

## **Singapore's IGaN says nation is at the cusp of becoming Asia's epicentre for niche semiconductor technologies in power efficiencies**

*Local champion strengthens GaN-based activities as US\$73mil investment rallies industry players to establish ecosystem for competitive advantage and lower cost barriers*

**Singapore, 28 Aug 2020** – Singapore-based IGSS GaN Pte.Ltd (IGaN), an internationally-recognised technology developer and commercialisation experts in gallium nitride-on-silicon/silicon carbide (GaN-on-Si/SiC), furthers its expansion initiatives following demonstrated successes in pilot lines of customers. This has fuelled the company's ambitions of setting up a combined commercial and Global Joint Lab for 4"- 8" metal organic chemical vapor deposition (MOCVD) GaN Epi Centre in Singapore. Additionally, IGaN's recent onboarding of a renowned toolmaker reaffirms the company's efforts in establishing an innovative GaN ecosystem that supports global demand for an energy-efficient, sustainable and mobile future.

Operationalisation of the GaN Epi Centre is envisioned for mid-2021, with IGaN, its holding company IGSS Ventures (IGSSV) and select partners investing some US\$73 mil to expand GaN epi production capacity and mass production 8" GaN fabrication technologies.

The Epi Centre capitalises on demands in new applications and next-generation technologies like power and renewable energy, 5G, wireless communication, and data centres – which require high switching frequencies, efficient energy management and the ability to perform under high power densities. Poised to accelerate "green goals" across Asia-Pacific, from China to Singapore-Malaysia to India, GaN technology is increasingly sought after by industry players looking to address public and private sector efforts in decarbonising digitalisation, energy distribution and mobility.

Creating new industry synergies, the Epi Centre brings together customers, universities, research institutes (RIs) and tool vendors to collaborate in the future development of GaN technologies as the quality of epiwafers are critical to GaN device manufacturing, says Raj Kumar, IGaN's chief executive officer and founder of IGSSV.

"What the industry lacks today is a concerted effort to enhance the overall GaN ecosystem to lower cost barriers so that technology adoption can happen at the pace the market is moving. We projected more than nine years ago that at 8" wafer dimensions, GaN-on-Si capabilities becomes a competitive and powerful solution to create the right balance between superior performances and cost competitiveness. A commercial centre and Joint Lab hosting several top specialist brands and leading vendors is a timely market response to creating strategic partnerships that fast-track innovation, growth, and customer value. Capitalising on the recognisable Singapore-brand, second to none IPs standards, its known semiconductor infrastructure and IGaN's in-house expertise, I truly believe we can set standards, create benchmarks and lead the global movement in GaN adoption," he stressed.

The company credits its roots in proprietary GaN-on-Si growth recipe as the result of hundreds of millions of dollars of research by various RIs and University groups in Singapore over 14 years. IGaN itself subsequently spent six years perfecting the technology and going beyond its original licensing capabilities - securing multiple partnerships focused on strengthening the company's capacity to supply 8" GaN-on-Si epiwafers.

Raj adds, “Today, Singapore’s existing semiconductor environment, strengths and industry framework forms an instrumental base to develop an ecosystem for niche technologies. Case in point for us is IGaN’s collaboration with Nanyang Technological University. Established to develop a GaN manufacturing technology that can be adopted by existing silicon wafer fabs to produce high-volume and low-cost GaN products, such partnerships and our global customer base has paved the way for the eventual realisation of our Epi Centre vision, next year. We are certain that Singapore is at the cusp of becoming a global commercialisation player in GaN.”

This Epi Centre facility project represents another critical milestone for IGSS Ventures group, IGaN’s holding company. The group’s other subsidiary CompoundTek Pte. Ltd, has successfully launched a multi-million-dollar dedicated Silicon Photonics (SiPh) Testing Centre of Excellence early this year, billed as Southeast Asia’s first-of-its-kind facility. The testing centre focuses on production and engineering test services accessible to commercial industry players.

Ambitions for the Epi Centre is indicative of the growing excitement in the industry as GaN technology sits at the intersection of power-efficient electronics, AI, 5G and IoT, charging systems/powertrain management, green energy and smart city demands. Spurring a wave of progress across several high-growth and mission-critical sectors such as consumer appliances, environmental monitoring, healthcare and automotive, GaN has unleashed unprecedented capabilities and new opportunities beyond the limits of existing technologies.

According to Transparency Market Research, the global GaN semiconductor devices market is expected to reach a valuation of ~US\$4 billion by the end of 2027. Of the key end-use industries utilising GaN semiconductors, the aerospace and defence sector dominates, accounting for a share of over 42% of the global market in 2015 alone.

IGaN offers a ‘one-stop solution’ approach for GaN-on-Si epiwafers and GaN fab on 200mm platform with its automotive-qualified foundry partner, to provide solutions suited for power, radio frequency (RF), sensor products and sustainable energy management applications.

For more information, contact [enquiry@igssgan.com](mailto:enquiry@igssgan.com)

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### **About IGSS GaN Pte Ltd (IGaN)**

IGaN is a Singapore-based company focusing in gallium nitride on silicon (GaN-on-Si) epitaxial wafers and proprietary 8” (200mm) GaN fabrication technologies for niche power, radio frequency, and sensor applications. Our solutions drive global technology adoption and customers’ commercialisation goals in cutting-edge applications spanning autonomous and electric vehicles (AV/EV), renewable energy, Light Detection and Ranging (LiDAR), 5G, high-performance sensors and Internet of Things (IoT). Apart from its in-house intellectual properties and know-how, IGaN has exclusivity of Singapore’s A-STAR’s GaN-on-Si patents/copyrights. In offering a “one-stop” approach to GaN-on-Si technologies, its ecosystem includes partnerships with research institutions and a leading automotive-qualified foundry partner.

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