



**UPM**  
UNIVERSITI PUTRA MALAYSIA  
BERILMU BERAKTI



# UPM COMMERCIALISED TECHNOLOGY

PROSPERING THROUGH INNOVATION

# CONTENTS

## AGRICULTURE

MRTLatexometer™ for Rapid Measurement of Dry Rubber Content	6
Newcastle Disease Vaccine	
Fowl Pox Vaccine	7
MyVAC UPM 93 IBD	
Stellar Lac	8
Fast Target™ Kit	
Mannheimia Haemolytica Bacterial Polypeptide and Sequences, Gene Sequences and Uses Thereof	9
ZAPPA®: The Rice Seeds Germination Enhancer	
Vita-Grow	10
Satiri Superdwarf UPM	
Fresh Fruit Bunch (FFB) Hyperspectral Scanner	11
Real Time Oil Palm Fruit Grading System	
B10: Biofertiliser	12
Web Smart Farmer V1.0	
Soil Prop-Soil Property Calculator	
ROBO-REST: An Improved Sterilisation Process to Increase Palm Oil Extraction Rate	13
GANOCARE™: A Composition for Ganoderma Disease in Plants	14
Akar Putra™	
MICRONES: System for Continuous Extraction of Pericarp Liquid and Method Thereof Technology & Kernel Nut and Mesocarp Separation System	15
E-Cutter	
Thohira: Economical Animal Feeds Powered by Synbiotics	16
Dekoponix - Compact Hydroponic Rack System	
PostBiome™	17
SAPPUTRA: Nano Emulsion Formulation	
Growing Media	18
Allamanda-Derived Biofungicide for the Control of Post-Harvest Diseases	

## BIOTECHNOLOGY

Purified T1 Lipase, A Novel Construct Of T1 Lipase and Methods Thereof	
Thermostable Organic Solvent Tolerant Protease from Gram-Positive Bacteria	20
Danio Assay Kit: Bioassay for Detection of Xenobiotics	
TMP Ester	21

## FOOD

Bacteriocin UL4, Antimicrobial Compound	
Natural Colorant and Methods Thereof	23
Specialty Rice Bran Oil (RIBO) Hypercholesterolemic	
TQRF (Thymoquinone Rich Fraction as Cardioprotective and Neuroprotective Agents)	24
Kardi Mind Palm Tea Sachet	
Cardio Mate Seasoning from Seaweed	25
OryGold-Acylated Steryl Glycoside-rich Product for Disease Prevention and Health Enhancement	
OgyBerry: Anti-Agent for Liver Cancer	26

Pineapple Multi-Peeler Plus	27
Rolled Tart Machine (A rolled cookie machine)	28
Nata De Coco Dicing Machine	29
Shredding and Slicing Machine	30
Coconut AutoSqueezer	31
Ezy Cooker	32
Auto Forming Machine	33
Fruit Grading Machine	34
Ohmic Heated Pasteuriser	36
Halal Test Kit - A Method for Identifying a Pork Content in a Food	37
The Production of Corn Cob Flour	38
Curry Puff Maker Machine	39
Sesame Cracker Machine	40
Pepper Peel-O-Matic (White Pepper Decorticator)	42
Porcine Rapid Amplification Kit	43
<b>HEALTH AND MEDICAL</b>	
Kantan Premium: Therapeutic Herbal Bath	36
DS Factor	37
Porous Bioceramic Composition for Bone	38
Healen: Skin Healing Product	39
Haruan Manan	40
Safety Syringe	42
Vacuum Blood Container	43
Computer Assisted Surgery System	44
REMDII Ultra Moisturising Cream	46
<b>APPLIED SCIENCE AND ENGINEERING</b>	
CNG Composite Tanks	42
Fibre Mastic Asphalt (FMA)	43
BIOGEN GREENWD	44
Optical Amplifier	46
Broadband Light Source	47
<b>ICT AND HUMAN DEVELOPMENT</b>	
MyOBE: Outcome Based Education Management System	46
Tutor Software for Visually Dyslexia Student	47
Star Kit: Story Telling Augment Reality Kit	48
Kit Bijak Wang	49
Food Pin	51
E.A.G.L.E: Excellent Accelerator Grounded Learning Environment Table	52
Water Safety Module	54
<b>BUILDING AND CONSTRUCTION</b>	
SABSystem: Spacer Architectonic Building System	51
Putra Blok-Interlocking Load Bearing Hollow Block Building System	52
Independent Sewerage Treatment Plant (I-STP) for Remote Settlements	54
<b>ENVIRONMENT AND ENERGY</b>	
Cosmo Ball: System and Apparatus for the Treatment of Organic Effluents	54
VIRAS RADER: Virtual Rainfall Stations with Radar Derived Rainfall	55
Biomass Microwave Carboniser (BMC)	55

# MESSAGE

## FROM THE VICE-CHANCELLOR

Today's tech-based economy is very much depending on a nation's ability to innovate. The large part of it comes from the high level entrepreneurial activities. Only through innovations, do entrepreneurs manage to set up foundations for new businesses, acknowledge the pressing challenges faced by the global citizens, catalyse productivity growth and most importantly, their roles as the key driver of economic development in order to create new wealth. Innovative economy is more productive, resilient, adaptable, future-proof and a much needed enabler to support higher living standards.

At UPM, we have been solidifying our innovations, utilising all resources at hand in facing fundamental obstacles through our quest to catapult the country to a greater prosperity and provide better living for its people. We see opportunities and are willing to take up risks in bringing about wealth-generating novel ideas into the market, as we perceive the translation of innovations created in our labs will benefit the people at large. Besides many branches of knowledge are able to be presented as new-found ideas, we also realise that small businesses are a good starting point to convert those ideas into full-fledged products.

In addition to that effort, UPM has also aligned itself with the government agenda to cultivate and encourage the culture of innovation in spurring the economy. Through the public-private partnerships, we help startup companies develop quality products and technologies that are able to be adopted in many areas in the market. Health, environment, agriculture, engineering are among other areas that we have covered, and yet we are still looking forward to catering more for other emerging needs of the country.

This compilation of products is aimed to serve as a useful reference manual, not only for general traders, business owners in the industry, but also prospective entrepreneurs, researchers and academics alike. Its redaction process is tailor-made for readers to circumvent a tedious read, as all information is meticulously laid out to make it easier for our potential clients to flip through the pages and have a quick overview of the range of innovations on offer.

It is my hope through this all-in-one piece of information, interested parties will be enticed to join forces with us. The responsibility always rests with UPM to break new grounds for new innovation frontiers, besides being an impetus to cofound and forge more collective efforts, open doors to new opportunities, as well as to stay at the forefront as the precursor among other institutions of higher learning in commercialising research and innovations.



**YBhg. Prof. Datin Paduka Dato' Dr. Aini Ideris, FASc**  
*DSIS, DPMK, PSK, KMN*  
Vice-Chancellor

*Universiti Putra Malaysia, Serdang,  
Selangor Darul Ehsan,  
MALAYSIA*



# FOREWORD

First of all, I would like to congratulate and thank Putra Science Park, Universiti Putra Malaysia (UPM) for the effort that was put into producing “UPM’s Commercialised Technology Directory First Edition”. It gives me a great pleasure to write the foreword of this year’s edition of the directory.

I would like to highlight that UPM’s Commercialised Technology and Innovation has brought in large number of successful collaborations with industrial linkages. Hence, this has created a momentum for researchers to uptake entrepreneurship skills to elevate the commercial values of their inventions.

Over the years, UPM has produced many researchers in various fields of innovation and technology. These researchers have delivered many new technologies for the benefit of mankind and UPM’s community; and they have made significant contribution towards the nation-building process.

As of 2018, UPM has submitted 2000 intellectual property applications. From this figure, a total of 166 technologies have been commercialised to various key industry players locally and abroad with a gross sale of more than RM61 million. Currently, UPM has initiated 57 startups through UPM InnoHub® Program that nurtures the development of UPM’s technopreneurs. It is our hope that these technopreneurs will create and deliver new and impactful technologies and innovations to meet the country’s need.

UPM has received worldwide recognitions from renowned organisations such as the MOHE Entrepreneurial Awards (MEA) from the Ministry of Higher Education and the National Intellectual Property Award under the Best Management of Intellectual Property category for 2008, 2012, 2014, 2016, 2017 and 2018. These achievements showcase UPM’s ability to strategise its research and develop commercial plans that would contribute to society.

In addition, an innovation directory has been made available for public viewing containing new inventions with commercial potential. If you are interested, please visit <http://www.sciencepark.upm.edu.my> or contact our team at [promosi@upm.edu.my](mailto:promosi@upm.edu.my) for further inquiry.

We believe the information available on our website will gain positive feedback from key industry players to join us in support of technology transfer.

We look forward to continued success and increased collaborations with major industries.

Best Wishes. Thank you.



**YBhg. Prof. Dr. Zulkifli Idrus**  
*Deputy Vice-Chancellor  
(Research & Innovation)*

*Universiti Putra Malaysia, Serdang,  
Selangor Darul Ehsan,  
MALAYSIA*



AGRICULTURE

## MRTLATEXOMETER™ FOR RAPID MEASUREMENT OF DRY RUBBER CONTENT

### TECHNOLOGY DESCRIPTION

A specialised instrument for rapid measurement of dry rubber content (DRC) in the field of rubber latex and latex concentrate. The meter has been indirectly calibrated to measure actual moisture content by standard laboratory method. The whole process of the measurement takes less than 5 minutes. Suitable to be used at latex collecting centre for rapid transaction and at latex-dipping industry for process control.



### INVENTOR

**Prof. Dr. Kaida Khalid (Retired)**  
*Faculty of Science*

**Year Licensed: 1990**

## NEWCASTLE DISEASE VACCINE, V4-UPM: HEAT RESISTANT STRAIN

### TECHNOLOGY DESCRIPTION

A heat stable vaccine (NDV4-UPM), developed by cloning NDV4 strain. An innovative technology preventing deadly Newcastle disease, thus increasing chicken production for the regions in Malaysia and developing countries. The vaccine contains a mild virus which is apathogenic and asymptomatic, which can be easily administered by incorporating it into chicken feed. The vaccine can be administered to village and commercial chickens as it is relatively cheaper than imported vaccines

### INVENTORS

**Prof. Datin Paduka Dato' Dr. Aini Ideris**  
**Prof. Emeritus Dato' Dr. Abdul Latif Ibrahim (Retired)**  
*Faculty of Veterinary Medicine*

**Industrial Link:** Malaysian Vaccines and Pharmaceuticals Sdn. Bhd.

**Year Licensed: 1993**



For Enquiry:

03-8947 1254 / 03-8947 1618

[promosi@upm.edu.my](mailto:promosi@upm.edu.my)

<http://www.sciencepark.upm.edu.my>

## FOWL POX VACCINE: TISSUE CULTURE ADAPTED

### TECHNOLOGY DESCRIPTION

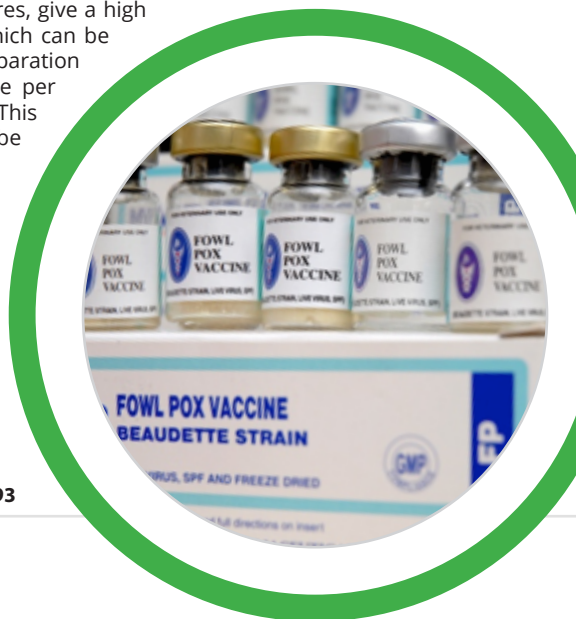
Fowl pox vaccine is produced by cloning the virus and propagating it via tissue culture. This is the first tissue cultured adapted technology developed in Malaysia. The special features of this new clone are that it can grow well in tissue cultures, give a high titre; produces homogenous and high quality vaccine which can be prepared in the freeze-dried form. This technique of preparation reduces operational costs and shortens production time per dose as compared to those using embryonated eggs. This vaccine is also more stable, has a long shelf-life and can be used for all types of chickens.

