

The Triple Helix

Technology. Applied to Market.



*Accelerating at the Curve:
Stepping up R&D efforts to innovate for long-term value*

CEO's Message

Dear Members and Partners,

The world is seeing a crisis of unprecedented nature and effects that has posted serious impacts on people's health and livelihood. The experiences and lessons from the past months will prove valuable in helping us rebound quicker.

In this issue of the Triple Helix, you will read about CREST's participation as a co-organiser for the National Conference for Clinical Research 2020 (NCCR). The NCCR conference brought together medical experts and researchers on one platform, to explore disruptive technologies, interdisciplinary digital health research and coordinated efforts to advance research in fighting against the COVID-19 pandemic. In line with the NCCR, CREST organized a webinar titled "Technology & Innovation in Healthcare", whereby representatives from the government and industry shared insights on how their respective organizations continue to play a role in championing healthcare innovation.

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Continuing on the theme of healthcare, we shine a spotlight on CREST's Digital Healthcare Cluster, where we look back on how far we have come in our journey to revolutionize the healthcare industry in Malaysia. Read about the collaborative nature of healthcare innovation and how our partnerships with industry, government, academia and healthcare professionals is paving the way towards affordable, accessible, patient-centric healthcare for all.

COVID-19 has become an extraordinary catalyst for change and has inadvertently placed greater emphasis on the need for innovation. The pandemic has put us through an innovation stress test and is pushing organizations to work together in new ways to create ecosystem-wide innovation. In view of this, organizations need to innovate, collaborate, invent and redefine themselves, to effectively meet these challenges.

It is on this note that I encourage all of you to reach out and collaborate with us. I wish you all the best for 2021.

Jaffri Ibrahim



2020 At a Glance

CREST promotes and facilitates collaborative research between Industry and Academia through which universities can increase their ability to produce industry-ready researchers, and industry players can benefit from the research findings.

RM201.5 m

Total Value of R&D Projects

97

Organisations
(22 MNCs, 6 LLCs, 66 SMEs, 2 CLGs,
1 GOVT)

25

Universities

322

Academic Researchers

271

Industry Practitioners

235

Industry-skilled postgraduates

R&D Grant Highlights



- 73 Completed projects, 21 implemented
29 IPs filed (7 granted)
- 117 Industry-ready Postgraduates Completed (68 Graduated)
- RM19.6m CREST R&D Grant disbursed
RM37.9m Industry & Uni. Contribution
RM140m Projected Business Value over 5 years
- 11x Return for every RM1 Grant disbursed for R&D

Data: Year to date, Nov, 2020

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2020 At a Glance

- Talent Development Highlights

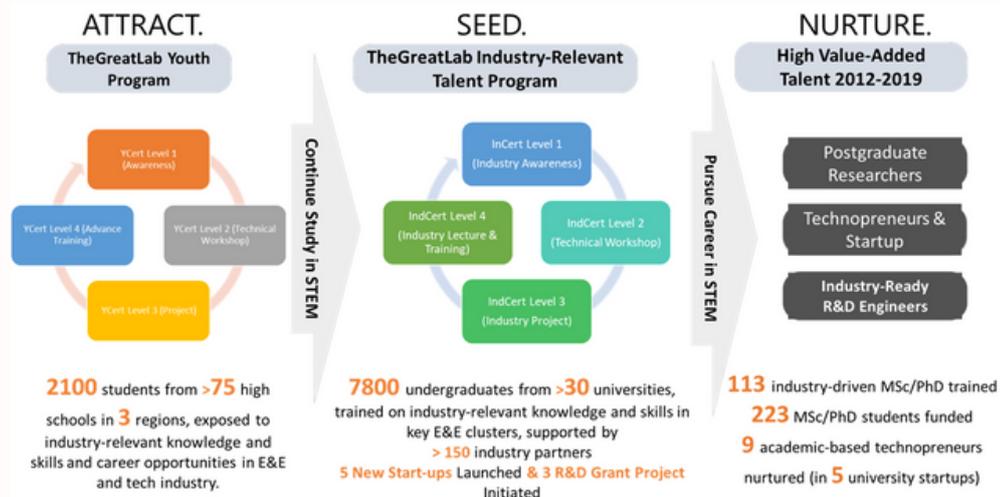
TheGreatLab (TGL) Program aims to attract, seed and nurture industry relevant talent through industry-driven Collaborative Blended Learning platform producing industry-ready graduates, technopreneurs and future scientists.

Unlike previous years where most of the programs involved face-to-face sessions, the talent development series of programs such as bootcamps, workshops, training and hackathons were conducted on a virtual platform this year due to the Covid-19 pandemic.

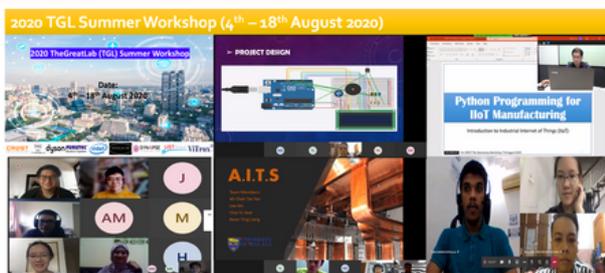
All of the TGL talent programs from technical workshops, hackathons, bootcamps, industry lecturers, project evaluations and design competition were delivered from the CREST online learning management system platform (TGL Finishing School Platform), funding application, project monitoring & evaluation platform, TheGreatLab website (<https://thegreatlab.my/>) as well as other online platforms.

As CREST, the industry, universities, schools and agency partners venture into this new virtual environment, we hope to continue our collaborative effort in delivering industry relevant training programs to university and high school students. We foresee that TheGreatLab Academy programs will be more exciting, vibrant and can reach out to more students with the virtual setting in the coming years.

