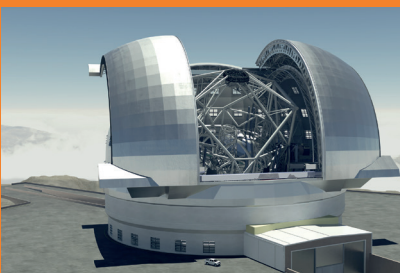
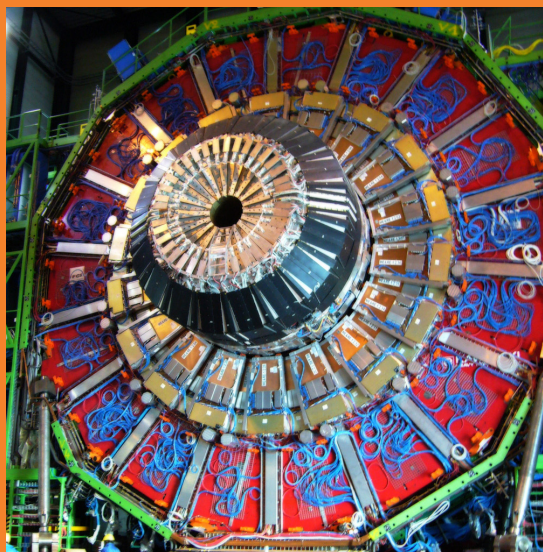




Symposium on Fusion Technology (SOFT 2016)
Prague, Czech Republic
5th – 9th September 2016



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www.bigscience.nl



Netherlands Organisation for Scientific Research



For further information: <http://www.iterbusinessforum.com>

where business and science meet

www.bigscience.nl

Iter-nl



Knowledge Transfer

Instrumentation Development

Industry Days & Matchmaking

Engaging 300+ Dutch Companies

The ITER-NL initiative brings together the know-how needed to develop and construct specific parts of the ITER international fusion experiment. Our aim is to enable Dutch companies to have strong participation in ITER and to facilitate front-line participation of Dutch research in the scientific exploitation of ITER.

ITER-NL is a consortium between four Dutch research institutes: the Netherlands Organisation for Applied Scientific Research TNO, the Foundation for Fundamental Research on Matter FOM (with her FOM-Institute for Plasma Physics Rijnhuizen), the Nuclear Research and consultancy Group NRG, and Eindhoven Technical University, TU/e.

If you are interested in cooperating with a Dutch company, please contact Toon Verhoeven.

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TNO innovation
for life



NRG

TU/e

Dutch Scientific and Big Science

Holland has been joining many Big Science programs for over 60 years. Examples are: particle accelerators like the LHC at CERN, fusion like ITER, optic- and radio telescopes like the E-ELT and Lofar but also light sources, free electron lasers and neutron facilities. Regardless that these projects are very important for Dutch scientists who obviously belong to the top in the world, many highly technological companies in the Netherlands are involved in building these large instruments. There is no doubt that innovation is driven by science and the development of scientific instruments. Innovative companies are the first to emerge when a crisis ends.

Dutch Scientific used to be an organisation of firms developing for science in close cooperation with scientific research institutes and their engineers. Now Dutch Scientific has been re-invented by the Dutch Industrial Liaison Network for Big Science and will be supporting all Dutch high-tech systems companies for doing business with Big Science. The Dutch ILO-net is a network of Industrial Liaison Officers in the Netherlands supported by the Dutch government and NWO.

The Netherlands Organisation for Scientific Research that funds thousands of top researchers at universities and institutes and steers the course of Dutch science by means of finances and research programmes. Since companies listed in this booklet are very well equipped for translating their scientific knowledge to commercially applicable solutions, Dutch Scientific proudly presents a number of frontline high-tech companies who can support you with any project in which you want to be successful.

April 2015

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Netherlands Organisation for Scientific Research



Contents

3D-Metal Forming	1	Hositrad Vacuum Technology	27
Hugo Groeneveld		J.L.J. (Jurgen) Tomassen	
Airbus Defence and Space Netherlands	2	IBS Precision Engineering BV	28
Mr. Sytze Kampen		Hans Ott	
A.J.B. Instrument B.V.	3	INCAA Computers	29
		Bart Sijbrandij	
Amstel Engineering BV	4	Irmco BV	30
André Scharis		Michael Koot	
Amsterdam Scientific Instruments	5	Janssen Precision Engineering	31
Dr. Hans Roeland Poolman		Huub Janssen	
Atkins BV	6	Kin Machinebouw	32
Arent-Jan de Graaff		Dries Wiersma	
Benecon	7	Landes High End Machining	33
		Peter Boogaart	
BKB Precision	8	Machinefabriek Boessenkool B.V.	34
Berrie van de Burgt		Ing. Eelco M. Osse	
Bodycote Vacuum Brazing	9	Mat-tech B.V.	35
Henkjan Buursen		Mo Biglari	
Bouman Machinefabriek BV	10	Megahard	36
Rob Geertshuis		Georges Meinders	
Butraco	11	MI-Partners	37
Mr. P. (Pim) Buters		Leo Sanders	
CCM	12	Mogema 3.0	38
Edwin Langerak		Sebastian Vrensen	
Ceratec Technical Ceramics BV	13	Montair Process Technology B.V.	39
Kees A. Visser		René Francken	
DARE!! Development	14	MTSA Technopower	40
Patrick Dijkstra		Rob van der Sluis	
Delft Neutron Instruments BV	15	Nedinsco	41
Chris P. Duif, MSc.		Bob in den Bosch	
Delta Elektronika BV	16	Nijdra Group	42
M.A. Giltay		Robbin van Zanten	
Demaco Holland BV	17	NRG	43
Ronald Dekker		Lida Magielsens Msc.	
Demcon Advanced Mechatronics	18	Peter Haak Produktontwikkeling	44
Henkjan van der Pol		Peter Haak	
ECM Technologies	19	PM-Group	45
Hans-Henk Wolters		Jos Oldereuver	
Entechna	20	Q-Sys	46
Dr.ir. Roger Hamelinck/Dr.ir. Chris Werner/		Henry Over	
Futura Composites BV	21	S&T	47
Martino Borgo		A. Bos	
Grontmij	22	Schelde Exotech	48
Barry van Sloten		Arthur Borsboom/Jos Mols	
Harsveld Apparatenbouw B.V.	23	Settels Savenije van Amelsvoort	49
Rob de Visser		John Settels	
Heemskerk Innovative Technology	24	Sumipro	50
Dr. Ir. C.J.M. Heemskerk		Ben Lubberman	
HEINMADE	25	Technobis Group	51
Hein Schellens		Pim L. Kat	
Hitec Special Measuring Systems	26		
R. Lachminarainsingh			

Tessella	52	VDL Fibertech Industries	57
Dr. Eric Arends		Michiel Wassink	
Thomas Thor Associates	53	Vermeulen Metaal B.V.	58
Kaoutar Belarbi		Peter Vermeulen	
TNO	54	Vernooy	59
Bart Snijders		Fred Verkerk	
Van Halteren BV	55	Wiltink	60
Marco Klitsie		Adwin Kannekens	
VDL Enabling Technologies Group	56	ILO's for Big Science	61
Cees Coolen			

3D-Metal Forming

Product information

3D-Metal Forming B.V. is specialized in metalworking by the use of dedicated explosive materials. New production processes are developed within the company by using CAD, FEM simulations and photogrammetry.

Explosive bonding makes the joining of unique metal combinations possible, such as molybdenum to copper or tungsten to CuCrZr.

3D-Metal Forming B.V. is your partner in developing new solutions.

We can provide a full process and manufacturing chain including e.g. explosive bonding, machining, brazing, electroplating, HIP etc.

Explosive forming provides complex double curved shapes, formed from sheetmetal.

The possibilities in size, shape, metal and sheet thickness are almost unrestricted.

Only one tool part (comparable to a lower die) is needed so that Non Recurring costs are kept to a minimum.

3D-Metal Forming B.V. serves customers Worldwide in the markets Big Science, Energy, Aerospace and Architecture.

We continuously develop new, innovative solutions. For example, the development of the explosive forming of large, 60 mm thick stainless steel plates for the ITER vacuum vessel led to the development of an integral Nose Fuselage for Airbus. This component is explosive formed out of one, 100 mm thick aluminum plate, and fully machined after explosive forming. For Airbus this results in significant weight reduction of the Nose Fuselage structure.

References

RES (Cadarache): explosive formed panels of the water basin – ITER (F4E): explosive bonded CuCrZr-stainless steel tube transitions – ITER (RFX): explosive bonded molybdenum to copper, machined and warm formed – MAST (Culham, UK): explosive formed cans for poloidal field coils

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Airbus Defence and Space Netherlands

Airbus Defence and Space Netherlands B.V. is a supplier of high-tech products and services for the international aerospace industry. Since its founding in 1968, the company has contributed to many challenging space programs and has built-up considerable expertise in space technology in areas such as Earth observation, telecommunications and science. The Dutch organization is part of Airbus Defence and Space, a division of Airbus Group. The portfolio of Airbus Defence and Space Netherlands B.V., which employs more than 200 experienced professionals, includes solar arrays, launcher structures and instruments & systems. The company employs more than 200 experienced professionals.

Some examples of relevant achievements for Space and Science are:

- The European Robotic Arm for the ISS is one of the most comprehensive space projects ever executed in the Netherlands. ERA has been developed for ESA by a European consortium, led by Airbus Defence and Space Netherlands. The project provided valuable heritage for remote handling.
- Three major optical spectrometers for measurement of atmospheric gases have been built by Airbus Defence and Space Netherlands, partnering with TNO: Sciamachy on ESA's Envisat and the Ozone Monitoring Instrument on NASA's Aura mission have provided state-of-the-art data and key knowledge of atmospheric processes. Their successor TROPOMI for ESA's Sentinel 5 precursor mission is currently being calibrated and prepared for flight early 2016.
- Six optical delay lines were built and delivered to ESO's Very Large Telescope Interferometer in Chile

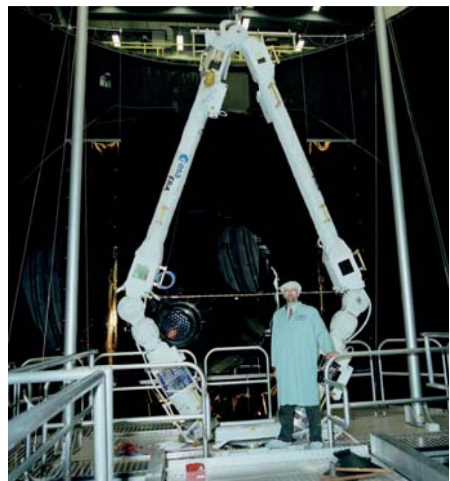
The Leiden-based space company is known for its, call it typically Dutch, approach: **reliable, solution-driven, with a clear goal in mind, and always open to international collaboration.**

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A.J.B. Instrument B.V.

Over the past several years AJB has developed itself as a specialised supplier of high precision components and small assemblies to many high tech industries.

Technical and commercial support combined with advanced production facilities allow us to satisfy almost every customer's demand. In our facility we have everything from conventional lathes to 5 axis CNC milling machines with automation and 13 axis CNC lathes. We also offer additional process capabilities of grinding, wire erosion, honing, lapping and a cleanroom assembly facility. An environmentally controlled measuring room with 2 CNC measuring machines ensures the highest accuracy and reproducibility of your product.

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Amstel Engineering BV

In business for more than 25 years, Amstel Engineering offers advanced Mechanical Engineering services to customers that help them in developing complex mechanical designs and products. Our customers call on our expertise to design or evaluate critical components for reasons such as reducing cost, reducing time-to-market, increasing load capacity and extending life span.

End-to-end capability

Amstel Engineering's capabilities in providing solutions throughout the product development life cycle from conceptual design, industrial and mechanical engineering design, CAD modelling and detailing, to simulation, analysis and prototyping, product testing and manufacturing, makes Amstel Engineering a unique one-stop solutions provider for Engineering Services.

Clients outsource their engineering work to Amstel Engineering, allowing them to focus on their core competencies. We not only solve unique engineering challenges, we manage the routine day-to-day engineering tasks that many clients no longer can complete in house.

Dedicated staff

We are staffed by professional engineers and designers with extensive experience and expertise in engineering design and 3-D drafting in a range of industries. We focus on delivering technically accurate and scientifically sound solutions based on our training and industry knowledge.

Proven expertise

We have a proven track record of providing complete Mechanical Engineering solutions for customers in verticals like Aerospace, Automotive, Rail, Material Handling, Food Processing and Retail.

What does that mean for you? When you partner with Amstel Engineering, you can depend on better value, faster delivery, superior products and services and a collaborative relationship throughout your project – as well as an engaged, expert partner for the life of your business. Amstel Engineering is part of the Neitraco Groep.

References

ASML – Nikhef – ECN – Dutch Space – Philips – ASM – Vanderlande Industries – Stork/Fokker – Multin Hittech – SKF

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Commercial Manager

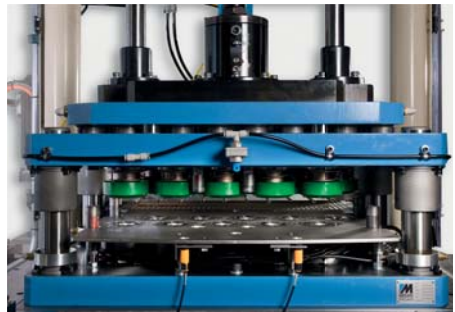
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Amsterdam Scientific Instruments

We offer you the benefits of cutting edge detector technology developed by the Medipix collaboration lead by CERN.

