

Micro Reaction Technology with Macro Process Efficiencies

Multi-Ton Production Millireactor substitutes a traditional Batch Process

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During the past 20 years, micro reaction technology raised from a pure academic field of research to a technology which can be used in the industrial area of the chemical and pharmaceutical industry. The most important benefits like the higher heat exchange, better mixing leading to higher yields are based on a higher surface-to-volume ratio in comparison to traditional batch technology. Nevertheless, this technology suffers from a broader acceptance as a process technology within these industries. These concerns are mainly driven by unforeseen risk difficulties from this 'new' technology due to a lack of visible reference projects in production scale.

Beneficial market segments will be presented for a successful use of this technology, the scale-up strategy from first lab experiments to an industrial scaled reactor. Hereby, the focus is always related to an improvement of the process efficiency, presented for several examples, in comparison to traditional batch processes.

Additionally, we will present a reference project for an attractive chemical reaction in a millireactor with a capacity of 10,000 t a year. Furthermore, the savings in energy, footprint, personal and in the demand of raw material as well as the down-stream process will be shown.