Since 2014, our 3-phased strategy to **attract, develop** and **retain STEM** talent



Sample Activities

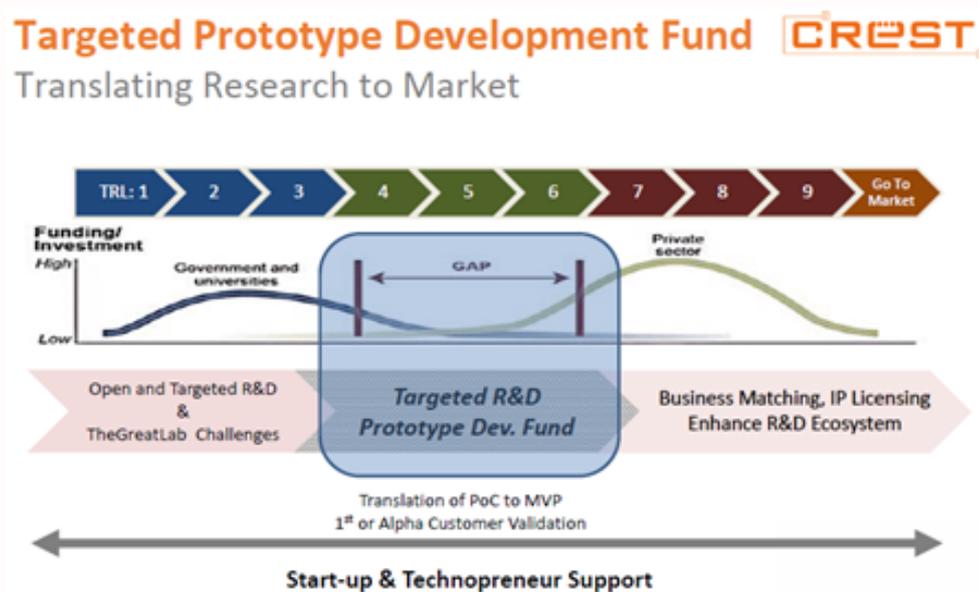


2020 At a Glance

- CREST Targeted Prototype Development Fund

Cycle 2 of 2020 marks our first announcement of the CREST Prototype Development Fund (PDF). The main objective of the grant is to fund applications with readily available proof-of-concepts (POC – at least TRL 3) to further develop them into minimum viable products (MVP – at least TRL 7), prototypes or services.

At CREST, we understand that the main gap of translating impactful R&D outcomes from lab to market is due to the lack of support in product development with business and market driven goals. Therefore, with the introduction of this new grant scheme, our aim is to bridge the gap between R&D outcomes, go-to-market (GTM) and commercialization phase. This scheme complements the existing CREST R&D grant.



How can I participate?

Eligibility and Basic Terms & Conditions

- 1st Proof of Concept to develop
- Minimum Viable Product prototyping / Services
- Development of project involves at least one company
- Company involved must be registered in Malaysia, with at least 51% ownership by Malaysians (not eligible for MNCs)
- Project lead must be a Malaysian citizen
- Project duration – 12 to 18 months
- Company contribution can be less than 50% of the total research budget
- CREST contributes to the salary of the engineering resources up to RM3,000 per month for the duration of the project, up to a maximum of 3 resources

When is the Next Application Window?

- Similar to the current CREST R&D grant
- For more details on the grant and application process, please email us at hazwan@crest.my

Cycle 1
1st Jan – 28th Feb

Cycle 2
1st Jul – 31st Aug

Leading the Digital Healthcare Revolution in Malaysia

By CREST Digital Healthcare Cluster Team

CREST's Digital Healthcare Cluster was formed in 2014 to focus on the application of wearable embedded systems, Internet of Things (IoT), connected devices technology; and the successful commercialisation of healthcare products, solutions and services by the E&E industry.

The cluster comprises more than 70 organizations, active in promoting and advancing IoT-enabled healthcare solutions and connected devices.

When we first started work in IoT, healthcare was one of the areas where we considered IoT could potentially play a big role. We were figuring our way around, and had met with E & E companies which at that time, were cautious about healthcare," Jaffri said.



Fast forward to today, CREST has pivoted from the E & E industry to extend its E & E core to enhance into health and wellness care. "We look at healthcare as an industry prime for technological disruption and strongly believe that digital healthcare innovations are at the heart of addressing the healthcare challenges faced by our country today." Jaffri added.

Led by the industry, supported by academia, government, researchers and healthcare professionals, CREST's Digital Healthcare Cluster comprises more than 70 organizations, active in promoting and advancing IoT-enabled healthcare solutions and connected devices. Coupled with artificial intelligence and data analytics, these solutions have been instrumental in advancing Malaysia's healthcare industry whilst opening up new opportunities globally.

To date, this cluster drives digital healthcare innovation, immersive technologies for health and wellness, mobile sensor for health monitoring and many others.

One notable innovation is Stethee, an artificial intelligence-enhanced stethoscope. CREST was instrumental in getting Dr Nayyar Hussain - the inventor of the Stethee to manufacture the device in Malaysia. CREST introduced him to a manufacturer in Penang who enabled mass production of the device to be sold to the global market



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The collaborative nature in healthcare innovation

As health needs grow, it is imperative that innovation is at the frontier of change, to keep the health needs and requirements of the 21st century scalable. For innovation in healthcare to be sustained at an economically and fiscally responsible pace, it has to be a collaborative effort, requiring input from diverse stakeholders and key players in the industry.

A collaborative healthcare system that includes information sharing, cross-industry cooperation and open innovation can lead to beneficial industry practices such as cost reduction and time efficiency. Together, these practices set a precedence for growth and development at a more rapid pace.