Our customer-focused team consists of scientists and engineers with a vast global experience covering all aspects of particle detector technology. We close the gap between innovation at the frontier of science and ready-to-use products for science and industry.

Product Information

Our Timepix hybrid pixel detectors can be used in a wide range of applications.

Besides X-ray imaging, ASI detectors are used for precise spatially resolved detection of electrons, neutrons and heavy charged particles. We also offer our detector in a vacuum compatible system.

Conventional detectors use a counting method. We offer clever pixels: every pixel can operate in three different modes. These are counting mode, time-over-threshold and time-of arrival mode.

For more information on our products, please visit our website: amscins.com or write us an email: info@amscins.com.

References

Nikhef, NL

AMOLF, NL

Reactor Instituut Delft, NL

Royal Adelaide Hospital, AU

Tribogenics, USA

Brookhaven National Laboratory (BNL), USA

Princeton Plasma Physics Laboratory (PPPL), USA

Stanford (SLAC/LCLS), USA

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AMSTERDAM
SCIENTIFIC
INSTRUMENTS



Atkins BV

Atkins BV, part of Atkins Aerospace and Atkins Plc, is a leading multinational aerospace design and analysis consultancy, with over 17000 permanent staff worldwide.

Atkins Plc operates in multiple markets, including: Aerospace, Defence, Highways & Transportation, Oil and gas, Nuclear, Telecommunications, Rail, Water and Environment.

As a result we have access to a variety of engineering capabilities such as Atkins Nuclear. Qualified to AS9100: 2004 rev. C across all offices

Product information

We design and analyse main components for many new aircraft programs, as have emerged onto the market over the past ten years such as the Airbus A380, A400 M and A350XWB, Lockheed Martin JSF and Mitsubishi Jet:

- Wing structure including integration of engine, landing-gear and movables
- High-lift devices
- Fuselage structure and interior
- Future aircraft program concept studies
- Structural integrity prediction methods development
- Landing gear systems & structures engineering services
- Engine components for low pressure compressor

For ITER-NL, Atkins performed an optimisation study of the concept for Remote Handling Tooling of the Port Plugs.

Specific expertise includes

Structural and mechanical engineering for large and complex international projects including integration and design for manufacturing.

- Structures – Light weight metallic and composites
- Systems – Landing gear, Controls, Fuel systems
- Interiors – Cabin, Cargo-hold, Flight-deck
- Aero Engines – Compression & Transmissions
- Our main tools are CATIA V5, Unigraphics NX, MSC PATRAN/NASTRAN, HyperMesh, PDM.

References

Our Customers include Airbus – Rolls-Royce – Fokker – Bombardier

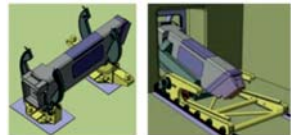
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ATKINS



Benecom

We introduce our company, which is already more than 50 years active in supplying, among others, the high demanding markets like Aerospace, Energy and medical also more general industry like Sanitary, Pumps, Hvac, and so on.

Our Products

Of course O-rings and Molded parts are within our scope of working, but also we realise, in cooperation, new designs. We have a lot of experience in rubber to metal or other base material combinations.

Produced in all kind of materials,

Rubber compounds	- SBR, NBR, EPDM, SILICONE ,FPM (VITON), KALREZ.....
SYNTHETIC	- POLYPROPYLENE, POLYAMIDE, HYTREL, POLYETHYLENE..
GASKETS	- HD300, KLINGERSIL, FIBRE, NOVAPRESS...
VARIOUS	- PTFE (TEFLON), FOAM MATERIAL, VULKOLAN..

Proven quality compounds with DVGW, KTW, WRAS, FDA, NSF Certificates.

We have our own KIWA and KOMO compounds with certificates.

International working is standard for us in buying possibilities. Exporting our goods is common business and with our experienced staff we always find a workable solution for your demands.

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BKB Precision

BKB Precision is well known for her accurate and innovative way of processing high performance plastics and the production of critical and complex parts. BKB is a trustworthy partner for design engineers and (technical) buyers. We enable our customers to gain a competitive advantage by sharing our knowledge, which leads to creative solutions with high performance plastics like PEEK, PEI and glasfiber composites. We outperform on accuracy up to 3μ , using a state of art machine park for milling and turning up to 5 axis. BKB does prototyping and series as well. If needed, we are happy to take care for (cleanroom) assembly or sub-assembly. NEN-ISO 9001:2008 certified.

BKB Precision's Core competences

- Specialists in high performance plastics machining
Producing high complex and/or very accurate parts on customer specification is our core business. 'Making the (near) impossible, possible' is our slogan.
We are specialized in manufacturing of PEEK, PEI, Torlon, Glasfiber composites, etc.
As well as Foam materials like Rohacell and Airex products.
To produce these materials on the requested spec's our complete production area is acclimatized on temperature and humidity.
- Turning
Our turning and milling machines are up to 3μ accurate. Dimensions from $\varnothing 10\text{mm}$ tot $\varnothing 100\text{mm}$.
- Milling
We have 'state of the art' milling centers. From our 5-axle machines (Hermle) with automated robot loading docks to our portal milling machines (6.500 x 2.500 mm) with an accuracy of 0,02mm on 6.500mm.
- Assembly
Assy's can be assembled at BKB Precision. If necessary in clean room conditions. Of course is delivery in clean-room packaging in most cases standardized.

Markets

Semicon – Defence – Medical – Optical – Food – Chemical

References

CERN – ASML – PSI – Storz Medical – Philips – Thales – VDL-ETG

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Bodycote Vacuum Brazing

Bodycote Vacuum Brazing has been engaged in advanced brazing techniques for about 40 years. During these years an extensive know-how and vast practical experience have been built, unique for the industry. Practically all types of base metal, filler metals and brazing processes are being applied to hundreds of different products. Bodycote Vacuum Brazing has several different types of brazing furnaces available for basic research, product development and production. Bodycote Vacuum Brazing is ISO 9001, ISO 14001 and ISO 50001 certified.

Product Information

In the high temperature brazing process joints are generated in a vacuum atmosphere. The combination of high temperature and reducing atmosphere ensures metal oxides dissociate at the product surface. The process results in very strong joints (90-100% base metal strength). Due to the automated furnace control these joints can be reproduced with a constant high quality.

Bodycote Vacuum Brazing Diemen provides the following services

Vacuum brazing – Special heat treatments in vacuum or reducing atmosphere – Consulting for material selection and design of braze joints

Materials regularly handled

Low and high alloy steels – Tool steel – Cast Iron – Stainless steel – Copper alloys – Titanium alloys – Superalloys – Carbides – Ceramic, Composites, Graphite

Markets served

Power Generation and Energy – Oil & Gas – Measuring & Control – High precision tooling – Lithography – Aerospace – Pharmaceuticals – Science/research – Plastic Moulding

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Bodycote



Bouman Machinefabriek BV

Our well thought-out working methods are recognizable in everything we do.

Machine fabriek Bouman B.V. is supported by its own Engineering Department, to manufacture complex projects and products. Excellent planning and Project Management through one contact point makes it possible that our cooperation is perfect and trouble free. Pick up the phone and contact Machine fabriek Bouman B.V.

Possibilities

- Engineering
- CNC turning and milling
- Welding and sheet metal working (Carbon steel and Stainless steel)
- Assembly special machines and modules

Unisign Uniport 6000

- 4-5 axis CNC milling + drilling machine
- x-axis : 8000 mm
- y-axis: 2500 mm
- Z-axis: 1000 mm
- table: 8000 x 2170 mm
- CNC table: Ø 2000 mm
- Free space portal 2500(y) x 1200(z)

THE MATTER IN HAND

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Butraco

Let BUTRACO hatch your idea!

BUTRACO is a small service oriented prototyping activity for machines & parts. We not only engineer but also manufacture. To save time and costs we often work from a sketch only, or convert/adapt existing products. Knowing many production techniques and having a large network of sub suppliers we can offer the best suitable production technology. Our way of working guarantees professional solutions and low throughput times. We can deliver in a timeframe that it normally takes to merely draw it on paper.

Our offer:

- One stop shop for prototypes: we engineer **and** have it made.
- Over **25 years experience** in machine building and part making.
- **Know how**; always the best suitable production technology.
- Small, flexible, and thus **speedy results**.

References

Mostly universities or research institutes e.g. Technische Universität München (ZAUM) Germany; RIVM, The Netherlands, Adam Mickiewicz University, Poland; University of Evora, Portugal etc .

Mr. P. (Pim) Buters

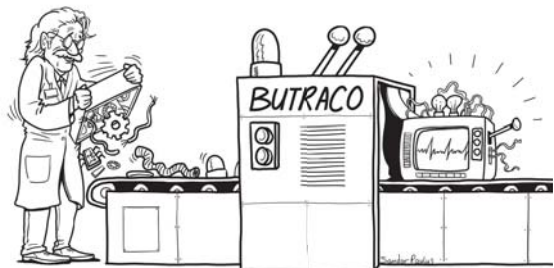
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BUTRACO

experienced in machinebuilding



CCM

CCM is a well experienced innovative product development company, founded in 1969.

Company Profile

We translate technology into solutions in the field of mechatronic products and systems.

Our main focus goes to the appropriate functionality, performance requirements and time-to-market, without ever losing track of product cost price and development costs.

Our competences in physics, mechatronics, mechanics, electronics and software enable us to support our customer's success.

Commitment, motivation, education and skills of our employees are the solid basis for our business approach.

CCM specializes in customized innovation for the semiconductor industry, medical diagnostics, pharmaceuticals industry and the imaging and printing industry.

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centre for concepts in mechatronics



Ceratec Technical Ceramics BV

Ceratec Technical Ceramics BV has specialized in industrial technical ceramic components since 1983. Ceratec's strength lies in the complete formula of problem analysis, development, prototyping and production. Alongside various processing techniques, special joining techniques are applied for production of composite products made of technical ceramic and metal. The requisite metal-working processes and assembly activities are carried out in-house. We produce both small and larger series. Ceratec develops and manufactures products made of technical ceramics for customer-specific applications.

Production capabilities

Green stage shaping and sintering – OD grinding, max 500mm, max length 1500mm – Honing min 0.6mm inner diameter – Flat and profile grinding – Centreless grinding min 1mm, max 60mm (tolerance 2 microns) – Lapping with surface roughness of Ra 0.01 µm – Coördinate grinding – Drilling of small holes, min 0,3mm – 4-axis CNC grinding – CNC OD grinding – CNC turning and milling – Brazing of ceramics and corrosion resistant steel.

Assembly of metal ceramic components

We are a main supplier for various kinds of industries; mechatronics, semiconductor, space & aerospace, medical, automotive, energy, optical, (petro)chemical, R&D, pump industry etc. The ceramic precision products we supply are engineered in house, designed with solid works & cosmos, green shaped & sintered and ground with state-of-the-art (CNC) grinding machines.

Following properties make our ceramic components successful; low density, high stiffness, electrical insulator, suitable for high vacuum, wear resistant, smooth surfaces, corrosion resistant, non-magnetic.

Ceramic on the right spot!

Kees A. Visser

Director

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ceratec®
TECHNICAL CERAMICS BV



DARE!! Development

DARE!! Development is a Research & Development company based in Woerden, The Netherlands, specialized in the development of analog RF and EMC measurement instruments. In the past 20 years DARE!! has acquired a strong name in RF electronics. With the successful implementation of several daring RF projects for civil and military use, DARE!! Development is always stretching the limits.

Specific expertise includes

Our expertise lies in the field of:

- RF signal generation
- Analog LASER applications
- Custom made RF filters
- Custom made RF mixers
- Custom made antennae, including custom patch antennae

In our state of the art facilities we can simulate designs, build fast prototypes and perform accurate measurements. As we can perform the total activities in house we have a very fast research and development cycle. Next to the hardware development we have our own embedded software team which has also expertise in the RF field.

References

DARE!! Development has performed projects for Dutch Defense, Dutch Government and many private companies. Our measurement systems are sold worldwide to renowned customers. Recently a RF power meter has been developed for the linear accelerator of DESY, Hamburg, Germany. This unique power meter is capable of measuring RF signals till 18 GHz at an unprecedented measurement speed of 1 Msamples/sec. At this moment the measurement speed is increased to 5 Msamples/sec. At the same time a trigger input/output is added.

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Technical Director

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45 employees



www.dare.eu/development

DARE!!
Development

Delft Neutron Instruments BV

The long experience of Delft University of Technology in the development of instrumentation for neutron science now serves the global neutron scattering community through a spin-off company. Delft Neutron Instruments designs and delivers a wide variety of high-tech components for polarized neutron applications tailored according to your specifications:

- High-frequency magnetic flippers and our in-house developed HF-generators
- Foil-based flippers (like in SESANS at the TU Delft)
- Coils for adiabatic spin rotation
- General purpose custom build DC coils and guide field configurations
- Complete add-ons for polarized neutron and Larmor labelling applications (like on OFFSPEC at ISIS in the UK)
- Our product range will be expanded in the future, please contact us if you need any other components or instruments.

