PENANG MONTHLY

JAN 2025 | FREE COPY

THE CHIP WAR

A WIDE WINDOW OF OPPORTUNITY FOR MALAYSIA

FEATURE

DO YOU KNOW HOW A SEMICONDUCTOR IS MADE?

FEATURE

GUNUNG JERAI: THE PROMINENT PEAK IN THE NORTH

FEATURE

LATAH: AN INDIVIDUAL REFLEX AGAINST THE GRIP OF CONFORMITY

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INTEGRATED CIRCUIT DESIGN

NEXT MONTH ON PENANG MONTHLY

HISTORY OF MALAYS IN PENANG

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COVER STORY
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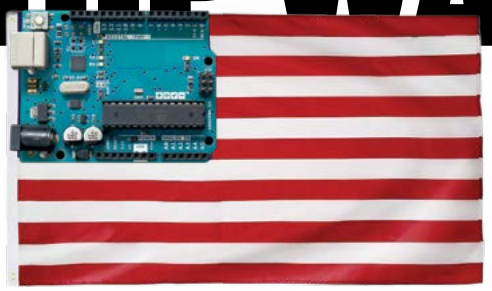
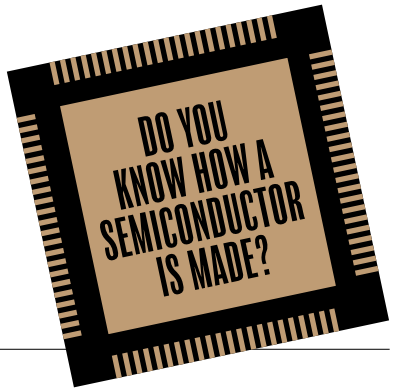
THE CHIP WAR



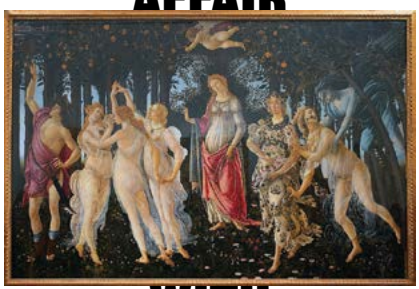
A WIDE WINDOW OF OPPORTUNITY FOR MALAYSIA



PENANG'S SEMICONDUCTOR CROSSROADS

NAVIGATING GLOBAL TRENDS AND INDUSTRIAL UPGRADING

INTEGRATED CIRCUIT DESIGN



PENANG MONTHLY

THE PENANG MONTHLY ENDEAVORS TO BE THE VOICE OF PENANG AND AN INSPIRING READ FOR THE CURIOUS MALAYSIAN. A PUBLICATION OF PENANG INSTITUTE, IT AIMS TO:

1. Supply Penangites with information about significant issues in order to promote public participation;
2. Encourage discussion about various aspects of Penang's fate and fortune;
3. Profile Penang personalities who have contributed, sometimes in very unassuming but critical ways, to the reputation and wellbeing of the state;
4. Put the spotlight on ordinary Penangites who otherwise go unnoticed, but who nevertheless define the culture of the state in essential ways;
5. Highlight the importance of Penang as a generator of culture, education, industry and cosmopolitan values;
6. Emphasise present trends in the arts, industry, politics and economics which affect the immediate future of the state and country; and
7. Offer reliable socioeconomic data for the benefit of decision makers in government and the private sector.

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BYTE-SIZED CHIPS
By Azmi Hussin

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BETWEEN THE MICROCOSMIC AND THE MACROCOSMIC: WE ARE ALL GIANTS NOW

BY OOI KEE BENG

YOU WOULD HAVE seen them. Mobile drone shots of cities, done with the camera pointed straight down to capture the topographical grid of streets and buildings. Whether done in daylight or at night, the effect is a reminder to us of how like those of bees or termites human habitations are.

Indeed, the more we urbanise, the more we have to cram ourselves, and the more we have to stack our living spaces on top of each other. We have to go vertically upwards. High-rise buildings are simply man-made caves balanced on top of each other. We then have stairs and elevators to move us vertically.

And we have pipes to supply water or dispose of used water; we have wirings to bring WiFi coverage and electricity to each apartment (I believe compartment is a better word). We once had telephone wires lining all our roads and penetrating buildings so that we could call each other on our landlines. We've got mobile phones now, but in many cities, those overhead wires remain.

Out on the streets, we have all sorts of traffic signals put up to control the movement of vehicles, and to keep pedestrians safe whenever they cross roads.

And then you have the street lamps; and neon lights and so forth. If you have x-ray vision, you will be able to perceive the labyrinths underground too. We go vertically downwards as well. Tunnels join underground stations, allowing for easy movement underneath streets and pavements; more wires and pipings making these dark places inhabitable and accessible.

THE OUTER SPACE

If you now fly your drone up as high into the sky as you can, the interconnectedness of urban infrastructure become even more obvious. Small routes lead to larger ones, and larger ones lead to expressways. Here and there, there is a river to cross, a hill to navigate, and a forest to penetrate. And flight paths will also be visible if you take your time to observe them.

As your drone ascends into space, you will realise how humans have been managing their physical environment to utilise more and more space for their own purposes. Upwards, downwards, sidewards—pushing Mother Nature back, leaving waste wherever they can.

> "There is no imaginable limit. There is no wall to hit, either outwards or inwards. Into the macrocosmos or the microcosmos."

It is about the need for Lebensraum—"Living space", German nationalism's iconic word. But this need goes for Homo sapiens as a whole. We need space. And we arrogantly consider all of Nature, and all of outer space—the boundless skies—our final frontier.

Seen from space, we do indeed procreate like insects, and our populations need space.

THE INNER SPACE

But what if we look down from where we are, from our individual human size into the world of electronics? Suddenly, we are giants. With the coming of electronic technology, humans now complement their insect-size within the Universe, with the stature of giants with the help of transistors and even-smaller electronic chips.

In taming electricity, and in understanding the semiconducting properties of certain materials, humans can now create tools of such minute sizes that these, in principle, turn us into giants. We have created for ourselves—from where we stand with our natural size—a realm befitting giants, even gods. How we psychological manage or not manage this revolutionary leap in Lebensraum, as individuals and as societies, remains to be seen.

Instead of zooming out with your drone, you can now zero in on the minute, into the wafer, into the chip, into one of the little squares in the chip, passing through layers of varied materials, to study transistors packed in a pattern of microcosmic cities.

This Lilliput world, is very like the city views you saw when your drone flew horizontally above the cityscape and then zoomed out into space. Here, you go the other way, from where we naturally belong into the world of the electron.

And here, we again design things the way our cities are designed. But here, nothing can be left to chance. The level of discipline and precision is as high as is thinkable. And there does not seem to be a limit for how far we theoretically can go. Just like outer space.

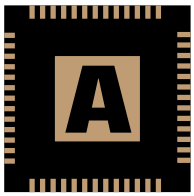
There is no imaginable limit. There is no wall to hit, either outwards or inwards. Into the macrocosmos or the microcosmos.

We are all giants now, and insects at the same time.

GLOSSARY OF TERMS YOU MIGHT ENCOUNTER IN THIS ISSUE

COMPILED BY ARJUNA MARZUKI

ARJUNA MARZUKI holds a B.Eng (Hons) from the University of Sheffield, an MSc from Universiti Sains Malaysia, and a Ph.D. from Universiti Malaysia Perlis, with over 27 years of experience in both industry and academia. He has worked at Hewlett-Packard, IC Microsystems, and Agilent Technologies, and is a chartered engineer, a Fellow of IET and an active IEEE member with over 100 publications and a US patent.

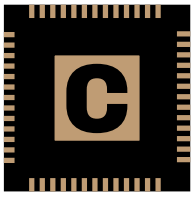


ANALOGUE

A continuous value that most closely resembles the real world and can be as precise as the measuring technique allows. Analogue Circuit refers to a collection of components used to generate or process analogue signals.

APPLICATION-SPECIFIC INTEGRATED CIRCUIT (ASIC)

A special integrated circuit designed according to specific functions or user applications. ASIC Cell is a logic function in the cell library defined by the manufacturer of an application-specific integrated circuit.



CHIP

A common name for an integrated circuit.

CIRCUIT BOARD

Refers to the generic name for a wide variety of interconnection techniques, which include rigid, flexible and rigid-flex boards in single-sided, double-sided, multilayer and discrete wired configurations.

DEEP SUB-MICRON

Refers to integrated circuits containing structures which are smaller than 0.5 microns.

DIE

An unpackaged integrated circuit. In this case, the plural of die is also die.

DOPING

The process of inserting selected impurities into a semiconductor to create P-type or N-type material.

FLIPPED CHIP

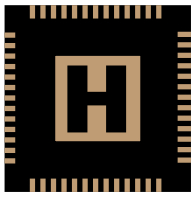
A generic name for processes in which unpackaged integrated circuits are mounted directly onto a substrate with their component sides facing the substrate.

FULL CUSTOM

Refers to an ASIC in which the designer has complete control over every mask layer used to fabricate the device. The manufacturer does not provide a cell library or pre-fabricate any components on the substrate.

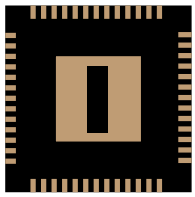
FUSE (FUSIBLE-LINK TECHNOLOGY)

A programmable logic device technology which employs links called fuses. Individual fuses can be removed by applying pulses of relatively high voltage and current to the device's inputs.



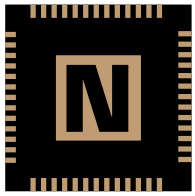
HYBRID

Refers to an electronic sub-system in which a number of integrated circuits (packaged and/or unpackaged) and discrete components are attached directly to a common substrate. Connections between the components are formed on the surface of the substrate, and some components such as resistors and inductors may be fabricated directly onto the substrate.



INTEGRATED CIRCUIT (IC)

A device in which components such as resistors, capacitors, diodes and transistors are formed on the surface of a single piece of semiconductor.



NANOTECHNOLOGY

Nanotechnology is an elusive term used by different research-and-development teams to refer to whatever it is that they are working on at the time. However, irrespective of their particular area of interest, nanotechnology always refers to working with something extremely small. One of the more exciting branches of nanotechnology that is seen as having a lot of potential in the future is micro-miniature electronic products that assemble themselves.

N-TYPE/P-TYPE

A piece of semiconductor doped with impurities that make it amenable to donating electrons or holes.

PCB (PRINTED CIRCUIT BOARD)

A type of circuit board which has conducting tracks superimposed, or "printed", on one or both sides, and may also contain internal signal layers and power and ground planes. An alternative name, Printed Wire Board (PWB), is commonly used in the US.

SCALING

A technique to make transistors switch faster by reducing their size. This strategy is known as scaling, because all of the transistors' features are typically reduced by the same proportion.

SEMICONDUCTOR

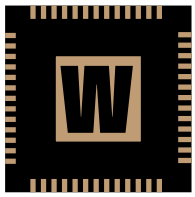
A special class of material that can exhibit both conducting and insulating properties.

SILICON CHIP

Although a variety of semiconductor materials are available, the most commonly used is silicon, and integrated circuits are popularly known as silicon chips, or simply chips.

SUBSTRATE

Substrate is the generic name given for the base layer of an integrated circuit or circuit board. Substrates may be formed from a wide variety of materials, including semiconductors, ceramics, FR4 (fiberglass), glass, sapphire or diamond depending on the application. Note that the term substrate has not been traditionally widely used in the circuit board world—at least not by the people who manufacture the boards. However, there is an increasing tendency to refer to a circuit board as a substrate by the people who populate the boards. The main reason for this is that circuit boards are often used as substrates in hybrids and multichip modules, and there is a trend towards a standard terminology across all forms of interconnection technology.



WAFER

A paper-thin slice cut from a cylindrical crystal of pure semiconductor.

HONG LEONG ISLAMIC BANK SUPPORTS HALAL MANUFACTURING IN PENANG

DRIVEN BY GOVERNMENT INVESTMENT, global demand and the China Plus One strategy, Penang is rapidly becoming a leading force in halal manufacturing. Projected to reach USD113.2bil by 2030 in Malaysia, with an anticipated 8.1% GDP contribution by 2025 (HIMP 2030), the halal sector promises 700,000 new jobs nationwide.

Penang offers manufacturers and halal businesses dedicated halal industrial parks such as the Penang Halal Industrial Park (PHIP), strategically located near the Penang Science Park. These cater specifically to food and pharmaceutical companies.

But it is more than just bricks and mortar. Besides state-of-the-art facilities, streamlined certification processes and a dedicated halal logistics network, Penang boasts a skilled workforce, a business-friendly environment and a rich cultural heritage that embraces halal values. Initiatives like the Penang International Halal Food & Heritage Festival (PIH2F) further promote local halal businesses and attract international attention. For companies seeking to expand their halal footprint, Penang offers a compelling proposition: A place where innovation meets tradition, and where businesses can truly flourish.

HONG LEONG ISLAMIC BANK: A CATALYST FOR HALAL BUSINESS GROWTH

As a bank that is "Built Around You"—the "you" in question being its customers—Hong Leong Islamic Bank (HLISB) realises that every business is different and has unique challenges. With personalised banking solutions for each customer, HLISB has designed a comprehensive approach to help businesses thrive—especially for those who want to enter the halal market.

The bank understands that navigating the halal industry requires more than just financial capital. It also requires a deep understanding of the halal certification

CAPTION

Dafinah Ahmed Hilmi, CEO of HLISB (4th from right), launching the BizHalal programme with Hairol Ariffein Sahari, CEO of Halal Development Corporation (4th from left). HLISB partnered with the latter to design its end-to-end halal business solutions.

process, supply chain integrity and ethical business practices. With that, the bank has recently launched BizHalal, which offers an end-to-end ecosystem of solutions that supports businesses entering the halal market.

BizHalal covers a wide spectrum of business needs: from providing initial readiness assessments and guidance on halal certification renewal, to navigating raw material sourcing, working procedures and infrastructure requirements, and establishing a robust halal system and operating framework. The bank also provides assistance with halal monitoring and fulfilling certification requirements to help businesses on their halal certification journey.

Moreover, joining BizHalal will connect businesses with the bank's partner networking platform, where customers can network and incorporate themselves into the wider halal ecosystem. The platform also provides businesses access to various financing schemes, including the Government Guarantee Scheme MADANI (GGSM), Bank Negara Malaysia's Fund for SMEs and HLB's SMElite.

This all-encompassing platform adds to the bank's existing Islamic banking services, which include deposit and cash management, financing options for daily operations, capital expenditure, trade and working capital facilities, and Global Markets and Treasury services that manage foreign currency transactions. Through HL ConnectFirst, customers can enjoy a fully-digital banking platform which allows them to open and manage their accounts seamlessly from their own premises, eliminating the need for business owners to visit a bank branch.

By combining financial expertise with a deep understanding of the halal ecosystem, Hong Leong Islamic Bank empowers Penang's manufacturers to not only meet local demand, but also compete on the global stage. This commitment to the halal industry is not just good business, it is a testament to the bank's dedication to ethical and sustainable growth.

A PROMISING FUTURE

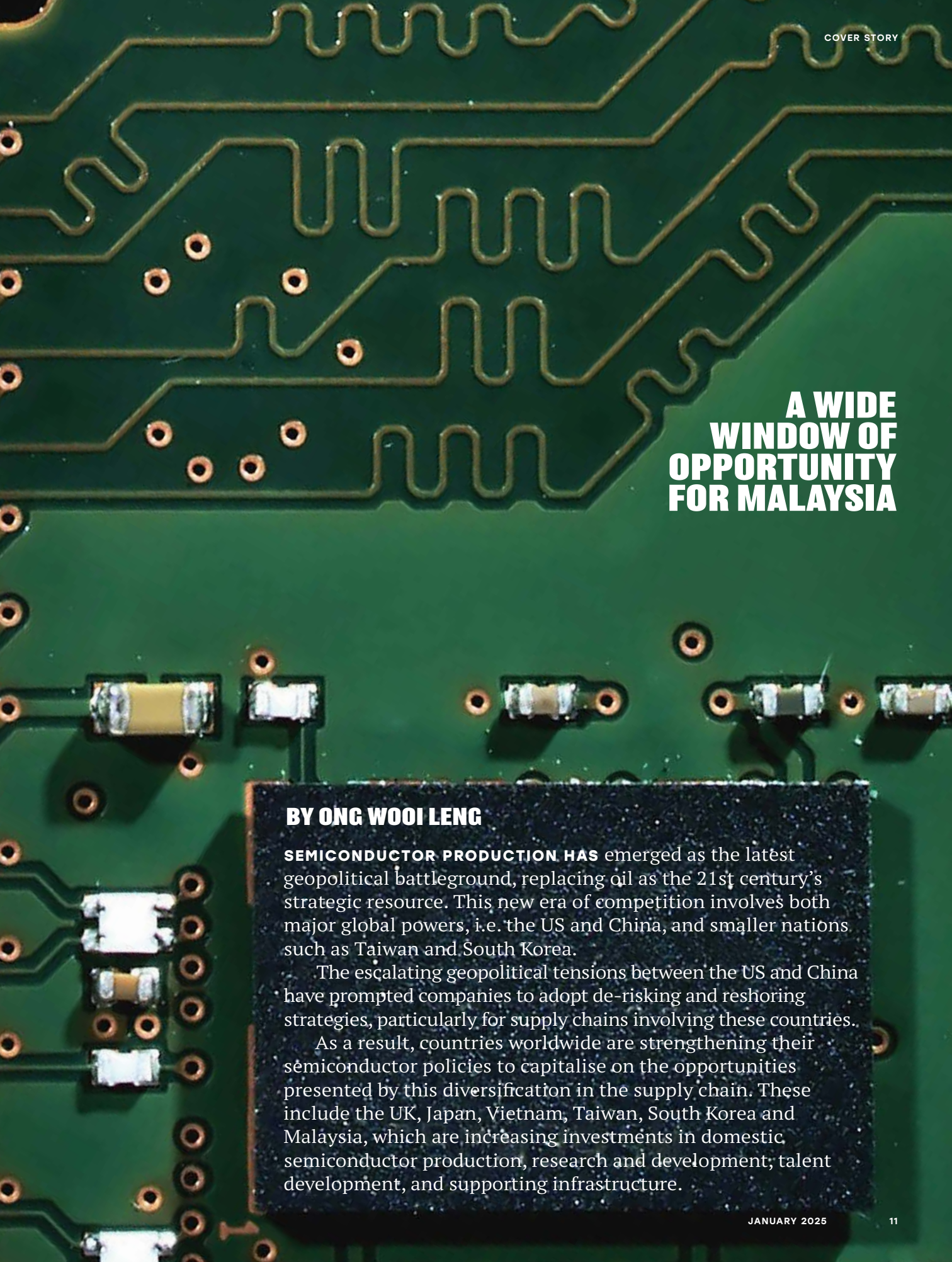
This year, HLISB partners with the Northern Corridor Implementation Authority, empowering SMEs and MSMEs looking to enter the halal market through the iTEKAD programme. HLISB has pledged, among other things, to create a shared kitchen and facilities which comply with global halal standards, for use by multiple businesses who are on their halal certification journey. This initiative helps businesses attain their halal certifications by cutting costs and increasing convenience and efficiency.

As Penang strengthens its position in the halal manufacturing sector, partnerships with institutions like HLISB are crucial. Their commitment to supporting businesses, fostering innovation and upholding halal integrity will undoubtedly contribute to the continued success of this vital industry.

To find out more about the BizHalal programme, visit **https://www.hlisb.com.my/en/business-i/hlisb-bizhalal.html**

THE CHIP WAR

A WIDE WINDOW OF OPPORTUNITY FOR MALAYSIA

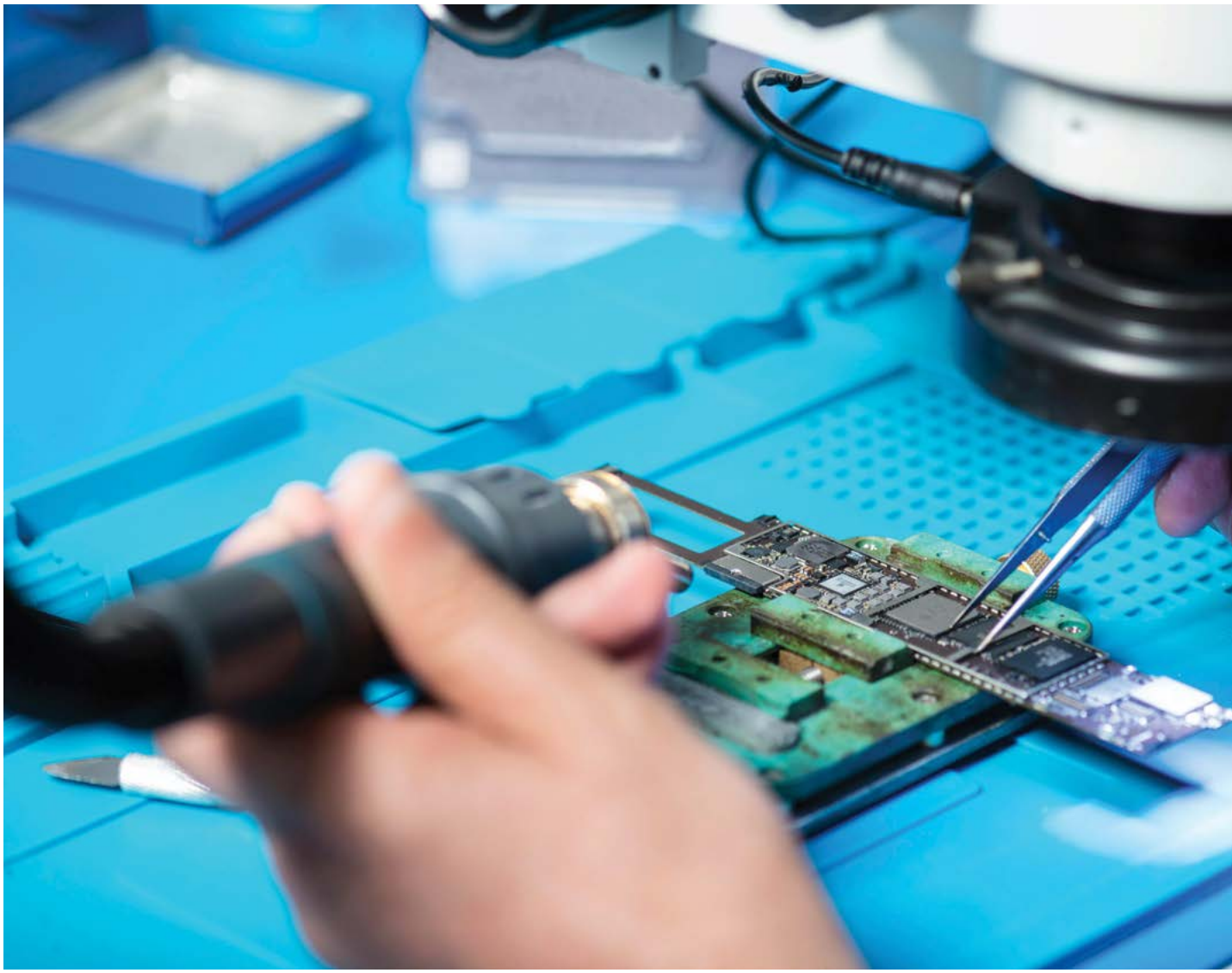


BY ONG WOOI LENG

SEMICONDUCTOR PRODUCTION HAS emerged as the latest geopolitical battleground, replacing oil as the 21st century's strategic resource. This new era of competition involves both major global powers, i.e. the US and China, and smaller nations such as Taiwan and South Korea.

