

SINGAPORE SEMICONDUCTOR VOICE

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ORGANISATION NETWORKING SUPPORT COLLABORATION SYSTEM INCLUSION DIVERSITY KNOWLEDGE COLLEAGUES TEAMWORK INFORMATION ANALYSING INTERACTION WOMEN BUSINESS OCCUPATION CONNECTION COWORKERS TECHNOLOGY ANALYSIS

Transformation WITH THE POWER OF Diversity And Inclusion

Building
Singapore's
Ecosystem
With The World
p9

Insights with
Industry Leaders
p22

Creating A
Sustainable World
p38



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Singapore Semiconductor Industry Association



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SSIA Welcomes New Members



FOREWORD BY Executive Director

The Singapore economy grew by 3.6% in 2022, moderating from the strong 8.9% growth in 2021. In the fourth quarter of 2022, the economy expanded by 2.1% on a year-on-year basis, and 0.1% on a quarter-on-quarter seasonally-adjusted basis. While Singapore's outlook for 2023 has improved due to several reasons, such as China's re-opening, the overall outlook remains ominous, tepid, and volatile given the broader slowdown in the global economy. This is compounded by the uncertainties that have been lurking against the backdrop.

Given the volatility, geopolitical tensions, and the recent reversal of demand for chips that have resulted in several semiconductor companies underperforming in their projected revenues, there has unfortunately been an onslaught of layoffs in companies to cut operating costs wherever possible.

Notwithstanding these turbulent times with mounting energy and inflation costs, and disruptions in supply chains, these challenges will serve to put companies' mettle to the test as they navigate uncharted waters once again. The industry had been through worse times, albeit in different settings, and had emerged stronger than before. As with all things, there is always a silver lining. There are already positive signs that the semiconductor industry will rebound and continue to grow.

It is therefore pivotal for companies to be strategic in their planning and management in order to mitigate the unstable market forces. It is timely that the Singapore Government has announced a slew of competitive measures in the recent Budget 2023 to equip local SMEs primarily, to propel forward and remain highly competitive on the international stage, so as to build a more resilient nation as we move towards #ForwardSG. In this respect, in order to remain a stable and competitive semiconductor hub in the region, SSIA will continue its mandate to help strengthen and grow the local ecosystem by introducing a line-up of activities to achieve this goal.

Singapore's semiconductor industry took root in 1968, at the humble premises of the Singapore Institute of Standards and Industrial Research (SISIR), an EDB-owned training facility, in River Valley. National Semiconductor, an American microelectronics company, was the first such company to set up operations in Singapore. It moved into its temporary premises in SISIR in December 1968. Since then, the semiconductor industry in Singapore has grown exponentially. Today, it is a thriving and robust sector that contributes nearly a quarter of Singapore's total manufacturing output. This year marks 55 years of remarkable achievements by the country's semiconductor industry, and to celebrate this milestone, a grand dinner will be held at the end of the year.

We hope that companies will seize these opportunities that we have created for the 55th anniversary of the industry. With this in mind, we must not rest on our laurels and continue to develop our talent pool and strengthen our social compact. SSIA will continue to organize platforms such as the Semiconductor Women's Forum—in its third iteration on March 9, 2023—to demonstrate the concerted efforts by the industry to embrace a culture of diversity and inclusion as part of growing the talent pipeline; to inspire and attract more female talent to join and thrive in our industry.

While the road ahead will not be easy, we have braved many storms before as an industry in solidarity. With this spirit, we stand together as one voice, one ecosystem, and one people.

ANG WEE SENG
Executive Director
Singapore Semiconductor Industry Association (SSIA)

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CONTENTS

SSIA NEWS

- 03** Foreword by Executive Director
- 05** SSIA Events
- 06** Train, Upgrade & Reskill
Building Singapore's Ecosystem with the World
- 09** Southeast Asia
Economic Strategy
- 10** Fostering Closer Partnership
between Singapore and Uzbekistan
- 11** A Closer Partnership
With The United States

GROWING THE TALENT PIPELINE

- 12** Electronics Industry Day 2023
- 18** Why DEI is so
Important for the Future of the
Semiconductor Industry
- 20** Hoya: Executive of the Year —
Electronic Manufacturing by
Singapore Business Review
- 21** Making Our Mark at the
Electronics Industry Day

SPOTLIGHT

- Insights with Industry Leaders
- 22** Insights with Geok Hong Tan,
Micron Technology
- 24** Insights with CS Chua,
Infineon Technologies

- 26** Insights with Rubina Azizdin,
Kulicke and Soffa Industries
- 28** Insights with Guat Kew Teh,
NXP Semiconductor
- 29** Insights with Carmen Chua,
Henkel Adhesive Technologies
- 30** Insights with Ong Eng Hui,
Systems on Silicon Manufacturing

INDUSTRY UPDATES

- 32** Tradewinds Jan/Feb 2023
- 34** The 24th Electronics Packaging
Technology Conference

SUSTAINABILITY

- 36** Interview with Sustainability
leader Janice Wong of UTAC
- 38** Creating a Sustainable World
by Rajita, STMicroelectronics
- 40** The Time to Act is Now

DIVERSITY AND INCLUSION

- 42** How ASM Plans to WIN
Diversity & Inclusion
- 43** SSMC: A Great Place to Work
- 44** Fostering a Workplace where
all Voices are Heard, Welcomed
& Valued
- 48** A Chat With YY Bong, Skyworks
- 50** A Chat With Velinda Wee Of SSIA:
For More Equality and
Diversity of Talent
- 52** Hear from the SAY Ambassadors
on Diversity & Inclusion

SSIA Mark Your Calendar EVENTS

Scan the QR code or email
secretariat@ssia.org.sg
to find out more.



END APRIL 2023

Arizona Trip

A mission trip to Greater Phoenix where the focus sectors will be on Semiconductors and Electric and Autonomous vehicles. Meet with industry experts from the likes of Intel, TSMC, Lucid Motors, EMD Electronics amongst others to Arizona State University that has been taking the top spot for innovation in the last 8 years.

Separately, there is also the joint invitation from Enterprise Singapore and US Department of Commerce on Investment Summit in early May.

For more details please contact amy@ssia.org.sg.

JULY 2023

Semiconductor Business Connect

Electronics Industry Transformation Map 2025 is to create a faster and greater adoption of advanced technology and digital solutions into the semiconductor industry. Some companies have started to revolutionise with new and innovative solutions into their manufacture. How then do more companies stay ahead of the curve and be at the forefront of this transformational change while staying on the pulse of sustainability?

Be a part of SSIA's strong ecosystem as we delve into the sphere of collaborations and innovations.

18–21 JULY, 15–18 AUGUST 2023

Singapore Semiconductor Leadership Accelerator

A custom programme designed to inspire emerging technical and business leaders to continue creating revolutionary possibilities with semiconductors. It was conceived as part of the Singapore Semiconductor Vision (SSV) 2020, a task force comprising the private and public sectors to increase competitiveness in Singapore's Semiconductor manufacturing industry. Delivered as two modules, the programme is an immersive hands-on learning experience designed to accelerate personal and professional growth for leaders to succeed in the increasingly volatile, uncertain, complex, and ambiguous (VUCA) global environment.

SEPTEMBER 2023

SSIA Summit 2023 and 55th Anniversary Dinner

The semiconductor industry celebrates a momentous occasion of 55 years of remarkable achievements. This year's Summit will discuss the disruption of supply chain and the plans to develop resilience across the value chain. C-suite executives from global MNCs will also be invited to the dinner this year.

For more details please contact amy@ssia.org.sg.

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TRAIN, UPGRADE & RESKILL

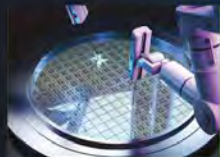
As the semiconductor and electronics sector strengthen our local ecosystem and relook at ways to attract and retain talents, training, up or re-skilling and upgrading remain critical in staying relevant and future-proofing ourselves. Check out programmes in the pipeline, brought to you by SSIA and our learning partners.



Introduction to Vacuum and Plasma Technology (1 day)



Microscopy and Thin Film Characterization for Failure Analysis (1 day)



Wafer Fabrication in Semiconductor Industry (3 days)



Digital Integrated Circuit (IC) Testing



Advanced Manufacturing Inspection Workshop (4 days)



Semiconductor Processes (2 days)



Check out [SSIA website](https://www.ssia.org.sg) or scan the QR code for full list of events, training and courses. Or contact Teresa at teresa@ssia.org.sg

Singapore Semiconductor Leadership Accelerator

PROGRAMME

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Delivered as two modules, the programme is an immersive hands-on learning experience designed to accelerate personal and professional growth for leaders to succeed in the increasingly volatile, uncertain, complex and ambiguous (VUCA) global environment.

Run 9

Programme Dates:

18–21 July & 15–18 August 2023

More info:





Semiconductor Business Connect 2023 July



Catalysing The Semiconductor Ecosystem Through Innovation And Sustainability

Electronics Industry Transformation Map 2025 is to create a faster and greater adoption of advanced technology and digital solutions into the semiconductor industry. Some companies have started to revolutionise with new and innovative solutions into their manufacture. How then do more companies stay ahead of the curve and be at the forefront of this transformational change while staying on the pulse of sustainability?

Be a part of SSIA's strong ecosystem as we delve into the sphere of collaborations and innovations.



Building Singapore's Ecosystem with the World



From left to right: Ms Alexis Crowell, Intel; Mr Ang Wee Seng, SSIA; Mr Jagadish CV, Advanced Micro Foundry; Mr Nicholas Moore, Special Envoy for Southeast Asia; Mr How Chong Peng, GlobalFoundries; Mr Andrew Goh, Lam Research

Southeast Asia Economic Strategy

The Australian Government is developing a Southeast Asia Economic Strategy to 2040.

The strategy will consider how emerging regional trends will change or transform Southeast Asian economies over the next two decades, and where Australia is best placed to respond to these emerging economic opportunities.

It will set out a pathway to strengthen Australia's economic engagement with the region by mapping emerging trade and investment opportunities across key sectors in Southeast Asia and matching those with Australian capabilities. The strategy will also provide practical recommendations to bolster two-way trade and grow Australian investment in the region.

Recognising that collective cooperation and ambition is needed to face up to the challenge of climate change, the strategy will pay particular attention to how Aus-

tralian businesses can support and contribute to the region's energy transition and set it up for a more prosperous future.

Special Envoy for Southeast Asia

The Australian Government announced Mr Nicholas Moore as the Special Envoy for Southeast Asia in November 2022. Mr Moore has a strong record of achievement in the business and financial sectors in Australia and Southeast Asia.

Mr Moore was CEO of Macquarie Group for ten years and is current Chair of the Financial Regulator Assessment Authority. He is also a member (and former Chair) of the University of New South Wales' Business School Advisory Council.

Mr Moore will lead consultations with business and other stakeholders in both Australia and Southeast Asia over the coming months to inform the strategy.

Why Southeast Asia

Southeast Asia is home to a growing, youthful and dynamic cohort of markets. Australia's two-way trade with the ten member countries of the Association of Southeast Asian Nations (ASEAN) is greater than that with Japan or the United States, having passed A\$127 billion in

2021 and up more than 30 per cent from A\$96 billion in 2016.

Collectively, trade with ASEAN accounts for nearly 14 per cent of Australia's overall trade. The region is also a significant consumer of Australia's energy, agricultural products, minerals and education.

These trends present an excellent opportunity for Australia to deepen our economic cooperation with Southeast Asian countries for our mutual benefit and a shared better future.

As Australia's Minister for Foreign Affairs, Senator Penny Wong, observed in her special lecture in Singapore in July 2022, "in any match up of economic complementarity with growth potential, the greatest trade and economic opportunities for Australia over the next thirty years lie in the ASEAN region."

Singapore and Australia deepen ties in the Semiconductor sphere

Mr Moore met some of the semiconductor industry leaders and SSIA Executive Director in a closed-door dialogue session recently. Several topics that would involve the opportunities between Australia and Singapore were discussed at length and how the pivoting to Southeast Asia on key strategies could help deepen the partnership.

