




Every challenge, every project allows us to find new solutions.
We gain new experience and skills by turning projects into reality.

TRANSFORMING IDEAS AND DREAMS INTO REALITY

Every challenge, every project allows us to find new solutions. We gain new experience and skills by turning projects into reality. Our catalogue of activities and products has links on each page for more detailed information.

We founded The KVANT Company in 1995 (Pavol Kubosek and Lubomir Mach) as young scientists who worked at the Slovak Academy of Sciences in Bratislava after already having worked as freelancers for three years in the field of laser optical sets, semiconductor lasers and holography development. Our mission is to transfer the latest scientific knowledge and technological solutions into practice. Our activities have expanded gradually allowing us to create several departments within our company. The amount of our own products, successfully exported abroad, is constantly increasing. Yearly we realize more than 3000 projects and business cases at home and abroad. Your projects become our projects.

Thank you for your cooperation and trust!


Lubomír Mach


Pavol Kubošek

KVANT[®]
FOR YOU
since 1995

ISO 9001
ISO 14001
OHSAS 18001

BUREAU VERITAS
Certification



ISO 27001

BUREAU VERITAS
Certification



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LASER SHOW SYSTEMS PRODUCTION

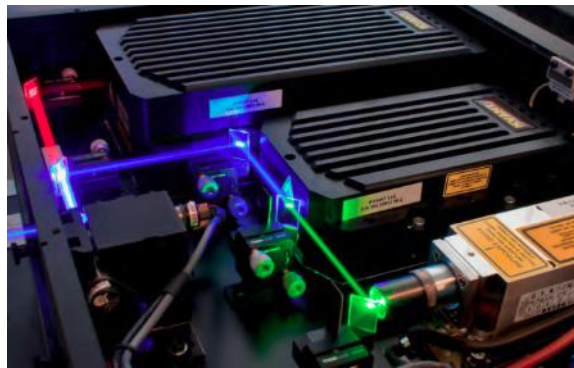
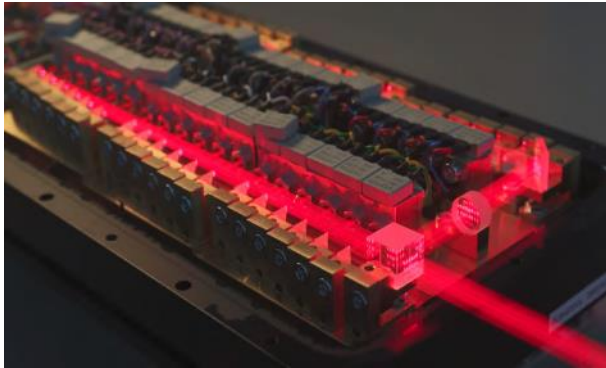


LASER DISPLAY SYSTEMS

More than 20 years KVANT Co. have supplied thousands of laser display systems in field of advertisement, art and industry. We are one of the most significant manufacturer of the laser display systems. We have received many ILDA Awards (International Laser Display Association)

We continue developing and manufacturing in Slovakia and ensure the highest quality of our products. Thanks to quality and technical specifications we succeed on the world markets. With over 40 distributors worldwide and a personalised approach to every client our customers say we are the best in the business. Are we really? We don't know and that's what drives us forward.

LASER SHOW SYSTEMS PRODUCTION

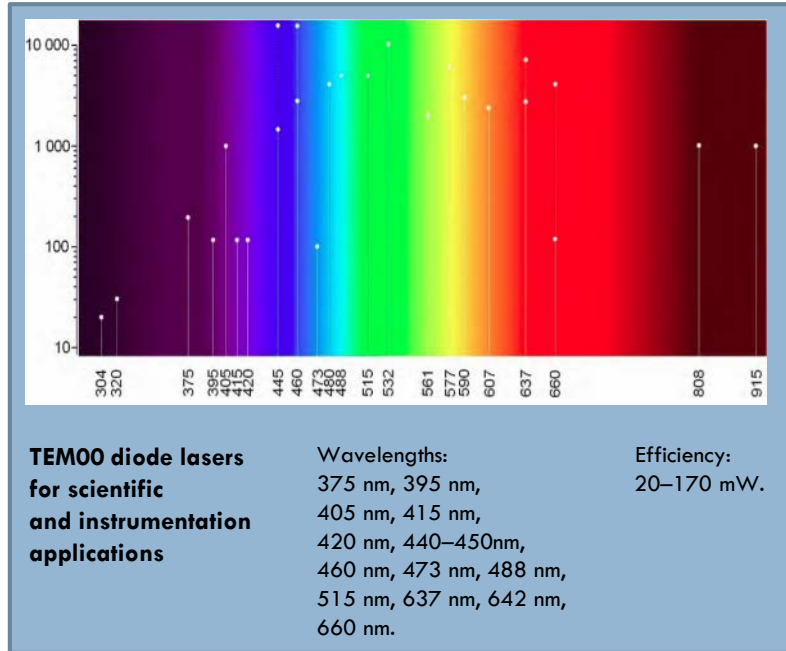


SPECIAL LASER SOLUTIONS

We offer new laser solutions for laser show, industry, transport, security and science.

We realize a lot of unique development projects for the use of lasers in cooperation with our partners in Slovakia and abroad. The latest research and development projects include mobile scanning and display laser systems, high performance lasers for modern chemistry, applications for forensic science, traffic and safety alert systems.

LASER SHOW SYSTEMS PRODUCTION



SEMICONDUCTOR LASERS

Laser modules for science and research manufactured by KVANT are equipped with high-quality laser diodes produced by the world's leading manufacturers.

Laser parameters can be adjusted according to customer requirements. Laser radiation output can be modulated by high frequencies. Efficiency or laser wavelength can be produced according to specific requirements. Laser modules are part of many devices, including: Laser projectors for industry, medicine, laser machining and targeting.

LASER SHOW SYSTEMS PRODUCTION



ILDA AWARDS

In 2016 the KVANT Company was awarded with five ILDA Awards (International Laser Display Association) for the most exceptional laser shows. In 2017 ILDA conference hosted by KVANT in Bratislava. In this time KVANT company achieved 30 ILDA Awards.



LASER AND DIDACTIC EQUIPMENT



KITS FOR TEACHING PHYSICS

The production department of teaching techniques is focused on the development and manufacture of kits for physics. Kits focusing on difficulty allow experiments in the range of the curriculum of secondary schools and universities mostly with a technical focus. Up to 90% of production through foreign distributors (worldwide as well as locally based) is made for international exports.

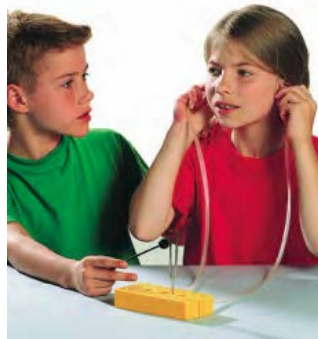
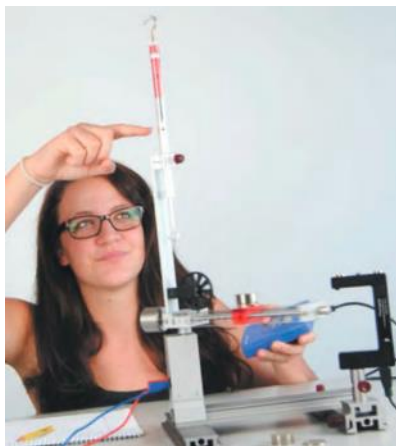
The company regularly participates in the world's largest exhibitions of teaching techniques. Sets are designed and tested in cooperation with teachers, which ensures their success and usefulness in the education process.

Our lasers and sets for education were achieved a lot of awards from international educational exhibitions.