### INVENTORS

**Prof. Datin Paduka Dato' Dr. Aini Ideris**  
**Prof. Emeritus Dato' Dr. Abdul Latif Ibrahim (Retired)**  
*Faculty of Veterinary Medicine*

**Industrial Link:** Malaysian Vaccines and Pharmaceuticals  
 Sdn. Bhd.

**Year Licensed:** 1993



## MYVAC UPM93 IBD VACCINE

### TECHNOLOGY DESCRIPTION

MyVAC UPM93 IBD vaccine is successfully developed and commercialised for chickens specifically, against very virulent Infectious Bursal Disease Virus (vvIBDV) field challenge. The vaccine's seed virus is novel and unique with molecular characteristics of the viral protein, which is highly homologous to vvIBDV field strains in Asia and Europe. It is safe, effective and able to induce high and protective levels of IBD antibody even in, chicken flocks with different levels of maternally derived antibody. The vaccine only causes mild to moderate bursal lesion with bursal recovery, without causing immunosuppression and interruption of feed conversion ratio performance of the chickens.

### INVENTOR

**Prof. Dr. Mohd Hair Bejo**  
*Faculty of Veterinary Medicine*

**Industrial Link:** Malaysian Vaccines and Pharmaceuticals  
 Sdn. Bhd.

**Year Licensed:** 2005



For Enquiry:  
 03-8947 1254 / 03-8947 1618  
 promosi@upm.edu.my  
<http://www.sciencepark.upm.edu.my>

## STELLARLAC-A PROBIOTIC FOR POULTRY (CHICKEN PROBIOTIC)

### TECHNOLOGY DESCRIPTION

StellarLac® is a high performance probiotic for poultry that is proven to improve chickens' intestinal health; thereby protecting them against diseases caused by enteric pathogens such as *E. coli*, *Salmonella* spp., *Clostridium perfringens* and *Campylobacter* spp. The *Lactobacillus* strains in StellarLac® are extracted from intestines of healthy chickens which are, scientifically selected and tested for strong probiotic characteristics that can survive harsh environment of chicken's

gastrointestinal tract. It is a unique blend of *Lactobacillus* strains which colonise the gastro-intestinal tract very rapidly thereby, preventing the attachment and colonisation by pathogenic (harmful) bacteria.

The *Lactobacillus* strains in StellarLac® produce lactic and acetic acids which are antagonistic towards invading pathogens.

Digestive enzymes secreted by StellarLac® helps improve feed digestion process and contributes by enhancing growth performance of poultry.



### INVENTOR

**Prof. Dr. Ho Yin Wan (Retired)**  
Institute of Bioscience

**Industrial Link:** Janaf Sdn. Bhd.

**Year Licensed:** 2003

## FAST TARGET™ KIT

### TECHNOLOGY DESCRIPTION

White spot syndrome virus (WSSV) causes millions of dollars losses to the shrimp industry in Asia. The Fast Target white spot syndrome virus detection kit is the first kit to use single tube, single loading, nonstop approach to detect white spot syndrome virus (WSSV). The single tube method is completely different from the conventional nested PCR that involves two cumbersome tubes and multiple-step procedures. This novel single tube method for shrimp virus is the first in the world. This kit gives user a non-stop nested amplification -low risk of contamination, economical, fast and user friendly. The advantages of this kit is its sensitivity to detect as low as 10 copies of viral DNA target; able to indicate infection levels (light, moderate and heavy); and it has built-in negative and positive controls for reliable results.

### INVENTOR

**Prof. Dato' Dr Mohamed Shariff Mohamed Din**  
Faculty of Veterinary Medicine

**Industrial Link:** Genensis Biotechnology Sdn. Bhd.

**Year Licensed:** 2005



For Enquiry:

03-8947 1254 / 03-8947 1618

promosi@upm.edu.my

<http://www.sciencepark.upm.edu.my>

## MANNHEIMIA HAEMOLYTICA BACTERIAL POLYPEPTIDE AND SEQUENCES, GENE SEQUENCES AND USES THEREOF

### TECHNOLOGY DESCRIPTION

A vaccine against mannhemiosis of sheep and goats. It which is, developed by using recombinant technology. This technology is used to control a respiratory disease of sheep and goats, that usually causes up to 30% mortality during rainy season. It is produced by using sophisticated recombinant technology which is, proven to provide protection against bacterium infection. The vaccine is administered intranasally into sheep and goats. The advantages are; it is effective if used according to the suggested protocol; it can reduce mortality to more than 90% and easy to use.

### INVENTOR

**Prof. Dr. Mohd Zamri Saad**  
Faculty of Veterinary Medicine

**Industrial Link: St Biolife Sdn. Bhd.**

**Year Licensed: 2005**



## ZAPPA®: THE RICE SEEDS GERMINATION ENHANCER

### TECHNOLOGY DESCRIPTION

ZAPPA® is specifically designed to encourage growth, rooting and activeness of grain; this enhances rice growth and expedites the process by two folds in 3 to 5 days. Containing rice seed germination enhancers to control weedy rice infestation, ZAPPA® infuses paddy seeds with active oxygen to enhance growth rate through anaerobic direct seeding in about 5 centimeters of water. This process delays or suffocates untreated weedy rice seeds present in the soil and greatly reduces competition between weeds and ZAPPA® soaked seeds.

ZAPPA® brings benefits to farmers such as conservation of water in paddy fields, prevents rats from feeding on seed and paddy crops, saves cost on weeding labour and herbicide chemicals. With these benefits, ZAPPA® can potentially increase the nation self-sufficiency of rice production from 20 to 40%.

### INVENTORS

**Assoc. Prof. Dr. Syed Omar Syed Rastan (Retired)**  
**Assoc. Prof. Dr. Ahmad Husni Mohd Hanif (Retired)**  
Faculty of Agriculture

**Industrial Link: Diversatech (M) Sdn. Bhd.**

**Year Licensed: 2008**



For Enquiry:  
**03-8947 1254 / 03-8947 1618**  
**promosi@upm.edu.my**  
**<http://www.sciencepark.upm.edu.my>**



## VITA-GROW®: THE GROWTH AND YIELD ENHANCER

### TECHNOLOGY DESCRIPTION

VITA-GROW® is a foliar fertiliser that contains complete and balanced plant nutrients. It is also enriched with plant growth regulators and organically bound micronutrients which are stable upon storage, or when mixed with most pesticide. It provides the most rapid utilisation of nutrients and permits the correction of observed deficiencies in less time than by topsoil treatment especially, during the critical growth stages. The application of VITA-GROW® has also shown to prevent the shedding of flowers and buds. Vita-Grow is equally effective for flower growth and reduction of fruit loss.

### INVENTORS

**Assoc. Prof. Dr. Syed Omar Syed Rastan (Retired)**

**Assoc. Prof. Dr. Ahmad Husni Mohd Hanif (Retired)**

*Faculty of Agriculture*

**Industrial Link:** Diversatech (M) Sdn. Bhd.

**Year Licensed:** 2008



## SATIRI SUPERDWARF

### TECHNOLOGY DESCRIPTION

Satiri Superdwarf is the first high quality, local bred turf grass for golf greens that will adapt to local climate of high temperature, high moisture and heavy rainfall. Short internodes and tiny leaf blades of Satiri Superdwarf contribute to turf green density, which will allow lower mowing height, enhance and increase green speed for enjoyment of the game. The benefits are tolerance to shade, extreme sunlight and excessive rainfall thus making it durable whole year round. The grass is not only suitable for use in golf courses, but also for lawn bowling and home use.

### INVENTORS

**Assoc. Prof. Dr. Mohd Said Saad (Retired)**

**Prof. Dr. Abdul Shukor Juraimi**

*Faculty of Agriculture*

**Industrial Link:** Satiri Sdn. Bhd.

**Year Licensed:** 2010



## FRESH FRUIT BUNCH (FFB) HYPERSPECTRAL SCANNER

### TECHNOLOGY DESCRIPTION

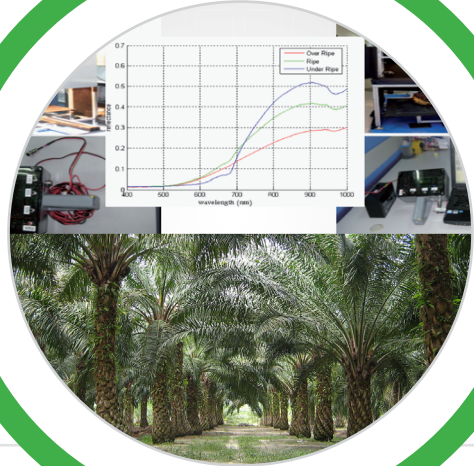
This invention is a hyperspectral scanner for fruit maturity detection, classification for oil palm fruit bunch and classification utilising NIR spectral bands with specific illumination system. It is related to hyperspectral for accurate detection and classification of fruit maturity.

### INVENTOR

**Prof. Dr. Abdul Rashid Mohamed Sharif**  
*Faculty of Engineering*

**Industrial Link:** Quallinaire Technologies Sdn. Bhd.

**Year Licensed:** 2011



## REAL TIME OIL PALM FRUIT GRADING SYSTEM

### TECHNOLOGY DESCRIPTION

Real Time Oil Palm Grading System provides classification mechanism for oil palm FFB, based on fruit external features such as color, texture, thorn and empty socket. It is designed with specific illumination system and can be used for different agriculture fruits. It has a unique system with specific techniques to work with the parameters and properties of oil palm FFB; and to classify the ripeness of FFB. This technology helps the oil palm companies to classify the different types of oil palm fruit and their grades of ripeness. These factors influence purchase price and quality of the extracted oil.

### INVENTOR

**Prof. Dr. Abdul Rashid Mohamed Sharif**  
*Faculty of Engineering*

**Industrial Link:** Quallinaire Technologies Sdn. Bhd.

**Year Licensed:** 2011



For Enquiry:  
03-8947 1254 / 03-8947 1618  
promosi@upm.edu.my  
<http://www.sciencepark.upm.edu.my>



## BACTO 10: BIOFERTILISER

### TECHNOLOGY DESCRIPTION

The technology produces a bio-fertiliser. It is based on nitrogen-fixing system whereby Plant Growth Promoting Bacteria is locally isolated from local plants and herbal roots. This non-pathogenic and safe liquid bio-fertiliser when applied to plant roots, produces phytohormones which enhances root development increases water and nutrient uptake. Inoculated plants are more tolerant to drought condition, produce equivalent high yield but with 65% less fertiliser-N input thus, saving fertiliser cost. Plants derive benefits from the endophytes which lives in plant roots and, biologically fix 'free' nitrogen from the atmosphere. The endophyte is protected from adverse soil and environmental conditions. Available in liquid form which, is cheaper to produce and easy to store.

### INVENTOR

**Prof. Dr. Zulkifli Shamsudin (Retired)**  
Faculty of Agriculture

**Industrial Link:** PhytoGold Sdn. Bhd.

**Year Licensed:** 2011



## WEB SMART FARMER V1.0

### TECHNOLOGY DESCRIPTION

The Web Smart Farmer is a web-based information system that allows farmers to view their soil variability maps. Logging onto the web portal gives farmers a chance to facilitate smart farming practices based on the ECA variable rate map available online. It acts as a bookkeeping site for activities carried out by the farmers, generates individual reports of farmer's lots to show costs and, acts as a prompt for farmers to carry out activities at the right place and time. This system is easy to access and readily updateable to carry out important agricultural activities to increase profitability by optimising fertilisers and chemicals. The web portal is also an educational way as it helps to bridge the divide between urban and rural communities with user-friendly interface and easy-to-use application.