Fostering Closer Partnership between Singapore and Uzbekistan



of “The Strategic Reforms Agency under the President of Uzbekistan”, and State Advisor to the President of Uzbekistan-His Excellency Shukhrat Vafaev, and the Chairman of the Board of Governing Association for Electrotechnics industry of Uzbekistan “Uzeltechsanoat” Honorable Mirziyod Yunusov had meetings with Executive Director of Singapore Semiconductor Industry Association (SSIA) – Mr. Ang Wee Seng, and with the Executive Director of Institute of Microelectronics (IME) under the “Agency for Science, Technology and Research” (A*STAR) – Mr. Terence Gan.

January 17 of this year, on the sidelines of his visit to Singapore, The President of the Republic of Uzbekistan, His Excellency Shavkat Mirziyoyev held talks with the President of Singapore, Her Excellency Halimah Yacob and His Excellency Prime Minister Lee Hsien Loong.



From left Mr Mirziyod Yunusov, Mr Ang Wee Seng and Mr Shukhrat Vafaev

It was a fruitful visit that led to the signing of eight documents of cooperation in the directions as followings: Transport; Trade and Economy; Education; Prosecution bodies; Public Administration; Investment; Health; Science and Innovation.

And a day before the Presidential meetings, on January 16 of 2023, an Uzbek-Singapore business forum was held in Singapore, aimed at comprehensively strengthening business ties between entrepreneurs of the two countries.

Today, the demand for semiconductors and electronic boards in our country and CIS markets is estimated at US\$6 billion. In this regard, the Government of Uzbekistan issued instructions to increase the number of scientific, experimental design and start-up projects in the field of electronics and microelectronics.

Singapore has a vast experience in the field of electronics, and 11% of the country's gross domestic product is contributed by the electronics, microelectronics and semiconductor industries.

Therefore, it must be admitted that among the leading developed countries around the globe, Singapore is a great example and a partner which is fully capable to support and contribute to the prosperity and development of the microelectronics industry of Uzbekistan.

Along with the bilateral negotiations, the delegation headed by the General Director

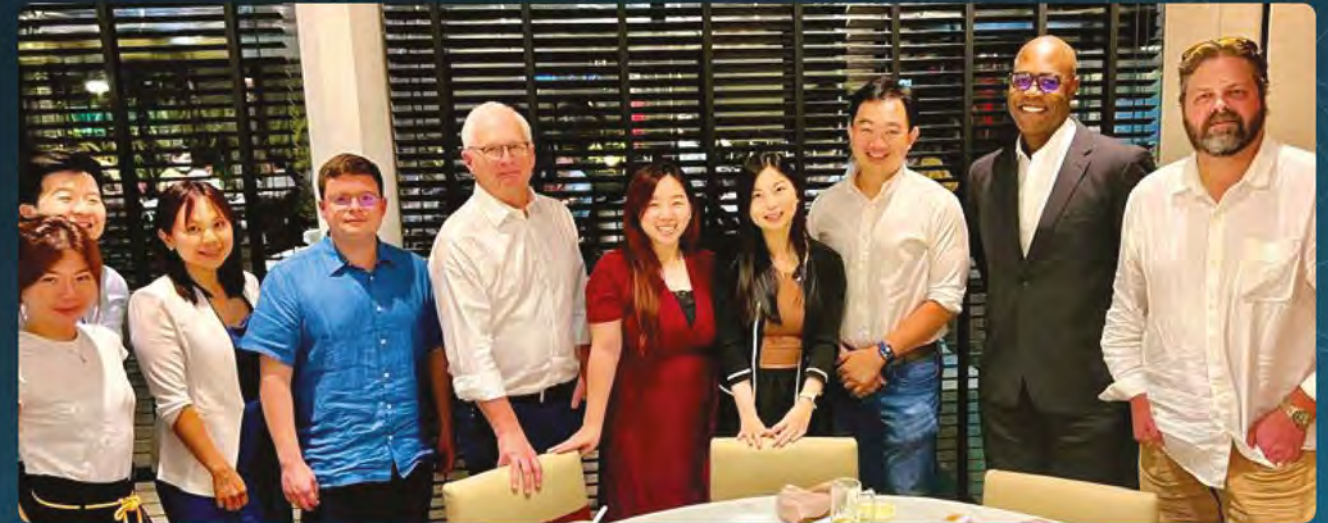
During the meetings with SSIA and IME, the Association “Uzeltechsanoat” received a warm welcome and high-level hospitality from the Singaporean side. The discussions were very interesting and fruitful. Uzbek and Singaporean sides exchanged ideas and experiences on developing the microelectronics industry of Uzbekistan, such as in Education, Training, R&D, Innovation, Joint Manufacturing and others.

CONTRIBUTED BY

Dr. Aziz Muysinaliev
Board of Governing Association
for Electrotechnics Industry of
Uzbekistan “Uzeltechsanoat”

uzeltexsanoat

A Closer Partnership With The United States



The SSIA team with the SIA team and US Embassy staff at dinner recently

The Semiconductor Industry Association (SIA) recently made a visit to Singapore in January. SSIA and John Neuffer, the President and CEO of the Semiconductor Industry Association (SIA) and some of his other colleagues jointly organized a closed-door session with several industry leaders, it was a constructive discussion about the current affairs of our semiconductor industry.

Much was discussed at length such as the US Chips Act, the trade tension between US and China and other trilateral trade between US, Japan and Netherlands amongst others. Global ramifications to the industry due to the sanctions were also widely discussed.

More importantly, it is about the next steps ahead to foster and deepen the strategic

partnership between Singapore and US and in turn, Asia as a pivotal global semiconductor hub.

SSIA will be organising a working trip to Arizona for companies to learn and also explore the infinite possibilities in the US. There are only very limited spaces and if any companies would like to find out more, please contact Amy@ssia.org.sg



A fruitful roundtable discussion with government agencies and companies



CONTRIBUTED BY

Yvonne Ng
Head of Marketing &
Communications
SSIA



THE HALL

DEVELOPING TALENTS FOR AN ELECTRIFYING FUTURE

ELECTRONICS INDUSTRY DAY

The youth of our tomorrow. They are the young champions and future of our industry. The voices and the ones we want to inculcate and nurture to build a stronger, innovative and dynamic environment for the future success of our industry.

The Singapore Semiconductor Industry Association (SSIA) jointly organized the Electronics Industry Day 2023 with ITE on 17 January 2023. We had the honor of Ms Gan Siow Huang, Minister of State for Education, to grace the event.

[Read More >>](#)

Galvanise The Youth And Empower Them

This event serves to be our industry's largest outreach platform to showcase the immense potential of Singapore's semiconductor Industry and its commitment to producing world-class talents. This year, to create greater awareness about our industry, we collaborated with SEMI, our global industry trade association, together with e2i, to co-organise the Singapore Electronics Week. We had an overwhelming turnout of over 1,400 students from various institutions really heartened all of us.

The shortage of semiconductor talent is today a global phenomenon. The Electronics Industry Day started in 2019 with close partnership with JTC to increase the visibility of the semiconductor industry and to attract more talent to join us, and SSIA has been working closely with our economic agencies,

IHLs and companies to encourage more students to join the sector upon graduation. And this has remained our primary goal to create a larger impact on the industry with the youth.

Singapore is expecting more than 2000 jobs and training opportunities for the sector, spanning the value chain from technical and innovation engineers to process and operations roles. Companies in the industry are continuing to hire aggressively into 2025, fuelled by the acceleration of digitalization, disruptive new technologies, and cutting-edge innovations which have semiconductors at their core.

Mr Ang Wee Seng, Executive Director of SSIA reiterated, "Despite the global economic headwinds and the cyclical downturn of the sector, the semiconductor industry still continues to create good job opportunities and to offer a variety of roles to shape the future of technology and our economy. And more importantly, this flagship event dives into addressing one of our top priorities – to build a robust pipeline of talent in the electronics sector. We need to continue to build a strong community of young champions."



Students pose for a photo outside the convention hall



Students engage with the displays of technology in the Experiential Zone

Over 1700 students, job seekers, and company representatives fill the convention hall





From left to right: Mr Ang Wee Seng, Executive Director, SSIA; Ms Jennifer Teong, Chairman, SSIA; Ms Gan Siow Huang, Minister of State, Ministry of Education & Ministry of Manpower; Ms Low Khah Gek, CEO, ITE; and Mr Suresh Natarajan, Principal, ITE College Central



ITE-SSIA MOU

At the event, an MOU between ITE and SSIA was signed. This will strengthen the collaboration in the next five years to organize joint events such as company visits, industry seminars, career showcase to attract even more youths to enrol in Electronics courses as well as receive quality training, internship, workplace learning and mentorship.

Highlights of the Event from Companies to IHLs

More than 25 companies from the semiconductor set up booths to promote greater awareness of our industry by showcasing their profiles and technologies as well as career and jobs in their companies. Among some of these companies were AMD, Hoya Electronics Singapore, GlobalFoundries Singapore, Micron Technology, STMicroelectronics, Soitec and Systems on Silicon Manufacturing Company amongst others.

Institutes of Higher learning, the five polytechnics and ITE had also set up booths to highlight their training program for this sector. ITE showcased four of its electronics-related Work-Study Diploma (WSDip) courses, namely the (i) WSDip in Microelectronics, (ii) WSDip in IoT & Data Engineering, (iii) WSDip in Automation Engineering, and (iv) WSDip in Applied Electronics & AI.



Why DEI is so Important for the Future of the Semiconductor Industry

The theme for this year's International Women's Day, "#EmbraceEquity," highlights the importance of achieving worldwide gender equality across all aspects of life, including in the workplace. In the semiconductor industry, where women remain vastly underrepresented despite increasing interest in the field, embracing equity is hugely important.



Why does diversity and inclusion matter in the semiconductor industry? For one thing, companies with a diverse workforce are better equipped to understand and serve a diverse customer base. They are also more innovative, as a variety of perspectives and experiences can lead to more creative problem-solving and product development. Creating an inclusive workplace can also improve employee satisfaction, which in turn can lead to better business outcomes and talent retention.

Progress has been slow. In the past, stereotypes and biases about who can be successful in semiconductor manufacturing dissuaded women from pursuing careers in the field. However, over the past few years there has been a notable rise in women showing interest in pursuing careers in the semiconductor industry. As a recruiter, I have observed a surge in the number of female candidates in my professional network, surpassing any numbers I have seen before. This has been a welcome change in a traditionally male-dominated field.

Many companies in the semiconductor industry have recognised the importance of diversity and inclusion, but progress

To overcome DEI challenges, companies must take proactive steps to create more

inclusive workplaces. This might include targeted recruitment efforts to attract candidates from underrepresented groups, as well as training programs to help employees recognise and overcome unconscious biases. It may also involve cultural changes in the workplace, such as creating flexible work arrangements that more widely accommodate employees' needs and creating safe spaces for employees to discuss their experiences and concerns. Investing in STEM (Science, Technology, Engineering, and Math) education and training is crucial for promoting DEI in the semiconductor industry. STEM education is essential for preparing students for careers in high-tech industries like semiconductors, where demand for skilled workers is growing rapidly. By investing in STEM education and training, companies can create a more diverse pipeline of talented workers, including women and other underrepresented groups.

With regards to gender equity, some good work is already underway. One leading manufacturer has set a goal to achieve full representation of women and underrepresented minorities in its U.S. workforce by 2025, which will likely have a ripple effect in Asia. The company has also invested in a variety of diversity and inclusion initiatives, such as unconscious bias training and mentorship programs for employees from underrepresented groups. Similarly, another leading organisation has established employee resource groups for women and other underrepresented groups, providing them with a space to connect and support one another. While positive examples exist, there is still a lot to be done. Representation of women in engineering and product management remains low across all levels,



according to research by Zippia. Only 5% of leadership positions in the technology sector are held by women. In addition, women hold only 32% of director positions, 28% of supervisory roles, and 32% of individual contributor roles in the tech industry. These statistics reflect the ongoing lack of female representation and advancement opportunities in the field.

Recent studies highlight the challenges faced by women in the tech industry. A lack of female role models is cited as a key factor, with 42% of women reporting a lack of representation at senior levels. Gender bias in the workplace is also a significant issue, with 39% of women experiencing discrimination or bias in their roles. Furthermore, women face unequal growth opportunities compared to men, with only 36% of women reporting equal opportunities for advancement. Finally, unequal pay for the same skills remains a significant issue, with 35% of women reporting pay disparities based on gender. Creating a more diverse and inclusive semiconductor industry will require systemic change, as well as individual and collective effort from companies, employees, and industry organisations. It will require the dedication of a lot of time and resources.

