SEMICON Taiwan UK Delegation

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SEMICON Taiwan

英國代表團

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British Office Taipei Contacts 英國在台辦事處聯絡資訊

Piers Gopsill 高景哲
Head of Technology Trade
處長 - 科技
piers.gopsill@fcdo.gov.uk

Ginell Hsu 許慧雯
Science & Technology Officer
組長 - 創新科技處
ginell.hsu@fcdo.gov.uk

Lawrence Niu 牛淳安
Commercial Officer - Technology
組長 - 科技
lawrence.niu@fcdo.gov.uk

Andie Wang 王安棣
Science & Technology Officer
組長 - 創新科技處
andie.wang@fcdo.gov.uk

Karis Lu 盧筱淳
Market Advisor for Export Support Service
主任 - 進口諮商服務
karis.lu@fcdo.gov.uk

Foreword

I am delighted to be leading the UK delegation to SEMICON Taiwan 2026 in my role as CEO of the UK Semiconductor Centre.

The UK and Taiwan both have a long heritage in semiconductors and bring highly complementary strengths to the global semiconductor industry. Taiwan has built the world's most advanced and deeply connected manufacturing ecosystem, while the UK has internationally recognised capabilities in design and IP, compound semiconductors, photonics, advanced materials, manufacturing equipment and research.

This year's UK delegation reflects both the breadth of the sector and the technologies shaping its future. It includes companies and organisations working across AI hardware, quantum technologies, flexible semiconductors, chip design, photonics, materials and equipment. Together, they represent a much wider ecosystem of established businesses, specialist SMEs, high-growth companies and world-leading universities.

The UK Semiconductor Centre was created to connect this ecosystem, support companies as they grow and strengthen the UK's international partnerships. Our purpose at SEMICON Taiwan is therefore not simply to showcase UK capability, but to help turn conversations into practical commercial, manufacturing, investment and research relationships.

We want to connect UK innovators with Taiwan's manufacturing expertise and supply-chain depth, while helping Taiwanese companies identify technologies, partners and opportunities in the UK. By bringing together our respective strengths, we can accelerate the development and commercialisation of new technologies, strengthen supply chains and create opportunities in global markets. SEMICON Taiwan provides an exceptional environment in which to build these relationships. I warmly invite companies, investors, researchers and industry leaders to visit the UK Pavilion, meet the delegation and explore how we can work together.

I look forward to meeting you and helping to build the next stage of the UK–Taiwan semiconductor partnership.

前言

很榮幸以英國半導體中心執行長的身分，率領英國代表團參加SEMICON Taiwan 2026。

英國與台灣皆擁有悠久的半導體發展歷史，並在全球半導體產業中展現高度互補的優勢。台灣打造了全球最先進且緊密連結的半導體製造生態系，而英國則在晶片設計與智慧財產、化合物半導體、光子技術、先進材料、製造設備以及研究創新等領域享有國際聲譽。

今年的英國代表團充分展現了英國半導體產業的廣度，以及引領未來發展的重要技術。代表團成員涵蓋人工智慧硬體、量子科技、柔性半導體、晶片設計、光子技術、材料與設備等領域的企業與機構。他們共同代表著一個更廣泛的產業生態系，包含成熟企業、專業中小企業、高成長公司以及世界頂尖大學。
英國半導體中心成立的宗旨，在於串聯這個生態系統、協助企業成長，並深化英國與全球夥伴之間的合作關係。因此，我們參與SEMICON Taiwan 的目的不僅是展示英國的技術實力，更希望促成實際的商業、製造、投資及研究合作關係，讓交流對話轉化為具體成果。

我們期盼協助英國創新企業對接台灣卓越的製造能力與完整的供應鏈優勢，同時協助台灣企業發掘英國的技術、合作夥伴與市場機會。透過結合彼此的優勢，我們能夠加速新技術的開發與商業化進程、提升供應鏈韌性，並共同開拓全球市場的新機遇。
SEMICON Taiwan 為建立這些合作關係提供了卓越的平台。我誠摯邀請各界企業、投資人、研究人員及產業領袖蒞臨英國館，與代表團成員交流，並共同探索未來合作的可能性。

期待在展會期間與各位相見，攜手開創英台半導體夥伴關係的嶄新篇章。

Andy McLean
CEO,
UK Semiconductor Centre

執行長
英國半導體中心

UK Semiconductor Landscape

With world-leading research institutions and innovative companies, the UK continues to play an important role in the global semiconductor industry. The latest World Semiconductor Trade Statistics forecast projects that the global market will reach approximately **$1.51 trillion in 2026**, driven particularly by demand for AI infrastructure, advanced computing and memory. The UK is focused on **securing leading positions in high-value parts of the semiconductor value chain**, including chip design and IP, compound semiconductors, photonics, advanced materials, semiconductor equipment, advanced packaging and next-generation computing architectures.

The UK Government's ambitions for the sector are embedded within the **Modern Industrial Strategy** and its **Digital and Technologies Sector Plan**, where semiconductors are one of six priority frontier technologies. Semiconductors are both a strategic capability in their own right and a critical enabler of artificial intelligence, quantum technologies, advanced connectivity, defence, automotive, clean energy and advanced manufacturing. The UK is investing in innovation, skills, infrastructure and commercialisation, including through the AI Hardware Plan published in 2026.

A key part of this effort is the **UK Semiconductor Centre (UKSC)**, established to accelerate growth across the sector and build on UK strengths in chip design and IP, compound semiconductors, integrated photonics, advanced materials and packaging. UKSC brings together industry, academia and government, providing cross-sector leadership, ecosystem development and business support while helping companies connect with investment, skills, infrastructure and international opportunities.

The latest government study identifies more than 700 companies active in the UK semiconductor sector, including **295 dedicated semiconductor companies**. These dedicated companies generated an estimated **£10.6 billion in revenue** and £7.5 billion in gross value added in 2025, while directly employing approximately 16,350 people. 60% are primarily engaged in research and development, design and IP activities.

The UK's influence extends far beyond its domestic market. More than 99% of the world's smartphones are built on technology from Cambridge-headquartered Arm. The wider UK photonics industry, an important enabler of semiconductor, quantum and communications technologies, comprises **more than 1,400 companies**, employs 84,800 people and generated **£18.5 billion in turnover** in 2024, making it the second-largest photonics manufacturing industry in Europe.

This commercial capability is supported by internationally recognised university research in semiconductor materials, integrated-circuit design, silicon photonics, power electronics, heterogeneous integration, neuromorphic computing and secure-by-design architectures such as **CHERI**. National Innovation and Knowledge Centres are helping translate this research into commercial technologies, including **CORNERSTONE** in silicon photonics, **REWIRE** in advanced materials for power electronics, **CHIMES** in heterogeneous integration and **NeuroWare** in neuromorphic computing.

South Wales is home to the world's first compound semiconductor cluster and an integrated ecosystem spanning research, materials, wafer production, chip fabrication, equipment, packaging and applications. Over the past decade, more than £850 million has been invested in facilities and over £150 million in collaborative research and development. The **Compound Semiconductor Applications (CSA) Catapult** supports companies developing and commercialising new semiconductor technologies, working alongside universities, manufacturers and specialist suppliers across the cluster.

International partnerships are central to the UK's ambitions. **ITRI's opening of its UK office in London in 2025**, together with its strategic collaboration with the UK Catapult Network, has created new routes for cooperation between British and Taiwanese researchers and companies. By combining the UK's strengths in research, design and emerging technologies with Taiwan's industrialisation and manufacturing capabilities, the two ecosystems can create new commercial opportunities and strengthen the resilience and security of international supply chains.

UK Research and Innovation (UKRI)

Seizing the opportunity of a thriving UK semiconductor industry

How Innovate UK and Compound Semiconductor Applications (CSA) Catapult are leading initiatives to drive growth, create jobs and foster innovation across the UK's semiconductor sector.

The role of Innovate UK, part of UKRI

Innovate UK, the UK's national innovation agency, is part of UKRI, the organisation established in 2018 with a budget of £8bn per year to support science and innovation in the UK.

As the UK's innovation agency, Innovate UK's mission is to help companies to grow and scale through their development and commercialisation of new products, processes and services, supported by an outstanding UK innovation ecosystem that is agile, inclusive and easy to navigate. This includes helping UK businesses to develop global R&D and innovation collaborations in areas such as semiconductors and other sectors of the economy. This is achieved through forming strong international partnerships such as with the Industrial Technology Research Institute (ITRI).

Additionally, Innovate UK supports the UK's Catapult Network, which helps business to convert their ideas into viable products and services. There are nine Catapults including the CSA Catapult.

The role of the Compound Semiconductor Applications Catapult

Established and funded by Innovate UK, the CSA Catapult is the UK's authority on compound semiconductor applications and commercialisation. It focuses on the development of the most advanced semiconductors, compound semiconductors, and how they can be used in the next generation of technologies.

From its base in Newport, Wales, the CSA Catapult's mission is to deliver long-term benefits to the UK economy. It does this by accelerating growth in industries where compound semiconductors create a competitive advantage and enables new products or end markets.

The CSA Catapult is working towards its goals by implementing a range of initiatives as outlined in the strategy. These include bringing together supply chains, creating jobs and providing training to scientists and engineers who will lead the way in developing future technologies.

The CSA Catapult is set to expand its operations across the UK, establishing physical locations in Bristol, Scotland and the North East. This expansion will allow the organisation to collaborate with companies and universities in these regions, leveraging their expertise to drive innovation and economic growth.

Given its expertise in compound semiconductor technology and applications, the CSA Catapult is well-suited to spearhead the development of prototype silicon fabrication and scale-up of compound semiconductors in the UK.

Building the semiconductor industry for the UK and beyond

The UK recognises that no one country has all the answers and therefore is keen to bring together complementary strengths through global collaboration.

The UK sector looks to form long-term international partnerships to safeguard supply chains against possible disruption, in order to bolster this increasingly important sector of the economy.

The opportunity for a thriving UK semiconductor industry is there for the taking. There are significant opportunities for growth and innovation across the industry with the potential for huge economic benefits by supporting companies and growing jobs and skills across the UK and creating global opportunities.

英國半導體產業概況

憑藉世界領先的研究機構與創新企業，英國持續在全球半導體產業中扮演重要角色。根據最新的世界半導體貿易統計組織預測，全球半導體市場規模至 2026 年將達約 **1.51 兆美元**，其中人工智慧基礎設施、先進運算與記憶體需求將是主要成長動能。英國正致力於在**半導體價值鏈中的高附加價值領域建立領先地位**，包括晶片設計與智慧財產、化合物半導體、光子技術、先進材料、半導體設備、先進封裝，以及新世代運算架構等關鍵領域。

英國政府對半導體產業的發展願景已納入《**現代產業策略**》及《**數位與科技產業計畫**》之中，並將半導體列為六項優先發展的前瞻技術之一。半導體不僅是攸關國家競爭力的戰略技術，更是人工智慧、量子科技、先進通訊、國防、汽車、潔淨能源及先進製造等領域的重要基礎。為此，英國持續投資於創新研發、人才培育、基礎設施及技術商業化，加速產業成長，其中包括於 2026 年公布的《AI 硬體發展計畫》。

在此發展藍圖中，**英國半導體中心**（UK Semiconductor Centre, UKSC） 扮演關鍵角色。UKSC 成立的宗旨在於加速產業發展，進一步鞏固英國於晶片設計與智慧財產、化合物半導體、積體光子技術、先進材料及先進封裝等領域的優勢。UKSC 匯聚產業界、學術界與政府資源，提供跨領域領導、產業生態系發展及企業支援服務，同時協助企業鏈結投資、人才、基礎設施及國際市場機會。

根據英國政府最新研究，英國半導體產業目前擁有超過 700 家相關企業，其中包括 **295 家專注於半導體業務的企業**。這些核心半導體企業於 2025 年創造約 **106 億英鎊營收**與 75 億英鎊總附加價值，並直接雇用約 16,350 名從業人員。其中，約六成企業主要從事研發、設計及智慧財產相關業務。

英國在全球半導體產業中的影響力遠超其本土市場規模。全球超過 99% 的智慧型手機採用了來自劍橋總部企業 Arm 的技術架構。此外，作為半導體、量子科技及通訊技術重要基礎的英國光子產業，目前擁有超過 **1,400 家企業**，共聘用 84,800 名從業人員，並於 2024 年創造 **185 億英鎊營業額**，成為歐洲第二大的光子製造產業。

這些產業實力背後，有賴於英國享譽國際的大學研究體系支撐。研究領域涵蓋半導體材料、積體電路設計、矽光子技術、功率電子、異質整合、類神經形態運算，以及以 **CHERI** 為代表的安全設計架構。英國各項國家級創新知識中心亦積極推動研究成果商業化，包括專注於矽光子的 **CORNERSTONE**、聚焦功率電子先進材料的 **REWIRE**、推動異質整合技術的 **CHIMES**，以及專研類神經形態運算的 **NeuroWare**。

南威爾斯擁有全球首個化合物半導體產業聚落，並建構出涵蓋研究、材料開發、晶圓生產、晶片製造、設備、封裝及終端應用的完整生態系統。過去十年間，當地已投入超過 8.5 億英鎊建置相關設施，並投入超過 1.5 億英鎊支持產學合作研發計畫。化合物半導體應用創新中心（Compound Semiconductor Applications, **CSA Catapult**） 則持續協助企業開發與商業化新一代半導體技術，並與區域內的大學、製造商及專業供應商密切合作。

國際合作是英國半導體發展策略的重要支柱。**工業技術研究院於 2025 年在倫敦設立英國辦事處**，並與英國的創新中心網絡展開策略合作，為英國與台灣的研究人員及企業建立新的合作管道。透過結合英國在研究創新、晶片設計及前瞻技術方面的優勢，以及台灣在產業化與製造領域的卓越能力，雙方生態系將能共同創造新的商業機會，並進一步提升國際供應鏈的韌性與安全性。