The escalating geopolitical tensions between the US and China have prompted companies to adopt de-risking and reshoring strategies, particularly for supply chains involving these countries.

As a result, countries worldwide are strengthening their semiconductor policies to capitalise on the opportunities presented by this diversification in the supply chain. These include the UK, Japan, Vietnam, Taiwan, South Korea and Malaysia, which are increasing investments in domestic semiconductor production, research and development, talent development, and supporting infrastructure.



MALAYSIA'S INITIATIVES

With the global semiconductor industry expected to hover around a trillion-dollar valuation by 2030, Malaysia has poised itself to capitalise on this unprecedented opportunity. With over 70 new semiconductor fabrications slated for construction worldwide, the demand for semiconductors is set to skyrocket.

In a bold move towards technological advancement, Malaysia seeks to elevate its position in the global semiconductor landscape, as expressed in the RM25bil National Semiconductor Strategy (NSS). NSS outlines a three-phase plan to elevate the nation's semiconductor and E&E industries, providing targeted incentives to spur growth in semiconductor design, advanced packaging, manufacturing equipment and wafer fabrication.

At the official launch of Penang Silicon Design @5km+ (PSD@5km+) on 7 December 2024, Prime Minister Anwar Ibrahim stressed the need to elevate the country's status as a high-tech industrial centre for semiconductors as well as for design innovation, the latter being essential for Penang to progress beyond the semiconductor back-end industry. "Malaysia needs to build a suitable supply chain ecosystem that supports SMEs and local training initiatives."

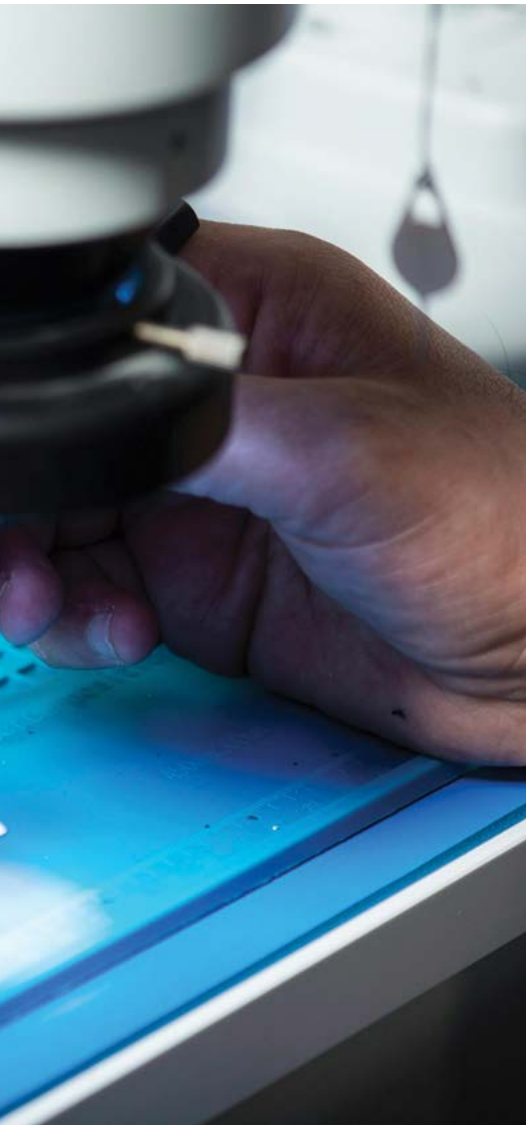
As an annexe to the New Industrial Master Plan 2030 (NIMP 2030), the first phase of NSS aims to upgrade outsourced semiconductor assembly and test (OSAT) capabilities and expand wafer fabrication facilities through skilled workforce and knowledge transfer.

In the second phase, the NSS targets to attract advanced chip manufacturers to set up facilities in Malaysia—this will position us at the front-end semiconductor value chain and position the local industry and workforce at the top-tier of the semiconductor ecosystem

Phase three focuses on attracting anchor companies in smartphone and PC makers such as Apple, Huawei and Lenovo to set up advanced fab manufacturing in Malaysia. This will benefit local OSAT, Automated Test Equipment (ATE) and semiconductor design houses through knowledge sharing while creating opportunities for local companies in design and in manufacturing and testing, particularly in advanced semiconductor technologies.

"Upskilling and reskilling initiatives which involve the Penang Skills Development Corporation (PSDC), universities and all the relevant institutions will have to work closely with industry leaders to increase qualified engineers," Anwar says. "Universities in Penang, Perak, Kedah and Perlis should work hand in hand to ensure that new disciplines and programmes required by the industry are approved at a fast and unprecedented pace, with preparedness to adjust."

Given the growing demand for chip design engineers and the rise of AI, academies for end-to-end semiconductor design development, which provide retraining and upskilling for chip design and AI, are needed.



This has been laid out in the Penang STEM Talent Blueprint, and is anticipated to position Penang as a preferred destination for Tier-1 chip design investments.

Under the NSS, a significant portion of the RM25bil fiscal incentive package will be allocated to stimulate domestic investments worth RM500bil in IC design, advanced packaging and wafer fabrication during the initial phase. The government also aims to boost the revenue of 10 Malaysian companies in design and advanced packaging to between RM1bil and RM4.7bil by 2030. Additionally, 100 semiconductor-related companies will receive support to achieve RM1bil in revenue, contributing to higher wages for Malaysian workers.

To solidify Malaysia's position as a global R&D hub for semiconductors, the NSS emphasizes the importance of talent development. The government aims to train and upskill 60,000 high-skilled engineers and attract Malaysian engineers working abroad to return home. This focus on talent development will ensure a sustainable pipeline of skilled professionals to drive innovation and growth.

Recently, there has been a significant decline of interest in science education. Forty years ago, eight out of ten Form 4 classes in Penang were dedicated to science subjects—at least, the ratio of students in the science stream was higher. Today, this number has decreased to a mere two-and-a-half. The national average is even more concerning, with less than two out of ten classes focusing on science.

A coordinated intergovernmental approach is essential to ensure the successful implementation of the NSS. Federal and state governments will need to work together to address challenges related to land, housing, water and electricity, particularly in key semiconductor hubs like Penang.

PROGRESSIVE INITIATIVES IN VARIOUS COUNTRIES

The governments of Asian countries are actively taking initiatives and investing resources to enhance self-sufficiency in the global semiconductor supply chain. They are currently allocating and spending multi-billion US dollars through investment and government funds to elevate the rapidly evolving microchips sector—all racing to be producers of the most advanced chips.

China is one of the global leaders in memory chips, semiconductor equipment and assembly, testing, and packaging. As of August 2024, it boasts the highest semiconductor revenue at a whopping USD177bil, largely focusing on mature 28-nanometer chip production.[1] Integrated circuits (ICs) dominate China's semiconductor industry following its intensified initiatives and investment. This segment predicts a steady 9.5% annual growth that should reach a staggering USD238bil by 2029.

While China has the capability to produce more advanced 7-nanometer chips, the technology remains in its early stages, positioning it behind established players like Taiwan and the US.

As mitigation measures for technology access and various import restrictions continue to be imposed by the US, China has, in the past 10 years, invested heavily in developing cutting-edge technologies, talent and infrastructure to achieve self-sufficiency in the chips industry. Nearly USD100bil has been allocated to strengthen the IC industry over three phases from 2014 to 2039. The third phase, or Big Fund III, a USD47.5bil chip investment fund, is the largest chip investment backed by a consortium of equity investors and Chinese state and municipal governments.

While talent migration remains a challenge, China aims to increase domestic talent supply through higher enrolment in undergraduate and postgraduate programmes, and also through the elite foreign recruitment programme. The latter offers humongous incentives in the form of home-purchasing subsidies, bonuses, etc.

On the other hand, Taiwan's major semiconductor commitments are centred around silicon-based semiconductors, compound semiconductors and quantum technology. Similarly, its talent attraction and development initiatives are also multifaceted. Taking 68% of the world's semiconductors, with Taiwan Semiconductor Manufacturing Company (TSMC) garnering 61% of the global market in foundry services, Taiwan aggressively invests in international students with students from Vietnam, Indonesia, Philippines, Malaysia and Singapore being offered world-class training and guaranteed job opportunities.

Cross-country partnerships are also taking shape in Taiwan through training programmes and research to improve international cooperation on chip manufacturing. For example, TSMC works with Japan's Kyushu University to train engineers in standard engineering courses as well as semiconductor management and design courses.

Even countries with limited technological foundations and finances, like Vietnam, are emerging as strong contenders in the semiconductor race, leveraging their geopolitical advantage, sizable young workforce, low labour costs and favourable government policies. In March 2024, Vietnam unveiled its semiconductor roadmap for 2025-2050, targeting the establishment of three semiconductor fabrication plants, 20 IC backend houses and 300 IC design houses, to build a self-reliant semiconductor ecosystem.

On top of tax incentives and streamlined investment procedures, Vietnam is developing the industry following the C (Chip) = SET (Specialised Electronics Talent) + 1 (Vietnam) formula. The country positions itself as one of the semiconductor manpower centres geared to grow from research, design and manufacturing to packaging and testing. This has caught the attention of semiconductor giants like South Korea's Samsung.

Currently, nearly two-thirds of Vietnam's 240 universities offer technology training and are poised to expand into semiconductor education, with 35 institutions extending specific semiconductor-related majors. This initiative aims to train at least 10,000 engineers every year.

FOOTNOTE

[1] Statista. Semiconductor – China. Accessed at https://www.statista.com/outlook/tmo/semiconductors/china#revenue

SCALING UP SILICON DESIGN DOMESTICALLY

Building upon Selangor's IC Design Park initiative, Penang, home to the highest concentration of IC design houses and engineers, is taking aggressive steps to elevate Malaysia's role as a leading chip design hub in Southeast Asia through the PSD@5km+ initiative.

"Penang Silicon Design Initiative @5km+ seeks to ensure that the state remains competitive and innovative, and becomes the main driver in the technology sector, especially in IC design," says Penang Chief Minister Chow Kon Yeow at the launching ceremony of PSD@5km+.

Penang has nurtured over 40 local and foreign IC design-related houses, employing more than 7,000 engineers. This growth, fuelled by significant foreign investments over the past five decades, has had a positive spillover effect on the local workforce and entrepreneurship.

"This sector is projected to reach a value of USD84.16bil by 2030. Penang has also recorded nearly RM20bil worth of investments in the services sector between 2019 and 2023, contributing 9% of the state's total investment."

"PSD@5km+ benchmarks IC design hubs in Silicon Valley in San Jose, USA and Taiwan by focusing on three key areas: attracting global IC design players, building a steady supply of skilled professionals to meet the growing demand for IC designers, and establishing world-class infrastructure and comprehensive IC design ecosystem," reveals Loo Lee Lian, CEO of InvestPenang.

In line with the NSS's goal of cultivating 10 Malaysian companies in design and advanced packaging, five promising companies—startups Filpal, Infinecs Lab, and Silicon X, along with growing companies SkyeChip and Sophic Automation—will be the inaugural occupants of the Silicon Research & Incubation Space at GBS TechSpace. They will benefit from incentive packages including office space, access to funding support, talent development programme, access to IC design tools and equipment, and access to mentorship programme.

Loo also shares that the development of facilities like the Penang IC Design & Digital Park and Silicon Research & Incubation Space within PSD@5km+ provides state-of-the-art resources which will position Penang as a competitive hub for IC design and semiconductor innovation.

Inter-industry, government and academic collaborations, facilitated by the state investment promotion arm, namely InvestPenang, brings together the core components of a full-scale IC design ecosystem in Penang. This includes the essential Electronic Design Automation (EDA) tool vendors, intellectual property (IP) providers, chip design houses, experts in New Product Introduction (NPI), foundry and assembly, and testing and packaging (ATP) service providers.

These collaborative endeavours are indispensable to the success of PSD@5km+. Improving the ability to create more advanced chips to support the growing demands of AI and machine learning applications and to upgrade the industry by incorporating AI in chip design is necessary, and will position Malaysia as a technological powerhouse.

Enthusiastically, Anwar Ibrahim has agreed to allocate RM50mil in the next five years to support the PSD @5km+ initiative. "This generous allocation is crucial in fostering a vibrant IC design ecosystem," Loo adds.

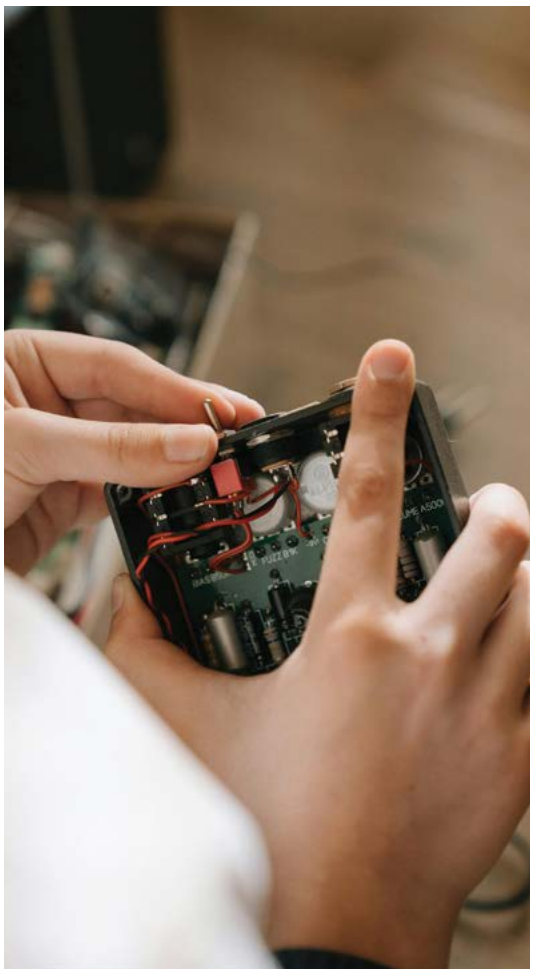
"The annual allocation of RM10mil will be used to fund upskilling and reskilling programmes, as well as provide subsidies for EDA tools and other essential equipment. This will enable IC design companies within the ecosystem to access state-of-the-art technologies at reduced costs. Additionally, the funding will support the acquisition of equipment and expertise in packaging and key technical disciplines crucial for NPI preparation, all facilitated by technology collaborators within the 5km+ ecosystem."

Loo highlights that this initiative will drive Malaysia's economic growth and technological advancement by attracting FDI, creating high-skilled jobs and stimulating growth in related industries like AI and digital technologies.

THE SEMICONDUCTOR RACE AHEAD

Semiconductors are ubiquitous in our daily lives, powering everything from smartphones and laptops to automobiles and medical devices; they enable advancements in artificial intelligence, the Internet of Things (IoT) and big data analytics.

Countries with the ability to design and produce cutting-edge chips, supported by a highly skilled workforce and a favourable policy environment, will be well-positioned to lead the semiconductor industry. With US President Donald Trump re-elected to be in power for the next four years, more exciting geopolitical dynamics are expected in the global semiconductor industry.



ONG WOOI LENG
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DO YOU KNOW HOW A SEMICONDUCTOR IS MADE?

BY EUGENE KHOO

EUGENE KHOO is a technopreneur who has lived and worked both in Malaysia and the US. He is now seeking to help the Malaysian tech ecosystem diversify into the upstream design and development frontiers to support the already established high-tech equipment and manufacturing sectors.

SEMICONDUCTORS ARE THE new oil, the Malaysian government now proclaims. Long held as a business realm that was left to the biddings of the private industry, technology now permeates every aspect of our everyday lives.

The interest in semiconductors, and the multitude of global players who play crucial roles in inventing and producing them, has created a seemingly insurmountable challenge for non-technical folk. While many technical terms are bandied around, Google is of limited assistance—a proper understanding goes beyond its mere descriptions.

Therefore, let us start with the basics—what are semiconductors? ChatGPT would conjure a reply that states, "Semiconductors are a solid substance that has a conductivity between that of an insulator and that of most metals, either due to the addition of an impurity or because of temperature effects. Devices made of semiconductors, notably silicon, are essential components of most electronic circuits."

If the above does not help in demystifying semiconductors for you, don't worry, you are not alone. Semiconductors are made from silicon, and they are used to build transistors, which is the basic building block of semiconductor devices. A transistor is a switch that can turn electrical signals on and off. This seemingly humble concept, applied in a myriad of combinations, tweaked with exponential levels of capabilities and combined in mind-numbing numbers, has enabled computing and communication.

To give you a sense of scale, microprocessors typically have between 10 to 50 billion transistors, while high-end chips, like graphics cards and data centre pro-

cessors, can exceed 100 billion transistors with each transistor measuring 5nm or smaller. 1nm is one billionth of a metre (0.000000001m). To compare: a bacterium is usually about 1,000nm. Quite inconceivable, isn't it?

We have made giant strides in the semiconductor industry, and the ecosystem that supports it has grown for over more than five decades, creating and building micro-marvels—yet, many consumers are oblivious to the power they hold in their hands today.

FROM TRANSISTOR TO PRODUCT

Almost everything we use, from simple digital weighing scales to large supercomputers, is fitted with semiconductors. The ones we are most familiar with are our phones and laptops. These products are consumer-grade systems for specific communication, entertainment or productivity needs, and comprise multiple categories of semiconductor components.

The list below is not in the slightest, comprehensive. However, there is a great likelihood that you would have already heard words like processors, power, analogue, optoelectronics and sensors; and acronyms such as Memory DRAM (Dynamic Random Access Memory), NAND (Flash Memory, NAND stands for NOT AND, which is Boolean logic), CPU (Central Processing Unit), GPU (Graphics Processing Unit), FPGA (Field Programmable Gate Arrays), MCU (Microcontroller Unit), ICs (Integrated Circuits) and MEMS (Micro-Electromechanical System), among others.

Your smartphone has six types of semiconductor components: memory to store your photos, a CPU and a GPU to process data and graphics, batteries for power, radio frequency semiconductors to receive 4G and 5G signals, optoelectronics for your camera, and sensors to rotate your screen or for face recognition.

Depending on the product function, a combination of any of the above components, with greatly varying degrees of sophistication, can give you a very dedicated system—say, a crypto mining rig, or at the other end of the spectrum, a generic multifunctional product like a phone.

Think of it as playing with Lego building blocks where putting pieces of specific shapes and colours together in different ways can create a house or a spaceship. In the case of semiconductors, what is varied are the different functions and capabilities.

The next question one might ask is, how are these miracles of technology made? Interestingly, at a conceptual level, the process of building any semiconductor component is the same. Regardless of its end function, it essentially goes through the same steps where sand is converted to silicon through methods developed over the last fifty-plus years. Here, I'll provide a simplified explanation of the major processes and the companies that perform them.`

The following stages are known as the front-end stages of the semiconductor life cycle.

