

**ENDEAVOR**

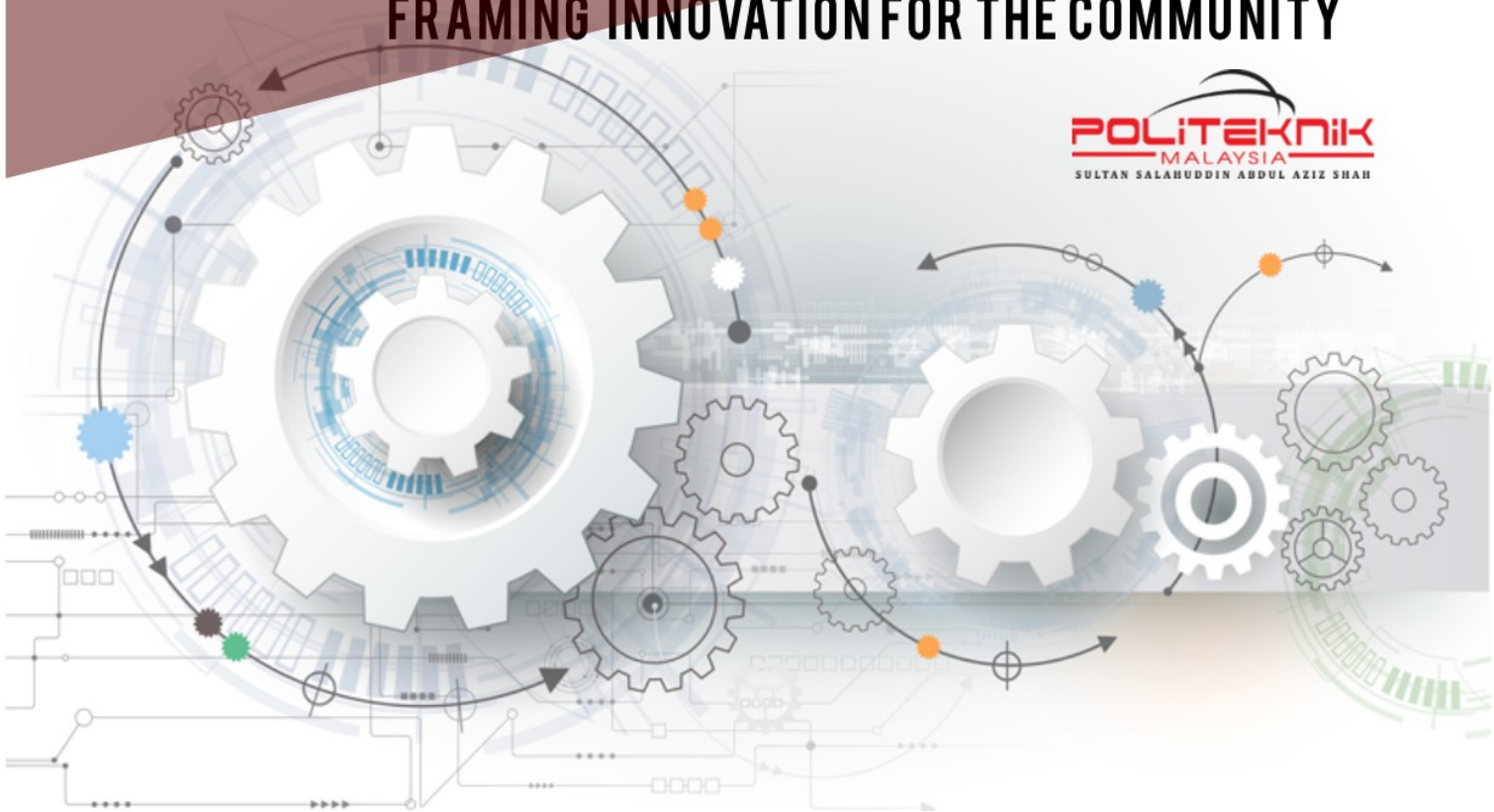
**2016**

**ANNUAL  
REPORT**



**FRAMING INNOVATION FOR THE COMMUNITY**

**POLITEKNIK  
MALAYSIA**  
SULTAN SALAHUDDIN ABDUL AZIZ SHAH





# VISION

PSA as the leader in industry-relevant TVET

# MISSION

To produce holistic graduates with entrepreneurial potentials by providing access to dynamic, quality and recognized TVET programmes through a responsive curriculum.

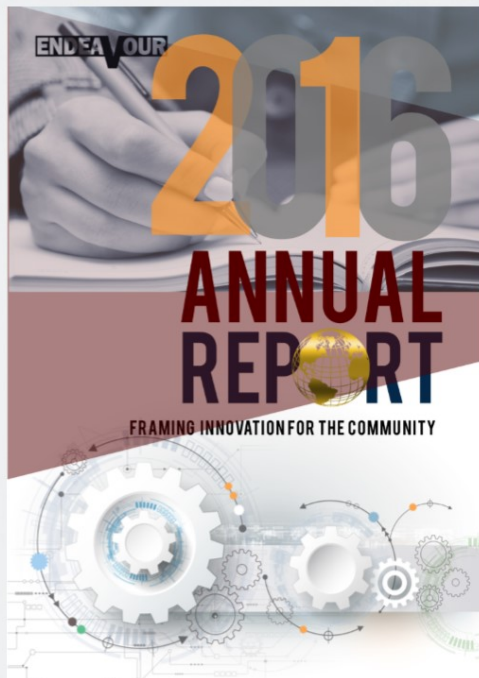
# CON TENT

## FEATURES

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# A note from the editors



*Innovation is change that unlocks new value*

- Jamie Notter

Welcome to the ENDEAVOUR; Our second edition under the chosen brand name. We, at the editorial committee certainly have the commitment of providing balanced and timely coverage of issues concerning our Polytechnic in this publication.

2016 was indeed another splendid year with both our students and staffs bringing laurels to our organization in all spheres, especially where innovation is concerned. In PSA, we realise that being innovative is essential. It can't be extra; It needs to be the core competence. Ultimately we want our students to be better prepared for tomorrow's challenges.

From the editors' desk, we would like to extend our appreciation to all concerned parties who have directly and indirectly extended their help to us in order to complete the 2016 edition of Endeavour.

Read on...



KOL. BERSEKUTU (PA) HJ. TAJUDDIN BIN ABDUL RASHID K.M.N

# DIRECTOR'S REVIEW

2016 has been one amazing year for Politeknik Sultan Salahuddin Abdul Aziz Shah. As one of the fastest moving academic institution under the Ministry of Higher Education, we have grown in many ways. We have earned the Polytechnic Excellence Award, we have built homes for the needy under the PolyHome project, we saw our pioneer batch of graduates from Bachelor of Technology in Facility Management course, we have participated in various innovation based initiatives and contributed to the community, especially in the Public-Private Research Network (PPRN) and most importantly we have moved forward to be one of the notable TVET institution in Malaysia.

It is one thing to achieve performance goals in the short term; It is quite another to ensure that the commitment and momentum for a dynamic learning is deeply embedded into an organization's DNA beyond the fanfare of a single programme or initiative. Achieving that level of continuity and consistency does not happen overnight. This is made possible with great team work from staffs of all levels. By encouraging and appreciating the unique contributions of each member of the organization, we have created interdependent teams with trust, compassion, stability and hope. Through this we have achieved more for our organization.