英國研究與創新署 (UKRI)

掌握英國半導體產業蓬勃發展的契機

英國創新局(Innovate UK) 與化合物半導體應用創新中心(CSA Catapult) 正領導各項倡議，以推動英國半導體產業的成長、創造就業機會並促進創新。

英國創新局（Innovate UK）暨 UKRI 的角色

英國創新局(Innovate UK) 為英國國家級創新機構，隸屬於英國研究與創新署(UKRI)。UKRI 成立於 2018 年，每年擁有約 80 億英鎊預算，負責支持英國的科學研究與創新發展。

身為英國的創新推動機構，Innovate UK 的使命是透過協助企業開發和商業化新產品、流程和服務，促進企業成長，並由靈活、具包容性且易於對接的英國創新生態系提供支援。

這包括協助英國企業在半導體等關鍵領域開展全球研發與創新合作。Innovate UK透過與工業技術研究院等國際夥伴建立緊密的合作關係來達成此目標。

此外，Innovate UK 亦負責支持英國創新中心網絡 （Catapult Network） 的發展，協助企業將創新構想轉化為具市場競爭力的產品與服務。目前英國共有九個創新中心，包括英國化合物半導體應用創新中心 （CSA Catapult）。

英國化合物半導體應用創新中心（CSA Catapult ）的角色

由 Innovate UK 建立並資助的CSA Catapult 是英國在化合物半導體應用及商業化發展的權威機構，聚焦於先進化合物半導體技術的開發，以及推動相關技術在下一世代產品與應用中的導入。

總部位於威爾斯紐波特的CSA Catapult 的使命是透過推動化合物半導體產業發展，為英國經濟創造長期價值。該機構透過加速化合物半導體具競爭優勢的產業成長，協助開創新產品與新市場應用，進一步提升英國在全球半導體產業中的競爭力。

為達成發展目標，CSA Catapult 正依據其策略藍圖推動多項重點計畫，包括整合產業供應鏈、創造高價值就業機會，以及培育未來將引領科技創新的科學家與工程人才。

CSA Catapult計畫在英國各地擴展其業務，預計於布里斯托、蘇格蘭及英格蘭東北部設立新的實體據點。這項擴展計畫將使該組織更緊密地與當地企業及大學合作，進一步結合區域技術優勢，加速創新發展並帶動區域經濟成長。

鑑於其在化合物半導體技術與應用領域的專業能力，CSA Catapult 非常適合領導英國矽晶圓製造原型和化合物半導體產業規模化的發展。

為英國及全球打造更具競爭力的半導體產業

英國認知到沒有一個國家能獨自解決所有問題，因此渴望透過全球合作來呈現互補的優勢。英國半導體產業希望透過建立長期的國際合作夥伴關係，以提升供應鏈韌性、降低潛在供應中斷風險，並強化半導體產業在英國經濟中的戰略地位。

英國半導體產業正在迎來前所未有的發展機遇。從研發創新到商業化應用，產業鏈各環節皆具備強勁的成長潛力。透過支持企業擴展、培育關鍵人才與技能，以及把握全球市場機會，英國有望打造更具競爭力的半導體產業，創造更多高價值工作機會，並帶動長期經濟成長。

Innovate UK
英國創新局

Innovate UK is the UK's innovation agency. We back deep tech businesses in the UK's priority sectors for national benefit, supporting their journey from startup to scaling business to industry leader. We provide the funding, expert support and connections to help breakthrough ideas reach their potential, improve lives and drive economic growth. Innovate UK is part of UK Research and Innovation.

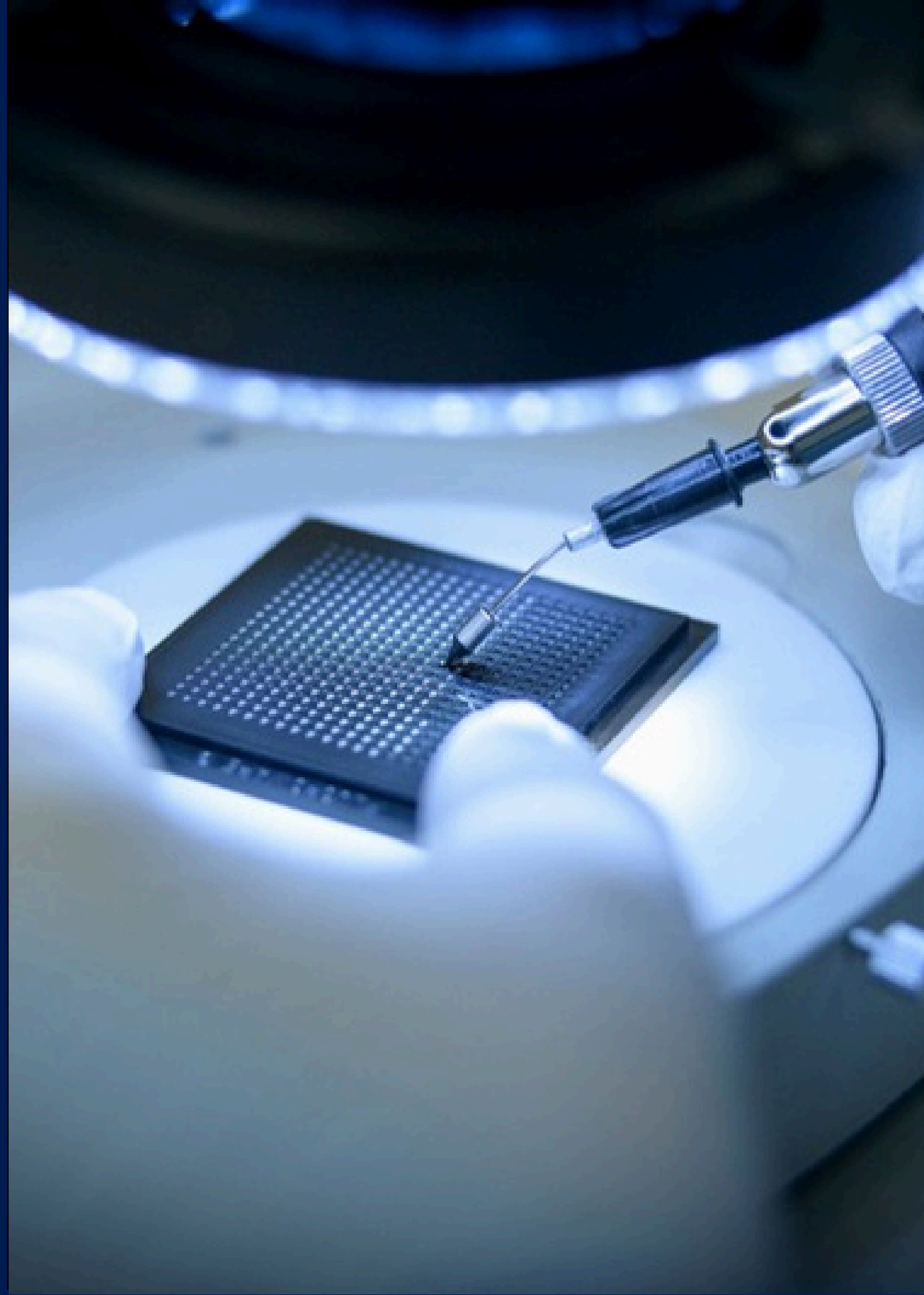
英國創新局（Innovate UK）是英國的國家創新機構，致力於支持深科技企業在英國重點產業領域發展，協助企業從新創階段一路成長為具全球競爭力的產業領導者。我們提供資金、專業輔導及國內外夥伴連結，協助突破性創新技術充分發揮潛力，改善人們生活，並帶動經濟成長。英國創新局隸屬於英國研究與創新署。

Innovate UK Contacts 英國創新局聯絡資訊

Louise Hooker
Global Business Innovation
Programme Manager
全球商業創新計畫經理
louise.hooker@iukbg.ukri.org
+44 7852 300 575

David Campbell-Molloy
Head of North America and Asia, Innovate UK
英國創新局 北美暨亞洲地區負責人
david.campbell-molloy@iuk.ukri.org
+44 7395 360 811

Dr Iain Mauchline
Head of Semiconductors, Innovate UK
英國創新局 半導體事務負責人
iain.mauchline@iuk.ukri.org
+44 7599 101 470



Aegiq Ltd

Contact 代表人

Chris Porthouse
CPO
產品長

chris.porthouse@aegiq.com

www.aegiq.com

Introduction

Aegiq develops photonic quantum computers based on their proprietary deterministic photon generation and ultra-low-loss photonic circuits. Drawing on over 20 years of research from the University of Sheffield and the National Epitaxy Facility, Aegiq's systems offer significant benefits:

- Fast: photonics provides fast runtimes, and Aegiq QGATE architecture solves the compilation bottleneck that can otherwise negate the benefit of quantum hardware.
- Deployable: designed for standard HPC deployment, there is no requirement for specialised infrastructure or dilution fridges.
- Scalable: 10,000x fewer components and millions fewer detectors shrink deployments from stadium-scale to rack scale, on-premises.

The result is a quantum computer, networked via standard telecom fibre, that integrates with existing data centre infrastructure and does not require a physics lab to operate. Their first-generation system is deployed at the UK NQCC and current R&D spans quantum dots, advanced photonic ICs, scalable control systems, and an HPC-compatible software stack.

Aegiq's "Quantum-Ready" tensor network algorithms deliver immediate benefit for complex simulation use cases on current GPUs, while mapping directly to fault tolerant quantum computers for a seamless transition in the future.

Strategic partners include BAE Systems, NVIDIA, MBDA, EPCC and ORNL. Aegiq is fabless and seeks partnerships in manufacturing, National Laboratories and academia to accelerate deployment of on-premise fault-tolerant photonic quantum computers.

Collaboration opportunities:

- Partners for (InP) quantum dots: epitaxy, nanofabrication of photonic devices, packaging
- Partners for ultra-low-loss photonic ICs (SiN, SiO2, TFLN)
- Wafer scale bonding and material growth for heterogeneous integration for photonic ICs
- Superconducting film deposition for SNSPD detector integration on photonic ICs
- Fibre packaging partners for cryogenic environments
- National Labs and HPC for deployment of Gen2 quantum computer
- Partnerships for complex simulation with quantum ready algorithms for material simulation and CFD (advanced manufacturing, fusion, aerospace)

公司概況

Aegiq運用專屬光子生成及超低損耗光子電路，研發光子量子電腦。

依據雪菲爾大學與國家磊晶中心逾二十年的研究基礎，Aegiq系統具備下列優點：

- 快速：光子運作速度快，Aegiq的QGATE架構能克服編譯瓶頸，發揮量子硬體設備的優勢。
- 可佈建：系統設計符合標準HPC佈建，毋需使用專業基礎建設或稀釋致冷機。
- 可擴充：零組件減少萬倍，偵測器減少百萬倍，可將部屬規模由大型設施縮小至單一機架。

如此量子電腦使用電信標準光纖連網，能整合在既有資料中心內，營運不需設置物理實驗室。

初代系統已建置於英國國家量子運算中心，目前研發方向包括量子點、先進積體光路、可擴充控制系統，以及與HPC相容的軟體堆疊。

Aegiq的張量網路演算式符合量子電腦需求，可在現有GPU上，立即獲得複雜模擬使用情境的優點，並可直接映射至容錯量子電腦架構，以便未來無縫接軌。

策略夥伴包括BAE Systems、NVIDIA、MBDA、EPCC、ORNL等，Aegiq未設晶圓廠，現正尋求製造夥伴、國家級實驗室及學術機構合作，加速部署現場容錯光子量子電腦。

合作機會:

- InP 量子點外延、生產製程及封裝技術
- 超低損耗光子積體電路（SiN、SiO_2、TFLN）
- 光子積體電路異質整合之晶圓級接合與材料成長
- SNSPD 超導單光子偵測器整合所需超導薄膜沉積技術
- 深低溫環境光纖封裝解決方案
- 第二代量子電腦部署所需國家實驗室與 HPC 資源合作
- 量子就緒演算法於材料模擬及 CFD 應用合作（先進製造、核融合、航太等領域）

Analogue Insight Ltd

Contact 代表人
Christian Borelli
Founder & CSO
創辦人& 策略長

christian.borelli@analogueinsight.com
www.analogueinsight.com/en/

Introduction

Analogue Insight is a fabless semiconductor company specialising in high-performance analogue and mixed-signal design, developing custom IP for advanced System-on-Chip (SoC), chiplet, and silicon photonics applications.

Analogue Insight delivers end-to-end SerDes and data-converter solutions for advanced SoC and chiplet architectures. The company specialises in high-speed serial links, ADC/DAC design, and photonic and electrical interfaces implemented in leading-edge technology down to 2nm GAA nodes, enabling demanding, high-bandwidth applications across AI, data networking, and automotive markets.

The founding team combines deep expertise in high-speed analogue design and layout for advanced interfaces and data converters, built over many years developing cutting-edge products at leading semiconductor companies. This experience underpins a strong capability set spanning protocol-agnostic SerDes PHYs, custom serial I/O for die-to-die, backplane, and card-edge interconnects, and bespoke transmitter and receiver solutions for silicon photonics. These solutions are optimised for higher throughput, lower latency, and reduced power consumption.

In addition to IP development, Analogue Insight provides design consultancy and turnkey execution services, supporting customers across North America and Europe from architecture definition through to silicon delivery.

The company is actively seeking to expand its presence and collaborations across the APAC region.

