SYGNIS

SPÓŁKA AKCYJNA

Annual Report

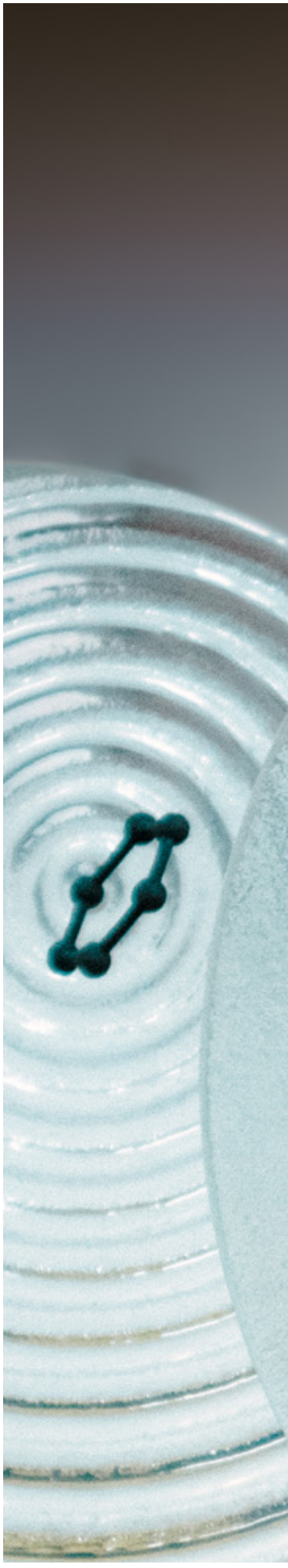
2022

We place in your hands the Annual Report on the Sygnis Capital Group.

The year 2022 was an extremely intense, but also extremely rewarding year for us.

2022

Table of contents



Dear Shareholders, Investors, Stakeholders,

For Sygnis SA, 2022 was the first full year on the stock exchange after the reverse IPO on Mode SA. The year 2022 was marked by three significant macroeconomic events that affected our company and its environment.

It was a year of high inflation, causing wage pressures from employees, as well as an increase in the cost of purchasing goods and components for production and research work.

We are writing these words in March 2023. For a year just across our border a full-scale war has been going on - Ukraine is heroically defending itself against Russian aggression. After February 24, 2022 our regional world of Eastern and Central Europe changed for the coming decades. As the Sygnis team, we have been and continue to be committed to helping our neighbours since the first days of the war, offering both humanitarian and technological help. We will explain in detail our involvement later in this report.

The year 2022 also marked the end of peak valuations for technology companies. Unprecedented layoffs at technology giants in IT areas show the adaptation of trends whose origin can be traced to the supply chain crisis, particularly significant during the COVID-19 pandemic. The global economy continues to actively benefit from the development of digital techniques, but the economy supplying physical items is much more appreciated on 2023's doorstep than it was as recently as 2019.

Our regional world of Eastern and Central Europe changed after February 24, 2022 for decades.

We regard it as success that on 30.12.2022, one year after the first listing of Sygnis SA, the price in such a difficult macroeconomic situation not only did not fall, but recorded a slight increase (from PLN 2.09/share to PLN 2.31/share). We wish all our shareholders further, much greater increases in share value in the years to come.

As the Management Board, we will do our best to make this happen.

We started the year 2022 as Sygnis SA and ended it as Sygnis Capital Group. The past 12 months have seen two major developments in our company.

At the end of July 2022, we finalized a key agreement leading to the acquisition of Zmorph SA, a Polish premium 3D printer company with significant international exposure. Using the Zmorph SA branding in the context of product

placement in the 3D printing market increases the effectiveness in foreign sales. We will seek to extend this effect to the products of the entire Group.

Among other acquisitions, we have also become a company with a nationwide dispersal of facilities. Our head office is in Gdańsk, we also have, as Sygnis SA, a registered branch in Warsaw and in Pruszcz Gdański. As part of the Group, we also have offices in Wrocław. Thanks to this geographical spread, we are able to more effectively and easily fish for talents regionally that will work for the entire Group.

The second major event was the sale of the Mode360_by Sygnis brand in August 2022. This transaction, in addition to a portion of the original payments already made, also includes planned future flows (earnouts) related to the indicators set between Sygnis and OrbitVu. The research work continues.

The purchase of the Zmorph SA Group, and the consequent increase in Sygnis' share capital to finance this transaction, was not the only acquisition in the past calendar year, however.

We also closed on the purchase of 3D printing technology for glassy carbon from the gas phase to the solid phase. This technology enables extremely interesting developments in the areas of hydrogen and electric cells, electrode processing related industries or biotechnology. We have created a new team in the R&D Department around this technology, and we are currently certifying it in cooperation with the National Bank in the context of Idea 3W.

In the past year, we spent thousands of hours developing and implementing the strategic foundation for the Group's future operations. We upgraded the internal corporate structure to one that is more relevant to the challenges the company currently faces, built production and warehouse facilities to a higher level than they were before, and bought new machines for the technology park. It featured 5-axis machining centers, more efficient 3D printers, and special-purpose machines.

In the coming year, we plan to further strengthen production and prototyping capabilities within the Sygnis Group.

from left:
Olga Czerwińska PhD, Andrzej Burgs and Joanna Danaj

In addition, the expansion of the Supervisory Board of Sygnis SA to 7 people and the appointment of recognized market experts to it, provides additional opportunities to gather the knowledge necessary for further scaleup of Sygnis.

We previously reported on the company's largest single contract - the delivery of LEEM microscopy to Jagiellonian University. The contract for the delivery of the SPECS system was signed by the University and the company. Two of the four technical stages have now been completed, with finalization expected in August-October 2023.

The financial results achieved in 2022, both by Sygnis SA and the Group as a whole, exceeded our expectations. The assumptions and the plan developed by our analytical team in August 2021 predicted that we were likely to achieve revenue of 20 million PLN. As Sygnis SA, we beat that by far, by nearly 7 million in revenue over the plan (PLN 26.8 million to be exact), achieving a net operating profit of PLN 2.2 million. Nevertheless, as a Group we suffered an annual loss of more than PLN 2 million - as part of the consolidated statement, the results of the acquired Zmorph SA company negatively affected the result of the Sygnis Group as a whole. We were aware that this was likely to be the effect of the acquisition on the consolidated financial statements. Zmorph is currently undergoing deep restructuring and is in the process of changes to make it consistent with the Sygnis Cultural Principles (page 68).
In our opinion, making improvements to Zmorph's flagship product, the i500 machine, supplementing the portfolio with a new product, SHAPE (a tabletop thermoforming machine), starting intensive work on monetizing Voxelizer software, or increasing the scale of production are rational investments that, over the course of 3-4 quarters, will bring a large increase in profit generated at Zmorph SA as a subsidiary.

The Sygnis Group currently operates primarily in two base industries - 3D printing and deeptech. As the most comprehensive team in Poland, we have the greatest predisposition and capabilities to lead the integration of the domestic 3D printing market, which we will continue to do as one of our strategic goals. On the other hand, the second goal and area is the industry of developing large, disruptive hardware technologies, where we want to increase our presence.

After consulting with global partners in the deeptech area, we realized partial pivots in our approach to commercialization in 2022. Originally, in the case of Syglass technology, we wanted to develop excellent machines that we would then sell at high margins. It turned out that a far better business case scenario, one that increases security in terms of technology theft, is to pursue application manufacturing at Sygnis, without selling the machines along with the know-how. This pivot has already resulted, among other things, in an agreement with Berger and Kraft to realize a photonics application in the wellness industry.

In the coming year, we plan to further strengthen the Sygnis Group.

The well-executed acquisition of carbon 3D printing technology, combined with the good relationship we as a Company have with most of Poland's technical and science universities, allows us to be a natural choice as a partner for research groups that want to commercialize their achievements.

This provides us with an additional stimulus for innovation within the Group. Our duality of operating activities based on deeptech and 3D printing allows us to create a scalable product-based business (3D printing), ensuring the constancy of ongoing cash inflows to the organization, as well as to pursue world-breaking projects that will be commercialized in the long term (deeptech).

As a company, we have not changed our main goal - over the next few years we want to become the largest hardware innovation company in Central and Eastern Europe. We have now added an additional goal - undisputedly we want to be the largest 3D printing company in Poland.

In the last quarter of 2022, as in Q2 2022, we participated in dozens of events, happenings and trade fairs, building brand recognition and conducting active sales activities. The highlight of the past quarter was, of course, the Formnext 3D printing trade show in Frankfurt am Main. We exhibited there jointly as Sygnis SA and Zmorph SA, which turned out to be Zmorph SA's debut at this prestigious fair. In accordance with the concept implemented by Sygnis, a significant part of the 29 people who participated in the fair on behalf of the entire group were employees of the R&D Department. Their task at the fair each time is to search for technological innovations.

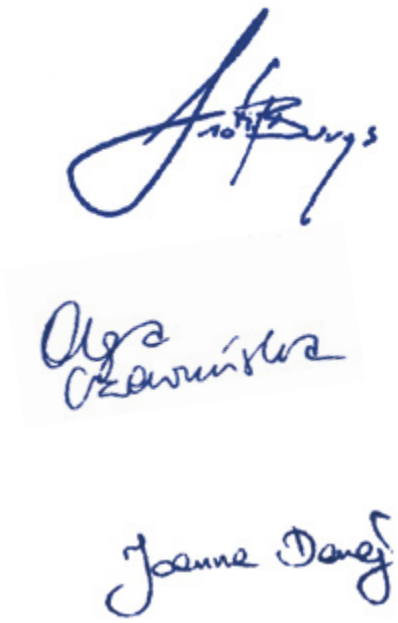
Already after the end of the balance sheet period, on January 9, 2023, Grzegorz Kaszynski, former vice-president of Sygnis SA and president of Zmorph SA, resigned from his positions. Olga Czerwinska, PhD. (CSO of Sygnis) and Joanna Danaj (CFO of Sygnis) were appointed as new members of the Sygnis SA Board of Directors, while at Zmorph SA, Andrzej Burgs became president, and Magdalena Krawczak (COO of Zmorph) was appointed as vice president.

Currently, as a company, we are preparing to begin increased expansion into neighboring countries: Bulgaria, Romania, the Czech Republic and Slovakia. In the near future, these countries will launch programs related to KPO assuming digitization of the educational process analogous to the Polish Laboratories of the Future program. This means that there will be a sharp increase in demand for 3D printers across Europe, which we want to meet as a proven provider of educational packages.

The CEE region is extremely interesting to us for several reasons. Among the most important are, of course, sales opportunities to individual countries (including educational packages consisting of textbooks and 3D printers), but also access to culturally close, talented and not yet so expensive - highly qualified personnel.

In order to scale to a European market tycoon, we will need a steady flow of talents into our organization.

We see great prospects for Sygnis SA in the coming years. These include growth in the 3D printing market, which is averaging more than 20% annually globally, and deep-tech enabling spectacular commercialization. We are pleased to be able, together with the entire team, to put into your hands the Sygnis SA 2022 Annual Report. It was an intensive, but extremely rewarding year. We wish you a pleasant reading!



We want to be the largest company in the industry of 3D printing in Poland.

As the Board of Directors, we will make every effort, to make this happen.

Management Board Report on the activities of Sygnis SA and the Sygnis Capital Group of operations in 2022.

Events significantly affecting the entity's operations that occurred during and after the fiscal year, up to the date of approval of the financial statements:

The year 2022 for Sygnis SA was the first full year on the stock market after the reverse IPO on Mode SA. It was marked by three significant macroeconomic events that affected the Group, as well as our environment.

1. High inflation causing wage pressure and raising component prices,
2. W the war in Ukraine changing supply chains
3. the end of peak valuations of technology companies and a reduction in the supply of financing for them.

In Q1 2022 we experienced primarily record deliveries tied to the governmental "Laboratories of the Future" program. Revenue generated in Q1 of 12.7 million was a better result than the proforma total for 2021. The resulting financial surplus was allocated to investments, including acquisitions, in subsequent periods.

In the second quarter of 2022, the Company recorded significant year-on-year revenue growth. (Q2 22 to Q2 21). Inventory in stock increased by 1.1 million zlotys, which provides a good basis for increased sales in future quarters. Due to the challenging logistics situation on the routes from China to Poland (including Flashforge printers, of which Sygnis SA is an authorized distributor and one of the most significant in Europe), it was necessary to secure inventory. The Company's strategic task was to secure its ability to serve customer demand in subsequent quarters. Accordingly, an investment was made, which took effect at the end of July 2022 - the Group was enriched with a new location at 15 Muszkieterów St. in Warsaw. This is a retail and trade fair warehouse, which was necessary to further scale the organization. It was also a very active period in terms of trade fairs, comparable only to the fourth quarter, as we as Sygnis took part in dozens of trade fair and conference events.

In the second quarter of 2022, Sygnis' management decided to make an investment in the F-NIS project (www.diw3d.com). This is an in-house project, where machines are manufactured in the company's Pomeranian branch, and the level of stocking at the time of initiation was planned at 300 machines.

The third quarter was very absorbing due to the conclusion of three transactions involving the entire organization.

