

LIGHT AS AN INNOVATION DRIVER

WILD
PHOTONIC

Fast-track to market
maturity in the WILD
network hub.

3

Check material
availability as you
develop your concept.

7

Meet us at the
LASER World of Photonics.

8

OPTICS DESIGN MEETS MANUFACTURING.



Dr. Stefan Zotter
 Photonic Site Manager &
 Head of Technology

In theory, the design of optical elements is relatively simple. Using software and the necessary know-how, you can arrange lenses, prisms and optical elements in a way that allows for almost perfect imaging quality or light distribution. However, it takes far more to translate this theory in to a serial production-ready, cost-efficient but highly precise product.

ALL VARIABLES UNDER CONTROL

First of all, there is a need for affinity to manufacturing. Our optics experts definitely tick this box. They can take into account all potential manufacturing tolerances during design, such as, for instance, deviations from the nominal radius of the lens, refractive index fluctuations of the glass or the fit clearance between the lens and the lens mount. This issue of PRISMA describes how our customers can benefit from manufacturing-focused optics design.

The WILD Group is not just an experienced technology partner but also a coveted network hub. Our insights into various different

markets and our collaboration with various networks allows us to constantly innovate and acquire the skills that will be needed in the future. Page 3 describes our contribution to enabling those physicians without access to an echocardiography system to diagnose cardiovascular diseases at the point of care.

Moreover, we are able establish a link between different areas such as like purchasing and development at a very early stage, a recipe for success that allows us to deliver in time even in times of a pandemic. For more, turn to page 7.

Our experts are very much looking forward to meeting you in person at the 2022 Laser World of Photonics in Munich.

Until then, all the best.

Dr. Stefan Zotter
 Photonic Site Manager & Head of Technology



3 — Thinking towards the future.

4-6 — Serial precision is all about the right design.

7 — In-time procurement for your product idea.

8 — Next level light.

THINKING TOWARDS THE FUTURE.

The WILD Group has access to the right networks to allow it to plan the future with its customers today.



New topics and technologies are emerging at an ever-quick-er pace. At the same time, innovation is happening more and more at the interface between different disciplines. Just like the WILD Group, anyone who wants to stay abreast of these changes must maintain a close collaboration with the best minds across corporate and institutional borders. Being an experienced technology partner, WILD contributes a solid foundation, has acted as a network hub coordinating innovation processes for years and also offers valuable insights into different markets.

“In addition to the expertise and experience, as well as quality and stability in manufacturing, we stand out from the rest because we constantly innovate. A major advantage in this respect is the broad positioning of our group of companies. From medical technology, laser and laboratory technology to optical measurement technology, we draw our knowledge from vastly different areas”, stresses Business Developer Daniel Pressl. “In addition, we regularly organise workshops with our customers to establish where they want to be with their products in three to five years’ time and what technological know-how we need to develop for that purpose”. As a result, those who work together with WILD have a partner on their side who knows what will be in demand in the future.

The networks created in recent decades are as diverse as the industries of WILD’s customers: ranging from the WILD Integrated Network, launched by the company itself, to various different clusters and the EIT Health Network. The

In addition to the expertise and experience, as well as quality and stability in manufacturing, we stand out from the rest because we constantly innovate.

Daniel Pressl, Business Developer WILD Gruppe

latter recently established an innovation centre in Vienna. As a pioneer member, WILD actively contributed to the establishment of this regional centre, whose aim is to help innovation projects achieve market maturity quickly.

One of these projects is currently being implemented with one of EIT Health’s partners, Boehringer Ingelheim. This globally operating pharmaceutical company recently invested in an exciting start-up which developed a completely new measuring instrument for the early detection of heart diseases. At the core of this innovation are algorithms and dedicated hardware for the simple, non-invasive assessment of cardiovascular health. In future, especially those physicians who have no access to an echocardiography system will be able to diagnose cardiovascular diseases at the point of care. WILD provides support in setting up the necessary processes and has brought Boehringer Ingelheim together with one of its WIN Network partners, IQC, which has now been commissioned with the development of the corresponding quality management systems.