Collaboration opportunities:

- Partners working on advanced process and packaging technologies
- Co-development of cutting-edge chiplet technologies for AI, industrial and automotive applications
- Partnership opportunities with foundries and research institutes to reduce development cycles, enhance reliability and accelerate market entry
- Explore emerging interface designs, expand R&D pipelines and strengthen supply chain relationships

公司概況

Analogue Insight 是無晶圓廠半導體公司，專注於高效能類比和混合訊號設計，為先進系統單晶片 (SoC)、小晶片和矽光子應用開發客製化 IP。

Analogue Insight 針對先進 SoC 和小晶片架構，提供端到端的 SerDes 和資料轉換器解決方案，專長包括高速串列連結、ADC/DAC 設計，以及採用頂尖技術（低至 2nm GAA 節點）實現的光子和電子介面，打造各項要求極高的高頻寬應用，如人工智慧、資料網路和汽車市場。

創始團隊掌握高速類比設計與佈局的專業知識，熟悉先進介面和資料轉換器，多年來在知名半導體公司研發頂尖產品，累積豐富經驗，為公司建構強大實力，包括不拘通訊協定的SerDes PHY、客製化序列I/O（用於D2D、背板和卡緣互連），以及用於矽光子的客製發射器和接收器解決方案，適合更高吞吐量、更低延遲、更低功耗。

除了IP開發，Analogue Insight還提供設計諮詢和統包執行服務，協助北美和歐洲客戶從架構定義到晶片交付。

本公司正積極拓展亞太區業務和合作。

合作機會:

- 研發先進製程與封裝技術
- 共同研發尖端小晶片技術，用於人工智慧、工業和汽車應用
- 與代工廠和研究機構建立合作，以縮短開發週期、提高可靠性並加速產品進入市場
- 探索新興介面設計、拓展研發管道並加強供應鏈關係

Clas-SiC Wafer Fab Ltd

Contact 代表人

Jen Walls
CEO
執行長

Jen.walls@clas-sic.com

www.clas-sic.com

Introduction

Clas-SiC Wafer Fab is the world's first dedicated open foundry to manufacture Silicon Carbide power semiconductors, enabling fabless design houses and major semiconductor players to quickly enter the SiC market.
The company is unique in the semiconductor industry, supporting customers at all stages of the product life cycle:

- Tech stream: fabless design houses new to SiC can design on proven process design kits (PDKs) leveraging process knowhow in fabrication and high-voltage termination.
- Low-rate production: transitions tech devices into low-rate production, supporting varied customer lifecycles using license fabs to transition to high volume.
- Licensing: for larger wafer fabs seeking to scale from concept to high-volume manufacture and accelerate entry into SiC and wide bandgap opportunities.

Clas-SiC combines world-class expertise, state of the art SiC processing and reliability-proven design kits for JBS/MPS SiC diodes and MOSFETs from 650V to >3.3kV, with customers designing devices in development at 6.5kV and above. Clas-SiC provides a cost-effective route to market.

The company has an established global customer base spanning Europe, China, Taiwan, Brazil, and North America and is looking to cement and build new collaborations in Taiwan.

Collaboration opportunities:

- Fabless design houses,
- Research institutes in Taiwan,
- Companies in the wide band gap supply chain,
- Companies focused on developing high-efficiency, high-power conversion products and sensors, and
- End users of wide band gap semiconductors.

公司概況

Clas-SiC Wafer Fab生產碳化矽半導體，為全球首座專用開放晶圓廠，協助無廠設計公司及大型半導體業者迅速進入碳化矽市場。

本公司在半導體業界與眾不同，可在產品生命週期各階段全面協助客戶：

- 技術開發：無廠設計公司接觸碳化矽之初，即可使用已驗證的製造設計套組，善用製造與高壓終端處理的製程知識。
- 小量生產：協助元件由技術開發階段轉入小量生產，並藉由晶圓廠授權，協助各種客戶週期，轉換至大量生產。
- 授權：大型晶圓廠可從概念設計轉型大量製造，並加速掌握碳化矽市場及寬能隙商機。

Clas-SiC結合世界級專業、頂尖碳化矽製程、可靠的設計套組，適合JBS/MPS碳化矽二極體，以及650V至3.3kV的MOSFETs，客戶可設計6.5kV以上元件，由Clas-SiC提供符合成本效益的市場進入路徑。

本公司擁有紮實的全球客戶基礎，涵蓋歐洲、中國、台灣、巴西、北美市場，期望在台灣鞏固與增加合作對象。

合作機會:

- 無廠設計公司
- 台灣研究機構
- 寬能隙供應鏈內的企業
- 研發高效能、高功率轉換產品及感測器的企業
- 寬能隙半導體終端用戶

CoolLED Ltd

Contact 代表人

Dr Duncan Stacey
Global Business Development Manager – Semiconductor and Industrial
全球業務開發經理 (半導體與工業市場)

Duncan.stacey@coolled.com

www.coolLED.com

Introduction

CoolLED Ltd. is a UK-based designer and manufacturer of advanced LED illumination systems for high-performance industrial, scientific, and semiconductor applications.

With over 20 years of expertise in optical illumination, CoolLED works closely with OEMs and system integrators to develop custom illumination solutions that deliver the stability, uniformity, spectral performance, and reliability required for next-generation inspection and metrology tools.
Our semiconductor focus includes optical inspection, wafer defect review, metrology, advanced packaging, and process control applications. We support customers developing systems for wafer manufacturing, packaging, hybrid bonding, compound semiconductors, display technologies, and emerging advanced process nodes.

CoolLED specialises in collaborative engineering partnerships, creating tailored illumination architectures that address demanding application requirements such as high irradiance, multispectral imaging, high speed triggering, precision uniformity, and long-term performance stability and lifetime.

From concept development through qualification and volume production, our in-house team provides optical, mechanical, electronic, and thermal design expertise to support complex OEM development programmes worldwide. CoolLED's solutions are deployed in leading analytical, industrial automation, life science, and semiconductor equipment platforms, helping customers improve imaging performance, measurement accuracy, throughput, and manufacturing yield.

公司概況

CoolLED Ltd. 是英國領先的先進 LED 照明系統設計與製造商，專注於高性能工業、科學研究及半導體應用領域。

憑藉超過 20 年的光學照明技術經驗，CoolLED 與 OEM 設備製造商及系統整合商緊密合作，開發客製化照明解決方案，提供新世代檢測與量測設備所需的高穩定性、高均勻性、優異光譜表現及長期可靠性。

在半導體產業方面，CoolLED 的技術廣泛應用於光學檢測、晶圓缺陷複檢、精密量測、先進封裝及製程監控等領域。我們支援客戶開發涵蓋晶圓製造、封裝、混合鍵合、化合物半導體、顯示技術以及先進製程節點等關鍵應用的系統設備。

CoolLED 擅長透過深度協同工程合作，打造符合客戶需求的客製化照明架構，滿足高照度、多光譜成像、高速觸發、精密均勻度控制，以及長期穩定運作與壽命等嚴苛應用要求。

從概念設計、產品驗證到量產導入，CoolLED 內部團隊具備光學、機構、電子與熱管理設計等完整專業能力，可支援全球 OEM 客戶執行複雜且高要求的設備開發計畫。

CoolLED 的照明解決方案已成功導入全球領先的分析儀器、工業自動化、生命科學及半導體設備平台，協助客戶提升成像品質、量測精度、生產效率及製造良率。

CORNERSTONE

Contact 代表人

Dr Ramsey Selim
Head of Business Development
商務發展負責人

R.Selim@soton.ac.uk

cornerstone.sotonfab.co.uk

Introduction

CORNERSTONE is an open-source, licence-free silicon photonics rapid prototyping foundry. Our open-source model lowers the barriers to innovation in photonic integrated circuits (PICs), giving researchers and innovators the freedom to design, fabricate, and test ideas.

Founded in 2014, CORNERSTONE is UK's leading silicon photonics hub hosted by the University of Southampton, University of Glasgow, and the UK's Science and Technology Facilities Council. Our diverse team of experts brings together knowledge and a passion for enabling next-generation photonic solutions. We believe that groundbreaking technology should be accessible, collaborative, and transformative. We understand that bringing technologies to life is often slowed down by complexity, long lead times, and lack of access to specialist facilities. CORNERSTONE addresses these challenges by providing a rapid, transparent, and flexible route to silicon photonics prototyping. Our services allow users to trial concepts, validate designs, and accelerate the journey from research to applications enabled by our deep-UV lithography capabilities.

CORNERSTONE is more than a foundry. We are building a collaborative community around silicon photonics — offering training, networking opportunities, and knowledge sharing to ensure our users are supported at every stage. Through partnerships, events, and accelerator programmes, we are working to develop skills, encourage diversity, and strengthen the photonics ecosystem.

By combining world-class academic expertise with an open-access model, CORNERSTONE provides an environment for experimentation and growth. Whether your goal is to advance research, develop a product, or explore new applications of silicon photonics, we are here to provide the tools, support, and community to help you succeed.

公司概況

CORNERSTONE 是一家採用開放原始碼、免授權費模式運作的矽光子快速原型製造晶圓代工平台。我們的開放原始碼模式降低了光子積體電路創新的門檻，讓研究人員與創新者能夠自由地進行設計、製造與測試，將創新構想快速化為實際成果。

CORNERSTONE 成立於 2014 年，是英國領先的矽光子技術中心，由南安普敦大學、格拉斯哥大學及英國科學與技術設施委員會共同推動與營運。我們匯聚來自不同領域的專家團隊，結合深厚的專業知識與對技術創新的熱忱，致力於推動下一代光子技術解決方案的發展。我們相信，突破性的技術應具備開放性、協作性與變革性，讓更多創新者都能參與其中，共同創造產業價值。我們深知，新的技術從概念走向實際應用的過程，往往受到技術複雜度高、開發週期長，以及缺乏專業設施資源等因素所限制。

CORNERSTONE 透過提供快速、透明且具彈性的矽光子原型開發服務，有效解決這些挑戰。我們的服務讓使用者能夠驗證創新概念、確認設計可行性，並藉由我們先進的深紫外光微影製程技術，加速技術從研究開發邁向實際應用。

CORNERSTONE 不僅是一座晶圓代工平台，更致力於打造一個以矽光子技術為核心的協作社群。我們提供教育訓練、專業交流與知識分享等資源，確保使用者在每個開發階段都能獲得完善支援。透過產學合作夥伴關係、產業活動及加速育成計畫，我們積極培育專業人才、促進多元參與，並持續強化光子技術生態系的發展。

結合世界級學術研究能量與開放共享模式，CORNERSTONE 為創新實驗與技術成長提供理想環境。無論您希望推動前瞻研究、開發新產品，或探索矽光子技術的創新應用，我們都將提供所需的工具、技術支援與產業網絡，協助您加速實現目標並取得成功。

Hartley Ultrafast Ltd

Contact 代表人

Dr Marija Radulovic
Technology Partnership Director
技術合作總監

marija@hartleyultrafast.com

hartleyultrafast.com

Introduction

Hartley Ultrafast is a Bristol, UK deep-tech hardware company building the fastest AI decision-making silicon on Earth, using light.

Most AI inference hardware is built for scale and throughput. For a growing class of latency-critical applications, that isn't enough: a decision has to beat a competitor, or beat a physical process, to matter. Hartley's optoelectronic architecture computes small, dense neural networks directly in the analogue, photonic domain, delivering inference in nanoseconds rather than microseconds, while presenting a standard UCIe chiplet interface that integrates into existing CPU, FPGA, and SoC designs without redesigning the host system.

Our in-house proof-of-concept, Babbage, has demonstrated end-to-end inference in 176 nanoseconds. Clockwork, our first production timing chip, tapes out on an advanced RF process in Q2 2026. We hold four patents filed on the core architecture.

We are targeting the $162B market (2025, growing to $450B by 2030) for ultrafast decision-making across high-frequency trading, electronic warfare, communications and forward error correction, industrial process control, and AI acceleration: markets where every nanosecond of latency has measurable value.

Hartley was founded by Josh Silverstone, whose earlier work laid foundational IP for PsiQuantum and built one of the first photonic quantum computing labs. The founding team includes five PhDs in photonics, physics, and computer science, advised by semiconductor and computing veterans including Prof Bhavin Shastri and Prof David May FRS.

We are building the manufacturing, packaging, integration, and field-trial partnerships needed to bring nanosecond-class AI into production silicon.

公司概況

Hartley Ultrafast 是一家位於英國布里斯托的深科技硬體公司，致力於運用光學技術打造全球速度最快的 AI 決策運算晶片。

目前大多數 AI 推論硬體皆以提升運算規模與吞吐量為主要目標。然而，對於日益增加的低延遲關鍵應用而言，僅有高吞吐量並不足夠；唯有決策速度快於競爭對手，或快於實際物理系統的反應速度，才能創造真正價值。Hartley 的光電整合運算架構直接在類比光子域中執行小型高密度神經網路運算，可將推論延遲從微秒等級大幅降低至奈秒等級。同時，該架構採用標準 UCIe Chiplet 介面，可無縫整合至既有的 CPU、FPGA 與 SoC 設計之中，無須重新設計主機系統架構。

公司自行開發的概念驗證平台 Babbage，已成功展示端對端 AI 推論僅需 176 奈秒。Hartley 首款量產導向產品 Clockwork 為專用高速時序晶片，預計於 2026 年第二季採用先進射頻製程完成投片。目前公司已就核心架構提出四項專利申請。Hartley 鎖定超高速決策運算市場，預估市場規模將由 2025 年的 1,620 億美元 成長至 2030 年的 4,500 億美元。主要應用涵蓋高頻交易、電子作戰、通訊系統與前向錯誤更正、工業製程控制，以及 AI 加速運算等領域。在這些應用中，每一奈秒的延遲改善都能帶來可量化且具顯著價值的效益。

Hartley 由創辦人 Josh Silverstone 創立。他早期的研究成果曾奠定 PsiQuantum 關鍵智慧財產（IP）技術基礎，並建立全球最早期的光子量子運算實驗室之一。創始團隊集結五位專精於光子學、物理學及電腦科學的博士人才，並獲得半導體與運算產業資深專家的指導，包括 Bhavin Shastri 教授及 David May FRS 教授等知名學者。

目前 Hartley 正積極建構涵蓋晶片製造、先進封裝、系統整合及實地驗證等關鍵合作夥伴網絡，推動奈秒級 AI 運算技術從研發階段邁向量產晶片與實際商業應用。

Heronic Technologies Ltd

Contact 代表人

Dr Alexander Montgomerie-Corcoran
CEO
執行長

alex@heronic.ai

www.heronic.ai

Introduction

Heronic Technologies is automating the design of bespoke AI-semiconductor hardware. Drawing on many years of research into hardware acceleration of AI algorithms at Imperial College London, the team are redesigning the next generation of AI processors by addressing the compute occupancy limitations of current AI chips at an architectural level.