Moving forward, there will always be looming challenges impacting our way. However, we are ambitious in our focus and direction for the coming year. I am confident that the 12 organizational objectives for PSA can be realized if we continue to work as a TEAM.

We will make our path clear; We will have to navigate through challenges to achieve our vision of becoming the premier industry-led TVET institution in the country and producing quality graduates in accordance with the Malaysian Education Development Plan 2015-2025.

The past year has been a rewarding one and I look forward to another year of bountiful possibilities and achievements with all of you.

*Together Everyone Achieves More.*

# THE MANAGEMENT Team



**KOL.BERSEKUTU (PA)**  
**HJ.TAJUDDIN BIN ABDUL RASHID K.M.N**  
 DIRECTOR



**HAJAH AMIDAH MOHD UJANG**  
 DEPUTY DIRECTOR  
 (ACADEMIC)



**MOHD ZIN HASSAN**  
 DEPUTY DIRECTOR  
 (ACADEMIC SUPPORT)



**ZARINAH ZAINI**  
 HEAD OF CIVIL ENGINEERING DEPARTMENT



**NURULHUDA MDSAAD @ SAAD**  
 HEAD OF COMMERCE DEPARTMENT



**ZAHID DAIM**  
 HEAD OF MECHANICAL ENGINEERING DEPARTMENT



**ROSHIDI ZAKARIA**  
 HEAD OF ELECTRICAL ENGINEERING DEPARTMENT



**ZAID JUNUS**  
 HEAD OF GENERAL STUDIES DEPARTMENT



**ZALINA BINTI ISMAIL**  
 HEAD OF STUDENTS' AFFAIRS DEPARTMENT



**SITI SAFIAH MARZUKI**  
 HEAD OF MATHEMATICS, SCIENCE & COMPUTER DEPARTMENT



**HANIZAH ANAITULLAH**  
 HEAD OF SPORTS, CO-CURRICULUM & CULTURE DEPARTMENT



**FATIMAH BAHARI**  
 HEAD OF CORPORATE INDUSTRIAL SERVICES & EMPLOYABILITY CENTRE



**DR ROKIMAH MOHAMAD**  
 HEAD OF RE-SEARCH AND INNOVATION UNIT



**SABARIAH BOHANUDIN**  
 HEAD OF QUALITY ASSURANCE DEPARTMENT



**SALWATI BADRUDDIN**  
 TECHNOLOGY DEVELOPMENT OFFICER



**ISHANUDDIN HUSIN**  
 SPECIAL TASK OFFICER



**DR FAUDZI MUHAMMAD**  
 PSA DEVELOPMENT OFFICER



**ABDUL SHARIF ABD KADIR**  
 PUBLIC RELATIONS OFFICER



**ROHANA KHALID**  
 SENIOR EXECUTIVE OFFICER

# Advisory COMMITTEE



## ELECTRICAL ENGINEERING DEPARTMENT

**Datuk Syed Hussian Al-Junid**  
Senior Director Business & Operation Support  
Western Digital (M) Sdn Bhd,

**Prof. Dr. Jasmy Bin Yunus**  
Dean  
Fakulti Biosains &Kejuruteraan Perubatan UTM

**Ir. Ashari Bin Mohd Yakub,**  
Executive Director,  
Lembaga Jurutera Malaysia,

## CIVIL ENGINEERING DEPARTMENT

**En. Mohd Mazhar Bin Mohd Marzuki**  
Director  
Microcorp FM Sdn. Bhd.

**Ir. Dr. Mohamad Jamil Bin Sulaiman**  
Vice President  
Research And Technology Innovation Division,  
SIRIM Berhad,

**Ir. Hj. Nazri Bin Hj. Ab Razak**  
Group Managing Director,  
Dihnar Group

## ALUMNI

**En. Nordin Bin Masri**  
YDP Alumni

## MECHANICAL ENGINEERING DEPARTMENT

**Melvin Lim**  
Manager  
Gentle Automatic Solution Sdn. Bhd

**En. Abdul Rahman bin Ibrahim**  
No. 8 Lorong Enggang 15,  
Taman Keramat,

**Osman Bin Ali**  
Group Engineer Packaging,  
Production / Group Engineering,  
Nestle Manufacturing (M) Sdn Bhd,

## COMMERCE DEPARTMENT

**En. Mohd Syaiful Izwan bin M. Suwarno**  
Central Regional Distribution Centre  
Sdn Bhd,

**Dr Sulaiman Bin Aris**  
International Business School  
Universiti Teknologi Malaysia

**Hasri Hamidan**  
Vice President  
Programme Development  
The Malaysian Insurance Institute

## PSA

**Kol.Bersekutu (PA) Hj.Tajuddin Bin Abdul Rashid K.M.N**  
Pengarah  
Politeknik Sultan Salahuddin Abdul Aziz Shah

**INNOVATION**

**&**

**EXCELLENCE**





## INNOVATION FOR COMMUNITY

Geared towards triumphing over the national mission as accentuated in the National Higher Education Strategic Plan (PSPTN), PSA is precisely steadfast in working towards achieving all the seven thrusts. 2016 attests PSA's vigorous involvements and achievements in enhancing research and innovation as highlighted in the 3rd thrust of PSPTN.

Lined up for ingraining creativity and innovation amongst students, these competitions create a platform to exhibit hidden talents and at the same time empower the community and industries to benefit from the products showcased.

Some of the competitions joined by PSA over the year that placed PSA as a smashing learning institution:



Bravo, PSA! Romping through victories, PSA has never failed to place itself on an equal footing with other higher learning institutions, leading its way to becoming among the most distinguished polytechnic in Malaysia.

