



INNOVATION

ENGINEERING

OPTIMIZATION

Corrosion Monitoring in Chemical Processes

baycorroxxion® – Online-System for Production Plants

Corrosion in the Process Industries

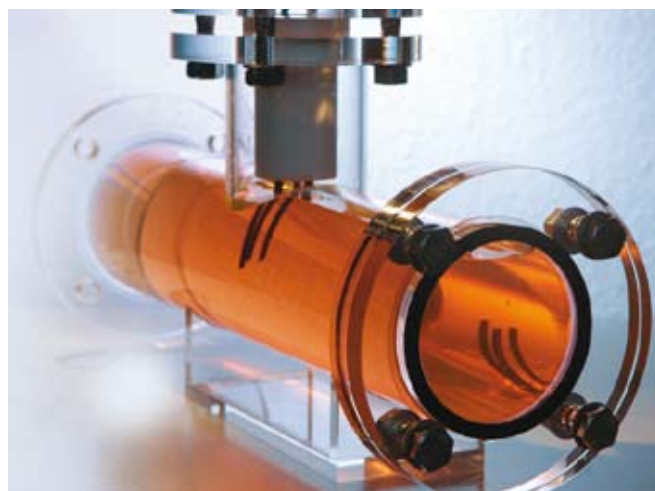
The usability, lifetime and availability of many plants, especially in the oil & gas, pharmaceutical, chemical and petrochemical industries, are greatly determined by the resistance to corrosion of the materials used. In addition to the selection of materials for all individual components and the design and layout, there are numerous other influencing variables which are not very obvious. Slight modifications to the chemical composition of raw materials or additives, minimal deviations from optimum process conditions or minor external influences can trigger active corrosion processes, resulting in serious changes in product quality or damage to and availability of equipment.



Crevice Corrosion in the Vicinity of Welding Seams

The Task

The corrosion behaviour of process units, equipment, and components is influenced by numerous factors. Corrosion is most often identified as the cause of equipment or plant failure through inspection after the damage has occurred. Laboratory investigations of corrosion processes are elaborate and time consuming. Very often temporary changes in the process conditions can result in excessive corrosion rates. Unknown and complex correlations between the process changes and materials behaviour exist which can only be determined empirically through the use of advanced measuring technology.



Model Sensor with Flange Connection



The Technical Solution

baycorroxxion® from Bayer Technology Services is an innovative system for online corrosion monitoring. It combines robust and reliable measuring technology with advanced Analyzer Result Transfer Software (ARTS). Bayer Technology Services thus provides an automated process analyzer technology PAT solution for effective and reliable online corrosion monitoring. baycorroxxion® also integrates with leading distributed control, and process information management systems.



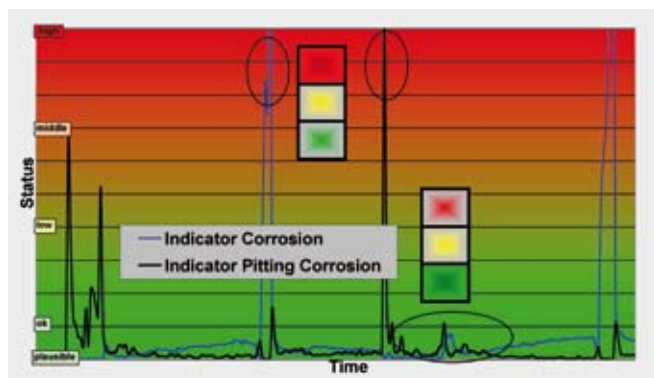
baycorroxxion System

baycorroxxion® is full-featured, proven, and easy to use.

- Determination and data output of up to 8 corrosion-related parameters such as electrochemical noise (EN)
- Automated evaluation of corrosion-related parameters (e. g. surface erosion) with plausibility check and classification of corrosion types such as localized corrosion, or surface corrosion
- Intuitive 'traffic light display' provide automated visual evaluation of corrosion status and qualitative assessment of corrosion processes
- Remote control access to all corrosion-related measurement data
- Conformity to NAMUR PAT recommendations
- Flexible data interfaces via Bayer Technology Services ARTS software (Profibus DP, Modbus, 4 – 20 mA and other industrial standards)

Bayer Technology Services offers expertise for specific customer probe design and other corrosion monitoring services:

- Individual customizing and adaptation of sensors to critical plant positions and critical services
- Specific customer probe design and fabrication (material, dimensioning, structure)
- Specific application electrode selection to ensure a high level of sensitivity and reliable data
- Expert support: regular status reports on corrosion monitoring from Bayer Technology Services corrosion experts
- Realization of solutions under explosion protection conditions



baycorroxxion 'Traffic Light Function'

The Benefits

Effective asset management in process plants through the identification of corrosion mechanisms and measurement creates new opportunities for increasing plant availability and condition based maintenance while dramatically reducing costs. Important benefits include:

- Visualize corrosion processes through standard distributed control system displays or a PC
- Provide information for engineers and operators to take corrective actions
- Prompt signalling of critical stress conditions
- Enhance of plant availability / decrease down-time
- Reduce maintenance costs
- Optimize process management costs
- Improve of plant safety
- Identify and remedy health, safety, and environmental risks