Heronic offers a portfolio of specialised Semiconductor IP for specific applications and optimised for deployment on FPGA and ASIC designs, with customisable objectives ranging from low-latency to resource-minimal strategies. Using their custom design-automation toolflow, MOSAIC, Heronic discovers the optimal accelerator design for a target AI application and technology pair, ensuring peak efficiency and a faster time to market.

The team has produced numerous publications in top-tier conferences and journals, achieving state-of-the-art performance in object detection, human action recognition and image classification on FPGA devices, alongside award-winning results from AMD and a state-of-the-art result on MLCommons' MLPerf Tiny benchmark.

As an Altera Solutions Acceleration Partner, Heronic has co-published a whitepaper demonstrating 1.9× greater performance over NVIDIA devices - 34x lower latency, and 28x compute efficiency.

Taiwan's position at the heart of the global semiconductor supply chain makes it a natural ecosystem for Heronic who is seeking partners in Taiwan to bring efficient, automated AI acceleration into next-generation FPGA and ASIC-based systems.

Collaboration opportunities:

- Fabless SoC and ASIC companies building chips for real-time video and audio processing,
- OEMs developing systems that incorporate FPGA devices,
- ODM partners for developing FPGA-based processing systems,
- Sales reps and distributors for semiconductor IP,
- EDA and IP ecosystem partners.

公司概況

Heronic Technologies主力推動客製AI半導體硬體設計自動化，運用倫敦帝國學院研究多年的AI演算式硬體加速成果，重新設計次世代AI處理器，從架構上克服現有AI晶片的運算占用率限制。

Heronic提供多種特定應用的專業半導體IP，適用於FPGA與ASIC設計，並符合低延遲、最低資源配置等目標，Heronic使用自行開發的自動設計工具流MOSAIC，可依據AI目標應用及技術組合，找出最理想的設計加速途徑，以達到最高效能，更快進入市場。

團隊已在重要研討會及期刊多次發表，在物體偵測、人員動作偵測、FPGA裝置影像分類等達到頂尖表現，獲得AMD獎項肯定，在MLCommons' MLPerf Tiny評比表現亦領先。

Heronic為Altera Solutions加速夥伴，曾參與發表白皮書，表現為輝達產品的1.9倍、延遲降低34倍、運算效能增加28倍。

台灣位於全球半導體供應鏈核心，對Heronic是理想生態系夥伴，期望在台尋找合作對象，將高效能、自動化AI加速帶入次世代FPGA與ASIC系統。

合作機會:

- 無廠SoC與ASIC企業，為即時影音處理製造晶片
- 研發包含FPGA裝置系統的OEM
- 研發以FPGA為基礎的處理系統ODM夥伴
- 半導體IP業代與經銷商
- EDA與IP生態系夥伴

IceMOS Technology Ltd

Contact 代表人

Hugh Griffin
Chief Sales & Strategy Officer
銷售兼策略長

hughgriffin@icemostech.com
www.icemostech.com

Introduction

IceMOS Technology is a global semiconductor pioneer operating a proprietary cleanroom fabrication facility in Belfast, Northern Ireland, UK. With over 22 years of volume manufacturing experience, IceMOS delivers world-class solutions across two primary business pillars:

- **Disruptive Power Discrete Semiconductor Devices**
- **Advanced Engineering Substrates**

In Power Electronics, IceMOS is the first company to merge mature-node CMOS architectures with MEMS Deep Reactive Ion Etch (DRIE) process techniques. Our proprietary mSJMOS™ **Super Junction MOSFETs** rival the efficiency of wide-bandgap materials like Gallium Nitride (GaN) at traditional silicon cost boundaries. Engineered with ultra-low RDS(ON) and Gate Charge (Q_g), our silicon power discretes and SiC M-Series optimise 1MW+ AI data center server racks, EV infrastructure, solar inverters, and medical power supplies.

In Advanced Substrates, IceMOS transforms raw wafer machining into a turnkey component delivery model. Our portfolio features Cavity Bonded SOI (mCSOI™), delivering a pre-fabricated sensing element capturing a high proportion of the active finished MEMS die, and Deep Trench Isolation (mTSOI™), providing Galvanic Isolation (>1.5kV RMS) for PhotoMOS relays and telecom ICs, alongside Bonded SOI (BSOI) Silicon Silicon direct-bonded wafers, (SiSi DWB™) Thin-SOI, and Through Silicon Vias (TSV).

Backed by an IP fortress of 86+ patents and IATF 16949 certification, IceMOS has shipped over 500 million dies worldwide with **zero field failures** across safety-critical automotive, medical, aerospace, and industrial systems. We provide global partners with secure, conflict-free European supply chain resilience.

公司概況

IceMOS Technology 是一家全球半導體技術領先企業，於英國北愛爾蘭貝爾法斯特擁有自營的專屬潔淨室晶圓製造設施。憑藉超過 22 年的大量生產經驗，IceMOS 透過兩大核心事業領域提供世界級技術解決方案：

- 創新型功率半導體分離元件
- 先進工程基板

在功率電子領域，IceMOS 是全球首家將成熟製程 CMOS 架構與 MEMS 深反應離子蝕刻技術相結合的企業。其專有 mSJMOS™ 超接面 MOSFET（Super Junction MOSFET） 技術，在維持傳統矽基元件成本優勢的同時，可提供媲美氮化鎵等寬能隙半導體材料的能源轉換效率。
IceMOS 的功率元件採用超低導通電阻（RDS(ON)）及超低閘極電荷（Gate Charge, Q_g）設計，其矽基功率分離元件產品與 SiC M-Series 碳化矽產品系列，可有效提升功率超過 1MW 的 AI 資料中心伺服器機櫃、電動車基礎設施、太陽能逆變器以及醫療電源系統的能源效率與功率管理效能。

在先進基板領域，IceMOS 將傳統晶圓加工服務進一步升級為一站式元件交付模式。其產品組合包括：

- Cavity Bonded SOI（mCSOI™）：提供預先完成結構製作的感測元件平台，可涵蓋 MEMS 晶片中相當比例的主動功能區域，協助客戶簡化後續製程開發與產品導入。
- Deep Trench Isolation（mTSOI™）：利用深溝槽隔離技術提供高達 1.5kV RMS 以上的電氣隔離能力，廣泛適用於 PhotoMOS 固態繼電器及電信積體電路等應用。
- Bonded SOI（BSOI）矽對矽直接鍵結晶圓（SiSi DWB™）
- Thin-SOI 薄膜絕緣層上矽基板
- Through Silicon Via（TSV）穿矽通孔技術

IceMOS 擁有超過 86 項專利所構築的完整智慧財產布局，並通過 IATF 16949 汽車產業品質管理系統認證。迄今，IceMOS 已於全球出貨超過 5 億顆晶粒，在汽車、醫療、航太及工業控制等安全關鍵應用領域中，維持零現場失效的卓越紀錄。

透過位於歐洲的自主製造能力與供應鏈布局，IceMOS 致力於為全球合作夥伴提供安全、穩定且無地緣政治衝突風險的供應鏈韌性，協助客戶建構更具競爭力的半導體供應體系。

Infiniflux Ltd

Contact 代表人

Marc Ottolini
CEO & Co-founder
執行長 & 創辦人

m.ottolini@infiniflux.cool

www.infiniflux.cool

Introduction

Infiniflux is a deep tech startup developing advanced 2-phase Direct-to-Die Liquid Cooling technologies for the most powerful 2.5D and 3D chips used in AI and HPC data centres.

Infiniflux's technology provides advanced heat removal, targeting hotspots on processor dies to eliminate heat spikes, enhance compute capacity, and extend device lifespan. This breakthrough supports next-generation chips with higher densities and duty cycles.

The superior cooling performance is based on a patent-pending cold plate design with 75% lower thermal resistance and a unique system architecture that requires much less pump energy. The system removes significantly more heat than single-phase liquid cooling, uses less energy and requires virtually no maintenance. The technology is suitable for both new build data centres and retrofits.

Infiniflux has secured equity investment from Zinc VC and grant funding from Innovate UK, the Royce and the Grantham Institutes, ensuring strong foundations for growth.

The company recently won the IC Taiwan Grand Challenge award, showcased at Innovex/Computex, and is experiencing significant interest from leading semiconductor and compute ecosystem players in Taiwan and the wider Asian region.

Collaboration opportunities:

- Joint feasibility studies with advanced packaging companies for integration of Infiniflux's cold lid technology,
- Partnerships with MEMS foundries for silicon cold lid production,
- Joint feasibility studies with server OEMs/ODMs to integrate 2-phase cooling loop in servers,
- Component manufacturers for cooling loop parts,
- Server rack manufacturers and system integrators,
- Pilot projects with data centres using advanced liquid cooling,
- Collaboration with academic institutions in liquid cooling, thermo-hydraulics and IC packaging.

公司概況

Infiniflux為深科技新創，研發先進二相直接液冷技術，服務AI與HPC資料中心的2.5D及3D晶片。

Infiniflux的技術具備先進散熱效能，針對處理器晶粒熱點，消除局部熱點、提高運算能力、延長設備壽命，這項突破可協助密度及工作週期更高的次世代晶片。

該公司表現優異的冷板設計正在申請專利，可降低75%熱阻，藉由獨特系統架構，大幅減少泵浦能耗，該系統的散熱效能遠高於單相液冷，耗能較低，幾乎不需維護，適合新建或改建資料中心使用。

Infiniflux已獲得Zinc VC股權投資，亦得到Innovate UK、the Royce Institute、the Grantham Institute獎助，為成長奠定厚實基礎。

本公司近期獲得IC Taiwan Grand Challenge獎項，已在台灣Innovex/Computex展出，吸引台灣及亞洲多項重要半導體及運算生態系夥伴洽詢。

合作機會:

- 與先進封裝公司合作，共同進行Infiniflux冷卻蓋技術可行性研究
- 與MEMS代工廠合作生產矽冷卻蓋
- 與伺服器OEM/ODM合作，共同進行二相冷循環與伺服器整合的可行性研究
- 冷循環零組件製造商
- 伺服器機櫃製造商與系統整合商
- 與採用先進液冷技術的資料中心合作進行試點計畫
- 與學術機構合作，研究液冷、熱流力學、IC封裝

Kelvin Quantum Ltd

Contact 代表人

Dr Robert Graham
CEO
執行長

robert.graham@kelvinquantum.com
www.kelvinquantum.com

Introduction

Kelvin Quantum brings semiconductor technology into the cold. Kelvin Quantum develops the electronics layer that quantum technology has been missing: readout and control systems engineered to operate at the same ultra-low temperatures as the quantum processors and sensors they serve.

By integrating electronics directly inside cryogenic refrigeration systems, we improve connectivity, reduce power consumption and noise, and enable faster, more precise measurements — simplifying system architecture so quantum manufacturers can scale toward commercially viable, large-scale machines.

Our Cryo-CMOS hardware runs continuously from room temperature down to deep cryogenic conditions, eliminating one of the most stubborn bottlenecks on the path to scalable quantum systems.
We design from the chip up.
Our expertise spans mixed-signal and analogue RF ASICs — including cryogenic-capable DACs, ADCs, mixers, and amplifiers — through to in-fridge FPGA platforms, electronic sub-systems, and complete packaged solutions.

Based in Glasgow, Scotland, we specialise in electronic verification with in-house cooling systems operating down to millikelvin temperatures — allowing us to characterise and validate every design in the exact conditions it will face in the field.

公司概況

Kelvin Quantum 將半導體技術帶入極低溫運作環境。

Kelvin Quantum 致力於開發量子技術長期欠缺的關鍵電子層，提供能夠在與量子處理器及量子感測器相同超低溫環境下運作的讀出與控制系統。我們的 Cryo-CMOS硬體平台可在從室溫到深低溫環境之間持續穩定運作，協助解決量子系統邁向大規模化發展過程中最具挑戰性的技術瓶頸之一。

透過將電子控制系統直接整合至低溫冷凍設備內部，我們能有效提升訊號連接效率、降低功耗與雜訊干擾，並實現更快速且更精確的量測能力。此方法不僅簡化整體系統架構，也能協助量子技術開發商突破擴充性限制，加速推動量子系統朝向具商業化可行性的大規模運算平台發展。

我們具備從晶片設計到系統整合的完整研發能力，專業涵蓋混合訊號與類比射頻ASIC 設計，包括可於低溫環境運作的數位類比轉換器、類比數位轉換器、混頻器及放大器等元件；同時也提供適用於低溫系統環境的 FPGA 平台、電子子系統，以及完整封裝解決方案。

Kelvin Quantum 總部位於蘇格蘭格拉斯哥，專精於低溫電子系統驗證與測試。我們擁有自主建置的低溫冷卻系統，最低可達毫開爾文等級，使我們能夠在產品實際應用環境條件下，對所有設計進行完整的特性分析與功能驗證。

Light Trace Photonics Ltd

Contact 代表人

Dr Dominic Sulway
CTO & Co-founder
技術長 & 創辦人

Dominic.sulway@ltphotonics.co.uk

www.ltphotonics.co.uk

Introduction

Light Trace Photonics is a Bristol-based deep-tech start-up developing the Universal Photonic Interconnect (UPIc): a detachable, ultra-high-performance fibre-chip interconnect built from the ground up for co-packaged optics (CPO) and pluggable transceiver volumes.

