

INAUGURAL EDITION - 2020

POLITEKNIK
MALAYSIA
SULTAN SALAHUDDIN ABDUL AZIZ SHAH

Bulletin

CMET@PSA



***CMET@PSA would like to thank all those
who have contributed towards the
successful publication of this bulletin.***

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Quality Unit, CMET

DIRECTOR'S REMARKS

DR. MOHD ZAHARI BIN ISMAIL

Firstly, I am proud to congratulate CMET@PSA for the inaugural publication of its bulletin. This bulletin provides a summary of PSA's Centre of Technology (COT) establishment, progress and events undertaken for the years 2010 - 2020.

For the most part, these activities are focused on expert services, research & innovation and collaboration that resulted with numerous awards and recognitions from organizations local and abroad. In 2019 alone, CMET has won many awards for various categories such as The Best COT, The Best COT Collaboration, The Best COT Expert Services and The Best COT Income Generation.

Currently CMET is pursuing ISO 17024 certification as a certifying body for personnel operating biomedical equipment. This certification enables CMET as a certified organization to certify persons as competent to operate specific biomedical equipment.

In overcoming the arduous challenges associated with this certifying standard, I hope CMET team will embrace the spirit of passionate, synergized and agile to remain sustain as one of the prestigious centre of technology. PSA top management is always committed in supporting CMET's leap into the future of triumphs and momentous accomplishments.

I believe that this bulletin provides useful information and beneficial insights about our program in line with the requirement of National Education Blueprint 2015 - 2025. Lastly, my best wishes and good luck to CMET@PSA.

Thank You.



CHIEF EDITORIAL'S NOTE

NOR SHAM BINTI HASAN

CMET Manager



Ten years have passed since the establishment of CMET. We are proud to present to you this Inaugural Edition of Buletin@CMET to jog a decade-long memory of accomplishments. We are grateful that we have thrived to sustain from then to now.

*This edition highlights an overview of CMET chapters : the concept, operation and way forward. The theme for this edition is **"Simple Yet Precise"**.*

I hope this bulletin CMET@PSA serves as a platform to deliver comprehensive perspectives and insights of the MEDICAL ELECTRONIC TECHNOLOGY. Hence, I most welcome your views, and feedback for future significant growth.

Happy Reading!

AT A GLANCE

The Centre for Medical Electronic Technology (CMET) was established in 2010 as the Centre of Technology (COT) under Premier Polytechnic flagship. CMET serves as a hub for references, research and innovation as well as a nexus for national and international collaboration specialized in medical electronics. The formation of CMET is one of the initiatives of the Polytechnic Transformation Plan (2010-2015) to strengthen and restore public confidence in the polytechnic TVET education system.

CMET was recognized as the first ISO/IEC 17025 accredited biomedical calibration laboratory in Southeast Asia in 2014. CMET has adeptly pioneered the selected areas of medical electronics by providing calibration services, training, research and development of medical devices, as well as collaborating and forming smart partnerships with over 150 universities, industries, public and private agencies local and abroad.

VISION

Transforming CMET as the leader in Technical Vocational Education and Training



To emerge as the Centre of Excellence and achieving the highest standards in Medical Electronics for the nation

MISSION



AMAZING FACTS

FOUNDED

25 February 2010



LOCATION

*Politeknik Premier
Sultan Salahuddin
Abdul Aziz Shah*

NICHE

*Medical Electronic
Technology*



ASSET

RM3.5 M

STRENGTH

*MS ISO/IEC 17025 Accredited
Biomedical Calibration Laboratory*



*Medical
Equipment
Analyzer
Calibration*

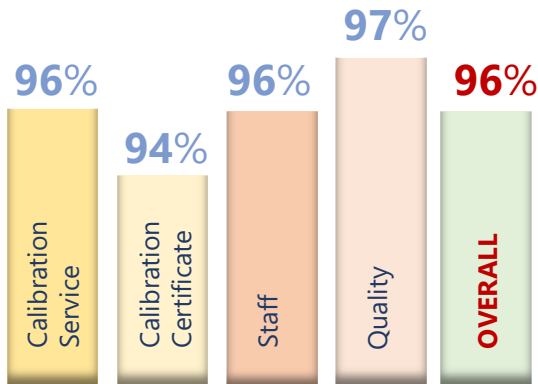
FOCUS

TRAINING CONDUCTED



50 (in-house)
30 (Dual Certification)
12 (International)

CUSTOMER RATING



150
Industry Partners



ACCREDITED

SCOPE ISO/IEC

17025

9 Biomedical Analyzer

Total Income Generated:

RM 1,750,968

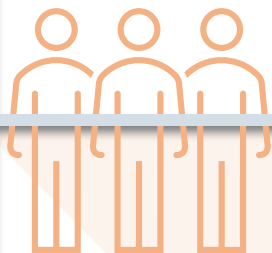
Calibration Laboratory

RM 747,840

Grant

RM 1,003,128

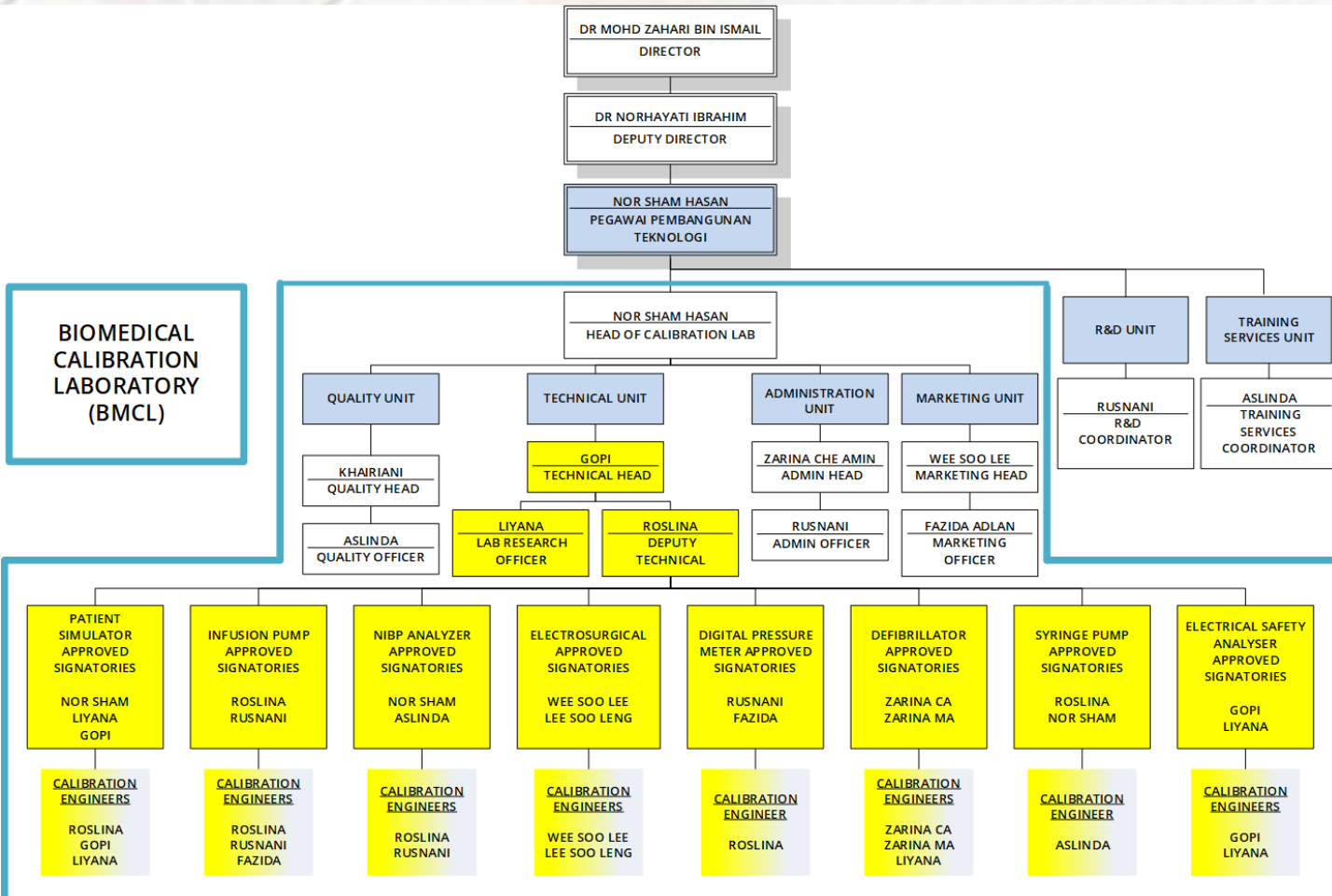
10 Staffs



957

Calibration Services

ORGANIZATION CHART



TEAM 2020

NOR SHAM BINTI HASAN



Designation:
CMET Manager
Calibration Engineer

Professional Certification:
Approved Signatory

ASLINDA ZAMAH SHARI



Designation:
Quality Officer
Calibration Engineer
Teaching and Learning Coordinator

