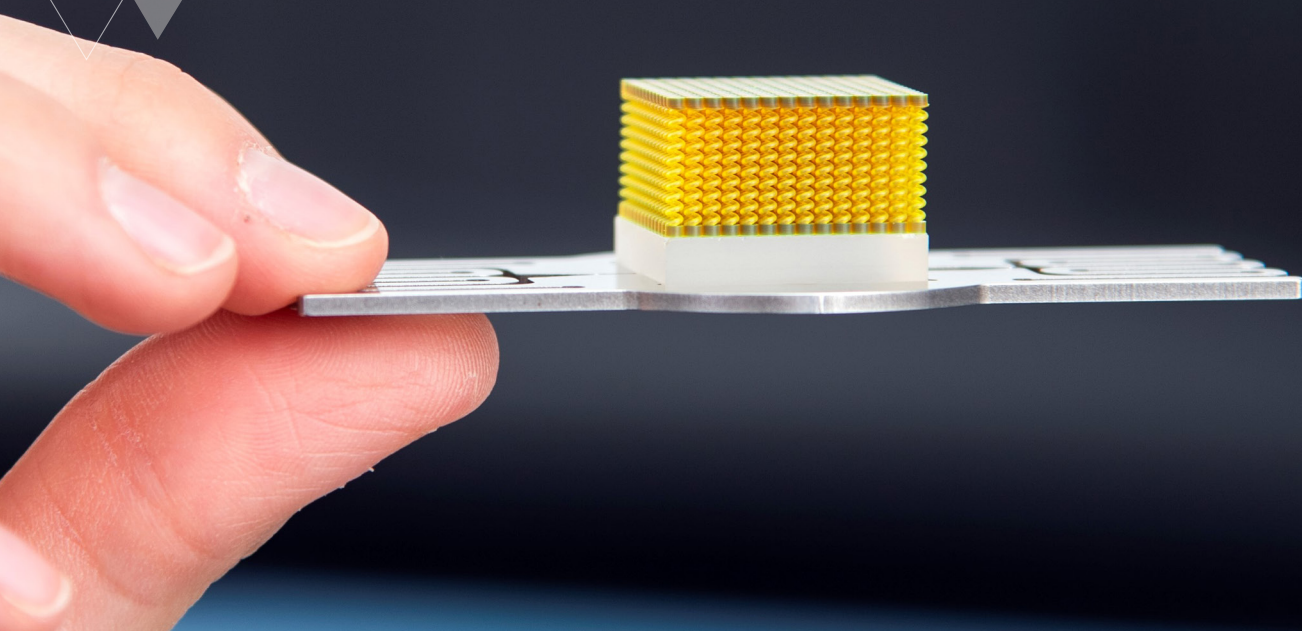


PRISMA

The WILD Group
magazine



UpNano:

MASTER OF THE MINIATURE

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▼ **PHOTONIC**

Consistent Lean
Management for
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TOP INNOVATIONS AT CLOSE QUARTERS.



Stephan Payer
Head of Business Unit
WILD Electronics

Many of the orders carried out in the WILD Group involve innovations that can make the hearts of technicians and users leap with joy. In addition, some of the systems we manufacture are door openers for completely new products and applications which have a sustainable impact on the lives of us all. The best example of this is the NanoOne 3D printer, which creates incredibly precise micro and nano components and structures which were previously considered impossible to manufacture. This offers new solutions in the pharmaceutical industry, in the biotech sector and also in microelectronics, to name but a few. We use various examples on pages 4 and 5 to demonstrate what this technology can make possible in the future.

The enthusiasm for our customers' products permeates throughout the company, from sales through development to operations and administration. Yet bringing a product to serial production entails numerous challenges that need to be tackled and require a collective effort. In today's extremely volatile procurement markets, they are greater than we could ever have imagined. Our

companion on this journey is continuous, dynamic learning.

Startups and established corporations alike are currently facing enormous challenges. How can these be tackled best? To begin with, through a closely integrated cooperation with our customers, suppliers and partners in the WIN network. The latest addition to this technology hub is the Austrian Center for Medical Innovation and Technology, which we present to you on page 7.

Searching for optimisation measures and striving for precision are everyday practices throughout the WILD Group. Concrete examples of this are our lean management activities, which are presented on page 3, and the enlargement of our Trnava production site, described on page 6.

Enjoy this latest issue of PRISMA.

Stephan Payer
Head of Business Unit WILD Electronics



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SYSTEMATIC, MAXIMUM IMPROVEMENT.