LASER AND DIDACTIC EQUIPMENT



LASER AND DIDACTIC EQUIPMENT

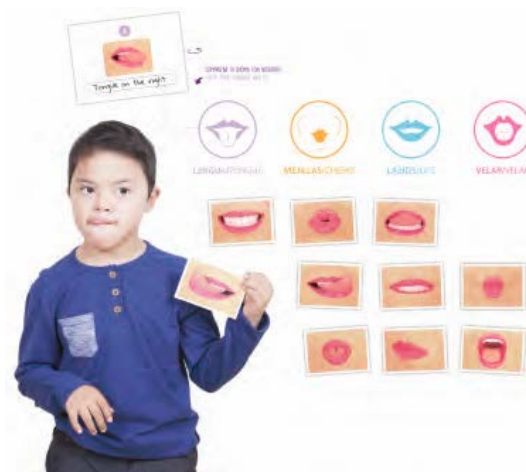


TEACHING AIDS

For educational purpose we offer a wide range of teaching aids for teaching physics, chemistry, biology, mathematics and other subjects. This selection is designed for kindergarten, primary schools, secondary schools and universities and by its extent it can satisfy the complex needs of educational institutions.

We offer products from the world's leading producers of teaching techniques and provide the teacher training for effective use of modern teaching aids.

LASER AND DIDACTIC EQUIPMENT



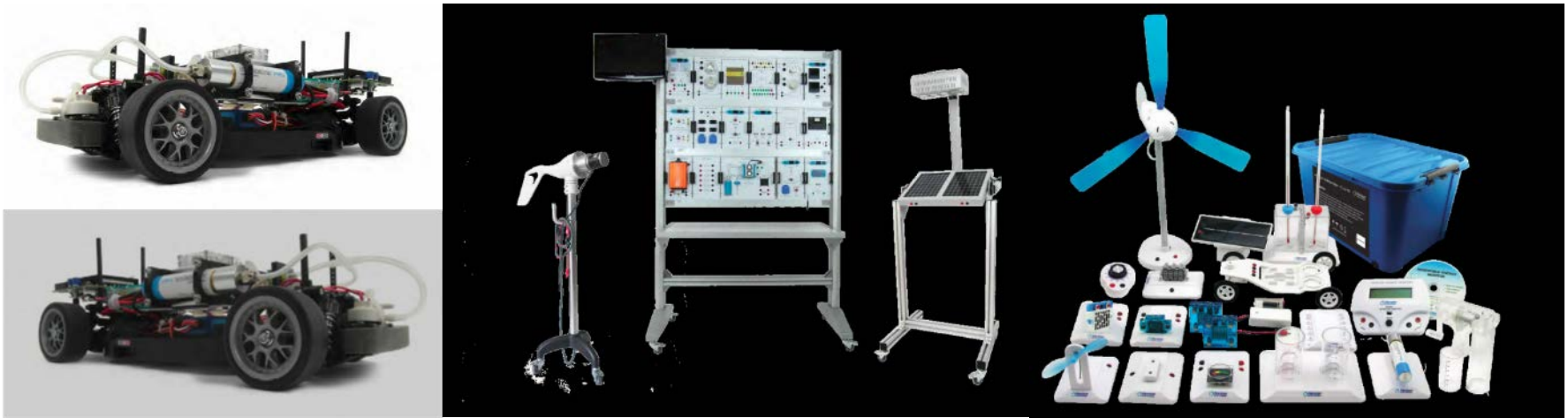
TEACHING AIDS

The KVANT Company is not only focused on selling, but also on the development and production of teaching materials and teaching techniques with a successful history in world markets. Our team has many experienced trainers who can help to take full advantage of all the modern tools to make the teaching process more inspirational not only for students, but also for teachers.

The aim of our company is to offer a wide range of products that improve the quality of teaching in schools and to participate in building a modern education system worldwide.



LASER AND DIDACTIC EQUIPMENT

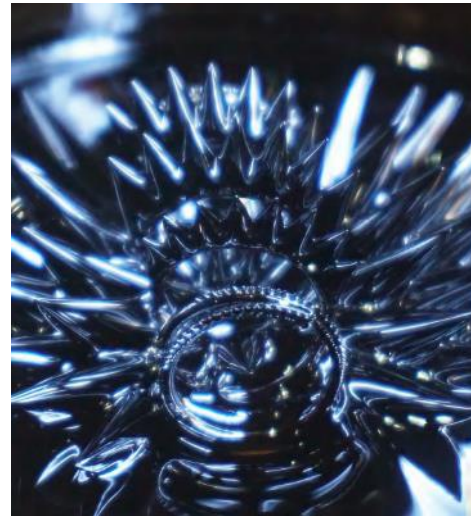


RENEWABLE ENERGY SOURCES

The use of renewable energy sources is currently one of the top themes. The Horizon Educational company belongs to the producers of presenting and teaching technology about green energy for elementary schools, high schools and universities. The aids are geared towards support the STEM (Science, Technology, Engineering, Mathematics) program.

The aim of program is growth of student interest in renewable energy technology. One example of this concept is the International Hydrogen Horizon Automotive Challenge (H2AC).

LASER AND DIDACTIC EQUIPMENT

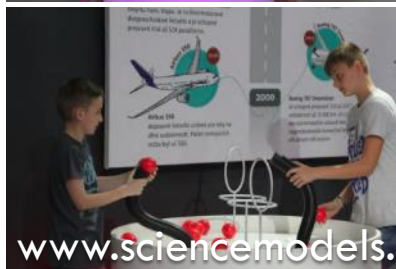


MANUFACTURE OF SCIENTIFIC MODELS AND EXHIBITS

In recent years the public interest in science and technology has grown. The target group is mainly young people who are about to decide on their future professions. In many scientific and technical museums interactive demonstrations of physical and technical phenomena are often requested, it allows a better understanding of presented principles in an amusing and entertaining way. Our company, thanks to its experience in the field of natural sciences and teaching techniques, develops and manufactures various models and exhibits according to customer requirements.



LASER AND DIDACTIC EQUIPMENT



www.sciencemodels.info

www.aurelium.sk

LASER RENTAL



MULTIMEDIA SHOW PRODUCTION SERVICES

Being a laser manufacturer, our show production career started with laser shows, but we progressed to what we are now by adding more entertainment elements into our arsenal and by gaining all the valuable experience. Our show department grew into an Award-Winning multimedia production team.

Laser displays, 3D video and laser mapping, holographic projections, fireworks and water shows. You name it, we've done them all. Energising, vibrant and evoking true inspiration.

