Non-Executive Director (Strategic Influencing)

Compound Semiconductor Applications Catapult

Application Pack

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1. About the Compound Semiconductor Applications Catapult

The Compound Semiconductor Applications Catapult was established to help the UK become a global leader in compound semiconductors through collaboration with both large companies, and start-ups to develop and commercialise new applications utilising this technology.

Compound semiconductor devices have the potential to transform the world of technology in the 2020s as radically as the silicon transistor did in the 1960s and 1970s. In the fields of power electronics and radio frequency systems, compound semiconductor devices can enable product manufacturers to achieve dramatic improvements in performance, size, weight, cost and power. In photonics, compound semiconductors provide unique emitter and detector functions to enhance sensor capability.

Compound semiconductor technology has such potential that it has triggered a cascade of innovative developments at UK companies and research institutes. But the market for compound semiconductors is so new that the infrastructure, systems and processes for realising a concept in the form of a working prototype or a complete system board have not been readily available to UK companies.

The Compound Semiconductor Applications Catapult's purpose is to deliver long-term benefit to the UK economy and accelerate UK economic growth in industries where applying compound semiconductors creates a competitive advantage and enables new products or end markets. Compound semiconductors bring many advantages in size, weight and performance when used in systems. Typically, they have a much wider bandgap compared to silicon which allows devices to operate at much higher voltages, frequencies and temperatures to power the essential technologies of the future.

Our vision is for the UK to become a global leader in developing and commercialising new applications for compound semiconductors. How do we aim to do this? Through the knowledge and expertise of our talented team based at our world-class Innovation Centre, based at the heart of the compound semiconductor cluster in Newport, South Wales.

The Compound Semiconductor Applications Catapult is a company limited by guarantee. The Leadership Team manages day-to-day operations under the supervision and guidance of the board of directors.


£9m
Projects won CR&D
£140m
Direct leveraged investment
£177m
Collaborative project pipeline
68%
Academic partners in CR&D projects
27
Academic collaborations
33 (18 CRD, 6 EVM, + 9 commercial)
R&D projects (CR&D, commercial, EVMs)
42 Tier 1 45 SMEs
Industrial collaborations
9
International partners
23
PhDs
76
Employees
705
Years of semiconductor experience
4770
Jobs forecast to be created or safeguarded


£8.7m
Projects won CR&D
£140m
Direct leveraged investment
£177m
Collaborative project pipeline
4770
Jobs forecast to be created or safeguarded
33 (18 CRD, 6 EVM, + 9 commercial)
R&D projects (CR&D, commercial, EVMs)
41 Tier 1 37 SMEs
Industrial collaborations
68%
Academic partners in CR&D projects
27
Academic collaborations
9
International partners

Governance and Structure

The Compound Semiconductor Applications Catapult (CSAC) is part of a network of world-leading centres designed to transform the UK's capability for innovation and help drive future economic growth.

The Catapult has been established by Innovate UK to connect business and research. Each Catapult Centre specialises in different areas of technology, but all offer a space with facilities and expertise to enable businesses and researchers to collaboratively solve key problems and develop new products and services on a commercial scale.

Catapults exist to:

- Reduce the risk of innovation
- Accelerate the pace of innovation
- Capitalise on UK investments in academic research
- Create sustainable jobs and growth
- Develop the UK's skills and knowledge base and its global competitiveness

Funding

The Catapult receives a core grant, under a Grant Funding Agreement, from Innovate UK. Additionally, the Catapult secures funding through directs contracts with UK business, projects with UK and international companies, and from competitive Research and Development Grants.