UPIc attaches processed single-mode fibre directly to photonic chips; no micro-optics, no bump-on-carrier, no active alignment, no epoxy. For AI data-centre customers this is what makes CPO manufacturable. It removes the fibre-attach bottleneck that drives cost, yield loss and assembly complexity, and because the connection is detachable, modules can be reworked and serviced rather than scrapped. This is critical as optics move inside the package at hyperscale.

Light Trace Photonics has demonstrated repeatable, detachable connections below 800 mdB loss with passive alignment in under three seconds, and are targeting sub-400 mdB with a clear route to millions of units. UPIc is currently at TRL 5, moving to reliability qualification with early customer design-in planned over the next 18 months.

Light Trace was founded in 2021 by Dr Jake Biele (CEO) and Dr Dominic Sulway (CTO) and is backed by leading deep-tech investors. Advisers include Dr Anthony Yu, former VP of Silicon Photonics at GlobalFoundries.

Collaboration opportunities:

- Pluggable transceiver and CPO module developers, hyperscalers and AI hardware teams for UPIc integration feasibility and product design-in
- Silicon photonics foundries and OSAT partners to integrate and scale toward volume manufacture, test & measure, and packaging
- Strategic investors and industry partners to accelerate the route to high-volume production

公司概況

Light Trace Photonics設於英國布里斯托，為深科技新創，研發全新Universal Photonic Interconnect (UPIc)，做為可拆卸超高效能光纖 - 晶片互連，用於共同封裝光學及可插拔收發器。

UPIc將處理過的單模光纖直接連至光子晶片，不需微光學、不需晶片載體凸塊（BoC），不需主動對位，不需黏著劑，使AI資料中心客戶具備量產CPO可行性。克服光纖連接瓶頸，避免提高成本、影響良率，或增加組裝複雜度，由於連接可拆卸，模組可重新調整使用，不必丟棄，當光學大量進入封裝時，這項特點非常重要。

Light Trace Photonics已達成可重複、可拆卸連接，損耗低於800 mdB，且被動對位在三秒內完成，期望至百萬單位時，損耗可降至400 mdB以下。UPIc目前為TRL 5，預計在未來18個月內可進入可靠度驗證階段，進入早期客戶設計階段。

Light Trace於2021年成立，執行長Jake Biele博士與技術長Dominic Sulway博士獲重要深度科技投資人支持，顧問包括GlobalFoundries前矽光子副總裁Anthony Yu博士。

合作機會:

- 可插拔收發器與CPO模組開發商、超大型業者、AI硬體團隊，研究UPIc整合可行性與產品設計
- 矽光子晶圓廠及OSAT夥伴，朝向量產、量測、封裝方向發展
- 策略投資人與產業夥伴，加速大批量生產路徑

LUX Industries Ltd

Contact 代表人

Samuel Dallimore
CEO
執行長

samuel@luxindustries.co.uk

www.luxindustries.co.uk

Introduction

Oxford-based clean energy company, LUX Industries (LUX) is pioneering advanced heat exchanger technology for semiconductor applications and AI data centre cooling.

LUX's patent pending proprietary heat exchangers are 100x smaller in volume to competitors. At TRL 6, LUX has successfully validated a cryogenic heat-exchanger prototype, offering an evolutionary step in AI data centre cooling using liquid nitrogen. The technology has the potential to unlock 90%+ energy reduction.

The heat exchanger can also produce up to 1,000kg per day of ultra-high purity green hydrogen at low-cost, on-site to meet the demands of large-scale, semiconductor fabs.

LUX has significant market traction in Taiwan, with partnership opportunities in the detailed planning stages for a demonstration site at ITRI's Guangfu campus, and with NTU for validation experiments.

LUX has secured £1.6M (USD $2M) of combined private investment and government funding and is in discussions with multiple semiconductor manufacturers in Taiwan and Singapore.

LUX is keen to develop strategic partnerships and collaborations with semiconductor fabs and AI data centre stakeholders to implement its novel technology.

Collaboration opportunities:

- Heat exchanger trials and bench marking studies,
- Industry collaborations with semiconductor fabs for demonstrations, and
- Partners for joint international grant-funded projects for technology development and demonstrations.

公司概況

潔淨能源公司LUX Industries設於英國牛津，研發先進熱交換器科技，適用於半導體應用與AI資料中心冷卻。

LUX的熱交換器已申請專利，體積較競品縮小百倍，達TRL 6等級，已完成低溫熱交換器原型驗證，為AI資料中心提供液態氮冷卻，耗能可減少90%以上。

這項熱交換器每日亦可在現場，生成高達1000公斤的低成本超高純度綠氫，以滿足大型半導體製造廠所需。

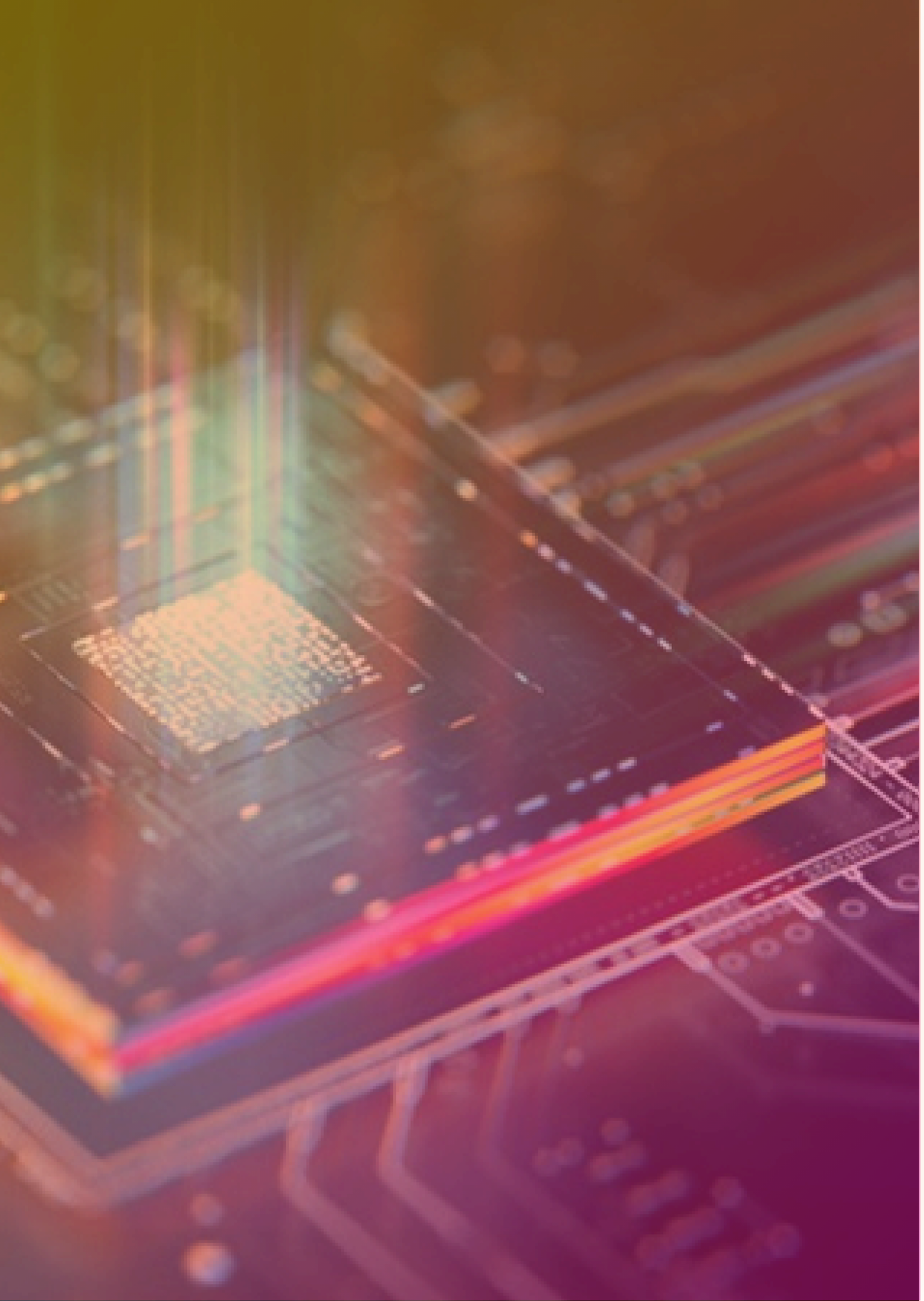
LUX已在台灣市場取得顯著進展，與夥伴進入詳細規劃階段，將在工研院光復院區設置示範點，並與台灣大學進行驗證實驗。

LUX已獲得160萬英鎊 (200萬美元)的公私部門資金，並與台灣及新加坡多家半導體製造商洽談中。

LUX尋求策略夥伴與合作單位，包括半導體製造廠及AI資料中心，一同建置這項新穎技術。

合作機會:

- 熱交換器試驗及指標研究
- 與半導體製造商合作示範
- 國際獎助計畫夥伴投入科技研發及示範



Novomorphic Ltd

Contact 代表人

Amar Abid-Ali
CEO
執行長

amar@novomorphic.com
novomorphic.com

Introduction

Novomorphic is a UK semiconductor design company focused on system-first Edge AI. We design chips and electronic systems together so edge devices can sense, decide and act locally under tight power, thermal, RF, latency, safety, security and reliability constraints.

Our capability spans system architecture, digital IC design, mixed-signal design, RF and high-speed interfaces, SoC subsystems, FPGA prototyping, embedded systems, AI hardware acceleration, power-aware design and hardware/software co-design.

We work from requirements through architecture, partitioning, prototyping, verification and delivery support. Our approach is practical: define the system constraints, make trade-offs explicit, and build towards measurable outcomes.

Novomorphic is based in Wales and is backed by Cadence, CSA Catapult and the Welsh Government. We are a Cadence Design Network Partner and support customers across advanced electronics, telecoms, automotive, defence, industrial and energy applications.

公司概況

Novomorphic 是一家來自英國的半導體設計公司，專注於以系統為核心的邊緣人工智慧技術開發。我們以系統整體需求為出發點，同步設計晶片與電子系統，讓邊緣裝置能夠在功耗、散熱、射頻效能、延遲、安全性、資安防護及可靠性等嚴格限制下，實現本地端感測、決策與即時執行能力。

我們的技術能力涵蓋系統架構設計、數位積體電路設計、混合訊號設計、高速介面與射頻電路設計、系統單晶片子系統開發、FPGA 原型驗證、嵌入式系統設計、AI 硬體加速技術、低功耗設計，以及軟硬體協同設計等領域。

從產品需求定義開始，Novomorphic 可提供涵蓋系統架構規劃、功能分割、原型開發、功能驗證到產品導入支援的完整服務。我們秉持務實的工程設計理念，透過明確定義系統限制條件、量化各項設計取捨，並以可衡量的成果作為開發目標，協助客戶打造兼具效能與實用性的解決方案。

Novomorphic 總部位於英國威爾斯，並獲得 Cadence、英國化合物半導體應用創新中心（CSA Catapult） 及威爾斯政府的支持。我們同時是 Cadence Design Network Partner 合作夥伴，並為先進電子、電信通訊、汽車電子、國防、工業自動化及能源等領域客戶提供專業技術服務與產品開發支援。

Oriole Networks Ltd

Contact 代表人

Derek Hutchins
VP of ASIC Design
ASIC設計副總

derek.hutchins@oriolenetworks.com
oriolenetworks.com

Introduction

Oriole is a photonic networking company developing disruptive technologies for AI/ML and high-performance computing (HPC) transforming data centre networking.

Oriole's core innovation, PRISM (Photonic Routing Infrastructure for Scalable Models), is the world's first pure photonic network for AI. Built from the ground up for distributed AI workloads, PRISM is a full-stack architecture which replaces traditional electronic switching with a deterministic optical fabric, delivering predictable, high-performance communication at scale.

PRISM removes the bottlenecks of electrical packet switching, enabling higher GPU utilisation by eliminating contention and idle time while maintaining consistent performance as clusters grow. Its passive photonic routing core requires no power or cooling, reducing network energy overhead and infrastructure complexity, up to 81% less network power, and 75% smaller footprint.

The architecture is designed to enable near-peak AI-cluster utilisation, compared with the 30–50% utilisation commonly achieved in conventional packet-switched environments.

Oriole recently deployed PRISM in the UK ARIA Scaling Inference Lab (the UK's novel AI hardware test bed) in collaboration with AMD, demonstrating how next-generation network fabrics can overcome performance, latency, and energy constraints in modern AI infrastructure. This marks the company's first commercial deployment achieved within three years of founding.

Acknowledged in the UK government's £1.1 billion AI Hardware Plan, Oriole has also delivered innovation projects with Innovate UK, resulting in an alpha photonic integrated circuit enabling ultra-fast, multi-dimensional switching.

Collaboration opportunities:

- Develop relationships with companies operating in ASIC manufacturing, advanced packaging, testing and back-end processing to support the development and commercial scaling of Oriole's next-generation photonic networking hardware.
- Building connections with photonics and high-speed design companies to explore technology partnerships, co-development opportunities, design integration, and supply-chain collaboration for future PRISM deployment.