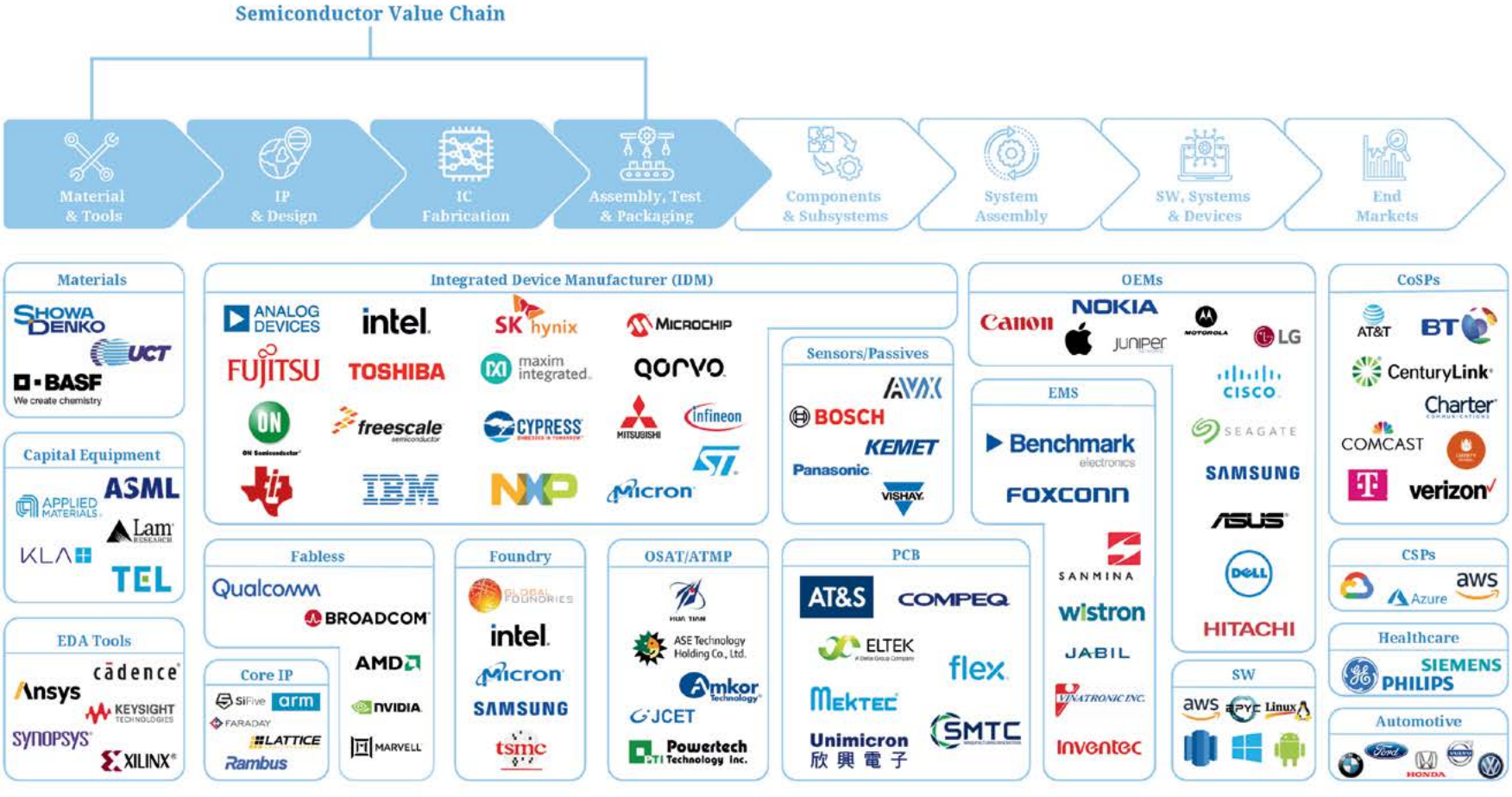
- **Design:** Complex semiconductor circuits are designed on a software called Electronic Design Automation (EDA), before they are simulated and verified to work. Bringing an idea to a working prototype and a marketable product is an arduous task, and can take years and tens of millions of US dollars, all with absolutely no guarantee of success. This makes the semiconductor industry a game of high risk, high reward.
- **Development:** Because semiconductors control almost every aspect of modern human life, they must work every time, all the time. Therefore, during the design phase, Design for Test (DFT) features must be built-in to enable semiconductor testing before fabrication. Only then can each semiconductor be tested using software to ensure that it works.
- **Fabrication:** Everything that can be verified using software is done prior to silicon wafer fabricating because a mask set for imprinting the designs on wafer using UV light can cost anywhere from USD1mil to USD10mil depending on its complexity. An error in any circuit will deem it useless, and millions more will be needed to correct the mistake(s), and every step done earlier repeated.
- **Validation:** Now, the semiconductor product is tangible in the form of a wafer or a singulated die. Either form is then taken to a tester to validate that the product functions as designed. With the advent of advanced multi-die packaging, there is now a need to validate components on interposers or substrates. The processes are known as the Design and Development (D&D) stages of the semiconductor life cycle. Most Original Device Manufacturer (ODM) or Integrated Device Manufacturer (IDM) companies like Intel, AMD, NVIDIA or Broadcom will invest in these D&D stages to push the boundaries of their respective technologies. It is only when a product has demand does it move to the back-end stages of the semiconductor life-cycle.
- **Assembly:** At this stage, wafers are processed such that the die is encapsulated in a package with, interconnects. There is a multitude of package types depending on specifications and product needs. Some of the more common packages are the legacy Flip Chip, Ball-Grid Array (BGA) and Quad Flat No-leads (QFN) packages. With the advent of more complex products, there is a growing need for 3D package designs where multiple types of die from different processes are stacked one on top of another.
- **Test:** This is the quintessential stage and the final hurdle for all semiconductor devices where every device is tested. Simpler devices are typically in 1mm x 1mm packages or smaller. More complex ones can be as big as 100mm x 100mm for high performance devices. These testing equipment ranges from USD100,000 to USD2mil or more. Once completed, the devices are baked, vacuum sealed, boxed and shipped to customers who then put it in the systems they are designing, building and marketing.

> **"While the Malaysian semiconductor ecosystem has been established for more than 50 years, we are only (in recent years) emerging as a design and development powerhouse."**

While the Malaysian semiconductor ecosystem has been established for more than 50 years, we are only (in recent years) emerging as a design and development powerhouse with the establishment of companies like Oppstar, Skyechip and Experior. See the chart in page 17 to visualise the role each company plays and who they interact with at different stages of the semiconductor ecosystem.

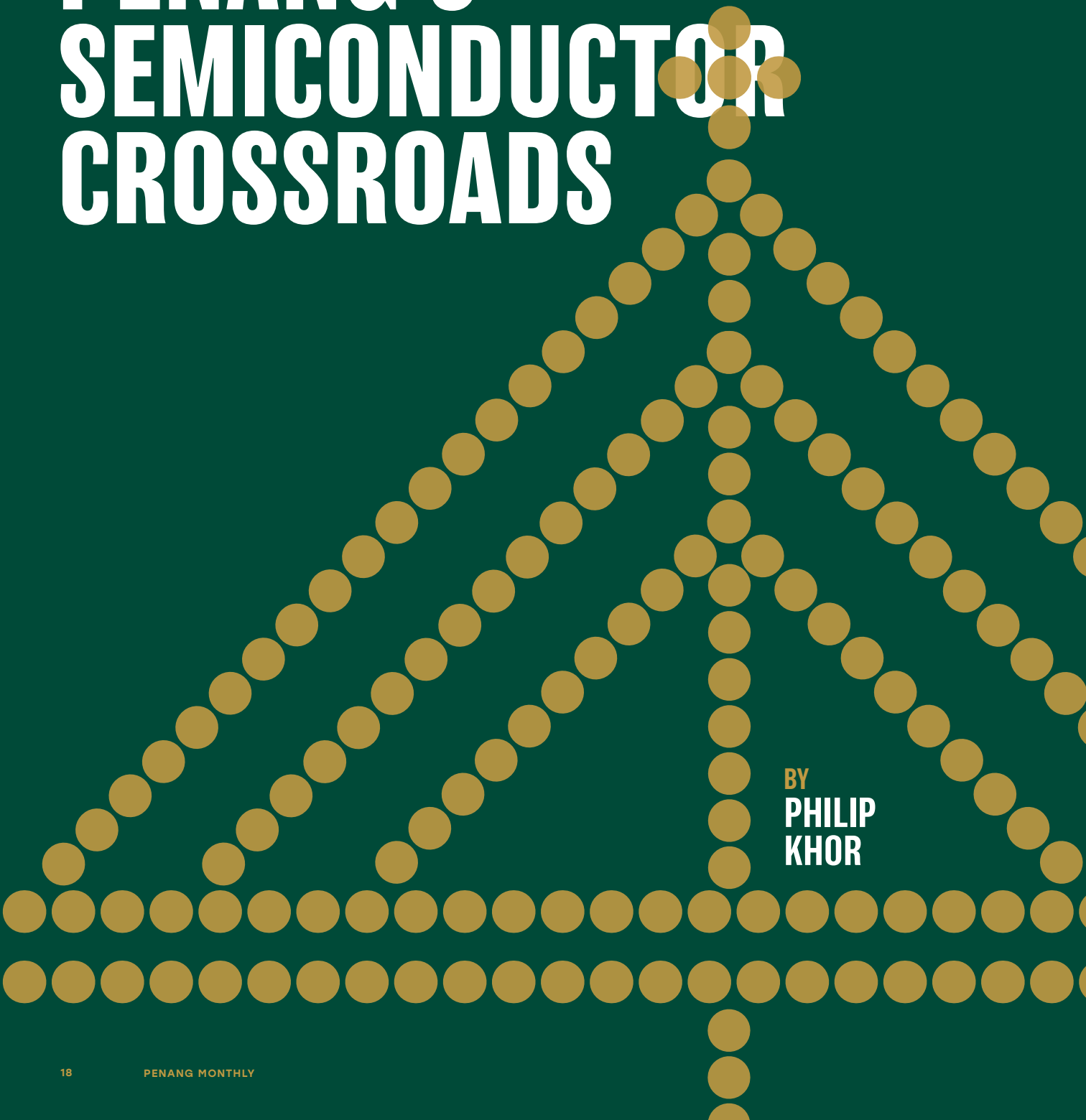
This article only provides a very basic overview of the pieces and processes that make up this very complex, innovative and growing industry—one that has collated every iota of science learned in human history while continuing to learn more with the goal of making science fiction a reality.

Most companies across the semiconductor value chain possess a unique set of specialised capabilities and focus on only one part of the value chain.



NAVIGATING GLOBAL TRENDS AND INDUSTRIAL UPGRADING

PENANG'S SEMICONDUCTOR CROSSROADS



BY PHILIP KHOR

THE WORLD SEMICONDUCTOR TRADE STATISTICS (WSTS) forecasts 16% year-on-year growth for the global semiconductor market in 2024, with the Asia Pacific region growing by 17.5%.[1] This robust market expansion is led by the demand for advanced processing to power artificial intelligence applications across data centres and consumer devices.[2]

Malaysian electronics and electrical (E&E) firms are projecting continued confidence in their performance for the second half of 2024.[3] Penang, in particular, has emerged as a key player in this global semiconductor boom. The state's strategic location, skilled workforce and favourable investment climate have attracted numerous multinational corporations to set up their operations here.

Although Penang plays a vital role in the global electronics supply chain, a significant portion of the value creation happens elsewhere. Penang specialises in the assembly and testing of semiconductor chips, commonly known as outsourcing semiconductor assembly and test (OSAT) services. While these have been perceived as a lower-value segment, they provide a strong foundation for future growth in the semiconductor industry, especially with the demand for advanced packaging solutions increasing.

The trend towards diversification and the increasing importance of backend processes create opportunities for locations with established ecosystems, such as Penang. Arizona's success in attracting TSMC's investment—due to an existing semiconductor ecosystem primarily built by Intel—shows the advantages of leveraging established infrastructure and a skilled workforce.[4] Penang can similarly capitalise on its OSAT strengths to attract investment in related activities, potentially becoming a hub for advanced packaging and testing solutions.

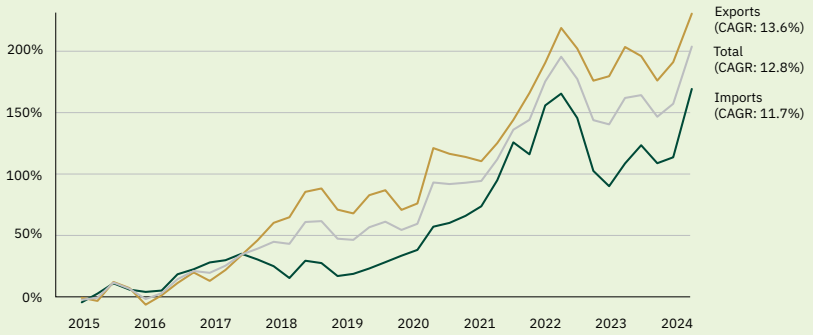
PENANG'S E&E TRADE PERFORMANCE

While E&E exports growth has been muted for Malaysia this year, growth in Penang's E&E exports remains robust. Nationally, between January and September 2024, E&E imports surged 16.9% year-on-year, while export value dropped slightly by -1.5%.[5] In contrast, September's year-to-date value of Penang's electronics exports grew by 4.6% year-on-year, while imports grew by 15.5% over the same period, resulting in total trade rising by 8.4%.

A broader look at trade data shows a rally in Penang's electronics sector in the lead up to 2022, when it recorded a whopping 21.8% year-on-year GDP growth. Consequently, growth in Penang's electronics trade between 2015 and 2024 has well surpassed 10% per annum. Following a slump between 2023 and mid-2024, during which gross output (GDP) declined by 0.8% (2023), the sector has rebounded in Q3 of 2024.

PERCENTAGE GROWTH FROM 2015 IN IMPORTS, EXPORTS AND TOTAL TRADE, ELECTRONICS (HS CODE 85), PENANG (Q1 2015 - Q3 2025)

Strong recovery in Penang electronics trade in Q3 2024, following the 2023-24 slowdown.



Source: Merchandise External Trade Statistics Database (METS Online), Department of Statistics Malaysia

GLOBAL TRENDS, LOCAL IMPACTS

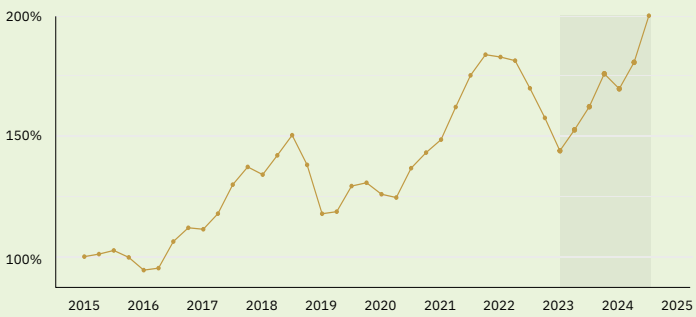
Penang—and Malaysia by extension—have been large beneficiaries of the global electronics reshoring race. RM53.3bil in foreign-source E&E investments were approved in 2023 within Penang, second only to 2021's record.

When looking at trade performance, it is important not to overly attribute short-term movements in the local E&E sector to local conditions. For instance, the 2023-24 slowdown in Penang's electronics trade clearly reflects global trends in semiconductor billings.

Keep in mind that the sector is characterised by boom-and-bust cycles caused by rapid technological changes and unpredictable demand—companies tend to overinvest in manufacturing capacity during booms, and this is often followed by market corrections.

QUARTERLY SEMICONDUCTOR HISTORICAL BILLINGS, WORLDWIDE, Q1 2015–Q3 2024 (Q1 2015 = 100%)

2023–24 Penang electronics trade slowdown preceded by a sharp 2022 decline in semiconductor billings.



Source: WSTS Blue Book

MOVING UP THE VALUE CHAIN

Launched in December 2024, the Penang Silicon Design 5km+ initiative aims to spur semiconductor innovation and industrial upgrading by co-locating semiconductor companies, targeted subsidies and talent programmes.

While Penang has actively sought to attract investment and leverage its existing strengths, significant hurdles are present for industrial upgrading, particularly towards higher-value activities like chip design and fabrication. The technological complexity and capital intensity required for leading-edge fabrication pose substantial challenges for newcomers.

Intel, a long-time leader in semiconductor manufacturing, encountered substantial difficulties in transitioning to advanced nodes, illustrating the technological barriers even for established players.[6] Fortunately, even if Penang does not rise to the pinnacle of the value chain, industry and geopolitical circumstances continue to offer a strong foundation for Penang's job market—no doubt a contributor to Penang's enviably low unemployment rate.

One way for Penang companies to upgrade their operations is through the championing of their local site leaders—however, it takes visionary leadership and long-term planning to build local capacity and convince top management that local sites are ready to move up the value chain. Further understanding of the internal decision-making processes of multinational companies (MNCs) could shed some light into developing strategies to encourage them to upgrade their operations in Penang.

Even so, strong corporate leadership may not be sufficient. Typically, policies that induce "vulnerability shocks" which challenge firms' status quos are the main driver of industrial upgrades in the developing world.[7] Recognising and preparing for similar future disruptions can be crucial in facilitating industrial upgrades in Penang.

That being said, moving up the electronics value chain is not a silver bullet for economic development—a move to higher-value activities does not automatically lift all boats. As the industry in Penang becomes more technologically sophisticated, workforce demand may shift from technician- to engineer-dominant,[8] potentially widening the wage gap between skilled and unskilled workers, or even resulting in job losses for those whose skills are no longer in demand.

Policies that support worker training and reskilling can help mitigate job displacement and facilitate the transition to higher-value activities. Additionally, policies that promote fair labour practices and collective bargaining can ensure a more equitable distribution of the benefits.

TRUMP 2.0: A STORMY OUTLOOK

A wave of decoupling from the Chinese supply chain among Western allies in the electronics industry, accelerated by the US CHIPS ("Creating Helpful Incentives to Produce Semiconductors") and Science Act of 2022, is on track to create an even more geographically distributed supply chain. Experts have opined that the rise in US chip manufacturing will lead to greater demand for OSAT services abroad. Additionally, Penang has attracted chipmakers seeking to diversify their manufacturing footprint in what has been named the China Plus One strategy.[9]

The return of the Trump administration in 2025 creates substantial uncertainty for the global E&E industry. Of concern is the previous Trump administration's aggressive posture towards the Chinese. Even though the US has a long-standing commitment to Taiwan's security, the incoming administration's capitulation towards authoritarians bodes poorly for Taiwan, an indispensable component of the global supply chain for leading-edge chips.

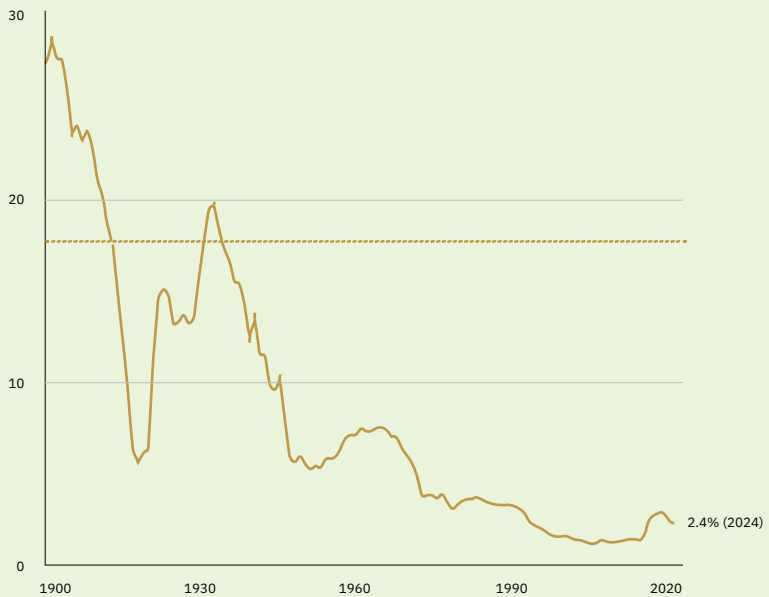
The only certainty will be a further breakdown in US policy coherence. It is baffling how the CHIPS Act's aggressive measures to reshore chips manufacturing and stifle Chinese innovation is the encapsulation of Trump's "America First" rhetoric. Yet, in October, Trump referred to the CHIPS Act as a "bad deal",[10] raising uncertainties about the future of the Act.[11] Trump's protectionist rhetoric must be considered together with the contrarianism that defines the Make America Great Again (MAGA) movement.

More alarmingly, on the campaign trail, Trump floated the idea of raising import tariffs to unprecedented levels, in particular with China: 60% for Chinese goods, 10-20% for goods from the rest of the world.[12] This proposal would bring back US import tariff rates unseen since the Great Depression. In 1930, the US passed the Smoot-Hawley Tariff Act which raised tariffs to their highest levels since the early 19th century, and is believed to have contributed to the severity of the Great Depression by reducing international trade.[13]

If Trump were to implement tariffs at the levels he has proposed, they would be comparable to Smoot-Hawley in magnitude—though the impact of Trump's proposal for universal tariffs would be far more wide-ranging, affecting 10 times the value of trade impacted by the 2018 trade war. Experts expect these tariffs to raise inflation and unemployment alongside substantial uncertainties for US importers,[14] increasing the risk of a US recession. Given the magnitude of the tariffs, China and other countries would likely be compelled to impose retaliatory tariffs against the US, reducing gains from trade across the world. Moreover, the accompanying appreciation in the dollar risks precipitating global financial instability.[15]

AVERAGE TARIFF RATE ON ALL US IMPORTS, 1900 - 2024 (%)

Trump's tariff proposals would bring average US import tariffs to levels unseen since the Great Depression.



Adapted from analysis by Tax Foundation
Source: https://taxfoundation.org/blog/trump-mckinley-tariffs-great-depression/

Penang has welcomed firms seeking to exploit tariff gaps—for instance the relocation of Chinese solar manufacturers to circumvent trade barriers.[16] Therefore, there is some chance that Trump 2.0 may work in Penang's favour. In fact, the ignition of the US-China trade war during the first Trump administration saw trade increase for "bystander" countries[18], particularly those with a high degree of economic integration.[19] Nevertheless, with Trump's proposal affecting the rest of the world this time, there will be no bystanders.

While protectionist measures like those implemented by the US could incentivise the return of some manufacturing to the US, Malaysia's semiconductor industry has shown resilience in the face of such policies. However, beyond the anticipated tariff-induced slump in the US domestic demand, if US chips policy deepens across the supply chain beyond fabrication[20]—or, worse yet—if the CHIPS Act is repealed, demand for Penang's OSAT services could decline, potentially leading to local job losses in the industry.

TALENT: THE WAY FORWARD?

Addressing talent demand is crucial for Penang's semiconductor industry success. As a matter of fact, the global semiconductor industry faces an acute shortage of skilled workers, from technicians to specialised engineers. While initiatives like Penang's STEM Talent Blueprint and Malaysia's National Semiconductor Strategy address this challenge, competition for talent remains fierce. Continuous training and upskilling programmes are crucial to ensure that the local workforce meets the industry's evolving demands. Collaborations with educational institutions—like Intel's partnership with Arizona colleges[21]—can help create a pipeline of skilled workers.