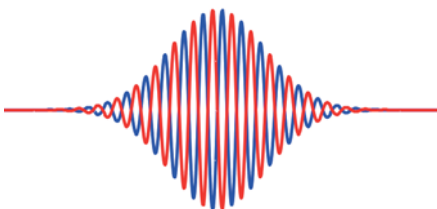
Delft Neutron Instruments BV delivers the full package: not only a component but also design, specify, install, and supply test reports and simulations.

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Delta Elektronika BV

DC Power Supplies

Delta Elektronika designs and manufactures DC power units since 1959. A power supply is seen as a minor part of any equipment and often taken for granted. For many just an electronic box ordered at the last moment. It can be compared with our heart. It's often neglected and we tend to pay even more attention to our hair. But if the heart fails the system goes down.

Design concept

By reputation, a Delta power supply must be reliable. This is why our design concept has a strong emphasis on excellent technical specifications and long life. The specifications of our products may seem unrealistic but turn out to be even better when measured. Delta users expect perfection and an almost infinite life time at continuous full power and low cost of ownership. An ongoing research program has resulted in production designs that can meet an ever increasing number of specifications.

Result

As a result of our design philosophy the units react more than 10 times faster on load transients, produce hardly audible noise and produce 10 – 30 times less electromagnetic interference. Delta customers will never face any problems due to radiated or conducted emissions of our power supplies. The same design philosophy applies for immunity: the toughest standard is not good enough for us. A Delta power supply will operate totally reliably even in a very noisy environment.

All our power supply units are thoroughly tested before being dispatched to the customer. All this ensures the long term correct functioning of each unit and client satisfaction. Delta Elektronika produces world class DC power supplies.

We are proud to hear our customers say: *"you are making them too well."*

Service and Support

Just designing and producing excellent products is not enough. At Delta we believe that excellent power supplies are incomplete without outstanding service and support. Only the best manufacturers do not let you down when problems might occur. We keep on helping. Also when equipment has been bought many years ago or when you made the mistake.

For us it is only natural that Delta users get technical support and advice about applications within 24 hours. Lead times are as short as possible and our product support is at least 10 years after the production of a unit has been stopped. Just because our customers appreciate this.

Delta Power Supplies: excellent products, excellent service!

M.A. Giltay

Sales

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www.delta-elektronika.nl

 **DELTA**
ELEKTRONIKA
DC POWER SUPPLIES



Demaco Holland BV

If you are looking for...

- Support in Cryogenic Engineering
- Cryogenic expertise in manufacturing and installation of your Cryogenic Infrastructure like
 - Helium Transfer Lines
 - Helium Distribution Valve Boxes
 - Helium Interconnections between your facility and the storage tank or liquefier
- Cryostats
- Liquid Nitrogen Systems
- Optimisation or Modification of your existing Cryogenic Infrastructure

...please don't hesitate to contact us and send us your enquiries. It will be our pleasure to provide you with a suitable proposal with your Cryogenic Solution.

We provide Technical Consultancy to our customer whenever is required. Demaco is the leading knowledge driven cryogenic infrastructure partner for industrial gas companies, scientific institutes and EPC contractors world-wide. Our team of cryogenic specialists, Cryogeniuses, is committed in supporting our partners in their daily effort to transport and condition all liquefied gasses. By advising on, designing, engineering, manufacturing, testing and installing customer specific vacuum insulated solutions of superior quality we continuously provide the highest yielding infrastructure in the industry.

References

CERN

- Multiple Helium Transfer Lines for LEP, LHC, ATLAS and CMS
- UHV-chambers for LEP separators
- Helium Siphons
- Liquid Argon Valve Box

DESY

- HERA-by-pass Helium Transfer Lines
- Bunch Compressor bypass pipelines I and II
- Helium Valve Boxes and Transfer Lines for the X-FEL Test Facility
- Extension for the TTF Transfer Lines

ESA

- Main Valve Boxes for the LSS Satellite Test Facility
- LN2 Transfer Lines and Phase Separators

Triumf – NSRRC – ESRF – KIT – GSI – ITER – PSI – ISRO – NIKHEF – Helmholtz – Max-Planck

Ronald Dekker

Director

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100 employees

www.demaco.nl
DEMACO



Demcon Advanced Mechatronics

About DEMCON

DEMCON researches, develops and produces high-tech systems and products for our focus areas of high-tech systems and medical devices. Due to our production capabilities, DEMCON can differentiate our self from other suppliers. Our clients receive not only a blueprint but also a working product or system.

Markets

DEMCON is a high-end supplier of technologies for the high-tech systems and medical devices markets. Within these markets, our focus is primarily on development and production.

DEMCON is highly proficient at applying, technical skills and high level of expertise in order to come up with surprising solutions to complex problems. The knowledge gained in one market enables us to look at problems in other markets in an open and creative manner.

Capabilities

We have employees from a wide range of technical disciplines in every project group and make use of a large number of facilities.

- Mechanical engineering
- Software engineering
- Electronics engineering
- Industrial design
- Physics/optics
- Clean room
- Prototyping
- Production

References

Philips – ASML – FEI – DORC – SIEMENS – TE Connectivity – Bronkhorst

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Turnover: 20 M€ | 140 employees



ECM Technologies

ECM Technologies is a company offering non-conventional electrochemical machining solutions, with its headquarter and production facility located in the Netherlands. It has been operating on the global market from its inception in 2003. In 2015 ECM technologies merged its activities with Metalmembranes, a company specialized in transferring metal into ceramic by means of electrolytic plasma oxidation.

Products & Services

ECM Technologies focuses on offering unique Research & Development (R&D) on materials, followed by Production of the requested product, as well as Consulting & Training services within the expertise of precision electrochemical machining (pECM) and Electrolytic Plasma Oxidation (EPO).

Precision Electrochemical Machining (pECM/ECM)

Electrochemical Machining is an advanced metal-working technique which can machine products difficult or impossible to design through conventional machining. It is an extremely accurate technique, capable of machining any electrically conductive work, even improved and new to machine metal alloys irrespective of their hardness, strength or thermal properties.

Electrolytic Plasma Oxidation (EPO)

Electrolytic Plasma Oxidation is used for creating ceramic layers with unique properties e.g. wear resistance, hardness, strength, absorption or thermal properties. By means of EPO it is possible to create nanometer pore sized membranes in ceramic, or flexible thin (10-50 micrometer) ceramic for different applications as well other specific applications have been developed.

Application

Process application: Electrochemical Machining can add accuracy and substitute the following processes: drilling, polishing, milling, grinding, and roughening; along with machining & designing what conventional-machining cannot, such as micro-machining, shaping hard to reach locations, ow turning, and die-sinking among others.

Industry application: Furthermore, there are no boundaries as to where pECM/ ECM/ EPO can be applied. ECM Technologies have researched and developed for the majority of the high tech industries: Aerospace & Space, Automotive, Medical, Energy & Offshore, Consumer products, and Machine Tooling.

References: Multinationals within Consumer Products – Oil & Gas – Energy market – Aerospace/ Space and medical market are available on request.

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CEO

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Turnover: 1.0-1.2 M€ | 10 employees

www.electrochemical-machining.com



ECM Technologies

Innovative Electrochemical Machining Solutions



Entechna Engineering

Entechna has been serving the high tech industry and academia with high-quality solutions in the field of mechatronics and mechanical engineering since 2010. Our extensive background in academic level Design Principles and experience with optical and electromagnetic systems allows us to quickly reduce complex problems to their essence. From here on we generate creative and innovative solutions without wasting time on symptom solving or losing sight of practicality and cost.

Our projects range from fast feasibility studies to extensive concept-to-prototype developments and turn-key instruments. A common theme is the large technical complexity which suits our role as lead engineer or system engineer perfectly. Additionally, we have experience with documentation and manufacturing aspects of big-science projects and complex industrial machines.

To summarize: if you need mere manpower, we may not be your best choice. However, if you need brainpower, give us a call!

A selection of our customers:

SRON, TNO (ESO), Trioptics GmbH, Demcon, VDL (ESO), Mecon, VSL, Eindhoven University of Technology, Abbott, High Tech Institute and several semicon equipment companies.



Dr.ir. Roger Hamelinck
Dr.ir. Chris Werner

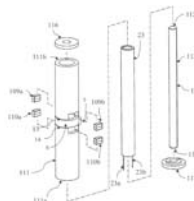
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www.entechna.nl



ENTECHNA
ENGINEERING



Futura Composites BV

Specialists in Fibre reinforced Composites

Components for products of the future. That is what Futura Composites produces. As a specialist in fibre reinforced composites, we are a reliable partner for all manufacturers of high-grade technical applications.

Futura Composites operates at the very highest technical level. We supply products of high-grade material according to unusual designs, which require extensive engineering work and are produced using highly advanced techniques. An extremely high delivery reliability complements the picture.

Technology

Futura Composites offers solutions for the technological challenges encountered by specific clients. We do not supply standard but only tailor-made products. Each product we make requires some measure of innovation. That is why creativity is central to our working methods.

Futura Composites performs the entire production process in-house, from design and engineering to production and testing. For this reason, too, we can guarantee the very highest quality.

Futura Composites is certified Iso 9001:2008 / Iso 14001:2004 / Iso13485:2003

Production techniques

- Filament winding
- Prepreg (In and out of Autoclave)
- Resin Infusion
- Sandwich Construction
- Resin Transfer Moulding (also Vacuum Assisted)
- Machining Composites
- Testing Composites

Materials

- Epoxy
- Phenolics
- Glass Fibres (E-R-S)
- Carbon Fibres (HM/HS – Pitch/PAN)
- Aramids
- Dyneema

Martino Borgo

Managing Director

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Grontmij

Grontmij provides consultancy, design & engineering and management services in a broad range of market sectors related to the built and natural environment. We work in all sectors, ranging from infrastructure all the way to urban development, Energy and Water.

Within our range of expertise, we aim for European leadership in five Group growth activities: Energy, Highways & Roads, Light Rail, Sustainable Buildings and Water. Our guiding principle is sustainability by design which is a leading value proposition for our customers.

Grontmij ranks among Europe's largest engineering consultancies and has a presence in the Netherlands, France, Denmark, Sweden, Belgium, United Kingdom, Germany, Poland, Turkey and China. We have approximately 7,500 professionals around the world where we work on a project basis.

Our envisioned future – what we aspire to become, to achieve and to create

- Recognised by our clients for market leadership and quality of delivery.
- 'Sustainability by Design' is our leading principle.
- Preferred company for talented professionals and offering ample opportunity for development.
- Among the best on financial performance in the Consulting & Engineering industry.

Core purpose – our fundamental reasons for being

- We enable our clients to make informed decisions and well-considered investments as they develop our natural and built environment.

Core values – our enduring beliefs: engaged, collaborative and reliable

- **Engaged:** Our engagement is driven by our clients' desire to improve life and society. We have the courage to develop new ideas and pursue new ways of achieving a sustainable future. We stay committed, overcoming problems and obstacles without compromising our integrity. Our working environments ensure that everyone's untapped source of creativity adds value to our clients' solutions.
- **Collaborative:** For us, collaborative means being part of a collective effort to meet our clients needs. We pool our knowledge, skill and expertise – acting as one company and sharing the same goals. We work together to find win-win solutions with empathy and respect for all. Together we celebrate our success.
- **Reliable:** We aspire always to perform and deliver – on time and on budget. We do more than just the job; we do it well and we are always there for our clients – now and into the future. Clients, partners and colleagues can all rely on us to deliver quality performance. We aim to be down to earth and practical in all our dealings.

Barry van Sloten

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Harsveld Apparatenbouw B.V.

Engineering, manufacture and installation of

- Piping
- Plate- and construction work
- Pressure vessels and tanks
- Heat exchangers
- Skidbuilding

Materials

- All Steel and Hi alloy Steels
- All Stainless Steels and heat-resistant Steels
- Duplex and Super Duplex
- Aluminium
- Titanium, Hasteloy®, Incoloy®, Inconel®, Monel®, Haynes®

Certified

- ISO 9001
- ISO 3834-2
- PED Module H and H1
- Workshop Approval Germanischer Lloyd

"We have built the Smelt Reduction Vessel for the Hlsarna pilot plant"

References

Albemarle – Danielli-Corus – EXXON mobil – Gardner Denver Nash – Linde Gas – Tata steel – e.a.

Rob de Visser

Managing Director

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Heemskerk Innovative Technology

Heemskerk Innovative Technology offers strategic and operational consultancy in the areas of robotics, mechatronics and hightech systems, and primarily targets the European institutional market.

Product information

Innovation Management – Heemskerk Innovative Technology (HIT) blends innovation management, systems engineering, and people management to support research projects and to develop spin-offs into proof of concept and market readiness, working in close cooperation with institutes, universities, and industrial partners.

ITER Remote Handling studies – During operation, plasma facing components of the experimental fusion reactor ITER will get activated and contaminated with radioactive and toxic materials. Remote Handling (RH) maintenance is performed by master-slave telemanipulation techniques. Heemskerk Innovative Technology develops new RH technologies and tools and validates RH maintenance sequences.

Virtual Slave – In an industrial partnership with Dutch Space and TreeC, HIT develops a simulation tool to simulate in real-time kinematics, dynamics and physical interaction of designs and environments imported from CAD software. The Virtual Slave system is multifunctional; it can be used to analyse the maintainability of components in the design phase, to validate maintenance procedures, to train operators and to provide operational support during maintenance operations.

