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CZECH Medical, Optical, and Measuring Devices

Supplement of Czech Business and Trade



CZECH MEDICAL, OPTICAL, AND MEASURING DEVICES

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*Linet – Number One Manufacturer of
Healthcare Equipment*



*Rodenstock – Mark of Exquisite Quality and
Design*



*EGO Zlín – Specialist in the Field of Rescue
Systems*

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Dear Readers,

In 2008, we have devoted the first sector supplement of Czech Business and Trade magazine to medical, optical, and measuring devices. This sector of Czech industry encompasses a wide product range and enjoys a good and promising position.

The competitiveness, expertise, and growth of these sectors is ensured by universities and research establishments, which enjoy a long tradition in the Czech Republic and have attained many a success in the field of research and development. An example that speaks for all is, for instance, that of Professor Otto Wichterle and his inventing of the contact lens.

The further growth of the sector is boosted by investment projects promoted in the Czech Republic in particular by CzechInvest, the Investment and Business Development Agency. The presence of companies such as Arrow International, Honeywell, and Delong Instruments is a testament to the fact that the Czech Republic is a destination of interest to foreign investors.

On the other hand, a number of Czech companies sell their products successfully on foreign markets. Linet is one such company. It ranks among the largest manufacturers of hospital beds worldwide. Linet's products are exported to over 75 countries the world over. Meopta-optika, again, is the number one on the optics market. It specialises in the development and manufacture of sports and military technology. AMESZ is an example of a successful manufacturer of measuring devices and equipment, 70% of which are intended for export. The three mentioned companies are just a small example of the fact that the manufacture of medical, optical, and measuring devices constitutes an inseparable part of Czech industry.

■ Prospects in the Manufacture of Medical, Optical, and Measuring Devices

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The manufacture of medical, optical, and measuring devices (NACE 33) is a competitive branch with a wide product range. It places high demands on co-operation between mechanical and electrical engineering and electronic professions, not only in the development of those instruments, but also in their practical use.

Legislation and Manufacture

In the area of both technical and ecological regulations, Czech legislation was broadly compatible with the legislation of the European Union already at the time when the Czech Republic had joined the EU.

The continuously shortening innovation cycles in production are forcing manufacturers to steadily rationalise their production processes and reduce their costs. The companies' response, therefore, is to seek different kinds of assistance, programmes to support employment or the building of technological centres. To facilitate and accelerate the development cycles, they started to form free associations of enterprises, so-called clusters, which can cover a part of their operating and development costs by drawing money from EU structural funds. The interest of Czech and foreign investors in capital investment, especially in new projects, creates prerequisites for the continuous growth of competitiveness of this branch.

Characteristics of the Branch

The technologically largest sectors within the branch are measuring and control instruments, and healthcare equipment.

The healthcare equipment sector, together with the medicaments sector, is the only industrial branch having an influence on living biological entities. From this ensues the great need for research in the branch and the development of instruments and equipment often based on the requirements of scientific medicine.

According to the branch classification of economic activities NACE 33, the following sectors are included in the branch:

- 33.1 Medical devices
- 33.2 Measuring and regulation apparatus
- 33.3 Automation devices
- 33.4 Optical instruments and photographic equipment
- 33.5 Time measuring instruments

Main Economic Indicators

The revenues from the sale of own products and services conclusively reveal that the branch is growing at a high rate. A comparison of figures for 2001 and 2006 shows that revenues from the sale of products and services of the branch as

Foreign Trade

A typical feature of this branch is its unfavourable balance of trade as a result of high imports, especially of sophisticated products from renowned companies and of semi-finished products and special components. In spite of this,

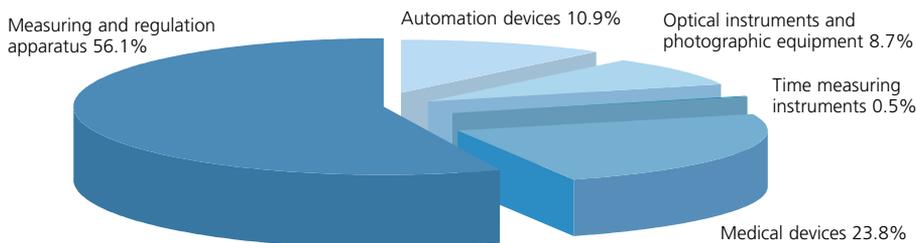
finished products and materials for manufacturers in the CR and then take finished products back, also for distribution to other countries.

International Comparisons and Competitiveness

The Czech market is fully comparable with markets in other countries. Czech manufacturers are doing well even in the face of keen competition from foreign companies, such as Siemens or Rodenstock. This concerns primarily the manufacture of a selected range of control equipment, instruments and components, final production of sterilisers, hospital furniture, surgical instruments and optical elements with a higher mechanical work input. In comparison with previous years, manufacturers compete successfully owing to the use value and the price of their products. The development of the branch goes hand in hand with investment in new technologies and the development of new advanced and sophisticated products. The labour productivity indicator derived from added value, however, is still lagging behind West European countries. For example, in 1999 productivity of labour was on the level of 39% of labour productivity in Germany and Austria. Currently this indicator is around 50%.

The condition of remaining competitive is continuous development, both of products and manufacturing technologies. This is only possible on the basis of new scientific knowledge and research, where the building of technological and development centres is becoming very useful.

Shares of the sectors in revenues from the sale of own products and services in 2006



Source: Czech Statistical Office, MIT estimate
Note: Data in current prices

a whole grew significantly. The most significant growth of revenues in that period in absolute figures was shown by

between 2001 and 2006 the trade deficit declined.

As can be seen from the graph below,

Revenues from the sale of own products and services in current prices

(EUR million) current prices	2001	2002	2003	2004	2005	2006*
Revenues from sale of own products and services NACE 33	10 656.0	11 557.1	10 165.7	12 802.8	3734.7	16 840.7
Revenues from sale of own products and services/Manufacturing industry	65 153.9	66 000.0	67 478.7	78 826.5	90 008.9	106 195.2

* estimate
NACE – Statistical Classification of Economic Activities within the European Communities
Source: Czech Statistical Office, MIT estimate

the sector "Measuring and regulation apparatus". Another fast-growing sector is "Medical devices", which grew by more than EUR 140 million.

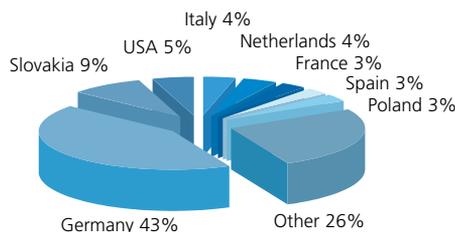
the dominant position is held by Germany, which is caused primarily by ownership relations, as the majority of firms under foreign control are German companies. Some of the parent companies make deliveries of semi-

Direct Foreign Investment

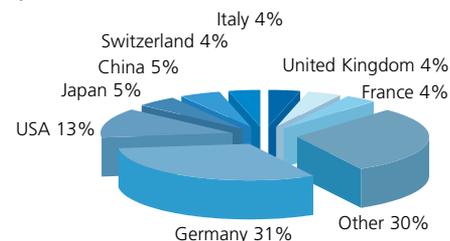
The flow of foreign capital into the manufacturing industry has resulted in favourable structural changes. Foreign investment in organisations within the branch is growing and accounts for an important part of new manufacturing facilities. Organisations under foreign control enlarge their existing enterprises and at the same time new investors keep arriving, whereby their share of the country's economic results is increasing each year. Foreign investors are primarily interested in "green-field" projects and in industrial parks with the infrastructure already in place.

Territorial Structure of Foreign Trade in 2006

Export territories in 2006



Import territories in 2006



Source: Czech Statistical Office, MIT estimate

The Development of Medical Devices Is Supported by a Professional Association

Otakar Fenik, Association of Manufacturers and Suppliers of Medical Devices (Asociace výrobců a dodavatelů zdravotnických prostředků), e-mail: asociacebrno@iol.cz, www.medtechnik.cz

As in other branches of industry, in the area of medical devices, too, efforts were made in the 1900s to set up an association of companies doing business in that branch. The Association of Manufacturers and Suppliers of Medical Devices was established in 1992. Its principal mission is to create optimum conditions for the development of the medical devices sector and to defend the interests of its members.

The Target is the Successful Development of the Sector

The Association's attention is focused on the development of the sector. In its framework, the Association is inciting its member companies to innovation, mainly in the area of research, design and quality.