While federal and state authorities have accurately identified human capital as the growth lever for the semiconductor industry, caution must be exercised to ensure it is done holistically. Amidst the E&E gold rush, policymakers must not lose sight of the broad spectrum of the sciences. A holistic STEM development strategy in Penang must go beyond electronics engineering. The STEAM movement—incorporating artistic skills into science education—is a reminder not to decouple creativity from the sciences, as problem-solving skills are key enablers for higher-value operations.

It is natural for policymakers to pursue STEM development to accommodate the needs of the E&E industry, but the responsibility goes both ways. The success of China's "forced" technology transfer regime in jumpstarting its now-dominant electric vehicle industry calls into question the conventional wisdom of a straightforward role for investment liberalisation in spurring economic development.[22] Although the practice is controversial, it may be worthwhile to explore mechanisms to encourage capital investments from talent-intensive sectors to contribute to the community's talent development.

> **"Amidst the E&E gold rush, policymakers must not lose sight of the broad spectrum of the sciences. A holistic STEM development strategy in Penang must go beyond electronics engineering."**

RISKS AND OPPORTUNITIES

Penang's E&E industry is at a crossroads. On the one hand, the industry is poised for continued growth, driven by global semiconductor demand and Penang's key role in the global supply chain. Penang has successfully attracted significant foreign investment in the E&E sector, particularly in 2021 and 2023. On the other hand, the industry faces uncertainties arising from its inordinate exposure to global trends and geopolitical tensions, such as the US-China "chip war" and the return of the Trump administration.

Penang's semiconductor future hinges on recognising the complexities of corporate decision-making and the potential pitfalls of focusing solely on moving up the value chain. While chip design and research and development (R&D) are attractive opportunities for industrial upgrading, to encourage higher-value operations, a keen understanding of the internal processes within MNCs goes hand-in-hand. Additionally, simply shifting towards higher-value activities may not guarantee widespread economic benefits and could even exacerbate social inequalities. Therefore, a nuanced approach is needed—one that considers the interplay of global trends, internal corporate dynamics and social equity—alongside strategies for talent development and technological advancement.

FOOTNOTES

[1] https://www.wsts.org/76/103/WSTS-Semiconductor-Market-Forecast-Spring-2024

[2] https://www.bloomberg.com/professional/insights/markets/global-semiconductor-midyear-outlook/

[3] https://www.thestar.com.my/business/business-news/2024/09/09/ee-firms-confident-about-2h24-performance

[4] Nikkei Asia, 2024.

[5] E&E references Harmonised System (HS) code 85 for comparability with Penang-level data, which is only available at the two-digit level for the HS. MATRADE states 28.6% and 0.6% for imports and exports respectively in its September 2024 report, but it is unclear which commodity codes are used. Restricting the analysis to HS codes 8541 and 8542, we get 17.6% and -4.4% for imports and exports respectively. (https://www.wcoomd.org/-/media/wco/public/global/pdf/events/2019/hs-conference/semiconductors-and-the-future-of-the-hs_sia-white-paper_april-2019.pdf?la=fr)

[6] Nikkei Asia, 2024.

[7] https://www.sciencedirect.com/science/article/abs/pii/S0305750X17301729

[8] The Penang Talent Prospects Survey (https://penanginstitute.org/wp-content/uploads/2023/07/Penang_Talent_Prospects_2023.pdf) finds that industry participants expect demand for engineering and technician talent to shift from technician-majority to engineer-majority from 2023 to 2026, although talent demand for each is projected to more than double.

[9] https://www.channelnewsasia.com/asia/malaysia-china-companies-move-manufacturing-facilities-semiconductors-trade-war-4282471

[10] https://www.cnbc.com/2024/11/07/trump-likely-to-uphold-chips-act-despite-his-campaign-rhetoric-experts-say.html

[11] Experts have opined that a repeal of CHIPS is unlikely. House Speaker Mike Johnson echoed Trump's position on CHIPS, then walked back on his comments, expressing a desire to "streamline" the Act instead of repealing it. (https://apnews.com/article/mike-johnson-chips-act-d5504f76d3aa0d5b401216f3592c9a09)

[12] There is also the question of tariffs' impact on consumer tech products in the US, which were previously exempt from Chinese import tariffs. Reporting suggests the tech industry expects to be caught in a trade war. (https://arstechnica.com/tech-policy/2024/11/tech-industry-fears-china-will-retaliate-against-trumps-60-tariffs/)

[13] Tax Foundation, 2024.

[14] https://www.hamiltonproject.org/publication/post/tariffs-on-all-imports-would-create-chaos-for-business/

[15] https://www.intereconomics.eu/contents/year/2024/number/4/article/trump-s-2025-tariff-threats.html

[16] Ratan, 2024.

[17] For semiconductors specifically, even without Trump's tariffs, 2025 is already set for a substantial widening of Malaysia's tariff gap vis-a-vis China. Currently, China semiconductor imports are subject to 25% Section 301 tariffs, but with the four-year review of Section 301 recently finalised in September 2024, US tariffs for China semiconductor imports are set to rise to 50% in 2025, notwithstanding 10-year restrictions on expansion in China and other "countries of concern" imposed on the recipients of the CHIPS Act funding. (https://ustr.gov/sites/default/files/89%20FR%2076581%20(September%2018%2C%202024).pdf; https://www.thestar.com.my/business/business-news/2024/05/16/united-states-tariff-hike-will-benefit-malaysia; https://www.csis.org/blogs/perspectives-innovation/guardrails-chips-act-funding-restrict-investments-china-may-restrict)

[18] A Consumer Technology Association report attributes the 2021 surge in Malaysia's semiconductor production to supply issues rather than US tariffs, since the 25% Section 301 US semiconductor tariffs were imposed already in August 2018. (https://www.wita.org/wp-content/uploads/2022/08/CTA_Section-301-Tariff-Whitepaper.pdf)

[19] https://www.nber.org/digest/202204/how-us-china-trade-war-affected-rest-world

[20] While the focus of the CHIPS Act is on semiconductor manufacturing, CHIPS incentives also include packaging activities with an apparent focus on advanced packaging. It also includes funding that will be deployed to expand international packaging capacity through the ITSI (International Technology Security and Innovation) fund. See https://sgp.fas.org/crs/misc/R47523.pdf for details.

[21] https://www.youtube.com/watch?v=lTcbUcRdaYg&t=690s

[22] An assessment of Chinese solar panel manufacturers' relocation to Malaysia (primarily Penang), induced by trade barriers, casts doubt on the idea of broad benefits from FDI beyond local employment (https://gsipe-workshop.github.io/files/Malaysia_Paper.pdf)

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PENANG CLIMBS UP THE SEMICONDUCTOR VALUE CHAIN

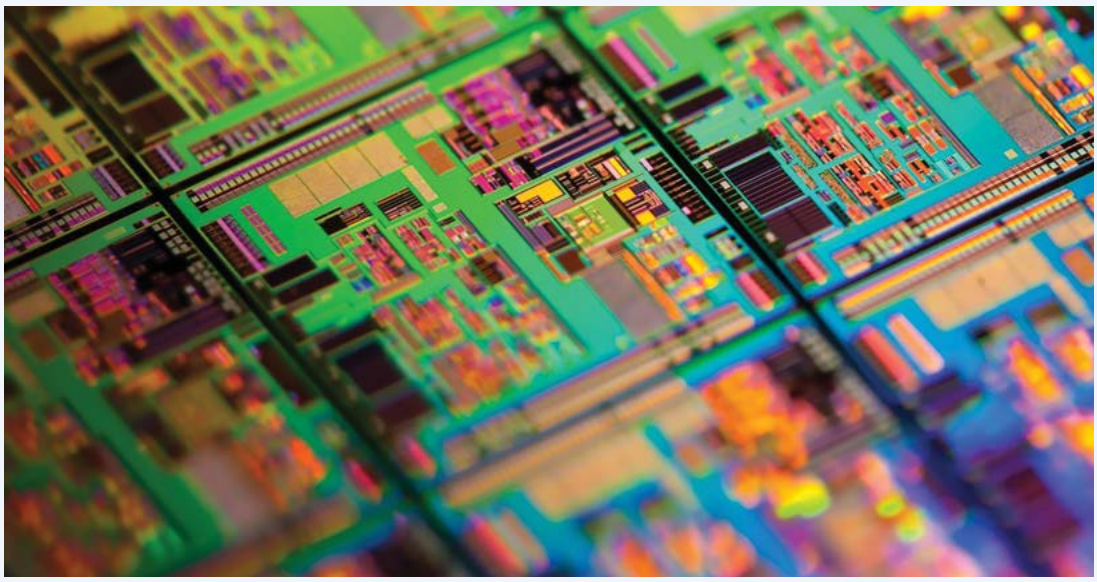
BY EUGENE QUAH TER-NENG

ACCORDING TO THE *Financial Times*, Malaysia (mostly Penang) supplies 20% of the semiconductor products imported by the US as of February 2023. While Penang is often touted as the Silicon Valley of the East, some question whether this moniker still holds, especially with Taiwan's dominance in the semiconductor industry. To understand these nuances, I spoke with Wong Siew Hai, president of the Malaysia Semiconductor Industry Association (MSIA), who came out of retirement during the pandemic to strengthen the industry's voice, and with other industry leaders.

Before American semiconductor giant, Intel, built its first overseas production facility in 1972, Bayan Lepas was mostly paddy fields. "Back then, we were the first [in the East]... so you could call it that," recalls Wong, a former Vice President of Intel. "It is different today... China is now a major player; so are many others [like Taiwan, Japan and South Korea]." He sees the "Silicon Valley" label more as a marketing tool. Wong reckons, given the globally distributed yet interdependent nature of manufacturing, it is more helpful to see the ecosystem to be consisting of various Silicon Valleys, each with its distinct areas of excellence, each adding value to the semiconductor value chain.

Penang dominates Malaysia's integrated circuit (IC) design sector, hosting 28 of the country's 30 firms and staking its claim as Southeast Asia's semiconductor epicentre. "Penang had about a 30-year head start in IC design," notes Wong, underscoring the industry's deep roots in the state. He would know—the former Intel VP played a pivotal role in setting up the first IC design centre in Malaysia.

"We have Taiwan and South Korea in Asia [leading globally]," says Suresh Kumar Dass, a current Vice President at Intel, who now heads the same centre Wong established. "Even if we are not the Silicon Valley of the East, we're definitely the Silicon Valley of Southeast Asia," he opines.



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CAPTIONS

1. View of a silicon wafer with colour gradients. Seen through a microscope, the circuits looks like a vast futuristic city with highways and blocks of buildings. IC designers are architects of these atomic scale marvels which power an increasingly technology-dependent world. Source: Creative Commons

> **“They see Penang’s path forward as not blindly imitating others, but harnessing its unique strengths—geopolitical neutrality, a supportive business environment, a mature manufacturing ecosystem and an established IC design ecosystem.”**

UP AND ACROSS THE VALUE CHAIN

British IC design powerhouse Arm Holdings showcases the immense potential of pure intellectual property (IP)—without owning factories, it licenses its chip architecture to nearly every smartphone manufacturer worldwide—Apple and Android devices alike. Meanwhile, Nvidia, a leader in graphics and AI chip design, has adopted a similar approach, outsourcing manufacturing, while focusing on design innovation. This strategy has made Nvidia the most valuable company in the world, with a jaw-dropping valuation of USD3.35tril—over eight times Malaysia’s GDP in 2023.

“A lot of [Penang] IC design companies now are [design] service providers,” observes Ooi Teng Chow, a senior director at a leading microchip company in Penang’s Free Trade Zone who began his career in IC design. He points out that local firms need to transition from creating custom designs for clients to developing their own proprietary intellectual property (IP). Imagine it this way: contract IC design firms are like personal chefs, preparing dishes to a client’s exact specifications, with the recipes belonging to the client. In contrast, companies like Arm Holdings create their own “recipes” and license them to others.

Given Penang’s land and water constraints, combined with its established IC design ecosystem, industry insiders agree that Malaysia’s semiconductor strategy of climbing higher up the IC design value chain while maintaining leadership in established areas like advanced packaging and OSAT is both practical and forward-thinking.

The IC design sector in Penang has now come of age, exemplified by the recent listing of Penang-based Oppstar Bhd on Bursa Malaysia. As Malaysia’s largest contract chip designer and the first pure-play IC design house on the exchange, Oppstar’s milestone signals the industry’s maturation and its potential to become an IC design champion. According to experts, the speed of Penang’s rise in the IC design sector will hinge on the growth and accessibility of Penang’s—and Malaysia’s—technology talent pool. Other home-grown firms offering advanced IC design services include SkyeChip and Infinecs Systems.

POOLING AND PULLING TALENT

Suresh Kumar reckons that today’s industry, with its current size, has enough people to meet those needs. “The size of the industry fits roughly the size of the talent [pool] we have,” he says. “Enough talent for today, yes, [but] enough talent for how this industry could be—for Malaysia and Penang—then no. We can grab a bigger slice of the pie if we have more talent.”

While the media often highlights Malaysia’s tech talent drain to Singapore, the reality is more nuanced, particularly in IC design. According to Minister of Investment, Trade & Industry, Tengku Zafrul Aziz, who leads the National Semiconductor Strategy, “There is a shortage of talents, but only in certain specialised areas, not in general numbers… Many semiconductor companies claim there is a shortage of talents, but they still come, and they are still operating. I mean, why would you come to Malaysia if there’s no talent?”

This view is supported by Oppstar co-founder Cheah Hun Wah who opines that the country is at present not short of IC designers, and that the “talent pool is quite large”—something “global companies did not realise Malaysia can provide”. Suresh Kumar

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2. Wong Siew Hai set up the Semiconductor Industry Association (MSIA), in which he serves as the current President.

3. Suresh Kumar Dass, a Vice President at Intel.

4. “People are always surprised that there are no full-body cleanroom suits, safety boots, helmets or soldering irons—just casual clothes, laptops and plenty of coffee,” explained Ooi Teng Chow regarding the typical workspace of a contemporary IC design engineer. Ooi is a senior director at a leading multinational microchip company in Penang.

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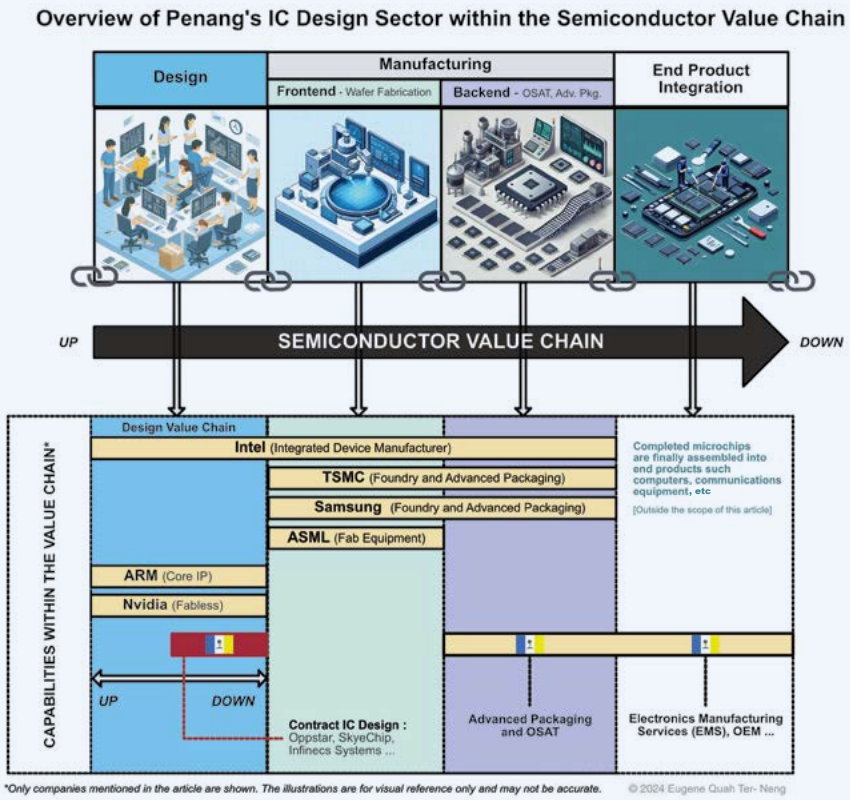

5. The semiconductor value chain.
Source: Eugene Quah Ter-Neng

emphasises the quality of the talent pool, "Malaysian [IC design] engineers are actually known not just to work hard, but are bright, creative and innovative. We come up with real solutions."

To accelerate the sector's growth, Suresh Kumar says: "Every country that is successful borrowed talent. It's like an accelerator to win fast. For example, if you want to expand a design centre by a thousand employees. If you get 50 foreign talents, you're not giving 50 jobs to non-Malaysians, but you have created 950 jobs that wouldn't have existed in the first place [due to a few missing skillsets not available locally]".

All three experts advocate this balanced approach—leveraging foreign expertise while building local capabilities—to accelerate Penang's growth in the global IC design sector. As for sustaining the talent pipeline, Suresh is optimistic, although it requires not just government support, but society as a whole to ensure the next generation remains interested in science.

The industry insiders interviewed generally agree that governmental support of the semiconductor industry presently and historically has always been very high—especially in Penang. However, some note that the government (both past and present) has, on some occasions, rolled out initiatives not asked for by the industry—usually as a knee-jerk reaction to perceived political criticism.

While government support is forthcoming and sufficient overall, there is room for improvement at the federal level. "Nobody will relocate here unless they can envision staying for the medium term," Suresh points out, advocating for longer employment permits for foreign talents. Ooi thinks bolder moves such as special tax incentives for foreign talent, similar to China's approach and Malaysia's own Johor-Singapore Special Economic Zone, could be a game-changer for attracting and retaining talents to accelerate growth in IC design.

THE ROAD AHEAD

Interviews with industry insiders such as Ooi, Wong, Suresh, and others who spoke off the record provides a clearer vision of Penang's semiconductor future. Decades of IC design expertise, paired with world-class backend operations, have built a strong foundation here. These leaders, all accomplished engineers, speak with quiet confidence about Penang's IC design potential, while acknowledging the formidable challenges ahead: nurturing a sustainable talent pipeline, managing geopolitical risks and adapting to rapid technological shifts.

They see Penang's path forward as not blindly imitating others, but harnessing its unique strengths—geopolitical neutrality, a supportive business environment, a mature manufacturing ecosystem and an established IC design ecosystem. By leveraging these advantages, Penang can—in line with the national semiconductor strategy—secure an ever-increasing share of the global IC design market and establish itself as a leading force in shaping the digital future.

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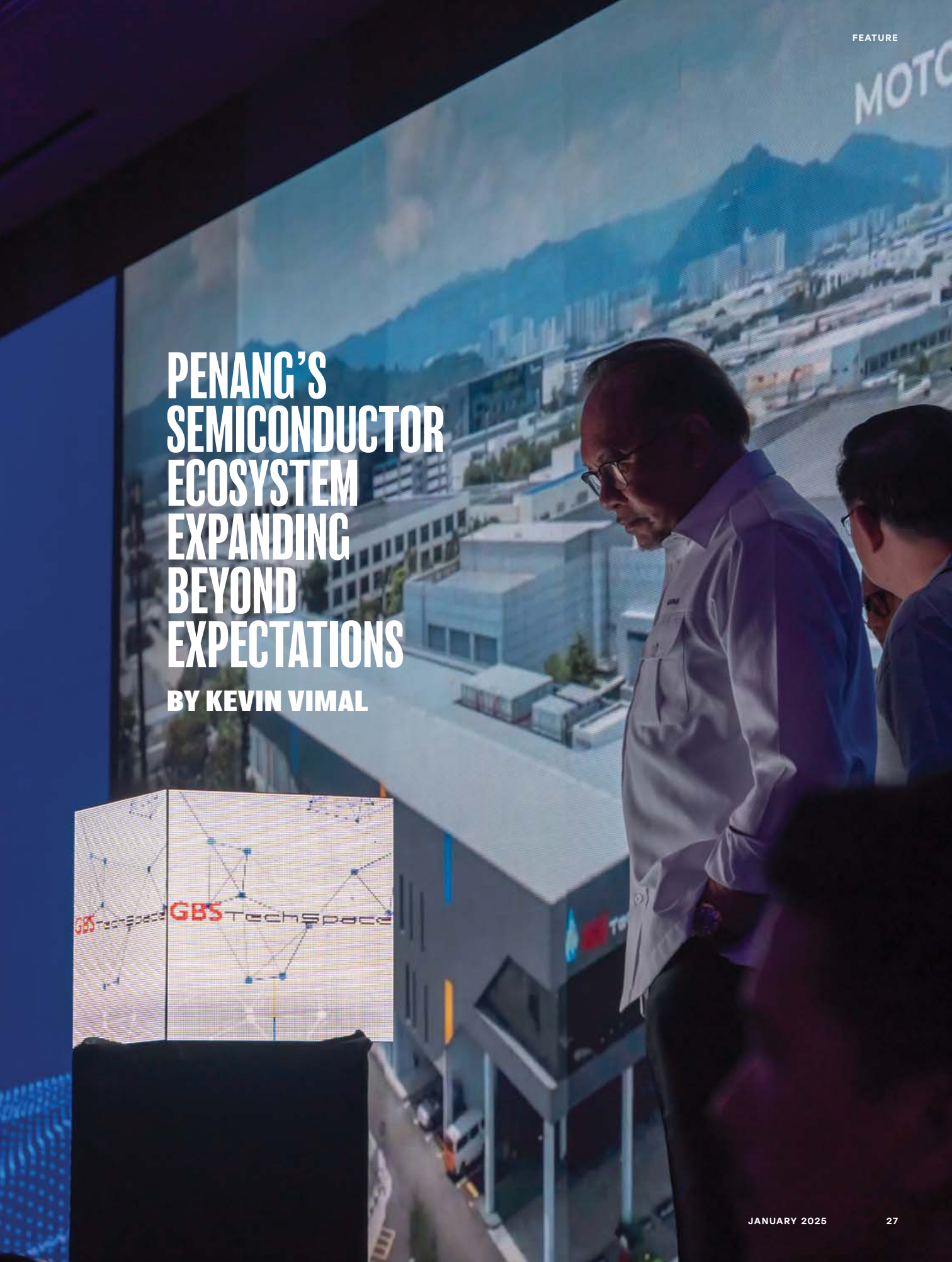
PENANG'S SEMICONDUCTOR ECOSYSTEM EXPANDING BEYOND EXPECTATIONS

BY KEVIN VIMAL



KEVIN VIMAL
believes that writing has the power to unfold many amazing things in this world.