In the end it will be worth it, because the benefits of such change are clear: a more innovative, customer-centric, and resilient industry that attracts and retains the best talent from all backgrounds. By looking to #EmbraceEquity, the semiconductor industry can help to build a better, more equitable future for all.

CONTRIBUTED BY

Michelle Lee

Semiconductor Practice Lead at Kerry Consulting

KERRY
CONSULTING



Hoya Electronics Singapore Pte Ltd at the SBR Management Excellence Awards 2022

EXECUTIVE OF THE YEAR — ELECTRONIC MANUFACTURING

Awarded by Singapore Business Review

Hoya Electronics has been a recognized innovator in the semiconductor technology for many years

Within a dedicated, innovative-thinking environment, your valued contributions will accelerate Hoya Electronics rapid progression in the world technology market.

With our positive financial results and exciting new EUV blank technologies, Hoya has continued to be a leader in the semiconductor industry. We have also been awarded the **Business Management Excellence Award** in 2022. It is a testament to the strong workplace culture that everyone in our organisation has worked to achieve and that we continue to cultivate. It is also an affirmation that our leaders are on the right track in engaging and building teamwork and trust among our employees.

As the focal centre for Hoya Electronics Operations, Engineering, Development, and Production, we provide a wider range of opportunities and greater career development than ever before.

Connect with us now at

hoes-recruitment@hoya.com

Jobstreet:

<https://www.jobstreet.com.sg/en/job-search/hoya-electronics-jobs/>

LinkedIn:

<https://www.linkedin.com/company/hoya-electronics-singapore-pte-ltd/mycompany/>



We are currently seeking the below inspired individuals who love challenges and have the passion to solve problems.

Development & Office Positions:

- **HOYA LSI Division Central Finance Director** - Lead & oversee P&L budget process for HOYA LSI Division
- **Procurement Assistant (1 year contract under agency)** - Create purchase requisitions & monitor purchase orders
- **Polishing & Cleaning Engineer** - Develop new process in polishing & cleaning for mass production
- **Application Engineer** - Provide customer support with issue analysis
- **Senior Software Engineer** - Design, develop, maintain & continuous improvements of assigned applications
- **Deposition Engineer** - Responsible for product overall performance including yield & quality

Footnotes

- ** Hybrid Working Model available
- ** High-end Competitive Remuneration & Fringe Benefits
- ** Technicians with Rotating 4242 Shift Work pattern

CONTRIBUTED BY



Making Our Mark at the ELECTRONICS INDUSTRY DAY



Our MD Chiou Lid Jian conversing heartily with Minister of State (Education and Manpower) Gan Siow Huang.

STATS ChipPAC participated in the Electronics Industry Day on 17 January 2023 at the ITE College Central.

This is a focal point for the semiconductor industry here to attract fresh talent. Our Managing Director **Chiou Lid Jian**, who is also SSIA Board member witnessed the signing of the MOU between SSIA and ITE, presided by Minister of State for Education and Manpower **Gan Siow Huang**.

Aside our company's booth at the convention, we also featured **Ms Ong Li Xuan**, a process engineer with the CMOS Image Senor (CIS) product line, for the talk segment "*Enablers of the Semiconductor Industry*". Ms Velinda Wee, SSIA's Human Capital Director complimented our speaker Li Xuan that "**you did a great job and please continue to influence your peers to join this industry...**"



Our SCS Booth at the SSIA Electronics Industry Day

Li Xuan also shared on her automation project involving Artificial Intelligence (AI) and Machine Learning (ML).

"We are evolving towards Industry 4.0 to become a Smart Factory. I work closely with stakeholders on machine modification and software upgrades to operationalise the AMRs (Autonomous Mobile Robot) in the production floor.

Being the key project coordinator, I will be lying if I said that I do not face any pressure. There will be times that we fall behind the project milestones which may lead to lower profitability.

To pre-empt this, I have learned to be more proactive, to strategize & prioritize key tasks. It is both fast-paced & challenging. Nearer to festive holidays, our customers will ask to expedite assembly. Though this is pressurizing, my management & leaders are understanding towards us & recognize our efforts & give us the recognition."



Li Xuan's talk on "*Enablers of the Semiconductor Industry*" (top) where she shared on her involvement in the AMRs (left) & her life as an engineer in STATS ChipPAC.



CONTRIBUTED BY



Interview with Geok Hong Transformation with the Power of Diversity & Inclusion



D&I has been a broad and increasingly important topic that most companies have been paying attention to. What does it mean to you personally?

To me, D&I is beyond business. I believe everyone deserves to be heard, seen, and valued. I have two kids, a boy and a girl.

I believe that what I am advocating now will create a better future for them, and for all.

What are some of the ways that your company has been on advocating D&I in the past years, any challenges encountered?

At Micron, we advocate for diversity, equality, and inclusion from multiple angles.

Our CEO and members of the executive team direct the strategy and execution of Micron's six DEI commitments:

- Increase representation of underrepresented groups.
- Drive equitable pay and benefits.
- Strengthen our culture of inclusion.
- Advocate for racial and LGBTQ + equality.
- Increase diverse supplier representation and spend.
- Engage with minority-owned financial institutions for cash management.

Our Employee Resource Groups (ERGs) play a vital role in promoting inclusion and raising awareness of unconscious bias. Our ERGs cover areas focusing on empowering women, LGBTQ+, com-

munities of color and communities of different capabilities.

These groups help us foster acceptance, celebrate achievement, and create communities of understanding — within and beyond the corporate walls. Our leadership sets the example for the entire company, empowering employees to do the same through organizing and participating in various ERG activities.

We also actively leverage technology to support team members with disabilities to unleash their full potential. We are committed to promoting inclusion and creating an environment where everyone feels valued and supported, and Micron was the first technology company to sign the President's Challenge Enabling Employment Pledge in Singapore. Last



year, President Halimah visited our company to learn how we leverage different smart applications to enable an inclusive workplace.

Lastly, as part of our commitment to pay equity, Micron is proud to have achieved global pay equity in 2021. We believe that everyone should have an equal opportunity to succeed, regardless of their background.

This year's International Women's Day theme is on #EmbracingEquity. Can you share a quick anecdote on what this catch phrase means to you personally.

Embracing equity is essential for ensuring that everyone has access to the same opportunities, regardless of their background. As someone who grew up in Malaysia, I experienced firsthand how

traditional thinking and gender norms could limit individuals' potential. Despite being born in a family with four daughters, my parents never once gave up on our education or opportunities. They believed in equity and embraced the idea that we could achieve anything we set our minds to. Unfortunately, this mindset was not shared by everyone around us during that time. I often heard statements like "girls don't need to pay attention to academics" or "girls will become house-wives anyway." These beliefs are not only outdated but also unjust. Everyone should have the same access to education, regardless of their gender or other factors.

My parents' belief in equity and education motivated me to promote these values. I believe that everyone should have fair opportunities, regardless of their background. We can create a more just and fair society by embracing equity.

What would you like to see for the semiconductor industry in this trajectory of empowerment in the next few years?

I hope to see more diverse talent choosing STEM as their field of study and ultimately the semiconductor industry as their career choice.

It would also be great to see more women in leadership roles and inventors, eliminating the notion that semiconductors are a male-dominated industry. I believe that if we continue to build awareness, support, provide equal opportunities and empower each other, we will make progress.



CONTRIBUTED BY

Geok Hong
Micron



Transformation with the Power of Diversity & Inclusion



Insights with CS Chua

Diversity & Inclusion: Do what's right, not what's easy

D&I has been a broad and increasingly important topic that most companies have been paying attention to. What does it mean to you personally?

Infineon is a global company that serves a diverse customer base around the world, through an equally diverse workforce. So to me, as a leader in the organization, it is my utmost priority to empower our people so that we can offer the best of Infineon for everyone. This can only be done through strong D&I initiatives to create an environment in which our diverse workforce can participate, belong and thrive.

What are some of the ways that your company has been on advocating D&I in the past years, any challenges encountered?

D&I has been an integral part of Infineon's culture and strategy. In particular, we define behavioural expectations for leaders and employees, setting the tone for how we interact with one another.

We also enable everyone in our organization with our D&I Toolbox, which includes learning materials, best practices, measures, and practical tips. We have also introduced a slew of initiatives such as "Diversity. Everyday" and refreshed our D&I strategy to really bring out the best in everyone.

Gender diversity remains a challenge for us in this industry, so we continue to put in the effort to boost it. For example by actively promoting STEM careers to female students at secondary schools via our Chips@School initiative, and get them inspired through our female engineers' successes.

This year's International Women's Day theme is on #EmbracingEquity. Can you share a quick anecdote on what this catch phrase means to you personally?

I subscribe to the anecdote, "Do what is right, rather than what is easy". From my experience, oftentimes, we are tempted to choose the path of least resistance instead of asking ourselves if the right things have been done.

Embracing equity to me means having the courage to do the right things in order to remove behavioural and structural barriers so as to fulfil the promise of equal opportunities, advancement, support and reward for all employees.



CS Chua with Infineon Singapore's 'Cultural Inclusiveness Fosters Talents' team



How would you empower more voices in this sector and what are some of the measures that you will be doing on this front?

I am a strong advocate of bringing greater awareness about D&I and as such, I support and applaud SSIA's Annual Women in Semiconductor Forum.

Only with continual outreach events, education and campaigns can we bring to light the necessity to do more of the right things. As Infineon has a dedicated D&I team, I am supporting the team in their

initiatives, and role modelling desired behaviors for my managers every day because D&I begins with each one of us too!

CONTRIBUTED BY

CS Chua
President and Managing Director
Infineon Technologies
Asia Pacific Pte Ltd



Transformation with the Power of Diversity & Inclusion (D&I)

Insights with Rubina Azizdin

D&I has been a broad and increasingly important topic that most companies have been paying attention to. What does it mean to you personally?

D&I to me means creating a space where everyone feels welcomed, treated respectfully, and believe they have opportunities to thrive and succeed, no matter what their background and lived experiences are.

What are some of the ways that your company has been on advocating D&I in the past years, any challenge encountered?

- Being in the Technology arena, we have faced challenges just like other tech companies in the US, with filling managerial



K&S CSR FRAMEWORK

roles and other staff positions with females and BIPOC. We created an office of Diversity & Inclusion, led by a global manager who reports directly to the company's General Counsel, a member of the executive leadership team.

- Our Nominating and Governance Committee (NGC) of the Board of Directors formally updated its charter to include oversight of ESG, including D&I specifically. The NGC ensures management

has meaningful, actionable, and measurable D&I initiatives and hold the leadership team accountable for results.

- We also have implemented global D&I cultural competency trainings, sessions in which our Executive Leadership Team also participated and we celebrated various cultural heritage traditions and historical observances across the company. We also have started working with the D&I Committee to support D&I global strategies and initiatives.



This year's International Women's Day theme is on #EmbracingEquity. Can you share a quick anecdote on what this catch phrase means to you personally?

I feel that this day celebrates the journeys that women around the world have experienced to get to where we are today. In many developed and developing nations around the world, women now have the right to be educated, vote, work and freely participate as members of society.

I believe we should also take time learn about and reflect upon the places in society where women have experienced inequality in equity resulting from institutional and

unconscious bias. We should demonstrate support for women's rights and equality to help women overcome marginalization and oppression wherever it exists.

What would you like to see for the semiconductor industry in this trajectory of empowerment in the next few year?

I would like to see more support of women in this industry, especially in leadership positions. Deliberate recruitment, more candidate research, to identify opportunities for women, and specific methodologies accelerate career develop opportunities

for women to thrive in professional, technical, and managerial career paths. I would like to see mentoring programs to support women in this industry and be able to encourage young females from all socio-economic, ethnic and nationalities to enter this industry.



CONTRIBUTED BY

Rubina Azizdin

Program Manager of Diversity & Inclusion
Kulicke and Soffa Industries



Transformation with the Power of Diversity & Inclusion (D&I)



This year's International Women's Day theme is on #EmbracingEquity. Can you share a quick anecdote on what this catch phrase means to you personally.

Early in my career, every offshore internship applications I submitted to oil and gas corporations was turned down. I attributed these behaviours to the impact of a deep-rooted gender imbalance, often embedded at home or in school.

