pharmaceutics

MDPI

Article

Speeding-Up Process Development of Continuous Slug Flow Crystallization for Novel Substance Systems

Anne Cathrine Kufner, Sarina Zink and Kerstin Wohlgemuth *

Figure S1. Images of aqueous saturated Met/H_2O slugs at the end of tubing (L_{tubing} = 7.5 m) for different total volume flow rates Q_{tot}. The experiments were conducted at ambient temperature ($\vartheta_{amb} \approx$ 20 °C).

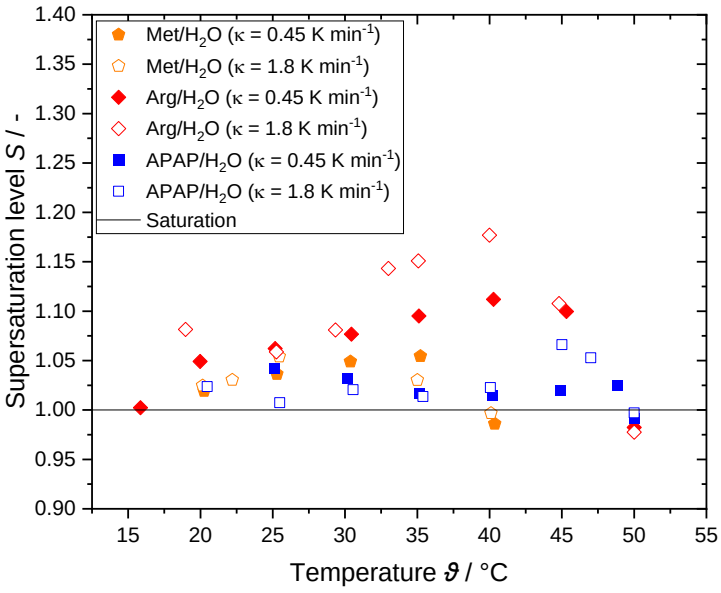

Figure S2. Supersaturation levels during the batch experiments for the respective substance systems.

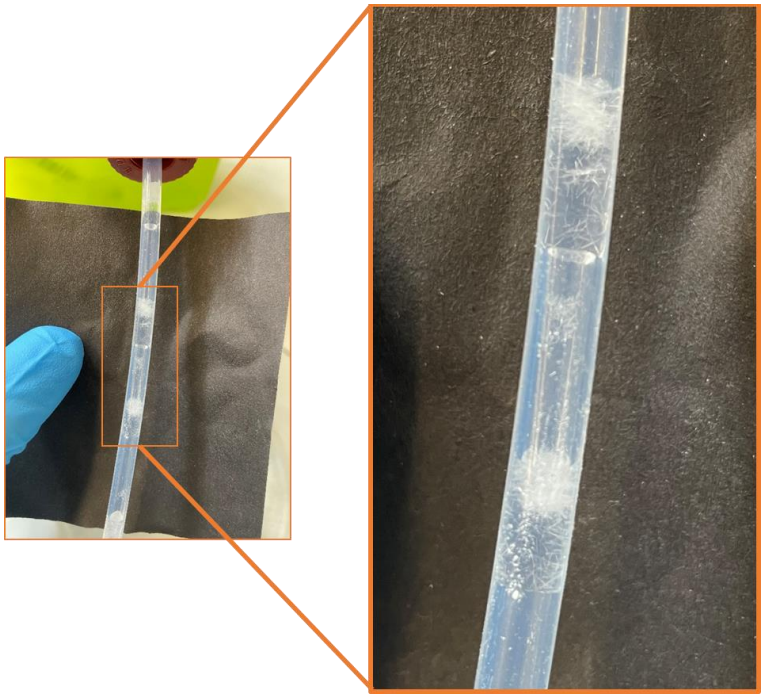

Figure S3. Image of wall crystallization inside the SFC at the end of the tubing L_{tubing} = 26.5 m, resulting in blocking of the apparatus. The high aspect ratio of the needles and the accumulation at the rear end of the slug were observed in the experiments despite the termination of the experiments.

Table S1. Process parameters of the continuous crystallization experiments inside the SFC for the substance systems Arg/H_2O, APAP/H_2O and Met/H_2O.

	Arg/wat		APAP/wat		Met/wat
$Q_{tot,soll}$ / mL min^{-1}	20	40	20	40	20
Q_{liq} / mL min^{-1}	9.99 ± 0.01	20.05 ± 0.01	10.00 ± 0.02	19.94 ± 0.01	9.99 ± 0.10
Q_{gas} / mL min^{-1}	10.99 ± 1.57	18.77 ± 0.71	14.90 ± 1.25	19.56 ± 2.06	9.93 ± 0.22
$\varepsilon_{L,0}$ / -	0.48 ± 0.05	0.52 ± 0.01	0.40 ± 0.02	0.50 ± 0.02	0.50 ± 0.01
L_{tubing} / m	26.5	26.5	26.5	26.5	26.5
ϑ_{start} / °C	49.23 ± 0.27	49.44 ± 0.40	49.33 ± 0.16	49.42 ± 0.17	40.42 ± 0.07
ϑ_{end} / °C	25.73 ± 0.65	26.88 ± 0.69	31.49 ± 0.15	31.44 ± 0.36	24.20 ± 0.24