Board composition

Rob Bryan: Acting Chair

Rob is a solicitor with vast experience in the publicly-funded STEM space and runs the only legal practice dedicated to STEM. He has held senior in-house roles with major PLC's, GEC and Courtaulds Textiles. His work on behalf of learned societies, including the Royal Society, The Royal Academy of Engineering and the Physiological Society have caused him to advise on some of the more high-profile issues that challenge STEM organisations. He is a qualified Chartered Company Secretary as well as Solicitor and is also a Non-Executive Director of the Open Data Institute and Chair of Action Against Age-Related Macular Degeneration. Rob is a visiting lecturer in Technology Management and Protection at Warwick University and has worked on two intellectual property cases that were successful in the House of Lords.

Kevin Crofton: Non-Executive Director

Kevin T Crofton is the former CEO of Comet, former President of SPTS Technologies Limited and former Corporate Executive Vice President of Orbotech Ltd. Previous to his positions at Orbotech (and SPTS), Mr Crofton held executive positions at Aviza Technologies, NEXX Systems, and Lam Research Corporation. Mr Crofton is on the Executive Board of SEMI, the industry association of the semiconductor equipment and materials industry. Further, Kevin is the former Chair and now member of the Governing Council of the MEMS and Sensors Industry Group.

Jonathan Lyle: Non-Executive Director

Jonathan Lyle is a Fellow of the Royal Academy of Engineering and the Institution of Engineering and Technology. He held a number of senior roles in the Ministry of Defence, including as Chief Executive of the Defence Science and Technology Laboratory (Dstl) – a government agency which works closely with companies and universities to harness innovative science and technology for the defence and security of the UK.

Stephen Duffy: Non-Executive Director

Stephen has around twenty years' experience in technical, operations and business development roles within the Semiconductor and Photonics industry. Stephen currently serves as Chief Executive Officer at Optocap Ltd, a technology company offering package design and assembly services for a wide range of optoelectronic and microelectronic devices. Stephen was co-owner of Optocap Ltd for several years following a successful Management Buy-Out (MBO) from previous owners, Scottish Enterprise and was co-owner and executive director at the time of the multi-million pound trade sale of Optocap Ltd to the German multi-national TUV NORD. He now sits on the Executive Management Committee of TUV NORD Aerospace Business Unit. He has been an expert evaluator the European Commission for a number of Horizon 2020 R&D projects for semiconductors and photonics and was a previous member of the European Space Agency working group for Hybrid and Packaging of semiconductor devices. Stephen has co-authored a number of technical papers on compound semiconductors and photonics and is the author of several trade-articles on semiconductor packaging. Stephen holds BSc Hons in Laser Physics and Optoelectronics from University of Strathclyde.

Trevor Cross: Non-Executive Director

As the Chief Technology officer of Teledyne e2v, Prof. Trevor Cross brings over 30 years of technology, product innovation and commercial experience to the Catapult, which includes over ten years spent at plc board level as Technical Director. Dr Cross played a pivotal role in e2v's university engagement programs and today leads the company's growing Quantum Technologies activity. His experience in committee roles include council membership of the former Particle Physics and Astronomy Research Council, Chair of the Electronics, Sensors and

Photonics KTN, and he currently chairs Innovate UK's Special Interest Group in Quantum Technologies.

Dr Wyn Meredith: Non-Executive Director

Dr Wyn Meredith is director of the Compound Semiconductor Centre, a new Joint Venture between IQE Plc and Cardiff University, focussed on technology translation of research and design in compound semiconductor materials and devices. Dr Meredith is also an expert advisor to the UKs Engineering and Physical Sciences Research Council, Cardiff University Department of Physics, The UK National III-V Centre, and provides executive level advisory services to numerous SMEs in the field of semiconductor technology.

