



ECN

Your energy. Our passion.

Manufacturing technology

“Fit for purpose”

Both the choice of material and the method of production of materials can have a major impact on your product or process. They raise questions such as: how can I produce series of high-quality, reliable, joined constructions? Why do my springs not realise their expected lifetime? How can I limit pollution in the process? What lifetime can I expect? The combination of materials knowledge, chemical knowledge, engineering knowledge and production knowledge in one single group is unique. It enables integral optimisation. The optimisation may focus on the costs of the process, production, materials or feedstocks, but it can also focus on the quality of the end product.

ECN can help you with:

- The influence of chemical processes
- Metal Injection Moulding (MIM)
- Feedstock development (paste kneading of ceramics, metals and composites)
- Additive manufacturing of ceramics and high-end metals
- Laser processes
- Thin film technology
- High-end ceramics
- Pickling and passivation
- Chrome-free processes
- Production or test application development
- Developing test methods and procedures

Recent assignments

Our most recent projects comprise the description of procedures and their validation against the standard. Moreover, we supply our clients with specifications for verification as well as a definition of chrome-free processes.

Productie

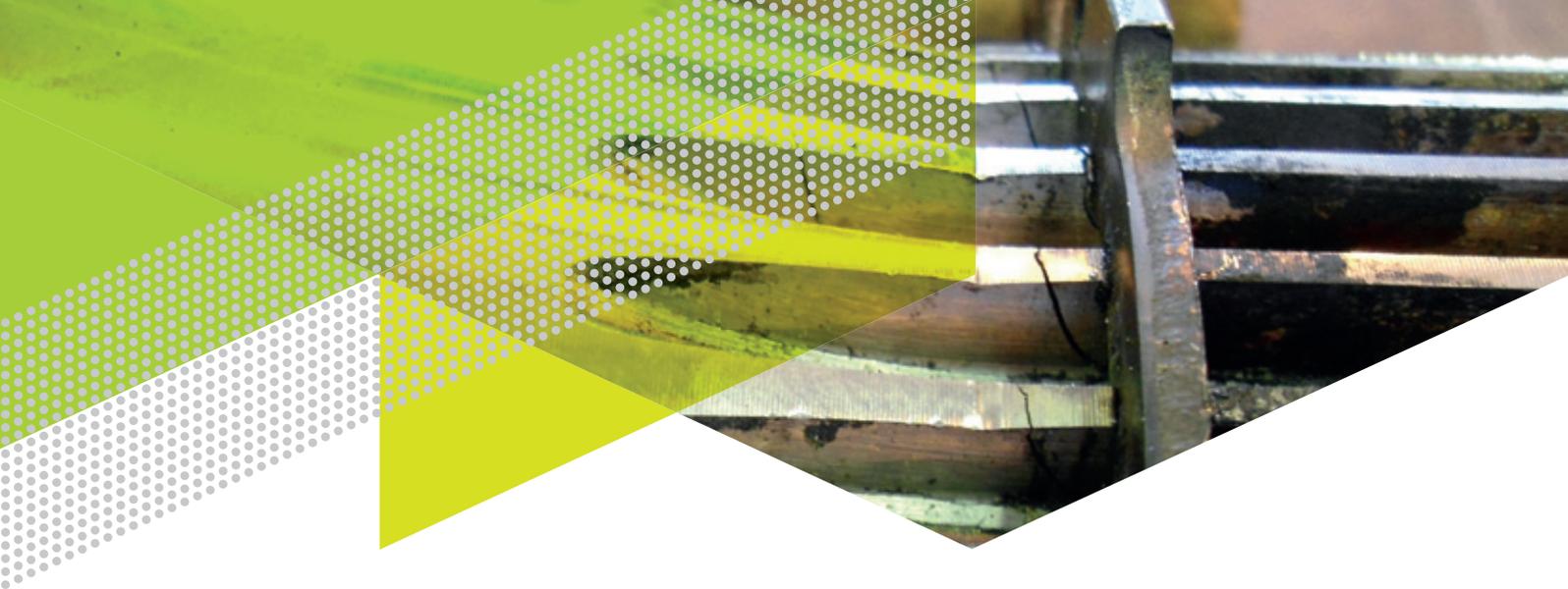
Do you have an (end) product in mind, but are you unsure of what would be the best technique or the best process to realise this product? Or do you have a new process and would you like to know which materials can best be used in your process equipment? If so, you have come to the right place. With our broad experience and various production techniques and processes and our large diversity in prototyping and pilot techniques, our experts can help you proceed. We are also able to arrange in-house production and assembly of the prototyping or serial production of specials.



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Materials, testing & analysis

Are you faced with a problem in your installation, process or product? In most cases, the ECN experts can solve this together with you. Our group of complementary specialists covers a broad knowledge area, enabling us to help you quickly with practical solutions or clear advice.

We can offer you the following expertise:

- Failure analysis
- Corrosion analysis
- Materials engineering
- Joining technology
- Manufacturing technology

Strong solutions

ECN can solve both complex and more practical engineering issues. We have built many pilot set-ups and installations that involved extremely highly demanding process conditions. They involve deployment of chemicals, high or low temperatures and/or high or extremely low pressure. Required process purity and interaction with media (fluids/gases) are also critical.

Solutions are often found through practical combinations of different materials such as glass, ceramics and metals. This way the special process demands can be met in a cost-effective manner.

Common material combinations are:

- Construction materials such as high-strength steels and high alloys
- Refractory metals and ODS steels
- Aluminium, non-ferrous materials
- Composites
- Glass and quartz
- Ceramic materials
- (Fibre reinforced) graphite
- (Fibre reinforced) plastics
- Coatings; organic, hybrid and inorganic

References

We are a valuable partner for small and medium-sized businesses, but also for multinationals in the following markets: the energy sector (nuclear, biomass, solar, wind), aviation, aerospace, offshore, defence, process industry, environment and infrastructure. Our clients comprise the following organisations: Fokker, Alcoa, CEA, Soterem, Stork, ASML, FEI, Shell, Friesland Campina, Bravilor, RGS, Covidien, NRG, EADS, ITER, CERN and Attero.