CREST has to date initiated many strategic collaborations to innovate digital healthcare solutions. Our efforts include connecting and facilitating digital healthcare initiatives under R&D&C and market access and nurturing a conducive ecosystem through collaborative partnerships with the industry, academia, society and government.

CREST collaborative partners in healthcare include the Ministry of Health for its Digital Healthcare Cluster initiative and Microsoft Malaysia for the development of an AI system and Digital Healthcare Data Analytics Centre. Together with DiGi, both parties are embarking on a pilot project to enable Remote Health Monitoring and Emergency Medical Services whilst a partnership with Data8 focuses on the development of an emergency response system.

The CREST Healthcare Advisory panel comprises Tan Sri Dato' Seri Dr Noor Hisham Abdullah, Director General of Health and Prof Dr Ogan Gurel, who is a Visiting Teaching Professor at DGIST (Daegu Gyeongbuk Institute of Science & Technology) and an entrepreneur with medical training; to bridge healthcare needs and innovation. The panel will lend their expertise by advising and reviewing the projects to ensure excellence in R&D&C, as well as international best practices. The panel members will also act as advocates for the cluster initiatives and identify opportunities for more effective research and innovation linkages.

In addition, CREST collaborates with Medical Opinion Asia for the development of remote health monitoring and the National Cardiovascular Data Analytics, to capture more than 25,000 Malaysian heart sounds nationwide, through the use of Stethee.

Sample Collaborative Projects



Stethee - IOT enabled wireless stethoscope



CR2 Haptic - compact & portable rehabilitation robot



HarTTrek - compact & portable rehabilitation robot

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Talent development as a building block to a robust healthcare ecosystem

Aside from initiating strategic collaborations to nurture a conducive ecosystem that encourages innovation, a key focus for CREST lies in growing and nurturing competent talent for the healthcare revolution. Through partnerships with industry and academia, we ensure that the tertiary education syllabus is kept abreast of the latest advancements and trends and are aligned with industry needs.

CREST has deployed a myriad of talent programs, streamlined to nurture undergraduates with relevant skills and experience, to bridge the gap between hands-on experience and classroom learning. With early exposure to industry-related skills and competencies, we have been successful in being able to produce industry-ready talent

CREST's talent development initiatives for digital healthcare include healthcare related bootcamps and design challenges in the areas of 3D printing, A.I.D.A and software as a medical device, targeted at students from Engineering, Science and Technology disciplines from public and private universities. In addition, students are exposed to workshops, lectures, R&D showcases and investment pitching sessions for digital healthcare projects on a regular basis to connect our talent and industry members with various stakeholders.

Driving the digital healthcare forward

The COVID-19 pandemic has catalyzed a massive shift towards more aggressive leverage of digital technologies in healthcare. This sector is estimated to reach more than \$500 billion by 2025 with an annual growth rate of 27.7%. Buoyed by the growth and immense potential of the industry, CREST is poised to lead the charge to drive Malaysia's healthcare industry forward and to ensure affordable, patient-centric healthcare for all.



If you are looking to become a collaborator in Digital Healthcare, reach out to us today!



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More demand for healthcare technology amidst Covid-19 crisis



DATA8 A CREST Digital Healthcare Cluster Partner

COVID-19 has brought a significant shift in consumer behavior, which will unlikely change even after the pandemic subsides. During these unprecedented times, people have become more aware of the importance of health and family well-being, resulting in an increasing demand for online healthcare solutions.

DATA8 Sdn Bhd, a healthcare technology startup believes that despite the extraordinary challenges brought upon by the pandemic, lies opportunities to drive positive changes within the healthcare systems.

According to Rajifah Ramli, Founder and CEO of DATA8, during the first Movement Control Order (MCO), the company had successfully developed a triaging & management system for COVID-19 which automates the end-to-end process from screening and swabbing to admitting patients suspected of COVID-19 to hospitals.

Amidst the fear of COVID-19, it is estimated that most clinics suffer up to a 70% loss in patient visits during the MCO.

Rajifah said that the idea to develop the system was based on the discussion with doctors at Hospital Sungai Buloh who were looking for ways to improve the processes for suspected COVID-19 cases at the hospital. "We began discussion prior to the start of the MCO on 18th March 2020 and the system was launched on 30th March, after two weeks' of development," Rajifah added.

The system features two main parts; a web app for patients to fill up their particulars and a dashboard for doctors. The web app, designed to be filled by patients, is developed based on Borang Saringan COVID-19 used by hospitals. The information covers demographic data, travel history, COVID-19 history, past medical history and current symptoms. The screening data is then linked to a dashboard, allowing doctors to track the progress, from swabbing to admitting patients to the hospitals.

"The two key objectives of the system are to minimise human contact between potential COVID-19 carriers and frontliners during the screening process, and to improve operational efficiency through faster process flow. To date, the results have been encouraging and we have received good feedback from the frontliners." Rajifah said.

Having worked on the triaging systems, DATA8 discovered an opportunity to further enhance its cHEART user app's capability. Amidst the fear of COVID-19, it is estimated that most clinics suffer up to a 70% loss in patient visits during the MCO. In view of this, DATA8 upgraded the feature of cHEART app to include telemedicine, which enables patients to consult their doctors online.