Professional Certification:
Approved Signatory

ROSLINA BT AB. AZIZ



Designation:
Deputy Technical
Calibration Engineer

Professional Certification:
Approved Signatory

WEE SOO LEE



Designation:
Marketing Head
Calibration Engineer

Professional Certification:
Approved Signatory

ZARINA MD AMIN



Designation:
Calibration Engineer

Professional Certification:
Approved Signatory

FAZIDA ADLAN



Designation:
Marketing Officer
Calibration Engineer

Professional Certification:
Approved Signatory

KHAIRIANI BT OTHMAN



Designation:
Quality Head
Internal Audit Coordinator
Risk Management Coordinator

Professional Certification:
Lead Assessor

GOPI A/L MUTHUSAMY



Designation:
Technical Head
Calibration Engineer

Professional Certification:
Approved Signatory

ZARINA CHE AMIN



Designation:
Admin Head
Calibration Engineer

Professional Certification:
Approved Signatory

RUSNANI BT YAHYA



Designation:
Admin Officer
Calibration Engineer
Research and Development Coordinator

Professional Certification:
Approved Signatory

LEE SOO LENG



Designation:
Calibration Engineer

Professional Certification:
Approved Signatory

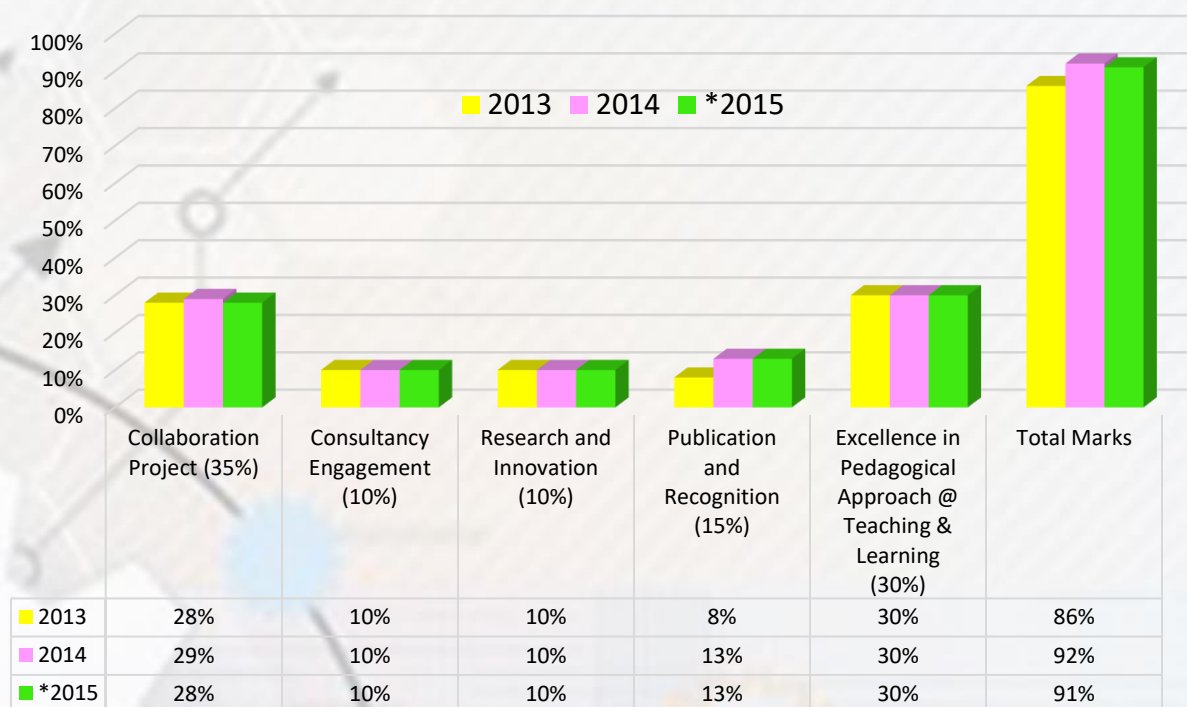
LIYANA BT MAHMUD



Designation:
Laboratory Research Officer
Calibration Engineer

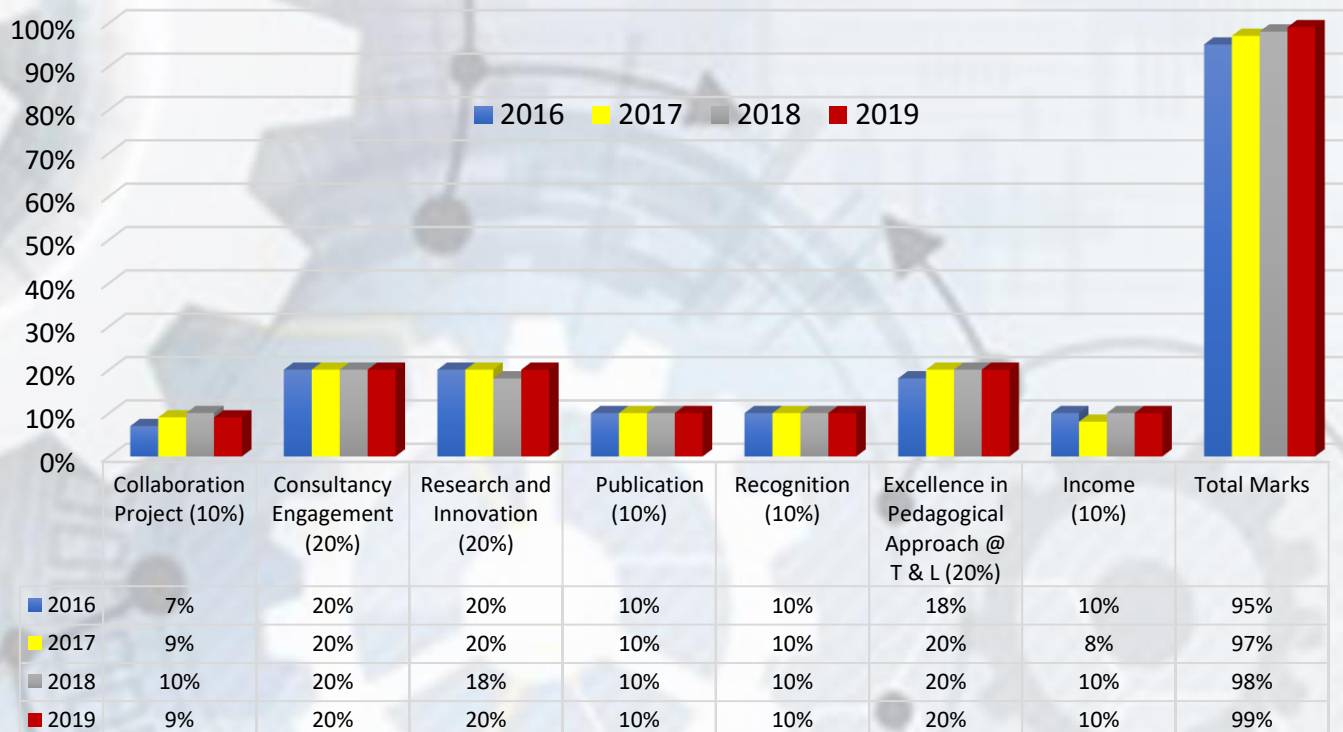
Professional Certification:
Approved Signatory

KPI ACHIEVEMENT FOR THE YEAR 2013 - 2015



*2015 – Marks are based on Audit Finding from External Assessor on 24 February 2015. CMET was recognized as a Centre of Technology (CoT) on 8 September 2015 in an official ceremony launched by Dato' Seri Idris Bin Jusoh, Minister of Higher Education

KPI ACHIEVEMENT FOR THE YEAR 2016 - 2019



Starting from the year 2020, CoT achievement will be assessed using new edition of Garis Panduan Pelaksanaan Centre of Technology (2020). The revised weightages are: Research & Innovation + Expert Services - 40%, Collaboration - 20%, Publication + Recognition - 20% and Teaching & Learning + Income Generation - 20%.

