519e Process Intensification Using Continuous Processes in the Synthesis of Pharmaceutical Intermediates

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While conventional batch processing dominates most operations of pharmaceutical API processing, process intensification concepts have been attracting increased attention. Continuous processing provides advantages, such as improved mass and heat transfer, short reaction times and small reactors. We have recently demonstrated such advantages while converting a batch synthesis to a continuous process in a telescoped metallation and coupling reaction. The major challenges of the large-scale batch synthesis lie in the required cryogenic reaction conditions (<-70ºC) and the stability of a reagent generated in situ. Associated reaction kinetics, experimentation and process optimization in our continuous process will be discussed.