At the end of July 2022, we finalized a key deal leading to the acquisition of Zmorph, a Polish premium 3D printer company with significant international exposure. Using the Zmorph SA branding in the context of product placement in the 3D printing market increases the effectiveness

in foreign sales. We will try to extend this effect to the products of the entire Group. The structure of the transaction involved the purchase of claims of Zmorph and its subsidiaries (LBL sp. z o.o., Value Factory sp. z o.o. and 3D Printers sp. z o.o.) against creditors (investment funds) and Zmorph SA shares. After all formalities are completed, the subsidiary will be a debtor to the parent company to the tune of about PLN 20 million.

As a consequence of this transaction, shareholders will include, for the first time, an investment fund that will hold more than 5% of shares. We believe that this is another step in building the Sygnis Group's transparency and credibility on the capital market.The second important event was the sale of the Mode360_by Sygnis brand to OrbitVu sp. z o.o. This transaction, in addition to part of the original payments already made, also includes planned future flows (earnouts) related to the indicators set between Sygnis and OrbitVu. Research work continues and funds from the sale of the brand have been reinvested in the Sygnis Group's operations.

We also closed in Q3 on the purchase of 3D printing technology for glassy carbon from the gas phase to the solid phase. This technology enables extremely interesting developments in the areas of hydrogen and electric cells, electrode machining related industries or biotechnology.

2022 is also the year of investment in demonstration and service equipment facilities. Among the most important purchases of production machinery, it is worth mentioning the first Mimaki 3DUJ-2207 printer, which is capable of multicolor printing (10 million colors) at high resolution. Also, the machinery park of the prototyping shop was modernized - equipping it with 10 Creator 4S machines along with filament dryers (industrial class machines).

Already after the end of the balance sheet period, on January 9, 2023, Grzegorz Kaszynski - former vice-president of Sygnis SA and president of Zmorph SA - resigned from his positions. Olga Czerwinska, Ph.D. (CSO of Sygnis) and Joanna Danaj (CFO of Sygnis) were appointed as new members of the Management Board of Sygnis SA, while in Zmorph SA Andrzej Burgs became president, and Magdalena Krawczak (COO of Zmorph) was appointed as vice president. The company, also in accordance with the decisions of the General Meeting of Shareholders, moved its headquarters from Straszyn to Warsaw, which was sanctioned by a KRS entry dated 18.07.2022. The General Meeting of Shareholders, which took place as early as January 2023, decided to change the address of the headquarters to Gdańsk, which was recognized by the KRS entry dated 17.01.2023.

Anticipated development of the entity

In the past year, we spent thousands of hours developing and implementing the strategic foundation for the Group's future operations. We upgraded the intra-company structure to one that is more relevant to the challenges currently facing the company, built production and storage facilities to a higher level than they were before, and purchased new machinery for the technology park. 5-axis machining centers, more efficient 3D printers, as well as special-purpose machines have appeared in machine park. In the coming year, we plan to further strengthen production and prototyping capabilities within the Sygnis Group. In addition, expanding the Supervisory Board of Sygnis SA to 7 people and appointing recognized market experts to it provides additional opportunities to gather the knowledge necessary for further scaleup of Sygnis.

In July 2022, the company's largest single contract was signed - the delivery of LEEM microscopy manufactured by SPECS to Jagiellonian University. Two of the four technical stages have now been completed, with finalization expected in 08-10.2023. The financial results achieved in 2022, both for Sygnis SA and the Group as a whole, exceeded our expectations. The assumptions and the plan developed by our analytical team in August 2021 predicted that we were likely to achieve revenue of 20 million PLN. As Sygnis SA, we beat that by far, by nearly 7 million in revenue over the plan (PLN 26.8 million to be exact), achieving a net operating profit of PLN 2.2 million. Despite this, as a Group we incurred an annual loss of more than PLN 2 million - as part of the consolidated statement, the results of the

acquired Zmorph SA company negatively affected the result of the Sygnis Group as a whole. We were aware that this was likely to be the effect of the acquisition on the consolidated financial statements. Zmorph is currently undergoing deep restructuring and is in the process of changes to make it consistent with the Sygnis Cultural Principles. In our opinion, making improvements to Zmorph's flagship product - the i500 machine, supplementing the portfolio with a new product - SHAPE (tabletop thermoforming machine), starting intensive work on the monetization of Voxelizer software or increasing the scale of production are rational investments, which over the course of 3-4 quarters will bring a large increase in the profit generated at Zmorph SA as a subsidiary.

We have created a new team in the R&D Department around the technology of 3D printing from glassy carbon, we are currently certifying it in cooperation with the Bank of National Economy in the context of Idea 3W. As the Board of Directors, we diagnose it as one of the greatest potentials for large-scale commercialization in the next few years. We also invested in personnel capital. The Group's collaborative team has grown to 120 people by the end of 2022. As a result, the scope of realized activities and their speed continue to grow. We anticipate that by the end of 2023, the workforce will increase to 140 FTEs.

The company generates revenue from the sale of its own machinery, the execution of commissioned research work, distribution sales of machinery from other manufacturers, and the provision of design and manufacturing services. Details and realization examples can be found later in the annual report.

Major achievements in research and development.

In 2022, the Company continued to invest in popularizing the knowledge of professional 3D printing and widely popularizing and marketing the Sygnis brand. In particular, the Company's high-profile realization was the 3D printing of a 3D preoperative model of an infant's skull, which was necessary for successful surgery.

Information about our company circulated the world (American, Korean, Hungarian, Brazilian publications, etc.) reaching multi-million dollar coverage. The activities of the Board of Directors also resulted in awards for the Company. We received the Made in Poland award and were selected as the most attractive employer in the photonics sector. In addition, we continued our mentoring and jurying path in programs such as HelloTommorow, TeenCrunch, MedBizDays, Polish Development Fund and Enterprise MIT Network. The Company is thus priming its expert image in Poland and increasing its talent recruitment potential.

The Company's research and development projects are progressing without delay, reaching milestones on time. The following projects are currently underway:

1. Constructing a multifunctional hybrid 3D printer with a real-time quality control system,
2. Creating a technology for printing from biomaterials and constructing a 3D bioprinter for automated creation of bionic organs,
3. Developing a proprietary product photography system for automated digital imaging of products using a compact device with remote work.

Among others, we have joined a consortium formed by the Lodz University of Technology (consortium leader), Warsaw University of Technology and Nicolaus Copernicus University in Torun for the implementation of a project entitled „New Functional 3D Printing MATerials for UROlogical Needs" (acronym: MATURO 3D). The MATURO 3D project is already underway and aims to develop innovative materials for the reconstructive treatment of urethral defects in children and adults.

Thus, as a Company, we are expanding our portfolio of hardware and new materials-based biotech projects and establishing new strategic partnerships, gaining access to valuable know-how. In addition, the Company also gains the opportunity to enter the pan-European biotech product market with another proprietary product, which is in line with the Company's strategy of multi-directional development.

Current and projected financial position

As of December 31, 2022, the Group had a loan liability not exceeding 10% of the Company's revenues. Detailed values can be found in the relevant reporting lines in the Company's income statement and balance sheet. Significant debt exists only between subsidiaries and the parent company.

The situation with the disruption of logistics chains due to the COVID-19 pandemic was a great opportunity for the Company, which, as a European manufacturer independent of Chinese component suppliers, used it to its advantage. Due to the high vaccination rate of employees, absences due to the COVID-19 disease were minimal.

As a consequence of the war in Ukraine, we do not anticipate an increase in logistical and financial problems. Currency exchange rates have stabilized in the Board's opinion, but internal calculations of the rates of the main currency pairs EUR/PLN, USD/PLN and CHF/PLN by 5-7% higher than current levels are accepted. Foreign currency costs have been included in new price lists for customers.

The company became involved in helping Ukraine. Total aid donated in the form of communication devices, 3D printers, filaments and tourniquets 3D printed at Sygnis amounted to about PLN 700 thousand. The tourniquet developed in support of Ukraine was tested by external research units as one of the best designs on the market. It fills us with pride that we have saved many lives with our technology and skills.

The Company's management assesses the financial and cross-market situation as good and promising. A steady increase in turnover, profits and investments is planned for 2023. The Board of Directors will recommend that shareholders allocate annual profits to intra-company investments including machinery purchases, new research projects and company acquisitions.

Treasury shares

The company has no treasury shares. The issued shares are wholly owned by shareholders, among whom Andrzej Burgs together with Anastazja Burgs (55.28%) and Grzegorz Kaszynski (13.68%) held more than 5% as of December 31, 2022. Already after the balance sheet date, a share capital increase was registered (by PLN 500,000, which means 2,500,000 new shares) introducing the following changes in the shareholding: Andrzej Burgs together with Anastazja Burgs 49.81%, Grzegorz Kaszynski 12.33% and WEM ASI (WEG SA) 9.20%, However, we do not exclude proposing to the shareholders in 2023 to implement a share buyback program, in order to create an incentive program for key employees (share package rewards).

Branches (plants) owned by the entity

The Sygnis SA entity is the parent company of Zmorph SA and prepares consolidated statements for ZMORPH SA, subsidiaries of Zmorph SA: LBL Systems sp. z o.o., Value Factory sp. z o.o., „3D Printers" sp. z o.o. The Group was established on the date of purchase of a majority stake in Zmorph SA on 29.07.2022. The consolidated financial statements of the Sygnis SA Group cover the period from January 1, 2022 to December 31, 2022, and include comparative data for the period from January 1, 2021 to December 31, 2021 of Sygnis SA.

The company also holds a 45% stake in Albireo Biomedical sp. z o.o., however, it is not included in the accumulated financial statements. This is a classic joint venture with Voxel SA.

Financial instruments in terms of risks and risk management methods adopted

As the Board of Directors, we do not see any risk in terms of high WIBOR, and due to the strict prepayment policy for ongoing orders, the risk of counterparty insolvency is insignificant from the point of view of financial hedging of contracts. This is due, among other things, to the organization's low level of credit in both working capital loans and leases. Most of the counterparties are also entities using their own funds or public entities, which makes contract financing well secured in the area of stability.

Subsidiary Zmorph SA has significant debt to parent company Sygnis SA. This is due to the transaction between Sygnis SA and the majority shareholder in Zmorph SA until 29.07.2022,

i.e. WEG SA. As a result of this transaction, Sygnis SA acquired Zmorph SA's claims to WEM worth PLN 17,017,000 (seventeen million seventeen thousand zlotys) for the value of PLN 3,102,835.12 (three million one hundred and two thousand eight hundred and thirty-five zlotys, twelve pennies). Thus, Zmorph SA became a debtor of Sygnis SA, and the claim became an internal matter of the capital group. Zmorph SA, after the restructuring carried out by specialists from Sygnis SA, will achieve high-margin, which will make it possible to eliminate the cross-debt in the long term (6-8 years). The Management Board does not see liquidity risks from this.

Within the framework of internal financial risk analysis, econophysical methodologies are used starting from 2022. In terms of hedging, these will include copula theory and the maximum likelihood method, and in terms of investment, proprietary Levy stochastic process modeling. The company has not used forward/future contracting but does not rule out the possibility in the future.

chapter 2:

Composition of the Management Board

from left:
Magdalena Krawczak
Andrzej Burgs
Olga Czerwinska, PhD
Joanna Danaj
Marcin Adamczyk, PhD, Eng.

Andrzej Burgs

CEO and President of the Management Board of Sygnis SA, President of the Management Board of Zmorph SA

A graduate of the Faculty of Physics at the University of Warsaw with a specialization in Econophysics. He has been operating in the 3D printing industry for over nine years and runs one of the longest operating Polish companies in this area - Sygnis SA. He manages and represents the Company, as well as coordinates and supervises the Human Resources and Sales Departments. He works closely with scientists and popularizers of science, promoting pro-scientific attitudes and implementing innovative solutions in research institutes and educational institutions.

3D printing expert with many years of experience. He is one of the founders of the Chamber of Commerce of Industry 4.0 and co-author of the Code of Ethics of the Polish 3D Printing Industry. He also acts as an expert - employer of the Polish Accreditation Committee. Experienced speaker and qualified trainer. He spoke, among others, at: XXXI Economic Forum in Karpacz, „Regiosummit" - Summit of Local Government and Economic Diplomacy 2019 organized by the Ministry of Entrepreneurship and Technology, International Symposium on Intellectual Property in Industry and Business (13th edition) organized by the Patent Office of the Republic of Poland, as well as the 2nd Congress of the Head of Maintenance and innoSHARE 2018.

Quickly or not at all. We efficiently transform ideas into products, because time-to-market is crucial in a technology-based business.

Under his aegis, Sygnis received e.g. Warsaw Business Journal Book of Lists 2019/2020 special award „Pioneer in New Technologies", EuroSymbol of Innovation 2019, nomination for the Polish Intelligent Development Award 2019, nomination for the Puls Biznesu Innovation Architects in 2018, as well as a very good rating in the Innovation Health Check conducted by Enterprise Europe network. Sygnis was also included in the Deloitte Technology Fast50 Central Europe 2021 ranking.

Olga Czerwinska, PhD

CSO and Vice-President of the Management Board of Sygnis SA

Doctor of Physics at the University of Warsaw, since 2018 she has been part of the management team of Sygnis SA. She has many years of experience in conducting scientific research, educating students and organizing national and international scientific conferences. She is the author of scientific articles published in international journals and an experienced speaker with dozens of conference speeches to her credit. From 2018, as Chief Scientific Officer, she is responsible for Sygnis' cooperation with the scientific community and the Company's scientific and research development strategy.

