

Solutions in Raman spectroscopy

Avantes, the leading Raman spectroscopy manufacturer and designer, is the choice for high quality and high repeatability solutions in any spectrometer situation and in any volume.

We take special pride in collaborating with our customers to supply the right solution, in time. Whether you need a custom configured optical bench or a specialized fiber optic probe, we have the experience and dedication to make it happen. Or choose one of our modular and flexibly configurable cost-effective Raman options.



Industries served

We have over 20 years of experience applying spectroscopy and optical sensing technologies to numerous environments and industries. Avantes supports Raman and other spectroscopy customers in all aspects, including opto-mechanical, electronics and software, with our dedicated experts.

Examples of industries:

- Pharmaceutical
- Gemology
- Safety & Security
- Mining & Metallurgy
- Agriculture
- Chemical/Petrochemical
- Bio-medical/Medical
- Environmental



Innovative design & technology

Avantes has introduced many industry-firsts in our products, such as on-board processing, replaceable slits and wireless interfaces. A good example is our symmetrical Czerny-Turner design, which allows a higher resolution at similar entrance slits compared to other designs. Several of these evolutions and revolutions came from close companionship with an OEM customer.

Avantes' state-of-the-art manufacturing facilities in Apeldoorn, The Netherlands, is 3,000 square meters or over 32,000 square feet in size. This allows for increased production capacity and has high-tech engineering facilities. We have the official ISO 9001 accreditation for development, manufacturing and sales of fiber-optic coupled spectrometers, fiber optics, light sources and accessories for several industries. Avantes' quality procedures provide for 100% traceability of all intermediate and final production test results. These can include additional customer-specific quality control, embedded in the production and QC process. Avantes' world headquarters in The Netherlands is the center of product development, manufacturing and marketing activities.

With additional offices in the USA, China, the UK, and a network of distributors in over 30 countries, we are able to provide outstanding local support. Flexibility in delivery schedules and door-to-door delivery (also to your customer) are standard.

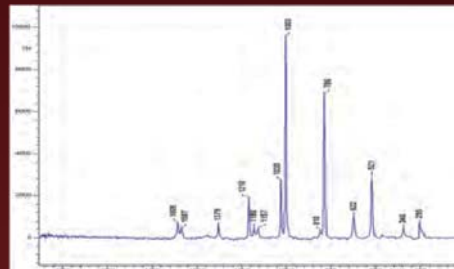
AvaBench Optical Benches

The AvaBench line of optical benches offers a robust selection of designs and configuration to meet the form factor and technical specifications for each application. Now available in five configurations with 16 standard detector options, the AvaBench is configurable to meet your needs. Independent Optics & Electronics for greater flexibility and modularity. Available as enclosed instruments or OEM modules.

A few customer applications...

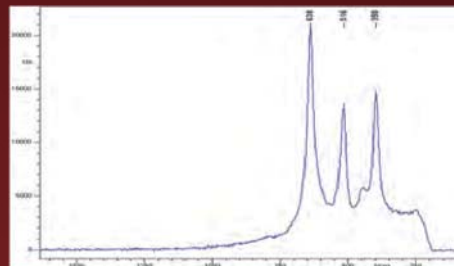
Polymer Chemistry

- Identification of various polymers (polycarbonate coating layer of cd shown)
- Quality control



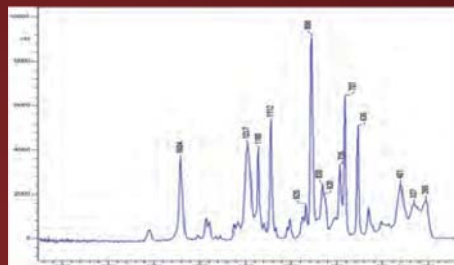
Inorganic Chemistry

- Identification of inorganic compound such as bariumsulfate, potassiumnitrate, etc.
- Possibility to discriminate between different forms of titaniumdioxide being rutile and anatase (anatase shown)



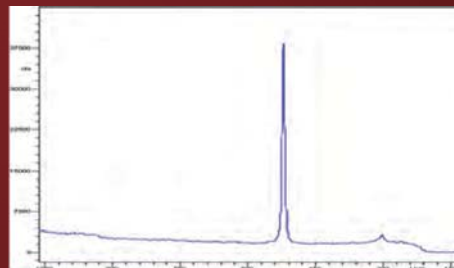
Organic Chemistry

- Identification of organic compounds such as toluene (shown), acetone, methanol, etc.