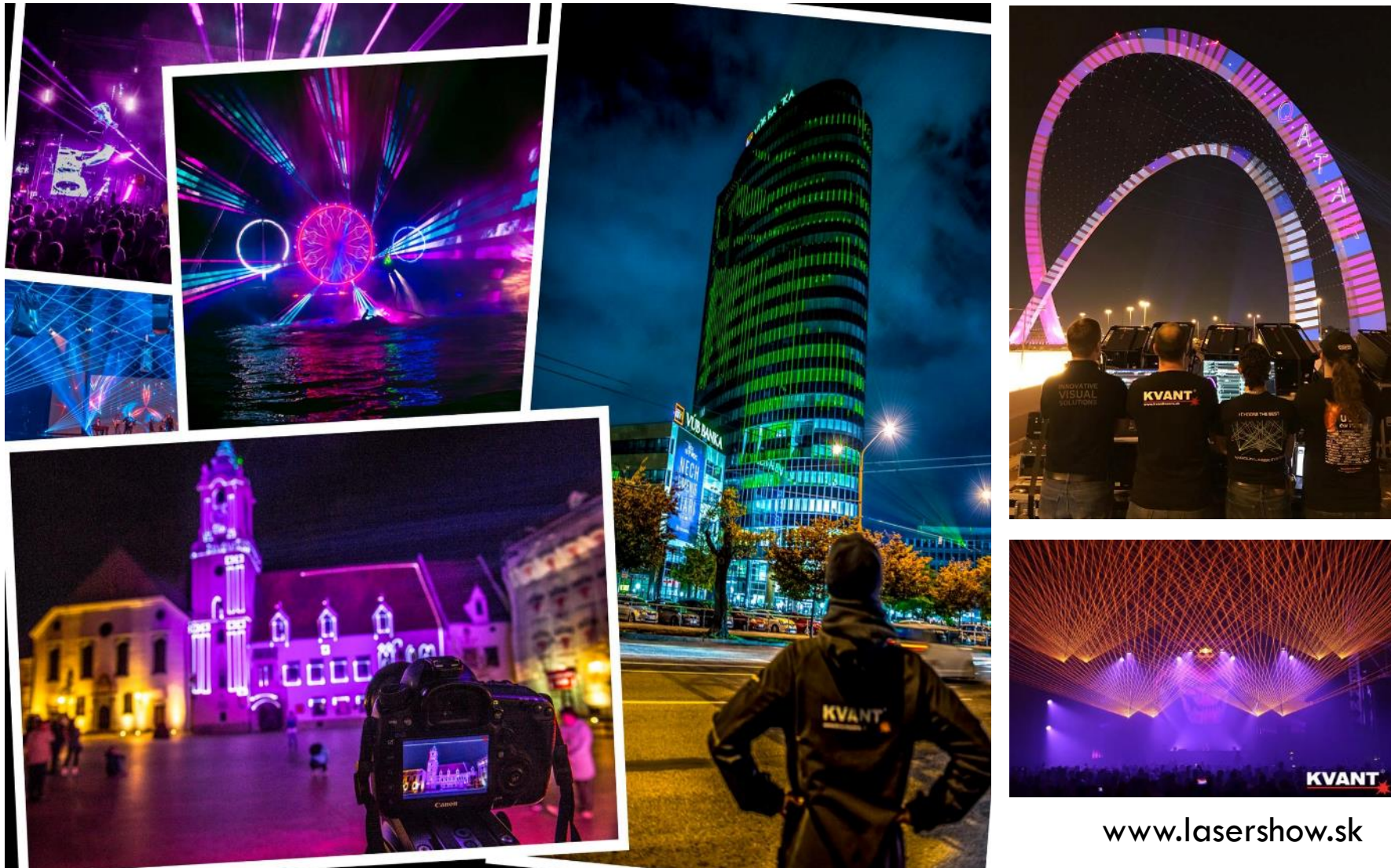
The most wonderful thing about all this is that even after that the many events we participated in, we still love doing it. We still treat every new project with the same importance showing exemplary attitude and professionalism.

www.lasershow.sk

LASER RENTAL



LASER RENTAL

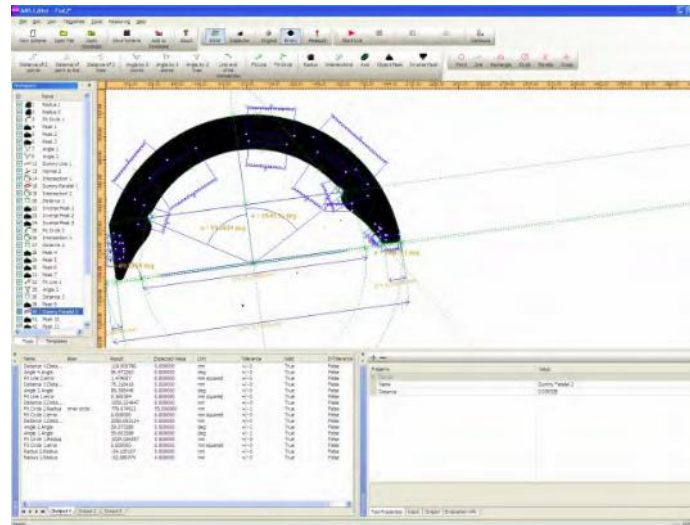


www.lasershow.sk

LASER RENTAL



LASER AND VISION QUALITY INSPECTION



Applications 100% quality control in manufacturing companies, selection of control of quality in laboratories and noncontact dimensional measurements.

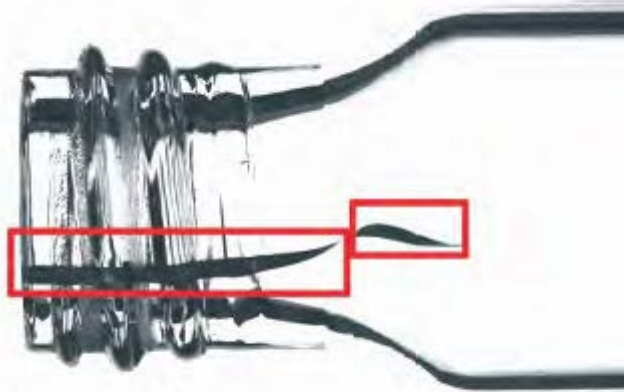
AUTOMATIC MEASURING SYSTEM – AMS

Optical measurements offer contactless, fast and accurate solutions for controlling product quality in industry. They also allow for easy deployment and extension to the needs of the individual customer. Universal access to scanning and evaluation in combination with visual control has become indispensable nowadays and a quickly recoverable investment.

An Automatic Measuring System (AMS) is an open application structure, it is intended to implement non-contact optical measurement applications and visual control in industrial environments.

The basic advantages of the solution are versatility, openness to adapt according to the precise needs of the customer, high accuracy, reliability and objectivity of the measurement.

LASER AND VISION QUALITY INSPECTION



VISUAL QUALITY CONTROL

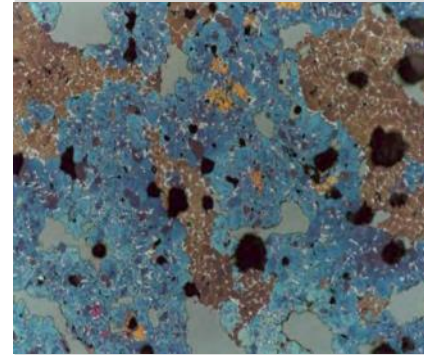
The versatility, the rapid return of investment and a high increase in product quality are the main advantages of a visual quality control system based on digital image processing.

Quality of material

The evaluation of the quality of the materials are divided into: control of surface (texture) and the detection of internal defects (cracks, bubbles, etc.). Digital imaging offers a powerful universal tool for automating control and reducing operating costs for quality control.

Geometric measurements

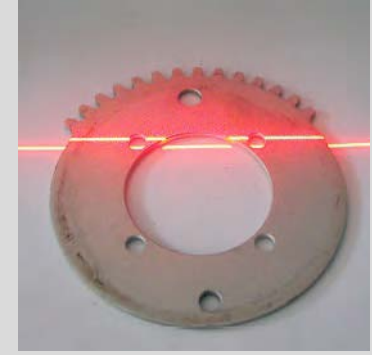
External dimensions of objects, shape accuracy (conformity with the model), the position of subelements, area and shape of the gaps, angle measurement, profilometry.



Quality control of products

Applications:

Control of printed patterns (tiles, parquets and others), inspection of glass and plastic, residual tension, cracks in transparent materials, aesthetic sorting of wood (joists, boards, planks).

