

# Ultrasound in Continuous Tubular Crystallizers: Parameters Affecting the Nucleation Rate

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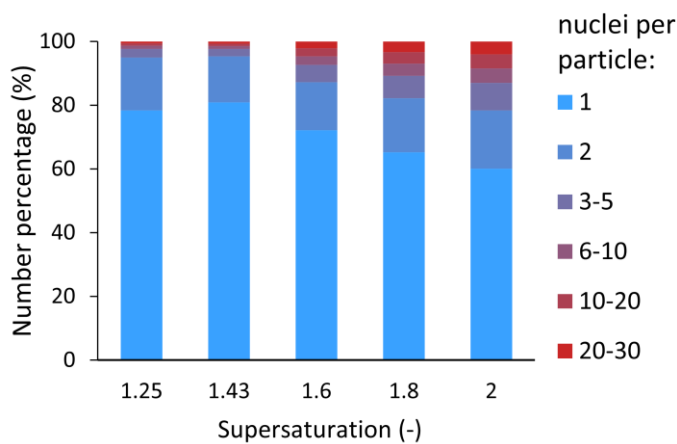
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**Table S1.** Values used to calculate the Proximity of a particle to a category.

| Mean                     | Single crystals | 2 nuclei | 3-5 nuclei | 6-10 nuclei | 11-20 nuclei | 21-30 nuclei |
|--------------------------|-----------------|----------|------------|-------------|--------------|--------------|
| Area ( $\mu\text{m}^2$ ) | 285.1325        | 718.4615 | 1048.1657  | 1589.4114   | 1970.0592    | 4071.4567    |
| Circularity (-)          | 0.8955          | 0.7792   | 0.6566     | 0.6269      | 0.6090       | 0.5391       |
| Solidity (-)             | 0.9429          | 0.9028   | 0.8696     | 0.8558      | 0.8458       | 0.8300       |
| Standard deviation       | Single crystals | 2 nuclei | 3-5 nuclei | 6-10 nuclei | 11-20 nuclei | 21-30 nuclei |
| Area ( $\mu\text{m}^2$ ) | 130.0506        | 404.2993 | 532.8863   | 544.5218    | 643.0956     | 1636.6376    |
| Circularity (-)          | 0.0842          | 0.0661   | 0.0735     | 0.0967      | 0.0860       | 0.0682       |
| Solidity (-)             | 0.0215          | 0.0242   | 0.0392     | 0.0555      | 0.0472       | 0.0448       |



**Figure S2.** Influence of the supersaturation on the aggregation distribution.

**Table S3.** Equivalent spherical sizes of the particles coming out of the nucleator during the first 10 minutes of the experiment. The deviations are calculated by divi.

| <b>Equivalent spherical diameter</b>        | <b>Number based</b> | <b>Deviation</b> | <b>Volume based</b> | <b>Deviation</b> |
|---|---------------------|------------------|---------------------|------------------|
| Number of particles analysed                | 291958              |                  |                     |                  |
| <b>Mean size (<math>\mu\text{m}</math>)</b> | <b>22.7</b>         | <b>0.55</b>      | <b>32.2</b>         | <b>1.38</b>      |
| d10 ( $\mu\text{m}$ )                       | 13.5                | 0.17             | 18.2                | 0.58             |
| d50 ( $\mu\text{m}$ )                       | 21.2                | 0.64             | 28.2                | 0.58             |
| d90 ( $\mu\text{m}$ )                       | 31.4                | 0.74             | 46.2                | 2.08             |
| Span  | 0.8                 | 0.01             | 1.0                 | 0.07             |

**Table S4.** Parameters used for the image analysis. The algorithm and further information can be found elsewhere [31].

| <b>Version</b>                                   | <b>MacroU-V69</b>         |
|--|---------------------------|
| Scale in scale in pixels/ $\mu\text{m}$          | 0.650                     |
| Background image method                          | Median of multiple frames |
| Edge detection High Threshold                    | 3                         |
| Edge detection Low Threshold                     | 1                         |
| Edge detection Smoothing                         | 2                         |
| Edge detection Sharpening                        | 0.4                       |
| Frames for background subtraction                | 30                        |
| Use additional histogram based binerization      | true                      |
| Closing cycles when using histogram binerization | 0                         |
| Closing cycles after edge detection              | 2                         |
| Field of View correction factor                  | true                      |
| Minimum size                                     | 1                         |
| Minimum circularity                              | 0                         |
| Maximum circularity                              | 1                         |
| Watershed irregular features                     | true                      |
| Erosion cycles                                   | 3                         |
| Convexity threshold                              | 0.98                      |