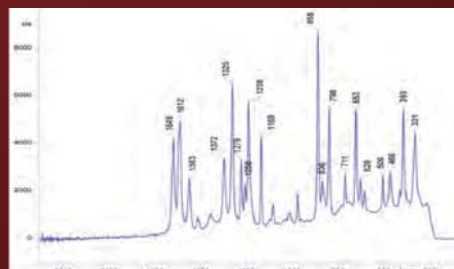
Semiconductor Industry

- To determine the structure of a wafer (surface damage)



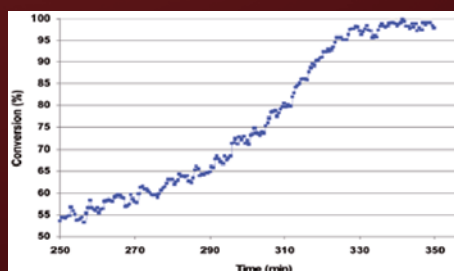
Pharmaceutical Industry

- Identification of tablets in general (paracetamol shown)
- Identification of counterfeit pharmaceuticals



Kinetics

- Monitoring the reaction process of polymerizations
- Monitoring the reaction process of liquids



AvaRaman-532TEC-USB2

Consisting of following elements:

- Solid state 50 mW laser 532 nm, FWHM 0.2 nm
- TE-cooled AvaSpec-ULS2048L-TEC-USB2 Spectrometer with 1200 lines/mm grating set 535-752 nm, 25 μ m slit, DCL-UV/VIS
- AvaSoft-Raman stand-alone software for the AvaRaman system, AvaRaman-GL-532 laser safety goggles

AvaRaman-785TEC-USB2

Consisting of following elements:

- Solid state 500 mW laser 785 nm, FWHM 0.2 nm
- TE-cooled AvaSpec-ULS2048L-TEC-USB2 Spectrometer with 830 lines/mm grating set 785-1080 nm, 25 μ m slit, DCL-UV/VIS-200
- AvaSoft-Raman stand-alone software for the AvaRaman system, AvaRaman-GL-785 laser safety goggles

AvaRaman-A

Based on an uncooled spectrometer this is the entry bundle for reasonable strong signals

- Range: 150 cm^{-1} - 3600 cm^{-1}

- Resolution: 6 cm^{-1}

- Spectrometer based on an AvaSpec-ULS2048L-USB2 set for (788-1100nm), slit-25, DCLUV/VIS200, FC-PC connector

- Also including: AvaLaser785 (incl. probe), AvaRaman software: Panorama Light
- Optional: Replaceable slit (add -RS)

AvaRaman-B

Based on the cooled version of the spectrometer offered in the bundle Ava-Raman-A. Cooling enables you to work with longer integration times, yet keeping the thermal noise limited.

- Range: 150 cm^{-1} - 3600 cm^{-1}

- Resolution: 6 cm^{-1}

- Spectrometer based on an AvaSpec-ULS2048L-TEC-USB2 set for (788-1100nm), slit-25, DCL-UV/VIS200, FC-PC connector

- Also including:

AvaLaser785 (incl. probe), AvaRaman software: Panorama Light

Optional: Replaceable slit (add -RS)

AvaRaman-C

For the most demanding applications. The spectrometer used in this bundle makes use of a cooled spectrometer with a special low-noise Back-Thinned detector. The spectrometer used in this bundle is a cooled spectrometer with a special low-noise Back-Thinned detector.

- Range: 150 cm^{-1} - 3600 cm^{-1}

- Resolution: 6 cm^{-1}

- Spectrometer based on an AvaSpec-ULS2048x64TEC-USB2 set for (788-1100nm), slit-25, DCL-UV/VIS200, FC-PC connector

- Also including:

AvaLaser785 (incl. probe), AvaRaman software: Panorama Light

Optional: Replaceable slit (add -RS)

AvaRaman probes (for AvaRaman-532 / 785-TEC-USB2)

AvaRaman-PRB-XXX

3/8" SS low-cost focusing probe with a 200 μ m excitation fiber and 400 μ m read fiber. Multiple focal lengths available (5 mm, 7.5 mm (standard), 10 mm). It can withstand 80°C. Manual shutter included, 1.5 m fibers. Specify XXX=excitation wavelength. Spotsize at sample 90-140 micron.

AvaRaman-PRB-FP-XXX

1/2" SS focusing probe with a 200 μ m excitation fiber and 400 μ m read fiber. Multiple focal lengths available (5 mm (standard), 7.5 mm, 10 mm). It can withstand 80°C. Specify XXX=excitation wavelength. Spotsize at sample 90-140 micron.

AvaRaman-PRB-FIP-XXX

5/8" SS immersible focusing probe for in-situ measurements with a 200 μ m excitation fiber and 400 μ m read fiber. It can withstand 200°C. Specify XXX=excitation wavelength. Spotsize at sample 90-140 micron.

AvaRaman-PRB-FC-XXX

3/8" SS immersible process probe for in-situ measurements with a 200 μ m excitation fiber and 400 μ m read fiber. It can withstand 500°C and 3000psi, the probe optics provide complete background filtering. Specify XXX=excitation wavelength. Spotsize at sample 90-140 micron.

Other accessories

AvaRaman-SH-3/8"

- Rugged sample holder for secure positioning of 3/8" Raman probes

AvaRaman-SH-1/2"

- Rugged sample holder for secure positioning of 1/2" Raman probes

AvaRaman-Calibrationtile

- PTFE White tile in holder for 3/8" Raman probe