Raj Gawera: Non-Executive Director

Raj Gawera has over 25 years of experience in short range and wireless comms technology R&D, business development and marketing. Raj was part of initial IEEE 802.11 team to define first WLAN standard in 1996 – a technology which has now shipped over 5bn units. Raj also helped pioneer the first 3G data transmissions working with Motorola and others to demonstrate one of the first video calls at the 3GSM show in 1998, many years before 3G licences were awarded. Raj was a founder member of startup UbiNetics (1999), that successfully exited in 2005 for over $120m USD. As part of that deal, Raj joined CSR and ultimately took the role of VP Marketing where he was part of the team that acquired SiRF Technologies for $136m (2009) to add GPS technology to CSR portfolio. In 2012, he helped sell CSR's handset business to Samsung in a deal worth $310m for 310 staff. As part of that deal, Raj took up the role of VP Marketing responsible for defining future wireless products. In 2014, Raj was promoted to head up the SCSC subsidiary leading the silicon and software development for Samsung's connectivity solutions. Raj now has responsibility for several European development centres delivering leading edge technology into Samsung's semiconductor division. The technology from these development centres has now been in mass production in hundreds of millions of units across multiple global customers in mobile and IoT products.

Debbie Wilkinson: Non-Executive Director

Debbie Wilkinson is a chartered accountant. She began her career at Deloitte UK and has served in strategic leadership roles including management consultant for the Ministry of Defence and Chair and Board Advisor for Airborne System Group.

2 About Catapult Centres

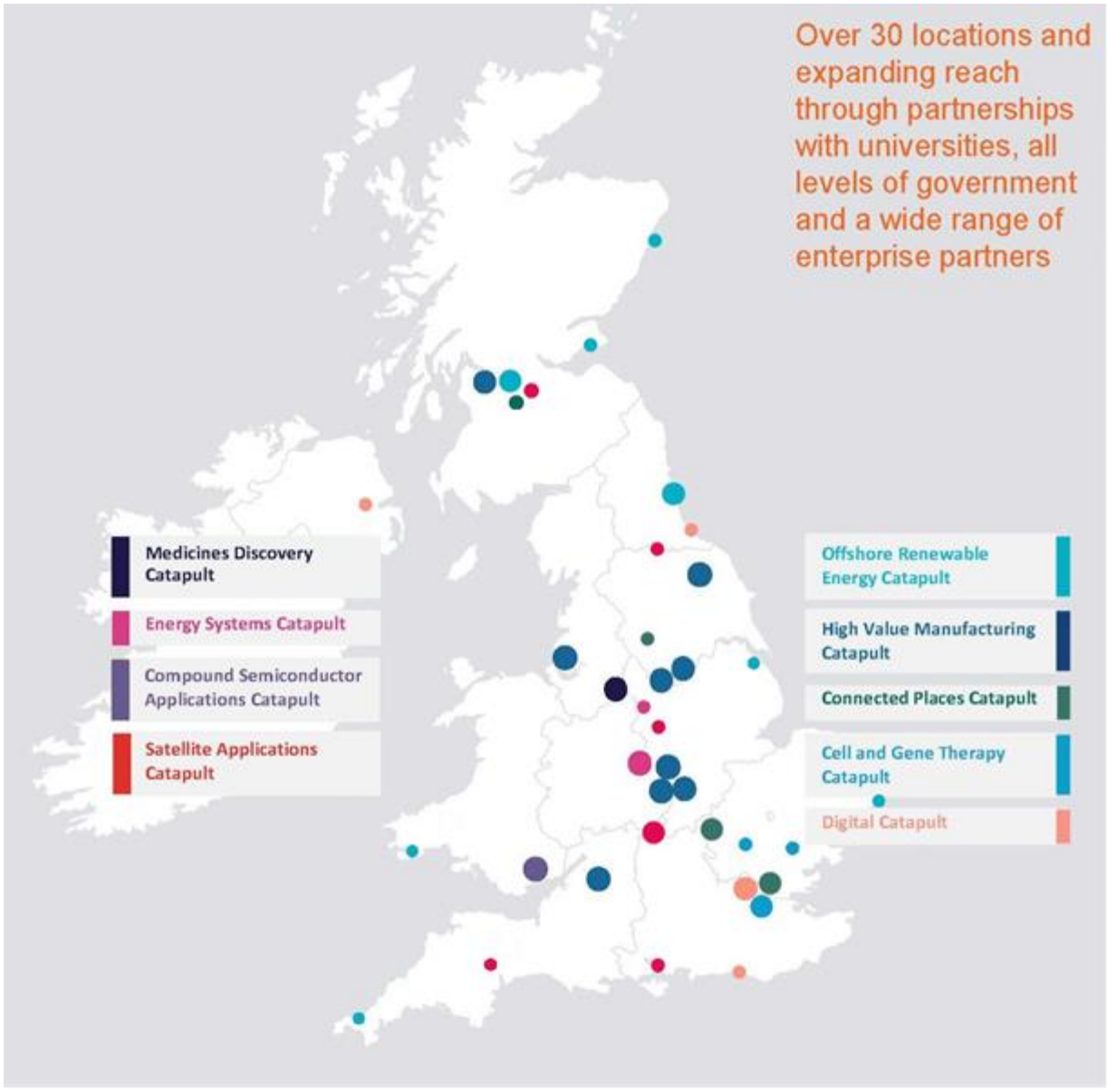
The Catapult Centres are a network of world-leading centres designed to transform the UK's capability for innovation and help drive future economic growth. The centres provide a physical place where the very best of the UK's businesses, scientists and engineers work side-by-side on translational research and development. The overall objective of the Catapults is to transform high potential ideas into new products and services to generate economic growth.