To attain these aims, the associated companies co-operate with a number of research institutions and universities. In this respect, the Medical Devices Association stimulates its members to participate in projects organised by the Ministry of Industry and Trade and seek financial support for their research or to apply for subsidies from EU structural funds.

Several associated companies, such as Linet, PATRON Bohemia, and ING corporation, already have experience in drawing money from those funds.

The Association Supports Exports and Products for Disaster Medicine

Another area in which the Association is involved is marketing. In recent years, the Association made arrangements for the participation of its members in the fairs Medica Düsseldorf and Arab Health in Dubai. Both fairs proved success for the companies, which gained new outlets for their products. The Association's members currently export 85% of their output. Very successful companies are, for example, Linet with its hospital beds, BMT with steam sterilisation devices, Borcad with gynaecological beds, and



UJP with cobalt and X-ray irradiation devices.

The Association pays special attention to the development of medical devices for disaster medicine. For this area, the Association organises specialised conferences.

Support of Life-long Education

The third area which the Association supports, is life-long education. Its main concern is legislation, quality management, and the disposal of wastes from the production of electrical devices. In this area, the Association organises seminars and conferences not only for the companies' senior management, but also for the technical personnel.

Future Prospects

The Association has set itself the aim to continue developing the medical devices sector by monitoring world trends in areas such as nanotechnology and micro-systems for the construction of instruments, devices for the minimisation of invasive methods, introduction of information technologies in the health service, urgent medicine, and disaster medicine.

From the History of the Medical Devices Sector in the CR

The history of the medical devices sector goes back to the 1920s, when artisan production began to develop into an industry, starting with surgical and dental instruments, X-ray apparatus, sterilisers, and dental devices. A qualitative change occurred with the appearance of electronics. At that time, the Czech Republic scored success with its products worldwide. For example, at the EXPO 1958 World Exhibition in Brussels, Czech products – cardiac defibrillator and electron microscope – won gold medals. Production began to develop of electronic medical devices (electrocardiographs, respiratory and anaesthetic units, physical therapy devices, etc.). Other world achievements were the Nobel Prize awarded to Professor Jaroslav Heyrovský for his polarograph, and the invention by Professor Otto Wichterle of the modern contact lens. Professor Delong, in his turn, was granted a patent for his electron microscope. In total industrial production, the medical devices sector is relatively small, but in terms of achievements and recognition it exceeds other branches of industry.

■ The Flow of Investment into the Branch Supports Its Development

Martin Partl, CzechInvest, e-mail: martin.partl@czechinvest.org, www.czechinvest.org

The medical device sector has a long history in the Czech Republic. The growth of the sector owes much to the favourable geographical position of the Czech Republic, which lies in the close vicinity of the largest markets of the European Union. The optical and measuring device sector, too, is doing well, benefiting from the considerable flow of foreign investment into the branch. Its good standing despite keen European competition is attested by the fact that about two-thirds of its total output goes for export.

CzechInvest Supports Life Sciences

Supporting companies operating in the Life Sciences sector is one of the aims which CzechInvest, the Investment and Business Development Agency, has set itself. Between 1992 and 2007, CzechInvest supported 12 Life Sciences investment projects worth nearly EUR 280 million.

There are many large foreign investors in the Czech Republic operating in the area of medical devices, such as the US based Arrow International company, which has built an enterprise in the country for the research, development, and manufacture of different kinds of hospital equipment, e.g. for cardiology and X-ray departments. Another large investor operating in the CR is the British company Laminar Medica, which specialises in the development, testing, manufacture, and validation of insulated transport systems used worldwide by the pharmaceutical and bio-technological industries. Lohmann & Rauscher, Austria, manufactures dressing material, sanitary products and first-aid equipment. Otto Bock CR, Germany, manufactures and distributes in the Czech Republic prostheses and orthoses, wheelchairs, rehabilitation equipment, special home aids for the handicapped, and orthopaedic shoes, while the Swedish company Mölnlycke

Health Care manufactures surgery material and equipment.

Measuring and Optical Devices in the Czech Aircraft Industry

Three technical universities and several specialised firms are involved in the research of measuring and optical instruments for the aircraft industry. One of them, for example, is the US company Honeywell, which opened a branch in the CR in 1991. It specialises in the development of advanced avionic systems. Honeywell has its bases in Prague, Brno, and Olomouc, which employ 2 300 people in total.

Research in this area relies on the good work of Czech universities, which help especially domestic sports plane manufacturers with their expertise and knowledge. It is encouraging that Czech technical universities are seeking partners in the private sectors to help shorten the time needed for the introduction of new and more efficient instruments and optical devices into practical use. At the same time, the schools and other research institutes can draw money for the development of these activities from European funds.

Optical Instruments and Devices

The Czech Republic boasts a long history of projects in the area of research, development, and manufacture of optical instruments and devices. Figuring high on the list of the projects are electron microscopes. The development of these instruments in the Czech Republic goes back to the 1950s and it is linked with names such as A. Delong, L. Zobač, and V. Drahoš. They were the only ones in the former Czechoslovakia to build an electron microscope prototype.

Their successful work was at the base of the programme of the Tesla Brno enterprise and the Instrumentation Engineering Institute (Ústav přístrojové techniky), which rank among pioneers

in this branch on the European scale. After 1989 and after the extinction of Tesla Brno, many of its former highly skilled researchers set up their own firms, which operate successfully until today.

This change marked another milestone in the history of the branch in the Czech Republic, which has become one of European and maybe even world centres of this top-standard technology comparable, for example, with Cambridge. Three companies are currently involved in this sector in the Czech Republic: FEI Company, TESCAN and Delong Instruments.

FEI is an international company concerned with the development and manufacture of electron microscopes. It came to the Czech Republic in the late 1990s and through Philips Electron Optics merged with the Czech DELMI company. This company, too, was set up by the employees of the former Tesla Brno. Currently it employs approximately 120 people, about fifty of whom work in research and development.

TESCAN is another example of a successful company established by former employees of Tesla Brno in 1991. The company concerns itself with the development and manufacture of scanning electron microscopes and electronic measuring devices. It employs about 70 people, who develop and manufacture Vega and Mira microscopes.

The third such manufacturer operating on the Czech market is Delong Instrument company, which was established in 1990. Under the guidance of Professor Armin Delong, the company devotes itself primarily to electron and X-ray microscopy and vacuum technology. The company's activities cover the areas of research and development, manufacture, and testing of equipment.

■ Long Tradition in Optics Education

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Optical education and research have a long tradition in Olomouc. The Department of Optics was founded at Palacký University in the 1960s. The beginnings of optical studies in Olomouc were linked with precision mechanics and optical instruments. Later development, mainly thanks to the variety of laser-based instruments and applications, brought optics closer to solid-state physics, electronics, and quantum mechanics. These modern trends are at the base of the current study of optics at the Department of Optics, in co-operation with the Joint Optics Laboratory of Palacký University and Institute of Physics, Czech Academy of Sciences.

The Core Branch: Optics and Optoelectronics

This specialisation can be studied in three-year Bachelor courses followed by a two-year course for a Master's Degree and the follow-up doctoral study. The whole study is conceived so as to allow permeability between students of other physics-oriented studies at other universities. The Bachelor course gives students good basic knowledge in mathematics and physics, and additional knowledge in the area of optics. Special attention is paid to photonics following modern trends in optics, optronics, and quantum optics.

The follow-up course for a Master's Degree leads students to greater specialisation in areas which the students will choose themselves. Currently there are three main lines for further specialisation. The first covers optical instruments and systems, where in the focus of attention are optical calculations, optical technologies, technical optics, and design of optical systems with software. This specialisation is combined with attractive research focused on the transmission of the mechanical effects of light and the construction of what is called optical tweezers. The second line is oriented to optoelectronics and photonics covering



Partial view of a laboratory at the Department of Optics of the Faculty of Science of Palacký University in Olomouc

the subjects, such as electronics and micro-electronics, optical information processing, laser physics, and integrated optics. The third line is focused on quantum optics and quantum information processing. Here, students become acquainted with subjects such as quantum electrodynamics, quantum protocols and communications, and quantum optics. This study is supported by a number of research projects covering a wide range of topics, such as quantum cryptography and information detection and processing. Many students take advantage of the possibility of winning scholarships and spend one or two terms at a partner university abroad. So far, students have served internships at universities in Graz, Austria, Grenoble, France, Lyngby, Denmark, and Umei, Sweden. After having defended their theses, the gifted students may continue their studies in post-graduate courses,

which will prepare them for their own scientific careers.

