Materialography
Hardness Testing
Heat Treatment
Elemental Analysis
Milling & Sieving
Particle Analysis

Science for Solids
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The **Scientific Division** of the family-owned VERDER Group sets standards in the manufacture of high-tech equipment used for quality control, research and development of solid matter. The fields of activity cover sample preparation of solids as well as analysis technologies.

For decades, the VERDER SCIENTIFIC brands have supplied research institutions, analytical laboratories as well as manufacturing companies with state-of-the-art and reliable instruments for quality control and process applications which provide solutions for application-specific requirements.

Our products are used in many different industries including aerospace, agriculture, chemicals, construction and environment, energy, food, geology and metallurgy, material science, pharmaceuticals, scientific research and development and many more. The more than 800 VERDER SCIENTIFIC employees worldwide develop and manufacture products with passion and expertise and provide comprehensive and individual services to the customer. This dedication combined with the willingness to rise to new challenges is the strong foundation of our success.

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**Organizational Structure**

- Materialography
- Hardness Testing
- Heat Treatment
- Elemental Analysis
- Milling & Sieving
- Particle Analysis
1959
The young Dutch salesman André Verder starts trading pumps and semi-finished plastic products. André continuously expands the activities by acquiring and setting up new members for the VERDER „family of companies”.

1989
RETSCH - a world-renowned company for laboratory mills and sieve shakers – becomes part of the VERDER family, extending the business activities towards scientific equipment. The first cornerstone of VERDER SCIENTIFIC is set.

1998
RETSCH TECHNOLOGY is founded. With its innovative products based on Dynamic Image Analysis the new member of the VERDER SCIENTIFIC Division rapidly develops into one of the world’s leading companies for optical particle analyzers.

2012
ELTRA and CARBOLITE enter the division. Their range of elemental analyzers and furnaces and ovens provides a perfect match to the laboratory and analytical product portfolio.

2013
GERO joins VERDER SCIENTIFIC. Their products extend the existing furnace portfolio of CARBOLITE in the temperature range up to 3 000 °C as well as for applications under vacuum, inert or reactive atmospheres.

2014
Supported by the VERDER Group, the „family of companies” benefits from operational synergies, joining forces to expand their product portfolio and further improve service to customers worldwide.

2015
With the acquisition of ATM – manufacturer of machines for the materialogic laboratory – VERDER SCIENTIFIC is now market leader for the mechanical sample preparation of solids. The furnace manufacturers CARBOLITE and GERO unite in one company and operate under the brand CARBOLITE GERO with production facilities in Hope (UK) and Neuhäusen (Germany).

2018
The Austrian company QNESS becomes part of VERDER SCIENTIFIC. ATM’s comprehensive product range for metallographic sample preparation and the innovative hardness testing machines from QNESS now form a strong platform to provide complete solutions for materials testing.
ATM is a technology leader in the development and construction of machines for materialography (metallography). ATM equipment is successfully used in areas like quality control, damage analysis, production control as well as research and development.
ATM cut-off machines, mounting presses, grinders, polishers and etchers as well as analysis systems are characterized by highest quality, flexibility and technical innovation. ATM not only supplies suitable instruments but also complete laboratories and consumables. Thanks to the most advanced engineering technologies and manufacture of components in its own production facilities, ATM is able to meet individual customer requirements and to customize the machines accordingly.

Engineers and developers from the ATM R&D department work in close cooperation with customers to continuously optimize the products.

ATM customers appreciate the extensive distribution and service network as well as the direct contact to the in-house application laboratory and renowned materialography experts.

Experts in Materialography

Portfolio
- Wet Abrasive Cut-off Machines
- Hot Mounting Presses
- Grinders, Polishers, Etchers
- Microscopes
- System Laboratories
- Consumables

Industries & Applications
- Aerospace
- Automotive Industry
- Damage Analysis
- Energy and Electronics
- Geology and Metallurgy
- Material Science
- Medical Engineering
- Research and Academia
- and many more
QNESS focuses on the development and manufacture of innovative high-end products for hardness testing. In addition to the wide range of versatile standard machines, QNESS is also specialized in the planning and realization of customer-specific solutions.
Hardness is one of the most important and most critical characteristics of many materials because it strongly influences essential workpiece properties like flexural or tensile strength and wear resistance. QNESS offers modern solutions for all possible applications in stationary hardness testing and stands for quality, flexibility and simple operation. Maximum usability for the operator and convenient applicability of the tested part are always in focus. The unique product range comprises semi-automatic machines as well as fully automatic hardness testers for every product category. All machines are developed and manufactured by highly-qualified technicians at the QNESS headquarters, located in the province of Salzburg in Austria.

The experienced QNESS project management team also designs and produces customer-specific machines and clamping solutions.

**Portfolio**
- Micro Hardness Testers
- Rockwell Hardness Testers
- Universal Hardness Testers
- Clamping Fixtures
- Customized Hardness Testers
- Fully Automatic Hardness Testing Plants

**Industries & Applications**
- Aerospace
- Automotive Industry
- Damage Analysis
- Energy and Electronics
- Material Science
- Medical Engineering
- Plastics
- Research and Academia
- Steel Production and many more
CARBOLITE GERO is specialized in the design and manufacture of high temperature furnaces and ovens for laboratory, scientific and process applications. Decades of profound experience in thermal engineering make the company a worldwide renowned supplier for innovative, powerful and reliable furnace technology.
The CARBOLITE GERO brand is synonymous with high quality, leading heat technology in the design and manufacture of laboratory and industrial ovens and furnaces ranging from 30°C to 3000°C. CARBOLITE GERO products are shipped to over 100 countries worldwide from two manufacturing and sales sites:
In Hope Valley, United Kingdom, CARBOLITE GERO has a history of manufacturing laboratory and industrial ovens and furnaces up to 1800°C since 1938.
In Neuhausen, southern Germany, high temperature furnaces up to 3000°C with a large variety of solutions for vacuum and other modified atmospheres have been manufactured since 1982.
In addition to the wide range of standard products, CARBOLITE GERO is an expert in the development of customized equipment for complex heat treatment processes. In this field the company has reached a worldwide leading position in industries like aerospace (Nadcap compliance), engineering, materials science, medical, bioscience and contract testing laboratories.

