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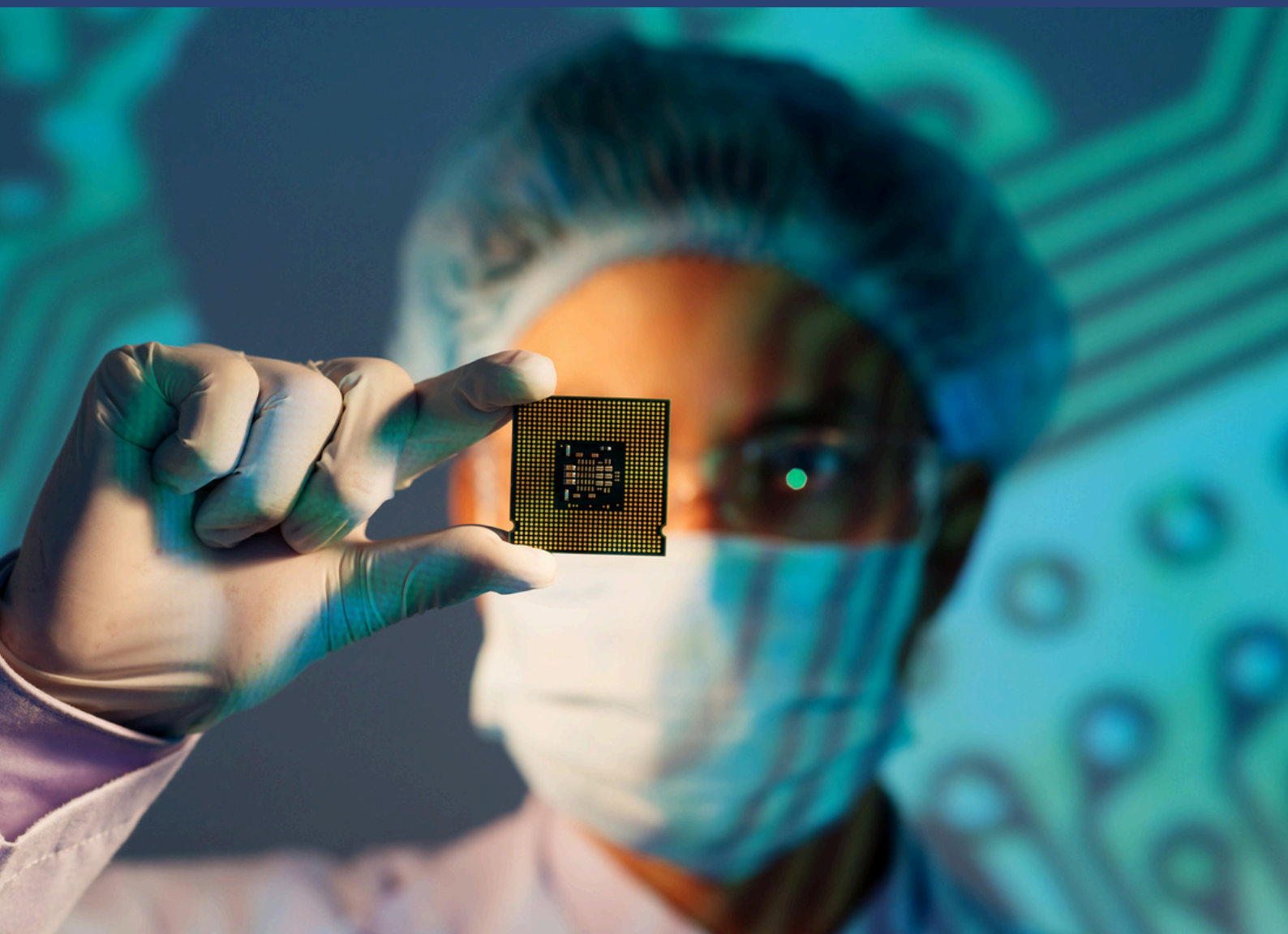
UK Electronics Skills Foundation

Semiconductors in the South West

Industry | Innovation | Careers | Opportunity

The South West, a region where teamwork, precision and creativity turn bright ideas into components that keep our world connected, is bustling with innovation.



