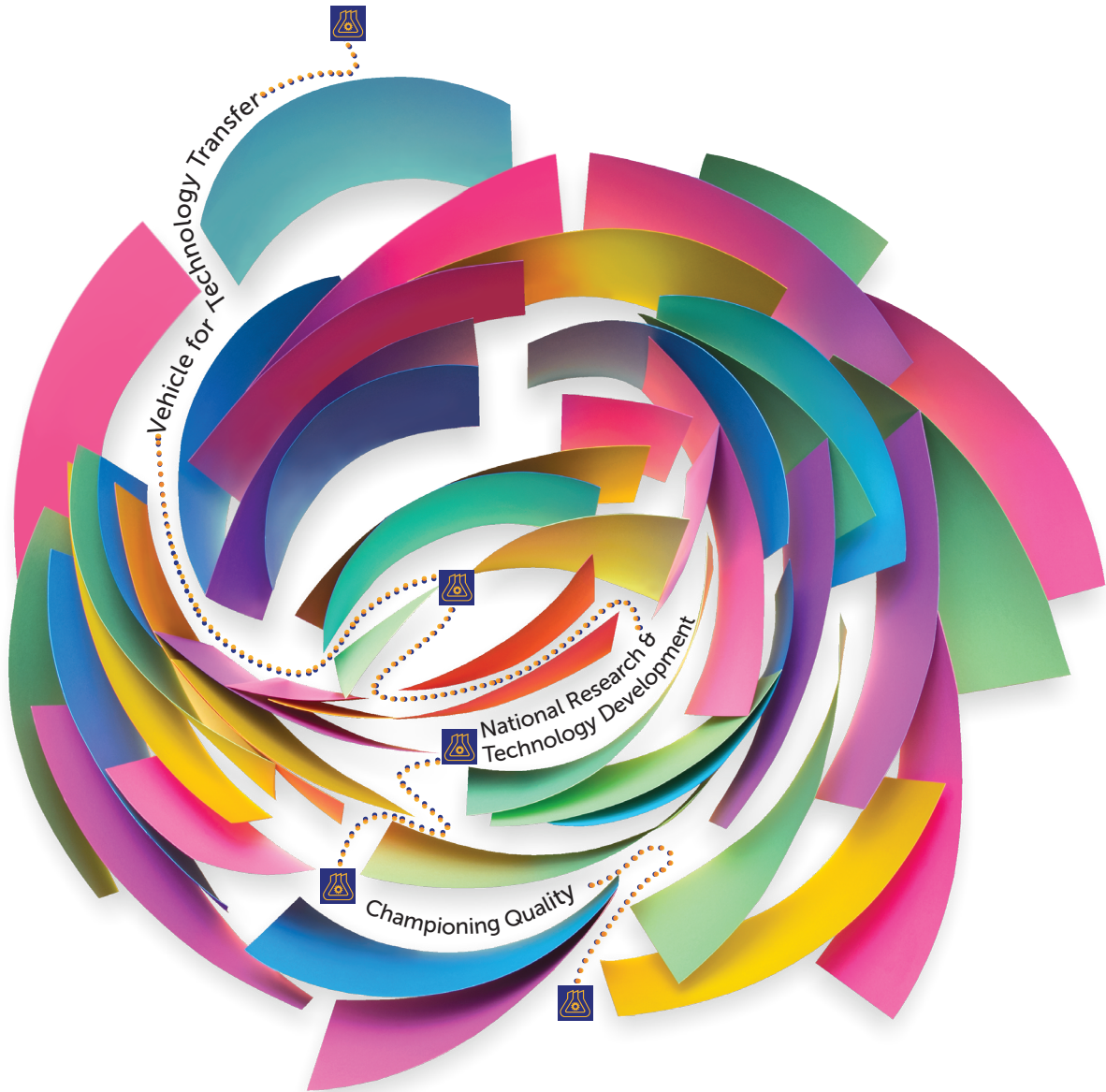




*Best Partner for Innovation*



Forging *partnerships* for *greater growth*

## Forging *partnerships* for *greater growth*



Many businesses tend to get lost in the global landscape. This concept highlights SIRIM's role in equipping industry players with the proper tools to forge ahead. A stylised maze becomes symbolic of the often inundated organisations striving to find their way out, while a bright colour scheme hints at an optimistic future. A closer look at the maze reveals SIRIM's key roles etched within. With decades of expertise and experience under its belt, SIRIM has a myriad of innovative solutions that will help its partners to find their way towards a brighter future.

# contents

ArNeNpUoArLt

# 19

# 20

10

**C H A I R M A N ' S**  
m e s s a g e s



15

**P R E S I D E N T**  
**& G R O U P C H I E F**  
**E X E C U T I V E ' S**  
r e p o r t s



02

Vision, Mission & Corporate Values

03

SIRIM Cultural Beliefs, Functions,  
Roles & Objectives

04

Board of Directors

08

Management Committee

10

Chairman's Message

15

President & Group Chief Executive's Report



## SIRIM INDUSTRIAL RESEARCH

- 24 Summary of SIRIM Industrial Research
- 25 SIRIM-Fraunhofer Programme
- 27 Environmental Technology Research Centre
- 30 Industrial Biotechnology Research Centre
- 32 Machinery Technology Centre
- 34 IC Innovation - Sensor
- 36 IC Innovation - Biomedical
- 40 IC Innovation - Nanotechnology
- 42 IC Innovation - Smart Manufacturing
- 45 IC Innovation - BioNG
- 47 IC Innovation - Energy Management



## SUBSIDIARIES AND BUSINESS UNITS

- 54 SIRIM QAS International Sdn Bhd
- 57 SIRIM STS Sdn Bhd
- 62 SIRIM Standards Technology Sdn Bhd
- 64 SIRIM Tech Venture Sdn Bhd
- 66 GranuLab (M) Sdn Bhd
- 71 Packaging & Security Design Centre



## DEVELOPMENTAL AND NATIONAL PROJECTS

- 76 National Metrology Institute of Malaysia
- 78 Malaysia Design Council
- 81 UNIDO-MAEESTA



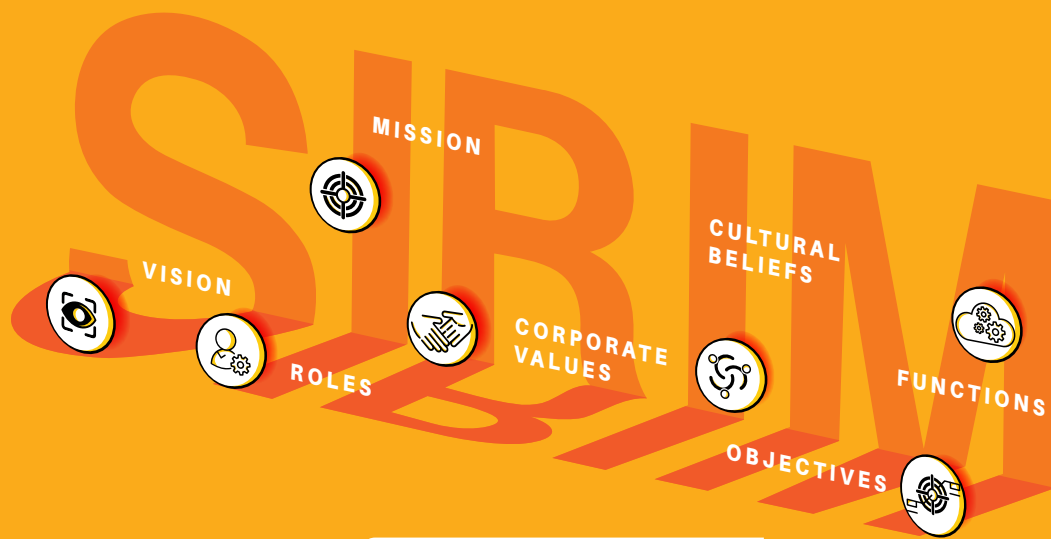
## CORPORATE

- 86 Group Strategic Planning Division
- 87 • Performance Management Office
- 91 • International Activities
- 93 • Regional Offices
- 94 Group Human Resource Division
- 99 Group Finance Division
- 104 Group Digitalisation & Information Technology



## CALENDAR OF EVENTS

- 108 Calendar of Events



**V I S I O N**

BEST PARTNER FOR INNOVATION

**M I S S I O N**

WE PROVIDE QUALITY AND SUSTAINABLE INNOVATION  
TO INDUSTRY, GOVERNMENT AND SOCIETY

**C O R P O R A T E  
V A L U E S**

**CUSTOMER FOCUS**

We focus on delivering excellence to our customers

**INTEGRITY**

We practise the highest standards of integrity

**TEAMWORK**

We achieve success through dedication,  
commitment and teamwork

**V I E W   O U R**

**ANNUAL REPORT**

and other information about SIRIM Berhad at

[www.sirim.my/annual-report.html](http://www.sirim.my/annual-report.html)





## SIRIM CULTURAL BELIEFS

### ACHIEVE SUSTAINABILITY

I shape SIRIM for our sustainable future.

### LEAD INNOVATION

I drive innovation for market competitiveness.

### ENGAGE TEAMWORK

I embrace differences and build high performance teams.

### ACT FAST

I take ownership to exceed R2.

### DELIVER EXCELLENCE

I partner to deliver excellent service.

## FUNCTIONS

- To enhance public and industrial welfare, health and safety
- To promote and undertake scientific industrial research:
  - > Improving technical processes and methods
  - > Discovering new processes and methods
  - > Encouraging the utilisation of Malaysian products
  - > Adopting or adapting technology developed in other countries for use in Malaysia
- To provide industrial extension and consultative services to assist industry in meeting standards
- To improve production processes and techniques

## ROLES

- The champion of quality
- A national research and technology development organisation
- A vehicle for technology transfer

## OBJECTIVES

- To innovate and develop processes, products and technologies for industry
- To promote standardisation and quality
- To provide technical services for industry and the public

## BOARD OF DIRECTORS



### ACADEMICIAN TAN SRI DR. IR. AHMAD TAJUDDIN ALI FASc

CHAIRMAN

#### EXPERIENCE

In addition to being Chairman of SIRIM Berhad, Academician Tan Sri Dr. Ir. Ahmad Tajuddin Ali holds directorship in other companies, including Linde Malaysia Holdings Berhad, Optimax Holdings Berhad, Universiti Teknikal Malaysia Melaka (UTeM), Malaysian Industry-Government Group for High Technology (MIGHT), Aerospace Malaysia Innovation Centre (AMIC) and Institut Integriti Malaysia (IIM), and is a Member of Northern Corridor Implementation Authority (NCIA).

He is also the Pro-Chancellor of Universiti Tenaga Nasional (UNITEN). Tan Sri Dr. Tajuddin is also the Chairman of the Board of Trustees of Yayasan Khazanah, and a Member of the Board of Trustees of Mahathir Science Award Foundation, Yayasan UTeM and the Board of Governors of the Malay College Kuala Kangsar (MCKK), his alma mater.

#### QUALIFICATIONS

- Post-doctoral work in nuclear engineering at Pennsylvania State University, USA
- Post-doctoral work in nuclear engineering at Oregon State University & Pennsylvania State University, USA
- Doctorate in Nuclear Engineering, Queen Mary College, University of London
- First Class Honours in Mechanical Engineering, King's College, University of London
- Ordinary National Diploma in Engineering, Brighton Technical College, Brighton, England



## BOARD OF DIRECTORS

SIRIM INDUSTRIAL RESEARCH

SUBSIDIARIES AND BUSINESS UNITS

DEVELOPMENTAL AND NATIONAL PROJECTS

CORPORATE

CALENDAR OF EVENTS



**DATO' (DR.) IR. ANDY SEO KIAN HAW, FASc**

### EXPERIENCE

Besides being a Board Member of SIRIM Berhad, Dato' Dr. Ir. Andy Seo Kian Haw has been appointed as Chairman of its Nomination & Remuneration Committee and Member of its Investment Committee. Additionally, he is the Chairman of SIRIM STS Sdn Bhd, and a Board Member of SIRIM QAS International Sdn Bhd and SIRIM Tech Venture Sdn Bhd.

### QUALIFICATIONS

- Honorary Fellow, Association of ASEAN Fellow Engineers Organization
- Honorary Member, ASEAN Engineer
- Fellow, Academy of Sciences Malaysia, FASc
- Registered Professional Engineer in Mechanical Engineering with Practicing Certificate, Board of Engineers Malaysia (PEng)
- Registered ASEAN Chartered Professional Engineer (ACPE)
- Fellow, Institute of Engineers Malaysia (FIEM)
- Fellow, Institution of Engineering and Technology, UK (FIET)
- Member, Malaysian Institute of Management
- Advisor, Technological Association Malaysia
- Honorary Doctor of Science, University of Hertfordshire, UK
- Strategic Management (Change Management) Executive Programme, IMD, Switzerland
- Executive Edge Strategic Management Course, London Business School, UK
- Master of Business Administration majoring in General Management, University of Hull, UK
- BEM/IEM/EC PT 1 & 2 in Mechanical Engineering
- Production Engineering (with Distinction in Automation Technology), University of Hertfordshire, UK



**DATUK IR. (DR.) KHAIROL ANUAR MOHAMAD TAWI**

### EXPERIENCE

Datuk Ir. (Dr.) Khairol Anuar Mohamad Tawi is the founder and current Executive Chairman of KAT Group, Malaysia's largest prepaid distributor. KAT Group was established in 1999 as a modest distribution company with just three employees and an annual revenue of RM600,000. Today, KAT operates in 13 offices across Malaysia's major cities, employing over 250 staff nationwide. In the year 2015, KAT recorded its highest annual revenue of RM850 million. The following year saw KAT evolve into an international solutions provider, deploying its advanced end-to-end digital distribution platform in countries like Nepal. Under Datuk Khairol's visionary leadership, the company has won numerous prestigious awards both locally and internationally, cementing its reputation as Malaysia's leading digital distribution specialist in retail and supply chain.

### QUALIFICATIONS

- Honorary Doctorate and Fellowship, University of Swansea, Wales, UK
- Senior Management Development Programme, Harvard Business School, USA
- Master of Business Administration, Cranfield Institute of Management, UK
- Bachelor of Science (Hon) in Electrical & Electronics Engineering, University of Swansea, Wales, UK



**DATUK (DR.) HAFSAH HASHIM**

### EXPERIENCE

Besides sitting on the Board of SIRIM Berhad, where she is also Chairman of the Investment Committee, Tender Committee and SIRIM Tech Venture Sdn Bhd, Datuk (Dr.) Hafsa Hashim also holds directorship in Zurich Takaful, Serunai Commerce Sdn Bhd, Arab Malaysia Chamber of Commerce, Majlis Agama Islam Wilayah Persekutuan (MAIWP) Dagang Sdn Bhd and USains Holding Sdn Bhd. She was the Chief Executive Officer of SME Corporation Malaysia (SME Corp. Malaysia) for nearly 14 years. Under her leadership, SME Corp. Malaysia formulated the internationally acclaimed SME Masterplan that charts the direction of SME development until 2020.

### QUALIFICATIONS

- Honorary Doctorate in Management and Entrepreneurship, Universiti Tenaga Nasional
- Honorary Fellow, ASEAN Federation of Engineering Organisations
- Master of Business Administration, Aston University, UK
- Bachelor in Applied Science, Universiti Sains Malaysia

**BOARD OF DIRECTORS**

**HAIRIL YAHRI  
YAACOB**

**EXPERIENCE:**

Hairil Yahri Yaacob is currently the Deputy Secretary General (Trade) of the Ministry of International Trade and Industry, Malaysia. He holds a Master Degree in Strategy & Diplomacy from National University of Malaysia and a Bachelor of Arts (Honours) in Politics and International Relations from University of Kent at Canterbury, UK. He joined the Malaysian Administrative and Diplomatic Service in 1995, and has been in the Malaysian civil service for over 25 years. He has extensive experience in economics and commerce, public management and social development management, and has held numerous positions throughout his career, including Deputy Secretary General (Investment) at the Ministry of International Trade and Industry (MITI), Counsellor (Economics) at the Permanent Mission of Malaysia to the World Trade Organization (WTO) in Geneva, Switzerland, from 2005-2008 and Minister Counsellor (Economics) at the Embassy of Malaysia, Washington D.C, USA, from 2011-2018.

**QUALIFICATIONS:**

- Master Degree in Strategy & Diplomacy, National University of Malaysia
- Bachelor of Arts (Honours) in Politics and International Relations, University of Kent, Canterbury, UK



**HAWARIAH ABDUL  
WAHID**

**EXPERIENCE**

As the Principal Assistant Secretary of the Government Investment Companies Division in the Ministry of Finance, Hawariiah Abdul Wahid is responsible for the affairs and corporate strategic direction of MOF Inc., particularly in the services industries. Prior to this, she was the Assistant Director of the Implementation Coordination Unit in the Prime Minister's Department, where she coordinated, monitored and evaluated the implementation and outcomes of Programme/Project Malaysia Five-Year Development Plan, and coordinated and monitored the effectiveness of policies and strategies of the Federal Statutory Bodies (MDS).

**QUALIFICATIONS**

- Association of Chartered Certified Accountants (ongoing)
- Bachelor of Accounting (Honours), Universiti Islam Antarabangsa Malaysia



**DATO' IR.  
LIM YEW SOON**

**EXPERIENCE**

Dato' Ir. Lim Yew Soon worked at Tenaga Nasional Berhad for more than 38 years, where he was the Chief Engineer and General Manager of Penang state and the Federal Territory of Kuala Lumpur. He is a Professional (Malaysia), Chartered (UK), Competent (Suruhanjaya Tenaga) and Services (Suruhanjaya Tenaga) Engineer.

**QUALIFICATIONS**

- Master of Electrical Engineering (MEE), University of Technology Malaysia
- Bachelor of Science (Honours) in Electrical & Electronic Engineering, Strathclyde University, Glasgow, Scotland, UK



## BOARD OF DIRECTORS

SIRIM INDUSTRIAL RESEARCH

SUBSIDIARIES AND BUSINESS UNITS

DEVELOPMENTAL AND NATIONAL PROJECTS

CORPORATE

CALENDAR OF EVENTS



**DATUK MOHD NASIR AHMAD**

### EXPERIENCE

Datuk Mohd Nasir Ahmad is a Fellow of the Association of Chartered Certified Accountants (ACCA), UK, and a Chartered Accountant with the Malaysian Institute of Accountants (MIA). He also holds a Master of Business Administration (Finance) from Universiti Kebangsaan Malaysia. He was the President of MIA from August 2011 to July 2013 and is currently a Council Member of ACCA (UK) since September 2013.

His career started in 1979 as Trainee Accountant with Tenaga Nasional Berhad (TNB). He went on to hold a few different positions before being seconded to Malaysia Transformer Manufacturing Sdn Bhd, (a subsidiary of TNB) as the Financial Controller in January 1993. He was later made the Chief Executive in June 1994. In January 2000 he moved to SPK Berhad as its Chief Executive Officer. On 1 June 2001 he was appointed as Chief Executive Officer of Perbadanan Usahawan Nasional Berhad, a position he held until his retirement on 1 June 2011.

### HIS CURRENT APPOINTMENTS ARE

#### Group Chairman

- CIMB Group Holdings Berhad

#### Chairman

- CIMB Bank Berhad
- CIMB Bank PLC (Cambodia)

#### Independent Director

- CIMB EOP Management Sdn Bhd

- SIRIM Berhad

- Prokhas Sdn Bhd

#### Member

- Board of Trustee, Yayasan Canselor UNITEN

- Global Council, Association of Chartered Certified Accountants (UK)

- Audit & Risk Committee, MAVCOM



**NORLIN ABDUL SAMAD**

### EXPERIENCE

Puan Norlin Abdul Samad has 38 years of experience in corporate law in the Plantation, Property Development, Manufacturing and Investment sectors as Head of Legal at Kompleks Kewangan Malaysia Berhad (KKMB) (now known as Amanah Capital Berhad), Golden Hope Plantations Berhad (Golden Hope) and Permodalan Nasional Berhad (PNB). She was Company Secretary for both KKMB and Golden Hope, and an Associate Partner at Messrs Zaid Ibrahim & Co (Zaid Ibrahim). She held directorships whilst in service with Golden Hope and PNB. She has extensive experience in M&A exercises, cross-border investments, joint venture transactions, contract negotiations and corporate governance.

### QUALIFICATIONS

- LLB (Honours) University of London
- Barrister-at-Law of the Honourable Society of Lincoln's Inn

- Called to the Malayan Bar in 1983

- Attended the Advanced Management Program (AMP) at INSEAD, Fontainebleau, France



**SAJI M K RAGHAVAN**

### EXPERIENCE:

Saji Raghavan has extensive experience in stakeholder management, business collaboration and start-ups. He has served on the boards of several government linked organisations and trade chambers. Currently, he sits on the Energy Council of Malaysia (ECOM) committee and on the board of AuditXPRT Asia, as well as sitting on the main board and four subsidiary boards of SIRIM.

### QUALIFICATIONS:

- Attended management courses at INSEAD and Oxford
- Master of Business Administration, Ohio University

- Bachelor of Engineering (Honours) Mechanical, Universiti Teknologi Malaysia



## MANAGEMENT COMMITTEE

# THE PEOPLE POWERING OUR STRATEGY



— **Datuk Ir. Dr. Ahmad Fadzil Mohamad Hani**  
*President and Group Chief Executive*



— **Ir. Dr. Mohamad Jamil Sulaiman**  
*Vice President*  
*SIRIM Industrial Research*



— **Mohd Azanuddin Salleh**  
*Chief Executive Officer*  
*SIRIM QAS International Sdn. Bhd.*



## MANAGEMENT COMMITTEE

SIRIM INDUSTRIAL RESEARCH

SUBSIDIARIES AND  
BUSINESS UNITS

DEVELOPMENTAL AND  
NATIONAL PROJECTS

CORPORATE

CALENDAR OF EVENTS



**Dr. Norlinda Mohd Zawawi**  
*Chief Executive Officer*  
*SIRIM STS Sdn. Bhd.*



**Nik Juliah Nik Jaafar**  
*Vice President*  
*Group Human Resource*



**Sabarina Harun**  
*Vice President*  
*Group Finance*



**Goay Peck Sim**  
*Vice President*  
*Group Strategic Planning*



**Tengku Intan Narqiah  
Tengku Othman**  
*Chief Digital & Information Officer*



C H A I R M A N ' S M E S S A G E

ACADEMICIAN TAN SRI DR. IR.

AHMAD

TAJUDDIN ALI

FASc





Over the years, SIRIM has built a strong brand synonymous with standards, quality and innovation. Our corporate tagline, **'Best Partner for Innovation'**, was adopted in an effort to drive ourselves to deliver concerted support to our partners and facilitate sustainable growth by strengthening our capability and relevance to industries through product innovations.

As the national body for industrial technology research and development as well as the custodian for standardisation and quality programmes, SIRIM continues to play its roles in three main spheres of activities: Commercial, spearheaded by six subsidiaries - SIRIM QAS International, SIRIM Training Services, SIRIM Standards Technology, SIRIM Tech Venture, GranuLab and National Precision Tooling; Technology Developmental activities led by SIRIM Industrial Research (SIRIM IR) and Packaging and Security Design; and Statutory activities as the national custodian of Weights and Measures, as entrusted to SIRIM's National Metrology Institute of Malaysia (NMIM). SIRIM also serves as the secretariat for the National Measurements Council and Malaysia Design Council (Majlis Rekabentuk Malaysia). This wide scope of activities has created a comprehensive ecosystem that enables SIRIM to assist industries from end to end in industrial research and development, commercialisation, packaging, training and market access, local and global, all under one roof.

Over the years, SIRIM has built a strong brand synonymous with standards, quality and innovation. Our corporate tagline, 'Best Partner for Innovation', was adopted in an effort to drive ourselves to deliver concerted support to our partners and facilitate sustainable growth by strengthening our capability and relevance to industries through product innovations.

**ACCELERATING INDUSTRY 4.0 TECHNOLOGY ADOPTION FOR MANUFACTURING SECTORS**

The government, through the Ministry of International Trade and Industry (MITI) continued the push of the Industry 4.0 agenda to increase productivity and employment opportunities, especially for the manufacturing sector. SIRIM, in support of the Industry4WRD programme, has taken the Industry 4.0 transformation seriously to ensure its successful adoption. The comprehensive programme is aimed at helping companies in the manufacturing and manufacturing-related service sectors to understand their current capabilities and gaps in terms of people, processes and technologies, and to provide intervention strategies in adopting Industry 4.0.

SIRIM, in assisting local industries in their Industry 4.0 journey, has forged collaborations with the Japanese industry consortium, focusing on upgrading the management knowledge of small and medium enterprises (SMEs) on basic production techniques relating to Industry 4.0, creating successful use cases and undertaking business matching between Japanese suppliers and SMEs.



## CHAIRMAN'S MESSAGE

### STRENGTHENING RESEARCH AND DEVELOPMENT AND INTERNATIONAL COLLABORATIONS

Global research and development collaborations have become more important than ever. SIRIM continues to explore and strengthen collaborations with reputable research and development organisations such as the National Science and Technology Development Agency (NSTDA), Thailand Institute of Scientific and Technological Research (TISTR), Korea Institute of Standards and Science (KRISS), Jiangsu Industrial Technology Research Institute (JITRI) and ITRI-SIRIM Collaboration in Mechanical & Electrical (M&E), Smart Manufacturing, Medical Devices and Sustainable Production.



To establish close working relationships in the international arena in 2019, SIRIM sent a delegation to TISTR to discuss potential areas of collaboration in Quality Testing and Standard Development, and signed a Memorandum of Understanding with Korea Conformity Laboratories (KCL) to collaborate in research, consultancy, standards and conformity assessments, as well as exchanging scientific and technical knowledge.

SIRIM continues to play an important role under the World Association of Industrial and Technological Research Organizations (WAITRO) as member countries agree on the need for global collaboration for innovation. SIRIM's President and Group Chief Executive was elected as a member of the Executive Board of WAITRO and began his term as the Regional Representative of Asia and the Pacific on 1 January 2019.



#### Technology and Quality

SIRIM STS Sdn Bhd, the training and consultancy subsidiary, marked commendable achievements in the year 2019 as well, having trained 14,000 industry personnel in the areas of technology and quality.

SIRIM, IN SUPPORT OF THE INDUSTRY4WRD PROGRAMME, HAS TAKEN THE INDUSTRY 4.0 TRANSFORMATION SERIOUSLY TO ENSURE ITS SUCCESSFUL ADOPTION. THE COMPREHENSIVE PROGRAMME IS AIMED AT HELPING COMPANIES IN THE MANUFACTURING AND MANUFACTURING-RELATED SERVICE SECTORS TO UNDERSTAND THEIR CURRENT CAPABILITIES AND GAPS IN TERMS OF PEOPLE, PROCESSES AND TECHNOLOGIES, AND TO PROVIDE INTERVENTION STRATEGIES IN ADOPTING INDUSTRY 4.0.

#### SIRIM Standards Technology Sdn Bhd (SST)

PRODUCED

46,544  
CERTIFICATES

TO

3,462  
COMPANIES

AND ACQUIRED ALL THE SHARES IN SIRIM MEASUREMENT TECHNOLOGIES SDN BHD EFFECTIVE FROM 29 OCTOBER 2019.





## CHAIRMAN'S MESSAGE

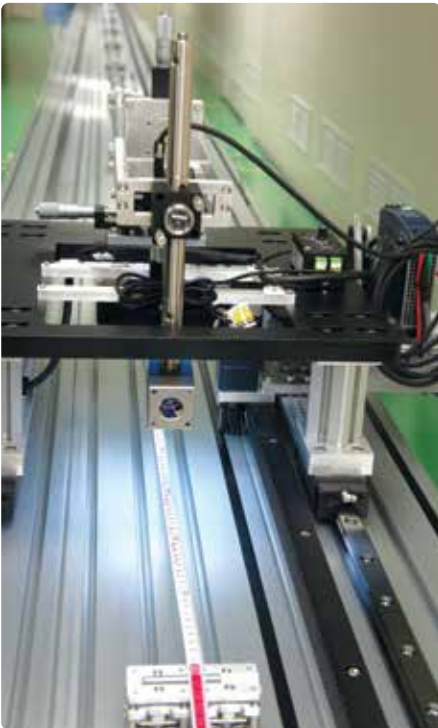
SIRIM INDUSTRIAL RESEARCH  
SUBSIDIARIES AND BUSINESS UNITS  
DEVELOPMENTAL AND NATIONAL PROJECTS  
CORPORATE  
CALENDAR OF EVENTS

### ADMIRABLE ACHIEVEMENTS BY THE SUBSIDIARIES & DEVELOPMENTAL UNITS

SIRIM's subsidiaries performed well during the year. SIRIM QAS International Sdn Bhd, the largest subsidiary offering certification, inspection and testing services, strengthened its position at the South East Asian level by setting up a regional fire protection testing hub. The new testing facility on fire safety for the external cladding systems of buildings is the first such test laboratory in the region.



SIRIM STS Sdn Bhd, the training and consultancy subsidiary, marked commendable achievements in the year 2019 as well, having trained 14,000 industry personnel in the areas of technology and quality.



The National Metrology Institute of Malaysia (NMIM), as the primary metrology and calibration body, launched a new measurement system unit to calibrate large-scale measurement tools that are capable of calibrating large-scale measuring instruments of up to 100m long. The facilities of the units meet the requirements of the National Measurement System Act 2007 (Act 675) and the Weights and Measures Act 1972 (Act 71) and are capable of minimising measurement error by 0.002% from the standard-length measurement using the existing one-metre-long physical standard.

Meanwhile, SIRIM's calibration arm, SIRIM Standards Technology Sdn Bhd (SST), produced 46,544 calibration certificates to 3,462 companies and acquired all the shares in SIRIM Measurement Technologies Sdn Bhd effective from 29 October 2019. This acquisition enabled SST to expand its calibration field to Radio Frequency (RF) and will position the company to forge strong and strategic partnerships with Electrical & Electronic (E&E) companies.

### THE WAY FORWARD

The year 2020 started with a number of crises unfolding around the world and downside risks on the economic side, globally and locally. In a year of high volatility and multiple elements of disruption including the COVID-19 global pandemic, SIRIM will continue to focus on what we do best and work hard to deliver our promises to all our customers.

We remain confident in our strong fundamentals and will continue to focus on delivering growth while managing the risks triggered by the external environment.

In alignment with the strategic thrusts of our 10Y Strategic Plan, SIRIM will continue strengthening the capabilities of SIRIM Group to further enhance business growth, adapt to the changing business environment and secure new business opportunities. The three strategic themes of Competitiveness, Connection and Culture of Excellence will continue to be the thrusts forward.

## CHAIRMAN'S MESSAGE

To strengthen SIRIM's business growth and sustainability, seven new initiatives have been identified to be launched and operationalised, amongst which are a Machinery Manufacturing Innovation Centre (MMIC) in Bukit Jalil, a Medical Devices Hub in AMREC, Kulim, new calibration and measurement capabilities in nano measurement traceability and RF, and the provision of AS9100 certification, training and calibration to the aerospace industry.

SIRIM looks forward to strengthening our relationships with the government and industries through continuous engagement and focused dialogues with ministries and state governments, industrial associations, multinational corporations (MNCs) and local companies.

### ACKNOWLEDGEMENTS

Our accomplishments to date would not have been possible without the overwhelming support and commitment from the leadership and staff of the Ministry of Finance Incorporated (MoF), MITI and several other ministries and their agencies.

On behalf of the Board of Directors, I would like to extend our sincerest appreciation to all industry players from the public as well as private sectors and the public for supporting SIRIM as the 'Best Partner for Innovation'.

In 2019, the Board welcomed four new Board members: YBhg Datuk Ir. (Dr.) Khairul Anuar bin Mohamad Tawi (appointed on 15 April 2019), YBhg Dato' Ir. Lim Yew Soon (appointed on 5 September 2019), YBrs. Puan Norlin Abdul Samad (appointed on 5 September 2019) and YBrs. Encik Hairil Yahri Yaacob (appointed on 19 December 2019). With their valuable experiences, I hope that they will be able to guide SIRIM to greater success in supporting the technological innovation and development of Malaysia's manufacturing industry.

We also wish to record our appreciation to Datuk Syed Hisham bin Syed Wazir who left the Board on 7 August 2019.

On a personal note, I would like to convey my appreciation to all our Board members for their invaluable expertise and guidance in leading the SIRIM Group forward. I would also like to take this opportunity to express my gratitude to the Board members who served SIRIM Berhad and its subsidiary companies throughout the year.

Last but not least, I would like to congratulate all SIRIM staff for delivering excellent services and their commitment in meeting customers' expectations. I am also thankful for the continuous support from our customers, both existing and new, as we strive to make SIRIM a trusted, reputable organisation.

Thank you.