Optical Instruments

In addition to the follow-up forms of study, students of the Department of Optics can take up professionally oriented Bachelor courses. One of them is a three-year course in Optical Instruments. Its main purpose is to train students to become qualified specialists in the area of modern optics and optronics, with a good general survey of optical branches and the ability to solve technical problems. The graduates are trained for qualified technical work in laboratories concerned with designing optical and optronic systems and instruments, the application of optical methods in metrology and medicine, computer-aided designing and devising optical technologies. Their universal training makes them easily adaptable to

team work. According to their own choice they can become specialised in various optical technologies including audio visual systems or medical optical systems and instruments. The study takes into account the requirements of enterprises operating in the Central Moravia Region. The curriculum was prepared in close co-operation with those enterprises and the graduates find work as medium-level technical specialists.

Bachelor-level Optometric Studies

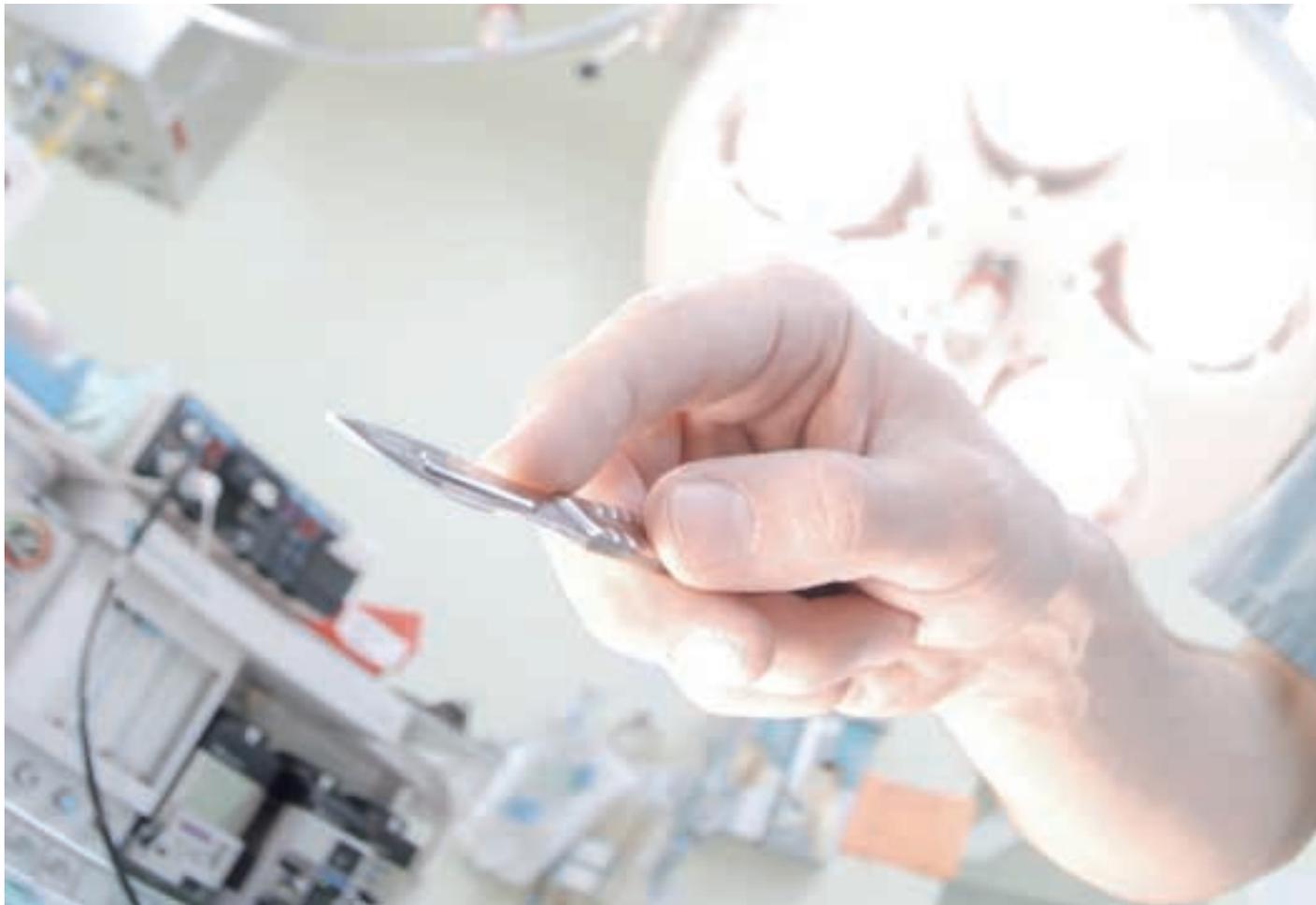
The last line of optical studies at the Department of Optics is an independent professional three-year course for a Bachelor's Degree in Optometry, which is quite popular with students. The curriculum is based on the requirements of the Ministry of Health of the CR, in the framework of which the graduates will gain the authorisation to provide the

healthcare profession of Optometrist. The curricula are being continuously harmonised with practical needs and are compatible with the European Optometrist Diploma requirements. The study consists of subjects covering general knowledge in optics and selected pre-clinical and clinical medical subjects having the system of vision in their focus. Special attention is paid to ophthalmology and optometric subjects, including practical study, and subjects relating to ophthalmic optics. The study also includes courses in professional ethics and the rudiments of economy and legislation. These subjects are the joint responsibility of the Department of Optics and institutes of the Medical Faculty of Palacký University, especially its Ophthalmic Hospital. Some of the teachers are external optometry and ophthalmic specialists. The study is terminated with an examination for the Bachelor's Degree. The graduates

become authorised "Optometrists" with opportunities to work in healthcare facilities in the sense of the act on non-medical healthcare professions. They can also work as specialists in contact lens application centres, as ophthalmic opticians, in the contact lens business, in businesses dealing in optical, ophthalmic, and other medical instruments and optical materials, or in the production of spectacle glasses, spectacle rims, contact lenses, etc.

Opportunities for Graduates

Although optics as a science dealing with light belongs to classical disciplines of physics, it has good prospects also in today's IT world. The graduates of this technically oriented university study have no problems in finding a good job, because demand for them greatly exceeds the supply. ■



Optics for Sport and Astronautics

Zuzana Veselá, Meopta – optika, s.r.o., e-mail: vesela@meopta.com, www.meopta.com

The company was founded in 1933 under the name of Optikotechna. Its first products were magnifying lenses, later magnifying instruments, cameras, motion-picture cameras, and projectors.

After 1990, Meopta was divided into several entities. At that time, co-operation was established with the company TCI New York, which, by investing in the company and enlarging its activities, gained a majority stake in Meopta. In 2006, the divided parts of the company merged again into one firm, Meopta–optika, which changed its legal status to become a limited liability company.

Product Portfolio

The company's production programme covers several areas. It consists of sport optics, mainly riflescopes for hunters and sportsmen, and binocular and monocular telescopes. In the optoelectronic instrument category it makes personal night-vision devices, day, night, and combined observation devices and direction finders for armoured vehicles, and night-vision direction finders for small firearms. OEM optoelectronic systems are part of larger technological units – medical, aircraft, and scientific



MEOSTAR R1 spotting scope section

instruments. Meopta also manufactures optomechanical systems – film projectors, lenses, eyepieces, prismatic systems, TIR colour prism assemblies, optical waveguides, etc.

The company's product portfolio also includes optical elements, such as glass prisms, lenses, and filters forming the basis of optical instruments serving various purposes, including science, measuring, manufacture, avionics and astronautics.

Rising Sales of Products

The company's success is based on the work of experienced teams of researchers and designers of devices and optical systems, the work of precision mechanics, high-tech manufacture of optical elements, including special coating,

precision assembly, and the testing of products and components.

One of its achievements in recent years has been the growing share of its sales of Meopta sport optics in the USA. It is also scoring success with the sale of its high-tech systems, such as laser scanners used in the manufacture of micro-processors and colour division systems for high-performance digital projection.

