







CUTTING | MOUNTING | GRINDING, POLISHING, ETCHING | ANALYSIS, HARDNESS TESTING

SOLUTIONS IN MATERIALOGRAPHY & HARDNESS TESTING



## I 1980

Foundation of ATM.

Start of sales activities as a fullservice provider for the metallographic laboratory.

## I 1996

Innovation award for the cut-off machine Brillant 260.

I 1998

## 1 2007

Relocation to today's headquarters in Mammelzen.

## 1 2009

First materialography conference QUALITY.

## I 2010

hy QNESS is founded.

## I 2015

ATM becomes part of Verder Scientific.

## I 2018

Qness becomes part of Verder Scientific and a cooperation partner of ATM.

## 1 2020

ATM and Qness are growing together: QATM is the new benchmark in materialography and analysis.

## **QATM - MATERIALOGRAPHY & HARDNESS TESTING**

## CUSTOMIZED SOLUTIONS - WITH COMPETENCE AND PASSION

#### Machines and equipment for the materialographic laboratory

Whatever you need for quality testing and material analysis, QATM has it all: As a manufacturer of high-quality machines for materialography and hardness testing, we offer the most comprehensive solutions for your needs. We not only supply a wide range of instruments but also accessories, consumables, complete laboratories and tailor-made special-purpose solutions.

#### We aim for highest quality

Our innovative cut-off machines, mounting presses, grinders, polishers/ electrolytic etchers, as well as hardness testers and analysis systems provide maximum reliability and flexibility. The R&D departments for hard- and software work in close cooperation with our customers to ensure continuous optimization of our products. QATM is certified according to EN ISO 9001:2015 to make sure our internal procedures for conception, development, purchasing, sales and service are efficient and reflect our high standards.

Customers all over the world appreciate QATM's extensive sales and service network as well as the direct communication with our experts. The comprehensive expertise and creativity of our qualified staff are the basis for the consistent high quality of our solutions.



#### MAMMELZEN / GERMANY

- I Materialography, consumables, manufacture of lab furniture
- I Development, manufacturing, assembly
- I Training center



#### **GOLLING / AUSTRIA**

- I Hardness testing, Analysis
- I Development and assembly
- I Training center

## **QATM offers:**

## I Modern production engineering

Optimum control of every single component of our machines guarantees reliable product quality "made in Germany" and "made in Austria".

- I Application consultation and end-user seminars with individual focus
  Our application experts determine parameters and equipment
  configurations best suited for your sample preparation process. Our
  team of lab experts and lecturers offers individual as well as advanced
  seminars.
- I In-house hardware and software development

QATM hosts the complete R&D process in-house. Tailor-made solutions to meet individual requirements are our strength.

I Consumables for all steps of the materialographic sample preparation
We offer a wide range of high-quality consumables for materialographic
sample preparation and analysis. The consumables are tested in
detail and chosen for optimal operation of QATM equipment by our
application specialists at our central inhouse laboratory.

www.qatm.com

## **CUT-OFF MACHINES** FOR ALL **REQUIREMENTS**

The size and geometry of a work piece may require sectioning into smaller pieces for examination. Successful sample preparation starts with correct cutting.

To avoid deformation of the sample it is necessary to extract it as gently as possible from the component to be examined. Cut-off machines, adapted to requirements such as geometry or size of the work piece, guarantee lowcontact cutting. The permanent stream of coolant as well as the use of different cutting modes help to avoid thermal damages and to remove cutting debris.

## PRECISION CUT-OFF MACHINES

## **BENCHTOP MODELS**







## NEW













- I Max. cutting capacity: Ø 40 mm
- I Chop cut 120 mm manuel / automatic

## **G**cut **200** A

- I Max. cutting capacity: Ø 75 mm
- I Traverse cut: 210 mm. automatic
- I Chop cut: 80 mm. automatic
- I Cross feed (optional): 80 mm, manual / automatic
- I Extendable with rotation device for samples

## **G**cut **250** M

- I Max. cutting capacity: Ø 55 / 90 mm (up to 25 mm length)
- I Chop cut: 155 mm, manual



## **BRILLANT 230**

- I Max. cutting capacity: Ø 110 mm
- I Traverse cut: 250 mm, manual
- I Chop cut: 125 mm, manual
- I Cross feed (optional): 100 mm, manual