YOUR CONTACT:

Daniel Pressl
Mail: daniel.pressl@wild.at



SERIAL PRECISION IS ALL ABOUT THE RIGHT DESIGN.

The close interplay between optics design and manufacturing offers planning and cost certainty to WILD's customers and guarantees that design focuses on manufacturing from the outset.

On the product side, there are ever more complex geometrical shapes, advancing miniaturisation and higher requirements for precision, quality and cleanliness. On the manufacturing side, new materials and innovative process and measurement techniques: to survive the competition in high-performance optics, the entire workflow from optics design to precise manufacturing and quality control must be perfectly choreographed. At the same time, it is essential to keep a watchful eye on the economic factors. When development and production go along different paths, designers will often succumb to the temptation to over-optimize, pushing subsequent manufacturing to its very limits.

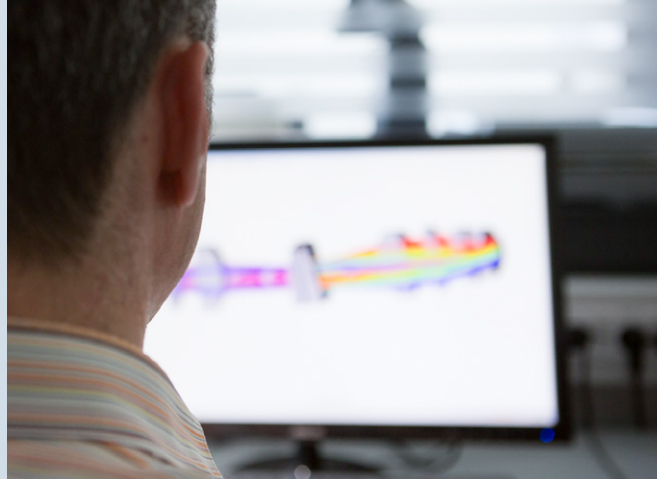
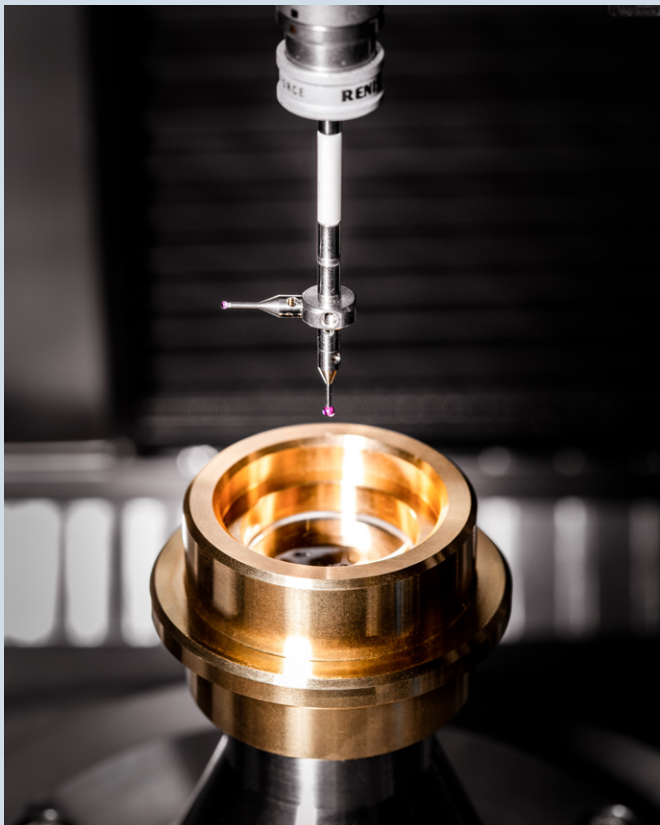
The WILD Group follows a different philosophy. "We know how essential the interplay between design and manufacturing is when it comes to ensuring a time-efficient

and cost-efficient production of high-quality optics, both in small and large numbers. Our in-house production and the inherent understanding of manufacturing tolerances and potential cost drivers offer a series of advantages. The same applies to the Group's combination of diverse skills - from feasibility studies to modern simulation methods and prototyping to serial production", says Photonic Site Manager Stefan Zotter.

