Continuous Reactive Crystallization of an API in PFR-CSTR Cascade with in-line PATs

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Fig. S1. RTD measurements of the PFR (Stage 1). (a) E(t) as a function of time, and (b) their corresponding $E(\theta)$ values as a function of dimensionless time θ . Tracer is 20 mL 0.175 g/mL NaCl solution.



Fig. S2. RTD measurements of the PFR-CSTR cascade system (Stages 1-6). (a) E(t) as a function of time, and (b) their corresponding $E(\theta)$ values as a function of dimensionless time θ . Tracer is 20 mL 0.175 g/mL NaCl solution.



Fig. S3. Microscope images of API crystals for stage (a) 2, (b) 3, (c) 4, (d) 5 obtained from a 40 h-run with the PFR.



Fig. S4. (a) Reaction yields in the PFR under different temperatures, and (b) Simulated conversion results as a function of z for three different conditions.

Table S1. Comparison of experimental conditions and RTD variables in the PFR (tracer is 20 mL 0.175 g/mL

NaCl solution).

	(c)	(d)	(e)	(f)
Flow rate, F (mL/min)	33.0	49.5	66.0	99.0
Mean velocity, $u (\times 10^{-2} \text{ m/s})$	3.09	4.63	6.17	9.26
Remean	154	231	307	461
$\bar{t}_{theoretical}$ (h)	0.69	0.46	0.34	0.23
$\bar{t}_{measurement}$ (h)	0.84	0.55	0.41	0.26
$\sigma^2 (\times 10^{-3} h^2)$	5.20	1.57	0.67	0.20
$E(\theta)_{max}$	4.36	5.14	5.93	7.24
<i>D*/uL</i> (×10 ⁻²)	1.90	1.58	1.36	1.11
<i>D</i> * (×10 ⁻² m ² /s)	4.46	5.57	6.40	7.84
$\sigma^2_{ heta}_{(imes 10^{-2})}$	4.08	3.36	2.87	2.32