ACADEMICIAN TAN SRI DR. IR. AHMAD TAJUDDIN ALI, FASc  
*Chairman, SIRIM Berhad*

## FACTS AT A GLANCE



IN ALIGNMENT WITH THE STRATEGIC THRUSTS OF OUR

# 10Y STRATEGIC PLAN

SIRIM WILL CONTINUE STRENGTHENING THE CAPABILITIES OF SIRIM GROUP TO FURTHER ENHANCE BUSINESS GROWTH, ADAPT TO THE CHANGING BUSINESS ENVIRONMENT AND SECURE NEW BUSINESS OPPORTUNITIES.

THE THREE STRATEGIC THEMES OF **COMPETITIVENESS, CONNECTION AND CULTURE OF EXCELLENCE** WILL CONTINUE TO BE THE THRUSTS FORWARD.

TO STRENGTHEN SIRIM'S BUSINESS GROWTH AND SUSTAINABILITY, SEVEN NEW INITIATIVES HAVE BEEN IDENTIFIED TO BE LAUNCHED AND OPERATIONALISED, AMONGST WHICH ARE A MACHINERY MANUFACTURING INNOVATION CENTRE (MMIC) IN BUKIT JALIL, A MEDICAL DEVICES HUB IN AMREC, KULIM, NEW CALIBRATION AND MEASUREMENT CAPABILITIES IN NANO MEASUREMENT TRACEABILITY AND RF, AND THE PROVISION OF AS9100 CERTIFICATION, TRAINING AND CALIBRATION TO THE AEROSPACE INDUSTRY.



# PRESIDENT & GROUP CHIEF EXECUTIVE'S REPORT

## PRESIDENT & GROUP CHIEF EXECUTIVE'S REPORT

# DATUK IR. DR. AHMAD FADZIL MOHAMAD HANI

We are delivering on our promises of improved financial performance and efficiency, and continued strong project delivery. The diverse knowledge found throughout the organisation has helped SIRIM to remain as the premier industrial technology and innovation leader in the country.



SIRIM INDUSTRIAL RESEARCH

SUBSIDIARIES AND  
BUSINESS UNITS

DEVELOPMENTAL AND  
NATIONAL PROJECTS

CORPORATE

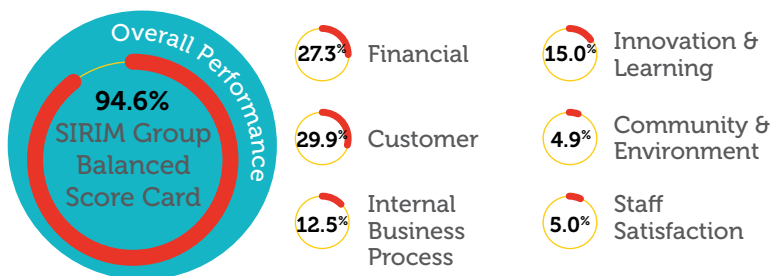
CALENDAR OF EVENTS

## PRESIDENT & GROUP CHIEF EXECUTIVE'S REPORT

SIRIM Group contributed to numerous successes in industrial growth and business, particularly for small and medium enterprises (SMEs), throughout the year 2019. At the same time, SIRIM also progressed further in our key competencies in industrial research, conformity assessment, measurement and calibrations, as well as technology and quality advisory services. As a leading government agency entrusted with such responsibilities, we strive to contribute towards national aspirations, industry growth and societal wellbeing.

I am delighted to report that SIRIM Group ended the year in a sustainable manner with our annual income of RM243.6 million and profit after tax of RM11.7 million being driven by demand in industrial research and development, conformity assessment and market access activities. In continuing our efforts from 2018, focus was given to optimising our financial efficiency through stronger controls on expenses and cost.

As of 31 December 2019, the SIRIM Group Balanced Score Card overall weighted performance stands at 94.6% against a target of 100%. The actual performance stands at 27.3% for Financial Perspective, 29.9% for Customer Perspective, 12.5% for Internal Business Process Perspective, 15% for Innovation and Learning Perspective, 4.9% for Community and Environment Perspective and five per cent for Staff Satisfaction Perspective.



The Group performed well despite a volatile and challenging background. With our strong fundamentals, we further enhanced our efforts to be the 'Best Partner for Innovation', especially to our stakeholders, industry and the community. The placement of SIRIM under the Ministry of International Trade and Industry (MITI) has enabled us to position ourselves as the catalyst for MITI to implement its roles in industrial development, international trade and investment and technology.

### KEY ACHIEVEMENTS

#### LEADING LOCAL INDUSTRY TO ADOPT I4.0 TECHNOLOGIES

The year reviewed saw SIRIM as one of the leading agencies in implementing the government's Industry 4.0 (I4.0) initiatives. SIRIM was appointed by MITI to conduct the Industry4WRD readiness audit and technology uptake that are crucial in leapfrogging the local industry to apply I4.0 technologies.

The SIRIM-Fraunhofer Programme is being recognised as one of the key government initiatives aimed at raising the productivity of SMEs through technology. The signature programme, which benefited more than 2,700 SMEs nationwide through various initiatives, has helped local industries to face the opportunities and threats posed by I4.0 disruptive technologies and move towards digital transformation.

During the year, the SIRIM-Fraunhofer Programme had 21 technology uptake projects; 13 of them have since been completed. A total of 70 audits were conducted for SMEs, consisting of 40 Technology Audits, four Post Technology Audits, 21 Post Project Assessments and five Readiness Assessments. Technology Uptake is the key component of the programme, comprising activities in technology adoption, application and facilitation.



SIRIM Group ended the year with an Annual Income of RM243.6 million and Profit After Tax of RM11.7 million.



SIRIM-Fraunhofer

The SIRIM-Fraunhofer Programme is being recognised as one of the key government initiatives aimed at raising the productivity of SMEs through technology. The signature programme, which benefited more than 2,700 SMEs nationwide through various initiatives, has helped local industries to face the opportunities and threats posed by I4.0 disruptive technologies and move towards digital transformation.





# PRESIDENT & GROUP CHIEF EXECUTIVE'S REPORT

SIRIM INDUSTRIAL RESEARCH

SUBSIDIARIES AND  
BUSINESS UNITS

DEVELOPMENTAL AND  
NATIONAL PROJECTS

CORPORATE

CALENDAR OF EVENTS

## ENHANCING SMEs' PRODUCTIVITY

Aside from specially designed programmes for SMEs such as SIRIM-Fraunhofer, SIRIM, through its Packaging and Security Design Centre (PSDC), offers product packaging design, research, ideation, prototyping, brand development and trademark search services to them. The centre assisted entrepreneurs in producing designs that meet the requirements of standard industry packaging. A total of 1,757 entrepreneurs were assisted under the Biz Transformation and Innopack programmes while 412 companies were nurtured under the incubation programme.

## SUSTAINABLE SOLUTIONS FOR INDUSTRY

In 2019, SIRIM Industrial Research (SIRIM IR) recorded several notable achievements in renewable energy and green initiatives, among other things. The team from the Industrial Centre of Innovation (ICI) in Bio-Natural Gas (BioNG) was instrumental in the establishment of the region's first full-scale sago biogas plant in Mukah, Sarawak. As the plant engineering and process consultant, SIRIM's extensive experience in the design and development of biogas plants from feedstock has enabled the plant's total capacity of 10,500m<sup>3</sup>, which could cater for a sago mill effluent feeding rate of 2,500m<sup>3</sup> per day. This marks the first time ever that a sago starch company in the region has adopted green technology on such scale, making the Sarawak sago industry a forerunner in embracing sustainable and environmentally friendly solutions. SIRIM was honoured to be part of the team that made this project a success.



THE REGION'S FIRST FULL-SCALE SAGO BIOGAS PLANT IN MUKAH, SARAWAK



I am also proud of our 'Compressed Bio-Natural Gas for Green Mobility and Power Generation in Oil Palm Industry' project team that won the prestigious ASEAN Energy Award 2019. This project harnesses energy from unutilised biogas with the aim of producing alternative fuel that complies with automotive standards and promotes greenhouse gas reduction activities. It also demonstrates the viability of BioNG production at a semi-commercial scale, as well as strengthening the commercialisation of BioNG as an alternative fuel for diesel-fired power plant and industrial users.

FACTS  
AT A GLANCE

THE 'COMPRESSED BIO-NATURAL GAS FOR GREEN MOBILITY AND POWER GENERATION IN OIL PALM INDUSTRY' PROJECT  
WON THE PRESTIGIOUS

# ASEAN ENERGY AWARD 2019

## **PRESIDENT & GROUP CHIEF EXECUTIVE'S REPORT**

SIRIM also launched the Solar Powered Street Light Using Light Weight Composite Poles and My LIPOS Battery, an innovation that combined Solar Photovoltaic, Lithium Ion Battery and Composite Pole. The product is also integrated with Internet of Things (IoT) technology. A total of 99 poles were installed at the Tasik Seksyen 7, Shah Alam; these have saved the Shah Alam City Council 13.5MWh of electricity a year.

In 2019, our ICI in Biomedical team widened its scope in bio-models with 3D printed surgical simulators to treat arteries with aneurysm, 3D printed herniated discs, 3D printed face models, 3D printed dental surgical guides and prosthetics such as the hand brace, which are now being offered to teaching hospitals.

SIRIM Tech Venture together with the Industrial Biotechnology Research Centre team successfully commercialised the Bromex Extract to Ensu Lifesciences Sdn Bhd. The Bromex bioactive was produced from pineapple biomass through a green technology extraction process.



BROMEX BIOACTIVE FROM PINEAPPLE BIOMASS WAS SUCCESSFULLY COMMERCIALISED

GranuLab Sdn Bhd was in constant engagement with orthopaedic surgeons and clinical consultants in the year 2019 to share knowledge and ideas and explore other effective applications of the company's products. This has resulted in the development of a custom-made bone construct for use by orthopaedic surgeons to treat segmental bone defects or injuries due to trauma, non-union cases or even diseased bones.



During the year, the Malaysia Design Council actively organised programmes to promote quality design; among them is the Malaysia Good Design Award (MGDA). The MGDA is a Malaysian government recognition programme for quality design produced by both local and international industries. The programme highlights the country's design and research and development in line with the mission of moving our industry from Original Equipment Manufacturer (OEM) to Original Design Manufacturer (ODM) and finally Original Brand Manufacturer (OBM). MGDA 2019 saw the submission of 326 products, which underwent the evaluation process from November to December 2019.

Another programme, Asia Design Sharing, is a synergic collaboration between design agencies from Korea, Thailand, the Philippines, Indonesia, Vietnam and Malaysia. The design summit promotes mutual understanding between the countries involved, focusing on the development of the design industry between the regions.

### **NEW SERVICES TO BOOST COMPETITIVENESS**

Our largest subsidiary, SIRIM QAS International, continues to strengthen its position at the South East Asian level by setting up a regional fire protection testing hub. This facility supports the Fire and Rescue Department of Malaysia in ensuring better fire safety of buildings and will also help manufacturers enhance the fire performance quality of their external cladding systems.

IN 2019, OUR ICI IN BIOMEDICAL TEAM WIDENED ITS SCOPE IN BIO-MODELS WITH 3D PRINTED SURGICAL SIMULATORS TO TREAT ARTERIES WITH ANEURYSM, 3D PRINTED HERNIATED DISCS, 3D PRINTED FACE MODELS, 3D PRINTED DENTAL SURGICAL GUIDES AND PROSTHETICS SUCH AS THE HAND BRACE, WHICH ARE NOW BEING OFFERED TO TEACHING HOSPITALS.



# PRESIDENT & GROUP CHIEF EXECUTIVE'S REPORT

SIRIM INDUSTRIAL RESEARCH

SUBSIDIARIES AND BUSINESS UNITS

DEVELOPMENTAL AND NATIONAL PROJECTS

CORPORATE

CALENDAR OF EVENTS

The subsidiary also launched Mobile Consignment Testing Services that provide same-day delivery of inspection, sampling, testing and issuance of security labels either at the port of entry or customer warehouse. It alleviates the hassle of transporting samples to SIRIM for testing and, more importantly, reduces time to market, which is critical for businesses.



Ten new services were introduced in 2019 by the subsidiary, consisting of four testing services, two product certification services and four management system certification services.

Kudos to our SIRIM QAS International team as 15,800 testing reports and more than 1,000 new Product Certification licenses were issued in the year reviewed. Meanwhile, almost 800 organisations were certified under various management system certification schemes.

## TRAINING & CONSULTANCY

Other subsidiaries and business units within SIRIM also achieved commendable results in their respective business segments. In the training and consultancy sector, SIRIM STS trained 13,916 industry personnel in technology and quality areas.

Management and soft skills training activities, which kick-started in April 2019, saw a total of 32 training courses comprising 17 public and 15 in-house training sessions conducted with the Digital Marketing subject being much sought-after. SIRIM STS also developed 17 Industry Standards and 14 Eco Standards in the year reviewed.

## MEASUREMENT AND CALIBRATION

In 2019, the National Metrology Institute of Malaysia-SIRIM (NMIM), a statutory business unit responsible for the coordination of the national measurement system, established six new capabilities for calibration and pattern approvals. NMIM served 526 companies and calibrated 4,068 measuring instruments. Additionally, 53 Pattern Approvals were approved for regulated measuring instruments spanning from electrical to mechanical and flow scopes.

SIRIM Standards Technology (SST), a subsidiary that provides calibration and measurement services, produced 46,544 calibration certificates to 3,462 companies in 2019. During the period, SST renewed long-term calibration contracts with PROTON Group of Companies, Tenaga Nasional Berhad and Malaysia Marine and Heavy Engineering Berhad. SST also completed the acquisition of SIRIM Measurement Technologies in October 2019, which enabled SST to expand its calibration fields to include Radio Frequency (RF).

**SIRIM QAS INTERNATIONAL**

15,800 testing reports and more than 1,000 new Product Certification licenses were issued in the year reviewed.

**FACTS AT A GLANCE**

**SIRIM STANDARDS TECHNOLOGY**

PROVIDED

**46,544**

CERTIFICATES TO

**3,462**

COMPANIES IN 2019



## **PRESIDENT & GROUP CHIEF EXECUTIVE'S REPORT**

### **DIGITAL SIRIM**

The SIRIM 10Y Strategic Plan outlines digitalisation initiatives under 'Seek better integrated technology platforms to optimise key processes', with the objective to ensure optimal processes for SIRIM's strategic and business needs, focusing on Infrastructure and System Development implementation.

We successfully migrated and completed the infrastructure to cloud-based in Q1 2019, where infrastructure and collaboration readiness for remote working is available. For system development, Digital SIRIM outlined four digital platform-driven ecosystems, which have three to five-year implementation periods. With Digital SIRIM, putting customers first is the strategy in providing better and secured business transactions and services.

### **PATH OF GROWTH AND NEW CONNECTIONS**

Together with MITI, SIRIM led an initiative - the Malaysia-Japan Collaboration & Inaugural Seminar for local SMEs. The programme enabled SMEs to gain access to Japan's smart manufacturing technology provided by its renowned technology leaders such as Konica, Hitachi, etc.



In the year under review, other strategic partnerships on smart manufacturing were also formed, namely with Huawei Malaysia and Vitrox, as part of SIRIM's long-term aspiration to become the leading agency of this frontier technology.



A MEMORANDUM OF UNDERSTANDING (MOU) WAS SIGNED BETWEEN SIRIM AND HUAWEI ON 14 JUNE 2019, WITNESSED BY THE MINISTRY OF INTERNATIONAL TRADE AND INDUSTRY (MITI) AS WELL AS THE MINISTRY OF INDUSTRY AND INFORMATION TECHNOLOGY, CHINA



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CORPORATE

CALENDAR OF EVENTS

Another significant collaboration commenced in June 2019 when the Malaysian Investment Development Authority (MIDA) and SIRIM agreed to embark upon the formation of a Manufacturing Machinery Innovation Centre (MMIC). This centre will provide a dynamic Public Private Innovation Network environment in which multi-disciplinary teams from a diverse range of backgrounds can work together to uplift the Machinery & Equipment industry. Various stakeholder engagements were jointly conducted with industry associations and players throughout the year.

## PRIDE IN OUR PEOPLE AND TALENT

I am proud of our employees, their expertise and their passion in delivering their work. Their knowledge and enthusiasm are crucial to achieving the company's mission. At SIRIM, we believe in developing employees based on strategic pillars: Enhance Employee Capabilities, Strengthen Leadership Pipeline and Cultivate High Performance Team Culture. In 2019, a total of 48 employees pursued their studies under the SIRIM scholarship with 27 of them pursuing PhDs, 15 pursuing Master degrees and six pursuing Bachelor degrees.

2019 was a year of health and wellness at SIRIM. A series of activities was conducted throughout the year for employees. These included a 100-day Healthy Eating Active Living challenge, aerobics, as well as health screenings and talks. The SIRIM team was also named champion at the MITI agencies sports event.

I AM PROUD OF OUR EMPLOYEES, THEIR EXPERTISE AND THEIR PASSION IN DELIVERING THEIR WORK. THEIR KNOWLEDGE AND ENTHUSIASM ARE CRUCIAL TO ACHIEVING THE COMPANY'S MISSION. AT SIRIM, WE BELIEVE IN DEVELOPING EMPLOYEES BASED ON STRATEGIC PILLARS: ENHANCE EMPLOYEE CAPABILITIES, STRENGTHEN LEADERSHIP PIPELINE AND CULTIVATE HIGH PERFORMANCE TEAM CULTURE. IN 2019, A TOTAL OF 48 EMPLOYEES PURSUED THEIR STUDIES UNDER THE SIRIM SCHOLARSHIP WITH 27 OF THEM PURSUING PHDS, 15 PURSUING MASTER DEGREES AND SIX PURSUING BACHELOR DEGREES.



The year reviewed also saw SIRIM Group contributing to the society through its Corporate Social Responsibility activities. A total of 130 SIRIM staff members volunteered to participate in SIRIM's first-ever programme to clean the beach of Pasir Panjang, Segari, Perak, a turtle conservatory area. The volunteers covered a three-kilometre area, collecting trash and sea debris, and planting trees along the beach to encourage turtles to nest. Other community engagement activities include visiting and entertaining old folks at Rumah Sri Kenangan, Cheras; a Back to School Programme for the Orang Asli community in Sepang, Selangor; consumer safety talks at 16 schools in collaboration with the Federation of Malaysian Consumers Associations; and an educational visit to Pusat Sains Negara for 70 children from Pusat Jagaan Cahaya Kasih Bestari by SIRIM QAS International.

## APPRECIATION & ACKNOWLEDGEMENT

The achievements in 2019 would not have been realised without the hard work and perseverance of the 2,081 SIRIM employees. The management team and staff showed utmost commitment and drive throughout the year that contributed to the Group's success for the year.

I would also like to thank all our stakeholders, customers and partners, both in the public and the private sectors, for placing their trust in SIRIM.

My utmost gratitude also goes out to the Board of Directors and respective subsidiaries' Board of Directors for all their guidance and wisdom.

Thank you.

DATUK IR. DR. AHMAD FADZIL MOHAMAD HANI  
President & Group Chief Executive, SIRIM Berhad

PIONEERING  
INNOVATIONS  
ADVANCING  
OUR INDUSTRIES

# 01 INDUSTRIAL RESEARCH











Report by:  
**Ir. Dr. Mohamad Jamil Sulaiman**  
Vice President, SIRIM Industrial Research



SIRIM Industrial Research (IR) is the leading applied research centre and technological innovation hub in Malaysia. We successfully became the 'Best Partner for Innovation' in the integration of research, technology and innovation for the utmost benefit of national development, industries and societies.



SIRIM Industrial Research (IR) is the leading applied research centre and technological innovation hub in Malaysia. We successfully became the 'Best Partner for Innovation' in the integration of research, technology and innovation for the utmost benefit of national development, industries and societies.

SIRIM IR delivered technology solutions to many stakeholders in research, development, technology transfer and services that accelerated the government agenda in promoting industrial clusters including smart manufacturing, medical technology, energy and environment, and machinery and equipment offered by the Technology and Innovation Centres. Under the Quality Management System (QMS) ISO 9001:2015 and MS IEC 17025 certifications, we continue to offer the best services in terms of commercial and non-commercial projects.

SIRIM IR has been achieving outstanding market-driven research and technology outputs and won various innovation awards such as the prestigious ASEAN Energy Award for the 'Compressed Bio-Natural Gas for Green Mobility and Power Generation in Oil Palm Industry'.



In 2019, SIRIM IR strove towards excellence amidst global changes and fast-moving technological trends. We reinforced our efforts in increasing industry competitiveness under the Industry4WRD policy, integrating technology and innovation via a mechanisation and digitalisation area-based project, which aimed to promote and increase the productivity and efficiency of small and medium enterprises (SMEs) by providing the highest value technology and process solutions for their products and services. Subsequently, the SIRIM-Fraunhofer Programme helped local industries to face the opportunities and threats posed by Industry 4.0 disruptive technologies to move towards digital transformation.

With the setting up of a Medical Device Innovation Centre (MDIC), Machinery Manufacturing Innovation Centre (MMIC) and Smart Manufacturing Centre of Excellence, SIRIM IR will continue our concerted efforts with our strategic partners and collaborators to enable an impactful outcome in transferring R&T results and innovations to industries and societies, leading to an improvement of productivity, efficiency and enhancement of the quality of life of people. Through numerous promotional channels, our team managed to connect business partners, collaborators and clients to leverage on SIRIM IR's technologies and innovations.

Moving forward, for 2020 SIRIM IR will continue to play a critical role in the development of key industrial sectors and help drive the Industry4WRD towards a more sustainable future.



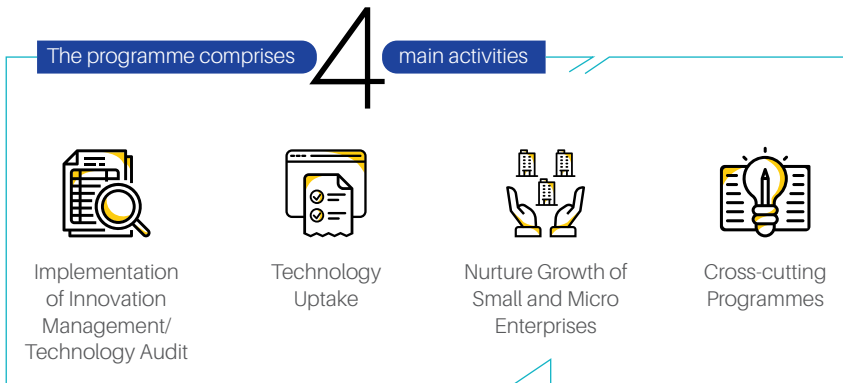
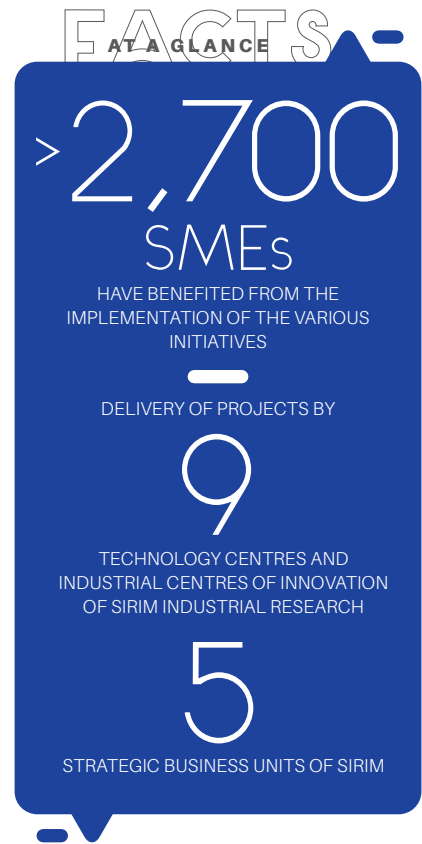
Report by:  
**Rosmina Mustafa**  
General Manager, SIRIM-Fraunhofer Secretariat

# SIRIM - FRAUNHOFER PROGRAMME

Small and medium enterprises (SMEs) have been recognised by the government as one of the main contributing factors to the country's gross domestic product (GDP) growth and, as such, any improvement in the SMEs' fiscal and productivity index will greatly enhance the country's economic growth. Technology is a significant catalyst in this ecosystem, and the SIRIM-Fraunhofer Programme is being recognised as one of the key government initiatives aimed at raising the productivity of SMEs through technology.

High-impact technology penetration and upgrading programmes are being coordinated by the SIRIM-Fraunhofer Section (SFS) of SIRIM Industrial Research. The technology programme created leverages on the experience of the Fraunhofer Institute of Germany, which is instrumental in spearheading the innovation and technology developments of the German industries.

Subsequently, SIRIM, with the collaboration of Fraunhofer Institute of Germany, has put in place the SIRIM Industrial Innovation Model comprising two significant features, viz. the enhancement of innovation services and the strengthening of networks with strategic partners.



The interest and response shown by the SMEs have been tremendous. To date, more than 2,700 SMEs have benefited from the implementation of the various initiatives. Delivery of projects was made possible by the nine Technology Centres (TCs) and Industrial Centres of Innovation (ICIs) of SIRIM Industrial Research as well as five Strategic Business Units (SBUs) of SIRIM, which comprise the National Metrology Institute of Malaysia (NMIM), SIRIM Tech Venture (STV), SIRIM STS (SSTS), Malaysia Design Council (MRM) and Packaging & Security Design Centre (PSDC).

Under the 15 initiatives, Technology Uptake remains the key component of the programme, comprising activities in technology adoption, application and facilitation. Technology intervention projects undertaken for the SMEs are in areas of Mechanisation and Automation, Technology Enhancement, Localisation of Technology, Packaging and Labelling, Training and Consultancy, Standards Compliance as well as Technical Advisory.

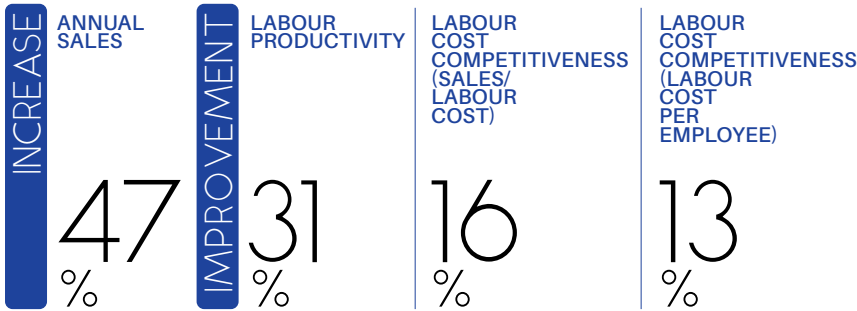
The expected outcome from the technology intervention projects would be:



**SMALL AND MEDIUM ENTERPRISES (SMEs) HAVE BEEN RECOGNISED BY THE GOVERNMENT AS ONE OF THE MAIN CONTRIBUTING FACTORS TO THE COUNTRY'S GROSS DOMESTIC PRODUCT (GDP) GROWTH AND, AS SUCH, ANY IMPROVEMENT IN THE SMEs' FISCAL AND PRODUCTIVITY INDEX WILL GREATLY ENHANCE THE COUNTRY'S ECONOMIC GROWTH. TECHNOLOGY IS A SIGNIFICANT CATALYST IN THIS ECOSYSTEM, AND THE SIRIM-FRAUNHOFER PROGRAMME IS BEING RECOGNISED AS ONE OF THE KEY GOVERNMENT INITIATIVES AIMED AT RAISING THE PRODUCTIVITY OF SMEs THROUGH TECHNOLOGY.**

## SIRIM-FRAUNHOFER PROGRAMME

In an independent study commissioned by SFS and undertaken by Putra Business School of Universiti Putra Malaysia (UPM), the following Financial Impact Analyses were validated by recipient companies:



A drop in the Capital Cost Productivity is expected due to the higher total fixed asset used. The return by these assets can only be realised in the next fiscal year, at the earliest. Nevertheless, the significant increase of 47% in Annual Sales offsets this teething operationalisation problem. These improvements are a testament to the positive impact that the collaboration between SIRIM and Fraunhofer Institute, Germany, has on the local SMEs.

Other positive impacts attributed by non-financial factors, such as those affecting work culture, are also significant in their contribution to the operational excellence of companies. The following summarises these findings:



SIRIM-Fraunhofer Programme will continue to play a vital role in enhancing the productivity of SMEs through the 15 initiatives for the remainder of the 11th Malaysia Plan, which will end in 2020. The establishment of six ICIs, comprising ICI Nanotechnology, ICI Bio-Natural Gas, ICI Energy Management, ICI Sensor, ICI Biomedical and ICI Smart Manufacturing, will further improve the delivery of this mandated role.

Plans are already underway to further enhance and increase the scope of projects to be included in SFS 2.0; these will include Frugal Innovation, Digitalisation Adaptation of Industry 4.0, Market-driven Research and Development, Product Value Enhancement through Industrial and Product Design, and Standards Compliance and Certification. These new initiatives will be the next pillars to be implemented by SFS under the proposed 12th Malaysia Plan.

➡ SIRIM-FRAUNHOFER PROGRAMME WILL CONTINUE TO PLAY A VITAL ROLE IN ENHANCING THE PRODUCTIVITY OF SMEs THROUGH THE 15 INITIATIVES FOR THE REMAINDER OF THE 11TH MALAYSIA PLAN, WHICH WILL END IN 2020. THE ESTABLISHMENT OF SIX ICIs, COMPRISING ICI NANOTECHNOLOGY, ICI BIO-NATURAL GAS, ICI ENERGY MANAGEMENT, ICI SENSOR, ICI BIOMEDICAL AND ICI SMART MANUFACTURING, WILL FURTHER IMPROVE THE DELIVERY OF THIS MANDATED ROLE. ➡

### FACTS AT A GLANCE

THE SCOPE OF PROJECTS TO BE INCLUDED IN

SFS 2.0

FRUGAL INNOVATION, DIGITALISATION ADAPTATION OF INDUSTRY 4.0, MARKET-DRIVEN RESEARCH AND DEVELOPMENT, PRODUCT VALUE ENHANCEMENT THROUGH INDUSTRIAL AND PRODUCT DESIGN, AND STANDARDS COMPLIANCE AND CERTIFICATION WHICH WILL BE THE

### NEXT PILLARS

TO BE IMPLEMENTED BY SFS UNDER THE PROPOSED

12<sup>th</sup> MALAYSIA PLAN



Report by:  
**Isnazunita Ismail**  
General Manager, Environmental Technology Research Centre

# ENVIRONMENTAL TECHNOLOGY RESEARCH CENTRE

## ACHIEVEMENTS IN 2019

### ■ FAD APPLICATION SURVEY

A survey was carried out among the fishing community of the Northern Sabah Coastal Area on the potential efficacy of the Fish Aggregating Device (FAD) in addressing issues of the oil and gas platform encroachment and as a countermeasure to uplift their socio-economy.

The community survey encompassed a quantitative study through an exploratory research design where questionnaires were specially developed to collect data from 230 respondents from Pulau Gaya, Kimanis and Pulau Mantanani. The survey generally aimed to measure the awareness level among fishermen on FAD and its alternative and on safe fishing grounds far from restricted areas such as oil and gas platforms. According to the survey analysis, more than 80% of the fishermen agree that the FAD is important to increase catch such as tuna fish, which would aggregate around the floating FAD, and strongly recommend that quality and durable FADs be deployed as an alternative location for fishermen to ensure long-term economic sustainability and food security.



ENUMERATORS FROM SIRIM BERHAD CONDUCTING THE SURVEY WITH RESPONDENTS FROM PULAU GAYA

### ■ GIZ'S REGIONAL WORKSHOP FOR INDONESIAN AND FILIPINO STAKEHOLDERS ON GPP, ECO-LABELLING

A crucial element of an effective Green Public Procurement (GPP) implementation is the pool of products and services that are verified as a green product; this gives the procurement officer security and confidence in selecting products or services that adhere to the GPP guidelines. SIRIM Berhad is the technical arm specialising in verifying the status of green products in Malaysia via the development of Product Criteria Document (PCD) and the carbon footprint's Product Category Rules (PCR) for eco-labelling, product testing for compliance, and eco-labelling auditing, verification and certification. As such, the Environment Technology Research Centre (ETRC), with support from the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), was appointed to conduct a one-day programme on 19 June 2019 to share our experiences with 34 stakeholders from Indonesia and the Philippines on the technical requirements and processes to support the GPP initiative.

### ■ HIGH-LEVEL POLICY EXCHANGE AND EXCURSION VISIT TO BERLIN: EXPORT INITIATIVE FOR ENVIRONMENTAL TECHNOLOGY PROGRAMME

The excursion to Berlin was an exchange platform for key public and private decision-makers of South East Asian countries, which were represented by Malaysia, Thailand and Indonesia. The programme introduced policies such as the EU Plastics Strategy 2030 and German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) 5-point plan for less plastic and more recycling. There are various policy instruments in place for enhancing packaging waste reduction and eco-design via the GPP and eco-labelling as championed by German eco-labelling scheme owner Blue Angel. Delegates were also exposed to state-of-the-art biomaterial companies, packaging associations and research institutions such as Oeko Institute, as well as exploring alternative business models such as 'The packaging-free supermarket', introduced by the Eberswalde University for Sustainable Development. Malaysia's delegates were led by En. Ahmad Kamal Wasis, Director of Environment, Natural Resources Economic Section of the Ministry of Economic Affairs.