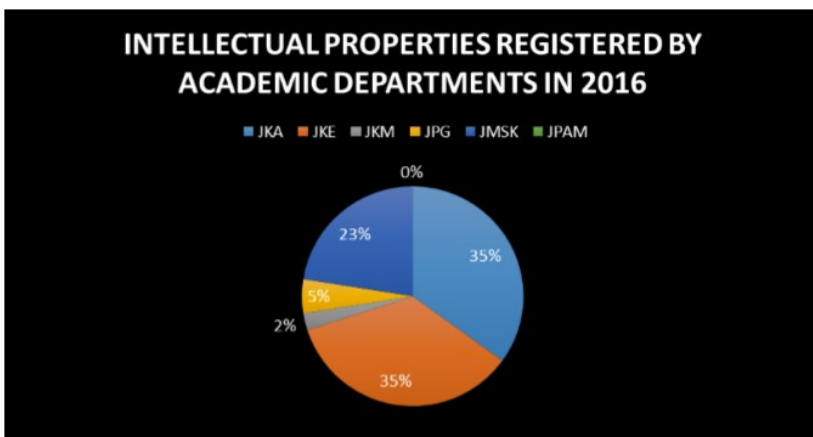


# MYIPO

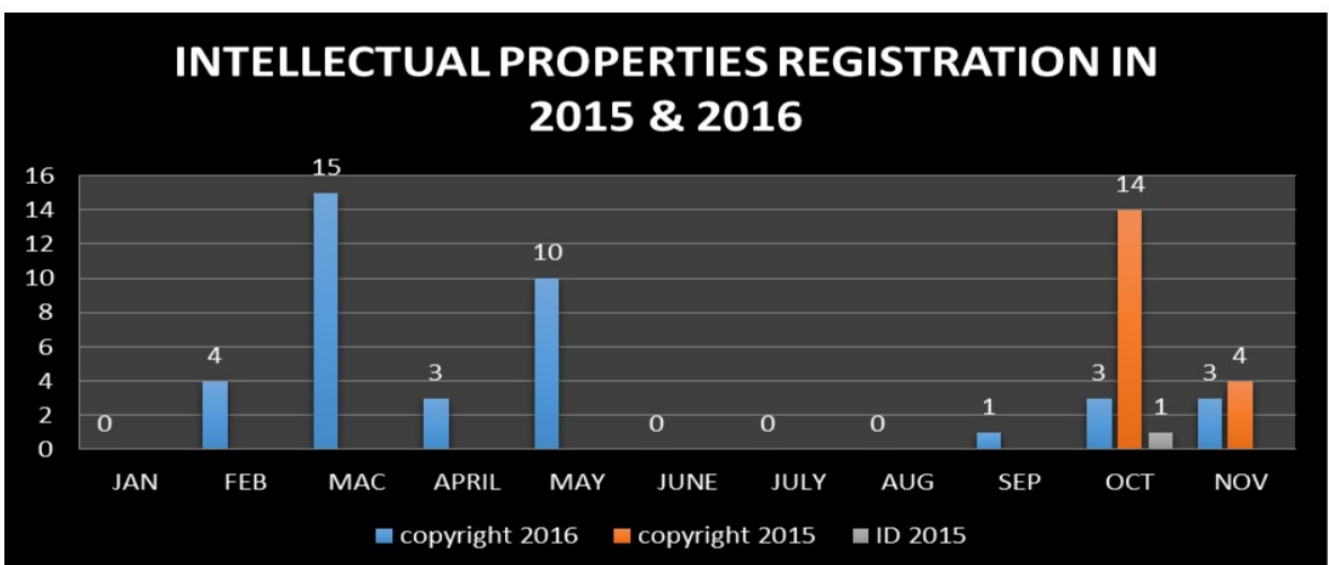
## (INTELLECTUAL PROPERTY CORPORATION OF MALAYSIA)

PSA had exultantly registered forty products under MYIPO (Intellectual Property Corporation of Malaysia) with a substantial cost of RM2000 in 2016. These phenomenal intellectual properties (IP) registered are in the forms of copyrights, by which, protects and safeguards original creations and confer ownership and the rights that come with the IP.

The proportions of the IP registered according to the academic departments are as follows:



Beyond the shadow of a doubt, this exertion had brought positive impact on inculcating the importance of registering the intellectual properties among lecturers; illustrating significant change on the total IP registered in 2016 as compared to 2015.



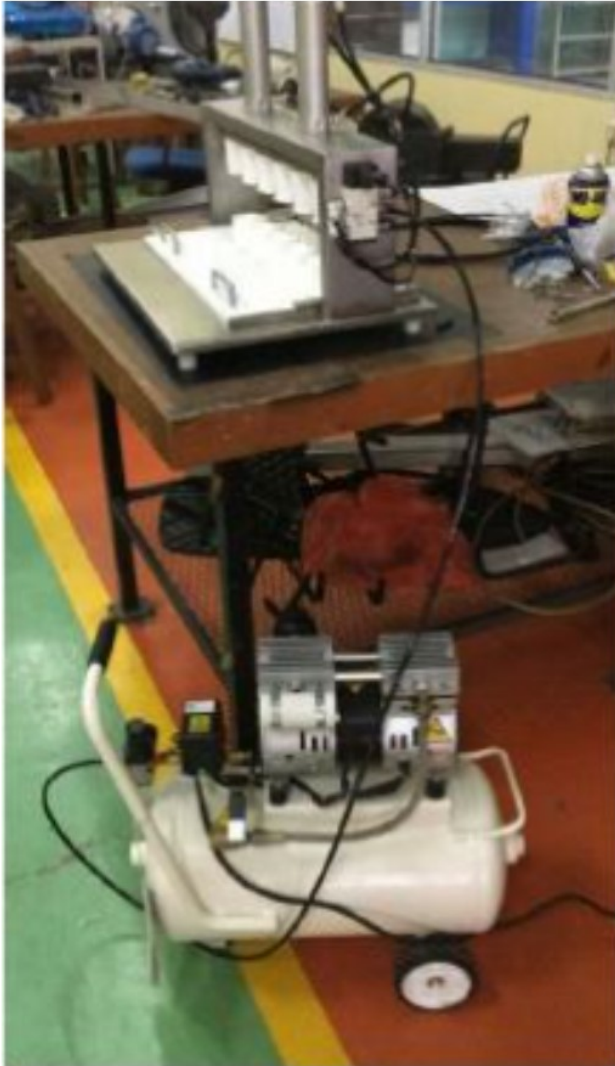
# CURRY PUFF

## machine

Rendering strategic alliance that brings synergistic benefits to both; Politeknik Sultan Salahuddin Abdul Aziz Shah and Imas Food; this Curry Puff Machine project, an effort striven and led by five fervent and enthusiastic Civil Engineering Department lecturers cum researchers, aided by a number of students, has made it possible for Imas Food to triple up their production within a day.

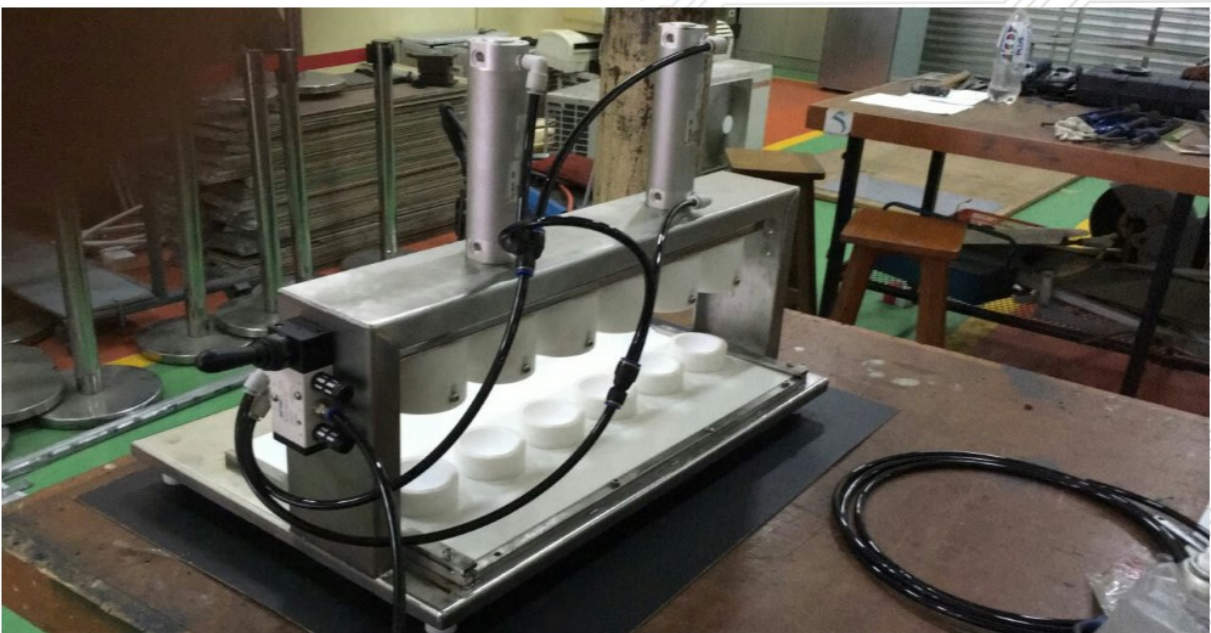


As this project is undergirded by the requirements set by Imas Food, this partnership has definitely not just opened up an opportunity to develop new machines to offer the smooth running of the industry, it has unequivocally enhances the learning opportunity for the students of PSA as they are exposed to real-life scenario and hands-on experience in making this project a success.