The basis for creating innovations is a diverse team. Different perspectives, often leading to differences of opinion, are a contribution to the emergence of new, very valuable ideas.

She manages research and development projects from the formal side, including the acquisition and settlement of EU funds, and the commercialization of the results of R&D works. She is responsible for raising funds for two proprietary Sygnis projects: SYGBIO and SYGPAST. Olga Czerwińska was one of the founders of the Warsaw branch of Women in 3D Printing, currently she is involved in mentoring activities at Innovations Hub and Network of Entrepreneurial Women.

Joanna Danaj

CFO and Vice-President of the Management Board of Sygnis SA

Finance expert with many years of experience. A graduate of the University of Finance and Management. For over ten years, she has been gaining experience in positions in controlling and financial audit departments. The skills acquired date back to the corporate structures of Colgate - Palmolive, where the international environment opened the door to further development and brought many ideas for itself. Working in the Accounting Department developed meticulousness and attention to detail, taught her to be attentive in reading the most important financial information. She took the next steps in her career in companies such as Concare IT and Good Looking Studio. The experience gained allowed her to turn in her career and focus on further activities together with Sygnis SA.

Innovative R&D projects need reliable financial and administrative support. Only in full synergy can we achieve the set goals.

Joanna Danaj controls and optimizes costs, deals with reliable assessment of investment projects and conducts economic and financial analyzes at the highest level. Her experience, characteristic personal features and resistance to stress allow her to master any crisis situation.

Magdalena Krawczak

COO and Vice-President of the Management Board of Zmorph SA

An economist technician by education, graduated from the University of Economics in Wrocław, majoring in Finance and Banking. Master's degree in Finance of Enterprises and Local Government Institutions. She started her professional development in Impel Cleaning Sp. z o.o., where as the Key Account Manager she looked after the most important and largest clients of the organization. In the following years, she worked at Ekkom Sp. z o. o. as Development Manager, and then as Operations Director and Member of the Management Board of two subsidiaries, where she was responsible for acquiring new customers, valorization of contracts and introducing optimization. In order to broaden her knowledge of the accounting and bookkeeping industry and the financial environment, she completed post-graduate studies in accounting and bookkeeping. The intensity of tasks, work in an environment of constant changes and persistence in the constant pursuit of personal development allowed her to broaden her professional experience in business and acquire a number of managerial skills.

Joining Zmorph to the Sygnis Group is a move towards even better products, technological facilities and new solutions for the client.

She has been with Zmorph SA since mid-2022. She is responsible for implementing the company's strategy at the management level, optimizing costs, cooperation with external suppliers and negotiating contracts with them, as well as managing the company's administration and coordinating HR activities.

Marcin Adamczyk, PhD, Eng.

Chief Technology Officer

Structural engineer with many years of design and leadership experience. A graduate of the Faculty of Mechatronics at the Warsaw University of Technology with a specialization in Precision Mechanics. In 2019, he defended his doctorate with honors at the Institute of Micromechanics and Photonics. For over 10 years involved in numerous R&D projects carried out both at the Warsaw University of Technology and beyond. He has cooperated with Barlinek, Mitsubishi Electric, KSM Vision, PhiBox, SmartTracking, Mnemosis, OVE, CLKP.

A holistic view allows me to find logical errors in the designed structures.

As a research and teaching assistant professor, he conducts theoretical and design classes in the construction of precision devices, optomechanics, and mechatronic systems. He is the author of 11 publications from the JCR list. He gained experience as a constructor and leader of technical teams by participating in over 20 R&D projects. He was responsible, among others, for: design and implementation of a hierarchical 3D system for measuring the crime scene, design and implementation of numerous 3D scanners using the projection method with structural lighting, design and supervision of two production lines for automating the process of removing defects and filling the face layer of the floorboard. Marcin Adamczyk has extensive knowledge in the field of rapid prototyping, especially in terms of the use of 3D printers.

2.1 Composition of the Management Board

Supervisory Board

Anastazja Burgs

Chairman of the Supervisory Board of Sygnis SA

She specializes in the area of insurance and operational risk. In Polish and international companies, she was an expert and coordinator for insurance and finance. She is licensed as an insurance broker (exam passed by the Polish Financial Supervision Authority in 2016) and has several years of experience in managing professional teams. The areas of insurance specialization include the construction, industrial and financial sectors.

Currently, she is a member of the team specializing in insurance within the Controlling and Operational Risk Department of the National Bank of Poland, where she is responsible, among others, for issuing opinions on insurance contracts submitted by entities obliged to do so, providing substantive support to other Bank units in the field of property and personal insurance, as well as identifying existing risks and threats in cooperation with other departments of the Bank.

Aleksandra Anklewicz

Business consultant in the field of sales management and building effective sales teams. She has many years of experience as a sales manager and as an Interim Manager in the field of sales management. For 9 years she cooperated with Mercuri International, No. 1 on the international market of consulting and training companies, in the design and implementation of development projects and changes in sales organizations, in 35% in cooperation with leading consulting companies: McKinsey & Company, Ernst&Young, Boston Consulting Group, Arthur Anderson.

Aleksandra Anklewicz teaches unique, innovative, managerial tools to achieve measurable results and strong sales leadership. Learning these skills allows her clients to achieve their most difficult business goals.

Managerial coach, trainer and mentor.

Grzegorz Brona, PhD

President of Creotech Instruments SA, the largest Polish company producing and supplying space technologies and specialized electronics and apparatus to the global market, including for the needs of quantum computers, quantum cryptography or laboratories of quantum physics and high energy. He is also e.g. coordinator of the Sectoral Council for Aerospace Industry Competences and a member of the Space and Satellite Research Committee of the Polish Academy of Sciences.

He is a graduate of the Faculty of Physics at the University of Warsaw. There, he also defended his doctoral thesis and completed his habilitation. He completed post-graduate MBA studies at the University of Commerce and International Finance Fryderyk Skarbek in Warsaw.

In 2009-2011, he worked at the European Organization for Nuclear Research CERN, where he was responsible for radiation detector software and managed one of the research teams working at the Large Hadron Collider. From 2015 to 2018 he was also a member of the Council of the Polish Space Agency.

In March 2018, he was appointed president of PAK and performed this role until March 2019. He is a co-author of several hundred scientific articles published in scientific periodicals such as „Physical Review Letters", „Nuclear Instruments and Methods" and „Nature" and the book „Człowiek. Istota Kosmiczna."

Jan Goliński

He has 11 years of professional experience and higher education. He conducted his education primarily at the Warsaw School of Economics (Quantitative Methods in Economics and Information Systems - second-cycle studies) and at the University of Warsaw (Faculty of Management - first-cycle studies). Scholar with an academic achievements.

He gained professional experience mainly in the area of banking and insurance, first directly, then in business consulting (Ernst & Young / EY) and as a Senior Consultant and then Manager in the strategic consulting team (Deloitte CE) for clients from the EU, Switzerland and Russia.

In the years 2020-2023, he also gained practical experience in the field of information technology (exposure to sectors: banking, insurance, telecommunications) working at SAS Institute.

2.1 Composition of the Management Board

Supervisory Board

Łukasz Kaleta

As part of the Innovative Poland Foundation, he supports the construction of the largest innovation ecosystem in Poland and in CEE. He is also the founder and co-founder of many companies, a member of supervisory boards and an investor and business angel: founder/ co-founder of Redi sp. z o.o., LoveKrakow sp. z o.o., Office&Cowork Center SA, BiznesHUB sp. z o.o. Founder of the Activus Promptus Entrepreneurship Support Foundation and vice-president of the Innovative Poland Foundation. Investor and business angel, member of the supervisory board of Columbus Energy SA, Columbus Elite SA or Nexity Global SA Founder of the Art-Tech Alternative Spółka Inwestycyjna Sp. z o. o.

A graduate of the AGH University of Science and Technology in Krakow at the Faculty of Electrical Engineering, Automatics, Computer Science and Electrical Engineering, specializing in Computer engineering in electrical systems. The best student of AGH and the 3rd best student of Małopolska in 2009.

Awarded in the Amicus Hominum competition in 2014 for supporting young people in building entrepreneurial attitudes.

Karolina Opielewicz

Karolina Opielewicz has valuable experience in the implementation of ESG policy and green transformation of enterprises. She initiated the creation of the ESG Committee, and within it, the ESG School and the National ESG Standard.

She actively supports Polish enterprises in the process of green transformation. Currently, she is a Member of the Management Board of the Polish Chamber of Commerce and Director of the Office of Communication and Member Affairs. She started working at the Polish Chamber of Commerce in 2008 as an assistant to the President.

In the following years, she managed the office for local government and statutory matters, at the same time serving as the protocol director in the President's Office. In 2012, she became the director of the combined communications and membership offices, and in 2016 she became the Deputy Director General of the Polish Chamber of Commerce. Pursuant to the vote of the General Meeting, in 2021 she became a member of the Management Board responsible for the areas of communication, membership issues, the Court of Arbitration and the Targowa Center for Creativity.

She is a graduate of the College of Foreign Languages in Poznań in the field of English philology and the University of Adam Mickiewicz in Poznań in the field of Law and Administration. In 2021, she completed postgraduate studies in Finance for Managers at the Warsaw School of Economics.

Exceptional people who agreed to support us with advice and supervision in the process of creating the largest company in hardware innovation in Central and Eastern Europe, are a huge added value for the Company.

Maciej Sadowski

Co-founder of the Startup Hub Poland Foundation (CEO 2012-2022), which supports innovative high-tech talents from Central and Eastern Europe in setting up global/inter-local ventures in Poland. Activist in the high-tech startup industry supporting innovation pioneers in finding investments and scaling their solutions and RoI potential.

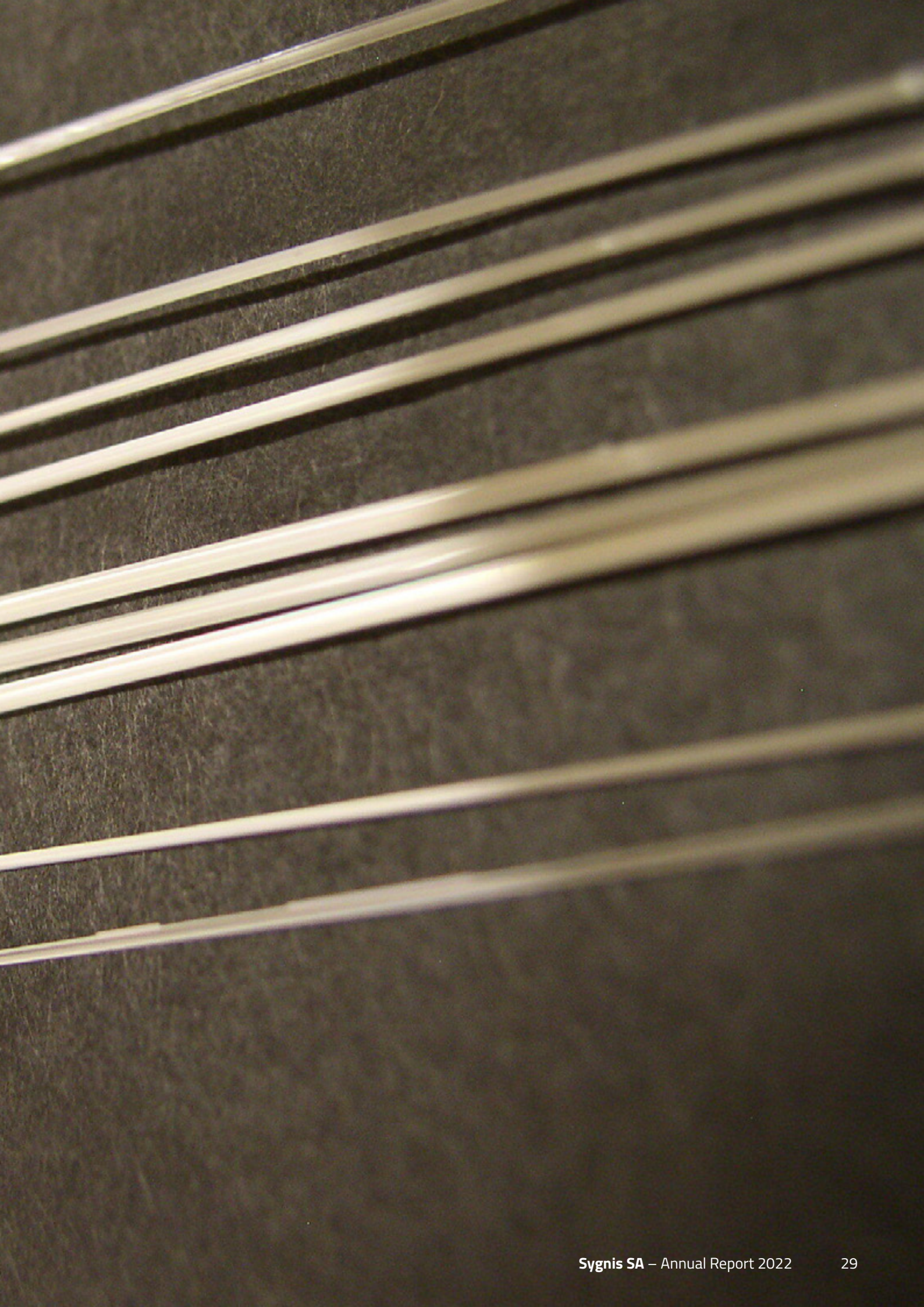
IP transfer specialist and R&D commercialization expert. At the Startup Hub Poland Foundation, Maciej searches for the best early-stagers from all hard-tech and IP-based sectors from 18 countries of the CEE region. For the best teams, his non-profit organization is preparing a „soft landing" program, grants up to 50,000. and exclusive VC/industry bootcamps.