## ENVIRONMENTAL TECHNOLOGY RESEARCH CENTRE



### ■ 5TH WMAM ANNUAL CONFERENCE

ETRC has always been supportive of knowledge dissemination activities organised by other parties as part of our corporate social responsibility in enhancing the knowledge of the general public with regards to sustainability and the environment. The theme for the 5th Waste Management Association of Malaysia (WMAM) Annual Conference was Plastics: The Good, The Bad and The Ugly. Madam Isnazunita Ismail was invited to present her paper on Environmental Footprint of Plastic Packaging, which emphasised the need for plastic manufacturers to consider the natural capital cost valuation. The cost valuation refers to physical impacts being translated into a monetary value; this expresses the potential value a company has to internalise should they be accountable to the damage or environmental impacts from the plastic product and its packaging.

### AWARDS/RECOGNITION:



<div style="background-color: #0056b3; color: white; padding: 5px; margin-bottom: 5px;">30<sup>th</sup> ITEX 2019</div> <p><b>GOLD MEDAL</b> for Water Scarcity Index Footprint Apps</p>	<div style="background-color: #0056b3; color: white; padding: 5px; margin-bottom: 5px;">Malaysian Innovative Product Award 2019</div> <p>for Water Scarcity Index Footprint Apps</p>	<div style="background-color: #0056b3; color: white; padding: 5px; margin-bottom: 5px;">30<sup>th</sup> ITEX 2019</div> <p><b>GOLD MEDAL</b> for Eco Substrate for Coral Restoration &amp; Rehabilitation of Marine Eco System</p>	<div style="background-color: #0056b3; color: white; padding: 5px; margin-bottom: 5px;">MTE 2019</div> <p><b>BRONZE MEDAL</b> for PIPKAR (Environmental Awareness Educational Board Game)</p>
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### PRODUCTS/SERVICES COMMERCIALISED:

ETRC works closely with industries to encourage and enable more efficient material consumption and recycling, ensuring quality of life, safety and sustainability of our environment. Most of our industrial waste is disposed of at prescribed premises, even though the waste can be recycled. SIRIM, through the environmental evaluation of a gypsum project, has overcome the barriers of gypsum waste recycling by diverting gypsum waste from landfills to be recycled into soil conditioner.

➡ ETRC WORKS CLOSELY WITH INDUSTRIES TO ENCOURAGE AND ENABLE MORE EFFICIENT MATERIAL CONSUMPTION AND RECYCLING, ENSURING QUALITY OF LIFE, SAFETY AND SUSTAINABILITY OF OUR ENVIRONMENT. MOST OF OUR INDUSTRIAL WASTE IS DISPOSED OF AT PRESCRIBED PREMISES, EVEN THOUGH THE WASTE CAN BE RECYCLED. SIRIM, THROUGH THE ENVIRONMENTAL EVALUATION OF A GYPSUM PROJECT, HAS OVERCOME THE BARRIERS OF GYPSUM WASTE RECYCLING BY DIVERTING GYPSUM WASTE FROM LANDFILLS TO BE RECYCLED INTO SOIL CONDITIONER. ➡

# ENVIRONMENTAL TECHNOLOGY RESEARCH CENTRE



A number of assessments were undertaken by ETRC to determine the properties and impacts of the application of gypsum waste. The assessments include:

- Characterisation of gypsum waste produced from the wastewater treatment for potential hazardous and toxicity properties
- A comparative assessment of the gypsum waste as soil conditioner to commercial compost
- Impacts of the application of gypsum waste on plants based on crop performance and potential leaching to groundwater



UNDER THE ROLLING PLAN 4 (2020), ETRC HAS BEEN TASKED TO IMPLEMENT THE DEVELOPMENTAL PROJECT ON 'TECHNOLOGY-ENABLED SUPPORT FOR THE DEVELOPMENT OF ECO-INDUSTRIAL PARKS - INTERVENTION & DIGITALISATION'. THE PROJECT AIMS TO DEMONSTRATE THE VIABILITY AND BENEFITS OF ECO-INDUSTRIAL PARK (EIP) APPROACHES IN SCALING UP RESOURCE PRODUCTIVITY AND IMPROVING THE ECONOMIC, ENVIRONMENTAL AND SOCIAL PERFORMANCES OF BUSINESSES, AND THEREBY CONTRIBUTING TO INCLUSIVE AND SUSTAINABLE INDUSTRIAL DEVELOPMENT.

## PLANNING FOR 2020 INITIATIVES:

Since last year, ETRC has been participating actively in developing the strategic paper for the 12th Malaysia Plan under the Chapter 'Clean and Resilient Development for Environmental Sustainability' as well as setting the direction of the New Industrial Masterplan, in particular in transforming the existing industrial estates. Under the Rolling Plan 4 (2020), ETRC has been tasked to implement the developmental project on 'Technology-Enabled Support for the Development of Eco-Industrial Parks - Intervention & Digitalisation'. The project aims to demonstrate the viability and benefits of Eco-Industrial Park (EIP) approaches in scaling up resource productivity and improving the economic, environmental and social performances of businesses, and thereby contributing to inclusive and sustainable industrial development. The project will pursue two objectives, thus responding to the main issues pre-identified in existing industrial estates:

- 1) to facilitate the transformation of existing industrial parks to EIPs based on international good practices; and
- 2) to demonstrate the 'out of experience' guidelines for subsequent EIP initiatives to take place as part of the programme expansion in the future.

# INDUSTRIAL BIOTECHNOLOGY RESEARCH CENTRE



Report by:  
**Dr. Ahmad Hazri Ab Rashid**

General Manager, Industrial Biotechnology Research Centre

The Industrial Biotechnology Research Centre (IBRC) was very active in conducting commercial biotechnology projects in collaboration with local organisations and small and medium enterprises (SMEs) for the production of bio-based products from renewable resources that hold great potential value for industries in various sectors including chemicals, and wellness and healthcare products. Two technical papers were published and one patent was filed in 2019. Eleven industry standards on herbal specifications were published in 2019 as well. IBRC was also involved in research and development and commercialisation activities for cosmeceutical products. Two cosmetics products developed by the researchers were successfully commercialised to local cosmetic entrepreneurs.

In 2019, the centre successfully maintained its ISO 9001 certification after being audited by SAI Global. To continually stay competitive in the area of technical testing services, the centre increased its scope of testing for ISO 17025 accreditation from Standards Malaysia for toxicology, microbiology and material characterisation testing. As the benchmark for the highest standard of laboratory accreditation, the IBRC successfully obtained the Organisation for Economic Co-operation and Development (OECD) Good Laboratory Practice (GLP) compliance certification from the National Pharmaceutical Regulatory Agency and Standards Malaysia in the area of toxicology for the following products: pharmaceuticals, medical devices, cosmetics, industrial chemicals and pesticides.

The IBRC is made up of two sections



## 1 COSMETICS AND NATURAL PRODUCTS SECTION (CNP)



The CNP is a one-stop centre for research and development of natural products, which covers developing new active ingredients, development of skincare and cosmetics formulations, and production under Good Manufacturing Practice (GMP) Regulations for market access. The value chain of natural product development covers raw material sourcing and processing, extraction and standardisation, bioactivity screening and safety evaluation for upstream activities and product development, stability evaluation, claim substantiation and product manufacturing for downstream activities.



## 2 BIO-PROCESS SECTION (BP)



The BP focuses on the industrialisation of bio-products and biological processes through the utilisation of microbial, fermentation and enzyme technologies. Some of the bio-products that have gone through our industrialisation process include animal vaccines, microbial enzymes such as phytase, microbial metabolites such as citric acid and natural vinegar.

### FACTS AT A GLANCE

**ISO 9001**  
CERTIFICATION BY SAI GLOBAL

**ISO 17025**  
INCREASED SCOPE OF TESTING. ACCREDITATION FROM STANDARDS MALAYSIA FOR TOXICOLOGY, MICROBIOLOGY AND MATERIAL CHARACTERISATION TESTING

OUR TESTS ARE ISO/IEC 17025 COMPLIANT, WHICH ASSURES THAT OUR FACILITY IS FIT FOR INTERNATIONALLY RECOGNISED TESTING PROTOCOLS AND STAFF COMPETENCY IS THOROUGHLY ASSESSED PERIODICALLY. OUR TOXICOLOGY LABORATORY IS COMPLIANT WITH THE PRINCIPLES OF GLP, WHICH IS A LABORATORY COMPLIANCE PROGRAMME DEVELOPED BY OECD COUNTRIES, AND CONSIDERED TO BE THE HIGHEST LABORATORY COMPLIANCE PROGRAMME.



# INDUSTRIAL BIOTECHNOLOGY RESEARCH CENTRE



SIRIM INDUSTRIAL RESEARCH

SUBSIDIARIES AND  
BUSINESS UNITS

DEVELOPMENTAL AND  
NATIONAL PROJECTS

CORPORATE

CALENDAR OF EVENTS

The IBRC offers solutions for product regulatory needs. Our experienced analysts deliver accredited testing according to international standards. We cater to clients who market a wide range of products, including traditional medicine, medical devices, cosmetics, fabrics, food, beverages, chemical disinfectants and bio-fertilisers. Our tests are ISO/IEC 17025 compliant, which assures that our facility is fit for internationally recognised testing protocols and staff competency is thoroughly assessed periodically. Our toxicology laboratory is compliant with the Principles of GLP, which is a laboratory compliance programme developed by OECD countries, and considered to be the highest laboratory compliance programme. The tests are shown below:



## MICROBIOLOGY AND MOLECULAR BIOLOGY

Pharmaceuticals, medical devices, food, fertilisers, chemicals such as disinfectants



## TOXICOLOGY

Pharmaceuticals, medical devices, cosmetics, chemicals, food



## BIOASSAY

Skincare and other topical products



## MATERIAL CHARACTERISATION AND CHEMICAL ANALYSIS

Pharmaceuticals, cosmetic products and traditional medicine



## FACTS AT A GLANCE



# OECD GLP

COMPLIANCE IN TOXICOLOGY OF  
PHARMACEUTICAL, MEDICAL DEVICE,  
COSMETIC, INDUSTRIAL CHEMICAL  
AND PESTICIDE PRODUCTS.

# MACHINERY TECHNOLOGY CENTRE



Report by:  
**Md Nizam Abd Wahab**  
General Manager, Machinery Technology Centre

Machinery Technology Centre (MTC) is supported by 46 technical and 14 supporting staff and its two main core business sections, i.e. Foundry Technology Section (FTS) and Machine Design Section (MDS).

During the course of its operations in 2019, MTC was actively involved in the implementation of the SIRIM-Fraunhofer Programme, including:



**MACHINERY TECHNOLOGY CENTRE (MTC) CONTINUED ITS ISO 9001:2015 QUALITY MANAGEMENT SYSTEM (QMS) CERTIFICATION, WHICH INVOLVED THE CONSOLIDATION OF COMMON PROCEDURES FOR THE 'PROVISION OF ENGINEERING SERVICES IN THE AREA OF MACHINERY TECHNOLOGY' FOR ITS FOUNDRY TECHNOLOGY SECTION (FTS) AND MACHINE DESIGN SECTION (MDS). THE IMPROVED QMS WAS AUDITED AND VERIFIED BY SAI GLOBAL INTERNATIONAL ON 2 JULY 2019 AND MTC WAS SUBSEQUENTLY AWARDED THE COMPLIANCE CERTIFICATE ON 16 JULY 2019.**

FTS is the main project implementer for 'Program Pembangunan Kapasiti Vendor (PPKV) Bumiputera Fasa 2' funded by the Ministry of Entrepreneur Development and Cooperatives (formerly known as the Ministry of Entrepreneur Development). There were two sub-programmes under the project, namely 'Towards ISO 9001:2015 Certification' and 'Innovative and Creative Circle (ICC)', which involved the participation of 15 vendor companies from 4 December 2017 to 3 December 2019. The closing ceremony, which was held on 19 September 2019 at SIRIM Bukit Jalil, marked the completion of the project and witnessed the attendance of representatives from the Ministry of Entrepreneur Development, anchor companies and participating vendor companies. In September 2019, SIRIM was again awarded the PPKV Phase 3 project, but this time with an increase of 50 participating vendor companies for an implementation period of one year (until September 2020). FTS has been mandated as the lead implementer of this project together with MDS as the sub-implementer. The kick-off meeting for the PPKV Phase 3 project was held on 15 October 2019 at SIRIM Shah Alam.

**FACTS AT A GLANCE**

**SEPT 2019**

AWARDED THE PPKV PHASE 3 PROJECT, BUT THIS TIME WITH AN INCREASE OF

**50**

PARTICIPATING VENDOR COMPANIES FOR AN IMPLEMENTATION PERIOD OF ONE YEAR (UNTIL SEPTEMBER 2020)

MTC's core activities in providing engineering services range from machining and fabrication to metal casting works for both external and internal clients utilising the facilities in SIRIM Rasa and tooling workshop. Among the services rendered to internal clients are the development of cast iron standard weight for the National Metrology Institute of Malaysia (NMIM), machining of test specimens for SQAS (Plastics and Composites Material Section) and development of syringe barrel cutting mechanism for GranuLab (M) Sdn Bhd. Meanwhile, one of the examples of services provided to external clients is the pilot production of aluminium sacrificial anode for a new start-up manufacturer.



CAST IRON STANDARD WEIGHT FOR NMIM



TEST SPECIMEN FOR SQAS (PLASTICS AND COMPOSITES MATERIAL SECTION)



# MACHINERY TECHNOLOGY CENTRE

SIRIM INDUSTRIAL RESEARCH

SUBSIDIARIES AND BUSINESS UNITS

DEVELOPMENTAL AND NATIONAL PROJECTS

CORPORATE

CALENDAR OF EVENTS



SYRINGE BARREL CUTTING MECHANISM FOR GRANULAB (M) SDN BHD

Beginning from early 2019, MTC embarked on providing engineering services to rail industries through various component fabrication jobs. Later, a collaboration project with Protech Master Coach Sdn Bhd (PMC) was initiated for monorail assembly works which include the scope of fabrication and machining parts and quality control on the assembly process.

MTC also continued to receive requests to provide customised training programmes related to topics on foundry and tooling from its past clients. In March 2019, a training programme was conducted for Majlis Amanah Rakyat (MARA) in foundry technology, which was attended by trainers from Institut Kemahiran MARA. Meanwhile, several tooling technology training programmes were conducted for students at Kolej Vokasional Sungai Buloh and Perak Entrepreneur and Skills Development Centre (PESDC).

For assessment and verification activities, MTC has five qualified Readiness Assessment (RA) assessors, who were actively involved in RA activities throughout the year. A team of four qualified verifiers conducted 94 verification jobs for the Malaysian Investment Development Authority's (MIDA) Automation Capital Allowance (ACA) programme and 52 verification jobs as part of the plastic industry Approval Permit (AP) renewal process for Jabatan Pengurusan Sisa Pejal Negara (JPSPN).

MTC continued its ISO 9001:2015 Quality Management System (QMS) certification, which involved the consolidation of common procedures for the 'Provision of Engineering Services in The Area of Machinery Technology' for its FTS and MDS. The improved QMS was audited and verified by SAI Global International on 2 July 2019 and MTC was subsequently awarded the Compliance Certificate on 16 July 2019.

Moving forward, in 2020 MTC will take the initiative to support the local rail industries through various programmes on the localisation of rail components. Several engagements with the stakeholders have been conducted as the preliminary studies on the feasibility of the programme for the industries.

FACTS AT A GLANCE



moving forward  
**2020**

MTC WILL TAKE THE INITIATIVE TO SUPPORT THE LOCAL RAIL INDUSTRIES THROUGH VARIOUS PROGRAMMES ON THE LOCALISATION OF RAIL COMPONENTS



Provision of Engineering Services in the area of Machinery Technology.

# IC INNOVATION - SENSOR



Report by:  
**Hamidah Sidek**  
Director, IC Innovation in Sensor

Industrial Centre of Innovation in Sensor (ICI Sensor) was established in the year 2017 to focus on developing products and services through sensor technology in the areas of biosensor, photonics and integrated sensing systems.

In 2019, we obtained copyright for the Kelulut Integrated Information System (KIS) (LY2019000554). We also undertook numerous projects throughout the year. These included a Modular Microfluidic System for Rapid Serotype-Specific Detection of Dengue Virus Infection, WAITRO-Capacity Building Programme on Internet of Things (IoT) Technology Application for Smart Farming, Improvement of LED Lighting Manufacturing Process Flow to Improve Product Quality and Reliability, Design & Optimisation of Low Intensity & High Intensity Obstruction Lighting Product, Product Cert Encryption and Monitoring System, Improvement in CNC Manufacturing Process Using Grid Plate Clamping System, Development of Mosquito Home AQ Automated Process and Tracking, Development of Auto Linear Dispenser System with IoT Connectivity, Development and Analysis of Extracted Oyster Powder and Oil for Capsule Production, Development of Online Prover Certification System, Smart Asset Tracking System and Productivity Improvement of Air Tight Plastic Container through Production Enhancement.

Several articles were published in various publications during the year. These included:

- Biocompatible CdSe/ZnS quantum dot micelles for long-term cell imaging without alteration to the native structure of the blood plasma protein human serum albumin. **Jan 2017. RSC Advanced. The Royal Society of Chemistry. 2392-2402.**
- Preparation, Characterization and Photostability Study of Biocomposites Comprising Quantum Dots for Bioimaging Application. **Jul 2017. Materials Science Forum. Trans Tech Publications. PG 3-6.**
- Effective Synthesis of Silicon Carbide Nanotubes by Microwave Heating of Blended Silicon Dioxide and Multi-Walled Carbon Nanotube. **Aug 2017. Materials Research. Materials Research Ibero-american Journal of Materials. DOI: <http://dx.doi.org/10.1590/1980-5373-MR-2017-0277>.**
- Effect of Heating Duration on the Synthesis of Silicon Carbide Nanotubes by Microwave Heating of MWCNTs and Silica. **Feb 2017. Sains Malaysiana. Penerbit UKM, Universiti Kebangsaan Malaysia. PG 1069-1074.**
- The study of photochromic performance and photofatigue behavior of spirooxazine. **Dec 2017. AIP Conference Proceedings. American Institute of Physics. 1901, 130014 (2017); <https://doi.org/10.1063/1.5010574>.**
- Headship rate projections for Housing Demand in Johor, Malaysia. **Journal of Physics: Conf. Series 1019 (2018) 012005 doi: 10.1088/1742-6596/1019/1/012005.**
- Impact of Bromocresol Purple in Organic and Inorganic Matrix on Optical Properties. International Journal of Scientific Research & Engineering Trends. **Vol. 4, Issue 6, Nov-Dec-2018, ISSN (online): 2395-566X.**
- Determination of Structural, Physical, and Thermal Properties of Biocomposite Thin Film from Waste Banana Peel. **JURNAL TEKNOLOGI UTM, Malaysia. 81:1(2019)91-100.**
- Underwater Fish Attraction LED Lamp (UFAL) for Improving Aquaculture Productivity. **Advanced Research in Applied Mechanics. AKADEMI BARU PUBLISHING (M) SDN BHD. Malaysia. Volume 53, No. 1 (PG 8-14).**

## FACTS AT A GLANCE

ESTABLISHED IN YEAR

# 2017

TO FOCUS ON DEVELOPING PRODUCTS  
AND SERVICES THROUGH SENSOR  
TECHNOLOGY IN THE AREAS OF

BIOSENSOR,  
PHOTONICS  
&  
INTEGRATED  
SENSING  
SYSTEMS







## IC INNOVATION - SENSOR

ICI Sensor bagged a few awards at the International Invention, Innovation & Technology Exhibition (ITEX) 2019. They included a Silver Award and Malaysia Innovative Product Award for the UFAL for Aquaculture and a Silver Award for Lab on Chip for Molecular Diagnostic.

Our new collaborations were with One Team Networks Sdn Bhd, NSW Automation Sdn. Bhd, UIS Technologies Sdn. Bhd, Avialite Sdn Bhd, LCM Utara Sdn Bhd and MS Lighting Sdn Bhd.

Several new growth areas were identified and focused on during the year. These encompassed intelligent sensor network supporting smart industry, infrastructure and track & trace solution; specialised solid state lighting and precision farming; smart sensor system based on optoelectronic sensing for healthcare applications; and smart packaging and labelling for product safety and security.



### FACTS AT A GLANCE



**ITEX  
2019**

**SILVER AWARD & MALAYSIA INNOVATIVE  
PRODUCT AWARD**  
FOR UFAL FOR AQUACULTURE

**SILVER AWARD FOR LAB ON CHIP**  
FOR MOLECULAR DIAGNOSTIC



New growth areas were identified and focused on, encompassing intelligent sensor network supporting smart industry, infrastructure and track & trace solution; specialised solid state lighting and precision farming; smart sensor system based on optoelectronic sensing for healthcare applications; and smart packaging and labelling for product safety and security.

# IC INNOVATION - BIOMEDICAL



Report by:  
**Dr. Kartini Noorsal**  
Director, IC Innovation in Biomedical

Industrial Centre of Innovation in Biomedical (ICI Biomedical) aims to strengthen the medical device industry in Malaysia through its various services, which include industrial research and development, testing and technology services. In 2019, the focus was on developing new testing methods for ISO/IEC 17025 accreditation and offering new bio-modelling services. There are about 14 new testing methods which fall under the scopes of physical, chemical, mechanical, microbiology and thermal, and these tests are expected to cater to about 30% of the medical device companies located in the northern region.

In addition to the well-known craniofacial implants produced through Additive Manufacturing technology, the group is now looking at widening its scope. Bio-models such as 3D printed surgical simulators to treat arteries with aneurysm, 3D printed herniated discs, 3D printed face models, 3D printed dental surgical guides and prosthetics like the hand brace are now being offered to teaching hospitals.

## FACTS AT A GLANCE

IN 2019, THE FOCUS WAS ON DEVELOPING NEW TESTING METHODS FOR

ISO/IEC

17025

ACCREDITATION AND OFFERING NEW BIO-MODELLING SERVICES. THERE ARE ABOUT

14  
NEW TESTING  
METHODS

WHICH FALL UNDER THE SCOPES OF PHYSICAL, CHEMICAL, MECHANICAL, MICROBIOLOGY AND THERMAL



3D-PRINTED FACE MODEL (CASING-ABS); ANEURYSM BRAIN MODEL USING WAX AND SILICON RUBBER MOULD (SRM)



3D-PRINTED MODEL OF HERNIATED DISCS



HAND BRACE



3D PRINTED DENTAL SURGICAL GUIDE



## IC INNOVATION - BIOMEDICAL

The new testing services offered in 2019 include surface profile analysis using a confocal microscope, tension, flexure and compression using a universal testing machine, and viscosity measurement using the viscometry technique.



### NEW SERVICE/PRODUCT

Surface topology by confocal microscopy



### DESCRIPTION OF NEW SERVICE/PRODUCT

Determination of surface profile using a confocal laser scanning microscopy technique

IN ADDITION TO THE WELL-KNOWN CRANIOFACIAL IMPLANTS PRODUCED THROUGH ADDITIVE MANUFACTURING TECHNOLOGY, THE GROUP IS NOW LOOKING AT WIDENING ITS SCOPE. BIO-MODELS SUCH AS 3D PRINTED SURGICAL SIMULATORS TO TREAT ARTERIES WITH ANEURYSM, 3D PRINTED HERNIATED DISCS, 3D PRINTED FACE MODELS, 3D PRINTED DENTAL SURGICAL GUIDES AND PROSTHETICS LIKE THE HAND BRACE ARE NOW BEING OFFERED TO TEACHING HOSPITALS.



### NEW SERVICE/PRODUCT

Tensile, deflection and compression



### DESCRIPTION OF NEW SERVICE/PRODUCT

Determination of Finger Jointed Timber Board by tension, flexure and compression tests (3-point bending)



### NEW SERVICE/PRODUCT

Viscosity measurement



### DESCRIPTION OF NEW SERVICE/PRODUCT

Determination of viscosity by rotational viscometry technique

ICI Biomedical has actively participated in the SIRIM-Fraunhofer Programme, with 23 audited small and medium companies for technology audit, four companies for post-technology audit and 18 companies for post-project audits. In addition, seven technology uptake projects were completed in 2019 and 30 proposals were approved for technology uptake.

The completed projects are as follows:

- Company - TAKO ASTATIC TECHNOLOGY SDN BHD  
 Title - Development of Automatic Defect Inspection System for Ultra Clean Easy
- Company - WEEDA RICH ENTERPRISE  
 Title - *Rekabentuk dan 'Plan Layout' Pembangunan Sistem Automasi bagi Pengeluaran Ais Krim Cawan*
- Company - DIPTECH INDUSTRIES SDN BHD  
 Title - Development of Semi-automatic Production System for Manufacturing Respiratory Products
- Company - KILANG BERAS MIHODA SDN BHD  
 Title - *Penambahbaikan Sistem Pengeringan Padi dengan Mengoptimumkan Penggunaan Tenaga yang Efisien melalui Kipas Pengeringan Padi Berteknologi Tinggi dan Pengurusan Mas*
- Company - PENAWAR INDUSTRIES SDN. BHD  
 Title - *Pembangunan Sistem Automasi untuk Pembotolan Produk Minyak Urut Tradisional*
- Company - ULFAH CHEM ENGINEERING SDN BHD  
 Title - *Meningkatkan Kapasiti dan Kualiti Pengeluaran Pet Liter Melalui Sistem Pemprosesan Pellet*



## IC INNOVATION - BIOMEDICAL

### Product Enhancement of Producing Local Formulation of Intermediate Grade Carbon Fibre

The project kicked off with a grant from Dasar Sains Teknologi Inovasi Negara (DSTIN) in the year 2016, under the Ministry of Science, Technology and Innovation (MOSTI), with the aim of producing pilot scaled carbon fibre to fulfil market demand for manufacturing the Type IV Composite Pressure Vessel (CNG & LPG). Various technical issues were encountered as this was the first project of its kind in Malaysia for producing local carbon fibre. These technical issues will be rectified in the approved PDP project under MITI, and a demo plant is expected to be in operations upon completion of the project.



HEAT TREATMENT PROCESS AT THE EXISTING PILOT PLANT AT SIRIM KULIM

### Clinical Trials of Titanium Alloy Metallic Implants for Oral Maxillofacial Produced by Metal Injection Moulding Technique for Medical Trauma Cases

This project specifically looks into conducting clinical trials of titanium alloy metallic implants for oral maxillofacial application in trauma cases. Activities include:

- Study of anthropometry distribution and specific design of the implants through 80 computed tomography image datasets with prototypes and models.
- Producing metallic implants through Metal Injection Moulding technology.
- Characteristic study of the implants through its physical and mechanical properties following the MPIF 35 standard.
- First phase clinical trials for 80 patients at various local hospitals.

The project is in collaboration with University of Malaya Medical Centre (PPUM), Universiti Teknologi Malaysia (UTM) and a designated company for technology transfer.



MAXILLOFACIAL IMPLANTS PRODUCED THROUGH METAL INJECTION MOULDING TECHNOLOGY

### Transforming Orthotic and Prosthetic Industry towards Digital Manufacturing using 3D Imaging and Additive Manufacturing Technologies

The demand for affordable and high-quality orthotic and prosthetic devices will continue to increase in Malaysia as the population faces an increasing prevalence of diabetes mellitus and obesity, resulting in traditional methods of producing these devices being non-sustainable. This is because the traditional methods, such as using plaster of Paris casts, are often inaccurate and labour-intensive.





## IC INNOVATION - BIOMEDICAL

### FACTS AT A GLANCE



# 2019

ICI BIOMEDICAL HAS SUCCESSFULLY  
PUBLISHED

# 8 REFEREED ARTICLES

The goal of this project is to strengthen the medical device industry through the implementation of 3D Digital Imaging and Additive Manufacturing technology in the production of orthotic and prosthetic devices. The project will leverage on existing 3D printing capabilities in SIRIM, with the expansion and acquisition of equipment and facilities to offer easy access to small and medium enterprises (SMEs). SIRIM will work with partners from Hospital Universiti Sains Malaysia (HUSM) and Pusat Latihan Perindustrian dan Pemulihan (PLPP) Bangi to design and develop the digital scanning and design protocols (CAD/CAM) for orthotic and prosthetics devices with subsequent technology transfers to participating SMEs. Three participating SMEs have indicated their intent to work with SIRIM on this project: DKSH Technology Sdn Bhd as a fabricator, Glomas Hitec Medic and Nusa Prosthetic & Orthotic Center Sdn Bhd.



3D IMAGING, DESIGN AND 3D PRINTING (DIGITAL PROCESS)

Realising the importance of the publication of scientific work in refereed journals, ICI Biomedical has also successfully published eight refereed articles in 2019:

Mohamad Azmiruddin bin Ahmad, Shirin Ibrahim, Syazana Abu Bakar, Siti Farhana Hisham, Abdul Yazid Abdul Manaf, K. Jamuna Thevi (2019) Effect of Treatment Time on Development of Gypsum Carbonated Apatite Biphasic Granules at Different Salt Solution Concentration, **Vol (16) Part (4), Materials Science: Materials Today Proceeding, pp: 2319 - 2324.**

Mohd Afian Omar et al. (2019) Mechanical Properties and Biocompatibility Evaluation of Medical Implant using Metal Injection Moulding Process, **Vol (5), Issue (3), International Journal of Scientific Research & Engineering Trends.**

Mohd Afian Omar et al. (2019) Processing and In-Vitro Study of Injection Moulded CoCrMo Alloy Hip Stem For Orthopedic Applications, **Vol (4), Issue (6), Journal Saudi Journal of Engineering and Technology.**

Mohd. Zakuan Abdullah et al (2019) Pin-on-disc Tribotest of Cr/CrN/CrCN/ZrN Multilayer Coatings by Physical Vapour Deposition (PVD), **Vol (16) Part (4) Pages 2067 - 2071, Materials Science: Materials Today Proceeding, pp: 2067 - 2071.**

Muhammad Jabir Suleiman@Ahmad et al (2019) Physical and Mechanical Properties of Fireproof Inconel 718 with Palm Stearin and Stearic Acid Binder, **Vol (54), Issue (1), Journal of Advanced Research in Fluid Mechanics and Thermal Sciences, pp: 112 - 123.**

Nor Shahida Kader Bashah et al (2019) The Influence of Silicon Addition in Modulation of HA/TCP ratio in Biphasic Calcium Phosphate Granules, **Vol (16) Part (4) Materials Science: Materials Today Proceeding, pp. 1796 - 1803.**

Salina Sabudin, Muhamad Anas Marzuke, Zulhazmi Hussin (2019) Effect of Mechanical Properties on Porous Calcium Phosphate Scaffold, **Vol (16), Part (4) Materials Science: Materials Today Proceeding, pp: 1680-1685.**

Shirin Ibrahim, Fazilah Fazan, Sudirman Sahid, Azan Seeni (2019) Non-toxic TCaP Modulate Osteogenesis via Differential Protein and Gene Expression in Human Osteoblast Cells, **Vol (16) Part (4) Materials Science: Materials Today Proceeding, pp: 1846 - 1855.**

# IC INNOVATION - NANOTECHNOLOGY



Report by:  
**Dr. Mohd Radzi Mohd Toff**  
Director, IC Innovation in Nanotechnology

The Industrial Centre of Innovation in Nanotechnology (ICI Nano) undertakes research and development in nanotechnology and engineering materials for industrial applications. Our researchers work with community, industry, university and government in developing new knowledge and value-adding enhancements to the industry. ICI Nano focuses mainly on technical services & consultancy, coating & friction materials, membranes and carbon-based materials.

ICI Nano has the role of providing innovative nanotechnology solutions to small and medium enterprises (SMEs) through customised technology intervention for productivity improvement, with the aim of boosting technology penetration among SMEs, conducting market-driven research and development in line with national nanotechnology focus areas, providing nanomaterials and nano-based product characterisation, nanosafety testing and consultancy, as well as supporting and collaborating with National Nanotechnology Centre (NNC) and NanoMalaysia Berhad (NMB) in developing the home-grown nanotechnology industry. Such collaboration is vital to ICI Nano since NNC serves as the National Focal Point for the coordination of research, development and all related activities of nanotechnology in Malaysia, while NMB is a commercialisation arm under the Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC) that acts as a business entity entrusted with nanotechnology commercialisation activities.

