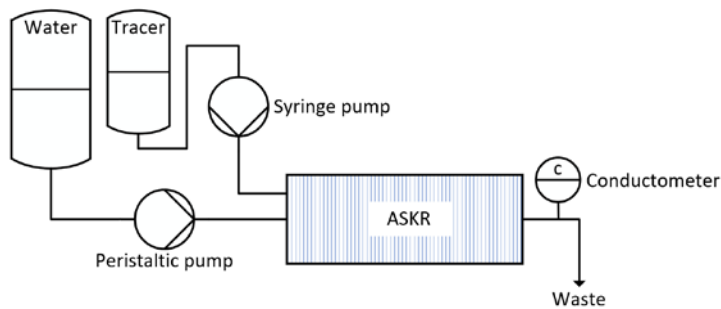


Continuous Archimedean Screw Crystallizer / Reactor (ASKR)

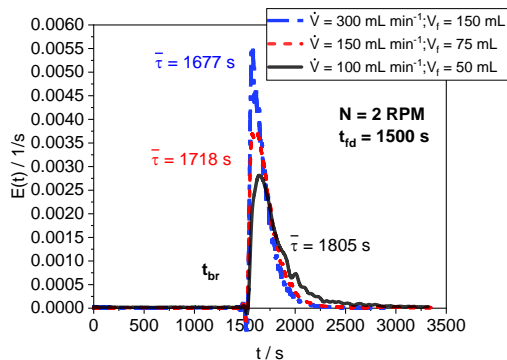
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Motivation

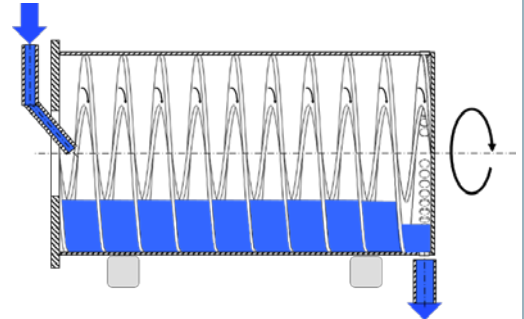
- Continuous crystallization is currently an area of strong interest especially in pharmaceutical manufacturing due to its potential for delivering constant particle attributes.
- A narrow residence time distribution (RTD) of substances promotes constant particle attributes.
- The Archimedean Screw Crystallizer / Reactor (ASKR) is a novel concept for continuous crystallization. Its main advantages are a gentle product treatment and a very narrow RTD accompanied with good mixing.
- The plant can be used to determine residence time characteristics of the ASKR via conductivity measurements at various operational parameter settings.



Example of experimental results



- Breakthrough time t_{br} is very close to the ideal fluid dynamic residence time t_{fd} .
- Very narrow RTD throughout a broad operational window.



- ASKR manufactured in PA12.
- Flowcell for the online measurement of conductivity.
- Automated dosing of tracer via a syringe pump.
- Peristaltic feed pump

Operation Range

Process parameter	Unit	Range
Volume flow	mL/min	50 ... 350
Residence time	min	1 - 110
Diameter	mm	300
Length	mm	600