

# CST Global



Automatic bar stacker



Neil Martin, CEO

**C**ST Global, based in Blantyre, near Glasgow, produces III-V compound semiconductor laser devices for the fabrication of a broad range of photonics products, used in items such as touch screens, facial recognition hardware and mobile communications devices. It provides a custom foundry service, alongside the manufacture of a range of high-volume, standard laser devices. The laser devices it produces serve the optical telecoms, cloud computing, defence, sensing, industrial, retail and healthcare markets. Neil Martin, CEO of CST Global, explains its history and recent achievements.

In 2017, we expanded our state-of-the-art production facility by 30 per cent. We then went on to achieve an incredible 88 per cent growth to £6.7 million turnover, employing 69 staff. We now produce almost two million laser devices a month and are an industrial partner in 14 government-funded UK and European Technology Consortia development projects. Over 90 per cent of our devices are exported worldwide and our customers are some of the largest and most high-profile companies in the world.

## The photonics market

The worldwide photonics market is experiencing exponential growth. It is a huge growth sector in the UK, with 1,500 companies employing more than 70,000 people. Its economic impact is impressive, bearing a sustained growth of six per cent to eight per cent per year over the last three decades, with an annual output of nearly £13 billion.

### FACTS ABOUT CST GLOBAL

- » CEO: Neil Martin
- » Established in 2000
- » Based in Blantyre, near Glasgow
- » Services: Production of III-V compound semiconductor laser devices
- » 69 employees
- » Turnover: £6.7 million
- » 90 per cent of products exported
- » [www.cstglobal.uk](http://www.cstglobal.uk)

“In the photonics industry, the first company to prove the feasibility of a technology effectively becomes an “owner” of that technology”

Scottish photonics companies are respected worldwide for adding great value and expertise to product development in the sector, likewise within the country, for making a massive contribution to the Scottish GDP. Technology Scotland states that the Scottish photonics industry, alongside other enabling technologies, now comprises 400 companies, with 15,000 employees and a net turnover of £4 billion. It is estimated that the sector makes up ten per cent of all Scottish exports – these figures are not to be ignored.

For every optical telecommunications project that a company may work on, there are probably 200 photonics-based sensing opportunities. Some examples include coughing into a phone to discover if you need a doctor; phones that sense carbon monoxide; cars with LiDar, or light-based radar; and houses with distributed sensors. As technology moves forwards, the industry is having an arguably increasing impact on society. This will ensure exponential growth in the photonics market, for the foreseeable future.

### History

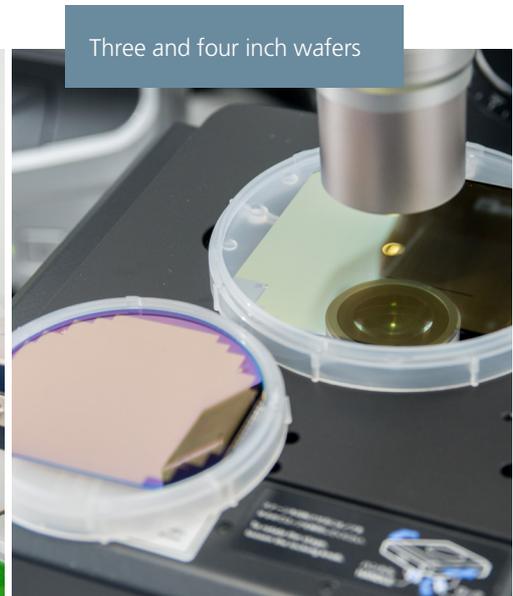
We were established in 2000 as a spin-off from Glasgow and

Strathclyde Universities, which are both renowned for their photonics expertise. In 2001, funding took us into private sector ownership and established our site as the first service provider with a III-V foundry in the UK. After steady growth and a second round of investment in 2009, our manufacturing capability increased. We acquired Intense UK in 2010 and their facilities have since become our “clean room” manufacturing facility – a 20,000-square foot unit with 2”, 3” and 4” wafer processing capabilities. In 2012, we then acquired Kamelian’s photonics technology, to add to our capability and IP portfolio.

