Driving manufacturing innovation in the chemical industry (PILLS)

Process Intensification methodologies applied to Liquid-Liquid Systems in structured equipment (PILLS) is a Euro 5.5 million collaborative R&D project funded under the European Commission’s Framework 7 programme and co-ordinated by Chemistry Innovation KTN.

Launched in January 2009, PILLS seeks to develop and validate a design methodology and criteria for dealing with two-phase liquid/liquid-reactions that will lead to a new generation of flexible and high-performance process equipment (micro through to meso structured) for continuous manufacturing.

It is a three year collaborative project involving ten industrial and academic project partners drawn from six EU member states.

Chemistry Innovation KTN has played a key role in bringing the project consortia together and co-ordinating activity amongst the partner organisation in order to secure funding from the European Commission.

In addition, Chemistry Innovation will be responsible for the dissemination aspects of the project, ensuring that there is effective knowledge transfer of all the generic learning into the UK chemical industry.

The technical focus of the project involves development of new methodologies and next generation of technology for liquid-liquid reaction systems that are widely used in chemical manufacturing.

The project links directly with Chemistry Innovations Manufacturing Design priority area and is part of our commitment to driving manufacturing innovation across the chemistry-using industries.

The technical work packages for the project cover:

**WP1: Project coordination**

**WP2: Modelling and process description**

Mathematical modelling and numerical simulations to develop understanding of interaction between sub-processes and equipment structures

**WP3: Design of tailored structured devices**

- Micro- & milli-structured reactors
- Netmix®-derived meso-structured reactors

**WP4A: Device development and characterisation**

- Speciality fine chemicals
- Commodity chemicals

**WP4B: Final device and plant testing**

- Multipurpose plant reactor, separator
- Experimental research facility

**WP5: Generic knowledge/toolkit development**

Develop generic understanding for the development of processes and equipment

**WP6: Training activities: E-learning, demonstrations, website, dissemination events, degree module**

For further information visit: [www.chemistryinnovation.co.uk/PILLS](http://www.chemistryinnovation.co.uk/PILLS)