Massive Exports and New Items on the Market

More than 95% of the company's output are exported, especially to West European states. Its other important outlets are the USA, Switzerland, and Israel. Its new items include a new series of Meostar sport optics, whose parameters rank the company among the world's leading manufacturers in the branch, mainly of riflescopes, monocular telescopes, and binoculars. The ranges of these products are enlarged each year with the addition of new models.



MEOSTAR S1 spotting scope section

■ Linet – Number One Manufacturer of Healthcare Equipment

Linet is company number one on the Czech market in the hospital bed sector and is one of the world's five largest companies in the branch. Linet exports 86% of its output to 75 countries. Its largest customers are EU states. In the 2006/07 business year, the turnover of the company, which has 460 employees, amounted to EUR 58.5 million. Linet, based at Želevčice u Slaného, manufactures more than 33 000 beds a year, plus a wide range of mattresses, bedside cabinets, and hospital furniture. To learn about the company's plans we met with its director, Mr Zbyněk Frolík, and asked him a few questions.



Universal hospital bed supporting the patient's movements

The Linet company was established in 1990 as a green-field project. Can you give our readers a brief outline of its development?

I founded Linet in 1990 with a clear vision: to manufacture sophisticated hospital beds, which at that time were not widely available, especially in the Czech Republic. In planning their construction, we placed emphasis on design and comfort with respect to the work of the nurse. At that time, it was a relatively great innovation and at the same time a great risk, as money in the Czech health service was in short supply. From the very beginning, however, we focused on the customer. We studied conditions in hospitals and healthcare homes, we talked to nurses and physicians and designed beds that would help them in their work.

At the beginning, the company had its workplace in an old farmstead near Prague, where machine tools were our only equipment. We made all sorts of things, from cages for laboratory animals to weldments. Our first major order for hospital beds came from the University Hospital in Prague-Motol. Our "Motol" bed had specific parameters focused on the customer's needs. Already at that time we started building the image of the firm so as to reflect its care for the customer and to fit its products to his ideas.

A breakthrough was the placing on the market of its Multicare and Eleganza beds, which differed so much from rival products that a comparison between them was like comparing "a Porsche with ordinary road vehicles". They meant a revolution not only in terms of design, but also in the wide range of their functions. In the year 2000, the beds opened the way for us to the market and started our massive expansion to foreign countries. The beds gained prestigious awards for their design. A real revolution was the lateral tilt construction, which was adopted also by rival manufacturers and has since become a hospital bed standard.

Can you give us a brief description of your production?

Our main product group is hospital and nursing beds. The overwhelming majority of our beds are top-standard, highly sophisticated beds in eight product ranges affording a multitude of functions for the comfort of both the patient and the nursing personnel. Conventional simple mechanical beds are on the decline and account for a mere 3% of Linet's total turnover. The best-selling types are the modern lateral tilt beds Eleganza and Multicare. Much appreciated are their unique functions and innovative design. Our programme naturally comprises a variety of other healthcare equipment, such as bedside cabinets, mattresses, and hospital and nursing-room furniture.

Linnet is an important company. What is behind your success?

Linnet's greatest strength in comparison with rival firms worldwide is its massive investment in new products. Innovation and human resources are the decisive factors of Linnet's success. Our strategy is innovation, which we apply to all the company's processes – from marketing and trade to development, from production to logistics and customer service.

At the centre of our attention is marketing in the broadest sense of the word. Communication on the web, all sorts of support given to our trading partners, public relations and advertising are a matter of course. We have gone still further and are training our potential customers, we co-operate with clinics and support the education of healthcare employees. Marketing, which, in addition to the customary activities, also comprises product management and the management of product development, has indeed a strong position. Rather unique is the inclusion in this section of the customer service, whereby we are getting an immediate response from customers. We find it vitally important to have well-educated employees capable of creative and innovative thinking. It is therefore our aim to have well-educated and satisfied employees. Linnet is continuously developing, and our great concern is the professional attention to the company's personnel issues, so that our people may cope with the steady growth of the enterprise and that they be prepared for further expansion in connection with production abroad.

Your company can boast many awards. Can you mention at least some of them?

One of our most recent awards, for the year 2007, is tenth place we won in the Most-Admired Company in the CR – Czech Top 100 competition. Other achievements include the prize we obtained in the Design Prestige Competition – for long-term and intensive efforts in the area of design in 2006. In the same year we became Company of the Year. Another prize we won in 2006 was in the Czech Brain Industry competition for our bed Image, which also won the Excellent Design prize in the same year.

You are expanding to foreign markets. Which of them are the most important for you and which products are your most popular export items?

Linnet is a company which exports 86% of its output. Its most important outlets are EU states, but other markets, on all continents, are also important – North and South Africa, Asia – Japan, China, Australia, and also the Middle East. South America is another outlet for Linnet's products. Currently we are making deliveries of 25 000 beds for 250 hospitals in Venezuela. Also promising are our exports to the demanding North American market.

Our number one export items are beds of the Eleganza series.

You have subsidiaries in other countries. Where do they operate and how are they faring?

Linnet has five subsidiaries: four in Europe (Linnet France, Linnet Italia, Linnet Sweden, and Linnet UK)

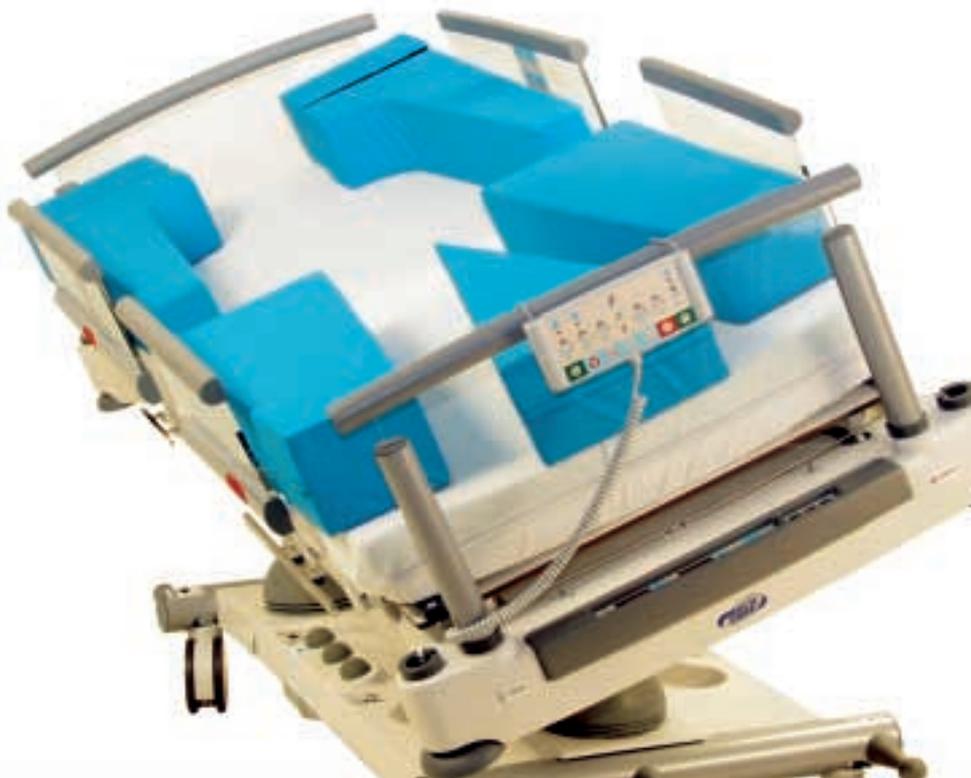
and one office in Peking (Linnet Far East). It has a 25% stake in the company Desan Flex, which is the largest Spanish supplier of healthcare equipment. In addition, Linnet has direct commercial representations through partner firms in other 32 states. Its most important partners include Siemens/Dräger, Philips, and Vamed Engineering.

All our subsidiaries are faring well on their domestic markets. The direct market participation strategy has proved very useful on a long-term basis.

Which new items have you prepared for 2008?

We are placing on the market new items developed in 2007. In 2006, Linnet increased its investment in product development by 27%, to EUR 1.9 million. This has resulted in the development of two new products with unique functions. One of them is the reasonably priced electrically adjustable bed Latera, which greatly facilitates care for immovable patients by way of lateral tilting. The bed is intended for both the healthcare and nursing segment. It radically reduces physical strain in manipulating immovable bed-ridden patients and completely eliminates injuries to the nursing personnel's backs. The other item is another bed model in the Eleganza series, Linnet's flagship product, Eleganza XC, making it possible to X-ray patients reliably straight on the bed, and to weigh them accurately. Here, production costs have been cut by one-half.

