SSIA
Singapore Semiconductor Industry Association

SINGAPORE SEMICONDUCTOR VOICE

Volume 33 • T05SS0291A

Special Edition: SSIA Flagship Event - Semiconductor Business Connect 2024

Semiconductor Business Connect 2024: 23 July - Unite. Innovate. Transform.

Empowering SMEs through Collaboration in Automation, AI, Sustainability, Cybersecurity, and Additive Manufacturing.

SSIA Summit & Semiconductor Dinner 2024: 18 September - Connect. Innovate. Lead.

Join the region's largest premier semiconductor event on 18 September at Resorts World Singapore to explore groundbreaking advancements in AI and Quantum Technologies.

Ignite the Future: Join the Mentoring SG Movement!

Empowering youth through dynamic mentorship, supported by Forward SG and the National Youth Council (NYC). Together, we're building a resilient and confident future generation across Singapore.

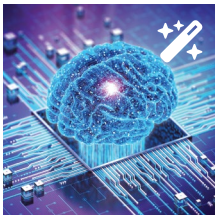
Joining the Singapore Semiconductor Industry Association (SSIA) opens a world of business opportunities

SSIA IS YOUR GATEWAY

Blending unparalleled network access and strategic growth opportunities into a single membership

Network Expansion:

Dive into a vast industry network through exclusive business networking and supplier development sessions, designed to forge valuable connections and partnerships.

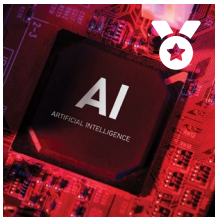


Branding and Marketing Leverage:

Broaden your outreach and enhance your visibility through diverse marketing opportunities - such as in our top industry VOICE publication - and a complimentary listing on the SSIA website.

Insight and Influence:

Gain access to the latest developments and government policies affecting the sector, while also having a platform to voice your feedback directly to key industry and government leaders.



Exclusive Training Opportunities:

Enjoy priority enrolment in specialized semiconductor-focused training and courses, keeping your team at the forefront of industry advancements.

Advocacy and Growth:

Benefit from SSIA's proactive advocacy efforts, ensuring your business's interests are represented, while also contributing to the vibrancy and growth of Singapore's semiconductor ecosystem.

Why be an SSIA member?

For both SMEs and MNCs in the semiconductor sector, SSIA membership offers a dynamic platform for growth, influence, and strategic connections, accelerating your business's success in Singapore and beyond by fostering key industry partnerships, providing insights into policy and development, and enhancing visibility within the global semiconductor ecosystem.

SSIA WELCOMES NEW MEMBERS

INTELMATE 镁漫科技

METech RECYCLING

muRata INNOVATOR IN ELECTRONICS

SICK Sensor Intelligence.

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FOREWORD

BY THE EXECUTIVE DIRECTOR

Welcome to the pivotal gathering of Semiconductor Business Connect 2024. As we embark on today's event, I am delighted to present this special edition of our magazine, dedicated to the powerful theme of unity—a principle that not only shapes today's discussions but also guides our actions throughout the year at the Singapore Semiconductor Industry Association (SSIA).

Our chosen theme, "Empowering SMEs through Collaboration and Innovation," serves as a resolute call to action. It mirrors our enduring mission to foster a continuous thread of unity and collaboration across the industry. Today, we highlight that this collaboration is not merely a convergence of paths but a robust highway to transformative growth and innovation. Here, multinational corporations (MNCs) and small and medium-sized enterprises (SMEs) unite, leveraging our platform to share resources, knowledge, and networks, thereby propelling each other's growth and the sector's overall advancement.

Today's event is a vibrant testament to the strength of our community. From dynamic keynotes that illuminate industry megatrends to breakout sessions exploring deep technological innovations, every segment is meticulously designed to cultivate enduring partnerships. We firmly believe in the power of connection and the efficacy of collective action. That's why we have integrated substantial networking opportunities throughout today's schedule, aimed at fostering not just momentary interactions but the start of ongoing collaborations that will resonate throughout the industry.

As you engage with today's comprehensive agenda, remember that each conversation and every exchange

carry the potential to ignite new partnerships or ideas that could significantly shape the future of semiconductors in Singapore. SSIA is your gateway to this thriving ecosystem. Our commitment to promoting and enhancing the local ecosystem is unwavering. Through initiatives like Semiconductor Awareness Days and educational outreach, we strive to build a robust pipeline of talent and innovation within Singapore. These efforts ensure that our local industry remains competitive on the global stage while fostering a community that supports and uplifts one another.

We are setting the stage not just for today, but for a sustained journey of innovation and growth, offering you unparalleled network access and strategic growth opportunities essential for navigating the complex semiconductor landscape. Your active participation is vital—challenge, question, connect, and explore. Let us stand united under the SSIA banner, propelling forward to solidify Singapore's role as a cornerstone of semiconductor excellence.

This event is merely one of many touchpoints in our shared journey toward establishing Singapore as a beacon of technology and innovation on the global stage. If you missed the opportunity to sponsor or participate fully in Business Connect, or if you wish to continue uniting in our industry and supporting SSIA, don't fret. We are thrilled to announce the SSIA Summit and Semiconductor Dinner 2024 scheduled for 18 September 2024 at Resorts World Sentosa (RWS). This event promises to be a cornerstone in fostering the pioneering spirit that characterizes our sector. Gathering for this event is crucial for cultivating a more vibrant semiconductor industry in Singapore and the broader region. It's more than just an event; it's an opportunity to forge and strengthen connections, share insights, and collaborate on future innovations that will drive our industry forward.

Reflecting on the tremendous success of last year's 55th-anniversary dinner, which hosted over 1,300 guests—our largest industry dinner to date—we are motivated by the enthusiasm and support it garnered. The positive feedback has inspired us to organize an event of a similar scale this year, and we are fully prepared to scale up as we already see the demand for it increasing.

As the LARGEST platform in the region, the SSIA Summit and Semiconductor Dinner 2024 offer unparalleled opportunities for visibility, networking, and influence. Sponsorships are filling up fast, and we invite you to be part of this extraordinary event. Please contact the SSIA team to secure your spot and join us in shaping the future of the semiconductor industry.

Underscoring all our flagship events - both the Semiconductor Business Connect and Summit & Dinner included - is our dedication to sustainability. This dedication is evident through our focus on four critical pillars: carbon reduction, waste management, water conservation, and energy efficiency. These pillars guide our actions as we strive to minimize our environmental impact and promote sustainable practices throughout the industry. By addressing these areas, we ensure that our growth is not only driven by innovation but also by a commitment to preserving our planet for future generations.

Additionally, we are proud to announce that Semiconductor Awareness Days will take place from August to November 2024 across eight IHL locations. These events are designed to inspire and educate the next generation of professionals, highlighting the vast opportunities within the semiconductor sector. For more information, please check out our new and improved website.

Thank you for joining us. Together, let's make today a defining moment in our ongoing pursuit of excellence, unity, and innovation.

Sincerely,

Ang Wee Seng
Executive Director
Singapore Semiconductor Industry Association

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SSIA Insights

SME Features #UnitedWeStand

DEI Spotlight

SEMICONDUCTOR BUSINESS CONNECT:

EMPOWERING SMES THROUGH COLLABORATION AND INNOVATION

Singapore Leads the Charge

In the ever-evolving landscape of technology, the semiconductor industry is the beating heart of innovation, powering everything from smartphones to advanced AI systems. At the forefront of this dynamic sector stands Singapore, a vibrant hub of technological advancement and home to the upcoming Semiconductor Business Connect 2024. This event, themed "Empowering SMEs through Collaboration and Innovation," promises to be a groundbreaking convergence of minds and ideas, setting the stage for the future of the semiconductor industry in ways never seen before.

Uniting Giants and Innovators

Semiconductor Business Connect 2024 is more than just a conference; it's a movement aimed at galvanizing the entire semiconductor ecosystem. The mission is clear: to foster a robust local semiconductor landscape by encouraging multinational corporations (MNCs) and small and medium-sized enterprises (SMEs) to collaborate and innovate together. This fusion of resources, knowledge, and networks is essential for driving the sector forward.

Key Focus Areas: Automation, AI, and Beyond

The event will shine a spotlight on critical areas that are reshaping the semiconductor industry:

- **Automation and AI:** These technologies are not just enhancing efficiency but revolutionizing the manufacturing processes, leading to smarter, more resilient production lines.
- **Sustainability:** As the world pivots towards greener practices, the semiconductor industry must adopt sustainable methods to reduce its environmental footprint.
- **Cybersecurity:** Protecting intellectual property and securing the supply chain are paramount in an industry where innovation is key.
- **Additive Manufacturing:** This technology promises to transform parts production, offering on-demand solutions that are both cost-effective and environmentally friendly.
- **Internationalization:** Expanding into global markets is crucial for SMEs to scale and remain competitive.

A Day of Insights and Networking

The event begins with a powerful opening, setting the stage for a day rich in insights and knowledge sharing. Attendees will immerse themselves in breakout sessions that delve into the latest trends in Automation, AI, Sustainability, Cybersecurity, and Additive Manufacturing. These sessions are designed to be interactive, with panel discussions and Q&A segments encouraging active participation and collaboration. It's a day dedicated to fostering a dynamic exchange of ideas and creating connections that will drive the semiconductor industry forward.

Showcasing Innovations and Capabilities

A dedicated exhibition space will allow SMEs to display their cutting-edge products and services, while MNCs can showcase collaborative projects that highlight the power of partnership. This platform not only elevates the visibility of SMEs but also emphasizes their vital role in driving industry innovation.

The Path to Global Competitiveness

Singapore's semiconductor industry is at a pivotal juncture. By fostering a culture of collaboration and innovation, Semiconductor Business Connect 2024 aims to propel the local ecosystem onto the global stage. This initiative underscores the importance of SMEs in the semiconductor sector, positioning them as key players in achieving global competitiveness and resilience.

Network, Innovate, and Collaborate

For MNCs, the event represents an opportunity to lead and support the growth of the industry by investing in the future. For SMEs, it's a chance to showcase their innovations and forge valuable partnerships. Together, through sponsorship and active participation, both MNCs and SMEs can contribute to a resilient and forward-thinking semiconductor industry.

Semiconductor Business Connect 2024 is set to be a landmark event, redefining the future of the semiconductor industry through collaboration and innovation. As Singapore continues to lead the charge, this event will serve as a beacon of progress, bringing together the brightest minds and pioneering solutions to shape a sustainable, secure, and prosperous future for the global semiconductor landscape.

Engage in meaningful conversations, ask questions, and share your ideas. The best innovations often start with a simple question. Let's make the most of this opportunity to network, talk, and foster the innovation that will shape the future of our industry. Don't miss the chance to connect with industry leaders and peers—together, we can create groundbreaking advancements.

Make Every Interaction Count

You're here, and the future is in your hands. Dive into discussions, forge new partnerships, and ignite the spark of innovation. Your ideas and interactions today will pave the way for tomorrow's technological breakthroughs. Let's build the future together—one conversation at a time.

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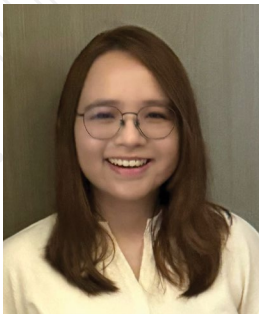
MEET GLENDA LEE:

A NEW FACE AT SSIA



In this interview, we speak with Glenda Lee, a Business Development Executive who joined SSIA in May. Glenda shares her background in Human Resources, her impactful experiences at SSIA, and her passions both inside and outside of work. She also offers valuable insights into her professional aspirations and advice for new employees.

From Psychology to Business Development

I graduated from Singapore Management University with a bachelor's degree in Psychology. Before venturing into Business Development, I explored various roles within Human Resources, including recruitment, HR administration, early careers, and benefits. My journey spanned diverse industries such as tech giants like TikTok and Amazon Web Services, tobacco with Philip Morris International, and luxury retail with TOD'S.

A Month at SSIA

Since joining SSIA, I just crossed my first month, and it feels like time has flown by! It has been incredibly eye-opening to witness SSIA's extensive involvement in the semiconductor space and the tremendous support from our partners. During this short period, SSIA hosted our annual Singapore Semiconductor Leadership Accelerator (SSLA) and HR Roundtable, gathering industry leaders to share their insights and considerations for the future. I also had the privilege of participating in Marvell's Driving Semiconductor Innovation for AI and Infineon's The Tech Spark as an exhibitor and showed support to our members, Shengjian Environment and Pall Company, who recently expanded their operations in Singapore. These events equipped me with invaluable knowledge, context, and connections to navigate the semiconductor space as a newcomer.

Driving Change in Singapore's Semiconductor Ecosystem

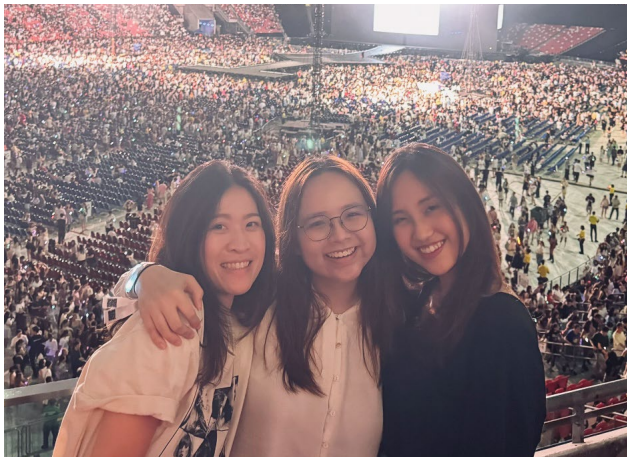
SSIA plays a pivotal role in advocating for, supporting, and shaping Singapore's semiconductor ecosystem. It's always heartening to witness our efforts having a ripple effect on the entire industry.

