First European Flow Chemistry Consortium

Background and Origins:

This new industry consortium is inspired by the European Microfluidics Consortium MF3 (which has been running since 2009 and includes: Philips, BASF, FMMC, IMT, Sony, Schott, ST Microelectronics, University College London, University of Cambridge).

Discussions within MF3 have identified that there is growing interest in using small scale continuous processes for chemical synthesis as an alternative to larger batch reactors. The feature dimensions involved in the reactors are not necessarily micro and, while the potential of small features is exciting, the objective is to manufacture kg and t quantities.

With this in mind we have decided to create a new 'sister' consortium to focus on this area.

The First European Flow Chemistry Consortium will draw on the lessons learned in MF3 and use the same approach / terms/management .

Scope:

Enabling Engineering:

- Microreaction engineering (eg multi-step organic synthesis)
- Micro process engineering (eg to deliver economy of scale, safety)
- Separation technology (eg to extract product from continuous process)
- Microfluidics (eg for creating novel emulsions)

Common Characteristics:

- Continuous operation
- Parallelization for larger volumes – no classical scaling criteria
- Large surface to volume ratios
- Need for interfacing to "real world" to realize a whole process
- Often harsh conditions

Members:

- Users of microreactors and microfluidics devices, typically producers of materials there may be smaller players in the specialty and fine-chemicals business
- Vendors of reactors and devices (mostly glass and steel) and infrastructural equipment including pumps, control systems, analytical tools, and modelling
- Service providers, including academic researchers, tech support companies, engineering consultants

Mission and Objectives

To facilitate the uptake of flow chemistry solutions in kg/h and t/h applications by providing a trusting and confidential forum for:

- Learning about new opportunities and experiences with flow chemistry (including micro and meso fluidic dimensions)
- Identifying opportunities for platform solutions (one piece of kit, many reactions) and standards (eg modular approach / interconnects)
- Encouraging a coordinated approach to shared problems such as:
    - Economies of scale
    - Regulator approvals
    - Simulation
    - The things which do not work

Members / Positioning

The consortium will be led by 'big industry'. It will be commercially focussed but will interact with best quality research and SME innovation as appropriate.

The consortium will be controlled by its paid-up members who will determine scope / focus and outcomes which they want to see.

Members will be drawn from across all European countries – this is not a national/regional subsidized consortium.

Initial membership of the consortium does not imply any IP agreement. However, sub groups of members might choose to sign such agreements as appropriate to further specific objectives.

Costs, Deliverables and Timescales

The consortium will apply the same terms as the MF1/2/3 consortia with an annual charge of £10k payable by all members and an opportunity to renew (or not) after each years' membership. This fee entitles up to three members of staff to participate in any activity of the consortium

The consortium will meet together 5 times per year (usually at one of its host sites or hosted by the University of Cambridge, UK). It is likely that it will share at least part of one of these meetings with its sister consortium MF3.

Each meeting will involve:

- An informal but private networking dinner addressed by a world class expert
- Facilitated sessions covering technical areas previously agreed by the members
- And as the consortium develops "Homework" in the sense of tasks that the consortium has set itself
- We are hopeful that site visits will become possible as the trust builds across the consortium

We are initially discussing this consortium with:

- BASF
- Corning
- University of Cambridge
- University of Hull
- Sigma Aldrich
- DSM
- Free University of Brussels
- IMM

For further information please contact:

Organisation/Procedures:	Dr Peter Hewkin ceo@cfbi.com ++44 1223 7951721110
Inspiration/Content:	Dr Christian Holtze Christian.holtze@basf.com ++491743481318