### INVENTOR

**Prof. Ir. Dr. Mohd Amin Mohd Soom (Retired)**  
Faculty of Engineering

**Industrial Link:** Pidmams Smartfarming Sdn. Bhd.

**Year Licensed:** 2012



## SOIL PROP-SOIL PROPERTY CALCULATOR

### TECHNOLOGY DESCRIPTION

This invention helps farmers in managing paddy fields in terms of optimising fertiliser input and increasing rice yield, based on soil variability map produced by the developed system. SoilProp is a high technology system which is integrated with a ground sensor, global navigation satellite system (GNSS), rugged computer and developed software to identify the soil characteristics and soil fertility level. The system is capable to provide precise information to the end user or farmer about the level of soil fertility and nutrient content of the soil such as Nitrogen, Phosphorus and Potassium in real time basis. The soil information provided will be mapped in the computer screen based on the actual position of the observed area. This invention contributes to time saving, cost effectiveness and prevention of environmental degradation. The system was proven to increase rice yield from 9 to 25%; and saving in cost of production up to 50%.

### INVENTOR

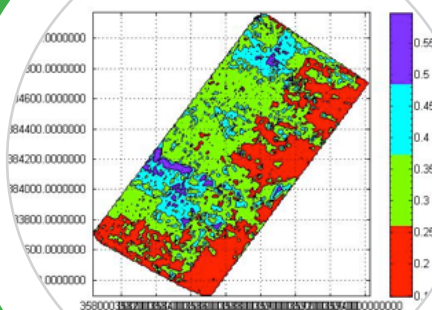
**Ezrin Mohd Husin**

*Faculty of Engineering*

*Institute of Advanced Technology*

**Industrial Link:** Pidmams Smartfarming Sdn. Bhd.

**Year Licensed:** 2012



## ROBO-REST: AN IMPROVED STERILISATION PROCESS TO INCREASE PALM OIL EXTRACTION RATE

### TECHNOLOGY DESCRIPTION

This technology maximises chemical reactions pertaining freeing fruits from stalk and allowing the oil-bearing cells to be free and separated to easily release its oil. The 70psi sterilisation also ensures sustenance of carotenes. The high pressure steam input creates rapid and equilibrated steam pressure at 70psi (152°C) into the sterilisation vessel. The 152°C steam permits better heat transfer into the fruits/bunch leading to equilibrated fruits/bunch temperature and steam. Reduction in water loss through evaporation; the high temperature excess water in fruits/bunch permits very efficient hydrolysis of the hemicellulose. The uniqueness of this technology is the cost associated with incorporation of the sterilisation is as much as establishing any conventional steriliser; shorter sterilisation that increases through-put and may require bigger or more digesters and sterilisation through shall be maintained with smaller steriliser capacity but produce equal tonnage to cope with the digester or pressing capacity.

### INVENTOR

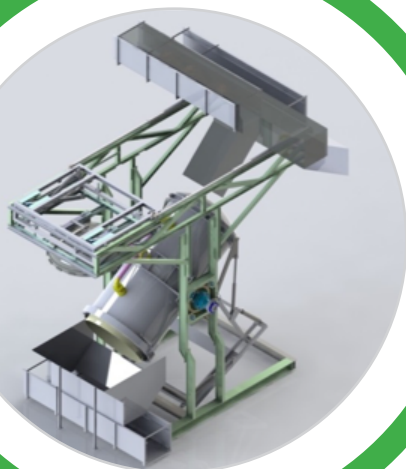
**Assoc. Prof. Dr. Abdul Azis Ariffin (retired)**

*Faculty of Food Science and Technology*

*Institute of Advanced Technology*

**Industrial Link:** Dophin Application Sdn. Bhd.

**Year Licensed:** 2013



For Enquiry:  
03-8947 1254 / 03-8947 1618  
promosi@upm.edu.my  
<http://www.sciencepark.upm.edu.my>

## GANOCARE™: A COMPOSITION FOR GANODERMA DISEASE IN PLANTS

### TECHNOLOGY DESCRIPTION

An organic fertiliser formulated to control basal stem rot (BSR) disease, which is common in oil palm caused by the fungus *Ganoderma* (*Ganoderma boninensis*, *G. miniatocinctum*, and *G. zonatum*). It is produced using fertiliser technology; and able to control BSR disease at various stages of oil palm growth i.e., at seedling stage in the nursery; during planting or re-planting, pre-mature, and mature. This product can be utilised as organic supplement and as a fertiliser for growth and development of oil palm at the rate specified. This product is easy to handle and more efficient in terms of cost-effectiveness relative to other products. It can reduce BSR disease infection of oil palm and hence, increases oil palm production.

### INVENTOR

**Prof. Dr. Mohamed Hanafi Musa**

*Faculty of Agriculture*

*Institute of Tropical Agriculture and Food Security*

**Industrial Link:** FELCRA Plantation Services Sdn. Bhd.

**Year Licensed:** 2014



## AKAR PUTRA™

### TECHNOLOGY DESCRIPTION

Akar Putra is a new breed of chicken that has proven to be superior than *Ayam Kampung* (village fowl). It can lay 200 eggs or four times as many as its free range cousin. It is bigger, has longer legs and reaches maturity much earlier than *Ayam Kampung*. This new breed of chicken has higher value for its meat and egg. Akar Putra produces larger eggs (60 grams each) in a shorter period than *Ayam Kampung* (less than 13 weeks); and produces larger chickens weighing 1.2 kg to 1.4 kg each; and are more resistant to diseases. These features of Akar Putra make it more profitable for commercial purposes as they can be marketed sooner.

### INVENTOR

**Assoc. Prof. Dr. Azhar Kassim (Retired)**

*Faculty of Agriculture*

**Industrial Link:** Azil Green Resources Sdn. Bhd.

**Year Licensed:** 2014



For Enquiry:

03-8947 1254 / 03-8947 1618

[promosi@upm.edu.my](mailto:promosi@upm.edu.my)

<http://www.sciencepark.upm.edu.my>

## MICRONES: SYSTEM FOR CONTINUOUS EXTRACTION OF PERICARP LIQUID AND METHOD THEREOF TECHNOLOGY & KERNEL NUT AND MESOCARP SEPARATION SYSTEM

### TECHNOLOGY DESCRIPTION

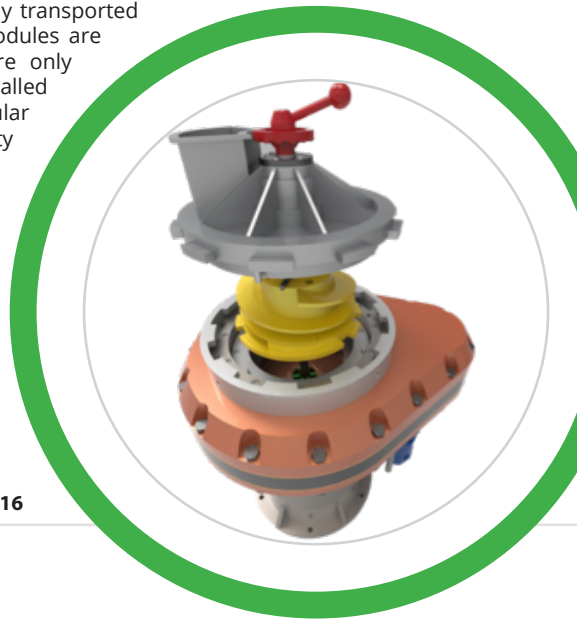
The two inventive steps enable replacement of the traditional digestion methodology to maximise the extraction of oil from mesocarp fibre in the absence of kernel nuts there-by, increasing Crude Palm Oil and Palm Kernel recovery from Fresh Fruit Bunches (FFB). The system efficiently separates pericarp fiber from the kernel nut. This liberates virgin oil due to the forces imposed by the internal helical screw it facilitates the discharge of kernel nuts from, the macerated mash prior to the mash entering the screw press. This technology can be efficiently transported to site and quickly installed as the 20ft container size modules are pre-engineered and fitted in the workshop; and require only minimal connection between modules on site. Can be installed without interference to ongoing production since the modular structure is self-supporting and includes walkways and safety rails. Requires minimum maintenance, readily and easily scalable for higher throughput capacity upgrades due to a unique modular design. Eliminates operator fatigue as the system is fully automated and demands only minimal operator intervention to monitor pre-set conditions to maintain optimum throughput.

### INVENTOR

**Prof. Dr. Robiah Yunus**  
Faculty of Engineering

**Industrial Link:** Fibaloy International Sdn. Bhd.

**Year Licensed:** 2016



## E-CUTTER

### TECHNOLOGY DESCRIPTION

E-Cutter is a crescent technology electricity that has a special generator which is lightweight, efficient, energy-saving and capable of picking up palm height of more than 8 meters (25 feet). E-cutter is a complementary tool to the existing oil palm manual methods. This innovation is an improvement to the present technology of motor oil cutter known as 'Trim'. It replaces the mechanical concept and therefore, is more economical and environmentally friendly. E-cutter technology is expected to accelerate the process of harvesting the oil palm and increases yield. This technology is the combination of generators and electric motors that produce a double-stator generator which has high power density, lightweight and powerful.

### INVENTOR

**Prof. Dr. Norhisam Mison**  
Faculty of Engineering

**Industrial Link:** JWR Technology(M) Sdn. Bhd.

**Year Licensed:** 2016



For Enquiry:

03-8947 1254 / 03-8947 1618

promosi@upm.edu.my

<http://www.sciencepark.upm.edu.my>



## THOHIRA: ECONOMICAL ANIMAL FEEDS POWERED BY SYNBIOTICS

### TECHNOLOGY DESCRIPTION

Thohira is high protein and an economical animal feed powered by synbiotics which contains a special blend of ingredient that promotes good health and growth of animals. The use of Thohira synbiotics technology improves the nutrition of the Palm Kernel Cake (PKC) and allows it to be used in high concentrations (25-35%) of animal feed formulation, without affecting the growth of animals. Animal feed formula that contains Thohira's technology, boosts nutrient and prebiotic content that improves feed's quality and stimulates growth of microorganisms in the animals' digestive system. Also, Thohira is able to improve water quality; environmental friendly; and encourages growth of livestock. It is comparable to similar commercial products that are available in the market but at a cheaper price.



### INVENTOR

**Prof. Dr. Shuhaimi Mustafa**

*Faculty of Biotechnology and Biomolecular Sciences  
Halal Products Research Institute*

**Industrial Link:** Halways Sdn. Bhd.

**Year Licensed:** 2017

## DEKOPONIX - COMPACT HYDROPONIC RACK SYSTEM

### TECHNOLOGY DESCRIPTION

Dekoponix is designed to facilitate indoor agriculture practices especially in urban areas. It is built to cater for horticultural needs of people who live in condominium and apartments. This technology adopts a modular system that can be assembled or disassembled easily. It is user friendly and space saving which will be extremely helpful for those who are living in limited space. Systemic water flow is used to ensure the cleanliness of water and constant water flow. The entire system comes in an easy-to-assemble package where the racks can be fixed within four to five simple steps before it can be utilised. The racks can be re-used to plant a number of vegetables over a long period of time. This technology allows production of vegetables with low initial cost and maintenance. It operates based on the 'Do It Yourself' (DIY) concept which enables anyone to pick up the technology and utilise it.

### INVENTOR

**Prof. Dr. Khairul Aidil Azlin Abd Rahman**

*Faculty of Design and Architecture*

**Industrial Link:** Dekoponix Sdn. Bhd.

**Year Licensed:** 2017



## POSTBIOME™

### TECHNOLOGY DESCRIPTION

A natural, green and environmental friendly animal feed supplement containing postbiotic derived from probiotics, which are regarded as safe microorganism. PostBiome™ can be used as a feed supplement to replace antibiotic growth promoter for livestock and aquaculture. The advantages of this technology are natural and environmental friendly, no occurrence of antibiotic resistance and cross resistance to pathogenic micro-organisms consistent and durable and cost effective.