Passionate About Stakeholder Engagement

As a Business Development Executive, stakeholder engagement is undeniably the most engaging aspect of my role. We always ask our members, partners, and potentials a simple question: "How can SSIA value-add to your organization?" It's crucial to work closely with our stakeholders to understand their motivations, challenges, and goals; more importantly, figuring out where, when, and how SSIA can step in to meet their needs.

Navigating Challenges and Embracing Learning Curves

Leveraging existing opportunities and identifying new ones for networking, business matching, and business expansion is always a challenge, especially with over 240 corporate members with drastically different priorities. Furthermore, balancing the enhancement of our membership growth while ensuring our existing members are effectively engaged adds another layer of complexity that we actively monitor and manage. The challenges mentioned make this role unique, and I'm thrilled to be part of shaping the semiconductor industry through cultivating and strengthening new and existing relationships alike.



Taking on a different role and diving headfirst into the semiconductor space has been a steep learning curve. It's especially perplexing when you don't know what you don't know, but that's also where the fun comes. You don't just try to put pieces of the puzzle together; instead, you get to create your own pieces and form your own puzzle. I enjoy the process of learning, dissecting complex concepts, and formulating ways to make information easier to understand. It'll take time to grasp a full understanding of the semiconductor landscape and its related technicalities, but I look forward to navigating these complexities one step at a time.

Creative Pursuits and Personal Interests

My interests have shaped me into the person I am today. I have always enjoyed the arts and have been actively involved in the space since I was young. Art, English, and Chinese Speech and Drama clubs were my go-to co-curricular activities, and I was most recently part of my university's Broadcast & Entertainment wing. Through the arts, I've learned to embrace spontaneity, ambiguity, and, more importantly, being comfortable with the uncomfortable. Through my creative pursuits, I strive to approach challenges with fresh perspectives and find new, innovative ways to solve problems.

On a day-to-day basis, as stereotypically Gen Z as it may sound, I enjoy collecting POPMART figurines and Sonny Angels for their emotional support properties. These items put a smile on my face when the days feel long. During my free time, I enjoy mindless TikTok scrolling, running (Korean drama) marathons, listening to Taylor Swift, and reciting musicals word-for-word. I used to draw caricatures of strangers online through my now-defunct Instagram account, @glendattempts, which I found therapeutic and hilarious. While these activities may appear counter-productive, they have instead kept me energized, focused, and stimulated, which I hope has also influenced my professional performance.

A Vision for the Future

I believe relationship building forms the basis of Business Development, so fundamentally, I hope to be a dependable and trusted partner to my colleagues at SSIA and the various stakeholders I work with. With my core responsibilities in spearheading membership growth, fostering strategic alliances, and driving new business opportunities, I aim to contribute to the industry's growth and success through SSIA. I aspire to eventually develop a holistic and comprehensive understanding of the semiconductor landscape and actively embrace any opportunity presented to get me there. With SSIA striving to continuously expand and grow our local ecosystem, I am also enthralled to see how we can help bring our local companies beyond Singaporean shores and enhance our engagements with foreign partners.

Words of Wisdom

Rather than advice, I hope to share four mottos that have been really useful in helping me navigate the complexities of life: 1) question everything, 2) ask and you shall receive, 3) treat others the way you want to be treated, and 4) it never gets easier, you just get better. These phrases occasionally pop up in my mind whenever I feel stuck or overwhelmed, and they have been particularly useful in helping me gain clarity, perspective, and composure.

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SSIA SUMMIT & SEMICONDUCTOR DINNER 2024

THE REGION'S LARGEST LEADING SEMICONDUCTOR PLATFORM

EVENT OVERVIEW

SYNERGIZING SILICON:

PIONEERING THE FUTURE WITH AI AND QUANTUM TECHNOLOGIES

SEPT 18

9am – 9pm | Resorts World Singapore, Resorts World Ballroom

About

The Semiconductor Summit 2024 is a landmark event dedicated to driving innovation within the semiconductor industry. This flagship Summit and Dinner are designed to inspire a pioneering spirit among industry professionals in Singapore and the broader region. Join us for an unparalleled opportunity to network, share insights, and collaborate on future innovations. Don't miss your chance to be part of shaping the future of our industry.

Key Focuses

This year's Summit is themed "Synergizing Silicon: Pioneering the Future with AI and Quantum Technologies", highlighting our commitment to spearheading advancements through A.I. and quantum technologies, showcasing the semiconductor as a critical enabler in these cutting-edge fields. This focus not only reflects the current state of our industry but also sets the trajectory for future technological integrations.

Why Attend?

This event isn't just another conference or dinner; it's a convergence of the brightest minds and most influential leaders in the semiconductor sector. By joining us, you'll forge vital connections, gain cutting-edge insights, and collaborate on innovations that will shape our industry's future. Seize this chance to be part of something transformative, contributing to the vibrant and dynamic future of the semiconductor industry in Singapore and beyond. Don't miss out.

As the LARGEST platform in the region, the SSIA Summit and Semiconductor Dinner 2024 offer unparalleled opportunities for visibility, networking, and influence. Sponsorships are filling up fast, and we invite you to be part of this extraordinary event. Please contact the SSIA team to secure your spot and join us in shaping the future of the semiconductor industry.

Don't miss out - be a catalyst for change

For sponsorship opportunities, contact **amy@ssia.org.sg**.
For speaking opportunities (we do not sell these; pitch them!), also contact **amy@ssia.org.sg**.

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About Semiconductor and Electronics

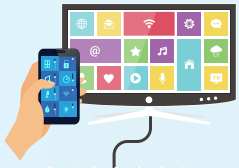
This is the huge impact of electronics on our lives. Miniature electronic brains – also called semiconductor chips – are embedded in almost all modern tech gadgets.

These chips help us live, work, play, and learn better.

Imagine life without the Internet, smart-phones, or computers...

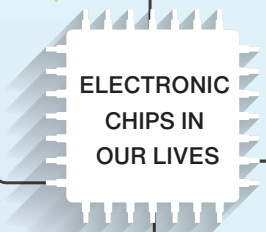
In your home

Smart home devices, appliances, and entertainment systems



In your pocket

Smartphones and tablets



DID YOU KNOW?

An electronic chip (also known as an integrated circuit or IC) can contain as few as hundreds or as many as billions of transistors.

In the workplace

Computers, servers, and office equipment

On the street

Cars, public transportation, and traffic management systems

What is an Integrated Circuit (IC)?

An IC chip is a microchip where hundreds, thousands, or millions of active and passive electrical components such as transistors, resistors, and capacitors are built on a semiconductor substrate such as silicon to perform a particular function (e.g., logic gates, microprocessor, microcontroller, memory, etc.).

There are different semiconductor technologies such as Bipolar, Complementary Metal Oxide Semiconductor (CMOS), and Bipolar CMOS (BiCMOS).

Where are they used?

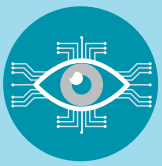
Innovation in semiconductor technology, with smaller, faster, and more reliable chips, enables transformative technologies and applications such as 5G, smart wearables, medical devices, smart cities, smart factories, smart phones, robots, cloud computing, artificial intelligence, network & connectivity, AR/VR, IoT, autonomous electric vehicles, etc.

Smarter Future Ahead

Electronics enable technologies behind smart cities to help us live and work better.