PENANG SILICON DESIGN @5KM+ is set to boost Malaysia's innovation and growth in high-end industries. The initiative consists of three major projects, the establishment of the Penang Integrated Circuit (IC) Design & Digital Park, the Penang Chip Design Academy and the Silicon Research and Incubation Space.

Aligned with the New Industrial Master Plan (NIMP) 2030 and the National Semiconductor Strategy (NSS), this initiative, which had its soft launch in September 2024, will drive Penang's continued efforts to attract more strategic investors.

In the next few years, expect to see a thriving semiconductor design ecosystem within a 5km+ radius of the existing Bayan Lepas Industrial Park.

During the soft launch of the state-of-the-art Silicon Research & Incubation Space at GBS Tech Space in Bayan Lepas, Penang Chief Minister Chow Kon Yeow reaffirmed that Penang was no longer only a manufacturing site but had become an economic powerhouse. He said Penang recognises IC Design, advanced packaging and equipment manufacturing as its key focus areas.

IC Design may seem like the latest buzzword, but the state has actually housed IC design-related companies for decades. In fact, Chow confirmed that "Penang has the highest concentration of IC design-related companies; 28 of these, both local and international, are based in the state, underscoring Penang's pivotal role in advancing the nation's economy through high-value activities."

With approximately 1mil sq ft of prominent office space to house IC and R&D companies, the Penang IC Design & Digital Park is expected to attract global and local IC design players to invest in Penang.

The Penang Chip Academy, at the same time, upskills engineers in silicon chip design through academic courses and hands-on experience. According to InvestPenang, the primary focus areas for this academy include digital chip design, design verification, prototyping and analogue design, among others.

The Silicon Research & Incubation Space will serve as a one-stop centre to support chip design start-ups and SMEs by providing shared space, facilities, consultation and research capabilities.

Last April, Chow announced new semiconductor players committed to strengthening Penang's IC design and advanced packaging ecosystem, namely China Wafer Level CSP Co Ltd (WLCSP), Ningbo SJ Electronics Co Ltd (SJE) and Wuxi AMTE Inc (AMTE). They are expected to invest some USD100mil. Penang is currently leading the nation into the front-end realm of the chip value chain, with over five decades of leadership and industrial excellence in mid- and back-end chip manufacturing.

Ever since the manufacturing boom in Bayan Lepas, Penang has been looking to tap into higher-value activities such as wafer fabrication, IC design, advanced packaging, Internet of Things (IoT), and research and development (R&D). Investors have continuously shown interest in Penang, specifically for expanding their businesses for the higher value chain.

To spur this industry further forward, the state has allocated USD13.5mil (RM60mil) toward this initiative, with USD451,000 (RM2mil) in annual incentives for eligible companies, which includes subsidies for space and utilities at GBS TechSpace, access to technology collaborators' facilities and talent development programmes through the Penang Chip Design Academy. Penang has also forged strategic partnerships with global technology leaders such as Cadence, Siemens, and Synopsys.

Meanwhile, Malaysia Semiconductor Industry Association (MSIA) president, Wong Siew Hai, commended Penang, "The announcement by Chow (Penang Silicon Design @5km+) shows that Penang is proactive, planning and megaphoning to everyone that Penang is committed to moving up the value chain and supporting the National Semiconductor Strategy (NSS). This will indicate to investors that Penang is addressing the challenges faced. Penang is leading in many ways, and it should collaborate with other states to enable everyone to prosper together."

When it comes to talent acquisition, the Group Director of GSH Precision Technology Sdn Bhd, J. Philip Vincent is optimistic that with the right policies, strategic investments, and unwavering support from the state government and other stakeholders, Penang is poised to reach even greater heights.

"It is well on its way to becoming the premier global IC design hub, not only within the region but also on the international stage. By equipping individuals with specialised skills, the IC Design Academy not only addresses the local and national talent shortage but also creates opportunities for a brighter future. It fosters a robust pipeline of qualified professionals ready to contribute to industry needs while empowering the next generation to thrive in high-value, knowledge-driven sectors."

CAPTIONS

1. (Cover spread) Prime Minister Anwar Ibrahim at the launch of the Silicon Research & Incubation Space at GBS Tech Space in Bayan Lepas.

2. The launch also included the signing of an MOU and the introduction of new investors for the Penang Silicon Design @5km+ initiative.

GREATECH SUPPORTS TALENT DEVELOPMENT THROUGHOUT SOCIETY

BY CAROLYN KHOR

WHILE MOST CORPORATIONS focus on the environment or social welfare as part of their Environmental, Social and Governance (ESG) initiatives, Greatech Technology is interested in instilling and strengthening the culture of reading, not only among its employees, but also in society in general. Greatech, a local automation solutions provider and this year's main sponsor for the George Town Literary Festival (GTLF), inculcates a love for reading among its employees in order to enhance creativity and innovation.

The company has a dedicated reading corner for its employees!

Unsurprisingly, Greatech's group CEO Tan Eng Kee is an avid reader himself, especially of books that focus on leadership, innovation and personal development: "Books as well as arts and cultural activities inspire people to think creatively, which ultimately spark ideas and drive innovation in all sectors, including ours."

GEORGE TOWN LITERARY FESTIVAL

GTLF, an internationally acclaimed annual festival held since 2011 in the UNESCO World Heritage Site of George Town, aspires to encourage exchange of ideas between local and international writers, and to expose Malaysians to the world of literature and also Malaysian literature to the world. It is Malaysia's most renowned literary festival. For 2024, it ran from 29 November to 1 December with the theme "Word on the Street", and featured nearly 50 writers, both local and international.

Greatech, GTLF's main sponsor in 2024, believes that continuous learning and the exploration of new perspectives enable diverse voices and ideas to flourish. In supporting GTLF, it hopes to create a ripple effect to encourage a reading culture in Penang's public sphere. Tan says Greatech is committed to supporting initiatives which align and resonate with his company's broader vision to generate a love for reading.

"I'm convinced of the positive impact GTLF has on Penang's society. Greatech wants to be actively involved, and GTLF is one way to drive growth through the love of reading.

"For Greatech, this means contributing to a well-rounded and culturally rich community that values creativity—a key driver of the technological solutions we develop."

A self-made man, Tan began working part-time at a bakery after school hours to supplement his family's income at 16 years old. After securing his mechanical engineering certification and having toiled as a production planner for a precision-tooling company for several years, he set out on his own with a RM10,000 loan from his mother and enlisted the help of his best friend, Khor Lean Heng, his current Chief Operating Officer, to start Greatech.

Although that first company folded in 2001, the pair embarked on setting up another, known as Greatech Integration, which produced semi-automated and automated equipment for the consumer electronics sector. Later, the company expanded into the semiconductor and solar power industries. Greatech was listed in 2019 on the ACE Market of Bursa Malaysia.

In 2020, the company's share prices soared, making Tan an instant billionaire. As the company further expanded, it was transferred to the Main Market on 28 October 2021, and in the same year, Tan was listed as one of Asia's most influential people. Greatech also made the list for Forbes Asia's Best Under a Billion in 2022 and 2023. Now, with a net worth of about USD-820mil, Tan is ranked No.25 on Forbes' Malaysia's 50 richest men.

Greatech primarily provides automation solutions in the design, development and production of systems, machinery and equipment for manufacturing processes, as well as value-added services such as supplying parts, training and after-sales support across the globe.

Tan proudly proclaims that Greatech's machinery and equipment are installed worldwide, including in China, India, Singapore, Vietnam, the US and several European countries.

"Our customers are involved in industries such as solar, semiconductor, consumer electronics, e-mobility and life sciences."

Beyond the arts, Greatech is actively involved in initiatives that support education, environmental sustainability and social welfare. Tan says that they are particularly committed to initiatives that promote STEM (Science, Technology, Engineering and Mathematics) education.

"We are exploring opportunities to partner with schools and universities to support educational programmes and scholarship opportunities."

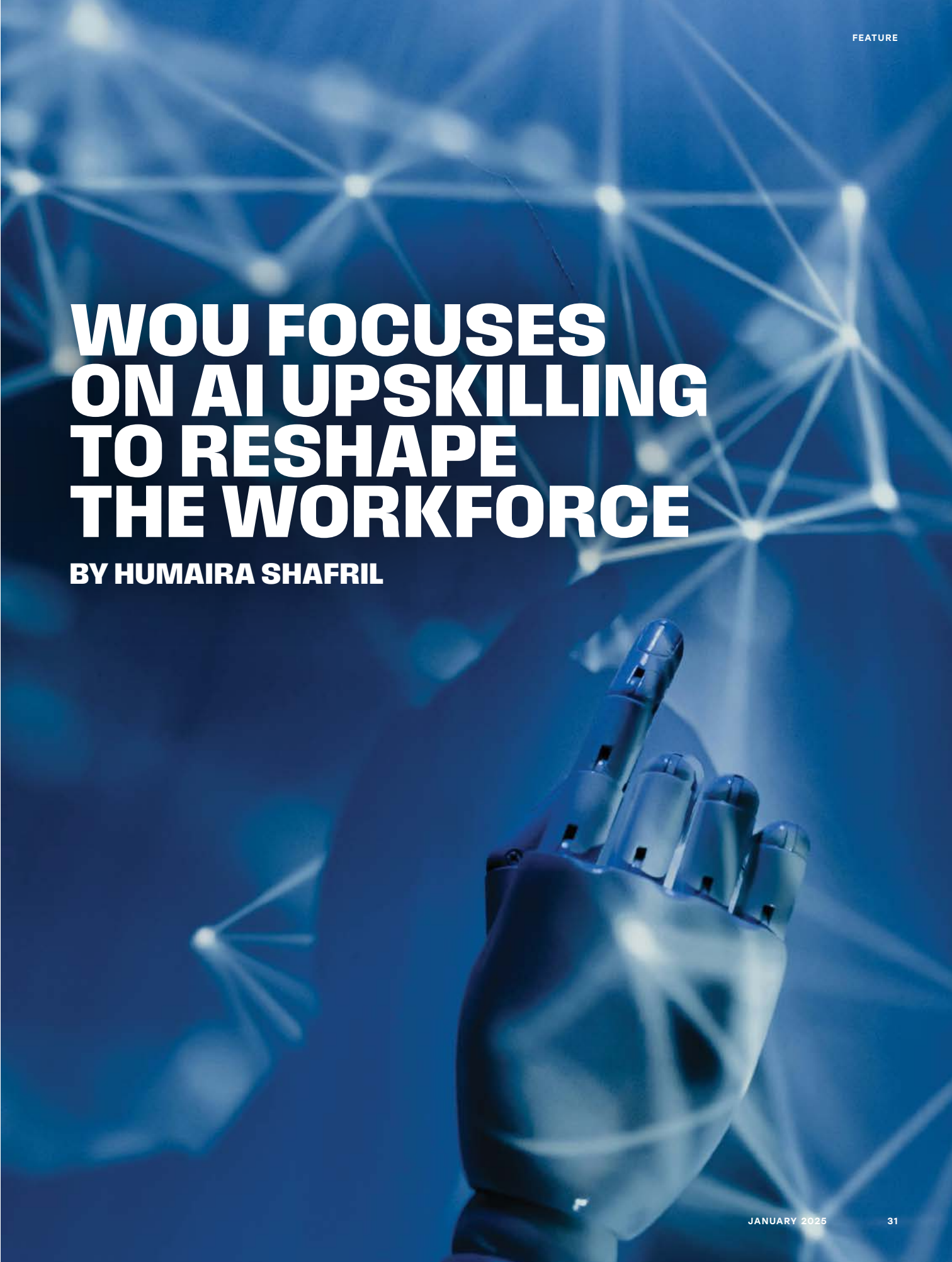
He adds that the company is also interested in establishing digital libraries in schools to enhance students' learning experiences, and in maintaining environmental sustainability. Greatech consistently participates in environmental clean-up events and supports green technology initiatives. "Pitch us a good idea on education, eco-friendly practices, or the preservation of natural resources, and let's see how we can work together," Tan offers.

With companies like Greatech actively investing in Penang's talent ecosystem, the state is well-poised for innovation and creativity. Such initiatives not only help retain and attract skilled workforce and mitigate brain drain, they also contribute to the continued advancement of Penang's manufacturing sector—one of Penang's main revenue sources.

CAROLYN KHOR
is a former ministerial press secretary, a former United Nations volunteer and an independent researcher/writer.

WOU FOCUSES ON AI UPSKILLING TO RESHAPE THE WORKFORCE

BY HUMAIRA SHAFRIL



Lily Chan, WOU's CEO and Vice Chancellor.

To learn more about how WOU is contributing to Penang's workforce, visit its website at wou.edu.my.

PENANG'S INDUSTRIAL ECOSYSTEM, particularly its E&E sector, has long been a cornerstone of Malaysia's economy. In the previous half a decade, from 2014 to 2019, the state had already charted a growth of 12% in terms of compounded annual rate (CAGR) to reach RM210bil. With global trends shifting towards automation, machine learning and data-driven decision-making, businesses are under pressure to adopt AI-driven processes to remain competitive. This shift is not without its challenges, as it requires a workforce skilled in the latest AI technologies.

"Artificial Intelligence (AI) is not just a buzzword—it's the cornerstone of how industries in Penang and beyond will advance," shares Lily Chan, CEO and Vice Chancellor of Wawasan Open University (WOU). "The digital economy demands a workforce equipped with cutting-edge AI knowledge and skills, and open distance learning institutions are uniquely positioned to meet this challenge."

In 2023 alone, generative AI attracted over USD21.8bil in global funding. Malaysia's AI market is also poised for significant growth, with an anticipated annual growth rate of 31% from 2024 to 2032, and a forecasted market value of USD3.23bil in key areas such as machine learning, data mining and analysis.

These trends underscore the urgent need for Penang's workforce to upskill and align with the demands of an AI-driven economy. This is where institutions like WOU are stepping in. As Penang's leading open distance learning university, WOU offers a comprehensive suite of 80 GEN AI courses, ranging from foundational modules to advanced, industry-specific training. These courses are designed to equip professionals with the tools they need to thrive in an AI-driven economy.

"Our goal is to democratise AI education," Lily explains. "By embedding flexibility and accessibility into our programmes, we're enabling working professionals to upskill without compromising their career or personal commitments.

BRIDGING THE TALENT GAP

Unlike conventional education models, open distance learning (ODL), allows students to learn at their own pace and from anywhere. This approach is particularly valuable for working adults. WOU's innovative ODL framework not only empowers individuals to pursue upskilling but also addresses the broader talent gap in AI knowledge across industries.

AI stands at the forefront of technological innovation, driving unprecedented levels of investment and transforming industries across the globe. In Malaysia, our AI programme initiative dovetails with the government's MyDigital Blueprint to strengthen the AI ecosystem and nurture AI startups.

UNLOCKING PENANG'S POTENTIAL WITH AI EDUCATION

The importance of AI education cannot be overstated. As businesses in Penang increasingly adopt AI technologies, the demand for skilled professionals continues to outpace supply. WOU's commitment to bridging this talent gap is evident in its diverse course offerings.

"AI is reshaping industries at an unprecedented pace," the university notes. "Our programmes are designed to not only build technical competencies but also to cultivate a mindset of innovation and adaptability."

WOU's 80 GEN AI courses are offered as a complimentary benefit to all its students. This means that any student who signs up for a diploma, graduate or postgraduate programme with WOU automatically gains access to these courses. Students can select from a wide array of AI modules that best align with their career paths and learning needs.

For professionals ready to unlock their potential, WOU offers unlimited access to 80 GEN AI courses as part of its flexible degree and upskilling programmes. From introductory modules to highly specialised industry-focused courses, WOU provides the tools needed to thrive in the AI revolution.

HUMAIRA SHAFRIL works as a research assistant at Bait Al Amanah in the Economics and Public Policy division. Outside of work, she enjoys winding down by creating personal vlogs and curating music playlists.

WHEN THE FACTORY BEFRIENDS THE FOREST

BY GOH SHUAN THING

GOH SHUAN THING enjoys helping businesses be heard and stay relevant through creative content strategy. You will occasionally line ner last in alternate realities of her favourite books.

WHEN WE THINK of factories, we often envision cleanrooms, concrete and the hum of machines. Yet, one factory—aptly nicknamed Factory in the Forest—challenges our perceptions of what factories can be. Paramit Malaysia provides fully-integrated engineering, manufacturing and post-manufacturing services to medical device and instrument companies. Nestled in Bukit Minyak on the mainland, its revolutionary facility is a game-changer in green building. Designed by Design Unit Architects in collaboration with IEN Consultants, the project turned 162,000sq ft of factory space into a lush and green "Hanging Gardens of Babylon" with cutting-edge technology.

Since its completion in 2017, Paramit's Factory in the Forest has stood as a beacon of what is possible when sustainability, innovation and functionality meet. The site, conceived as a forest that penetrates and envelops the building, has won numerous design awards, including Commercial Building of the Year in the ABB Leaf Awards 2017; winner of the commercial category in the FuturArc Green Leadership Award in 2018; listed on the Royal Institute of British Architects (RIBA) International list in 2018; winner in the Commercial, Retail and Office category in Architecture and Design Trophy Awards 2019; and winner of the commercial category award under the World Green Building Council's Asia Pacific Leadership in Sustainable Design and Performance Awards in 2020.

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A pioneer in green industrial design in Penang, Paramit is a vision for the future. Looking less like a factory and more like a tropical resort, its design incorporates courtyards, roof gardens and skylights that provide natural light to the production floor.

The design of Paramit's Factory in the Forest incorporates biophilic principles, integrating natural elements into every aspect of the building. Its passive design features—such as light-coloured roofs and insulated flooring—minimise heat absorption, while its radiant chilled slab system provides an innovative, energy-efficient cooling solution. Natural light floods the interior, thanks to diffuse daylighting systems and low-emissivity (low-E) glass, which filters out harmful ultraviolet and infrared radiation, while reducing glare and heat gain.

Moreover, the factory boasts a rainwater harvesting system capable of collecting millions of litres annually, which are used to irrigate the surrounding greenery and reduce reliance on external water sources—a feature that might become critically useful in the face of future water shortages. Rooftop gardens and green spaces not only enhance the aesthetic appeal of the space, they also regulate temperature, improve air quality and provide tranquil areas for employees to unwind. Working in harmony, these design features have slashed energy consumption in the new factory by 70% compared to conventional factories.

"The manufacturing sector consumes a vast amount of energy. Any effort to reduce that amount by default lowers carbon emissions, and therefore impacts climate change," Nizar Musa, Principal and Editor of Qoravant Ideas & Design (QID) says.

"The Factory in the Forest's use of natural daylight on the manufacturing floor, for example, reduces the need for artificial illumination. Another effort is its gardens of trees and plants that shade walls and glass, and lower ambient temperatures, thus reducing the energy needed to cool indoor spaces."

Beyond its resilience to the adverse effects of climate change, Factory in the Forest is a testament to how being sustainable can be more economical for a business in the long run. While green designs are often perceived as being expensive, this facility boasts reduced energy and water consumption, combined with employee-centric features that boost productivity and satisfaction, making it a financially sound investment. It is proof that sustainable design is not just good for the planet—it is good for business.

As Penang continues to evolve as a global hub for technology and manufacturing, this factory sets a bold precedent. Batu Kawan, the state's emerging industrial heart, is ready to adopt this visionary model. By building factories prioritising sustainability, Penang can position itself as a leader in eco-industrial development, attracting investors and talent who value environmental responsibility.

Factory in the Forest invites us to dream bigger and to challenge the status quo. The story is clear: the future is green, and it begins here and now.

CAPTIONS

1. The building is designed to block direct sunlight while admitting ample diffused natural light.
2. The plant utilises natural light throughout, minimising reliance on artificial lighting.
3. Sawtooth systems are an excellent day-lighting strategy to diffuse natural light without unwanted solar heat gain.

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ALREADY FAMOUS FOR its street food and street art, Penang is determined to capture the word on the street too. That was the wordplay and theme for the 2024 instalment of George Town Literary Festival (GTLF). Held from 29 November to 1 December 2024, it aimed to capture the voice of the everyday man and woman living in cities.

Writers, poets, historians, politicians, scholars, critics, musicians, curators and translators descended upon Gat Lebuh China, transforming it into a "GTLF village", to ponder, discuss, critique, showcase and share their perspectives of the world through their written work.

PENANG INSTITUTE LOCALISES THE

GEORGE TOWN LITERARY FESTIVAL

BY LIM WAN PHING

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THE STREETS OF GEORGE TOWN

Running in its 14th year now, a cleverly-designed poster placed the GTLF theme on a green Penang street sign, complete with white font, four corner grooves and a black pole.

For three days, festival-goers ran intellectually amok from Bangunan UAB to Sun Yat Sen Museum and from E&O Hotel to Hin Bus Depot, trying to catch a glimpse of their favourite authors. Tan Twan Eng was the keynote speaker for the Festival this year, while Hanna Alkaf, Dina Zaman and Saras Manickam were among the stars of the show.

The Penang-born Booker Prize nominee for his book *The House of Doors* welcomed an event hall filled with writers, readers and book lovers—and dozens in the overflow, inclining their ears to what he had to say. "We're here because we share one great love: stories," he began. "Stories give us pleasure, and stories hold societies together."