Lean management is nothing new. Implementing it successfully in the long run, however, requires the collaboration of as many staff members as possible. For this reason, the WILD Group is launching a broad training offensive in all areas.

As a technology partner accustomed to manufacturing at micrometre level, WILD lives and breathes precision on a daily basis. The same applies to its search for optimisation, which has been backed by a continuous improvement process for years. "This fundamental approach is deeply rooted in the company", stresses Matthias Ghetta, Head of Operations at WILD Electronics. Therefore, the topic of lean management falls on particularly fertile ground throughout the group. This is demonstrated, for instance, by the strong commitment of many staff members who wish to train and upskill themselves on their own initiative. Recently, 23 of them have successfully completed the Green Belt training programme. Together with the other 20 Green Belts and some 40 Yellow Belts who have attended the courses in recent years, they are currently promoting lean production in the areas of manufacturing, assembly, strategic procurement, sales, and engineering. In essence, the objective is always the highest possible customer satisfaction and the avoidance of any waste in the production process.

"The lean philosophy must be deeply embedded in the minds of staff members and management alike", says WILD Technologies Managing Director Tobias Knoop. "It's the only way to make the principle of lean production work. Operative processes, in particular production, represent a major lever that yields immediately visible results. But we want to expand this in-depth lean production knowledge to all corporate processes". Hence, a Black Belt training programme has been scheduled for the autumn. Participants who successfully complete the training

will have acquired in-depth lean production and lean leadership knowledge, enabling them to encourage lean thinking and coach their colleagues. The overriding aim: to improve the company's own processes with regard to efficiency and effectiveness, which will ultimately benefit customers.

AGILE AND AUTONOMOUS TEAMS

To implement this on a systematic basis, the WILD and Photonic staff members are given the necessary tools as part of their Green, Yellow, and Black Belt training. "We want to involve them even further and use their deep understanding

for our processes and products. They receive greater freedom to implement improvements but they also assume greater responsibility", Matthias Ghetta explains. The basis for all improvements is a clean and jointly implemented

5S concept. Other tools building on this include value stream mapping, SMED analysis, 5S audits and Muda Walks. The potentials identified in the process are then sustainably implemented as part of a PDCA (Plan-Do-Check-Act) cycle.

To implement this on a systematic basis, the WILD and Photonic staff members are given the necessary tools as part of their Green, Yellow, and Black Belt training.

Matthias Ghetta, Head of Operations WILD Electronics

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GRAND PLANS FOR NANOTECHNOLOGY.

UpNano steps in where established 3D printing technologies give up. The provider of high-resolution laser lithography systems is a door opener for completely novel micro and nano products and applications.

Extremely small, high-precision components, previously considered impossible to manufacture, can now be efficiently and individually shaped in 3D printers. Moreover, at a speed up to 100 times higher than with comparable technologies. This feat was accomplished by WILD customer UpNano, who developed a high-resolution 3D printer for polymer microparts now sold worldwide. The device goes by the name NanoOne and uses multiphoton lithography to manufacture both ultrafine components with structural details in the range of 170 nm and macroscopic microparts in the centimetre range, opening a plethora of possible applications. The first examples already demonstrate what will be made possible by this technology in the future, e.g. in medical and filter technology or in micro-optics.

The possibilities are virtually endless. Everything you can draw can also be printed.

Bernhard Küenburg, CEO UpNano

BIOPRINTING FOR RESEARCH

The origins of UpNano's high resolution 3D printing lie in so-called bioprinting, i.e. the printing of 3D structures containing layers of living cells. These biosystems, measuring just a few millimetres, are used in research, e.g. to test and evaluate