### INVENTORS

**Prof. Dr. Loh Teck Chwen**

*Faculty of Agriculture*

*Institute of Tropical Agriculture and Food Security*

**Prof. Dr. Foo Hooi Ling**

*Faculty of Biotechnology & Biomolecular Sciences*

*Institute of Bioscience*

**Industrial Link:** Eco Biodynamic Sdn. Bhd.

**Year Licensed:** 2017



## SAPPUTRA: NANO EMULSION FORMULATION

### TECHNOLOGY DESCRIPTION

SAPPUTRA is a Nano emulsion formulation which consists of plant-based active ingredient. The formulation contains nanoemulsion of crude by weight and is made from vegetable based oil. The surfactant is from castor oil ethoxylate; and it uses less than 20% of it. The size of the nanoemulsion is small thus, the formulations can be spread on target effectively. It is effective in controlling apple snail (rice pest), easily degraded into harmless compounds and not persistent to the environment by reducing or prevents the usage of chemical controls.

### INVENTOR

**Prof. Dr. Rita Muhamad Awang**

*Faculty of Agriculture*

**Industrial Link:** AMCO Niaga Sdn. Bhd.

**Year Licensed:** 2017



For Enquiry:  
03-8947 1254 / 03-8947 1618  
promosi@upm.edu.my  
<http://www.sciencepark.upm.edu.my>

## GROWING MEDIA

### TECHNOLOGY DESCRIPTION

Growing media or soil mixtures are widely used materials for potted or container grown plants. Growing media holds water and nutrients, provides anchorage to plants and allows gas exchange in and out of root zone. This mixture is composed from locally available soil and soilless components; and enriched with balanced composition of liming material and plant nutrients which is sufficient to kick-start the growth of seedlings and nursery stocks. It is suitable for production of vegetables, herbs, fruit seedlings, ornamentals and landscape plants. Beside potted plants, it can also be used for bedding plants and planting hole.

### INVENTOR

Assoc. Prof. Dr. Yahya Awang  
Faculty of Agriculture

**Industrial Link:** Gardenasia Solutions Sdn. Bhd.

**Year Licensed:** 2017



## ALLAMANDA-DERIVED BIOFUNGICIDE FOR THE CONTROL OF POST-HARVEST DISEASES

### TECHNOLOGY DESCRIPTION

An eco-friendly and biodegradable nanoemulsion formulation biofungicide that is non-toxic to human and animals. It contains major active compound found in the leaf extract of *Allamanda cathartica* 'Jamaican Sunset'. It has a long shelf life of four weeks and is able to achieve maximum fungicide performance. The application of this biofungicide specifically, targets *C. gloeosporioides*, without damaging the commercial value of the fruits. The advantages of this biofungicide are: it is more effective and efficient as compared to common commercial fungicide, enhance fruit quality, effective and easy to handle and apply, economical, longer shelf life and high stability. It is a suitable alternative to hazardous chemical fungicides.

### INVENTOR

Assoc. Prof. Dr. Kamaruzaman Sijam  
Faculty of Agriculture

**Industrial Link:** Heritage Environment Sdn. Bhd.

**Year Licensed:** 2017





BIOTECHNOLOGY



## PURIFIED T1 LIPASE, A NOVEL CONSTRUCT OF T1 LIPASE AND METHODS THEREOF

### TECHNOLOGY DESCRIPTION

The constructed T1 lipase is a recombinant thermostable enzyme that is able to withstand high operating temperatures. T1 lipase is extensively used as it is an enzyme which has desirable characteristics for industrial applications, especially due to its ability to function effectively at high temperatures. It works well at a wide range of temperature, between 50–70°C and works best at high pH. The rate of conversion is increased when a reaction is conducted at a high temperature, thus, improving productivity and reducing production cost. The purified T1 lipase has great potential in various industries because of its thermostability, alkaline optimum pH, inexpensive production and its preference for natural oils. So far, T1 lipase has been incorporated in eco-friendly, biodegradable Automatic Dishwashing Detergent (ADD) as one of the components.



### INVENTOR

**Prof. Dr. Raja Noorzaliha Raja Abdul Rahman**

*Faculty of Biotechnology and Biomolecular Sciences  
Institute of Bioscience*

**Industrial Link:** Zymeratics Sdn. Bhd.

**Year Licensed:** 2015

## THERMOSTABLE ORGANIC SOLVENT TOLERANT PROTEASE FROM GRAM-POSITIVE BACTERIA

### TECHNOLOGY DESCRIPTION

The present invention is the first to report an organic solvent tolerant proteases with high thermostability isolated from *Bacillus subtilis* sp. Rand as an enzyme for industrial use. Rand protease is an organic solvent tolerant protease with high thermostability (60°C). The enzyme exhibited high activity and stability in the presence of selected organic solvents. The areas of application vary widely from food additives, flavors and fragrances to pharmaceuticals, pesticides and specialty polymers. This Rand protease is a 4-in-1 enzyme: alkaline, thermostable, high salinity tolerant and organic solvent tolerant.

### INVENTOR

**Prof. Dr. Raja Noorzaliha Raja Abdul Rahman**

*Faculty of Biotechnology and Biomolecular Sciences  
Institute of Bioscience*

**Industrial Link:** Zymeratics Sdn. Bhd.

**Year Licensed:** 2015



## DANIO ASSAY KIT: BIOASSAY FOR DETECTION OF XENOBIOTICS

### TECHNOLOGY DESCRIPTION

Danio Assay Kit is a ready-to-use kit for toxicity screening of chemicals or compounds, drugs, chemicals, food or drink. It is a test for predicting side effects of short term or long term usage of chemicals or drugs on human. The kit is easy to use, fast, cost effective, with high accuracy of the data and does not require a large space. Danio Assay kit was developed using the unique properties of zebrafish or scientifically known as *Danio rerio*. Zebrafish has about 80% of the gene sequences that are similar to human genes. This methodology can reduce animal testing as recommended by FDA in ISO10993.

### INVENTORS

**Dr. Syahida Ahmad**

**Assoc. Prof. Dr. Mohd. Yunus Abd. Shukor**

*Faculty of Biotechnology and Biomolecular Sciences*

**Industrial Link:** Danio Assay Laboratories Sdn. Bhd.

**Year Licensed:** 2015



## PALM OIL BASED TRIMETHYLOLPROPANE (TMP) ESTERS IN THE FORMULATION OF ENGINE OIL

### TECHNOLOGY DESCRIPTION

The current TMP ester is produced via esterification reaction which utilises fatty acids as the raw material. The quality of current TMP ester in the market is slightly inferior due to its high acidity and lack of oxidative stability. Green synthetic engine oil is produced via transesterification process using palm methyl ester as starting material. The use of low pressure technology guarantees the product to be thermally and oxidatively stable. The green synthetic engine oil is biodegradable and exhibits excellent lubricating properties for extended engine performance.

### INVENTOR

**Prof. Dr. Robiah Yunus**

*Faculty of Engineering*

**Industrial Link:** D2O Resources Sdn. Bhd.

**Year Licensed:** 2016



For Enquiry:  
03-8947 1254 / 03-8947 1618  
promosi@upm.edu.my  
<http://www.sciencepark.upm.edu.my>



FOOD

## BACTERIOCIN UL4, ANTIMICROBIAL COMPOUND

### TECHNOLOGY DESCRIPTION

BACTERIOCIN UL4 promotes the growth of beneficial bacteria by improving food digestion and adsorption, strengthening the body's natural immunity system, lowering cholesterol and reducing the gastrointestinal tract's pH levels. It is an antimicrobial compound possessing vast applications in health, food and livestock industries. Environmentally friendly proteinaceous inhibitory compound Hydrolyses by proteolytic enzymes present in the gastrointestinal tract, hence no harmful health impact. Exhibits broad inhibitory spectrum where it is able to inhibit a number of food-borne and clinical pathogens. It also has a vast potential as bio-preservative for food and feed industries

### INVENTOR

**Prof. Dr. Foo Hooi Ling**

*Faculty of Biotechnology and Biomolecular Sciences  
Institute of Bioscience*

**Industrial Link:** SRAS Berhad

**Year Licensed:** 2005



## NATURAL COLORANT AND METHODS THEREOF

### TECHNOLOGY DESCRIPTION

A natural red-purple colorant from dragon fruits (*Hylocereus polyrhizus*). Prepared in the form of powder and can be utilised in food, drink, pharmaceutical, nutraceutical and cosmetic applications. The powder is odourless, bland in taste, has high antioxidant activity and can be prepared in low and high fibre powders. The advantages of this invention are; it can replace artificial colorant that gives pink to red-purple shades, can be utilised as a functional food ingredient and can be an alternative to red beet powder.



### INVENTOR

**Assoc. Prof. Dr. Sharifah Kharidah Syed Muhammad**

*Faculty of Food Science and Technology*

**Industrial Link:** Jitu Biotech Sdn. Bhd.

**Year Licensed:** 2010

For Enquiry:

03-8947 1254 / 03-8947 1618

[promosi@upm.edu.my](mailto:promosi@upm.edu.my)

<http://www.sciencepark.upm.edu.my>



## SPECIALTY RICE BRAN OIL (RIBO) HYPERCOLESTROLEMIC

### TECHNOLOGY DESCRIPTION

The edible oil has excellent fatty acid profile, improved antioxidants contents and stability. The edible oil is health oil with hypocholesterolemic and nutraceutical potential as it improves the total antioxidant status, enhances lipid peroxidation, and reduces high/low-density lipoprotein (LDH/HDL) ratio and decrease the risk of coronary heart disease (CHD) of human subjects. This product is formulated with hypocholesterolemic and nutraceutical potential for human consumption.

### INVENTOR

**Prof. Dr. Maznah Ismail**

*Faculty of Medicine and Health Sciences  
Institute of Bioscience*

**Industrial Link:** GerMiBran Sdn. Bhd.

**Year Licensed:** 2011

## TQRF (THYMOQUINONE RICH FRACTION AS CARDIOPROTECTIVE AND NEUROPROTECTIVE AGENTS)

### TECHNOLOGY DESCRIPTION

Thymoquinone Rich Fraction (TQRF) is a nutraceutical product extracted from *Nigella sativa* seeds using Supercritical fluid extraction (SFE) system. The bioactive compound is Thymoquinone (TQ) which is highly volatile. TQRF has a very high anti-oxidant activity and thus has the capacity to maintain optimum health. It is very efficient in the prevention and treatment of degenerative diseases such as cardiovascular diseases and cancer. TQRF is also effective in slowing down the aging process. TQRF also protects neurons from the toxic effects of beta amyloid protein via inhibition of apoptosis (programme cell death) mechanism.

### INVENTOR

**Prof. Dr. Maznah Ismail**

*Faculty of Medicine and Health Sciences  
Institute of Bioscience*

**Industrial Link:** NUTRACREME Sdn. Bhd.

**Year Licensed:** 2011



## KARDI MIND PALM TEA SACHET

### TECHNOLOGY DESCRIPTION

Kardi Mind Palm Tea Sachet is a health tea product originally processed from the leaf of *Elaeis Guineensis* (species of oil palm). The quality and value of the leaf were maintained to preserve its health benefits. This tea has undergone scientific research to prove its therapeutic effects. A comestible composition with phytoestrogenic property against stress and a retarding cancer-related hormone that can affect fertility. In addition, this tea is effective in hindering ailments related to cardiovascular disease, osteoporosis, loss of cognitive function, urinary incontinence, body fat increase, post menopausal syndromes and vasomotor symptoms.

