

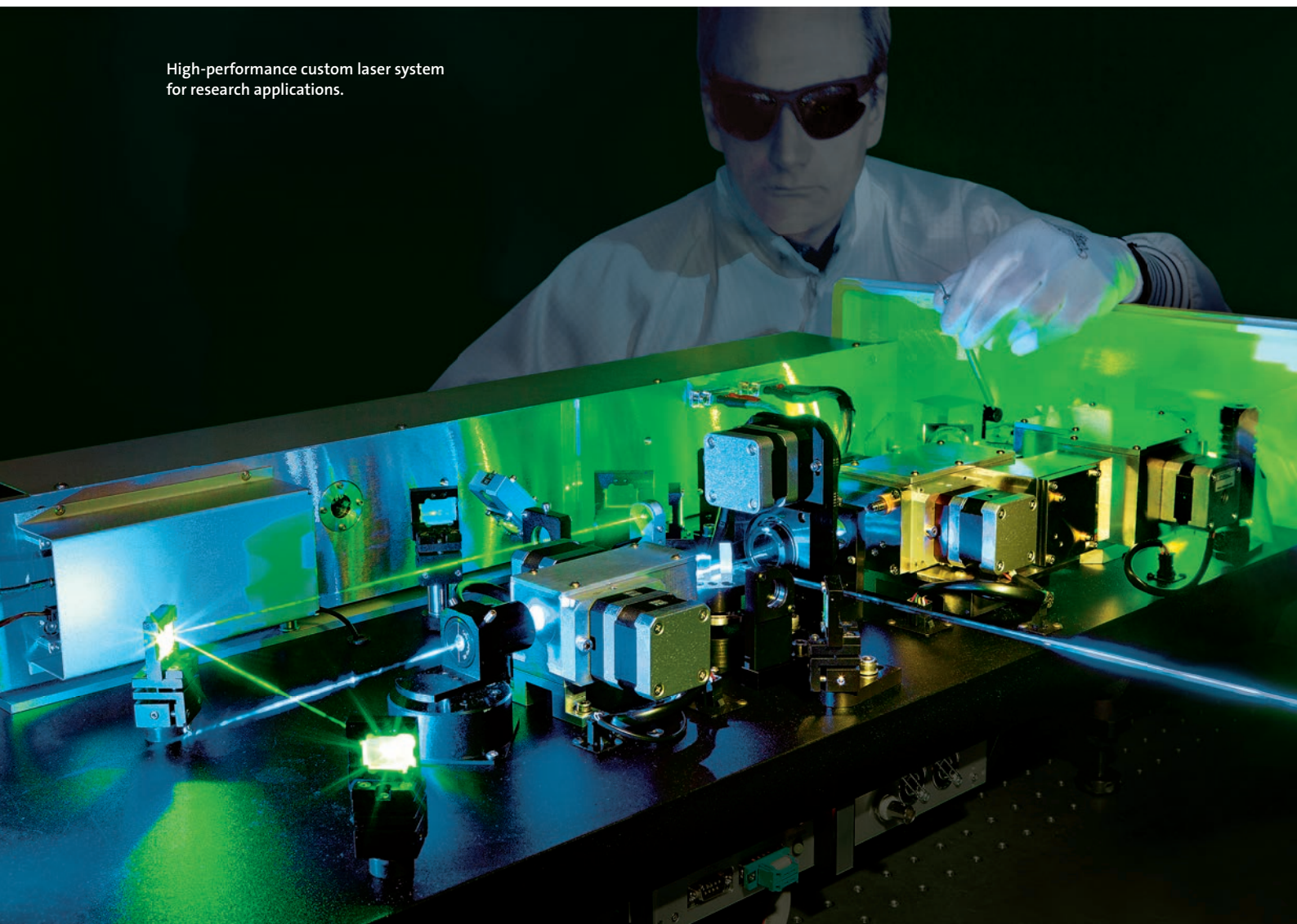


EPO SME CASE STUDIES | EKSPLA

Leveraging IP: from research tools to industry applications

EKSPLA, a Lithuanian SME set up in 1992, started off supplying customised high-performance laser systems to scientific laboratories. It later extended its product range to standardised laser systems for industrial applications. The move to producing standardised lasers made IP more important. EKSPLA now owns twelve patent families. In addition, some of its incremental innovations are kept as trade secrets. EKSPLA participates in EU projects and co-operates on R&D with contract manufacturers. Decisions to file patent applications are taken together with its partners. As its main competitors are based in Europe, EKSPLA looks forward to the Unitary Patent as a means of securing more extensive patent protection in the region.

High-performance custom laser system
for research applications.