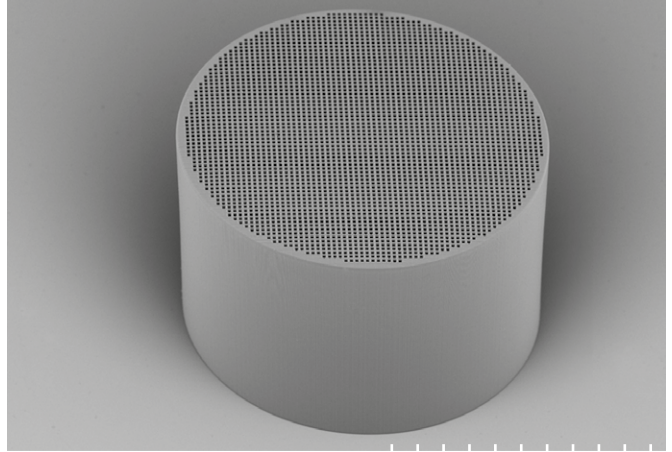
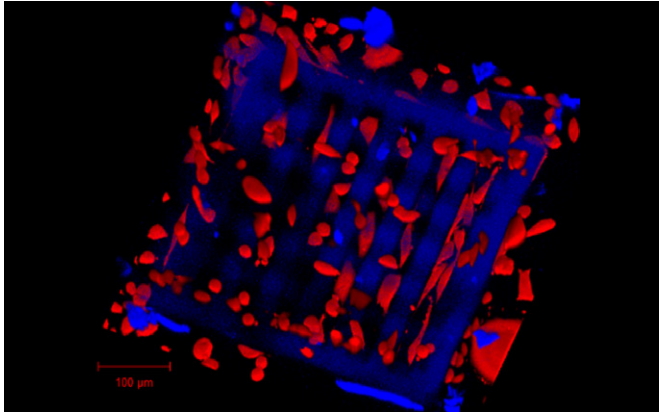
pharmaceuticals. The advantage of this method lies in the fact that cells behave more naturally in a 3D context than in a two-dimensional cell layer.

TISSUE REPLACEMENT AND INTELLIGENT BANDAGES

UpNano founder and CEO Dr. Bernhard Küenburg also sees a considerable potential in 3D-printed biofunctional tissue replacement. The idea behind this is to insert stem cells into specific sensitive areas such as the retina to seal tissue defects or to accelerate the healing process. "We will be seeing identical or similar research projects in the coming years, especially in the area of small cell agglomerates which need to be particularly precise."

What sounds less like science fiction and is currently pending clinical examination, however, is an intelligent bandage that indicates when it needs to be replaced. Using technology from UpNano, a customer from Sweden developed sensors with printed electronics for this purpose, which monitor indicators for infections such as temperature, blood pressure, or humidity in the wound. The system consists of an electrochromic display combined with





FlexSEM1000 15.0kV 9.2mm x100 BSE-COMP 30Pa

500µm



a sensor that generates voltage when exposed to exudate. In combination with the exudate, the electrodes generate enough power to cause the display to change colour, indicating that it's time to change the bandage.

PURE QUARTZ GLASS STRAIGHT OUT OF THE 3D PRINTER

In principle, the NanoOne can only be used to print polymer objects. There is now a method, however, which allows the printing of microstructures made of glass in any desired shape. The first step consists of mixing nano glass powder (the glass particles measure approx. 40 nm across) made by Freiburg-based partner company Glassomer into the polymer. The result is a kind of liquid glass jelly that can be printed using a 3D printer. Subsequently, the polymer is burned off at high temperature, causing the glass globules to sinter and coalesce. The end product is high-quality, pure quartz glass. This is how Kuenburg describes the advantage of this two-step approach: "This thermal process causes the printed forms to shrink on a three-dimensional scale and there is no tension whatsoever in the product itself. In addition, quartz glass is chemically not corrodible or toxic. These high-precision glass structures are therefore extremely interesting for various areas of application ranging from endoscopy to microfluidics. The possibilities are virtually endless. Everything you can draw can also be printed."

MICROFLUIDICS AND MICROFILTERS

Another topic UpNano faces almost daily is microfluidics. After all, NanoOne can also easily build spatial structures with fine channels. Contrary to microfilters made of

celluloses or other fibrous materials whose pore size is always subject to large fluctuation margins, NanoOne can print microfilters with precisely defined pore sizes of up to 1 x 1 micrometres in just a few hours.

"One can choose any filter shape. In order to keep the very fine filter struts mechanically stable, we also print additional support structures into the product. Such microcomponents cannot be manufactured conventionally," says Kuenburg, who has never made a secret about the fact that the WILD Group has been on board from the very beginning as a manufacturing partner. The technology partner has actually been assigned with the serial production of the NanoOne and, together with other WIN network partners, has further optimised its design during development to obtain a desktop device that fits into the smallest laboratory. "We see ourselves as industrialisation specialists who can guarantee professional serial production regardless of batch size. If necessary, we are also capable of quickly scaling up production to accommodate large quantities", stresses WILD Group CTO Wolfgang Warum.

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MORE SPACE FOR FUTURE TECHNOLOGIES.

With 2,400 m² of additional floorspace currently in the final construction phase, WILD Technologies is laying an important cornerstone for future growth.