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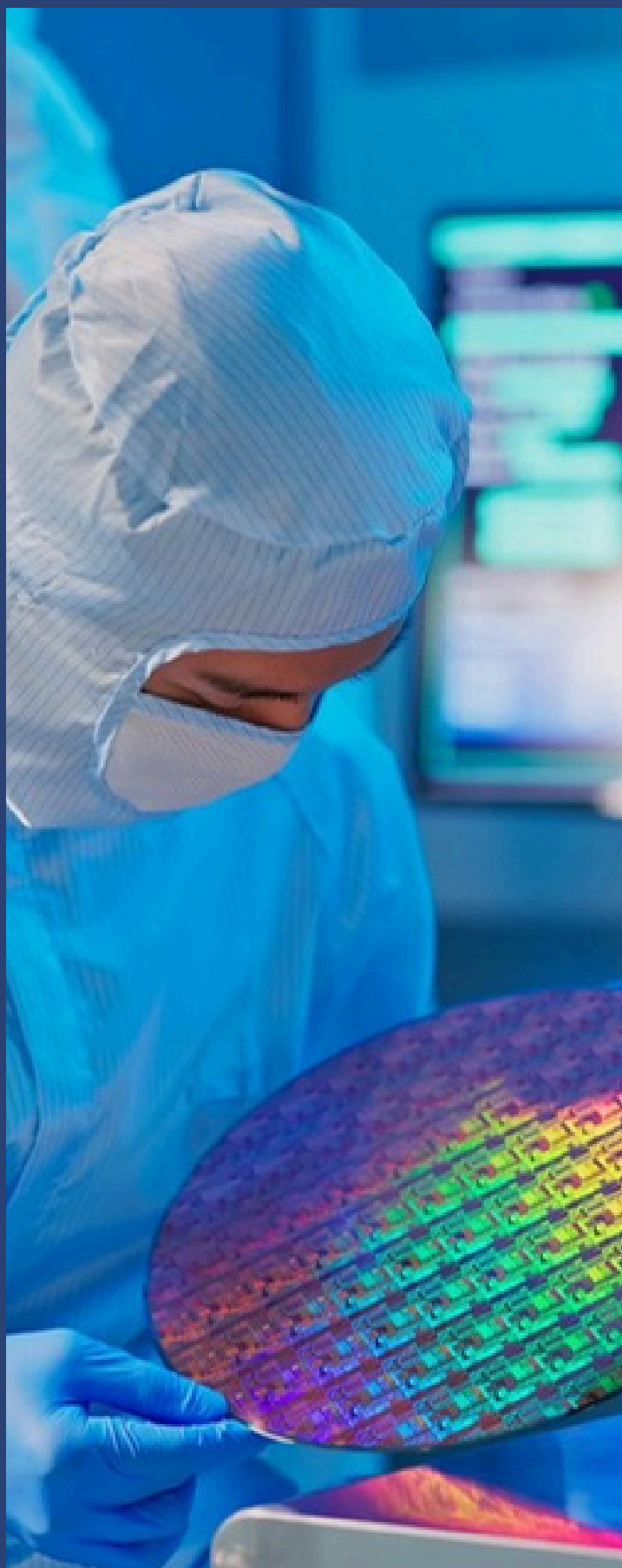
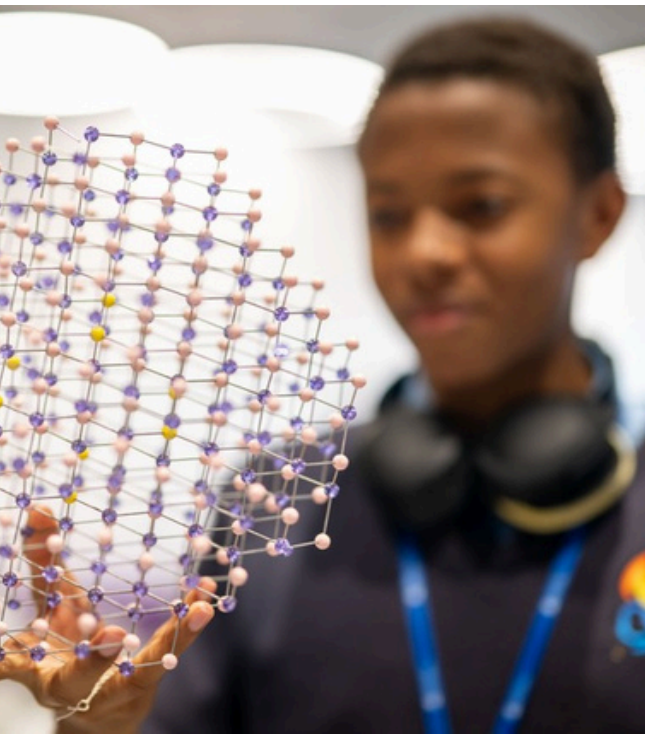