### INVENTOR

**Prof. Dr. Suhaila Mohamed**

*Faculty of Food Science and Technology  
Institute of Bioscience*

**Industrial Link:** PhytoQuest Sdn. Bhd.

**Year Licensed:** 2011



## CARDIO MATE SEASONING FROM SEAWEED

### TECHNOLOGY DESCRIPTION

KardioMate is a salt replacer which enhances the flavour and taste of food from tropical marine and terrestrial plants. It has many health benefits including; management of cancer, hypercholesterol, hypertension, hyperlipidemia, atherosclerosis, obesity, oxidative stress, preventing organ damage, assisting in healing several ailments. It is high in antioxidant, relatively low in sodium, rich in dietary fibre and other important minerals. Beneficial to human and animals especially for the brain and organ protection.

### INVENTOR

**Prof. Dr. Suhaila Mohamed**

*Faculty of Food Science and Technology  
Institute of Bioscience*

**Industrial Link:** PhytoQuest Sdn. Bhd.

**Year Licensed:** 2011



For Enquiry:

03-8947 1254 / 03-8947 1618

[promosi@upm.edu.my](mailto:promosi@upm.edu.my)

<http://www.sciencepark.upm.edu.my>



## ORYGOLD-ACYLATED STERYL GLYCOSIDE-RICH PRODUCT FOR DISEASE PREVENTION AND HEALTH ENHANCEMENT

### TECHNOLOGY DESCRIPTION

OryGold is a germinated brown rice-based cereal drink. It has a potential to be the staple ingredient in producing cereal-based products such as instant porridge, energy food and cornflakes. It is more nutritious than the ordinary brown rice due to its higher property of bioactive compounds. Other benefits of this drink are: it reduces risks of oxidative stress-related diseases, it is less sugary and thus, suitable for children across all ages, for individuals recovering from medical condition, and for individuals who require high endurance and energy-rich drink. OryGold is rich in acylated steryl glycoside, GABA, oryzanol, phenolics and other antioxidants; and can provide daily nourishment for general health promotion.

### INVENTOR

**Prof. Dr. Maznah Ismail**

*Faculty of Medicine and Health Sciences  
Institute of Bioscience*

**Industrial Link:** GermiBran Sdn. Bhd.

**Year Licensed:** 2011



## OGYBERRY: ANTI-AGENT FOR LIVER CANCER

### TECHNOLOGY DESCRIPTION

OgyBerry Juice is a health drink developed from Berberis Vulgaris. Berberis Vulgaris is a type of herb that contains a number of active substances which can contribute to human health. The bark contains a large number of alkaloids and tanines while its fruits contain glucose, fructose, malic acid, pectine and vitamin C. The active substances from the herb contains high antioxidant which help to decrease liver enzymes, improves liver function and promotes bile flow. Ogyberry Juice has also been proven to suppress alpha feto-protein, a biological indicator for liver cancer.

### INVENTOR

**Prof. Dr. Fauziah Othman (Retired)**

*Faculty of Medicine and Health Sciences*

**Industrial Link:** Healviver Sdn. Bhd.

**Year Licensed:** 2011



## PINEAPPLE MULTI-PEELER PLUS

### TECHNOLOGY DESCRIPTION

The 'Pineapple Multi-Peeler Plus' is a 3-in-1 machine that assists slicing, coring and dicing pineapples. The system consists of a hydraulic press and is operated with a lever to begin the process (slicing and coring), while coring and dicing is a manual-operated unit of the whole machine. A hygienic design, time and energy saving machine. It is an affordable machine that is suitable to be used at home or by the pineapples' downstream industry. The machine is made out of the stainless steel. Technology features include skin peeling and removing pineapples' core as well as slicing and dicing the fruit.

### INVENTOR

**Assoc. Prof. Dr. Rosnah Shamsuddin**  
Faculty of Engineering

**Industrial Link:** RJ Machine Solution Sdn. Bhd.

**Year Licensed:** 2011



## ROLLED TART MACHINE (A ROLLED COOKIE MACHINE)

### TECHNOLOGY DESCRIPTION

The machine is designed to semi-automate the dough molding and shaping processes. It operates under a batch process operating system, assists in molding and shaping of the dough and filling as desired; using a pneumatic and screw-pressing mechanism that helps reduce energy involved and allows a shorter production period. It also provides a much hygienic process as it reduces surface contact to lengthen the shelf life and enhance the quality of the cookies. The design of the machine is made easy for cleaning and maintenance purposes. The speed of the machine is also adjustable. This machine is able to produce 700 and more cookies in an hour, with consistent shapes and sizes while reducing human labor. The advantages of this machine are energy and cost saving and able to increase production as well as produce uniform shaped cookies.

### INVENTOR

**Assoc. Prof. Dr. Rosnah Shamsuddin**  
Faculty of Engineering

**Industrial Link:** RJ Machine Solution Sdn. Bhd.

**Year Licensed:** 2016



For Enquiry:

03-8947 1254 / 03-8947 1618

[promosi@upm.edu.my](mailto:promosi@upm.edu.my)

<http://www.sciencepark.upm.edu.my>



## NATA DE COCO DICING MACHINE

### TECHNOLOGY DESCRIPTION

Nata De Coco Dicing Machine is designed to cut Nata De Coco into uniformly diced product. This machine is designed and developed to overcome problems faced by industries producing this food. Most factories are currently using multiple rotating blades with a low production rate. This machine consists of three parts: the pressing, the cutter and the main structure. This machine uses automatic system with a capacity of 80 pieces/hr and the product obtained is uniformly diced. This machine gives 96% consistency, which helps to increase its quality and market value.

### INVENTOR

**Assoc. Prof. Dr. Rosnah Shamsuddin**  
Faculty of Engineering

**Industrial Link:** TPM Engineering Sdn. Bhd.

**Year Licensed:** 2011



## SHREDDING DAN SLICING MACHINE

### TECHNOLOGY DESCRIPTION

Shredding and slicing machine is designed to shred selected tuberous fruits and vegetables such as sweet potatoes, potatoes, carrots and others. This invention is aimed to replace the existing tools in traditional manual shredding method in producing traditional food like *cakar ayam*, *popia*, *rojak* and coleslaw. It is easy to operate, safe, hygienic, cost and time saving as well as low labour consumption. This machine comprises 3 main parts which are the loading unit, shredding unit, and collecting unit. The machine yields 74.15% efficiency in shredding process and 88.18% in slicing process. The production capacity of this machine is approximately 53.08 kg/hr.

### INVENTOR

**Assoc. Prof. Dr. Rosnah Shamsuddin**  
Faculty of Engineering

**Industrial Link:** TPM Engineering Sdn. Bhd.

**Year Licensed:** 2011



## COCONUT AUTOSQUEEZER

### TECHNOLOGY DESCRIPTION

Coconut Auto Squeezer is designed to grate and extract coconut milk from coconuts after their shells have been removed. It is designed to achieve an efficient, hygienic, safe and easy handling operations. It takes only 20 seconds to process from coconut fruit into coconut milk. It is suitable for small scale entrepreneurs such as housewives, restaurant owners, SMEs and others. This machine is hygienic, able to save time and energy, produce higher volume of concentrated coconut milk and process unlimited quantity of coconuts.

### INVENTOR

**Assoc. Prof. Dr. Rosnah Shamsuddin**  
*Faculty of Engineering*

**Industrial Link:** TPM Engineering Sdn. Bhd.

**Year Licensed:** 2011



## EZY COOKER

### TECHNOLOGY DESCRIPTION

EZY COOKER is a multi-purpose cooker that can be used for either cooking or mixing or both, using electricity or gas systems. The capacity of the machine ranges from a minimum of 20kg or can be custom-built according to the customer's need. The 'double-jacketed' feature on the machine allows a better heat entrapment while preventing heat loss to achieve consistent heating and faster cooking time. It is designed for the small scale industry. It is suitable to make jam, chili sauce, tomato ketchup, *kaya*, *dodol* and others. The attributes of this machine are: automatic pedal for mixing, digital temperature controller, outlet valve for product discharge, insulated mixing bowl to reduce heat loss as well as time and energy saving.

### INVENTOR

**Assoc. Prof. Dr. Rosnah Shamsuddin**  
*Faculty of Engineering*

**Industrial Link:** TPM Engineering Sdn. Bhd.

**Year Licensed:** 2016



For Enquiry:

03-8947 1254 / 03-8947 1618

[promosi@upm.edu.my](mailto:promosi@upm.edu.my)

<http://www.sciencepark.upm.edu.my>

## AUTO FORMING MACHINE

### TECHNOLOGY DESCRIPTION

Auto forming machine is designed to mould certain food products into specific shapes. This machine is developed to minimise labor cost and overcome efficiency problems encountered when using manual processes that are traditionally practised by food producers such as *koye* or *putu kacang* cookie makers. This machine comprises 3 main processing parts which are the feeding unit, compression unit and knocking unit; and has a production capacity of approximately 15kg/hr. This machine is simple and it provides advantages in terms of practicality, hygiene, costs and labor energy.

### INVENTOR

**Assoc. Prof. Dr. Rosnah Shamsuddin**  
Faculty of Engineering

**Industrial Link:** TPM Engineering Sdn. Bhd.

**Year Licensed:** 2011



## FRUIT GRADING MACHINE

### TECHNOLOGY DESCRIPTION

This machine automatically grades fruits according to the weight. This grading of fruits process follows the FAMA's specifications and standards. The machine consists of a series of sensor-attached mechanical weighing units. If the weight of the fruit is within a specified weight, the plate will trigger the sensor's indicator and activates the pneumatic cylinder to push the fruit to the storage section. Otherwise, the fruit will be conveyed into the next weighing unit where the mechanism is repeated.

### INVENTOR

**Assoc. Prof. Dr. Rosnah Shamsuddin**  
Faculty of Engineering

**Industrial Link:** TPM Engineering Sdn. Bhd.

**Year Licensed:** 2011



## OHMIC HEATED PASTEURISER

### TECHNOLOGY DESCRIPTION

Ohmic heating Pasteuriser is designed and fabricated for the pasteurisation of liquid foods. The design is unique and simple to apply. The technology consists of ohmic heating cell and fluid handling system; and ohmic heating control system. It is a compact and portable pasteuriser with no external heat source, giving rapid and uniform heating and a product of better nutritive quality. The performance of the pasteurisation system developed is able to control temperature and meet the pasteurisation parameters as set, electrically safe to operate, hygienic in design and has lower capital cost.

### INVENTOR

**Prof. Ir. Dr. Norman Mariun (Retired)**

*Faculty of Engineering*

**Industrial Link: Myterra Sdn. Bhd.**

**Year Licensed: 2011**



## HALAL TEST KIT - A METHOD FOR IDENTIFYING A PORK CONTENT IN A FOOD

### TECHNOLOGY DESCRIPTION

Pork-specific real-specific PCR assay is developed for halal authentication. Concentration of DNA extracted is estimated by UV absorption spectrophotometry using the Biophotometer (Eppendorf AG, Hamburg, Germany) prior to real-time PCR reaction. The annealing temperature for the primers against the other two meat samples to detect possible cross-reactions. The advantages of this kit are direct (without DNA extraction) or indirect (with DNA extraction) PCR testing, capable of multiplexing, portable, easy to handle, reliable for animal speciation and robust.

### INVENTOR

**Prof. Dr. Shuhaimi Mustaffa**

*Faculty of Biotechnology and Biomolecular Sciences  
Halal Products Research Institute*

**Industrial Link: DxNA LLC, USA**

**Year Licensed: 2011**



For Enquiry:

03-8947 1254 / 03-8947 1618

[promosi@upm.edu.my](mailto:promosi@upm.edu.my)

<http://www.sciencepark.upm.edu.my>

## THE PRODUCTION OF CORN COB FLOUR

### TECHNOLOGY DESCRIPTION

This corncob flour is light yellow and has very fine particles size which is similar to wheat flour. It is very high in fiber and corn aroma. Corncobs are suitable for production of high-fiber products due to its high dietary fiber content. It has great water absorption capability which can help to increase and retain water content of food products. It can be imparted in various food products to enhance their nutritional properties. Cereal drink, energy bar, bread, cookies and muffin are among food range made from corn cob flour produced by this technology.