A significant enlargement of the manufacturing area, optimised storage equipment, and additional meeting, office and social space: The WILD Group is significantly upgrading its Trnava production site in Slovakia by introducing a series of measures designed to expand capacity in the production process for the long term.

“In order to be best prepared for growing market and customer requirements, we primarily need the corresponding production and storage space. Following completion of the first of three stages, 600 square metres are now available. The expansion by an additional 1,800 square metres from May 2023 will help reduce our office space bottleneck,” Managing Director Tobias Knoop explains. “Not only do we want to make use of the entire space of 4,800 square metres by 2027, but we also want to double turnover compared to 2021 by then.” Until then, the number of staff members is expected to grow from currently 98 to 150-170. At the same time, the company is addressing the issue of energy efficiency and resource conservation. For instance, the entire lighting system in the production hall has been converted to LED.

COMPETENT AND WITH AN ATTRACTIVE COST STRUCTURE

In recent years, the Trnava site has developed into a competent production partner and an important complement to

the WILD Group’s sites in Carinthia. “We succeeded because our main focus was on expanding and strengthening the technical expertise available. This is the requirement for managing the challenge of manufacturing a large share of the WILD Group’s product portfolio,” says Knoop. Therefore, in addition to the building infrastructure, we are also investing above all in the individual production lines. “This is done on a product-to-product basis, depending on how the devices or assemblies can be manufactured in the best possible manner,” Knoop explains.

A technologically competent site with lower wages is definitely relevant to the group’s sustainable growth strategy. After all, today many customers are subject to increasing cost pressure.

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BUILDING A BRIDGE BETWEEN INDUSTRY AND ACADEMIA.

By combining research, serial production, and manufacturing, ACMIT and the WILD Group form a partnership that is extremely interesting not only for startups.

When it comes to research and development, the WILD Group has long ceased to resort solely to its own potential. Instead, the technology partner is driving innovation forward through collaboration, and today relies on various forms of cooperation within the WIN partner network. A new member of this knowledge hub is ACMIT GmbH, the Austrian Center for Medical Innovation and Technology, which offers genuine added value for WILD and Photonic customers.

ACMIT combines R&D services both with clinical requirements and with medical-technical basic research and product development at a corporate level. "Our core topics include smart tools, medical robotics, fibre-optic tissue sensors, and the design of novel intraocular lenses. In general, we already get started when the idea for a product is born, be it from a market leader or a startup. In both cases, it requires processes and regulatory expertise to develop a medical technology product and bring it to serial production," explains ACMIT CEO Nikolaus Dellantoni.

CO-FINANCING FOR STARTUPS

The range of services extends far beyond that, though. "As a publicly funded COMET research centre, we are also in a position to support projects that match our research areas with co-financing of up to 50%. We do not acquire any share in a company in the process but recover the invested funds through a temporary licence instead. The essential element for the customers is that the intellectual property created is fully transferred to them," Dellantoni explains.

WELL-CONNECTED

Since the approx. 50 employees of ACMIT are closely linked to technical and medical universities around the world, they add extra speed to the development projects. They can handle tasks from the idea to the clinical application, including ethical approval, clinical studies and pilot series. When larger quantities are required, however, the WILD Group comes into the picture. "We soon realised that we had to think beyond what we could manage ourselves. Therefore, we already try to anticipate a later serial production when volumes are still small. As a certified medical equipment manufacturer who can quickly scale up production volumes when required, WILD is the ideal partner for us," says Dellantoni. "We are currently working together on an innovative medical device, where we can ideally contribute our expertise in the area of optics development and manufacturing", predicts Photonic Managing Director Stefan Zotter.

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INTERN

WHAT A SUMMER PARTY.

8 Getting together to celebrate, have fun, and enjoy the summer: the staff members of WILD and Photonic recently raised a toast at a scenic gathering against the historic backdrop of Taggenbrunn castle in Carinthia. This group-wide reunion was organised to thank the staff members for their commitment in these demanding times.

REFUGE OF THE SENSES

The programme included a small tour through the local vineyard and a visit to the Time Spaces exhibition by artist

André Heller. After the party guests had been treated to a culinary feast in this refuge of the senses, CEO Josef Hackl served refreshing Krappfeld ice cream for dessert from a vintage Citroen ice cream van.

Business Developer Franz Aigner then kicked off the evening with live music and many stayed to enjoy the surroundings, dancing and celebrating to DJ beats until the early hours.

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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.