Despite this, I am persistent to 'break the bias' and continue to pursue a career in engineering and was fortunate to be employed in the semiconductor industry by Motorola.

Insights with Guat Kew Teh

D&I has been a broad and increasingly important topic that most companies have been paying attention to. What does it mean to you personally?

I appreciate the focus and growing understanding of companies that DEI is essential to business success and I'm honoured to have the chance to inspire and contribute to women in a typically male-dominated workplace. I strongly believe more women will be able to realize a clearer and more attainable route to success in this sector as gender equality advances to a broader mix of diversities.



Today, women represent 3% of the offshore workforce, and there is an increasing percentage of female graduates with core STEM degrees, translating to 24% female STEM workforce in the world.

The IWD theme of 'Breaking the Bias' in 2022 and this year's 'Embracing Equity' is fitting in our quest to remove bias and improve equity in STEM industries.

What would you like to see for the semiconductor industry in this trajectory of empowerment in the next few years?

I believe that companies will continue to evolve to improve their diversity, equity and inclusivity.

One key thing will be continued training to provide awareness and guidance towards a more inclusive workforce. An example here would be unconscious bias training – something currently in process at NXP. I hope that these training and inclusivity will provide a path for an increase in chief executive positions for women.

CONTRIBUTED BY

Guat Kew Teh
Senior Director, Supplier Quality
NXP Semiconductor Pte Ltd



Insights with Carmen Chua

D&I has been a broad and increasingly important topic that most companies have been paying attention to. What does it mean to you personally?

It's a journey. I am glad that the organizations that I have the privilege to work for and work with are increasingly putting importance and actions into driving D&I.

It truly starts with the tone at the top and the organization as a whole must believe in and be supportive of diversity and inclusion. Many initiatives failed due to the lack of genuine buy in across the organization. Advancing D&I extends far beyond providing sensitivity training to employees. True appreciation of the importance of D&I comes from witnessing the impact it has on both professional and personal life. Being part of the equation as a leader, I am conscious of the fact that true D&I means creating a level of trust amongst my team that does not marginalize any specific group within the organization. It's not a 'this.. or' situation, it's a 'this... and' situation.

This year's International Women's Day theme is on #EmbracingEquity. Can you share a quick anecdote on what this catch phrase means to you personally.

- Diversity hiring including diversity profiles/input to people manager
- Diversity Talk about Female Leadership, Breaking stereotype, etc
- Hack Your Bias workshop & eLearning that teaches how to identify & counteract subconscious thought processes
- Different employee resource groups in various countries
- Pride month celebration

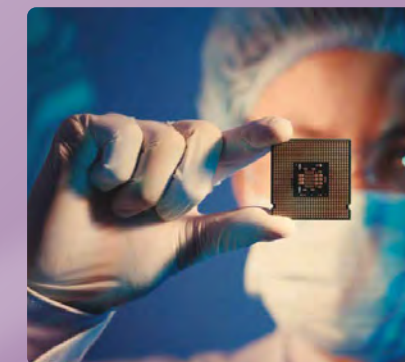
What are some of the ways that your company has been on advocating D&I in the past years, any challenges encountered?

In my view, equity is key to harnessing the impact of all D&I initiatives. As organizations increasingly focus on building a diverse and inclusive workplace, equity enables true progress through exercising fair treatment, opportunities and access

for all people. Armed with an art degree, I have limited experience, let alone know-how on polymer science. One would ask, why recruit an art graduate for a technical role? Diversity was the answer. It's the easy first step.

The challenge for me was how do I progress and succeed in a highly technical field. The learning curve was steep, but my manager recognized and took responsibility to ensure I have a level playing field in the shortest time possible by investing resources in technical training, a buddy program and on sites immersion or an extended period.

This wasn't a one-week program that we often see in many organizations' on-boarding schedule. The most important of it all, I was allowed to make mistakes without being labelled as lacking in potential. It was a genuine recognition that I had a different starting line than others. This was a true demonstration of embracing equity.



CONTRIBUTED BY

Carmen Chua
Global Head,
Electronics (AEE) Business Unit
Henkel Adhesive Technologies

Transformation with the Power of Diversity & Inclusion (D&I)

Insights with Ong Eng Hui

D&I has been a broad and increasingly important topic that most companies have been paying attention to. What does it mean to you personally?

I had been in traditionally male-dominated work environment and as the idea of D&I becomes increasingly important and corporations are sitting up paying special attention to it, what it means to me personally shines emphasis on equality and a working world without bias and discrimination to fellow human beings who may be different, have special needs.

It holds not only true to our National Pledge of being “regardless of race, language or religion...” and extends beyond. Its further means deliberate and affirmative actions is needed to consciously equalize the playing field by offering more support to those who needs more.

What are some of the ways that your company has been on advocating D&I in the past years, any challenges encountered?

- **Advocating Diversity:** Our employee newsletter featured “Superwomen” in the limelight. Their unique strengths and experiences were shared to help create gender equality awareness. We celebrated IWD event, Racial Harmony Day and local ethnic festivals.
- **Equitable Development Opportunities:** Learning needs analysis (LNA) are done



for all employees in different skill levels, and address individualized training needs for all staff to enable target upskilling, from managers to operators.

- **Inclusion hiring:** We supported women back to work after a career break. SSMC welcomed them with a training framework and supportive work environment to bridge the career gap.
- **Others Initiatives**
 - **WFH/ Flexi-hour work arrangement** helps working mothers in achieving work-life balance.

- **Lactation Room** amenities are available for nursing mothers.
- **Special Attention and Support** are given to pregnant women in the fab, as they receive the customised design purple cleanroom gown.
- **Indirect Compensation Equity.** SSMC offers direct labours and lower wage workers differentiating compensations to defray their daily expenses, such as meal and housing allowance. Also, special incentives are offered to all employees who support shift duties.

This year’s International Women’s Day theme is on #EmbracingEquity. Can you share a quick anecdote on what this catch phrase means to you personally.

To me, embracing is an affirmative call for real action. Not just discussing about it but taking action. And to #EmbraceEquity, it is a call for action to demonstrate resolve to provide more for those needs more with the end in mind that diversity is not discriminated from achieving success in each own’s right in an all-inclusive work-life environment.

How would you empower more voices in this sector and what are some of the measures that you will be doing on this front?

After the pandemic, we will be intensifying our efforts in creating all-inclusive work-life environment and making a different by empowering more voices both internally and externally.

• **Internally**

- **Resuming Interest Groups, Volunteering Committees** to encourage staff self-nurturing, growth & leadership development.
- **Continue organizing company-wide events,** educational talks to promote all-inclusive work life culture.
- **Continue to feature female leaders** in the limelight in our employee newsletter, sharing their leadership thoughts.
- **Deliberate increase female representation** in the workforce by setting an internal target as part of ESG efforts to increase female hiring.

• **Externally**

- **Outreach to more female new graduates** during university career talk. To invite them to discover career in engineering.



- **Develop more female leaders** by encouraging more female leaders to participate in the Singapore Semiconductor Leadership Accelerator (SSLA) programme

- **Continue collaboration with SSIA** Eg. Publish in VOICE our DEI story and continue supporting IWD event and seize networking opportunities.

- **Networking** within the Semiconductor sector, learn and adopt best DEI practices

CONTRIBUTED BY

Ong Eng Hui

HR Director
Systems on Silicon
Manufacturing Company (SSMC)





Semiconductor Tradewinds Jan/Feb 2023

In the semiconductor industry nothing ever stays the same which makes this industry so exciting to work in. This time last year we were looking forward to another record year with no end in sight to the growth. Everyone up and down the supply chain was trying to ensure they had enough capacity, be it for materials or semiconductor chips, to support the demand. Unfortunately, as we start 2023, the outlook is quite different and we are already in a downturn which looks like it will last at least until Q3 if not longer.

Current Economic Climate

Since the pandemic started, we have had 3 great years of year-on-year growth of the semiconductor segment. Worldwide semiconductor sales increased from US\$414 billion in 2019 to US\$574 billion in 2022 according to data from the World Semiconductor Trade Statistics (WSTS) organization. Last year started with a forecast of low double-digit growth for 2022 following the exceptional 26% growth seen in 2021. However, by Q2, there were signs of trouble ahead with inventory levels building in the smartphone and consumer electronics segments. It was not until Q3 2022 that the market really started showing signs of a slow-down and then declined in Q4. As a result of the 2nd half slowdown the full year worldwide semiconductor sales growth reduced to between 2 to 3% year-on-year, not a bad year but not as good as we hoped. This year, the semiconductor market is expected to decline around -4% according to major market researchers, due to high inventory levels across most major

segments. These inventory levels are not expected to start recovering until Q3 at the earliest and some negative researchers are predicting that they will not recover until the end of the year.

Foundry and OSAT Update

The foundry and OSAT market had a record year last year with all the foundries and OSATs reporting record annual revenues despite the slow-down in Q4. The world's largest foundry, TSMC, outgrew its competitors, reporting a 43% increase in revenue in 2022 with sales of US\$76 billion. In Q4, all foundries and OSATs reported a decline in revenues except for TSMC & GlobalFoundries that posted a small increase.

Looking ahead to 2023, all major foundries and OSATs are predicting a sequential double digit decline in Q1 revenues. TSMC is reporting it will outgrow the foundry market and will show slight growth in 2023, whilst ASE is predicting its ATM group will have flat to high single digit decline in revenue for 2023. However, both the leading foundries and OSAT, TSMC and ASE, are forecasting the market to improve in the 2nd half of 2023.

Mergers and Acquisitions

Whilst the 1st half of 2022 had deals worth US\$20 billion in merger and acquisition activity, with the largest western acquisitions being Intel's US\$5.4 billion acquisition of Tower Semiconductor, the 2nd half of 2022 was very quiet with no major

acquisitions announced. There is talk however, that Western Digital will spin off its NAND business and merge it with Kioxia to form a new joint venture in early 2023.

Capital investment

Due to the capacity shortage since the pandemic and encouraged by Government incentives like the US CHIPS and Science Act and the European Chip Act, there has been a lot of global investment in new Fabs. The Semiconductor Industry Association (SIA) believes that the CHIPS and Science Act has generated around US\$200 billion in private investments in semiconductor production in the United States with over 40 new semiconductor ecosystem projects announced since 2020 when the CHIPS act was first introduced.

Singapore is also not left out of the investment in new capacity and Singapore should be able to look forward to a strong semiconductor scene when the boom cycle comes back with many new jobs expected to be created. According to Singapore EDB Chairman, Beh Swan Gin, Singapore attracted a record of US\$16.88 billion in fixed-asset investment commitments in 2022, nearly double the previous year's level. GlobalFoundries & UMC, are both building new 300mm Fabs in Singapore with other foundries also adding capacity to their Singapore Fab Wafer substrate manufacturers, Siltronic and Soitec have also both started building new facilities in Singapore to increase

Type	Company	Country	Q4 Revenue (US\$ million)	Q4 seq change %	2022 Annual Revenue (US\$ million)	Annual Revenue % change	Q1 Revenue Guidance % Seq change
Foundry	TSMC	Taiwan	\$19,930	+2%	\$75,881	+43%	-14%
Foundry	UMC	Taiwan	\$2,240	-10%	\$9,219	+31%	-ve high teens
Foundry	GF	US	\$2,101	+1.3%	\$8,108	+23%	-13%
Foundry	SMIC	China	\$1,621	-15%	\$7,273	+34%	-11%
Foundry	PSMC	Taiwan	\$472	-25%	\$2,499	+16%	n/a
Foundry	VIS	Taiwan	\$314	-28%	\$1,707	+18%	-15%
Foundry	X-FAB	Germany	\$184	-2%	\$739	+12%	+16%
OSAT	ASE (ATM grp)	Taiwan	\$3,005	-5%	\$12,551	+11%	-21%
OSAT	Amkor	US	\$1,910	-8%	\$7,090	+16%	-24%
OSAT	PTI	Taiwan	604	-14%	\$2,760	0%	n/a
OSAT	KYEC	Taiwan	\$290	-2%	\$1,210	+9%	n/a

Note: all % changes are based on reporting currency revenue changes.

Mark Dyson

capacity. Whilst in the semiconductor equipment sector there is also ongoing considerable growth. Applied Materials has started building a new facility in Singapore, whilst ASM is expanding its new facility in Singapore to include a 2nd manufacturing floor.