### INVENTOR

**Prof. Dr. Lai Oi Ming**

*Faculty of Biotechnology and Biomolecular Sciences  
Institute of Bioscience*

**Industrial Link:** Emmerworldwide Sdn. Bhd.

**Year Licensed:** 2015



## CURRY PUFF MAKER

### TECHNOLOGY DESCRIPTION

The Curry Puff Maker machine is designed to allow 12 puffs to be formed at a time. The process starts by manually laying the dough sheets and fillings, then hand-swing the handle that is incorporated as part of the machine. The invention works on the mechanism of the connecting rods that relay the next fold clamp sets. The machine is able to carry out multiple functions simultaneously such as folding, pressing, cutting, designing and eliminating excess dough. The dimensions of the machine are 560mm(L) x 720mm(W) x 230mm(H).

### INVENTOR

**Assoc. Prof. Dr. Rosnah Shamsuddin**

*Faculty of Engineering*

**Industrial Link:** RJ Machine Solution Sdn. Bhd.

**Year Licensed:** 2016





## SESAME CRACKER MACHINE

### TECHNOLOGY DESCRIPTION

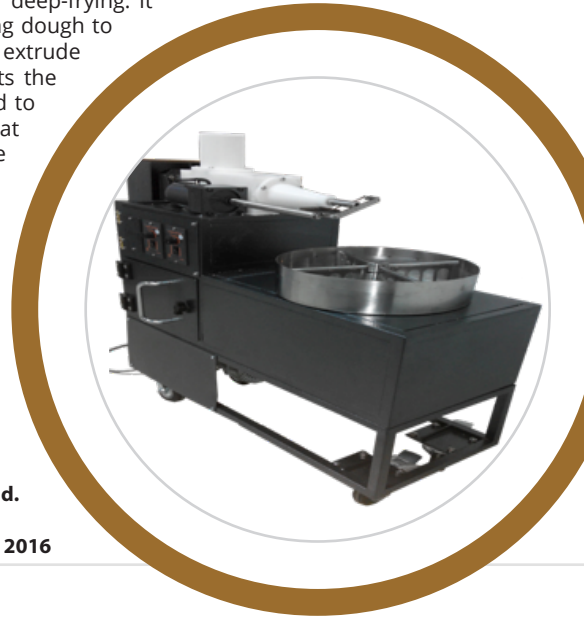
The Sesame Cracker Machine consists of a dough extruder, a rotary wire cutter, a stirring unit and a round collector. These main components are ideal and crucial to produce small dough balls coated with white sesame prior to the process of deep-frying. It consists of a mechanism to assist in shaping and coating dough to produce crackers. It also includes a screw extruder to extrude the dough out. Then, the automatic rotating cutter cuts the dough to form a round shape. The dough is transferred to the coating bowl equipped with a mixer to ensure that the dough is thoroughly coated. The production of the sesame coated crackers is automated, thus, intensive human labor can be reduced or even eliminated.

### INVENTOR

**Assoc. Prof. Dr. Rosnah Shamsuddin**  
*Faculty of Engineering*

**Industrial Link:** RJ Machine Solution Sdn. Bhd.

**Year Licensed:** 2016



## PEPPER PEEL-O-MATIC (WHITE PEPPER DECORTICATOR)

### TECHNOLOGY DESCRIPTION

White pepper decorticator is designed to expedite the process of removing shells from the pepper berries in producing white pepper. It consists of a hopper, a rubbing mechanism that comprises of two discs, a vibration sifter for the separation process and a water recycling system that provides water for the separation and cleaning process. The advantage of this machine is its ability to shorten production period (max. soaking time: 5 days). It also reduces labor intervention with the machine, consisting of 3 combined processes (rubbing, sieving and cleaning), increases production rate (more than 65% compared to the traditional method), ensures hygiene and the use of green technology (has a water recycling system).

### INVENTOR

**Assoc. Prof. Dr. Rosnah Shamsuddin**  
*Faculty of Engineering*

**Industrial Link:** RJ Machine Solution Sdn. Bhd.

**Year Licensed:** 2016



For Enquiry:  
03-8947 1254 / 03-8947 1618  
promosi@upm.edu.my  
<http://www.sciencepark.upm.edu.my>

## PORCINE RAPID AMPLIFICATION KIT

### TECHNOLOGY DESCRIPTION

The Porcine Rapid Amplification Kit is a rapid test to identify pork DNA in meat products such as burger, hotdog and salami. It is a highly sensitive and a specific detection method. The presence of pork DNA can be detected within 40 minutes; and up to 0.06pg of DNA. This kit is very easy and convenient to use.

### INVENTOR

**Nur Fadhilah Khairil Mokhtar**  
*Halal Products Research Institute*

**Year Licensed: 2017**





HEALTH AND MEDICAL



## KANTAN PREMIUM: THERAPEUTIC HERBAL BATH

### TECHNOLOGY DESCRIPTION

These are herbal handmade soaps from the finest herbs and pure essential oils without parabens and artificial fragrances. The benefit of aromatherapy is, the aromatic oils can be detected by cells in the olfactory systems which are closely-linked to mood centres in the brain. Subsequently, the oils are absorbed through the skin in minute quantities. These soaps can be used for cleansing as well as, exfoliating. The present products range are Nutmeg, Lengkuas Padi, Lempoyang, Torch Ginger, Patchouli, Eucalyptus, Basil, Lemongrass, Citronella, Therapeutic Herbal Bath and Floral Bath aromas. Suitable for sensitive skin or allergy (ex. eczema), function as aromatherapy and skin problem solution, produce natural antioxidant and antibacterial properties.

#### INVENTOR

**Assoc. Prof. Dr. Faridah Qamaruzaman**

*Faculty of Science*

*Institute of Bioscience*

**Industrial Link:** EtlinGEra Sdn. Bhd.

**Year Licensed:** 2011



## DS FACTOR

### TECHNOLOGY DESCRIPTION

DS Factor is a type of herbal tea product with anticancer properties. It is a potential supplement for cancer patients to help them heal from the disease. The herb has been used traditionally for treating various diseases including cancer. DS Factor was cytotoxic (ability to kill) towards various cancer cell lines which include breast cancer cell lines, colon cancer cell line, cervical cancer cell lines, ovarian cancer cell and lung cancer. DS Factor has been acknowledged by USA National Cancer Institute as a potential anticancer agent.

#### INVENTOR

**Assoc. Prof. Dr. Latifah Saiful Yazan**

*Faculty of Medicine and Health Sciences*

**Industrial Link:** Premier Herber Sdn. Bhd.

**Year Licensed:** 2012



## POROUS BIO CERAMIC COMPOSITION FOR BONE

### TECHNOLOGY DESCRIPTION

The present invention relates to a porous bioceramic composition for bone repair and method of fabrication. 3D-scaffolds are fabricated with a novel micro and macro architecture. This technology uses porous bioceramic composition scaffolds for bone repair using aragonite polymorph calcium carbonate nanoparticles. Aragonite polymorph calcium carbonate is proven to be safe (non-toxic), efficient and cost effective. This material can be used as an alternative material in bone fractures to avoid the current medical practice-bone grafting. This technology is able to reduce the suffering of the patient from long period of healing. Bone scaffold is natural and proven to be safe. This technology will be useful for orthopedic surgeons who are facing patients with late recovery and complications due to bone grafting.

### INVENTOR

**Prof. Dr. Md. Zuki Abu Bakar**  
Faculty of Veterinary Medicine  
Institute of Bioscience

**Industrial Link:** Ozherb Sdn. Bhd.

**Year Licensed:** 2015



## HEALEN: SKIN HEALING PRODUCT

### TECHNOLOGY DESCRIPTION

Healen is an antiseptic skin healing enhancer from various anti-inflammatory, immune-modulatory, tissues regenerative and anti-septic plant extracts. It helps accelerate recovery by up to 50% faster than untreated wound. Healen is formulated to improve tissue regeneration and immune/inflammatory response to enhance healing even for diabetics.

It promotes healing for most kinds of skin injuries such as burns, pimples, cracked heels, boils, cuts, bruises, swelling, inflammation, diabetic wounds, bed sores, eczema, rashes, microbial/fungal/mites infection and various skin ailments.

It is non-toxic & safe for regular use. The biophenolic balm prevent and treats microbial, fungal & mites infection. Anti-inflammatory effects mitigates pain, & soothes the skin.

### INVENTOR

**Prof. Dr. Suhaila Mohamed**  
Faculty of Food Science and Technology  
Institute of Bioscience

**Industrial Link:** Seamax Resources Sdn. Bhd.

**Year Licensed:** 2015



For Enquiry:  
03-8947 1254 / 03-8947 1618  
promosi@upm.edu.my  
<http://www.sciencepark.upm.edu.my>

## HARUAN MANAN

### TECHNOLOGY DESCRIPTION

This is a natural medicine made from fresh Haruan fish. It is a non chemical-based drug and contains *Haruan Manan* (HM) as bioactive. The product is non-steroidal, non-carcinogenic, and halal. It is formulated to be a new alternative medicine for eczema. It is a universal product as it is suitable to both males and females, from all age-group, and under different weather conditions. The other three new products in the pipelines are *Haruan* Tonic, Tablet and Capsule. Each product is unique as each of them is specific for a chronic non-healed complication.



### INVENTOR

**Prof. Dr. Abdul Manan Mat Jais (Retired)**  
Faculty of Medicine and Health Sciences

**Industrial Link:** AbManan Biomedical Sdn. Bhd.

**Year Licensed:** 2015

## SAFETY SYRINGE

### TECHNOLOGY DESCRIPTION

This is a novel safety syringe that can be operated single handedly. The needle holder can be permanently disengaged from the barrel to prevent misuse. The safety syringe can be used to administer and withdraw liquid to and from the patient similar to normal syringe. Upon withdrawing liquid from the safety syringe, the plunger can be further pressed to break the needle support holder. This will disengage the needle permanently from the barrel. This invention can prevent disease outbreak and misuse of needles. The needle can be dismantled easily and disposed for convenience and practicality.

### INVENTOR

**Assoc. Prof. Ir. Ts. Dr. Abd. Rahim Bin Abu Talib**  
Faculty of Engineering

**Industrial Link:** Selia-Tek Industries Sdn. Bhd.

**Year Licensed:** 2016



## VACUUM BLOOD CONTAINER

### TECHNOLOGY DESCRIPTION

The novel design of cap, enclosure and tube allows the innovative process of non-penetrative vacuum blood container. This invention does not require needle penetration for vacuuming process. Air is withdrawn via innovative passages in the cap to get the desired vacuum level. Hence, reduces the possibility of air leakages into the tube and allows a longer shelf life. Vacuum blood container (VBC) is used for storing blood sample in laboratory testing. The new innovation does not require any penetration through its enclosure to produce vacuum. During the process of vacuuming, the air trapped inside the tube will be withdrawn through air passages to create the required vacuum pressure. This technology can reduce the possibility of air leakages in the tube by not having a penetration process like existing product available in the market; and thus, allows a longer shelf time.

### INVENTOR

**Assoc. Prof. Dr. Abdul Rahim Abu Talib**  
Faculty of Engineering

**Industrial Link:** Selia-Tek Industries Sdn. Bhd.

**Year Licensed:** 2016



## COMPUTER ASSISTED SURGERY SYSTEM

### TECHNOLOGY DESCRIPTION

PACS (picture archiving and communication system) is a healthcare technology for short and long term storage, retrieval, management, distribution and presentation of medical images. An imaging system that communicates and transmits patients' data images from medical devices to PACS's storage. CASD-PAC system is a web-based PAC system with Images Analysis and Diagnosis Report Functions. CASD-PAC system consists of medical image, patients' data acquisition, storage, and display subsystems integrated by digital networks and application software. CASD-PAC system facilitates the systematic utilisation of medical imaging for patient care with added value image analysis functions as required by the clinical expert and structured storage with report modules needed by the radiologist. CASD-PAC system is a web-based PAC system with facilities that are able to transform to cloud-based and non-delayed/minimum in retrieval; and display the required image from outside of the hospital. CASD-PAC system can be customised and integrated with Hospital Information System.

