Working closely with your specialists we can help identify cost-effective improvements to optimize process efficiency.

Modern reactor technology has made significant advances in recent years. The profitability of existing plants can often be significantly increased at moderate costs – by simply replacing the reactor internals and agitator. For new plants the latest technical advances should always be assessed in order to achieve optimal process efficiency.

In an increasingly competitive world, process plant operators need to focus on maximizing productivity of existing plants as well as new equipment. Recent advances in reactor technology often enable large improvements to a very modest investment.

Simply upgrading the reactor agitator and internals can have a large impact on the profitability of existing production plants. EKATO RXT – EKATO Reactors and Reaction Technology has developed optimized designs for some of the most complex process applications:

- **Polycondensation reactors**
- **Gas-liquid reactions**
- **Bioreactors**
- **High viscosity processing**
- **Air oxidation reactors**
- **World scale reactors**
- **Internal loop reactors**

EKATO has supplied agitators up to 1.9 MW and reactors of up to 500 cubic meters. Based on our in-depth understanding of process engineering, fluid mechanics and patented agitation technology, EKATO has developed optimized designs for some of the most complex process applications.

The ELA 5 is a process development miniplant, with which reactions can be performed in well defined fluid dynamic conditions. This provides significant advantages for laboratory process development studies.

Trials are supported by an experienced team of technicians in EKATO's technical center and research workshop. Data from the trials can be directly used for design of production-scale plants together with the known performance characteristic of the agitator systems.

Plant equipment reliability and operational safety can be significantly improved using Finite Element Analysis. Deflections, stresses and natural frequencies in agitated vessels and internals can be calculated and potential problems can be identified to allow fast solution designs.

Recommended plant design improvements will target opportunities for cost effective improvements.

EKATO RXT’s scope of supply usually includes the reactor, the agitator and vessel internals which directly influence the mixing process. Important aspects of the reactor design have to be studied carefully to identify potential interactions and their influence on process performance.
EKATO Rühr- und Mischtechnik GmbH – the worldwide leader in mixing technology – has acquired an in-depth knowledge concerning the major processes within the chemical industry. This core competence has been gathered together to create a new business field called “Reactors and Reaction Technology (RXT)”, which now enables EKATO to offer a complete scope of services starting with the process engineering design stage of a reactor followed by the mechanical design up to the delivery of complete units.

**Project Management**

Many procedures and project steps have to be considered during the supply of a complex chemical reactor from the very early chemical design considerations through commissioning and start-up. Usually, the services of several companies have to be coordinated to achieve the project objectives on schedule. EKATO RXT is able to act as a single source supplier, handling the project requirements within the defined scope.

**Process Design**

Our highly qualified R&D engineers have many years experience of assessing process requirements for agitated reactor design and providing reliable process engineering designs.

**Mechanical Design**

The mechanical engineering department offers skills such as finite element or vibration analysis as well as detailed knowledge of vessels and the various internal components encountered.

**Purchasing**

Effective project management supports the procurement and production processes. Expediting and quality assurance of equipment from sub-suppliers will be ensured by the EKATO quality management.

**Documentation**

Quality control to international standards and appropriate documentation support the design and supply process.

**Installation supervision and start-up support**

To ensure optimal performance our process engineers are also available for commissioning and start-up.