Artificial Intelligence

Big Data



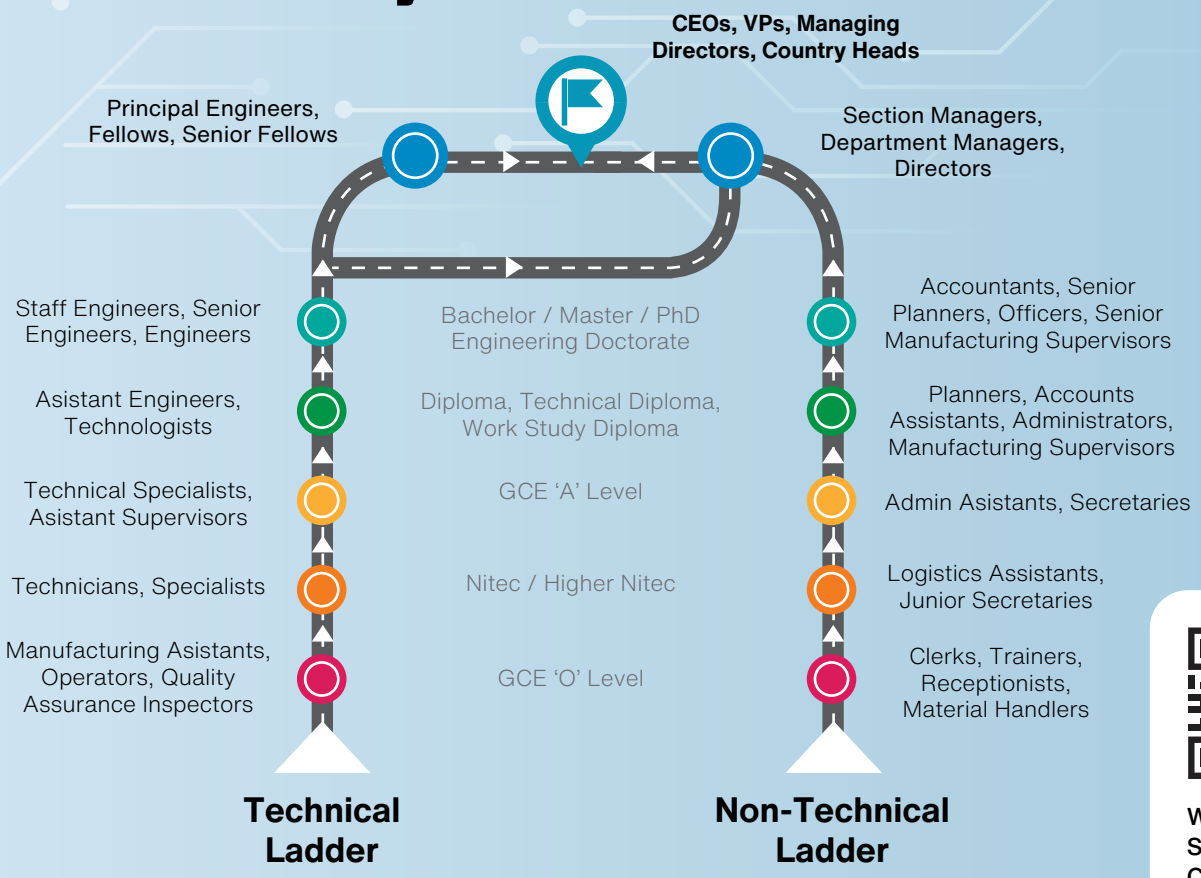
Augmented Reality and Virtual Reality

5G

Cloud Computing

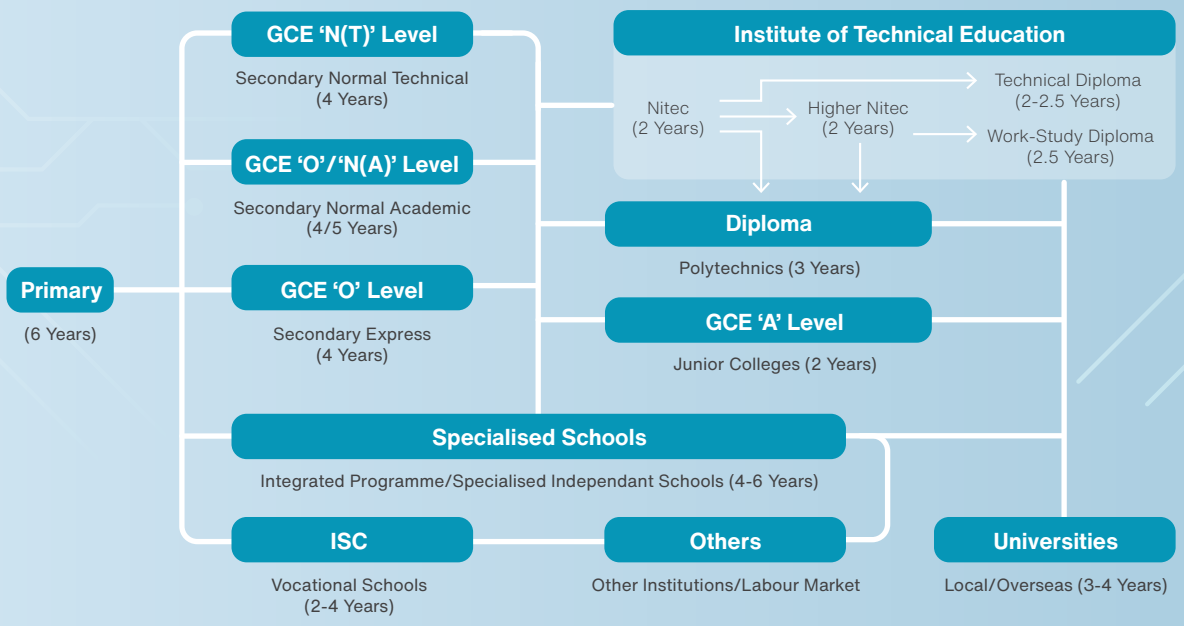
Internet of Things

Career Pathways

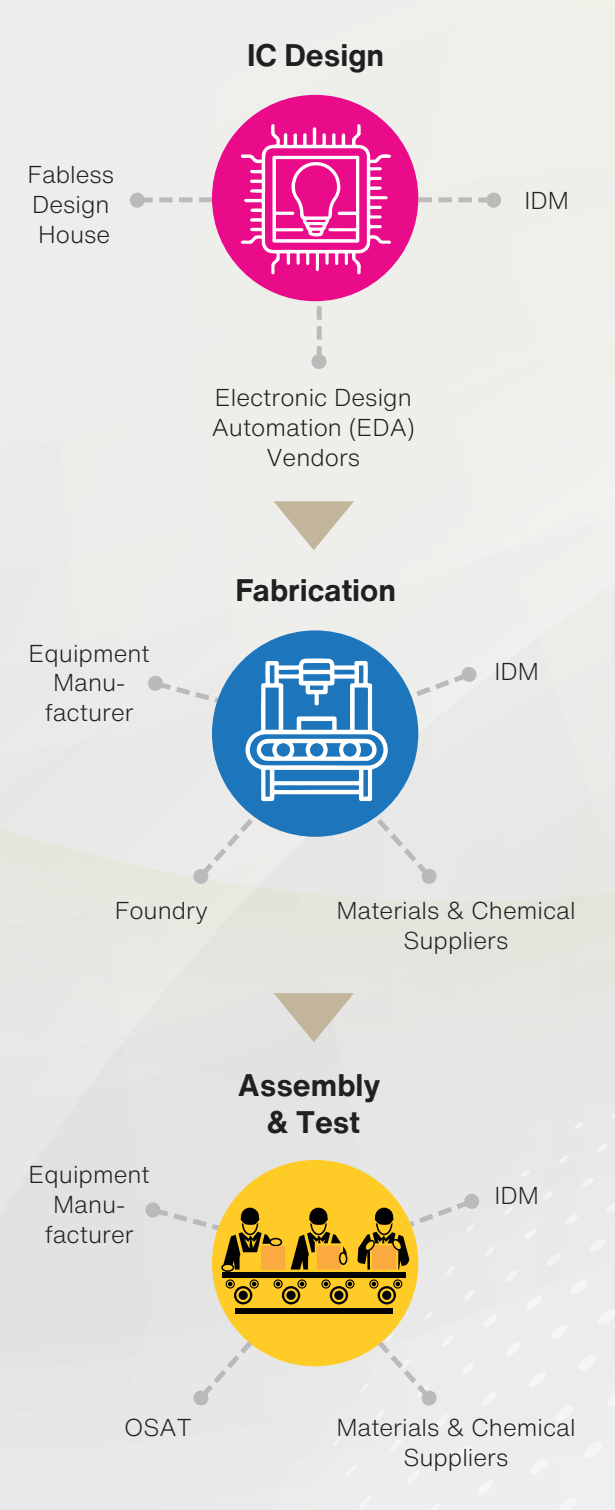


Why You Should Consider a Career in the Semiconductor Sector

Singapore Education & Training System



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.

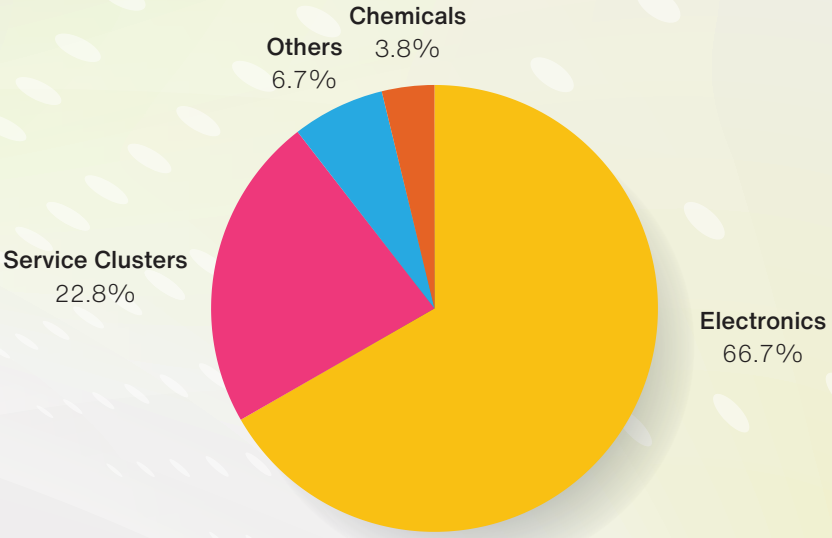
Research & Academia

Companies that focus on research and development of innovative technologies.

About Semiconductor and Electronics Industry in Singapore...

Since 1968, Semiconductor Industry has been a key power engine for Singapore's economy, contributing to about 7% of its GDP and 11% of global market share.

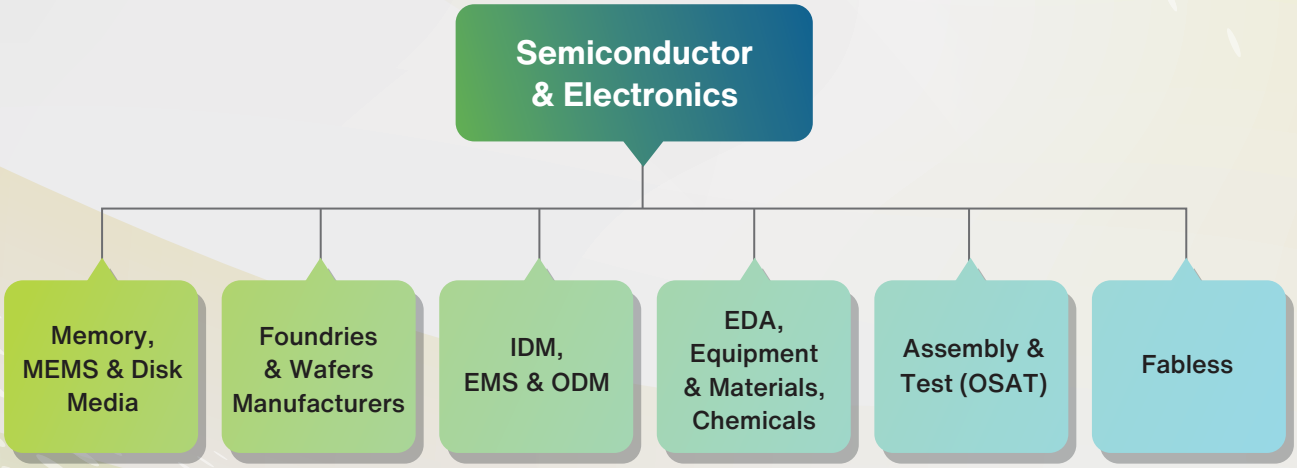
With the implementation of the Industry Transformation Maps for Industries in Singapore, developing talents, driving innovation and strengthening and growing the local semiconductor ecosystem are key focuses areas of the semiconductor industry.



Fixed Asset Investments by Industry Clusters in 2022

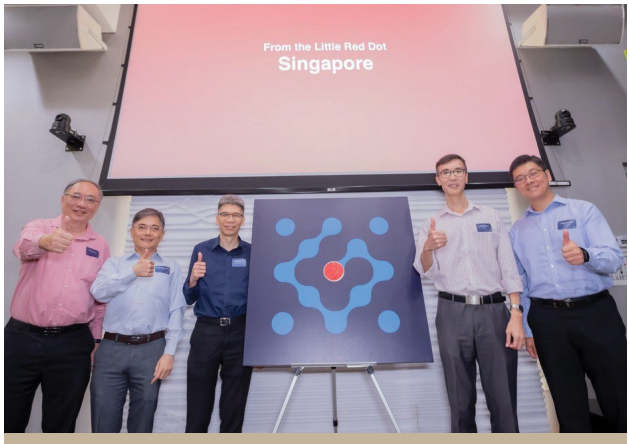
Source: Economic Survey of Singapore 2022

Electronics & Semiconductor Industry Landscape



NATIONAL GALLIUM NITRIDE TECHNOLOGY CENTER (NGTC)

SINGAPORE'S NGTC CATALYZING GaN TECHNOLOGY FOR FUTURE COMMUNICATIONS



Left to Right: Prof. Ng Geok Ing (Centre Director, NGTC), Prof. Guan Yong Liang (Associate Vice President, NTU), Dr. Desmond Rodney Lim (Deputy Chief Executive Officer, DSO), Prof. Lim Keng Hui (Assistant Chief Executive, Science & Engineering Research, A*STAR), Mr. Terence Gan (Executive Director, A*STAR IME)

NGTC envisions being a global premier R&D and manufacturing centre for Gallium Nitride technologies.

NGTC's mission is to develop advanced GaN technologies, nurture talents, and foster industry R&D and manufacturing collaborations, to enhance Singapore's semiconductor competitiveness and create a global impact.

Singapore's RIE2025 initiatives are structured around four strategic domains, one of which is "Smart Nation and Digital Economy" – which aims to develop technologies to drive Singapore's Smart Nation ambitions, reinforce Singapore's position as a trusted digital innovation hub, and to enhance local capabilities and build new partnerships. In 2023, according to the Institute for Management Development (IMD), Singapore was the top smart city in Asia and the seventh globally.

This Smart Nation vision hinges on integrating advanced technologies to improve connectivity, efficiency, and sustainability across sectors. GaN-based RF solutions play a pivotal role in enabling high-performance wireless communication systems, which are crucial for building a connected Smart Nation infrastructure and deploying technologies like 5G networks, IoT platforms, and smart city solutions.

Singapore is investing heavily in GaN research with Deputy Prime Minister and Coordinating Minister for Economic Policies, Mr. Heng Swee Keat, announcing the establishment of the National GaN Technology Centre (NGTC) in October 2022, with an initial investment of S$123 million over five years. Expected to be operational by 2025, NGTC will feature technologies developed by Nanyang Technological University (NTU) and DSO National Laboratories.

To fulfil its mission, NGTC will (a) collaborate with top-tier researchers and engineers, (b) collaborate with industry partners to ensure that the R&D is aligned with the market needs, and (c) explore groundbreaking applications of GaN technologies.

Beyond driving technological advancements, NGTC is dedicated to nurturing talent and cultivating an environment of innovation. By conducting training programs, workshops, and working on industry projects, NGTC offers researchers, students, and entrepreneurs opportunities to hone their skills and contribute to the GaN ecosystem.

Left to Right: Prof. Guan Yong Liang, Mr. Terence Gan, Prof. Lim Keng Hui, Dr. Desmond Rodney Lim, Mr. Yamanouchi Isao (General Manager, Ferrotec), Prof. Yeo Yee Chia (Assistant Chief Executive, Innovation & Enterprise, A*STAR), Prof. Ng Geok Ing, Mr. Ng Ee Chong (Deputy Future Systems & Technology Architect, Future Systems and Technology Directorate, MINDEF)

NGTC's cleanroom was completed at the end of 2023, and the first tool was installed in March 2024. NGTC's logo was also revealed at the same time.

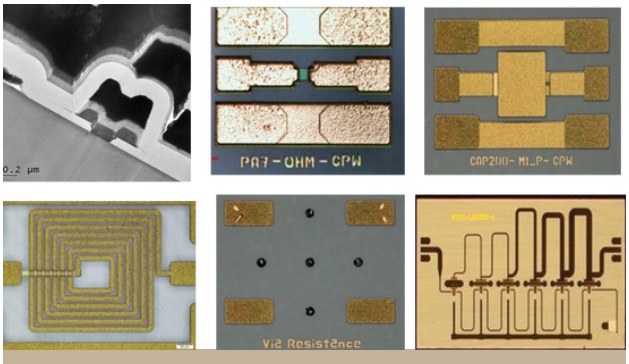
When operational in 2025, NGTC will offer the following:

1. Cutting-edge facilities - 700m² of Class10/100 cleanroom for 6" GaN-on-SiC, 1200m² of Class 100 cleanroom for 8" GaN-on-Si, and 250m² of laboratory space. These areas are fully ESD and ISO certified.

2. Advanced process capabilities for RF-mmWave – 6" gold-based GaN-on-SiC MMIC process for wireless communications infrastructure, 8" CMOS-compatible GaN-on-Si MMIC process for low-voltage mobile applications within the 1-40 GHz range, and comprehensive Process Design Kits (PDKs) of qualified processes.

3. Technology platforms – 1-140 GHz gold-based GaN-on-SiC High Electron Mobility Transistors (HEMTs) and Monolithic Microwave Integrated Circuits (MMICs), as well as 1-40 GHz CMOS-compatible GaN-on-Si HEMTs and MMICs. These platforms cater to various applications such as communications (including 5G and beyond), low-voltage mobile applications, mmWave radars, and advanced instrumentation applications, showcasing NGTC's versatility and adaptability across diverse technological domains.

At NGTC, we aim to bridge the gap between your innovative ideas and impactful results. Our business model revolves around facilitating advanced research, providing state-of-the-art facilities and expertise to validate ideas, develop market-ready prototypes, and conduct small-scale production.



Offers full suite of active and passive components for MMICs

Connect with us at:
https://www.linkedin.com/company/ngtc-sg/

Institute of Microelectronics
IME

Written by **Angeline Tee, Prof. Ng Geok Ing, Terence Gan, Pankaj Sharma, A*STAR IME**

FOSTERING INNOVATION THROUGH DIVERSITY:

UTAC GROUP'S COMMITMENT TO DEI

At UTAC Group, Diversity, Equity, and Inclusion (DEI) are key to creating a dynamic and harmonious workplace. By embracing diversity, UTAC celebrates the rich tapestry of human experiences and upholds its core values of Unity, Trust, Accountability, and Communication.