In 2013, he was a due diligence analyst at Giza Polish Ventures, a Polish-Israeli VC fund, later investment director at the StartVenture@Poland seed fund, and investment manager and managing partner of StarFinder VC.

Maciej worked on about 60 investment processes and invested in 29 hard tech startups. 24 of them obtained another round of financing, of which 10 attracted additional investment capital to Poland. 3 companies debuted on the WSE, 3 obtained profitable exits.

chapter 3:

Financial Data



3.1 Capital Group

Sygnis SA was the parent company of Zmorph SA, in which it held 100% of the shares. Sygnis SA is the parent company of Zmorph SA and prepares consolidated statements for Zmorph SA and Zmorph SA's subsidiaries:
LBL Systems Sp. z o.o.,
Value Factory, Sp. z o.o.,
3D Printers Sp. z o.o.

Zmorph SA was established in 2012 in Wroclaw, Poland, and is active in manufacturing and supplying 3D printing solutions for educational and industrial applications. The company has developed and manufactures the Zmorph FAB all-in-one printer and the Zmorph i500 high-performance printer, which are available worldwide through a network of official partners.

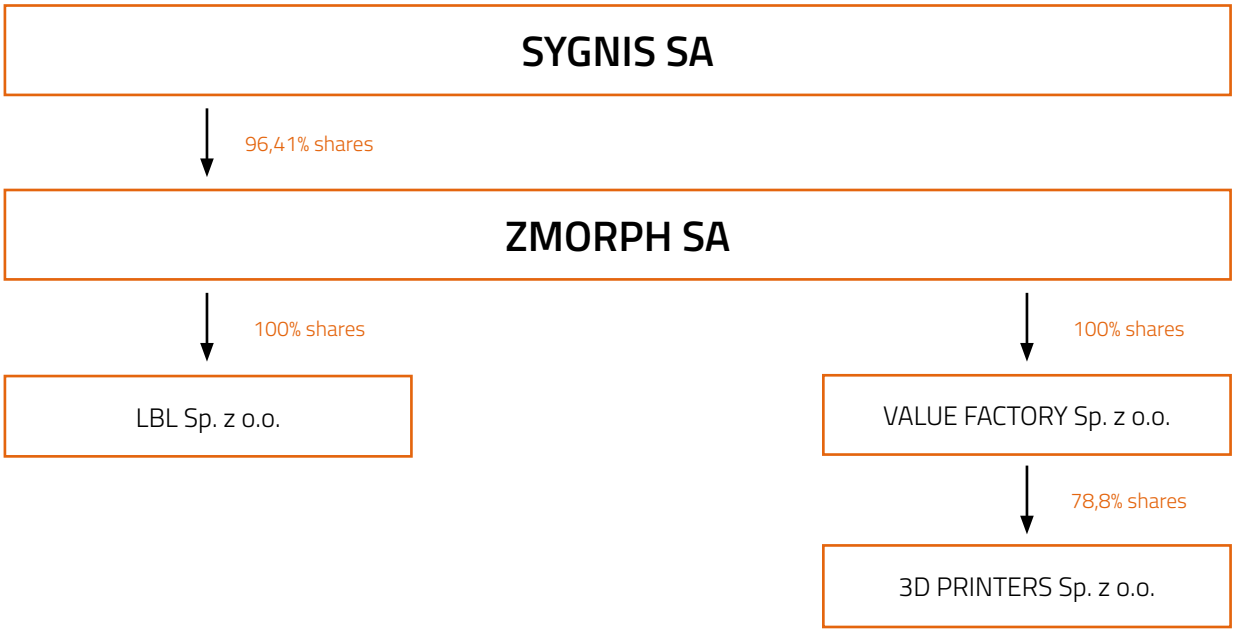
Zmorph SA is the parent company (holding 100% of shares each) of Value Factory Sp. z o.o. (which in turn holds a controlling stake in 3D Printers Sp. z o.o.) and LBL Systems Sp. z o.o.

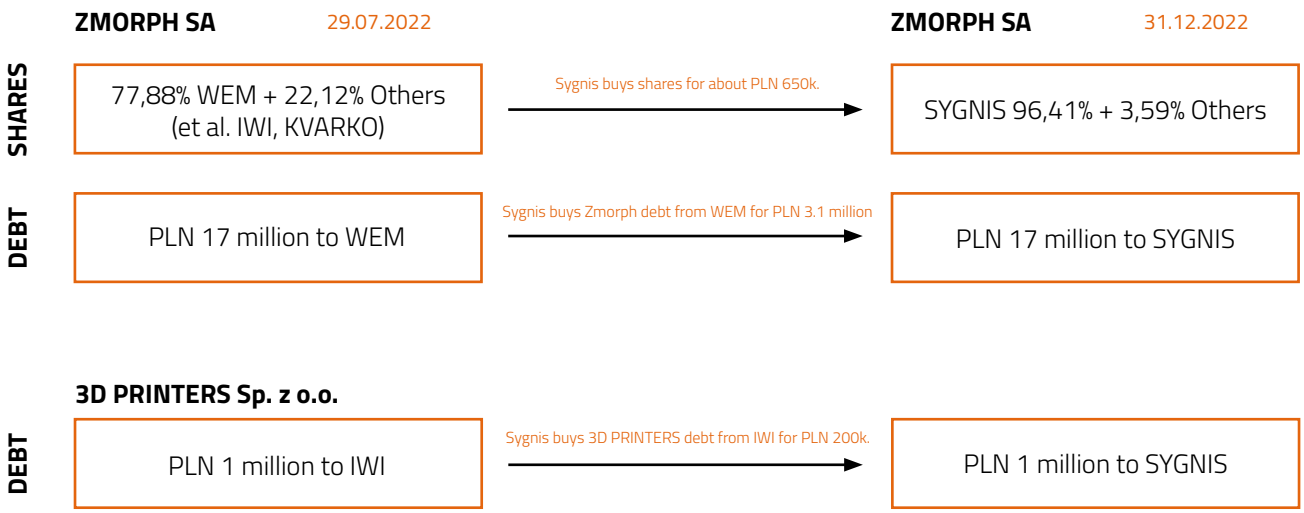
Data of parent company Sygnis SA
(as of December 31, 2022)

	Sygnis Spółka Akcyjna
registered office address	101 Żwirki i Wigury 101 Street, 02-089 Warszawa
court of registration	District Court for the capital city of Warsaw, 12th Commercial Division of the National Court Register
date of registration	16.08.2011
KRS number	0000393095
REGON	0220906517
NIP	9571029651
Share capital	PLN 4 548 586,00

Data of the subsidiary of Sygnis SA
(as of December 31, 2022)

	Zmorph Spółka Akcyjna
registered office address	9 Ostrowskiego Street, 53-238 Wrocław
court of registration	District Court for Wrocław-Fabryczna in Wrocław, 6th Commercial Division of the National Court Register
date of registration	19.03.2018
KRS number	0000724021
REGON	022111640
NIP	8992743204
Share capital	PLN 696 114,50


SYGNIS SA
96,41% shares
ZMORPH SA
100% shares
100% shares
LBL Sp. z o.o.
VALUE FACTORY Sp. z o.o.
78,8% shares
3D PRINTERS Sp. z o.o.


ZMORPH SA
29.07.2022
ZMORPH SA
31.12.2022
SHARES
77,88% WEM + 22,12% Others (et al. IWI, KVARKO)
Sygnis buys shares for about PLN 650k.
SYGNIS 96,41% + 3,59% Others
DEBT
PLN 17 million to WEM
Sygnis buys Zmorph debt from WEM for PLN 3.1 million
PLN 17 million to SYGNIS
3D PRINTERS Sp. z o.o.
DEBT
PLN 1 million to IWI
Sygnis buys 3D PRINTERS debt from IWI for PLN 200k.
PLN 1 million to SYGNIS

3.1 Capital Group

Basic information on subsidiaries of Zmorph SA (as of December 31, 2022)

Sygnis SA does not directly hold shares in LBL Systems sp. z o.o., while 100% of shares in this company are held by Zmorph SA (data based on a current extract from the KRS Register of Entrepreneurs).

Line of business: PKD 26.20.Z - Manufacture of computers and peripherals.

	LBL Systems Sp. z o.o.
registered office address	9 Ostrowskiego Street, 53-238 Wrocław
court of registration	District Court for Wrocław-Fabryczna in Wrocław, 6th Commercial Division of the National Court Register
KRS number	0000788840
REGON	383498693
NIP	8982250807
Share capital	PLN 10 000,00

Sygnis SA does not directly hold shares in Value Factory Sp. z o.o., while 100% of shares in this company are held by Zmorph SA (data based on a current extract from the KRS Register of Entrepreneurs).

Line of business: PKD 70.10,Z - Activities of head offices and holding companies, excluding financial holdings.

Currently Value Factory Sp. z o.o. does not conduct business activities.

	Value Factory Sp. z o.o.
registered office address	9 Ostrowskiego Street, 53-238 Wrocław
court of registration	District Court for Wrocław-Fabryczna in Wrocław, 6th Commercial Division of the National Court Register
KRS number	0000378516
REGON	142819129
NIP	7010282156
Share capital	PLN 14 250,00

Sygnis SA does not directly hold shares in 3D Printers sp. z o.o., while Value Factory Sp. z o.o. holds a controlling stake (78.80% of shares) in this company. (data based on a current extract from the KRS Register of Entrepreneurs).

Subject of activity: PKD 26.20.Z - Manufacture of computers and peripheral equipment.

	3D Printers Sp. z o.o.
registered office address	9 Ostrowskiego Street, 53-238 Wrocław
court of registration	District Court for Wrocław-Fabryczna in Wrocław, 6th Commercial Division of the National Court Register
KRS number	0000486072
REGON	022293172
NIP	8952025721
Share capital	PLN 696 114,50

3.2 Commentary on results

The company in 2022 recorded a slight increase in value expressed in the capitalization of the Company listed on the Warsaw New Connect market. The organization's revenues increased dynamically from 3,533 thousand to 28,283 thousand. This is an 800% year-on-year increase in revenues. Sygnis SA's standalone profit also increased to PLN 2,216 thousand, against PLN 403 thousand achieved in 2021, this is a 550% year-on-year increase.

In the past year, the purchase of subsidiaries (Zmorph SA and thus also shares in 3D Printers Sp. z o.o., Value Factory Sp. z o.o. and LBL Sp. z o.o.) created mutual indebtedness in the Group | at the level of PLN 17,000 thousand, which was an operating expense of PLN 3,400 thousand (for a detailed explanation, see Structure of the Sygnis-Zmorph transaction). At the consolidated level of the Group, a loss of PLN 2,244 thousand was recorded.

At this level, the restructuring of Zmorph SA is underway in order for the Group to have a positive result in this aspect in 2023. Current assets increased significantly to PLN 25,815 thousand from PLN 18,384 thousand, as well as the value of inventories and materials (to PLN 9,929 thousand from PLN 6,614 thousand and PLN 2,644 thousand from PLN 818 thousand, respectively).

The value of goods in stock also increased from PLN 1,499 thousand to PLN 4,296 thousand. The Group enters 2023 stocked for successful delivery of equipment and services to customers worldwide.

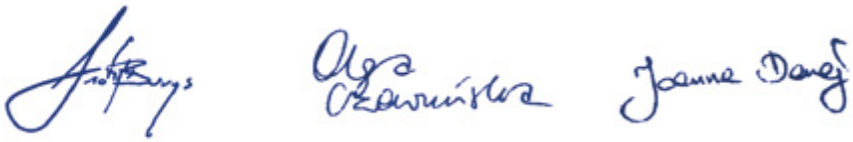
Sygnis SA's standalone profit rose to PLN 2.21 million, a 550% year-on-year increase.

STATEMENT
on the reliability and completeness of the consolidated financial statementso

Acting on behalf of Sygnis SA with its registered office in Gdańsk, we represent that, to the best of our knowledge, the annual consolidated financial statements of the Sygnis Capital Group for the financial year 2022 and comparable data have been prepared in accordance with the regulations applicable to Sygnis SA or internationally recognized standards, and that they reflect in a true, reliable and clear manner, the material and financial situation of the Sygnis Capital Group and its financial result. Moreover, we declare that the Report on activities contains a true picture of the situation of the Sygnis Capital Group, including a description of the basic risks and threats.

