

BASF Fuel Cell, Somerset, NJ, USA

Production of the membrane electrode assembly with Freelance 800F

BASF Fuel Cell Inc is a subsidiary of BASF and a leading supplier of membrane electrode assemblies (MEA) for high temperature Polymer Electrolyte Membrane PEM fuel cells, as well as fuel cell and reformer catalysts to the emerging fuel cell industry. The pilot production of the membrane electrode assembly within the BASF Polymer Electrolyte Membranes plant located in Somerset, New Jersey, USA, was designed by a BASF engineering team. The goal of the team was to build the entire production facility using a standardized approach. The chemical process for the membrane production includes the dosing, mixing and production of the raw materials in a reactor. The process is performed using a batch process.

For the automation of this process, BASF chose an ABB process control system. ABB's Freelance 800F was selected because of its small footprint and flexibility. These Freelance 800F systems control applications in many BASF plants globally.

Freelance 800F Control System

The system consists of one AC 800F controller, one Combi station – which is both, an operator station and an engineering station – and about 150 I/O points, which are connected to input and output devices within the application.

Batch management

The batch management is performed using the sequencing (SFC) capability of Freelance 800F. Standard DigiVis displays are used to control the batch parameters.

Local support by channel partners

The entire membrane production application was designed by BASF's central engineering group and then shipped on site. The system was brought on-line in November 2008. Start-up was performed by local Freelance Channel Partners.

Applied Analytics Inc., a Flemington, NJ, USA based certified vendor for ABB control systems and by Applied Control Engineering, Inc. (ACE), a certified Solution Provider with a wealth of previous experience using the Freelance control system.

Start-up went smoothly – there were no significant issues.

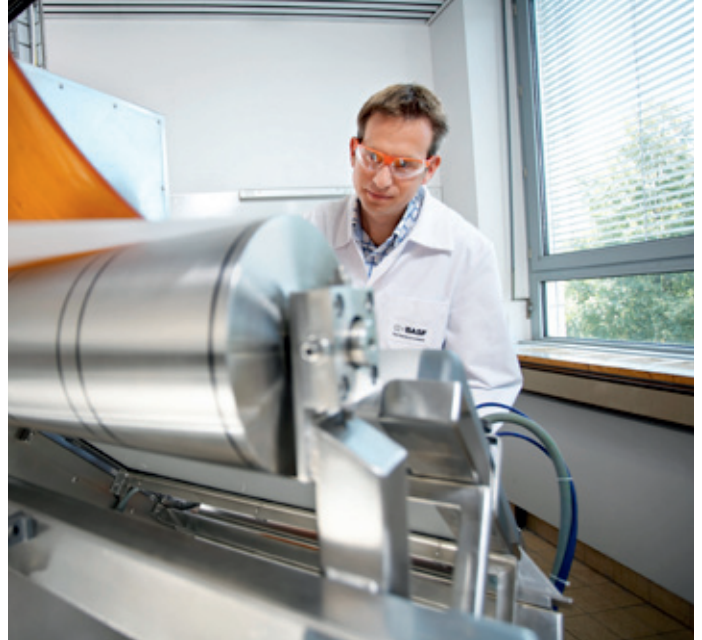


Photo: Membrane for fuel cell production

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Customer Quotes

Zhenyu Liu, project engineer at BASF, Somerset, commented on the control system: "It (Freelance 800F) has been doing the control job from the very first day with no problem. For this process accurate control and stability is an absolute must otherwise a full day production gets lost. We particularly like the simplicity of operation and the trouble shooting capability, which let's our operator react quickly without having to call for help."

Emory De Castro, plant manager said: "We had the proven track record of this system and knew it would be a reliable system for our pilot production, but moreover it is good to know, that due to its scalability we can use it for larger industrial production as well."

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