## **G**cut **250** A

- I Chop cut: 170 mm, manual



- I Max. cutting capacity: Ø 135 mm
- I Traverse cut: 260 mm, automatic
- I Chop cut: 180 mm, automatic
- I Cross feed (optional): 140 mm, automatic







I Traverse cut: 225 mm, automatic & manual

I Cross feed (optional): 120 mm, automatic















## **FLOOR-STANDING MODELS**



















## **EASY NUT**

PRODUCT

**SPECIFICATIONS** Cutting wheel diameter - in millimeters Drive power - in kilowatt

AT A GLANCE

The easy nut fastening system guarantees an effortless exchange of the cut-off wheels. The floor-standing machines Qcut 500 A to Qcut 800 A use a power lock nut to ensure an easy fastening of the cut-off wheels.



#### **AXES**

Manual axis drive



Manual or automatic axis drive



Automatic axis drive



Without Z axis





NEU









- I Max. cutting capacity: Ø 190 mm
- I Traverse cut: 420 mm, automatic
- I Chop cut: 280 mm. automatic
- I Cross feed (optional): 200 mm, automatic

























- I Max. cutting capacity: Ø 244 mm
- I Traverse cut: 550 mm, automatic
- I Chop cut: 360 mm, automatic
- I Cross feed: 550 mm, automatic
- I B and C axis: up to max. 360° (patented)

















#### **G**cut **600** A

- I Max. cutting capacity: Ø 244 mm
- I Traverse cut: 550 mm, automatic
- I Chop cut: 360 mm, automatic

YXZZ

I Max. cutting capacity: Ø 150 mm

I Traverse cut: 345 mm. automatic I Chop cut: 200 mm. automatic

I Cross feed (optional): 150 mm, manual / automatic

**Q**cut **400** A

I Cross feed (optional): 550 mm, automatic



ATTA

MINTAL

Qp 50

MTM

Opress 50

## **MOUNTING DEVICES**

## **HOT MOUNTING PRESSES**



## Opress 50

- I Modular setup
- I Max. number of pressing units: 2 or 4
- I Molds: Ø 25.2 50 mm (8 different diameters)
- I Closure system: Slide closure









## NEW









## **Q**press 40

- I Mold: Ø 25 40 mm (6 different diameters)
- I Closure system: Bajonet closure
- I Double mounting possible

## **Cp 50** (P-50)

- I Pressing unit for expanding the basic unit
- I Controlled by basic unit
- I Mold: Ø 25.2 50 mm

# **UV MOUNTING DEVICE**



## **M**mount

- I UV mounting in the shortest possible time
- I Highly efficient, long-life LED technology
- I Up to 12 samples with a diameter of 40 mm
- I Connectable suction unit (optional)



## MOUNTING **WITH FORMAT**

QATM offers robust hot mounting presses, which offer different pressure- and temperature modes for the generation of almost gapless mounted samples.

A sufficient selection of cylindric and rectangular moulds is offered to the customer. Intuitive software and good ergonomics are further defining properties of our products.

**QATM** furthermore offers devices for cold mounting samples under UV irradiation. This enables the fast generation of transparent, mounted samples for standard applications. They offer long-lasting LED technology and simple control elements.

## AT A GLANCE

## **PRODUCT SPECIFICATIONS**



Mould size or max. sample area

- in millimeters



Heating capacity - in watt



#### **ECO FUNCTION**

The machine is equipped with an eco function, which strongly reduces the machine's water consumption.





## **GRINDING AND POLISHING MACHINES**

## **PRE-GRINDING MACHINES**









## **Q**grind 100

- I Dry/wet belt grinder
- I Two grinding belts for different grain sizes
- I Endless grinding belts: 100 x 920 mm
- I Easy exchange of grinding belts

## **Q**grind XL

- I Powerful planar grinding machine for high sample throughput
- I Reproducible results thanks to electronic force measuring system and automatic material removal measurement
- I Automatic diamond dresser and optional cleaning station

## MANUAL GRINDING AND POLISHING MACHINES



## **Qpol 250** M1/M2

- I Working wheels: Ø 200/250 mm
- I Speed: 30 600 rpm, continuously adjustable
- I Single or twin wheel unit



## **Gpol 300** M1/M2

- I Working wheels: Ø 250/300 mm
- I Speed: 30 600 rpm, continuously adjustable
- I Single or twin wheel unit
- I Visualization of the current grinding force
- I Timer function
- I Automatic water valve



## **Gdoser** 🔤

- I Dosing attachment for standard suspension bottles
- I Adjustable dosing quantity
- I Freely positionable using a tripod
- I Screwable to polishing heads Qpol GO and ECO

## **OPTIMIZED SAMPLE PREPARATION**

Grinding and Polishing are essential steps in sample preparation. The aim is a sample surface which is free of deformations and scratches because this is the basic requirement for a correct evaluation under the microscope. Contrasting with an appropriate etchant is often required to make the structure visible.