EKSPLA is a research-driven photonics company with 120 employees. Based in Vilnius, Lithuania, the company originated from a pilot plant called EKSMA Co., which was set up in 1983 by the Institute of Physics at the Lithuanian Academy of Sciences. In 1992, the laser design and manufacturing part of the business was spun off to form EKSPLA. Established by private initiative, with no foreign investment or direct government support, the new company concentrated on making stand-alone short-pulse solid-state lasers and accessories for the scientific market.

Over the years, EKSPLA has extended its range to include products for industrial customers. Today the company supplies high-performance laser systems and laser components such as diode-pumped solid-state lasers, ultrafast fibre lasers, optical parametric oscillators, laser optoelectronics and tailor-made laser systems. According to Andrejus Michailovas, Science Director at EKSPLA, customers like the unique features of EKSPLA's lasers. The wide range of wavelengths, together with competitive prices and the option to purchase customised lasers, are what persuade scientific and industrial clients to buy from EKSPLA. Customisation is particularly important for public research laboratories with highly specialised requirements.

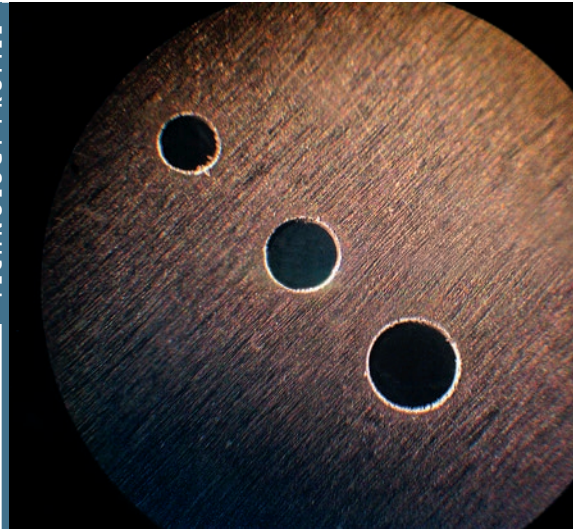
Current sales are almost evenly split between scientific institutions and industry, which means that the company's strategic decision to expand its product range to the industrial market has been a success. EKSPLA sells over 90% of its products on the international market, and sales are divided equally between Europe (outside Lithuania), North America and Asia.

Applications for EKSPLA lasers

EKSPLA's laser systems and accessories for R&D applications and complete spectroscopy systems are well known and highly valued within the international scientific community. The company was selected to develop the European Union's Extreme Light Infrastructure (ELI) facilities in the Czech Republic and Hungary. Together with an American partner, it is currently installing the world's most powerful laser systems in Prague.

In response to the growing demand for high repetition rate and ultrafast lasers for material processing, EKSPLA has been focussing on its industrial product line. Its low-maintenance industrial lasers are reliable, compact and cost-effective. High repetition rate combined with great stability has made its picosecond lasers a good choice for industrial high-throughput material processing systems that require both speed and precision. The range of applications includes the marking, drilling, cutting, scribing and patterning of various materials, including heat-sensitive media.

TECHNOLOGY PROFILE



EKSPLA is focused on high-performance advanced solutions. New products are designed, developed and manufactured in-house. Short and ultrashort pulse generation and amplification, optical parametric amplification, nonlinear spectroscopy and optoelectronics are among its core competencies. EKSPLA also produces lasers for material processing and supplies lasers for industrial equipment manufacturers. The image above shows holes (0.5, 0.4 and 0.3 mm diameter) cut in tantalum with 1064 nm picosecond laser radiation.

New business model – new approach to IP

EKSPLA started out as a supplier of customised laser systems for scientific laboratories, developed for individual customers in a small niche market, so there was no real need to protect the company's unique technology at the time. It would not have made much sense economically for a competitor to copy EKSPLA's innovations, since the market was simply too small and not expected to grow.

Around 2005, EKSPALA decided to target the fast-growing market of industrial laser applications as well, a move which was facilitated by its adoption of the new laser diode pumping technology, which can be used in laboratories and industry alike.

The decision to manufacture industrial lasers entailed a change from bespoke manufacturing to what is effectively serial production. As a result, some innovative features that were previously only relevant to individual customers became of more general interest. From then on, it was essential for EKSPALA to protect its technology: competitors are much more likely to copy successful products in a larger and growing market. The company made a strategic decision to become more IP-active and to safeguard its innovations for the new field of industrial applications. It now owns six active international patent families and six national patents, protecting twelve inventions in total.

TAKEAWAY

IP STRATEGY

It is important to have an IP strategy early on, even if your company is not yet in need of formal IP protection. Later changes to your business model, involving targeting new markets or new customers or offering new services or products, may mean you have to make quick adjustments to your IP strategy. These are easier to implement if your company is already aware of its options and how to achieve them.