CMET first initiative for its establishment is the set up of accredited Biomedical Calibration Laboratory (BMCL)

Biomedical Calibration Laboratory (BMCL) staffs are always committed to achieve more.



QUALITY OBJECTIVES

Biomedical Calibration Laboratory sets out four quality objectives to competently and effectively achieve the requirements of MS ISO/IEC 17025:2017, SAMM Accreditation Standard and others relevant statutory regulations.

As stated in BMCL Laboratory Management System Procedures (BMCL/LMS/ Section 8) Issue 1 page 4

Able to generate an income of at least RM 120,000 annually



01



Able to calibrate customer's biomedical analyser within five working day per unit.

02

Able to respond customer complaint within three working days



03



Zero tolerance against impartiality

04

SERVICES OFFERED

CALIBRATION



PLANNED PREVENTIVE MAINTENANCE



FOR BIOMEDICAL EQUIPMENT

Preventive maintenance is an important part of facilities management

GOAL OF PPM

- 1** To establish **CONSISTENT PERFORMANCE**
- 2** To ensure **SAFETY OF THE EQUIPMENT**
- 3** To **IMPROVE EQUIPMENT LIFE**
- 4** To **AVOID ANY UNPLANNED MAINTENANCE ACTIVITY**

BMCL ACHIEVEMENT

THE FIRST WORLD CLASS BIOMEDICAL EQUIPMENT CALIBRATION LAB IN MALAYSIA

*"Providing accurate and trustworthy calibration testing result recognised by its
International Standards"*

Shah Alam, 7 April 2014 -- The Department of Standards Malaysia (DSM) recognised the Biomedical Calibration Lab (BMCL) at Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) for meeting international standards, through MS ISO/IEC 17025:2005 accreditation. It is conferred by Madam Fadilah Baharin, Director General of DSM to Tn Hj Kamaruzaman Ismail, Director of Politeknik Sultan Salahuddin Abdul Aziz Shah and witnessed by Dato' Seri Ir. Dr Zaini bin Ujang, Secretary General II, Ministry of Education Malaysia in conjunction with the MoU Signing Ceremony between PSA and SIRIM held today. The lab accredited under Skim Akreditasi Makmal Malaysia (SAMM), is a competence laboratory that meets both technical and management requirements, that also operates in accordance with MS ISO 9001, Quality Management Systems.

"Congratulations to BMCL on becoming the *first lab in the country accredited for the calibration of biomedical equipment* and also to Politeknik Sultan Salahuddin Abdul Aziz Shah as the *only polytechnic institution in Malaysia accredited with MS ISO/IEC 17025 by DSM*. As I understand it, this calibration service will be opened to the public, where it would not only provide benefits within our education system but also serves the industry", said Fadilah at the ceremony.

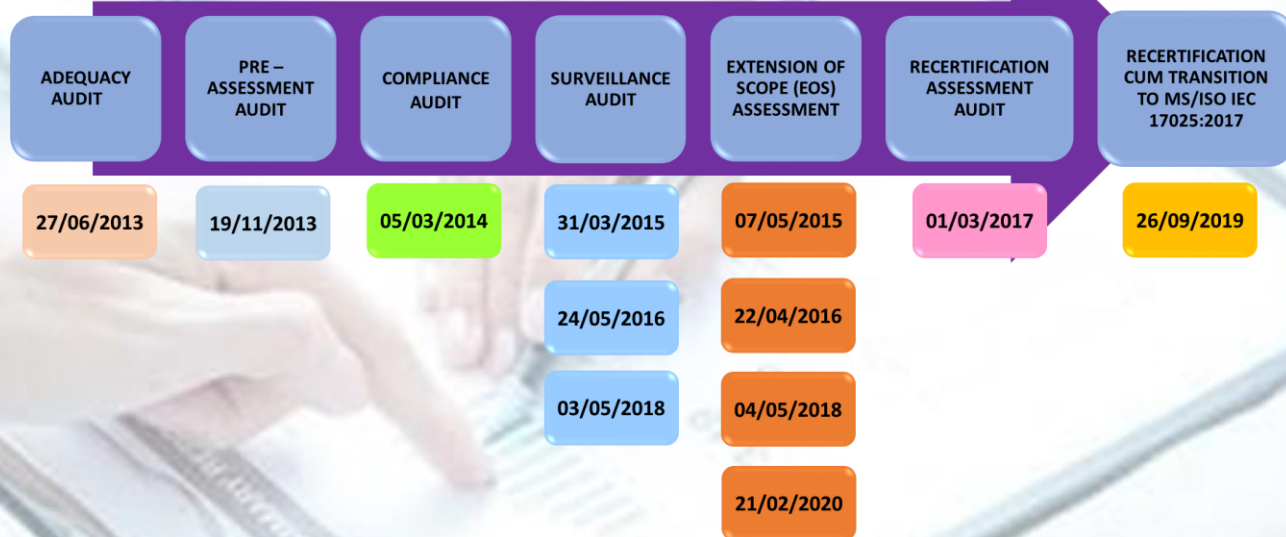
"Furthermore, this accreditation *is an assurance to calibration report from the lab*, which is accurate, trustworthy and accepted by other countries e.g. Australia, China, Japan and US. This will also save resources in terms of time and money by reducing duplicative testing. Furthermore, it supports international trade by eliminating non-tariff trade barriers;" added Fadilah.

**BIOMEDICAL
CALIBRATION
LABORATORY
(BMCL) *FIRST
LABORATORY
IN MALAYSIA*
accredited for the
calibration of
Biomedical
Equipment**

Source : APLAC News Notes Issue No. 119

AUDIT TRAIL

MS ISO/IEC 17025 AUDIT TRAIL



The above figure shows Biomedical Calibration Laboratory Audit Trail of MS ISO/IEC 17025 from 2013 to 2020. Assessment were carried out by assessor appointed by Department of Standard Malaysia.

INTERNAL AUDIT (2013-2020)

BMCL also conducted Internal Audit of MS ISO/IEC 17025 once a year. The Internal Audit Program cover BMCL document and records, designated personnel, procedures, environment and equipment based on MS ISO/IEC 17025 requirements, SAMM requirement and BMCL established procedures. Process based approach are used during internal audit. The table below shows Internal Audit Finding from 2013 to 2020.

