



## SST Sensing

Sensor development Knowledge Transfer Partnership

**Glasgow Caledonian University (GCU) researchers are collaborating with SST Sensing, manufacturer of electronic fluid and gas sensors, to develop new sensors which measure levels of oxygen in a wide range of industrial applications.**

Funded by a two-year Knowledge Transfer Partnership (KTP), from which GCU will be awarded £140,000, the partners aim to develop the next generation of small, low-cost gaseous oxygen sensors.

Coatbridge-based SST Sensing has aimed to mark itself out from competitors with the development of innovative, low cost, small optical oxygen sensors for industrial applications.

The company has identified opportunities to improve the performance of their sensors, thereby opening up a significantly larger market for the product. For example, making the sensor react much faster to changes in oxygen would allow the sensor to be used in medical breath analysis and accurate measurement of parts per million (ppm) levels. This level of improved performance can also be applied to new sectors

such as mining, fruit transportation and other industries. SST Sensing also aims to develop new oxygen sensors which work effectively at high concentrations of oxygen to supply a growing international market for oxygen concentrators.

Having identified a number of potential improvements, but lacking the necessary skills in-house, the company decided that a KTP would be the best way to tackle these challenges. KTP is a part government-funded programme to encourage collaboration between businesses and universities. It is the UK's leading knowledge transfer scheme, helping businesses to access the knowledge and skills that reside within universities to improve competitiveness and productivity.

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University for the Common Good



The project has recruited Dr Gary McDowell, to work within SST at Coatbridge and focus on embedding chemistry expertise into the company, with the specific aim of improving the performance of the current oxygen sensor and developing a new oxygen sensor.

GCU has specialised instruments for characterising the sensing polymer, fluorescence spectrometers for calibration, and high resolution microscopes to examine the structural make-up of the polymers.

Patrick Shannon, Technical Director at SST Sensing, said: "We are very much looking forward to working with our chosen KTP Associate and with GCU. Our dealings with GCU so far have been very encouraging."

The new knowledge that will be gained as part of this project is a better understanding of the luminescent sensing material and how changing material properties can affect the overall instrument performance. Towards the end of the project a feasibility study will be carried out to determine if knowledge gained on this project can be transferred into sensors for other gases.

The partnership will be led by GCU's Dr Sheila Smith, Assistant Head of Department with responsibility for Instrumentation, Control and Chemical Sciences within the School of Engineering and Built Environment. Dr Smith has worked on fluorescence sensing applications for nearly 30 years and has research interests in optical chemical sensor development with a particular emphasis on fluorescence-based sensing technologies.

## School of Engineering and Built Environment

Dr Smith said: "SST manufactures all their sensors and instruments in-house, including calibration and testing facilities, where sensors are exposed to various environmental, functional and performance tests. It is a great opportunity for the Associate to be part of an enthusiastic team of engineers, be involved in instrument development and be part of the product journey from prototype right through to an end product."



**At Glasgow Caledonian University, we provide solutions to real-world problems through applied research and development, working in partnership with business, the public and voluntary sectors. GCU's strategic business and knowledge exchange teams work with academic experts across the University to support businesses with a problem-solving approach so that they can innovate for social and economic impact.**

**If you are interested to find out how a KTP can help your business email [janette.wark@gcu.ac.uk](mailto:janette.wark@gcu.ac.uk) or visit [www.gcu.ac.uk/business](http://www.gcu.ac.uk/business) for more information.**

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