CHEART
Manage your health with cHEART
FREE ACCESS

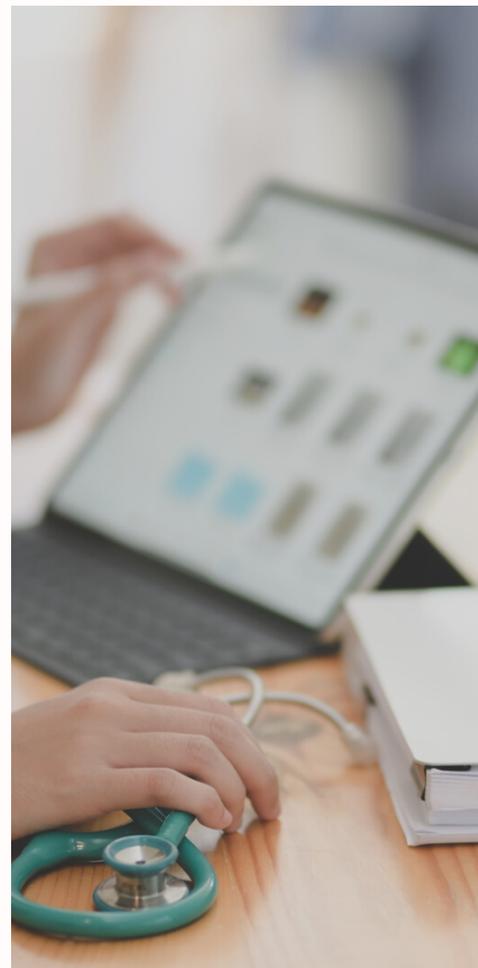
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“The telemedicine was developed in accordance with Malaysian Medical Council Advisory on Virtual Consultation and requires doctors to conduct tele-consultation only with their existing patients. Thus, our system allows doctors to invite their patients for online consultation in order to provide continued care.” Rajifah explained.

At present, DATA8 is planning to roll out a pilot project using these features at selected Pusat Internet in Indera Mahkota Pahang for the B40 community. With this initiative in place, those without internet connectivity can visit any Pusat Internet involved in this project to receive consultation from doctors.

cHEART will also be part of EM Watch, a research project led by Hospital Kuala Lumpur and Hospital Sungai Buloh. EM Watch will utilize cHEART’s telemedicine platform to provide continuous care for patients, upon discharge. The research will be used to measure the effectiveness of using telemedicine for online consultation and remote monitoring in a move to reduce bottlenecks at the hospital.

DATA8 has been selected as part of the National Technology and Innovation Sandbox, an initiative by the Ministry of Science, Technology and Innovation (MOSTI) to provide facilitation to accelerate the development of innovative solutions from R&D stage to commercialization. “We are participating in the sandbox as telemedicine in Malaysia is currently self-regulated due to the absence of a gazetted Act. In addition, we would like to allow for medical data interoperability to be done in a secure and safe environment by using blockchain technology,” Rajifah added.



Being part of the CREST Digital Healthcare Collaboration

Commenting on the collaboration with CREST, Rajifah said that working with CREST is a huge blessing particularly for startups like DATA8. “CREST has filled the gaps by connecting DATA8 with various agencies and organisations within the healthcare ecosystem in Malaysia.”

“CREST has opens doors for DATA8 to present our solutions to various agencies; they have successfully bridged the link with parties that have mutual interest and commitment towards bringing about digital health transformation,” Rajifah said.

“Working with like-minded partners like CREST has made it more manageable for us to face the challenges within the healthcare industry. We look forward to a long-lasting collaboration with CREST towards improving the healthcare system and services through technology.” Rajifah added.



Collaboration meeting with CREST on the EM Watch research project

CREST Southern Innovation Program

Our initiative in Johor Bahru originated from the need to attract high technology industries from neighbouring countries and support the industry in the southern region, including Malacca and Negeri Sembilan.

CREST Southern Innovation Program kick started in July 2019 focused on creating an innovation design ecosystem and developing companies with activities and/or involvement in IC design, artificial intelligence, machine learning, automation and robotics.

CREST is on a quest to establish strategic technology and ecosystem partnerships with the industry and academia in the region to deliver relevant programs in the southern region.

Streamlined processes to seed, nurture and grow innovative ideas & talent through Ideation, Incubation and Acceleration programs

Strategic Focus Areas

Enhancing product design and the manufacturing ecosystem in Johor and southern region in E&E, plastic & petrochemical, oleochemical and machine and engineering (M&E) sectors – through the advancement and adoption of IoT, AI, machine learning, robotics, AR/VR technologies.

Enabling a sustainable smart city and rural living in Johor and southern region in targeted regions and municipalities – through the advancement and adoption of IoT, AI, machine learning, robotics, AR/VR technologies, autonomous solutions. Identify, attract and facilitate promotion, adoption and development of innovative solutions to Smart Sustainable Living.

Developing sustainable talent pipeline for the industry, nurturing future scientists and technopreneurs, grooming tech startups; adopting TheGreatLab model and framework with specific programs. Incubation of innovative hardware solution startups (INCUBATION GARAGE). Partnering with academic institutions in Johor, EduCity Iskandar Puteri, Malacca, Negeri Sembilan and southern Pahang.

Leveraging capabilities in E&E to enable growth in various industry verticals



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Bridging the Gap through Collaborative Initiatives

WhatToHack program

- Collaborating with company(s) to identify growth opportunities, to improve productivity, value creation through outsourcing & crowd sourcing innovative solutions
- Aimed at generating closer collaboration between company(s) and technology developers to accelerate the development & implementation of new technologies.
- To date, Alcon, Kulim Berhad and Touch N Go have participated in this program

Pitch4Profit program

- An open pitching session for research entrepreneurs and tech startup to have opportunities to pitch to potential venture capitalists, corporate ventures/investors, and companies looking for new opportunities

Bridge to Global program

- Connecting local research entrepreneurs and starts to international accelerators to jointly explore global market opportunities and partnerships.



During the WhatToHack session with Kulim Berhad - to develop a solution for company involved in recycling of palm oil mill effluent.

