

Continuous efficient multistage extraction

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Abstract:

Liquid-liquid extraction (LLE) is a very common workup strategy in pharmaceutical and fine chemicals production due to its high selectivity and large capacity at relatively small energy consumption. Despite its well-known advantages, implementation of continuous LLE is still rather infrequent and most often relies on a batch based, non-continuous approach.

In this work, we present examples at different scales of applications of membranes based, scalable, liquid-liquid separators for continuous LLE. We highlight how continuous separation technology provides not only the ability to telescope reactions with inline work-up, but most importantly, how it enables new applications involving dangerous chemistries or unstable intermediates. After providing background information, we will provide examples of applications for both single and multistage LLE. Finally, we will highlight how continuous LLE is starting to be used to improve the productivity of batch based processes.

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