Building a Culture of Inclusion

Last year, UTAC rolled out a comprehensive communications framework, serving as the cornerstone of its inclusive culture. This framework includes feedback channels for employees to voice their thoughts, ensuring everyone feels heard and valued. Additionally, UTAC has introduced amenities like a fitness corner, recreation hall, bicycle bay, prayer room, and nursing room, catering to the diverse needs of its workforce. These facilities not only promote well-being but also underscore UTAC's commitment to an environment where everyone can thrive.

Celebrating Diversity

UTAC celebrates diversity by marking key festivals from various cultures and religions, such as Chinese New Year, Hari Raya Puasa, Deepavali, and Christmas. These celebrations foster understanding and unity among employees, making the workplace more inclusive and cohesive.

Success Stories: Global Knowledge Exchange

In a groundbreaking move, UTAC welcomed Manufacturing Specialists and Technicians from its sister company in Thailand. This initiative, a first for the company, involved cross-cultural training and open feedback channels to overcome language barriers and cultural differences. The result? Enhanced team capabilities and a significant step towards a more inclusive workplace. Participants left with positive experiences and heartfelt thank-you notes, highlighting the warm and inclusive environment they encountered.

Measuring Impact

UTAC prides itself on being a fair employer, selecting the best candidates regardless of age, race, gender, religion, marital status, or family responsibilities. While specific DEI KPIs are not set, the company's culture-driven initiatives have produced impressive results:

- **Ethnic Diversity in Management:** Senior management teams in Singapore are 70% Chinese and 30% from other backgrounds.
- **Generational Representation:** The workforce spans Baby Boomers (5%), Generation X (47%), Millennials (42%), and Generation Z (6%).
- **Pulse Survey Scores:** High scores (above 4 out of 5) in communication and collaboration reflect a positive and inclusive environment.
- **Engagement Activities:** UTAC organized 35 diverse activities last year, demonstrating its commitment to an engaging workplace.

Looking Ahead: The DEI Vision

Promoting DEI is an ongoing journey for UTAC. The company plans to leverage data analytics to refine its initiatives and compare its efforts with industry standards to ensure continuous improvement. The goal is to foster a workplace where every individual feels supported, empowered, and included.

Empowering the Future

UTAC is dedicated to championing Diversity, Equity, and Inclusion because it drives both organizational success and societal progress. By fostering an environment where diversity is celebrated, UTAC empowers its team members to unleash their full potential and drive innovation. This journey embraces the richness of diversity and the strength it brings to collective efforts.

UTAC

autentica

SEMI CONDUCTOR

The future of semiconductor manufacturing is here: localised, customer-centric, and unified. At Autentica, consumption and production are seamlessly intertwined to meet your specific needs.

Autentica Industrial Platform Pte Ltd Singapore founded in 2021 is a software technology company that provides cloud-based cutting-edge solutions that are poised to revolutionise the way we approach manufacturing and distribute components and the protection of intellectual property and digital assets within the sectors we serve.

Creating a secure environment for the **design and manufacturing of semiconductors with 3D printing**, Autentica's unified ecosystem seamlessly connects semiconductor companies with the entire value chain. This includes equipment and materials suppliers, IP electronic design, integrated device manufacturers, semiconductor assembly and testing services, and 3D printing service providers. Autentica offers an end-to-end design and manufacturing supply chain solution for the semiconductor industry.

- Blockchain Integration
- NFT Implementation
- AI Utilization
- API Integration
- Gateway for Streaming Digital Files

autenticaindustrialplatform.com

REDUCING ENERGY USAGE WITH $0 INVESTMENT AND ZERO DISRUPTIONS TO OPERATIONS

Many companies are concerned that energy efficiency initiatives would increase cost and dilute focus on existing operations. Identifying solutions that offers the best return on Investment while tailored to their operational needs is another key challenge.

Focus on low hanging fruits: Some companies spend a significant amount of time deliberating how to kick start their sustainability journey. Rather than devising a perfect plan, businesses could focus on low hanging fruits, achieve easy wins and use that to create positive momentum within the organisation to drive more actions.

Achieve energy savings with $0 investment: Too good to be true? Technology enablers like bbp offers a "Pay as You Save" business model for energy savings. It's a performance-based approach which aligns all parties' interest from the get-go while enabling assets owners or operators to focus on their core competencies.

Energy Savings as a Service (EsaaS)

bbp provides ESaaS to businesses using patented technologies. All investment costs associated with implementation, extraction and maintenance of energy savings are typically borne by bbp.

The actual savings, certified by independent 3rd party verifiers annually, is shared between our clients and bbp. From the clients' perspective, the payback is immediate with zero investment outlay. If there is no savings delivered by bbp's patented technologies, bbp collects $0 in service fee. Using such unique approach, bbp has enabled companies to achieve up to 40% energy savings, without disruption to their operations.

Targeted segments are commercial real estates, industrial buildings, data centres, airports, hospitals, and district cooling plants where cooling or air-conditioning consumes up to 60%[1] of total energy usage.

Proven track record by bbp

Till date more than 400,000 Refrigeration Tons (RT) of cooling systems have been optimised by bbp across 9 Asian markets. This makes bbp a leading and independent pure-play cooling optimisation platform. bbp focus on deploying technologies and patented software to extract savings rather than the traditional approach of equipment replacement which has long payback period.

bbp's clients include 3 of the world's top 10 semiconductor manufacturers, Fortune 500 companies and Asia's top 20 commercial real estate players.

bbp has enabled these blue-chip companies to achieve more than S$90 million of energy savings and 240,000 tonnes of carbon dioxide emission avoidance.

References: [1] Zhao, Y., Li, N., Tao, C., Chen, Q., Jiang, M., 2021, "A Comparative Study on Energy Performance Assessment for HVAC Systems in High-Tech Fabs," Journal of Building Engineering, Vol. 39, p. 102188

CAD-IT CONSULTANTS (ASIA) PTE. LTD.

FROM SAND TO SUCCESS

"GUIDING YOUR DIGITAL TRANSFORMATION JOURNEY"

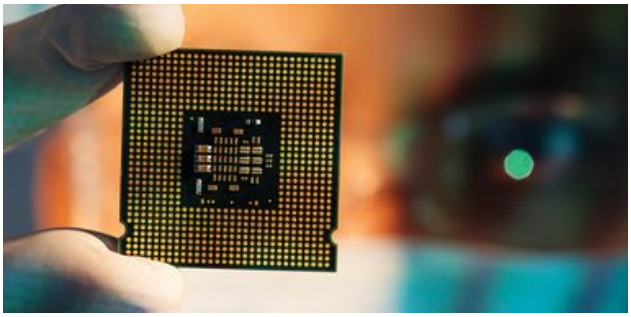
Revolutionizing Semiconductor Demand Forecasting

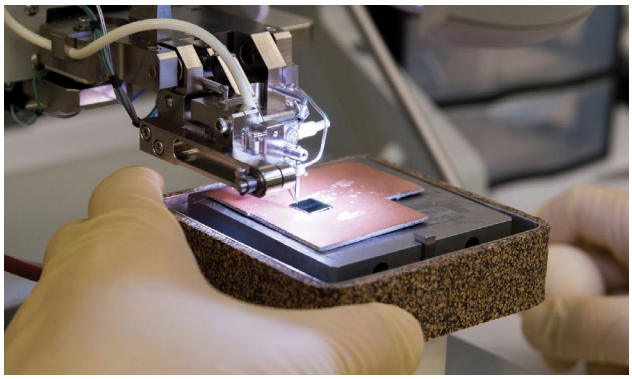
Revolutionizing semiconductor demand forecasting, we've implemented cutting-edge machine learning techniques to analyze historical customer forecasts, orders, and multi-plant capacity data. This dynamic approach not only boosts our clients' order management efficiency but also ensures streamlined operations for seamless fulfillment.

Diving deeper into semiconductor engineering, our expertise extends to offering comprehensive simulation tools and services for R&D departments. From oxidation and coating to dicing and wire bonding, we cover a wide spectrum of processes, empowering companies to stay at the forefront of technological advancements.

Driving Yield Improvement Initiatives in Frontend Operations

In the realm of semiconductor fabs, we've been instrumental in driving yield improvement initiatives for frontend operations. Leveraging backend compute power and machine learning algorithms, we harness data from equipment through advanced protocols and event log files. This data-driven approach has significantly enhanced operational efficiency and productivity.

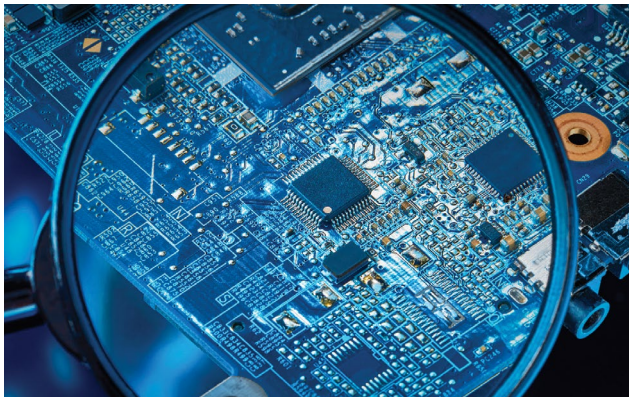




Empowering Semiconductor Equipment Manufacturers

Empowering semiconductor equipment manufacturers, we implement state-of-the-art IoT, AI/ML, and AR technologies for remote monitoring, predictive maintenance, and guided diagnostics. This ensures enhanced efficiency and reliability across the production chain.

At CAD-IT, we offer tailored Digital Transformation consulting services to the semiconductor industry. Our global team of industry experts and consultants collaborates closely with clients, delivering comprehensive Blueprints and Roadmaps through a skilled Technical Project Team. From solution architecture to web/mobile application development, we are committed to driving innovation and success in the semiconductor industry.



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COMMUNICATIONS

SYSTEM

Design, IP, and analysis solutions that address SoC, package, board, and device development

QUALITY

Delivering best PPA, faster time to market, with improved overall product quality

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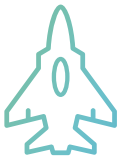
AUTOMOTIVE



AERO / DEFENSE

INDUSTRIAL

LIFE SCIENCES

PRODUCTIVITY

Artificial intelligence capabilities built into core engines and solution flows

CLOUD

Readily available cloud solutions that meet the needs of customers for enterprise deployment

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We are one-stop production manufacturers more than 20 years. Our products include Ultra-Clean PFA Tube, Ultra-Clean PFA Connector, HDPE Drum, Cleanroom Wipes, ESD Wipes, Roll Wiper, Raw Fabric.

Baoshili has successively obtained ISO9001, ISO14001, ISO45001, QC080000, SGS Report, NEBB, Safety Production Standardization Certificate and obtained 46 patents.We have over 200 employees and we can meet different customers' requirements according to ODM and OEM services.

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Ms. Carrie Lin: carrie@xmbsl.com (International Sales Manager, MP/WhatsApp: +86 13850062482)

Ultra-Clean PFA Tube

Ultra-Clean PFA Connector

Ultra-Clean HDPE Drum

Cleanroom Wipes, Roll Wiper

BSL
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UNLOCKING THE FUTURE OF MANUFACTURING:

CONNECTIVITY IS KEY TO DATA ANALYTICS, AI AND MACHINE LEARNING

In today's fiercely competitive manufacturing arena, unlocking the potential of data analytics, machine learning, and artificial intelligence is crucial for maintaining a competitive edge. These cutting-edge technologies offer opportunities for optimizing production processes and implementing predictive maintenance strategies, ushering in new levels of efficiency and productivity.

The Commonly Overlooked Prerequisite

While advanced technologies promise transformative change in manufacturing, realizing their full potential requires overcoming significant challenges, particularly in environments dominated by legacy equipment and disparate systems. Key prerequisites for harnessing these technologies include connectivity, interoperability, and the establishment of a unified ecosystem across the factory floor.

Identifying the Challenge

Legacy equipment, characterized by diverse communication protocols and outdated interfaces, often results in fragmented factory environments that struggle to harness the power of data effectively. Similarly, newer equipment lacking standardized protocols and seamless communication further complicates achieving a unified factory ecosystem. The absence of a cohesive approach to data exchange and communication confines valuable insights within isolated systems, limiting opportunities for meaningful analysis and improvement.

Achieving Interoperability and Data Exchange

Solutions like Electrotek's Legacy Equipment Connectivity bridge the gap between legacy systems and the digital age, facilitating a more unified approach to data exchange. By connecting previously isolated legacy equipment to the broader network, these solutions unlock a treasure trove of untapped data and insights. For newer equipment, Electrotek's SDKs empower seamless connectivity, streamlining the integration of SECS/GEM compliant functionality/interfaces into the manufacturing environment to achieve interoperability.

Holistic Approach to Connectivity and Data Management

The ultimate stage of connectivity, factory unification, entails a holistic approach to connectivity and data management, where systems and protocols are unified to deliver high throughput, harmonized operational data in real-time. This data is primed for analysis, providing actionable insights.

Ultimate Benefit of Connectivity

With every machine connected, data point synchronized, and system integrated, the promise of advanced data-driven technologies becomes a reality. Leveraging the power of connectivity facilitated by Electrotek's solutions, manufacturers can unlock unprecedented efficiency, productivity, and competitiveness, propelling operations into the future.

electrotek

MORE SME-ENTERPRISE COLLABORATION TO MAINTAIN SINGAPORE'S COMPETITIVE EDGE IN MANUFACTURING

Earlier this year, Singapore announced enhancements to its Partnerships for Capability Transformation (PACT) scheme, introduced to drive productivity improvements, knowledge transfer and co-innovation between small and medium enterprises (SMEs) with large enterprises. The augmented scheme is set to support partnerships in more areas, which will be critical for driving and sustaining growth in Singapore's manufacturing sector.