Building platforms with multiple stakeholders

Startup incubator & Accelerators

- Helping entrepreneurs solve problems commonly associated with running a startup
- Partners include Xpress Train, Iskandar Space, EduCity, UsahawanJohor, SME Corp and Permodalan Nasional Berhad
- Builds the pipeline for CREST R&D grant applications

CREST was invited to present at Johor Entrepreneur Development Council (Majlis Pembangunan Usahawan Negeri Johor (MPUNJ))

- Exploring potential startup programs for targeted group of entrepreneurs

Living Labs

- Nurturing a Living Lab ecosystem for innovators to create, connect and collaborate in ISKANDAR PUTERI
- Focused on a Research Living Lab (EDUCITY) and Urban Living Lab (MEDINI CITY)

Digital Talent

- Striving to narrow the skills gap and connect employers with academic institutions
- Developing new age digital talent through the Siemens Training Partner Program
- Developing a new module combining TheGreatLab and EduCity methods

Farm2Fork

- A precision agriculture project ranging from rooftop urban farming to container farming which is equipped with smart farming IoT systems, innovation displays, with community access



Streamlined processes to seed, nurture and grow innovative ideas & talent through Ideation, Incubation and Acceleration programs

New CREST members based in Johor

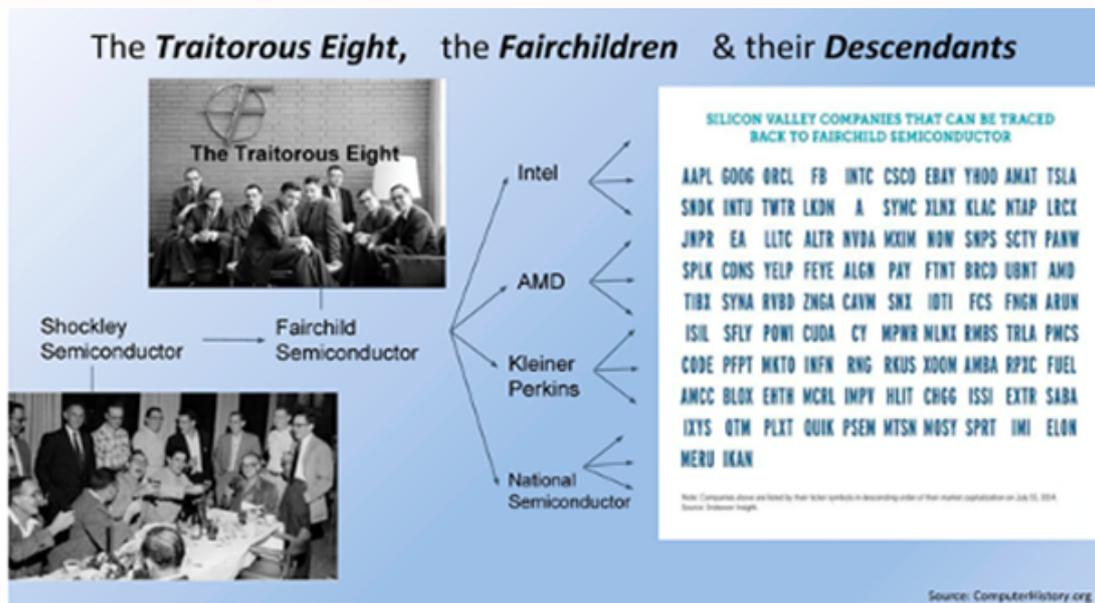


News from the Community

- SkyeChip and Silicon Valley Dream

The Story of Silicon Valley

In August 1957, 8 brilliant engineers aged between 26 and 33, left the prestigious Shockley Semiconductor Laboratory and founded Fairchild Semiconductor. William Shockley famously labelled the group as the traitorous eight. Based on nothing more than knowledge, optimism, ideas, and passion, the bold move of the “traitorous eight” gave rise to Silicon Valley which eventually became the Epicenter of Technology innovation that changed the world. Companies traceable to Fairchildren are worth more than 3 Trillion, and these include technology giants such as Intel, Apple, AMD, Google, Cisco, etc.



Penang & Silicon Valley

Penang’s association with Silicon Valley heralds back to 1972. The state became the first offshore site to host Silicon Valley companies such as Intel, AMD, HP and National Semiconductor. These pioneers together with hundreds of other MNCs who invested in Penang, have helped the state earn its nickname of the Silicon Valley of the East and since then, the E&E industry in Penang has contributed 38% of Malaysia's total exports. Over the last 48 years, the MNCs have helped grow a deep bench of local talent which in turn nurtured many other successful local companies.

In IC assembly and test manufacturing and automation, the LLC and SMEs are playing an increasingly important role in a sector previously dominated by MNCs. These homegrown SMEs which started off as suppliers to the MNCs have grown into large listed entities however were unable to conduct their own research and development, and venture into new markets abroad. Among these are well-known names such as Vitrox, Inari Amerton, Pentamaster and the recently listed Greatech and TT Vision.

Progress has been made in Integrated Circuit R&D whereby local companies that were established by former MNC employees provide IC design services to MNCs both in Malaysia and abroad. Through high quality services provided, these companies have built their reputation in the industry, and are gaining sufficient momentum to give larger global players a good run for their money. The only drawback is that these companies are merely providing services and are not building their own IPs, specifically in filing their own patents in Malaysia and abroad.

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An E&E industry veteran used the car industry as an analogy to illustrate the progress of Malaysia's E&E sector. According to him, in the last 48 years, Malaysia has built a strong foundation, resulting in acquisition of knowledge and expertise in assembly, test and automation and today is able to build cars of any complexity. He relates this to pit team at Formula One races, stating that Malaysia has immense potential to compete globally with its very own IPs and IC products.

