

Membrane monitoring platform

Optimize
your plant



Less downtime
and more
efficient runs



More process
and system
insight



Remote
supervision
by WafiLin



Turning data into value

Industry: International producer of high functional collagen proteins and peptides
Technology: Digital Monitoring Platform applied to Ceramic Microfiltration (MF) + Nanofiltration (NF) Membrane System

The Challenge

DCP Ingredients produces high-functional proteins and collagen peptides for the food and sports nutrition industry. The production process includes several membrane filtration steps that are critical before the product is further concentrated and dried into powder.

Hydrolysed raw materials are first purified using our ceramic microfiltration systems, after which the permeate is concentrated using nanofiltration membranes.

Because these process steps are strongly interconnected and the product has complex filtration characteristics, maintaining stable membrane performance is essential to ensure both capacity and product quality. Traditional SCADA systems typically provide only individual data points without deeper insight into trends or relationships between parameters. As a result, it remained difficult to fully understand membrane performance, the interaction between the two membrane processes and identify optimization opportunities.

Our Approach

To provide deeper insight into membrane performance, Wafilin implemented its remote monitoring platform at the DCP production facility.

The platform collects operational data from the membrane installations and converts these into clear visual trends and performance indicators.

Unlike conventional monitoring systems, ours combines historical data trending, performance comparison over time and component-level monitoring. This allows engineers and operators to analyse process behaviour quickly and identify optimisation opportunities.



Enhancing process stability and efficiency through Monitoring

Key benefits



improved

Production stability and process output



better insight

Into membrane performance and cleaning effectiveness



optimized

Process control and operator procedures



fig 2 ← Trending Progsteps and dP Hiflux over time - The increasing pressure drop across the HiFlux pre-filter indicates fouling and, if left unchecked, can eventually cause the unit to stop production and switch to hold mode, which should be avoided.

The Wafilin Solution

The implemented solution consisted of the digital monitoring tool & service combined with the membrane process expertise of Wafilin engineers – Master in Membranes. The system continuously monitors key operational parameters such as pressures, flows, temperatures and cleaning cycles.

Historical data analysis allows engineers to understand cause-and-effect relationships in the process. This enables a deeper evaluation of membrane performance, cleaning effectiveness and operational procedures. Wafilin provides weekly or monthly performance reports, in which engineers analyze operational trends and provide recommendations for process optimization.

Data becomes valuable with the right expertise. With the process know-how and experience of our Masters in Membranes, the real difference is made.

fig 1 ← Dashboard for CMF1 - Indicating key performance by input parameters, process parameters and output, providing insights to optimize performance and support informed

Insight + knowledge = impact.

The system uses secure industrial connectivity devices designed according to the requirements of BSI and IEC 62443-4-2, ensuring secure remote access and protection of operational data.

Impact & Results

The monitoring platform provided valuable insights that led to several improvements in the production process.

Process optimizations

Analysis revealed opportunities to improve the control strategy of certain production steps, including cleaning procedures and process control.

Improved cleaning performance

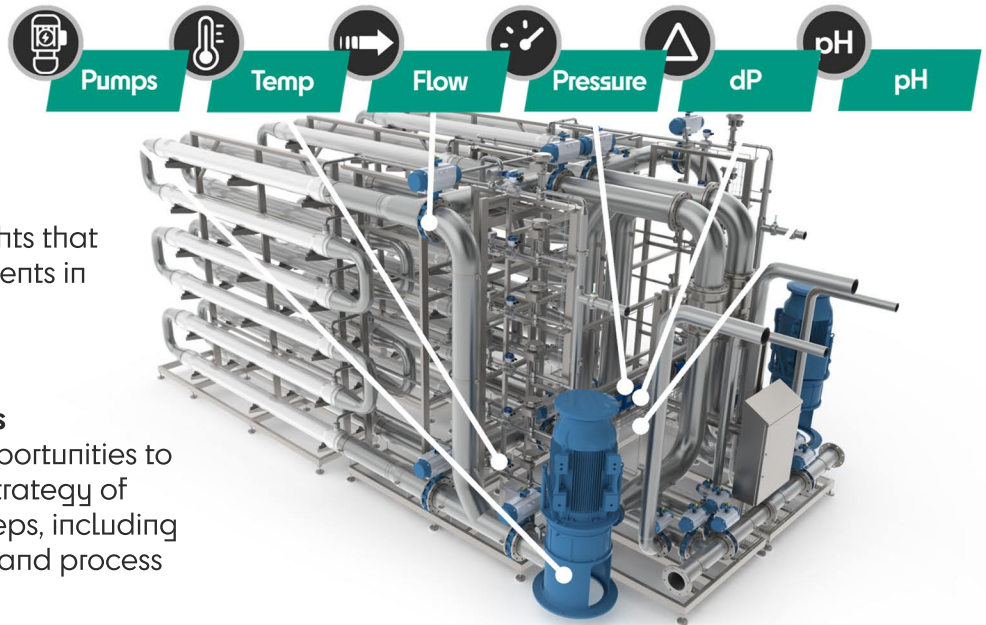
The monitoring system provided insight into when cleaning was necessary and how effective each cleaning cycle was.

Increased production stability

As a result of these improvements, the production process achieved higher and more consistent output in both quantity and product quality.

Operator support and training

The analysis highlighted where operator instructions could be improved and where automation could reduce the influence of operator variability.



Why Wafilin

- ✓ Wafilin combines advanced monitoring technology with deep membrane process expertise.
- ✓ By transforming operational data into actionable insights, Wafilin helps customers improve process efficiency, increase membrane lifetime and maximize the performance of their membrane installations.

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