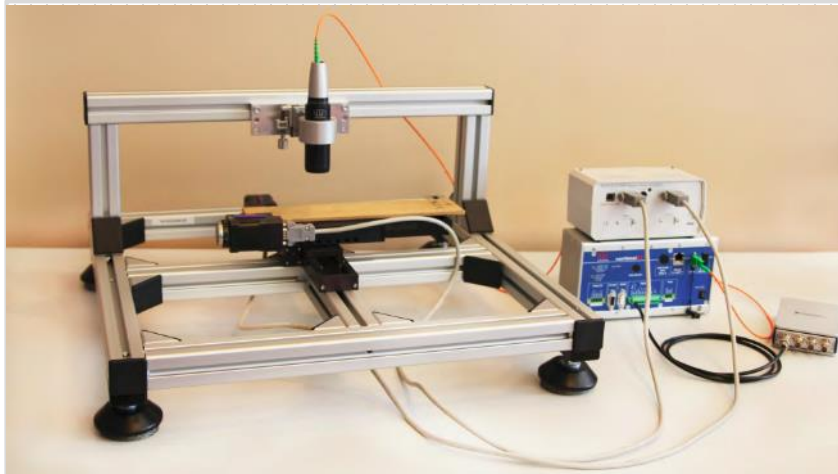


Geometric measurement

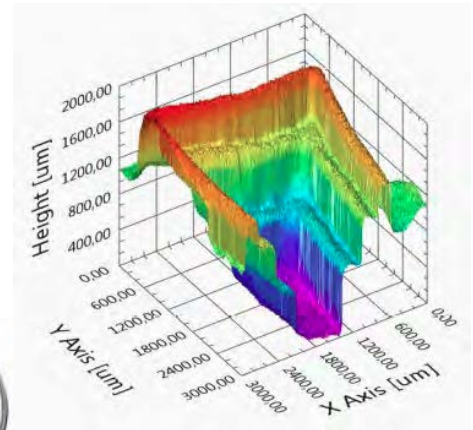
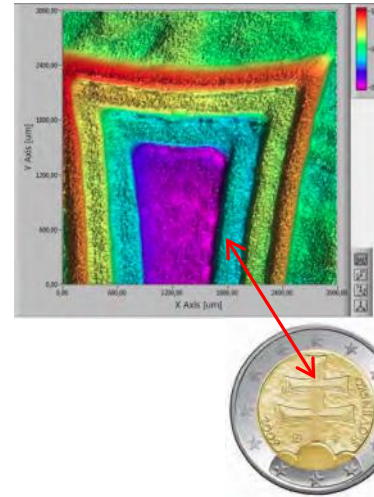
Applications:

Measurement of extruded profiles (rubber, metal, plastic), moulded parts inspection, measurement of cut outs in metal sheet, squareness measurement of cut wood.

LASER AND VISION QUALITY INSPECTION



The Confocal Profilometer scans the distance between the sensor and the surface using a confocal rangefinder. The device is used for quality control, evaluation of shape accuracy and surface roughness.



THE CONFOCALER PROFILOMETER AND DEVICES FOR THERMO-MECHANICAL MATERIAL TESTING

We supplied technological equipment for the implementation and creation of the innovation center at SAV for aluminum processing technology and products made from aluminum. This extended the existing centers possibilities for material research and technological potential for the preparation of unique materials in addition to the processing and preparation of test prototypes.

LASER AND VISION QUALITY INSPECTION



LASERS FOR INDUSTRIAL USE

The KVANT Company has developed several types of lasers for industrial use - lasers for visualization and surveying.

- A laser controlled PC (Navigator) can be deployed anywhere where you need to repeatedly place parts, artwork or where you need to replace mechanical templates. With help from our software you can program any shape of template. The advantage of this system is the ability to quickly change templates without limiting production. Areas of applications are: automotive, machinery, textile and the leather industry and as well as many others ...
- Static lasers are used for accurate tool navigation, earmarking borders, demarcation of intentional point definitions and the setting of exact positioning by projecting lines, crosses or points
- Precision lasers are used in combination with cameras for profilometric systems.

LASER AND VISION QUALITY INSPECTION



The application works by comparing the scanned image controlled bearing with the etalon. The program operates in real-time, using correlation algorithms and it is suitable for deployment directly into a production line.



AUTOMATIC CONTROL OF SLIDING BEARINGS

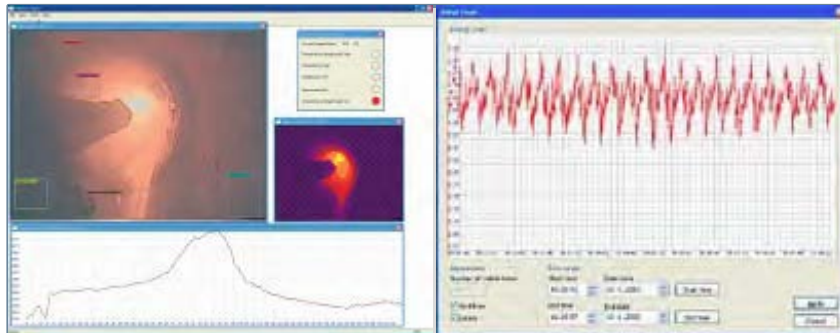
A Bearing Checker system visually controls the quality parameters of a bearing by measuring its basic structural elements. The application can be implemented directly to the production line, which is operated by one operator. The system is flexible to changes in the production and adaptable to different types of sliding bearings.

The controlled structural elements of the bearings include:

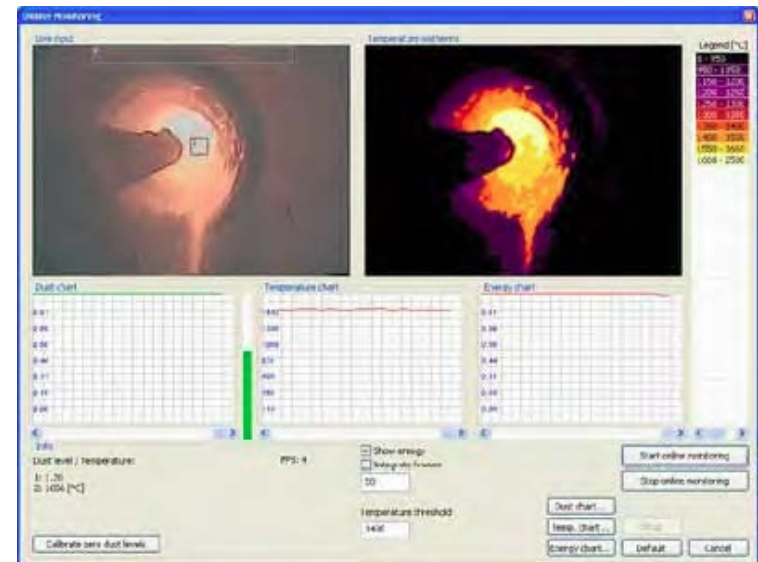
lubricated holes, lubricated grooves, the tongue and the quality of the lining surface.

The hardware components of the system are: Digital (CMOS / CCD) camera with a lens, a digital input-output card, a special light source, a computer and an LCD monitor.

LASER AND VISION QUALITY INSPECTION



Flame monitoring in real-time, calibration of temperature due to spectral characteristics of the signal, evaluated data collection, retrospective views in time, the definition of false colours by emperature range and their analysis in real-time as well as onitoring of the thermal profile in a specified area.

