

# Opportunities in chemical sensing

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## Abstract

This talk will introduce the technology being commercialised by Stratophase Ltd, which has been developed at the Optoelectronics Research Centre, University of Southampton. The company produces sources and sensors, with the sources based on periodically poled lithium niobate, and sensors utilising planar Bragg gratings for measuring refractive index.

The underlying technology will be reviewed, and then applications and opportunities will be discussed in the field of chemical sensing. The nonlinear materials produced by Stratophase – periodically poled lithium niobate allow phasematching for nonlinear generation at virtually any wavelengths within the transmissions range of Lithium Niobate (approx 450nm to 4.5 microns – with operation under certain regimes at wavelengths up to 7 microns). The company is also commercialising planar Bragg grating waveguide sensors. These provide a highly integrated approach to refractive index sensing. The technology offers a number of unique features including remote fibre access, high sensitivity, self calibration, multiwavelength operation. Results will be reviewed for various phase change systems including liquid crystals and condensation, water, ice.

Applications of the technology in Chemical Sensing will be reviewed.