## AT A GLANCE



### **PRODUCT SPECIFICATIONS**

Working wheel diameter, max. sample diameter single pressure in brackets - in millimeters.



Drive power

- in kilowatt

## **GRINDING AND POLISHING MACHINES**

## **AUTOMATIC GRINDING AND POLISHING MACHINES**





(Grinding and polishing head)

- I Adjustable pressure (single pressure 5 45 N)
- I Adjustable timer for preparation time
- I Toolless sample holder clamping
- I Single pressure: 4x Ø 40 mm
- I Retrofittable on Qpol 250/300 M machines



## **Cipol 250** A1/A2 <sup>66</sup>

- I Working wheels: Ø 200/250 mm
- I Programmable memory for reproducible results
- I Single or twin wheel unit
- I Single/central pressure: 6 samples Ø 40 mm



## **Gpol 300** A1/A2 \*\*\*\*

- I Working wheels: Ø 250/300 mm
- I Programmable memory for reproducible results
- I Single or twin wheel unit
- I Single/central pressure: 6 samples Ø 50 mm





- I Automatic dosing unit
- I Dosing interval adjustable
- I Reverse rinsing function
- I Suspension containers refillable
- I Incl. accessories for installation in the Eco polishing head
- Auto-dosing for final polishing suspension, expandable to 1 L capacity (only Qdoser Eco+)



## **SAPHIR 550 / RUBIN 520**

- I Working wheels: Ø 200/300 mm
- I Single/central pressure: 6x ∅ 50 mm
- I Programmable memory for reproducible results
- Dosing system (optional): 6-fold
- I Single or twin wheel unit



## **G**pol XL

- I Working wheels: Ø 300/350 mm
- I Central pressure: 50 750 N
- I Programmable memory for reproducible results
- Integrated cleaning station (optional)
- I Integrated modular dosing system (optional)



## **C**pol Vibro

- I Polishing bowl: Ø 308 mm
- I Vibration frequency: 60 120 Hz
- I Pressure via weights for sensitive samples
- I Programmable memory for reproducible results
- I Customized sample holders



## COMPACT GRINDING AND POLISHING ROBOTS









## **G**pol **250** <sup>66</sup>

- I Working wheels: Ø 250 mm
- I Central pressure: 20 350 N
- I Changer for 16 grinding and polishing media
- I Dosing system: 6-fold, incl. fine polishing suspension
- I Cleaning station and ultrasonic cleaner
- I Integrated settling tank

## **Apol 300** <sup>60</sup>

- I Working wheels: Ø 300 mm
- I Central pressure: 50 450 N, adjustable
- I Foil changer station
- I Dosing system: 6-fold, incl. fine polishing suspension
- I Storage for up to 10 sample holders
- I Individual configuration

## **ELECTROLYTIC POLISHER AND ETCHER**



#### **Getch 1000**

- I Current & voltage diagram in real time
- I Automated temperature control of electrolytes
- I Connection for a second electrolytic tank (optional)
- I Memory for up to 200 programs (password-protected)



#### **Getch 100** M

- I Portable unit for electrolytic polishing and etching
- I Independent of the mains supply
- I Low-weight, high-performance batteries
- I Replaceable tank for electrolytes
- I Integrated manual grinder (optional)
- I Aluminium housing with strong carrier grip and shoulder strap

# AUTOMATIC GRINDING AND POLISHING MACHINES

With the semi-automatic grinding and polishing machines both single and central pressure can be applied. The central pressure allows grinding and polishing of embedded, unembedded and oversized specimens. In combination with a removal measurement, grinding can be done automatically to a defined sample height if required. With single pressure, up to six samples (depending on sample holder) of different sizes can be processed in one sample holder by pressing on individual plungers.