Building of Cars
Assembly Test Manufacturing & Automation



Pit Team
IC Design Services



F1 Race
Competing globally with our own IP & IC Products



SkyeChip and the Silicon Valley Dream

SkyeChip is the latest startup to be hosted at Crest Place. Our goal is to be in the Formula One race, to compete globally with our IPs and IC products. We have set our target on building a global IC company based on the Silicon Valley DNA of innovation, optimism, engineering excellence, and teamwork.

Our founding team have left well paying jobs and are taking a gigantic leap to realize their Silicon Valley dream. We believe that time is ripe for SkyeChip; we have a great team in place and are equipped with competitive technology to serve a large and fast growing market. Our computing infrastructure is up and running in CREST's data center and we have been granted full access to TSMC proprietary 6/7nm advanced process node with a full Synopsys EDA tool suite in place. The team is currently running full steam on all cylinders on several cutting-edge IP developments to serve the needs of our pipeline of global customers.

SkyeChip is appreciative of the great support rendered by policy makers, government authorities, and industry leaders who want to see Team Malaysia move up the value chain, as well as our vendors and suppliers who trust in our engineering abilities.

Having said that, we will see you in the semiconductor Formula One race as Team Malaysia!



CREST PLACE

SkyeChip Sdn Bhd

Block A, Sains@USM,
10 Persiaran Bukit Jambul
11900 Bayan Lepas,
Penang, Malaysia.

News from the Community



- The iCYCLE Journey

How did iCYCLE come about?

iCYCLE Malaysia is co-founded by Dr Tan Ching Seong (PhD, NTU Singapore) who is also an Associate Professor in Multimedia University. Dr Tan has been actively involved in research on waste management solutions and retrofit light bulbs with 30 peer-reviewed journal papers to his name.

Living on an island with a polluted landfill and faulty incinerator (which is deemed an alternative) is not everyone's choice. The waste issue in Pangkor Island was expected to be solved by operating the incinerator which eventually failed. Therefore, Dr Tan's idea of setting up a Non-profit Organization in 2013 was propelled by his frustration over the failure to control the waste. To encourage the villagers to recycle their waste, Dr Tan developed a reward-based collection system and throughout his journey, the system had embraced new technologies to provide better user experience and generate interest in recycling.

August 2016 saw the start of iCYCLE in Klang Valley to add value to the society by reducing, reusing, and recycling the society's waste. The business idea was well accepted in another country where we began our operations in Guangzhou, China in July, 2018. Subsequently, in May 2019, we enlarged our footprint to include offices in Singapore and Thailand.

Company Profile

iCYCLE Malaysia is a social business startup under MMU's startup scheme. In 2018, we kicked off the business, armed with the vision to be the leading solutions provider to manage waste responsibly through waste separation and recycling. We are committed to reduce waste to landfills through the integration of smart technology in lieu of Industrial Revolution 4.0.

As one of the subsidiaries under Terra Phoenix Holdings Sdn. Bhd., iCYCLE Malaysia has advanced into rapid technology growth with a few filed Intellectual Properties held by its parent company since March 2017. Our web-based system which was first launched in August 2016 was further developed into our first Mobile Application (Phinonic) beta version in April 2018. The app is now rebranded as iOWT and is a patented Internet of Waste Things – a self-sustainable, community engagement program that incentivizes communities and businesses for waste separation at source and facilitating historical data tracking. Since inception, iCYCLE Malaysia has received recognition from various entities and exhibitions for our ideas, innovation and efforts. Our accolades include:

- Gold medal Award ITEX 2017 - The Best Start Up Award
- MSC Malaysia APICTA 2018 Awards Winner
- MMU Best Spin Off 2018
- Listed as 100 Social Enterprises to watch for in Asia 2018 (DBS-NUS Social Challenge Venture Asia)
- IEI WIIF 2018 (10th International Exhibition of Inventions and 3rd World Invention and Innovation Forum China)
- 2019 World Class Partner-United Nations Technology Innovation Labs (UNTIL)
- UNEP SEA of solutions
- 2019 Smart City Cyberjaya
- The Star – Golden Hearts Award 2019
- Nouveau Award 2019 GBS Iskandar

A major challenge of iCYCLE lies in how we further reduce the cost of waste disposal landfill which makes separation at source a vital part of its process. In addition, having to develop a platform for an eco-friendly community has proven to be challenging as we are required to incorporate good user experiences for users. In view of this, iCYCLE has integrated the solutions seamlessly with the usage of barcode and QR code, together with gamification to attract the younger generation. Social media and key source of news and information, thus we improved our presence and engagement by creating a Finding Simorgh comic whose storyline is closely related to adopting a green lifestyle. We hope to continue educating our society to adopt sustainable lifestyles which brings about better social and environmental impacts.

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What's next for iCYCLE?

In the next 10 years, iCYCLE is determined to provide real-time mobility solutions that will enhance the sustainability of humankind. We do this by providing an online platform to reduce and recycle society waste with the support of the developed Internet of Things Waste (iOWT) mobile application that allows users to recycle in a trustable, enjoyable and waste diversion. The utilization of Big Data will have a massive impact for Smart City Solution which enables us to learn more about carbon footprint reduction and carbon cycle research. We expect to further collaborate with local governments to support the green masterplan which will help reduce their landfill disposal cost. Corporate clients on the other hand will have a better understanding of delivering their products in a sustainable manner which will create a ripple effect among consumers. Our product will be further enhanced by combining conveniences, comprehensives, triple reward and data tracking abilities.

iCYCLE Malaysia is proud to be one of CREST's registered members. CREST as a platform has facilitated and supported our business growth and developments and we look forward to exploring more collaborative opportunities in the space of green technology.