Tan remembers being one of five writers in the first edition of GTLF, and marvelled at how much the festival has grown. His speech even included a short retelling of the Epic of Gilgamesh, and Homer's Iliad and The Odyssey, to prove that all good stories are rooted in conflict, love and war.

In between sessions, festival-goers congregated at the marketplace to chit chat, have a breather, or buy books. Booths were taken up by Gerakbudaya, Kata-Pilar, Clarity Publishing, Malaysian Writers Society and Working Desk Publishing. Two coffee stalls, by Frank Laurent Coffee and SHU The Common, provided the caffeine fix needed to fuel all the intellectual conversations.

ADOPTED BY PENANG INSTITUTE

The festival is in effect now adopted by Penang Institute, the state's think tank and publisher of the *Penang Monthly* magazine. With private sponsorship from Greatech and HSBC, the Institute maintained the festival's reputation as an award-winning literary event while lending a more academic slant and introducing new programmes for children, such as "Storytelling – Stories for the Young" and "Fintegrity Boardgame Workshop", and for teens, "How to Start a Magazine 101".

A diversity of voices and ideas were heard on stage, including from regular *Penang Monthly* contributors, Rexy Prakash Chacko and Eugene Quah. The panel "Tracking the Past and the Present" on the re-reading and re-interpretation of history was a surprising hit as audiences continued the discussion off-stage.

This year also saw discussions on new language phenomena, perhaps a sign of things to come. These included discussions on "creative non-fiction" on the panel "Democratising Novel Thinking" hosted by BFM radio presenter Sharaad Kuttan, featuring Deputy Minister of International Trade and Investment, Liew Chin Tong, Singapore's Ambassador to Greece, Simon Tay, and Penang Institute's head, Ooi Kee Beng.

There was another on the importance of good sources in the writing of political biographies, which saw Tawfik Tun Dr Ismail and Antony Lee being quizzed on their families' great service of keeping the vital private papers that formed the basis for biographies such as *The Reluctant Politician* on Tun Dr Ismail, and *As Empires Fell* on Lee Hau-shik. The two descendants of these two first-generation nation builders discussed the issue with the author of those books, who also moderated the session, Ooi Kee Beng. Ooi's newest book, *The Reluctant Nation: Malaysia's Vain Quest for Common Purpose*, was also launched at the Festival, as were many others, including the latest volume by the Deputy Minister of Human Resources, Steven Sim, titled *Heart of Service*, which is on the life of M. P. L. Yegappan.

The wish for inclusivity at the Festival extended to the promoting of literacy for the blind and visually-impaired. A memorandum of understanding (MOU) was signed at the festival with St. Nicholas' Home, as *Penang Monthly* commits to transcribe its magazines into Braille, emphasising the importance of reading for all.

In celebration of the 50th anniversary of the sister city relationship between Adelaide and George Town, a coffee-table commemorative book, *George Town & Adelaide: Sister Cities 50th Anniversary 1973-2023*, published by the City Council of Penang Island (MBPP) was also launched. The panel was attended by mayors of both cities, Penang's Rajendran Anthony and Adelaide's Lord Mayor, Jane Lomax-Smith via Zoom, where both spoke of mutual learnings and strengthening ties between both cities.

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TALES, STORIES AND RUMOURS

But GTLF wasn't all panels, book launches and readings in air-conditioned buildings. The festival went outdoors to soak up the cityscape and literally, search for the "word on the street".

Ban Ban Kia conducted a walking tour along Lebuh Carnarvon, pointing out the history, design and calligraphy of shop signs, from art stores to book sellers to coffin makers. At night, Khoo Kongsi's courtyard lit up with moviegoers watching *Little Women* (2019) or *Anna and the King* (1999) in a headphones-only outdoor cinema, a beautiful blend of East and West.

No "word on the street" is complete without a book like *Kaki Lima*, published by Fixi Novo featuring photos of five-foot walkways by Malek Hue and a fictional story by Shih-Li Kow. Writers can find inspiration everywhere—in hushed alleyways, a deserted street, a window, a doorframe—even a mosaic tile can tell a story, if one cares to look closely.

The panel "Voices on the Block" also listened to the word on the street from the music point of view. Featuring Penang-born songstress Bihzhu, rapper and ex-Teh Tarik Crew member Altimet, and Australian poet Rob Waters, the trio discussed how their lyrics and spoken word poetry on social justice, empowerment, freedom and self-love helped champion the voices of the everyday man and woman.

Then picking on the literal idiom, "word on the street" ie. rumours and hearsay, Regina Ibrahim moderated a session on how gossip was good fodder for one's fiction. The panellists detailed how their friends and families' lives could be "mixed into a rojak bowl" to create a new character, or how even a newspaper clipping about a man swallowing iguana eggs could inspire a short story.

COMMITTED TO THE CAUSE

With exactly 40 sessions plus a raucous closing ceremony at ChinaHouse featuring spoken word performances, over 40 writers came from a dozen countries to celebrate all things literary over the Thanksgiving weekend. This is all thanks to participating embassies of Belgium, Canada, France, Italy and the Netherlands.

Tan Xin Wei, a designer and copywriter from Kuala Lumpur, hasn't visited GTLF since 2018. This time though, she says the camaraderie has been strong, having met new and old friends from the writing community. She particularly enjoyed the reading session from final year creative writing students at University of Nottingham Malaysia. "It gives me a lot of hope in our future generation of writers," Tan says. "Seeing them recite and perform their works on stage was such a powerful moment."

Some programmes were held in Bahasa Malaysia, Mandarin and Tamil. There was a panel titled "*Jalan & Ingatan"*, a reading of "*Jejak Kata"*, a Mandarin discussion on the Malaysian Chinese publishing industry, and two Tamil programmes co-organised with Vallinam Malaysia, albeit supported by the Festival and held in YMCA Brickfields in Kuala Lumpur.

Despite the flux and changes, the commitment to literature survives. Over the past 14 years, the festival has changed hands and seen several organisers taking charge. But hope burns bright as there are stakeholders—public or private, group or individual—who still trust in the power of the written word in changing lives.

Next year's dates have been locked down; the 15th edition of GTLF will be held from 28 to 30 November 2025. So commit them to diary and memory.

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CAPTIONS

1. (Cover page) The GTLF team from Penang Institute.

2. "My Journey by Bus" is an exhibition showcasing Lam Ching Fu's unique travel experiences in Pahang, Terengganu and Kelantan.

3. Chen Lin Loong, the editor-in-chief of Got One Publisher, sharing on the current status and challenges of Malaysian Chinese publishing.

4. Sofea Lee delivering her spoken word during GTLF's closing at ChinaHouse.

5. The screening two films simultaneuously, *Little Women* and *Anna & The King* at Khoo Kongsi.

6. The FINTEGRITY Board Game, created by the Wealth of Life Children (WOLc) Academy, teaches kids about money by simulating real-life financial situations like earning, spending, saving and investing.

7. Artist Cheah Sumay showing an art installation crafted from upcycled braille paper provided by St. Nicholas' Home. Each origami piece is folded by hand to represent two of our local endangered species. This installation was featured during *Penang Monthly*'s MOU signing with the Home.

LIM WAN PHING is a freelance writer based in Penang. She has a short story collection, *Two Figures in a Car* published by Penguin SEA.

A JAPANESE LOVE AFFAIR WITH PENANG

BY RACHEL YEOH

"THE FUMAKILLA *TAUKEH* is the owner of this house," my mother quipped as my father snailed the car past Villa Primavera, a mansion located at Jesselton Heights, also known as the Beverly Hills of Penang. We ogled for a few moments—the pupils of my 10-year-old self dilated as it captured the image of the driveway lined by marble statues, with trees casting dappled shadows on the white figures that led to what looked like a castle, a spire jutting out of a low tower.

More than two decades later, I found myself at the same gate my family peered into. This time, they opened for me, and I drove into the 3.2-acre plot where the grand villa stood. The Fumakilla *taukeh* had agreed to an interview with *Penang Monthly*.

FALLING IN LOVE WITH PENANG

Fumihiko Konishi graduated from Tokyo University in Pharmacy and Life Science in 1966 and decided at the very last moment to decline a job offer from a prestigious pharmaceutical company. He enrolled instead into an English business school, mainly because he wanted to go overseas. Two years later, aided by his newly acquired English tongue, he was chosen as a member for a Goodwill Mission to Southeast Asia by the Japanese government, in conjunction with the centenary celebration of the Meiji era.

He embarked on a 53-day journey on a luxury cruise—fully paid by the Japanese government—and landed in Taiwan, Singapore, Sri Lanka, India, Malaysia, Indonesia, the Philippines and Thailand. The city he was most impressed with at that time was KL. "The other cities were so dirty, but KL was so clean—and there was a highway. At that time, Japan had a very desolate highway."

After that whirlwind tour, Konishi was determined to come back to Malaysia. Within 10 days upon disembarking, he found a student exchange programme to Universiti Malaya. He quickly registered and was one of two chosen to take part. It was April 1968.

When in Malaysia, he travelled as much as he could around the peninsula on his 125cc motorcycle.

RACHEL YEOH is a former journalist who traded her on-the-go job for a life behind the desk. For the sake of work-life balance, she participates in Penang's performing arts scene after hours.

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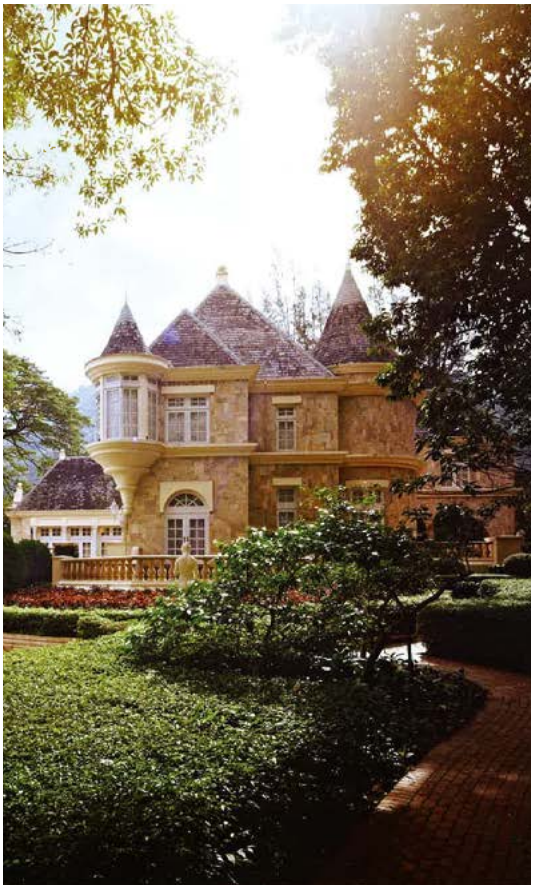

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"I went to Singapore four times, Kota Bharu four times and even to Songkhla before heading to the west coast, to Hatyai. I then biked south to Alor Setar and finally came to Penang."

At the time, there was no bridge linking the island to the mainland, only ferry service. Konishi rode his motorcycle up to the top deck of the ferry, and for the first time, had a good look at the island that floated on the horizon ahead. "It was raining a bit, but the island looked very, very beautiful. So beautiful, I still remember. There were no high-rise buildings then, and I could see the orange roofs of the heritage shophouses."

It was love at first sight, and after staying in a government rest house for a few nights, he resolved to return, and if possible, to stay.

THE MAKING OF TEXCHEM

After one year as an exchange student studying Malaysian History and Geography, Konishi went back to the drawing board, looking for a way to remain in Malaysia—this time, to work.

His friend from Singapore invited him to work in Singapore, and seeing that the island state was newly separated from Malaysia at the time, he thought "Why not?". But he still needed a concrete plan.

He remained in Petaling Jaya for another year, and noticed the poor quality of mosquito coils in Malaysia compared to the high-quality ones available in Japan, which was already invented in 1912. He recalled frustrating experiences with ineffective mosquito coils, including frequent breakages and shorter-than-advertised burn times. Discerning the market's need, he decided to return to Japan to study the technology. "One discipline is not enough, I may not be able to survive," recognising the need for a diversified skillset. He added a subject on dyes into his studies to leverage on the textile industry that was blossoming in Malaysia and Singapore.

Armed with his newfound knowledge, he went to Singapore, only to be left jobless after two months when the company he worked at closed down. With his wife's impending arrival to join him in Singapore, he had to quickly land a job. Fortunately, with his knowledge on dyes, he was hired by Sinto Chemical with a salary of SGD400, which was equal to RM400 at the time.

Every month, his car would hit 5,000km on the odometer as he travelled throughout Malaysia for work. As a salesman, he had to visit textile factories—from Johor Bahru to Penang. With so much time away from home, it was the toughest four years for Konishi and his wife.

During his travels, sometime in 1971, he visited the Penang Development Corporation (PDC) and met Chet Singh, the general manager at the time. "I consulted with them on how I can get a visa to live in Penang. They recommended that I establish a company incorporated in Malaysia."

In August 1973, Konishi resigned from his job in Singapore, and the next month, he packed everything he had into a second-hand, diesel-only Mercedez-Benz and headed north to Penang. He picked his wife and two daughters (the eldest was two and the second was 10-months old) from Penang International Airport and begun their new life at a rented terrace house. That same month, he started Texchem and served as its only salesman for the first six months. Invoices, delivery orders, import clearances and the like, he handled them all. His saving grace were the ties he had created with the Japanese chemical industries; because he was the top salesman in his previous company, his fellow Japanese customers wanted to continue dealing with him.

When the year closed, he found himself with two staff—an account clerk and a salesman—and RM1mil in sales. He was overjoyed, but cautious at the same time.

Unfortunately, the global oil crisis struck, and Texchem experienced a significant decline in sales, impacting both customer operations and overall revenue. Due to low operational costs, the company managed to stay afloat, and Konishi established Texchem Malaysia Sdn. Bhd. in 1976. This manufacturing company, which is still operational today, initially focused on chemicals and has since expanded its product range.

Like mushrooms after the rain, Konishi started new companies, namely Texchem Resources, Texchem-Pack (formerly Malaysian Fine Chemical Industries Sdn Bhd) and Texchem Corporation Berhad.

"Throughout my career, I established more than 70 companies with about 40 companies still in operation—the other 30 companies are no longer operating; some closed down and others were sold." Fumakilla was one of the successful ventures as the mosquito coils produced were superior to those on the local market.

Konishi also pledged not to dabble in Malaysia's primary industries like agriculture, fisheries and forestry. "These industries belong to the locals and it should remain that way. I was also offered to be a developer, which I declined as I do not want any conflict with Malaysian businessmen. Besides, they were already making profit from that industry."

Today, Texchem is a multinational conglomerate that has four business divisions: restaurant, industrial, food and polymer engineering. However, it is currently best known for its halal sushi enterprise, Sushi King. The company, now helmed by his son, Yuma Konishi, has recently announced an allocation of RM220mil to set up another 220 Sushi King outlets in Malaysia and Indonesia over the next decade.[1]

PENANG: ALMOST PARADISE

Konishi shared his life journey in Malaysia against the backdrop of the remake of *La Primavera* by Sandro Botticelli, a renowned Renaissance masterpiece that depicts a scene of mythological figures in a lush orange grove. On its right are four marble pillars, and on the left are French windows that lead to the patio, overlooking the garden and Penang Turf Club. Above me, frescoed ceilings paired with tinted crystal chandeliers. He had bought the land he built his dream villa on from an auction in 1993. Villa Primavera was completed in 1995. If not for the heat and humidity, I might have thought I was somewhere in Europe.

Seeing our intrigued faces, he said, "I love Italy, this house is inspired by it. We just came back from Paris, it was very cold—very very cold." He explained that he frequently visits different parts of Europe but has a long-term commitment to Malaysia—his roots are deep in Malaysian soil.

"As much as I love Europe, I told my wife, 'I think we just go there to visit, okay *lah*.' Every morning, I go to Botanical Gardens for my walk for an hour. If the weather were not so hot, Penang would already be paradise. I cannot find a better place to live. This is my conclusion."

CAPTIONS

1. A path leading to the front gardens featuring a marble sculpture of a maiden.

2. Villa Primavera showcases European chateau-style architecture and meticulously landscaped grounds.

FOOTNOTE

[1] https://theedgemalaysia.com/node/724289

AN INDIVIDUAL REFLEX AGAINST THE GRIP OF CONFORMITY

BY HUSNA SHAFIRAH

HUSNA SHAFIRAH is a final-year student of Applied Language (Hons): English for Intercultural Communication from Universiti Teknologi MARA (UiTM). Currently interning with *Penang Monthly*, she is enjoying her first opportunities in writing about culture and lifestyle along with the smell of freshly printed magazines.

BEING A MOMMY'S GIRL, if I could fuse with my mom at a cellular level, I would. That is why, at five, I was already in the open kitchen, doing what I thought was the most important job there was: slicing open *beronok* (sea cucumber).

In Langkawi, before any *kenduri* or open house, women—most of them elderly—would gather together for *rewang*. As I sat among women in their golden age, in between their fast-moving, wrinkly hands and constant chattering, you could always hear their raucous laughter. And preceding this is usually a list of colourful vocabulary describing men's, women's and even animals' genitals.

Back then, I told myself that this is one of the perks of being old. Who is going to yell at them for swearing anyway? But, as I got older, I recognised it as Latah—a trait of many elderly Malay women.

Latah refers to exaggerated, abnormal responses resulting from someone being startled or experiencing a sudden stressor. These behaviours can range from repeating the same words, wild gestures, cursing and involuntary obedience. But the catch is, the ones who Latah don't consciously act this way, nor do they usually remember these episodes. And because of this, they often get a "free pass" to act out in public.

Latah, however, is far from ideal behaviour in Malay culture, which is known for its strict social customs. A few of the important Malay *adat* (customs), listed in the *Adat Raja-Raja Melayu*, are: *melayukan diri* (be humble), *tidak mamang* (soft-spoken and reserved) and *pandai menyimpan diri* (sensible in manners, behaviour and speech). In Gen-Z slang, they should epitomise being "very mindful and very demure".

Despite being deeply embedded in Malay culture for as long as Malays can remember, Latah was first recorded only in the 1800s, and by British colonial officers. Perhaps it is true you cannot read the label from inside the jar—it is a normal occurrence in our society, something no one gave much thought about. It is best read from the outside.

To the colonial officers who dubbed the Malays "nature's gentlemen", it was a bizarre condition. Frank Swettenham dedicated a full chapter in *Malay Sketches* to record his observations of two police officers working under him: Kasim Besar and Kasim Kechil. Both Kasims, differentiated by their body sizes, were Latahs. Observing these two officers, Swettenham deduced that there were two kinds of Latahs: the funny and the not-so-funny. Kasim Kechil, or Little Kasim, was funny, and he was often the subject of bullying by his colleagues due to his Latah. Among his Latah responses, forced obedience was their favourite. Once, they asked him to climb a coconut tree, and he did so without complaint.

Big Kasim's responses, on the other hand, were not-so-funny, as they posed a grave danger to people. When his colleagues tried to tease him like they did with Little Kasim, he ended up chasing them with a bayonet. Although I have never witnessed a case like Kasim Besar's, Malay elders would always warn kids not to startle elder Latahs, especially when they are holding a parang.

LATAH AS A COMEDIC ELEMENT

In the media, Latahs are often framed in a comedic way. For instance, the 2021 movie *Kampung Latah Kena Kuarantin* managed to rake in RM1mil when broadcasted on Astro First. The movie, which featured many actors with actual Latah conditions, used the syndrome as its main comedic punchline—something never done in other comedy films. Its success reflects how popular the theme is among Malays.

Latahs are also popular during social gatherings. As Malays love bonding through jokes and light banter, Latahs always become the target of mischievous pranksters because they are just "effortlessly funny". Cue Latahs just standing around in a social setting, and some random passerby will poke them in the waist. "Oh ***** Mak Hang!!!" The Latah will exclaim, to the mirth of everyone else witnessing.

Nevertheless, while Latah is enjoyed by many as comedic, it is different for a young Malay woman or *anak dara*. Latah in younger women is frowned upon as society sees it as a gimmick to attract attention—comments like "*latah yang dibuat-buat*" (a made-up Latah) directed to young women are not uncommon.

WHY DOES LATAH OCCUR?

While it is recognised in psychology and neurology as a culture-bound syndrome and a mental disorder, most in the Malay community do not think of Latah as a disease. Little is known about the true cause of the condition, but some Malays believe it affects people who are *lemah semangat* or low in spirit. The "cure" for Latah is usually a visit to traditional practitioners for a *mandi bunga* ritual to boost their inner energy, especially if they are young and male. However, as Latah is more prominent among elderly women—deemed to be physically weak and easily frightened by nature—society does not recognise it as a problem.

So, why does Latah manifest more in older women in the Malay community? If we look at it as a culture-bound syndrome, it would make sense when we take into account the heavy expectations placed on women, particularly older women, in upholding societal customs and educating the young. Elders are highly respected within the Malay culture, and they are expected to be wise and act proper at all times. The strict standards imposed on them by society might inadvertently put them under greater pressure.

The proverb, "*biar mati anak jangan mati adat*", which literally translates as: it is better to have your child dead than to have your customs dead, reflects the strong emphasis on customary practices in the Malay culture. Ironically, perhaps it is this deep-rooted fear of breaking social customs that results in Latah. Some of the behaviours displayed by Latahs do resemble medical conditions; for example, echolalia (imitation of sound and words) and coprolalia (abrupt use of vulgar words) might result from a fear of stammering and fear of cursing or speaking taboo words. On another hand, echopraxia (imitation of goofy gestures) and involuntary obedience could be triggered by the fear of expressing oneself excessively or looking silly in public, and trying to conform to good behaviour.

When I think about it, my late grandmother's Latah also became more frequent when she was stressed out dealing with my naughty younger uncle. Stress and Latah are not a good combination—I am glad that the only things harmed during her Latah episode were the rubber snakes she threw up the roof in a startle.