Nada Vávrová



Intensive care hospital bed

Rodenstock – Mark of Exquisite Quality and Design

Milan Pytlík, Rodenstock ČR s.r.o., e-mail: milan.pytlík@rodenstock.cz, www.rodenstock.cz

Rodenstock CR, a subsidiary of the German company Rodenstock GmbH, based in Munich, has been in the Czech Republic since 1994. The gradual enlargement of the manufacturing centre in Klatovy has turned Rodenstock into the largest lens manufacturer in the Czech Republic, and indeed the largest manufacturing plant of Rodenstock GmbH. Its main specialisation is the manufacture of high-quality single-focal, bifocal, and progressive lenses. About 90% of the company's total turnover of EUR 31 million is destined for export.

New Products

One of the most recent innovations in Rodenstock's range of eyeglass lenses is Impression FreeSign® – a multifocal lens affording perfect vision comfort, matched to the individual requirements and visual habits of the person wearing eyeglasses.

Another innovation, this time in the area of services, is Impression!ST®, offering advice to buyers of eyeglass lenses and rims.

Porsche Design and Rodenstock Rims

Another type of product is rims, featured in the

Eyeglass lenses for different uses and different light conditions

Porsche Design and Rodenstock collections. Besides current correction rims, the Rodenstock collection also comprises sunglass frames and a large supply of sports glasses.

Prizes for Design and Quality

In recent years, Rodenstock's high-quality products have won prestigious prizes for the design and quality of eyeglass lenses.

For example, in October 2006, Rodenstock was awarded in Paris the much-sought-after "Silmo d'Or" award for its individual

single-vision lens Impression® Mono, one of the most prestigious awards in the world of optics.

At the Opta fair in Brno, the first prize was won by the Porsche Design P'8438 model.

In 2007, Rodenstock set new standards for individual multifocal lenses with its Multigressiv MyView® model.

Distribution

Rodenstock products are distributed through specialised optician's shops. Even the most discerning customers will appreciate their services and information about the company's innovated products and fashionable, well-serving rims.



Modern eyeglass rims created in cooperation with Italian designers



■ EGO Zlín – Specialist in the Field of Rescue Systems

Jitka Suchánková, EGO Zlín, spol. s r.o., e-mail: js-export@egozlin.cz, www.egozlin.cz

EGO Zlín was established in 1992. It is an important supplier of biological protection systems, mobile workplaces, and rescue devices for use in extraordinary situations, war conflicts, military operations, and humanitarian missions in case of disaster.

The company is a member of the Association of Manufacturers and Suppliers of Medical Devices of the Czech Republic, of the Defence Industry Association of the Czech Republic, and a member of the Czech NBC Team.

Production Programme

For the medical sector, the company manufactures comprehensive protection systems for cases of infection, with a biological agent based on the underpressure principle, overpressure tents and a number of mobile field workplaces serving as rescue stations, warehouses, and field hospitals. It also supplies the complete interior equipment of the workplaces. Within the biological protection system in the case of biological infection, EGO manufactures biological bags, bio-boxes, decontamination modules, protective clothing, pathological bags for infected persons, etc.

Its product portfolio also includes mobile workplaces consisting of inflatable tents, containers, rigid construction tents (all types of field hospitals, logistic facilities for all kinds of troops, decontamination and quarantine infection workplaces, rapid traumatology and surgical teams, dressing stations, arrangement of humanitarian missions, etc.)

The company also manufactures rescue system devices (vacuum fixation devices, helicopter suspension bags, emergency

bags, stretchers, field beds, defibrillators, battery and manual suction bottles, resuscitation bags). Other important items in EGO's production programme are surgery and radiotherapy devices. First-aid training and testing are also part of the company's business activities.

Achievements and Awards

Recently, the company made a delivery of a biological system worth approximately EUR 53 000 for the protection of the population in Angola.

EGO's achievements include an award to its product BIOBOX EBXT with a decontamination module designed to

awards for its products TRANSPORT BAG EBV – 20 BIOBAG and its IZS MOBILE WORKPLACE from HOSPIMEDIC the International Fair of Medical Devices and Pharmacy in Brno.

EGO Zlín in Other Countries

EGO Zlín maintains trade relations with more than 20 countries on five continents. It supplies its medical products regularly to hospitals and rescue services not only in the Czech Republic, but also in other countries, such as Slovakia, Poland, Lithuania, and Belgium. It has its permanent representations in the USA, Australia, New Zealand,



EBV-30 transport bag for moving infected persons

isolate infected persons from the external environment and a prize for its BIOBOX EBX-04 product, awarded to it by IDET NEWS magazine on the occasion of the IDET 2005 International Fair of Defence and Security Technologies in Brno. Other distinctions the company has gained are

Malaysia, Sri Lanka, Pakistan, Iran, South Africa, Germany, Austria, Poland, Slovakia, Lithuania, Romania, Turkey, and the United Kingdom.

Unique Radiotherapy Systems

Jaromír Shejbal, UJP PRAHA a.s., e-mail: shejbal@ujp.cz, www.ujp.cz

UJP PRAHA a.s. came into being in 2002 by the transformation of ŠKODA-ÚJP, Praha a.s. The company's current business activity benefits from the long experience and know-how created by the former Nuclear Fuel Institute, established in 1966 as part of the one-time Czechoslovak uranium industry, and from the follow-up enlargement of its business activities.

Production

The company's product portfolio covers several areas. Its core production programme is the manufacture of special medical devices, especially the TERABALT digital radiotherapy irradiation system.

It comes in four versions, with a fully digitalised control system, with a variety of accessories and supplementary devices. A completely new product is the TERASIX digital X-ray simulator with the unique Virtual Beam View technology, used especially for the planning and preparation of radiotherapy. To enhance the quality of the treatment, the company supplies systems for the planning and verification of the treatment. The PlanW planning system can work with both cobalt irradiators and linear accelerators with a photon or electron beam. Another product is its well tried and tested TERAGIS verification system.

UJP PRAHA makes complete deliveries of these systems, including the preparation of the technology project, installation, training of the attending personnel, and follow-up servicing of the systems at the user's workplace.

In the area of medical devices, the company supplies the IRACEL blood irradiation system.

In its other activities, the company benefits from the experience gained in past years in the development of technologies and the research of materials used in nuclear power stations. The company uses technologies for depleted uranium processing and manufactures containers and shields for the storage and transport of radioactive substances. The company currently supplies about 40 different types of containers for different kinds of radio isotopes used especially in defectoscopy, geology, and medicine.

New Items in the Company's Production Programme

A new feature of the company's production programme is the development and manufacture of tungsten materials based on tungsten pseudo-alloys. These high-density materials are used as a basis for the manufacture of radioactive radiation shielding and the manufacture of its newly designed armoured-piercing shells.

The company has a number of special workplaces, including places for work with uranium and its compounds and material research workplaces. All the company's activities are in compliance with the integrated quality management system. The company is entitled to mark selected products with the CE label.

Innovation and Modernisation

The company owes its success to the suitable division of its production programme and unique know-how, the use of advanced technologies, and the quality of its entire product portfolio. Recently, the company began to concentrate on the innovation and modernisation of its radiotherapy devices. By innovating and modernising their control systems, the company raised their quality, which is comparable with world top standards, while keeping their prices on a competitive level. Its other achievement is the commercial utilisation of its research and development in the area of tungsten pseudo-alloys, especially in the defence industry.

Radiotherapy Systems for Export

In its export of radiotherapy systems, the company has oriented itself mainly on the states of the former Soviet Union. In future, it would like to expand to markets



TERASIX X-ray simulator

in African, Asian, and Arab countries. Already now, its containers and shields are exported to practically the whole world, except North and South America.

Awards for the Company's Products

The company's new series of radiotherapy products has gained a number of awards recently. Its TERABALT radiotherapy system won First Prize in the Innovation Competition in the Czech Republic in 2006, organised by the Association of Innovative Entrepreneurship of the CR, and a Prize for Excellent Design 2007 in the category of industrial design, organised by the Czech Design Agency. The TERASIX X-ray simulator won a Gold Medal at the Hospimedica 2007 International Medical Fair in Brno.