FINDING

YEAR	2013	2014	2015	2016	2017	2018	2019	2020
NC 1	0	0	0	0	0	0	0	0
NC2	0	1	0	0	0	1	1	0
NC3	1	2	1	1	0	0	1	1
OBS	1	1	0	1	1	2	1	2

NC 1 – Very serious non conformity

NC 2 – Quite significant non conformity

NC 3 – Minor non conformity

OBS – Observation

Ref: Sistem Akreditasi Makmal Malaysia (SAMM) Policy 10

CERTIFICATE OF ACCREDITATION

S/N: 1465



STANDARDS
MALAYSIA

Certificate of Accreditation

No: SAMM 641

Accredited since: 14 April 2014

This is to certify that

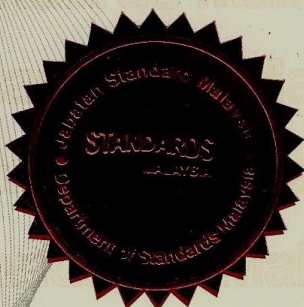
BIOMEDICAL CALIBRATION LABORATORY CENTRE
FOR MEDICAL ELECTRONIC TECHNOLOGY
POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
SHAH ALAM, SELANGOR
MALAYSIA



Scan this QR Code or visit
www.jsm.gov.my/cab-directories
for the current scope of
accreditation

has been granted accreditation in respect of the scope of accreditation described in the schedule, subject to the terms and conditions governing the *Skim Akreditasi Makmal Malaysia* (SAMM), the Laboratory Accreditation Scheme of Malaysia.

Laboratories accredited under SAMM meet the requirements of MS ISO/IEC 17025. This Malaysian Standard is identical with ISO/IEC 17025 published by the International Organization for Standardization (ISO).



(DATUK FADILAH BAHARIN)
Director General
Department of Standards Malaysia

Date of issue: 9 January 2020

Issuance of this Certificate is governed by Section 16 Subsections (2) and (3) of Standards of Malaysia Act 1996 (Act 549)

ACCREDITED SCOPE CERTIFICATES

NO: SAMM 641
(Issue 2, 2 March 2020 replacement of SAMM 641 dated 9 January 2020)

SCOPE OF CALIBRATION: ELECTRICAL

LABORATORY LOCATION:
(PERMANENT) LABORATORY
POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH
PERSIARAN USAHAWAN, SEKSYEN U1
40150 SHAH ALAM, SELANGOR
MALAYSIA

FIELDS OF CALIBRATION: ELECTRICAL, VOLUME & PRESSURE

This laboratory has demonstrated its technical competence to operate in accordance with MS ISO/IEC 17025:2017 (ISO/IEC 17025:2017).

This laboratory's fulfillment of the requirements of ISO/IEC 17025 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001 (see Joint ISO-ILAC-IAF Communique dated April 2017).

* The expanded uncertainties are based on an estimated confidence probability of approximately 95% and have a coverage factor of k=2 unless stated otherwise.

SCOPE OF CALIBRATION: ELECTRICAL

Instrument Calibrated/ Measurement Parameter	Range	Calibration and Measurement Capability Expressed as an Uncertainty(*)	Remarks
1. Multiparameter/ Electrophysiology (ECG) Patient Simulator	a) Pulse Amplitude 0.50 mV to 5.50 mV	33 mV/V ± 17 µV	Generation pulse amplitude by using Differential Amplifier (A-M Systems 3000) and measurement by using Digital Oscilloscope (Tektronix 3072C)
	b) Resistance 250 Ω to 1000 Ω 1107 Ω to 7355 Ω 13499 Ω to 31320 Ω 94900 Ω	0.10 mΩ/Ω ± 27 mΩ 0.10 mΩ/Ω ± 0.23 Ω 0.10 mΩ/Ω ± 1.8 Ω 12 Ω	Measurement by using Digital Multimeter (Keithley 2000)

SKIM AKREDITASI MAKMAL MALAYSIA (SAMM)
LABORATORY ACCREDITATION SCHEME OF MALAYSIA

NO: SAMM 641
(Issue 2, 2 March 2020 replacement of SAMM 641 dated 9 January 2020)

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PERSIARAN USAHAWAN, SEKSYEN U1
40150 SHAH ALAM, SELANGOR
MALAYSIA

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PERSIARAN USAHAWAN, SEKSYEN U1
40150 SHAH ALAM, SELANGOR
MALAYSIA

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PERSIARAN USAHAWAN, SEKSYEN U1
40150 SHAH ALAM, SELANGOR
MALAYSIA

FIELDS OF CALIBRATION: ELECTRICAL, VOLUME & PRESSURE

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PERSIARAN USAHAWAN, SEKSYEN U1
40150 SHAH ALAM, SELANGOR
MALAYSIA

FIELDS

ACCREDITED SCOPES



Patient Simulator



Non-invasive Blood Pressure Simulator



Defibrillator Analyzer



Electrosurgical Analyzer



Electrical Safety Analyzer



Syringe Pump



Infusion Pump Analyzer



Digital Pressure Meter



TRAINING

CMET second initiative to realize the objectives of its establishment is providing training in the niche area. The prime motivator for a training is to improve productivity and performance. Every year CMET conducts minimum of 12 trainings as categorized in the diagram below. Total trainings conducted since its inception are 65 sessions.



List of yearly mandatory courses

 <p>Workshop on MS ISO/IEC 17025:2017 Awareness</p>	 <p>Workshop on Measurement Uncertainty & Budget Table for NIBP Analyzer</p>	 <p>Workshop on Measurement Uncertainty & Budget Table for Patient Simulator</p>	 <p>Workshop on Measurement Uncertainty & Budget Table for Electrosurgical Analyzer</p>	 <p>Workshop on Measurement Uncertainty & Budget Table for Electrical Safety Analyzer</p>	 <p>Workshop on Measurement Uncertainty & Budget Table for Pressure Meter</p>	 <p>Workshop on Measurement Uncertainty & Budget Table for Multimeter</p>	 <p>Risk Management and Risk Assessment under ISO/IEC 17025:2017 Requirements</p>	 <p>Workshop on Measurement Uncertainty & Budget Table for Defibrillator Analyzer</p>	 <p>Workshop on Measurement Uncertainty & Budget Table for Syringe and Infusion Pump Analyzer</p>
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TRAINING SESSIONS

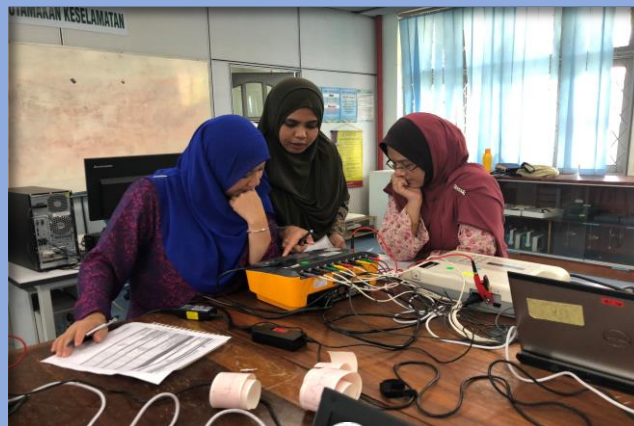


*Biomedical
Equipment
Maintenance and
Testing Training for
Bhutanese*

*Medical Device
and Technology
Management
Training for
Sudanese*



*Medical Equipment
Maintenance
Competency and
Electrical Safety Test
Training*



RESEARCH & INNOVATION

The third initiative of CMET is to conduct research and innovation in Medical Electronics and any other areas related to or in support of Medical Electronics. The research and innovation focus on products, services or process considered beneficial and applicable to the polytechnic, TVET system, communities and industries. All research findings are presented at conferences while potential innovation products will be commercialized.

For the past 10 years CMET has conducted THREE (3) conferences known as Innovation and Commercialization of Medical Electronic Technology (ICMET). The first ICMET conference was held in 2012 followed by the second one in 2013. The third ICMET was conducted in 2015, in collaboration with Institute of Electrical and Electronics Engineers (IEEE), University Technology Mara (UiTM) and Women in Engineering (WIE). The following are some of the research conducted by CMET from 2010 – 2020.