# CURRY PUFF machine

Formerly, the conventional existing method took approximately 1 hour to complete one production cycle including the filling process and produced a maximum of 1000 pieces curry puff daily. However, with this innovative method, it offers a huge reduction in the production process to 10 minutes and is able to produce up to 3000 pieces per day.



# BOLER

## bolster barrier

Aggravated and alarmed by the number of fatal accidents happened in Malaysia involving guardrails, a team, led by Pn. Bibie Sara bt Salleh and few students from the Civil Engineering Department took the initiative to explore the possibility to reduce impact and the severity of damage and injuries by introducing BOLER (Bolster Barrier).



The conceptualizing stage called on PSA to partner up with RoadPro Sdn Bhd, a notable traffic control devices manufacturer, together with the Malaysian Public Works Department (JKR) and consultants from Synergy Network to put their resources together to figure out the inevitability to upgrade the existing guardrails to improve its functionality.

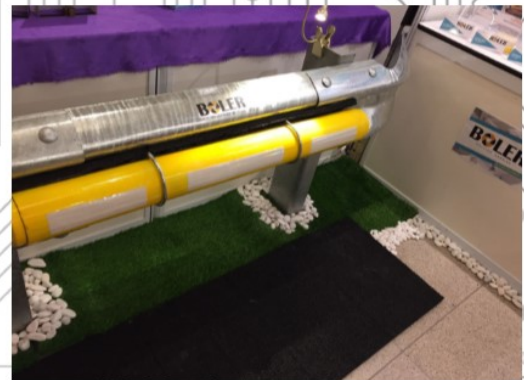
In MyInovasi 2016, contending against 1300 groups from local universities, private universities, polytechnics and community colleges from all over Malaysia, PSA has led its way to become among the 15 groups to qualify to the next level and received RM5000 to construct the BOLER prototype.

To brainstorm ideas and concept for the final round, all the participants were called to attend a 2-day boot camp at AKEPT, Nilai. There, experts from Zul Design Autotronics facilitated to succour the participants in turning their ideas into reality.



BOLER, which is four times cheaper than the imported roller barrier presently used in some parts of the Klang Valley area, is seen as a much needed improvisation for the local authorities and the Malaysian Public Works Department (JKR) to help control the severity of accidents that happen at black spots, sharp corners and other accident prone areas.

BOLER team has definitely done PSA proud and brought back with them the 1st runner up title plus RM2500 as winning token. On top of that, BOLER team was also endowed Patent Grant worth RM10000 for patenting.



# ATTHEP

## Autism Tricycle Therapy for Pediatric

A work by four final semester students from the Medical Electronics Engineering Department, supervised by Pn. Suriyani binti Ilias; Autism Tricycle Therapy for Pediatric (ATTHEP) offers a huge social impact in Malaysia as it brings a new dimension for autism therapy. This astonishing device is specially designed to help repair and strengthen the muscles especially around the lower body of the autistic children and by and by, it quickens the recovery process to allow the special kids to walk just like any other normal kids.

Suitable for both outdoor and indoor use, ATTHEP subsumes a custom-made tricycle with an LCD screen display panel and a cycle sensor. On top of that, this remarkable innovation is also equipped with safety features that include safety belt and back support, and powered by a 24 volt power supply to support the LCD screen and all the other electronic components.



To measure the success of the project, the enthusiastic avant-gardists use IoT (internet of things), the inter-networking of physical device, to monitor the development of the children through the web. The result shows that the autistic children who use ATTHEP for 3 months and above, show improvement on the movement of their feet and had subsequently boost up their self-confidence for a better life.

Featured for the first time at the MyINOVASI 2016(zone level), this device won RM5000 worth of grant and that automatically qualifies them to the national level which witnessed the team to earn the 2nd runner up title and brought back with them RM1500. Since then, this product has been on a winning streak as it won series of innovation competitions like Malaysia Technology Expo (MTE) 2017 (Silver Award), National Innovation and Invention Competition Through Exhibition (Icompex) 2017 (Gold Award), and International Technology Expo (ITEX) 2017 (Gold Award).



# CEREBRAL PALSY Child seat



The Cerebral Palsy Child Seat signifies a momentous collaboration between PSA, Faculty of Health Science (UKM), My CP Association, FRIM, FITEC and the Department of Polytechnic Education. After series of conscientious revamping, this special child seat, which offers ergonomic sitting support and comfort to its users (children with CEREBRAL PALSY), made its way to be registered under MYIPO.

This innovation project has indubitably made PSA proud by winning numerous awards in Innovation competitions. The most prominent medal won in 2016 is the ITEX Gold Medal at the International Invention and Innovation Exhibition, ITEX Malaysia 2016.



Making an all-out effort to reach the community through innovation, PSA organised a special handover ceremony of the Cerebral Palsy Child Seat to Muhammad Riyadh Irfan, 8 years old, a special child with cerebral palsy, who was also the subject of this project since its conceptualisation state. What a fulfilling and rewarding project, PSA did not just win competitions, but also win the hearts of the first ever user of PSA's very own Cerebral Palsy Child Seat and his parents. May this innovation benefit many more cerebral palsy children out there as PSA is planning to commercialise it in near future.



# COLLABORATION TO LEARN

## LEARNING TO COLLABORATE

Collaboration can strengthen an institution by providing avenues to connect people, share knowledge and expertise, expand opportunities, elevate competencies, leverage specialization, identify needs, innovate ideas, deliver values and shape professionalism.

Throughout the year, our polytechnic has been actively seeking and building collaborations with our counterparts; old and new, far and near.



COLLABORATION

The collaboration between PSA and Shenzhen Polytechnic has finally materialized this year with the official opening of PSA-SZPT Chinese Language and Cultural Centre located in the Department of Facility Management in the polytechnic. To date, the collaboration was initiated in 2007. This event was officiated by the Deputy Minister of Higher Education, Yang Berhormat Dato Dr. Mary Yap Kain Ching on the 21 October 2016. Welcoming speeches were delivered by Professor Li Yue from Shenzhen Polytechnic and Dato Amir Bin Mohd Noor, the Director General of Department of Polytechnic Education.