## KEY ACTIVITIES IN 2019

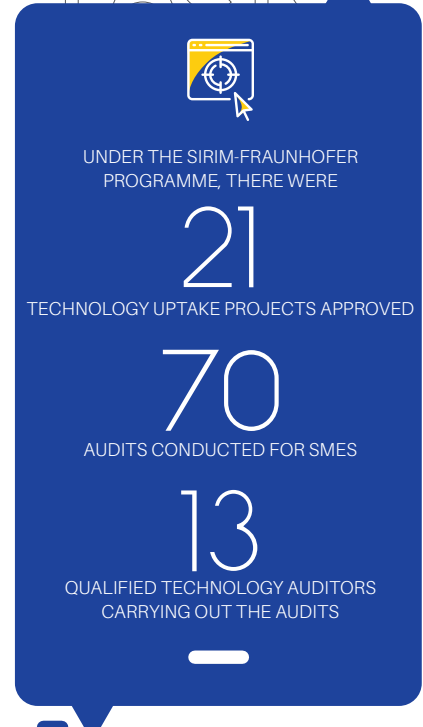
In line with the Centre's role, one project was carried out in 2019 under MESTECC's grant, namely Smart Challenge Fund. The amount approved for the project, titled 'Manufacturing Process of Producing Current Collector Using Local Carbon Materials for Light Rail Transit (LRT) Application', is RM0.675 million. One of the main purposes of the project is to improve methods of producing Carbon-Copper (C-Cu) composites for electrical and electronic applications to produce environmentally friendly C-Cu products using local carbon materials. Proposals for two PDP projects have also been tabled to the Ministry of International Trade and Industry (MITI), titled 'Pilot Plant Manufacturing on Underwater Coating for Oil and Gas Piping and Marine Applications' and 'Pilot Scale Production of Water-Based Nano Coat Rust Inhibitor for Corrosion Protection of Steel Component and Structure'. The projects are valued at RM1.05 million and RM1.24 million respectively. In addition to research and development activities, ICI Nano also provided training on Water Filtration System for Drinking Water under the Malaysian Technology Development Corporation (MTCP) to 10 participants from various countries.

Under the SIRIM-Fraunhofer Programme, there were 21 technology uptake projects approved, 12 on-going projects and 13 projects completed. About 70 audits were conducted for SMEs, consisting of 40 Technology Audits, four Post Technology Audits, 21 Post Project Assessments and five Readiness Assessments. The audits were carried out by 13 qualified technology auditors from ICI Nano. Out of the 13 auditors, three have been appointed as proposal reviewers. As a result, various technology interventions such as technology enhancement, innovative processes and automation have been adopted by those SMEs, improving productivity in their processes.

In terms of technical services and consultancy, ICI Nano has carried out market-driven research and development in advanced materials and nanotechnology to deliver outputs and products for future commercialisation. In the year 2019 alone, as many as 125 requests for technical services and consultancy were received from SMEs and universities. This allowed the Centre to participate in testing contracts, and provide characterisation services for ceramics, metals, composites and polymers utilising high-end equipment such as the XPS, XRD, XRF, FESEM, TEM, VPSEM, BET and materials processing facilities. One commercial project with Jabatan Mineral & Geosains (JMG) on Water NanoFiltration System for Drinking Water has been delivered to Sekolah Menengah Sains Teluk Intan (SEMESTI) in September 2019. The project value is RM152,000.

ICI NANO HAS THE ROLE OF PROVIDING INNOVATIVE NANOTECHNOLOGY SOLUTIONS TO SMALL AND MEDIUM ENTERPRISES (SMEs) THROUGH CUSTOMISED TECHNOLOGY INTERVENTION FOR PRODUCTIVITY IMPROVEMENT, WITH THE AIM OF BOOSTING TECHNOLOGY PENETRATION AMONG SMEs, CONDUCTING MARKET-DRIVEN RESEARCH AND DEVELOPMENT IN LINE WITH NATIONAL NANOTECHNOLOGY FOCUS AREAS, PROVIDING NANOMATERIALS AND NANO-BASED PRODUCT CHARACTERISATION, NANOSAFETY TESTING AND CONSULTANCY, AS WELL AS SUPPORTING AND COLLABORATING WITH NATIONAL NANOTECHNOLOGY CENTRE (NNC) AND NANOMALAYSIA BERHAD (NMB) IN DEVELOPING THE HOME-GROWN NANOTECHNOLOGY INDUSTRY.

## FACTS AT A GLANCE





# IC INNOVATION - NANOTECHNOLOGY



WATER NANOFILTRATION SYSTEM FOR DRINKING WATER

ICI Nano aims to increase awareness and collaboration among industry partners, academia, research institutions and Government agencies on its technological capabilities and facilities through participation in technology exhibitions and the organisation of seminars, workshops and training programmes. Through these ventures, contract research and development, consultancy, training and technical service projects can be undertaken by ICI Nano in the near future. Through this platform, ICI Nano has received recognition, bagging a Silver Medal at the International Invention, Innovation and Technology Exhibition 2019 (ITEX'19) and Special Award at the Selangor R&D Expo. ICI Nano, together with Universiti Teknologi Mara (UiTM) as joint organiser, successfully organised the National Symposium on Micro-Nano Technology (NaSMiNT 2019) at MAGIC, Cyberjaya.

In the long term, the visibility of ICI Nano can also be enhanced by having highly trained personnel as an expert panel for grant proposal evaluations involving the Smart Challenge Fund, ASEAN Science & Technology Innovation Fund and other nanotechnology-related project proposals under NNC.

## FACTS AT A GLANCE



**ICI NANO**  
HAS RECEIVED RECOGNITION

**SILVER**medal

INTERNATIONAL INVENTION, INNOVATION  
AND TECHNOLOGY EXHIBITION 2019 (ITEX'19)

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**SPECIAL**award

SELANGOR R&D EXPO



In 2019, as many as  
**125 requests** for  
technical services and  
consultancy were received  
from SMEs and universities.





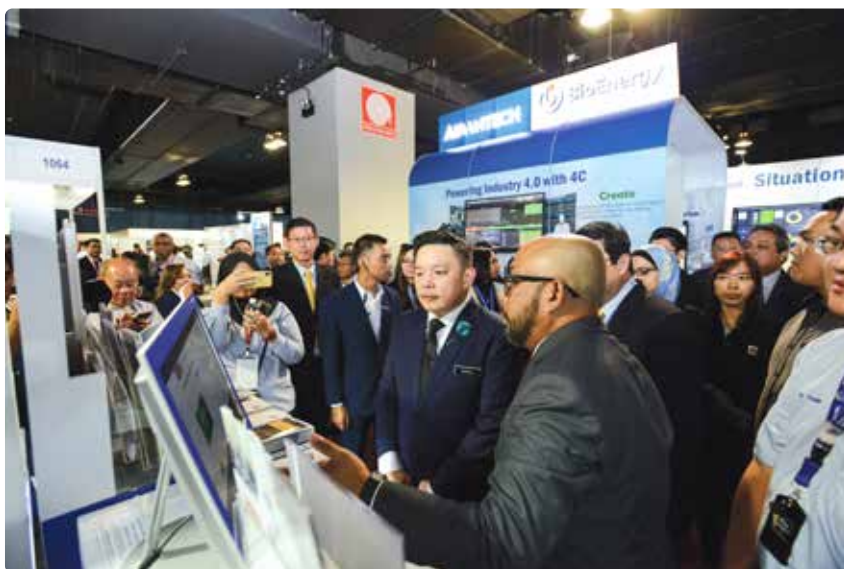
# IC INNOVATION - SMART MANUFACTURING



Report by:  
**Dr. Mohd Shahrul Azmi Mohamad Yusof**  
Director, IC Innovation in Nanotechnology

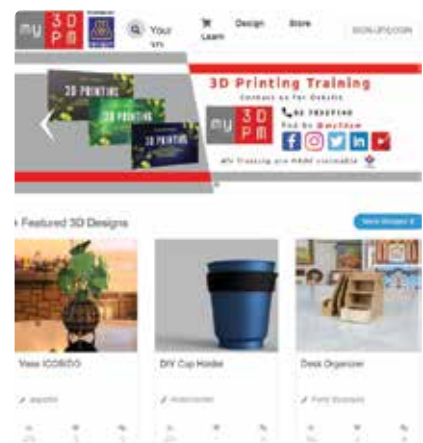
Industrial Centre of Innovation in Smart Manufacturing (ICI SM) is a centre of innovation in Industry 4.0 (I4.0), leading the path of transformation for industries and laying the foundation of the regulatory framework for national Industry4WRD initiatives. 2019 marked the centre's first year of establishment; our offerings include technical training services, readiness assessments, strategic technology planning, and private and public contract research.

TRAINING	ASSESSMENT	PROJECTS	SERVICES
 <ul style="list-style-type: none"> <li>Expert</li> <li>TVET</li> <li>Fundamental</li> <li>Public Awareness</li> </ul>	 <ul style="list-style-type: none"> <li>Effectiveness</li> <li>Transformation</li> <li>Readiness</li> <li>Technology Audit</li> </ul>	 <ul style="list-style-type: none"> <li>Research</li> <li>Commercial</li> <li>Policy-driven</li> </ul>	 <ul style="list-style-type: none"> <li>Long-term Contracts</li> <li>Jobs and Trends</li> </ul>
			
ICI SM'S OFFERINGS IN 2019			



Located in Bukit Jalil, ICI SM has been key to the implementation of projects under the SIRIM-Fraunhofer Programme in 2019. During this time, the centre executed more than 25 technology audits, 22 technology uptake approvals, two solving industry wide (SIWP) projects and a couple of post project audits.

Beyond policy-driven projects, the centre has been very committed to commercial activities through its contract research projects, such as the PROven digital platform for Petronas. Through the platform, we create essential values to the oil and gas sectors. With the engineering service capabilities offered by the centre, ICI SM continuously bridges the technical fundamentals between academia and industry.



3D PORTAL

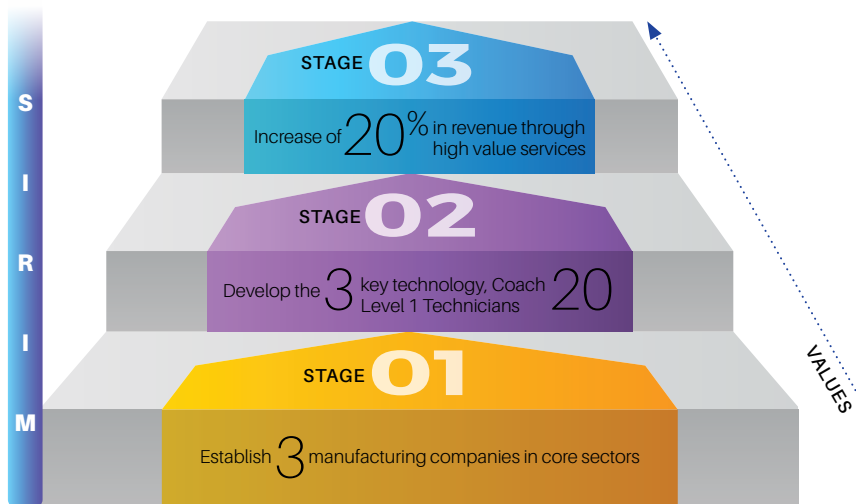




# IC INNOVATION - SMART MANUFACTURING

The two breakthrough brownfield projects completed in the financial year are:

1. Inculcating the culture of predictive maintenance for Malaysian manufacturers, a pragmatic project approach in line with the national Industry4WRD policy



CREATING VALUES THROUGH INNOVATION

2. Retrofitting of I4.0 technology within the food and beverage (F&B) sectors, where IoT tools were retrofitted within three existing conventional manufacturing lines



A series of Focus Group Discussions (FGDs) was organised by the centre, and a few projects were derived from the initiative such as the Inculcating Predictive Maintenance Industry SIWP project implementation, which harnesses the local triple helix potential.

In ensuring the understanding of I4.0 is at its level best along the horizontals, a series of innovation workshops was organised by the centre. These workshops were attended by multiple players along the supply chain, from beginners to industry experts. Through the tireless efforts of by the centre's personnel, ICI SM began gaining prominence among the industry players and our experts were invited to be keynote speakers at numerous conferences nationwide.

## IC INNOVATION

### - SMART MANUFACTURING



ICI SM WILL CONTINUE TO BE THE I4.0 CENTRE OF CHOICE FOR INDUSTRY PLAYERS THROUGH CONTINUOUS COMPETENCY IMPROVEMENTS ALONG THE SPECTRUM OF I4.0 TECHNOLOGY. IN THE YEAR TO COME, WE WILL ENSURE OUR EXPERTISE CAN BE THE BEST OFFERING FOR THE GROWTH OF INDUSTRY PLAYERS THROUGH I4.0 TECHNOLOGY.

ICI SM will continue to be the I4.0 centre of choice for industry players through continuous competency improvements along the spectrum of I4.0 technology. In the year to come, we will ensure our expertise can be the best offering for the growth of industry players through I4.0 technology. Listed below are some of the projects implemented in 2019:

- 1 Development of Coffee Bean Roaster
- 2 Design and Development of Tilted Jacketed Cooker and Roll Sheeting System for Productivity Improvement of Mee Rebus Production Line
- 3 Development of Jacketed Mixer Cooker and Automatic Filling System For Chilli Sauce Production
- 4 Development of Semi-automated Loading and Mixing System for Productivity Improvement of Whey Protein Drinking Powder
- 5 *Pengautomasian Proses Pengeluaran Kriuk Tempe*
- 6 *Penambahbaikan Proses Pengeluaran Keropok Lekor Sejuk Beku*
- 7 *Program Asas Peningkatan Kualiti Produk (LADA)*
- 8 *Penyelenggaraan System eQMS Angkasa (ANGKASA)*
- 9 *Penyelenggaraan TA Portal*
- 10 *Pembangunan SFS Dashboard*
- 11 FEA of Mechanical Buffalo Scissor Lift and MB Integrated Loose Fruit Collector/ Sime Darby Plantation Research
- 12 UMP - FDM 3D printing
- 13 Localisation of Photovoltaic Inverter via Design, 3D printing and Manufacturing of Casing/Revotech Electrical
- 14 *Pembangunan Sistem dan Pengurusan Tenaga untuk Pengeringan Padi/Kilang Beras Megat Dewa*
- 15 Development of Systematic Piping, Mixing, Filling & Packaging System for Disinfectant Production Line/Hana Medic
- 16 Semi-automated Slip Casting Process for Hand Former Production
- 17 Retrofitting of Injection Moulding by Introduction of Robotic Arm and Mechanisation Water Tap Assembly Line /Glasfil Polymer Sdn Bhd



Report by:  
**Azhar Abdul Raof**  
Director, IC Innovation in BioNG

## REGION'S FIRST INDUSTRIAL BIOGAS PLANT FROM SAGO WASTE LAUNCHED IN SARAWAK

Industrial Centre of Innovation in Bio-Natural Gas (ICI BioNG) has successfully delivered the region's first full-scale sago biogas plant in Mukah, Sarawak. This is the first time ever a sago starch company in the region has adopted green technology on such a scale, making the Sarawak sago industry a forerunner in embracing sustainable and environmentally friendly solutions.

The biogas plant has a total capacity of 10,500m<sup>3</sup> and is designed to cater for a sago mill effluent feeding rate of 2,500m<sup>3</sup> per day. The biogas plant is powered by a 350kWe biogas engine as the sole source of its electrical energy.

As the plant engineering and process consultant, ICI BioNG had taken a bold decision to take full responsibility in ensuring that biogas can be produced from sago mill effluent at such an unprecedented scale and volume.

However, as a result of our extensive experience in the design and development of biogas plants from various feedstocks, and through innovative actions taken throughout the project, the biogas plant has successfully produced biogas with more than 50% methane in less than 100 days from the day the effluent was first fed. Not only that, the biogas plant is also capable of removing more than 80% of the effluent organic matter content.

This first-of-its-kind full-scale sago biogas plant has provided the other sago millers in Sarawak a real-life reference for a successful and economical method to treat their wastewater before discharging it to the rivers.



ON 23 NOVEMBER 2019, THIS MPIC-SARAWAK STATE GOVERNMENT CO-SPONSORED PROJECT WAS OFFICIATED BY THE CHIEF MINISTER OF SARAWAK, DATUK PATINGGI (DR.) ABANG HAJI ABDUL RAHMAN ZOHARI BIN TUN DATUK ABANG HAJI OPENG

ICI BioNG, through its demonstration project submission, won a prestigious ASEAN Energy Award. The 'Compressed Bio-Natural Gas for Green Mobility and Power Generation in Oil Palm Industry' project harnesses energy from unutilised biogas with the aim of producing alternative fuel that complies with automotive standards and promotes greenhouse gas reduction activities. It also demonstrates the viability of Bio-Natural Gas (BioNG) production at a semi-commercial scale, as well as strengthening the commercialisation of BioNG as an alternative fuel to diesel-fired power plant and industrial users.

# IC INNOVATION - BioNG

## FACTS AT A GLANCE



BIOGAS PLANT HAS SUCCESSFULLY PRODUCED BIOGAS WITH

> 50 %

METHANE IN

< 100

DAYS FROM THE DAY THE EFFLUENT WAS FIRST FED

BIOGAS PLANT IS ALSO CAPABLE OF REMOVING

> 80 %

OF THE SAGO MILL EFFLUENT ORGANIC MATTER CONTENT

INDUSTRIAL CENTRE OF INNOVATION IN BIO-NATURAL GAS (ICI BioNG) HAS SUCCESSFULLY DELIVERED THE REGION'S FIRST FULL-SCALE SAGO BIOGAS PLANT IN MUKAH, SARAWAK. THIS IS THE FIRST TIME EVER THAT A SAGO STARCH COMPANY IN THE REGION HAS ADOPTED GREEN TECHNOLOGY ON SUCH A SCALE, MAKING THE SARAWAK SAGO INDUSTRY A FORERUNNER IN EMBRACING SUSTAINABLE AND ENVIRONMENTALLY FRIENDLY SOLUTIONS.



**IC INNOVATION**  
**- BioNG**



ICI BioNG, THROUGH ITS DEMONSTRATION PROJECT SUBMISSION, WON A PRESTIGIOUS ASEAN ENERGY AWARD. THE 'COMPRESSED BIO-NATURAL GAS FOR GREEN MOBILITY AND POWER GENERATION IN OIL PALM INDUSTRY' PROJECT HARNESSSES ENERGY FROM UNUTILISED BIOGAS WITH THE AIM OF PRODUCING ALTERNATIVE FUEL THAT COMPLIES WITH AUTOMOTIVE STANDARDS AND PROMOTES GREENHOUSE GAS REDUCTION ACTIVITIES.



SIRIM Berhad stood out as a Leader that Exemplifies the Achievements across Special Submission.

SIRIM Berhad has stood out as a leader that exemplifies the achievements across Special Submission and is bringing the region closer to a greener community, according to the official letter from the ASEAN Energy Business Forum on SIRIM's win.

The ASEAN Energy Awards represent the benchmark of excellence and offer recognition for those working across industry. The ASEAN Energy Awards celebrate those who are pushing boundaries, displaying exemplary leadership and driving innovation. The winners and their businesses have played a critical role in the development of the sector and helped drive the industry forward and region towards a more sustainable future.







Report by:  
**Mohd Fauzi Ismail**  
Director, IC Innovation in Energy Management

# IC INNOVATION - ENERGY MANAGEMENT

2019 was a very interesting year. Among others, Industrial Centre of Innovation in Energy Management (ICI EM) successfully implemented the International World Association of Industrial and Technological Research Organizations (WAITRO) Capacity Building Programme and completed four technology intervention projects for small and medium enterprises (SMEs) that were mainly in the food and beverage sector. These were the outcomes of Technology Audits performed on SMEs under the SIRIM-Fraunhofer Programme. The projects were aimed at improving the productivity of the SMEs by increasing production capacity and improving production cost through efficient energy utilisation.





## WAITRO CAPACITY BUILDING PROGRAMME ON SOLAR THERMAL TECHNOLOGY FOR INDUSTRIAL APPLICATION

### INTRODUCTION

The WAITRO Capacity Building Programme on Solar Thermal Technology for Industrial Application that was held on 29 April-4 May 2019 was a collaboration between WAITRO and SIRIM. The programme was designed to introduce participants, who are currently working in research institutes, universities and government agencies in the Asia Pacific, Middle East and African regions, to the key concepts and practical application of energy efficiency audit, process and system optimisation concept, solar thermal technology and system design, solar thermal system integration concept and financial analysis of solar thermal projects. The course encompassed a blend of theory, practical, design and calculation that enable participants to appreciate the utilisation of solar thermal technology, a renewable energy-based solution for industries, while combating global warming and climate change. Besides gaining some experience, knowledge and information on the current development of technology and science, participants had the opportunity to network and collaborate with each other.

The programme training modules consisted of both theoretical and practical sessions focused on providing key concepts of energy efficiency audits, solar thermal technology, solar thermal integration and system design.

Participants were first introduced to energy efficiency approaches, and process and system optimisation concepts; this is an essential step prior to the development of the solar thermal project. Subsequently, comprehensive lectures covering the following topics were delivered:

-  Introduction to Solar Thermal Technology
-  Solar Thermal System Design Principles
-  Solar Thermal Application at Industry for Heating Process
-  Potential Energy Reduction and Cost Savings

Case studies of successful industry solar thermal projects developed by ICI EM were also presented to give an overview of the solar thermal integration concept and its application in industry. A site visit to view the solar thermal projects was arranged to provide valuable insights and exposure to solar thermal technology for industrial application. This visit also helped participants to develop an understanding of how the theoretical concept is applied in practice.

2019 WAS A VERY INTERESTING YEAR. AMONG OTHERS, INDUSTRIAL CENTRE OF INNOVATION IN ENERGY MANAGEMENT (ICI EM) SUCCESSFULLY IMPLEMENTED THE INTERNATIONAL WORLD ASSOCIATION OF INDUSTRIAL AND TECHNOLOGICAL RESEARCH ORGANIZATIONS (WAITRO) CAPACITY BUILDING PROGRAMME AND COMPLETED FOUR TECHNOLOGY INTERVENTION PROJECTS FOR SMALL AND MEDIUM ENTERPRISES (SMEs) THAT WERE MAINLY IN THE FOOD AND BEVERAGE SECTOR. THESE WERE THE OUTCOMES OF TECHNOLOGY AUDITS PERFORMED ON SMEs UNDER THE SIRIM-FRAUNHOFER PROGRAMME. THE PROJECTS WERE AIMED AT IMPROVING THE PRODUCTIVITY OF THE SMEs BY INCREASING PRODUCTION CAPACITY AND IMPROVING PRODUCTION COST THROUGH EFFICIENT ENERGY UTILISATION.

## IC INNOVATION - ENERGY MANAGEMENT

### A. Technology Audit and Energy Audit

As at 31 December 2019, our qualified auditors have performed 32 technology audits at various locations in Malaysia. Our customers are concentrated in the northern region, followed by southern and central and east coast regions. The breakdown of audits conducted according to region was 44%, 40% and six per cent respectively.

Our customers represent a diverse range of industries that include food and beverages, poultry, wood furniture, textiles and metals. As can be seen in the table below, most of the companies were from the food and beverage industrial segment, contributing up to 31%.



**INDUSTRIAL SEGMENTATION**



**NO. OF COMPANIES**



**PRODUCTS**

Food and Beverages	10	Dried noodles, non-carbonated drinks, chicken & beef burgers, chicken & meat balls, jelly, fruit drinks, flavoured milk
Furniture	4	Table tops & chairs, sofas, beds, couches, saw milling
Plastic Industry	4	Plastic products
Machinery & Electronics	4	Cables and electrical products, automated machine & tester machines, electrical & electronic products
Engineering Components	6	Automotive parts, air filters
Textiles	3	Clothes
Poultry	1	Processed chickens
<b>Total</b>	<b>32</b>	

The technology audit provides companies with an understanding of their strengths and weaknesses in technology management, as well as identifying potential areas for productivity improvement. We continue to explore potential technology uptake projects that will contribute to productivity improvement. Among the areas identified for potential projects are mechanisation and automation of manual process steps, fuel savings regarding energy efficiency, alternative processing using renewable energy-based solution, minimisation of waste via recycling and efficient operation and system.



## FACTS AT A GLANCE



QUALIFIED AUDITORS HAVE PERFORMED

32

TECHNOLOGY AUDITS AT VARIOUS LOCATIONS IN MALAYSIA

THE BREAKDOWN OF AUDITS CONDUCTED ACCORDING TO REGION WAS

44%

NORTHERN REGION

40%

SOUTHERN & CENTRAL REGIONS

6%

EAST COAST REGION



F&B industrial segment contributed up to 31%.



# IC INNOVATION - ENERGY MANAGEMENT

## B. SIRIM Industrial Innovation Model Fund (SIIMF) under SIRIM-Fraunhofer Programme

### PROJECT 1:

Development of Solar Thermal Hot Water System for Jelly Drink Production at Miwa Manufacturing Sdn Bhd.

The objective of this project was to introduce a renewable energy technology, namely a solar thermal hot water system, for heating water for the mixing process which previously was done using an electric boiler. The solar thermal hot water system consists of 40 units of solar collector flat plate panels, which can provide 4,000 litres of readily available hot water for production usage at the required temperature range of 68-70°C. The project took eight months, from November 2018-June 2019, with the system installation and commissioning taking less than three months.

Since adopting the technology, the company has gradually increased its monthly production capacity by more than two-fold (up to 190 batches). Besides that, the electricity consumption ratio per unit of production or specific energy consumption (SEC) also showed tremendous improvement from 60-70kWh per batch to around 40kWh per batch. The success of the intervention project has resulted in the company becoming one of the grant recipients under the Malaysia Energy Efficiency and Solar Thermal Application (MAEESTA) project funded by the Global Environment Facility (GEF), which was facilitated under the United Nations Industrial Development Organization (UNIDO).

**FACTS AT A GLANCE**

**PROJECT 1**  
Miwa Manufacturing Sdn Bhd

**GRANT RECIPIENT**

UNDER THE MALAYSIA ENERGY EFFICIENCY AND SOLAR THERMAL APPLICATION (MAEESTA) PROJECT FUNDED BY THE GLOBAL ENVIRONMENT FACILITY (GEF), WHICH WAS FACILITATED UNDER THE UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION (UNIDO)



SOLAR COLLECTOR ON ROOF TOP



THERMAL ENERGY STORAGE



## IC INNOVATION - ENERGY MANAGEMENT

### PROJECT 2:

Development of Continuous Automated Production Line System Equipped with Auger Conveyor System for Premix Drinks at Emran F&B Suppliers Sdn Bhd.

The project was aimed at increasing the production of premix drinks with improved formulation. The success of this project has helped the company to secure new customers such as Mydin Hypermarket and pave the way for further market expansion in the Middle East.

For this project, key steps to solve the issue were first identified. Consequently, in implementing the proposed solutions, the development of the continuous automation system would require:

1. Mixer with 500kg capacity with platform for ergonomic process.
2. Platform to ease the mixing process.
3. Packaging machine equipped with expiration date coding to eliminate manual weighing and packaging process.
4. Auger transport system to be connected to the packaging machine to create a continuous production line.
5. Expiration date coding at the packaging machine.

All the required machines have been successfully delivered according to the necessary specifications and requirements and met the customer's satisfaction. The test and acceptance process of the system have also been conducted as planned. Besides that, the commissioning and installation of the system have been done at the established site according to the agreement with consultation by the project member. Training has also been provided accordingly to the company representative.

The new automated and continuous production line has increased productivity in terms of total sales, by allowing the company to gain new customers and meet market demands, and product quality as well as reducing the number of operators from four to two for each batch of production.

### PROJECT 3:

Improvement of Capacity and Quality of Frozen Keropok Lekor Production at Sinku Food Industries Sdn Bhd, Terengganu.

This project involved SIRIM's intervention in the production of frozen keropok lekor by initiating new mixer and extrusion process methods to form uniform-sized keropok lekor and a new freezing method using a blast freezer. The process of mixing raw materials with inefficient mixing machines results in a long (45 minutes) mixing process and frozen fish wastage as it is difficult to mix with the dough. SIRIM's proposed machine, which is a chopper mixer/silent cutter, can produce keropok lekor dough in a short time (<5 minutes) and avoid raw material wastage.



HOT STAMPING PRINTER

The proposed extrusion machine by SIRIM, meanwhile, has the capability to produce uniform-sized keropok lekor, unlike those manually formed by rollers. Besides that, while a typical cooling method using a box freezer takes a long time (>12 hours) before the product can be marketed, the blast freezer method proposed by SIRIM reduces the cooling time to five hours and subsequently prevents bacteria from spreading on the keropok lekor products. Overall, the intervention of SIRIM has enhanced the capacity and quality of production of keropok lekor at Sinku Food Industries Sdn. Bhd.

## FACTS AT A GLANCE

### PROJECT 2



#### INCREASED PRODUCTIVITY

IN TERMS OF TOTAL SALES, BY ALLOWING THE COMPANY TO GAIN NEW CUSTOMERS AND MEET MARKET DEMANDS, AND PRODUCT QUALITY AS WELL AS REDUCING THE NUMBER OF OPERATORS FROM FOUR TO TWO FOR EACH BATCH OF PRODUCTION

## FACTS AT A GLANCE

### PROJECT 3

#### CHOPPER MIXER/ SILENT CUTTER

CAN PRODUCE KEROPOK LEKOR DOUGH

< 5 mins

#### BLAST FREEZER

METHOD PROPOSED BY SIRIM  
REDUCES THE COOLING TIME TO

5 hrs





# IC INNOVATION - ENERGY MANAGEMENT

## PROJECT 4:

Improvement of Facility, Quality and Capacity of Biscuit Production at RMK Timur Qaseh Sdn. Bhd.

RMK Timur Qaseh Sdn. Bhd. is an SME involved in the manufacturing of cookies for local markets. The company manufactures 24 types of traditional and modern biscuits; among them are Almond Oat Biscuits, White & Black Sesame Biscuits, Coconut Cornflake Biscuits, Rich Chocolate Chip Cookies, Black Chocolate Biscuits, Chocolate Chip Cookies and Raisin Almond Cookies Oats under the Rochinur brand.

SIRIM's technology intervention involved addressing the company's critical problems due to low capacity of mixing techniques and non-uniform combustion methods. As a result of temperature simulations and feasibility studies conducted on the company's premises, SIRIM proposed for the existing industrial gas oven system to be converted to a more systematic combustion system called Rotating Rack Oven. The system uses a rotating rack heating system that disperses convection heat from the gas burner more uniformly and faster than the conventional heating method using the industrial gas oven. Furthermore, the temperature and time of the baking process can be adjusted to produce better quality cookies. Through this system, the heating time can be reduced by at least five minutes, from 25 minutes to 20 minutes. In addition, the system also uses 15 trays simultaneously each time. Indirectly more cookies can be baked, thus increasing the company's productivity, saving it time and reducing its fuel consumption.

FACTS AT A GLANCE

**PROJECT 4**

**ROTATING RACK OVEN**

HEATING TIME CAN BE REDUCED BY AT LEAST

**5 mins**



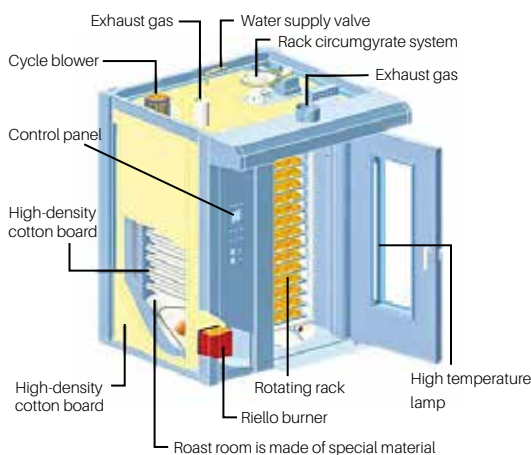
BOWL CUTTER



EXTRUDER



BLAST FREEZER



SYNERGISING  
STRENGTHS  
BETTERING  
OUR FUTURE

# 02 SUBSIDIARIES AND BUSINESS UNITS







# SIRIM QAS INTERNATIONAL SDN BHD



Report by:  
**Mohd Azanuddin Salleh**  
Chief Executive Officer, SIRIM QAS International Sdn Bhd

SIRIM QAS International Sdn. Bhd. (SIRIM QAS) is Malaysia's largest conformity assessment body and is the testing, inspection and certification (TIC) partner of choice for some of the world's biggest brands. Its stellar reputation is the result of its unwavering focus on meeting its customers' and stakeholders' needs over the years. With every intention of staying true to this commitment and in alignment with SIRIM Berhad's vision and mission, SIRIM QAS introduced its new vision to be a trusted partner for growth and sustainability in 2019.

SIRIM QAS' diverse service offerings in conformity assessment across all economic sectors have also helped the Company to deliver a solid performance for the year 2019 amidst a softer global economic backdrop impacted by trade wars and ongoing geopolitical tensions.

That year, 10,274 customers leveraged on SIRIM QAS' TIC services to boost their market competitiveness, penetrate the global market and achieve business sustainability. About 15,800 test reports and more than 700 new Product Certification licences were issued. Meanwhile, almost 800 organisations were certified under various management system certification schemes.