公司概況

Oriole為光子網路公司，為AI/ML與高效能運算研發創新科技，翻轉資料中心網路面貌。
Oriole核心創新為PRISM（可擴充模型光子路由架構），為全球首創AI純光子網路，完全為分散式AI工作型態打造，以確定性光子網路取代傳統電子開關，創造可預測的大規模高效能通訊。

PRISM排除電子封包開關的瓶頸，避免競爭和閒置時間，提高GPU使用率，即使規模擴大，效能仍能維持。被動式光子路由核心不需耗能或冷卻，可降低網絡整體耗能及架構複雜度，網路耗能最多可減少81%，所需空間可縮小75%，這套架構可創造近峰值AI叢集使用率，對比一般封包開關環境使用率僅30%至50%。

近期在英國最新AI硬體測試環境ARIA Scaling Inference Lab內，Oriole與AMD合作建置PRISM，示範次世代網絡如何克服現代AI基礎建設中，面臨的效能、延遲及耗能侷限，這也是本公司成立三年內，首度完成的商業建置案例。

Oriole亦獲英國政府11億英鎊的AI硬體計畫點名，與Innovate UK推動創新專案，設計出alpha光子積體電路，實踐超高速多向開關。

合作機會:

- 與ASIC製造、先進封裝、測試、後端處理企業建立關係，支援Oriole次世代光子網路硬體研發及商業發展
- 與光子及高速設計企業建立關係，探索技術合作機會、共同研發方向、設計整合、供應鏈合作等，為PRISM未來建置做準備

Oxford Lasers Ltd

Contact 代表人

Dr Alan Ferguson
Vice President
副總經理

alan.ferguson@oxfordlasers.com

www.oxfordlasers.com

Introduction

With almost 50 years of expertise in lasers, optics and industrial applications, Oxford Lasers is a global leader in high-precision laser micromachining.

Originating as a spin-out from the University of Oxford's Physics Department, Oxford Lasers built its reputation through the manufacture and supply of short-pulse lasers.
For the past 35 years, the company has focused on laser integration, supplying advanced laser tools and providing specialist laser subcontract manufacturing services.

Oxford Lasers specialises in high-quality, high-precision micromachining, with the capability to drill, mill, cut, weld and pattern a wide range of materials.
By combining nano-, pico- and femtosecond pulsed laser technology, with innovative motion control systems, the company consistently delivers demanding features with accuracy, repeatability and reliability.

The company has particular strength in drilling guide plates for Advanced Wafer Level Test and supplies leading global probe card companies. Its 24/7 production facility has drilled more than 200 million holes for next-generation wafer testing, demonstrating proven capability at scale.

With support from Innovate UK, Oxford Lasers is developing next-generation drilling technologies, including GHz pulse drilling and selective laser etching, to enable glass interposers for heterogeneous integration of chiplets in advanced packaging. These developments offer a step change for power electronics, photonics, quantum technologies and micro-display applications.

Collaboration opportunities:

- Probe card suppliers and research institutions seeking advanced guide plate solutions and support for future market challenges
- Companies and institutions developing next-generation advanced packaging solutions using glass interposers

公司概況

Oxford Lasers 擁有近 50 年的雷射、光學及工業應用技術經驗，是全球高精度雷射微加工領域的領導廠商。

Oxford Lasers 源自英國牛津大學物理學系的技術衍生企業，早期以短脈衝雷射系統的研發與供應建立市場聲譽。過去 35 年來，公司專注於雷射系統整合技術，提供先進雷射加工設備，並為全球客戶提供專業雷射委託加工服務。

Oxford Lasers 專精於高品質、高精度的微細加工技術，具備鑽孔、銑削、切割、焊接及圖案化加工等能力，可應用於多種材料。透過結合奈秒、皮秒與飛秒脈衝雷射技術，以及創新的運動控制系統，公司能夠穩定實現高精度、高重複性及高可靠度的精密加工成果，以滿足最嚴苛的製造需求。

公司在先進晶圓級測試所需的導引板鑽孔加工領域具備深厚技術實力，並為全球領先的探針卡企業提供相關產品與服務。其全天候 24 小時運作的生產設施，已累計完成超過 2 億個孔位的加工製造，廣泛應用於新世代晶圓測試，展現卓越的大規模量產能力與穩定品質。

在 Innovate UK 的支持下，Oxford Lasers 正積極開發新一代雷射鑽孔技術，包括 GHz 超高頻脈衝鑽孔技術與 選擇性雷射蝕刻技術，以推動玻璃中介層在先進封裝中的應用，支援異質整合架構下的 Chiplet 晶粒整合需求。

這些技術創新可望為功率電子、光子技術、量子科技及微型顯示器等產業帶來突破性的技術進展與全新發展契機。

合作機會：

- 尋求先進導引板解決方案，以及共同因應未來晶圓測試技術挑戰的探針卡供應商與研究機構
- 開發以玻璃中介層為基礎之次世代先進封裝技術的企業與研究機構

Photarix Ltd

Contact 代表人

Dr Gizem Acar Tekin
CEO & Co-founder
執行長 & 創辦人

gizem@photarix.com

www.photarix.com

Introduction

Photarix is developing next-generation compound semiconductor light sources for quantum-secure communication.

Photarix is a UK quantum hardware spinout from Lancaster University developing compact, electrically driven single-photon sources for quantum-secure communications. The company's semiconductor-based technology is designed to operate at telecom wavelengths and at, or close to, room temperature, with a route towards chip-scale integration and scalable manufacturing. The device architecture is based on III-V compound semiconductor processes related to those used in established optoelectronic technologies such as VCSELs, providing a practical foundation for future manufacturing and integration.

Photarix is addressing one of the key barriers to practical quantum communication: the need for quantum light-source hardware that is compact, reliable and easier to integrate into existing fibre and telecom infrastructure.

With Quantum Key Distribution (QKD) as a first market, longer-term opportunities include secure optical links, satellite-enabled quantum communications, and wider quantum network applications.

Photarix is currently focusing on device optimisation, system-level validation and engagement with industrial and research partners to support future deployment and manufacturing. The company has a vision to turn single-photon generation from a specialist laboratory capability into a practical telecom hardware component for real-world quantum communication systems.

Collaboration opportunities:

- QKD vendors and network operators for design partnerships and pilot integration,
- Telecom, defence and critical-infrastructure organisations for use-case validation,
- III–V foundries and packaging partners for manufacturing readiness,
- Research institutes and testbeds for validation and certification, and
- OEMs and satellite communications partners for future product integration.

公司概況

Photarix源自英國蘭開斯特大學，專注於量子硬體研發，為量子安全通訊開發小型電子驅動的單光子源，這項技術以半導體為基礎，可在電信波長及近室溫下運作，並朝向晶片規模整合與大規模製造努力。裝置架構以III-V化合物半導體製程為基礎，與VCSELs等成熟光電技術相關,為未來製造及整合提供務實基礎。

量子通訊實務一大障礙在於，量子光源硬體必須體積小、可靠，且能輕鬆整合在既有光纖及電信基礎建設內，這也正是Photarix著手的領域。

除了量子金鑰分發（QKD）外，長期商機包括安全光通訊鏈路、衛星量子通訊，及其他量子網路應用。

Photarix目前著重於裝置優化、系統層級驗證，並與業界及研究夥伴合作，支援未來建置與製造。本公司的願景是將原本僅存在於專業實驗室中的單光子產生技術，轉化為可實際部署於量子通訊系統的電信硬體元件。

合作機會:

- QKD業者及網絡營運商，進行設計合作與整合試行
- 電信、國防、關鍵基礎設施組織，以驗證使用情境
- III–V製造廠及封裝夥伴，以提高製造準備度
- 研究機構及測試環境，以供驗證及認證
- OEM及衛星通訊夥伴，以整合未來產品

Pickering Group Ltd

Contact 代表人

Evelyn Ooi
Technical Marketing Manager for ASEAN
ASEAN地區技術行銷經理

evelyn.ooi@pickeringtest.com
www.pickering-group.com

Introduction

Pickering Group is a leading provider of high-performance electronic test and verification solutions, supporting the world's most demanding industries, including semiconductor, automotive, medical, aerospace & defence, and industrial electronics.

With over 55 years of engineering expertise, the Group comprises Pickering Interfaces, Pickering Electronics, and Pickering Connect, delivering a comprehensive portfolio of industry-leading reed relays, modular signal switching, simulation testing, custom cable and connector solutions.

Our products are widely used in Semiconductor Automated Test Equipment (ATE), Wafer Acceptance Test (WAT), High Pin Count Package Test, and Photonics Test, where measurement accuracy, signal integrity, and long-term reliability are critical.

Designed and manufactured to the highest quality standards, Pickering's PXI, LXI, PCI, and USB-based switching solutions enable engineers to build flexible, scalable, and cost-effective test systems while reducing system complexity and maintenance costs.

With engineering, manufacturing, and support facilities across Europe, North America, and Asia, Pickering partners closely with customers to develop reliable test solutions that accelerate product development, improve manufacturing efficiency, and support next-generation semiconductor technologies.

At SEMICON Taiwan 2026, Pickering looks forward to connecting with semiconductor manufacturers, equipment suppliers, and technology partners to explore innovative test and measurement solutions that enable the future of advanced electronics.

公司概況

Pickering Group 是高效能電子測試與驗證解決方案的領導供應商，服務全球最具技術挑戰性的產業領域，包括半導體、汽車電子、醫療設備、航太與國防，以及工業電子等市場。

憑藉超過 55 年的工程技術經驗，Pickering Group 旗下包含 Pickering Interfaces、Pickering Electronics 及 Pickering Connect 三大事業體，提供完整且業界領先的產品組合，涵蓋簧片繼電器、模組化訊號切換系統、模擬測試解決方案，以及客製化線纜與連接器解決方案。

Pickering 的產品廣泛應用於半導體自動測試設備、晶圓允收測試、高接腳數封裝測試及光子元件測試等領域。在這些應用中，量測精度、訊號完整性及長期可靠度皆為關鍵要求。所有產品均依照最高品質標準設計與製造。

Pickering 提供以 PXI、LXI、PCI 及 USB 平台為基礎的訊號切換解決方案，協助工程團隊建構兼具彈性、擴充性與成本效益的測試系統，同時降低系統複雜度與後續維護成本。

透過遍布歐洲、北美及亞洲的工程研發、生產製造與技術支援據點，Pickering 與客戶建立緊密合作關係，共同開發高可靠度測試解決方案，加速產品開發時程、提升製造效率，並支援新一代半導體技術的研發與量產導入。

在 SEMICON Taiwan 2026 展會期間，Pickering 期待與半導體製造商、設備供應商及技術夥伴交流合作，共同探索創新測試與量測技術，攜手推動先進電子產業的未來發展。

Poro Technologies Ltd

Contact 代表人

Dr Yingjun Liu
CTO & Co-Founder
技術長 & 創辦人

Yingjun.liu@porotech.com

Porotech.com

Introduction

Cambridge-based Porotech is advancing ultra-low-power, full-colour microLEDs on silicon for next-generation AR devices, optical interconnect, and photonic compute.

Porotech's proprietary PoroGaN® material platform introduces controlled nanopores into GaN to tune its electrical, optical, mechanical, and thermal properties, unlocking brighter, more efficient emitters with robust manufacturability.

Leveraging PoroGaN®, the company has developed DynamicPixelTuning®, the first microLED architecture where each pixel can emit the full colour gamut, simplifying optics, shrinking form factor, and enabling daylight-readable, energy-efficient microdisplays.

Porotech operates an end-to-end design–manufacture–test loop, including epitaxy and device design through wafer processing, heterogeneous integration with CMOS, advanced packaging, and in-line metrology, which are supported by pilot plant and mass production lines.

With an expanding IP portfolio and partnerships across the UK, Europe, North America, and Asia, Porotech is providing mass production and volume integration to OEMs.

Porotech's mission is to deliver scalable, sustainable photonics that reduce system power and cost while enabling new human–machine interfaces in wearables, industrial, healthcare, and compute.

Collaboration opportunities:

- Partners in integrated photonics fabrication (Si/SiN/InP), metasurfaces, holographic system, drivers/control electronics, and quantum control,
- Connectivity/AI/quantum testbeds,
- Collaboration on advanced packaging and high-throughput metrology,
- Funding opportunities: corporate ventures, Asian investment banks, family offices,
- End-users in AR, optical communications and quantum/photonic compute, and
- Consortium partnership on low-power emitters and pixel architectures.

公司概況

Porotech總部位於劍橋，研發矽基超低功耗全彩微型 LED，以應用於下一代AR裝置、光互連和光子運算領域。

Porotech 的專門 PoroGaN® 材料平台在GaN中加入可控奈米孔，以調節電性及光學、機械和熱學特性，創造亮度更高、效率更高、容易製造的發光裝置。

本公司運用 PoroGaN® 技術，開發出 DynamicPixelTuning® 微型 LED 架構，首創每個像素都能發出全色域，簡化光學系統，縮小尺寸，是可在日光下閱讀的節能微型顯示器。

Porotech 擁有完整的端到端設計—製造—測試流程，涵蓋磊晶、裝置設計、晶圓加工、CMOS 異質整合、先進封裝和即時量測等，並由試量產線與量產線支援。

Porotech的IP組合不斷拓展，夥伴遍布英國、歐洲、北美和亞洲，為OEM提供大規模生產和量產整合服務。

Porotech 的使命是提供可擴充、永續的光子技術，既能降低系統功耗和成本，同時為穿戴式裝置、工業、醫療保健和運算領域，創造新型人機互動介面。

合作機會:

- 整合光子製造（Si/SiN/InP）、超表面、全像系統、驅動/控制電子裝置和量子控制領域的合作夥伴
- 連網、人工智慧、量子測試平台
- 先進封裝與高吞吐量測的合作
- 融資機會：企業創投、亞洲投資銀行、家族辦公室；
- AR、光通訊和量子/光子運算領域的終端用戶
- 低功耗發射器和像素架構的聯盟合作

Pragmatic Semiconductor Ltd

Contact 代表人

James Davey
SVP Sales, Business Development and Product Management
產品管理暨市場開發銷售資深副總經理

Jamie.davey@pragmaticsemi.com

www.pragmaticsemi.com

Introduction

Pragmatic Semiconductor is pioneering flexible semiconductor technology at scale to sustainably bridge our digital and physical worlds.