References

ITER – Dutch Space – FOM Insitute DIFFER – FlexGen – TNO – Oxford Technologies – VDL APTS

Dr. Ir. C.J.M. Heemskerk

Managing Director

Merelhof 2

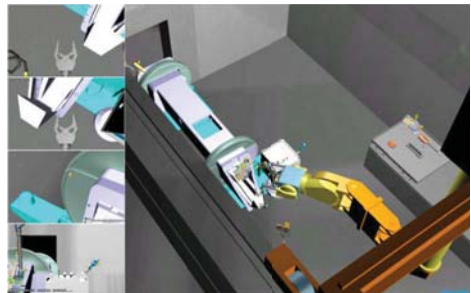
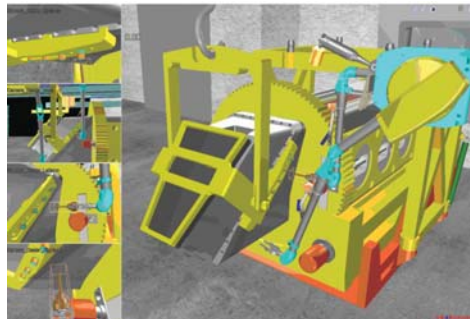
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Turnover: 400.000 € | 7 employees

**www.heemskerk-
innovative.nl**



HEINMADE

HEINMADE develops and delivers piezo system solutions ranging from a single bulk piezo to servo controlled multiple axis motion platforms. With our long term experience and extended network, we are able to detect critical aspects, to control and solve these aspects and to provide reliable solutions.

Product information

Through collaboration with Noliac (DK), Nanomotion (Isr) and Piezomechanik (DE), HEINMADE offers a wide portfolio of standard products and system solutions. Over the years HEINMADE has extended this portfolio with developed custom made designs to meet the high demanding requirements of the high tech and medical industry.

Some examples of systems in production are; multiple axis long stroke motions systems, transducers, sensors and active damping systems. Present R&D work is focused on active damping, accurate dispensing and high force high precision stages. HEINMADE supplies basically all piezo related components and (sub-) systems:

- R&D work on piezo components and integrated systems.
- Design, engineering and supply of high precision metal parts like hinge structures, etc.
- (Encaged) piezo actuators and benders (high and low voltage).
- Piezo motors and steppers.
- Short and long stroke piezo stages (actuator and motor based).
- Drivers and controllers for piezo actuators and motors.
- Active vibration dampers.
- Dispensing systems for low vapour pressure or high viscous substances.

References

Philips Apptech – ASML – ESO – TNO – TU Delft
– TU Eindhoven – TU Twente – VSL (NMI) – FEI

Hein Schellens

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Turnover: 1.0 M€ | 7 employees

www.heinmade.com

HEINMADE
supplier piezo ceramic solutions



Hitec Special Measuring Systems

Hitec Special Measuring systems BV develops and manufactures off-the-shelf and customer specific current measuring systems for AC and DC currents up to 50kA with scientific class accuracy and stability.

Product information

Hitec Special Measuring System, part of the Hitec Power Protection Group, has a long and impressive history in developing and manufacturing of tailor made current measuring system for AC and DC currents.

Hitec was the first to introduce a revolutionary high precision current measuring system based on the Zero-flux principle.

The Zero-Flux principle enables galvanic isolated measurement of AC and DC currents with supreme accuracy, linearity and stability.

Many thousands of our systems have already been applied in High Voltage DC, Scientific and industrial applications.

References

Science: All major scientific research centers

High Voltage applications: Most of the High Voltage Direct Current links

Industry: Power metering/data logging, lithographic systems for semiconductor industry and medical imaging

R. Lachminarainsingh

General manager

Bedrijvenpark Twente nr. 40

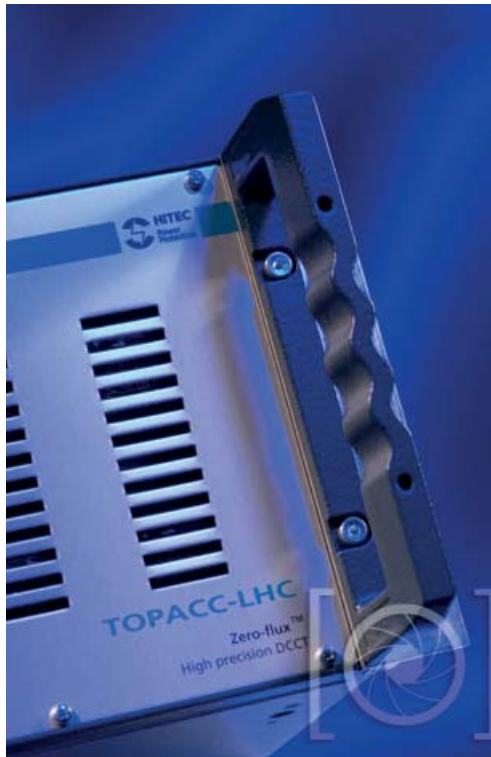
7602 KB Almelo

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Turnover: 5 M€ | 9 employees

www.hitecsms.com



Hositrad Vacuum Technology

Hositrad Vacuum Technology combines more than 45 years of experience in vacuum and cryogenic technology. We supply standard vacuum parts CF, KF and ISO components from stock.

Product information

Hositrad Vacuum Technology

- Have capabilities covering all areas starting from a standard flange up to designing a complete vacuum system,
- Manufacturing, repair and after sales service of vacuum equipment
- Experts in TIG-Laser and Microplasma welding en He. leak testing <1x10⁻¹⁰ mbar l/sec.
- Laser welding for medical devices and clean technologies
- Own production and an AutoCad design in Holland and in the Far East
- "Custom made specials" according to customer drawing in our workshop
- Supply the following products: CF-KF and ISO vacuum components – Electrical/Linear/Rotary Feedthroughs – Edge welded bellows – Isolators – View ports – Fiber Optics – Glass to Metal seals – Manipulators – Ferrofluidic feedthroughs – All Metal Valves – Angle Valves – Gate Valves – Diode Ion/Triode pumps and Titanium sublimation pumps – Cryopumps – Cryostats

Hositrad Vacuum Technology represent

Ceramtec: Ceramic-to-metal sealing technology. Hermetically sealed electrical & optical components include D-type/circular feedthroughs, multipin connectors, coaxial connectors, thermocouples, isolators, viewports and accessories.

These components are ideally suited to support optical, gas, liquid, power, instrumentation and sensing applications.

ColdEdge Technologies: provides custom <4K to 1000K closed cycle cryostats with interfaces.

Extrel: Extrel is the world's leading manufacturer of Research and Proces Mass Spectrometers, Residual Gas Analyzers (RGA's), Quadrupole Mass Spectrometry Systems and Components from 1-100 amu to 16000 amu

Thermionics: Manipulators, Valves, E-Guns, Ion Pumps, MBE Systems, Mechanical feedthroughs.

References

CERN – DESY – (XFEL – EMBL – Hasylab Hamburg) – Helmholtz Zentrum Berlin (Bessy – HMI) – FZ Jülich – GSI Darmstadt – KIT Karlsruhe – GKSS – DLR – IPP Garching – PSI Villigen – ESA Noordwijk – ESRF Grenoble – ALBA Barcelona – FOM-Nikhef Amsterdam – FOM Nieuwegein and all Universities and Research Labs in Europe.

J.L.J. (Jurgen) Tomassen

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Turnover: 4 M€ | 10 employees

www.hositrad.nl



IBS Precision Engineering BV

For over 20 years IBS Precision Engineering has been helping its customers to realise their demands for measurement, positioning and motion systems where ultra-high precision is required. With our expert foundation in metrology, we understand the true meaning of precision and how to help our customers achieve it.

IBS products and solutions can be found at leading companies world-wide serving industries from disk drive to semiconductor equipment, printing and medical systems. In the field of machine tools we serve both builders and users with measurement systems delivering significant bottom-line productivity improvements. For the research community, we provide support from standard ultra-precision components to custom made systems.

At IBS we have a long history in successfully helping our customers address unique problems. We do this through both our standard products as well as our design house. The latter provides support from feasibility through to pilot production for modules through to machines.

From advice on component application to full system design and realisation, our aim is to deliver the innovative solutions required by our clients where leading measurement or high accuracy motion capability is critical.

Hans Ott

Sales & Marketing Director

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INCAA Computers

INCAA Computers is a well-established company with over 35 years experience in design and manufacture of professional high-tech electronic equipment for industry, science, and OEM. We provide solutions for technical automation projects and take system responsibility.

Product information

Applications extend from industrial and scientific scalable data acquisition systems through transient recorders, timing systems, superconducting magnet test benches and power supply control modules to alarm and safety systems.

Hardware Development: Modules can be designed from scratch or standard modules can be tailored to customers specific needs. Characteristic product properties are the high quality level and the relatively small to medium production volumes.

Software Development: Due to our in-house hardware expertise we know best to separate projects into hardware and software functions and how to interface them to build innovative fail-safe systems. Specialisations include system software, databases and graphical user interfaces.

System Integration: We not only deliver hardware modules and software packages but also integrate these with third-party components into complete functioning turn-key systems.

References

Our client base includes a wide selection of international organisations and companies:

CERN – Sincrotrone Trieste – GSI – UKAEA – MIT – FZ Juelich – Alstom – ASML

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Project manager

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Irmco BV

Irmco bv has been formed in 1972.

Irmco bv developed the legendary educational toy **Sjobus**.

Irmco BV takes the lead in co-operation between reliable Dutch companies.

Heeze Mechanics, Schelde Exotech, Innovation Handling, Sunfys, TNO.

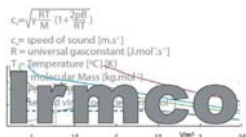
Irmco bv gathers the technology experience and know-how to design and manufacture:


- **waveguides**
- **measuring instruments based on acoustics**

Michael Koot

Director

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EFDA
EUROPEAN FEDERATION OF DUTCH ACADEMIC RESEARCHERS
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EUROPEAN UNION DEVELOPMENT AGREEMENT


Modifications and transportation of the RS
ITER launcher test mock-up



International
Thermonuclear
Experimental
Reactor

Vacuum tests on Dutch waveguide section May 27
First mmw test May 28 and 29 (Remote during weekend)



Vacuum tests:

- 1 mbar after 1 hr
- Effective turbo pumping after 1.15 hrs
- End pressure 5×10^{-4} mbar after 2 hrs
- Expected leak at the seal surface !!!!

B.S.O. Eindhoven progress meeting June 22 and 23 2005

A-7-0005

Janssen Precision Engineering

Precision engineering and mechatronic solutions in ambient, vacuum and cryogenic environment.

Company profile

JPE is an independent engineering group for development and realization of high-tech machinery and instruments. Especially where accurate and stable performance is involved in the sub-micron area.

The company was founded by Huub Janssen in 1991 after several years of experience in the high-tech industry of companies like ASML and Philips. Nowadays, we have built up a team of professionals which are able to find and implement solutions for very challenging engineering requests. JPE has gained multidisciplinary knowledge of technical issues at every level. From system level down to component level, from definition and design, up to prototyping and qualification. By following a systematic approach with high involvement, quality and efficiency are guaranteed.

We develop high-end opto-mechanical applications to be used in deep vacuum as well as cryogenic environment. Our developments typically find their way in an international market like:market like:

- Semi-conductor industry,
- Astronomy and space,
- Scientific experimental instruments

Competences

- Precision engineering
- Mechatronic solutions
- Nanometer positioning
- Positioning in cryogenic environment

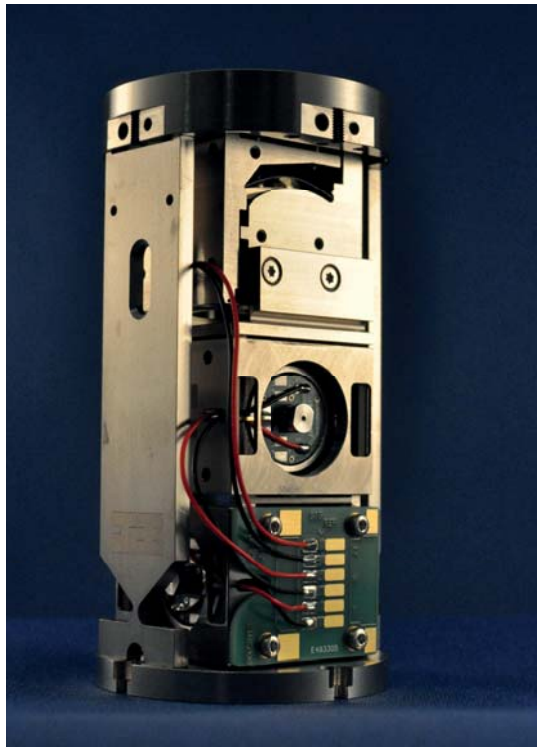
Huub Janssen

Founder & CEO

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20 employees

www.jpe.nl



Kin Machinebouw

System supplier to the industry. Long lasting experience combined with craftsmanship. Specialized in certified welding constructions and the machining thereof.

