

EKATO FERMENTATION

Optimization in Fermentation Technology

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More than 250,000 agitators are operating worldwide in various industrial applications. For fermentation applications, EKATO has specialized in reliable processes scale-up and demanding agitator and vessel equipment.

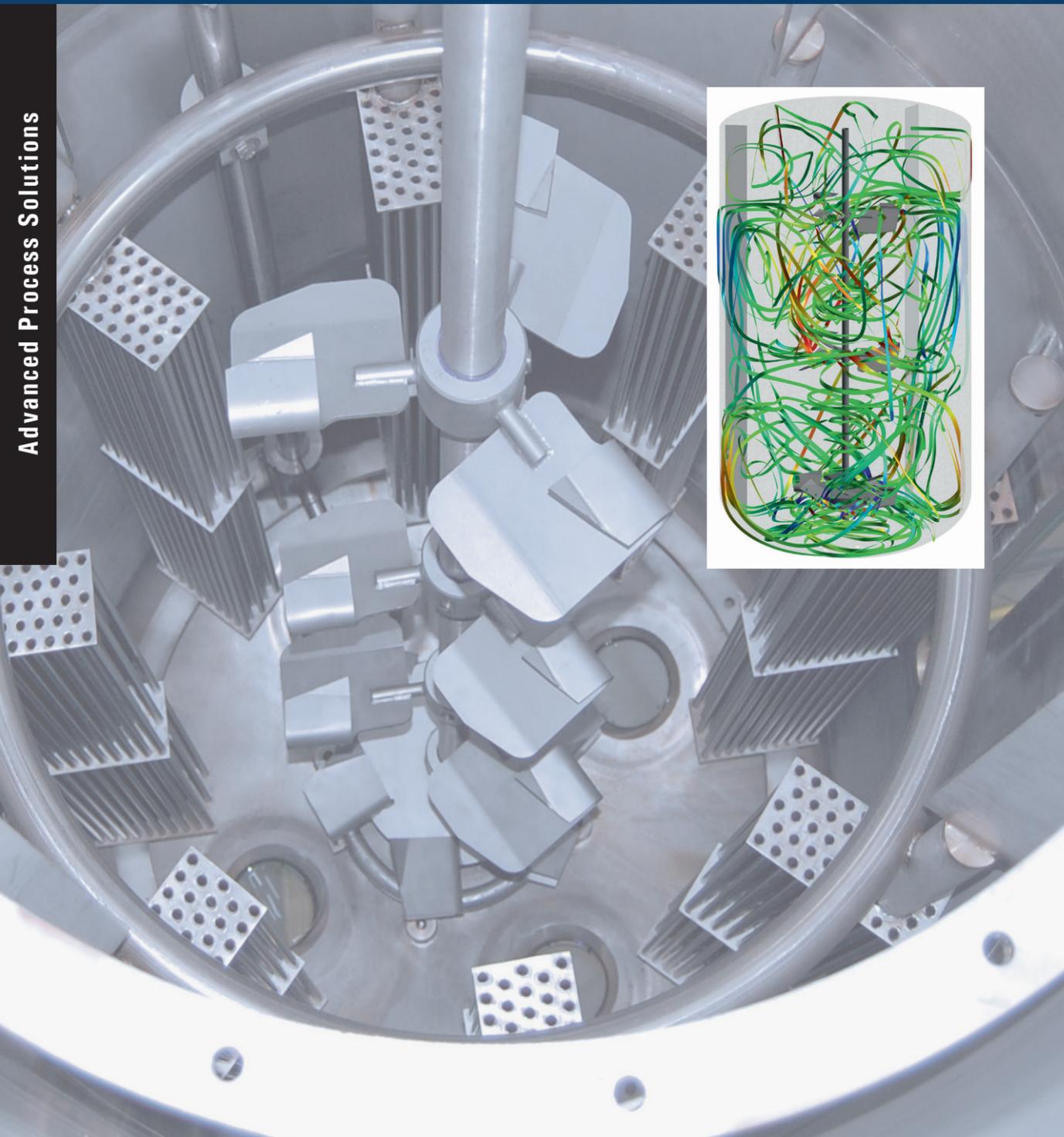
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Advanced Process Solutions



- More than 80 Years of Experience
- Scale-up Expertise
- Optimized Mixing Equipment
- Full Scope Engineering Services



920-01-621/500/06.2016

Reliable Fermenter Scale-up

Industrial fermentation often starts from lab/pilot investigation or small production scale with a challenging demand for a reliable scale-up, both from a process point of view as well with respect to the related equipment. EKATO offers a broad range of process and mechanical methods in order to establish optimized fermentation conditions with dependable equipment.