SMEs, with their inherent agility, will play a key role in partnering with larger manufacturers in helping the industry respond quickly to market dynamics and future-proof operations.

Tapping into the Singapore SME ecosystem

Due to their size, SMEs possess a significant advantage in being able to swiftly transform ideas into innovation and remain flexible to dynamic market landscapes. In fact, they play an indispensable role as grassroot organisations in building Singapore's robust manufacturing ecosystem. Through working with larger manufacturers, their adaptability and agility can contribute to supply chain resiliency by shortening time to market, and accelerate digital manufacturing advancements at scale for their partners.

This is especially key for the highly technical and complex semiconductor industry, which requires pinpoint precision and accuracy to manufacture products that deliver on the highest levels of quality and reliability. Continuous innovation therefore needs to occur at all stages of the manufacturing process.

Driving innovation in the cleanroom together

As the world's third-largest foundry, GlobalFoundries (GF) is always looking for new and innovative ways to enhance the productivity of our fabrication plants ("Fabs") while ensuring that we continue to deliver on our hallmark standards of quality. Within our vast cleanrooms are tools that are incredibly complex, long-lasting and expensive, some of which have been in operation for more than 20 years. Such legacy tools could have obsolete parts or may face minor equipment issues due to wear and tear. These ultimately impact production timeline and quality, all of which are crucial to semiconductor manufacturing processes. As such, we started partnering with local suppliers of additive manufacturing services to raise overall productivity in our Fabs.

Photo courtesy of GlobalFoundries Singapore

Photo courtesy of GlobalFoundries Singapore

As a result of our partnerships, we were able to leverage 3D printing technology as a solution to print obsolete parts, as well as modify designs of existing parts for better quality. Beyond improving part lifetime, the use of 3D printing also meant that each prototype could be created faster, and the relatively low cost of printing allowed GF to conduct multiple trials with our local partners, adjusting the design each time for better outcomes. GF was able to achieve a shorter turnaround time for tool repair, and bring about more cost savings as there was no need to overhaul the existing machines or buy new ones to replace those with obsolete parts. Furthermore, the 3D modelling technology could be applied to other tools or parts, resulting in greater production efficiency in the long term.

The benefits are multifold in this win-win relationship. Local SMEs gain technical know-how and experience in using additive manufacturing to enhance production efficiency, and their engineers get a glimpse into the inner workings of GF's world-class semiconductor production facilities. This helps them enhance their skill sets and gain a better understanding of the stringent requirements of semiconductor manufacturing, ultimately allowing them to serve more diverse needs and build up their capabilities in providing a wider range of solutions to their customers. In fact, the entire semiconductor industry stands to benefit with such collaborations, as more local partners build up the right capabilities and realise the untapped potential of additive manufacturing to drive productivity and spur growth.

The Singapore economy is powered by SMEs which account for 99% of all enterprises as well as 71% of total employment. Strategic partnerships between these local partners and large enterprises like GF is the way forward to unlock more value-add for Singapore's manufacturing industry and maintain its competitive edge.

GlobalFoundries®

Contributed by

Joseph Chia
Vice President and General Manager, Fab Operations, GlobalFoundries Singapore

The Global Production Engineering Company **Hirata**

Wafer Sorter System

Sorter series

SEMI Software Standard

Compatible with GEM300

Minimum Footprint

Robot, load port, and end effector can be optimally positioned

Particle Free

Industry-recognized load ports, robots, and enclosures

Proven High Reliability

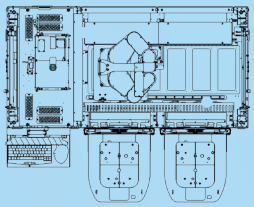
Inheriting the technology of more than 40,000 robots operating in harsh environments

◆ Layout Variation

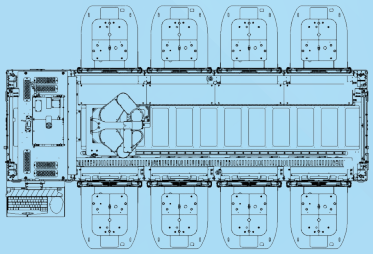
Flexible layout to meet a variety of requirements

Component variations for a wide variety of carriers and wafers

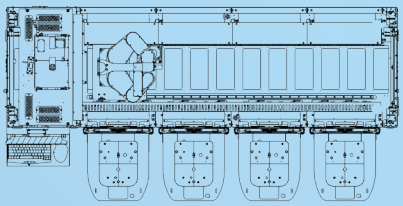
Multiple recipes for various requests



2xPort 1xRobot 1xAligner



4x4xPort 1xRobot 1xAligner



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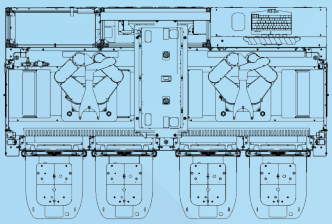

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INNOVATION AT THE FOREFRONT:

IWATANI SINGAPORE AND TAKANO'S ADVANCED WAFER INSPECTION EQUIPMENT

Iwatani Singapore is at the cutting edge of serving the semiconductor industry's front-end wafer fabrication and back-end test and packaging processes. Through their steadfast partnerships with leading Japanese innovators, they offer unparalleled value in industrial gases, equipment, and materials tailored for the semiconductor sector.

A cornerstone of their offerings is the bare wafer defect inspection equipment, an essential tool in every wafer fabrication plant. This equipment ensures that each bare wafer meets stringent quality standards before entering the complex and precise multi-modular manufacturing processes. It also serves as a baseline to verify the contamination-free status of other module tools. Given its versatile and critical applications, this equipment comes with a significant investment.

Iwatani Singapore's long-term partner, Takano, provides bare wafer inspection equipment that meets the exacting requirements of wafer fabrication plants at an affordable price. Their models, the WM-7SR and WM-10R, offer high sensitivity and are suitable for a range of wafer sizes:

WM-7SR: 79 nm (61 nm optional) sensitivity, 2-8 inch wafers

WM-10R: 48 nm sensitivity, 4-12 inch wafers

The semiconductor industry has widely embraced Takano's WM-7SR and WM-10R for their leading-edge capabilities in inspecting bare and filmed wafers. Key features include:

Leading Edge Bare Wafer Inspection Equipment

These models provide high sensitivity inspection, detecting particles and scratches ranging from 48nm to 5μm. They are perfect for applications such as:

- Process control
- Establishing new production lines
- Pre-shipment inspections for equipment makers
- Post-move-in inspections
- Research and development

Excellent Performance

Manufactured in Japan with the highest quality standards, Takano's systems offer superior cost performance, space savings, and minimal maintenance fees due to their laser diode technology and stable optics design. Their technical specifications are on par with or surpass those of competitors.

Operator-Friendly Interface

The Takano inspection systems are user-friendly, featuring auto wafer calibration and an intuitive software interface that facilitates a smooth transition from older systems.

Wide Installed Base and Established Tech Support

With over 800 installations of the WM Series worldwide, Takano has a robust international technical support network. In Southeast Asia, Iwatani Singapore collaborates with local distributors to provide comprehensive support, and Takano's policy of not requiring yearly maintenance contracts results in significant long-term cost savings for users.

Iwatani
Iwatani Corporation

YOUR ONE-STOP SOLUTION FOR CUSTOM SILICON DESIGN

MarqueeSemi is a leading provider of custom chip design solutions, specializing in digital interfaces for connectivity, ARM-based subsystem design, and analog/mixed-signal power management and silicon integration. SignatureIP, on the other hand, focuses on providing complete cutting-edge IP solutions for connectivity – Coherent/Non-Coherent NOC, PCIe Gen6, and CXL3.0. Additionally, MarqueeSemi offers their web-based project management and issue tracking tool, corpLink.ai, to enhance productivity and streamline business processes.

Together, MarqueeSemi and SignatureIP offer tailored solutions to drive innovation and elevate your business operations.

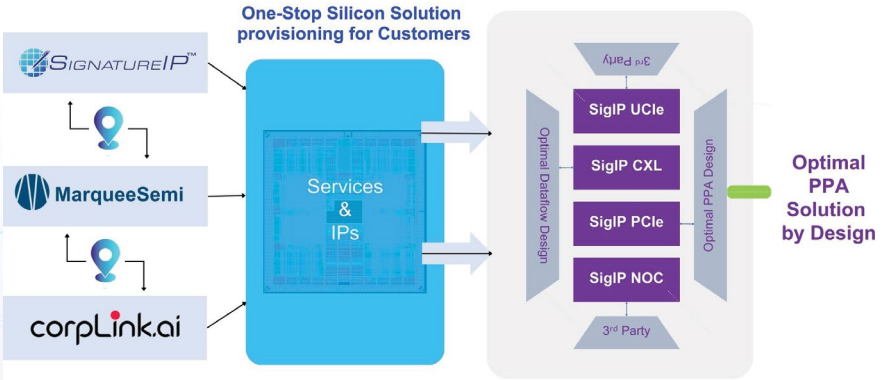
MarqueeSemi

Digital Design: Expertise in PCIe, CXL,UCIe, DDR, USB, DP, UFS, and NoC,AMBA protocols
ARM-based Subsystem Design
Analog Design: Power management and mixed-signal silicon integration

SignatureIP

Interconnect IPs: Coherent and Non-Coherent Network-on-Chip, Inoculater NoC Builder
Interface IPs: PCIe Gen6 Controller, CXL 3.0

Leveraging Core Strengths for One-Stop Solution



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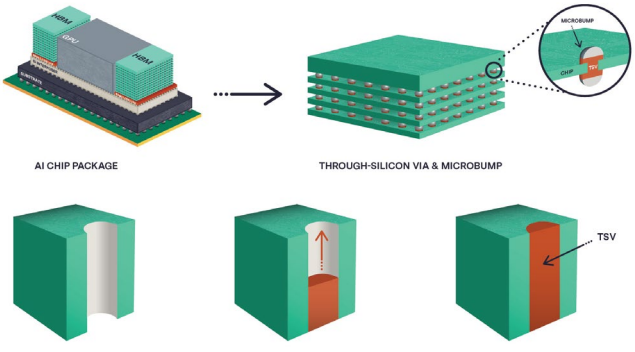
HIGH BANDWIDTH MEMORY (HBM) IS PUSHING THE BOUNDARIES OF AI INNOVATION

As artificial intelligence (AI) grows more complex and their performance demands escalate, the need for efficient data storage solutions has never been greater. High Bandwidth Memory (HBM), with its promise of faster data access and reduced energy consumption, is emerging as a key technology in optimizing AI performance and curbing the power drain of memory chips.

At the heart of HBM's high-performance is its innovative 3D stacking architecture. This approach involves vertically integrating multiple layers of dynamic random-access memory (DRAM) chips, creating a compact, efficient structure. The stacked chips are interconnected through high-speed channels, enabling rapid data exchange that is crucial for the intricate AI tasks.

As technologies like generative AI and high performance computing gain momentum, the market for HBM is expected to remain robust. HBM's unique design supports rapid data transfer between processors and memory, optimizing various AI applications.



TSV and microbump are critical to enable high-density 3D stacking of memory dies. Major TSV formation steps include uniform deep silicon via etch and fast, void-free, bottom-up copper electro filling.

In machine learning, HBM enhances both training—where AI learns from data—and inference, where a trained model makes predictions. For instance, recent breakthroughs have given birth to multimodal AI models like GPT-4o from OpenAI and Gemini from Google. These cutting-edge models can now see, hear, and speak, blurring the lines between human and machine interaction. By leveraging the capabilities of HBM, these AI can swiftly process vast amounts of information, enabling them to engage with users in a remarkably natural and intuitive way. This means a seamless and efficient user experience that's as close to human-like conversation as you can get!

The latest generation, HBM3e brings several advancements that enhance memory capacity and performance. Central to these improvements are micro-bumps and through-silicon vias (TSVs). Micro-bumps are minuscule solder points that facilitate die connections, while TSVs are meticulously etched holes filled with copper, forming speedy electrical links between memory layers.

To unlock AI's full potential, HBM needs to process large datasets simultaneously. The evolution from the first generation, HBM1, with a 4-layer stack in 2013, to HBM3e, expected to reach a 12-layer stack by 2024, illustrates significant advancements in performance, memory capacity, and power efficiency.

Developing HBM involves intricate fabrication processes, with industry giants like Samsung, SK Hynix and Micron at the forefront. These suppliers are crucial in meeting the increasing demands of AI and data-intensive applications. In fact, chip designers such as NVIDIA, AMD and Intel have integrated HBM into their GPUs and AI accelerators, while semiconductor manufacturers, including Lam Research, are pushing the limits of physics and material science to create scalable, high-performance memory solutions.

Advanced packaging and heterogeneous integration schemes, like HBM, are essential for achieving optimized performance, power efficiency, and cost-effectiveness in the semiconductor industry. As the industry stands on the brink of new innovations in semiconductor design for the AI era, breakthroughs in manufacturing will be critical for the future development of HBM.