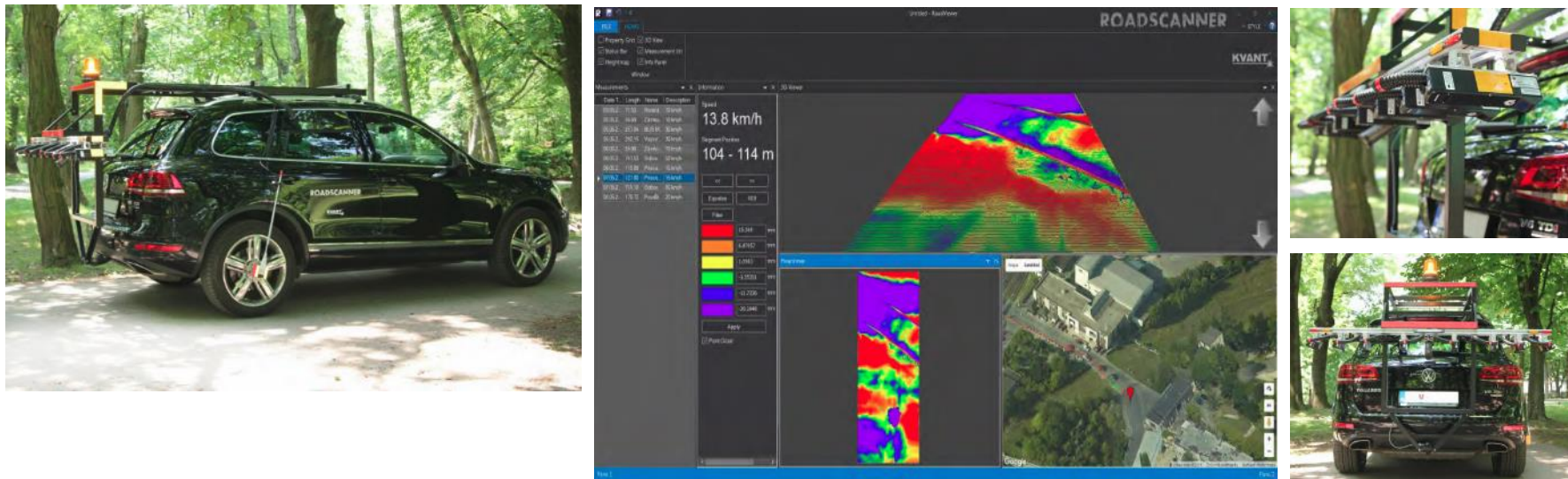


MONITORING SYSTEMS

A frequent requirement tends to be to design and develop systems for continuous monitoring of dynamic objects and processes in real time. An integral part of those systems is the software evaluation of monitored objects.

The monitoring facility is secured by a special device (e.g., CCD cameras, vibration analyser, ...) and the output is processed by a PC, according to the specific requirements for a given application. The Flame Analysis system is designed to monitor the combustion process in a rotary kiln for cement. It provides overall temperature evaluation and dust prevalence in defined areas, as well as the evaluation of energy emissions from the system.

LASER AND VISION QUALITY INSPECTION



ROADSCANNER

The KVANT Company in cooperation with Research Centre of the University of Žilina developed a scanning system for high-density transverse road profiles for rut measurements. It can scan roads up to 4.2 m wide at highway speeds with excellent suppression of ambient light. RoadScanner is device for mobile contactless scanning and measuring of road profiles with high precision.

Typical system outputs are international roughness index (IRI), rut detection, rut quantification, road quality assessment. Results are calculated during the measurement and are available for operator immediately on touch panel. Point cloud is stored as well for further analysis. Suitable for checkup of controlled road sections, road quality control, mapping of road network.

[video](#)

www.roadscanner.sk

LASER AND VISION QUALITY INSPECTION



TRAFFIC ENFORCEMENT

As transport solutions integrate, we are able to propose and implement mobile measuring systems using the latest equipment used in this field (lidar, scanners, video surveillance). The device is used to digitize the road and its surroundings.

LASER AND VISION QUALITY INSPECTION



TRAFFIC ENFORCEMENT

Part of our solutions are a transport system with analyses traffic data, provides statistics and output reports.

Years of experience in the field of traffic applications and digital processing applications allows us to offer reliable solutions for various uses.

Our transport systems are suitable for: highways, municipalities, industrial plants, gas stations, shopping centres and parking lots.

LIMS - Laboratory Information Management Systems



The evidence is a software product designed for processing data and laboratory information management. It provides a wide range of activities that support and facilitate work in the laboratory.



IS FOR LABORATORIES – LIMS

Laboratory automation creates new requirements for the automation of information management, enabling faster data procurement and improved access to information resources. In the last decade the implementation of new, computer controlled laboratory systems, forced modern laboratories to implement new management systems and information processing. These systems are known as LIMS (information management system in the laboratory), allowing laboratories to streamline to maximum efficiency and rationalize the work of the team to provide a higher quality output. Laboratory information management system – Evidence was optimized for forensic applications. From 2006 it is used by Ministry of Interior of the Slovak republic.

LIMS - Laboratory Information Management Systems

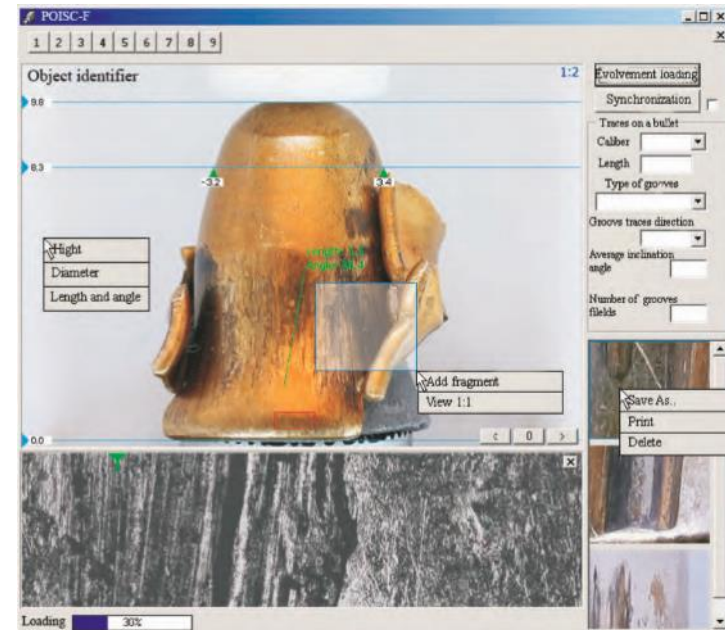
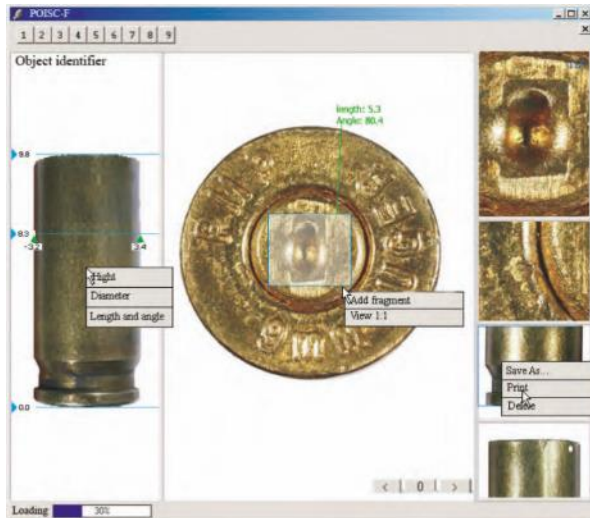


FORENSIC TECHNIQUE

Forensic facilities are intended for the detection of false documents (eg. Passports and identity cards) and banknotes. They are used by government agencies, including the Border Police, Customs and immigration, and state police agencies around the world, as well as commercial and private entities such as: Security printing, lottery companies, insurance companies, national libraries, currency exchanges and banks.

We also supply the equipment for the crime scene: forensic lights, fingerprinting and shoe-printing material etc.

LIMS - Laboratory Information Management Systems



DIGITAL FORENSICS

The Automated ballistic reference system is used for automatic identification and comparison of ballistic track – missiles and cartridges in a database. It provides three-dimensional views of deformed bullets.

The National database backed ballistic tracks allows to quickly search and identify similar tracks in Slovakia. A complete national ballistic system was supplied to the Ministry of Interior of the Slovak republic in 2010.

LEDSCREEN RENTAL

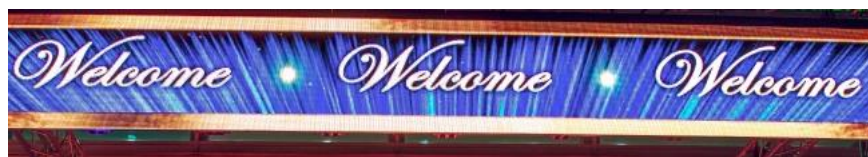


LED SCREENS

In recent years LED technologies have noticed huge developments, they are now used in energy-efficient lighting applications. In the field of advertising and presentations LED displays are proven as an effective advertising media in the third millennium with the possibility of a rapid change in the presented content through Internet connections.