Apart from this, among other successful collaborations involved environment preservation where projects such as Recyclable Oil with United Energy and Rock Melon Farm have been successfully produced. Tapping on education, collaborations have been found successfully established with companies such as Naza Kia Malaysia Sdn. Bhd., CIDB Holdings, Edgenta, Advance and Radibems, UiTM Negeri Sembilan, Service Master Sdn. Bhd and Global Facilities Management, to name a few.

# PSA-SHENZEN POLYTECHNIC

## COLLABORATION



# FIVE REASONS

## WHY COLLABORATION IS SUCCESSFUL IN PSA

### PEOPLE

**1** Organisations do not work together but people do. The entire staff of PSA has been committed in efforts to collaborate to support the process of teaching and learning in line with the vision and mission of the polytechnic.

### VISION

The shared vision and common goals established among all members of the polytechnic to be Malaysia's main provider of innovative human capital through transformational education has geared all members to continuously work in the spirit of excellence and high performance.

**2**

# FIVE REASONS

## WHY COLLABORATION IS SUCCESSFUL IN PSA

### 3 TRUST

Mutual respect and trust given to every individual's experience, knowledge and contribution has propelled this polytechnic to be one of the best in the country.

### COMMUNICATION

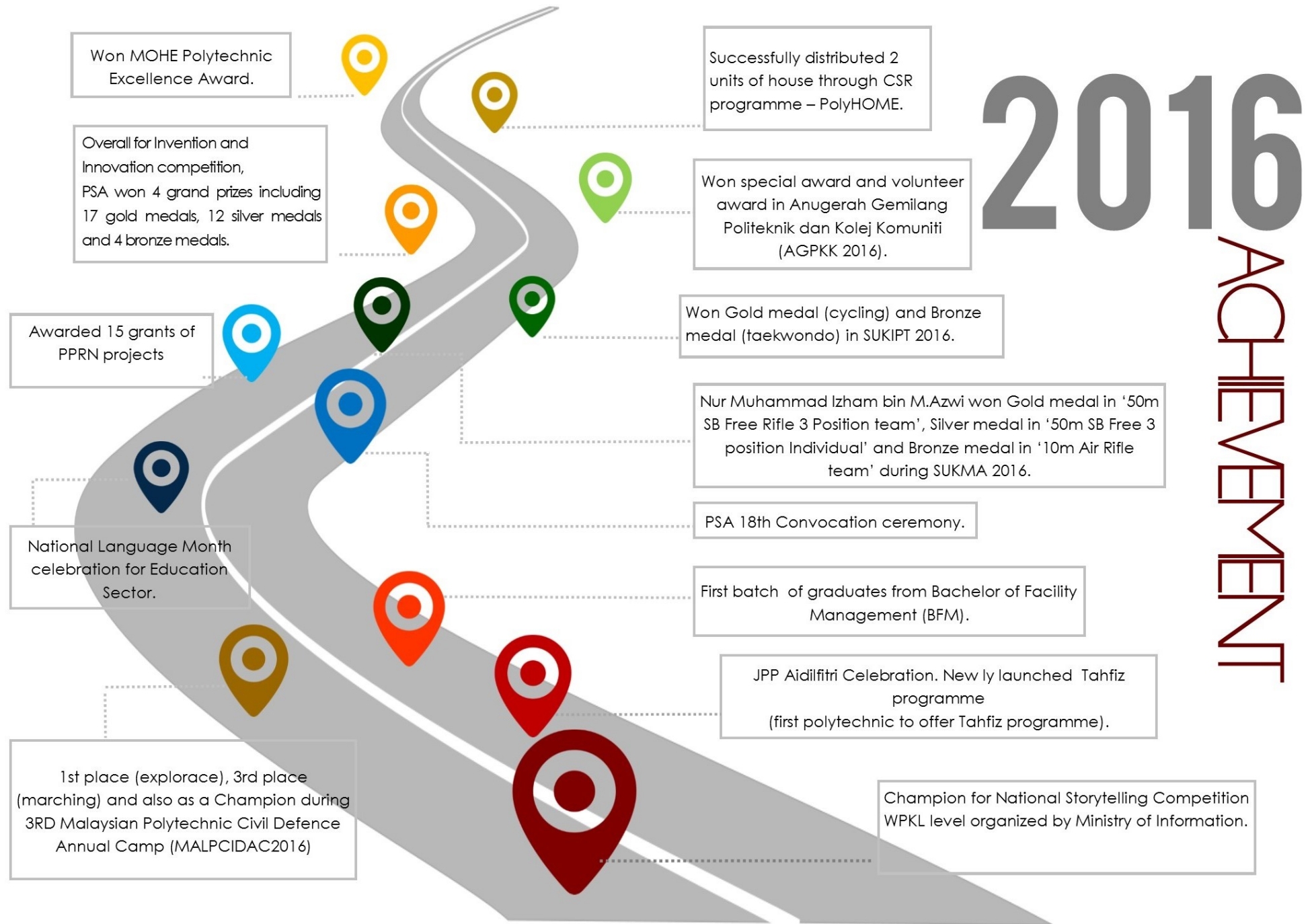
All members are continuously kept up-to-date on matters which take place in the polytechnic through various online platforms.

### LEARNING TOGETHER

5 The open communication concept among all staff of PSA invite more partnerships as learning together about each other, issues and needs have always been engaging and fun in PSA.

# 2016 IN RETROSPECT





# TIME CAPSULE

*And the countdown continues ...*

## Why a time capsule?

The idea was mooted from the grand design of PSA itself. With the inception of PSA in 1997, there was a pursuit for the finest model of polytechnic for the country. With this objective in mind, a strategic planning workshop was initiated to work towards that aspiration. The standard that was finalised by the pioneer management team was based on the Colombo Plan initiatives with six important domains, namely: development of strong leadership process, efficient administrative process, innovation in teaching and learning, efficient handling of student records, industrial training and collaboration and conducive environment for staff development.



In relation with the six strategic thrusts, SOPs were then developed by the core departments which later became the basis for PSA's Quality Management System (QMS).

After putting the system in place, the top management team were asked to envisage their expectations for PSA in 2020 and the entire concept of a time capsule took shape.

The primary focus was to inject a healthy and competitive work culture among the staff; to give them a sense of 'working towards accomplishment'. The question remains, in 2020 will reality and aspiration meet? A fundamental truth is that time marches on, with or without us.