The merger with Sivers IMA, in 2017, allowed us to invest heavily in the automation of our production facility and improve quality processes. The latter has been crucial in enabling us to supply telecommunications products across the world. This move was essential to meeting the escalating demand for III-V compound semiconductors in an ever-widening range of markets.

### Opportunities

In the photonics industry, the first company to prove the feasibility of a technology effectively becomes an “owner” of that technology

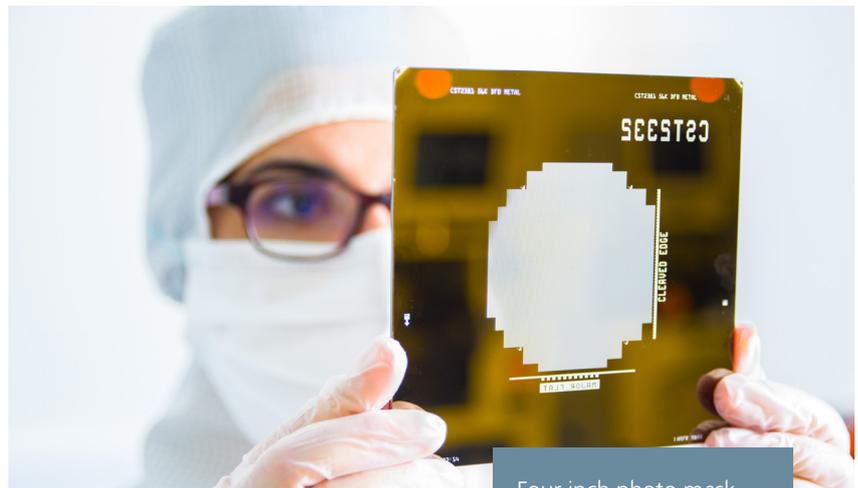


when it comes to commercialisation. Government funding enhances and broadens our global technology offering and accelerates development, speeding up entry into new and critical technology sectors. Since photonics is an enabling technology – that is to say, a key element for dependent industry sectors – the importance of funding and getting there first is even more critical.

We currently operate 14 research projects, all of which are co-funded by the government and worth over £1 million to our business. These projects are aimed specifically at outlining the feasibility of a variety of new photonics technologies, mitigating the risk for prospective further investors. The government must sustain or increase this level of investment, if we are to secure the UK as a major influencer in the global photonics market in the future.

Our challenges do not stop there. Our development engineers must blend chemistry, physics and electronics at PhD level. There are currently 12 experienced PhD engineers at CST Global, with Scottish, English, Irish, Bangladeshi, Italian, Mexican and Polish nationalities represented and a great gender ratio. We simply recruit the best. To continue attracting the best engineers to both our company and Scottish industry, we need the uncertainty Brexit has caused to international employment to be resolved.

Our most effective recruitment path has been through university PhD programmes and their involvement in the government-funded research projects we operate. When students get to work on real projects at our site, it helps attract high-calibre PhD students to the university, who in turn work with our experienced engineers. The students find themselves producing work of both commercial



Four inch photo mask

value and academic excellence, allowing us to identify the very best talent for recruitment.

### A Westminster view

Carol Monaghan, MP for Glasgow North West and Chair of the All Party Parliamentary Group for Photonics in Westminster, recently visited the company for a technology day. Carol, who studied laser physics and optoelectronics at Strathclyde University, addressed visitors and stated: “The central belt of Scotland is a hotbed for photonics research, from Glasgow and Strathclyde in the west, to Heriot-Watt, Edinburgh and St Andrews in the east. These industry-facing universities allow great and rich partnerships between industry and research, that allow SMEs to flourish.”

Wider recognition in Westminster of the growing opportunity in photonics in Scotland and the massive contribution it is already making to both Scottish and British GDP would further boost both recruitment and investment opportunities.

Carol concluded: “Companies like CST Global continue to push the boundaries of possibilities and their semiconductor components, developed and manufactured in Blantyre, are integral to laser devices used worldwide.”

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