# ELECTROLYTIC POLISHING AND ETCHING

In electrolytic polishing and etching, an electrochemical process is used to contrast phase boundaries under the light microscope. This process often saves mechanical grinding and polishing steps.

# ONLINE PRODUCT CONFIGURATOR

For more equipment and accessories go to the online product configurator at www.qatm.com





**VICKERS, BRINELL, KNOOP & ROCKWELL** 

AUTOMATED HARDNESS TESTERS – HIGH PRECISION AND INTUITIVE OPERATION

## HARDNESS TESTERS

## **MICRO HARDNESS TESTERS**



### **Qness 10 / 60** M

- I Test force range: 20 gf 10 kgf Option: 0.25 gf - 62.5 kgf
- I Test methods: Vickers, Knoop. Brinell, Option: Rockwell
- I Semiautomatic, economical hardness testing and microscopic analysis
- I Automatic 8-position tool changer
- | Motorized Test axis
- I Manual XY movable cross table for simple hardness traverse measurements (CHD, NHD, SHD)



#### Qness 10 / 60 A+

- I Test force range: 20 gf 10 kgf Option: 0.25 gf - 62.5 kgf
- I Test methods: Vickers, Knoop, Brinell, Option: Rockwell
- I Fully automated, economical hardness testing and microscopic analysis
- Automatic 8-position tool changer
- I Motorized and controlled Z-Axis
- I Unique 3D positioning features
- I Very precise XY slide
- I Integrated sample camera for unique ease of use



#### **©ness 60** A+<sup>∞</sup>

- I Test force range: 0.25 af 62.5 kgf
- I Test methods: Vickers, Knoop, Brinell, Rockwell
- I Fully automated, High-end hardness testing and microscopic analysis
- | Automatic 8-position tool changer
- I Motorized and controlled Z-Axis
- I Unique 3D positioning features
- I High precision XY slide
- I Integrated sample camera for unique ease of use



### **☑ness 60** A+<sup>®</sup> portal

- I Test force range: 0.1 kgf 62.5 kgf
- I Test methods: Vickers, Knoop, Brinell
- I Fully automated, Portal hardness testing and microscopic analysis
- I Automatic 8-position tool changer
- As a portal solution the Oness 60 EVO offers unique movements and new possibilities in micro/low load
- I X 500 / Y 500 / Z 300 mm

- KNOOP

- hardness testing



DIN EN ISO 18265. DIN EN ISO 50150. ASTM E-140

## **ROCKWELL HARDNESS TESTERS**



#### **Qness 150** CS

- I Test force range: 1 kgf 250 kgf
- I Test methods: Rockwell, HVT, HBT
- I Classic concept new defined
- A flexible solution for easy Rockwell hardness testing
- 7" full-color touch display



## **Qness 150** CSA+

- I Test force range: 1 kgf 250 kgf
- I Test methods: Rockwell, HVT, HBT
- I Fully automatic, economical and up-to-date hardness testing
- I XY slide
- I Unique 3D control functions
- I With integrated sample image camera



#### **Qness 150** RCS

- I HRA, HRC or HBT
- I Very fast Rockwell hardness testing
- I Cycle times down to 2 seconds

## REVOLUTIONARY **IMAGE EVALUATION** WITH AI-TECHNOLOGY Fully automatic indentation detection, even with low contrasts and difficult surfaces Specifically designed for Vickers, **Knoop and Brinell hardness** For QpixControl2 Software

## HARDNESS TESTING **STANDARDS**



## **VICKERS**

DIN EN ISO 6507, ASTM E-92. **ASTM E-384** 



## **BRINELL**

**DIN EN ISO 6506, ASTM E-10** 



## ROCKWELL

DIN EN ISO 6508. ASTM E-18



DIN EN ISO 4545. ASTM E-92. **ASTM E-384** 

**PLASTICS TESTING DIN EN ISO 2039** 

**CARBON TESTING** DIN 51917



#### **CONVERSIONS**

## **MICROSCOPY & ANALYSIS**



**PHASE ANALYSIS** ISO 9042. ASTM E-562



## **DIN EN ISO 643, ASTM E-112**



LAYER THICKNESS **DIN EN ISO 1463** 



**WELD SEAM DIN FN ISO 5817** 

## **AUTOMATIC EXPORT FUNCTIONS**















Many professional export features are included in the standard.