Dr Tan Ching Seong, Co-founder



iCYCLE Malaysia Sdn Bhd
(Northern Region Satellite Office)

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10 Persiaran Bukit Jambul
11900 Bayan Lepas,
Penang, Malaysia.

Highlights

- CREST Co-organised the 13th National Conference for Clinical Research 2020

CREST collaborated with the Institute for Clinical Research and National Institute of Health to co-organise the 13th National Conference for Clinical Research 2020 (NCCR). Held from 24 – 26 August 2020, the NCCR conference which was aptly themed “Conference Of Very Important Disease (COVID-19)” showcased meaningful research advancements in the fight against the global COVID-19 pandemic.

The conference brought together over 700 participants comprising medical experts, researchers, healthcare and technology related companies from 17 countries on a virtual platform, to explore disruptive technologies, interdisciplinary digital health research and coordinated efforts to advance research in fighting against the COVID-19 pandemic that has affected Malaysia and the world.

“The NCCR conference is of significance to CREST as it aligns with our commitment towards development of technology to address the real needs of the healthcare industry. CREST has been actively involved in digital healthcare and together with our industry, academia and government partners, we actively advocate and implement technology into our healthcare solutions.” Jaffri Ibrahim, CEO of CREST said.

Among the conference highlights were the CRC Named Lecture titled ‘Battling Against COVID-19’ which was delivered by Tan Sri Dato’ Seri Dr Noor Hisham Abdullah, Director General of Health and the NCCR research e-Poster display session which provided an opportunity for clinicians and researchers within the Ministry of Health, academia, industry and private hospitals to share their research findings and discuss trends that will shape the future of healthcare.

CREST’s involvement at the conference included a session moderated by Jaffri, titled “COVID-19 Clinical Updates”, where he spoke to Dr Suresh Kumar Chidambaran, the Head of Medicine & Infectious Disease Consultant from Sungai Buloh Hospital. Dr Suresh provided an update on the initiatives undertaken by the Ministry of Health to mitigate the spread of COVID-19 in Malaysia, in addition to the use of technology to track and trace the spread of the disease.



Opening Ceremony conducted online and on-site at the National Institute of Health, Shah Alam.



Special Lecture by Tan Sri Dato' Seri Dr Noor Hisham Abdullah



Collaborative effort : Organising team members from the National Institute of Health (NIH) & CREST

Highlights

CREST Webinar in conjunction with NCCR: The role of industry & government in shaping the future of healthcare innovation

Researchers, businesses, and innovators around the world are putting technology to work to alleviate the effects of the global health crisis. From applications that collect data to track the spread of the virus to robots that have been deployed to minimize human contact; these are some of the innovative technologies that have risen to the occasion in the fight against COVID-19.

The pandemic has sparked a health crisis that in turn has unleashed an unprecedented deployment of resources. Locally, the scientific, healthcare and technology communities have put their full weight behind finding solutions that help mitigate the impact of the pandemic in the country.

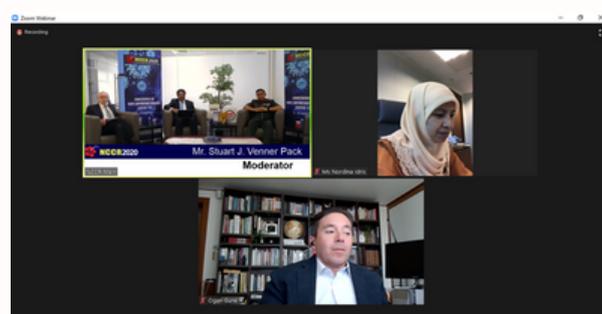
Against the backdrop of the pandemic, CREST organized a two-part webinar themed "Technology & Innovation in Healthcare" which saw the participation of government representatives who shared insights on how their respective agencies have been instrumental in "Shaping the future of healthcare innovation." The second session featured captains from the industry who discussed "How innovation in healthcare is leading the way in the fight against COVID-19?"

The panelists for the first session included Dr Kalaiarasu M. Peariasamy from the Ministry of Health Malaysia, Colonel (Dr) Mohd Arshil Moideen from the Ministry of Defence Malaysia, Ms Nordina Idris from the Ministry of Science, Technology and Innovation and Prof Dr Ogan Gurel, from Daegu Gyeongbuk Institute of Science and Technology, Korea. Topics that were discussed include:

- The future of healthcare innovation and the pivotal role in which governments play in shaping healthcare policies and regulations
- Examining the role of government policies and regulations on innovation Spreading innovation through partnerships and collaboration with industry players
- Striking the right balance between technology transfer and national innovation

The panelists for session two include Dr Dzahar Mansor from Microsoft Malaysia, Mr Yew Kian Seng from IME Group of Companies, En Abdul Halim Md Lassim from Hei Tech Padu and Jaffri Ibrahim (CREST). Among the topics discussed during this session were:

- How is the use of technology and innovation helping businesses and society operate in the new norm?
- Success stories from digital health technologies implemented during the COVID-19 Trends in healthcare innovation and why it is so important to innovate in this sector
- Delivering innovation through research Reimagining healthcare: The collaborative nature in healthcare innovation, the importance of partnerships and working together towards a better future.



A replay of the webinar is available here:
<https://www.youtube.com/watch?v=rxQFVp5KSZI>
We encourage you to listen to it to get more insights on the topics discussed.

Highlights

- CREST @ NextBigTechAsia, 7 - 8 September 2020

Innovation alone will not help entrepreneurs succeed in the end goal of meeting the demand of patients. Instead, innovations must include the fundamental human problems that meet better solutions. Healthcare's long and continuing affair with technology has evolved into a synergy between complementing partners that come together to innovate and produce patient-centric products and solutions for the industry.

