Andreas **Junghans**

Plant engineering

Pressure vessels

Membrane filtration plants

Test facilities

Automatisation and visualization

Documentation

Engineering
Manufacturing

Membrane filtration plants

aqueous and non-aqueous

membrane filtration

Test facilities

for pumps, valves

and armatures

Pressure vessels and welded assamblies

acc. technical guidelines

special material

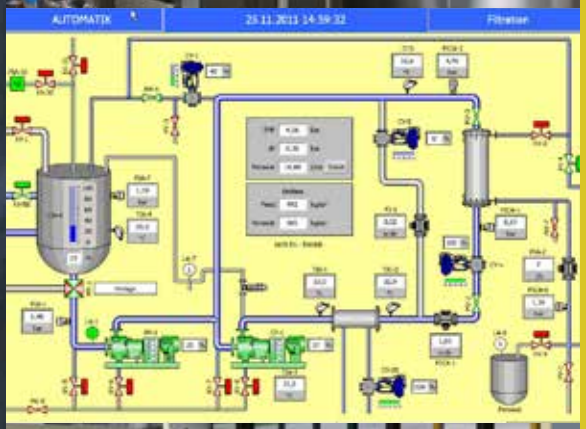
- high temperature austenite
- nickel-base material

Automatisation and Visualization

incl. control cabinet

and wiring

data storage, telemaintenance



Dokumentation

approval, certification

and user manual

acc. GMP | ATEX | WRA

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Andreas **Junghans**

Plant engineering

Products and Services

membrane filtration plants
test facilities
pressure vessels

- Engineering acc. guideline 94/9/EG („ATEX")
- up to 2 to weight, including strenght calculation
- up to pharma quality (collaring, polishing, measuring)
- Manufacturing including wiring and cabinet
- turn key plants as well as parts

Turn key from one supplier

- Full solution (process design, controll concept, hazard analysis, etc.)
- Design and selction of all components
- 3- dimensional design
- Certified manufacturing
- Controlling by notiefied bodies (f.e. TUEV)
- Factory acceptance tests with attestation
- Commissioning
- After sale services and remote maintenance

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Made in Germany

Andreas **Junghans**

Products and Services

Plant engineering

Membrane filtration plants for liquids

- Recycling of heterogene catalysts
- separation and concentration of peptides and bioavtive molecules in organic solvents
- Diafiltration to remove hazardous substances
- Solvent cleaning and/ or -recycling
- Recycling of solution with content of chrome
- Cleaning of foodoils or lecithin

Test facilities for liquids and gaseous substances

- Design of flow diagrams
- Calculation of pressure drops and flow profiles
- Calculation and design of vessels and piping
- Manufacturing of vessels and piping
- Circuit diagrams
- Manufacturing of control cabinets and wiring
- Commissioning

Pressure vessels and welded assamblies

- Pressure vessels and welded assamblies
- Calculation and design up to 2 to total weight
- Stainless steel only

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plant engineering

Organophilic Nanofiltration

Turnkey membrane separation plants for use under potentially explosive atmospheres

- following the recommendations of guideline 94/9/EG ("ATEX")
- usable in Ex II 3G IIC T4 inside, Ex II 2G IIC T4 outside
- up to 60 bar inside pressure
- up to 80° C working temperature
- manufacturing acc. GMP guidelines
- not changeable data storage (can be validated), different usergroups

Applications

- recycling of heterogene catalysts
- separation and concentration of peptides or other bioactive molecules from organic solvents
- diafiltration to remove hazardous solvents
- solvent purification/ solvent recycling
- recycling of chromatography dilutions
- polymer fractioning
- treatment of nutritional oil and lecithin
- regeneration of lubricating oil

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Made in Germany

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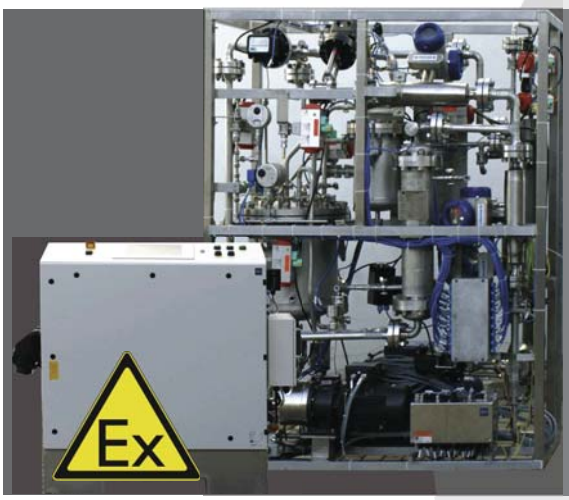
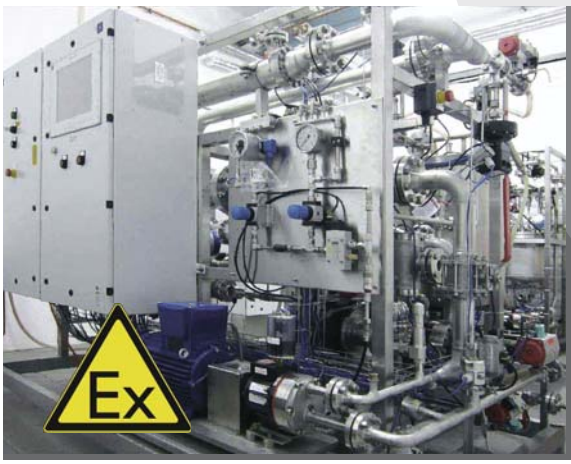
plant engineering

Organophilic Nanofiltration

Customer:	Research institute
Location:	Belgium
Capacity:	approx. 500 L/ h
Membrane:	3 x ceramic multi channel tubes 1 x 2,5” spiral wound membrane
Requirements:	Ex II 3G IIB T4 inside, Ex II 2/3G IIB T4 outside GMP- procedures for using under pharmaceutical conditions
Medium:	all kind of organic solvents (hexane, ethanol, ...)



Customer:	Chemical industry
Location:	Germany
Capacity:	approx. 300 L/ h
Membrane:	1 x ceramic multi channel tubes 1 x 4” spiral wound membrane
Requirements:	Ex II 3G IIC T4 inside, Ex II 2G IIC T4 outside
Medium:	propylene oxide



Customer:	Chemical and pharmaceutical Industry
Location:	Germany
Capacity:	max. 750 L/ h
Membrane:	2 x 7 x ceramic multi channel tubes 1 x 4” spiral wound membrane
Requirements:	Ex II 3G IIC T4 inside, Ex II 2G IIC T4 outside
Medium:	different organic solvents (hexane, ethanol, toluene)