## **CALIBRATION MANAGER**

The QATM Calibration Manager has an automated feature for mandatory verification of the hardness tester using suitable testing plates.

## **QCONNECT**

Qconnect is the software interface of the Qness QpixControl2 software.

I PCI Plug-In / AMS Plug-In / QDAS Plug-In

## **VERDER IOT PLATFORM**



Networking of all devices in the Verder IoT Cloud environment.

- I Virtual laboratory
- I Status of devicese
- I Machine software update
- I Backup and reporting







## **HARDNESS TESTERS**

## MACRO HARDNESS TESTERS



#### **Qness 200** CS

- I Test force range: 0.5 187.5 kgf
- I Test methods: Rockwell, Vickers, Knoop, Brinell
- I 5-position tool changer
- I Classic concept new defined
- I Economical hardness testing



#### **Oness 200** CSA+

- I Test force range: 0.5 187.5 kgf
- I Test methods: Rockwell, Vickers, Knoop, Brinell
- I 5-position tool changer
- I Fully automatic, economical and up-to-date hardness testing
- I XY slide
- I With integrated sample image camera



#### **Qness 250/750/3000** C/CS™

- I Test force range: 0.3 3000 kgf
- I Test methods: Rockwell, Vickers, Knoop, Brinell
- 8-position tool changer
- I Classic concept new defined
- I Ideal for small parts



#### **Qness 250/750/3000** M/E<sup>™</sup>

- I Test force range: 0.3 3000 kgf
- I Test methods: Rockwell, Vickers, Knoop, Brinell
- 8-position tool changer
- I Variant M
- Manual adjustable (z-axis) testing head
- Well suited for big parts
- | Variant E
- Motorized testing head positioning
- Suited for a wide range of part sizes and high preload foces



Qness 250/750/3000 A+™

- I Test force range: 0.3 3000 kgf
- I Test methods: Rockwell, Vickers, Knoop, Brinell
- I 8-position tool changer
- I High precision XY slide
- I Fully automated testing of serial parts
- I Protective housing with light grid
- I Unique 3D control functions
- I Integrated sample image camera for unique operating comfort

## SOFTWARE FOR HARDNESS TESTING AND ANALYSIS



## **Qpix** T**2**

- I Large 12" touchscreen user interface
- I Fully automated image analysis
- I Full screen mode



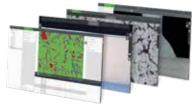
## 

- I Clearly structured batch management
- I Effective report template feature
- I Comprehensive data management
- I Data import and export functions



## **CIPIX** CONTROLE

- I Innovative 3D operation concept
- I Professional generation of fully automated testing routines
- I Comprehensive data management
- I Data import and export functions



## **INSPECT** SOFTWARE MODULE

- I INSPECT phase analysis
- I INSPECT layer thickness measurement
- I INSPECT grain size measurement
- I INSPECT weld seam measurement

## **CUSTOMIZED SOLUTIONS**



## **Iness 60** A+ Sample Disc

- I Grinding, polishing and hardness testing in one sample holder
- I Sample holder is compatible with the grinding and polishing machine Qpol XL



## Qness 3000 A+ 1000 mm cross table

- I Automated serial testing on the 1000 mm cross table
- I Robust industrial design
- I Data connection to primary customer systems



**Ciness BHT** 10 kgf - 3000 kgf

- I Fully automated Brinell/Rockwell hardness tester
- I Integrated test point preparation (milling device)
- I Integrated extraction system
- I Various equipment variants and automation systems

## **OPTICAL ANALYSIS**



## **G**eye 800

- I Fast, high-resolution and efficient optical analysis and measurement of specimens
- I Innovative LED analysis area illumination
- I 8.5 megapixel color camera system
- I 20x optical zoom 35x combined zoom (optical and digital)



## CONTROL Inspect Vision System

- I Fast, high resolution and efficient for optical analysis and measurement of samples for microscopic evaluation
- I Compatible with reflected light and/or stereo microscopes





## **@**mobile

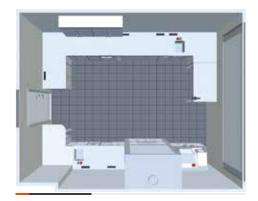
- I Mobile image analysis of existing Brinell indentations
- I XLED Brinell evaluation unit
- I Suitable for Brinell methods with 10 mm, 5 mm and 2.5 mm sphere
- Field of view 8.6 x 6.6 mm, incl. 2x digital zoom





## LABORATORY FURNITURE

## SYSTEM LABORATORY FURNITURE



## Laboratory planning

I The QATM 3D Lab software is used for generating blueprints of customer specific machine- and laboratory-layouts. They are visualized in a realistic, three-dimensional format.