Facts

- Expert in certified welding constructions in various materials; ISO 3834-part 2 and PED module D certified.
- Modern machining capabilities: boring 1.5x1.5mtr, milling upto 4,5 mtr, horizontal turning up to 8 mtr, vertical up to 6 mtr.
- Experienced engineering capable of co-ordinating large projects (up to € 3 mio).
- Experienced in the assembly and project co-ordination of complex machines.
- Extensive network of sub-contractors.

Industry served

Special machines and apparatus for e.g. defense, nuclear, off-shore, food and aviation industry. Supplier of pressure vessels, lifting and towing equipment and amusement rides.

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www.kin-machinebouw.com



Landes High End Machining

Reliable supply of mechanical parts ready for assembly is the core competence of Landes High End Machining. Landes incorporates 30 years of experience in the manufacturing and on-time delivery of complex and/or accurate components for high end industries. Products are realised by means of CNC-turning, CNC-milling and CNC-measuring. This privately owned business was established in 1985 and has demonstrated consistent growth in turnover and technology development over the years. Landes currently employs approx. 50 employees and is both ISO 9001 and AS-9100C certified.

Capabilities

The capabilities within Landes range from the industrialisation of new components and qualification of manufacturing and outsourcing processes as well as high end machining of titanium (all grades), aluminium and high alloy steels. Manufacturing activities may include special processes like heat treatments, surface treatments, finishing and cleaning with the aim to deliver components that are ready for next higher assembly. The dimensions of Landes in-house manufacturing go up to 1000x1000x1000 mm. Documentation and traceability are an integral part of the quality management system within Landes.

Products

Structural parts, precision components, turbine components, landing gear components, interior components, frames, housings, limiters, rotation parts, pick- and place components, etc.

Markets

Aircraft- and Space industries, Defence (land systems, naval systems, air bound systems), Semicon industries, Optical industries, Medical equipment, Offshore industries, Special machinery.

References

Fokker – Airbus – Marshall Aerospace – General Electric – Stork – Pratt & Whitney – VDL – Siemens – Fresenius – etc.

Certification

ISO-9001, AS-9100C

Peter Boogaart

Sales Manager Aerospace & Defence

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Landes
HIGH END MACHINING



Machinefabriek Boessenkool B.V.

Machinery Manufacturer Boessenkool: knowledge, competence and facilities. Co-maker mentality. Pro-active thinking and handling. Based on a complete know-how and service mentality. Engineering, steel structures, metalworks, mounting facilities and mechanical machining. When needed also supplied with controls, electronics and final treatment. For that reason "Made by Boessenkool" is a guarantee for quality and success to many of our customers.

Product information

Product	Description	Customer
Beampipe Bake Out Shell	Beampipe for electrons, matter research	CERN (CH)
Revolver Mobile Undulator Carriage	Electron fibrillation tool, matter research	E.S.R.F. (FR)
Galacsi Structure + Graal Tools	Alu structure to mount mirrors for space research	E.S.O. (D)
Product & Utility Swivel, Chainstopper	Off-shore FPSO (Oil Production & Storage Unit)	SBM Offshore (FR)
Gas-Compressor	Heavy Duty Gas Compressors	Siemens (D/NL)
Compression Piston Rods	Piston Rod for high pressure compressor	Thomassen Compression (NL)
Rollers & Shaft for Test Bench	Rollers & Shaft of a testbench for trucks diam. 5 mtr.	Froude Hofmann (GB)
Warehouse Stacker Crane	Order picking unit for warehouses upto 40 mtr. height	FKI Logistex (World Wide)
Vacuum Vessel	Vacuum vessel for Wafer-Stapper production	ASML (NL)
Bearings & Gears	Bearing & Gear for Windmills upto 4 mtr. Diam.	Siemens (D) / Flender (D)
Services	Description	Max. weight
Milling	Upto 20 meters to 6 meters to 3 meters	120 tons
Boring	Upto 20 meters to 6 meters to 3 meters	120 tons
Turning	Upto 6 meters length with a diameter of 1 meter	20 tons
Vertical Turning	Upto 5 meters diameter with a height of 4 meters	60 tons
Fabrication	To customer specifications	120 tons
Welding	Certified welding in all materials and thicknesses	120 tons
Machine-building	Hardware incl. electronics, pneumatics and hydraulics	120 tons
Assembly	Products upto 60 meters with weight upto 120 tons	120 tons
Project-management	Projectmanagement incl. traceability	
Powder coating	Upto 4 meters long	
Hoisting	Hoisting capacity inside the factory is 120 tons	Max. 120 tons

Ing. Eelco M. Osse

CEO

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Turnover: 8.5 M€ | 50 employees

www.boessenkool.com



Revolver Mobile Undulator Carriages for the E.S.R.F. in, France. Repeating Paralellism tolerance between the beams is 0,05 mm over 2,5 meters, incl. beam rotation.



Large Welding constructions including the Large Machining against small tolerances in just one factory!

Mat-tech B.V.

Mat-tech B.V. is an innovative metallurgical company with a proven track record as interconnection technology supplier. Mat-tech consists of two business units and focuses on research, development and production of high-tech soldering and brazing.

R&D and Production

Mat-tech Development & Testing has specialized in development, optimization and implementation of innovative joining technologies. Various services such as contract R&D (e.g. application and process development), consultancy (process improvement), testing services (reliability) and failure analysis, prototyping and special alloy production are offered. Mat-tech Production offers the opportunity to outsource your high-tech soldering and brazing production, for large series as well as for single pieces.

Mat-tech is servicing a wide variety of industries, a.o. medical, lab equipment, electronics, electronic components, automotive, machine building, process industry, solar industry and aerospace.

Know-how and Equipment

Both extensive know-how as well as in-house equipment are present at our company and through our trusted network.

A wide variety of equipment, such as Scanning Electron Microscopy equipped with Energy Dispersive X-ray Spectroscopy, Optical Microscopy, Meniscograph (Wetting balance) and furnaces for vacuum brazing, inductive soldering, etcetera.

Industrial applications

Mat-tech is servicing multiple industries, such as medical, lab equipment, electronics, electronic components, automotive, machine building, process industry, solar industry and aerospace.

Mo Biglari

Technical Commercial Director

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mat-tech 
innovative soldering & brazing



Megahard

Technology development services

Megahard is a high tech electronics design service provider. We have the capability to design in our own lab or we can provide talented trusted engineers to work at your organization.

The design service we provide can range from a PCB to a complete technology development including enclosure design and software development.

Research institutes and universities

Megahard has strong roots in the scientific research world. Our specialty lies in the development of apparatus for scientific research and application demonstrators of scientific research. Megahard engineering has many years of experience in development of lab and field-ready research tools and demonstrators.

Technology development capabilities:

- 3D designs and 3D rendering
- 3D printing/rapid prototyping
- PCB design and production
- Embedded systems programming, FPGA "programming"
- Functional testing
- Environmental testing

Technology support capabilities:

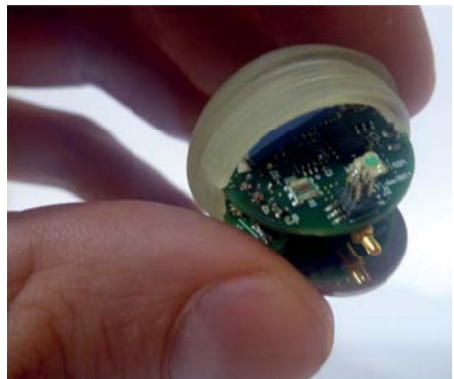
- Technical documentation writing
- Translating technical documentation and software: French, Dutch, English, Spanish, German
- Recruitment of specialized electronics design engineers

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Megahard
The design of your imagination.



MI-Partners

Innovative High-End Mechatronic Solutions

Our company

MI-Partners is your contract R&D partner for the development of high-end mechatronic systems. Offering the complete cycle of predevelopment, design, realization and testing of high-tech systems, MI-Partners can assist you in your development efforts. MI-Partners uses a compact and highly educated team which results in fast solutions that work. Operating in a wide variety of market sectors results in solutions that characterize themselves as fresh, innovative and out-of-the-box. Choosing MI-Partners means choosing for open communication throughout your project, profiting from the mechatronic approach and reaching your goals on time.

Our competences

To assist in developing mechatronic total solutions, MI-Partners has a high level of knowledge of the customary mechatronic disciplines and competences at its disposal:

- Design principles for precision engineering
- (Advanced) motion and equipment control
- Predictive modeling (dynamic/thermal)
- Dynamic error budgeting
- Floor vibration isolation
- Air bearing design
- Design for vacuum/contamination
- Magnetically levitated systems
- Optics
and of course:
- Project management
- Customer focus
- Cost awareness

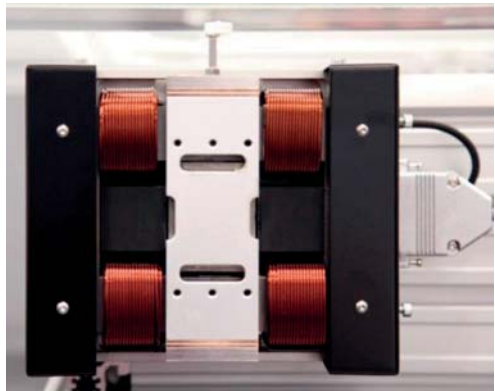
Leo Sanders

Director

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30 Employees

www.MI-Partners.nl



Mogema 3.0

The combination makes the difference

Mogema 3.0 is high-tech expert in welding, machining and vacuum technology. This unique combination of activities is what makes the difference: we are your partner right through from development up to and including delivery of the complete module.

We specialise in complex and large vacuum chambers and vacuum systems. Our expertise in welding, machining and assembly comes into its own for the manufacture of vacuum chambers.

Production techniques

Precision welding

- Wide choice of materials
- Broad range of sizes over 9000 mm
- Specialized production

Advanced machining

- Extreme accuracy to within hundredths of a mm
- Acclimatized production
- Enables highly accurate machining

Critical assembly

- Meeting every need

Our commitment to innovation and our belief in the importance of ongoing development is reflected in our investment in new techniques and expertise, as well as our partnerships with scientists and involvement in academic projects.

Sebastiaan Vrensen

Sales Manager

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mogema3.0



Montair Process Technology B.V.

Montair Process Technology B.V., established in 1971, provides customised turnkey solutions on a worldwide basis. Montair Process Technology B.V. is an independent member of the Manders Industries Group with affiliated companies established in the Netherlands, Belgium, Romania, India and the USA.

Product information

The core business of Montair Process Technology B.V. is divided into two categories:

- Air pollution control & thermal treatment systems
- Special process equipment

Turnkey projects

Montair Process Technology B.V. focuses its activities mainly on realisation of turnkey projects. From the design and engineering phase to the final start-up of the systems, Montair Process Technology B.V. will carefully manage all aspects of a project. All stages of a project are realised under our own administration in our brand new plant.

The manufacturing department of Montair Process Technology has a well-equipped machinery. This department mainly processes stainless steel, high-nickel alloys, aluminium and thermoplastics. The engineering and manufacturing department is also responsible for the development and assembly of complete control systems including HMI and data logging capabilities.

Montair Process Technology B.V. is certified according ISO 9001, SCC** and ISO 3834-2 (under construction).



René Francken

Managing Director

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MONTAIR
PROCESS TECHNOLOGY

member of mandersgroup



MTSA Technopower

MTSA Technopower designs and builds customer specific equipment, installations and machines. MTSA Technopower has own products which are used for switching high power at short circuit laboratories and atomic fusion. MTSA Technopower offers production capacity (manufacturing and assembly) and on-site service.

Product information

To initiate the atomic fusion process large amounts of energy need to be applied in a controlled manner. MTSA Technopower developed high power switches to make or break a high current at the right moment. Typical products we supply:

Make Switches – Safety Break Switches – Separators – Rogowski measuring systems

This type of equipment is being applied at KEMA, JET and various other short circuit laboratories, e.g. KPT, Toshiba, EETI, KERI and Ormazabal.

In addition MTSA Technopower designs and builds customer specific equipment, installations and machines. Within the nuclear sector we acquired a great deal of experience by taking over KEMA Techniek in 2003 and close relations we maintain with scientific institutes within the Energy Sector like ECN, NRG and TNO. For the nuclear sector we designed and built for instance:

Special remote handling systems for application in radio active environment – High power switch systems – Gas dosing systems – Special machines – Prototype installations – (Spare) Parts and modules/subsystems

Customer specific projects can be divided into the following stages, whereby we can join at any level:
Concept engineering – Basic engineering – Detail engineering – Procurement and manufacturing of parts – Assembly – Testing – Installation and commissioning – Maintenance

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Manager Marketing & Sales

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MTSA
TECHNOPOWER



Nedinsco

Nedinsco develops, designs and produces a broad range of photonic technology based systems for high-tech applications.

Nedinsco has many years of experience providing customers sophisticated systems consisting a combination of optical, mechanical and electrical technologies. Strategic partnership is a key concept in Nedinsco's approach to contemporary as well as future business.

Capabilities

With our extensive engineering and production knowledge and our state-of-the-art facilities we are providing customers with state-of-the-art and cost effective photonic based systems enabling them to become more successful.

Goal is to deliver qualified serial products and being able to manage the complete lifecycle of the product starting with a basic idea of the customer until the service and aftersales.

Products

Camera systems, spectrometers, photonic sensors, alignment telescopes, sensor platforms, bore sighting and training systems.

Markets

Diagnostics (medical, pharmaceutical, forensic, recycling and food branches), semiconductor and defence.