Gdansk, on March 20, 2023

Andrzej Burgs – President of the Management Board
Joanna Danaj – Vice-President of the Management Board
Olga Czerwińska – Vice-President of the Management Board



STATEMENT
on the selection of an audit firm for auditing annual consolidated financial statements

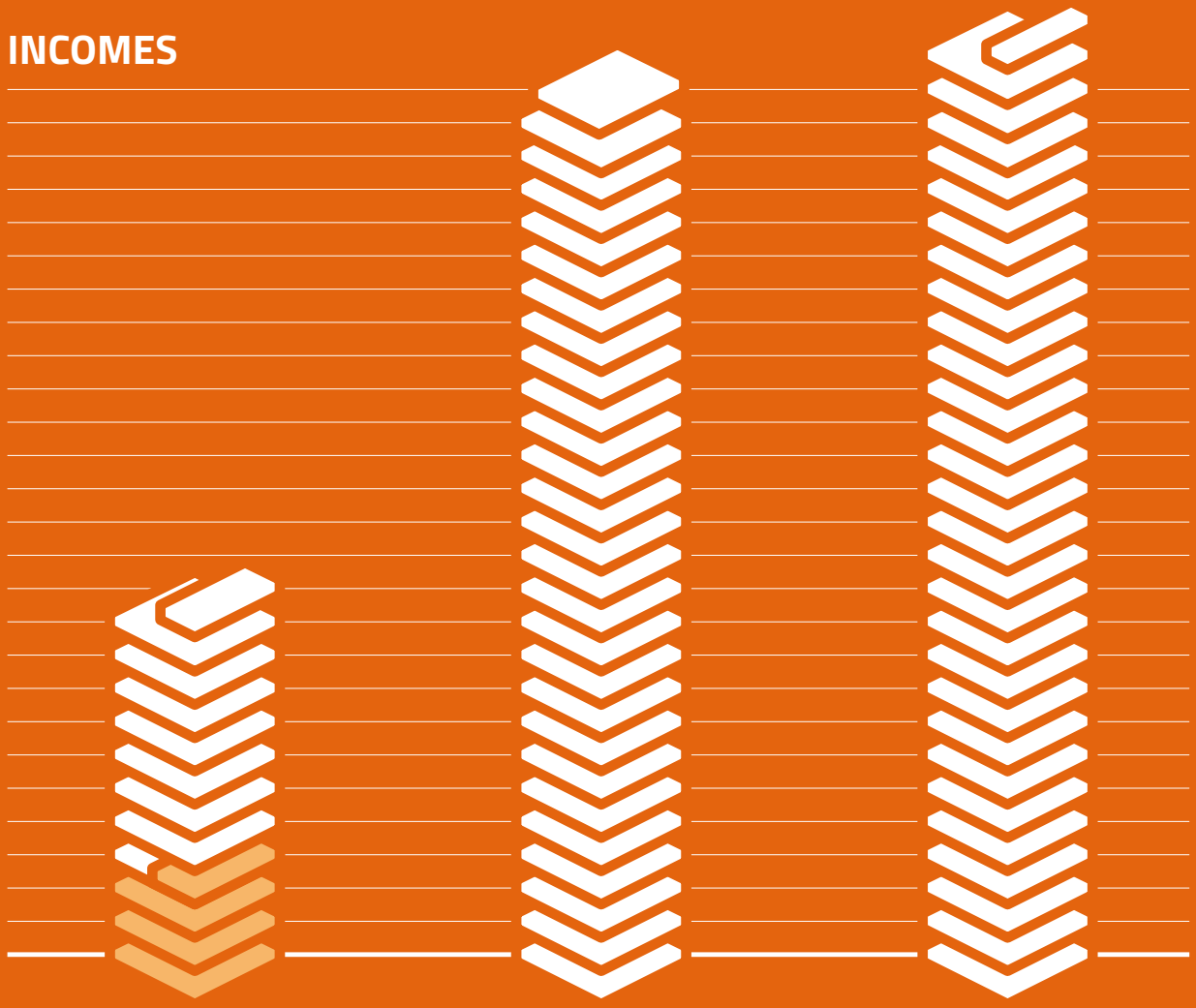
Acting on behalf of Sygnis SA with its registered office in Gdańsk, we declare that the selection of the audit firm conducting the audit of the annual consolidated financial statements of the Sygnis Capital Group for the financial year 2022 was made in accordance with the regulations, including those regarding the selection and selection procedure of the audit firm, and that the audit firm and members of the team performing the audit met the conditions for the preparation of an impartial and independent report on the audit of the annual consolidated financial statements of the Sygnis Capital Group in accordance with applicable regulations, professional standards and professional ethics.

Gdansk, on March 20, 2023

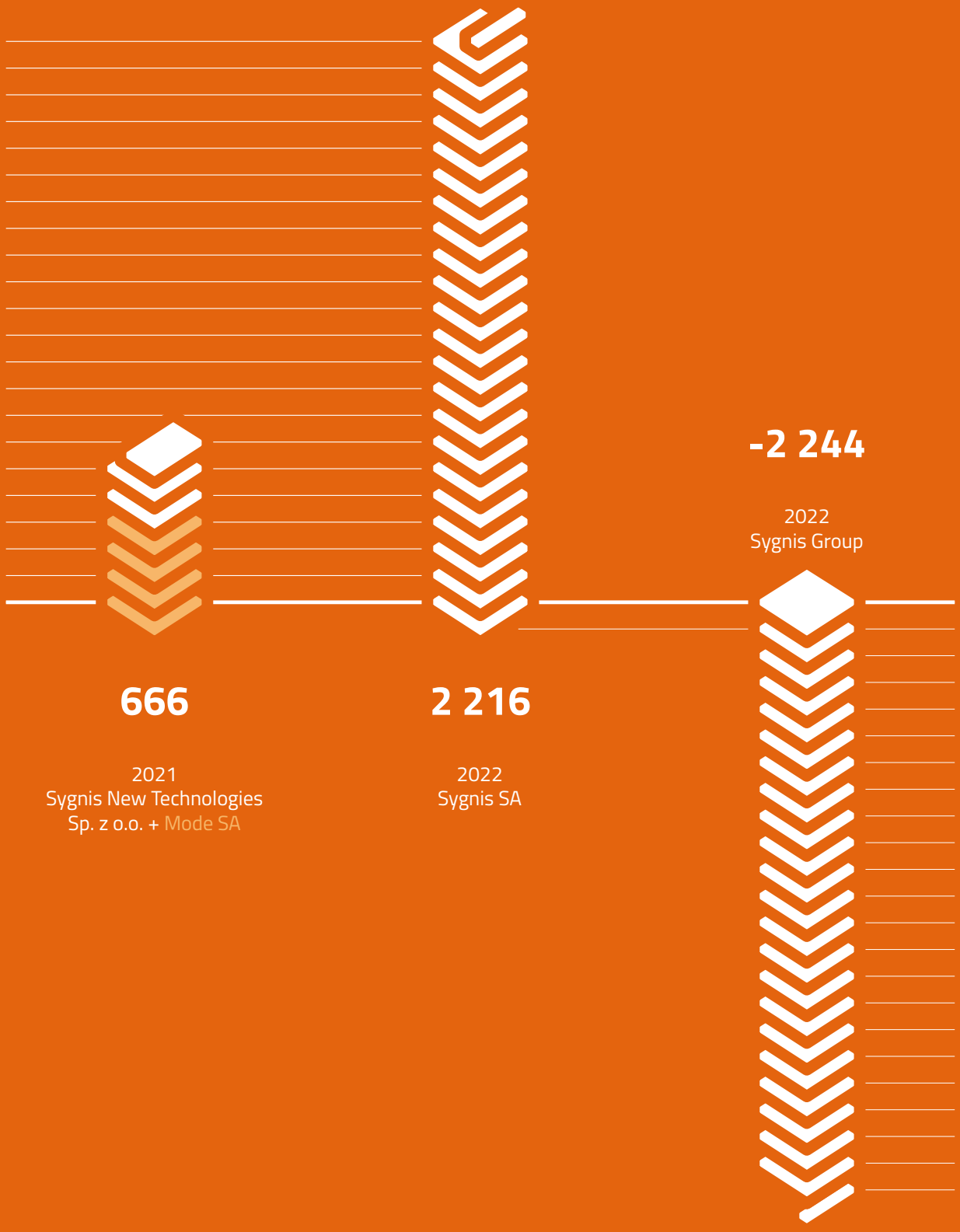
Andrzej Burgs – President of the Management Board
Joanna Danaj – Vice-President of the Management Board
Olga Czerwińska – Vice-President of the Management Board

3.4 Selected financial data

Data in PLN thousands



PROFITS


666
2021
Sygnis New Technologies
Sp. z o.o. + Mode SA
2 216
2022
Sygnis SA
-2 244
2022
Sygnis Group

CAPITALIZATION

Data in PLN million

EQUITY CAPITAL

	2021	2022
SYGNIS SA	PLN 35 578 409	PLN 38 057 625
SYGNIS GRUPA	X	PLN 36 004 197

ASSETS

	2021	2022
SYGNIS SA	PLN 18 384 966	PLN 46 543 999
SYGNIS GRUPA	X	PLN 25 815 313

NON-CURRENT ASSETS

	2021	2022
SYGNIS SA	PLN 33 987 240	PLN 33 725 748
SYGNIS GRUPA	X	PLN 34 150 252

UNIT DATA SYGNIS SA comparison (2022/2021) – EBIDTA

	2022		2021	
	PLN	EUR	PLN	EUR
EBITDA	3 791 723,41	808 487,05	927 604,47	201 679,45
EBITDA %	14,14%	14,14%	26,25%	26,25%

SYGNIS GROUP 2022 – EBIDTA

	PLN	EUR
EBITDA	285 876,17	60 955,71
EBITDA %	1,01%	1,01%

3.4 Selected financial data

Sygnis SA

BALANCE

	PLN k	PLN k	EUR k	EUR k
	12/31/2022	12/31/2021	12/31/2022	12/31/2021
NON-CURRENT ASSETS	**33725,75**	**33987,24**	**7191,14**	**7389,49**
Intangible and legal assets	31605,93	33171,37	6739,15	7212,11
Tangible non-current assets	1400,22	793,42	298,56	172,51
Long-term receivables	0,00	0,00	0,00	0,00
Long term investments	658,16	22,45	140,34	4,88
Long-term prepayments	61,43	0,00	13,10	0,00
CURRENT ASSETS	**46543,99**	**18384,97**	**9924,30**	**3997,25**
Inventories	6884,24	6614,59	1467,89	1438,14
short-term receivables	23717,25	2769,18	5057,09	602,07
Short-term investments	4088,47	4858,44	871,76	1056,32
Short-term prepayments	11854,05	4142,76	2527,57	900,72
TOTAL ASSETS	**80269,75**	**52372,21**	**17115,45**	**11386,75**
EQUITY CAPITAL	**38057,63**	**35578,41**	**8114,81**	**7735,45**
Basic capital (fund).	4548,59	4548,59	969,87	988,95
Supplementary capital (fund).	31029,82	30998,19	6616,31	6739,62
Profit (loss) from previous years	262,75	-371,98	56,02	-80,88
Net profit (loss).	**2216,47**	**403,62**	**472,60**	**87,75**
LIABILITIES AND PROVISIONS FOR LIABILITIES	**42212,12**	**16793,80**	**9000,64**	**3651,30**
Provisions for liabilities	182,99	0,00	39,02	0,00
Long-term liabilities	828,06	554,27	176,56	120,51
Current liabilities	12947,17	10532,13	2760,65	2289,89
Accruals	28253,89	5707,39	6024,41	1240,90
TOTAL LIABILITIES	**80269,75**	**52372,21**	**17115,45**	**11386,75**

PROFIT AND LOSS STATEMENT

	PLN k	PLN k	EUR k	EUR k
	12/31/2022	12/31/2021	12/31/2022	12/31/2021
Net revenues from sales and equated to them	**26816,83**	**3533,22**	**5719,95**	**771,87**
Operating expenses	26100,02	3655,07	5567,05	798,49
Profit (loss) on sales	**716,81**	**-121,86**	**152,89**	**-26,62**
Other operating income	2505,25	670,60	534,36	146,50
Other operating cost	274,70	62,47	58,59	13,65
Profit/Loss on operating activities	**2947,36**	**486,28**	**628,66**	**106,23**
Financial income	176,63	0,01	37,67	0,00
Financial costs	258,24	47,55	55,08	10,39
Profit (loss) Gross	**2865,75**	**438,75**	**611,26**	**95,85**
Income tax	649,28	35,13	138,49	7,67
Net Profit/Loss	**2216,47**	**403,62**	**472,77**	**88,17**

CASH FLOW

	PLN k	PLN k	EUR k	EUR k
	12/31/2022	12/31/2021	12/31/2022	12/31/2021
Net cash flows from operating activities	-3331,89	2251,14	-710,68	480,16
Net cash flow from investing activities	-2480,28	-1871,99	-529,04	-399,29
Net cash flows from financing activities	1885,62	3219,19	402,20	686,64
Total net cash flows	-3926,56	3598,35	-837,52	767,52

*

Selected financial data presented above have been converted into the Euro currency as follows: balance sheet items have been converted at the average exchange rate announced by the National Bank of Poland, applicable as at the balance sheet date. This rate was as at December 31, 2021
1 EUR = 4,5994 PLN, while per day
On December 31, 2022, EUR 1 = PLN 4.6899.

Items relating to the profit and loss account and the cash flow statement were converted at the exchange rate being the arithmetic average of the average exchange rates announced by the National Bank of Poland, applicable on the last day of each month. This course for 2021.
1 EUR = 4,5775 PLN and respectively for 2022
1 EUR = 4,6883 PLN.