Learn here »
Work here »
Change the world »

From the harbours of Torbay to the tech corridors of Bristol, the South West is a place where curiosity thrives and technology has a character of its own.



Instead of huge chip factories, the region specialises in the parts of the semiconductor world that require precision, creativity, and teamwork. Photonics, microelectronics, packaging, assembly, and chip design are the technologies shaping today's local industry.

Placed at the heart of the South West semiconductor cluster, the EPIC Centre and South Devon College form a unique partnership that supports local companies, by training the next generation of engineers, and connecting students directly to labs and cleanrooms.

When universities, colleges, and industry work side-by-side, students are able to gain the skills, confidence and experience they need to step straight into real engineering and manufacturing roles.

Whether you study engineering in Bristol, explore Electronics in Plymouth, or learn photonic manufacturing techniques in South Devon, by choosing to further train across the South West you'll be able to see exactly how skills link to a future career.

Innovation is happening right here, and you can be part of it!

When ideas meet action

If you're thinking of what to do next, the region offers plenty of routes into the sector! Universities such as Bristol, Bath, Southampton and Plymouth teach Electronics, photonics, chip design and semiconductor manufacturing, giving students access to specialist cleanrooms and research labs.

If you prefer hands-on learning, local colleges such as South Devon College, Wiltshire College, Gloucestershire College, City College Plymouth and Bath College offer engineering and Electronics courses shaped around the local industry needs.

EPIC and South Devon College work closely together to make sure courses match the skills needed in local industry offering Electronics training and hosting industry-led events where students can meet engineers and see technology in action.

Both students and apprentices benefit from a strong network that supports them in every step of the way. This blend of education opportunities that are linked to education, makes the South West a great place for young people who enjoy problem-solving and shaping the modern world.

Curious about studying Electronics Engineering? Explore local opportunities

- University of Bristol
- University of Bath
- University of Southampton
- University of Plymouth
- South Devon College
- Wiltshire College & University Centre
- University Centre Weston
- Gloucestershire College
- City College Plymouth
- Bath College
- University Centre South Devon
- We The Curious
- Bristol University Outreach

