

# Process intensification flow reactors: Customized solutions to meet advanced chemistry challenges

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## **ABSTRACT**

Transferring chemical synthesis from traditional batch technology to continuous flow methodologies brings significant advantages when looking for a rapid process scale up. In the pharmaceuticals and fine and specialty chemicals industries product quality and availability have become today's crucial parameters and it is often not possible to maintain optimum product quality when scaling up a process in a short period of time using traditional approaches. A seamless move from lab-scale to larger scale and production volumes using the same technology platform is particularly attractive in the areas of cost reduction, safety management and response times.

Problems associated with batch process scaling can be overcome via straight-forward methodologies utilizing a consistent performance continuous process platform which will be described: 1000x improvement in heat transfer, 10-100x enhancements in multiphase mixing, x/1000 reduction in chemical holdup comparing with conventional stirred batch reactors. This seamless scaling also reduces development and production costs leading to a drastically reduced time to market.

This talk will focus on several cases of applications that have been seamlessly transferred from lab scale directly to industrial production using continuous flow and the benefit for the pharmaceutical industry will be highlighted.