Outlook

Whilst the short-term outlook is not so positive due to the current inventory build-ups and the not so favorable macro-economic environment, the current downturn cycle will pass and the long-term future is good. The semiconductor industry is essential for big emerging technologies like AI, IoT and 6G as

well automotive vehicles and future EV vehicles and medical devices.

As a result, a study by SIA and the Boston Consulting Group reveals that the global demand for semiconductor manufacturing capacity is projected to increase by 56% by 2030, so the future is bright for the industry. For now, just weather the current storm and wait patiently for the good times to come back.



CONTRIBUTED BY

Mark Dyson

Foundry Account Director
AMS-OSRAM Asia Pacific Pte Ltd





A plenary session at EPTC2022



Dr Kitty Pearsall, EPS President, giving her Opening Speech.



First keynote speaker, Dr Ravi Mahajan, Intel.



Second keynote speaker, Dr Raj Pendse, Meta.



Third keynote speaker, Dr Sundar Ramamurthy, Applied Materials.

The 24th Electronics Packaging Technology Conference

The 24th IEEE Electronics Packaging Technology Conference (EPTC2022) is an international event organized by the IEEE Singapore RS/EP/EDS Chapter and co-sponsored by the IEEE Electronics Packaging Society (EPS). Since its inauguration in 1997, EPTC has been established as a highly reputed international electronics packaging conference and is the EPS flagship conference in the Asia Pacific Region. It aims to cover the complete spectrum of electronics packaging technology.

The 24th Electronics Packaging Technology Conference (EPTC2022) went in-person this year. The conference in the last 2 years (2020 & 2021) were virtual due to COVID-19. The 24th EPTC was held from Dec 7 to Dec 9 at the Grand Copthorne Waterfront Hotel, Singapore. Great catch up with industry technologists and academicians. There were over 430 attendees from 20 countries.

The conference kicked off with 5 half-day professional development courses: "Reliability Engineering Testing Metho-

dology and Statistical Knowledge for Qualifications of Consumer and Automotive Electronic Components" by Dr Fen Chen, Cruise LLC (a GM company); "Photonic Technologies for Communication, Sensing, and Displays" by Dr Torsten Wipiejewski, Huawei Technologies; "Reliability of Heterogeneous Integration (HI) Systems - Reliability Needs of HI Stakeholders" by Prof SB Park; The State University of New York, Binghamton; "Fan-Out Packaging and Chiplet Heterogeneous Integration" by Dr John H Lau, Unimicron Technology; and "Advanced Packaging for MEMS and Sensors" by Dr Horst Theuss, Infineon Technologies. Dr Chandra Rao, General Chair EPTC 2022 gave the welcome address, thanking all conference delegates, sharing the conference statistics and appreciating sponsors, exhibitors and conference partners for their support.

Following the opening ceremony were 3 keynotes delivered by prominent leaders from industry. Dr Ravi Mahajan, Intel Fellow, give the first keynote on "Challenges and Opportunities in Heterogeneous Integration". He spoke on the tremendous



Panel on "Chiplets as An Enabler for System Scaling"



EPTC2022 Organizing Committee.

opportunities of Heterogeneous Integration in different application environments and focused on the projected evolution of advanced packaging architectures.

Dr Raj Pendse, Director of Si Packaging, Meta Reality Lab delivered the second keynote titled, "New Directions and Challenges in the Packaging of AR/VR Hardware". His presentation focused on the new trajectory for Si packaging technology set by the emergence of AR/VR hardware and advanced wearable computing.

Dr Sundar Ramamurthy, VP & GM Advanced Packaging, Applied Materials delivered the third keynote titled "Materials Engineering Innovations to address Next-Gen Electronics Packaging Challenges". Following the keynotes was a panel

session on "Chiplets as An Enabler for System Scaling" which was moderated by Prof CS Tan. The panel speakers were Dr Ravi Mahajan, Intel; Dr Raj Pendse, Meta Reality Labs; Dr Bernd Dielacher, EVG Group; and Dr Yik Yee Tan, Yole Group. The panel revisited the drivers behind chiplets technology, the manufacturing ecosystem, and use-cases.

The Heterogeneous Integration Roadmap (HIR) workshop was held at the end of the conference with the theme "Heterogeneous Integration Paving the Way for Global Electronics Resurgence". The HIR is a system and application driven roadmap inclusive of the full microelectronics technology ecosystem with the purpose to deliver the next extension of Moore's law for decades to come.



Packaging Education Workshop at EPTC2022



Prof. Wenhui Zhu presenting on packaging education in China.

EPTC2023 will be the 25th Anniversary of EPTC and will be held in Singapore, on Dec 5-8, 2023. The normal 3-day conference will be extended by a day to cater for an extra-special program of celebration. The fall meeting of the EPS Board of Governors will be held in conjunction with EPTC2023 and many of the BoG members are expected to play a role in the conference. The Call for Papers will be posted soon at <https://www.epic-ieee.net/>.

CONTRIBUTED BY

Ranjan Rajoo, Andrew Tay
EPTC Board Members



Interview with Janice Wong

Chief Sustainability Officer and General Counsel, UTAC

Other than our focus on efficient use of energy, well-being of our employees remains our top priorities.

Additionally, we have continuously engaged in various programs to uplift and improve our communities.

Janice Wong joined UTAC in 2015 as the Group's General Counsel and has years of corporate transactions and finance experience with a leading Singapore law firm as well as a top US law firm based in Singapore. As UTAC is making significant headway with our sustainability agenda, strengthening the foundations of long-term, profitable, and sustainable growth, Janice is tasked with an added portfolio, as UTAC Group's Chief Sustainability Officer. She oversees all our ESG (environmental, social & governance), commitments and works both internally and externally to fulfil them.

What are UTAC Key Sustainability Programs?

Semiconductors are a key component of products that are essential to our daily life. UTAC Group is proactive on the sustainability front, diligently monitoring, tracking our use of resources and actively reduce our carbon footprint. We invest in better, more efficient equipment, introduce alternative energy source by installing solar panels on our rooftops. Across our operations in the region, we have brought down CO2 emissions by 35.7% since 2012. Over the same period, we doubled the amount of recycled water used in our operations to 41.3%.



UTAC's rooftop installation will generate over one million kWh of green energy annually

Has there been any resistance?

Our stakeholders & employees have been very supportive throughout the years. As I get more involved, we are committed to further efforts through education and communication, to ensure our employees have such understanding and will encourage them to actively participate in our sustainability efforts.

How do you extend the sustainability effort to your customers and suppliers?

We are pleased to report all our global customers and suppliers have a high standard when it comes to sustainability efforts. We ensure our suppliers are also participating and practicing in similar CSR initiatives.

Steering sustainability effort & working on legal counsel matter are quite different, how do you manage it (so well)?

Many of the traits in my current leadership role, as head of legal team, can be utilized and transported in my role as the leader of our CSR effort. Having said that, I'm still relatively new to the CSO role and there are

lots to learn. I look forward to this journey and grateful for the support from our strong ESG and legal teams.

Any big projects in the pipeline for UTAC that you would like to share?

While I am unable to disclose the details of our major upcoming projects, what I can say is that UTAC Group is continuing to make headways in the areas of 5G, IoT and the mobile market segments. There's a lot of excitement brewing, so watch this space.

In terms of CSR, I'm happy to share that we've just installed an array of solar panels in our Singapore factory.

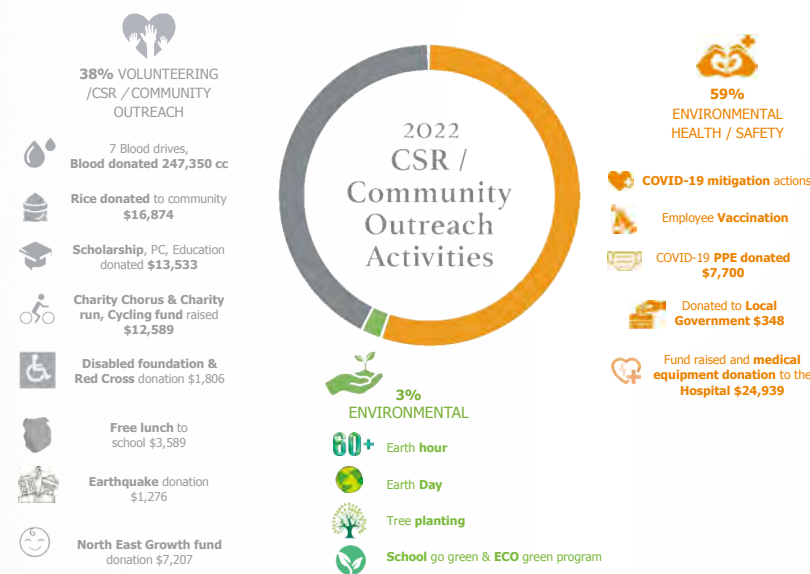
The system generates over one million kilowatt-hours (kWh) of electricity per year, offsetting its operational consumption needs and saving 467,000 kg of CO2 emissions.

This is equivalent to taking 100 cars off the road for a year. This is one of the recent examples of our company's many sustainability initiatives since 2012. In 2020, UTL, UTAC's Thailand site, also installed solar panels on its roof and on a larger

scale, removing over 2,000,000 kg of CO2 emissions per year, which is equivalent to taking 450 cars off the roads for a year.

In addition, we have ongoing projects including water savings schemes as well as recovering and recycling water from manufacturing processes. There are also significant initiatives to increase energy efficiency and reduce waste, including upgrading machinery with advanced variable-speed motor drives and installing solar lighting.

2022 ACHIEVEMENT AT A GLANCE



SHINE HOPES OF A BRIGHTER FUTURE FOR LESS PRIVILEGED CHILDREN

Our children's well-being should not be compromised by unexpected situations in the world. The North East Growth Fund provides milk and diaper support for children of age 0-6 years old as well as income support for better cope with their financial needs.

Support the North East Growth Fund. Donate at: USG & Corporate : North East Growth Fund Donation valued 7,207 USD



UTL : PC & Printer Donation to the Police Station



UTL : Fund raised for Hospital valued 16,966 USD

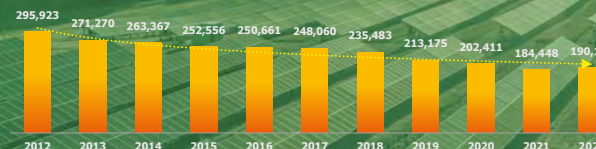


UID : Donate for Apindo Training Center in Karawang

UTAC's Conservation Results 2012 - 2022



CO2 Emission Reduction Trend in Tons CO2e 2012 - 2022



CONTRIBUTED BY



Creating A Sustainable World



STMicroelectronics is one of the world's leading semiconductor companies. Since 1987, ST designs and manufactures semiconductor products, empowering all businesses across the globe. As an independent device manufacturer with a strong sustainability culture, ST is the world first semiconductor company committed to become carbon neutral by 2027.

Rajita D'Souza shares how the semiconductor industry contributes to build a better future for all.

How is ST taking the lead on sustainability in the semiconductor industry?

The semiconductor industry works behind the scenes, powering almost everything in our modern lives. Hence, ST plays an essential role in building a more sustainable way of living. Sustainability isn't a whole new story for us —we created our first environmental policy in 1993 and released our first environmental report in 1997. In addition to protecting the environment, ST constantly aims to improve its social and economic impact. Putting people first and creating long-term value for our 200,000 customers and the local communities where we operate are equally important.

How does ST's technology help to create a sustainable world?

We innovate to support the transition of society to a more sustainable approach with low-carbon and energy-efficient products. From materials, design to manufacturing, ST masters the entire semiconductor value chain. In contrast to pure semiconductor foundries, this business model gives us the ability to act rapidly on all fronts. In 2021, 37% of our sales came from products that help cut greenhouse gas emissions across the product lifecycle according to the European taxonomy standard, and 69% of ST new products were labeled as responsible.

As a leader in sensing & radiofrequency solutions, ST regularly releases advanced products to enable smart manufacturing, prioritizing people's safety at work while increasing the industry overall performance.

What are ST key people-related initiatives and recent highlights?