# FACTS & FIGURES

## GRADUATES

Employment & continuing education

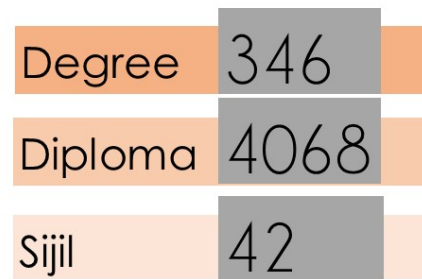
**91%**

## Staff Strength

Academic Staff **378**

Non-teaching Staff **112**

## STUDENTS ENROLMENT 2016



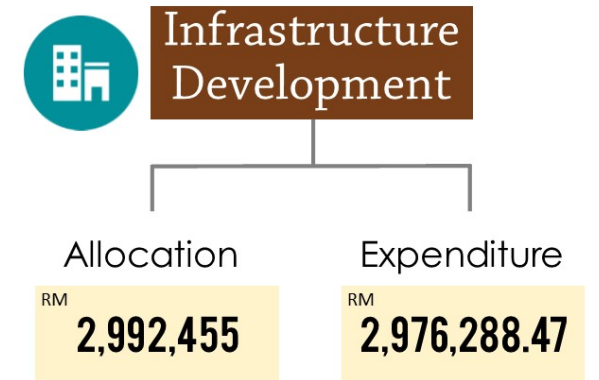
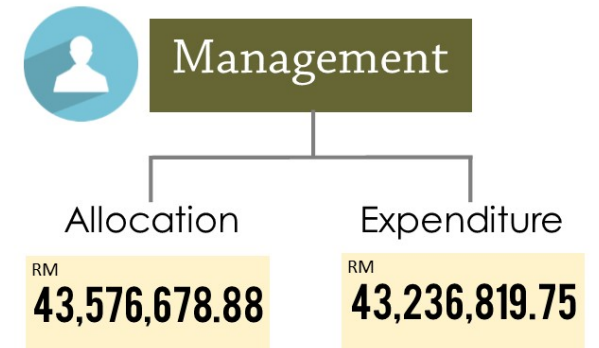
FULL TIME



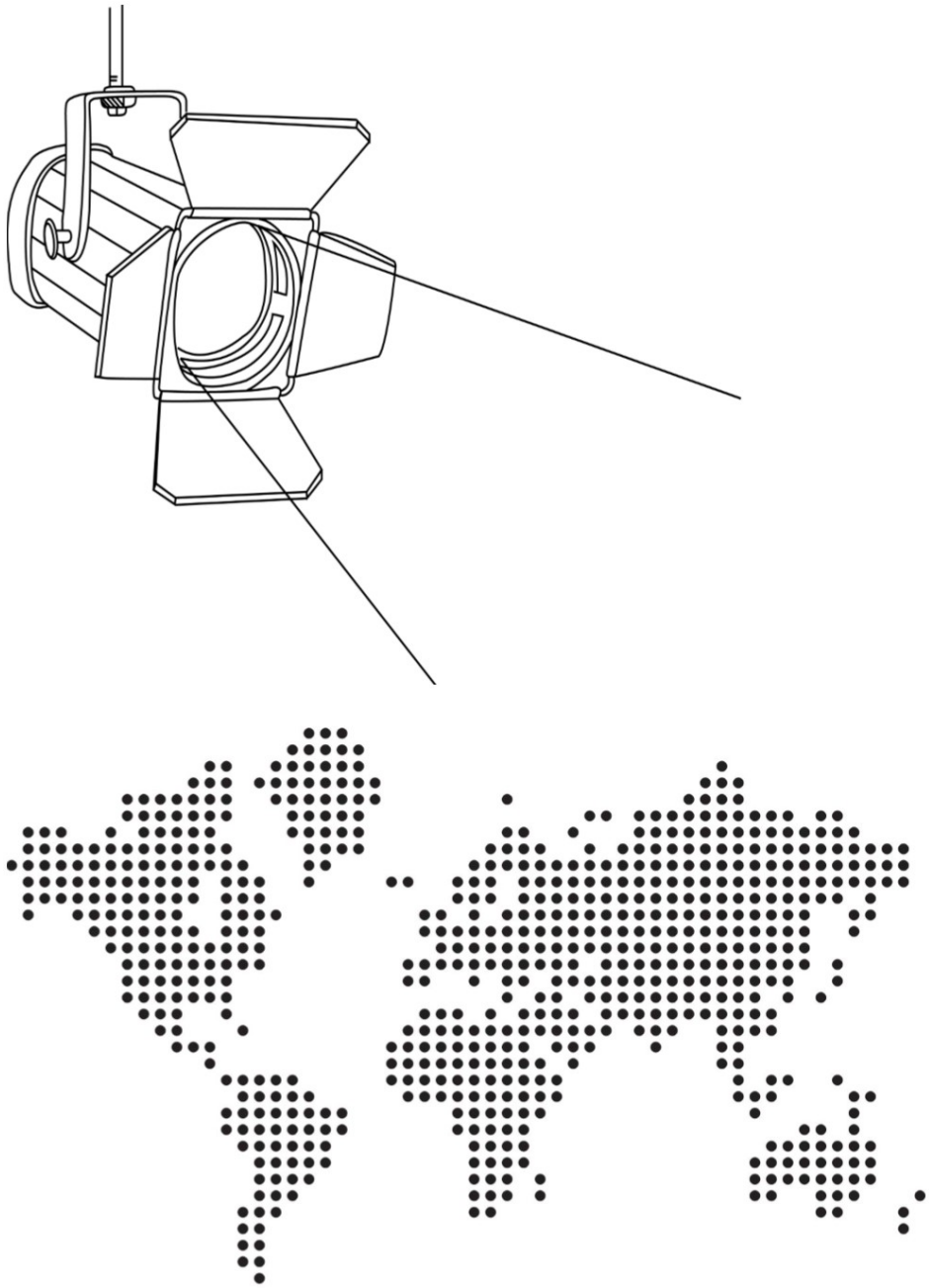
PART TIME



## ALLOCATION & EXPENDITURE







In the  
**SPOTLIGHT**



The POLYHOME project is one of the CSR projects carried out by Politeknik Sultan Salahuddin Abdul Aziz Shah to build houses for the poor based on the Industrialised Building System (IBS) concept. Through this project, which had the participation of 29 students and four staff members, two 600-square feet houses were built in just 25 days. The location of PSA Polyhome project is at Kampong Baroh Masin, Pasir Akar, Jerteh, Terengganu.

The first project was carried out from 15 August 2016 to 11 September 2016 and the second one was from 7 September 2016 to 30 September 2016.

Building the houses provided the students with invaluable experience in the building industry, consistent with the nation's aspiration in producing high skilled work force. This too further strengthens the role of polytechnics in the technical

and vocational education training (TVET) to produce holistic graduates in line with the Malaysia Education Blueprint (Higher Education).



# CARING HEARTS

## Yes PSA!



YES! Politeknik Malaysia or Malaysian Polytechnics Volunteer Foundation was established on 15 July 2011 with a goal to ensure 20% of students in each Malaysian polytechnic becomes an active volunteer. This is in line with Malaysia Education Blueprint 2015-225 (Higher Education) - to produce holistic, entrepreneurial and balanced graduates.