We supply LED screens based on your requirements for indoor and outdoor use, we also offer the possibility of advertising through an existing network of LED screens throughout Slovakia.

LEDSCREEN RENTAL



LEDSCREEN RENTAL

Our stock is packed with more than 1000 m² of various LED screens:

- **20m² LED screen P2.8mm**

The P2.8 is perfect choice for conferences or other events where the audience should be able to read texts from the LED screen.

- **550m² LED screen P3.9mm**

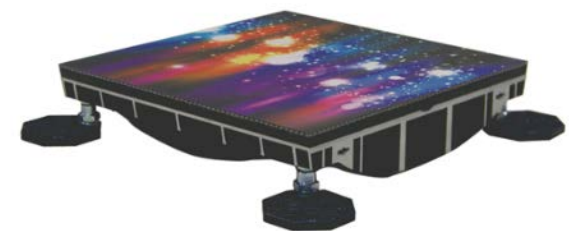
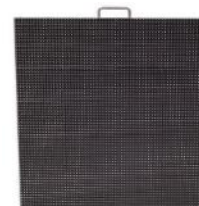
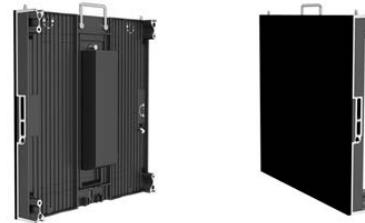
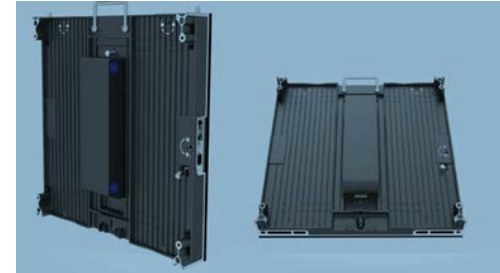
The P3.9 offers a high quality video with viewing distance of 4 metres. This screen is suitable for indoor events of all types, even for conferences where the viewing distance is the break point at decision making whether to use a screen or a videoprojector.

- **500m² LED P6.6**

P6.6 is one of the best outdoor screens thanks to its good resolution and low viewing distance. The picture is very sharp even for the audience close to the screen. Its ultra light weight saves time of the event preparation.

- **60m² LED Floor P4.8**

Our LED floor is practically a LED screen which is adapted to be used as a floor. The options of this LED floor are the same like options of any other screen.



LABORATORY TECHNOLOGIES



OPTICAL AND OPTO-MECHANICAL COMPONENTS

We offer optical, opto-mechanical and detection elements from various manufacturers such as: optical components (lenses, filters, and mirrors for a wide spectral range from the deep UV to the far infra-red area), mechanical components (brackets, manual and motorized sliding tables, large stabilizing systems and electric sliding nanotables), detecting components (detectors and power energy meters, laser beam profilometers). We also offer complete laboratory equipment designs using optical and mechanical components according to customer needs.

Special anti-vibration tables with passive or active vibrating elimination systems find their usefulness in many laboratories for fine measurements of physical quantities.

LABORATORY TECHNOLOGIES



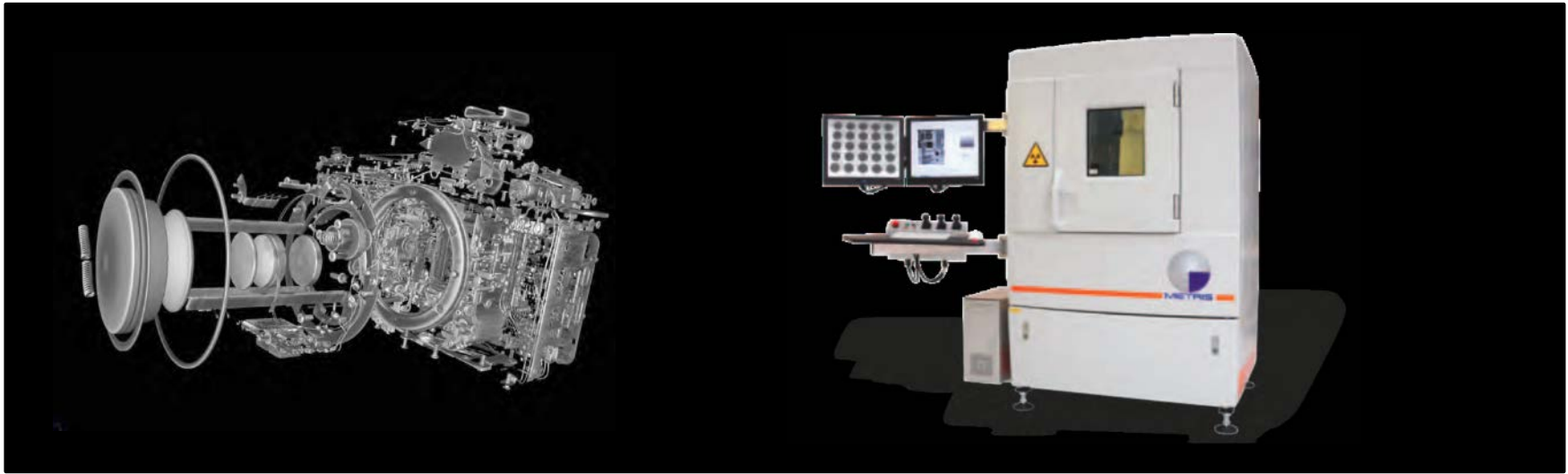
An extensive array of measuring probes, detectors, light sources and accessories make up our complete range of effective solutions for spectrometric tasks, especially where there is a need for a compact, easy and mobile design.



COMPACT SPECTROMETERS AND MICROPHOTOSPECTROMETERS

The Ocean Optics Company was the first to come up with the miniature spectrometer-based detector line feed. Today, Ocean Optics is a well-known leader in mobile spectrophotometric applications. They offer miniature USB spectrometers in the range of UV, VIS and NIR all perform with different efficiencies, resolutions and sensitivities. KVANT Ltd. is the exclusive distributor of microphotometers CRAIC Technologies in Slovakia and in the Czech Republic.

LABORATORY TECHNOLOGIES



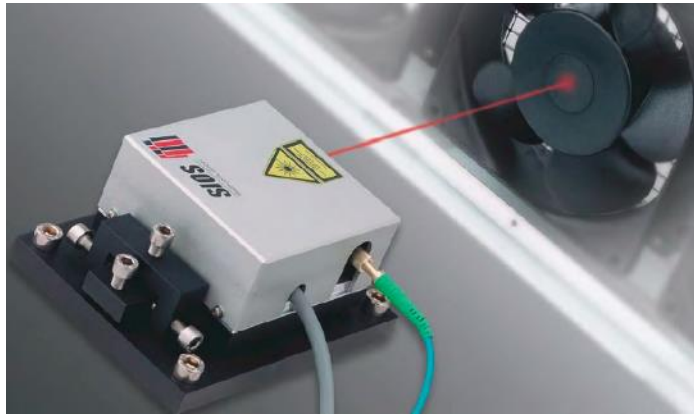
X-RAY INSPECTION

X-ray inspection systems are flexible and high precision defectoscopic devices useful in RnD as well as in production. The 2D systems are excellent for PCB inspection with BGA technologies, internal integrity of chips. 3D version offers complete nondestructive 3D tomography for inspection of dimensions, precision of the shape, inspection in enclosed modules of electronics in automotive, aerospace, medical electronics industries in medicine and general-purpose research and development. Systems are enclosed in shielding cabinets, so operation does not require special regime on the work place.

Systems are variable and configurable for many different application fields.

KVANT Ltd. is the exclusive distributor of X-ray inspection by NIKON in Slovakia.

