

Let's flow make chemistry great again!

Abstract:

For more than a decade we have performed development activities to enable more than 150 flow chemistry processes to be delivered for about 70 clients worldwide. This talk emphasizes two interesting strategies associated with continuous processes that have been demonstrated to be effective and offer advantage:

1- Flow chemistry and catalysis.

Biocatalyzed processes have been run in flow, as well as chemistries needing metal based catalytic systems. Technology options are discussed and the challenges to overcome that are introduced by constraints associated with the adoption of flow regimes.

Concrete examples are given to illustrate the various cases that have been tried so far including new & original catalysis processes. In particular a revolutionary approach giving excellent results in flow, recently developed and patented in co-operation with the University of Toulouse, is presented.

2- In situ reagents generation in flow.

Generation of hazardous or unstable reagents in a continuous reactor might offer alternative options to forbidden chemistries.

Examples will be given of unthinkable reactions in a batch mode, that were quite successful in a continuous mode, rendering processes safer and cheaper.

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