3.4 Selected financial data

Sygnis Group

BALANCE

	PLN k	PLN k	EUR k	EUR k
	12/31/2022	12/31/2021	12/31/2022	12/31/2021
NON-CURRENT ASSETS	**34150,25**	**33987,24**	**7281,66**	**7389,49**
Intangible and legal assets	32097,33	33171,37	6843,93	7212,11
Tangible non-current assets	1938,33	793,42	413,30	172,51
Long-term receivables	1,10	0,00	0,23	0,00
Long term investments	43,31	22,45	9,23	4,88
Long-term prepayments	70,16	0,00	14,96	0,00
CURRENT ASSETS	**25815,31**	**18384,97**	**5504,45**	**3997,25**
Inventories	9929,82	6614,59	2117,28	1438,14
short-term receivables	2848,59	2769,18	607,39	602,07
Short-term investments	1155,70	4858,44	246,42	1056,32
Short-term prepayments	11881,20	4142,76	2533,36	900,72
TOTAL ASSETS	**59971,17**	**52372,21**	**12787,30**	**11386,75**
EQUITY CAPITAL	**36004,20**	**35578,41**	**7676,97**	**7735,45**
Basic capital (fund).	4548,59	4548,59	969,87	988,95
Supplementary capital (fund).	31331,04	30998,19	6680,53	6739,62
Profit (loss) from previous years	2368,90	-371,98	505,11	-80,88
Net profit (loss).	**-2244,30**	**403,62**	**-478,54**	**87,75**
LIABILITIES AND PROVISIONS FOR LIABILITIES	**43771,50**	**16793,80**	**9333,14**	**3651,30**
Provisions for liabilities	422,98	0,00	90,19	0,00
Long-term liabilities	828,06	554,27	176,56	120,51
Current liabilities	14073,54	10532,13	3000,82	2289,89
Accruals	28446,91	5707,39	6065,57	1240,90
TOTAL LIABILITIES	**59971,17**	**52372,21**	**12787,30**	**11386,75**

PROFIT AND LOSS STATEMENT

	PLN k	PLN k	EUR k	EUR k
	12/31/2022	12/31/2022	12/31/2022	12/31/2021
Net revenues from sales and equated to them	**28283,78**	**3533,22**	**6032,84**	**771,87**
Operating expenses	31002,80	3655,07	6612,80	798,49
Profit (loss) on sales	**-2719,02**	**-121,86**	**-579,96**	**-26,62**
Other operating income	2665,15	670,60	568,47	146,50
Other operating cost	796,21	62,47	169,83	13,65
Profit/Loss on operating activities	**-850,09**	**486,28**	**-181,32**	**106,23**
Financial income	95,63	0,01	20,40	0,00
Financial costs	1276,11	47,55	272,19	10,39
Profit (loss) Gross	**-2030,57**	**438,75**	**-433,11**	**95,85**
Income tax	649,28	35,13	138,49	7,67
Net Profit/Loss	**-2244,29**	**403,62**	**-478,70**	**88,17**

CASH FLOW

	PLN k	PLN k	EUR k	EUR k
	12/31/2022	12/31/2022	12/31/2022	12/31/2022
Net cash flows from operating activities	-6040,63	2251,14	-1288,45	480,16
Net cash flow from investing activities	151,49	-1871,99	32,31	-399,29
Net cash flows from financing activities	1885,62	3219,19	402,20	686,64
Total net cash flows	-4003,52	3598,35	-853,94	767,52

HUMAN RESOURCES DATA

	average	as of 31.12
SYGNIS SA	42,30	46
SYGNIS GROUP	79,03	80

3.5 Adopted accounting principles

Revenues and costs

Revenues and costs are recognized in accordance with the accrual principle, i.e. in the financial year to which they relate, regardless of the date of receipt or payment. The company records costs by type and prepares a profit and loss account in the comparative variant.

Sales revenue

Sales revenue is recognized when the goods are delivered, if the entity has transferred significant risks and rewards of rights ownership of the goods, or when the service is performed. Sales are shown in net value, i.e. without VAT and after taking into account any discounts granted.

Subsidy revenues related to incurred costs are recognized in accordance with the matching principle at the time of their granting. In order to ensure the identification of economic operations reflecting the EU aid, their aggregation and the method of entering them into the catalog of costs eligible for co-financing from EU funds, a list of general ledger accounts, adopted rules for qualifying events and other connections with general ledger accounts are established for the purposes of keeping separate accounting records for EU funds implemented projects co-financed from structural funds and other European funds. Accounting accounts specified for keeping separate records of financial resources, revenues and costs of implemented EU projects are separated in the chart of accounts. EU subsidies and costs of projects other than the construction and improvement of fixed assets are recorded and settled as other operating income and costs on the accounts of the team „2", „4", „5" and „7".

The income method described in the International Accounting Standard No. 20 „Government Grants" is used to settle grants as revenue, which shows that grants are systematically recognized as income in individual reporting periods in such a way as to ensure their commensurability with the related costs. If a subsidy from EU funds is a form of compensation for already incurred costs or losses, it is booked as income due to the equivalent of the costs incurred at the end of the reporting period on the basis of the concluded contract for the implementation of a project with EU funds.

Interest income

Interest income is recognized on an accrual basis using the interest rate resulting from the loan agreement, which is close to the effective rate.

Intangible and legal assets

Intangible and legal assets are recognized in the books according to their purchase prices or costs incurred for their production and are amortized using the straight-line method using the following depreciation rates:

- Costs of completed development works 20%
- Software 30%

The correctness of the applied periods and rates of amortization of intangible assets is verified by the entity, causing appropriate adjustments of depreciation write-offs made in subsequent years.

The costs of completed development works carried out by the entity for its own needs, incurred before starting production or applying the technology, are classified as intangible assets, if the conditions set out in the Act are met.

The initial value of fixed assets is recognized in the books according to purchase prices or production costs, less depreciation write-offs, as well as write-offs for permanent loss of their value.

The purchase price and production cost of fixed assets and fixed assets under construction include all their costs incurred by the entity for the period of construction, assembly, adaptation and improvement until the date of acceptance for use, including the cost of servicing liabilities incurred to finance them and related differences exchange rate, less the related revenues.

The initial value constituting the purchase price or production cost of a fixed asset is increased by the costs of its improvement, consisting in reconstruction, extension, modernization or reconstruction, as a result of which the value in use of this asset after the completion of the improvement exceeds its value in use when it was accepted for use.

The Company classifies lease contracts according to the rules set out in the tax regulations, Art. 3 section 4 of the Accounting Act.

Accruals

The Company makes active accrued costs, if they relate to future reporting periods.

Accrued expenses are made in the amount of probable liabilities attributable to the current reporting period.

Provisions for liabilities

Provisions are liabilities whose maturity date or amount are not certain.

Income tax

Income tax disclosed in the profit and loss account includes the current and deferred part. The current income tax liability is calculated in accordance with tax regulations. The deferred part recognized in the profit and loss account is the difference between the deferred tax provisions and assets at the end and beginning of the reporting period.

The deferred income tax reserve and assets related to operations settled with equity are charged to equity.

Deferred income tax assets are determined in the amount expected to be deducted from income tax in the future, due to negative temporary differences that will reduce the income tax base in the future, and deductible tax loss, determined taking into account the prudence principle.

The deferred income tax liability is created in the amount of the income tax payable in the future, due to the occurrence of positive temporary differences, i.e. differences that will increase the income tax base in the future.

The amount of the deferred income tax liability and assets is determined taking into account the income tax rates applicable in the year when the tax obligation arises.

The deferred tax liability and assets are not offset for the purposes of presentation in the financial statements.

Exchange differences

Exchange differences resulting from the valuation of assets and liabilities denominated in foreign currencies as at the balance sheet date, with the exception of long-term investments, and arising in connection with the payment of receivables and liabilities in foreign currencies, as well as on the sale of currencies, are recognized as financial income or expenses, respectively, and in in justified cases – to the cost of manufacturing products or the purchase price of goods, as well as the purchase price or manufacturing cost of fixed assets, fixed assets under construction or intangible assets.

Financial instruments

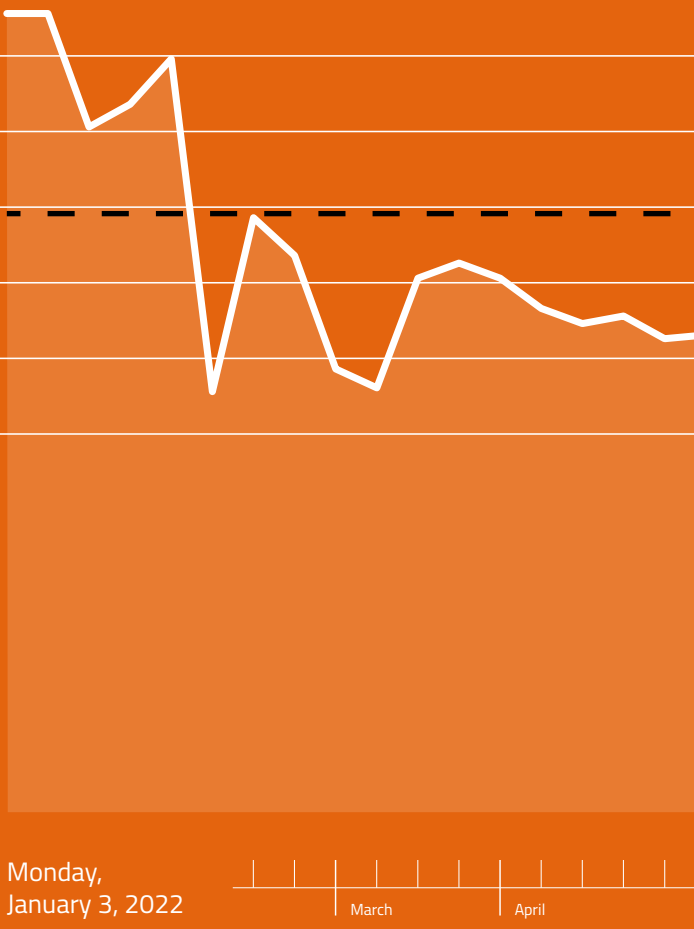
IFinancial instruments are recognized and valued in accordance with the Regulation of the Minister of Finance of December 12, 2001 on detailed rules for recognition, valuation methods, scope of disclosure and method of presentation of financial instruments. The principles of valuation and disclosure of financial assets described in the note below do not apply to financial instruments excluded from the Regulation, including in particular shares and stocks in subsidiaries, rights and liabilities under lease and insurance contracts, trade receivables and payables and financial instruments issued by the Company constituting its capital instruments.

Principles of recognizing and measuring financial instruments

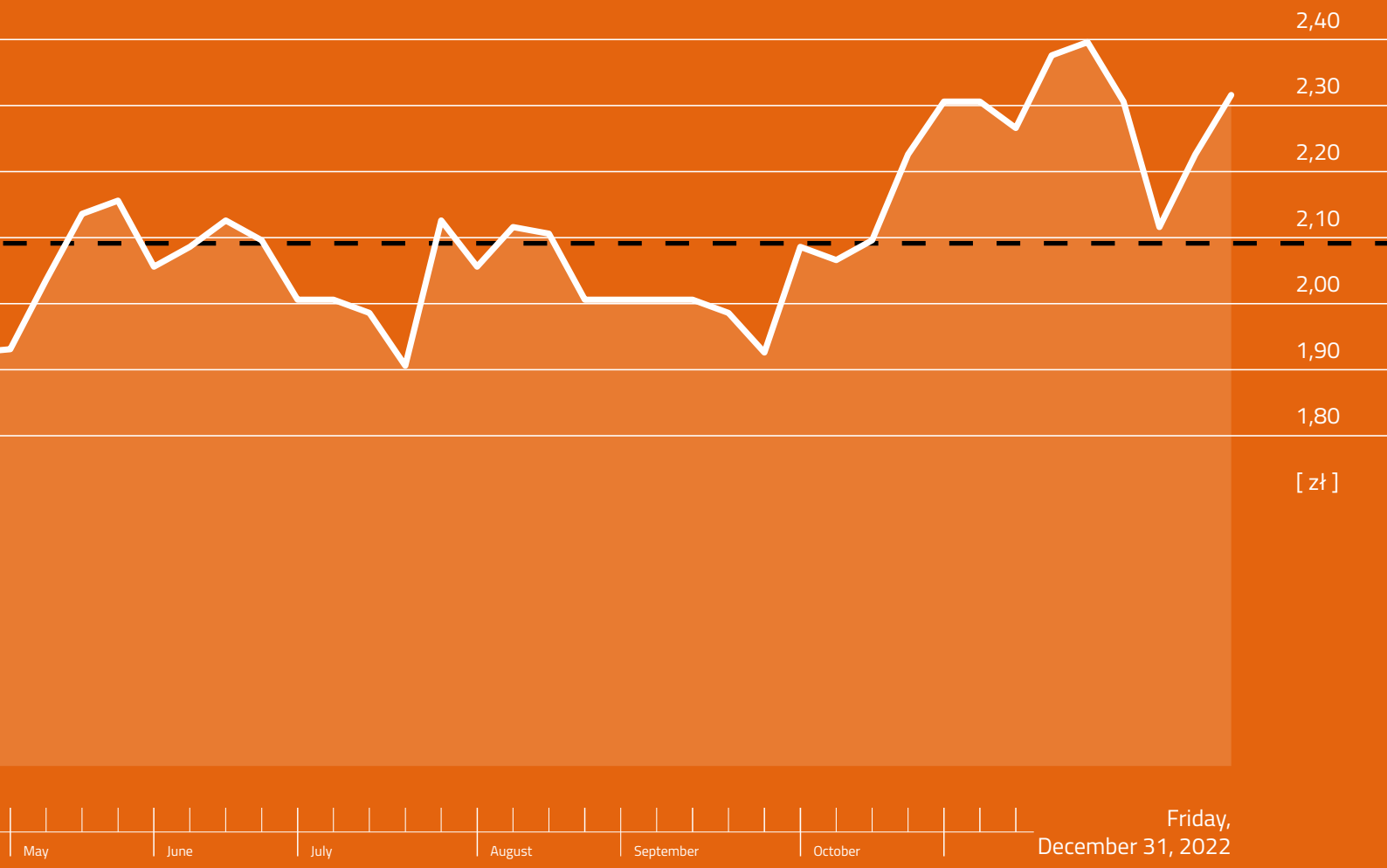
Financial assets are entered into the books of account as at the date of concluding the contract at the purchase price, i.e. at the fair value of the expenses incurred or other assets transferred in exchange, and financial liabilities at the fair value of the amount obtained or the value of other assets received. Transaction costs incurred by the Company are taken into account when determining the fair value as at that date. Transactions of purchase and sale of financial instruments made in regulated trading are entered into the books of account on the day of their conclusion.