The Catapult network has been established by Innovate UK to connect business and research. Each Catapult Centre specialises in a different area of technology, but all offer a space with the facilities and expertise to enable businesses and researchers to collaboratively solve key problems and develop new products and services on a commercial scale.

Catapults exist to:

- Reduce the risk of innovation
- Accelerate the pace of business development
- Capitalise on UK investments in academic research
- Create sustainable jobs and growth
- Develop the UK's skills and knowledge base and its global competitiveness

Each Catapult focuses on an area in which the UK has genuine potential to generate growth in strategically important global markets. There are currently nine Catapults: High-Value Manufacturing Catapult, Offshore Renewable Energy Catapult, Energy Systems Catapult, Connected Places Catapult, Satellite Applications Catapult, Medicines Discovery Catapult, Cell and Gene Therapy Catapult, Digital Catapult.


Over 30 locations and expanding reach through partnerships with universities, all levels of government and a wide range of enterprise partners
Medicines Discovery Catapult
Energy Systems Catapult
Compound Semiconductor Applications Catapult
Satellite Applications Catapult
Offshore Renewable Energy Catapult
High Value Manufacturing Catapult
Connected Places Catapult
Cell and Gene Therapy Catapult
Digital Catapult

3. About Semiconductors

Modern electronic products, from computers to smart phones, use silicon chips at their heart. As the name suggests, these chips are made from silicon, which is a highly abundant element found in sand.

With a single element, it is possible to scale-up the manufacturing process to make highly complex silicon chips in large volumes, and hence 80% of the world's semiconductors use silicon. The remaining 20% use compound semiconductors, which combine two or more elements from the periodic table to form a compound.

Although compound semiconductors are more complex to manufacture than silicon, they possess 3 properties that outperform silicon:

Power (power electronics for electric vehicles)

Speed (radio frequency for 5G and RADAR)

Light (photonics for optical fibre communications)

The Catapult has aligned these three properties with three matching technical divisions, supported by Advanced Packaging. Those are Power Electronics, Photonics and RF & Microwave.

There are many ways of combining two or more elements from the periodic table, which creates a wide variety of semiconductor materials, each with unique properties. Their unique properties mean that compound semiconductors are finding increasingly diverse applications, such as Electric vehicles and 5G.