LOOK BEYOND THE PROBLEM AT HAND

In essence, the task of optics design is to efficiently implement application-specific imaging quality and light distribution. Therefore, it is not limited to the design of optics, but also involves detailed sensitivity and tolerance analyses. "We examine all potential manufacturing tolerances such as, for instance, production-related deviations from the nominal





radius of the lens, refractive index fluctuations of the glass or the fit clearance between the lens and the lens mount. All of these factors can have an impact on the performance parameters of the optical system. Only if you analyse all undesirable influences and eliminate them already in the design phase will you ultimately create a system that delivers the required optical performance – from the very first prototype”, explains Gerold Aschinger, Head of Development at Photonic. For this reason, the developers at WILD and Photonic critically scrutinise the general setting and discuss it with the customer before they begin with the actual design. “This has often allowed us to find and implement more affordable and more suitable solutions.”

FLEXIBILITY IS THE KEY TO TOP DESIGN

This open-minded approach can in part be attributed to the breadth of manufacturing capabilities available within the WILD Group. Developers can be quite flexible in the interpretation of their design. “A system is not geared towards a specific and perhaps inefficient manufacturing process. Instead, we optimise the system for the manufacturing method that is best suited to solving the problem at hand and that generates the highest possible value for the customer”, explains Stefan Werkl, Head of the Business Unit Optical Technologies at WILD GmbH.

SHORTER TIME TO MARKET

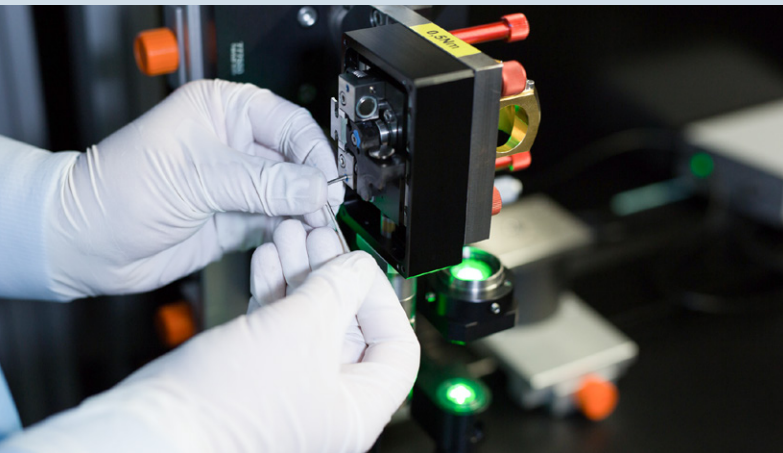
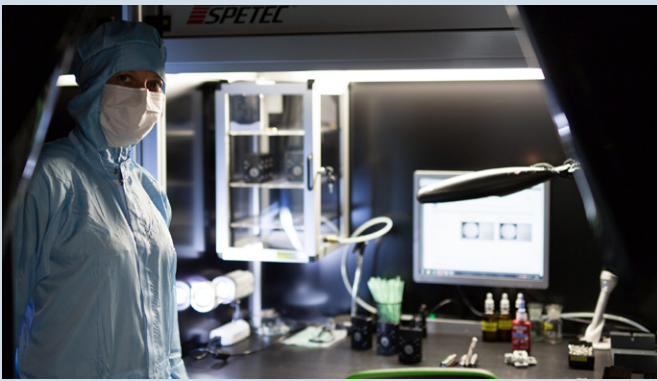
Another advantage of this manufacturing-focused design is that “the close interplay between optics and mechanics design significantly reduces the time to market”, as Optics

Designer Rembert Fertner points out. Since the simulation already takes the system’s later feasibility into account, the number of correction loops on the prototypes decreases significantly.