Lam RESEARCH

Contributed by
Lee Chee Ping
Senior Director, Advanced Packaging Customer Operations

MI TECHNOLOGIES:

A ONE-STOP-SHOP FOR SEMICONDUCTOR MANUFACTURING SOLUTIONS

Semiconductors, the tiny brains powering our devices, rely on a complex manufacturing dance. MI Technologies steps in as your partner, automating these intricate moves to propel you ahead in the ever-evolving world of chip making.

Imagine your fabrication facility buzzing with optimized efficiency. MI Robotics offers automated solutions to make this a reality, handling everything from materials to equipment. By optimizing material handling, MI Robotics enhances throughput and reduces costs, accelerating production cycles and lowering labor expenses. Their modular designs improve safety and integrate seamlessly with existing equipment, minimizing workplace accidents. Automation ensures exceptional accuracy and effortless scaling to meet production demands. Additionally, the availability of spare parts reduces downtime during maintenance, ensuring continuous production.

Core Products:

- **Automatic Stockers:** Efficiently store and manage wafer boxes and reticles.
- **Advanced Robotic Arms:** Perform precise pick-and-place operations for reticles and wafers.
- **Automatic Transport Systems:** Overhead or floor-mounted systems ensuring smooth material flow.
- **Customized Load/Unload Systems:** Automate loading/unloading for tools like etchers, steppers, and cleaners.
- **Metro Litho Area Robotization:** 6-axis robot manages buffer stations and assists with maintenance.
- **Safe Reticle Handling:** Cobot or linear guide-based solutions for secure reticle handling.

MI-SARA revolutionizes wafer handling with a fleet of Autonomous Mobile Robots (AMRs) equipped with collaborative robots (cobots), managed by a central fleet manager for simplified task allocation and monitoring. By eliminating manual bottlenecks, MI-SARA increases throughput and reduces labor costs, accelerating production cycles and freeing up valuable human resources. It enhances accuracy and safety by minimizing human error and reducing the risk of worker injury. The system is also easily scalable to accommodate future growth and production demands.

MI-SARA's key features include centralized control with autonomous navigation, allowing AMRs to transport wafers with precision and speed. Cobots with customized grippers ensure careful handling, while the smart racking system facilitates efficient loading and storage. Key elements include vision technology for precise positioning, stainless steel construction for cleanroom standards, and secure pod holders to prevent damage. Additionally, MI-SARA ensures reliable operation with guaranteed connectivity and built-in safety lasers and a safety PLC controller to protect personnel and equipment.

Moving Forward with MI Technologies

MI Technologies is dedicated to optimizing your semiconductor manufacturing processes and providing a sustainable competitive edge. Contact us today to discuss your specific needs and discover how our innovative automation solutions can empower your success.

MERIDIONALE IMPIANTI

NANYANG POLYTECHNIC'S ADDITIVE MANUFACTURING INNOVATION CENTRE:

ADVANCING 3D PRINTING IN THE SEMICONDUCTOR INDUSTRY

About the Additive Manufacturing Innovation Centre (AMIC)

The Additive Manufacturing Innovation Centre (AMIC) was established in 2014 by the Economic Development Board (EDB) and Nanyang Polytechnic (NYP). Located at NYP, AMIC serves as a Centre of Excellence for Additive Manufacturing Technology and Design Innovations.

AMIC's mission is to support national initiatives in additive manufacturing by fostering greater industry adoption and developing core capabilities in Design for Additive Manufacturing (DfAM) and process innovation. The Centre also supports NYP's Pre-Employment Training (PET) and Continuing Education and Training (CET) programmes and offers solutions through co-creation, collaboration, project incubation, and knowledge-sharing sessions.

Photo of AMIC Lab with QR code to AMIC webpage

Collaborating with industry partners, government agencies, and academic institutions, AMIC advances Additive Manufacturing (AM) across various sectors, including aerospace, automotive, medical, and consumer goods. AMIC aims to enhance Singapore's manufacturing capabilities and promote the widespread adoption of additive manufacturing technologies.

AMIC's key objectives include:

- Training and Education
- Industry Collaboration
- Research and Development
- Technology Transfer

Through research, collaboration, and innovation, AMIC contributes to Singapore's vision of becoming a global leader in AM. The Centre drives progress, enhances productivity, and promotes sustainable manufacturing practices by applying AM technologies.

Unique AM Capabilities and Facilities

The AMIC provides comprehensive industry solutions to address product design and development challenges. Our services range from consultation, conceptual and mechanical design, rapid prototyping, tooling and mould development to fixturing, additive manufacturing, collaborative product development, and full turnkey solutions. Our team of experienced professionals, which includes Lecturers and Development Engineers, are dedicated to meeting industry demands.

AMIC offers customised training programmes in AM, equipping individuals with essential skills and knowledge. Our consultation services address specific requirements and provide expert advice on Product Design and Development, focusing on optimising designs for AM techniques. We specialise in industrial product design, design for AM optimisation, rapid and hybrid tooling, conformal cooling technology, and post-processing finishing to enable efficient and precise manufacturing processes.

NYP's commitment to manpower training for the AM sector is evident through its formal WSQ Specialist Diploma in Precision Engineering (Additive Manufacturing) programme and modular AM courses, which have trained over 500 industry participants from over 100 companies.

AM Systems at AMIC

AMIC also offers SkillsFuture Continuing Education and Training (CET) short courses and the Work-Study Programme (WSP) Specialist Diploma with On-the-Job Training (OJT), which is customisable for the semiconductor industry. Other industry collaborations include industrial 3D printing services, student internships, Final Year Projects (FYP), and research and development (R&D) projects.

Customised AM Solutions for the Semiconductor Industry

In the semiconductor industry, heat sinks are essential for managing and dissipating heat generated by electronic components. Traditional manufacturing methods, like brazing, pose several challenges, including material compatibility, surface preparation, temperature control, joint fit-up, filler material selection, and quality control. These processes often result in high failure and scrap rates of up to 70 percent.

Hence, the collaboration between AMIC and Hao Yang Technology (HYT) Pte Ltd aims to resolve these manufacturing challenges. For this project, AMIC identified two parts for consolidation via Design for Additive Manufacturing (DfAM) to improve HYT's manufacturing processes.

Using powder bed fusion (PBF) technology, parts were printed in one piece as proof of concept (POC). The project also seeks to understand the key characteristics of the PBF process and generate statistical confidence in the mechanical properties, forming a foundation for improved yield and reduced failures.

AMIC's AM techniques encourage industry partners to adopt 3D printing to save production time and costs while simultaneously promoting sustainability through reduced scrap rates. HYT has also acquired a Metal EOS M270 machine to continue advancing its manufacturing capabilities. Other industries, including the aerospace, medical, and marine fields, can similarly employ PBF technology to achieve such outcomes.

This innovation project with AMIC served as a stepping stone for HYT, accelerating innovation and allowing it to stay competitive in the semiconductor industry.

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NYP NANYANG THE INNOVATIVE POLYTECHNIC


Engineer in a controlled room working on vacuum valves repairs

ODYSSEY TECHNICAL SOLUTIONS:

PIONEERING EXCELLENCE IN RF, DC, AND MW REPAIRS

Celebrating Two Decades of Innovation and Excellence

Since its establishment in 2004, Odyssey Technical Solutions Singapore has been a trailblazer in the realm of RF, DC, and MW repair services. Under the visionary leadership of Managing Director and Co-Founder, Mr. Adrian Lee, Odyssey Singapore has continually expanded its influence across the Asia Pacific region. As the company celebrates its 20th anniversary in 2024, it proudly reflects on a journey of excellence and innovation, highlighted by the inauguration of a state-of-the-art repair facility spanning an impressive 13,600 square feet.

Global Expertise, Local Commitment

Odyssey Technical Solutions combines global expertise with localized support, ensuring comprehensive and responsive services. With a workforce exceeding 130 professionals worldwide and strategically positioned repair facilities in Texas, the Netherlands, Taiwan, Singapore, and Malaysia, the company offers unparalleled service to its clientele. The Singapore office was officially opened earlier this year on April 23, 2024. Ambitious expansion plans include establishing local facilities in Japan by 2025, followed by Arizona in 2026, and New York in 2028, further solidifying its global footprint.


Odyssey Managing Director, Adrian Lee


Launch of Odyssey's Singapore Office


Launch of Odyssey's Singapore Office

Leading-Edge Repair Facilities

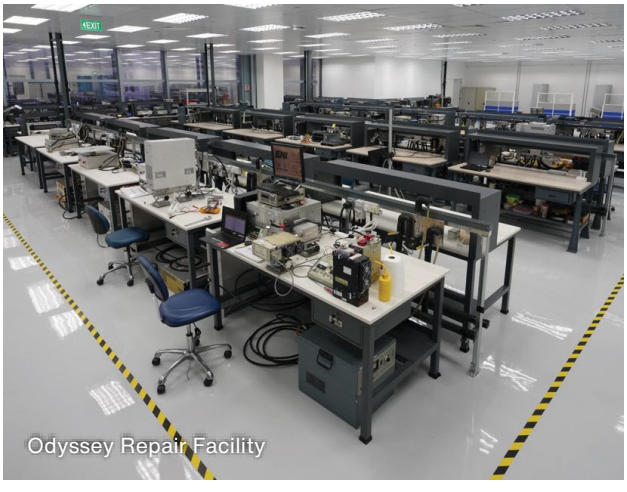
The commitment to excellence at Odyssey Technical Solutions is epitomized by its cutting-edge repair facilities. These facilities are equipped with proprietary software, automated testing platforms, and standardized repair procedures, ensuring capabilities that remain unmatched in the industry. Continuous innovation drives the company to deliver the highest quality repairs and service excellence to its valued customers.

Innovative Solutions

Innovation is the cornerstone of Odyssey Technical Solutions. The company's suite of self-developed test equipment and software is engineered to optimize efficiency and precision in its repair processes:

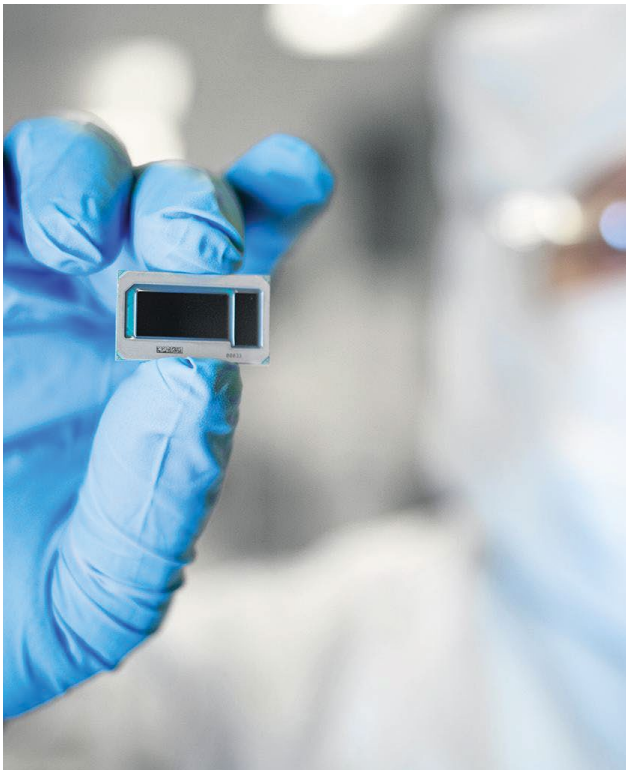
- **Odyssey Magic:** This proprietary software provides precise control over RF/DC generators and matching networks, ensuring unparalleled reliability.
- **Dynamic Dummy Load:** This innovative equipment enables rigorous testing of RF matching networks, ensuring optimal performance.
- **ODAC:** A pioneering automation solution, ODAC streamlines data extraction processes, enhancing efficiency and accuracy in every repair.

Odyssey Technical Solutions is committed to pushing the boundaries of possibility in RF, DC, and MW repairs. Through unwavering dedication to innovation and customer satisfaction, the company consistently delivers exceptional value to customers worldwide. Looking to the future, Odyssey Technical Solutions focuses on expanding its capabilities, enhancing its services, and continuing to lead the industry in quality and innovation.


Odyssey Repair Facility

COSTA RICA

AN EMERGING HUB FOR THE SEMICONDUCTOR INDUSTRY



Although Costa Rica's territory only covers 51,000 km2, it has 6% of the world's biodiversity and is aiming to become a hub for the semiconductor industry, thanks to the strategic efforts it is developing. About a year ago, the United States Government announced that our country would become its first partner in exploring opportunities to diversify and expand the global semiconductor ecosystem. This agreement seeks to create a transparent, secure, and sustainable global value chain, positioning the country as a key player in this industry.

