

## Verdel Instruments – 2D MS technology up to 10x quicker than current methods

Verdel Instruments has developed the first benchtop instrument with two dimensional mass spectrometry (2DMS) capability. It delivers rapid high quality structural analysis and sequencing of every component in a complex mixture, making pharmaceutical research and food safety testing more accurate, more efficient, and up to 10 times quicker than current mass spectrometry approaches. Verdel's instrument is compatible with any mass spectrometer that uses linear ion trap technology.



### Technology overview

Currently, mass spectrometers cannot analyse more than one component at a time, which means the user scientist must accept a loss of information about impurities or parts of the entire structure. 2DMS solves this problem by providing a way to fragment many molecules simultaneously whilst retaining the knowledge of which fragment comes from which molecule. It uses electric pulses to manipulate ions in a linear ion trap before fragmentation to enable parallel acquisition of mass spectra, which operates in combination with UV laser-based fragmentation and a fast mass analyser such as a time-of-flight.



### The Company

Verdel Instruments was spun out of the University of Warwick Department of Chemistry in 2016 following development of the technology over eight years by the founder, Professor Peter O'Connor. The team also took part in Innovate UK's ICURE<sup>1</sup> programme, which supports university researchers to validate their ideas in the marketplace. During meetings with 100 industry experts and end-users, they discovered that the high cost of instruments and slow throughput of samples meant that payback was around 8 years. The Verdel device solves both of these problems and can achieve payback in one year.

### FUNDING TO DATE

2016 – Royal Society Translation Award £50k  
2016 – ICURE funding - £50k  
2019 – Innovate UK grant - £141k  
2019 – Longwall Ventures - £100k  
2020 – Longwall Ventures – £1m

Patents:  
PCT/GB2017/052678

### Next Steps

Verdel Instruments has developed a prototype. The Innovate UK grant and Longwall Ventures investment in 2019 enabled acceleration of the development of a commercial product and allowed the company to focus on the next stages of validating the device in field trials with a major pharmaceuticals manufacturer. The funds raised in 2020 enabled the company to open a new R&D facility in Rugby which will be home to the new service lab and a production facility for 2DMS capable instruments.

For further information please contact: Cath Whitaker on 07957-363389 or visit [www.verdelinstruments.co.uk/](http://www.verdelinstruments.co.uk/)

<sup>1</sup> ICURE – Innovation-to-Commercialisation of University Research