Latah is a manifestation of the conservativeness of Malay social customs and the communal nature of the culture. As swearing and improper behaviours become more and more acceptable within society, I wonder what will happen to this mysterious affliction. Perhaps, as society modernises, Latah will eventually become a thing of the past.

KENAF

A CROP FOR THE FUTURE

BY IAN MCINTYRE

HAVE YOU HEARD of Kenaf (*Hibiscus cannabinus*)? Probably one of the most underrated herbaceous crops in the country's vast commercial agriculture field, kenaf is not directly edible, but when processed and chemically mixed with other compounds, it becomes an interesting industrial proposition for the users.

CAPTIONS

1. (Cover page) Kenaf board chairperson, Wan Abdul Rahim (second from left) and his officers observing the kenaf garden plantation.

2. Visitors to the kenaf gallery receiving a briefing from board officers.

Images by the National Kenaf and Tobacco Board.

IAN MCINTYRE is a veteran journalist with over 25 years of experience reporting for the mainstream and alternative media. He subscribes to a belief that what is good for society is likewise beneficial for the media.

Grown in abundance in Kelantan, parts of Terengganu, Pahang, Kedah and Perlis—the Malay belt states—most people from elsewhere have never even heard of this plant. The ignorance is unfortunate as kenaf has been around since the 1970s, but was only seen for its economic spillover in 1999 when it was listed as one avenue to value-add farming by the now-defunct National Economic Action Council (NEAC). As the country entered the new millennium, kenaf was seen as a substitute for the discredited tobacco.

"But it took time for tobacco to be gradually replaced. There were districts such as Bachok (Kelantan) where bank branches closed down when tobacco farmers found their productivity dropping in the mid-2000s. The authorities began replacing cigarettes with either e-cigarettes or trying to scale down demand," the National Kenaf and Tobacco Board (LKTN) chairperson Wan Abdul Rahim Wan Abdullah, said.

Now, he wants all tobacco farmers to shift towards growing kenaf instead.

SUSTAINABLE AND NATURAL

Kenaf is an annual dicotyledonous crop that thrives in warm, sunny places that get ample rainfall. It can be harvested within four and five months of cultivation. It then goes through a process called water retting through which the natural fibre can be extracted from the dry stem material.

This African plant can be grown easily and widely in Malaysia due to its tropical climate, which its roots thrive on. Historically used as a cordage crop (to make rope, twine and sackcloth), it evolved to be used as absorbents, paper products, building materials and animal feed.

It consists of four important useful components; seeds, stems, leaves and flowers.

Wan Abdul Rahim, together with the director-general of the board, Wan Baharuddin Wan Ismail, have begun to strategise on a plan to raise public awareness about kenaf so as to facilitate its adoption as a cash crop alternative to tobacco.

Decades earlier, the Malaysian Agricultural Research and Development Institute (MARDI) was directed by NEAC to co-ordinate a fast-track commercialisation of the product. Since then, MARDI has successfully done research into variety screening, agronomic practices for kenaf cultivation, harvesting and mechanisation, retting, fibre processing and downstream applications such as animal feed and bio-composite.

In 2010, LKTN was established to replace the tobacco board and phase out tobacco cultivation. However, the uptake of kenaf requires time—something which Wan Abdul Rahim wants hastened.

Wan Rahim explained that kenaf is a source of natural fibre for the automotive and construction industries. He is particularly proud of a significant achievement during his tenure: the successful development of kenaf as a component for making furniture. Kenaf fibre is used in high-quality mattresses such as those from Akemi. It has the property of cooling down relatively quickly. Those who desire a luxurious and comfortable sleep prefer to purchase mattresses that use kenaf fibre, Wan Abdul Rahim added.

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He also revealed that the plant has one of the highest rates of CO_2 absorption, requiring approximately 1.5 tonnes of CO_2 to produce one tonne of dried kenaf plant material.

The board is now transfixed on research and development, cultivating ample stalks to meet the anticipated demand, exporting and pursuing downstream activities from commercialising to patenting. They are doing it all to raise public awareness. So far, the results are encouraging.

While Universiti Malaysia Kelantan explores the organic pharmaceutical supplement, Universiti Teknologi Mara (UiTM) recently revealed a sample of oriented strand board (OSB) made from core kenaf fibre. This kenaf-based wood can be used for construction and home interior elements. It is considered a sustainable building material.

Today, it is used to make biodegradable plastic sockets, animal feed and noise pollution absorbers.

UNDERDOG CROP WITH HEAVYWEIGHT POTENTIAL

"It is a multi-million industry with potential for tremendous growth if we can convince the masses about its benefits, especially with the shift towards sustainability and food security," Wan Abdul Rahim reiterated. The board is ready to take kenaf to the next level by incorporating sustainable practices while commercialising its end products; among which are fibre for textiles, wood furnishings and pet food ingredients.

The board also wants the adoption of kenaf to be done in phases and in a holistic manner for it to be sustainable and be a boost to the agriculture sector, after it attracted the attention of the Plantation and Commodities Ministry.

Wan Abdul Rahim said that there are big plans to expand into Sabah and Sarawak soon.

Despite the high demand, it is not yet cultivated as effectively as it should be due to the lack of proper land management by farmers. Farmers tend to grow other plants in view of the push for food security, however, he stressed that due to its flexibility, kenaf can be grown alongside other items such as paddy. Much fertile land is under-utilised. Wan Abdul Rahim suggested cultivating kenaf on existing plantations alongside crops like oil palm and rubber.

The Plantation and Commodities Ministry plans to seek a bigger allocation under the national budget to boost the multi-purpose sustainability of kenaf. Its Deputy Minister, Chan Foong Hin, said that kenaf's downstream and upstream activities have now grown to become a domestic industry worth RM10mil in the first six months of this year, an increase of 69% compared to 2022. Therefore, the ministry will seek more development funds to generate public awareness about the plant and to boost its R&D.

Kenaf can also be cultivated by disfranchised groups such as the Orang Asal and the urban poor as not much space is needed. On top of that, Wan Abdul Rahim sees each state complementing one another in the industry. For example, Penang could house R&D facilities whereas Perlis and Kedah could focus on its cultivation. Meanwhile, the Klang Valley could become its marketing hub.

"The room for growth is tremendous and given time and support, the board is in the position to fully harness the potential of the plant," Chan remarked.

SAME SAME BUT DIFFERENT: A KERALITE GYPSY'S REFLECTIONS ON PENANG

BY SASANK GOPINATHAN

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WHAT'S IT LIKE being a 21st century gypsy? Not easy. Constantly moving from where we currently are to greener pastures can be quite tiring, and my family and I have been doing that all our lives. This has allowed me to live and grow up in several cities, a mix of choice and circumstance.

I am a half-Singaporean and half-Indian, with a Keralite ethnic background (Malayali), now living in Penang. I've grown up, lived and worked in seven cities across three countries. Having needed to adjust to a new home and life several times, I have developed a knack to observe and find things that stick out to me. This may also be due to my training as a designer, aimed at extracting information from observation.

Having to shift to new places and assimilate into new environments has taught me to observe cultural similarities and differences between where I've lived and where I'm living, so that I can understand my environment better and live more comfortably. That being said, there are so many reasons to love Penang simply by comparing it to Kerala, my home state.

A southern Indian coastal state west of Tamil Nadu, Kerala is where a majority of Malaysian Indians in Penang come from. It has rolling hills and mountains on the east and a sunny tropical western coast facing the Arabian Sea, a mostly hot and humid jungle climate in between, and a smattering of islands off the coast. It was a colony of the Portuguese, the Dutch and eventually, the British. It may not be racially diverse, but it is religiously so, and everyone gets along well. We are famous for our seafood and our many spicy coconut-derived dishes!

Sometimes, when I talk about Kerala, it almost feels as if I'm referencing Penang. Penang, a state on the western coast of Malaysia, with a tropical humid jungle climate, a former British colony, and known for its diversity and great food.

Of course not all the grass is green on both sides. In both places I've seen carelessness in civil engineering in the likes of bad curbs and poor city planning. Sometimes when I see the erratic driving and traffic in Penang, I almost feel homesick. Of course, many Penangites may deny that their driving is bad, just like the people in Kerala do, and any further discussions will usually be settled at a tea stall.

In Kerala, tea stalls are called *chayakadas* while here, they are known as *kopitiam*. Both serve the same pulled tea known as Teh Tarik (Penang) and Chaya (Kerala). Same-same!

CAPTIONS

1. Typical street in Fort Kochi, Kerala.
2. Temple built in the Kerala vernacular style.
3. House in Balik Pulau, built in the Malay vernacular style.
4. Street in Fort Kochi, Kerala.
5. Typical street in George Town, Penang.

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Of course, Teh Tarik isn't new to me as I lived in Kuala Lumpur for several years. However, it was after moving to Penang—George Town in particular, that I was reminded of my hometown, Kochi. It has similar relaxed vibes with old streets where people used to trade, and some still do. Kerala was once a major trading hub, just like Penang. As a matter of fact, you can actually see the remnants of the Malayali-Penangite maritime connection if you take a closer look.

There is a street called Kampong Malabar—now, Malabar is the name of the northern coast of Kerala. Sometimes many Penang Indians gather at the "North Malaysia Malayali Samajam" in Jelutong. These Malayali immigrants moved from Kerala to Penang several generations ago. Some would layover here before sailing to Singapore. Many were quarantined at Jerejak island (I have a relative who's still alive who went through this process). Such migrations may have imported more than just a street name. If you walk by old snack shops in Penang you will see Kuih Loyang, a fried rose-cookie, which is actually a Dutch-inspired snack originating from Kerala.

One of my cycling explorations around Penang Island led me to Balik Pulau. It was there that I observed Rumah Melayu houses. Such beautiful homes with architecture adapted to local climatic conditions. In fact, they look very similar to the houses in Kerala, with their gable roofs and raised construction. These comparisons make me appreciate the skills, evolution in thought and execution of traditional artisans from both sides. Some traditional mosques in Penang have a similar architectural style to those in Kerala.

If someone from Penang went to Kochi and walked the old heritage streets, they might almost think they're in George Town. This harks back to our common colonial legacy, with a lot of the architecture having a blend of Asian and European styles. Penangites may easily feel at home in Kerala if they ever moved there, the same way I feel at home here.

I love the diverse mix of religions in every neighbourhood, even the instances where traditional cultures intertwine, like the Datuk Kong (or Datuk Keramat) shrines—an intersect between Malay culture and Chinese belief. It reminds me of similar examples I see in Kerala, like one where Syriac-Christians incorporate Keralite temple and architectural elements into their churches, like stone lamps *(kalvilakku)*. Even if the characters are different, the similar ideals in both places bring a sense of comfort.

The "Queen of the Arabian Sea" and the "Pearl of the Orient", the land of coconuts (Kerala) and the areca nut *(pinang),* stories of trade and heritage long forgotten, now only heard as whispers in the sunny balmy coastal winds. One may be unaware of what defines their home unless one leaves and lives elsewhere. What a pleasure it is when one finds a connection to their old home in their new home!

Sometimes, forgotten legacies are exciting to recall, as they can mend bridges that once existed, or forge new bridges amongst people. I've always found that people have more joy in appreciating and embracing new cultures if they take some time to observe and discover first. To respect differences and connect with similarities. As much as we should preserve our cultures, it is also good to learn about other cultures. In the end, aren't we all just same-same but different?

"Sometimes, forgotten legacies are exciting to recall, as they can mend bridges that once existed, or forge new bridges amongst people."

SASANK GOPINATHAN is an award-winning industrial designer from India living and working in Penang. Apart from designing, his other passions include art, photography and writing.

KHOO KONGSI

118 PROUD YEARS OF HISTORY

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BY LIM WAN PHING

LIM WAN PHING is a freelance writer based in Penang. She has a short story collection, *Two Figures in a Car* published by Penguin SEA.

FROM SIN KANG VILLAGE in Fujian, China, men sailed south for greener pastures. Steer left, and you would arrive in the Philippines. Steer right, and you would arrive in Thailand. Go straight on and you hit Semarang. Take a sharp right and you reach Singapore, after which a U-turn up north would bring you to Penang, Medan or Rangoon (Yangon today).

That was how the Khoo forefathers arrived in Penang Island in the late 1700s. A century later, the community had grown so large that a clan house was needed for ancestral worship, weddings and other rituals. The present Khoo Kongsi building was completed in 1906, hence the 118th anniversary celebration held in 2024.

Unlike the Western convention of celebrating jubilees every 25 years, 118 is worth highlighting because it sounds like "prosperity every day" in Cantonese. It is typical of the Chinese love for homonyms and numerology; the number one in Cantonese is "yat", which sounds like day, and eight is "patt", which sounds like luck.

CONFUCIAN VALUES IN PRACTICE

As with all aspects of traditional Chinese society, education was not forgotten by the early migrants. Already in that same year, 1906, a school was established for the Khoo children. Today, SRJK(C) Sin Kang in Air Itam is open to the public and boasts an enrolment of about

350 students. Though it has been absorbed into Malaysia's national education system, its building and landowners are still the Khoo trustees.

The Khoos held on strongly to Confucius' emphasis on moral character achieved through education. Throughout 2024, the school's parent-teacher association had raised RM1.18mil through fundraising programmes like gala dinners, fun fairs, charity walks and art auctions. The Khoo trustees then met this amount dollar-to-dollar. Its new target is now RM3mil.

Khoo Boo Yeang, President of the Leong San Tong Khoo Kongsi Trustees, who also sits on the school board, explains that the Kongsi advocates Confucian values. Apart from education, they include reverence for ancestors and deities, harmony and coexistence with relatives, and care for fellow clansmen.

"The Kongsi looks out for all clansmen and their children from the cradle to the grave," says Khoo, a 22nd-generation clansman. He outlines benefits such as red packets for newborns and newly-weds, grants for students, medical aid for the poor, and even condolence money for families of newly deceased clansmen. To be a clansman, one has to be able to trace one's ancestry to Sin Kang Village.

As part of this RM3mil fundraiser, Khoo Kongsi held a live sketching session on the morning of 11 November 2024 in partnership with Urban Sketchers Penang. The collaboration came about because the co-founder of Urban Sketchers Penang, Khoo Cheang Jin, is an alumni of Sin Kang school.

The Penang artist said he was contacted by one of the teachers who is also an Urban Sketcher member—to help his alma mater. He gathered 40 artists to the clan house, who plopped themselves around the courtyard and opera stage, facing the main temple. There, they sketched dragon sculptures, carved pillars and ceramic figurines using pencil, graphite, ink and watercolour.

Artist Khoo, a 23rd-generation clansman, stated that the "Kongsi is a family temple, and it is a very grand heritage building. It has so many details and ornaments, and that's what makes it so interesting for artists to sketch." The artworks produced will be sold at a future event, going into the pot to upgrade Sin Kang school with laptops for every student, air-conditioning in every classroom and a swimming pool.

Together with Penang's Chung Hwa High School, Sin Kang is believed to be one of the earliest modern Chinese schools in Malaya, established before the Chinese Revolution of 1911 that overthrew China's last imperial dynasty, the Qing. Education is still so highly revered today that any Khoo male who graduates with a degree will have their names inscribed on a plaque inside the Kongsi's hall.

FAMILY, FUTURE AND FORESIGHT

"Our forefathers had so much foresight when it came to educating future generations and planning for their well-being," says President Khoo, explaining how one of the most prominent Khoos in Penang, Khoo Thean Teik, during the 1800s, had procured lands in the Thean Teik estate, now renamed Bandar Baru Air Itam.

Other famous Khoos in Penang have had streets named after them, such as Jalan Khoo Sian Ewe, Lorong Seck Chuan and Lorong Soo Hong. Elsewhere in the diaspora, a prominent Khoo clansman is Singapore's Khoo Teck Puat, founder of Malayan Banking who lends his name to Khoo Teck Puat Hospital in Yishun.

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Today, one will find Xin'ancun (新垵村), or Sin Aun Village (formerly Sin Kang village), on Google Maps. But its historical location is said to be 8km west of Amoy Island (now Xiamen Island), situated at the estuary of Sin Kang River. It was a typical clan village of a single surname, with a total population of 7,000, of which almost 80% had the surname Khoo.

No doubt the cityscape would have changed from 500 years ago, when the first recorded Khoo emigrated to Borneo in the 1500s. With so much change and modernisation in mainland China, it is heartening to see that a slice of history has been replicated and preserved in Penang.

Although not unique to the Khoos, the building of clan houses by surname and geographical affinity has been a way of holding onto a piece of home away from home, of not forgetting one's roots, and of passing down culture and heritage. This is perhaps the desire of all migrants; to adapt and embrace the new, yet hold onto their origins.

Today, in Cannon Square, one can travel back in time to admire not just Khoo Kongsi's architecture, but study its rituals and observe its Southern Fujian customs—from birth to death and everything in between, replicated and preserved from Sin Kang Village 118 years ago, like a live diorama.

> **"The Kongsi looks out for all clansmen and their children from the cradle to the grave."**
> **– Khoo Boo Yeang**

CAPTIONS

1. Owen Ow, a member of Urban Sketchers Penang, completing his masterpiece.
2. Chin Kok Yong, a member of Urban Sketchers Penang, looking pleased at what he has drawn.
3. Khoo Cheang Jin, the co-founder of Urban Sketchers Penang.
4. Cheng Kai-Hsiang (郑开翔), a Taiwanese artist well-known for his watercolor sketches of street scenes, was also one of the participants.

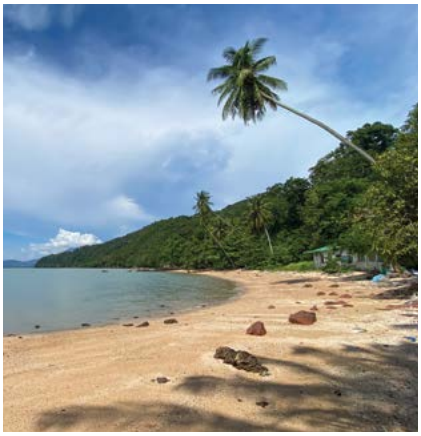
GUNUNG

THE PROMINENT PEAK IN THE NORTH

JERAI

BY EUGENE QUAH TER-NENG

ALONG JALAN TANJUNG BUNGAH, part of Penang's scenic north coast road leading to the tourist belt of Batu Ferringhi, one can find a spectacular roofed viewpoint near the Penang Swimming Club (PSC). From there, one can gaze upon Pulau Tikus, a rugged rocky islet that has long served as a natural sentinel marking the entrance to Penang's harbour, and dominating the horizon is the majestic blue-hued silhouette of Gunung Jerai or Kedah Peak, its distinct summits often adorned with wisps of cloud. Rising to a height of 1,217m above the Straits of Malacca. It is a good 384m higher than Penang Island's highest point. Furthermore, Gunung Jerai, at 220 million years old, is ancient. Penang Island would emerge from the sea only 100 million years after it.



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CAPTIONS

1. (Cover spread) Gunung Jerai, rising from the plains of Kedah, as seen from Halliburton's Hill, Penang. The building in the foreground is the derelict Crag Hotel, which in its later years housed the Uplands School. Source: Eugene Quah Ter-Neng

2. Pulau Sayak is a secluded beach located south of Gunung Jerai and is part of the Jerai Geopark. Similar to the village of Pulau Betong in Penang, the village is named after a nearby island. The name "Sayak" means an overturned coconut shell in the Minangkabau language, referring to the island's shape. The village is known for its Mee Udang. From one of the food stalls, the flashing lights of the Muka Head lighthouse in Penang can be seen in the evening. Source: Eugene Quah Ter-Neng

3. The Jerai Resort is built on the grounds of this bungalow completed in 1922 to serve as a sanitarium for Kedah officials. The current road up Gunung Jerai was completed at the same time. Photo: Eric Yeoh Kok Ming

4. Pulau Songsong as seen from Gunung Jerai. It is one of the four islands of the small archipelago, and is also a turtle nesting ground. The group's main island, Pulau Bunting (Pregnant island), sets the tone for the childbirth-themed naming scheme. The three other small islands nearby are Pulau Telor (Egg Island), Pulau Songong (Welcomer Island) and Pulau Bidan (Midwife Island). Pulau Telor was formerly called Pulau Panggilan (Messenger Island). Source: Eugene Quah Ter-Neng

5. Tourists posing with the altitude marker, with the paddy fields of the Yan district (during the planting season) and Pulau Bunting (Pregnant Island) in the background. The archipelago of four islands (five, if counting Pulau Sayak) adorns the coast facing the west face of Gunung Jerai. Source: Eugene Quah Ter-Neng

6. Air Terjun Alur Naga (Dragon's Groove Falls), is a scenic waterfall reachable by hiking 30 minutes through a trail starting at the resort. Gunung Jerai is replete with ancient legends; this waterfall is said to be the dwelling place of a dragon who bathed in its cooling waters. Photo: Rexy Prakash Chacko

Katherine Sim, an artist and writer who has travelled extensively around Malaya, documenting her adventures, wrote in the middle of the 20th century that it was "impossible to consider Penang without including that marvellous blue shape across the sea" which "exerts a spell over the island" of Penang. Decades before she put down those words, this breathtaking panorama was so renowned that it influenced the development of Tanjung Bungah (the Cape of Flowers) in the 1890s, attracting prominent Penangites to build seaside bungalows there in order to enjoy this prized view of the Straits.

Gunung Jerai, deservingly known as the jewel of Kedah, is "an isolated mass rising steeply from the rice fields—proud and superbly beautiful", Sim wrote lyrically more than 70 years ago. Seen from Penang Hill, the peak "appears an island of lapis-lazuli in the flat plains of Kedah", she added. Today, it is still as she described it. Poetics aside, there may be some truth to the enigmatic mountain being an actual island in the distant past.