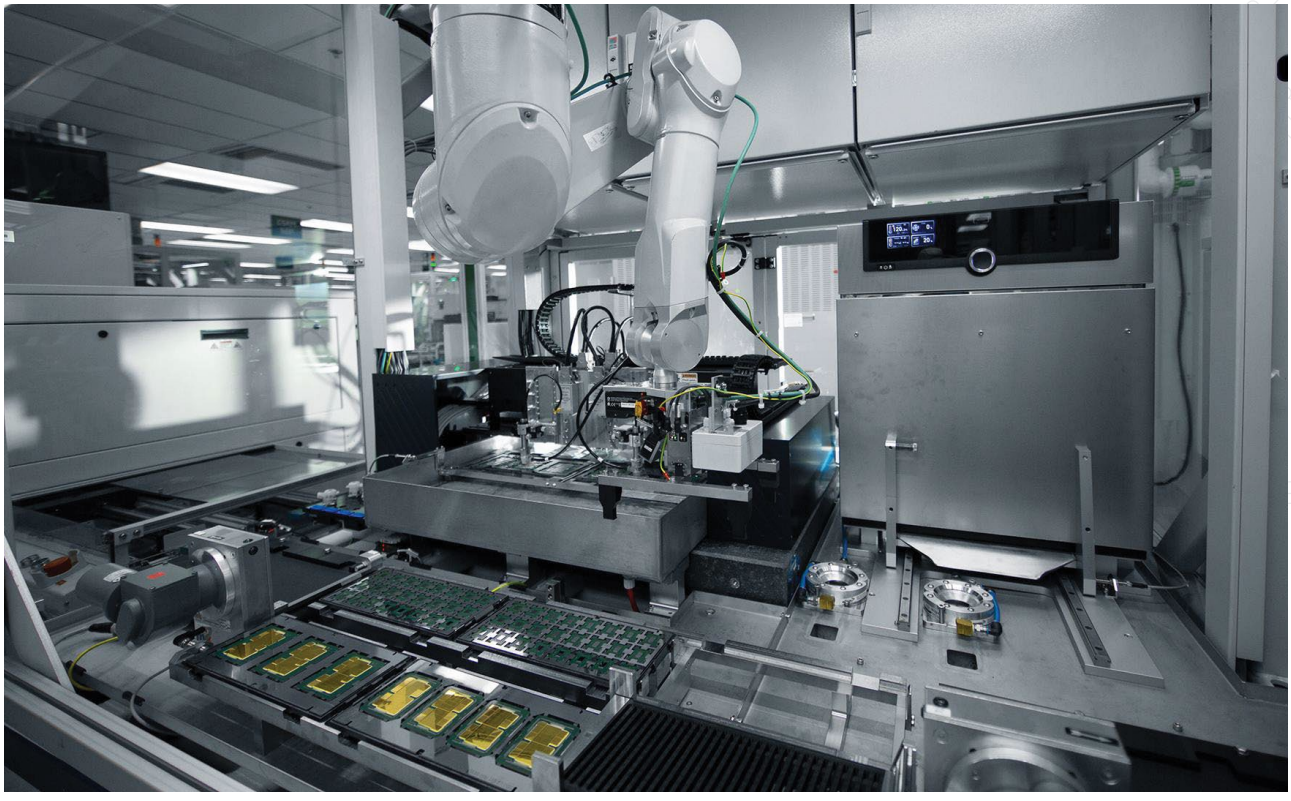
For many years, Costa Rica has been famous for being a democratic country and a leader in sustainability. However, recently, an American media outlet also suggested that our country is also competing to become the Silicon Valley of Latin America.

Why? Due to the highly competitive factors at an international level that compose its value proposition which make it so attractive, such as its political stability, legal security, appealing incentives for investment, its business atmosphere, specialized human talent, a broad ecosystem of local suppliers and its main differentiator: sustainability.

This value proposition, combined with the fact that more than 450 multinational companies are currently operating in Costa Rica, creates the necessary conditions for the development of this hub. Costa Rica's history in the semiconductor industry dates back more than 25 years, when Intel opened its manufacturing plant in Costa Rica, placing the country on the world technology map.

This legacy has been essential for the development of a national semiconductor ecosystem, which now has more than a dozen companies with vast experience in advanced manufacturing processes, such as the manufacture of integrated circuits, PCBs, sensors, and motherboards. Moreover, Costa Rica has become a world leader in assembly operations, testing, packaging, design, research, and development (R&D), as well as in the distribution of semiconductors, while providing training of specialized human talent.

With the enactment of the Chips and Science Act, we have the opportunity to gain access to funds that will strengthen the semiconductor industry and its supply chain. This new legislation represents a great opportunity to consolidate the country as an attractive destination for investment and a potential regional center for research, manufacturing, and development, together with the consequent strengthening of the global supply chain and the creation of new positions that will contribute significantly to the country's economic growth.



Efforts in this regard are made as indicated in the Semiconductor Roadmap, a strategy launched last March by the Ministry of Foreign Trade (COMEX). In this strategy, the Trade & Investment Promotion Agency of Costa Rica (PROCOMER), the official agency responsible for attracting direct foreign investment to the country, leads the initiative to obtain new investments in the semiconductor sector.

In addition to attracting investments, PROCOMER focuses on talent development, a key aspect of the industry. Furthermore, the agency collaborates closely with companies to identify and develop new suppliers and attract others with the potential to start operations in Costa Rica.

Costa Rica is ready to become the Silicon Valley of Latin America. The country is well positioned to become a regional semiconductor hub, thanks to its experience, talent and strategic collaborations. With the continuous support of initiatives such as the Chips Law and Science Act and the country's efforts through institutions such as PROCOMER, we are moving towards strengthening the industry and attracting new investments, which benefits the economy and positions the country as a leader in semiconductor technologies.

Commercial Relationship Costa Rica - Singapore

The commercial relationship between Costa Rica and Singapore has strengthened significantly since the passing of the Free Trade Agreement (FTA) in 2013.

This trading agreement has created a favorable environment for business, facilitating the exchange of goods and services between both nations. Thanks to this FTA, Costa Rica has been able to export a variety of products to Singapore, including medical devices, goods from the electronics sector, as well as tropical fruits such as pineapple and banana. In addition to increasing trade flow, this agreement has opened new opportunities for entrepreneurs and consumers in both countries.

PROCOMER COSTA RICA | EXPORTS INVESTMENT

Transforming Semiconductor Manufacturing with SESTO Robotics

Enhance your semiconductor manufacturing process with precision-engineered, efficient and scalable autonomous mobile robots (AMRs), boosting operational efficiency and sustainability.

Achieve efficiency and material handling reliability with SESTO Robotics' Autonomous Mobile Robots

- Accurate Obstacle Detection
- Integrates with MES System
- Reduce Manpower Requirements
- Small Footprint

SESTO™

More Information
www.sestorobotics.com
+65 6266 1522
sales@sestorobotics.com

ENHANCING MACHINE CONDITION MONITORING:

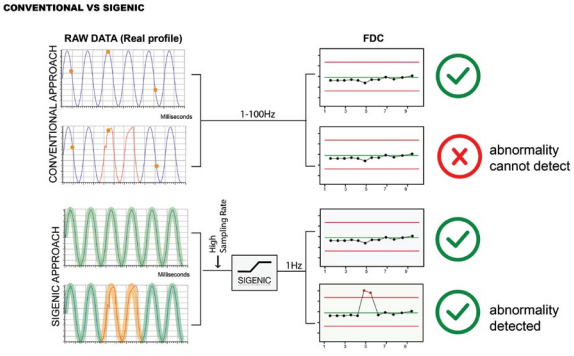
SIGENIC'S REVOLUTIONARY APPROACH

SIGENIC provides enhanced real-time machine condition monitoring solutions to factories. SIGENIC's solutions utilise proprietary software - SEREBRO, it has the capability to run high resolution multi-dimensional in-depth analysis of real-time data, thereby enabling engineers to optimise their machine condition monitoring requirements. It effectively achieves:

- Prevents excursions by prediction
- Minimizes wafer scraps and improves production reliability
- Real-time monitoring of machine behaviour down to sub-millisecond level
- Unleashes the full potential of existing factory host analytical performance
- Cost-savings by avoiding expensive server upgrades

SIGENIC's solutions act as a crucial bridge connecting the host and the machine, functioning as an intermediary layer that precedes data modelling at the edge, near the sensors. This enables big data to be effectively processed at a magnitude that was previously unattainable before sending the light yet concise information to the host, opening a new dimension for comprehending machine performance and addressing long-standing issues that were previously unsolvable.

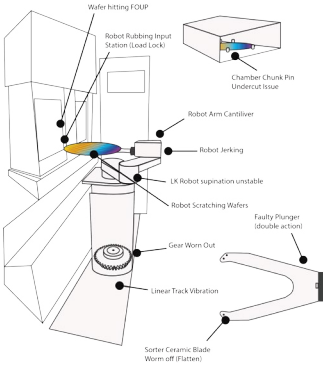
The conventional approach to machine performance monitoring often centers around increasing the data sampling rate, typically ranging from 1 Hz to 100 Hz. However, such an approach is costly and can result in higher network traffic, leading to latency issues, and may not effectively address some persistent problems. SIGENIC's solutions, on the other hand, is a think-out-of-the-box methodology that can handle vast amounts of real-time data and provide highly accurate analyzed data to the host without requiring the host to increase the sampling rate. This combination reduces capital expenditure, provides more meaningful data and enhances real-time machine quality control.



With Sigenic's methodology, the system is able to capture acute and isolated abnormalities without increasing the host's sampling rate.

Notably, SIGENIC's solutions have been successfully adopted by numerous chip manufacturers and has demonstrated its potential to enhance process control systems, including E3, Bistel, Camline Space etc. This superior capability provides users with a significant number of additional options to improve overall machine performance by preventing excursions as well as predict failure that has the potential to lead to production losses. Some have recognized the SIGENIC system as their Best-Known Method (BKM) for machine condition monitoring.

Examples of a use case:



Application:
- Wafer Handling Robot Monitoring

Predictive Measure
- Advanced modeling of robot behavior to prevent issues through prediction. As illustrated, one system can handle all critical spots of the robot's movement.

Gain:
- Uptime gain up to 0.5% per tool
- One-off gain up to USD1.4M with product gain up to USD540K/month
- Eliminate multi-million loss from excursion (based on recent cases)

To learn more about SIGENIC system, log on to www.sigenic.com

SIGENIC
ENGINEERING INTELLIGENT SOLUTIONS

SANCODA

GREEN HIGH-TECH SERVICE PROVIDER

GREEN SERVICES FOR TECHNOLOGY ENTERPRISES

TECHNOLOGY PRODUCTS FOR GREEN ENTERPRISES

SHENGJIAN TECHNOLOGY PTE.LTD.
Add: 2 Science Park Drive, Ascent #01-08 Singapore 118222
Web: http://en.sheng-jian.com/
Email: randyliew@sheng-jian.com

We are dedicated advocates for green technology and champions of innovative collaboration.

Our mission is to drive sustainability in the semiconductor industry, ensuring a greener future for all.

Local Scrubber

Vacuum Pump

Chiller

Wet Chemicals

SSMC TAPPING 3D PRINTING IN SEMICONDUCTOR SUPPLY CHAIN MANAGEMENT FOR RESILIENCE

SSMC has embarked on a journey of supply chain resilience through 3D printing innovations. Driven by the escalating costs of machine consumables and the need for proactive inventory management, SSMC sought new approaches to procuring maintenance parts for wafer processing machines.

Mr Ivan Hee, VP of Supply Chain and Business Operations shared, "Our journey of 3D printing applications and development works started since 2015 and is probably the earliest adopter of 3D printing technology in semiconductor industry in Singapore. Staying on this strategy with persistence, together with local suppliers with an engineering and innovative mindset, we are now able to create parts with greater precision, flexibility and cost efficiency. This helps us to stay ahead of the competition in our manufacturing tool capabilities and supply chain management." In 2023, the company achieved breakthrough in overcoming some challenges of sourcing suitable 3D solutions that fulfil the tooling requirements (such as matured 3D fabrication technology, material, design and lead time logistics).

Facilitated by the Singapore Semiconductor Industry Association (SSIA), SSMC engaged with local 3D printing firms, resulting in successful collaborations on machine parts across different wafer process machines of the fab. The redesigned parts created by advanced 3D printing (with materials like ceramics, metals and resins) have yielded tangible improvements in functionality and cost-effectiveness.

One example is the 3D printed oscillation arm of the scan arm. The supplier integrated complicated air channel design within the arm instead of having it around the arm's peripheral. The advantage of this new design is better protection of the air channel which is embedded and protected within the arm and hence likely leading to longer lifespan.

Mr. Lim Beng Kiat, Supply Chain Director commented "We are glad to be able to produce high-quality parts on demand, reducing the need for excess inventory and the risk of equipment part obsolescence and avoiding supply chain bottlenecks. At the end, SSMC's long-term relationship of co-creating local supply chain capabilities by working with local SMEs is one of the win-win formula of success. Our collaboration with SSIA has been instrumental in navigating the complexities of local partnerships and fostering technical capabilities within the semiconductor industry. This fruitful alliance underscores the importance of industry associations in driving innovation and collaboration."