“The optics designers at WILD and Photonic use the Zemax® OpticStudio simulation software for imaging optics and LightTools for lighting optics. When the standard functions of these tools no longer suffice, our developers expand them by writing scripts, some of them in Python”, Stefan Zotter explains. Yet their field of activity is not limited to simulation: The results are regularly verified in experiments on an optical table or in prototyping and the measurement results from production are used to update the tolerance models in the designs. Zotter is convinced that “these valuable feedback loops between manufacturing and optics design are what sets the WILD Group apart from conventional optics design studios and optics manufacturers”.

EXPERIENCE FROM DIFFERENT FIELDS

WILD Group customers also benefit from the technology partner’s long-standing experience in various fields. The experts in Völkermarkt mainly focus on imaging optics systems and free form optics. Photonic can resort to a wealth of know-how in lighting optics, which is required in almost all optical applications. Photonic Business Developer Joachim Enengl cites fluorescence-assisted tumour resection as an example: “This clearly demonstrates that, in addition to modern display and camera technology, lighting plays a decisive role in implementing augmented reality



solutions in medical technology. You can only develop a device that offers added value to the user in the operating theatre if you possess the necessary knowledge of surgery procedures and the underlying physiological principles, and the technical expertise”, insists Joachim Enengl. The same is also true for in-vitro diagnostics, where the corresponding light technology is a major requirement for the multispectral evaluation of molecular biologic samples.

HIGH-END EQUIPMENT

The WILD Group has a whole array of high-end optical measurement equipment at its disposal. Photonic, for instance, recently made considerable investments in its optics and electronics laboratory, installing new assembly sites for prototypes and demonstrators. These are equipped with cameras and the necessary IT, so that the assembly sites can be used both for serial production on site and for virtual training.

The technical highlights of the new class 4 laser optics laboratory include a CAS 140D spectrometer by Instruments Systems with integrating sphere for high-precision spectral light measurement. “The new spectrometer offers greater sensitivity and performance, which boosts our ability to measure fluorescence signals. Its integrated light-field camera allows for significantly quicker measurements of the light distribution of flood lamps”, explains Stefan Preißer of Photonic Business Development. This has increased the volume of findings obtained from functional samples, leading to even greater efficiency in development.

The new equipment also includes an LMK camera for luminance and colour measurement and a camera system used to characterise the VIS and NIR content in the energy distribution of illumination fields. Moreover, a power meter for the measurement of lasers in the NIR range and faster photodiodes for measuring fluctuations in lasers were added to WILD’s arsenal. Furthermore, Photonic has created a database of light bulbs which was linked to software for spectral combination. Such knowledge at the push of a button can shorten the concept phase, since the search for light sources can be done much quicker.

All in all, the quality of the equipment currently available within the WILD Group is similar to that of test laboratories. As a result, optics designers can directly compare their measurement results to those of the certification authority, thus minimising waiting time, accelerating development and reducing lead time to production.

YOUR CONTACTS:

Rembert Fertner

Mail: rembert.fertner@wild.at

Stefan Preißer

Mail: preisser@photonic.at



IN-TIME PROCUREMENT FOR YOUR PRODUCT IDEA.

WILD further strengthens the link between purchasing and development to get the right materials with the right requirements at the right time.

Establish more robust supply chain networks and guarantee top quality while ensuring a quick time to market: it takes innovative material management solutions to achieve such a balancing act. Based on the principle of Simultaneous Engineering, the WILD Group establishes a strong link between development and purchasing at a very early stage. For this purpose, it has created a "Project Material Management" role. Its integrative function is to link two strategic steps: product development and procurement, including the choice of supplier with the respective lead times in mind. "Which decision must be taken and when? Until when must a specification be defined? By asking the right questions, our material managers can keep track of the critical path. As a result, we achieve attractive costs, better functionality and a quicker launch of serial production", stresses Christian Rabitsch, WILD Group Head of Supply Chain.