Geological evidence suggests that during 100-300 AD, due to the rise of sea level, most of the area around its foothills was indeed submerged in a shallow sea. The ancient Hikayat Merong Mahawangsa or Kedah Annals, which chronicles the founding myths and royal genealogy of Kedah, also mentions that the mountain was once known as Pulau Serai—Serai Island. The Italian soldier and scholar, Col. Gerolamo Emilio Gerini, who served in the Siamese Army, wrote in the 1905 edition of the Journal of the Royal Asiatic Society that this was a corruption of the Siamese word, srai (also spelt as chrai), meaning banyan-tree. Indeed, when Kedah was under the control of the Kingdom of Siam, the occupied territory was officially named Srai-puri (spelt Saiburi in romanised Malay)—City of the Banyan.

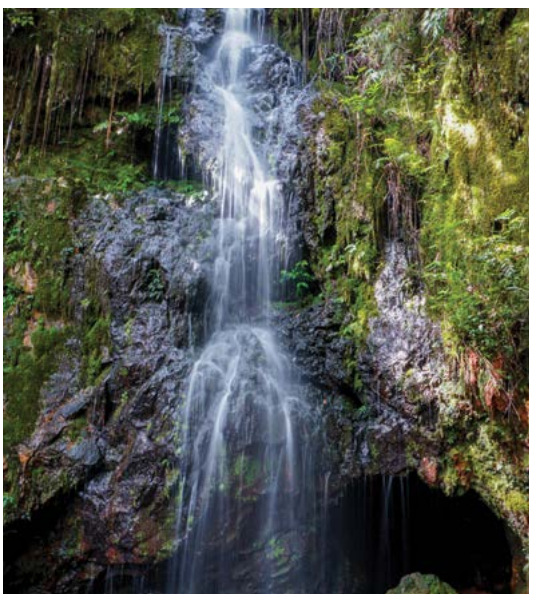
The surrounding Bujang Valley teems with "sites of ancient settlements, consisting of ports as well as centres for iron production" that collectively formed ancient Kedah. This maritime kingdom was renowned across trading networks—"Ancient Kedah was mentioned as an important seaport by various Indian and Arab accounts, being referred to in various toponyms such as Kaḍaram, Kaṭāhadvīpa, Kaṭāha, Kalah-Bar and Kala." Throughout these centuries of maritime commerce, Gunung Jerai served as a natural beacon for sailors navigating the east-west route between the Indian Ocean and the South China Sea, while the Sungai Merbok estuary provided a safe harbour and valuable resources.

In spite of its proximity—a mere 20km from Penang's north coast—Gunung Jerai remained remarkably isolated until the 20th century, even as Penang Hill became one of the most sought-after sanitariums in the Far East by the dawn of the 19th century. Gunung Jerai stood aloof and mysterious; the absence of proper roads and accommodation meant that only the most intrepid souls—primarily botanists and surveyors driven by scientific curiosity—ventured to explore its heights. It was only in August 1913, when the railway line passed near its foothill at Gurun—"making it comparatively easy of access from Penang and Alor Star"—that the Kedah government decided to "erect a bungalow on the Peak" and a path to a site "200ft lower than the summit". The sanitarium, "approached by a good road nine miles long", was "ready for occupation by Kedah officials" by early February 1922. The bungalow was lighted by a "Delco electric lighting plant installed by Messrs Huttenbach, Lazarus and Sons". A year later, the Penang Hill railway opened, which meant that, once again, Gunung Jerai remained forgotten and little visited compared to its more accessible Penang cousin.

In 2024, things had changed much for Gunung Jerai and its surrounding region. As of July 2017, it became part of the Jerai Geopark, where geology, archaeology and ecology converge in a magnificent trinity of natural heritage. The park's official proclamation on 24 November, 2018, in the presence of Sultan Sallehuddin Sultan Badlishah, the Sultan of Kedah, was a significant milestone in recognition of the mountain's role as guardian of Kedah's historical and natural heritage. Covering a land area of 816sq km, it is about 10% larger than Singapore. Within this large area, there is an attraction to be found for everyone—from towering peaks and thunderous waterfalls to sandy beaches and serene fishing villages; from idyllic verdant paddy fields to tropical islands, and to archaeological sites and meandering rivers.

These days, it is quite easy to get to Gunung Jerai by car from Penang. It is a pleasant 93km drive along the North-South highway. The drive from George Town to the hill resort typically takes a little over two hours. Gunung Jerai's now 102-year-old road was upgraded during the pandemic after experiencing multiple landslides. The beautiful mountain motorway coils like a serpent around the ancient massif; each bend revealing new vistas, and each turn bringing a fresh breath of increasingly rarified cool air. The road, with the occasional hairpin bends and steep inclines, should not pose much of a problem for most drivers; the gradient is, for the most part, quite gradual—far less steep and easier to drive on when compared to Penang Hill's off-limits jeep track. The old bungalow and its grounds are now part of the sprawling Jerai Hill Resort, replete with modern additions like chalets, a swimming pool, hotel rooms, team building facilities, meeting rooms and a recently opened café cum observation platform. Other parts of this enormous geopark, such as the Bujang Valley archaeological site, Pulau Sayak and Pantai Merdeka, are connected by good roads and can be easily reached by car. However, getting public transport to these places remains challenging.

The Jerai Geopark, as it edges towards its ambitious goal to be listed as a UNESCO Global Geopark by 2025, stands poised to join the ranks of Langkawi and Kinabalu in global recognition.



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EUGENE QUAH is an independent researcher and writer who is working on a book tentatively called "Illustrated Guide to the North Coast of Penang". He rediscovered the joys of writing after moving back to Penang from abroad.

PENANG: A NATURAL STOP ON THE HIPPIE TRAIL

BY WONG TEIK AUN

WONG TEIK AUN is a senior faculty member at a private institution of higher learning.

"THERE ARE WESTERN papayas in Batu Ferringhi!" whispered some of the older boys in school. I was rather innocent then, and didn't understand the fuss about the "fruit hunts" and was in any case not "hip" enough to be invited. It was much later that it dawned on me that there were topless sunbathers right here in Penang, and digging slightly deeper unveiled Penang's colourful past as part of the fabled Hippie Trail!

The Hippies were a counterculture movement against the conservatism of Western culture in the 1960s and 70s as well as against the ongoing Vietnam War. Seeking an alternative culture and lifestyle away from rigid, restrictive and conservative values, they advocated freedom, free love, peace and non-violence with their iconic "make love, not war" slogan and "peace" logo. The Hippies were also known as the "Flower People"—in reference to the flowers, plants, doves and peace motifs in their dressing. The movement reached its peak in 1967, which is often referred to as the "Summer of Love". Music played a prominent role in the Hippie subculture.

Historically, counterculture and non-conformist movements have regularly occurred throughout the world. China has a tradition of eccentric and enigmatic sages like Lao Tzu, who loved to poke fun at Confucians and government bureaucracy. Socrates and his brethren Greek philosophers were non-conformists par excellence who questioned societal norms and challenged the status quo. More current expressions include the Bohemians in Europe and the Beatniks in America.

The Hippies sought places away and apart from Western civilisation, and started travelling to Asia and other perceived exotic places. They were mostly young, jobless and financially tight—they travelled on the cheap. Their de rigueur mode of travel was cheap land transportation and hitch-hiking, if feasible. They stayed in budget hotels, homestays or simply camped outdoors, weather permitting; communication and information were by word-of-mouth among fellow travellers and locals. Thus, the Hippie Trail was formed like a pearl necklace strung from Europe all the way to Southeast Asia.

The Hippies gravitated towards places that were beautiful, exotic and light on the pocket. In West Asia, the Hippie Trail snaked through Iran, Afghanistan and Pakistan—countries that are now not easily accessible to Westerners. They even adopted the traditional Afghani long robe with leather waist belt as their popular attire, calling it the "Afghan", and redecorating it with flower and peace motifs. The trail subsequently reached Kathmandu in Nepal, which was considered the main terminus. From here, the Hippie Trail branched south through India all the way to Goa, or east to Bangkok, Phuket, Penang and Bali in Southeast Asia.

In all the stops, they congregated in ghettoes or beaches, much to the curiosity and interest of the locals. Penang was not a major stop, but the cultural influence of the Hippie movement was considerable—Malaysia even had a local Woodstock at the Scout Association's Kem Semangat in Cheras, Selangor in 1972, and many from Penang hitch-hiked down and camped there.

Apart from seeking alternative lifestyles and cultural values, the Hippies also love alternative substances—such as cannabis and hallucinogenic mushrooms—in their quest for "enlightenment" or rather, psychedelic highs. Their predilection for banned substances, free-loving lifestyle and anti-establishment culture did not go down well with many authorities. Malaysia labelled the Hippies as *budaya kuning* (yellow culture) or negative cultural influence, and official press releases reflected the official stance such as "Haram Hippies Malaysia" (Outlaw Hippies in Malaysia), "Langkah Kerajaan Untuk Mengharamkam Kemasukan Hippies" (Government Measures to Outlaw the Entry of Hippies) and "Menteri Besar Perak, Dato' Sri Haji Kamaruddin Isa Mensifatkan Orang-Orang Yang Berbogel Menggunakan Dadah Dan Golongan Hippies Sebagai Anti-Nasional" (Perak Chief Minister Characterises People Who Go Naked, Use Drugs and Hippies as Anti-National).

Not to be outdone, Singapore took the harshest stance against the Hippies. Lee Yuan Yew dramatically stated in 1970 that next to economic challenges, the Hippies posed an existential threat to Singapore. Singapore went into overdrive, bordering on hysteria, to eradicate the Hippies. Flowery designs, bright "psychedelic" colours and loose, flowy garments were discouraged in fashion (fortunately, kindergartens were spared, and children could still draw flowers and colour them brightly). Songs were scrutinised for alleged "drug tunes" and banned—casualties included Bob Dylan's *Puff the Magic Dragon* and several Beatles' songs such as *Lucy in the Sky with Diamonds*, *With a Little Help from My Friends* and *Sgt Pepper's Lonely Hearts Club Band*. A crusade was launched against men with long hair, and foreigners with long locks were strictly barred from entry, while locals and foreigners already residing in Singapore were forced to cut their hair (which led to several diplomatic tiffs).

Penang was generally more laid back and accommodative of external cultural influences. The Hippies congregated in the Chulia Street area, Batu Ferringhi beach and Chin Farm waterfall. Chulia Street, with its many narrow side streets and back lanes, was popular among Hippies for cheap accommodations and *ganja*, as cannabis is called locally. Even though officially illegal, cannabis is native to this region, apparently widely grown in nearby Acheh, and thus was easily available.

"Penang was generally more laid back and accommodative of external cultural influences. The Hippies congregated in the Chulia Street area, Batu Ferringhi beach and Chin Farm waterfall."

Batu Ferringhi attracted more "nature-oriented" Hippies, who camped along the beach or at the nearby Chin Farm waterfall where they bathed. Some stayed at local village guesthouses or ventured further to Teluk Bahang beach and Titi Kerawang waterfall. Initially, they lived harmoniously with the local villagers, and some even assisted with local fishing activities. Subsequently, their numbers increased, and as they tended to stick among themselves, the local villagers felt some uneasiness about their presence. Local youths were curious and attracted to them. A few joined their ranks—one even did a "reverse Hippie Trail" and ended up in Germany. Apart from actually becoming a Hippie, many enterprising locals set up burger stalls and aped their long hair, music and lifestyle.

Interestingly, Penang was also a rest and recreation (R&R) destination for American soldiers fighting in the ongoing Vietnam War. So, locals were exposed to two distinct groups of foreigners: American troops with their penchant for booze and brothels, and Hippies with their predilection for pot and free love.

In comparison with other stops on the Hippie Trail in Southeast Asia, such as Bangkok and Phuket, Penang was a relatively minor destination. Many made Penang a pit stop between long stays in Thailand, so as to not run afoul of visa requirements. Others treated Penang as a transit stop to take the ferry to Medan in Indonesia, and continue travelling to Bali and beyond. Penang was no match for the "party islands" of Thailand, with their overflowing abundance of sun, sea and sex. Incidentally, Penang also lost out to Pattaya, Bangkok and Manila in popularity for American troops on their R&R.

The Hippie Trail came to an end in the late 70s, when political upheavals in West Asia made the overland route unfeasible. In Southeast Asia, the Hippie culture gradually transited to the backpacker culture, in which travellers also travelled on the cheap, but were more interested in experiencing local cultures than free love and pot. The Hippies and backpackers share much in common, such a love for freedom, exploration and adventure.

The Hippie era was over before my time, and I only got a whiff of it when I backpacked in Asia. The backpacker haunts in Kathmandu, Bangkok, Jakarta and Bali were chill hangouts with nice vibes and cool music. Upon reflection, the laid-back vibe of Southern California where I attended college in the 90s also exuded a Hippie vibe. It was cool to dress down, go around barefoot, get wasted and skinny-dip in the wilderness. The generally open-minded and free-spirited nature of the people there captivated me.

Back home in Malaysia, I am fortunate to get to know people who are still Hippies or encapsulate the Hippie spirit. These amazing individuals are homeless by choice, live in off-grid permaculture farms, travel across the globe to care for cats and idiosyncratically wander off the beaten track. I realised that the Hippies are still with us, in the guise of independent thinkers, free-spirited individuals, adventurous global travellers and newfangled digital nomads.

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A LIFE IN FULL COLOUR

BY
AGNES JAMES

REMEMBERING CHARLES STEPHEN RAMACHANDRAN

(1964–2024)

CHARLES STEPHEN RAMACHANDRAN was a chameleon, constantly shifting between roles, each more remarkable than the last. A masterful hairstylist, an insightful artist, a mindful yoga instructor, a comedian who would leave a room in stitches—Charles wore many hats, each with a style uniquely his own. He moved through life with a rare fluidity, able to fade into the background or step into the spotlight, depending on his mood. A single man, but multiple in character, he left an indelible mark on everyone who knew him.

He seemed destined for a path that would lead him far beyond the ordinary. His unique blend of artistry, humour and spirituality made him a beacon for those searching for something deeper in life—whether that was through a haircut, his art, a conversation or a yoga class.

Born on 23 November 1967 in the heart of George Town, Charles was a product of the iconic St. Xavier's Institution. He was a recluse at school, but it may have been there that his innate creativity and intellectual curiosity began to bloom.

In 1988, Charles ventured into the world of hairdressing and opened his unisex salon, which quickly became a sanctuary for those seeking transformation. For him, hairdressing was never just about the surface—it was an exploration of the self. Every client was, in his words, "a mountain of creativity" waiting to be uncovered. He didn't simply style hair; he helped people express who they truly were. His work was not about creating beauty, but revealing it—and in doing so, he made people feel seen, understood and celebrated.

Charles often spoke of the heart, believing it was the source of all creativity and connection. "The heart is multifaceted," he once said, "Once unlocked, it radiates in all directions."

This philosophy guided not only his approach to his work, but to life itself. His ability to tap into the emotional core of those around him was one of his greatest gifts. His presence had a way of making others feel lighter, more complete and more connected to themselves.

As a self-taught artist—who, remarkably, was colourblind—Charles defied conventional limits. His paintings were vivid, bold and brimming with energy, reflecting his inner world. The colours and textures in his work often mingled in a kind of dance, a trance-like expression of his emotional depth. He once explained that his artwork was not just about creating something beautiful, but about understanding oneself. For him, art was a mirror, reflecting the hidden parts of our souls. In his pieces, he conveyed a deep truth: "We are, after all, not just part of each other, but in fact, we are each other."

His exhibitions, though few in number, left a lasting impact on those who viewed his work. People who stood before his canvases felt not only his energy, but a sense of their own. It was as if the colours, shapes and movements in his paintings spoke directly to the viewer's heart, echoing the interconnectedness Charles believed in so deeply. He shared his inspiration with everyone who encountered him, be it through his art, yoga or gentle conversation.

As a yoga instructor, Charles found another way to inspire and uplift those around him. His classes were far more than just physical exercise; they were spiritual journeys. In his calm, steady voice, he taught the importance of mindfulness, balance and breath. Yoga, for Charles, was not about physical perfection, but about embracing the journey of self-awareness. He reminded his students that strength comes in many forms—sometimes in the stillness of a pose, sometimes in the quiet resilience of the heart.

His students often left his classes feeling more grounded, more in tune with themselves. Charles encouraged them to find peace within, to cultivate a sense of calm amid life's chaos. His guidance was not just instructional, but deeply personal, as he saw potential for growth and healing in each person. Through his yoga practice, he taught all that our inner journeys are as important as any external achievement.

But if there was one other role Charles played with effortless grace, it was that of a comedian with his other persona, Charlie-Boy. He had a wit that could brighten the darkest day, a sense of humour that was both sharp and infectious. His friends would often find themselves doubled over in laughter, unable to contain the joy he brought into every interaction. Whether on stage or in an intimate gathering, Charles could shift the mood from serious reflection to light-hearted banter in the blink of an eye.

He was also a man of many hidden talents, from his passion for healthy, vegetarian cooking to his role as a proud caretaker of his beloved chickens, which roamed freely in his beautiful garden. These pursuits weren't just hobbies, but expressions of his creativity and nurturing spirit—his love for the world around him shone through. His ability to excel in such diverse crafts reflected his boundless energy and passion for life. Every endeavour, no matter how small, was approached with the same care, dedication and heart that defined all of his work.

Charles' funeral at the Church of the Immaculate Conception in Pulau Tikus was a testament to the broad scope of lives he had touched. People from all walks of life came to pay their respects—clients, students, friends and family—all gathered to honour a man who had made them feel special, seen and loved. The outpouring of grief and gratitude was a reflection of the profound impact Charles had on his community.

As we mourn his loss, we also celebrate the life he lived—a life filled with creativity, love and authenticity. Charles showed us how to live fully and unapologetically, how to embrace our flaws and strengths alike. He left behind more than just art and memories; he left behind a legacy of connection and compassion.

In the end, Charles Stephen Ramachandran was not just one thing, nor could he ever be. He was a collection of stories, a multitude of talents and a beacon of light in the lives of so many. His spirit, like his artwork, will continue to radiate long after his passing, touching those of us fortunate enough to have known him.

Rest in peace, Charles. You will forever be missed, but your legacy of love, laughter and creativity will continue to inspire.

AGNES JAMES is a former journalist with 20 years of experience in corporate communications, specialising in crafting and executing impactful internal and external strategies that drive organisational success. A trusted advisor to corporate leaders and government officials, she continues to work in stakeholder engagement, building networks and fostering collaborations to support complex business and social initiatives.

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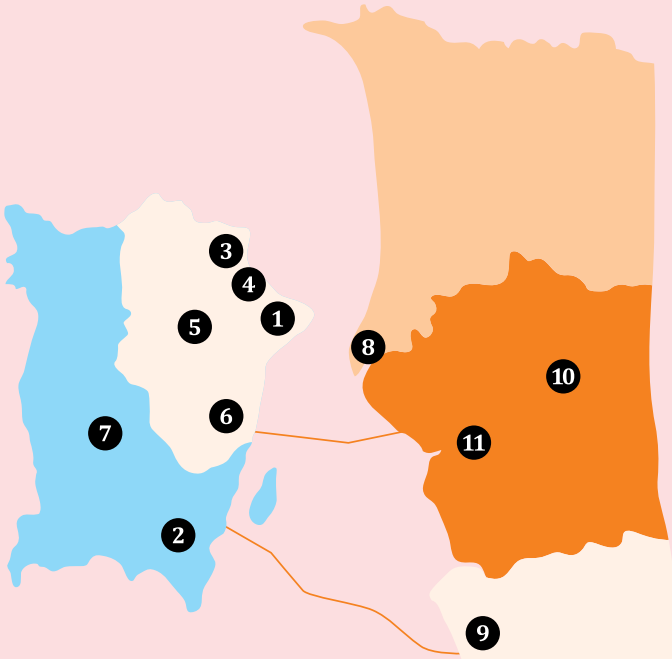

PICK-UP SPOTS
KL/SELANGOR

◯ Kuala Lumpur
Hubba Hubba Mont Kiara
The Godown Arts Centre

◯ Petaling Jaya
Temu House
Yin's Sourdough Bakery and Café

◯ Subang Jaya
Sunway University
(Students Study Area)

PICK-UP SPOTS
PENANG

1 George Town
Areca Books
Book Island @ COEX
Infinity 8,
Black Kettle
BookXcess Gurney Paragon
ChinaHouse
Cheong Fatt Tze Mansion
(Blue Mansion)
Gerakbudaya Bookshop
@ Hikayat
Gurney Plaza
(Information Counter)
Hin Bus Depot Art Centre
Huey & Wah Café
Le Petit Four Patisserie
More by Arang Coffee
Penang Institute
Penang Island City Council
(Komtar Level 3)
Penang Island Municipal Council
Pusat Harmoni
(Harmonico)—Reception
Ren I Tang Heritage Inn
Sin Seh Kai Artisan Bakery
Tourist Information Centre
32 Mansion

2 Bayan Lepas
Arang Coffee
InvestPenang
Penang Development
Corporation (PDC)
Penang Skills
Development Centre (PSDC)
Spices by Yin's
Urban Republic

3 Tanjung Bungah
Gusto Café
Straits Mini Mart
Tenby International School
Yin's WholeFood Manufactory
(Lembah Permai)

4 Tanjung Tokong
Blue Reef Straits Quay

5 Air Itam
Coffee Elements
Penang Hill—Lower Station

6 Gelugor
E-Gate (Security Desk
located at the building's
middle span)
Penang Youth
Development Corporation
(PYDC)
Universiti Sains Malaysia,
Hamzah Sendut Library 1
(Main Entrance Foyer)

9 Batu Kawan
IKEA Batu Kawan

10 Bukit Mertajam
Seberang Perai Municipal Council

11 Juru
AUTO CITY
Management Office

READING SPOTS
PENANG

1 George Town
Bricklin Café Bar
Consumers' Association
of Penang
Forward College
G Hotel
Kim Haus
Komichi Tea House
Mugshot Café
Narrow Marrow
Penang Public Library
USM Library
Wheeler's Café

4 Tanjung Tokong
Leo Books

7 Balik Pulau
Botanica Mansion
Nada Natural Farming

8 Butterworth
Artichoke Café

9 Batu Kawan
Peninsula College

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