References

ASML – TNO – Carl Zeiss – Saab Defence and Security – FLIR

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Manager Marketing & Sales

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Nijdra Group

Precision is our profession, service is our passion!

Nijdra Group is a professional supplier specialized in high-tech precision components, complex (sub)modules and complete systems for the high-tech industry.

Nijdra Group cares for its clients' needs, from engineering, manufacturing, assembly and testing to supply chain management. Thanks to our extensive experience (since 1974) in the high-tech industry, we are capable of providing added value in any phase – from development to production, assembled and tested modules and machines. Furthermore, we provide our clients with support with their designing, guiding and producing a prototype as well as with the development from a prototype to serial production and assembly. We draw on our wide expertise in the field of manufacturability, scope of tolerance, use of materials, surface treatment, cost reduction, excellent quality and efficient assembly to achieve the optimum results for our clients.

Our range

- (Co)engineering
- Value engineering
- Production
- Supply chain management
- System integration
- Assembly
- Testing
- Our Quality:
- ISO 9001
- ISO 14001
- ISO 13485
- Testing facilities

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NRG

NRG is a high-end service provider. Based in the Netherlands, we provide products and services to nuclear industries, process industries and medical industries around the globe. For more than 50 years we operate the High Flux Reactor along with Hot Cell Laboratories, Decontamination and Waste Treatment facilities and other advanced nuclear infrastructures. We have an established, licensed site track record combining in-depth knowledge on radioactive material with broad operational experience.

We employ 500 world-class scientists, engineers, technologists, operational staff and highly qualified consultants in a wide range of nuclear technology, radiation protection and radioactive waste disciplines. Together we support the nuclear lifecycle from new build and operations to decommissioning and waste management.

Our extensive nuclear infrastructure allows us to offer a wide range of irradiation and post-irradiation services that cover all irradiation needs for industry.

As an independent organization, NRG offers support with confidential processes from product development to material qualification. We provide understanding of material behavior under neutron irradiation through standardized material test programs.

Lida Magielsen Msc.

Project manager Fusion Irradiation Solutions

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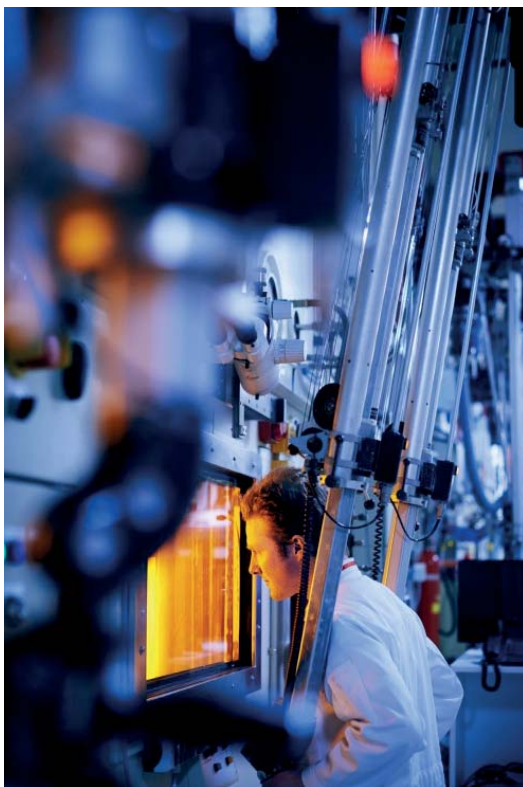
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Peter Haak Produktontwikkeling

High Performance Sensors and Instrumentation

Product information

Our core business is the development of high performance sensors and instrumentation for scientific and industrial applications, with over 20 years experience in this field. Our expertise is primarily based in the analog electronics domain, with an emphasis on low frequency and low power. For projects that may require any external expertise, we work with a broad network of specialists, e.g. in the field of physics, data processing algorithms or ASIC design, in order to provide you with an optimal solution.

We spend substantial resources on evaluating new technologies and constantly engage with professionals from neighbouring fields to be prepared for future inquiries. Regular participation in product definition and testing of “early samples” for leading component manufacturers and exchanging the test results and insights, enables us to go “far beyond the datasheet” and push the limits with confidence.

Due to our efficient way of working we can respond quickly to customer requests, and as such we can offer rapid prototyping and notable flexibility when it comes to last minute changes.

Our solutions are used in the semiconductor industry, in scientific research (ultra-precision current measurement, cryogenic reference thermometry), healthcare (EEG, *in-vivo* measurements) and other sectors. Typical examples include: thermal sensors with μK stability, magnetic and capacitive sensors for sub- μm positioning, highly sensitive hybrid optical detectors, sensors for mHz range noise cancellation.

Core expertise

- high resolution and low noise circuit design: discrete, IC-based or “composite” designs and hybrid circuits
- solutions for signal integrity in a real life environment: think of 1/f noise, popcorn noise, thermal EMF
- extensive knowledge of electronic components, materials and processing, circuits and systems

Services offered

- product development: concepts, analysis, design, prototyping, qualification
- consultancy: component and circuit advice, technology reports, reviews
- training and support with emphasis on implementation

References

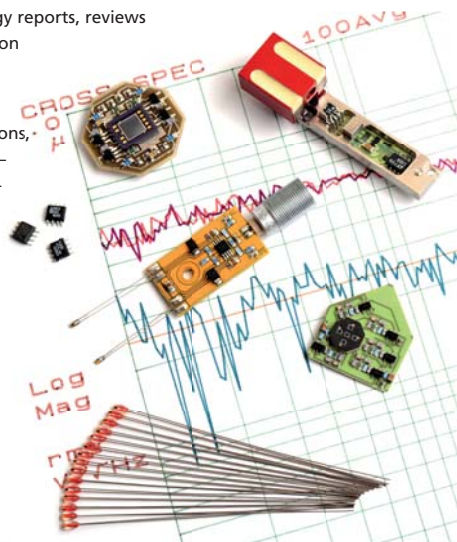
From small enterprises to large companies and institutions, including: ASML – CERN – Vistec (Leica) – SKF Research – Philips Healthcare – TNO – Nedap – Heidenhain – NXP – ABB – Shell

Peter Haak

director

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peter haak produktontwikkeling



PM-Group

DISCOVER PRECISION

Company Introduction

As a strategic business division of the PM-GROUP we as PM-BEARINGS are highly specialized in designing and manufacturing high precision bearings and advanced motion systems in ultra high quality. We are providing a complete range of linear bearings, frictionless slides, (piëzo)positioning tables and stages, which guarantees high levels of performances at competitive prices. Thanks to almost 50 years history of experience, new findings in research, combined with innovating linear technology, our products meet the highest accuracy and quality demands of today's industry and are successful in use world-wide. As a proud member of the PM-GROUP we are able to realize turn-key projects for our customers starting with design, project management, machining, assembly and after service.

Our activities

As a strategic business division of the PM-GROUP we are a leading company in the development, integration and manufacturing of linear guides, guiding systems, nano-positioning stages and mechatronical [vacuum] modules for several high-tech markets and Synchrotron initiatives.

Reference Projects

Our experience with particle accelerator projects and synchrotron initiatives started all ready a long time ago. We have good contacts towards the synchrotron activities with Brookhaven National Laboratory (BNL), Diamond Light Source (DLS) and the Paul Scherrer Institute (PSI). For many years PM-BEARINGS delivered complex ceramic bearings and they have already find a way to institutes as PSI. Furthermore we have a close relation with the Diamond Light Source (DLS) initiative in Great Britain. For DLS we deliver turn-key advanced beam-alignment modules combined with piëzo stage technology and sub-micron mechatronical integrated modules.

PM-BEARINGS Competences

Machining of exotic materials (Composites, Glass, Duplex, Hastelloy, Inconel, Nimonic, Invar, AMC, Titanium, Ceramics and Stellite) – from R&D to Serial production – Electro Chemical Machining (ECM) – FEM Simulation – Algor – CAD/CAM Design – Siemens NX7.5 – High Precision Machinery (sub-micron range) – Cryo Positioning Stages – Vacuum Positioning Stages – Nano Motion control – Linear technology – Piëzo technology – Nano-Positioning Systems – Mechatronical high precision modules – System Integration – Cleanroom facilities ISO class 5-6 (>1000m²) – Vacuum cleaning – (U)HV and UCV knowledge – Surface Treatment

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Q-Sys

"Q-Sys offers a unique service to motion system users. Whether your requirement is for a single system for research or development work or you are looking for a supplier of series production motion platforms, you have found the only partner you need. With its extensive experience in the specification, design and build of motion and positioning equipment, Q-Sys can take your basic outline or well defined specification and produce exactly the system you require, instead of trying to force an off-the-shelf product to fit your needs. The motion systems we produce use the very latest technologies to ensure performance to your exact needs, be it accurate motion control, precise positioning, stability, etc.

Q-Sys systems have applications in many varied industries and in every application there are a number of key measurables that define system performance. These include geometric and positional accuracy, acceleration and velocity and, some times most importantly, system eigenfrequencies and bandwidth. By a combination of detailed design, modern CAD tools and experience, Q-Sys offers systems that precisely meet the requirements of the given application in a cost effective and timely manner.

As a manufacturer of systems rather than components, Q-Sys is able to pull together the very best hardware available, including motors, encoders, bearings, drive amplifiers and multi-axis motion controllers. At all stages of the design and build process, Q-Sys engineers can work as closely with you as you require. From the initial concept discussions, through feasibility study, CAD design and on to system build and test, your involvement is encouraged. This will take the form of regular discussions, design reviews and sign-offs and even witnessed acceptance tests to validate system performance to the quoted specification.

As an added service to customers, Q-Sys is able to offer complete turnkey system solutions. This provides a motion platform configured as part of an overall package, that may include, for example, a laser source for welding, scribing or cutting, a safety or controlled environment enclosure, integration to existing inhouse systems, etc. In these cases the overall system is designed with safety and CE conformity in mind and is delivered, installed and commissioned with full certification. This method ensures your process is up and running far quicker than normal and with minimal impact on your own internal resources.

Finally, Q-Sys offers a comprehensive technical support service for many types of motion systems, ranging from telephone support, through system service and repair, to scheduled preventative maintenance contracts for production systems where availability and reliability are paramount."

Henry Over

Managing Director

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S&T

Science & Technology (S&T) has more than 10 years experience in the development of data analysis software for both engineering- and science data. S&T's expertise is applied in a wide range of domains, including space and earth observation, astronomy, oil and gas industry, navigation, and high-tech machinery.

Product information

The objective of S&T's data processing software is to extract as much information from sensor data as possible. The data processors systems are used to wide range of applications. These applications include (i) the extraction of scientific information from sensors such as Earth Observation sensors for atmospheric research and telescopes for space research, (ii) to derive an accurate estimation of a system's health so that imminent failures are recognized before they actual take place, (iii) to derive the exact positional information using various navigational sensors. For System Health Management (SHM) applications S&T has developed the Uptime tool. This tool encapsulates the state-of-the-art SHM technology to avoid unnecessary downtime, alarm rate reduction, fault diagnosis, and the prediction of imminent failures.

Our scientific data expertise focuses on the analysis of large science data-sets, data visualisation, simulation, the development of software-pipe-line systems and calibration algorithms. The S&T expertise focuses on the (pre-) processing and visualisation of raw data and the generation of calibration key-data for level 0-1 and 1-2 data processors. In addition we develop user interfaces that allow quick-access to level 2 science and housekeeping data.

References

System health management for the ESA future launcher rocket propulsion – calibration and data-pipeline activities for the LOFAR radio telescope telescope – ITER NL vacuum leak detection and localization – data quality control toolbox (Quadas) used for ground- and space segments for missions such as SWARM, CroyoSat-2, Galileo, Sentinel-1, Sciamachy – on-ground and in-flight calibration activities for various Earth Observation missions such as OMI, GOME, Sciamachy, and Tropomi.

A. Bos

Director

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Turnover: 6 M€ | 80 employees

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s[&t]

dependable solutions



**Uptime:
System Health Management
of Complex System**



Schelde Exotech

Schelde Exotech offers her clients design, fabrication and testing of high quality and complicated equipment. Schelde Exotech offers a wide range of products of Exotic materials like: Nickel Alloys, Copper Alloys, Cladded Steel, Aluminium, Titanium, Tantalum, Zirconium, etc.

Product information

Schelde Exotech has a rich history, based on last century companies: AKF Goes, Schelde Boiler Division and Schelde MT-Products. Schelde Exotech was founded in 1998 and is a member of the VE Group since 2009.

Schelde Exotech is specialized in the design and manufacturing of 'Special Products'.

Special components – Vacuum systems – Heat exchangers – Reactors – Pressure vessels – Airfin coolers – Gasification burners – Super heaters – Repair and maintenance in Exotech facility – Repair and maintenance at client's site/facility.

Schelde Exotech has a fully staffed Design Departement and uses modern design tools like: AutoCad (2D design program); Mechanical Desktop (3D design program); Inventor (3D modeling-design program); PV Elite (ASME Code calculations, PD 5500); Scades (RToD); BabsyWin (EN 13445 Code calculations, AD 2000); Ansys.

Besides special products and services Schelde Exotech is also a reliable partner for repairs and replacement projects. Schelde Exotech has a 24/7 helpdesk when it comes to emergencies. Schelde Exotech will mobilize a repair team at earliest possible convenience, usually available within a few hours.

