FLOW CHEMISTRY SYMPOSIUM

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In the chemical development and manufacturing environment, improvements in product quality, yield, synthetic route, safety and overall time efficiency have become key factors in driving chemists and engineers to seek alternative chemical development methods. Modern continuous flow reactor technologies provide the opportunity to address many of these issues as they allow for rapid testing, optimization, and scaling of chemical sequences. However, a common limiting factor with these methods relates to inline monitoring as this is of great importance with respect to optimization and synchronized control of multi-step reactions.

One of the most convenient and nondestructive methods for real-time inline monitoring is mid-infrared (IR) spectroscopy. Not only does this technique allow the formation of products and reactive intermediates to be monitored in real time but immediate reaction feedback is also possible on the effect of changing a process parameter (flow rate, reaction temperature, stoichiometry etc) which can lead to an improved understanding and a faster optimization of the flow process.