The required tasks of this role are precisely defined and documented. Based on their training and specific expertise, the respective staff members come with the necessary competence and mutual understanding, further bolstered by special courses they attend for this particular position. "We allow those coming from procurement to work together with the developers. Vice versa, developers get to experience the requirements of procurement," Rabitsch explains. "We also plan to apply this method when our customers carry out the development themselves and we simultaneously work with them as Project Material Managers, taking charge of material procurement."

A current project in which WILD has taken on the continued development of a surgical instrument stand demonstrates how material management works. "Based on general specifications, the customer commissioned us to develop a new product generation, manufacture a demonstrator and near-series prototypes and prepare the technical documentation", says Project Manager Markus Aichwalder. WILD began selecting suppliers for the series already during the concept phase. "These were informed months before the commissioning. We agreed together on the delivery times and deadlines for the completion of the specification documents and we updated the delivery status of individual components and assemblies on a daily basis. As a result, we were able to detect and solve difficulties in the supply chain at an early stage," says Aichwalder. He cites electronics as an example where individual components have delivery times of up to one year due to the pandemic and whose availability had to be factored in already during concept development.

YOUR CONTACT:

Christian Rabitsch

Mail: christian.rabitsch@wild.at





NEXT LEVEL LIGHT.

At the 2022 LASER World of Photonics, the WILD Group will be presenting itself as a highly specialised allrounder for the development and manufacturing of optical technologies.

FAIR
8

In many areas of business, innovation is currently unthinkable without the contribution of photonics. This coming spring, the LASER World of Photonics exhibition will once again deliver impressive evidence of how important the influence of photonics can be. The industry's leading trade fair will be opening its doors for think tanks and key players in Munich from 26 to 29 April. They include experts from the WILD Group who are using this international networking platform to exchange thoughts and ideas with customers on the latest innovations and to forge new business relationships. Together with LED specialist Luminus, WILD and Photonic will be presenting themselves as true allrounders with a broad range of key technologies ranging from optics and lighting design and the development and manufacturing of high-precision optics, laser components, 3D measuring equipment, diffractive optics and electronics and software design, to additive manufacturing and

cleanroom assembling. "We possess all the methods needed to cost-effectively manufacture optical systems in the required quality and under cleanroom conditions," stresses Martina Trinkel-Rudman from Business Development. "Add to that a comprehensive range of lighting solutions provided by Photonic for endoscopy, microscopy and fluorescence imaging".

Moreover, this year the WILD Group will stream its development and production locations virtually at its fair booth. This will open its doors to interested customers via webcam, allowing them to take a glimpse behind the scenes during live company tours.

Make the most of the inspiring setting of the Laser World of Photonics and meet our experts **in Hall B6, Booth 443**. We look forward to seeing you there.

PUBLISHING INFORMATION

Owner and publisher: WILD Group, Wildstraße 4, 9100 Völkermarkt, Austria
T +43 4232 2527-0, E-Mail: sales@wild.at

Responsible for the contents: CEO Josef Hackl, CTO Wolfgang Warum

Editorial staff: Andrea Patterer und Sabine Salcher

Photos: WILD, Photonic, Daniel Waschnig, Shutterstock

THE WILD GROUP

The WILD Group is comprised of the WILD brands which are established in Völkermarkt and Wernberg (Austria) and Trnava (Slovakia), as well as Vienna-based Photonic. The technology partner develops and produces optomechatronic systems for medical and industrial applications as well as optical technologies exclusively on behalf of its customers. Approximately 500 staff members are always the first choice whenever precision and reliability are called for and wherever innovation takes place.