IP boost for international standing

EKSPALA's patents played an important role in establishing its reputation as a serious player in high-performance laser innovation. Patents made it more attractive to its client base and raised its profile as a knowledgeable partner for international projects. Participation in EU projects is a vital part of EKSPALA's business. It demonstrates the company's top-class know-how in the high-tech laser field. A company's patents help to demonstrate its competence when it comes to forming international consortiums or applying for project funding. Recent examples include OPTIX, an advanced system for detecting explosives in terrorist situations, and APPOLO, a consortium for establishing and co-ordinating dialogue between end-users and manufacturers to validate change process feasibility.

TAKEAWAY

FUNDED PROJECTS

Applications for participation in EU or other internationally funded projects are assessed on the basis of objective criteria, including technological know-how. This in turn is often assessed on the basis not only of scientific publications but also of granted patents or promising patent applications. The same criteria are applied when the results of funded projects are evaluated.

Wake-up call

EKSPALA's first encounter with IP was back in 2000, when it was accused of infringing another company's patent. The year spent in intense negotiations with the plaintiff's lawyers used up valuable resources. With hindsight, EKSPALA realises that proving non-infringement could have been easier if it had applied for a patent rather than keeping its technology secret, as this would have demonstrated that it had its own alternative technical solution. Although EKSPALA was eventually able to prove that it had not infringed the patent, this event led to greater awareness of the importance of patent protection in general. From then on, EKSPALA began to pay attention to protecting its own inventions, with the company filing its first patent application in 2004. To partly finance patenting costs, it made use of a public funding scheme in Lithuania that offers financial support for SMEs filing patent applications under the PCT or EPC.

“If we had had a patent, it would have saved us all the time and hassle involved in proving that the other company wrongfully claimed an invention.”



Andrejus Michailovas
Science Director, EKSPALA



Compact picosecond fibre laser.

Co-operation with partners

Although EKSPLA is a laser manufacturer, it does not grow laser crystals or produce other optical components itself. Its primary business focus is the assembly of optical components for laser systems, so most of its innovations concern novel types of assembly process and system control. However, it also works with contract manufacturers to improve individual components. Under this arrangement, EKSPLA comes up with a novel concept for a better component, which is then developed and produced by the contract manufacturer.

For components produced exclusively for EKSPLA, it is usually agreed with the manufacturer that the know-how will not be patented but kept as a trade secret. However, if the manufacturer intends to sell the component to other customers as well, a joint patent application is filed, so that both parties can benefit from the invention, thus creating incentives for co-operation and the exchange of new ideas in the future. One example of such a case is European patent No. EP2965852, which was filed in partnership with Altechna R&D UAB.

Usually, there is no exclusivity clause for EKSPLA in the patent ownership agreement, so that the manufacturer is free to sell products applying the patented process to other customers who may potentially be competing with EKSPLA. The parties therefore agree that EKSPLA will be able to purchase the component at a more favourable price.

