

Chemists design new high pressure reactor

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(Phys.org) —Experts at The University of Nottingham have designed a new pressure reactor which has led to improvements in applied materials research – and particularly in healthcare.

In the School of Chemistry at the University, high quality cutting edge collaborative research is carried out regularly in many areas including nanotechnology, synthetic methodology, natural product synthesis, [materials](#) chemistry and the utilisation of supercritical fluids as alternative solvents for synthesis.

One area of specialism is the use of supercritical fluids, such as carbon dioxide, as a "green" solvent for polymer synthesis and materials processing. This research is led by Professor Steven Howdle, who, along with his group of researchers, required access to equipment which would enable the development of efficient synthetic protocols for the preparation and isolation of a variety of [polymeric materials](#) quickly,

easily and in a safe manner.

Professor Howdle embarked on a project with colleagues Martin Dellar, Peter Fields and Richard Wilson based in the University's workshops, to design and develop a bespoke [high pressure](#) reactor.

The team created the PressureSyn reactor, which includes a unique safety key concept that has enabled a variety of novel research approaches at high temperatures and high pressures to be undertaken in a safe and efficient manner.

The outcomes of this work have led Professor Howdle and colleagues to produce significant improvements in applied materials research, the production of commercially important polymeric materials and have impacted significantly in the area of healthcare.

Professor Steven Howdle, from the School of Chemistry's Division of Organic Chemistry, said : "I developed the kit because we needed a simple way of carrying out high pressure experiments, and most high pressure kits are not that easy to operate and can be difficult to disassemble and clean up from one experiment to the next."

As a result of many years close collaboration with Asynt Ltd, on a series of laboratory reactor and heating system development projects, the company was chosen by the University to commercialise the PressureSyn reactor. For more information please visit www.asynt.com/product/pressuresyn/.

Provided by University of Nottingham

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