

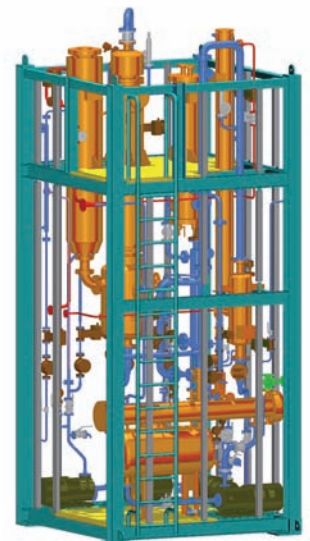
Kühni is a leading technology venture in the area of thermal separation technology and membrane separation process, in particular for the separation and purification of aqueous and organic mixtures. The business activities include services for process optimization as well as the designing and implementation of process instruments and turn-key, modular plants for the process industry with the main focus on pharmaceutical and fine chemicals industry. Kühni is a part of Sulzer group since early 2009; the headquarters Allschwil is promoted to a centre of excellence of the new business unit 'Process Technology' by Sulzer Chemtech.

The task

What is the special offering of the company as compared to its competitors? Torsten Merly, Engineer, head of mechanical design, summarizes this as follows: "Kühni is in the position to deliver everything under one roof, from a feasibility study to a complete plant, thanks to our experience of many years both in engineering and in implementation."



At Achema 2009, Kühni presented the plant designed for Weyland A/S and joined together as skid for acid recovery.



And this is how the plant designed with TRICAD MS in the CAD model looked like.

Project: Bioethanol recovery from cellulose

Project scope	Creation of 3D model, including instrument design and steel construction and pipeline designing. Creation of lists of materials. Mechanical detail design and assembly of main components.
Data for plant	The pilot plant in Bergen processes up to 2 T cellulose every day and produces more than 500 l ethanol from it.
Project requirements	Compact design, since integrating in a skid.
Advantage of designing with TRICAD MS	With TRICAD MS, it is possible to coordinate the instrument design, the steel construction and the pipelines and to design accordingly. Material surcharge can be minimized and costs can be reduced with the help of lists of materials on the basis of 3D model.

This experience was also important in case of a current project for the contractor Weyland A/S in Bergen, Norway: A plant for reclaiming process of concentrated sulphuric acid was ordered. Weyland specializes in bio ethanol production from cellulose. The proprietary process converts every form of natural cellulose into ethanol on the basis of concentrated acid; the raw material is therefore very versatile and widely available.

Plant designed and built by Kühni for acid recovery is a central component of the technology, from the point of view of the environmental protection as well as with regard to resource conservation and operating expenses. Merly: "The client receives the complete process know-how for acid recovery, with respect to the required knowledge for control, from us. In addition to this, the contract includes the mechanical detail design and the assembly of main components."

The solution

Weyland project was designed with the designing software TRICAD MS. Merly: "This tool connects the CAD basic program MicroStation with a customized database solution. MicroStation is fully developed CAD software for 2D and 3D applications, which is implemented in the process industry internationally and has proved its worth. And the TRICAD MS database enables easy operation of material data and part catalogs; the comparable databases of other service providers are too comprehensive and thus too expensive for our purpose."

The advantage

Merly describes the role of TRICAD MS in this project and in case of other projects as follows: "With TRICAD MS, it is possible for us to coordinate the instrument design, steel construction and the pipelines and to design accordingly. The overall concept can be synchronized with the clients and all the internal services

(process, MSR, purchase, etc.) well before mounting. We minimize the materials surcharge and thereby lower the costs with the help of lists of materials on the basis of 3D model." And this is also important: "The client can be included in the designing right from the beginning with the help of photo-realistic representation of 3D model using NavisWorks and the client can coordinate the plant design with his operation engineers and maintenance specialists."

Installed Tricad MS modules

- 3D piping
- Platform technology/structural steelwork
- Isometric drawing (Iso X)



"TRICAD MS connects the CAD basic program MicroStation with a customized, cost-effective database solution."

*Torsten Merly, Engineer,
Sulzer Chemtech 'Process Technology'*

Contact

ITandFactory GmbH
Auf der Krautweide 32, 65812 Bad Soden /Germany
Phone +49 (6196) 6092-310, Fax +49 (6196) 6092-202
info@ITandFactory.com, www.ITandFactory.com