which consists of sodium bicarbonate may have reduced the odour through the neutralisation of the odorous organic acids. First, this bin has two parts, which are the food waste disposal part and the slow decomposing material disposal part such as plastic and polystyrene. Hence, can save the money and space of the consumer rather than purchasing another dustbin for inorganic trash. Next, this bin has a blade that can grind food waste. As a result, we can dispose of this food waste easily at home alone while inorganic trash can be sent to a recycling centre which can simplify the process of the company that manages the materials. This bin has a storage place for baking soda. When the garbage reaches a certain level, this bin will automatically secrete baking soda in a quantity of 50g to reduce the foul smell of garbage. The dustbin has a feature that will automatically insert the baking powder with a quantized amount of 50g baking soda onto the bin before adding 1 kg of food waste. We are targeting every household to have this product as malodour from food waste has become a critical problem to each of them. Thus, factors such as money and space can be saved.

Keywords: Food wastes; baking soda; odours; dustbin; inorganic trash.

SMART CO-DET

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ABSTRACT

Carbon monoxide gas is a by-product of combustion that is colourless, tasteless and odourless gas. The gas becomes a silent killer when the carbon monoxide is built up indoors and poison who breathe it. Hence, the production of a smart carbon monoxide detector using an Arduino microcontroller with mobile notification alert. The project aims are to detect and warn the level of carbon monoxide in a room or space to people in the room or the close contact of the person that is harmed by the gas. This SMART CO-DET improvise the existing gas detector by applying the Arduino microcontroller and smart messaging features. The MQ-2 gas sensor is selected to detect and measure the level of carbon monoxide gas in the room. The sensor can build up as a gas detector and set up the warning level of carbon monoxide. As it reaches the level, the system sends a notification to the mobile to warn the person or other close contact using Blynk App. Therefore, the person that is harmed with high amount of carbon monoxied could be safe from death or the other can try to make a wake-up call as a quick response. Furthermore, the SMART CO-DET also equips with solar cell as the power supply and GPS to track the location of the detector.

Keywords: Carbon monoxide; detector ;arduino microcontroller; mobile alert; solar.

ORGANIC OIL ABSORBER

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ABSTRACT

Oil spoilage or oil spill has become a great problem for our environment specifically in becoming a big factor of pollution for our seawater and rivers which gives a huge impact to the marine ecosystem and our life. Irresponsible human beings tend to not take this problem as a big issue as they thought that sea pollution has nothing to do with their daily life and thought that sea pollution does not affect human life. To clean up oil spoilage on a big scale, requires a lot of costs and energy since doing that is not easy and does take time. For example, cleaning a sea oil spill can cost around \$2 to \$9 billion US dollars economically. The main objectives of this innovation are to help reducing oil spills on the sea more cost-efficiently, help households to remove daily oil waste more environmentally friendly, and to take advantage of fruit waste. This innovation is developed by using fruit peels that have spongy properties such as oranges, lime, and lemons, and clip them in a plastic frame with a net to prevent the peels from leaving the frame. The commercial potential is that households can use them to absorb cooking oil waste and throw them as solids rather than let the oil flow in the drain which will (in some cases) end up in rivers. Additionally, if produced on a larger scale and bigger size, fishers can use them to pick up the oil spills in their pond or lake. Therefore, this innovation can help the community live in a more environmentally friendly way by reducing oil pollution.

Keywords: Pollution; oil; petroleum; organic; peels.

CALMIVA - AN INSTANT COLD PACK WITH SCENT

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ABSTRACT

A panic attack is known as sudden brief feelings of fear and strong physical reactions to normal nonthreatening situations. A person who has a mental illness is more prone to get panic attacks compared to a normal person and will tend to commit self-harming without their intention because their debilitating emotions can be temporarily relieved when they self-harm. To curb this problem, researchers found out that ice could help with panic attacks as it provides instant relief from high cortisol levels. Ice will divert all of the attention and focus on the ice. As ice is inaccessible in some situations, therefore this project is innovated an instant cold pack with scent, Calmiva to help the person with a panic attack keep their focus on two things which are their touch and smell sensory that can be used anywhere. This instant cold pack comes with scent and it is nowhere to be found in the market. Therefore, the main objective is to provide an instant reliever for panic attacks. Calmiva consists of a bag with two compartments. It consists of ammonium nitrate and water respectively. When the pack is squeezed, water is mixed with the reactor and an endothermic reaction occurs and causes the pack to cool down rapidly. The pack has scented gel that can be accessed by peeling a sticker and comes with a cloth bag. Also, Calmiva is made in a smaller size than commercial products to be more mobile for emergencies at any time. Other than helping with panic attacks, it can also be used for minor injuries such as cramps, minor bumps, and bruises. This product will prepare society for an emergency accident to get the problem solved properly in public places and contribute to the reduction of self-harm and suicide cases in our country.

Keywords: Panic attacks; mental illness; physical reaction; self-harming.

DISPOSABLE RAZOR

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ABSTRACT

One of the greatest problems that the world is facing today is that of environmental pollution, thus by applying the entrepreneurial mindset, we manage to think of an innovation to preserve our earth from pollution. Therefore, we come out with an innovation in the removal of body hair tools which is a disposable razor, that is named as Naru Razor. Cardboard is a biodegradable material which is better for the environment compared to plastics. The product is described in three keywords which are easy, smart, and conservationist. The design of this innovative product is by sketching the template of the razor body on the plain cardboard, then, the template of the body of the razor is cut and the handle of the razor is built by ourselves. Then the razor blade can be applied on the top of the handle and in just a second it is ready to be used. The commercial potential and benefits to the society can also be seen in the keywords we made up. The 'Easy' refers to a simple packaging which is in small flat cardboard, thus it is easy to keep. 'Smart' refers to mind-sharpening, when the customer buys our product, they need to figure out on how to build the body razor. The 'Conservationist' stands for the eco-friendly material that can be found in our product. As this Naru Razor does not require a lot of materials, thus it is decided that the product will be sold at the price RM15. Overall, we hope our dream to let this product be released in the market and can be used worldwide will come true as this innovation will help conserve the world from pollution.

Keywords: easy; smart; conservationist; razor; disposable.



"UNLEASHING CREATIVITY, HUMANIZING INNOVATION"