Portfolio
- Chamber Furnaces
- Ashing Furnaces
- Tube Furnaces
- Ovens
- Debinding Furnaces
- Sintering Furnaces
- Retort Furnaces
- Pyrolysis Furnaces
- Si-infiltration Furnaces
- Crystal Growth Furnaces

Industries & Applications
Advanced Materials • Aerospace • Chemistry • Coal and Steel • Energy and Electronics • Food and Feed • MIM/CIM • Precious Metals • Research and Academia • Technical Ceramics and many more
For more than 30 years ELTRA has been one of the leading manufacturers of elemental analyzers. Starting with combustion analyzers for carbon and sulfur determination ELTRA has expanded its product range successively with analyzers for oxygen, nitrogen and hydrogen as well as thermogravimetric analysis.
Modern Combustion Analysis

Chemical elements are the basic modules of the materials and substances surrounding us. They influence material properties and consequently the quality of substances.

ELTRA develops and manufactures combustion analyzers for the reliable and rapid determination of carbon, hydrogen, nitrogen, oxygen and sulfur in solids. Determining the elemental composition is an important factor in the quality control and development of materials.

Thanks to tailor-made solutions for a wide range of samples and concentrations thousands of satisfied customers worldwide are proof of the quality and reliability of ELTRA analyzers.

The instruments are used in industries such as steel production, mining and coal, construction materials and in universities for research & development, to name just a few.

Portfolio

**Elemental Analyzers**
- C|H|S Analyzers
- CO₂ Analyzers
- H₂O Analyzers
- O|N|H Analyzers
- Surface Carbon Analyzers
- Thermogravimetric Analyzers
- Consumables

**Industries & Applications**
- Aerospace
- Cement
- Coal
- Construction Materials
- Environment and Secondary Fuels
- Geology and Metallurgy
- Metal Working Industry
- Mining
- Refractory Metals
- Research and Academia
- Steel and many more
RETSCH is the world’s leading manufacturer of instruments for homogenizing laboratory samples for analysis as well as for analyzing the particle size of solid substances by test sieving. The product portfolio includes mills and crushers, sieve shakers and test sieves as well as assisting and testing equipment.
Looking back on a century of business experience in the laboratory world, RETSCH is the leading provider when it comes to reproducible sample preparation instruments for accurate and reliable analytical results. RETSCH offers a comprehensive range of the most modern sieve shakers for reliable analytical results and mills and crushers for coarse, fine and ultra-fine size reduction of almost any material in quality control, R&D and the semi-industrial field.

The choice of grinding tools and accessories not only ensures contamination-free preparation of a wide range of materials, but also the adaptation to the individual requirements of such different areas of application as construction materials, metallurgy, food and feed, pharmaceuticals, environment or plastics.

No matter for which analytical method – ICP, AAS, NIR, XRF or many others - RETSCH instruments provide the best sample preparation for precise analyses.

**Portfolio**

**Mills and Crushers**
- Jaw Crushers
- Rotor Mills
- Cutting & Knife Mills
- Mortar Grinders & Disc Mills
- Ball Mills

**Sieve Shakers & Test Sieves**
- Analytical Sieving Machines
- Test Sieves (ISO, ASTM)

**Industries & Applications**
- Agriculture • Analytics • Biology • Chemistry • Construction Materials • Electronics • Environment and Recycling • Food • Geology and Metallurgy • Glass and Ceramics • Pharmaceuticals • Plastics • Research and Academia and many more
RETSCH TECHNOLOGY stands for the combination of innovative particle characterization technologies with a maximum of operating convenience. Significant analyses of particle size and shape in suspensions, powders, granules and bulk materials are carried out on the basis of Dynamic Image Analysis.
Optical Particle Analysis

Although hardly ever noticed by the end consumer, particle size analysis is a fundamental step in quality control. For all types of bulk materials, millions of particle size analysis processes are carried out every day, all over the world. These measurements not only ensure that the coffee has the same rich taste every morning, and salt and spices are properly mixed in our lunch menu, but also that industrial production runs smoothly and efficiently.

RETSCH TECHNOLOGY's Dynamic Image Analyzers help to maintain highest quality standards by employing a measurement principle which is direct, faster, and more accurate than traditional particle sizing methods.

Meaningful, statistically relevant information about the size and shape of millions of particles can be obtained within a few minutes. Customers are offered turnkey solutions which meet their analytical requirements, often after individual consultation and application sample testing at the in-house application laboratory.

Portfolio

Dynamic Image Analyzers
• CAMSIZER P4
• CAMSIZER X2

Measuring Range
0.8 µm - 30 mm

Industries & Applications
Catalysts • Ceramics and Glass • Chemicals • Coal and Carbon • Black • Construction Materials • Fertilizer • Food • Medicine and Pharmaceuticals • Mineralogy • Plastics • Sand and many more
In addition to the local sales offices each manufacturer within the VERDER SCIENTIFIC Division is represented by dedicated distributors worldwide. To find your local distributor please visit [verder-scientific.com](http://verder-scientific.com).

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