

Intelligent production with real-time optimization

- Evonik is one of the first chemical companies to use process control systems with real-time optimization in some of its plants
- The aim is to realize a savings potential of €50 million by the year 2025 by expanding the use of real-time optimization

Evonik Industries, one of the world leaders in specialty chemicals, is one of the first in its sector to successfully introduce a new process control system with real-time optimization (RTO) in selected production plants. Real-time optimization serves as an extension to advanced process control systems (APCs) which facilitate the monitoring and technically optimum operation of modern chemical plants. The real-time optimization that has now been developed allows chemical plants to be controlled optimally both in technical and economical terms. A real-time optimization system constantly incorporates not only measurement data from the plant, but also various market data—prices for raw materials and energy, for example, as well as current market demand. Using all of this data, the RTO system permanently calculates the optimal operating condition of the plant and sends this information to the advanced process control system, which then controls the plant.

For the Evonik plants, real-time optimization results in an estimated savings potential of €50 million, which Evonik hopes to realize by the year 2025. “For us, advanced process control measures such as APC and RTO are vital tools for operating our processes efficiently and optimally in terms of the use of raw materials and energy,” says Dr. Martin Harrmann, head of Technology in the Performance Intermediates Business Line.

Until recently, real-time optimization was predominantly used in the large plants of the refining and petrochemical industries. In the past six years, Evonik has equipped 24 plant units belonging to the Performance Materials Segment with advanced process control systems.

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“The key to our success in introducing real-time optimization was to combine the expertise of the process and automation engineers. We benefited primarily from the know-how of the employees working at the plants and from Evonik’s extensive experience in process simulation,” explains Dr. Hans-Rolf Lausch, who is responsible for Computer Aided Process Engineering & Automation in the Process Technology & Engineering Business Line at Evonik.

Company information

Evonik, the creative industrial group from Germany, is one of the world leaders in specialty chemicals. Profitable growth and a sustained increase in the value of the company form the heart of Evonik’s corporate strategy. Its activities focus on the key megatrends health, nutrition, resource efficiency and globalization. Evonik benefits specifically from its innovative prowess and integrated technology platforms.

Evonik is active in over 100 countries around the world. In fiscal 2014 more than 33,000 employees generated sales of around €12.9 billion and an operating profit (adjusted EBITDA) of about €1.9 billion.

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