



Figure 3.15 Profiles of saturation and crystal sizes in antisolvent crystallisation seed generator¹⁷⁰ with permission from Elsevier, Copyright 2015.

that crystallisation was rapidly completed near the point where the two streams met; saturation became unstable when flow rates were unequal (Runs D & E in Table 3.2).

The steady state of the mean crystal size ($45 \pm 3.01 \mu\text{m}$) was achieved at the 2nd sampling point with equal flow rates of solvent and antisolvent (Runs A, B & C), and was not established when unequal flow rates were employed (Runs D & E). In the extended operation of the steady states, 884 g of seed crystals of uniform size were produced over 6.25 h (or 0.141 kg h^{-1}). These particles are perfect for seeds.

3.5.3 Nucleation by Scraping

Sodium chlorate is an intrinsically achiral inorganic compound, but crystallizes as two enantiomorphous chiral crystals in the cubic space group $P2_13$.¹⁷⁶ The usefulness and the uniqueness of this compound is that the chiral status at the end of crystallisation can retrospectively refer to the nucleation event. In 1898, Kipping and Pope¹⁷⁷ measured the handedness of 3137 NaClO_3 crystals from 46 separate crystallisation tests, and showed 50.08%:49.92% of dextrorotatory (*R*) to laevorotatory (*L*) crystals. This was well within the statistical error of the unbiased 50%:50% distribution they anticipated. Kondepudi *et al.* repeated the 19th century work of Kipping and Pope and obtained equal numbers of left and right handed