TAKEAWAY

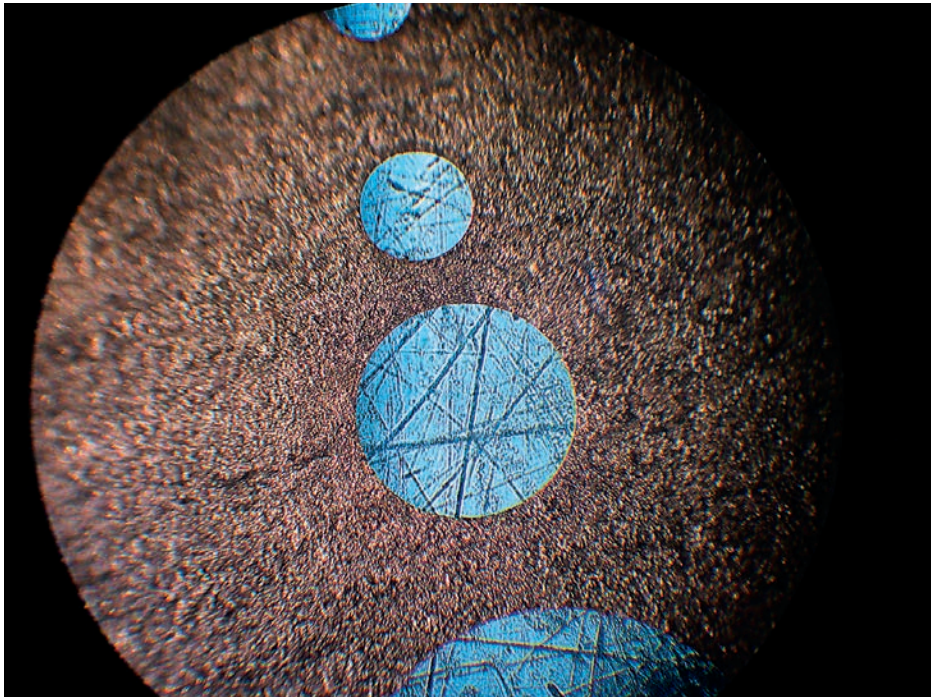
JOINT INNOVATIONS

Co-operation with partners can often result in co-inventorship. When this happens, it is important to have a clear agreement on whether the invention is to be patented or kept secret, and, if a patent application is to be filed, how ownership and exploitation rights are to be distributed. This will allow both parties to benefit from the invention and will at the same time strengthen the partnership.

“Patents alone do not always provide optimum protection. Sometimes the best option is a combination of patent protection for the basic technology and trade secrets for details of the invention.”



Virginija Petrauskienė
IP specialist, EKSPLA



Holes (0.5 and 0.3 mm diameters) cut in tungsten with 1064 nm picosecond laser radiation.

Managing a patent portfolio

When EKSPLA decided to build up a patent portfolio more than ten years ago, its senior management set a target of filing two patent applications per year and established a dedicated fund for this purpose. It was a difficult start for a company with no previous experience in IP management, but since then EKSPLA has steadily increased its filing activities. In order to manage patenting costs, the portfolio is constantly reviewed and patents sometimes abandoned.

TAKEAWAY

IP PORTFOLIO MANAGEMENT

Renewal fees for granted patents are usually due annually. Although relatively small in the early stages, they can accumulate over the years with a growing patent portfolio, and the cost can add up. Patents should therefore be reviewed on a regular basis in the context of their commercial relevance and abandoned if necessary. Software tools for patent evaluation and management, as well as service providers for patent renewals and validations, can help with this.

The Science Director decides which inventions should be protected. If he is in favour of filing a patent application, EKSPLA's IP specialist prepares a first draft, which is then forwarded to the external patent attorney for review. Having gained experience in drafting patent applications over the years, the company does not need to involve the patent

attorney too early in the process. It prefers to draft a fairly advanced specification in-house and send it to the attorney for comments, claim drafting and final improvements, thereby saving both time and money.

Filing routes

In the past, EKSPLA filed first in the USA for patent protection. However, over the years, the main focus for patent protection has shifted to Europe, where the company's main competitors are based. Filings are initiated through the national route, with a European patent application being filed within the 12-month priority period. Generally speaking, EKSPLA's patents are validated in three to five European countries, chiefly in Lithuania, France, Germany and the UK, and sometimes in Italy too, since these are the main markets for EKSPLA and its competitors.

If it had been less expensive to patent its technology in other European countries, EKSPLA would have added other potentially relevant markets, such as Greece, Spain, the Netherlands, Switzerland, and the Baltic and Nordic countries. The company expects the Unitary Patent to provide a cost-effective way of protecting its inventions in more countries and make portfolio administration easier and cheaper.

Patents or trade secrets?

EKSPLA sometimes decides that, rather than file a patent application, it will keep the innovation as a trade secret instead. The choice is determined on a case-by-case basis, and always entails a trade-off. Incremental improvements, such as mechanical layout, do not have to be disclosed in a patent application, so the cost of patenting can be saved – and an infringement might be difficult to prove anyway. However, if a competitor does then copy the development, no protection is available.

TAKEAWAY

TRADE SECRETS

Applying for a patent is more expensive than keeping an invention secret by contractual means. However, not having a patent can prove to be immensely costly, for example if your invention is reverse-engineered, knowledge is leaked, or the invention is patented by someone else.

Sometimes, a combination of the two options is the preferred strategic choice. The primary invention is patented, and hence revealed to the outside world, while the special technical feature addressing a specific problem in a particular application – based on this root invention – is kept as secret in-house know-how.

COMPANY PROFILE

EKSPLA UAB

- > Headquarters: Vilnius, Lithuania
- > Year of establishment: 1992
- > Staff: 120
- > Turnover: EUR 17 million
- > www.ekspla.com

PRODUCTS/SERVICES

Solid-state lasers, high-performance laser systems and optoelectronics for a wide range of research and industrial applications

MARKET AND TECHNICAL AREA

Scientific and industrial lasers as well as laser systems

CUSTOMERS

Research institutions, industry and original equipment manufacturers (OEM)

SELECTED AWARDS

- 2006 Innovative Company of the Year
- 2010 Prism Award for Photonics Innovation
- 2012 Business IQ of the Year

PATENT PORTFOLIO

12 patent families, including EP2965852

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