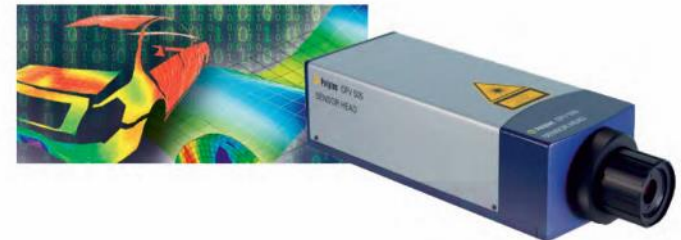
LABORATORY TECHNOLOGIES



VIBRATION MEASUREMENT

A non-contact vibration measurement method is particularly useful for the measurement of vibrations in structures.

These devices are suitable in cases where high speed and flexibility are required during the solution of the dynamics and acoustics of any structure, and otherwise difficult to measure surface. There is a wide selection of different types of systems from uniaxial to triaxial to complete measurements of vibration vectors. From systems which measure one exact point through multi-point measurements, to scanning vibrometers, which gradually pass over the entire examined surface.



LABORATORY TECHNOLOGIES



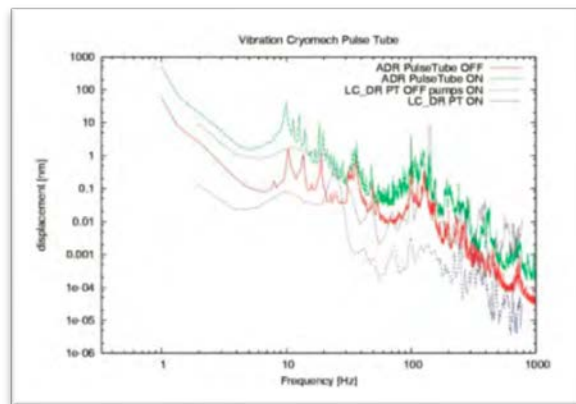
RESEARCH LABORATORY FOR THIN FILMS



Faculty of Mathematics Physics and Informatics together with company Staton created common research laboratory for new thin film coatings. Company uses CNC technologies for sharpening of weared tools as well as vacuum technologies for thin film coatings, mostly TiN. Customers request for new materials with more advanced properties is creating a need for inovations in coating technologies and that is a task for the new research laboratory. One part is aimed for preparation of the coatings. A core is industrial HiTUS coating machine. Second part is aimed to analysis of coating properties.

Equipment for the laboratory was supplied by KVANT.

LABORATORY TECHNOLOGIES

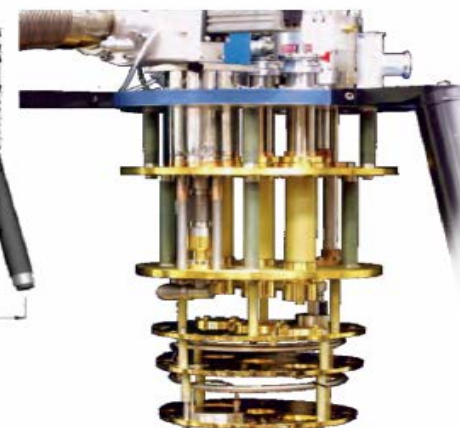
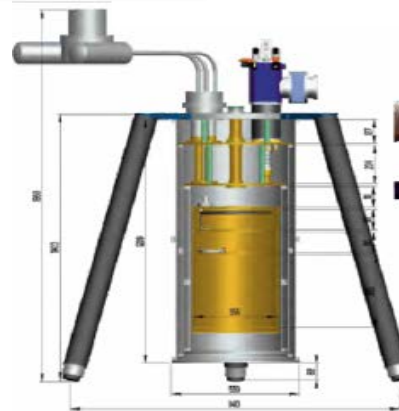


The device allows performin experiments at extremely low temperatures near absolute zero. These conditions are used to study quantum phenomena. The laboratory is equipped with measuring equipment and electrical signal analysers within the limits of the possibilities of current technology.

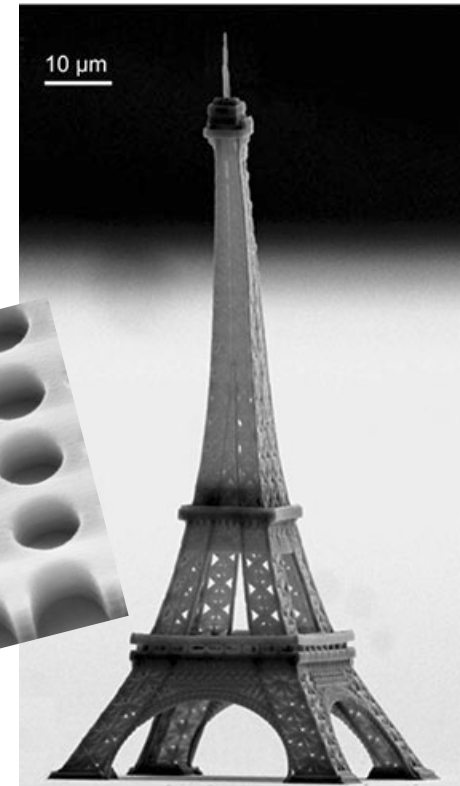
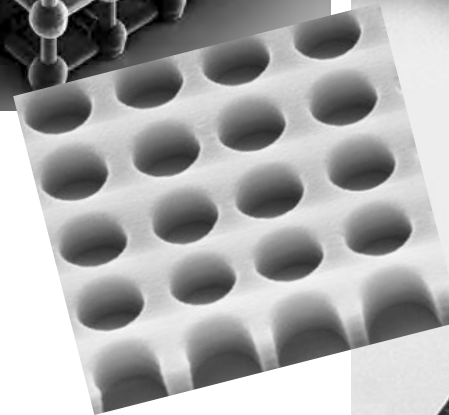
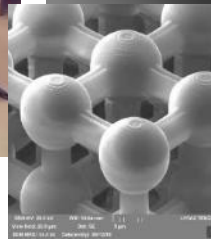
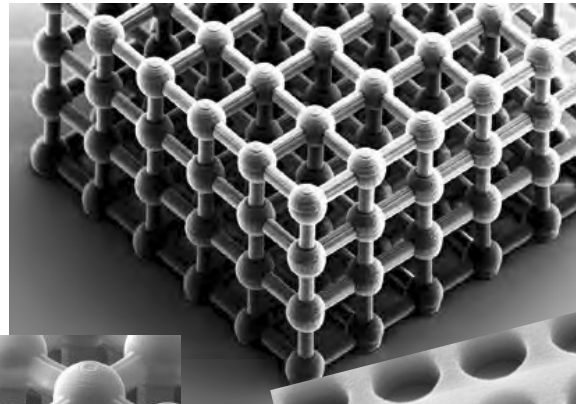
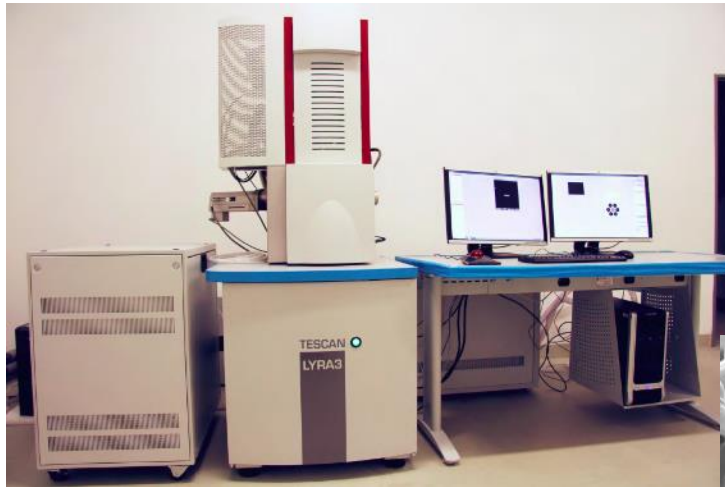
CRYOGENIC TECHNOLOGY

Department of Experimental Physics of Comenius University have created a physics laboratory operating at extremely low temperatures. The laboratory is equipped with a refrigerator, which reaches a temperature of 10 mK.