AMEST Bets on Precision Measuring

Aleš Folwarczny, AMEST a. s., e-mail: folwarczny@amest.cz, www.amest.cz

AMEST a.s. was established in 1990 and since then has developed into a successful company in its branch. Its specialisation is the development, construction, manufacture, installation and servicing of measuring and control stations, monitoring devices, and control fixtures. The core of the company is formed by a team of designers, electronic specialists, and system programmers, who have long experience and are in close contact with world progress in the branch.

AMEST Metering Devices for Export

The company exports 70% of its output. Its main export territory is Germany, where its partners are GM Powertrain, VW Kassel, INA Herzogenaurach, KOKI Technik Niederwurschnitz and TRW, followed by Hungary, with partners such

a new way to measure gear and groove parameters. This method makes possible high-precision control of pitch circle diameters, roundness deviations, eccentric running and untrue running to the centre of the wheel or the work centres of crankshafts and differences in run-out in neighbouring tooth space. The short operating time (around 30 seconds) and easy control of the metering device ensure one-hundred-per-cent control of wheels even in large volume serial production. Its use increases significantly the efficiency of production control and at the same time reduces production costs. AMEST has installed dozens of these stations in leading Czech and foreign enterprises, such as GM Powertrain Vienna and VW Kassel. In its laboratories, AMEST has developed a completely new principle of accurate

a special AMEST programmable electronic device.

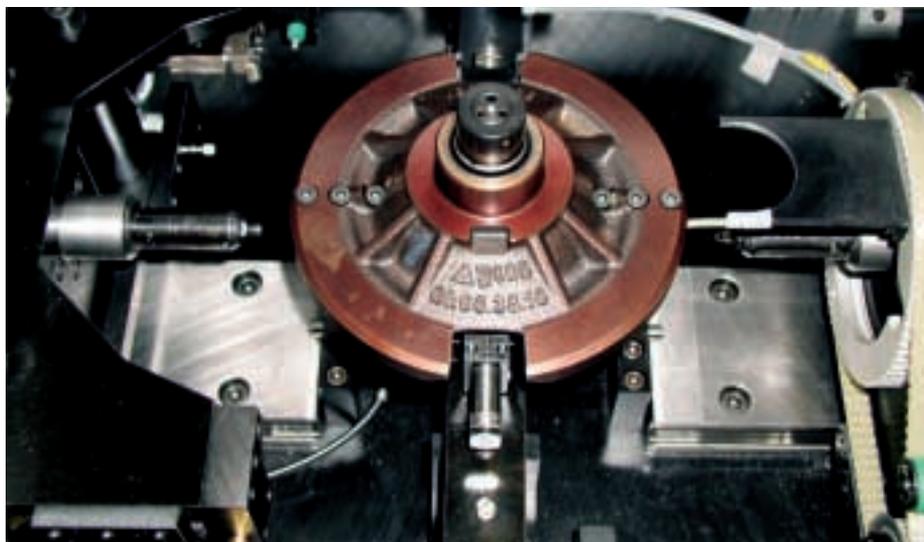
Automatic Measuring Station for Rail Wheel Production Control

In mid-2007, AMEST engineers successfully completed work on an extremely demanding order for the Ukrainian enterprise OAO INTERPIPE Dnepropetrovsk. In co-operation with selected Czech firms they developed and put into operation an automatic measuring station for the one-hundred-per-cent control of rail wheels made serially in continuous three-shift operation. A unique system was developed to ensure the required high precision, reliability, and performance of the station.

At this station, the precision and reliability of rail wheel production control is ensured by a system of lasers and special cameras. The device controls 29 parameters specified for the wheel hub and disc and the running profile, including the facets. Accurate positioning and automatic wheel handling during control is secured by a programmable optical sensor and servo-drive system.

The scanned values of the controlled parameters are evaluated by a special electronic device. In view of the high frequency of optically scanned data and the strict statistical processing and recording requirements and the need for the marking and reliable filing of data for each wheel being controlled, three special-purpose computers had to be attached to the electronic system, which ensure the automatic control of the entire operation of the station, in addition to the registration of the scanned data.

The station can be easily set for all wheel types and sizes. Its performance corresponds to the speed of the production line, with sufficient reserve. A record is made of each wheel being controlled, making it possible to identify the causes of potential accidents. This applies particularly to the wheels of trains travelling at very high speeds.



Differential case measuring

as General Motors, and Poland, where AMEST products are accepted by Mahle Krotoszyn. Recently, the company entered the Ukrainian market, where it entered into a contract with OAO INTERPIPE Dnepropetrovsk. AMEST is also doing well in Russia with its exports of axles for railway wagons.

New Precision Measuring and Control Technologies

For gear control, AMEST has developed

cylindrical hole and surface metering with the help of a measuring head fitted with a changeable dynamic plug contact or an outside contact crown. The application of this principle in AMEST metering stations makes it possible to control quickly and most accurately the diameter, roundness, cylindrical form, and perpendicularity of the hole axis in relation to the plane and even the relative position of the measured holes. The metering results are evaluated by

■ Modern Prevention and Diagnostic Method

Jaromír Volf, Czech Technical University in Prague, Faculty of Mechanical Engineering, e-mail: jaromir.volf@fs.cvut.cz, www.fs.cvut.cz

Modern medicine tends to the development of advanced non-invasive diagnostic methods. An instrument fully in keeping with this trend is the pressure distribution scanner, which, while making it possible to diagnose already developed orthopaedic disorders, has

the ability to point to potential pathological conditions. Plantograph V05 is used by general practitioners for making timely diagnoses, and it is appreciated by sports physicians, rehabilitation doctors, and orthopaedists.

Its development is the outcome of co-operation between researchers and designers of the Czech Technical University in Prague - Faculty of Mechanical Engineering (Department of Instrumentation and Control Engineering and Department of



Pressure distribution scanner makes it possible to diagnose already developed orthopaedic disorders but also to prevent the occurrence of pathological conditions

Mechanics, Biomechanics, and Mechatronics) and Faculty of Electrical Engineering, the Faculty of Physical Education and Sport of Charles University in Prague, and the Rehabilitation Clinic of the Faculty hospital Královské Vinohrady in Prague.

How Does It Work?

The system is used for making analyses of human walk, measuring the pressure distribution on the sole, indicating the condition of large joints and measuring body stability (balance disorders) etc. It is a compact portable device which, if connected to the PC or the notebook, can process, in real time, signals of pressure changes in static and dynamic load conditions. Its construction is based on the principle of the dependence of the change of the conductive elastomer resistance on mechanical pressure. The system consisting of a computer-controlled scanner can analyse up to 300 whole pictures per second. This capacity ranks it among high-standard world products. The colour picture of pressure distribution is available as a two- or three-dimensional photograph.

The measuring can be started at once from the PC, externally or by scanner activation, e.g. by treading fully on the foot.

All the measured data can be fed back into the programme at any time and they can be processed as if they were

just measured, or they can be displayed and processed externally.

The System Allows the Use of Two Basic Modes:

The first is continuous display. It displays the current distribution of pressures on the scanner in real time. The speed depends on the computing rate and is up to 50 pictures/second. This mode is used especially for setting parameters with immediate visual control for later, accurate measuring, or for obtaining one-shot pictures that can be stored.

The second mode is accurate measuring. The data being measured are not directly displayed, but they are stored on the internal disc (HDD) for later transfer to the PC. The rate is up to 300 pictures/second. The size of the disc depends on the particular requirements. The device has a standard 160 GB disk, which amounts to approximately 4 hours of recording. Several records can be stored on the disc for their later one-off storage on the PC.

The system can be controlled from the connected PC. During each measurement several parameters can be set independently (some parameters are only relevant for a certain mode).

The Plantograph Has Been Developed for the Following Main Uses:

– In the area of medical orthopaedics

and bio-mechanics for the study of pressure distribution on the sole surface and its dynamic changes in pacing. Determining the pressure distribution of pressure on the sole surface and its change in time is valuable information for non-invasive diagnostics of motoric disorders, orthopaedic defects, and various diseases.

- For the prevention of pathologic pressures on the human body, resulting in decubitus.
- For measuring stability in stabilometry.
- In physiotherapy for rehabilitation, the development of rehabilitation aids and prostheses and in biological feedback.
- For measuring pressure in prostheses and their optimum adjustment to the limb.
- For designing seats for paraplegics and for prevention feedback.
- For designing anatomic shapes of seats and backrests, especially in the automotive and aircraft industries.
- In sports medicine and methodology.
- In robotics for the stability and balancing of robots – finding the firm spot for gripping, determining the strength, etc.
- In other industrial applications where pressure distribution is needed.