## INNOVATING NEW SERVICES TO BOOST GLOBAL COMPETITIVENESS

SIRIM QAS introduced several new testing and certification services in 2019 in line with its new mission to provide innovative TIC solutions for the industry players to enhance their competitiveness and to build a sustainable business performance.

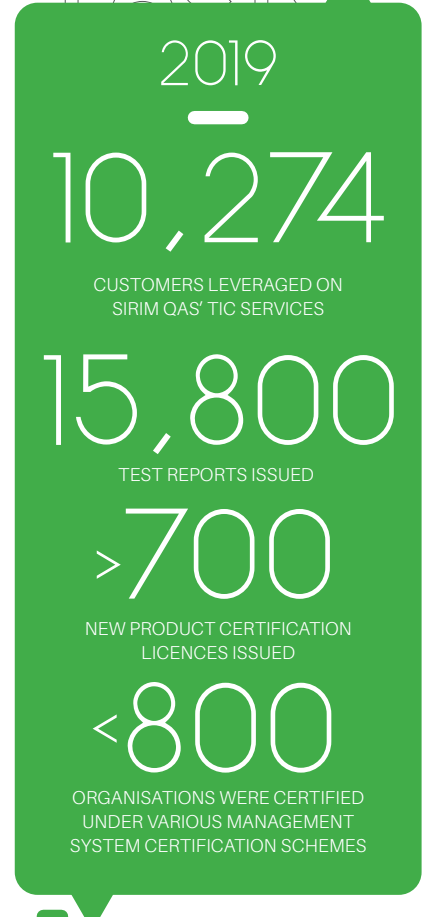
Positioning itself as the regional fire protection testing hub in South East Asia, SIRIM QAS set up a new testing facility on fire safety for external cladding systems for buildings, the first such test laboratory in the South East Asian region. The external cladding system will be tested to the requirements of the British Standard, BS 8414. This new test facility will not only support the Fire and Rescue Department of Malaysia in ensuring better fire safety of buildings but will also help manufacturers to enhance the fire performance quality of their external cladding systems and further develop the nation's building materials industry.



LAUNCHING OF TEST FACILITY FOR EXTERNAL CLADDING SYSTEM FOR BUILDINGS

Besides that, SIRIM QAS also introduced full testing on insulating glass units (IGU) for buildings to MS 2666:2016 standard and energy efficiency testing for washing machines. In the same year, our Photovoltaic (PV) Testing Laboratory was finally equipped with full facilities to test both crystalline silicon and thin-film terrestrial PV module designs to the safety and performance requirements of IEC 61215 and IEC 61730 standards.

## FACTS AT A GLANCE



SIRIM QAS INTERNATIONAL SDN. BHD. (SIRIM QAS) IS MALAYSIA'S LARGEST CONFORMITY ASSESSMENT BODY AND IS THE TESTING, INSPECTION AND CERTIFICATION (TIC) PARTNER OF CHOICE FOR SOME OF THE WORLD'S BIGGEST BRANDS. ITS STELLAR REPUTATION IS THE RESULT OF ITS UNWAVERING FOCUS ON MEETING ITS CUSTOMERS' AND STAKEHOLDERS' NEEDS OVER THE YEARS. WITH EVERY INTENTION OF STAYING TRUE TO THIS COMMITMENT AND IN ALIGNMENT WITH SIRIM BERHAD'S VISION AND MISSION, SIRIM QAS INTRODUCED ITS NEW VISION TO BE A TRUSTED PARTNER FOR GROWTH AND SUSTAINABILITY IN 2019.





SIRIM QAS launched the Mobile Consignment Testing Services during Majlis SIRIM Industri 2019. Through this mobile service, we provide same-day delivery of inspection, sampling, testing and issuance of security labels either at the port of entry or customer warehouse. This new service has been well-received by importers of electrical and electronic products into the Malaysian market that require SIRIM approval and labels through the SIRIM Batch Certification Scheme. It saves them the hassle of transporting their samples to SIRIM for testing and, more importantly, reduces time to market, which is critical for their businesses.



LAUNCHING OF MOBILE CONSIGNMENT TESTING SERVICE DURING MAJLIS SIRIM INDUSTRI 2019

In addition, we launched four new sector-specific management system certification schemes that same year:

- The ISO 41001 Facility Management Systems Certification Scheme, which is applicable to both organisations with in-house facilities management as well as professional facilities management companies wishing to demonstrate the effective and efficient delivery of facilities management that supports the objectives of the organisations they serve.
- The ISO 18788 Security Operations Management System (SOMS) Certification Scheme, which is relevant for organisations that wish to demonstrate a high conduct of professional security operations.
- The MSPO Supply Chain Certification System (MSPO SCCS) Scheme, which is applicable to the palm oil refineries and palm oil-related industries that process, trade or manufacture palm oil from MSPO-certified oil palm management units.
- The ISO 17679 Wellness Spa Certification Scheme, which is for wellness spas that wish to demonstrate their commitment to customer-focused quality spa service.

As a Conformity Assessment Body approved by Saudi Standards Metrology and Quality Organization (SASO), SIRIM QAS is now authorised to issue SASO Certificate of Conformity for low voltage electrical equipment and appliances, thereby helping manufacturers of electrical products to gain access to the Kingdom of Saudi Arabia market.

SIRIM QAS also introduced the Industrialised Building System (IBS) Certification Scheme. IBS component manufacturers are required to have this certification as a pre-requisite to obtaining CIDB-IBS Sdn Bhd's approval under the IBS Manufacturer Product Assessment and Certification (IMPACT) programme.

In 2019, we also introduced the Used Tyre Import Facility Scheme. Under this scheme, we can issue a letter of approval and provide inspection services for importers of pneumatic used tyres to enable them to obtain the Royal Malaysian Customs Department's approval for shipment clearance at the port of entry.

As industry needs for TIC evolve with technology, global trade and government policy, SIRIM QAS will continue to roll out more innovative services to meet those needs. We will be offering remote audit/inspection through digital means as an alternative to on-site audits next year. New testing services to be introduced in 2020 include geotextile testing and portable fire extinguisher testing to EN-3 standard as well as steel structure testing and assessment report. With 75 types of certification services currently on offer, we can certainly help our customers achieve business excellence and sustainability.

**FACTS AT A GLANCE**

NEW SERVICES TO BOOST GLOBAL COMPETITIVENESS

### Testing

- BS8414 EXTERNAL CLADDING SYSTEM
- MS2666 INSULATING GLASS UNIT (IGU)
- ENERGY EFFICIENCY - WASHING MACHINE
- IEC 61215 & IEC 61730 FULL PV TEST FACILITY
- MOBILE CONSIGNMENT TESTING SERVICE

### Management System Certification

- ISO 41001 FACILITY MANAGEMENT
- ISO 18788 SECURITY OPERATIONS MANAGEMENT
- MSPO SUPPLY CHAIN (MSPO SCCS)
- ISO 17679 WELLNESS SPA

### Product Certification

- SASO CERTIFICATE OF CONFORMITY
- IBS CERTIFICATION
- USED TYRE IMPORT FACILITY SCHEME
- MS 2669 TINT FILM FOR ROAD VEHICLES

**DSM Accreditations**

**ISO 37001 Anti-Bribery Management System**  
(first and only one to be DSM-accredited)

**ISO 45001 OHSMS MSPO SCCS.**

## SIRIM QAS INTERNATIONAL SDN BHD

### GENICES AND NEW ACCREDITATIONS

After undergoing a stringent peer review process, SIRIM QAS was accepted under the Global Ecolabelling Network Internationally Coordinated Ecolabelling System (GENICES). Acceptance under GENICES will allow us to give inputs on standards and specifications to be included in the Global Ecolabelling Network's common internationally accepted database of eco-label criteria besides boosting international acceptance of the SIRIM Eco-Labeling Scheme.

In addition to this, we also added new accreditations under our belt when we were accredited by the Department of Standards Malaysia for our ISO 45001 Occupational Health and Safety Management System (OHSMS) Certification Scheme and the MSPO SCCS Scheme. SIRIM QAS is the first and only certification body to have its ISO 37001 Anti Bribery Management System (ABMS) Certification Scheme accredited by the Department of Standards Malaysia.

These accreditations and recognitions not only demonstrate high levels of personnel competency and the impartiality of SIRIM QAS' certification processes, but also ensure the international recognition and acceptance of our certificates globally.

### CERTIFYING AND TESTING AGENCY FOR REGULATORY BODIES

Regulatory bodies and government ministries continue to lean on our testing and product certification to support them in the implementation and enforcement of technical regulations for consumer safety in Malaysia. These include the Energy Commission, Malaysian Communications & Multimedia Commission (MCMC), Fire and Rescue Department, National Water Services Commission (SPAN), Road Transport Department and Ministry of Domestic Trade and Consumer Affairs (MDTCA). Mindful of the significance of this responsibility and trust, we are committed to delivering our services with the highest level of integrity for a better and safer Malaysia.

In 2019, manufacturers of tint film for road vehicles were encouraged by MDTCA to get their products tested as well as certified to the MS 2669:2017 standard and labelled under the SIRIM Product Certification Scheme as an assurance of product quality to consumers.



Manufacturers of tint film for road vehicles to get their products tested and certified to the MS 2669:2017 standard and labelled under the SIRIM Product Certification Scheme as an assurance of product quality to consumers.

### STAKEHOLDER ENGAGEMENTS

There were regular engagements, dialogues and communications with regulatory bodies, government ministries, industry associations, accreditation bodies, non-governmental organisations and other stakeholders to understand their needs and concerns as well as gaining feedback on our services.

SIRIM QAS collaborated with Energy Commission (ST), Malaysian Electrical Appliances Distributors Association (MEADA) and Federation of Malaysian Electrical Appliances Dealers' Association (FOMEDA) to jointly launch a nine-month-long Safety Awareness Campaign to drive the importance of Energy Commission and SIRIM QAS-approved electrical appliances amongst consumers, manufacturers and importers.

We also reached out to existing and potential customers through networking sessions, 72 seminars, 26 trade exhibitions, social media platforms as well as print and billboard advertisements. Meanwhile, staff engagements and activities include town hall meetings, one-to-one *Sesi Santai Bersama* CEO and *Hari Keluarga* at Desaru, Johor, as well as information sharing through the SIRIM QAS TV platform and Infoqas email blast.

Community engagements and outreach, on the other hand, include donations to social causes; a collaboration with the Federation of Malaysian Consumers Associations (FOMCA) in conjunction with *Hari Pengguna Malaysia* (HPM) 2019, involving 16 school talks on consumer safety; SIRIM QAS International *Program Dermasiswa*, providing financial assistance and a motivational camp for 14 underprivileged diploma students; and an educational visit to Pusat Sains Negara for 70 children from Pusat Jagaan Cahaya Kasih Bestari.



# SIRIM STS SDN BHD



Report by:  
**Abdul Aziz Long**  
Senior General Manager, SIRIM STS Sdn Bhd

## STANDARDS RESEARCH AND DEVELOPMENT DEPARTMENT



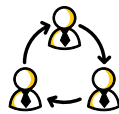
Standards Research and Development Department (SRDD) is the standards arm of SIRIM STS. SRDD develops SIRIM Industry Standards (SIS), organises seminars on standards and industrial-related matters, and organises training on standards implementation, training on soft skills and management and standards-related consultancy. SRDD, on behalf of SIRIM Berhad, carries out the function of Malaysia's Enquiry Point for the World Trade Organization's Agreement on Technical Barriers to Trade (WTO/TBT).

The department also assists businesses and organisations get access to industry, foreign and international standards through its SIRIM Technical Library Membership Scheme and SIRIM Standards Store.

### The department also assists



BUSINESSES



ORGANISATIONS



to get access to

INDUSTRY, FOREIGN & INTERNATIONAL standards

through its



SIRIM TECHNICAL LIBRARY MEMBERSHIP SCHEME



SIRIM STANDARDS STORE

## SIRIM INDUSTRY STANDARDS (SIS)

Consultancy services on the development of industry and organisation standards, a service which was undertaken by the department in 2019, saw collaborative efforts in industry standards development for organisations such as Public Works Department, Nano Verify Sdn Bhd, Ministry of Agriculture and Agro-based Industry, Universiti Malaysia Terengganu (UMT), Malaysia Design Council (MRM), Perbadanan Kemajuan Kraftangan Malaysia and E-Idaman Group of Companies.

## FACTS AT A GLANCE

STANDARDS DEVELOPED IN

2019



17

SIRIM INDUSTRY STANDARDS



14

ECO STANDARDS

STANDARDS RESEARCH AND DEVELOPMENT DEPARTMENT (SRDD) IS THE STANDARDS ARM OF SIRIM STS. SRDD DEVELOPS SIRIM INDUSTRY STANDARDS (SIS), ORGANISES SEMINARS ON STANDARDS AND INDUSTRIAL-RELATED MATTERS, AND ORGANISES TRAINING ON STANDARDS IMPLEMENTATION, TRAINING ON SOFT SKILLS AND MANAGEMENT AND STANDARDS-RELATED CONSULTANCY. SRDD, ON BEHALF OF SIRIM BERHAD, CARRIES OUT THE FUNCTION OF MALAYSIA'S ENQUIRY POINT FOR THE WORLD TRADE ORGANIZATION'S AGREEMENT ON TECHNICAL BARRIERS TO TRADE (WTO/TBT). THE DEPARTMENT ALSO ASSISTS BUSINESSES AND ORGANISATIONS TO GET ACCESS TO INDUSTRY, FOREIGN AND INTERNATIONAL STANDARDS THROUGH ITS SIRIM TECHNICAL LIBRARY MEMBERSHIP SCHEME AND SIRIM STANDARDS STORE.

## SIRIM STS SDN BHD

Overall, there were 17 SIS developed in 2019:

Standard No	Title
SIRIM 28:2019	Code of Practice for Production of Kopi-O
SIRIM 29:2019	Sustainable Manufacturing – General concept, framework and principle
SIRIM 30:2019	Design for Environment
SIRIM 31:2019	Bio-Natural Gas (BioNG) – Specification for use as vehicle fuel
SIRIM 33:2019	Code of Practice for Upgrading of Interior Lighting with LED Lamps and Luminaires
SIRIM/MOA 4-1:2019	Herbal Extracts – Specification – Part 1: Belalai gajah ( <i>Clinacanthus nutans (Burm.f.) Lindau</i> ) spray-dried aqueous extract
SIRIM/MOA 4-2:2019	Herbal Extracts – Specification – Part 2: Dukung anak ( <i>Phyllanthus niruri L.</i> ) spray-dried aqueous extract
SIRIM/MOA 4-3:2019	Herbal Extracts – Specification – Part 3: Halia ( <i>Zingiber officinale Roscoe</i> ) spray-dried aqueous extract
SIRIM/MOA 4-4:2019	Herbal Extracts – Specification – Part 4: Hempedu bumi ( <i>Andrographis paniculata (Burm. f.) Nees</i> ) spray-dried aqueous extract
SIRIM/MOA 4-5:2019	Herbal Extracts – Specification – Part 5: Kacip fatimah ( <i>Marantodes pumilum (Blume) Kuntze syn Labisia pumila (Blume) Fern.-Vill.</i> ) spray-dried aqueous extract
SIRIM/MOA 4-6:2019	Herbal Extracts – Specification – Part 6: Mas cotek ( <i>Ficus deltoidea Jack var. kunstleri (King) Corner</i> ) spray-dried aqueous extract
SIRIM/MOA 4-7:2019	Herbal Extracts – Specification – Part 7: Misai kucing ( <i>Orthosiphon aristatus (Blume) Miq.</i> ) spray-dried aqueous extract
SIRIM/MOA 4-8:2019	Herbal Extracts – Specification – Part 8: Mengkudu ( <i>Morinda citrifolia L.</i> ) spray-dried aqueous extract
SIRIM/MOA 4-9:2019	Herbal Extracts – Specification – Part 9: Pegaga ( <i>Centella asiatica (L.) Urb.</i> ) spray-dried aqueous extract
SIRIM/MOA 4-10:2019	Herbal Extracts – Specification – Part 10: Roselle ( <i>Hibiscus sabdariffa L.</i> ) spray-dried aqueous extract
SIRIM/MOA 4-11:2019	Herbal Extracts – Specification – Part 11: Tongkat ali ( <i>Eurycoma longifolia Jack</i> ) spray-dried aqueous extract
SIRIM/DOA 1:2019	Requirements for Heat Treatment of Wood and Wood Packaging Materials (WPM)

There were 14 ECO Standards developed in 2019:

Standard No	Title
ECO 073:2019	Eco-Labeling Criteria for Flexible Tile Made of Natural Earth Materials
ECO 074:2019	Eco-Labeling Criteria for Oxo-Biodegradable Plastics
ECO 075:2019	Eco-Labeling Criteria for Photodegradable Plastic
ECO 076:2019	Eco-Labeling Criteria for Accommodation
ECO 077:2019	Eco-Labeling Criteria for Imaging Equipment
ECO 078:2019	Eco-Labeling Criteria for Domestic Gas Appliances
ECO 079:2019	Eco-Labeling Criteria for Automotive Workshop Services (Adapted)
ECO 080:2019	Eco-Labeling Criteria for Telecommunication Site
ECO 081:2019	Eco-Labeling Criteria for Door Sets
ECO 082:2019	Eco-Labeling Criteria for Wood-based Furniture
ECO 083:2019	Eco-Labeling Criteria for Commercial Contract Cleaning Services
ECO 084:2019	Eco-Labeling Criteria for Radiant Barrier and Reflective Insulation
ECO 085:2019	Eco-Labeling Criteria for Gypsum-based Board
ECO 086:2019	Eco-Labeling Criteria for Wood Products

## MARKET ACCESS CONSULTANCY

Engaging companies with knowledge and support to reduce barriers to market access is SRDD's initiative on market access consultancy. This service guides companies on product compliance with standards requirements, ensuring product acceptance by regulators and consumers. There were 10 companies that applied for the Market Access Consultancy Programme (MACP) and seven companies have agreed to participate in the programme.

Under the SIRIM-Fraunhofer Programme, a training session on Material Flow Cost Accounting for Manufacturing Organisation was held on 22 August 2019. There was also a training session on the implementation of ECO 009:2016, Eco-labelling criteria – Biomass-based products for food-contact applications, which was held on 2 October 2019 at De Cans Cans Sdn Bhd as one of the components of MACP. Additionally, a talk on MACP was presented to 70 companies under the Technology Park Malaysia (TPM) incubator programme on 28 May 2019.





UNDER THE SIRIM-FRAUNHOFER PROGRAMME, A TRAINING SESSION ON MATERIAL FLOW COST ACCOUNTING FOR MANUFACTURING ORGANISATION WAS HELD ON 22 AUGUST 2019. THERE WAS ALSO A TRAINING SESSION ON THE IMPLEMENTATION OF ECO 009:2016, ECO-LABELLING CRITERIA - BIOMASS-BASED PRODUCTS FOR FOOD-CONTACT APPLICATIONS, WHICH WAS HELD ON 2 OCTOBER 2019 AT DE CANS CANS SDN BHD AS ONE OF THE COMPONENTS OF MACP. ADDITIONALLY, A TALK ON MACP WAS PRESENTED TO 70 COMPANIES UNDER THE TECHNOLOGY PARK MALAYSIA (TPM) INCUBATOR PROGRAMME ON 28 MAY 2019.

### TRAINING ON STANDARDS IMPLEMENTATION

Five Training on Standards Implementation sessions were conducted in 2019.

1. Training on SIRIM 15:2017, Requirement for workshops - Service and repair of aftermarket air-conditioning systems for motor vehicles was held on 16-17 April 2019 in collaboration with the Pertubuhan Pakar Penyeljuk Bekuan & Penyaman Udara Malaysia (MRACS).
2. Training on Green Supply Chain Management was held on 15-16 July 2019.
3. Workshop on Green Supply Chain Management was held on 19 November 2019.
4. Training on MS 2697:2018, Motor vehicle aftermarket - Repair, reuse, recycle and remanufacture (4R) for parts and components - Code of Practice was held on 4-6 October 2019 in collaboration with the Malaysia Automotive, Robotics & IoT Institute (MARii).
5. Three training and consultancy sessions on the implementation of MS 2696:2018, Motor vehicle aftermarket - Service and spare parts (2S) - Code of Practice for Nagoya Automobile Malaysia Holding Sdn Bhd were held on 24 September 2019, 20 November 2019 and 19 December 2019 respectively.

Eight seminars were conducted in 2019.

1. Seminar on Role of Standards in Biosecurity & Safety of Agriculture Produce was held on 6 March 2019.
2. Seminar on Safety of Landscape & Forestry was held on 4 July 2019.
3. Seminar on Role of Standards on Medical Devices for Regulatory Compliance was held on 1 August 2019.
4. Seminar on Accessibility for OKU in Public Amenities was held on 27 August 2019.
5. Seminar on Wellness Spa 'Indulging in Quality Services' was held on 21 October 2019.
6. Seminar on Supply Chain Management of Fruits and Vegetables was held on 5 November 2019.
7. Seminar on Accessibility for OKU in Public amenities was held on 20 November 2019.
8. Seminar & Hands-on Session on Understanding Cement for Engineering Applications was held on 3 December 2019.

SIRIM, BOSCH and Kedah Industrial Skills and Management Development Centre (KISMEC) collaborated to organise two MasterClass Programme sessions on Industry 4.0, which were held on 24 April 2019 and 21 August 2019 at SIRIM Bukit Jalil. Meanwhile, SIRIM also collaborated with Japan External Trade Organization (JETRO) to organise five Seminar on Smart Manufacturing Adoption in Industries sessions, which were held on 18 September 2019 at SIRIM Bukit Jalil, 14 October 2019 at SIRIM Penang, 24 October 2019 at MITI Kuala Lumpur, 13 November 2019 at SIRIM Johor and 10 December at SIRIM HQ Shah Alam.

FACTS -  
AT A GLANCE

TRAININGS AND SEMINARS  
CONDUCTED IN  
**2019**  
**5**  
TRAININGS ON  
STANDARDS  
IMPLEMENTATION  
**8**  
SEMINARS

## SIRIM STS SDN BHD

### MANAGEMENT AND SOFT SKILLS TRAINING

The year 2019 saw SRDD undertaking management and soft skills training activities, which kick-started in April.

A total of 32 training courses, comprising 17 public and 15 in-house training sessions, have been successfully conducted. The public training involved 189 participants from 93 companies, while for the 15 in-house courses, eight companies have trusted SSTS as their training provider; in total, 291 personnel were trained. Amongst the companies that have chosen SSTS were CyberSecurity Malaysia, Tamura Electronics, KPJ Ampang Putri, Sime Darby Seeds and Agricultural Services Sdn Bhd, Sapura Industrial Berhad and Angkatan Koperasi Kebangsaan Malaysia Berhad (Angkasa).

Of all the courses offered under management and soft skills training, the subject of Digital Marketing has been the most sought after, with seven conducted for public training, and one in-house.

### STANDARDS CONSULTANCY SERVICES

SRDD completed the development of Halal Assessment and Performance Rating System Covering Food and Beverage, Pharmaceutical and Cosmetic Sectors for Halal International Selangor.

SRDD also continued to promote the SIRIM-Fraunhofer Programme on Productivity Improvement through Best Practices and Standards Compliance: Innovation Management (SIRIM 8:2016, Guidance towards becoming an innovative organisation). Four companies agreed to participate in the programme.

### WTO/TBT ENQUIRY POINT AND TECHNICAL LIBRARY

The national World Trade Organization/Technical Barriers to Trade (WTO/TBT) enquiry and notification point circulated 3,337 notifications throughout the year from other WTO member economies through the E-ping alert system to the relevant national stakeholders, including regulators, industries and exporters. Currently there are 252 registered users who receive timely notifications on proposed changes to regulations and standards of foreign countries.

On the home front, 16 regular notifications and one notification on corrigenda on Malaysian technical regulations had been forwarded to WTO. Eleven notifications were on food regulations (Food Safety and Quality Division, Ministry of Health), three on telecommunication systems (Malaysian Communications and Multimedia Commission, MCMC), one from Malaysian Timber Industrial Board (MTIB) on wood-based panels, one from the National Pharmaceutical Regulatory Agency (NPRA) on veterinary medicine and one from the Energy Commission (ST) on household electrical equipment. Twenty-one local and foreign enquiries were received and answered accordingly.

The SIRIM Library Membership Scheme has a membership of 261 companies, organisations and government agencies reaping the benefits of access to the most comprehensive collection of International, Foreign, Association and Malaysian Standards.

### SALES OF STANDARDS

SRDD is an agent for sales of standards, including International Standards (e.g. ISO, IEC, ITU) and Foreign Standards (e.g. British Standards, Australian Standards). Apart from that, SRDD also sells Association and Organisation Standards (e.g. NFPA, AASHTO, ASTM, AIAG) and SIS, including SIRIM ECO standards.

SRDD recorded the sale of 1,136 copies of International and Foreign Standards in 2019. Meanwhile, the SIRIM Standards Store, which is a platform to facilitate online purchase of standards, in particular SIS, recorded 108 copies of standards being sold.

## FACTS AT A GLANCE

SRDD RECORDED THE SALE OF



1,136  
INTERNATIONAL  
& FOREIGN  
STANDARDS

108

COPIES OF STANDARDS SOLD ONLINE

— A TOTAL OF 32 TRAINING COURSES, COMPRISING 17 PUBLIC AND 15 IN-HOUSE TRAINING SESSIONS, HAVE BEEN SUCCESSFULLY CONDUCTED. THE PUBLIC TRAINING INVOLVED 189 PARTICIPANTS FROM 93 COMPANIES, WHILE FOR THE 15 IN-HOUSE COURSES, EIGHT COMPANIES HAVE TRUSTED SSTS AS THEIR TRAINING PROVIDER; IN TOTAL, 291 PERSONNEL WERE TRAINED. OF ALL THE COURSES OFFERED UNDER MANAGEMENT AND SOFT SKILLS TRAINING, THE SUBJECT OF DIGITAL MARKETING HAS BEEN THE MOST SOUGHT AFTER, WITH SEVEN CONDUCTED FOR PUBLIC TRAINING, AND ONE IN-HOUSE. —



Report by:  
**Dr. Mohd Azman Idris**  
Senior General Manager, SIRIM STS Sdn Bhd

## TRAINING AND CONSULTANCY DEPARTMENT

In 2019, the Training and Consultancy Department (TCD) of SIRIM STS Sdn Bhd successfully organised 797 training courses for 602 organisations, involving a total of 13,916 participants. Of these organisations, 28 were small and medium enterprises (SMEs). In terms of guidance and consultation, TCD secured 58 new consulting or collaborative projects.

TCD continues to focus on core guidance and training services related to quality, technology and best practices. These include guidance and training for Standards Based Management Systems such as ISO 9001, MS 1900, MS 2400, MS 2058, ISO 14001, ISO 45001, ISO/IEC 17025, ISO/IEC 17020, ISO/IEC 17021, ISO/IEC 17065, ISO 15189, ISO 13485, HACCP, ISO 22000, ISO 27001, ISO 22301, ISO 37001, ISO 50001, ISO 55001, ISO/TS 16949, Integrated Management System, GMP, GHP and Halal (MS 1500).

TCD also offers guidance and training for Tools and Techniques for Quality, and Best Practices such as TQM, Green 5S, 7 QC Tools, SPC, ICC/QCC, 6 Sigma, Kaizen, Customer Service Management, TPM and Lean Management. Additionally, TCD has implemented technology-related training such as Certified Welders-AWS, Certified Welding Engineers-AWS, Certified Welding Inspectors-AWS and Certified NDT Programmes on UT and RT (approved by Jabatan Pembangunan Kemahiran).

Several new products and services were introduced in 2019. Among them are Personnel Certification programmes such as Certified BCMS Lead Implementer, Certified AS 9100 Professional, Certified Food Safety Management Systems Executive, Certified Halal Executive, Certified Halal Auditor and Certified Internal Auditor (quality); Lead Auditor courses such as Integrated Management Systems Lead Auditor and Anti Bribery Management Systems Lead Auditor; and Standards Based Management Systems such as ISO/TS 22163, ISO 21001, ISO 28001, ISO 10002, MSPO SCCS, ISO/IEC 17043 and MS 2634. Through a smart partnership with Open University Malaysia (OUM), TCD trained and qualified 13 of the university's Master of Quality Management students for Certified Quality Manager and Certified Quality Professional. In collaboration with Universiti Tun Hussein Onn Malaysia (UTHM), TCD trained and qualified 23 faculty members of the university in the Certified AS 9100 Professional. These lecturers will then train their students in the Certified Aerospace Management System Executive Programme. TCD also trained and qualified students from Universiti Sains Islam Malaysia (USIM) and polytechnics in the Certified Food Safety Management Systems Executive Programme. A total of 51 students have participated in the programmes. With additional certification, it is anticipated that the students' employability will be further enhanced. Through public training programmes, four individuals have been qualified through Certified Internal Auditor for Quality, 21 individuals were qualified as Halal Executives and 16 individuals were qualified as Halal Auditors. A Certified BCMS Lead Implementer Programme was conducted for Malaysian Communication and Multimedia Commission (MCMC) vendors, and 19 individuals were qualified.

A total of 31 organisations have been successfully guided towards obtaining various certifications, accreditations and recognitions. Seventeen organisations were assisted for Standards Based Management Systems such as ISO 9001, ISO 45001, MS 2530, ISO/IEC 17065, ISO/IEC 17025, ISO/IEC 15189, MS 1500 and HACCP. Fourteen organisations have been assisted to achieve Best Practices Recognition Schemes such as Green 5S, TQM and Customer Service Management.



# SIRIM STANDARDS TECHNOLOGY SDN BHD



Report by:

**Abdul Ghani Abdul Rahman**

Chief Executive Officer, SIRIM Standards Technology Sdn Bhd

'As an ISO17025 accredited laboratory, SST offers a comprehensive and diversified range of calibration and measurement services and acts as a one-stop centre for our customers. SST currently serves more than 3,400 companies per annum.'

SIRIM Standards Technology Sdn. Bhd. (SST) provides a wide range of services with full traceability to National and International Standards to cater for a complete range of calibration and measurement across six fields: Radio Frequency (RF), Electrical (DCLF & Time Frequency), Force and Pressure, Temperature, Dimensional, Mass and Volumetric.

To serve our customers better, SST has offices and laboratories located at five different regions: Central (Selangor), Northern (Penang), Southern (Johor) and the East Coast (Pahang) of Peninsular Malaysia, as well as East Malaysia (Sarawak). All laboratories are ISO 17025-accredited to serve diversified market sectors, which include Oil and Gas, Manufacturing, Aviation, Semiconductors, Electrical & Electronics, Utilities, Education, Defence, Automotive, Telecommunications, Agriculture, Healthcare, Government Agencies and Construction.

Since its inception in 1994, over 1.2 million calibration certificates have been issued and more than 10,000 companies have been served, both locally and internationally. This achievement is testament to SST's Value Proposition in providing 'Trusted and Reliable High Quality Measurement Services.'

**SIRIM STANDARDS TECHNOLOGY SDN. BHD. (SST) PROVIDES A WIDE RANGE OF SERVICES WITH FULL TRACEABILITY TO NATIONAL AND INTERNATIONAL STANDARDS TO CATER FOR A COMPLETE RANGE OF CALIBRATION AND MEASUREMENT ACROSS SIX FIELDS: RADIO FREQUENCY (RF), ELECTRICAL (DCLF & TIME FREQUENCY), FORCE AND PRESSURE, TEMPERATURE, DIMENSIONAL, MASS AND VOLUMETRIC.**



In 2019, SST produced 46,544 calibration certificates to 3,462 companies and acquired all shares in SIRIM Measurement Technologies Sdn Bhd (SMT) effective from 29 October 2019. This acquisition enables SST to expand its calibration field to RF. With the new addition, SST will be well-positioned to forge strong and strategic partnerships with E&E companies.

The successful installation of a Coordinate Measuring Machine (CMM) at the Dimensional laboratory in Shah Alam enables SST to play a role in catering to length measurements of components such as aircraft propeller blades, jigs and fixtures for the Aerospace and Automotive sectors.

Moving forward, SST is committed to providing excellent calibration and measurement services to our clients by prioritising the continued development of state-of-the-art technologies to position ourselves as a 'Best Partner for Innovation'.





# SIRIM STANDARDS TECHNOLOGY SDN BHD

SIRIM INDUSTRIAL RESEARCH

SUBSIDIARIES AND  
BUSINESS UNITS

DEVELOPMENTAL AND  
NATIONAL PROJECTS

CORPORATE

CALENDAR OF EVENTS




SST is committed to providing excellent calibration and measurement services to our clients by prioritising the continued development of state-of-the-art technologies to position ourselves as a 'Best Partner for Innovation'.