Jumping into the bandwagon and always ready to contribute, PSA staff and students have been involved in various activities to give back to the society and help those in need. Among the various activities carried out by thoughtful and concerned staff and students of PSA are :

### CSR ENTREPRENEURSHIP IN TUMPAT KELANTAN

Date : 14-16 October 2016

Participants : 40 RELASIS members

Volunteer Officer in Attendance :

En Nasharudin And En Mohd Fahmi

Objective : To Carry Out CSR

Programmes

At A Small And Medium Industry (IKS)





COLLABORATION FOR PERSONALITY DEVELOPMENT  
AND SELF-REALISATION CAMP WITH  
SK (2) TENGGU BENDAHARA AZMAN  
Venue : Rimba Ria Suara Hutan Camp,  
Hulu Langat, Selangor  
Date : 12-14 March 2016  
Participants : 15 PRS members  
Objective : To Assist In Coordinating  
Self Realisation Programme  
Attended by : En Mohd Zin Bin Hassan - Tpsa



**CARING HEARTS**  
Yes PSA!





# CARING HEARTS

## Yes PSA!

### UNIFORMED BODIES CAMPING COLLABORATION

Place : Sg Limau Resort Camp, Sg Besar, Selangor

Date : 19-20 November 2016

Participants : 15 Relasis Members

Objective : To Teach Camping Techniques And Methods



# CARING HEARTS

## Yes PSA!



### BUILDING A RELIGIOUS PRIMARY SCHOOL

Venue : Pulau Terap, Bangkinang Indonesia

Date : 26-29 April 2016

Participants : 20 Students

Objective : To Build As Syarofi Religious Primary School

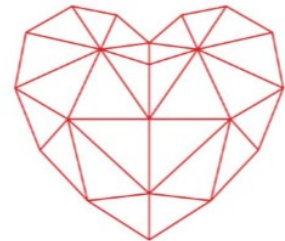
Attended By :

Ybhg Datuk Haji Mohlis Jaafar,

Director General Of Department Of Polytevhnic Education,  
and

Tuan Haji Kamaruzaman Ismail,

Director Of Psa & Bupati Kampar Representative



# CARING HEARTS Yes PSA!



## ENGLISH TUITION CLASS

Venue : Paya Jaras Sg. Buloh, Selangor

Date : February - November 2016

Participants : 40

Objective : To Provide Tuition To Year 5  
And UPSR Students

Activity : Teach English And Motivate The Students

Coordinator : Pn Suhazni Mohd Said



# CMET

## Soaring higher

PSA's Centre of Medical Electronic Technology (CMET) which boasts the exclusive Biomedical Calibration Laboratory is further boosted with the certification of its staff members as signatories in the various field of calibration offered by its facility. CMET is constantly expanding its scope of accreditation by proposing new approved signatories for the related equipment in its lab. Below are the signatories who received their certificate of competence under the Laboratory Accreditation Scheme of Malaysia (SAMM) :







# ACHIEVEMENTS & AWARDS

## International Level



### Eureka Innovation Exhibition EIE2016

1 Gold



### ITEX 2016

3 Gold

1 Silver



### IDEA UITM 2016

2 Gold

1 Silver

# National Level



## Creative and Innovative Group Convention (KIK)

Winner – Technical Category  
2nd Runner Up – Management Category -1 Gold



## Innovation and Invention in Education Competition 2016 – 2 IEC16

5 Gold  
4 Silver



## INIIC 2016

3 Gold



## Innovation and Creativity Competition @ PMJB

2 Bronze



## 3rd Tinker Innovation & Entrepreneur Challenge 2016

1 Silver



## iCompex 2016

2 Gold  
4 Silver  
1 Bronze



## MyINOVASI 2016

Winner – Central Zone

## State Level



### Selangor Innovation Award (AINS) 2016

Best Original Idea / Prototype Award - Dr. Ir. Hj. Zunuwanas bin Mohamad

## Zone Level



### Intellectual Property Awards 2016 – Central Zone

1st Runner Up

## Institution Level



24



30



30

### PICOSA 2016

24 Gold

30 Silver

30 Bronze



In the  
**ZONE**

IN THE  
Z  
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N  
E

# BEU

## DEGREE PROGRAMMES

Bachelor of Engineering Technology (Medical Electronics) with honours, which was first open for enrolment in September 2014, has never stopped to soar higher. Trained by the unswerving and steadfast lecturers, the first batch of intake is scheduled to graduate in August 2017. PSA gives full focus not on just producing excellent academic achievers; emphasis is also given on shaping a great and well-rounded human capital.



In prepping the students for the industry, chains of training and courses have been organized to provide them with the savoir-faire and the industry know-hows.

On top of giving the students the exposure to experience themselves the work scenarios through Work Based Learning (WBL), experts from the industries were first given pedagogical training and later on were invited to share their expertise and enlighten the students of what they should expect when they join the work force.

Looking at the incessant effort put forth by PSA, it is no doubt that these graduates are definitely going to be at par with graduates from other local and private higher learning institutions in Malaysia. Way to go, PSA!

2016 witnessed the graduation ceremony for the first batch of graduates of Bachelor of Technology in Facility Management with Honours. Invigorated by twelve exceptional, excessively industrious and zealous staffs, these eager beavers have never looked back from making PSA to become Malaysia's number one provider of an innovative human capital through transformational education and training for the global workforce. Since the first enrolment in September 2013, to date, 117 students enrolled in the programme.

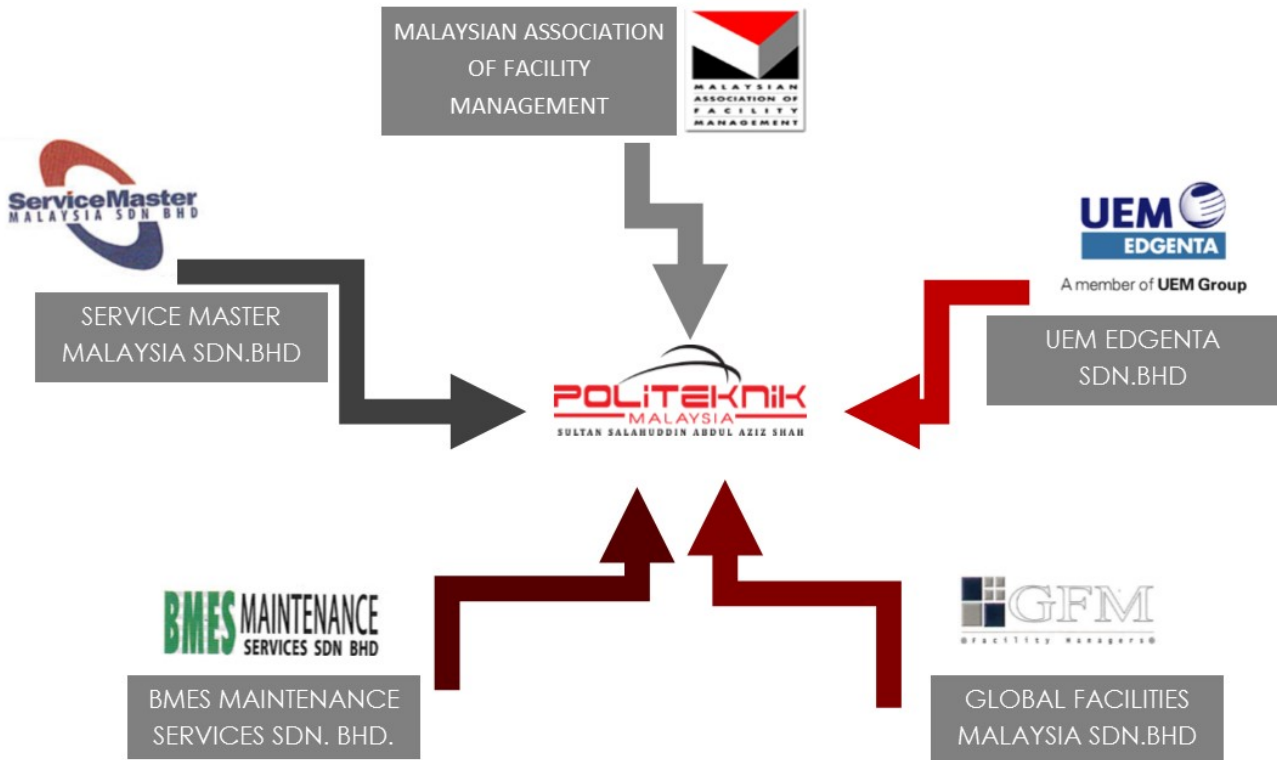
# BFM

## DEGREE PROGRAMMES

IN THE ZONE



Working very closely with the nation's key industry players like Malaysian Association of Facility Management, UEM Edgenta Berhad, Global Facilities Management Sdn Bhd, BMES Maintenance Services Sdn Bhd and Service Master (M) Sdn Bhd as PSA's industrial partners; this collaborative programme aims to equip the students with up-to-date knowledge and skills applied in the actual and current situation.