Headquartered in Cambridge, with manufacturing in Durham, UK, Pragmatic designs and manufactures FlexICs – ultra-thin, physically flexible microchips. Using thin-film transistor (TFT) technology and manufactured on 300mm wafers, FlexICs have a wide range of use cases, spanning consumer, industrial, healthcare and beyond. Examples include smart packaging and item-level traceability in fast-moving consumer goods, extending to applications such as system miniaturisation in consumer electronics.

The Pragmatic FlexIC Foundry operates a unique manufacturing process that compresses production cycle times from months to just days. It provides rapid scalability and cost efficiency for application-specific integrated circuits (ASICs) and near-field communication (NFC) solutions, as well as a clear pathway to supply chain resilience. This innovative approach is also highly sustainable, using significantly less energy, water, and fewer harmful chemicals than standard semiconductor fabrication. This gives FlexICs an industry-leading low carbon footprint.

Crucially, FlexICs provide the foundational hardware for physical AI by bringing intelligence out of the cloud and directly into the physical environment. By enabling distributed sensing and localised processing at the far edge, FlexICs allow everyday objects to gather, process, and act on real-world data in real time, fuelling the next generation of smart, context-aware automation.

Backed by strategic global investors and positioned at the forefront of the flexible electronics market, Pragmatic Semiconductor is scaling its high-volume global operations. By driving digital transformation, the company aims to bring seamless, item-level intelligence to billions of smart objects worldwide.

For more information, visit pragmaticsemi.com.

公司概況

Pragmatic Semiconductor 致力於推動可撓式半導體技術的大規模應用，以更永續的方式連結數位世界與實體世界。

Pragmatic 總部位於英國劍橋，並於英國達勒姆設有製造基地，專注設計與生產 FlexICs，即超薄、可撓曲的微晶片產品。FlexICs 採用薄膜電晶體技術，並以 300 mm 晶圓進行製造，可廣泛應用於消費性產品、工業、醫療健康等多元領域。

其應用範圍包括智慧包裝、快速消費品（FMCG）的單品級追蹤與溯源管理，以及消費性電子產品的系統微型化設計等創新應用。Pragmatic 的 FlexIC Foundry 採用獨特的製造流程，將傳統半導體生產週期由數個月大幅縮短至數天。此製程平台能為客製化積體電路及近場通訊解決方案提供快速擴產能力與優異成本效益，同時協助客戶強化供應鏈韌性。
除了生產效率優勢外，Pragmatic 的製造模式亦具備卓越的永續發展效益。相較於傳統半導體製程，其生產過程所需的能源、水資源及化學品使用量均大幅降低，因此 FlexICs 擁有業界領先的低碳足跡優勢。

更重要的是，FlexICs 為實體人工智慧提供關鍵基礎硬體平台，將智慧運算能力從雲端延伸至實際應用場域。藉由實現分散式感測與終端邊緣本地化資料處理能力，FlexICs 使各類日常物件能夠即時蒐集、分析並回應實際環境中的資料，進而推動新一代智慧化、具情境感知能力的自動化應用發展。

在全球策略投資人的支持下，Pragmatic Semiconductor 已站穩可撓式電子技術市場的領先地位，並持續擴展其全球化高產能營運布局。透過推動數位轉型與智慧化應用普及，公司致力於將單品級智慧識別與感知能力導入全球數十億個智慧物件之中，打造更智慧、更互聯的未來世界。

更多資訊請參閱： pragmaticsemi.com

Prospectral Ltd

Contact 代表人

Dr Gwen Wyatt-Moon
Co-Founder
創辦人

gwen.wyatt-moon@prospectral.tech
www.prospectral.tech

Introduction

Prospectral is a University of Cambridge deep-tech spin-out building the world's first full-stack spectral intelligence platform for industrial inspection.
The technology combines novel optical hardware with proprietary reconstruction algorithms and spectral vision software to deliver material-level insight at production speed, in a single snapshot.

The platform uses a metasurface optical encoder, integrated directly onto a conventional visible or IR image sensor. Unlike traditional hyperspectral systems, which require scanning, moving parts, or laboratory conditions, Prospectral's architecture captures spectral data in a single frame. Any camera can become a spectral imager and combined with Prospectral's reconstruction algorithms can convert raw sensor output into actionable materials intelligence.

At TRL 6 Prospectral's technology offers an in-line technology for real-time snapshot material insights for QA and process control for manufacturing within the semiconductor industry.

Collaboration opportunities:

- Partners with expertise in upscaling in-lab nanofabrication processes to pilot lines
- Image sensor and optics supply chain (vis and SWIR)
- Semiconductor inspection companies seeking new in-line inspection tools
- Corporate venture / strategic investment

公司概況

深科技公司Prospectral源自劍橋大學，開發全球首個工業檢測用的全端光譜智慧平台，其中結合新型光學硬體、專用重建演算法、光譜視覺軟體，能在單次成像及生產速度內，提供材料層級洞察。

這項平台採用超表面光學編碼器，直接整合在傳統的可見光或紅外線影像感測器內，傳統高光譜系統需要掃描、移動部位或實驗室條件，而Prospectral 的架構可從單幅畫面擷取光譜資料，任何相機均可成為光譜成像儀，搭配 Prospectral 的重建演算法，將原始感測器輸出轉換為可操作的材料資訊。

Prospectral 技術已達TRL 6，可為半導體產業的QA和製程管控，提供即時影像的材料洞察。

合作機會:

- 專業合作夥伴，能放大實驗室奈米製程規模，進入測試產線
- 影像感測器和光學元件供應鏈（可見光和SWIR）
- 尋求新型即時檢測工具的半導體檢測公司
- 企業創投／策略投資

TherMap Solutions Ltd

Contact 代表人

Dr. Roland B. Simon
CEO & CTO
執行長 & 技術長

roland.simon@thermapsolutions.com
www.thermapsolutions.com

Introduction

A University of Bristol spin-out, TherMap Solutions designs and manufactures advanced laser-based thermal characterisation instrumentation, enabling accurate and reliable measurements of critical thermal properties.

Increasing power density in semiconductor devices makes thermal management crucially important. This relies on optimising interfaces and bonding layers (e.g. die attach) for efficient heat extraction. Conventional techniques struggle to characterise the thermal properties of such complex multilayer structures. TherMap's commercially available instruments address this challenge, providing accurate in-situ measurements on a variety of materials, from epitaxial thin films to die attach layers, facilitating faster R&D feedback and improved quality control.

The technology enables semiconductor companies manufacturing high-power devices to accelerate thermal design optimisation and ensure consistent thermal performance and production reliability.

TherMap has collaborated with industry and academic leaders including the University of Oxford, IMM-CNR (Italy), Soitec (France) and QFI (US).

公司概況

TherMap Solutions是布里斯托大學（University of Bristol）的衍生公司，設計並製造使用雷射技術的先進熱特性量測儀器，能針對關鍵熱性能進行準確且可靠的測量。

半導體元件的功率密度越來越高，讓熱管理變得至關重要，須仰賴介面優化和黏合層（例如黏晶），以實現有效散熱（heat extraction）。傳統技術難以描述如此複雜多層結構的熱性能特徵。TherMap已上市的儀器能解決此一挑戰，可針對磊晶薄膜、裸晶接合層等多種材料，進行精確的原位（in-situ）測量，有助研發回饋加速和品質管控提升。

該技術讓製造高功率元件的半導體業者，能加速熱設計最佳化，並確保熱性能一致與生產可靠性。

TherMap已和眾多產、學界領導者合作，包括英國牛津大學（University of Oxford）、義大利國家研究委員會（CNR）旗下微電子與微系統研究所（IMM）、法國梭意科技（Soitec）和美國QFI公司等。

Vector Photonics Ltd

Contact 代表人

Dr Richard Taylor
CEO
執行長

Richard.taylor@vectorphotonics.com

www.vectorphotonics.co.uk

Introduction

Deep tech University of Glasgow spin-out, Vector Photonics is a specialist semiconductor laser company developing patented Photonic Crystal Surface Emitting Laser (PCSEL) technology.

PCSELs combine high optical power, excellent beam quality, broad wavelength flexibility and low-cost, scalable manufacturing in a surface-emitting architecture, offering significant advantages over conventional edge-emitting lasers. As a fabless company, Vector Photonics leverages established commercial semiconductor foundries to enable rapid scaling and cost-effective production.

The technology has been demonstrated in real-world applications, including a free-space optical communications link across the River Clyde, highlighting its potential for next-generation communications. PCSELs are well positioned for emerging AI and hyperscale data centre applications, where efficient, high-performance optical interconnects are increasingly critical. Beyond communications, the technology offers opportunities in LiDAR, sensing and industrial processing.

Vector Photonics is supported by a highly experienced team with deep expertise in semiconductor lasers, photonics and commercialisation. The company has secured public and private investment and received multiple awards recognising both its technological innovation and commercial potential.

As it moves towards volume deployment, the company is focused on building commercial traction and strengthening engagement across the global photonics supply chain.

Collaboration opportunities:

- Partnerships with foundries to fabricate PCSELs,
- Joint development with organisations developing CPO and transceivers,
- Joint development with organisations developing Free Space Optical Communication links for ground and space applications, and
- Datacentre hardware suppliers for systems testing and evaluation.

公司概況

深科技公司Vector Photonics源自格拉斯哥大學，專注於半導體雷射領域，研發專利光子晶體面射型雷射(PCSEL)技術。

PCSELs在表面發射架構中，結合高光功率、優異光束品質、寬波長靈活性、低成本、可擴充製造等，明顯優於傳統邊射型雷射。Vector Photonics身為無晶圓廠公司，運用成熟商用半導體代工資源，快速擴大規模，並符合成本效益。

這項技術已試用在實際應用中，例如跨越克萊德河的自由空間光通訊連結，發揮下一代通訊潛力，PCSEL非常適合新興人工智慧和超大規模資料中心應用，高效能光互連可扮演重要角色。除了通訊之外，這項技術在光達、感測和工業處理等也擁有龐大潛力。

Vector Photonics團隊經驗豐富，涵蓋半導體雷射、光子學、商業化等，目前已獲得公私部門投資，並獲得多個獎項，肯定技術創新和商業潛力。

本公司邁向量產部署之際，持續拓展商業市場，加強與全球光子供應鏈合作。

合作機會:

- 與代工廠合作製造PCSEL
- 與CPO和收發器研發廠共同研發
- 自由空間光通訊連結研發機構，共同研發地面和太空應用
- 與資料中心硬體供應商合作，進行系統測試和評估

Wave Photonics Ltd

Contact 代表人

Dr James Lee
CEO
執行長

james.lee@wavephotonics.com

wavephotonics.com

Introduction

Pioneering fabrication-tolerant photonic design for applications from Co-Packaged Optics (CPO) to Quantum Technologies.

Wave Photonics is advancing photonic integrated circuit (PIC) design technology to accelerate the mass production and adoption of integrated photonics, that integrates fabrication process characterisation, modelling, photonic simulation, and inverse design to develop process design kits (PDKs) across various materials and wavelengths. This adaptability enables applications ranging from CPO and transceivers to quantum technologies.

Wave Photonics' PDKs demonstrate lower loss and reduced sensitivity to process variations compared to conventional designs. The company has developed the world's most expansive PDK focused on quantum applications covering 33 wavelengths, showcasing the speed and scalability of its approach. Compatibility with leading electronic design automation tools is ensured through partnerships with Cadence, Siemens, Luceda and Synopsys.

With the growing demand for energy-efficient chips in applications such as data centres, AI, on-chip LiDAR, wearable sensors, optical processors and quantum technologies, Wave Photonics is exploring opportunities within Taiwan's ecosystem to establish mutually beneficial collaborations.

Collaboration opportunities:

- Network and development partnerships with fab, foundry and design partners,
- Joint development opportunities with organisations developing new integrated photonics process/platforms as well as CPO and transceiver,
- Identify customers developing new integrated photonics technologies, and
- Offering expertise in photonics for quantum applications including trapped ions and QKD.

公司概況

Wave Photonics 開創具備製程容忍度的光子設計，可應用於共同封裝光學、量子科技等。

Wave Photonics 推進光子積體電路 (PIC) 設計技術，以加速積體光子技術的量產和普及，其中整合製程表徵、建模、光子模擬、逆向設計，開發出適用於各種材料和波長的製程設計套件 (PDK)，這種調適性促成CPO、收發器、量子技術等多種應用。

與傳統設計相比，Wave Photonics 的 PDK 損耗更低，對製程變異的敏感度更低，本公司已開發出全球最廣泛的量子應用 PDK，涵蓋 33 個波長，證明這項策略的速度及擴充性，且因為與 Cadence、Siemens、Luceda 和 Synopsys 等合作，讓PDK能與重要電子設計自動化工具相容。

在資料中心、AI、晶片上LiDAR、穿戴式感測器、光學處理器、量子技術等應用領域中，節能晶片的需求不斷增長，Wave Photonics 正在探索台灣生態系內的機會，以建立互惠的合作關係。

合作機會:

- 與晶圓廠、代工廠和設計合作夥伴的網絡和研發合作
- 與新型整合光子製程/平台、CPO和收發器的研發單位，進行共同研發
- 尋找研發新型整合光子技術的客戶
- 提供量子應用（離子阱和QKD）的光子學專業知識

Aqualase

Contact 代表人
Dr Amir Rabani
CEO & Founder
amir@aqualasetech.com
www.aqualasetech.com

Introduction

AquaLase is developing advanced laser processing technology for wide-bandgap, compound semiconductor and photonic materials. Its proprietary wafer-level liquid-assisted thermal management platform enables cleaner and higher-yield laser processing by eliminating thermally induced wafer damage and defects. Compatible with femtosecond, picosecond and nanosecond laser platforms, AquaLase addresses critical manufacturing challenges in power electronics, photonics and advanced semiconductor devices. Protected by an international patent application portfolio, the company is seeking semiconductor manufacturers, equipment OEMs, strategic partners and investors to accelerate global commercialisation.