## 2019 SST PRODUCED



# 46,544

CALIBRATION CERTIFICATES TO

# 3,462

COMPANIES



### SST BRANCHES



# SIRIM TECH VENTURE SDN BHD



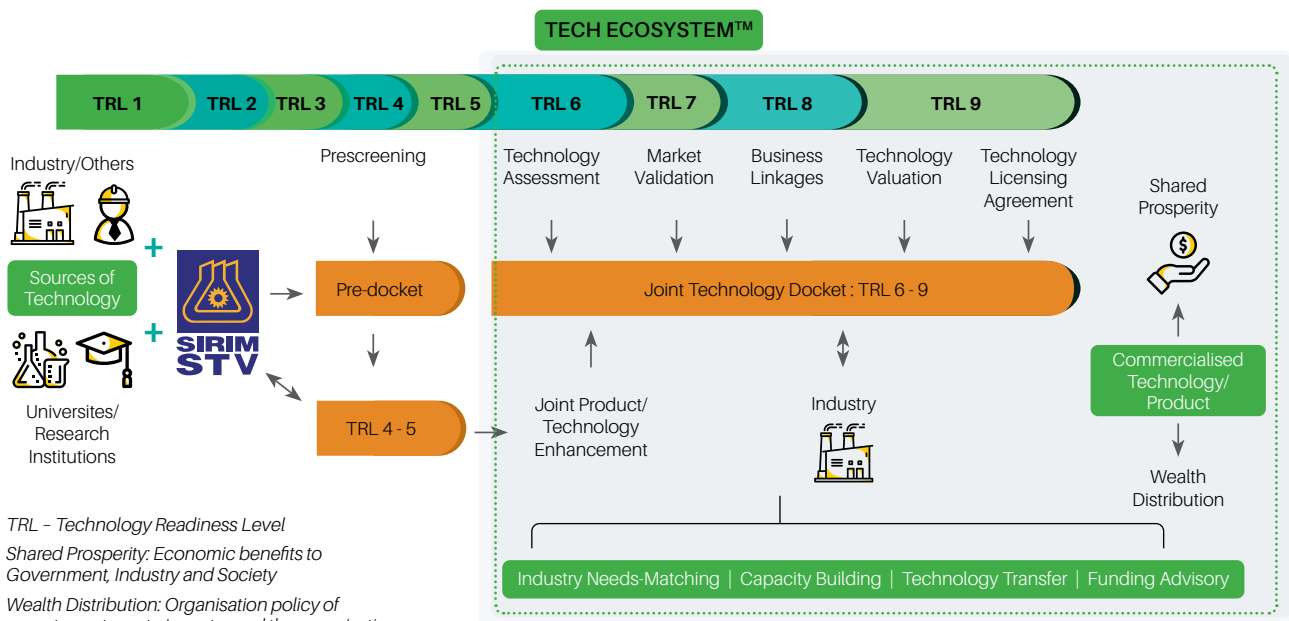
Report by:  
**Ajmain Kasim**

Chief Executive Officer, SIRIM Tech Venture Sdn Bhd

SIRIM Tech Venture Sdn Bhd (STV) initiated a new business model in 2019 by creating more value-centric activities in meeting client needs. It is imperative to be recognised in the commercialisation as well as in the innovation fraternity and the new business model aims to accelerate business growth for the sustainability of the company. The new business model is called the Technology Enterprise and Commercialisation Hub or TECH Ecosystem™. TECH Ecosystem™ acts as an overall ecosystem of STV's business activities and focuses on addressing the innovation gap in the industry and market.

The TECH Ecosystem™ undeniably focuses on both technology sources and technology takers by bridging these two sectors to gain the best out of research and development investment and for the economic development of the country. The value chain activities in TECH Ecosystem™ facilitate the progress of technology maturity from Technology Readiness Level (TRL) 4 or 5, preferably, to TRL6 and above, until it is ready for commercialisation. TRL is a methodology of estimating technology maturity during the acquisition process. Advisory activities comprise project screenings, joint technology enhancements, technology assessments, techno-economic feasibility studies, market validations, business linkages, technology valuations, industry-need matching, capacity building and funding advisory. This collaboration platform will benefit all parties in the long term.

## Technology Enterprise and Commercialisation Hub (TECH) Ecosystem™ CONNECT + COLLABORATE + CO-CREATE



TRL - Technology Readiness Level  
 Shared Prosperity: Economic benefits to Government, Industry and Society  
 Wealth Distribution: Organisation policy of monetary returns to inventor and the organisation  
 Updated on 6 April 2020

STV essentially led seven Innovation Workshops for small and medium enterprises (SMEs) under the SIRIM-Fraunhofer Programme, and a total of 175 SME business owners and personnel have attended the sessions. The Innovation Workshops delivered technology management tools that are adaptable in the product innovation of SMEs to enable their productivity enhancement and sustainable growth. The topics covered include Technology Management, Technology Profiles and Technology Radar, Technology Decomposition, Value Curves, Analogies, Morphological Box and Lead User Involvement. These are best practices taught to SMEs that assist them in creating more innovative products and processes for their businesses.

The Commercialisation Workshop, which was introduced by STV in 2019, is a capacity building programme customised for researchers, technology transfer officers and research management teams. The modules, comprising Commercialisation Model, TRL, Feasibility Study, Market Study, Technology Portfolio, Technology Decomposition and Value Curves, are assembled in an interactive approach, and guides are given to facilitate deeper understanding of the commercialisation processes. STV successfully conducted two workshops: one for Multimedia University, Cyberjaya Campus, and one for international participants under the World Association of Industrial and Technological Research Organizations (WAITRO) members.

**FACTS AT A GLANCE**

STV ESSENTIALLY LED **7** INNOVATION WORKSHOPS FOR SMALL & MEDIUM ENTERPRISES (SMEs) UNDER THE SIRIM-FRAUNHOFER PROGRAMME

**175** BUSINESS OWNERS AND PERSONNEL ATTENDED THE SESSIONS



# SIRIM TECH VENTURE SDN BHD

STV analysed appropriate partners and collaborators to be offered technologies from our Technology Docket – a virtual database which holds ready technologies or products to be offered through various commercialisation pathways, such as Licensing, Outright Sales, Joint Ventures or Strategic Alliances.

The year 2019 witnessed the successful commercialisation of Bromex Extract from SIRIM Berhad to Ensu Lifesciences Sdn Bhd. The Bromex Bioactive is produced from pineapple biomass through a green technology extraction process and possesses strong antioxidant properties. The Technology Transfer Agreement between both parties was signed in December 2019.

Currently there are nine technologies and products at various stages of commercialisation and negotiation with potential technology takers. In 2019, STV actively carried out various efforts to increase the sources of the Technology Docket by conducting technology scouting amidst both internal and external sources.

By executing our strategic business objectives of Competitiveness, Connection and Culture of Excellence, STV moved towards meeting unknown customers proactively by having CEO Breakfast Sessions and connecting with decision-makers. These are small and interactive sessions with chief executive officers of companies and agencies, where common interests are rationalised and business follow-ups are conducted. STV successfully conducted three CEO Breakfast Sessions in 2019.

STV continued providing services for the fabrication and testing of composite cylinders, testing for high pressure in accordance with ISO 11439, testing for low pressure in accordance with BS EN 14427 and advisory in composite technology as well as overall business commercialisation.



THREE-DAY WORKSHOP FOR COMMERCIALISATION OF RESEARCH AND INNOVATION CONDUCTED FOR MULTIMEDIA UNIVERSITY IN JANUARY 2019



SIGNING OF TECHNOLOGY TRANSFER AGREEMENT FOR BROMEX EXTRACT BETWEEN SIRIM AND ENSU LIFESCIENCES SDN BHD IN DECEMBER 2019



A CEO BREAKFAST SESSION WITH INSTITUTES OF HIGHER LEARNING FROM THE NORTHERN REGION AT THE LIGHT HOTEL, PENANG, ON 9 OCTOBER 2019

THE YEAR 2019 WITNESSED THE SUCCESSFUL COMMERCIALISATION OF BROMEX EXTRACT FROM SIRIM BERHAD TO ENSU LIFESCIENCES SDN BHD. THE BROMEX BIOACTIVE IS PRODUCED FROM PINEAPPLE BIOMASS THROUGH A GREEN TECHNOLOGY EXTRACTION PROCESS AND POSSESSES STRONG ANTIOXIDANT PROPERTIES. THE TECHNOLOGY TRANSFER AGREEMENT BETWEEN BOTH PARTIES WAS SIGNED IN DECEMBER 2019.



# GRANULAB (M) SDN BHD



Report by:  
**Dr. Fazilah Fazan**  
Chief Operating Officer, GranuLab (M) Sdn Bhd

GranuLab, a wholly-owned subsidiary of SIRIM Tech Venture Sdn Bhd (STV), was established in 2006 and is the sole synthetic bone graft manufacturer in South East Asia. The BioNexus Status Company (BNX 100217) has its manufacturing facility in Shah Alam, Selangor, which is ISO 13485:2016-certified by British Standard Institution (BSI) and operates under the manufacturing licence A017866, producing high-quality bone substitute materials. These products are used in Orthopaedic, Dental and Oral Maxillofacial surgeries through bone grafting procedures. The manufacturing facility has a capacity to produce up to 350kg of synthetic bone grafts per year. The types of bone grafts manufactured are based on Hydroxyapatite (HA), Tri-calcium Phosphate (TCP) and Biphasic, and produced in various forms, shapes and sizes for clients, hospitals and patients.

GranuMaS® is a first-of-its-kind bone graft material that is certified CE by BSI and has obtained Halal recognition by the Department of Islamic Development Malaysia (JAKIM). Another product of GranuLab which has seen an increased demand is Synthetic Bone Construct (SBC); this is in tandem with the growing need for customised products by surgeons for patient-specific applications. GranuLab is also continuing with its product development initiatives to introduce new products to the market.



## ABOUT GRANUMAS®

GranuMaS® is a HA bone graft made of calcium phosphate, which is similar in nature to human bone mineral, and is a Class D medical device according to the Medical Device Act 2012. It is used for non-load bearing applications in Orthopaedic, ENT, Dental and Maxillofacial surgeries.

The production of GranuMaS® conforms to the ASTM F1185-88 Standard for composition of ceramic HA for surgical implants and ISO 13779 Standard for surgical implants from HA.

This product has been registered under the Approved Product Purchase List ('APPL') in the year 2018 as required by the Ministry of Health Malaysia with the signing of a central contract with Pharmaniaga for it to be used by the local hospitals. In view of this as well as our continuous engagement with hospitals and surgeons, the product has seen an increase in application amongst the orthopaedic and dental surgeons in both government and private hospitals.

GranuMaS® also obtained Halal certification from JAKIM in January 2018 as a consumer good, which has added value to the quality of the product and increased acceptance of it by surgeons and patients compared to products manufactured from animal bones and other forms. GranuMaS® is produced in granules, cubes, chips and pins for various applications in orthopaedic and dental surgeries.



CUBES



PINS



CHIPS



GRANULES

**FACTS AT A GLANCE**

**GranuMaS®**  
HAS OBTAINED

CERTIFICATION FROM JAKIM IN  
**Jan 2018**  
AS A CONSUMER GOOD

GRANUMAS® IS A FIRST-OF-ITS-KIND BONE GRAFT MATERIAL THAT IS CERTIFIED CE BY BSI AND HAS OBTAINED HALAL RECOGNITION BY THE DEPARTMENT OF ISLAMIC DEVELOPMENT MALAYSIA (JAKIM). ANOTHER PRODUCT OF GRANULAB WHICH HAS SEEN AN INCREASED DEMAND IS SYNTHETIC BONE CONSTRUCT (SBC); THIS IS IN TANDEM WITH THE GROWING NEED FOR CUSTOMISED PRODUCTS BY SURGEONS FOR PATIENT-SPECIFIC APPLICATIONS.



GRANUMAS® USED TO TREAT CAVITY DEFECT DUE TO CYSTS





# GRANULAB (M) SDN BHD

## ABOUT SYNTHETIC BONE CONSTRUCT (SBC)

GranuLab had been in constant engagement with orthopaedic surgeons and clinical consultants in the year 2019 to share knowledge and ideas and explore other effective applications of our company's products to treat patients. This has resulted in the development of a custom-made bone construct for use by orthopaedic surgeons to treat segmental bone defects or injuries due to trauma, non-union cases or even diseased bones.

SBC is an osteoconductive and biodegradable product comprising more than 50% calcium phosphate materials, with the main compound being a combination of tri-calcium phosphate and tetra-calcium phosphate, which are highly resorbable in a human body. SBC's porous structure allows bone regrowth to take place in situ.

The original powdered state of SBC allows it to be formed into solids of various shapes and sizes through moulds, including discs as fillers of segmental bone loss or pellets, blocs and other bespoke shapes of various sizes and thicknesses. Surgeons have acknowledged the ease of use and effectiveness of this product in treating their patients in year 2018.



GranuMaS® is a HA bone graft made of calcium phosphate, which is similar in nature to human bone mineral, and is a Class D medical device according to the Medical Device Act 2012.



THE SBC IS CUSTOM-MADE



ORTHOPAEDICS APPLICATION



SAMPLES OF BLOC-SHAPED SYNTHETIC BONE CONSTRUCT

GRANULAB HAD BEEN IN CONSTANT ENGAGEMENT WITH ORTHOPAEDIC SURGEONS AND CLINICAL CONSULTANTS IN THE YEAR 2019 TO SHARE KNOWLEDGE AND IDEAS AND EXPLORE OTHER EFFECTIVE APPLICATIONS OF OUR COMPANY'S PRODUCTS TO TREAT PATIENTS. THIS HAS RESULTED IN THE DEVELOPMENT OF A CUSTOM-MADE BONE CONSTRUCT FOR USE BY ORTHOPAEDIC SURGEONS TO TREAT SEGMENTAL BONE DEFECTS OR INJURIES DUE TO TRAUMA, NON-UNION CASES OR EVEN DISEASED BONES.

## GRANULAB (M) SDN BHD

### ACCREDITATION

As an internationally recognised medical device manufacturer and distributor, the company ensures that it continues to maintain a high standard through accreditation and certification by international bodies. GranuMaS® underwent an annual audit for ISO 13485:2016 and CE Mark certification by BSI and successfully retained both certifications for the year 2018. This recognition allows for the potential of market access and strategic expansion of GranuLab to the Asia Pacific and Middle East.



GranuMaS® underwent an annual audit for ISO 13485:2016 and CE Mark certification by BSI and successfully retained both certifications for the year 2018.



### PROMOTIONAL ACTIVITIES (LOCAL AND INTERNATIONAL)

In 2019, GranuLab participated in and organised various promotional initiatives to engage with stakeholders, both from private and government hospitals, through continuous medical education (CME), continuous dental education (CDE), exhibitions, seminars and public awareness to introduce and share knowledge of both GranuMaS® and SBC. GranuLab also held plant visits for medical and dental university students.



## GRANULAB (M) SDN BHD

### 1. CONTINUOUS MEDICAL EDUCATION (CME)

GranuLab organised a series of 13 Continuous Medical Education & Continuous Dental Education sessions for the year 2019. Some of the hospitals involved were: Hospital Ampang, Hospital Kajang, Hospital Kemaman, Hospital Angkatan Tentera Tuanku Mizan, Hospital Seberang Jaya, Hospital Enche' Besar Hajjah Kalsom and Klinik Pergigian Anika, Klang. This event was supported by surgeons who shared their experience of using our products in treating patients. GranuLab also set up an information counter to display and demonstrate the preparation and use of the products and to answer enquiries.

The year 2019 saw an increase in hospitals that preferred GranuMaS® as their choice for bone grafts. Among the hospitals currently using GranuMaS® are Hospital Kajang in Selangor, Hospital Segamat in Johor, Hospital Kemaman in Terengganu and Hospital Banting in Selangor.

Our SBC product, which was introduced in mid-June 2018, received good response from surgeons who were interested to use it for their cases. In 2019, there was an increase in the demand for SBC from new customers. Some of the new cases were from Hospital Kemaman, Hospital Sandakan and Hospital Seremban. There was also one case in a private hospital - KPJ Klang.



CME TALK IN HOSPITAL SEBERANG JAYA BY PROF. NAZRI

### 2. CONTINUOUS DENTAL EDUCATION (CDE)

Apart from holding CDE talks locally, GranuLab also managed to organise one CDE programme internationally at Pakar Bedah Mulut Rumah Sakit Dr. Hasan Sadikin, Bandung, Indonesia.

### 3. LOCAL EXHIBITIONS

In addition, GranuLab also participated in 11 exhibitions, such as the Halal Fiesta (HALFEST) 2019 at the Mines International Exhibition & Convention Centre (MIECC) and Malaysia Spine Society in Ipoh, Perak.



HALFEST - 4-8 SEPTEMBER 2019



MALAYSIA SPINE SOCIETY  
- 2-4 AUGUST 2019

### 4. INTERNATIONAL EXHIBITIONS

In 2019, GranuLab continued making inroads in the Indonesian market. Some of the promotional activities that GranuLab participated in and organised there were the Indonesia Dental Exhibition Conference (IDEC) and Indonesia Orthopaedic Society for Sports Medicine & Arthroplasty (IOSSMA).

### 5. INTERNATIONAL PRODUCT TRAINING

A training programme on GranuMaS® products was conducted in Indonesia for our current distributors. This networking and engagement programme was aimed at enhancing our distributors' knowledge on GranuMaS®. Apart from that, this investment will broaden the network between GranuLab and our current and potential distributors in Indonesia, indirectly increasing GranuLab's revenue from the international market.

### 6. PUBLIC AWARENESS

Public Awareness programmes were done at private hospitals where booths were set up to display GranuMaS® and SBC products. This allowed us to spread the awareness to the public on Halal bone grafts that are currently in the market. In addition, this was a good platform for knowledge-sharing sessions between marketers and visitors interested to know more about the products. The feedback received from the visitors has been positive, and they have been glad to discover that there is a Halal alternative to bone grafting.



BOOTH AT KPJ SELANGOR - 5 & 12 OCTOBER 2019

### 7. PRODUCT DISPLAY PROMOTION AT MATRADE

GranuMaS® products were put on display together with other medical devices at Malaysia External Trade Development Corporation (MATRADE).



## GRANULAB (M) SDN BHD

### 8. PLANT VISIT AT GRANULAB

GranuLab received 40 guests from the Universiti Malaya Dental Faculty on 16 December 2019. They were mainly students currently pursuing their Masters Education in Dentistry. During the event, a talk was given by one of the marketers and the GranuLab CEO herself to give guests an overview of GranuLab and the products we carry. The participants enjoyed the sharing, eagerly asking questions to gain a better understanding.



PLANT VISIT FROM THE UNIVERSITI MALAYA DENTAL FACULTY - 16 DECEMBER 2019

### 9. MEDIA EXPOSURE PROMOTION

In 2019, GranuLab started to get more active on Facebook and Instagram, following current social media trends. GranuLab utilised these platforms to share a lot of knowledge and promotions.



FACEBOOK



YOUTUBE VIDEOS



INSTAGRAM

### 10. CORPORATE SOCIAL RESPONSIBILITY (CSR) PROGRAMME

In supporting volunteering practices, GranuLab took the opportunity to organise a corporate social responsibility (CSR) programme for Bait Al Mawaddah Zakat Selangor. All GranuLab staff members were dedicated and worked together to cook and pack complete meals to be distributed to Bait Al Mawaddah.



GRANULAB CSR PROGRAMME AT BAIT AL MAWADDAH - ZAKAT SELANGOR





Report by:  
**Noor Hayati Hj Mokhtar**  
General Manager, Packaging and Security Design Centre

# PACKAGING AND SECURITY DESIGN CENTRE

Packaging and Security Design Centre (PSDC), SIRIM Berhad offers product packaging design, research, ideation, prototyping, brand development and trademark search services focusing on food and beverages, cosmetics, crafts and other areas with the aim to help boost the growth of the small and medium enterprise (SME) sector in the country. The slogan 'Believe in the Power of Ideas' motivates PSDC to play the role of the catalyst in producing designs that help entrepreneurs achieve the requirements of standard industry packaging.

THROUGH THIS PROGRAMME, SMEs WILL INCREASE THE QUALITY OF THEIR PRODUCTS AND BE AT PAR WITH GLOBAL BRANDS, THUS CONTRIBUTING TO THE GROWTH OF THE ECONOMY IN A MORE MEANINGFUL MANNER.

Through this programme, SMEs will increase the quality of their products and be at par with global brands, thus contributing to the growth of the economy in a more meaningful manner. Therefore, it is essential for the SMEs to have more creative and innovative packaging. PSDC strives to help SMEs improve through training and knowledge-sharing programmes, which will also allow entrepreneurs to be exposed to the requirements of hypermarkets that change their operational models.



The Green-Blue (GB) packaging is becoming more popular, especially among local authorities, hospitals, restaurants and eateries that are concerned about conservation of the environment, bio-degradability and reducing their carbon footprint.

## BUSINESS ACTIVITIES

In the year 2019, PSDC focused on several programmes for product packaging improvements for micro enterprises and SMEs. The programmes include Security Design, Innopack, Green-Blue (GB) Packaging, Biz Transformation and special projects.

### Security Design

Security Design (SD) originally started as a SIRIM Printing Unit to provide in-house printing services to SIRIM. These services were later extended to include security printing and security design. Currently, its core focus is on the production of safety labels for SIRIM QAS International, and it also extends its services to government agencies. SD offers a variety of security solutions to safeguard products and high security documents against brand counterfeiting, product piracy and tampering. The multi-layers of security defences, together with track and trace solutions, are able to help companies protect their brands and safeguard the security of their products/services.

Security design services or products can be grouped into the following:

- Security Label - Security design and printing of security labels specifically for SIRIM QAS International
- Security Packaging - Security design and printing of packaging
- Security Document - Security design and printing with integrated systems (with QR code and RFID application) for:
  - Graduate Certificates
  - Academic Transcripts
  - Licences
  - Premise Stickers & Bunting/Banner Stickers
  - Parking Coupons
  - Security Cards
  - Medical Supplies

## PACKAGING AND SECURITY DESIGN CENTRE

### Innopack

The Innopack programme continues from previous years to keep developing and improving local entrepreneur packaging, starting at the basic labelling product surface treatment to complete design and printing of the packaging according to the requirements of local and international markets. The programme also includes brand enhancement, registration of intellectual property, label design and product presentation. Recently, the implementation of the Innopack programme was focused more on product development and enhancement of the SMEs in the following categories:



- Innopack 1 - for Micro Enterprises and SMEs (Small)
- Innopack 3 - for SMEs (Small and Medium)
- Innopack 6 - for SMEs (Small and Medium)



PSDC has successfully transformed the SMEs' packaging from simple and unattractive to more creative and innovative packaging designs that attract customers and improved their businesses.

### Green-Blue Packaging

The Green-Blue (GB) packaging is becoming more popular, especially among local authorities, hospitals, restaurants and eateries that are concerned about conservation of the environment, bio-degradability and reducing their carbon footprint. PSDC has supplied the GB packaging to authorities such as the Shah Alam City Council (MBSA), Petaling Jaya City Council (MBPJ) and Sabah Ministry of Local Government & Housing (KKTP). In the meantime, many authorities have express their interest in this programme.

The original design of GB packaging includes single and three-compartment takeaway and dine-in food containers. To meet customer needs, the GB packaging design was subsequently enhanced to include noodle boxes, cups, straws and biodegradable plastic bags. This has contributed significantly to the replacement of food polystyrene containers, which contain toxic chemicals and are difficult to dispose of. At the same time, the GB materials comply with the relevant standards such as MS 1513 Stacking test, ASTM D4169-09, Temperature - Environmental hazard test, Commission Regulation (EU) No/2011, Heavy metal tests, EN 13432, ISO 14855-1 Biodegradation test and many others.

### Biz Transformation Programme

This programme has assisted many entrepreneurs in enhancing their knowledge, understanding, skill and capability in developing packaging, branding and labelling. In 2019, the programme included digital marketing, the latest packaging and labelling regulations, and packaging trends. Several agencies such as Majlis Amanah Rakyat (MARA), Ministry of Youth & Sports, MBECC, Lembaga Lada, Pusat Kraftangan Sabah and Veterinary Department attended the programme.



In addition to providing exposure and awareness, the programme has also proved invaluable in instilling entrepreneurial values. It has created more knowledgeable and experienced entrepreneurs who are well-versed with the packaging technology needs, regulations and trends. Most importantly, the programme has equipped entrepreneurs to be more competitive in facing the challenges of marketing their products locally and globally.



# PACKAGING AND SECURITY DESIGN CENTRE

## Special Projects

Another initiative undertaken by PSDC is the enhancement of entrepreneurs in the East Coast Economic Region and SIRIM (ECER-SIRIM) and SIRIM-Fraunhofer projects. The ECER-SIRIM entrepreneur development project focuses on the development and enhancement of micro businesses through coaching and consulting, especially in quality systems, management innovation, production and controls of the manufacturing processes. The modules include financial management, product costing, clean environment practices, production quality control, marketing, MeSTI and HALAL certification, support for human capital development, consulting and guidance on branding and labelling. The ECER-SIRIM project covers areas in Kelantan, Terengganu, Pahang and the district of Mersing, Johor. The target population sector for this programme is the B40 group regardless of race or religion.

The SIRIM-Fraunhofer Programme implements activities targeted at enhancing productivity and market expansion of SMEs through packaging and labelling. PSDC focuses on upgrading and enhancing product innovation through the development of packaging designs, especially for food and beverages (F&B), cosmetics and crafts. The project develops new packaging designs to meet market trends and requirements, and be accepted by local and international markets. Each company is allocated a project value of up to RM50,000 for packaging design and brand development, international nutrition facts, foreign language translation and packaging printing.



## ACHIEVEMENTS

Throughout the year 2019, a total of 1,757 entrepreneurs have been assisted through the Biz Transformation and Innopack programmes, and a total 412 companies were nurtured under the incubation programme.

### 2020 outlook & focus

<p><b>smart intelligent packaging</b></p> <p>CONSUMER PRODUCTS SUCH AS COSMETICS, PHARMACEUTICALS AND ELECTRONICS</p>	<p><b>green-blue packaging</b></p> <p>PROVIDING SERVICES TO LOCAL AUTHORITIES, HOSPITALS, HOTELS, FOOD COURTS AND ONLINE ORDERS AND DELIVERIES</p>	<p><b>security design</b></p> <p>SMART CARD DESIGN WHICH HAS POTENTIAL FOR SECURITY ACCESS TO GOVERNMENT DEPARTMENTS, FINANCIAL INSTITUTIONS AND MEMBERSHIP PROGRAMMES</p>
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SIRIM-Fraunhofer Programme implements activities targeted at enhancing productivity and market expansion of SMEs through packaging and labelling.



G R O W I N G  
C A P A B I L I T I E S  
E L E V A T I N G  
T H E N A T I O N

# 03 DEVELOPMENTAL & NATIONAL PROJECTS







Success

Solution

Business Strategy

Innovation  
Branding  
Solution  
Marketing  
Analysis  
Ideas  
Success  
Management

Innovation  
Branding  
Solution  
Marketing  
Analysis  
Ideas  
Success  
Management

● SOCIAL NETWORK



May Jun Jul Aug Sep Oct Nov Dec

# NATIONAL METROLOGY INSTITUTE OF MALAYSIA



Report by:

**Dr. Osman Zakaria**

Senior Director, National Metrology Institute of Malaysia

The National Metrology Institute of Malaysia (NMIM-SIRIM) is a statutory business unit, operating under SIRIM Berhad to facilitate domestic and international trade as well as ensuring safety, health and the environment for Malaysians through measurement. On 15 February 2008, NMIM-SIRIM was appointed as the National Measurement Standards Laboratory (NMSL) with stated functions and powers under the National Measurement System Act 2007.

As the National Metrology Institute (NMI), NMIM-SIRIM is responsible for the coordination of the national measurement system for Malaysia and requires continuous strengthening of its capacities, promoting recognition of Malaysia's metrological system by gaining full membership in international organisations in the field of metrology. NMIM-SIRIM has excellent connections to the international metrology system. It is a member of the International Bureau of Weights and Measurement (BIPM), International Organization of Legal Metrology (OIML), Asia Pacific Metrology Programme (APMP), Asia-Pacific Legal Metrology Forum (APLMF) and NCSL International (NCSLI). It is also a signatory to the global CIPM Mutual Recognition Arrangement (CIPM-MRA), which has recognised eight measurement fields within the comprehensive facilities in physical and chemical metrology. It has also provided the backbone for eliminating measurement-related Technical Barrier-to-Trade (TBT).

## FACTS AT A GLANCE

2008  
15 FEB

NMIM-SIRIM WAS APPOINTED AS THE NATIONAL MEASUREMENT STANDARDS LABORATORY (NMSL) WITH STATED FUNCTIONS AND POWERS UNDER THE

NATIONAL MEASUREMENT SYSTEM ACT 2007

2019

**Advancing the Nation with Precise Measurements**

In 2019, NMIM-SIRIM implemented its functions as mandated with the establishment of six new capabilities for calibration and pattern approvals, serving 526 companies and calibrating 4,068 measuring instruments throughout the country as well as internationally. NMIM-SIRIM also approved 53 Pattern Approvals for regulated measuring instruments spanning from electrical to mechanical and flow scopes.

In networking and forging relationships with stakeholders, NMIM-SIRIM has engaged with and entertained 18 visitors from ministries, government departments, industry and international organisations (Sudanese Standard & Metrology Organization). NMIM-SIRIM also participated in five exhibitions: METALTECH 2019 (15-18 March 2019), MARIQ (4 April 2019), SIRIM-WAITRO (29 April 2019), SIRIM-MITI-JAPAN (2 May 2019) and OGA 2019 (18-20 June 2019). In reaching out to the academia, NMIM-SIRIM organised an awareness programme called the Metrology Lecture Series, highlighting the importance of metrology in our daily lives to Universiti Putra Malaysia (UPM) (9 April and 10 May 2019), Universiti Sains Islam Malaysia (USIM) (24 April 2019), Politeknik Sultan Azlan Shah (29 April 2019), MJTI Beranang (25 October 2019) and Universiti Teknologi Mara (UiTM) Shah Alam (27 November 2019).

**NMIM-SIRIM IS RESPONSIBLE FOR THE COORDINATION OF THE NATIONAL MEASUREMENT SYSTEM FOR MALAYSIA AND REQUIRES CONTINUOUS STRENGTHENING OF ITS CAPACITIES, PROMOTING RECOGNITION OF MALAYSIA'S METROLOGICAL SYSTEM BY GAINING FULL MEMBERSHIP IN INTERNATIONAL ORGANISATIONS IN THE FIELD OF METROLOGY.**





## NATIONAL METROLOGY INSTITUTE OF MALAYSIA

In ensuring the harmonisation of measurement traceability and techniques throughout the country to guarantee the competitiveness and sustainability of our local products and services, NMIM-SIRIM organised 68 metrology courses and trained more than 500 personnel. The metrology courses covered theoretical and practical sessions where our experienced metrologists shared the knowledge and expertise they acquired from years of work in their chosen measurement areas and training in other foreign National Metrology Institutes. NMIM-SIRIM also approached three small and medium enterprise (SME) companies through SIRIM Industrial Innovation Model Fund (SIIMF) projects and offered assistance in improving their processes relating to measurement.

On the international platform, NMIM-SIRIM hosted two international trainings organised by Germany's PTB APLMF/MEDEA Training on:



VERIFICATION & PATTERN APPROVAL OF WATER METERS ON 15-18 OCTOBER 2019, WITH THREE NMIM METROLOGISTS SELECTED AS TRAINERS



CALIBRATION AND TESTING OF NON-INVASIVE SPHYGMOMANOMETER ON 11-15 NOVEMBER 2019



NMIM-SIRIM approved 53 Pattern Approvals for regulated measuring instruments spanning from electrical to mechanical and flow scopes.



NMIM-SIRIM hosted two international trainings organised by Germany's PTB APLMF/MEDEA Training on Verification & Pattern Approval of Water Meters and Calibration & Testing of Non-Invasive Sphygmomanometer.



# MALAYSIA DESIGN COUNCIL



Report by:  
**Prof. Dr. Mohamad Hariri Abdullah**  
General Manager, Malaysia Design Council

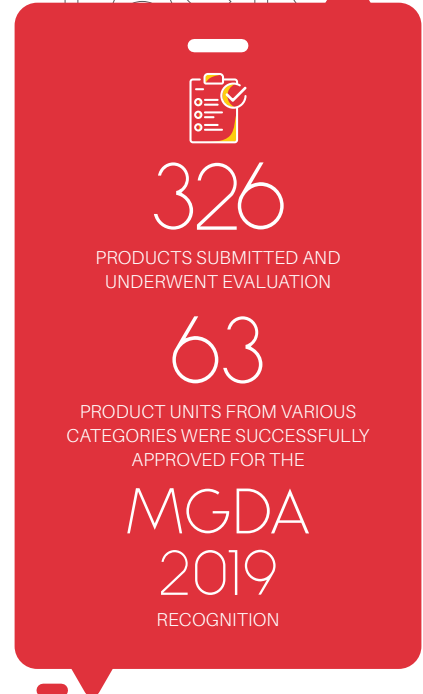
## MALAYSIA GOOD DESIGN AWARD (MGDA)

Malaysia Good Design Award (MGDA) is a Malaysian government recognition programme for quality design produced by both local and international industries. The programme highlights the country's design and research and development in line with the mission of moving our industry from Original Equipment Manufacturer (OEM) to Original Design Manufacturer (ODM) and finally Original Brand Manufacturer (OBM).