# PSA INNOVATION ICON



Never stop when failure hits, God is teaching the real meaning of life.

Full name	<b>Engr. Dr. Hj. Zunuwanas bin Mohamad Grad. IEM</b>
Date of birth	<b>2 August 1974</b>
Place of birth	<b>Pasir Mas, Kelantan</b>
Marital status	<b>Married with four children</b>

**Education Background:**

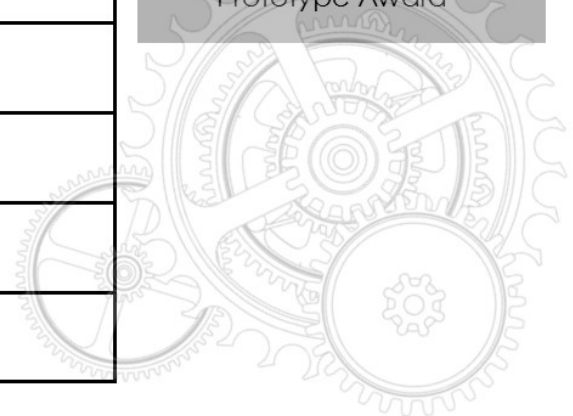
Primary	: Sek. Ren. Tok Uban, Pasir Mas, Kelantan
Secondary	: Sek. Men. Keb. Tok Uban, Pasir Mas, Kelantan Sek. Men. Teknik Alor Setar, Kedah (Agricultural Science)
Tertiary	
1992-1994	: Politeknik Kota Bharu, Kelantan - Certificate in Electronics Engineering (Communication)
1994-1997	: Universiti Teknologi Malaysia (UTM) /ITTHO Bachelor of Electronic Engineering (Medical Electronics)
1997-1999	: Universiti Teknologi Malaysia (UTM) /ITTHO – Master in Education (Technical)
2008-2013	: Universiti Kebangsaan Malaysia (UKM) – Doctor of Philosophy (PhD) in TVET (Laboratory Engineering Management)

Name of Innovation Project	Competition Joined	Achievement
Development Elbow joint for Stroke patient	International Invention & Innovation Competition 2016 (InIIC)	Gold Medal
	Selangor Innovation Award (AINS) 2016	Best Original Idea / Prototype Award RM2,500.00
	ISSN: 2469-8180 (Print); ISSN: 2469-8199 (Online)	International Journal of Vocational Education and Training Research
Development pedal exerciser for Parkinson disease	International Invention & Innovation Competition 2016 (InIIC)	God Medal
	Growing Creative and Innovative solutions (MNNF Publisher) ISBN 978-967-13637-2-0	Book Chapter
Compact Photovoltaic Controlbox With Handpiece	ICompex 3MC	Gold Gold
Solar Portable Vaccine Freezer	ICompex 3MC	Gold Silver
Sleep Inducer Monitor	ICompex	Silver
Smart Diagnosis	3MC	Silver

## AWARDS WON IN 2016



- Innovation Award-**
- The Polytechnics and Community Colleges Gem Awards 2016
  - Selangor Innovation Award (AINS) 2016
  - Best Original Idea / Prototype Award





## 2016 CAN BE CONSIDERED AS A GOOD YEAR FOR YOU. WHY IS THAT?

Yes, definitely 2016 is a good year for me. I was awarded the Selangor Innovation Award (AINS) 2016 and the Best Original Idea / Prototype Award.

## CAN YOU EXPLAIN FURTHER ABOUT THE AWARDS?

The Selangor Innovation Award (AINS) is a combination between the Selangor Public Sector Innovation Award (introduced in 2010) and 'My Innovation Challenge' (introduced in 2015). Both are aimed at promoting innovation culture to the public by providing a platform for their creative and innovative new ideas to be showcased.

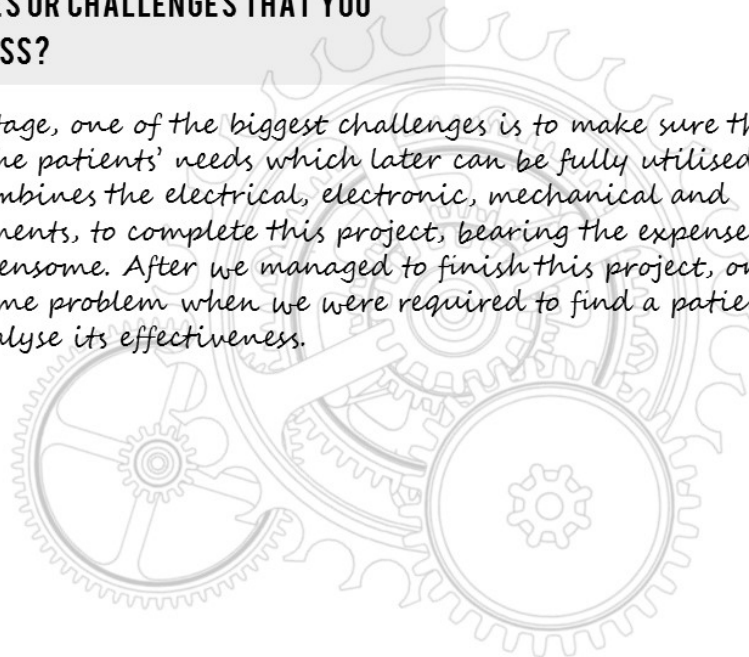
## WHAT SPARKS THE IDEAS FOR YOUR INNOVATION PROJECTS?

One particular innovation project that I am mostly proud of is 'The Elbow Joint Project' which is actually a project under the Bachelor of Engineering Technology (Medical Electronics) programme. To develop this project, we did some observations at the rehabilitation unit in one of the hospitals in Malaysia. There, we realised that we need to channel our expertise to innovate something that can offer exercise therapy to patients with stroke and arm injuries.

After vigorous series of discussions and consultations with physiotherapists, biomedical engineers and programmers, we managed to bring this project into realisation.

## CAN YOU SHARE SOME OBSTACLES OR CHALLENGES THAT YOU HAVE TO FACE ALONG THE PROCESS?

In the planning stage, one of the biggest challenges is to make sure that our design suits the patients' needs which later can be fully utilised. As this project combines the electrical, electronic, mechanical and programming elements, to complete this project, bearing the expenses is also quite burdensome. After we managed to finish this project, once again we faced some problem when we were required to find a patient to enable us to analyse its effectiveness.





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