3.6 Annual share price of Sygnis SA

Sygnis SA – listing 2022	
Listing Market:	**New Connect**
minimum:	**PLN 1,6000 (22-02-24)**
maximum:	**PLN 2,5900 (22-01-17)**
average:	**PLN 2,0914**
turnover volume:	**2 535 016 pcs**
average volume:	**10 181 pcs**
turnovers:	**5,292 mln**
average turnover:	**0,021 mln**
capitalization:	**56 039 304,6**



SPECIFIC ANALYSIS:
www.trandingview.com



Friday,
December 31, 2022

3.7 Shareholding structure

Shareholder	Share
	December
Andrzej Burgs	**49,12%**
Grzegorz Kaszyński	**13,68%**
Anastazja Burgs	**6,17%**
TOTAL:	**68,97%**
Free float:	**31,03%**

	March 2
Andrzej Burgs	**44,26%**
Grzegorz Kaszyński	**12,33%**
Warsaw Equity ASI sp. z o.o.	**9,20%**
Anastazja Burgs	**5,56%**
TOTAL:	**71,34%**
Free float:	**28,66%**

Number of shares	Number of votes
31, 2022	
11 171 788	**11 171 788**
3 112 344	**3 112 344**
1 402 476	**1 402 476**
18 009 109	**18 009 109**
7 056 332	**7 056 332**
0, 2023	
11 171 788	**11 171 788**
3 112 344	**3 112 344**
2 322 501	**2 322 501**
1 402 476	**1 402 476**
18 009 109	**18 009 109**
7 233 831	**7 233 831**

chapter 4:

Investor Relations

Marek Lorent-Kamiński
PR and Communication Sygnis SA
marek.kaminski@sygnis.pl

Investor relations are a key aspect of our functioning on the stock exchange. Although we are still learning them, we communicate often and willingly, using many channels to reach all interested parties.

In addition to the disclosure obligations imposed on NewConnect companies over the last year:

- We organized webinars for investors and shareholders, during which we talked about current activities, plans and answered questions,
- We gave interviews to industry media,
- We were in constant e-mail communication with stakeholders,
- We informed about the activities and discussed with those interested in social media,
- And we even launched a special LinkedIn newsletter with a monthly summary of the Company's activities.

We intend to continue the chosen direction, ensuring fast and efficient communication.

Historically, since November 24, 2021, our investor relations have been handled by the public relations agency InnerValue Sp. z o.o.. As you can see, we were preparing for proper communication even before entering the NewConnect market. At the end of October 2022, communication duties and tasks related to investor relations were taken over by our PR and communication specialist, Marek Lorent-Kamiński.

In investor relations, we are also assisted by a financial analyst and certified advisor, Michał Więzik from Beskidzkie Biuro Consultingowe Sp. z o. o. Our market maker is Dom Maklerski BDM SA.

In the following subsections of this chapter, you will read about the most important interviews on topics related to the stock exchange, as well as a collection of the Company's most important current announcements from last year. We try to communicate frequently with all persons interested in our Company. In interviews, we talk about our R&D projects and development plans of the Sygnis Group, and we answer questions, including difficult and uncomfortable ones.

Breakthrough technologies need a great story. We've been telling it for years.

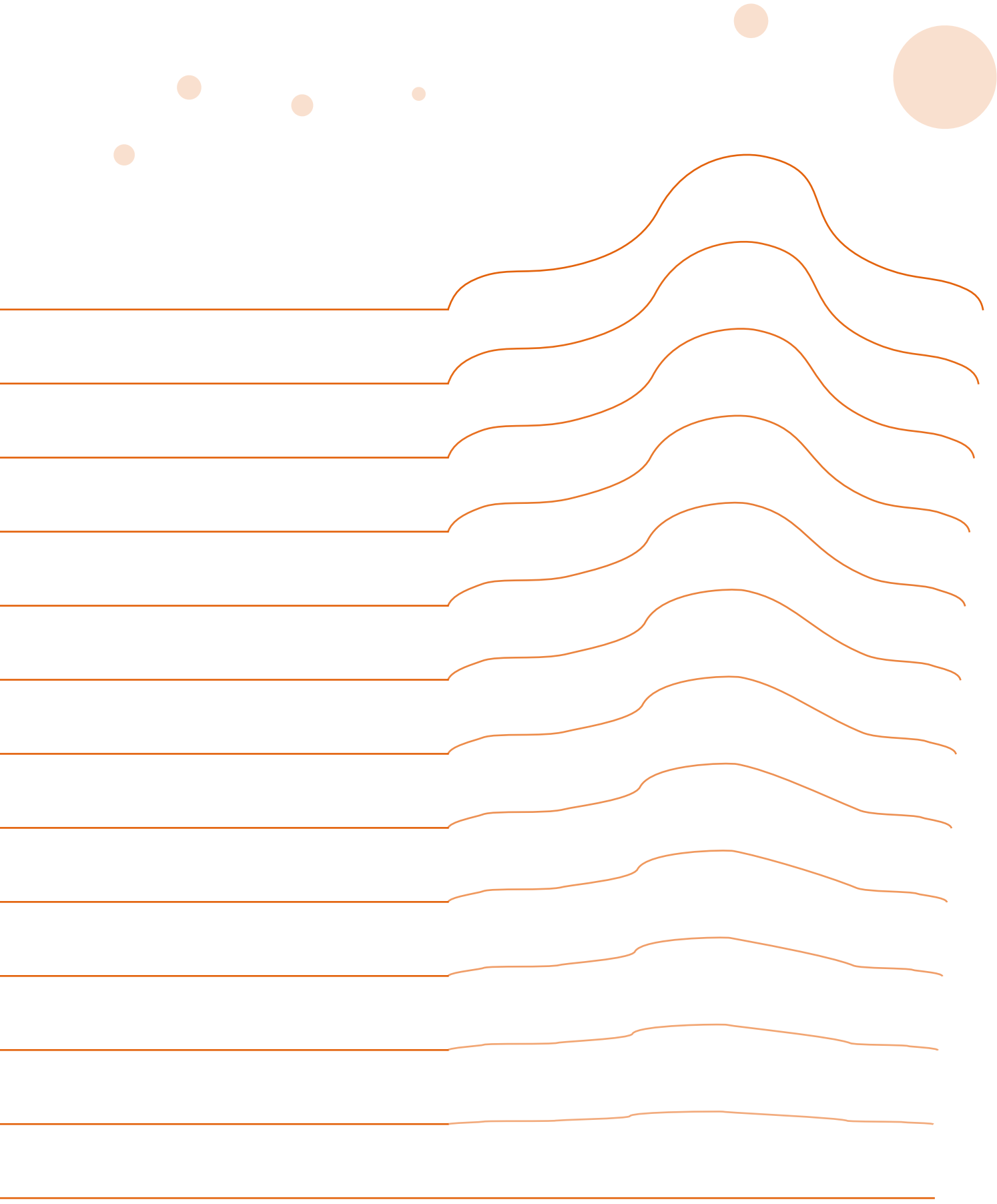
In 2022 we published a total of 25 ESPI and 19 EIB announcements.

In 2022, as the Management Board, we gave interviews to the following media:

Gazeta Wyborcza, wnp.pl, Comparic, Albrecht Partners, Forbes, Forbes Women, Radio Wnet, Interia Biznes, Puls Biznesu, Strefa Inwestorów, inwestorzy.tv, Raport o stanie świata Dariusza Rosiaka, 97,1 FM Kampus, Stockwatch, Parkiet

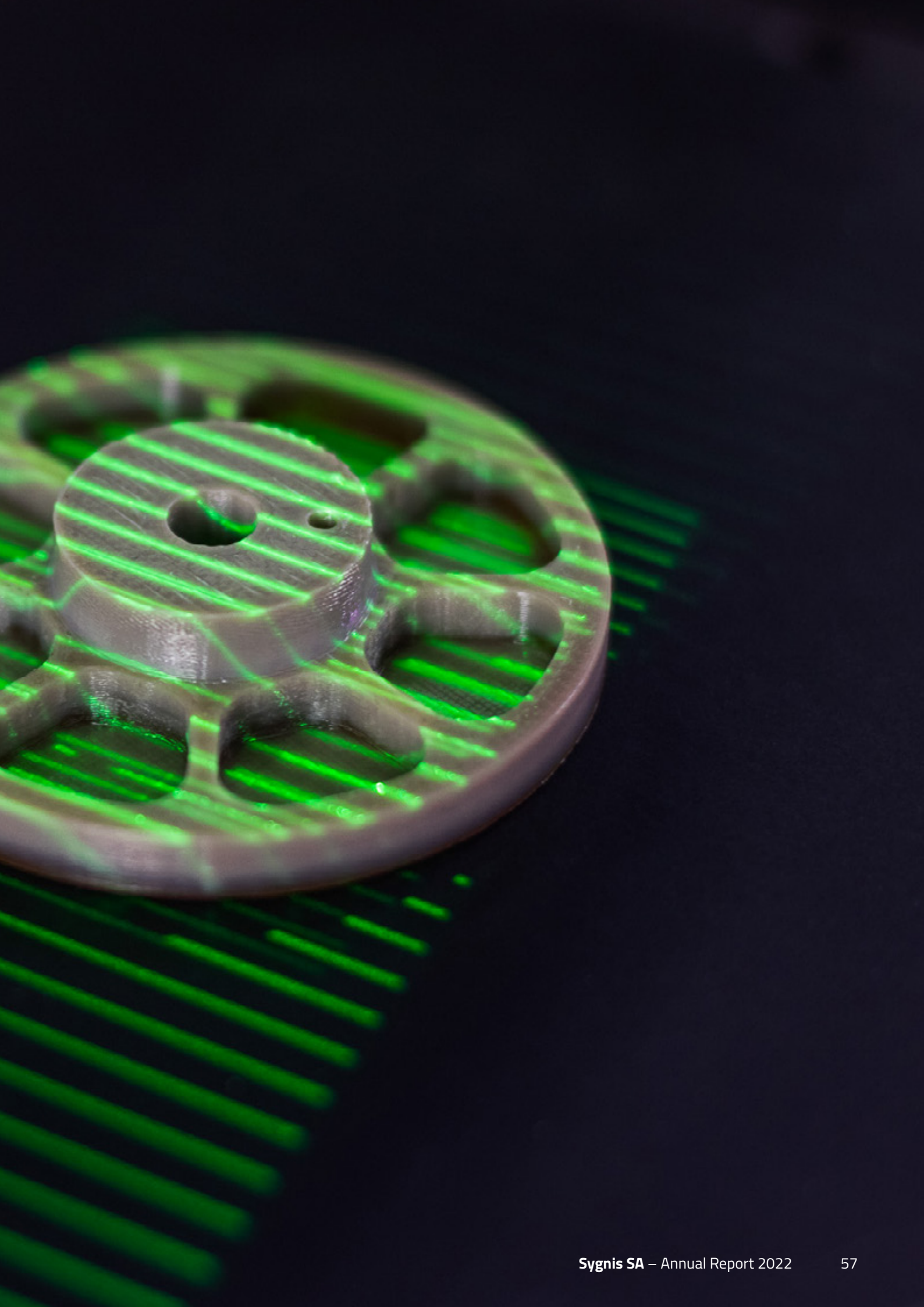
Step by step, we reach toward the stars.

