Adding Value through Process Understanding

Content

- Overview
- Vision
- Organisation
- Membership
- Collaborators
- How Britest works
- Britest tools & methodologies
- Benefits
- Summary

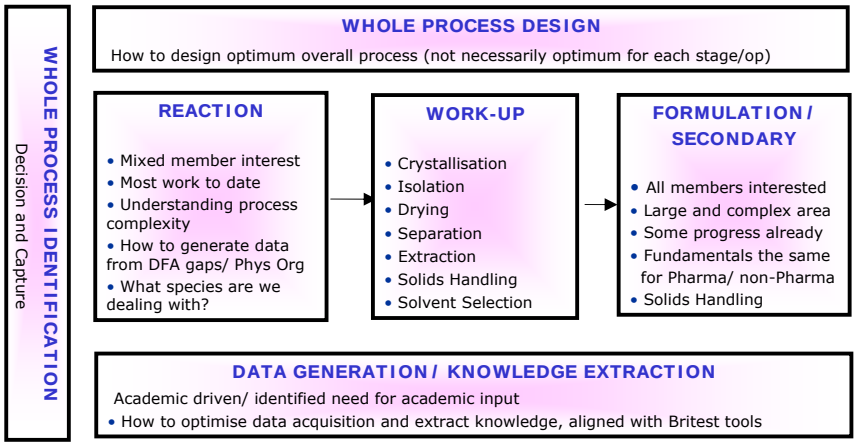
Overview

- Formed 1998:
  - Partnership with leading fine chem/pharma companies & academics
- Not for profit company owned/directed by members
- Members: Leading industry players/key academics
- Proprietary Tools & Methodologies
  - Holds bank of IP developed through unique collaborative programmes amongst members
- Focused on innovative processes and plant design
  - Speciality processes carried out traditionally in batch plant
- £50m+ of business benefits delivered since 1998

Strong international reputation for delivering substantial benefits through Understanding/development of innovative process & manufacturing design

Vision

Britest vision based on principles of **'whole process design'**



Membership

17 world leading industrial and academic organisations

AstraZeneca	Hovione FarmaCiencia	Robinson Brothers
Borregaard Synthesis	ICI	Shasun Pharma Solutions
Excelsyn	Jacobs Engineering	Imperial College
Foster Wheeler	Johnson Matthey	Newcastle University
Fujifilm Imaging Colorants	NPIL Pharmaceuticals	University of Manchester
GlaxoSmithKline	Pfizer	

Britest collaborators

GEA Niro Pharma Systems	RWTH Aachen	Warsaw University of Technology
IMM - Institut für Mikrotechnik Mainz	Cardiff University	University of York
FZK - Forschungszentrum Karlsruhe	University of Oxford	
Siemens	ENSIC - Ecole Nationale Superieure des Industries Chimiques, Institut National Polytechnique de Lorraine, Nancy	

How Britest works

- Aims to provide direct **business benefit**
  - applies effort where it will give the most benefit
- Aims to **improve processes** and **plant**
  - improves processes (chemical & physical)
  - makes the plant deliver the needs of the process
- Makes best use of **existing knowledge**
  - identifies gaps in knowledge to target experimentation
  - not just about creating 'new science'
- Tools help **structure thinking** not replace thinking
- Works alongside **other tools / methods**
  - i.e.Six Sigma, DoE, etc.

Britest tools & methodologies

- Used in the design of new plant/processes
  - New products, processing routes, formulations etc
- Used to problem solve existing plant/processes
  - Process improvement, capacity upgrades etc
- Uses multi-disciplinary approach
  - Commercial, chemists/chemical engineers, operations
- Manages understanding/knowledge
  - Efficient data collection, interpretation, recording etc
  - Systematic approach to decision making
- Involves 'whole team' approach with facilitation

Britest tools & methodologies

- Strategic/business tools
  - To review business strategy
- Project steering tools
  - To review and analyse projects as a whole
- Whole process tools for technical analysis
  - To review entire process and make decisions on strategies that effect the processing chain from start to storage
- Process analysis tools
  - Detailed analysis of specific elements of the process, including creating models of the chemical or physical transformations
- Formulation tools
  - Analyse the creation of end properties from upstream processes and support deeper understanding of these

Some Britest tools...

- Transformation (reaction) map
- Driving Force Analysis (DFA)
  - analyses a process task (e.g. reaction) in terms of the equilibrium and rate processes and the process drivers (T, P, comp^{n} etc)
  - enables process conditions and contacting patterns to be chosen to meet technical targets
- DUDES Duty Definition
  - Define the duties required of equipment to carry out a specific processing task
  - Initial screening of possible equipment types

Benefits

Business Benefits

- Reduction in capital/operating costs (£50m+ since 1998)
- Higher yields of better quality product
- Environmental benefits through waste reductions
- Reduced risk through knowledge sharing
- Increased customer satisfaction

Individual/team benefits

- Better understanding of processes/complex operational issues
- Better, more efficient plant design
- Capturing and retention of process knowledge
- Establishment of a shared vision across the organisation
- Better team working

Summary

- Not for profit company owned/directed by members
- Focused on innovative process/plant design
- Membership drawn from leading international companies and UK academic organisations
- Unique Collaborative approach
- Proprietary Tools & Methodologies
- Proven delivery of £50m+ business benefits