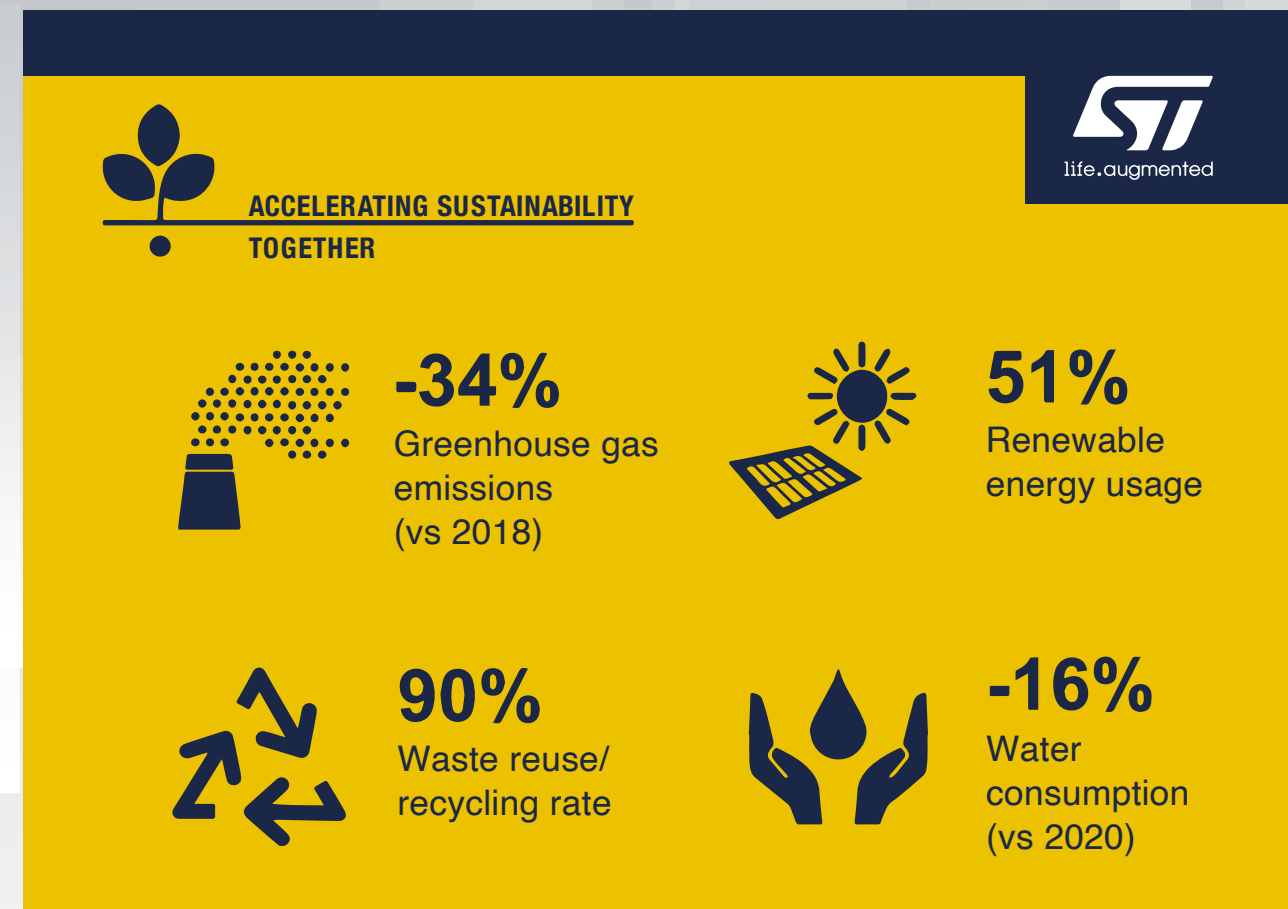
In addition to its net-zero target, ST creates a workplace that reflects the world's rich diversity. As a global company operating in more than 35 countries, we offer a diverse working environment with 115 nationalities working together as one team. In 2021, 83% of our employees said that they would recommend ST as a great place to work.

The semiconductor has a long history of being an industry with mostly men. In 2021, women represented 34% of our global workforce. While most tech companies hire around 25% of women, there is still work to be done in this area. But change takes time. To fast-track equity and inclusion and empower the communities in which we operate, ST launched the "STEM your way" program in 2003. Sharing with young people —especially young girls—our passion for science and electronics, ST experts deliver more than 300 STEM sessions annually. So far, more than 70,000 young people benefited from this program.

What are ST key environment-related programs and recent progress you would like to highlight?

We announced end of 2020 our intention to become carbon neutral by 2027. This includes all direct emissions, but also indirect ones from the energy we use, and all transportation emissions. In 2021, our greenhouse gas emissions dropped by 34% compared to 2018 in absolute terms—a feat considering the company increased its manufacturing capacities during this period.

To reach carbon neutrality, ST taps into renewable energies with a combination of on-site solar and wind power installations as well as long-term agreements with renewable power providers. To minimize the carbon footprint of our Singapore-based largest "fab", ST is investing \$370 million in a district cooling system that will distribute chilled water through pipes to



cool down the facility, replacing hundreds of energy-intensive air conditioning systems.

This project should help save 120,000 tons of carbon emissions annually. On the production side, another challenge is water. In 2021, ST reduced its water consumption by 16% per unit of production compared to last year.

What is important in promoting sustainability initiatives?

We are living in a period of change, with a new energy landscape. Today's complex economic, social, and political dynamics require constant attention and extraordinary responsiveness.

To address the chip shortage and accelerate the transition, ST, together with its partners, is bolstering production across the globe with two additional semiconductor "fabs" to be built in Europe next year. We are also planning to expand in Asia.

What is your experience around sustainability?

At ST, sustainability is not just a project, it's a way of life. With more than 25 years of experience in HR and Corporate Social Responsibility, I have spent most of my career trying to protect the health and safety of workers, and build work environments where diversity is embraced, encouraged, and celebrated. I firmly believe that effective communication is key to create a collective mindset around sustainability.

CONTRIBUTED BY

Rajita D'Souza
President of
Human Resources &
Corporate Social Responsibility

The Time to Act is NOW

There's no time like the present.

With a few years left to minimize the impact of climate change, humanity is faced with one of the greatest challenges in history. We are forced to reanalyze every wheel of the modern economy to make the way we live more sustainable.

Even with our current technology, we are unable to accurately determine the possible outcome, not to mention looming danger, that climate change will bring. And while data centers are often referred to as the backbone of the digital world, and touted as a potential solution to the energy crisis, the industry is also a contributor to climate change.

While the topic of sustainability and energy efficiency did gain traction over the last few years, the operators focus remains more on the enormous demand for IT space. In order to put sustainability and energy efficiency on the agenda in the data center industry we need to involve the government, the operators and the consumers.

Instead of governments from various countries trying to regulate the energy efficiency and sustainability of data centers, they seem to compete with each other to provide the most lucrative conditions for operators to settle within their regions.

Rather than implementing programs that the operators have to comply to, standards are provided that are written as recommendations, or the programs are not tailored for data centers. Those programs that are used, only require voluntary participation. One would like to see governments implement stricter laws in terms of compliance to sustainability standards in the data center industry.

Business is business, if the numbers don't add up you can't remain in the market. While some operators perceive sustainability and energy efficiency as a cost, it should be perceived as a competitive edge.

Yes, initial investment might raise operational costs in the short-term, but in the long-run it will allow for larger profit margins and lower operational costs.

The four R's of sustainability: **reduce; reuse; recycle and recover** should be applied in all decisions and processes when it comes to data centers.

For example:

Reduce: Using a site with natural cooling, such as mines to reduce traditional cooling methods, without impacting too strongly on the ecosystem.

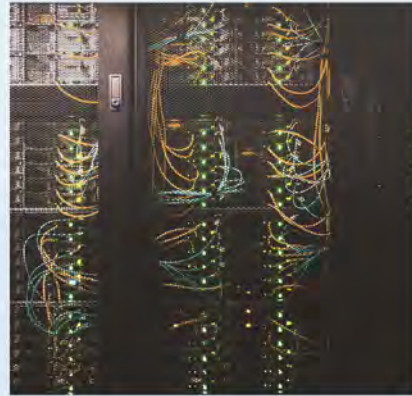
Reuse: Reuse the excessive hot air through heat pumps to distribute heat to rural areas.

Recycle: Recycle old server equipment.

Recover: Use rainwater for adiabatic cooling rather than drinking/tap water.

Unfortunately, a common practice in the industry among operators is to greenwash, whereby to lower their carbon footprint, operators just buy green energy, rather than improving the energy efficiency of the overall facility.

This often means that other important areas such as water usage get left out of the sustainability conversation.



Operators should seek to align the sustainability demand of the public with their economic interests, leaving behind a minimal operational footprint, but not only in terms of carbon dioxide.

The demand side, i.e. the businesses, could exert pressure to demand sustainability with energy efficiency and minimal water usage from the colocation data centers.

We can no longer afford to sit idly and hope the world changes for the better. Sustainability shouldn't just be used to 'green' a brand's image; rather it should be implemented as something mandatory, and urgent. And there are efforts from standard organizations (i.e., EN 50600 from Cenelec) as well as inspection companies (i.e., TSE, STANDARD from TÜVIT) to provide the appropriate instruments to achieve this.



CONTRIBUTED BY
Karim Marcel Odeh
Account Manager
Data center international at TÜVIT



Win More Customers – Enrol in Our SME Kickstarter Decarbonisation Programme



Supported by Enterprise Singapore

The Only Thing You Need to Lower Your Carbon Footprint

Specially designed for SMEs, strategically differentiate yourself by kickstarting your sustainability journey and reduce your carbon emissions.

SMEs contribute to the larger company's emissions as they outsource to SMEs for product manufacturing. Since larger companies have a head start to decarbonisation, it is imperative for SMEs to integrate sustainability to remain competitive in the local and global economy.

Sign up now at ~50% of the programme's cost with no redemption paperwork required.

Our 3-year program offers mentorship in line with Best-in-Class companies' 3-step approach — from strategy setting to execution delivering climate-ambitious results.



Through mentorship provided by Schneider Electric, the global leader in sustainable solutions, you can expect to develop decarbonisation strategies and adopt digital solutions to effectively track your energy consumption and emissions.

Hear from one of our customers:

“ Schneider Electric's solutions reduced our operational costs by 25% and maintenance time by 10%, allowing us to become more resilient, adaptable and capable of ensuring food security for Singapore. ”
– Chew's Agriculture Pte Ltd



Interested? Simply sign up here by scanning the QR code.

Learn more here: <https://www.se.com/sme-kickstarter-decarbonisation.jsp>

How ASM Plans to WIN Diversity & Inclusion



In the semiconductor industry, progress is driven by the power of ideas. And one proven way to unleash that power is for companies to embrace inclusion and diversity. At ASM, a strong focus on D&I is an essential part of its strategy.

In fact, the company has set an ambitious target: having ASM's workforce consist of 20% women by 2025.

WIN : A Key Resource

One key resource that is spearheading D&I efforts is the company's **Women's Initiatives Network (WIN)**. A dedicated group focused on community, mentorship and growth, WIN has three core guiding principles and brings together ASM business leaders and employee volunteers through activities implemented across the company worldwide:

- **Community:** Where all female employees feel supported and encouraged to lean on and learn from each other's personal and professional experiences.
- **Career:** Provide training and/or outreach programs with a focus on women's professional development and personal wellbeing.
- **Connections:** Coming together through social and charity events to build stronger bonds at work and within the tech industry & local neighborhoods.

Expert Guidance

ASM is taking positive action to further strengthen its female talent pipeline not only through hiring, but also with personal and professional growth and mentorship, offering all employees long-term, sustainable careers.

The company's Chair of the Supervisory Board, **Pauline van der Meer Mohr**, has taken on a leading role in this respect, sharing valuable insights such as:

- Creating robust plans in a culture that encourages developing female talents
- Actively supporting support women to seize opportunities of taking on bigger roles
- Enabling women to return to work post-maternity & not be passed by for key roles
- Partnering with schools to build a pipeline for female talents in the industry
- Making "me time" a priority, e.g., for work, play, or strategic thinking and reflection
- Leveraging the WIN community for support

At ASM, we believe enduring success of the company is only possible if it truly cares about its people and develops a diverse talent base. That's part of our core values "We Care".

And that's why ASM is working to become an employer of choice for both current and future employees – investing in its commitment to create a safe, inclusive workplace where everyone can be themselves and thrive.