Improvement of System Acquisition for Fast Scanning in Heterogeneous Network.
Authors: Fazida Adlan, M.Ismail, N.Zainal, S.Bohanudin. (Best Paper Award and Best Presenter Award)

1



Fazida Adlan, the winner of Best paper Award and Best Presenter Award in Conference on Applied Science, Engineering, Business & Information Technology (ICO-ASCNITECH 2018)

2

The development of an interactive blood pressure device for telemedicine application. *Authors: Baharuddin Mustapha, P. Jeganathan, Rusnani Yahya and Fazida Adlan.*

3

Location-aided scanning mechanism using GPS during handoff process in mobile WiMAX. *Authors: Fazida Adlan, M. Ismail and N. Zainal*

4

General guidelines on calibration requirements for electrical safety analysers. *Authors: Nor Sham Hasan, Aslinda Zamah Shaari and Fazida Adlan.*

5

PC Based Blood Pressure Meter for E-health Application.
Authors: B. Mustapha, M. Z. Hassan, Z. Mohamad, I. Kamaruddin and Rusnani Yahya.



14

Improvement of System Acquisition for Fast Scanning in Heterogeneous Network. *Authors: Fazida Adlan, M.Ismail, N.Zainal, S.Bohanudin. (Best Paper Award and Best Presenter Award)*

13

An Innovation of Hands-Free Crutches for Offering Greater Freedom and Safety.

Authors: Wee Soo Lee, Masriani Mansor, Rusnani Yahya, Roziah Abdul Latiff, Nur Aliah Rozman & Siti Hajar Ismail.

12

Toy For ADHD Children.

Authors: Sharizan Mat Saat and Rusnani Yahya and N. M. Salleh

11

Non invasive cholesterol meter using Near

Infrared sensor *Authors: I. M. M. Yusoff, Rusnani Yahya, W. R. W. Omar and L. C. Ku.*

10

Effects of Material Properties in Spinal Fusion Cage for Lumbar Vertebrae.

Authors: Rusnani Yahya, Muhammad Lukman Shudin, Muhammad Hazli Mazlan, Solehuddin Shuib and Abdul Halim Abdullah.

9

Effectiveness Of ECG E-Manual Using Mobile Apps Among ECG User At Hospital Tengku Ampuan Afzan.

Authors: Sharizan Mat Saat, Rohana Sahak and Rusnani Yahya.

8

Exploratory research: CMET as a hub for Biomedical Research & Technology

development. *Authors: Khairiani Othman, Roziah Abdul Latiff and Rokimah Mohamad*

7

Customer Acceptance of Telehomecare System For Elderly With Chronic

Diseases. *Authors: Roziah Abdul Latiff, Khairiani Othman, Mohd Khanapi Abd Ghani and Nor Afirdaus Zainal Abidin*

6

Effectiveness Of ECG E-Manual Using Mobile Apps Among ECG User At Hospital Tengku Ampuan Afzan.

Authors: Sharizan Mat Saat, Rohana Sahak and Rusnani Yahya.

17

INVENTION & INNOVATION

The strength of CMET is reflected by the team's success in invention and innovation. The following are gold awards received for its product inventions.



2019

Gold Award in International Invention and Innovative Competition (InIIC) 2019.
Product: Hands-Free Crutches

Gold Medal in SPICE 2019. *Product: Dynamic Ablution Machine.*

Gold Medal in International Invention, Innovation & Technology Exhibition (ITEX) 2016. *Product: IR Cholesterol Meter*

2016



Gold Medal in 3rd International Innovation, Design and Articulation (i-IDeATM) 2016.
Product: Rechargeable Laryngoscope With Camera Added and E-learning Pulse Oximeter kit product

2015

Gold Award in Invention, Innovation & Design Exposition (IIDEX) 2015.
Product: Nano Vein Locator.

Gold Award in Invention, Innovation & Design Exposition (IIDEX) 2014.
Product: Vein Viewer

2014



Gold Award in International Maritime Science Conference (IMSC) 2014. *Product: e-stethoscope.*



2012

Gold Medal in International Invention, Innovation & Technology Exhibition (ITEX) 2012.
Product: ECG Lead Tester

EXPANDING THE HORIZON

CMET has gone through 3 chapters of development to ensure its sustainability since inception. The strategy for CMET development has been carefully carved to ensure that every horizon of possibilities have been explored. The formulated blueprint are implemented to achieve the objectives of the Polytechnic Transformation Agenda. They can be illustrated in a few chapters as depicted below

CHAPTER ONE

01

2010 - 2011

Carving A Landmark



Chapter one marks the beginning of a concerted effort on establishing CMET from concept to operation. From 2010 through 2015, CMET formulated strategies towards carving the landmark, establishing the footprint and sharpening the saw.

At these early periods of establishment, CMET studied, identified and formulated a strategy regarding its role in supporting the curriculum as well as the healthcare industry and how this could be achieved.

2012 - 2013

Establishing the Footprint



2014 - 2015

Sharpening the Saw



CHAPTER THREE

03

Chapter 3 embraces on CMET's towering strategies towards endeavoring for sustainability. CMET continues to grow diversifying its organizational functions with new added capabilities for realizing the TVET innovation ecosystem.

CMET is empowering industrialization in its organization through establishing a structured network with industries to boost its performance and to meet additional customer requirements

CHAPTER TWO

02

Chapter two chronicles the initiatives of constructing resilience and leaping the boundaries in CMET operations. The period of 2016 to 2019, signifies its existence as a leader in the field of medical electronics through enhancing capacity, sharing expertise, expanding the market and building global nexus. CMET continues to be a durable entity to operate beyond its normal capacity and remain competitive in the open market.

2016 - 2017

Constructing Resilience



2018 - 2019

Leaping Beyond Boundaries



2020 - Onwards

Endeavoring For Sustainability





CHAPTER

1

**CARVING THE
LANDMARK
(2010 – 2011)**

COMPETENCY TRAINING

▶
Biomedical
Equipment
Training at
PSA

2010



2011

◀
Basic Metrology
Training at
National
Metrology
Institute of
Malaysia
(NMIM)

COMPETENCY TRAINING

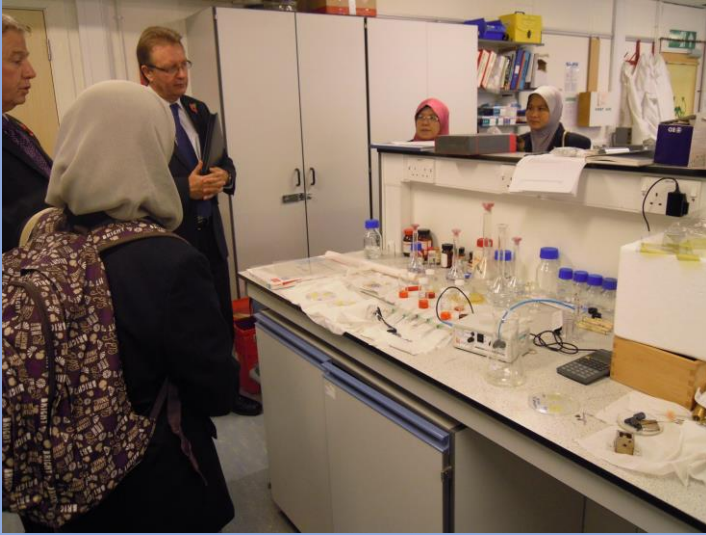
Biomedical
Equipment
Competency
Training Under
Economic
Partnership
Program with Japan
International
Cooperation agency
(JICA)



In-House Biomedical
Equipment Training

2011

2011



Benchmarking visit to Eastwood
Park Training Centre, UK



Benchmarking visit to TVRMS
Calibration Laboratory Australia



Benchmarking visit to Flinders
Medical Centre, Australia

BENCHMARKING VISIT



2011

Benchmarking visit
to West England
University for Work
Based Learning
implementation



Benchmarking visit
to University of
Sydney for Work
Based Learning
implementation



Benchmarking visit
to authorized
FLUKE Biomedical
calibration
laboratory OSAKA,
Japan

INDUSTRY DIALOGUE



*Meeting with
Redibems Sdn Bhd*

2011

*Discussion with
Advance Pact Sdn
Bhd*



*Dialogue with Eastwood Park
Training Centre*

2011

INDUSTRY DIALOGUE

2011



Brainstorming Session with Faber Mediserve and MNE Solutions Sdn. Bhd.