## Laboratory tables and desks

Configure you perfect working place with solutions from the extensive QATM laboratory furniture assortment.

Laboratory tables:

- I Very robust and durable construction
- I Passive vibration damping (optional)
  Desks:
- I Electric or manual height adjustment
- I Integrated cable management



## **Customized laboratory furniture**

The laboratory furniture system combines QATM quality with a flexible modular system.

- I Base, corner and end cabinets
- I Wall units and shelves
- I Doors, liner bases, integrated media bars
- I Worktop surfaces
- I Installations e.g. recirculatory cooling unit, safety storage cabinet, inset sink or waste collectors



#### Shelves and cabinets

- I The open shelves as well as the two-door cabinets are equipped with adjustable shelf boards.

  The cabinets can also be ordered lockable.
- I Shelves and cabinets are available in heights of 900 mm, 1200 mm and 1950 mm.



### Standard cabinets

Our selection of standard cabinets from the SYSTEM LAB FURNITURE range provide the ideal basis for placing QATM benchtop machines!

- I Sturdy, corrosion-free construction, powdercoated aluminum housing
- I Ideal for integration of recirculation cooling system or settling tank
- I Soft closing doors and drawers



## Safety cabinets for acids and bases

I Safety cabinets for the storage of acids, bases and other hazardous substances. With integrated system ventilation monitoring system. They are designed for laboratory use and comply with the regulations for the safe storage of flammable substances, acids and bases.

## COMPLETELY FURNISHED LABORATORIES

QATM offers customized solutions for your needs. From single machines to fully equipped laboratory container everything is possible. All used parts are designed for easy and clean disposal.

The laboratory furniture system combines QATM quality with a flexible, modular system. Based on a standardized aluminium module, each cabinet element can be fitted with doors, drawer inserts and other installations. The benchtop can also be fitted to customer needs. The cabinet elements have screw connections. QATM offers an on-site assembly service.

# THE FULL SCOPE

Here you can find our current consumables catalog: www.qatm.com/downloads/brochures



# EXPERT GUIDE MATERIALOGRAPHY METALLOGRAPHY

- I Guide for materialographers and beginners
- I Tips & Tricks
- I Artefacts avoidance
- I From sampling to the finished cut



## **Qprep CONSUMABLES**

# EVERYTHING FOR CUTTING, MOUNTING, GRINDING, POLISHING, ETCHING, ANALYZING AND HARDNESS TESTING



I Corundum cut-off wheels



I CBN cut-off wheels



I Diamond cut-off wheels



I Diamant-pot wheels



I Anti-corrosion coolants



I Accessories and additives for anti-corrosion coolants



I Filter accessories for recirculatory cooling units



I Mounting accessories



I Hot mounting materials



I Cold mounting materials



I Infiltration unit



I Cold mounting molds



I Solution Boxes



Diamond grinding discsSiC grinding discs



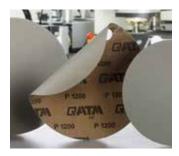
I Fixation system for plain backed grinding paper (GALAXY QUICK-Tap)



I Adhesive carrier



I CONTERO fine grinding discs



I SiC grinding papers



I Grinding belts



I Diamond suspensions



I Diamond pastes
I Diamond spray



I Polishing cloths



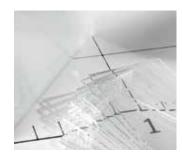
I Desiccator cabinet



Etchants



I Miscellaneous laboratory accessories



I Accessories for microscopy



I Hardness test blocks and indenters



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## **VERDER**

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VERDER SCIENTIFIC is composed of leading laboratory equipment companies active in sample preparation and analysis for quality control as well as research & development purposes.

As trusted solution partner, VERDER SCIENTIFIC enables thousands of companies to ensure economic, technological and environmental progress by mastering their scientific applications. Together, we make the world a healthier, safer and more sustainable place.