Market Applications

Compound semiconductors are currently being deployed across a rapidly growing number of applications and here at CSA Catapult we are the forefront of these developments. These include:

Transportation

Electric and hybrid-electric vehicle motors and chargers

Auxiliary electric motors in conventional aircraft

Novel electric propulsion technologies for aircraft

RADAR for ADAS and autonomous vehicles

LIDAR for autonomous vehicles

Clean Energy

In the area of clean energy, Wide Band Gap technology can reduce energy conversion losses by up to 90%. Here at CSA Catapult we are the forefront of these developments. CS is fundamental in the generation of renewable energy and with high efficiency will significantly reduce the loss of energy in the process.

Wide Band Gap technology can reduce energy conversion losses by up to 90%

Solar power system inverters and micro-inverters

Inverters in wind turbines

High-efficiency power distribution

Power conversion and distribution in emerging renewable generation technologies

Digital Communications

The challenges in digital communications lie in solving 5G, implementing vehicle to vehicle communication and in satellite communications from ground stations to low earth orbit satellites.

Defence and Space

Defence and security applications bring a set of requirements for harsh environments, temperature range, and reliability considerations that can be addressed with compound semiconductors leveraging our expertise in advanced packaging and harsh environmental and reliability testing.

4. Projects

A selection of our exciting innovative projects are:

SPLICE (Single Photon LiDAR Imaging of Carbon Emissions)

SPLICE assembles a world-leading scientific and industrial consortium to develop and industrialise gas imagers based on time-correlated single photon counting. This is one of the early applications of quantum technology.

Strength in Places Fund

Developing a global advantage in a sovereign, key enabling technology which will allow the UK to increase trade globally in critical sectors such as communications, 5G, autonomous and electric vehicles and medical devices.

High-T Hall Sensor Platform

Developing a supply chain for high-temperature operation Hall sensors which can sense high-frequency switching for electric motors and drives, using an innovative Hall graphene sensor.

SNORQL

Space-certified Nonlinear Optical Rugged Quantum Lasers.

AirQAD

AirQKD will address quantum-secure last-mile connectivity and build a demonstrator for a metropolitan-scale free-space optical (FSO) QKD network.

Additional information about our projects can be found at:
https://csa.catapult.org.uk/project-snapshots/

5. Role Specification

It is essential that in your application you address as many of the criteria in the specification as you can. These criteria will be explored further in screening conversations.

The Compound Semiconductor Applications Catapult is seeking an inspirational Non-Executive Director to lead oversight of strategic influencing strategy of the Company.

We are looking for a high-calibre individual with a track record of influencing and building networks, with the gravitas and diplomacy to communicate effectively with industry leaders, government, SMEs and academics, within the United Kingdom and internationally.

The non-executive director must have a leadership style that supports a team of highly qualified and intelligent employees to deliver optimal solutions that help to foster, grow and scale companies in the UK.

As an 'intermediary' organisation with interfaces to the research base and business and operating as a not-for-profit company with support from Government, we are interested in individuals who have experience of robust governance.

KEY RESPONSIBILITIES AND ACTIVITIES

Term of office: 3 years

Time commitment: 1 - 2 days per month (8 board meetings plus 3 or 4 committee meetings).

Remuneration: £12,984 per annum (an extra c. £1,500 for chairing a committee)

Role description
Board Member
Term of office: 3 years
Remuneration: £12,984 per annum
Time commitment: 2 days a month

Purpose:

Board Members are required to undertake the following responsibilities:

- Direct the Catapult's strategic development through ambitious leadership and clear policies and plans.
- Work effectively with the Chair to discharge the leadership functions of the Catapult.
- Monitor the strategic performance of the organisation, ensuring that it delivers services in line with decisions made and targets set in the business plan.
- Develop the Catapult's key relationships with industry, government, universities, sector bodies and other major stakeholders and decision-makers.
- Communicate the development of the Catapult and its achievements to industry stakeholders, the government, universities, SME's and agencies.
- Champion the Catapult's communications strategy, furthering the organisation's reputation externally.
- Determine the Catapult's approach to risk, establishing its risk appetite and tolerances.
- Support the Chief Executive, monitor budget spend against service delivery and targets.
- Act as a statutory director with associated fiduciary duties and responsibilities. This may include the need to join or chair a committee set up by the board.