Fireside chat with ASM Supervisory Board Chairperson, Pauline van der Meer Mohr to discuss female talent development



ASM WIN members gather in support of Breast Cancer Awareness month



SSMC A Great Place to Work



Empowering Employees to Reach Their Fullest Potential by Embracing EQUITY (#EmbraceEquity)

SSMC Making a Difference, Empowering Women

More than 28% of SSMC staff serving more than 10 years is one of the evident signs for being a great place to work. Endeavoring to be the "Employer of Choice", SSMC has always been actively creating a positive, fun, creative and productive workplace where employees are excited to come to work. By pivoting upon its strong believe in "Value People" (one of the company core values), SSMC embraces a diverse, inclusive and equitable culture, and forges towards an equal world.

SSMC Diversity & Inclusion (#D&I) Culture

While SSMC Staff come from 16 nationalities with a diverse ethnic backgrounds, country of origins and colorful demographics, we also have a healthy gender equality, having 41% female among our employee's population, above average in the semiconductor industry.

Everyone in SSMC receives fair treatment at work in terms of job opportunity, rewards and more. Our Business Ethic Policy ensures zero tolerance against discrimination, racism and bias at our workplace. Reward and recognitions, performance appraisal decisions are made based on merits and equal opportunities.



I am determined to actively reach out and listen to concerns relating to diversity & inclusion; and address any gap that blocks us from embracing equity in SSMC.

Quek Pua San,
SSMC Director



International Women's Day
#IWQ2023 #EmbraceEquity

Embracing EQUITY (#EmbraceEquity)

Moreover, we understand that not everyone started equal, SSMC provides open-minded environment and equitable opportunities to enable everyone to thrive. We make every effort to empower employees, in a flexible and personalized level, and address the needs of the aspiring individuals.

Some examples of employee empowerment initiatives & incentives include:

- **Equitable Development Opportunities:** Learning needs analysis (LNA) are done for all staff to enable target upskilling.
- **Flexi Benefits:** Flexi-hour & Flex-benefits are designed to cater the different needs, lifestyle and reward preference of our staff.
- **Indirect Compensation Equity.**

Celebrating #DEI & Harmony in Workplace

By fostering inclusiveness, respect and harmony among people of all different cultures, we are strengthening employee engagement in workplaces such as

- **Companywide Events** like International women's day, racial harmony day, ethnic festivals are celebrated in SSMC. This is to prioritize equitable representation within the company, advocating awareness and encouraging women to step-up.
- **Fostering Communications, Bridging the Gaps:** annual employee satisfaction survey, quarterly Employee newsletter and employee driven voluntary committees are some of the tools we implemented for open and timely 2-way communications.



Fostering a Workplace where all Voices are Heard, Welcomed, & Valued!

Founded more than thirty years ago, AMD Singapore contributes towards the development and launch of leadership high-performance & adaptive products that solve some of the world's toughest challenges. Today, billions of consumers, leading Fortune 500 businesses & cutting-edge scientific research facilities around the world rely on the AMD technology to which our team contributes.

AMD Singapore's significant growth and success over the years is attributed to our culture that thrives on innovation, excellence, and community engagement. With the dedication and hard work of over 1,000 employees, AMD Singapore has contributed significantly to the development of technology that can be used to push the boundaries of what is possible.

Our organizational values celebrate diversity and encourage people to be their authentic selves. Close collaboration across different levels encourages idea exchange and mutual respect that transcends job ranks and titles. This creates an environment where people feel secure, supported, and eager to carry on the good work. The diverse nature of our business naturally presents multi-faceted opportunities for everyone to find their niche and AMDers are empowered to steer their own careers.

In addition to empowering women internally, AMD Singapore also goes the extra mile to encourage the next generation of female students to consider a career in the semiconductor industry. Last year, we



participated in SWE Singapore International Women's Day event and hosted Institute of Higher Learnings (IHLs) female students on-site for a company tour. We hosted 60 eager students, who were given insights into what we do as a company with a lab line tour.



Pei Fern Ng

“ I came across this guiding quotation and I like it so much because it illustrates the concept so clearly.

“Equality is giving everyone the same pair of shoes. Equity is giving everyone a pair of shoes that fits.”

I believe awareness is the cornerstone to enhancing diversity and equity in the workplace.

At AMD, we know equity will not be achieved by treating everyone equally. Instead, we recognize each person has a different circumstance and to provide the necessary support to enhance their unique strengths. We also play to everyone's strength and that to me is teamwork at its best.

IWD 2023's theme is **#embraceequity** and a timely reminder to everyone - **think equity before equality.**



Zhi Xin Koh

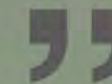
“ I've been incredibly lucky to have found a place where my personal growth and development is important to the people around me (specifically, my mentors and manager). Because of this, I have been granted the space to partake in external activities I value such as outreach events, standards development, amongst many others.

These are activities which positively contribute to the overall company.

Through these, I have had opportunities to develop the breadth of my knowledge and meet so many interesting and inspiring people I wouldn't otherwise have encountered.

We are all part of this workforce that makes our workplace a place worth working in.

**Together, we lead.
Together, we nurture.
Together, we advance.**

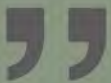


Alice Chua

“ At AMD, I am fortunate to meet AMDers from different educational fields, (Business, Finance, Electrical, Mechanical) different cultures, different generations, which allow me to be more open-minded and have a multi-perspective view.

Personally, I have had multiple opportunities to learn, from technical complexities, communication across the globe, to time management. I am truly grateful for the help and guidance my manager and mentors have given me. This challenges my thought process, encourages me to stand back up after a setback, and grow as an individual.

It is the journey that truly matters!



CONTRIBUTED BY





“ My female role model is **Indira Chandrasekharan...**

Sonal Chandrasekharan
Vice President Bluetooth Product Line,
Infineon Americas



“ My female role model is **Grace Hopper...**

Severine Fiegler
Vice President Talent Network,
Head of Diversity, Inclusion and Health



“ My female role model is **Marie Curie...**

Markus Fink
Executive Vice President & CHRO,
Infineon Technologies



“ My female role model is **Angela Merkel...**

CS Chua
President and Managing Director
Infineon Technologies Asia Pacific



“ My female role model is **Chiaki Mukai...**

Misako Tadanaga
Vice President Corporate Account,
Infineon Japan



Build and empower a diverse workforce

At Infineon, we strive to provide an equitable working environment through the desired processes and behaviors to fulfill the promise of equality. Through performance and merit, employees have access to the same opportunities and resources. The result is, the best Infineon for everyone and a better future for all.

A Chat with YY Bong

Director of Engineering at Skyworks Solutions

In an exclusive interaction with SSIA, YY Bong, Director of Engineering at Skyworks Solutions, shares about her career journey in the semiconductor industry, and how the industry can continue to empower and embrace equity in the coming years. YY Bong specializes in design filter solutions in the Singapore office.

Share with us a bit more of yourself and how you started in this industry.

Over the course of my career, I have worked my way up the leadership ranks and gained greater experience in process and equipment engineering, manufacturing, technology development and new product introduction.

I was excited when Skyworks presented a career opportunity last year. I am now leading a team of 120 staff members in an exciting innovative analog semiconductors world, spanning several new and previously unimagined applications within the aerospace, automotive, broadband, cellular infrastructure, connected home, entertainment and gaming, industrial, medical, military, smartphone, tablet and wearable markets.

The semiconductor industry has always been very male-dominated. Do you see this as a challenge for females who are in the environment?

Having spent 25 years in a male-dominated industry, I have seen tremendous change over the years in terms of equity.



I always encourage my team, especially the female engineers, technicians and operators to be creative and innovative. I try to motivate them to be passionate and committed in their day-to-day deliverables. Women in the field should be bold, courageous and feel confident that they have the skills, intelligence and perseverance to succeed.

What was your first impression when you joined the industry?

In the early start of my career, I was always curious about the engineering world, as it entails a lot of hard, laborious work. Engineering is a competitive and challenging sector and being a woman can amplify many of the challenges. I always believe it is important to push yourself out of your comfort zone and adopt a "can-do" attitude.

What does D&I mean to you personally?

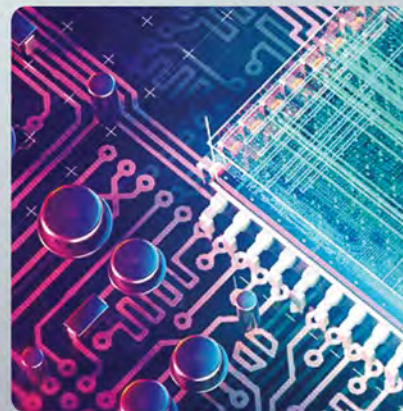
I believe in practising inclusive leadership and I aim to build a psychologically safe work environment by communicating and invite employees to share and exchange ideas without judgment.

True D&I goes beyond the usual metrics of nationality, ethics, gender and age. We need to include people who think differently, have different perspectives and reach out to underserved populations like those with physical disabilities.

What are some of the ways that your company has been on advocating D&I in the past years, any challenges encountered?

We have placed more emphasis on promoting female engineers and have tried to introduce more females to leadership positions.

One of the key challenges for many employers is an ageing workforce. While the focus for many organizations has long been based around attracting, developing and retaining young and mid-career talent, businesses are now understanding and appreciating the wisdom of experienced older workers. They are learning to manage truly multi-generational workforces that create new dimensions in diverse thinking.



We have been seeing an uptick of young females taking on STEM in schools but the numbers are not really showing when it comes to joining the semiconductor industry upon graduation. What do you think some of these roadblocks are?

Some people associate science and math fields with men and humanities and arts fields with women. As engineering is a traditionally male-dominated field, women may feel less confident about their abilities even when performing equally. Discouragement, lack of role models, negative peer pressure, fewer advancement opportunities for women who have family responsibilities emerge as major roadblocks for women in STEM.



This year's International Women's Day theme is on #EmbracingEquity. Can you share a quick anecdote on what this catch phrase means to you personally.

Embracing Equity is ensuring everyone has access to the most basic skills training at their workplaces to develop their careers. Embracing Equity is moving proactively, with empathy and solidarity in mind. Embracing Equity is treating others the way they want to be treated.



What would you like to see for the semiconductor industry in this trajectory of empowerment in the next few years?

As member of the Singapore leadership team, it is critical to set women up for success in technical roles. I will continue diversifying my team with female and early career staff members.

As a female engineering leader, I plan to empower more women to enter this field and I encourage all business/ operations leaders to do the same.

To empower women in technical roles, organizations may find value in implementing a mentoring program. Having a mentor can improve career opportunities and provide support for navigating career paths.

Companies could also consider building a community specifically for the female engineers to cultivate a safe place to talk, share and connect with each other. Our hope in uniting these women is that they can rely on and lift one another.

Attracting, retaining and promoting women into engineering roles is not only essential to increase diversity but also vital for the future sustainability of the industry.



CONTRIBUTED BY





You are a veteran in the industry. What started you in the semiconductor industry?

I ventured into Semiconductor in 1992 after leaving Rodime Singapore Pte Ltd, a disk drive MNC. I wanted a more stable industry with a wider market serving a wide variety of end products.

How has the semiconductor climate changed since you joined till now?

I was lucky to be able to join a very stable company Linear Technology Pte Ltd. Although the industry has seen its ups and downs. Linear survived through several down turns and the company's agility and a strong product lines, the company steadily grew from a 78 employees to a 1000 headcount.

You have recently switched roles from a company's standpoint to one where you play a more active role in SSIA. What prompted you to join SSIA?

After Linear, I wanted to continue to help the semiconductor industry to stay and continue to grow in Singapore. I felt strongly that Singapore does have the right skill sets, talent and a strong infrastructure in Singapore.

I wanted to be in a position to be the voice for the industry and help workers in this industry stay relevant.

Hence, besides attracting talent, upskilling and retraining the current pool of talent is also important.

I hope I am able to bring my wealth of experience to contribute in this arena.

The SSLA and Leaders in Engineering courses are some examples of helping to upskill the workforce.

How has it been for you and what is your vision for your new role?

It has not been an easy journey though I have so much experience in this area. The climate is always changing. Hence, adaptability is key.

With my new role in SSIA, I hope to be able to grow the current talent pool and



For More Equality and Diversity of Talent Through SSIA

A Chat With Velinda Wee, Human Capital Development Director, SSIA

Tell us a bit more about yourself.