MGDA 2019 saw the submission of 326 products, which underwent the evaluation process from November to December 2019. Nine professional evaluators from various design disciplines were appointed and led by Mr. Abdul Munir Yahaya, Director of DIMU Design Sdn. Bhd.

A total of 63 product units from various categories were successfully approved for the MGDA 2019 recognition. Evaluation of the products was based on a scoring criterion with input from the jury's discussions. The award ceremony is scheduled to be held in 2020.

## FACTS AT A GLANCE



## ASIA DESIGN SHARING 2019

Asia Design Sharing is a synergic collaboration between design agencies from Korea, Thailand, the Philippines, Indonesia, Vietnam and Malaysia since 2010. The main intention of this design summit and sharing is to promote mutual understanding between the countries involved, focusing on the development of the design industry between the regions. The agenda included strategic preparation and activities that can promote healthy competition towards the socioeconomic growth of the countries involved through design.

During the year under review, the Asia Design Sharing Council Meeting & Seminar was held from 30 September - 3 October 2019 at Best Western i-City, Shah Alam. The event was attended by representatives from Malaysia Design Council (MRM); Korea Institute of Design Promotion (KIDP); Center for International Trade Expositions and Missions (CITEM), Philippines; Department of International Trade Promotion (DITP), Thailand; Creative Economy Agency (CEA), Thailand; Vietnam Trade Promotion Agency (VIETRADE) and Indonesia Design Development Center (IDDC).



### DESIGN AND TECHNOLOGY (RBT) SEMINAR 2019

MRM has been involved with the Ministry of Education in the development of the Design Curriculum, in particular Reka Cipta (RC) and Reka Bentuk Teknologi (RBT), since 2000. Among the programmes conducted was training for teachers and students to ascertain that the curriculum design is being practised within the design context yet supported by technology. This includes ensuring that the teachers' teaching, learning and understanding of the RBT subject are aligned with the STEM approach implemented all over the country, increasing the knowledge theoretically and practically, particularly on the design process, among RBT teachers and implementing a High Level Thinking approach.

### INTERIOR DESIGN HOUSE 2019 - MRM & FITEC

MRM was offered a partnership opportunity with the Furniture Industry Technology Center (FITEC) to conduct two programmes: an ID House Seminar and Collaboration Seminar. The objective of these programmes is to train furniture entrepreneurs under Majlis Amanah Rakyat (MARA) on the importance of Original Design Manufacturing (ODM). The intention is to educate them on the importance of furniture designs that have their own brand and identity, which will lead to Original Brand Manufacturing (OBM). Hence, it may help the design of the furniture to be acknowledged under the Malaysia Good Design Award (MGDA), and subsequently help the entrepreneur to compete in local and international markets. This seminar, which was held from 26-28 November 2019 at FITEC, Kuala Lumpur, had 20 participants. A second seminar was held from 9-11 December 2019 at the same venue with the same number of participants.



To develop a business, there are a few chains that need to be filled to ensure that it is on the right track, specifically in facing the fourth industrial revolution (IR4.0).

The majority of the design strength, appearance, product branding and packaging being produced by local small and medium enterprises (SMEs) is low. One of the main reasons for this is because the designs developed are not aligned with the needs of IR4.0. The Internet of Things (IoT) field has become one of the most important elements in IR4.0. As such, the design and packaging of the product need to be suitable for marketing and promotion on a virtual platform. It has become a challenge for the government and respective agencies to convince and inform the SME entrepreneurs on the importance of a product and its packaging.

The Creativity and Innovation through Design Seminar was aimed at increasing participants' knowledge and experience in the field of design and innovation. They were given the opportunity to observe the printing process of the packages using various methods, such as flexible packaging and offset.

Under the guidance of the Rubber Industry Smallholders Development Authority (RISDA), the SME entrepreneurs were encouraged to increase the quality of their product design. Additionally, the seminar looked at the importance of ensuring that products comply with specifications and current trends while elevating the creativity of the entrepreneurs. Participants were also provided with guidance and design ideas on ways to win the MGDA.

Activities conducted included paperwork presentations, a seminar on the development of brand design and product packaging, and site visits to a plastic printing company and offset printing company.

● **MALAYSIA GOOD DESIGN AWARD (MGDA) IS A MALAYSIAN GOVERNMENT RECOGNITION PROGRAMME FOR QUALITY DESIGN PRODUCED BY BOTH LOCAL AND INTERNATIONAL INDUSTRIES. THE PROGRAMME HIGHLIGHTS THE COUNTRY'S DESIGN AND RESEARCH AND DEVELOPMENT IN LINE WITH THE MISSION OF MOVING OUR INDUSTRY FROM ORIGINAL EQUIPMENT MANUFACTURER (OEM) TO ORIGINAL DESIGN MANUFACTURER (ODM) AND FINALLY ORIGINAL BRAND MANUFACTURER (OBM).** ●



The Internet of Things (IoT) field has become one of the most important elements in IR4.0. As such, the design and packaging of the product need to be suitable for marketing and promotion on a virtual platform.

## MALAYSIA DESIGN COUNCIL



**SOLIDWORKS INNOVATION DAY 2020**  
**Empowering Design Innovation**

01 Oct'19 Penang	03 Oct'19 Selangor	08 Oct'19 Johor	16 Oct'19 Melaka	25 Oct'19 Sarawak
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### EMPOWERING DESIGN INNOVATION: SOLIDWORKS INNOVATION DAY

This event offers a platform for SOLIDWORKS users as well as industry leaders and thinkers to share insights on the main trends shaping the Design and Innovation industry, exploring innovation, technological creativity and futurism, and inspiring key player in the industry and academicians to transform their businesses to become more innovative and competitive.

Among others, participants were able to connect with professional thinkers from 500 local and international companies. The programme also encompassed a government funding information session for digital transformation, and an Industry 4.0 showcase featuring Overall Effective Equipment (OEE) Screen, 3D Printer, Intuitive Industrial 'Arm Robot', Virtual Reality (VR), Digital Factories, Smart Logistics and many more.

A Digital Transformation Acceleration Programme (DTAP) was held to connect participants with other laboratory users in the Digital Transformation Lab (DTL) pre-evaluation. Besides that, the event looked at enhancing productivity, testing a new solution driver capable of shortening the period from product development to market, and providing technical consultation to optimise the design and production process.

UNDER THE GUIDANCE OF THE RUBBER INDUSTRY SMALLHOLDERS DEVELOPMENT AUTHORITY (RISDA), THE SME ENTREPRENEURS WERE ENCOURAGED TO INCREASE THE QUALITY OF THEIR PRODUCT DESIGN. ADDITIONALLY, THE SEMINAR LOOKED AT THE IMPORTANCE OF ENSURING THAT PRODUCTS COMPLY WITH SPECIFICATIONS AND CURRENT FUNDING TRENDS WHILE ELEVATING THE CREATIVITY OF THE ENTREPRENEURS. PARTICIPANTS WERE ALSO PROVIDED WITH GUIDANCE AND DESIGN IDEAS ON WAYS TO WIN THE MGDA.





Report by:  
**Dr. Azmi Idris**  
National Project Manager

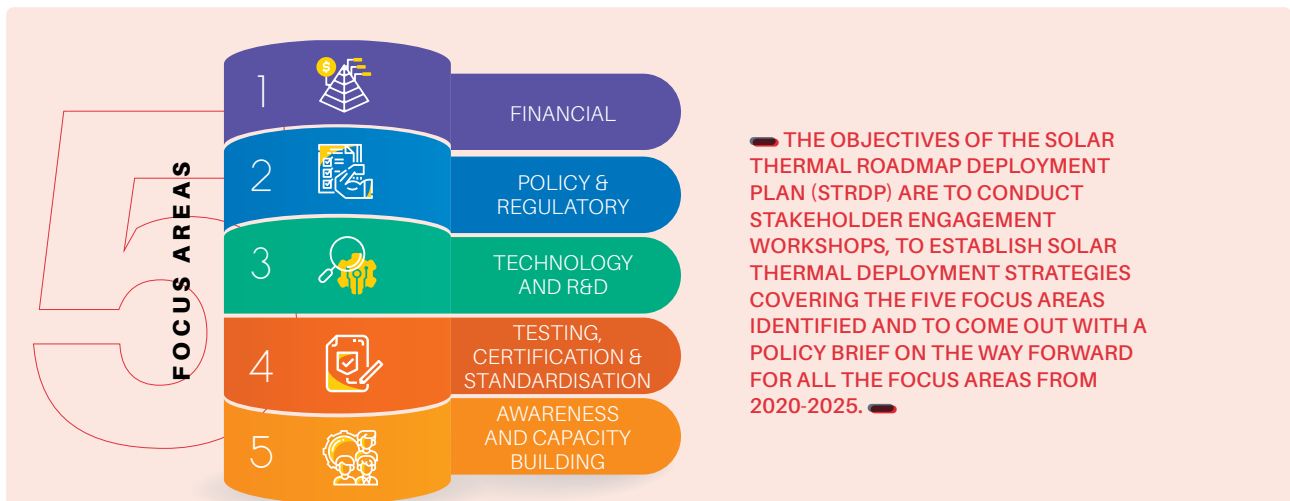
# UNIDO-MAEESTA

SIRIM Berhad is the national executing agency of United Nations Industrial Development Organisation (UNIDO)-Malaysia Energy Efficiency and Solar Thermal Application Project (MAEESTA), responsible for hosting and managing the Project Management Unit (PMU) which deals with the daily management of project execution. SIRIM is also involved in the training, energy audit and solar thermal demonstration projects.

## GEF 5 PROJECT: MALAYSIA ENERGY EFFICIENCY AND SOLAR THERMAL APPLICATION PROJECT (MAEESTA)

In the year 2019, the MAEESTA activities focused on the deployment plan of the Solar Thermal Roadmap for Malaysian Industries developed by PricewaterhouseCoopers (PwC) India, together with the team from UNIDO PMU and AEE INTEC, Austria, to ensure sustainability of the project. Awareness seminars were conducted with the top management of companies to increase the number of approved demonstration projects and ensure its realisation.

### Solar Thermal Roadmap Deployment Plan



### THREE WORKSHOPS WERE ORGANISED UNDER THE STRDP



WORKSHOP 1 — 12 MARCH 2019, THE EVERLY PUTRAJAYA - TO BRIEF THE STAKEHOLDERS ON THE SOLAR THERMAL ROADMAP FOR MALAYSIAN INDUSTRIES AND TO SET UP IMPLEMENTATION TIMELINE FOR THE ROADMAP'S RECOMMENDATIONS



WORKSHOP 2 — 29-30 MARCH 2019, DORSETT HOTEL, PUTRAJAYA - FOCUSED ON DEFINING THE BASELINE MECHANISM FOR THE RECOMMENDATIONS, IDENTIFYING THE BARRIERS AND CHALLENGES AND EVALUATING THE PERFORMANCE OF EXISTING MECHANISMS IN ADDRESSING SOLAR THERMAL



**UNIDO-MAEESTA**



WORKSHOP 3 — FEEDBACK SESSION - HIGHLIGHTED THE WAY FORWARD FOR SOLAR THERMAL INDUSTRIAL APPLICATIONS IN MALAYSIA

The workshops identified lead agencies to realise the initiatives recommended under the deployment plan. UNIDO-MAEESTA project will support and work closely with the lead agencies.





Awareness seminars were conducted with the top management of companies to increase the number of approved demonstration projects and ensure its realisation.

POLICY BRIEF ON THE WAY FORWARD FOR ALL FOCUS AREAS FROM 2020 - 2025

**Awareness Seminars**

In the year 2019, UNIDO-MAEESTA took a different approach in conducting the awareness seminars. UNIDO-MAEESTA approached the relevant government and state agencies such as Johor Industry Regional Development Authority (IRDA), Invest Selangor, Invest Penang, Sarawak Economic Development Corporation (SEDC), Terengganu Economy Planning Unit and Invest Melaka to be partners in organising the awareness seminars. The purpose of this approach was to get more commitment from the top management of the industry for the project. At the seminars, in addition to the presentation made by the UNIDO-MAEESTA Technical Expert on the opportunities of the solar thermal project, presenters from HSBC Bank shared on 'Empowering a Sustainable Future', Malaysian Debt Venture Berhad (MDV) on 'Financing for Green Project', Malaysian Investment Development Authority (MIDA) on 'Green Project Tax Incentives', and Malaysia Green Technology Corporation (MGTC) on 'Government Initiatives Towards Solar Thermal Industry'. MIWA Manufacturing Sdn Bhd also shared on the company's experience using the solar thermal system at its factory and IOI Pan Century Oleochemicals, Pasir Gudang, shared on the considerations undertaken by the company before the decision was made to install a solar thermal system at IOI.



JOHOR BAHRU



### UNIDO Certified Experts

Another three final examinations were conducted in 2019. As of 31 December 2019, a total of 19 candidates have passed the examination on thermal energy efficiency and solar thermal technology and design.

### Training Programmes

A few training programmes were held in 2019; among them was the Expert Training Batch on Thermal Energy Efficiency which was held from 1-4 July 2019 at the Lexis Hotel in Port Dickson. A total of 53 participants attended the training and 14 companies offered to be the host company.

In conjunction with the Expert Training Batch 4 Course 1 that was held in Port Dickson, another three potential trainers were invited to participate, namely Dr. Mohammad Kamil Abdullah from Universiti Tun Hussein Onn Malaysia (UTHM), Dr. Lim Jeng Shiun from Universiti Teknologi Malaysia (UTM) and Mr. Mohd Arief Firdaus Mohd Yusof from PMU-UNIDO. To date, eight potential trainers have been identified under the MAEESTA project.

A two-day user training was jointly organised with the Ministry of Health (MOH) for MOH engineers from hospitals throughout Malaysia on 17-18 September 2019 at Putrajaya. MOH is very committed to the sustainability programme and very interested to install the solar thermal system at its hospitals. A total of 60 participants attended the training. The training was conducted by UNIDO-MAEESTA Technical Experts.



TWO-DAY TRAINING WITH MOH

### Thermal Energy Efficiency Measures and Solar Thermal Demonstration Plant

Four companies implemented energy efficiency (EE) measures in 2019. The total greenhouse gas (GHG) emission reduction is around 708 tonnes/year.

MIWA Manufacturing Sdn Bhd completed the installation of the flat plate solar thermal system in May 2019. The solar thermal system was installed with financial assistance from both SIRIM SME-Fraunhofer Development Fund and UNIDO-MAEESTA project fund. The project is expected to contribute to a GHG emission reduction of 33 tonnes/year.

There was a total of 40 flat plate collectors encompassing a collector area of 77m<sup>2</sup>.



4000L HEATED WATER TANK



40 PLATE COLLECTORS INSTALLED ON ROOF TOP

Two solar thermal demonstration projects were approved for UNIDO-MAEESTA funding in 2019, i.e. for Farm's Best Food Industries Sdn Bhd and Hospital Tuanku Jaafar, Seremban. The expected GHG emission reduction is 1,130 tonnes/year.



S O L I D I F Y I N G O U R  
F U N D A M E N T A L S

S H A R I N G  
O U R F U T U R E

04 CORPORATE





# GROUP STRATEGIC PLANNING DIVISION



Report by:  
**Goay Peck Sim**  
Vice President, Group Strategic Planning

Group Strategic Planning (GSP) continues to chart SIRIM's business direction for business growth and sustainability through three main functions: >> strategic planning and business intelligence, performance monitoring and risk management, and marketing and promotion in local and international markets.

GSP, supported by its five Regional Offices in Northern, Southern and the East Coast of Peninsular Malaysia, as well as Sarawak and Sabah in East Malaysia, provides outreach services with value-added and innovative products and solutions, at the same time strengthening its relationship with the state governments and industries.

Managing and strengthening relationships with SIRIM's key stakeholders have always been GSP's main priority. In the year under review, GSP carried out three Key Stakeholder Engagement Sessions with relevant authorities, which included the Ministry of Finance, Ministry of Economic Affairs, Implementation Coordination Unit (ICU) and Malaysian Investment Development Authority (MIDA). The sessions covered activities relating to the National Metrology Institute of Malaysia (NMIM) and AMREC as well as smart manufacturing, biomedical and other commercialisation activities.

GSP's signature programmes such as SIRIM Industry Dialogues (SID) and SIRIM Industry Engagement (SIE) have successfully linked the industry to SIRIM's services as well as providing platforms for exchanging information and assistance from other ministries and relevant agencies such as the Ministry of International Trade and Industry (MITI), MIDA and Malaysia External Trade Development Corporation (MATRADE). Three

SID have been organised for growth sectors such as Rail, Medical Devices and Ship Building and Ship Repair, and six SIE have been conducted in Muar, Kelantan, Bintulu, Shah Alam, Lahad Datu and Penang.

To drive business growth in new areas, the strategic initiatives undertaken include the Machinery and Manufacturing Innovation Centre (MMIC) in collaboration with MIDA, Medical Device Innovation Centre (MDIC) and Centre of Excellence (COE) for Smart Manufacturing.

In elevating SIRIM's visibility at an international level, a Memorandum of Understanding (MoU) was signed on 2 July 2019 with the National Science and Technology Development Agency to collaborate on industrial research, conformity assessment, technology audits and commercialisation. Other collaborations established were with Thailand Institute of Scientific and Technological Research and Jiangsu Industrial Technology Research Institute.

To improve monitoring and marketing activities, GSP has successfully digitised and developed two significant systems/applications as tools to support the marketers (e.g. e-brochures, FAQs, record enquiries and registrations for Group Marketing's events), namely the Performance Management & Delivery System (PMDS™) to monitor, track, report and view the progress of the 3ft Plan for the SIRIM 10Y Strategic Plan, and SIRIM IR First and e-Marketing Mobile platform to centralise current marketing information for SIRIM Group.

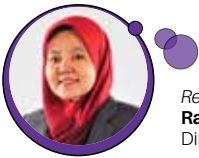


STAKEHOLDER ENGAGEMENT PROGRAMME WITH THE MINISTRY OF FINANCE, MINISTRY OF ECONOMIC AFFAIRS AND ICU AT NMIM SEPANG ON 17 JUNE 2019



STAKEHOLDER ENGAGEMENT PROGRAMME WITH TKSU TRADE MITI AND MIDA AT SIRIM BUKIT JALIL ON 11 JULY 2019





Report by:  
**Rafidah Mokhdar**  
Director, Performance Management Office

# PERFORMANCE MANAGEMENT OFFICE

## ACTIVITIES & ACHIEVEMENTS IN 2019

### SIRIM BUSINESS FORUM 2019

On 31 January 2019, a SIRIM Business Forum was organised for managers and senior executives to provide updates on the mega-trends, global economic outlook and experiences of digital transformation. External speakers were invited, namely Subbu Bettadapura from Frost and Sullivan, Prof. Zulkornain Yusop from Universiti Putra Malaysia and Dr. Dzahar Mansor from Microsoft Malaysia.



SUBBU BETTADAPURA, FROST AND SULLIVAN



PROF. ZULKORNAIN YUSOP,  
UNIVERSITI PUTRA MALAYSIA



DR. DZAHAR MANSOR, MICROSOFT MALAYSIA

### PMDS™ LAUNCHING

The Performance Management and Delivery System (PMDS™) functions as a virtual workbench to effectively implement and monitor the SIRIM 10Y Strategic Plan. PMDS™ was officially launched on 31 January 2019 by SIRIM Chairman YBhg. Tan Sri Dr. Ahmad Tajuddin Ali (FASc, P.Eng).



OFFICIAL LAUNCHING OF PMDS™ BY SIRIM CHAIRMAN YBHG. TAN SRI DR. AHMAD TAJUDDIN ALI, FASC, P.ENG, WITH SIRIM PRESIDENT AND CHIEF EXECUTIVE OFFICER YBHG. DATUK IR. DR. AHMAD FADZIL MOHAMAD HANI, AND WITNESSED BY SIRIM MANAGEMENT



### GALLERY WALKS FOR NEW SIRIM BOARD MEMBERS

Gallery Walks for SIRIM's new Board of Directors were also organised in 2019 to visualise the 'new SIRIM' through the implementation of the SIRIM 10Y Strategic Plan.



GALLERY WALK FOR SIRIM BERHAD NEW BOARD MEMBERS YBHG. DATO' IR. LIM YEW SOON AND PN. NORLIN ABDUL SAMAD ON 22 OCTOBER 2019

## PERFORMANCE MANAGEMENT OFFICE



GALLERY WALK FOR SIRIM BERHAD NEW BOARD MEMBER YBHG. DATUK IR. DR. KHAIROL ANUAR BIN MOHAMAD TAWI ON 10 JULY 2019

### SIRIM 10Y STRATEGIC PLAN - 2019 HIGHLIGHTS

The year 2019 marked the second year of the implementation of the SIRIM 10Y Strategic Plan. The implementation team, led by Key Results Managers (KRM) and Champions, realised the transformation of SIRIM through the following activities.



#### ENHANCING CUSTOMER EXPERIENCE AND THE SIRIM BRAND

In helping SIRIM to become a customer-focused organisation, multiple initiatives are currently implemented. On 29 March 2019, SIRIM officially launched its revamped corporate website and upgraded its visitors' gallery.



NEW SIRIM CORPORATE WEBSITE



NEW SIRIM GALLERY THAT WAS UPGRADED IN AUGUST 2019

SIRIM's brand is highly recognised due to its legacy and past achievements. By adopting an omni-channel communication practice, SIRIM increased its presence, especially through various social media platforms, enhancing its appeal among the younger generation and outreach to the general public.



# PERFORMANCE MANAGEMENT OFFICE



## INTEGRATED AND INNOVATIVE SOLUTIONS

Integrated and innovative solutions will allow SIRIM to achieve digital transformation. Among these solutions is a Remote Sampling for Labelling of Motorcycle Helmet (SQAS). The solution resulted in a significant reduction in clients' audit lead time.



## INDUSTRY 4.0 ENGAGEMENTS WITH STAKEHOLDERS

In supporting the transition of Malaysia's manufacturing sector to Industry 4.0 (I4.0), continuous engagement sessions with the government and industry stakeholders were conducted to assist SIRIM in adopting fast-paced shifts in manufacturing.



SIRIM-JETRO VISIT TO SELIA-TEK INDUSTRIES SDN BHD ON 14 AUGUST 2019



CEO FORUM: INDUSTRY4WRD SUMMIT AT MITEC SUNWAY ON 30 OCTOBER 2019



SIRIM VISIT TO ITRI TAIWAN & COLLABORATION DISCUSSION ON 23-26 JULY 2019



## PERFORMANCE MANAGEMENT OFFICE



### MALAYSIA - JAPAN COLLABORATION ON SMART MANUFACTURING

The Malaysia - Japan Collaboration on Smart Manufacturing was officially launched on 2 May 2019 by the Ministry of International Trade and Industry (MITI) (Malaysia) and Ministry of Economic Trade and Industry (Japan), with SIRIM as the implementing agency. In conjunction with the launching, an inaugural seminar on smart manufacturing adoption in industry was organised on the same date with 400 participants from industry and government agencies. The collaboration resulted in nine jointly organised seminars, including a seminar held at the 37th MAJECA-JAMECA Joint Conference. The seminar attracted 250 participants.



37TH MAJECA-JAMECA JOINT CONFERENCE, 1 JULY 2019



### GREENER SIRIM FOR GREENER MALAYSIA

The SIRIM 10Y Strategic Plan also aims to reduce SIRIM's environmental footprint and contribute to a sustainable Malaysia. In conjunction with SIRIM Green Day 2019, a Tree Planting Initiative was held on 6 December 2019 with the participation of staff members from across SIRIM Group.



SIRIM GREEN DAY 2019 INCLUDED A TREE PLANTING ACTIVITY



### SGROUP SYNERGIES

Multiple initiatives are ongoing to unlock value addition and strengthen synergies across SIRIM Group. Among them is the development and review of internal processes and procedures. Additionally, digital transformation initiatives allow for internal and external services to be digitalised. These include the successful migration of servers to cloud and other initiatives to better integrate platforms for enhanced key processes with strengthened measures against cybersecurity threats.

These will ensure optimal processes for SIRIM's strategic and business needs.



### FORGING STRONG PARTNERSHIPS

By forging networks with external parties, SIRIM can be a catalyst for the growth of industry, technology, standards and conformity assessments in Malaysia. Strong partnerships have been established locally and internationally in areas such as I4.0, Medical Devices and Rail, among others.

**SIRIM BERHAD**

## FACTS AT A GLANCE



# SIRIM 10Y

STRATEGIC PLAN AIMS TO REDUCE SIRIM'S ENVIRONMENTAL FOOTPRINT AND CONTRIBUTE TO A SUSTAINABLE MALAYSIA



# INTERNATIONAL ACTIVITIES

## SIRIM BERHAD WORKING VISIT TO THAILAND INSTITUTE OF SCIENTIFIC AND TECHNOLOGICAL RESEARCH

On 3 July 2019, a delegation from SIRIM led by Academician Tan Sri Dr. Ahmad Tajuddin Ali, FASc, P.Eng, Chairman of SIRIM, and Prof. Ir. Dr. Ahmad Fadzil Mohamad Hani, FASc, FIEM, President and Group Chief Executive, paid a working visit to Thailand Institute of Scientific and Technological Research (TISTR). The SIRIM delegation was welcomed by Dr. Chutima Eamchotchawalit, Governor of TISTR.

A fruitful discussion was held on potential areas of collaboration in Quality Testing and Standard Development of Rail Technology, Regulation and Production Management of Halal Products, Metrology and Non-Destructive Testing. The SIRIM delegation visited the Rail Transportation System Testing Centre and was briefed by its Director, Dr. Anat Hasap, on the services offered by the centre to the rail industry inside and outside of Thailand.

SIRIM hopes to establish a close working relationship with TISTR as family members of the World Association of Industrial and Technological Research Organization (WAITRO), and to discuss further on the areas of potential collaboration as well as signing a Memorandum of Understanding in the near future.



Renewable Energy (RE) helps to increase the S&T capability in developing countries, and the SIRIM-WAITRO Capacity Building Programme is a good platform for researchers to be equipped with skills and knowledge on RE to solve technological problems.

## SIRIM-WAITRO CAPACITY BUILDING PROGRAMME 2019

A total of 75 participants from the Middle East, Africa and Asia Pacific regions participated in the SIRIM-WAITRO Capacity Building Programme 2019 from 29 April to 3 May 2019 at Concorde Hotel, Shah Alam. There were five programmes organised under the SIRIM-WAITRO Capacity Building Programme 2019, namely the Senior Management for Managing Research Technology Organisation, Solar Thermal Technology for Industrial Application, Women Empowerment Programme in Personal Care Product Development, Internet of Things Technology Application for Smart Farming, and Workshop for Commercialisation of Research and Innovations.

The opening ceremony was officiated by En. Hairil Yahri Yaacob, Deputy Secretary General (Investment) of the Ministry of International Trade and Industry. Also present at the opening ceremony were Dr. Paul Burrows, Head of WAITRO Office China, and Chairman of SIRIM, YBhg Academician Tan Sri Dr. Ahmad Tajuddin Ali.

At the end of the programme, the participants shared a few key takeaways from the main topics discussed. Among them was on the topic of global collaboration for innovation, with continuous effort towards promoting global collaboration. Participants shared that digital transformation and related services in smart farming are important to improve productivity, reduce dependence on human resources, and pave the way for enhanced productivity, job creation and high-skilled talent pool in the manufacturing sector to ultimately contribute

— PARTICIPANTS SHARED THAT **DIGITAL TRANSFORMATION AND RELATED SERVICES IN SMART FARMING ARE IMPORTANT TO IMPROVE PRODUCTIVITY, REDUCE DEPENDENCE ON HUMAN RESOURCES, AND PAVE THE WAY FOR ENHANCED PRODUCTIVITY, JOB CREATION AND HIGH-SKILLED TALENT POOL IN THE MANUFACTURING SECTOR TO ULTIMATELY CONTRIBUTE TO ECONOMIC PROSPERITY AND SOCIETAL WELLBEING.** —

## **INTERNATIONAL ACTIVITIES**



to economic prosperity and societal wellbeing. Participants also agreed that renewable energy (RE) helps to increase the S&T capability in developing countries, and that this was a good platform for researchers to be equipped with skills and knowledge on RE to solve technological problems.

### **SIRIM AND KOREA CONFORMITY LABORATORIES INK MOU TO EXCHANGE KNOWLEDGE IN BUILDING INTEGRATED PHOTOVOLTAIC**

SIRIM Berhad and Korea Conformity Laboratories (KCL) strengthened their positions as leading research and testing institutions by signing a Memorandum of Understanding (MoU) to exchange scientific and technical knowledge in Building Integrated Photovoltaic (BIPV) on 29 May 2019 at SIRIM's headquarters in Shah Alam. The MoU will allow both parties to collaborate in research, consultancy, standards and conformity assessment in renewable energy. The MoU was signed by President and Group Chief Executive of SIRIM, Prof. Ir. Dr. Ahmad Fadzil Mohamad Hani, while KCL was represented by its President, Kap Seok Yoon.

SIRIM has identified potential benefits through this strategic alliance, namely the exchange of technical personnel in BIPV, establishment of BIPV demonstration and research site, BIPV certification scheme development and establishment of testing facilities for the BIPV system.



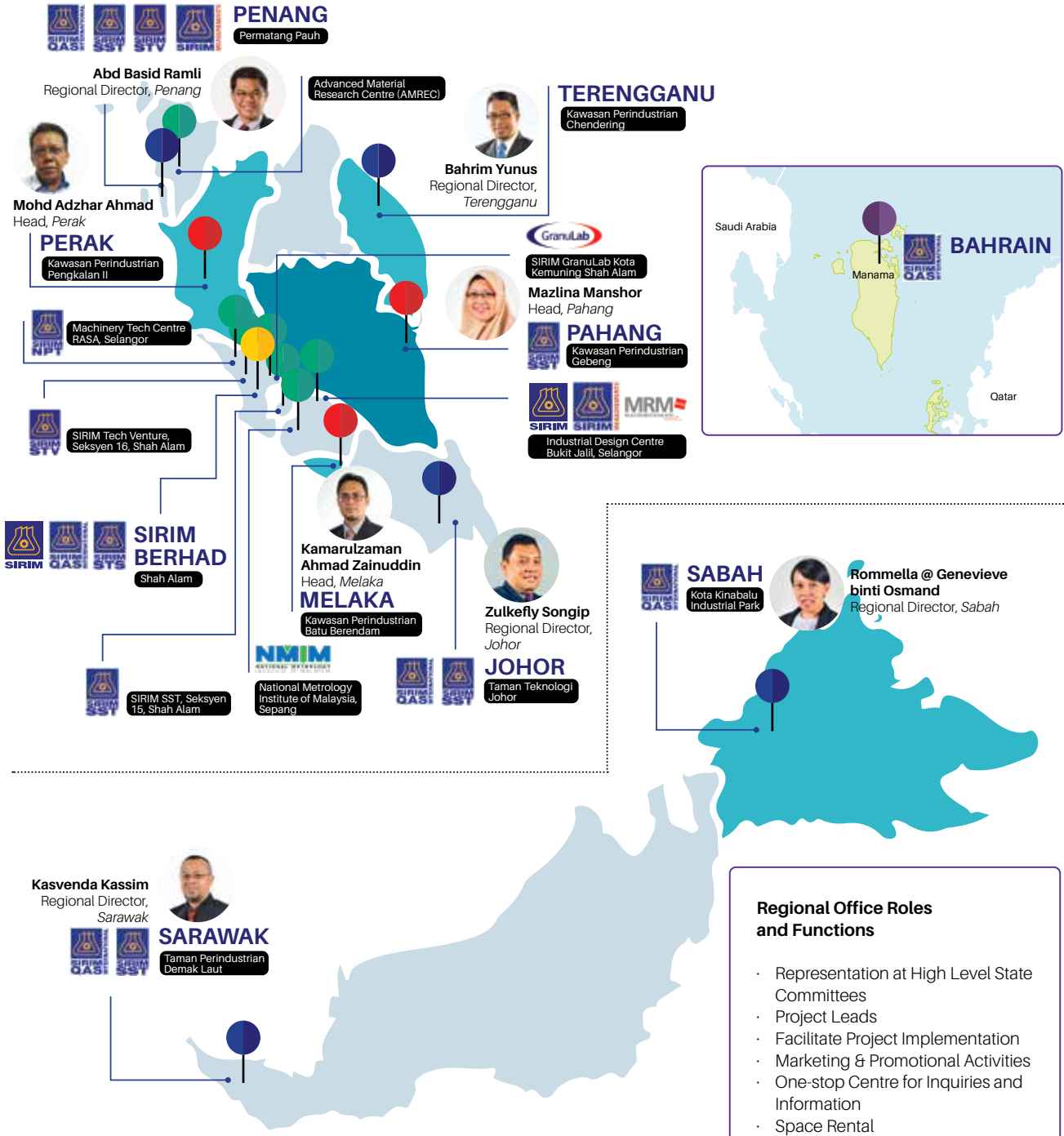




# REGIONAL OFFICES



Report by:  
**Zulkifli Abdullah**  
Senior General Manager,  
Group Marketing and State Liaison, Group Strategic Planning



SIRIM Berhad Headquarters
 Technology Facilities
 State Office
 Regional Offices
 SIRIM QAS International Branch

# GROUP HUMAN RESOURCE DIVISION

Report by:  
**Nik Juliah Nik Jaafar**  
 Vice President, Group Human Resource




## HR STRATEGIC PILLARS

### ENHANCE EMPLOYEE CAPABILITIES



### STRENGTHEN LEADERSHIP PIPELINE



### CULTIVATE HIGH PERFORMANCE TEAM CULTURE

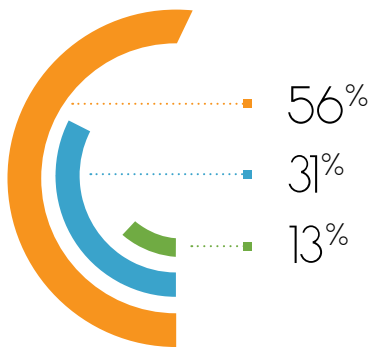


## 1. ENHANCE EMPLOYEE CAPABILITIES



### HIGHER EDUCATION

By the end of 2019, a total of 48 staff members were pursuing their studies under the SIRIM scholarship.