Meeting with Significant Technologies Sdn. Bhd.



Discussion with Advance Pact Sdn. Bhd.



Engaging with Biomedical Industry players

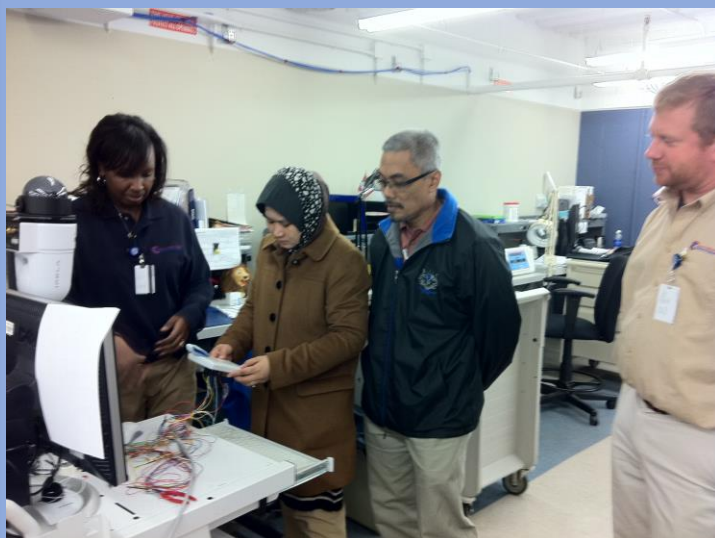
CHAPTER

1

ESTABLISHING THE FOOTPRINT (2012 – 2013)



2012



Biomedical equipment training at
Arkansas Children Hospital



Effective Laboratory Management
Training at Fluke Seattle



2013



Intermediate Level
Biomedical
equipment
competency
training



Certified Biomedical
Equipment Assessor
training



EEG Training to
technical staff

SHARING KNOWLEDGE

CMET First
International
Research &
Innovation
Conference
(ICMET 2012)



2012

ICMET 2013



CMET Industrial
Advisory Committee



2013

A woman wearing a red hijab and a white lab coat is working in a laboratory. She is standing at a workbench filled with various electronic equipment, including a power supply unit, a multimeter, and a breadboard. She is holding a small electronic component in her right hand and pointing at it with her left hand. The background shows a large, modern building with a glass facade. The text "CHAPTER 1 SHARPENING THE SAW (2014 – 2015)" is overlaid on the image in a blue, serif font. The number "1" is particularly large and bold.

CHAPTER 1 SHARPENING THE SAW (2014 – 2015)



ISO/IEC 17025:2005
Compliance Audit
and Witnessing



ISO/IEC
17025:2005
Accreditation
Certification
handing over
ceremony

PUBLICITY

CMET promoting
Calibration
Services at
Hospital
Management
Asian Conference,
Cebu, Philippines



CMET Open Day to Promote Calibration Services to Biomedical Industries



3rd ICMET IEEE Conference at
Bluewave Hotel Shah Alam

2015

COT Exhibition for Industrial
Engagement Program at
Politeknik Ibrahim Sultan (PIS)

VISIT

2014



Visitors from Vietnam



1st Calibration Customer



2015

Customer visit
from
Redibems Sdn.
Bhd. And
Edgenta
Mediserve
Sdn. Bhd



2015

ISO/IEC 17025
Extension of Scope
Audit



COT audit by Jabatan
Pendidikan
Politeknik dan Kolej
Komuniti (JPPKK)



Matured COT
Recognition
Ceremony by
Minister of
Higher Education

STRATEGIC ALLIANCE

Memorandum Of Agreement (MOA) Signing Ceremony With SIRIM Standards Technologies



2015

Memorandum Of Understanding (MoU) with Medical Industries and IPTA





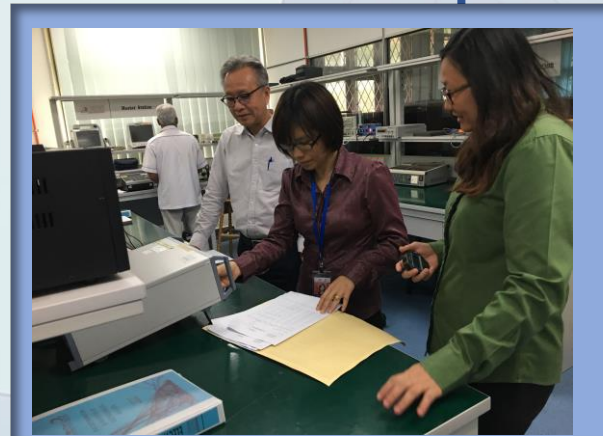
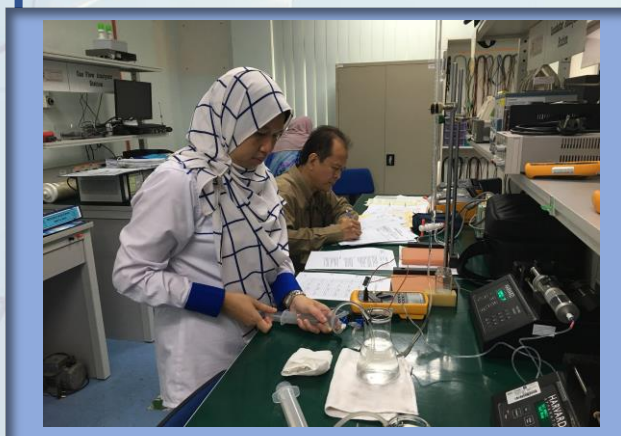
CHAPTER

2

CONSTRUCTING RESILIENCE (2016 – 2017)

STRENGTHENING CAPACITY

Extension of
Accredited
Calibration Scope
Assessment



Seminar on The Importance of
Accredited Calibration Laboratory
to Healthcare Industries



2016

SHARING EXPERTISE

2016 - 2017



Visitors From Korea



Delegates From CIDB



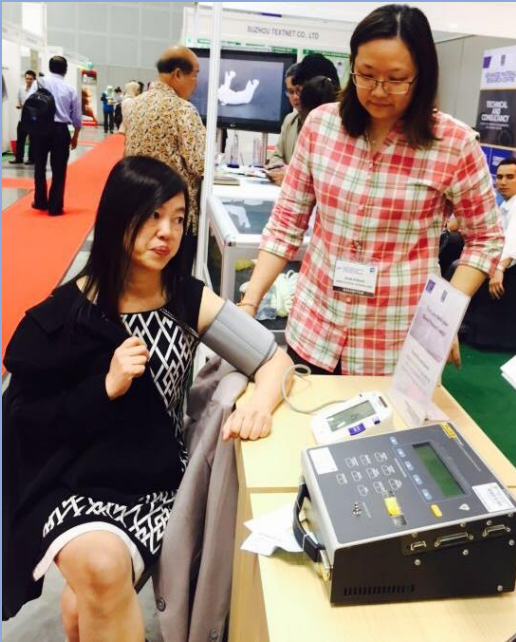
Training for Bhutanese Ministry Of Health Personnel



Training for delegates from Sudanese Health

APPROACHING CUSTOMERS

2016-2017



Promoting CMET at
Southeast Asia Healthcare &
Pharma Show



CMET at USTART
Conference Malaysia



CMET video shooting for
PoliTV Central Chapter



CHAPTER

2

LEAPING BEYOND
BOUNDARIES
(2018 – 2019)

GLOBAL NEXUS

2018



PSA Director
Officiated
Biomedical
Programme
Launching
Ceremony at Pea
Riverview
Technical
College,
Guangzhou



