



Our Clients include:

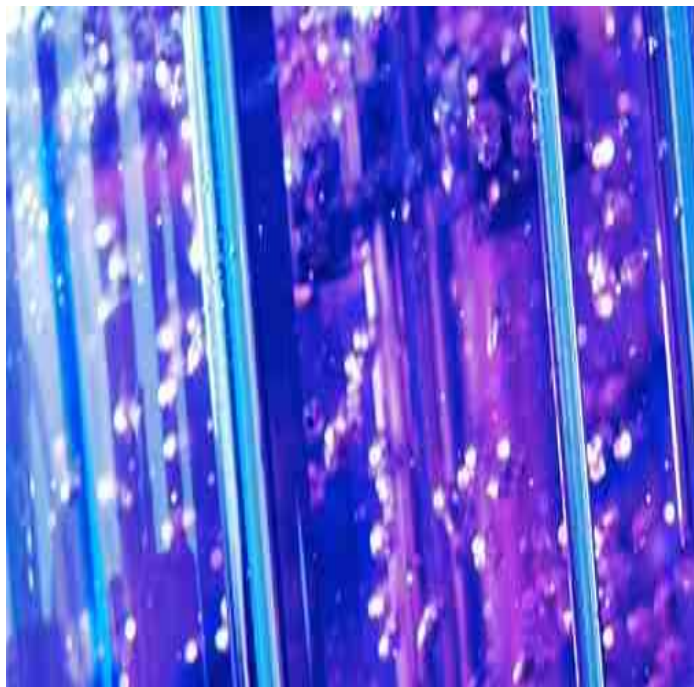
- ABB
- Arthur D Little
- AEA Technology
- Aesica Pharmaceuticals
- A H Marks
- BP
- British Nuclear Fuels
- British Sugar
- Bridon
- British Paper & Board
- Cambridge Consultants
- Carbon Trust
- ConocoPhillips
- Centre for Process Innovation
- DEFRA
- DTI
- Eli Lilly
- Fibres Worldwide
- GlaxoSmithKline
- Hickson
- Holliday Pigments
- ICI
- Imerys
- J R Crompton
- Johnson Matthey
- Manro
- Newcastle University
- Norsk Hydro
- PICME
- Roche
- Rotork
- Scott Bader
- Sellafield Ltd
- Servelec
- Severn Trent Water
- SIRA
- Spiritus Consulting
- Strategem Consulting
- Stepan
- STG
- Sulzer
- SWRDA
- Syngenta
- Synthomer
- Technical Absorbents
- Tensachem
- University of Sheffield
- University of Strathclyde

Improving Development Efficiency at the National Industrial Biotechnology Facility

The Centre for Process Innovation develops products, processes, services and businesses in the process and manufacturing sectors. Its unique portfolio of activities includes provision of services to the global business community in process



innovation, consultancy and research. Substantial investments in innovative bio and chemical process technology have enabled an open access facility, available to commercial customers and research organisations alike. The National Industrial Biotechnology Facility was launched by CPI in July 2007. It possesses state of the art process development facilities providing a unique gene to kilo service for industrial biotechnologists. From development laboratories to 1000 litre fermentors, it can produce trial quantities and scale-up, assisting its clients to develop proof of concept.



Development of knowledge is a key aspect of any process development and, at CPI's facility, the MS2 Process Diagnostics system developed by AJM Consulting will link to comprehensive control and data acquisition systems based on Emerson's DeltaV Distributed Control System. The MS2 system's breadth of complex data analysis and visualisation tools will enable both the technologists at CPI and their clients to gain a far deeper understanding of highly innovative processes, helping to move towards full commercial realisation.

"The use of the MS2 software is as an excellent addition to the tools and technologies employed in the National Industrial Biotechnology Facility. The software allows the Centre for Process Innovation (CPI) to deliver better and faster services to our clients."
Steve Donegan, Process Technology Manager

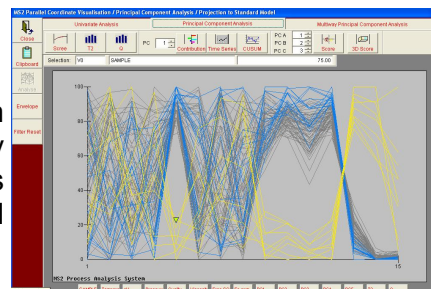
"This capability means the data produced and subsequently interrogated will deliver for the future creating systematic integrated developments for new manufacturing processes for new products by design. In simple terms CPI will produce new more efficient and robust processes at a lower cost."
Dr Chris Dowle, Director, Advanced Processes

The MS2 Process Analysis System

MS2 is based on a sophisticated database which models the production process, both batch and continuous. It can be used to manage the production itself or, as is the case at Fibres Worldwide Ltd, to receive data from other, existing systems. A wide range of statistical analysis tools and visualisation methods have been developed to pinpoint critical process influences. The system incorporates powerful techniques such as multivariate principal component analysis and parallel co-ordinate visualisation.

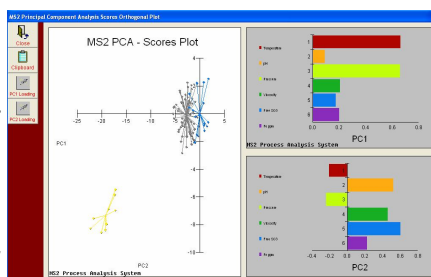
Parallel co-ordinate visualisation

This technique provides a view of relationships between many diverse process variables, for instance quality parameters such as pH and viscosity, process parameters such as maximum pressure and temperature and calculated values such as time to peak exotherm or shift identity.



Principal Component Analysis

The complex multivariate analysis and visualisation tools needed for this powerful technique were developed in conjunction with the world-renowned Centre for Process Analytics and Control Technology at the University of Newcastle. PCA provides a method of reducing the apparent complexity of large data sets to identify the principal causes of variability. It is proven to provide substantial bottom line benefits in major organisations and, through MS2, is now available to all sizes of company.



Ease of Use

The MS2 Process Analysis System was developed by AJM Consulting with the aim of bringing advanced techniques within the reach of all companies, recognising the frequent need for low ownership cost and limited on-site personnel involvement. Technologies developed for and applied to large organisations are often just too complex and expensive for most process manufacturers and the philosophy behind the MS2 Process Analysis System is to make advanced technologies accessible and affordable with immense potential benefits to competitiveness.

The company was selected by Yorkshire Forward to receive a substantial research and development grant to enable it to build a suitable tool for any size of company. Available at several levels of cost and complexity and easily upgradeable, MS2 is now the ideal solution for process manufacturers needing better knowledge of their processes and therefore improved production performance.



This project received funding from Yorkshire Forward (Yorkshire and Humber Regional Development Agency)

AJM Consulting is a member of:

- Institute of Measurement and Control
- Humber Chemical Focus
- Yorkshire Chemical Focus
- North East Process Industry Cluster
- Chemicals NorthWest
- CPACT