Scientific Research in Optics

Zdeněk Hradil, Faculty of Science, Palacký University in Olomouc, Department of Optics, e-mail: hradil@optics.upol.cz, www.optics.upol.cz

Research in modern conventional optics, quantum optics, and quantum information has a long tradition. The largest project being currently addressed at the Department of Optics, in co-operation with the Joint Laboratory of Optics, is the long-term research programme "Measuring and Information in Optics", supported by the Ministry of Education of the CR. The programme

spans over seven years, from 2005 to 2011. The research plan links all research activities carried out at the Department of Optics providing a platform for monitoring trends in modern optics.

Aims of the Project

One of the aims of the project is to propose new quantum and information protocols. This signifies new procedures

in the manipulation of light, which take advantage of its quantum nature. For this purpose, it is possible to use light whose intensity is extremely faint, or on the contrary extremely strong. The basic element in quantum optics is the photon. It is the smallest energy unit linked with light propagation. The number of photons determines whether the light field will be faint, a field that

would be invisible to the naked eye, or on the contrary, whether it will be a strong coherent source, such as semiconductor lasers in a CD player. Optical effects which are present in our everyday life are based on the ability of our eye to distinguish the quantity of light, and sometimes also its colour. Quantum optics, however, makes it possible to take advantage of a number of other details for the transmission and processing of information. To bring it closer to everyday life, we often borrow terminology from other areas and use terms such as quantum teleportation, cloning and erasing information, and quantum cryptography or quantum tomography. Similarly, in the framework of modern optics it is possible to study new types of light fields both theoretically and practically in the laboratory. We may prepare the well focused beams as the so-called nondiffracting beams, light fields, which have a helical structure (vortex beams) or beams which are strongly entangled, even though they are distant from each other. Although, for the time being, none of these effects of quantum optics are to be seen in our everyday life, just as twenty years ago no one used the Internet or the mobile phone, there is no doubt that these effects will find a place for themselves in the information technologies of the future.

National and International Projects

Subjects covered by the research plan are studied in a number of smaller independent projects. Primarily, it is the project of the Ministry of Education, Youth, and Sports designed for the personal support of young scientific workers, called "Modern Optics Centre", where the Department of Optics co-operates with the Institute of Instrumentation Engineering of the Academy of Sciences in Brno. Part of the project is the investigation of quantum information processing protocols, a task aimed at devising a compact source of entangled light beams, and the study of helical beams and an analysis of information using spatial light modulators.

Another project, supported by the Ministry of Industry and Trade of the CR, is the project "Systems for the generation of nondiffraction beams and the transmission of the mechanical effects of light", covering the years

2005-2007. In co-operation with the Meopta Přerov company and the Institute of Instrumentation Engineering in Brno, we are developing a functional sample of laser tweezers for micro-object manipulation by means of light. As a part of the 6th EU Framework

covering the years 2006-2008, called "Characterisation and utilisation of spatial degrees of freedom of light" and "Chaos in non-linear electron-phonon quantum systems" and two projects, which are just being completed, "Analysis of faint photon fields using



Programme, in 2004-2007 we co-operated as partners on the project COVAQIAL (Continuous Variable Quantum Information with Atoms and Light), the principal aim of which was the study of new quantum protocols of information processing. In 2004, we joined the 6th EU Framework Programme in the European QUACS (Secure Communication and Quantum Cryptography) network, the purpose of which is the selection and implementation of a system for safe quantum communication by way of quantum cryptography. In addition to the large national and international projects, there are several projects supported by the Grant Agency of the CR, which are being addressed by researchers at the Department of Optics. Specifically, there are two projects

pulsed homodyne detection" and "Entanglement preparation and quantum information processing in atomic systems".

Modern Optics and Its Development

Today, modern optics is much more than just spectacle glasses or the law of reflection and refraction. Current research is much more deeply involved in the study of the nature of optical phenomena so as to create prerequisites for their future potential use. The Department is endeavouring to reach this aim by both theoretical research and the systematic building of laboratories with the support of experiments in modern optics and quantum informatics.

Poll of Successful Companies Operating in the Area of Medical, Optical, and Measuring Devices

Medical Devices

BMT a. s.

Cejl 50, 656 60 Brno, phone: +420 545 537 111, fax: +420 545 211 750, e-mail: mail@bmt.cz, www.bmt.cz

Turnover: CZK 460 million – approx. EUR 16.2 million
 Number of employees: 360
 Contact: Mr Tomáš Tuček, e-mail: tomas.tucek@bmt.cz
 Export: 53%, of which Europe 27%, Asia 14%, America 5%, Africa 1%

BMT a.s., a member of the German MMM Group, is an important world manufacturer of medical and laboratory devices. It develops and manufactures steam and hot-air sterilisers, steriliser pressure vessels, steam generators, laboratory incubators, drying chests, and stainless furniture. The distribution and servicing of its products is ensured by the worldwide network of the Group's affiliations and commercial and service representations. Owing to its comprehensive offer of products and services for hospitals, surgeries, scientific institutes, laboratories, and the pharmaceutical industry, BMT a.s. has become an established company known for the high quality of its products and its innovative strategy.

What did the entry of the foreign partner bring to BMT?

The entry of the foreign partner in BMT has brought especially new products that are in compliance with European legislation. With its own development and in co-operation with the parent firm MMM (Münchener Medizin Mechanik GmbH), the company has completely upgraded its range of steam sterilisers and steam generating equipment formerly manufactured under the Chirana trademark.

During its existence, BMT has worked its way among the world's most important companies in its line of business. All its products are designed and manufactured so as to meet strict technical and hygienic standards and environmental requirements. BMT has a certified quality management system entitling it to export its medical devices to EU markets and its pressure



Steam steriliser

equipment to markets in the EU, the USA, and China.

Which countries are your largest customers and what products do they take?

Owing to the company's export experience of more than 60 years and the technical standard and quality of its products, it has trade partners in more than 80 countries. Export is of key importance for BMT. To promote its sales, the company has opened its own affiliations in countries with good trading prospects, such as Germany, Spain, the USA, Poland, Russia, the Ukraine, and Slovakia. Currently our products are sold on all continents. Very promising, apart from Europe, are markets in Asia and the USA. We export the full range of our devices – small and large steam sterilisers (bearing the STERIDENT, STERIMAT, UNISTERI AND STERIVAP trademarks), laboratory driers and incubators (ECOCELL, VENTICELL, STERICELL, VACUCCELL, INCUCCELL, FRIOCELL, CLIMACELL).

Photo: BMT archives

Medin, a. s.

Vlachovická 619, 592 31 Nové Město na Moravě, phone: +420 566 684 336, e-mail: marketing@medin.cz, www.medin.cz

Turnover: CZK 317 million – EUR 11.1 million
 Number of employees: 520
 Contact: Mr Bohumil Novotný, e-mail: bohumil.novotny@medin.cz
 Export: EU 75%, the rest of Europe and Turkey 9%, Arab countries and Israel 3%, Latin America 5%, USA and Canada 1%

MEDIN was established in 1992 as the legal successor of the former state corporation Chirana Nové Město na Moravě. The object of its business is the manufacture, development, and sale of surgical and

dental instruments and surgical implants.

The largest share of the company's production and sale is accounted for by medical instruments for all main medical specialisations, including bone surgery and implants.

How do you see the future development of your company?

Our mission is the development, manufacture, and supply of high-quality instruments and implants for surgical operations,

traumatology, and stomatology. We draw on the latest scientific, technical, and clinical findings to continuously improve our products.

Can you tell us something about new items in your production programme?

A new item we have placed on the market is the Gracey curette for removing scale. A new material was used for its ends, which lends the instrument high cutting efficiency and resistance to the edge. The thin-walled hollow handle makes the instrument extremely light and easy to operate. The end is connected to the handle by laser welding. Its unique properties, resulting from the use of the most up-to-date material, afford great comfort to the physician.

Another new item is the diamond grinder coming in new shapes, enabling highly efficient treatment of dental tissues and stomatological materials.



Novel item of the year 2007 – diamond grinder

Photo: Medin archives

Optics

ERILENS, s. r. o.

