PRESS RELEASE

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Flow Chemistry Specialist Uniqsis Introduces New Gas Addition Module for Continuous Flow Reactors

Flow chemistry specialist Uniqsis Ltd is introducing a new Gas Addition Module for the Uniqsis FlowSyn and other continuous flow reactors. The new module enables fast, controllable pre-saturation of liquid reagents with a wide range of gases and so promotes efficient gas-dependent reactions in flow, such as hydrogenation, ozonolysis, carbonylation, and direct synthesis of carboxylic acids.

Mixing gas and liquids in a controllable and reliable manner has always posed a particular challenge for flow chemists, in particular the prevention of undissolved gas bubbles which have an adverse effect on the control of pressure and residence time in flow chemistry. The ingenious pressurised tube-in-tube design of the Gas Addition Module overcomes this problem by ensuring continuous interaction between the gas and liquid at every point along its length.

The tube-in-tube design is based on semi-permeable membrane technology, whereby the semi-permeable inner tube containing the liquid (typically a solvent) is bathed by a stream of pressurised gas which is enclosed within a thick-walled impermeable outer tube. The pressurised gas is able to cross the semi-permeable membrane of the inner tube and dissolve into the liquid carried within. However, because of the semi-permeable nature of the inner tube material, the liquid is unable to cross in the opposite direction. The design was developed in a collaboration between chemists in Professor Steven Ley's group at Cambridge University and is being jointly commercialised by Uniqsis and Cambridge Reactor Design.

The Gas Addition Module is compatible with a wide range of reactive gases (e.g. CO, CO_2, H_2, D_2, ethene, ethyne, SO_2) and organic solvents (e.g. THF, MeCN, MeOH, PrOH). Capable of generating a continuous gas-saturated solvent stream in typically less than 10 seconds, it enables flow chemists to carry out a wide

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variety of applications with minimum effort, including heterogeneous and homogeneous gas-liquid reactions such as hydrogenation, ozonolysis, carbonylation, and direct synthesis of carboxylic acids.

A particularly convenient feature of the Gas Addition Module from Uniqsis is the availability of an optional Portable Gas Reservoir. This handy space-saving device is easy and safe to charge with gas from a larger reservoir and obviates the need to bring bulky pressurised gas cylinders into the immediate experimental area.

The Gas Addition Module can be added in-line to any FlowSyn system and other continuous flow reactors to provide a solvent feed stream pre-saturated with gas, although it can also be used as a reactor in its own right.

Paul Pergande, Group MD of Uniqsis, comments: "The Gas Addition Module represents a significant enhancement to the FlowSyn product range and, together with the recently launched Polar Bear chiller module, greatly extends the applications for the FlowSyn continuous flow reactors."

The Gas Addition Module is available from Uniqsis and its international distribution network. For more information visit www.uniqsis.com, e-mail info@uniqsis.com, or call +44 (0)845 864 7747.

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Editors' notes

About Uniqsis Ltd
Based near Cambridge, UK, Uniqsis was formed in January 2007 by Asynt Ltd and Grant Instruments (Cambridge) Ltd to develop innovative continuous flow chemistry products for customers in both the research and biopharmaceutical sectors. A consortium of expert engineers, supporting companies and scientists from the pharmaceutical industry has been assembled to provide in-depth scientific and technical expertise to the development of this exciting new technology.