Such is the focus of a panel discussion at NextBigTech Asia 2020 which CREST participated in. Titled, "Living up to the hype of patients", the panelist for the session included Tan Sri Dato' Dr. Abu Bakar Suleiman, Former Chairman, Health Advisory Council & Chairman, IMU Group, Malaysia, Datuk Dr. Kuljit Singh, President, Association of Private Hospitals Malaysia and Jaffri Ibrahim, who represented CREST.

At the discussion, Jaffri touched on the collaborative nature of healthcare innovation to produce result-based outcomes for the healthcare industry. He cited examples of CREST's involvement in nurturing a conducive ecosystem through initiating collaboration with industry, academia, researchers, healthcare professionals and relevant government organizations, to innovate digital healthcare solutions. He also stressed on the importance of collaborative partnerships as an integral component to improve integration, quality and delivery of the local healthcare system and adoption of new technologies to ensure that Malaysia stays ahead of the healthcare curve.

In addition, the CREST's Digital Healthcare Cluster provides a neutral platform for the industry and entrepreneurs to network and engage with medical practitioners and regulators to identify pain points in the healthcare system that can be addressed with technology innovations and solutions.

The fourth installation of the NextBigTech Asia 2020 which took place on 7th and 8th September saw the participation of Malaysia Digital Economy Corporation (MDEC) as the strategic partner, McKinsey & Co as the knowledge partner with participation from supporting partners such as Malaysian Airports Berhad, Visa, DHL and CREST, among others. The conference provided a platform for industry leaders and global minds to share their thoughts and insights on Artificial Intelligence, Big Data & Data Science and how these technologies continue to enhance and impact industries and businesses.



Highlights

- CREST wins Outstanding Partner Award for International Cooperation, presented by the International Solid-State Lighting Alliance (ISA)

The partnership began in 2018 when CREST was invited to participate in the 5th Meeting of BRICS SSL Collaboration Working Group in Xiamen, China. The international delegates were intrigued by the existing ecosystem in Malaysia when CREST presented on the topic of the LED industry landscape.

Following this, CREST accepted ISA's co-Secretary General, Mr Yue proposal to co-host the 15th Meeting of ISA Technical Committee on Standardisation (TCS) in Penang. This came to fruition in May 2019, where the 3-day event involved over 50 participants (21 international; 37 local) who exchanged views on current and emerging trends on standards development in smart lighting. In addition, CREST partnered the local industry and academia to host on-site visits to Itramas, QAV, SIRIM, OSRAM and Universiti Sains Malaysia. These visits were meant to provide the international delegates an overview of locally developed technologies and available facilities in Malaysia.

During the 6th Meeting of the BRICS SSL Collaboration Working Group in Beijing in July 2019, Malaysia was recognised for having a conducive ecosystem for LED research & development and manufacturing. This was particularly of interest to the Chinese counterparts due to the looming trade war between the US and China. CREST also used the opportunity while in Beijing to organise dialogue session between MIDA and SSL Manufacturers in Xiamen.

Due to the Covid-19 pandemic this year, ISA conducted the annual BRICS SSL Collaboration Working Group and TCS meeting via Zoom. The key topic discussed was around UV LED and its use in disinfection. This year also marks ISA's 10th Anniversary and the Alliance presented awards in recognition of their members and partners – to which CREST was named Outstanding Partner for International Cooperation.

CREST will continue to foster the partnership with ISA as we view the collaboration to be beneficial to the SSL ecosystem. Through this partnership, CREST has gained insight and exposure to the latest SSL technology throughout the value chain such as epitaxy, packaging, application, materials, equipment, design system integration and testing. In addition to know-how, CREST also established a connection to a network of international experts in the field of solid state lighting technology.



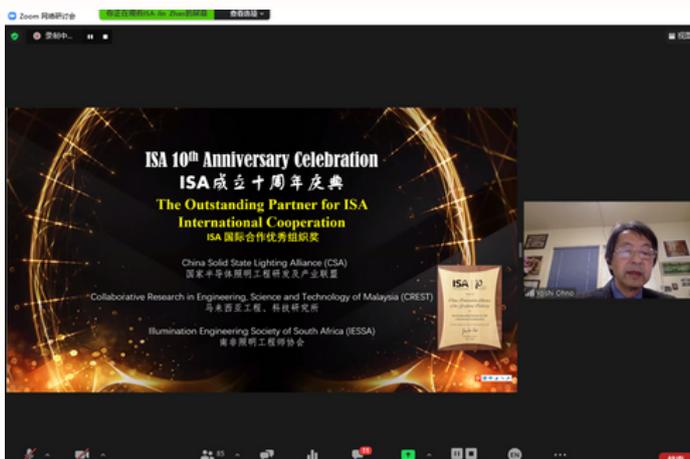
15th Meeting of ISA Technical Committee on Standardisation, Equatorial Hotel, Penang



One of the many on-site visits to companies in Penang



6th Meeting of the BRICS SSL Collaboration Working Group in Beijing.



Virtual Award Ceremony by ISA on 12 November 2020



Collaborate with Us Today

For more details on our programs and initiatives, feel free to contact our team below:

INITIATIVES

OPEN & TARGETED R&D GRANT

THE GREATLAB (TGL) PROGRAM

- TGL YOUTH INDUSTRY BOOTCAMP
- GRADUATE INNOVATION PROGRAM
- INDUSTRY LEADERSHIP PROGRAM

GALLIUM NITRIDE GAN RESEARCH PROGRAM

DIGITAL HEALTHCARE CLUSTER

INTELLIGENT & INNOVATIVE CITY CLUSTER

SMART MANUFACTURING
PRECISION AGRICULTURE
NEW PRODUCT DEVELOPMENT &
INNOVATION

JOHOR INCUBATION PROGRAM

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