公司概況

AquaLase針對寬能隙、化合物半導體及光子材質，研發先進雷射處理技術，擁有專業晶圓級液體輔助熱管理平台，排除因熱能造成的晶圓損傷及瑕疵，達到更潔淨、更高良率的雷射處理表現。AquaLase與飛秒、皮秒、奈秒雷射平台相容，可因應電力電子、光子、先進半導體元件的重大製造挑戰。本公司擁有國際專利申請組合，正尋求半導體製造商、設備OEM、策略夥伴及投資人，以加速全球商業化進程。

Arm

Contact 代表人
Jack Huang
Sales Director
Jack.Huang@arm.com
www.arm.com

Introduction

The future is built on Arm. Arm provides the industry's most efficient and highest-performing compute platform, with more than 310 billion Arm-based chips shipped to date. The world's biggest technology companies, including AWS, Microsoft, Google, Meta, NVIDIA and Samsung, are innovating on Arm, all with a shared purpose of meeting the insatiable compute demand required to deliver the unprecedented capabilities and experiences that AI promises. Together with the world's largest computing ecosystem and over 22 million software developers, we are achieving the impossible from cloud to edge by building the AI experiences of the future for everyone.

公司概況

建構運算的未來，由 Arm 領航。Arm 提供全球最節能且效能卓越的運算平台，迄今已出貨超過 3,100 億顆 Arm 架構晶片。因應 AI 所帶動的龐大運算需求，全球頂尖科技公司，包括 AWS、Microsoft、Google、Meta、NVIDIA 和Samsung，皆在 Arm 平台上持續創新。結合全球最大運算生態系與超過 2,200 萬名軟體開發者，Arm正在雲端到邊緣的各個領域推動次世代 AI 體驗。

Beebolt

Contact 代表人
Thelma Onyeka
CEO
Thelma@beebolt.com
www.beebolt.com

Introduction

Beebolt is building the intelligence assembly line for high-stakes decisions in critical industries. We turn fragmented information into decision-grade intelligence by combining AI, data, human expertise and industry context. Like a modern production system, Beebolt standardises inputs, creates continuous flow, sequences what matters, brings specialised expertise to the right signals, and gives decision-makers visibility and control. Our intelligence team and expert network validate what AI surfaces, delivering a focused set of trusted, actionable signals. Conductor™, our intelligence assembly line for the semiconductor value chain, was built with SEMI and validated by the industry. We don't predict the future. We help you see it sooner, and act with confidence.

公司概況

Beebolt 正在為關鍵產業中的高風險決策打造「智慧情報生產線」（Intelligence Assembly Line）。我們結合人工智慧、數據、人類專業知識與產業洞察，將零散的資訊轉化為可支撐決策的高價值情報。如同現代化生產系統，Beebolt 透過標準化資訊來源、建立持續性的資訊流、聚焦最重要的訊號，並將專業知識精準導入關鍵議題，讓決策者能夠獲得更高的視野與掌控力。我們的情報團隊與專家網絡會針對 AI 所識別出的訊號進行驗證與分析，提供經過篩選、可信賴且可立即採取行動的關鍵洞察。Conductor™ 是專為半導體價值鏈打造的智慧情報平台，與 SEMI 共同開發，並經產業驗證。我們不預測未來，而是幫助企業更早看見未來，並更有信心地採取行動。

CSA Catapult

Contact 代表人
Chris Davies
Head of Product Marketing
Chris.Davies@csa.catapult.org.uk
www.csa.catapult.org.uk

Introduction

CSA Catapult is the UK's innovation centre for semiconductor commercialisation, helping companies accelerate breakthrough technologies from concept to market. Established by Innovate UK in 2018, Catapult supports start-ups, SMEs and global tech leaders through co-design, integration, validation and product commercialisation. Combining expertise in power electronics, photonics, microwave technologies, RF and advanced packaging, it helps organisations reduce risk, strengthen supply chains and speed market adoption. Catapult works with industry, academia and government to advance UK semiconductor capability in AI, defence, quantum, energy and communications sectors.

公司概況

CSA Catapult（化合物半導體應用創新中心）為英國半導體商業化創新機構，致力協助企業加速突破性技術從概念走向市場。中心於2018年由英國創新署（Innovate UK）成立，提供協同設計、系統整合、驗證與商業化支援，服務新創、中小企業及全球科技公司。憑藉功率電子、光子技術、射頻與微波、先進封裝及半導體整合專長，協助降低風險、強化供應鏈，並推動AI、先進通訊、國防、量子科技及能源等領域創新發展。

CSConnected

Contact 代表人

Howard Rupprecht
Managing Director

info@csconnected.com
csconnected.com

Introduction

CSconnected is the world's first compound semiconductor cluster, located in South Wales. Supported by the Strength in Places Fund (UK Research and Innovation) and Cardiff Capital Region, the cluster unites leading companies, research institutions, and government partners to drive innovation, economic growth, and global leadership in semiconductor technology.

公司概況

CSconnected 為全球首座化合物半導體產業聚落，座落於英國南威爾斯。在英國研究與創新署（UKRI）提供的Strength in Places 基金及Cardiff Capital Region的支持下，CSconnected 匯聚了國際領先的企業、頂尖研究機構與政府單位，致力於推動化合物半導體技術創新、促進區域經濟發展，並強化英國於全球半導體產業的領導地位。

EMU Technologies

Contact 代表人

David Hyland
CEO

david.hyland@emutech.com
www.emutech.com

Introduction

Established in 2005, EMU Technologies manufactures silicon and compound semiconductor substrate handling equipment, supplying a global customer base with wafer aligners, transfer machines, laser mark readers and automated wafer sorters operating under full host control. EMU collaborates with over 100 semiconductor and materials manufacturers to provide standard and customised wafer handling solutions. With over 1,200 wafer handling products installed in fabs across Europe, Singapore and the USA, EMU is a trusted partner offering cost effective and reliable solutions.

公司概況

成立於2005年，EMUTechnologies 專門製造矽與化合物半導體基板處理設備，為全球客戶提供晶圓對位機、轉送機、雷射標記讀取器以及可完全由主機控制的自動晶圓分類機。EMU與超過100家半導體與材料製造商合作，提供標準化與客製化的晶圓處理解決方案。至今已有超過1,200台EMU晶圓處理設備安裝於歐洲、新加坡與美國的晶圓廠中。EMU是值得信賴的合作夥伴，致力於提供具成本效益且可靠的解決方案。

Dycem

Contact 代表人

Vincent Chen
General Manager North East Asia

Vincent.Chen@dycem.com
dycem.com

Introduction

For over 60 years, Dycem has protected critical environments worldwide. Our polymeric mats attract, capture, and retain up to 99.9% of foot and wheel-borne contaminants and reduce airborne contamination by up to 75%. Reusable for 3–5 years, Dycem provides sustainable, high-performance floor-level protection, replacing traditional disposable sticky mats.

公司概況

逾 60 年來，Dycem 致力於守護全球關鍵受控環境。我們的高分子防塵墊能有效吸附、捕捉並保留高達 99.9% 來自鞋底與車輪的污染物，並減少高達 75% 的空氣污染。具備 3–5 年長效壽命且可重複清洗使用，Dycem 提供永續、高效的地面級防護，完美替代傳統拋棄式黏塵墊。

Gencoa

Contact 代表人

Dr Erik Cox
New Business Development Manager

erik.cox@gencoa.com
www.gencoa.com

Introduction

Gencoa is a leader in the design and manufacture of products for the vacuum coating sector. Continuous innovation has led to technology which sets industry benchmarks in magnetron plasma deposition components, process monitoring and control. With funding from Innovate UK, Gencoa has developed "Optix", an optical gas sensor for use in any vacuum environment, functioning through a wide range of operating pressures, making it compatible with high-pressure semiconductor processes including PVD, CVD, ALD and ALE.

公司概況

Gencoa 是真空鍍膜領域的領導廠商，專精於真空鍍膜產品的設計與製造。透過持續創新，Gencoa 在磁控電漿沉積元件、製程監控與控制技術方面，樹立了業界標竿。 在英國創新署（InnovateUK）的資助下，Gencoa 開發出「Optix」光學氣體感測器，可應用於各種真空環境中，並能在廣泛的操作壓力範圍內穩定運作， 使其相容於包括PVD、CVD、ALD與ALE在內的高壓半導體製程。

National Physical Laboratory (NPL)

Contact 代表人

Fernando de Castro
Department Head of Science

Fernando.castro@npl.co.uk
www.npl.co.uk

Introduction

NPL is the UK's National Metrology Institute, providing the trusted measurement science that underpins innovation, industry and trade. With more than a century of expertise, NPL delivers world-leading science, engineering and technology to support breakthroughs in areas including semiconductors, quantum communications, advanced healthcare and 5G. As an independent and impartial national laboratory, NPL helps organisations improve performance, reduce risk, accelerate innovation and strengthen confidence in emerging technologies.

公司概況

英國國家物理實驗室（NPL）為英國國家計量院，提供支撐創新研發、產業發展與國際貿易的關鍵量測科學能力。憑藉逾百年的專業積累，NPL運用世界領先的科學、工程與技術實力，推動半導體、量子通訊、先進醫療及5G等領域創新發展。作為獨立且公正的國家級實驗室，NPL協助企業降低風險、提升效能、加速創新，並建立對新興技術的信任與信心。

QuInAs Technology

Contact 代表人

James Ashforth-Pook
CEO & Co-Founder

james@quinas.tech
quinas.tech

Introduction

QuInAs Technology is developing ULTRARAM™, a patented quantum semiconductor memory platform that combines the speed and endurance of DRAM with the non-volatility of flash. Built on a III-V compound semiconductor platform, ULTRARAM™ is designed to deliver ultra-low-energy operation, addressing one of the most critical challenges facing next-generation AI systems: the energy cost of moving, storing and processing data.

ULTRARAM™ is being developed for energy-efficient AI hardware, in-memory computing, neuromorphic systems, secure computing, photonics integration and heterogeneous integration.

公司概況

QuInAs Technology正研發專利量子半導體記憶體平台ULTRARAM™，兼具DRAM的速度與耐用度，以及flash的非揮發性，ULTRARAM™以III-V化合物半導體平台為基礎，運作可達超低能耗，因應次世代AI系統在搬移、儲存、處理資料時的能源成本。

ULTRARAM™適用於節能AI硬體、記憶體內運算、神經型態系統、安全運算、光子整合、異質整合等。

Sandvik (Osprey)

Contact 代表人

Shazi Sheikh
Sales & Marketing Manager

shazi.sheikh@sandvik.com
www.cealloys.sandvik

Introduction

We manufacture Controlled Expansion Alloys (CE-Alloys). These are a range of high modulus, low density Aluminium-Silicon (Al-Si) Alloys with tailored thermal expansion. The components tailored from our CE alloys are typically used to provide support, protection, and thermal management to various types of devices and systems. We support various demanding industries such as semiconductors, electronics, space, automotive.

公司概況

我們提供高性能受控熱膨脹合金（CE-Alloys）解決方案，採用高剛性、低密度且熱膨脹係數可精準調控的鋁矽合金（Al-Si）材料。相關零組件可有效提升系統的機械穩定性、熱管理效能與可靠度，廣泛應用於半導體設備、先進電子系統、航太科技及汽車產業等高階應用領域。

UKSC

Contact 代表人

Steve Taylor
Director of Strategic Marketing
策略行銷總監

steve.taylor@uksemicentre.org.uk
uksemicentre.org.uk

Brian Robertson
Director of International Partnerships
國際合作總監

brian.robertson@uksemicentre.org.uk

Introduction

The UK Semiconductor Centre (UKSC) is the UK's national gateway to the semiconductor ecosystem. Connecting industry, academia, investors and government, UKSC accelerates business growth, innovation and global partnerships. It supports companies with access to investment, talent, infrastructure and expertise, helping bring breakthrough technologies to market faster. Championing UK leadership in chip design, photonics, compound semiconductors and advanced materials, UKSC strengthens the UK's position as a globally competitive semiconductor nation and promotes international collaboration across the supply chain.

公司概況

英國半導體中心（UKSC） 是英國半導體產業生態系的國家級合作樞紐與對外窗口。透過串聯產業界、學術界、投資機構及政府部門，UKSC 致力於加速企業成長、推動技術創新，並深化全球合作夥伴關係。
UKSC 協助企業取得資金、人才、基礎設施及專業資源，加快突破性技術的商業化進程與市場導入。作為英國半導體產業的推動者，UKSC 積極促進英國在晶片設計、光子技術、化合物半導體及先進材料等關鍵領域的國際領導地位。
透過強化產業生態系發展與國際供應鏈合作，UKSC 持續提升英國作為全球競爭力半導體強國的地位，並推動跨國界、跨產業的協同創新與合作。

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