### INVENTOR

**Prof. Dr. Rahmita Wirza O. K. Rahmat**  
Faculty of Computer Science and Information Technology

**Industrial Link:** CASD Medical Sdn. Bhd.

**Year Licensed:** 2016



For Enquiry:  
03-8947 1254 / 03-8947 1618  
promosi@upm.edu.my  
<http://www.sciencepark.upm.edu.my>

## REMDII ULTRA MOISTURISING CREAM

### TECHNOLOGY DESCRIPTION

REMDII is an ultra-moisturising cream formulated with full spectrum vitamin E (tocotrienol and tocopherol) complementing other ingredients in a balance blend to repair despaired skin conditions without involving the use of steroid. Tocopherol and tocotrienol have been proven clinically to calm itching and burning instantly, through their effective anti-oxidant and anti-inflammatory actions. Besides that, allantoin and hyaluronic acid formulation are able to provide key physiologic lipids and powerful hydration power to return the infected skin areas to its original state. Pre-clinical data shows that the formulation of REMDII managed to reduce itchiness, flaking and intensively repair atopic dermatitis conditions within 2 weeks. REMDII provides a safe and natural option for very dry skin condition and potentially eczema. This product fulfills the needs required by the huge Halal market.



### INVENTOR

**Prof. Dr. Lai Oi Ming**

*Faculty of Biotechnology and Biomolecular Sciences  
Institute of Bioscience*

**Industrial Link:** Lipidware Sdn. Bhd.

**Year Licensed:** 2016



# APPLIED SCIENCE AND ENGINEERING



## CNG COMPOSITE TANKS

### TECHNOLOGY DESCRIPTION

This invention relates to a reinforced compressed natural gas (CNG) composite tank and a method for making the direct injection in vehicle systems at high pressure. It comprises layering the middle of the dome section of the back end of the liner with layers of carbon fibers; over layering the liner with a tow of carbon fibers in epoxy resin by winding process; and heating the composite layer of the composite tank by curing process in a mobile oven. The composite tank is constructed from aluminum alloy material based liner, reinforced with carbon fiber or epoxy composite. This invention is cost effective and environmental friendly.



### INVENTOR

**Prof. Dr. Fakhru'l Razi Ahmadun (Retired)**

*Faculty of Engineering*

*Institute of Advanced Technology*

**Industrial Link:** Advance Composite Engineering Sdn. Bhd.

**Year Licensed:** 2009

## FIBRE MASTIC ASPHALT (FMA)

### TECHNOLOGY DESCRIPTION

Fibre Mastic Asphalt (FMA) technology is an innovation formulated from oil palm empty fruit bunch to resolve the issues of durability, longevity of roads and pavement material use. The material costs can be comparable to the traditional mix. The construction cost can be reduced by 20-30 %. The advantages are: ability to handle heavy loading from commercial vehicles, minimising pavement surface distresses, enhanced viscosity, reduction of road noise, increasing surface grip, making the roads safer for all vehicles and reduce cost of road maintenance.

### INVENTOR

**Prof. Dr. Ratnasamy Muniandy**

*Faculty of Engineering*

**Industrial Link:** Novapave Sdn. Bhd.

**Year Licensed:** 2011



## BIOGEN GREENWD

### TECHNOLOGY DESCRIPTION

BIOGEN GREENWD is a premium grade penetrating oil and a multi-purpose spray lubricant. It is reliable, non-toxic, environmental friendly and anti-rust. Its superb performance is obtained from rigorous research and development tests conducted using the latest invention and technology.

### INVENTOR

**Prof. Dr. Robiah Yunus**  
*Faculty of Engineering*

**Industrial Link:** Solution Biogen Sdn. Bhd.

**Year Licensed:** 2012



## OPTICAL AMPLIFIER

### TECHNOLOGY DESCRIPTION

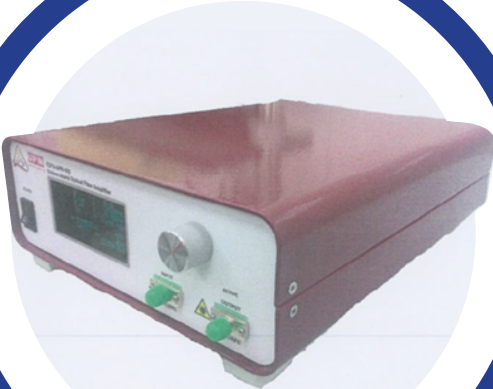
Erbium-doped fiber amplifier (EDFA) module incorporates a microprocessor unit to manage three different operations; automatic gain control (AGC), automatic power control (APC) and automatic current control (ACC). In addition, the microcontroller intelligently converts the EDFA into a broadband source when no input is detected. This versatile feature offers flexibility for users to operate this module as dual function, as an optical amplifier or optical source. This EDFA module can be utilised as amplifier in transmission links, active gain medium in laser cavity and test source.

### INVENTOR

**Prof. Dr. Mohd Adzir Mahdi**  
*Faculty of Engineering*

**Industrial Link:** Bumi Interactive Sdn. Bhd.

**Year Licensed:** 2016



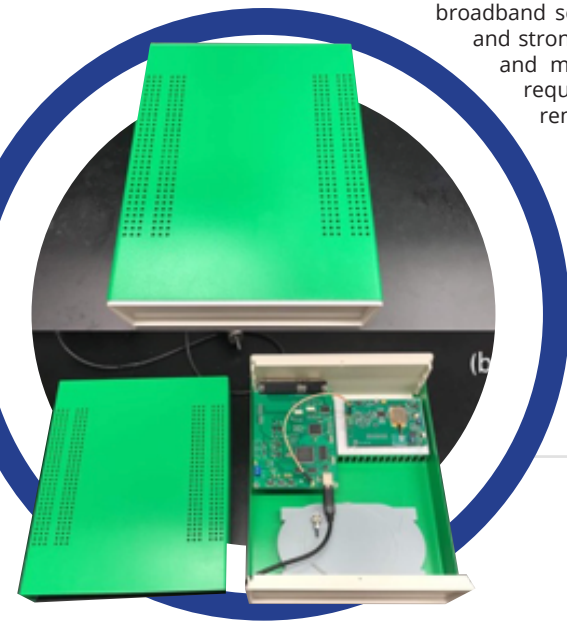
For Enquiry:  
03-8947 1254 / 03-8947 1618  
promosi@upm.edu.my  
<http://www.sciencepark.upm.edu.my>

## BROADBAND LIGHT SOURCE

### TECHNOLOGY DESCRIPTION

Broadband light sources uses amplified spontaneous emission of optically pumped erbium-doped optical fibers to generate broadband output that covers a wide range of wavelength, 1520-1620 nm.

This broadband light sources typically have higher power than fiber-coupled broadband semiconductor diodes. It has lower relative intensity noise and strong incoherence which enables it as an ideal source for test and measurement. Its compact size and low electrical power requirement are suitable for practical deployment especially in remote sensing applications.



### INVENTOR

**Prof. Dr. Mohd Adzir Mahdi**

*Faculty of Engineering*

**Industrial Link:** TFL Solutions Enterprise

**Year Licensed:** 2016



# ICT AND HUMAN DEVELOPMENT

## MYOBE: OUTCOME BASED EDUCATION MANAGEMENT SYSTEM

### TECHNOLOGY DESCRIPTION

MyOBE is a comprehensive web-based system to administer Outcome Based Education (OBE) for Higher Learning academic programmes. This system provides evaluation of MyOBE implementation process which includes assessment of the design, implementation and assessment processes and are integrated into a database system which is made available for consideration in continual quality improvement (CQI) of an academic programme; and wherein implementation of the system enables to monitor complete cycle of design, implementation, assessment, and continual quality improvement processes. It is an online system for real-time monitoring & reporting of outcome attainment and generate automated report. The benefits of this system are reduction cost and time, user-friendly and easy customisation, also accessible anytime and anywhere.



### INVENTOR

**Prof. Dato' Ir. Dr. Mohd Saleh Jaafar**  
Faculty of Engineering

**Industrial Link:** MIQEdusys Sdn. Bhd.

**Year Licensed:** 2011

## TUTOR SOFTWARE FOR VISUALLY DYSLLEXIA STUDENT

### TECHNOLOGY DESCRIPTION

This invention is an exclusive diagnostic tool and software that provides language therapy in Bahasa Melayu for dyslexic children. It enables teachers, students, children and parents to have an interactive learning environment thus improving the learning quality of students. It aims to introduce multi-sensory methods in the spelling area for visual dyslexia students. The methodology for this research comprises the following four phases; Phase 1- Exercise, Phase 2- Sample Selection, Phase 3- Administering Phonic Tutor Software in Malay language, and Phase 4-Selection of real sample and real research. Materials for the purpose of dyslexia treatment are purpose driven.

### INVENTOR

**Assoc. Prof. Dr. Vijayalecthmy Subramaniam**  
Faculty of Modern Languages and Communication

**Industrial Link:** Braineo Solution Sdn. Bhd.

**Year Licensed:** 2011



For Enquiry:

03-8947 1254 / 03-8947 1618

[promosi@upm.edu.my](mailto:promosi@upm.edu.my)

<http://www.sciencepark.upm.edu.my>

## STAR KIT: STORY TELLING AUGMENT REALITY KIT

### TECHNOLOGY DESCRIPTION

Story Telling Augment Reality (STAR) Kit is an interactive package including story books, game board, and figurines with sensor/ trackers, apps and user manual to help children tell stories for a holistic development of a child and its also related to a system for determining Human Engagement Behavior. Design is based on a theoretical Norma™ Engagement Multimedia Design (NEMD) Model. This product is an interactive augmented reality story telling educational teaching material, for parents and teachers to teach children to tell stories themselves. This will shape a child to be confident, have good communication skills, be creative and innovative thinkers with positive attitude and good moral values. Images can be transmitted to computer screens, tablet PCs, I-pads, I-phones and androids. This product teaches children to learn the art of storytelling to increase their sense of confidence to express themselves in public, increase their cognitive and intelligent capabilities to improve their short term and long term memories.

### INVENTOR

**Assoc. Prof. Dr. Normahdiah Sheikh Said (Retired)**  
Faculty of Modern Languages and Communication

**Industrial Link:** Realitimaya Sdn. Bhd.

**Year Licensed:** 2015



## KIT BIJAK WANG

### TECHNOLOGY DESCRIPTION

A structured and comprehensive educational financial kit with Islamic concept that contains six important units of financial knowledge. The kit can be used as educational aid for teachers and parents to teach children about financial management. This kit comprises 10 financial games. It is suitable for local and international use as it is available in two languages. An additional advantage of this product is it promotes learning through activities that have been organised according to children developmental stages.

### INVENTORS

**Assoc. Prof. Dr. Mohamad Fazli Sabri**  
**Nurhayatul Nira Ramli**  
Faculty of Human Ecology

**Industrial Link:** Money Genius Sdn. Bhd.

**Year Licensed:** 2015



For Enquiry:

03-8947 1254 / 03-8947 1618

promosi@upm.edu.my

<http://www.sciencepark.upm.edu.my>



## FOOD PIN

### TECHNOLOGY DESCRIPTION

Food Pin is a crowdsourced map app based with pins mobile application which caters for budget-conscious eateries such as, food stalls and restaurants by focusing only on one specialty item. Budget food-goers such as students can quickly identify the best food nearby, crowdsourced ranking and halal by selecting the appropriate amount of money to spend. Users can see recently search newly added places and places for halal or vegetarian food outlets.