References

Scientific experiments – Research Institutes / Universities – Nuclear energy – Oil & Gas – Energy – Defence – Particle physics – Chemical and petrochemical industry

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Sales Manager

Jos Mols

Managing Director

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Turnover: € 20.000.000,00 |
100 employees; total capacity 240,000 man-hours

www.exotech.nl



Settels Savenije van Amelsvoort

About Us

Settels Savenije is a group of companies where high level technology is combined with a passion for people. We invent, design, manufacture, assemble and test high tech equipment, products and tools. We also train technology professionals in both technical and leadership skills. What we are looking for is creativity, tenacity and downright enthusiasm for technology!

Development

Our research, development and engineering activities are covered by different expertise groups. Our groups closely cooperate and there are regular interchanges between projects. In our Research and Feasibility Group, we focus on creating new technology, new manufacturing processes and creating concepts. We out role proof-of-principle programs and feasibility studies and perform concept studies for high tech products and systems. Our Engineering of Tools & Equipment expertise group focuses on design and industrialisation. Projects link to test-tools, manufacturing tools and manufacturing equipment. Key focus in this group is on writing performance specifications, risk management, implementing design principles, design for manufacturing and design to cost. We have great experience in generating full TPD, integration in SAP and using several CAD environments (Unigraphics, ProE, Inventor etc..).

References

ASML – CERN – VDL Enabeling Technologies Group – NIKHEF – Panalytical-Elekta

Manufacturing

Our development activities are closely integrated with manufacturing, testing and assembly. This guarantees success in delivering complex and technologically advanced systems. It also provides a challenging and dynamic working environment where theory and practice are combined. In 2010 we invested in our precision factory Bakker Fijnmetaal BV. Our company is specialised in the manufacturing of small dimension, high precision metal parts and assemblies. In 2009, during our assessment of this factory, we recognised a level of craftsmanship and experience comparable to the high tech tool shop at Philips research in the 80s. The Bakker factory is an important source of knowledge and experience for our group. In our projects, understanding manufacturing technology and the risks involved is often more relevant than managing cost. In our supply chain design team, design experts and manufacturing experts always are involved as key members of our team.

We welcome you to visit us!

Are you looking for support with innovative solutions for complex mechanical, mechatronic and physical challenges? For a broad range of leading international customers in the (high tech) industry? Consider us!

John Settels

Director

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Sumipro

For over 15 years Sumipro supplies high precision optics for customers all over the world. Sumipro advises medical, aerospace and defense industries and designs and produces optical products and systems for them.

Product information

Sumipro realizes custom made solutions for your optical challenges: human contact lenses, optics for night vision systems or reflectors for all kinds of light sources, etc.

Consultancy and design – Sumipro offers innovative solutions in design, engineering and rapid prototyping, choosing the right optical components and creating superior optical systems. Our engineers are specialized in designing aspherical and non rotational-symmetric optic components to achieve systems with high performance and less components.

Quality optics – Sumipro develops and manufactures optical components and systems with competitive prices and a very high degree of accuracy. Our inserts have tolerances in focus lengths within 0.1% instead of the typical 1 till 5%.

Mirror optics – Sumipro specializes in aspherical and diffrax surfaces for mirrors. Max. diameter 300 mm, Material: various aluminium alloys, copper, Arcap, or other machinable materials. Applications: Space, Imaging optics and Laser applications.

Specifications for mirrors – Geometries realized: Spherical and aspherical surfaces – Fresnel and diffrax patterns – Off axis mirrors – Parabolas and ellipses.

Form accuracies in general reach PV-values smaller than 350nm with irregularity beneath 1 fringe (633nm), depending on material and size.

Coatings – gold, silver, aluminium enhanced or protective (non oxidizing) coatings.

Infra red optics – Sumipro specializes in aspherical and diffrax surfaces for lenses, max. diameters 240mm, most often realized in germanium, silicon and high purity float zone silicon (HPFZ): Applications: Night vision – Thermal imaging optics – Space applications

Specifications for IR lenses – Spherical and aspherical surfaces; Fresnel and diffrax patterns; Off axis; Parabolas and ellipses. Form accuracies in general reach PV-values smaller than 350nm with irregularity beneath 1 fringe (633nm), depending on material type and size. Roughness values (Ra) typically reach values of 5 nm or less.

Coatings – Lenses are commonly supplied with AR coatings, ranging from 3-5µm or 8-12µm or variations. Reflectivity $R < 0.5\%$ or even smaller upon request. All IR coatings are compliant with most MIL-specifications. Besides AR we can supply front sides with DLCs

Ben Lubberman

CEO

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Turnover: 1.5 M€ | 9 employees

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Technobis Group

Technobis Group is a developer and supplier of high-tech instruments and modules for the most dedicated national and international OEM companies.

Core competencies: photonics, mechatronics, assembly and testing

Technobis Mechatronics: Technobis Mechatronics specializes in complete product development projects, from the initial idea to a successful turnkey product, prototype or series product.

The main scope for which we use our technologies and competences are amongst others the complete turnkey delivery of:

- Inspection / measuring systems
 - Probe manipulators
 - Optical inspection systems
- Handling systems
 - Servo driven manipulators
 - Gripper units suitable for harsh environments, remotely operated
 - Vacuum chuck units suitable for harsh environments, remotely operated
- Design and engineering of graphite, carbon reinforced carbon and other ceramic parts used for the handling of products in a harsh environment.
- Life science instruments
 - Crystallization research
 - Confocal fluorescence microscopy

Technobis Fibre Technologies

Technobis Fibre Technologies specializes in the development and supply of total solutions in high-speed, high-resolution and multi-sensor fibre interrogators and sensors.

Optical fibre sensors find widespread use in a multitude of applications due to their small size, light weight, inertness to chemical substances, ability to withstand high temperatures (~900°C) and immunity to electromagnetic interference. As a result, optical fibre sensors are frequently used for applications such as structural health monitoring, condition based maintenance and other specific sensing applications. Technobis Fibre Technologies current interrogator systems allow resolution levels ranging from 1 picometer down to 2 femtometer wavelength shifts, allowing the user to detect nano strains at speeds up to 80 kHz or higher. This is of great benefit in a large number of highly demanding applications. In order to meet growing demand from the market, Technobis Fibre Technologies has initiated a trajectory to develop Photonic Integrated Circuits for the new generation of interrogators capable of meeting at least the same specifications.

References

ASML – Fei – Airbus – Boeing – NLR – Tata Steel – Vistec – Polytec – IHC – RGS development

Pim L. Kat

CEO

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25 employees

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www.tft-fos.com



Tessella

Tessella is the international provider of science powered software technology and consulting services. World leading organizations choose our unique blend of science, software engineering and sector expertise to deliver innovative and cost-effective solutions to complex real-world commercial and technical challenges. Our people are high achievers from leading universities and are passionate about delivering value to clients; more than 50% hold PhD qualifications. We are proud that our work makes the world a better place to live in: developing smarter drug trials; preserving the digital heritage of nations across the globe; minimizing risk in oil and gas exploration; controlling the orbit and attitude of satellites; researching fusion energy.

Services

IT Consulting Tessella IT consulting services advise businesses on how best to use information technology to meet their business objectives. We provide a broad range of IT consulting skills that include: business analysis, IT strategy, supplier selection and IT architecture.

Technical Consulting with over 100 PhDs in the company, and a broad experience in academic and industrial research across a wide range of sectors, Tessella constitutes a world class problem solving engine able to bring novel ideas and innovation to your business.

Science Powered Software Development & Systems Integration has been at the heart of what we do for over 25 years. In that time we have designed, built and deployed thousands of successful software systems and IT projects, for hundreds of clients.

References

Tessella customers include: JET fusion research laboratory – ITER – TNO – Deltares – European Space Agency – Dutch Space – Rutherford Appleton Laboratory – Diamond Light Source – AkzoNobel – Unilever – Shell – Koninklijke Bibliotheek

"Tessella's background in science and their professional approach to system design and development means we have been able to significantly increase our overall capacity, efficiency and quality."
— Aart Wismeijer, Senior Researcher, High Throughput Experimentation. AkzoNobel

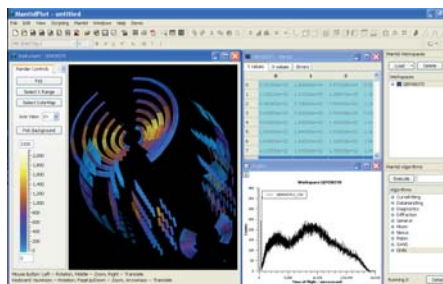
Dr. Eric Arends

Operations Manager

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Turnover: €23M | 240 employees

www.tessella.com



"...Tessella really understands R&D users and processes. This translates into responsive levels of support, and a real appreciation for how each application can be enhanced going forward." — Pete Keeley, Innov8 Programme Manager, Unilever

Thomas Thor Associates

A brief description of our business and main areas of expertise

Thomas Thor Associates provide Recruitment and Executive Search services to the global nuclear industry. Our clients include governments, regulators, utilities, operators, equipment manufacturers and supply chain organisations across the nuclear industry. With offices in Europe and the Middle East, we are set up to recruit nuclear professionals for our clients on an international scale. Our staff is multinational and multilingual and we have a live network of over 23,000 nuclear professionals globally.

What makes us different to our competitors?

- We are completely focused in the recruitment of professionals for the nuclear industry, both temporary and permanent staff.
- We have a successful track record in recruiting nuclear specialists for international clients and consortia.
- We are specialists in the international relocation of nuclear professionals.
- We represent multinational and multilingual experts in the nuclear industry.

Our network of candidates includes internationally mobile project and engineering specialists in new build, commissioning, operation and decommissioning in the following disciplines:

- Executive and Board Level Positions
- Project and Programme Management (design, construction and commissioning)
- Project Support and Control (Planning, Contract, Cost, Time Schedule)
- Safety (deterministic and probabilistic)
- Quality, Human Factors, Human Performance and Risk Management
- Licensing and Regulatory
- Process and Design Engineering
- Procurement, Supply Chain and Supplier Management
- Senior technical specialists – areas including I&C, HVAC, Thermo hydraulics, Reactor Physics
- Plant Operations and Maintenance
- Waste management and decommissioning strategy

The services that we offer

- Provision of interim/temporary consultants
- Recruitment of permanent staff (contingency, retained search, executive search and campaign management)
- Industry information and survey results

Kaoutar Belarbi

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Thomas Thor
associates



It is TNO's mission to help the advanced Dutch industry in innovating. One of the focus areas of TNO is Big Science with activities in ground based astronomy, nuclear fusion, CERN/CLIC as well as in space instrumentation and other projects.

Product information

TNO provides system architecture, multi-disciplinary (pre)design, alignment plans and execution, calibration plans and execution, and control of high-end opto-mechanical instruments and mechanisms. Realization and delivery of these systems is preferable done with industrial partners, certainly for larger instruments and for series production. Thus, TNO hopes to open new markets for these industries.

The instruments that TNO develops are characterized by picometer stability and sub-nanometer positioning accuracy; often operating in extremely hostile environments with long life time; and where necessary with intelligent image interpretation.

TNO's expertise in (adaptive) optics, mechanical engineering, control, image processing and contamination control enables the development of a wide range of complex instruments and mechanisms. Our flexure or magnetic bearing-based mechanisms have low friction and zero hysteresis. We produce quality optics with low wave-front error from a variety of materials including Aluminium, Fused Silica, Silicon Carbide and Molybdenum. We know how to prevent, monitor and remove contaminants, ensuring long life times. And our abilities to process and interpret images are worldwide unrivalled.

References

For nuclear fusion, TNO developed endoscopes (CXRS, Lidar), a control system for the plasma, contamination control tools and image processing for *in-situ* repair. For ground based astronomy, TNO has been playing important roles in the ESO programmes VLTi and E-ELT on delay lines, mirror actuation and laser launchers. TNO has developed tools for extreme precise measurements and control on aspherical optical parts and for rapidly finding particles on wafers. TNO's experience in space is applied in HIFI for Herschel, metrology for Gaia, OMI and soon also TROP-OMI and delay lines for Darwin. Important commercial customers of TNO in the field of high-end optomechanics are ASML and Carl Zeiss.

Bart Snijders

Business Development

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Turnover: 494,6 ME | 4,400 employees

www.tno.nl

TNO innovation
for life



Van Halteren BV

Company profile

Van Halteren Special Projects (VHSP) is part of the Van Halteren Group which has the following business activities: High Voltage Products, Defence and Industrial Services. The group is an independent family owned business with production facilities in The Netherlands, Poland and India.

VHSP aims for multidisciplinary projects where competences as advanced heavy machining, certified welding, assembly and commissioning are a requirement. Our production facilities in Bunschoten comprises 12.000 Sqm. equipped with state-of-the-art machinery, a modern construction shop and conditioned measuring facilities. Our staff is motivated, skilled and very experienced.

Markets

- Offshore
- Oil, gas and mining
- Applied science
- Shipbuilding
- Defence
- Sustainable Energy

Competences

- Advanced heavy machining
- Certified welding
- Project management
- Assembly, Integration & Commissioning
- Engineering
- Measuring up to 6 meter

Products

- Road wheels
- Simulators
- High voltage switches

Marco Klitsie

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VAN HALTEREN 



VDL Enabling Technologies Group

VDL Enabling Technologies Group is a globally operating tier one contract manufacturer of parts, mechatronic modules and systems. VDL ETG focuses on long term / strategic partnerships with its customers.