Collaboration
Meeting With
Guangdong
DeXin Medical
Technology Co.
China at PSA



2019

Business Talk With Indonesian
Healthcare Industry Representative

GLOBAL NEXUS

2019



Business Talk With
International Conformity Co.
(OCI) Bahrain



Visit from Somalia,
Bangladesh and
Mongolia

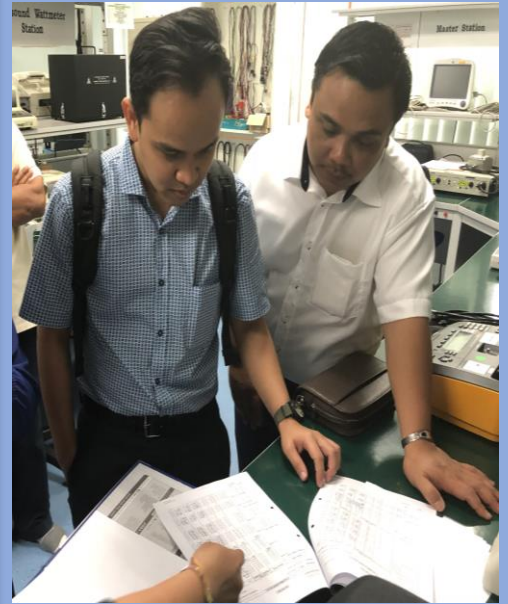


2018

INDUSTRY SPEARHEAD



Customer Visit From
Biomedix, Sarawak



Visit From MedRev Sdn.
Bhd



Discussion with
BECTA Sdn. Bhd

2019

EMBRACING THE DEMAND

MS ISO/IEC
17025:2017
Transition Audit
by Department of
Standards
Malaysia



External Panel for COT
KPI audit

2019

HIGHLIGHTS

2019



The Best COT
Awards



Centre Of Technology Convention 2019

S/N: 1465



STANDARDS
MALAYSIA

Certificate of Accreditation

No: SAMM 641

Accredited since: 14 April 2014

This is to certify that

BIOMEDICAL CALIBRATION LABORATORY CENTRE
FOR MEDICAL ELECTRONIC EQUIPMENT
POLITEKNIK SEMANGGI, SEMANGGI, KUALA LUMPUR
SHAH ALAM, SELANGOR
MALAYSIA



For more information or visit
www.standards.gov.my/cab-cred
for the current scope of
accreditation

CHAPTER 3

ENDEAVOURING FOR SUSTAINABILITY (2020)

has been granted accreditation in respect of the scope of accreditation described in the schedule, subject to the terms and conditions governing the Skim Akreditasi Makmal Malaysia (SAMM) and the Laboratory Accreditation Scheme of Malaysia.

Laboratories accredited under SAMM meet the requirements of MS ISO/IEC 17025. This Malaysian Standard is identical with ISO/IEC 17025 published by the International Organization for Standardization (ISO).



(DATUK FADILAH BAHARIN)
Director General
Department of Standards Malaysia

Date of issue: 9 January 2020

Issuance of this Certificate is governed by Section 16 Subsections (2) and (3) of Standards of Malaysia Act 1996 (Act 549)

PROFESSIONAL ENGAGEMENT



Calibration Certificate
Review and Analysis
Seminar Opening
Ceremony By PSA
Director



Seminar Participants are
From Healthcare
Industries





MS ISO/IEC
17025:2017
Extension of
Scope Assessment



Witnessing
Session for
Extension of
Scope Assessment



Technical
Competency
Assessment for
Extension of
Scope

INSPIRING OTHERS

Benchmarking Visit
from Politeknik
Sultan Mizan Zainal
Abidin (PSMZA)
Centre of Technology



Benchmarking Visit from Politeknik
Seberang Perai (PSP) Centre of
Technology



Visit From Universiti Malaysia
Pahang (UMP)



CMET Visit to One
Gasmaster Sdn. Bhd.



Visit from Industrial
Hygiene &
Ergonomic Section,
Department Of
Occupational Health
And Safety

2020

COMMITMENT TO COMMUNITY

2020



Vital Sign
Monitoring
Service



Centre Of
Technology
Open Day for
Community



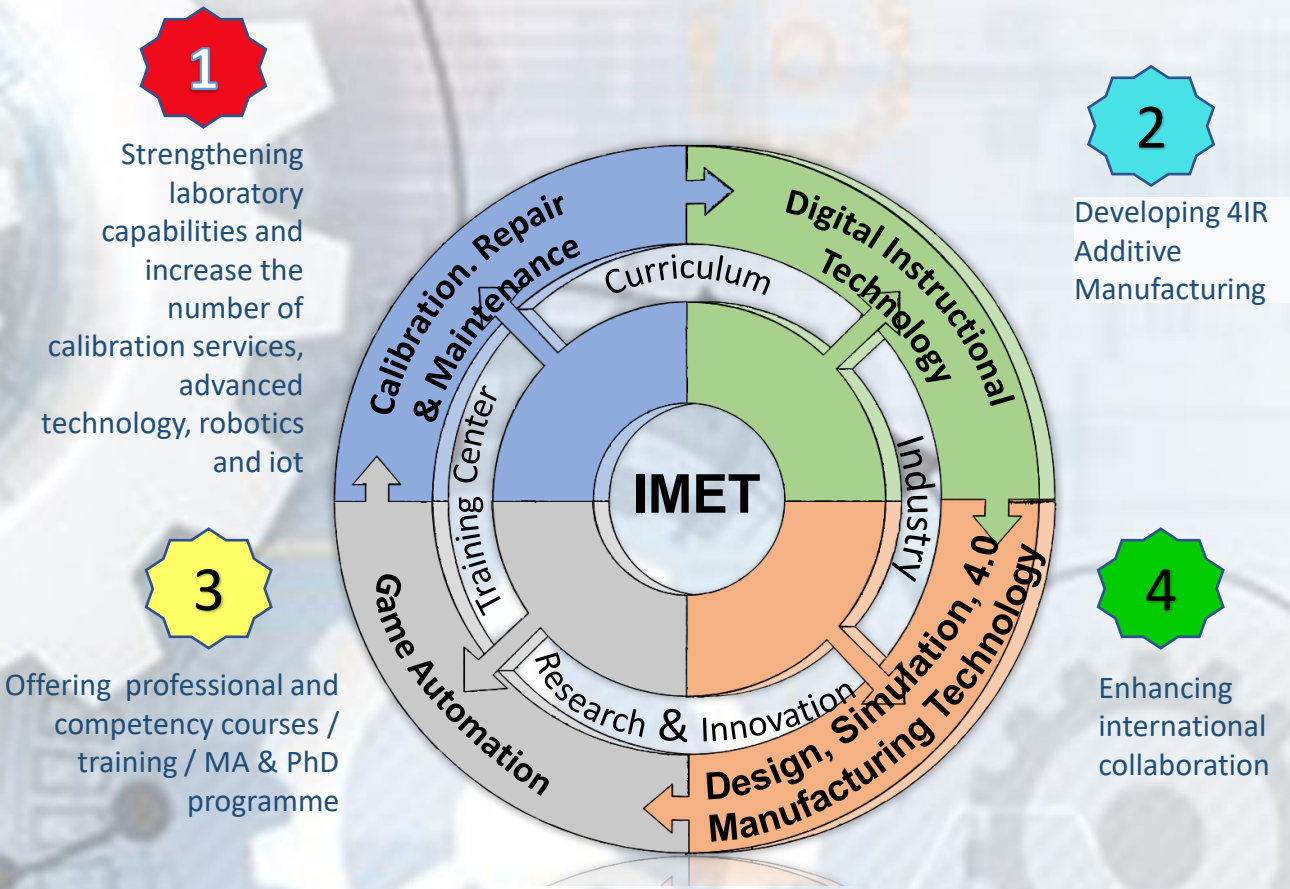
Invention and
Innovation
Exhibition



THE WAY FORWARD

The TVET Innovation Ecosystem is another initiative from JPPKK to empower industrialization within TVET institutions to establish a structured network of industries within polytechnics, community colleges, and selected industries.