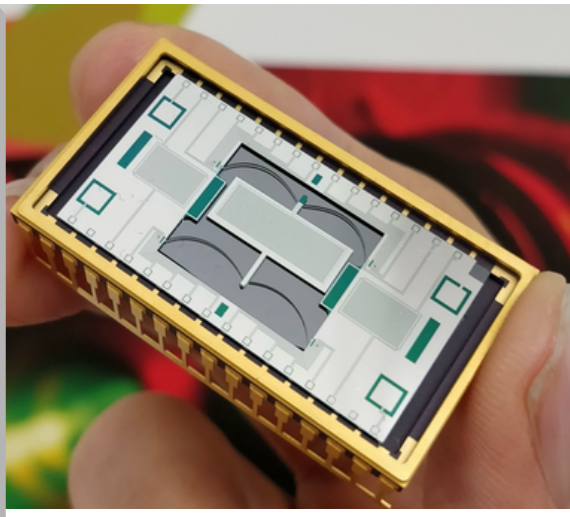


Image courtesy of the James Watt Nanofabrication Centre University of Glasgow

Local organisations

BAY PHOTONICS

Torbay | Paignton

Bay Photonics specialises in photonic packaging, the process of carefully assembling and protecting tiny chips. In the past, electronic chips carried signals using electricity, a bit like cars travelling along a motorway.

Now, Bay Photonics helps make photonic integrated circuits (PICs) that guide light instead of electricity; this is more like travelling through a super-fast light tunnel instead of the motorway!

These light-based chips are used in high-speed internet equipment, sensors, medical scanners and emerging quantum devices. But Bay Photonics' expertise does not stop there. The team also supports a wide range of other technologies that rely on precise, light-based components.

Because they're part of the local innovation hub, Bay Photonics is able to give students access to cleanrooms, precision tools and hands-on engineering. This opens the door to careers in device assembly, testing, optical alignment and problem-solving for anyone who enjoys practical, detail-focused work.

XMOS

Bristol

XMOS in Bristol designs small, energy-efficient chips that help devices listen and respond, almost like giving them a tiny, built-in brain. Their technology is used in things like smart speakers and advanced audio equipment, where the chip can separate voices from background noise and process sound in real time. One example is their work on voice-controlled interfaces that let gadgets understand spoken commands even in busy or noisy places.

For students who enjoy coding, Electronics, maths or AI, XMOS offers pathways into digital design, embedded programming, testing and engineering within Bristol's growing tech community. It's a great place for anyone who wants to see how software and hardware come together inside the devices we use every day.

Engineer stories

HI, MY NAME IS JACOB

I am a 'Graduate Process Engineer' at KLA Newport. KLA manufactures semiconductor wafer processing equipment - basically, machines that make computer parts.

Our customers want to make sure that our machines can make a certain product - so it is my job to ensure that they can do so, and to show them how to do it. I also look at long-term improvements to our machines.

A typical day would usually include some demo work, such as demonstrating that the machine can get certain results specified by the customer. I would need to gather results by measuring the wafers after they have been processed through our equipment. Then, I may need to formally write up my findings and present these to a customer.

KLA Newport manufactures lots of different machines, that each can be used to make a range of devices. This means that we are present in a massive number of industries. Our machines are used to make devices in cars, mobile phones, data centres, healthcare, lighting and so much more.

What I enjoy the most about working in the semiconductor industry is the variety. Every day is different, so it keeps you on your toes.

It is also very exciting to work right at the forefront of technology. I am also looking forward to start travelling with work soon, but right now the biggest benefit for me is knowing how widely used my work is. It is hard to find an industry now that is not reliant upon the semiconductor industry!

If you are curious about Electronics but not sure it's for you, watch YouTube videos on the semiconductor industry and wafer processing.

You could also attend some career fairs/conferences as a lot are free, especially if you are in university. But if you don't fancy university, there are also a lot of apprenticeships available too.

Engineer stories

HI, MY NAME IS PHILIP

I'm Bay Photonics' Technology Solution Specialist, Dr Philip Mitchell, and I help to design and develop solutions for tiny tech called semiconductors that enable light-based modern technology to work. These semiconductors are inside your phone, computing, gaming console and even cars!

My job is to design and solve technical problems and create new solutions so these devices can be faster, smarter and more reliable. I also support the learning of the future workforce by teaching photonic programmes at our local college and fellow colleagues.