Product information

VDL ETG provides solutions based on its core competences: Precision Technology, Vacuum, Material Handling, Material Positioning, and Industrialization. This throughout the entire product life cycle: basic research, proto typing, ramp-up, volume, and end-of life.

Products

Mono parts, complex high-end modules, complete (mechatronic) systems.

Markets

VDL ETG serves a number of OEM industry key segments: Semiconductor Equipment, Analytical, Medical, Solar, LED, and Science & Technology.

Science & Technology

VDL ETG is specialized in the (co)development and manufacturing of high precision parts, sub-assy's, complex modules. All products require high / ultra precision turning & milling, high-end metrology, bonding, RF testing, and heat & surface treatments. The defined production strategy determines yield, cycle time, and cost of ownership. Our strength is to rapidly translate highly innovative, complex product designs into tangible products ready to enter small series production. Typical key markets within Science & Technology: accelerator, FEL, aerospace, and instruments.

References

Semiconductor Equipment: ASML – AMAT – KLA Tencor – Cymer
Analytical: KLA Tencor, FEI; **Medical:** Philips – Elekta – Waters; **Solar & LED:** AMAT – Veeco; **Mechanization Projects:** P&G – Kellogg's – Bosch; **Science & Technology:** ESO – ESA – ESRF – TNO – PSI – CERN

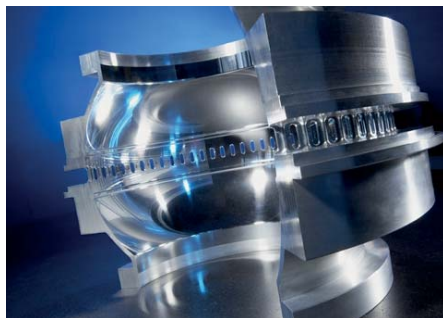
Cees Coolen

Business Manager Science & Technology

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Turnover 2011 E500M | 1750 employees

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VDL Fibertech Industries

"VDL Fibertech industries is your partner in providing large series of state-of-the-art composites for high tech demanding solutions. Our fully equipped engineering team builds on decades of experience combined with efficient and the latest composite production technologies."

VDL Fibertech Industries is one of the oldest composite companies in the Netherlands. Through cooperation with the customer we look at countless of possibilities that composites offer to create a product that offers a substantial added value to a variety of products.

Our production facilities make it possible to produce both very small and very large sizes (3x5 m), combined with a typical series size from a few dozens per year to ongoing large series. The end result is a product that we are proud of and from which you can achieve enormous benefits in your application. ISO14000, ISO13485 and UL certificates guarantee our high and constant quality of work.

As part of VDL Group and building on 40 years of experience we have a lot of experience within our walls. Combine this experience with our state-of-the-art production facilities and team of experienced engineers and the outcome will be a composite that we can be proud off. A composite product that will bring you added value.

Engineering

- >90 jaar cumulative experience
- Pro-E
- Abaqus FEM

- VAR RTM up to 3x5 meter
- Continue Sandwich Panel production (Acrosoma®)
- RIM
- 5-axis CNC + Robotized contouring
- Robotized Assembly

Production

- 12.400 m2 Production surface including cleanroom
- 2D Fiber Cutter
- Gelcoat/Paint Cabins
- Robotized pre forming
- Hot pressing
- RTM up to 2x4 meter

Quality

- ISO13485, ISO14001
- 3D CMM
- X-Ray/NDT
- Pullbench
- 3D Laser radar

Michiel Wassink

Managing Director

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VDL Fibertech Industries

Vermeulen Metaal B.V.

Vermeulen Metaal B.V. is your One stop shop for specials

Engineering

- Solid works
- Inventor

Manufacturing

- Sheetmetal (all materials)
- CNC milling
- CNC turning
- CNC boring
- Piping (water, gas and chemical)
- Skidbuilding
- Certified welding

Assembly

- machine building
- machine parts
- on-site installation

References

OMT solutions – Cosign – Permobil France – Perfetti van Melle benelux – Solvay chemicals – Viro – Alstom – WML

Certified

ISO 3834-2

ISO 1090-1

ISO 9001 (under construction)



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Director

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Vermeulenmetaal BV



Vernooy

Vernooy is a distinguished specialist in vacuum technology and in developing and manufacturing vacuum parts and equipment.

Product information

Vernooy is specialized in vacuum engineering – process control, from design to final execution. Products are made according to customer's specifications or according to designs by Vernooy's engineers. For more than 60 years, VERNOOY Vacuum Engineering has developed and fabricated high quality vacuum- and vacuum related components for research, semiconductor, display and solar industry.

Vernooy has a balanced and sophisticated machine shop with CNC lathe and milling machines, in combination with TIG-welding and robotic welding. It offers the following capabilities:

- Milling up to 6000mmx1600mmx2000mm – Turning swing of 1500mmx 2000mm length – TIG Welding by hand en robot – Vacuum Leak testing – Clean room packing.

All activities are executed by highly trained vacuum engineers. Flexibility and quick response are held in high esteem in the company. As a consequence of the great experience in designing, manufacturing, vacuum testing, clean room building and packaging of various vacuum components, Vernooy can be your valuable partner.

References

Vernooy realized and completed the delivery of most of the mechanical parts for Magnum-PSI for the FOM-institute DIFFER (the Netherlands). They are completely produced by Vernooy Vacuum Engineering.

Fred Verkerk

Managing director

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Turnover Vernooy: 4 M€ | 23 employees
Turnover Triumph Group: 20 M€ | 120 employees

www.vernooybv.nl



Wilting

Wilting is your international partner for the industrialisation and production of high-quality precision components, assemblies, and assembled components. Wilting has been a supplier in the high-tech industry for over 30 years. Our customers are European OEMs that compete globally, Universities and knowledge institutions.

Based on our vast experience in machining Wilting developed into **“Specialists in Manufacturability”**. Therefore, we want to be involved during the engineering phase of your products. In order to be committed during the industrialisation and production of your high precision complex components and/or modules. This enables our customers to focus on innovation & development, and sales & service.

Wilting's Core competences

- **Specialists in high-precision components**

Outsourcing the production of your high-precision components to Wilting means quality assurance during production and competitive prices due to 24-7 low-manned production.

- **Specialists in assembly and supply chain management**

Have Wilting take care of your assemblies and supply chain management and you will experience flexibility thanks to project-driven or process-driven assembly (if required in a well-equipped cleanroom).

- **Specialists in value chain management**

Let Wilting take responsibility of your assembled parts (parts that require a series of different production technologies like milling, welding, brazing, cleaning, etc.) and you will benefit from unique innovative solutions through cooperation with a strong network of compatible partners. Furthermore Wilting will engineer an optimal production chain due to a multidisciplinary approach in the process design.

Markets

Semicon Equipment, University and science, Aerospace, Food processing equipment.

Adwin Kannekens

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ILO's for Big Science

Name ILO / Affiliation	Email	Facility / organisation	Theme
Eric W. Boom	ericboom@upcmail.nl		Representing the Dutch Industry
Toon Verhoeven (FOM-DIFFER/ITER NL)	A.G.A.Verhoeven@differ.nl	ITER (F4E) – FR ESS/RID – SE JET (EFDA) – UK Asdex-U* – DE Wendelstein-7X* – DE IFMIF* (IEA)	Fusion facilities
Rob Klöpping (FOM-Nikhef)	klopping@nikhef.nl	CERN – CH ESRF – CH ILL* – FR EMBL – DE DESY* – DE Neutrino Telescopes	Accelerator, neutron and X-ray facilities
Wilfried Boland (NOVA + ESO)	boland@strw.leidenuniv.nl	E-ELT ALMA	Optical telescopes
Emiel van der Graaf (KVI)	vandergraaf@kvi.nl	ZFEL – NL, Groningen XFEL* – DE	Free electron laser facilities
Ronald Halfwerk (ASTRON)	Halfwerk@astron.nl	LOFAR – NL SKA	Radio Telescopes
Michiel van Haarlem	Haarlem@astron.nl	SKA	
Gerard Cornet (SRON en NSO)	G.Cornet@sron.nl	ESA ruimtemissies	Space observation satellites
Paul Hieltjes	P.J.Hieltjes@sron.nl		
Daniel van Beekhuizen (NSO)	d.vanbeekhuizen@spaceoffice.nl	NSO	Space
Hermen van der Lugt (Pallas)	hermen.vanderlugt@pallasreactor.com	Pallas	Pallas reactor, medical isotope production and energy
Martin van Breukelen (HFML)	M.vanBreukelen@science.ru.nl	HFML – NL, Nijmegen EMFL – NL, FR, DE	Magnets with ultrahigh fields
Rob van der Mei (CWI)	R.D.van.der.Mei@cwi.nl		National research institute for mathematics and computer science in the Netherlands

NOTES

[illegible]

Overview of companies

	*			Management /syst eng	Development	Engineering	Production	Test & measurement	Technical consultancy							
												Area				
		Discipline	Technique							Large	Small	Mechatr.	Cryo	Vacuum	Electronics	Software
3D Metal Forming	S		Explosive forming													
Airbus Defence and Space Netherlands	M	Space		x	x	x		x				x	x			x
A.J.B. Instruments BV																
Amstel Engineering BV	M	Mechanical Engineering	3d Design & Drafting		x	x	x	x			x	x				
Amsterdam Scientific Instruments	S		X-ray detector		x	x	x									
Atkins BV	L				x	x		x								
Benecom																
BKB Precision	S	High Performance Plastics	ge. Machining, assbly				x									
Bodycote Vacuum Brazing	M		Brazing		x	x	x			x	x					
Bouman Machinefabriek																
Butraco	S		Custom Production Machines	x	x	x										
CCM	M				x	x	x	x				x			x	x
Ceratec Technical Ceramics BV	S	Ceramics	Machining/casting		x	x	x									
DARE!! Development	M		EMC		x	x	x	x							RF Analog	
Delft Neutron Instruments BV	S	Neutron Instruments			x	x		x								
Delta Elektronika BV	S	DC power supplies			x	x		x							Power Supplies	
DeMaCo Holland BV	M	Cryo/vac	Metallurgy		x	x	x			x			x	x		
Demcon Advanced Mechatronics	M				x	x	x	x				x				
ECM Technologies BV	S		Electro Chemical Machining		x	x	x		x	x	x					
Entechna																
Futura Composites BV	M		composites		x	x	x	x						x		
Grontmij	L		building management	x	x	x	x	x								
Harveld Apparatenbouw BV	S					x	x				x					
Heemskerk Innovative Technology	S		Remote handling		x	x										x
Heinmade	S		Piezo		x	x	x	x				x				
Hitec Special Measuring Systems	S		Current measuring		x	x	x	x								
Hositrad Vacuum Technology	S	Vacuum	Ceramics		x	x	x	x					x	x		
IBS Precision Engineering BV	S	Metrology				x	x	x				x				
INCAA Computers	S	data acq. power contr.	computers		x	x	x	x							Anal/Digital	x
Irmco BV	V		Accoustics and Waveguides		x	x	x	x								
Janssen Precision Engineering	S				x	x	x	x			x	x				

Overview of companies

	*	Speciality		Management /syst eng	Development	Engineering	Production	Test & measurement	Technical consultancy	Area						
										Metal		Mechatr.	Cryo	Vacuum	Electronics	Software
		Discipline	Technique							Large	Small					
KIN Machinebouw	M					x	x				x					
Landes High End Machining BV	M	Precision Parts	General Machining			x	x			x	x					
Machinefabriek Boessenkool B.V.	S	Machinery/structures	Machining	x		x	x				x	x			x	
Mat-tech BV	s		Metallurgy		x	x		x								
Megahard																
MI-Partners	S				x	x	x					x				
Mogema BV	M		Welding			x	x			x	x			x		
Montair Proces Technology BV	M	Nuclear	Waste Handling		x	x	x				x					
MTSA Technopower	S	Nuclear				x	x	x				x			Power	
Nedinsco	M	Photonic				x	x	x								
Nijdra Group	S	System supplier	Assembly			x	x	x				x	x		x	
NRG	L		Neutronics		x	x		x								
Peter Haak Productontwikkeling	V	Sensor Design			x	x						x			x	
PM-Group	S		Hi-precision Bearings		x	x	x				x	x				
Q-sys	S		Motion Control & Positioning		x	x	x	x				x			x	x
S&T	S		Data Analysis		x	x		x								Modelling
Schelde Exotech	M					x	x			x						
Settels Savenije van Amelsvoort		Mechafysics	Engineering, Precision Alignment, CFD				x	x	x		x	x		x	x	x
Sumipro	S	Optics	Precision Machining		x	x	x	x								x
Technobis Group	S		Fiber		x	x	x					x				
Tessella	M	Space				x	x	x								x
Thomas Thor Associates	S	Nuclair	Recruitment	x												
TNO	L	Space	Optics	x	x	x	x	x				x				
Van Halteren BV	M	Projects	General Machining			x	x	x		x	x	x				
VDL Fibertech																
Vermeulen Metaal B.V.	S	Projects	Certified welding/sheet metal /precision machining			x	x	x		x	x					
Vernooy	M					x	x	x						x		
Wilting	S		High Precision		x	x		x								