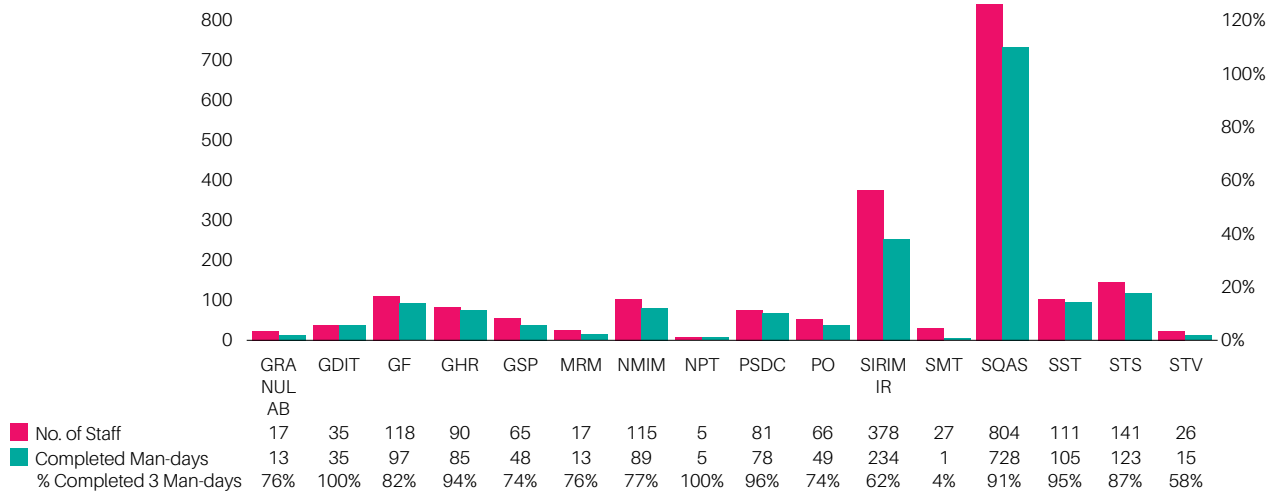


SIRIM Scholarship	
Qualification	Number of Employees
PhD	27
Master	15
Degree	6



### TRAINING

82% of the total number of staff completed three man-days of training in 2019.





# GROUP HUMAN RESOURCE DIVISION

## SIRIM TOASTMASTERS CLUB

Formed in August 2019, the club has 20 active members from various business units.




20 active members from various business units.

## 2. STRENGTHEN LEADERSHIP PIPELINE



### STRUCTURED LEADERSHIP PROGRAMME

In our effort to build a high performance team, several leadership programmes have been conducted in 2019 with the aim of nurturing future leaders, closing competency gaps and developing leadership characteristics. A total of 85 SIRIM leaders participated in the following leadership programmes:



### MOTIVATIONAL TALKS

Four sessions were conducted in 2019, involving external and SIRIM Board members as distinguished speakers.

SPEAKER	TOPIC	DATE
Tan Sri Datuk Dr. Ahmad Tajuddin bin Ali	Being a Leader - A Life Experience	22 April 2019
Datuk Dr. Hafsa binti Hashim	New Technologies defining Business Competitiveness: Shape Up or Ship Out	25 June 2019
Tan Sri Abdul Wahid bin Omar	Challenges of New Leaders	3 October 2019
Datuk Mohd Nasir bin Ahmad	Leading with Integrity	3 December 2019



## GROUP HUMAN RESOURCE DIVISION



### SIRIM TALENT MANAGEMENT PROGRAMME (StaMP)

Categories of Talents



#### LEADERSHIP TALENTS

Potential successors to the leadership/senior management team within a one to five-year timeframe. The leadership team members (job grades 26 & above) have broad spans of control and are directly involved in the strategic planning of the company/key business functions.

#### MANAGEMENT TALENTS

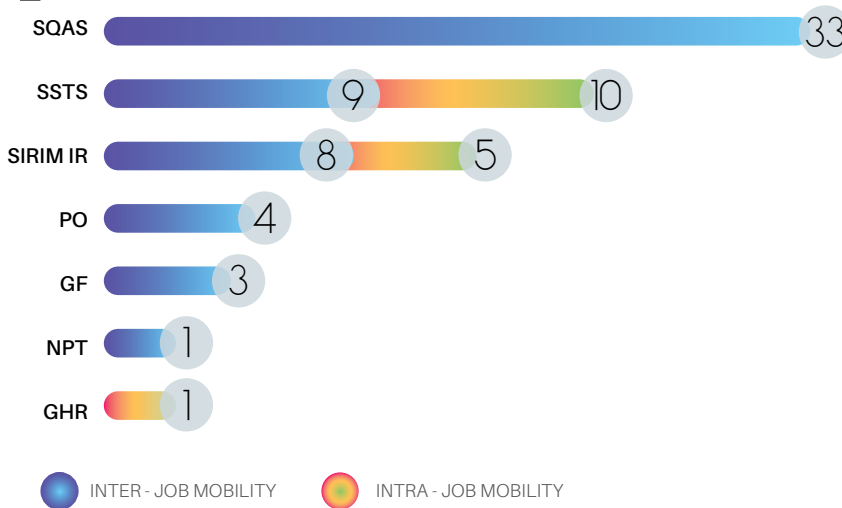
Individuals with the ability, agility, aspiration and engagement, and are ready to assume or have the potential to be developed within a six to 10-year timeframe to assume one of the leadership/senior management roles.

#### EMERGING TALENTS

Individuals early in their careers who have begun to demonstrate the potential to assume broader job responsibilities and/or advance to senior level positions. They will be ready to assume leadership/senior management roles beyond a 10-year time frame.



### JOB MOBILITY



### 3. CULTIVATE HIGH PERFORMANCE TEAM CULTURE



#### HR ENGAGEMENT DAY - 3 APRIL 2019

SIRIM Group Human Resource's first HR Engagement Day was a success as more than 600 employees took part in its activities. Various activities were organised, including motivational talks, food stalls, a blood donation campaign, health screening, Lembaga Tabung Haji, KWSP and many others.





**RAYA CELEBRATION**

Acknowledging how well-rounded students can shape the future, on 27 June 2019, SIRIM awarded 44 of its employees' children with RM9,427.00 in cash rewards for their excellent results in the *Ujian Pencapaian Sekolah Rendah (UPSR)*, *Pentaksiran Tingkatan 3 (PT3)* and *Sijil Pelajaran Malaysia (SPM)*. The ceremony was celebrated during the Raya Celebration at SIRIM Hall. The event was attended by 1,843 staff members amidst a warm and friendly atmosphere. The celebration was also a platform for the Management to convey their appreciation to all employees for their good support of and cooperation with SIRIM Group.



**25 YEARS SERVICE AWARD AND COMPULSORY RETIREMENT CEREMONY**

Recognising employees for tenure is an excellent way for SIRIM to show that it values the ongoing dedication and contributions of individuals. Group Human Resource organised a ceremony on 16 December 2019 to commemorate both employees' 25 years' service and compulsory retirement. For the year 2019, 27 staff members received Sijil Simpanan Premium BSN valued at RM500 for 25 years' service, while 25 staff members received either Sijil Simpanan Premium BSN or gold coins valued at RM2,000 for their compulsory retirement at age 60.



**SIRIM SPECIAL INCENTIVE AWARD**

SIRIM Special Incentive Award is an award/incentive for SIRIM employees who are award recipients of state/national/international recognised bodies. Participations at the international level will be awarded with Certificates of Appreciation and RM500 cash; those at national level will receive Certificates of Appreciation and RM300 cash and those at state/agency level will receive Certificates of Appreciation and RM200 cash.

## GROUP HUMAN RESOURCE DIVISION



### TASKA

In order to keep up with the demands of their jobs and lives, employees need help balancing work with their family responsibilities. A total of 125 children ranging from two months old to six years old were placed under the care of SIRIM Taska. The SIRIM childcare programme covers all aspects of child development and school readiness by providing valuable educational and social experiences.



The SIRIM childcare programme covers all aspects of child development and school readiness by providing valuable educational and social experiences.



### HEALTHY EATING ACTIVE LIVING (HEAL) CHALLENGE

2019 was the year of health and wellness at SIRIM. Launched on 26 August, the 100-day Healthy Eating Active Living (HEAL) challenge was participated by 23 groups of 115 staff members determined to walk forward in better health. A series of activities was conducted during the challenge, including health screenings, health talks, zumba, aerobics, jogging, stairs-climbing and many others. At the end of the 100th day, the group with the highest cumulative score of weight reduced was rewarded with cash.



## FACTS AT A GLANCE

2019

27

STAFF MEMBERS RECEIVED SIJIL SIMPANAN PREMIUM BSN

VALUED AT

RM500

FOR

25

YEARS SERVICE

25

STAFF MEMBERS RECEIVED SIJIL SIMPANAN PREMIUM BSN OR GOLD COINS VALUED AT

RM2,000

FOR THEIR COMPULSORY RETIREMENT AT AGE 60





Report by: **Sabarina Harun**  
Vice President, Group Finance

# GROUP FINANCE DIVISION

## STRATEGIC FINANCE & OPERATIONS DEPARTMENT

An engagement session was held on 4 November 2019 with stakeholders and the Ministry of Finance (MOF) to communicate and discuss on key strategies towards the sustainability of SIRIM.



A workshop on Government Green Procurement (GGP) with Green Tech Malaysia (by Abdul Malik Atan, Manager) was held on 17 April 2019 at SIRIM Berhad, Shah Alam. Participants were from SQASI, SSTS, SST, Asset Management Department (AMD), Project Management Office (PMO) and Group Finance (Procurement).



A networking session with Unit Peneraju Agenda Bumiputera (TERAJU) was conducted on 18 November 2019 to explore collaborative opportunities for developmental activities to benefit Bumiputera small and medium enterprises (SMEs).

- The synergy programme focuses on the National Entrepreneur Transformation Programme, quality management enhancement as well as commercialisation & technology enhancement.
- The RM5.4 million project is expected to result in positive growth and move SMEs up their value chain to potentially Go Global.



A knowledge sharing session by Permodalan Nasional Berhad (PNB) was held on 17 July 2019, with En. Suhaimi Hussein, Senior Manager, speaking on Preparation of Technical Specification. The event was attended by SIRIM Group's Jawatankuasa Teknikal Pusat/Jabatan.



A sharing session on Understanding Level of Authority (LOA) of Financial and Procurement Processes by Procurement Section and Finance Operation Section was held on 23 August 2019 at Bilik Titanium, Block 2, for SIRIM Standard Training Services (SSTS) employees. This was a refresher programme to ensure compliance with the SOP and LOA on Procurement and Financial (Invoicing and Credit Control).



Khairuddin Hasyudeen and Razi (KHR) was appointed as the new external auditor for the Financial Year ended 31 December 2019 for SIRIM Berhad and its Subsidiaries.

The implication of Covid-19 has been stated in the Audited Financial Statement 2019 including the impact from the movement control order (MCO), market reaction after the pandemic is over and identification of proactive measures to be taken by SIRIM Berhad and its Subsidiaries.



## GROUP FINANCE DIVISION

A two-day in-house training programme on Finance for Non-Finance Manager was held from 17-18 April 2019. The programme was aimed at enabling SIRIM managers to become more confident and proactive in meetings and in decision-making. A total of 27 managers from various Divisions/departments attended this training.



The Understanding the Malaysian Financial Reporting Standard MFRS 15 (Revenue from Contract with Customers) session was held on 15 October 2019. The session was conducted by Deloitte PLT and focused on the responsibilities and commitments of the business units, timing of revenue recognition, costing and impact of non-compliance with the standard requirements.

On 19 November 2019, Deloitte PLT held a workshop on Malaysia Financial Reporting Standard 120 (MFRS 120) Accounting for Government Grants and Disclosure of Government Assistance with IRMC SIRIM IR on the SIRIM-Fraunhofer funding.



## ASSET MANAGEMENT DEPARTMENT

Carried out disposal of equipment activities throughout the year based on recommendations by the Asset Disposal Committee.



Continuous maintenance activities throughout the year, covering inspection, identification of source of breakdown or repair needs, and implementation of remedial work.



Replacement of old and leaked Transformer at Substation No. 2 and Oil-link Unit (OLU) at Substation No. 6 at the SIRIM HQ as a preventive effort to ensure the reliability and safety of the electrical system.



OLU UNIT AT SUBSTATION NO. 6  
- PROJECT COMPLETED ON  
26 DECEMBER 2019



TRANSFORMER AT SUBSTATION  
NO. 2 - PROJECT COMPLETED  
ON 28 SEPTEMBER 2019

Implementation of pest control inspection for termites to prevent further damage to the interior finishes of the building.







## GROUP FINANCE DIVISION

Carried out Phase I upgrading work at Auditorium Dato' Yahaya Ahmad, Building 5, involving the replacement of worn out wall fabric panelling, carpet and new chairs. The project was completed on 25 January 2019.



Scheduled landscape and external building maintenance.



Repainting works at the SIRIM Sabah building in Kota Kinabalu as part of planned maintenance in upkeeping the building exterior finishes. The project was completed on 24 December 2019.



**Construction of a WE LOVE SIRIM instalment** to inculcate a sense of attachment to the organisation while also providing a nice photo shoot spot for staff or visitors. The project was completed in December 2019.



**Enhancement of the Kafeteria and its kitchen** to provide a better dining ambience for staff as well as improving the operator's food preparation flow with respect to hygiene and safety. The project began in August 2019 and was completed in November 2019.





## GROUP FINANCE DIVISION

**Auditorium Dato' Yahaya Ahmad** the interior décor of the stage panel and signage at the main entrance was done by SIRIM's staff and was completed in March 2019.



A **Game Room** to offer alternative recreational options for SIRIM staff to loosen up and refresh their energy levels after working continuously for hours, in addition to providing an avenue to enhance interpersonal relationships, communication and bonding within a team. Facilities available include a pool table, foosball table, darts, carrom and several board games such as chess, checkers and scrabble. The paint job and carpet tile installation were carried out by SIRIM's staff. This room was inaugurated on 6 December 2019 by the President and Group Chief Executive Officer of SIRIM.

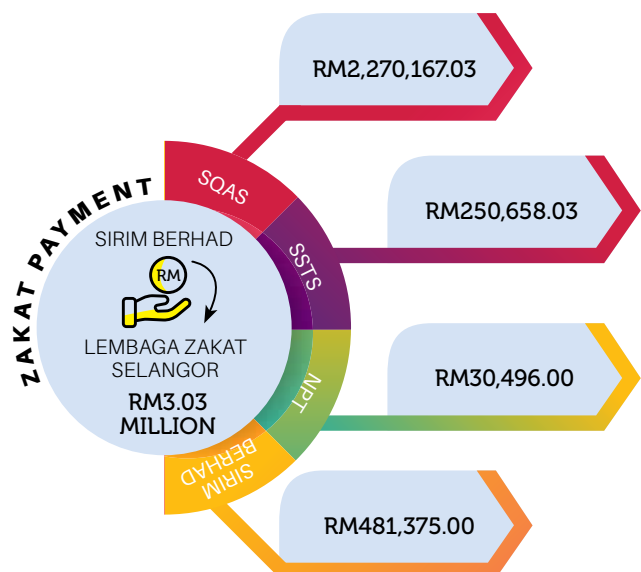


**Colourful Tree Planting at Pavilion and Multipurpose Hall** AMD, together with SIRIM Landscape Committee, carried out landscape enhancement works at Building 10 (Pavilion) and the Multipurpose Hall to create a cheerful and vibrant working atmosphere. The *Cordyline terminalis*, *Osmoxylon*, *Acalypha wilkiesiana*, *Ipomea batatas* Yellow and Fern Tree were selected for this purpose, adding beautiful greens and colours to SIRIM Complex. These projects were completed in November 2019.



## ZAKAT DISTRIBUTION PROGRAMMES AND ACTIVITIES IN 2019

During the year under review, SIRIM Berhad's zakat payment to Lembaga Zakat Selangor amounted to RM3.03 million. SQAS contributed RM2,270,167.03, while RM250,658.03 was collected from SSTs. Besides that, NPT and SIRIM Berhad contributed RM30,496 and RM481,375 respectively.





## GROUP FINANCE DIVISION

Throughout 2019, a total of RM303,271 was channelled to various Islamic organisations and individuals including employees and external applicants. The amount was distributed to the beneficiaries of zakat (*asnaf*), such as *fakir*, the poor, *gharimin* and *fisabilillah*. Among the programmes and activities conducted were:

### SIRIM Corporate Social Responsibility Programme (CSR): Back to School with the Orang Asli community

Held on 18 December 2019, the programme was initiated by Group Human Resource as part of its CSR programme. A total of RM18,160 from the Zakat funds was used to purchase schoolbags and other school necessities. These were then presented to 462 Orang Asli children in three villages in Sepang.



### Back to School Programme

In November 2019, a total contribution of RM44,600 was given to 75 SIRIM staff members (223 children).

### Program Sentuhan Kasih

Group Human Resource organised a visit to the Bait Al Mawaddah Old Folks' Home on 21 August 2019. During the visit, 37 elderly residents were handed goodies that amounted to a total of RM3,700.



### Iftar Ramadhan Programme

The programme was held on 16 May 2019 to celebrate the fasting month and breaking of fast. Eighty-eight *asnaf* from Bait Al Hasanah and senior citizens from Bait Al Mawaddah were invited for the event. They were presented with cash and Hari Raya cookies that amounted to RM6,228.



### Celebrating Pilgrims Programme

The programme was held on 5 July 2019 to celebrate 16 SIRIM staff members performing hajj in 2019. Contributions amounting to RM2,705 were given in the form of hajj essentials.



### Program Kasihku under Lembaga Zakat Selangor (LZS)

Under *Program Kasihku* Zakat Selangor, SIRIM contributed a total of RM35,000 to various programmes, namely:

- Back to School programme
- Al Biruni Innovation & Learning Centre (a centre teaching various methods of learning)
- LZS Dialysis Centre



# GROUP DIGITALISATION & INFORMATION TECHNOLOGY

Report by:  
**Tengku Intan Narqiah Tengku Othman**  
 Chief Digital & Information Officer



The SIRIM 10Y Strategic Plan outlines SIRIM's digitalisation mission towards enhancing and improving customer and employee experiences by simplifying and innovating its business processes through digital technologies.

The SIRIM 10Y Strategic Plan outlines SIRIM's digitalisation mission towards enhancing and improving customer and employee experiences by simplifying and innovating its business processes through digital technologies.

With Digital SIRIM, the strategy for providing better and secured business transactions and services lies in placing the customer first. Within the organisation, meanwhile, the digitalisation of the internal business processes will enable collaborative work anywhere, at any time and on any device, subsequently facilitating the improvement of business transactions and staff productivity.

The year 2019 witnessed the progress of two key implementation areas that laid the pivotal foundation for a SIRIM Digital Collaborative working environment under the 'Seek better integrated technology platforms to optimise key processes' initiative. These are:

## Cloud Computing

SIRIM successfully complete its migration to a cloud-based platform during the first quarter of 2019, making it a pioneer in cloud-based readiness among government-owned companies (GOCs)/government-linked companies (GLCs). This paved the way for SIRIM to receive the Microsoft Digital Transformation Award in April.

In adopting a cloud-based platform, SIRIM shifted from fixed asset-based infrastructure to a pay-as-you-use cost model, which enables faster deployment in provisioning information technology (IT) infrastructure for digitalisation innovation and implementation. While previously it would take a minimum of three months to set up the IT infrastructure, now it only takes days.





# GROUP DIGITALISATION & INFORMATION TECHNOLOGY



## Collaborative Platforms

Understanding the difficulties faced by a dispersed workforce in collaborating and working as a team, SIRIM adopted collaborative platforms and tools that facilitate online communication and remote working between business units, branches and subsidiaries. This has led to opportunities for business process improvement and significantly improved the productivity of SIRIM employees.

Moving forward, in the next three to five years, SIRIM will endeavour to modernise and secure its entire front and back-end IT and digital ecosystem. Termed as the 'platformisation' of SIRIM's business services and transactions, these efforts will encompass four main areas, namely Enterprise Resource Planning (ERP), e-Commerce, anti-forgery and technology innovation & industrial research.

### PLATFORMISATION



Enterprise Resource Planning (ERP)



e-Commerce



Anti-forgery



Technology Innovation & Industrial Research



## FACTS AT A GLANCE

# 2019

WITNESSED THE PROGRESS OF TWO KEY IMPLEMENTATION AREAS THAT LAID THE PIVOTAL FOUNDATION FOR A SIRIM DIGITAL COLLABORATIVE WORKING ENVIRONMENT UNDER THE

**'SEEK BETTER INTEGRATED TECHNOLOGY PLATFORMS TO OPTIMISE KEY PROCESSES'**

INITIATIVE



## CLOUD COMPUTING



## COLLABORATIVE PLATFORMS

ENHANCING  
COMMUNITIES  
TOUCHING  
LIVES

Year Planner

March

April

October

# 05 CALENDAR OF EVENTS







# CALENDAR OF EVENTS

17 / 01 — 2019

— SIRIM SIGNED MOU WITH OPEN UNIVERSITY MALAYSIA

SIRIM signed a Memorandum of Understanding (MoU) with Open University Malaysia (OUM) to cooperate in the standards of management systems and staff competencies. OUM, in collaboration with SIRIM, has introduced a Masters in Quality Management programme that provides students with a strong foundation in the theory of and a variety of application concepts in Total Quality Management.



24 / 01 — 2019

— MoU CEREMONY BETWEEN SIRIM AND KEDAH INDUSTRIAL SKILL & MANAGEMENT DEVELOPMENT CENTRE (KISMEC)

SIRIM Berhad and KISMEC signed a Memorandum of Understanding (MoU) to collaborate for the Industry 4.0: Smart Manufacturing and Competency Development Programme, focusing on competency and training.

1 / 02 — 2019

— VISIT BY NATIONAL SCIENCE & TECHNOLOGY DEVELOPMENT AGENCY (NSTDA), THAILAND

NSTDA, Thailand, led by its President, Dr. Narong Sirilertworaku, visited SIRIM. They were also joined by Datuk Dr. Mohd Yusoff Sulaiman, President and Chief Executive Officer of the Malaysian Industry-Government Group for High Technology (MIGHT).





## CALENDAR OF EVENTS



### 21-23 / 02 - 2019

— SIRIM WON TWO GOLD, THREE SILVER AND ONE BRONZE MEDALS AT MTE 2019

SIRIM researchers won a total of two gold, three silver and one bronze medals at the Malaysia Technology Expo (MTE) 2019 at the Putra World Trade Center in Kuala Lumpur.

### 15-16 / 03 - 2019

— PINEAPPLE ENZYME-BASED COSMETICS DEVELOPED VIA COLLABORATION

The Industrial Biotechnology Research Centre (IBRC) and ENSU Lifescience Sdn Bhd have successfully developed pineapple enzyme-based cosmetics that use pineapple biomass as the main ingredient.

ENSUtouch's cosmetic products include a face wash, serums and sleeping masks, which contain premium active ingredients such as bromelain enzyme that slows down the ageing process, inhibiting skin inflammation, improving elasticity and facial complexion, and brightening the skin.



### 27 / 03 - 2019

— BRANDLAUREATE SMEs STRATEGIC BUSINESS PARTNER AWARDS

SIRIM received the BrandLaureate SMEs Strategic Business Partner Awards at the Asia Pacific Brands Foundation (APBF) gala dinner. The award was received by Ir. Dr. Mohamad Jamil Sulaiman, Vice President of SIRIM Industrial Research, at the Majestic Hotel, Kuala Lumpur. The prestigious awards night was attended by over 800 guests comprising corporate leaders, brand owners and leading personalities.



## CALENDAR OF EVENTS

16-18/04

— 2019

### — SIRIM INVENTION, INNOVATION & TECHNOLOGY EXPO (SI2TE)

SIRIM Invention, Innovation & Technology Expo (SI2TE) 2019 was held at SIRIM Kulim to foster research and innovation focusing on Industry 4.0 among the community. The event received 381 entries from researchers, academics and industry, institutions of higher learning, primary and secondary students, as well as domestic and international, and small and medium entrepreneurs (SMEs).



27-28/04 — 2019

### — PEKASA CHARITY PROGRAMME: RIDE AMAL SANTUNAN KASIH PEKASA

Nearly 100 staff members from SIRIM Berhad and its subsidiaries were part of a bike convoy participating in a charitable event that took place over two days. Aimed at promoting road safety as well as corporate social responsibility (CSR), the event saw participants holding gotong-royong activities to spruce up the Rumah Anak Yatim At-Taqwa Puchong and Madrasah Asyraful Madaris Besarlah premises. These included painting the buildings, cleaning drains, cutting grass and collecting trash in addition to conducting motivational programmes for the residents of the orphanage and the students of the madrasah.

30/04 — 2019

### — CSR PROGRAMME WITH SENIOR CITIZENS AT RUMAH SERI KENANGAN, CHERAS

SIRIM held a corporate social responsibility (CSR) programme at Rumah Seri Kenangan, Cheras, to cultivate caring community practices and inculcate good values among SIRIM employees. Various activities were held, including hydrostone painting crafts, a karaoke session and quizzes with the senior citizens. SIRIM also donated items such as cookies, SIRIM's research products like shampoos and shower gels from honeycombs and adult disposable diapers to the 150 residents.







## CALENDAR OF EVENTS

# 2-4/05 - 2019

### SIRIM WON SEVEN MEDALS AT ITEX 2019

SIRIM won four gold and three silver medals as well as the Best Design Award under the Research Institutions category at the International Invention, Innovation & Technology Exhibition (ITEX) 2019. The gold medals were won for the Natural Bioactive Dermatocide Anti-Fungal Cream, which also won the Best Design Award under the Research Institution Category; Water Scarcity Footprint Apps; Eco Substrate for Coral Restoration & Rehabilitation of Marine Eco System; and Quantum Dot Light Emitting Diode QLED Device for General Lighting Applications.



# 29/05 - 2019

### MOU SIGNING CEREMONY BETWEEN SIRIM AND KOREA CONFORMITY LABORATORIES (KCL)

The Mou paved the way for SIRIM to collaborate with KCL to establish a Building Integrated Photovoltaic (BIPV) demonstration and research site, develop a BIPV certification scheme and establish testing facilities for the BIPV system.

# 14/06 - 2019

### SIRIM AND HUAWEI TECHNOLOGIES (MALAYSIA) STRENGTHEN COOPERATION IN AREAS RELATED TO INDUSTRY 4.0 AND SMART MANUFACTURING

SIRIM and Huawei Technologies (Malaysia) formalised a partnership to strengthen cooperation in areas related to Industry 4.0 and Smart Manufacturing that will allow both parties to collaborate in technical expertise and support on information and communication technology (ICT) solutions, a joint partnership in planning and developing enterprise or SME connectivity for infrastructure, advisory and cooperation on talent development, and best practices and deployment guidelines for standards.



**CALENDAR  
OF EVENTS**



28 / 06 — 2019

— RAYA CELEBRATION WITH SIRIM CLIENTS

SIRIM Group celebrated Hari Raya Aidilfitri with its clients at the Setia City Convention Centre as part of a business networking session with them. The guests of honour included Sahibus Samahah Datuk Setia Haji Mohd Tamyas Abd Wahid, Dato' Seri Utama Diraja Mufti Selangor; Datuk Ir. Ahmad Fauzi Hasan, Chairman of the Energy Commission; Hairil Yahri Yaacob, Deputy Secretary General (Investment), Ministry of International Trade and Industry (MITI) and heads of government and industry agencies.



20 / 07 — 2019

— 130 VOLUNTEERS FROM SIRIM HELPED IN CLEANING THE BEACH

A total of 130 volunteers from SIRIM and their family members lent their hands in SIRIM's corporate social responsibility (CSR) programme at the Turtle Conservation and Information Centre in Pasir Panjang, Segari, Perak. The volunteers helped to clean up waste, especially plastic-based materials, from the beach.



6 / 08 — 2019

— MITI MONTHLY ASSEMBLY WITH AGENCIES AT SIRIM

The MITI Monthly Assembly with Agencies was held at SIRIM. MITI Minister Datuk Darell Leiking launched the Solar Powered Street Light Using Lightweight Composite Poles and My Lipos during the assembly. Representatives from the agencies also visited the Open Area Test Site Laboratory, Helmet Testing Laboratory and Biocompatibility Testing Laboratory.





## CALENDAR OF EVENTS



# 8/08 — 2019

### — COURTESY VISIT TO NORTHERN CORRIDOR IMPLEMENTATION AUTHORITY (NCIA)

SIRIM President and Chief Executive Datuk Ir. Dr. Ahmad Fadzil Mohamad Hani made a courtesy call to Datuk Seri Jebasingam Issace John, Chief Executive Officer of the Northern Corridor Implementation Authority (NCIA) in Cyberjaya. Also present was Ir. Dr. Mohamad Jamil Sulaiman, Vice President of SIRIM Industrial Research.

# 17-18/09

— 2019

### — SUDANESE STANDARDS & METROLOGY ORGANIZATION (SSMO) COURTESY CALL TO SIRIM

Mr. Sharif Mohammed Sharif Fadul, the General Manager of Sudanese Standards & Metrology Organization (SSMO), accompanied by the Embassy of the Republic of Sudan Counsellor, Mr. Abdelalim Eltayeb Elamam, visited SIRIM on 17 & 18 September 2019. The purpose of this visit was to benchmark SIRIM's experience and success stories and to re-apply them in efforts to develop Sudan's standards and metrology sector.



# 12/10 — 2019

### — SIRIM IS THE OVERALL CHAMPION IN MITI SPORTS INTER-AGENCY

SIRIM won the Overall Championship in the MITI Sports Inter-Agency (SAAM) in conjunction with the National Sports Month. SIRIM was the champion in four events, namely bowling, netball, sepak takraw and badminton.





## CALENDAR OF EVENTS



8/11 — 2019

### — THREE ORGANISATIONS RECEIVE SIRIM QUALITY AWARDS 2019

Three organisations received the prestigious SIRIM Quality Award 2019. The award recognises organisations in the public and private sectors, which achieved quality management that meets national and international standards.

The awards were received by:

- Averex Technology Sdn Bhd (Small and Medium Enterprise (SME) Category)
- Seberang Perai City Council (Government Category)
- Teleplan Technology Services Sdn Bhd (Large Company Category)

3/12 — 2019

### — SIRIM QUALITY AND INTEGRITY DAY

The programme was held in conjunction with World Quality Day and Integrity Month in Malaysia with the objective to increase awareness, commitment and cooperation between departments in an effort to improve quality and integrity, and inculcate a good practice culture in the organisation.

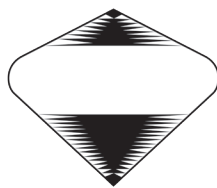


19/12 — 2019

### — WORLD METROLOGY DAY 2019

The World Metrology Day was officiated by Hairil Yahri Yaacob, Deputy Secretary General (Trade) of the Ministry of International Trade and Industry (MITI). He also launched a new large-scale longitude physical standard measuring 25m.





**SIRIM**

**SIRIM BERHAD**

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