Person specification:

It is essential that you address as many of the criteria in part one of the specification as you can. These criteria will be explored further with those who are invited to interview.

Part one – experience

- Extensive experience of developing strategic relationships with government funders, decision-makers and related stakeholders.
- Proven record of influencing key decision-makers in a complex and evolving government funding policy environment.
- Insight and experience of navigating funding mechanisms, identifying key decision-makers, strategic influencers and partners.
- Sound judgement and decision-making to ensure a successful communications strategy that builds credibility and trust across senior levels of the civil service, industry, SME's, investors and academics.
- Evidence of understanding public sector practices and principles for granting funds, including engagement with universities, industry, investors and relevant ecosystem stakeholders.
- Track record of building trusted relationships and reputation with senior civil servants, university leaders, investors and stakeholders.
- Demonstrable experience of championing emerging fields, building effective communication and influencing channels.
- Proven understanding and experience of strategic influencing within fast moving high technology environments with an ability to grasp potential risks and opportunities.
- Demonstrable commercial and political nous demonstrable at a significant leadership level.
- A demonstrable commitment to developing robust and efficient governance mechanisms.
- Previous Non-Executive Director experience would be advantageous.

Part two – skills and attributes

- A strong intellect, analytical and communication abilities.
- Proven track record of leading external engagement and strategic external stakeholder management.
- Proven track record of successfully leading strategies that secure funding in an evolving Technology or related Sector.
- Proven track record of leading strategic influencing practices that build credibility and trusted reputation with targeted stakeholders.
- An appreciation of the Catapult's remit and the ability to demonstrate an understanding of, and commitment to, the growth of the Compound Semiconductors sector in the UK.
- Ability to understand fully the strategic role of the Board and its accountabilities, upholding the values of the Catapult.

- Undisputed personal integrity and a personal style that demonstrates authority, commitment and consistency.
- Excellent judgement, collaborative style with excellent communication skills.

6. Timetable

Applicants should note the key dates when you may be required to submit information and/or participate in assessment, subject to progression at each stage.

Indicative Timetable

Detailed screening conversations will form part of the search and selection process prior to Final Panel.

1st November Closing date for applications
W/C 7 Nov Shortlist Meeting
W/C 14 Nov Final Panel

The dates given are indicative and subject to change.

Zoom, Telephone, video conference and Skype facilities are also available if necessary.

7. How to Apply

To apply for this role, please provide the following documents:

- An up-to-date CV.
- A supporting statement (maximum two pages) that outlines your interest in this particular organisation and role, and your fit against the essential experience criteria set out in the person specification and role description.
- A completed diversity monitoring form.
- To apply please find the role on Green-Park's website - here

Please submit your application by 11:59pm Tuesday 1st of November 2022

If you want to know more about the role or selection process, please contact Laura Stuart on laura.stuart@green-park.co.uk or Baljit Dhadda on baljit.dhadda@green-park.co.uk

Reasonable expenses for unavoidable travel expenses about attending interviews will be reimbursed.

Diversity policy

The Compound Semiconductor Applications Catapult is committed to providing equal opportunities for all, irrespective of race, age, disability, gender, marital status, religion, sexual orientation, transgender and working patterns.

This appointment will be conducted in line with principles of merit, fairness and openness.

Confidentiality and Data Protection

We are required to process confidential data as part of the recruitment process. All data is stored on a secure database and is fully compliant with General Data Protection Regulations. Please contact Baljit Dhadda on baljit.dhadda@green-park.co.uk if you have any confidentiality concerns.

Identity and Reference checks

All candidates will be asked to provide proof of identity (copy of passport). Referencing checks will be carried out before formal offer is made.