SSMC's journey with 3D printing serves as a beacon of light for the local semiconductor community. By embracing innovation and collaboration, the industry can unlock new opportunities and drive meaningful change in supply chain management and technical capabilities adopting forefront advance technologies.

ssmc

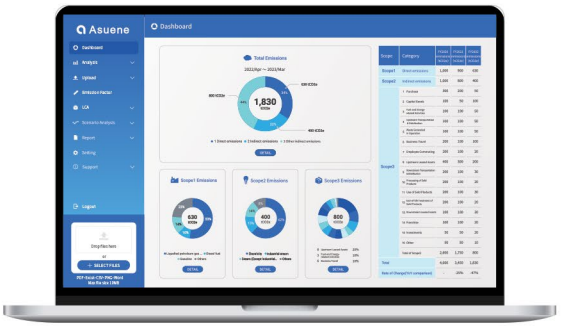
(A Joint Venture of NXP and TSMC)

The carbon accounting platform

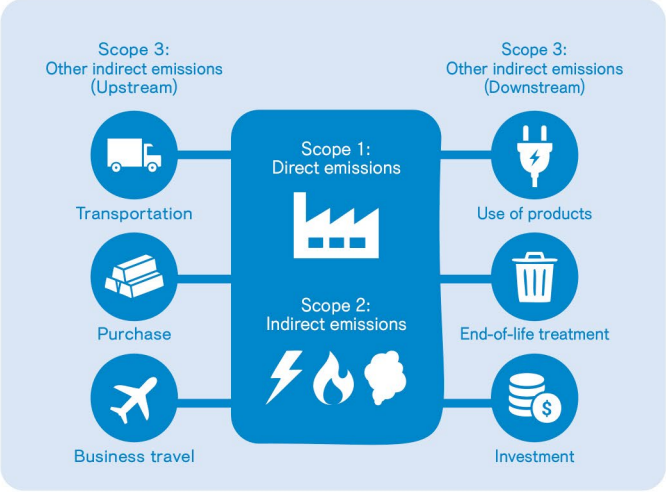
Asuene

Measure, report and reduce carbon emissions,

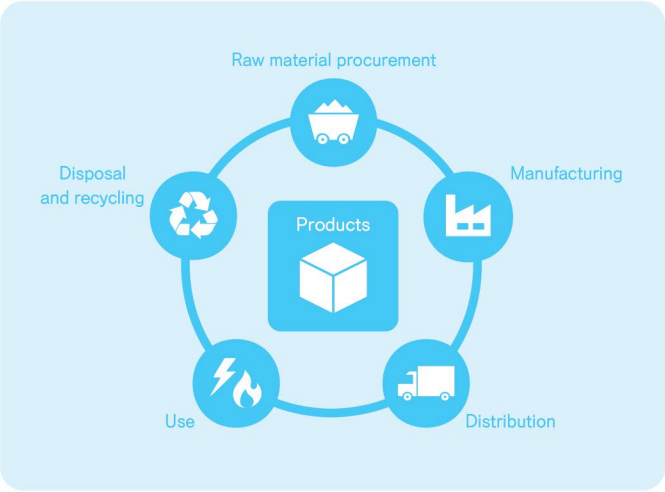
for your sustainability and for the planet



GHG Protocol for Enterprise

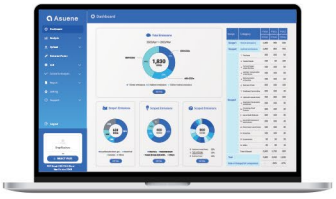


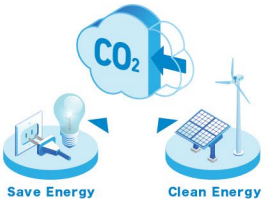
Carbon Footprint of Products



Manage your Scope 1-3 emissions and product lifecycle assessment to accelerate actions to achieve net zero.

Asuene's 3 Benefits





POINT 01 Accurate & Efficient

- AI-OCR Technology for easy data input
- Flexible data entry model (API/CSV) for all Scope 3 methodologies

POINT 02 Tailor-made Support

- Continuous assessment to refine your methodology for higher accuracy
- Emission Factor and data mapping recommendation

POINT 03 End to End Decarbonization

- Decarbonization Road-mapping
- Reduction support via Renewable Energy, Carbon Credits

Tokyo Electron Device Singapore Pte. Ltd.
152 Beach Road, #10-03 Gateway East, Singapore 189721

E-mail : tedsg_info@teldevice.co.jp
TEL : +65-6542-1776

PIONEERING INNOVATION IN SEMICONDUCTOR EXCELLENCE:

WINTECH NANO'S LABLESS REVOLUTION

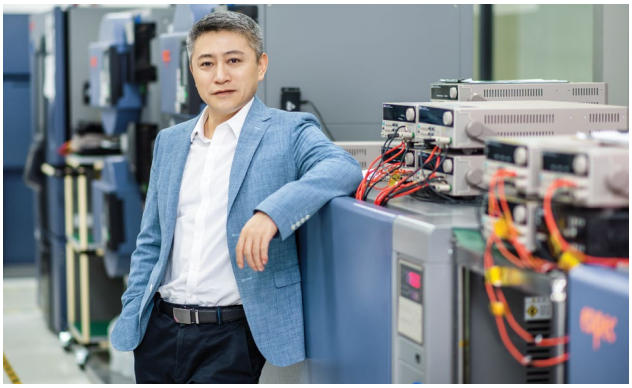
Driving Innovation in Semiconductor Analysis

In the fast-paced world of semiconductor technology, WinTech Nano stands at the forefront of innovation. Established in Singapore in 2004, the company has revolutionized the industry with its cutting-edge approach to third-party semiconductor analysis. With state-of-the-art laboratories in Singapore and China, WinTech Nano delivers unparalleled expertise in Failure Analysis (FA), Material Analysis (MA), and Reliability Analysis (RA). These services are critical for advancing research, development, manufacturing, and quality control, enabling companies to enhance their product yield and performance. WinTech Nano's comprehensive testing and analytical capabilities have earned it the moniker "IC Hospital," a testament to its role as a crucial support platform for the semiconductor industry.

The Labless Advantage: Cost-Efficiency and Enhanced Performance

2024 poses significant challenges for the semiconductor sector, with many companies grappling with cost control and efficiency amid uncertain economic conditions. WinTech Nano's innovative Labless or Lablite business model offers a transformative solution. This approach allows companies to outsource their failure analysis needs, circumventing the substantial expenses associated with maintaining in-house laboratories.

Typically, large multinational companies allocate a portion of their capital expenditure (capex) to analytical equipment during the annual budgeting process. However, the cumulative costs of equipment depreciation, service contracts, consumables, and specialized personnel often exceed initial estimates. Setting up a basic failure analysis lab for IC chips can require an investment of USD 7-9 million, with yearly expenses amounting to USD 1.5-2 million.



Strategic Outsourcing for Unmatched Quality and Speed

CEO of WinTech Nano, Mr. Li Xiaomin, highlights the advantages of outsourcing to a proficient third-party lab like WinTech Nano. By spending USD 1.5-2 million annually with WinTech Nano, companies can secure top-tier customer status, ensuring priority service and exceptional quality. WinTech Nano operates 24/7, serving over 500 customers in Singapore each year, and is equipped to handle a wide range of failure and material analysis tasks efficiently and effectively.

Expanding Capabilities for Comprehensive Service

Mr. Li Xiaomin emphasizes the evolution of third-party labs: "In the past, limited capacity and service portfolios restricted the scope of third-party labs. Now, WinTech Nano has significantly expanded our capabilities to cover most failure and material analysis needs in the industry. Our Labless or Lablite model enables customers to achieve substantial savings while maintaining high standards of analysis. We analyze for your success."

WinTech Nano's commitment to innovation and excellence positions it as a leader in the semiconductor industry. By offering a revolutionary Labless business model, the company provides a cost-effective, efficient alternative to traditional in-house labs. As the semiconductor sector navigates challenging times, WinTech Nano remains a beacon of technological advancement and reliability, ensuring that customers can thrive with superior analysis services.

"THE SECRET LIES WITH DIVERSITY AND INCLUSIVITY" AMD DIRECTOR ON WHY INNOVATION IS DEFINED BY CULTURE

Since young, Chen Lan has enjoyed finding a better way for every problem she encounters and making a positive difference for everyone.

Chen Lan's natural curiosity and penchant for working at a problem without faltering led to her finding a calling in the engineering field and, eventually, her way up to her current position as the Director of Product Development Group at AMD Singapore.

In her role, Chen Lan oversees the engineering functions for AMD Instinct products. She has been a part of AMD Singapore since 2001, where she has honed her expertise across various disciplines – including design verification, test engineering, product engineering, program management, and product management.

She continues to apply this mantra of pushing boundaries to her job and leadership approach – proactively seeking out ways to innovate and bring value to the company, as well as embracing any opportunity for her team to reach new heights – and she wasn't the only one; AMD as a whole was doing the same.

Passion drives transformation

AMD has undergone a dramatic transformation and expansion over the past five years. The 55-year-old company has more than doubled its global engineering workforce to over 15,000 employees to help it deliver cutting-edge chips, software, and enterprise AI solutions, including its flagship AMD Instinct™ MI300 Series accelerators.

While many may find a big team to be a difficult landscape to navigate, especially when it comes to innovation agility, Chen Lan appreciates the diversity and the ingenuity that it brings to the table. "Engineering is never a one-person show. You will be surprised at what happens when you bring a group of experts from different functions with diverse backgrounds."

It is also what keeps her going. The semiconductor industry is not only fast paced but also demanding, and this is exceptionally so with AMD's ambition of powering the products and services that help solve the world's most important challenges. For Chen Lan, satisfaction comes from working on and solving problems with her global team. In fact, she described the enthusiasm, creativity, technical

depth, and teamwork that AMDers bring to those meetings as her “Energizer battery”.

Game-changing experience

One of her most memorable product development experiences was when she was given the opportunity to lead the team in charge of developing the processor for Microsoft Xbox back in 2020, at the height of the pandemic.

The project posed an unprecedented challenge for Chen Lan and her team. They had to bring up the product and achieve the requisite production volume ramp while the supply chain was severely disrupted, and team members adjusted to remote work arrangements. Under her charge, the team took calculated risks to experiment with bold ideas to develop new ways of speeding up their progress. It was an intense three quarters, but the team managed to launch the product and deliver to the customer on time. It was a reaffirming moment for Chen Lan and her belief in the power of teamwork.

Chen Lan believes that creativity is essential to finding better solutions, and that is why she finds herself right at home with AMD. The company is not only a proponent of a diverse and inclusive culture but also in the power of its employees, actively empowering them to achieve their goals. Thanks to the support and resources, Chen Lan was able to bring back the AMD Women Forum – that seeks to establish a network of peer support and advocate for women in tech – in Singapore in 2020. “Learning is a life-long journey. I am excited for what comes next for me and my team at AMD especially as we usher in the next era of adaptive and high-performance computing.”

IGNITE THE FUTURE:

JOIN THE MENTORING SG MOVEMENT

Welcome to Mentoring SG, where we're on a mission to cultivate a vibrant culture of mentorship and make it accessible to young people across Singapore.

Supported by Forward SG and the National Youth Council (NYC), Mentoring SG plays a pivotal role in youth development, helping young individuals navigate the crucial transitions from school to work and beyond. Our collaborations span corporate partners, mentoring organizations, educational institutions, and youth groups, creating a committed community dedicated to nurturing confident and resilient youth.

Our Journey: From Vision to Reality

Recognizing the transformative power of mentoring, we launched the Mentoring Alliance for Action (AfA) in March 2021. Spearheaded by the Mentoring Alliance for Singapore (MASg) and NYC, our 16-member Steering Committee, representing the People, Public, and Private (3P) sectors, came together to address gaps and harness insights in the youth mentoring landscape. Rebranded in 2022, Mentoring SG now leads a nationwide movement, championing youth mentoring across the nation.

Building a Robust Mentoring Ecosystem

Mentoring SG has made remarkable strides:

- 100 corporate partnerships forged
- 700 mentors trained
- 5,000 young individuals reached through strategic collaborations
- We host regular community initiatives to create an effective mentoring ecosystem where various stakeholders thrive.

Community of Practice (CoP)

Our CoP sessions bring together experts and experienced mentors to share strategies, tackle challenges, and explore new trends in mentoring.

CoP '24, Building Bonds: Fostering Mentor and Mentee Communities within Your Organisation.

CoP '23, From awareness to Action: Marketing for Mentoring Programme Success

Corporate Engagement (CE)

CE events unite individuals and corporate representatives to nurture young talents and contribute to the national mentoring movement.

CE June '23

CE September '23

Flash Mentoring

Passionate mentors volunteer their time during our school engagements, offering insights and advice to students.

Electronic Fair @ ITE College Central

TechConnect @Ngee Ann Polytechnic

Flagship Programs

To enhance mentor capabilities, Mentoring SG offers flagship programs:

Mentoring 101: Our foundational e-learning program prepares mentors for impactful mentorship.

MENTORING 101

Mentoring for Youths: This dynamic, WSQ-accredited two-day course delves into the evolving mentorship landscape, equipping mentors with insights to adapt to the changing needs of today's youth.

MENTORING FOR YOUTHS

Industry-led Mentoring Collaborations

Looking ahead, we're expanding our industry partnerships. Executive Director Kelvin Kong emphasizes, "Industry-led mentoring initiatives are the lifeblood of tomorrow's workforce. They're not just programs; they're transformative journeys that inspire and prepare our youth for their future." Stay tuned for our exciting partnership announcement with the Singapore Semiconductor Industry Association.

Join the Mentoring SG Movement!

National Mentoring Summit (NMS) in Nov '24
This year's summit, themed "Mentoring Matters," highlights the impact of industry-led collaborations in empowering young people. It aims to unite key stakeholders to cultivate stronger connections and celebrate the ecosystem's progress.

NMS 2022

Corporate Excellence Award

First introduced at NMS last year, this award recognizes organizations excelling in internal mentoring programs and youth development. Get ready to showcase your commitment to excellence at NMS 2024!

NMS 2023

Corporate Excellence Award 2023

Volunteer & Pay it Forward!

Industry Leaders: Join our core team and lead industry-specific mentoring initiatives.

Volunteer as a Mentor: Participate in our flash mentoring sessions and share your experiences with youth.

Join us in making a lasting difference. Reach out at contact@mentoring.sg, follow us on LinkedIn @MentoringSG, and explore our initiatives at mentoring.sg.

Mentoring SG LinkedIn

mentoring SG

Technology Enabling Life

Technology for creating semiconductors is technology that makes dream products real

Shockingly groundbreaking products –
this is what semiconductor advancements bring.
Our technology produces equipment to
manufacture semiconductors,
and it makes wonders real.

TEL TOKYO ELECTRON

SSIA
Singapore Semiconductor Industry Association

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