



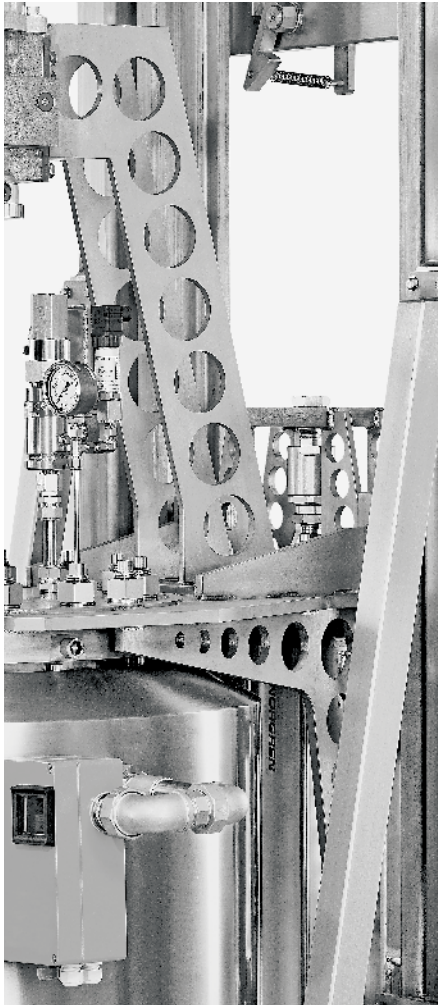
Partners in Research & Pilot Scale Units

PROREC offers a complete range of services in the design and build of bespoke research units and miniplants. Based on over 12 years of experience our engineers have a wide range of expertise and detailed knowledge in designing and building customer specific solutions.

PROREC adds value to developing solutions for complex research problems through comprehensive know-how, an integrated perspective as well as a flexible and pragmatic approach.

We offer a comprehensive package of services: starting from concept design and basic engineering through process hazard analysis & detailed engineering, up to supervision of build, acceptance testing including the after sales support and operational lifetime of the asset.

This comprises a professional project management in all project lifecycle stages, characterised by our pragmatic and solution driven approach.



In addition to engineering services PROREC cooperates with a select range of partner companies in process automation and equipment manufacturing in order to deliver bespoke R&D equipment and miniplants to our customers.

The combined expertise and experience from all relevant engineering disciplines makes sure that the optimum solution is developed to meet the research application requirements. PROREC ensures effective communication & project management between all partners.

Equipment Manufacturing Cooperation Model:

Automation and Process Control Company

Know-How in Process Control, E&I and SCADA/HMI programming – Integration of analytics

Delivery of the process control system and E&I package



Equipment Manufacturer (Main Contractor)

Know-How in mechanical engineering & design (CAD), manufacturing and assembly

Delivery of basic equipment concept & layout and detailed process engineering design



PROREC GmbH

Process Engineering and Process Safety Know-How for basic and detailed development of lab-scale R&D units and miniplants

Communication and Project Management



Complete equipment delivery from single supplier



Customer

End user/operator of laboratory equipment and pilot plants to deliver R&D programmes

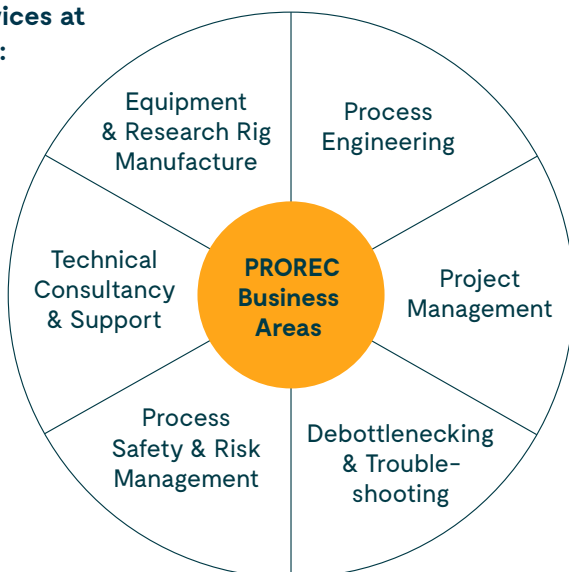
In our cooperation model a single main contractor assumes general contractual responsibility with the customer in order to simplify the management of contracts and minimise organisational effort.

PROREC has a wide range of experience in multiple chemical applications. Selected examples include:

- Heterogeneous and homogeneous catalysis – low and high pressure applications
- Oxidation catalysis, e.g. methane, propane, propene, benzene
- Ammonia synthesis
- Hydrogenation reactions
- Hydrotreating (HDS, hydrocracking, hydroisomerisation)
- Methanol synthesis, GTL processes and Fischer-Tropsch synthesis
- Thermal cracking, visbreaking, catalytic cracking
- High temperature applications – steam reforming, high/low temperature shift
- Metathesis
- Oxo processes / hydroformylation
- Olefin oligomerisation
- Liquid phase and gas phase polymerisation, e.g. nylon, polystyrene, PE, PP
- Alkoxylation reactions, e.g. conversion of fatty alcohols with ethylene oxide and propylene oxide
- Conversion of bio-based feeds to chemicals and fuels
- Catalyst and material synthesis, including zeolites, microporous and mesoporous materials
- Ageing units
- Processes with supercritical CO₂
- Automotive exhaust emissions aftertreatment
- Fuel combustion test units



Our services at a glance:



**Contact us
for further
information**

PROREC

PROREC GmbH
Rungestr. 9 10179 Berlin
www.prorec-berlin.com info@prorec-berlin.com
Tel.: +49 (0) 30 220549782