Papírenská 114/5, 160 00 Praha 6, phone: +420 234 123 456, fax: +420 234 123 360, e-mail: info@erilens.cz, www.erilens.com

Turnover (2006): CZK 102.8 million – approx. EUR 3.6 million
 Number of employees: 51
 Contact: Ms Helena Karešová, e-mail: hkaresova@erilens.cz
 Export: France, Bulgaria, Romania, Estonia, Lithuania

ERILENS s.r.o. is a family company established in 1992. In the early days of its existence it was a pioneer in the manufacture and development of intraocular lenses and held the leading position on the market. Keen competition forced the company management to start developing new activities on the ophthalmology market and enlarge its product portfolio. Its pride is a new range of high-quality and technologically advanced ophthalmic instruments made in Canada (OTI), Switzerland (Ziemer), the USA, and other countries. ERILENS specialises in the distribution of surgical instruments for vitreo retinal, cataract, and refraction surgery of renowned companies, such as ASICO, Geuder, and Synergetics. In 1997, the company opened two new divisions, REHA, which manufactures and sells locomotion aids, and ROOMER, specialising in transport systems for immobile patients.

Your company has three divisions. Can you give us a brief outline of their activities?

REHA makes locomotion aids, ROOMER distributes transport systems for immobile persons, and the third division, OPHTHA, specialises in

the manufacture, distribution, and servicing of ophthalmic surgery materials and products, i.e. medical material, and the manufacture and sale of intraocular lenses, distribution of diagnostic and display lasers, ophthalmic surgery instruments, repair of handpieces and MEDPOR implants.

Which countries are the largest customers for your products?

After the Czech Republic's accession to the EU, the company significantly raised its exports to EU states. Its main customers are firms in France, Lithuania, Estonia, Bulgaria, and Romania. In 2001 it opened a new branch in Bratislava, Slovakia.



PASCAL dynamic contour tonometer

Photo: EriLens archives

Measuring Devices

ZPA Smart Energy, s. r. o.

Komenského 821, 541 01 Trutnov, phone: +420 499 907 111, fax: +420 499 907 497, e-mail: zpa@zpa.cz, www.zpa.cz

Turnover: CZK 182 million – approx. EUR 6.3 million
 Number of employees: 165
 Contact person: Mr Josef Křepinský,

e-mail: josef.krepinsky@zpa.cz
 Export: Bulgaria 80%, Slovakia 10%, Poland 3.4%, Switzerland 2.9%

ZPA Smart Energy is continuing the activities of its predecessor, ZPA Trutnov, a traditional supplier of instruments for industry, in particular power engineering.

Its long-term specialisation is the development and manufacture of ripple control receivers and household and industrial electrometers. Its largest customers are the Pražská energetická and České energetické závody companies. Currently, ZPA makes deliveries of automated metre reading and automated metre management (AMR, AMM) systems. AMM systems make possible backward regulation and consumption control, and they are the most up-to-date expression of efforts to control and regulate the take-off networks of different media. Its other successful products are street lighting systems and energy management systems.

Your products are widely exported. Which are your important foreign markets and customers?

We are regular exporters of electrometers to the companies EMU Elektronik AG, Switzerland, Termotehna Čačak, Serbia, EnTech Krakow, Poland, and Sofia District Electric Bulgaria. Our customers for ripple control receivers are the Dutch company IMBEMA Controls B.V. Haarlem and the Slovak companies ZSE Bratislava and VSE Košice.

What new items have you prepared for the year 2008?

The development and marketing departments are working on the development of AMR and AMM systems. The systems consist of the technological level (water, gas, heat, and

electricity measuring instruments), communication modules, concentrators and application servers for data concentration, and filing and system control.



ZPA Smart Energy workshop

Photo: ZPA Smart Energy archives

MESING, spol. s r. o.

Mariánské nám. 1, 617 00 Brno, phone: +420 545 426 211, fax: +420 545 426 219, e-mail: info@mesing.cz, www.mesing.cz

Turnover (2006): CZK 56 million – EUR 1.9 million
 Number of employees: 35
 Contact: Mr Jan Kůr, e-mail: jan.kur@mesing.cz
 Export: Slovakia 48%, Switzerland 5%, Poland 2%, Germany 1%

MESING is a company specialising in the construction and manufacture of customised measuring devices (meters, stations, automatic devices) and automatic control and technological lines. In the Czech Republic the company is a leading supplier of calibrating meters and readers. A new programme introduced recently covers the development of straightening presses and surface defect measuring devices.

A major part of your production goes for export. Which are your main foreign outlets and your most important customers?

Our main customers are companies in the automobile, antifriction-bearing, electrical engineering, textile, and plastics industries. Our largest customers include VW, BOSCH, KRUPP – PRESTA, INA, TRAMEC, KINEX, SIEMENS, NOVIBRA, AND VISTEON, among many others.

Which are your latest achievements?

We won a Gold Medal at the 2007 International Engineering Fair in Brno and the Annual Prize of the Czech-Moravian Electrical Engineering Association for our automatic machine for surface defect measuring of injection pump casings.



Textile spindle control and technology line

Photo: Mesing archives

Fairs and Exhibitions in the Sector of Medical, Optical, and Measuring Devices in 2008

OPTA

14th International Fair of Optics and Ophthalmology
22–24 February 2008
Veletrhy Brno, a.s., e-mail: opta@bv.cz
www.bv.cz

PRAGOMEDICA

30th International Medical Fair
15–18 April 2008
Prague – Exhibition Grounds, e-mail: m.benesova@incheba.cz
www.incheba.cz/pragomedica

AMONG US – DAYS OF THE HANDICAPPED

Sales exhibition of compensation, rehabilitation, and prosthetic aids; offer of services for the handicapped
12–14 June 2008
Olomouc – Flora Exhibition Grounds, e-mail: info@flora-ol.cz
www.flora-ol.cz

PRAGODENT

16th International Dental Apparatus, Instruments, Surgery Equipment, and Service Fair
16–18 October 2008

Prague – Exhibition Grounds, e-mail: m.benesova@incheba.cz
www.pragodent.eu

HOSPIMedica Brno 2008

International Fair of medical Devices, Rehabilitation, and Health
21–24 October 2008
Veletrhy Brno, a.s., e-mail: hospimedica@bv.cz
www.bv.cz

Official participation of the Czech Republic in international fairs and exhibitions abroad

MEDICA

40th World Forum for Medicine International Fair with Congress
19–22 November 2008
Düsseldorf, Germany, e-mail: mhorakova@bv.cz
www.medica.de

MOSCOW – ZDRAVOKHRANENIE

International Fair of Medical Equipment
8–12 December 2008
Association of Medical Device Manufacturers and Suppliers,
e-mail: asociacebrno@iol.cz, www.medtechnik.cz

Important Contacts

Ministries		
Ministry of Industry and Trade	www.mpo.cz	mpo@mpo.cz
Associations and Unions		
Confederation of Industry of the Czech Republic	www.spcr.cz	spcr@spcr.cz
Czech Chamber of Commerce	www.hkcr.cz	office@komora.cz
Association of Manufacturers and Suppliers of Medical Devices	www.medtechnik.cz	asociace@iol.cz
Universities		
Czech Technical University in Prague, Faculty of Electrical Engineering, Department of Measurements	www.feld.cvut.cz	dean@fel.cvut.cz
Brno University of Technology, Faculty of Electrical Engineering and Computer Science	www.feec.vutbr.cz	rousova@feec.vutbr.cz
University of West Bohemia, Plzeň Faculty of Electrical Engineering, Department of Technologies and Measuring	www.fel.zcu.cz	fel@fel.zcu.cz
Palacký University Olomouc Faculty of Science (OPTICS)	www.upol.cz	kancler@upol.cz
Tomáš Baťa University in Zlín Faculty of Applied Informatics	www.utb.cz	info@utb.cz
Technical University of Ostrava, Faculty of Electrical Engineering and Computer Science	www.fe.i.vsb.cz	sekretariat.fe.i@vsb.cz
Research Organisations and Institutes, Testing		
Institute of Physics, Academy of Sciences of the Czech Republic	www.cas.cz	info@cas.cz
Institute of Scientific Instruments, Academy of Sciences of the Czech Republic, Brno	www.isibrno.cz	institute@isibrno.cz
Czech Metrological Institute	www.cmi.cz	info@cmi.cz
Czech Standards Institute	www.cni.cz	info@cni.cz