

EKATO CRYSTALLIZATION

Efficient Suspending with Gentle Handling of Crystals

EKATO

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More than 250,000 agitators are operating worldwide in various industrial applications. EKATO offers state-of-the-art mixing systems together with various engineering and R&D support for all kinds of crystallization processes.

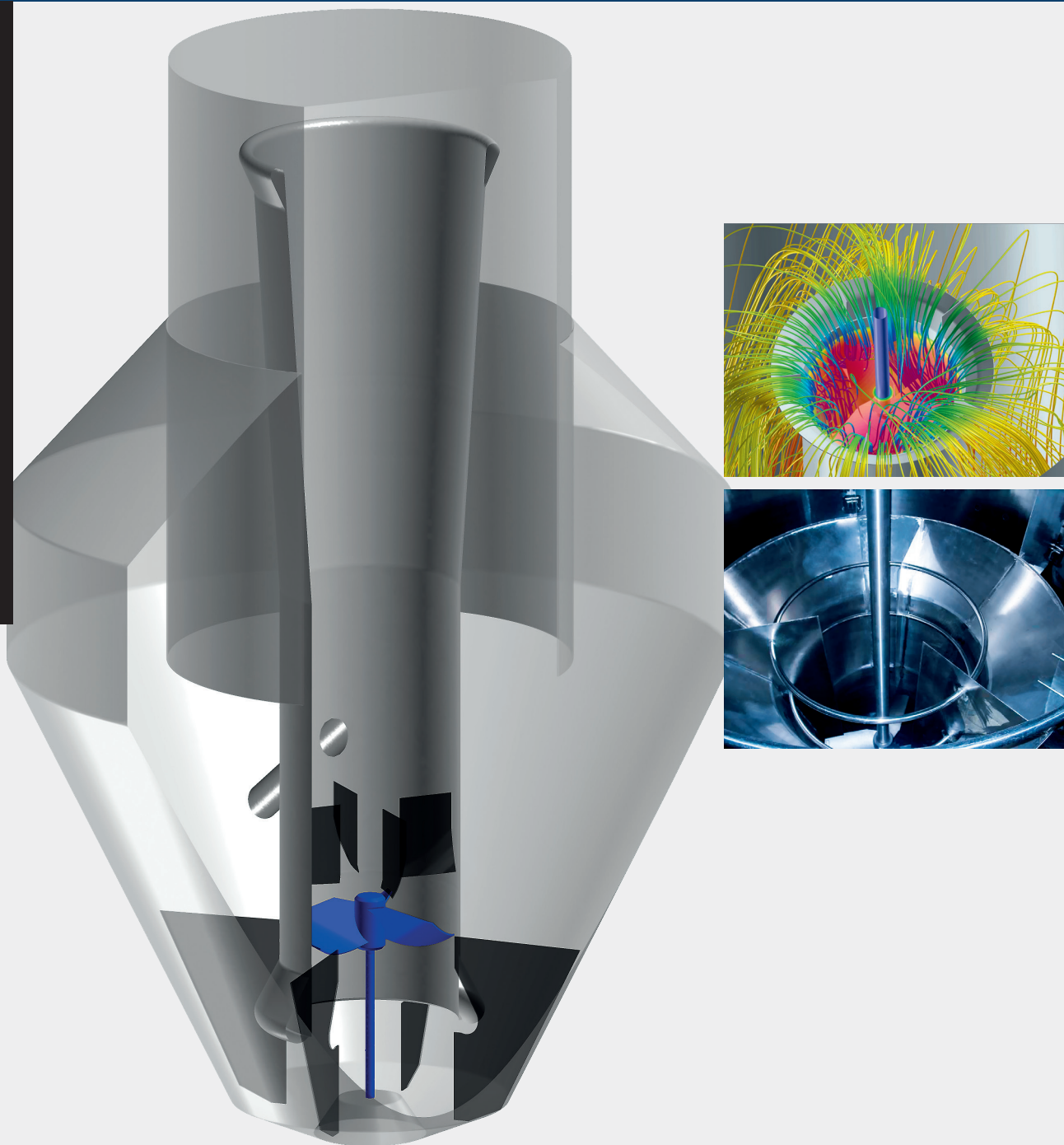
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Advanced Process Solutions



- Highly Efficient Designs
- Low Shear
- Excellent Engineering Support
- Process Guarantee



EKATO Draft Tube Crystallization

DTBs (draft tube baffled crystallizers) are commonly used for single purpose crystallization applications. EKATO has further improved the impeller design and developed the EKATO TORUSJET. At the same time the draft tube and its baffles were evaluated to increase efficiency at lowest possible impact on the crystals.