In order to support the TVET Innovation Ecosystem initiative, the way forward for CMET is to upgrade its status from being a center to become an institute; thus the Institute of Medical Electronic Technology (IMET). Under this new entity, IMET shall expand CMET's current scope with more demanding ones, in order to fulfill TVET Innovation Ecosystem requirements. Among the new scopes planned for CMET are Calibration Repair & Maintenance Centre, Digital Instructional Technology Centre, Design Simulation 4.0 Manufacturing Technology Centre and Game & Automation Center. Realizing these objectives are not easy tasks, hence collaboration between IMET with the industries is invariably a must in the future.

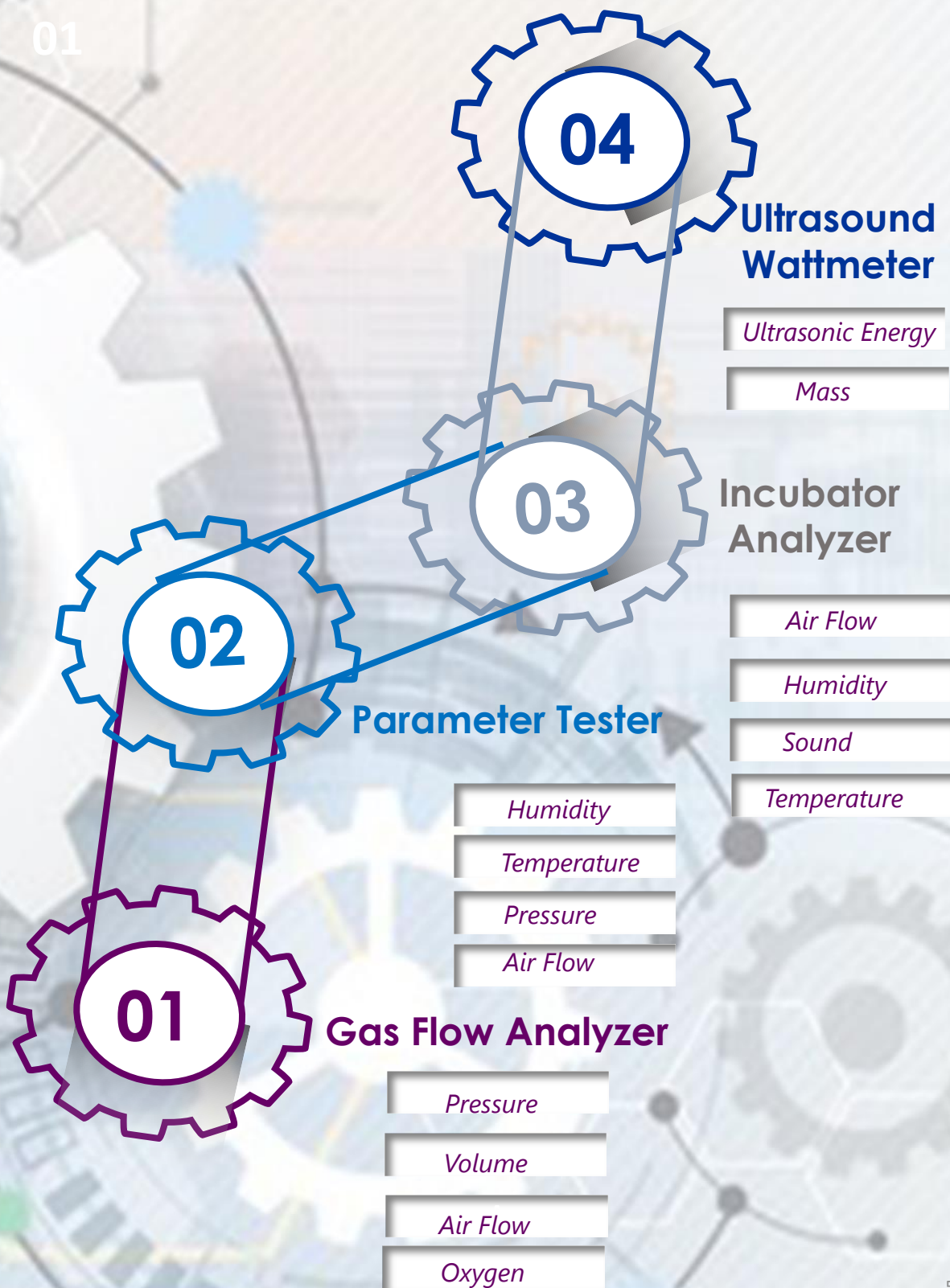


INSTITUTE OF MEDICAL ELECTRONIC TECHNOLOGY

EXPANDING THE BASE

CMET plans to strengthen its calibration services by applying for extension of accreditation scopes to the FOUR (4) equipment shown in the figure below. Through this initiative, it will expand and broaden the primary function of CMET, thus making it more competitive and improving its future sustainability.

01



SPECIAL THANKS

Bahagian Perancangan Program dan Institusi (BPPI)
Jabatan Pendidikan Politeknik & Kolej Komuniti



International Company



BAHRAIN DEFENCE FORCE
ROYAL MEDICAL SERVICES
Military Hospital



Humedical

PT. Fania Ersapratama



BY FARAH KAMILIA

PHILIPS

CMET (CENTRE for MEDICAL ELECTRONIC TECHNOLOGY)

Politeknik Sultan Salahuddin Abdul Aziz Shah (PSA) is one of the three polytechnics conferred with the status of Premier Polytechnic. One of the major KPI for Premier Polytechnic is setting up Centre of Excellence in Technology (CoT) based on each respective niche areas as identified by Ministry of Education, Malaysia. Also in line with the agenda of transformation for polytechnic, PSA has taken the initiative to develop the CoT in the field of medical electronics, also known as Centre for Medical Electronic Technology (CMET). Three development plan of CMET are: establish an accredited biomedical calibration laboratory, research and development and training centre for teaching and learning in the field of medical electronics.

BIOMEDICAL CALIBRATION SERVICES FOR TESTER / SIMULATOR & ANALYZER

New and upgraded biomedical equipment are constantly being introduced in the healthcare industry to meet increasing demand for better healthcare services. These equipment require proper maintenance and calibration to deliver standard and optimum level of performance. Center for Medical Electronic Technology (CMET) - Biomedical Calibration Lab (BMCL) collaborates with SST to provide biomedical calibration services for Medical Equipment analyzers. BMCL obtained accreditation under Malaysia Laboratory Accreditation Scheme for calibration, MS ISO/IEC17025 awarded by Department of Standards Malaysia. It is our promise to provide calibration services with the highest level of accuracy and reliability possible.



CALIBRATION CAPABILITIES

- Patient Simulator
- Infusion Pump Analyzer
- Defibrillator Analyzer
- Ultrasound Wattmeter
- Non-invasive Blood Pressure (NIBP) Analyzer
- Electrical Safety Analyzer
- Pulse Oximetry Analyzer
- Electrosurgical Analyzer
- Gas Flow Analyzer



BIOMEDICAL CALIBRATION SERVICES



Our standard calibration service includes:

- Complete inspection & cleaning
- Calibration Service performed in compliance with ISO/IEC 17025
- Calibration Label, with date calibrated
- Calibration Certificate with Statement of Traceability
- Full scope Calibration As per Manufacturer Standard
- 5 days turnaround



We are capable to calibrate medical devices from all leading manufacturers, including Dynatech Nevada, Bio-Tek, BioMed, Fluke Biomedical, Rigel, Datrend and Clinical Dynamic.

Politeknik Sultan Salahuddin Abdul Aziz Shah
Persiaran Usahawan, Seksyen U1,
40150 Shah Alam, Selangor Darul Ehsan.
Tel : 03-51634000 / 6136 • Fax : 03-55691903
Email : cmetcalab@psa.edu.my

SIRIM Standards Technology Sdn. Bhd
Lot 12, 18&20, Jalan Beremban 15/12, Seksyen 15,
40200 Shah Alam, Selangor Darul Ehsan.
Tel : 03-55109066 • Fax : 03-55109077
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CENTRE FOR MEDICAL ELECTRONIC TECHNOLOGY
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