I came from a small state of Kelantan to Singapore in 1978 to pursue my education. I hold a Bachelor degree in Business majoring in HR from the University of Tasmania.

In my 40 years of HR experience, I have worked in large MNC manufacturing consumer products (radio and TV sets), disk drives and semiconductor chips. I started my first career as a HR Clerk in 1984 at General Electric Consumer Pte Ltd. After GE, I had worked in companies

such as Nelco Products (Copper Laminates), Rodime Singapore Pte Ltd (Diskdrive) and Kaifa Technology (Diskdrive – Media).

In 1992, I joined Linear Technology Pte Ltd – Semiconductor industry. My career grew steadily for 30 years at Linear. In Year 2017, Linear was bought over by Analog Devices Inc and it announced its closure of the Singapore Factory in 2022 much to my dismay but due to this, it gave me opportunities that I never thought possible.

cultivate new blood into the industry. My first project was the Electronics Industry Day and together with the Secretariat team, we ensured the success of it in January this year.

We attracted more than 1500 participants this year and 80% were students. This could not have been achieved without the vision and drive with the whole team.

In the same token, I hope to see more females playing an active voice in the growth and retention of talent.

The industry has always been male dominated but females can equally excel in it, I am an example case in point where so long as there is passion, you can do well wherever you are.

With my new role here in SSIA, I would like to work towards this vision.

Female leaders in the semiconductor industry was rare but there has been an uptick recently. What are your thoughts on this?

When I first started at Linear as their HR manager, I was the only lady among 10 male managers.

Life was tough as I constantly needed to challenge their decisions and steer them towards the right directions. But as a lady manager, we can be soft, strong and tough at the same time and I have used this approach to grow the relationships with the managers.

In the recent years, I have seen more lady managers been given opportunities to climb the career ladders.

With a good blend of lady managers in the management team, we are able to provide a more diverse organisations with

more innovation and creativity. With a diverse organisation, we make better decisions and are more adaptable.

With the Embrace Equity as the pledge for this year, what does this mean to you?

It will ensure a fair treatment, access and equality of opportunities for all levels of staff in the organisation.

This will make the work environment more inclusive and a better place for everyone.

CONTRIBUTED BY

Velinda Wee
Human Capital Development Director
SSIA

Hear from the SAY Ambassadors on Diversity & Inclusion



A Chat with Chantel Ku

Tell us a bit more about yourself and your course of study and where you are interning at now.

I am Chantel, a third year student in NTU completing my degree in EEE with a doublemajor in Business. I am interested in semiconductors and am specialising in Microelectronics because semiconductors are featured in every facet of the technology that we use on a daily basis. Currently, I am interning at Advanced Microdevices (AMD) under the SGIS scholarship.

When you hear about D&I, what is your personal take on this especially when you are in a male-dominated environment.

Personally, I feel that D&I has seen significant progress in the semiconductor industry. It is definitely encouraging to see many initiatives such as Women in Tech and Women Leaders Forums progressively being rolled out across many companies within our industry. However, there is always room to grow.

Is there a woman leader whom has inspired you in the industry?

The woman leader that has inspired me in this industry would be the CEO of AMD, Dr Lisa Su. Since she took over

the reigns of the company, she transformed AMD into one of the most competitive semiconductor companies in the industry. She is also the first woman to receive the IEEE Robert N. Noyce Medal and is listed on the Forbes 100 Most Powerful Women list.

And what is it that you have learnt from her?

Lisa Su drove AMD to diversify from their initial PC consumer base into various other sectors to ensure the company's longevity. She has also made numerous bold moves during her time, such as the recent acquisition of Xilinx. From her, I have learned to step out of my comfort zone, to be a person of action and to keep the bigger picture in mind.

If you were a woman leader some time down the road, how would you change the industry to embrace the D&I culture?

I would engage in more community level initiatives to increase the level of diversity and inclusion in the semiconductor industry. For example, I would engage in talks in schools and other places of learning to encourage people from various backgrounds to join the industry.

Most importantly, I would also ensure to drive the point that D&I is everyone's responsibility. This means that there should be both men and women involved in women's events as having an inclusive workspace for women should not just be the responsibility of women themselves.

CONTRIBUTED BY

Chantel Ku
NTU, School of Electrical and Electronics Engineering
Doublemajor in Business (Year 3)
SAY Ambassador



A Chat with Juliet Tang

Tell us a bit more about yourself and your course of study and where you are interning at now.

Hello! I am Juliet Tang, a Year 2 student from Singapore Polytechnic's Electrical and Electronic Engineering course. I am planning to join my school's in-house internship where I will be working on projects aligned with my goals.

When you hear about D&I, what is your personal take on this especially when you are in a male-dominated environment.

I do see significant difference in treatment between male and female students from time to time. However, with that being said, I believe that creating an inclusive environment is something that everyone of us can contribute to make it realistic. Although there have been efforts to be more inclusive, I do believe that this matter is the one we definitely can work together and improve on.

Is there a woman leader whom has inspired you in the industry?

A woman leader that inspires me is Debra Bell, vice president of DRAM Engineering. Ms Bell is named on 58 U.S. patents, most on DRAM circuit design and product engineering. It has always been a dream of mine to be able to create technology that could help others and looking at all the female leaders in the industry with their creations really motivate me.

And what is it that you have learnt from her?

One thing about Ms Debra Bell that stands out to me a lot is her view and perspective as a woman in the industry. To quote her, she once said "I feel confident that, in a lot of ways, my unique perspective as a woman in a high-tech industry helps my innovation, since that very uniqueness leads to viewing situations and solutions differently." There were times where I felt that the solutions my male friends had were on the same wavelength as what was expected of us by our lecturers. However, recalling what Ms Bell has said, I always regain the confidence that there might be ideas I could come up with as

well that albeit different, solves the issues as efficiently.

If you were a woman leader some time down the road, how would you change the industry to embrace the D&I culture?

A step I would consider is to rotate the leaders for projects so that both genders have been given equal chances to lead. This would further allow others to transit slowly and adapt to having female leaders in male-dominated environments, as well as create opportunities for women to lead in the industry.



CONTRIBUTED BY

Juliet Tang
Singapore Polytechnic,
Electrical and Electronic
Engineering (Year 2)
SAY Ambassador



Passionate about the electronics sector? We want you!
Semiconductor Active Youth (SAY) Ambassador Programme

The Semiconductor Active Youth (SAY) Ambassador Programme is a one-year programme meant to create a robust pipeline of young talent for the semiconductor industry, working in close partnership with both Institutes of Higher Learning (Polytechnics and Universities) and leading companies in the industry. Ambassadors gain valuable insights and hands-on experience in the semiconductor industry, and training and mentorship opportunities with industry leaders from the companies across the value chain.

Companies will pair the mentors with the ambassadors and to also provide with relevant industry content. To pilot this programme, six queen bee companies will be participating in the first year, with more to come.

If you are interested in participating, please contact yvonne@ssia.org.sg and xingyun@ssia.org.sg with your CV. Kindly note that applicants will be screened and we will notify successful candidates upon acceptance.



We have launched a programme just for you!
Be the voice and future of the industry.

Find out more!



The Semiconductor Value Chain



Fabless IC Design House

Companies that design & develop products, and subcontract the manufacturing process to foundries.

Integrated Device Manufacturer (IDM)

Companies that design, manufacture, and market their integrated circuit products.

Foundry/Wafer Fabrication Plant (FAB)

Companies that own the fab to manufacture semiconductors. Fabs are cleanrooms with various modules equipment to process integrated circuit devices.

Outsourced Semiconductor Assembly (OSAT) & Test Service

Companies that provide packaging service to silicon devices made by foundries into components and test them prior to shipping to the market.

Equipment Manufacturer

Companies that supply equipment for semiconductor manufacturing.

Materials & Chemical Supplier

Companies that provide the base materials and other raw materials required for semiconductors manufacturing.

Electronics Manufacturing Services (EMS) / Original Design Manufacturer (ODM)

Companies that provide manufacturing services or products that are used by manufacturing companies.

Other Services

Companies that provide a wide range of services in the value chain, from equipment maintenance, IT solutions, analysis, consultancy to the sale of refurbished products.

Research & Academia

Companies that focus on research and development of innovative technologies.

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How Managers Can Be The Most Powerful Ally for DEI

This year's International Women's Day (IWD) campaign wants everyone to #EmbraceEquity and think beyond traditional attitudes.

An integral part of Diversity, Equity & Inclusion (DEI) and an important topic at Applied Materials South East Asia is equity, something that needs to be coded into every organization's culture and backed with intention and action.

It requires those in charge to think broader than their current project or department, to consciously provide opportunities for those who turn to them for leadership, and map a future where everyone can bring their best self to work.

This role to affect change falls upon every manager, who must juggle multiple competing priorities and demands. Managers are the key agents of organizational change, as their day to day interactions with their team members impact employees' experiences and their perception of inclusiveness in an organisation.

Their roles are as tough as they sound, yet the impact managers have on the people they lead is immeasurable.

Employees from Applied share what equity looks like to them.



Hosea Lai
Senior Director,
Diversity, Equity & Inclusion

Mindsets need to change.

"Traditionally, there were a lot of unwritten codes to career advancements at the workplace. There is an urgent need to create equity across the organization, remove systemic biases & barriers, and implement processes that do not hamper the growth of different groups," said Hosea.

Hosea's career has always revolved around helping people - under-represented communities such as under-served youth, persons with disabilities, and mothers returning to the workforce. Much of his work focuses on being a voice for those who are not heard. As Applied's Senior Director of DEI, part of his job is to influence managers into becoming powerful allies.

To do that, there needs to be a change in how managers think and set the tone. And shifting the manager's mindset to think broader and bigger is part of Applied's multi-pronged and long-term investment in becoming a DEI industry leader.

"That's why we conduct sessions to increase DEI competences among our managers, on topics such as unconscious bias, multigenerational engagements, and how to hire in a more diverse way.

We also have Employee Resource Groups (ERGs) like the Women's Professional Development Networks (WPDN), and a newly launched Young Professional Network (YPN), which are other avenues to create conversations and exercise DEI in the organization.

To illustrate, he pointed out that

"like a muscle, practising DEI is something that needs regular workout before you can flex it. When you exercise daily, on a day-to-day basis, you might not see changes. But in the long run, the whole system becomes a lot healthier."

To Hosea, #EmbraceEquity means a holistic acceptance of others - the whole person and whatever comes with them.

"How do you bring the entire organization together? By respecting individual differences, acknowledging individual and generational assets and strengths, thereby empowering every individual to thrive at work. That's what we really need to focus on at Applied."

Being a manager isn't just about making sure team members stay on track, but also exposing them to opportunities that complement their strengths and interests.

Clinton strongly believes in taking the time to understand his team members well.

"The role of a manager is to identify opportunities that either matches up with a person's interest or builds their capabilities. The manager needs to encourage their team to develop by setting stretch goals for them to demonstrate their capability and supporting them if they run into difficulties," he explained.

"What I am looking for as a manager is the hunger to learn and be interested," said Clinton, in reflection of his team of diverse individuals across genders, backgrounds and qualifications.

"To #EmbraceEquity, managers must ensure that everyone is given the chance to prove themselves on whatever platform that aligns with their skills, capabilities and interest."

"It's about giving the opportunity without any bias."

Clinton remembers that early in his career in Applied, he worked closely with the Vice President of his business unit, a woman that was dedicated to both her work and family commitments. It shaped his perception that gender does not affect the ability to be a good leader.

"Anyone can lead an organization as long as they have good leadership qualities," Clinton said.

His team member, Erica, attests to this. She outlined how she not encountered any significant barriers to growth or opportunity in making a career switch from life sciences to the semiconductor industry. The presence of female leaders in her business unit shows her that women are able to reach top leadership positions in Applied.

"Thinking skills, presentation, organizing and pitching of ideas, and trying to get that buy-in from stakeholders," she said. "Getting everybody to agree to a single consensus is quite difficult."

But with #EmbraceEquity as part of the work culture at Applied, it meant that she gets access to opportunities to learn, develop her career, and a fair seat at the table.



Clinton Goh, Director, Global Product Management (Right)
Erica Teo, Global Product Management (Left)

For more information, please visit www.appliedmaterials.com



Happy International Women's Day!

#EmbraceEquity

