

News and updates  
from HEL Group

# Process Chemistry News

## FACT FILE

### PolyBLOCK Fast Facts:

#### Dimensions:

35cm x 20cm x 20cm

#### Zones:

4 independently controlled  
and monitored (8 optional)

#### Temp range:

-60 °C to +225 °C

#### Temp mode :

Jacket control, reaction  
mixture control, distillation  
(constant or ramp)

#### Reactor sizes:

Any vessel from 2ml to 500ml,  
standard or custom

#### Stirring

Built in "suspended" magnetic  
stirring, optional overhead  
stirring

#### Data handling:

Real time monitoring,  
featuring graphical and  
numerical displays

#### Additional options:

pH, turbidity, Calorimetry,  
liquid dosing, gas feed, liquid  
sampling

## PRODUCT IN BRIEF: Smart process development platform becoming laboratory standard

The need to increase productivity in the pharmaceutical and chemical industries is ever present and over the last 25 years HEL has been at the forefront of delivering technology to speed up time consuming tasks. Stringent economic conditions have meant that the demand for a robust, easy-to-use tool, at a competitive price, has increased. HEL has repackaged the PolyBLOCK 4 system to meet these demands with emphasis on offering an affordable alternative to using traditional round bottom flasks and hot plate stirrers.

Dr Jasbir Singh, HEL's Managing Director, says: "This marks an exciting direction for HEL in offering a system capable of becoming a laboratory standard. The hot plate stirrer is a staple of any laboratory and the PolyBLOCK 4 offers a powerful alternative; 4 independent, fully automated, hot plate stirrers on a footprint of a lab notebook!"

The company views PolyBLOCK 4 as a key tool for bench chemists – a resource that is as easy to use as traditional hot plate stirrers but offers all the advantages of the lab of the future; whether for quick use or unattended overnight operation the PolyBLOCK 4 delivers improved tracking and better quality reproducible data.

The new PolyBLOCK 4 system includes all necessary elements for immediate plug-and-play use, such as choice of glassware, magnetic stirring, temperature probes and a touchscreen control PC. A range of integrated temperature controls are available, depending on system requirements and space availability, and a wide variety of options and accessories can be added as required and as budget permits.



PolyBLOCK can quadruple your lab's capacity



Full control at your fingertips with Touchscreen PC

COMING EVENTS: visit <http://www.helgroup.com/events>

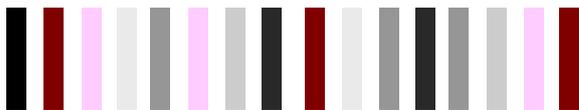


International Year of  
**CHEMISTRY**  
2011

Catalytic reactions, hydrogenation in particular, have seen a remarkable surge in interest over the last 10 years, most strikingly in the pharmaceutical and fine chemical industries. More recently, flow chemistry has begun to attract a similar level of interest for a wide range of chemistries, but especially involving heterogeneous catalysis.

To celebrate the International Year of Chemistry 2011, join us at one of the following events focused on the development tools and applications for both batch and flow reactions from a wide range of industries.

June 30th , 2011, Hotel Emperor Palms, New Delhi, India	September 27th , 2011, Cambridge University, UK
<b>Continuous and batch process development for hydrogenation and other catalytic processes</b>	<b>Flow and batch process development for hydrogenation and other catalytic processes</b>
Half day presentation and workshop Organised by HEL India	12th HEL Conference With leading chemists from industry and academia



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**BUSINESS IN BRIEF: Bio-fuels and bio-reactors**



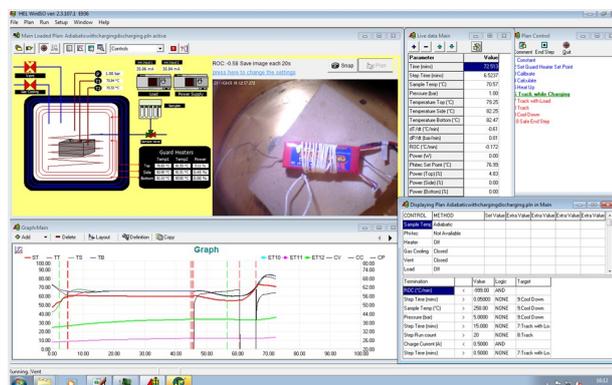
Research into renewable energy sources includes bio-conversion of hydrogen and CO2/CO into liquid fuels, and this is now an expanding area of activity with several applications where bio-reactor systems have already been supplied by HEL. The key to HEL's bio-reactor range is the ability to enable the chemistry down to 30ml scale, with all the classic control and monitoring needed for bio-reactions, totally under sterile conditions. The design concept allows easy interchange of different size reactor vessels so that large amounts of material can be easily generated too.

This complements rather nicely HEL's more traditional area of strength namely high pressure synthesis reactions including hydrogenations which are being used to develop catalytic reactions under flow (FlowCAT) and semi-batch (HP ChemSCAN) modes, at research scale.

**TECHNOLOGY IN BRIEF: Process visualisation**

Process visualisation can be extremely valuable when it is used to supplement common measurements such as temperature, pressure and even particle size. HEL has integrated real time video display into reactor control software (WinISO) and has combined this with high resolution cameras and light probes, to enable unique images.

The screenshot shown here is that of a battery being tested in our Battery Testing Calorimeter (BTC). The BTC is used to test the thermal stability of batteries and battery components. In this test the objective was to determine the battery safe use temperature but this data will not show which parts of the battery actually fail.



Future uses of process visualisation will include applications such as crystallisation where crystal images, combined with HEL's LaserTRACK particle sizing probe, could provide a full understanding of particle growth and shape.



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