### INVENTOR

**Assoc. Prof. Dr. Marzanah A. Jabar**

*Faculty of Computer Science and Information Technology*

**Industrial Link:** MyInfitech Sdn. Bhd.

**Year Licensed:** 2016

## E.A.G.L.E: EXCELLENT ACCELERATOR GROUNDED LEARNING ENVIRONMENT TABLE

### TECHNOLOGY DESCRIPTION

Excellent Accelerator Grounded Learning Environment known as E.A.G.L.E Table is a visualisation tool for quickly developing comprehension of scientific research requirements. It is a tested and proven technique to expedite comprehension of thesis journey. The course provides concept and structure of the Eagle Table for students or potential thesis candidates to start developing quick understanding about their research proposals. The important features of this technology are; able to help user to focus on problem identification, main research inquiry rather than on inquiry strategy at very early in scientific research, encourage user to focus on conducting literature review, theoretical development compared to expediting data collection activities and it ensures user work within thesis requirements for either Master or PhD level.

### INVENTOR

**Prof. Dr. Hajah Rahinah Ibrahim**

*Faculty of Design and Architecture*

**Industrial Link:** Grounded Learning (M) Sdn. Bhd.

**Year Licensed:** 2017



## WATER SAFETY MODULE

### TECHNOLOGY DESCRIPTION

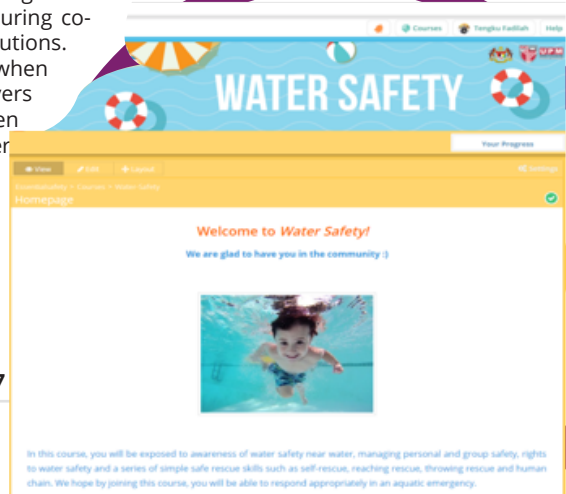
Water Safety Module is a Certified Online Course (CoC). This invention is the world's first online certificate course on water safety that uses 'social learning' approach which involves, direct interaction between students and experts. This course is conducted in Malay and English. The focus of this module are: online availability (24 hours) and accessibility ([keselamatanair.com.my](http://keselamatanair.com.my)). This module educates the young on how to be safe in and near water, helps reduces the risks during co-curriculum activities in schools and in higher learning institutions. It also creates awareness on safety measures to observe when conducting activities near waterfalls, swimming pools, rivers and beaches. Water Safety Module empowers children and community to manage their safety when doing water related activities.

### INVENTOR

**Assoc. Prof. Dr. Tengku Fadillah Tengku Kamalden**  
Faculty of Educational Studies

**Industrial Link:** Open Learning Sdn. Bhd.

**Year Licensed:** 2017



For Enquiry:  
03-8947 1254 / 03-8947 1618  
[promosi@upm.edu.my](mailto:promosi@upm.edu.my)  
<http://www.sciencepark.upm.edu.my>



**BUILDING AND CONSTRUCTION**

## SABSYSTEM: SPACER ARCHITECTONIC BUILDING SYSTEM

### TECHNOLOGY DESCRIPTION

The spacer architectonic building system (SABSystem) is a complete prefabricated assembly system that allows design flexibility in an Industrialised Building System (IBS). This system uses various geometrical shapes of spacer such as rectangle, square, triangular or polygon in shape for construction of flexible design form. There can be various possible geometrical shapes of spacer and interlocking spacer used in architectonic spacer building system. The space can be of, but not limited to rectangular, square, triangular or polygonal in shape either as a single part or two separate interlocking parts, depending on the use of the spacer. The spacer works as key accessories in physical building components such as bracing of adjoining wall panel, dowel connector and also composite key roof connector.

### INVENTOR

**Prof. Dr. Hajah Rahinah Ibrahim**  
*Faculty of Design and Architecture*

**Industrial Link:** Golden Precision Technology(M) Sdn. Bhd.

**Year Licensed:** 2012



## PUTRA BLOK-INTERLOCKING LOAD BEARING HOLLOW BLOCK BUILDING SYSTEM

### TECHNOLOGY DESCRIPTION

An innovative, interlocking load bearing, hollow block building system, designed to satisfy the modular coordination requirement of the Industrialised Building System (IBS) concept. The system consists of three types of blocks- stretcher, corner and half. Putra Blok building system provides a cost-effective alternative to the existing building materials. Cost can be reduced due to the exclusion of mortar, reinforcement bars plastering in the building structure, the reduced need for skilled labor and shorter construction time.

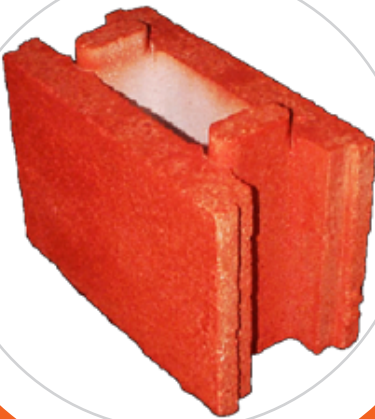
### INVENTORS

**Prof. Dato' Ir. Dr. Mohd. Saleh Jaafar**  
*Faculty of Engineering*

**Prof. Emeritus Dato' Ir. Abang Abdullah Abang Ali (Retired)**  
*Faculty of Engineering*

**Industrial Link:** Triple A Engineering Sdn. Bhd.

**Year Licensed:** 2016



For Enquiry:  
03-8947 1254 / 03-8947 1618  
promosi@upm.edu.my  
<http://www.sciencepark.upm.edu.my>

## INDEPENDENT SEWERAGE TREATMENT PLANT (I-STP) FOR REMOTE SETTLEMENTS

### TECHNOLOGY DESCRIPTION

i-STP is an Independent Sewerage Treatment Plant for decentralised water residences. It features a modular detachable system when decentralised solution is required for treating sewage for settlements in remote places. The i-STP is 350 L and is easily transportable using boats to fix the technology below toilets in water villages in Borneo. The treated discharge meets SPAN's (National Water Services Commission) Standard A. The i-STP is a design innovation by taking a typical anaerobic-aerobic treatment plant system into a detachable modular system. The chambers could be separated into two parts for easy transportation by boat and then wrapping the units around, the structural column below the house's toilet.

### INVENTOR

**Prof. Dr. Hajah Rahinah Ibrahim**  
Faculty of Design and Architecture

**Industrial Link:** Golden Precision Technology(M) Sdn. Bhd.

**Year Licensed:** 2017





# ENVIRONMENT AND ENERGY



## COSMO BALL: SYSTEM AND APPARATUS FOR THE TREATMENT OF ORGANIC EFFLUENTS

### TECHNOLOGY DESCRIPTION

Biofil-AE system employs the latest innovation in sewage treatment, by incorporating the biological nutrient removal stage. The configuration consists of four reaction tanks, utilising anaerobic-anoxic-aerobic-aerobic process. The primary aim is to remove BOD and ammonia nitrogen to very low level which is the requirement of today's environmental protection to combat river pollution and protect the coastal water. Cosmo-ball plastic media is suitable for both aerobic and anaerobic situations. It is light weight and floats in water and therefore easy to remove or clean whenever required. The material is made of strong polyethylene plastic which will resist even highly corrosive or hazardous effluent. The innovative design of cosmo-ball makes it less prone to clogging as the void spaces provided is in excess of 85%.

### INVENTOR

**Prof. Dr. Azni Idris**  
*Faculty of Engineering*

**Industrial Link:** Pakar Management Technology (M) Sdn. Bhd.

**Year Licensed:** 2012



## VIRAS RADER: VIRTUAL RAINFALL STATIONS WITH RADAR DERIVED RAINFALL

### TECHNOLOGY DESCRIPTION

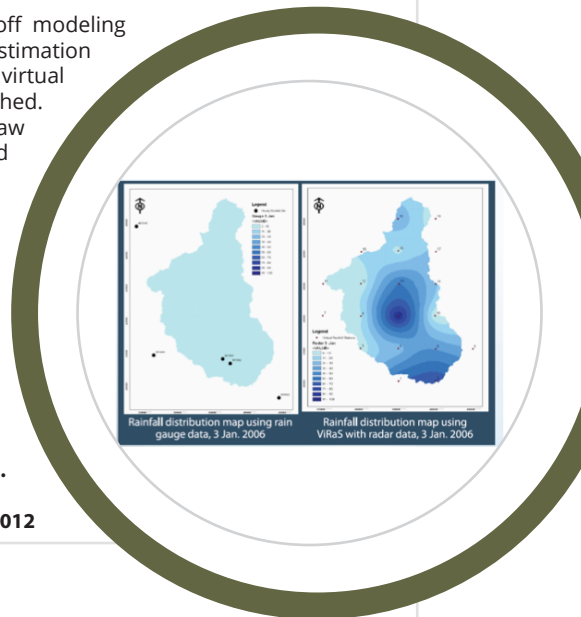
A new technique to improve runoff modeling based on weather radar-derived rainfall estimation and hydrological model for the whole watershed. Using GIS tools, virtual rainfall stations are created uniformly throughout the watershed. The rainfall data for these virtual stations are estimated from raw weather radar data using a newly developed Programme called RaDeR ver1.0. The calibrated radar-derived rainfall is used as input data in the rainfall-runoff model. Results showed that virtual rainfall stations distributed throughout the river basin give a more representative rainfall distribution, hence more accurate river runoff estimation.

### INVENTOR

**Prof. Ir. Dr. Mohd Amin Mohd Soom (Retired)**  
*Faculty of Engineering*

**Industrial Link:** Pidmams Smartfarming Sdn. Bhd.

**Year Licensed:** 2012



## BIOMASS MICROWAVE CARBONISER (BMC)

### TECHNOLOGY DESCRIPTION

Biomass Microwave Carboniser (BMC) adopts an innovative clean technology using microwave energy to burn biomass and agricultural wastes into high grade of bio-charcoal, called biochar. It is highly efficient and environmental friendly system which gives innovative ways of handling variety of wastes. BMC technology gives the best performance compared to the existing alternatives which are, incineration and conventional pyrolysis. BMC system gives a better result on process control, heating time and quality produced. Biochar gives 30% more efficient and 90% cleaner burning than the charcoal available in the market (almost no smoke).

### INVENTORS

**Prof. Dr. Azni Idris**  
**Assoc. Prof. Dr. Mohamad Amran Mohd Salleh**  
*Faculty of Engineering*

**Industrial Link:** Pakar Go Green Sdn. Bhd.

**Year Licensed:** 2017



For Enquiry:  
03-8947 1254 / 03-8947 1618  
promosi@upm.edu.my  
<http://www.sciencepark.upm.edu.my>

# ACKNOWLEDGEMENT

Special acknowledgement to the working committee on their effort to prepare this directory

## **Patron**

Prof. Dr. Zulkifli Idrus

## **Advisor**

Prof. Dr. Samsilah Roslan

## **Chief Editor**

Dr. Mohamad Fakri Zaky Ja'afar

## **Executive Editors**

Dr. Che An Abdul Ghani

Hafliza Hussin

Asrizam Esam

Noorhayati Fazlul Haque

Shazlan Halamy

## **Graphic Designers**

Mohd Mas'Ataillah Ismail

## **Photographer**

Saleha Haron

## **Circulation**

Mohammad Hisham Omar

---

Disclaimer: All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any forms or by any means, electronic, mechanical, photocopying, recording, and/or otherwise without prior written permission from Putra Science Park (PSP).

Whilst every effort has been made to ensure the accuracy of the information contained in this publication, the authors and publishers accept no responsibility for any errors it may contain, or for any losses sustained by any person using this publication.



For Enquiry:

**Tel: 03-8947 1254 / 03-8947 1618**

**E-mail: [promosi@upm.edu.my](mailto:promosi@upm.edu.my)**

**Website: <http://www.sciencepark.upm.edu.my/>**