In Slovakia, it is the only device that allows you to research phenomenas at extremely low temperatures.



LABORATORY TECHNOLOGIES



UNIVERSITY SCIENCE PARK

Main research areas of University Science Park are intelligent transportation and manufacturing systems, development of progressive materials and technologies and information and communication technologies.

Company Kvant worked as main sub supplier of complete technologies for laboratories: Technology for development of optical fiber sensors, optical systems and wires. Technology for application of new photonic opto-fluid fiber elements, integrated optics and optical wires.

LABORATORY TECHNOLOGIES



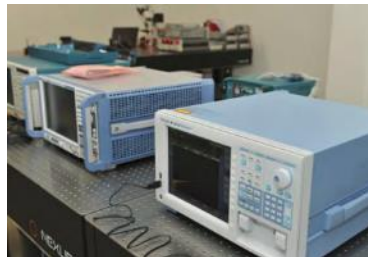
EQUIPMENT FOR TECHNICAL SCHOOLS

Teaching and research systems for renewable energy. Our education system in the field of ENERGY is dealing with basic principles and practical aspects of "traditional" renewable energy sources and their use. As skilled technicians and specialists are needed to address vision, 2E has developed an extensive line of products for training in these areas.

Our education policy is ideally suited to the typical curriculum of professional schools and universities in the field of environmental engineering. Technologies using renewable energy sources are an integral part of our modern education system in the field of energy technologies, effective use of energy is an important criterion for the future viability of the technology.



LABORATORY TECHNOLOGIES



VÝSKUMNÉ CENTRUM
ŽILINSKEJ UNIVERZITY V ŽILINE



RESEARCH CENTRE EQUIPMENT

Research Centre of the University of Žilina was created as research and development facility at the University of Žilina. With number of 14 departments and more than 100 new Instruments and technical equipment, its mission is to work as regional center for applied research. Main research areas are transportation including control, operation and new materials, construction, mechanical engineering and smart systems, mainly focused on smart buildings operation and renewable energy sources.

KVANT company worked as the general supplier of Technologies for Research Centre.

LABORATORY TECHNOLOGIES



TANDEM ION ACCELERATOR

The Faculty of Mathematics, Physics and Informatics, of Comenius University in Bratislava is building a laboratory with a tandem ion accelerator and a mass analyser. KVANT Co. worked on the project as the supplier of the accelerator and all necessary accessories. We ensured complete delivery, refinancing, installation and service in demanding time and technological conditions. Thanks to the project, Slovakia has gained the modern technology for the research and detection of materials and ionized radiation.

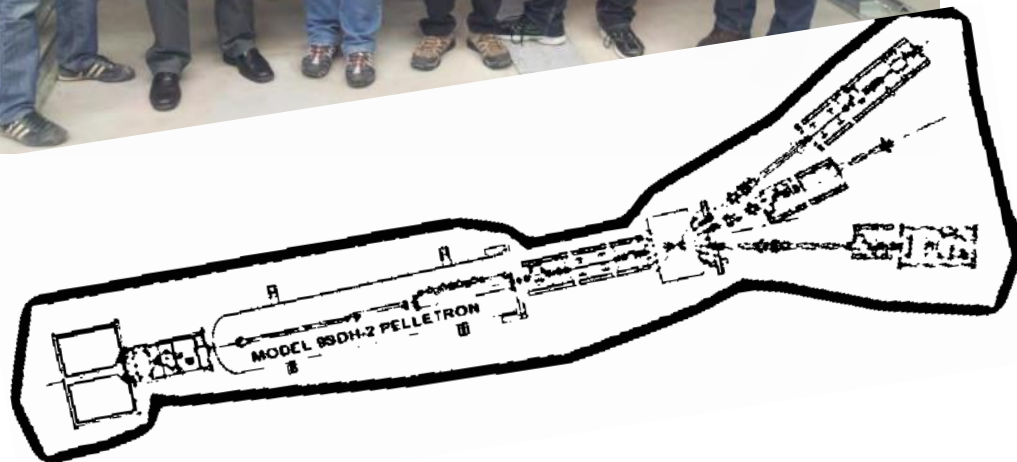
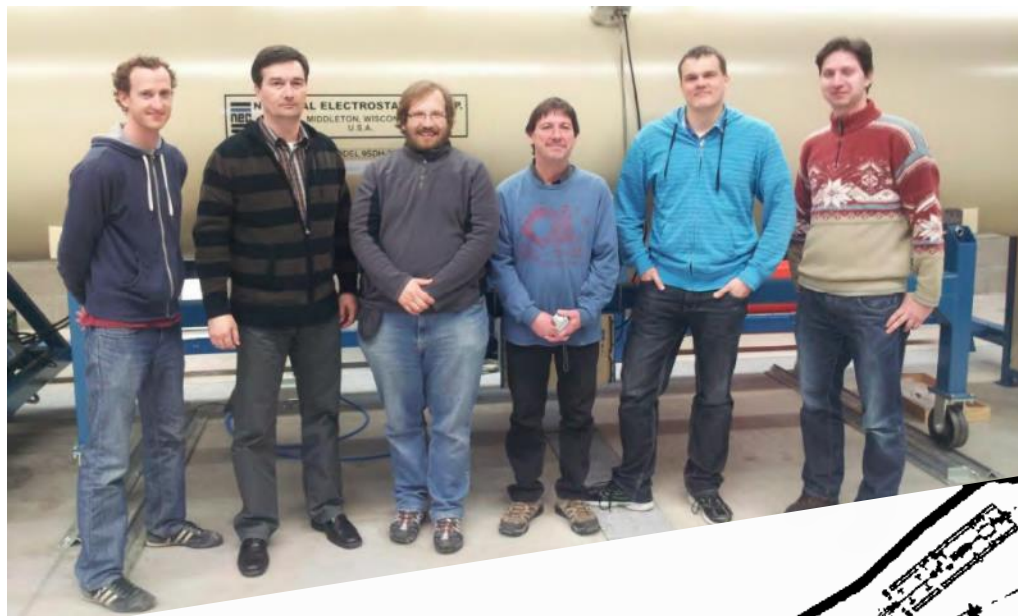
LABORATORY TECHNOLOGIES



TANDEM ION ACCELERATOR

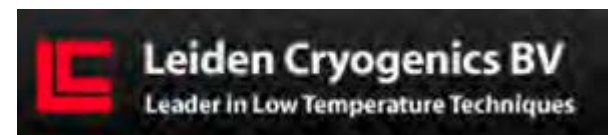
The Tandem ion accelerator with a voltage of 3 MV equipped with an ion analyzer is a unique device in Central Europe.

The device has strong scientific potential, it can be used to identify substances with very low activity, which greatly contributes to the field of nuclear safety.



LABORATORY TECHNOLOGIES

KVANT is distributor of a lot of worldwide producers of technologies



AWARDS OF THE KVANT COMPANY



In precious years KVANT was awarded with several prestigious awards. Lubomir Mach and Pavol Kubosek, founders of KVANT, were finalists in the 2013 Entrepreneur Of The Year contest.

In the year 2014 KVANT became the holder of two awards in the SLOVAK GOLD contest.

In the category of "Specific Products" we received the award for "Laser Geometrical Optics" and in the category of "Services" we received the award for "Design and Implementation of Laser and Multimedia Shows".

In 2016 and 2017 KVANT Company achieved a lot of ILDA Awards.

www.kvant.com



www.kvant.sk

OVERVIEW OF REVENUES

Year	Turnover total (euro)	Export total (euro)	Number of employees
2010/11	9 691 917	4 465 643	75
2011/12	12 699 312	4 527 191	76
2012/13	12 978 589	4 936 174	77
2013/14	22 954 530	6 326 021	100
2014/15	24 953 095	7 618 913	104
2015/16	61 747 533	8 389 283	108