Reliable Fermenter Operation

The mechanical design of the industrial scale fermentation reactors plays a key role in reliable plant operation. In particular, the reactor design needs to be considered with respect to vibration and resonance phenomena to avoid undesirable plant operation conditions. EKATO provides a full set-up of engineering methods in order to guarantee dependable operation of the entire equipment under all operating conditions.

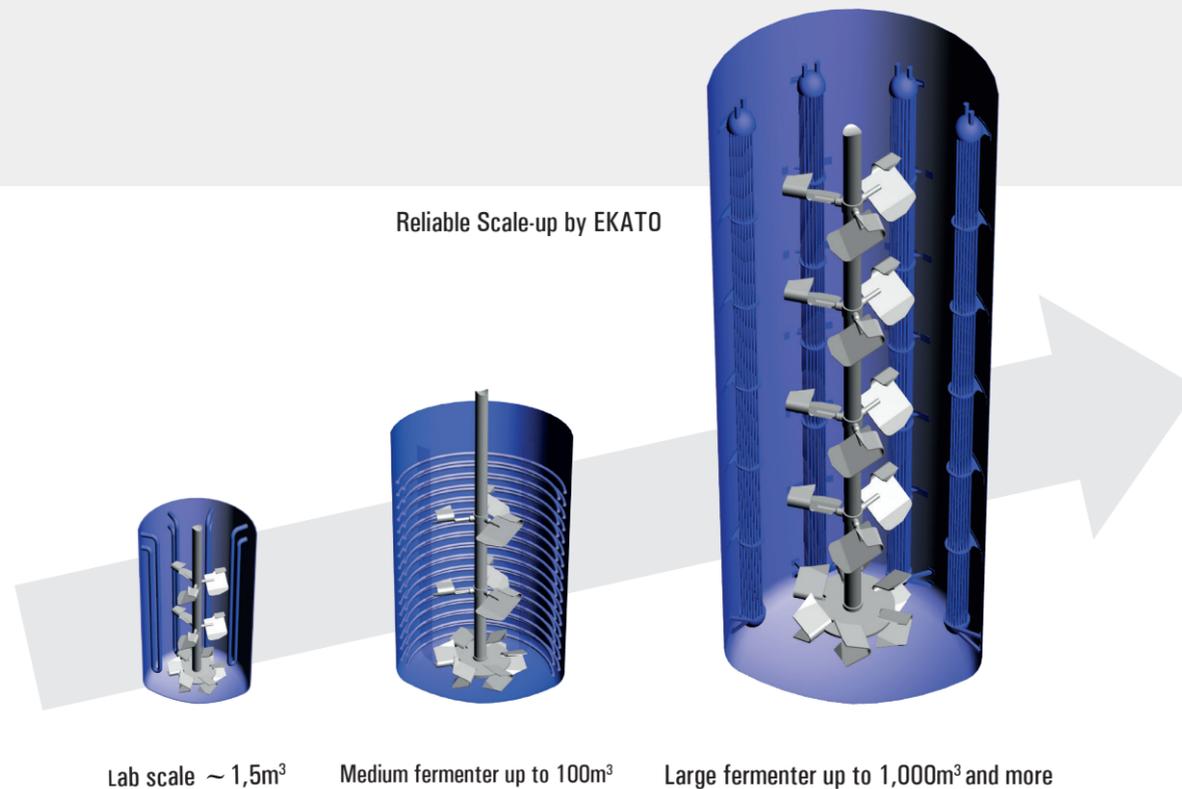
Extended engineering services

- A high oxygen transfer rate, homogeneity of DO (dissolved oxygen) and feeds are essential for a successful fermentation and optimized yield.
- Experience in scale-up and customized mixing equipment guarantees stable process conditions for the organisms over the whole reactor content.
- A statement on industrial process targets and improvements are given based on a thorough process analysis of existing fermenters and pilot tests with optimized mixing equipment.
- EKATO guides the process from lab scale to industrial scale by applying suitable calculation methods and engineering procedures for data assessment and identification of additional tests resulting in a recommendation for an optimized industrial scale.

Extended deliverables

- An optimized impeller design that generates fewer forces acting on the vessel structure.
- Basic engineering and specification of reactor vessel.
- Stress calculations on critical locations throughout the reactor vessel considering the dynamic loads from the agitator operation.
- Modal analysis (calculation of natural frequencies) and consideration of agitator excitation in order to avoid resonance phenomena.
- Recommendations for optimized reactor design and surrounding structure.
- Vibration analysis of site equipment during start-up or normal operating conditions.
- Complete delivery of fermenter vessel and agitator on demand.

Reliable Scale-up by EKATO



Computer-Aided-Engineering and Multi-Physics