When I left school, I attended South Devon College and studied Electrical and Electronic Engineering. My first job was with Standard Telephone and Cables, which were a pioneering company in photonics. At the age of 27, I went to Plymouth university and received a bachelor in Engineering with Honours degree. I then continued my career within photonics and after another 10 years, I decided to go back to education and received my Masters of Science. Why stop there? I went on to do a PhD and studied for a Doctorate in Technology.

If I could, I would tell my 16 year old self to have passion, love what you do and chase it with everything you've got. When you truly enjoy your work, it will naturally shine through in your achievements – and that passion will carry you further in everything you do.

There are lots of avenues you can do down with a career in photonics, such as Electronic Circuit Designer, develop code, or even in a commercial role.

The advantage is that you can shape your career as you wish - you can train and develop into a specific pathway.

Hands on science for all

Beyond research labs and tech centres, the South West is also full of places where people of all ages interested in learning about getting into STEM can explore science and engineering in fun, interactive ways.

We The Curious in Bristol, the Science Creates Outreach Lab, the Fleet Air Arm Museum, and Exeter Science Centre all run workshops, exhibitions, and activities that show how science connects to our everyday life.

Each autumn, the FUTURES Festival brings science and research out into the community offering hands-on activities, talks and workshops across Bath, Bristol, Exeter and Plymouth. The Science Futures Fair at UWE Bristol is a great opportunity for students to meet employers, explore career options and discover pathways into science and technology.

Many of these centres also work directly with schools, offering Electronics, light-based experiments, maker-lab activities, and engineering challenges. These programmes help students see how classroom skills link to those needed to thrive in the semiconductor sector!

- STEM in 10: Introducing an Electronic Revolution, Glasgow University
- Watch *Inside the mysterious world of compound semiconductors* video from Cardiff University.

Everyday impact

Companies in the South West help create technology that makes our everyday life easier.

Everyday Tech

Chips designed in Bristol help power smart devices, such as smart speakers, headphones, and voice-controlled gadgets.

Transport

Ultra-fast wireless communication systems that help vehicles and transport networks stay connected and responsive when on the move.

Healthcare

Tiny semiconductor sensors support medical diagnostics, such as pulse oximeters that use light to measure oxygen levels through the finger.

Light-Based Technology

Photonic devices packaged in Torbay help move data across the internet using light, improving speed and reliability.

Space & Defence

High-precision optical components to support satellites, communication links, and advanced imaging systems.

Opportunity in action

Do you see yourself as a technician, engineer, designer, researcher, or just someone who loves figuring out how new tech works?

© Bay Photonics

In the South West, there are lots of paths you can explore - Chip design, photonics, microelectronics, advanced packaging, testing, prototyping or embedded software are some examples.

Alongside college or university courses, companies like Infineon - Infineon Academy offer free online training that helps you learn real industry skills at your own pace. However you choose to learn, the South West gives you space to grow your skills and take your first steps into the semiconductor and photonics world.

Want to explore local opportunities?

- Plessey
- Bay Photonics
- Xmos
- QLM
- Effect
- G&H Torquay
- G&H Artemis
- Coherent
- Codasip
- Hybrid Integration
- Light Trace Photonics
- Nordic Semiconductors
- Qualcomm
- Broadcom Inc
- Graphcore
- Sensata Technologies
- Aion Silicon
- Lumentum
- Infineon
- Oriole Networks
- Spirent

In South West England you can access all sorts of fantastic opportunities.

Just get involved in the sector and see what feels right for you and your future.

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The UK has a long heritage of technological innovation and has a world-class Electronics sector. It has the potential to grow and innovate to provide solutions to some of the biggest challenges facing society today.

It is our mission to inspire more young people to pursue rewarding careers in this important industry, and give them the skills to thrive.

We are an independent, UK based charity, and we work collaboratively employers, universities and schools to raise awareness of and promote interest in Electronics and Semiconductors.

Find out more about our educational resources for:

Aspiring engineers
Teachers

Get in touch
ukesf.org
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education@ukesf.org

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