EKATO Crystallization

It is very important to maintain the suspension that allows crystals to grow in batch crystallization or continuous cascades. EKATO's expertise is not only limited to the agitator design but can also help by determining the best control strategy to provide the maximum particle size and yield. By applying this low shear mixing system, the amount of fines is decreased which helps to reduce the cycle time in the following solid-liquid separation and drying process steps.

Continuous Operation

Applications

- Optimized impeller and flow-supportive internals result in a higher pumping rate and lower shear on crystals
- Increased crystal size up to 2,000 microns and more
- Narrow particle size distribution leading to minor effort during the filtration and drying process steps
- Ideal for continuous operation and high capacities

Engineering Support

- Inhouse finite elements calculations of draft tube including baffles and wall connections
- Scale-up
- Flow simulations (CFD)

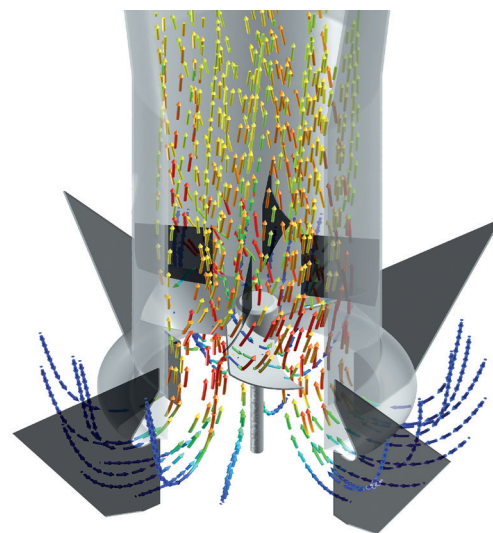
Batch Operation

Applications

- Ideal for cooling and evaporation crystallization
- Continuous operation with vessel cascade
- Shear sensitive products
- Narrow particle size distribution leading to minor effort during filtration
- Flexible, easy adaption to new feedstock

R&D Support

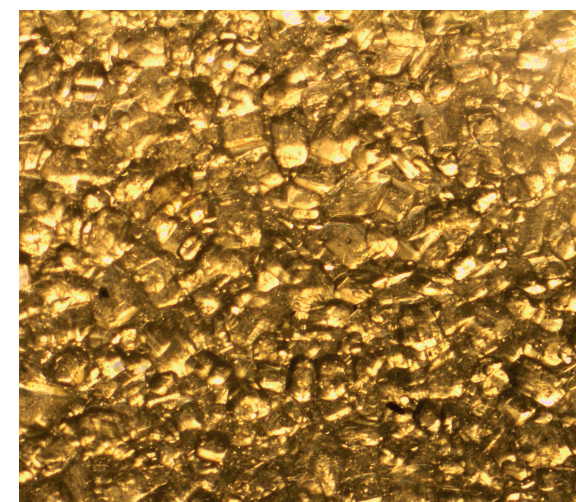
- Determination of the optimum control strategy that results in controlled particle formation, reduced cooling power and increased yield
- Lab tests and scale-up
- Conversion from batch to continuous operation



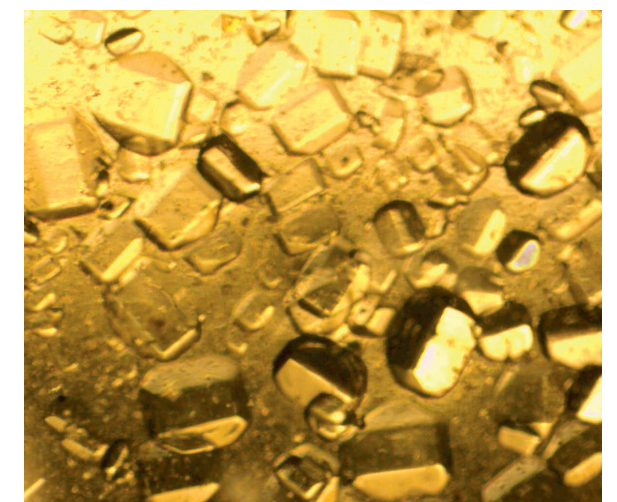
CFD DTB with detail of model



Detail flow pattern with the EKATO TORUSJET



Wide particle size distribution, many fines



Optimized design, narrow particle size distribution, fewer fines