Opportunities for Microflow Technology

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During the last decades, microflow technology has gained an enormous interest in both academic research and within the chemical, but especially within the pharmaceutical industry. Extensive research is performed to develop new types of microreactors and various applications have been investigated thoroughly. The advantages of the flow chemistry are now well established, mixing rates are extremely high and the temperature profile is very narrow due to a big surface-to-volume ratio, compared to those in batch vessels. Back-mixing is minimized and the reaction time is narrowly controlled. As a consequence, switching from batch to continuous processing is beneficial because of the use of similar conditions, minimizing the expensive and time-consuming process of scaling-up.

The short course will focus on the variety of reaction types (exothermic reactions, dangerous reagents, …) that now can be performed advantageously under microflow conditions and give an overview of the different methodologies including on-line measurements, work-up of reactions, sustainability issues,… Concrete literature examples will be presented to illustrate the discussed concepts.