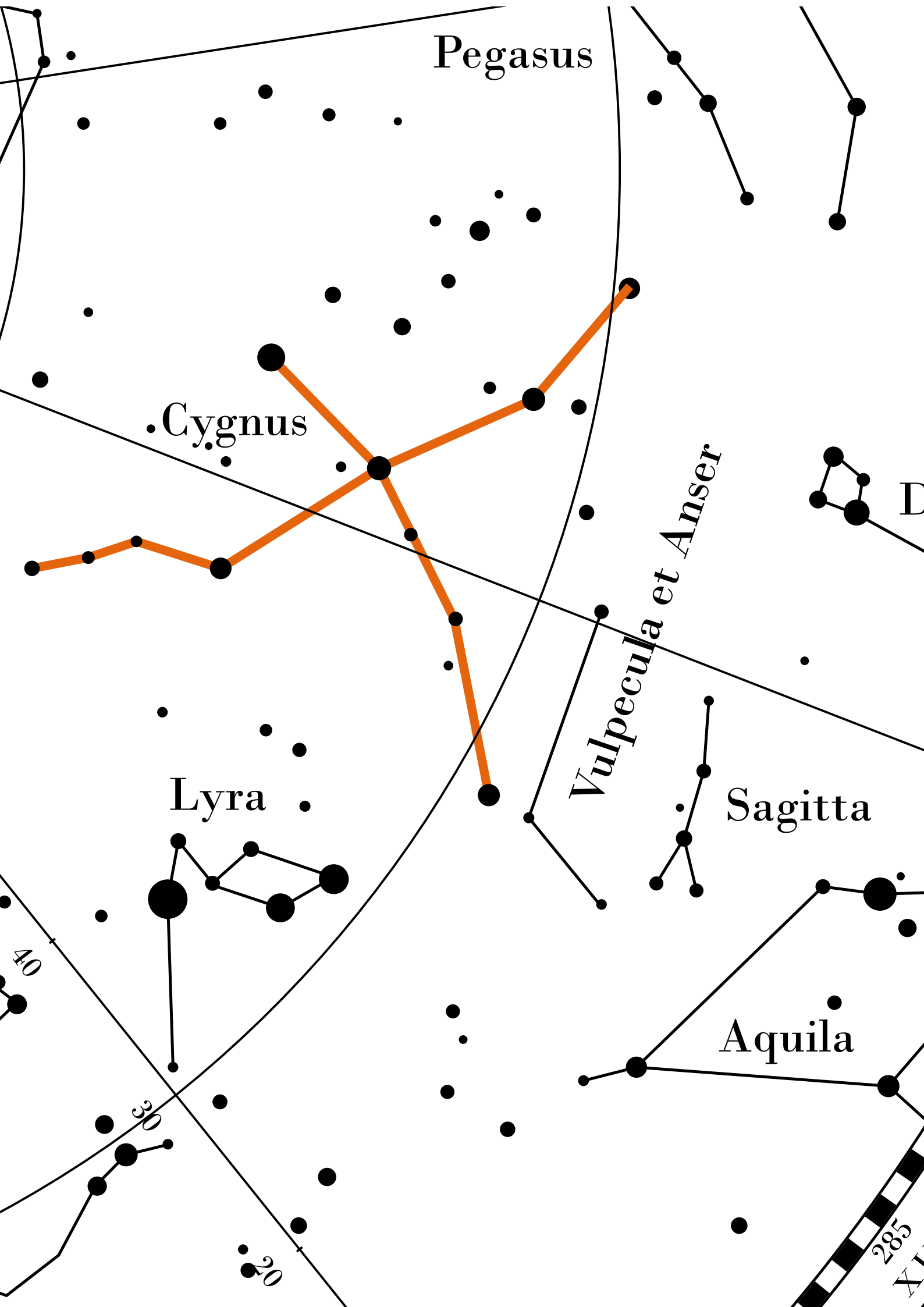
2022-01-28	Obtaining authorization for the sale of Andor confocal microscopes (Oxford Instruments) and Imaris software in Poland.
2022-04-08	Delivery of a 3D printer for metal printing of significant value.
2022-05-06	Commencement of negotiations on establishing cooperation in the field of product photography or the sale of an organized part of the enterprise covering the area of product photography and 360 degrees.
2022-06-25	Receiving information about winning a tender for the supply of a holotomographic microscope for an entity in Bulgaria.
2022-06-29	Receiving information about winning the tender for the supply of the LEEM microscope.
2022-07-29	Purchase of a controlling stake in ZMORPH S.A..
2022-08-30	Sale of assets covering the area of product photography and 360 degrees.
2022-09-06	Conclusion of a contract for the supply of the LEEM microscope.
2022-09-20	Signing a letter of intent with BGK regarding cooperation in the dissemination of the Idea 3W.
2022-09-28	Purchase of intellectual property rights for the method of creating objects from the gas phase to the solid phase in 3D printing,
2022-10-25	Joining the consortium implementing the MATURO 3D project.
2022-12-29	Conclusion of contracts for the supply of 3D printing devices with the Gdańsk University of Technology.

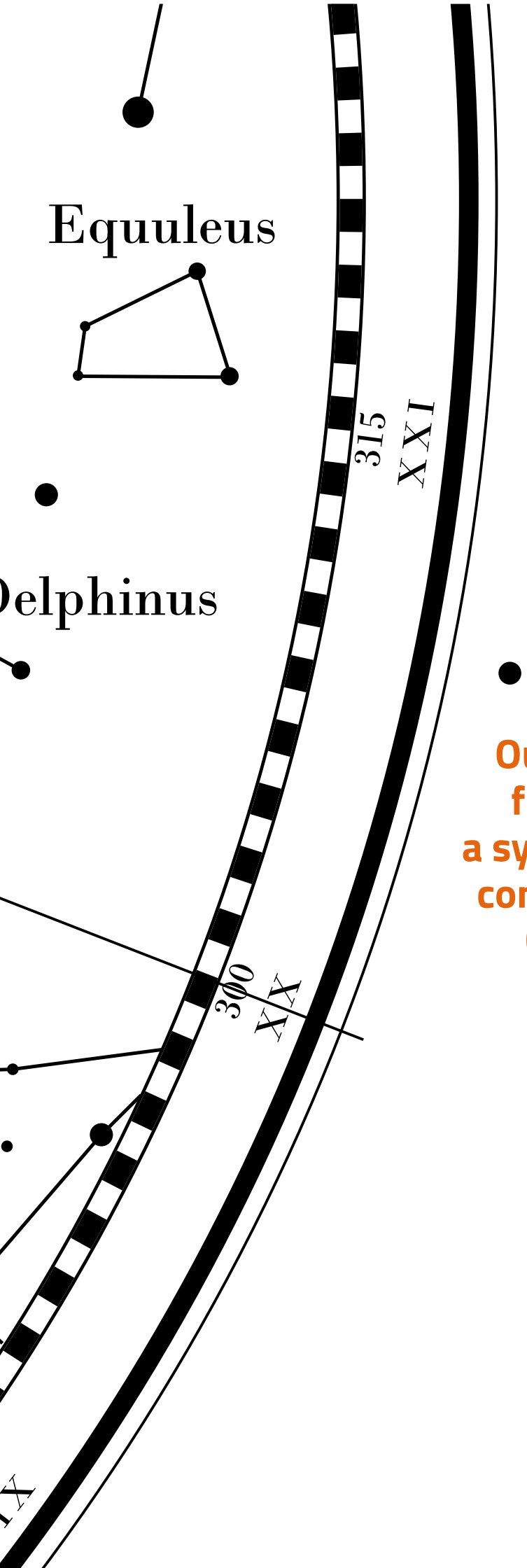


chapter 5:

Basic information about the company




Pegasus
Cygnus
Vulpecula et Anser
Lyra
Sagitta
Aquila
40
30
20
285



We are a collection of outstanding individuals: respected engineers, designers and scientists, creating a harmonious, dynamic team. Regardless of where we come from, each of us is an expert in our field. We grow stronger by sharing knowledge. We love to create utility items, technological solutions, projects, as well as graphics, films and hermetic jokes.

Our appearance on the market firmament was depicted with a symbol inspired by the Cygnus constellation. The mythological Cygnus is a friend of Photon, the son of Helios, which fits perfectly into the universe of our new technologies.

We share a passion for science-fiction series and books – a remnant of teenage fascinations with the Universe, when we understood that the future is malleable and we can shape it. The motif of the Cygnus constellation, which we use in a variety of ways, contains the quintessence of what is unsaid about Sygnis.

5. Basic information about the company

Name:
Sygnis Spółka Akcyjna

Year of establishment:
2011

NIP:
9571029651

REGON:
220906517

KRS:
0000393095

Share capital:
5 048 586,00 PLN

Sector:
Deeptech

Locations:
Gdańsk, Warszawa, Wrocław

Activity:

Sale of own products, Distribution, R&D works, Consulting, Design and Production services

Sygnis is made up of extraordinary people. We are almost 120 people.

Internally, we place great emphasis on cooperation between individuals on many levels. Building trust between employees so that they can rely on each other is one of the key elements contributing to the development of the company and optimization of processes.

We consciously decentralized the Company and gave the employees a lot of responsibility, and also gave them independence in terms of execution.

Equality within the company results in the fact that you can meet people from the Management Board carrying cardboard boxes with machines or in the laboratory making 3D prints. Anyway, this applies to the entire managerial staff at Sygnis. We found it important that, along with the development of the company, managers and the Management Board did not lose the idea of working in lower positions in the company. The management model, in order to be a good manager, one must thoroughly understand what employees face, as well as notice the spaces for optimization.

Representatives of the Sygnis team concluding
The 3-day marathon of Formnext trade fair,
the largest European event dedicated to 3D printing

5.2 Key moments in Sygnis' history

Knowledge has Layers™

2022
Sale of the MODE_360 by Sygnis brand

July 2022
Acquisition of Zmorph SA,
a Polish manufacturer of 3D printers

2021 December
Debut of Sygnis SA on NewConnect

November 2021
World premiere of SYGLASS_01
- LTG 3DP2021

2021 September
Premiere of F-NIS 23151

August 2021
Establishment of
Sygnis Nano Technologies

2021 July
4,6 mln PLN od NCBiR w ramach
1.1.1. na projekt B+R

July 2021
PLN 4.6 million from NCBiR
under 1.1.1. for an R&D project

2021 January
Start of works on merger of Sygnis
and Mode SA

2020
PLN 17.5 million from NCBiR
under 1.1.1. for two R&D projects

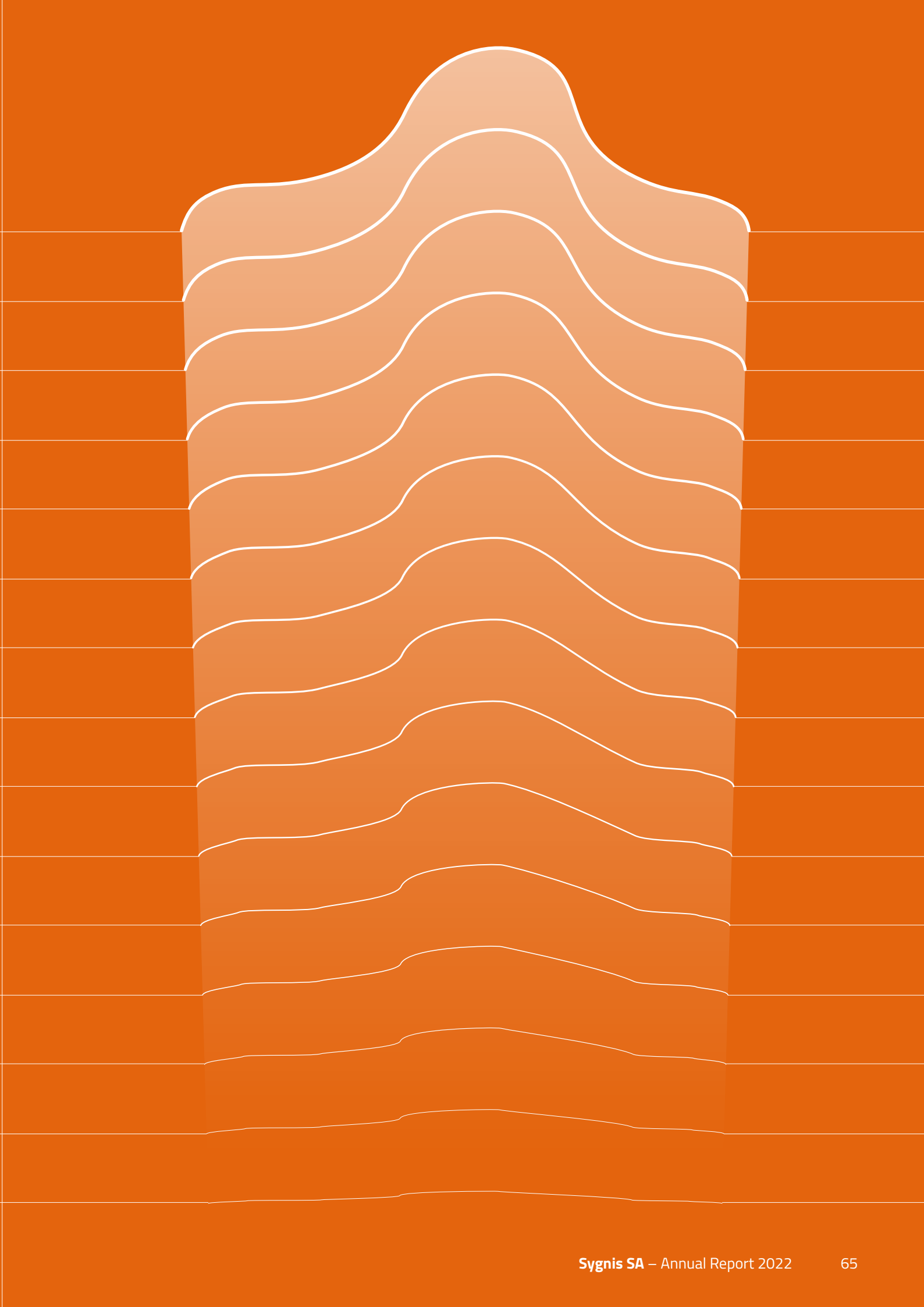
2019
Sygnis merges with Labnatek:
Sygnis Bio Technologies is created

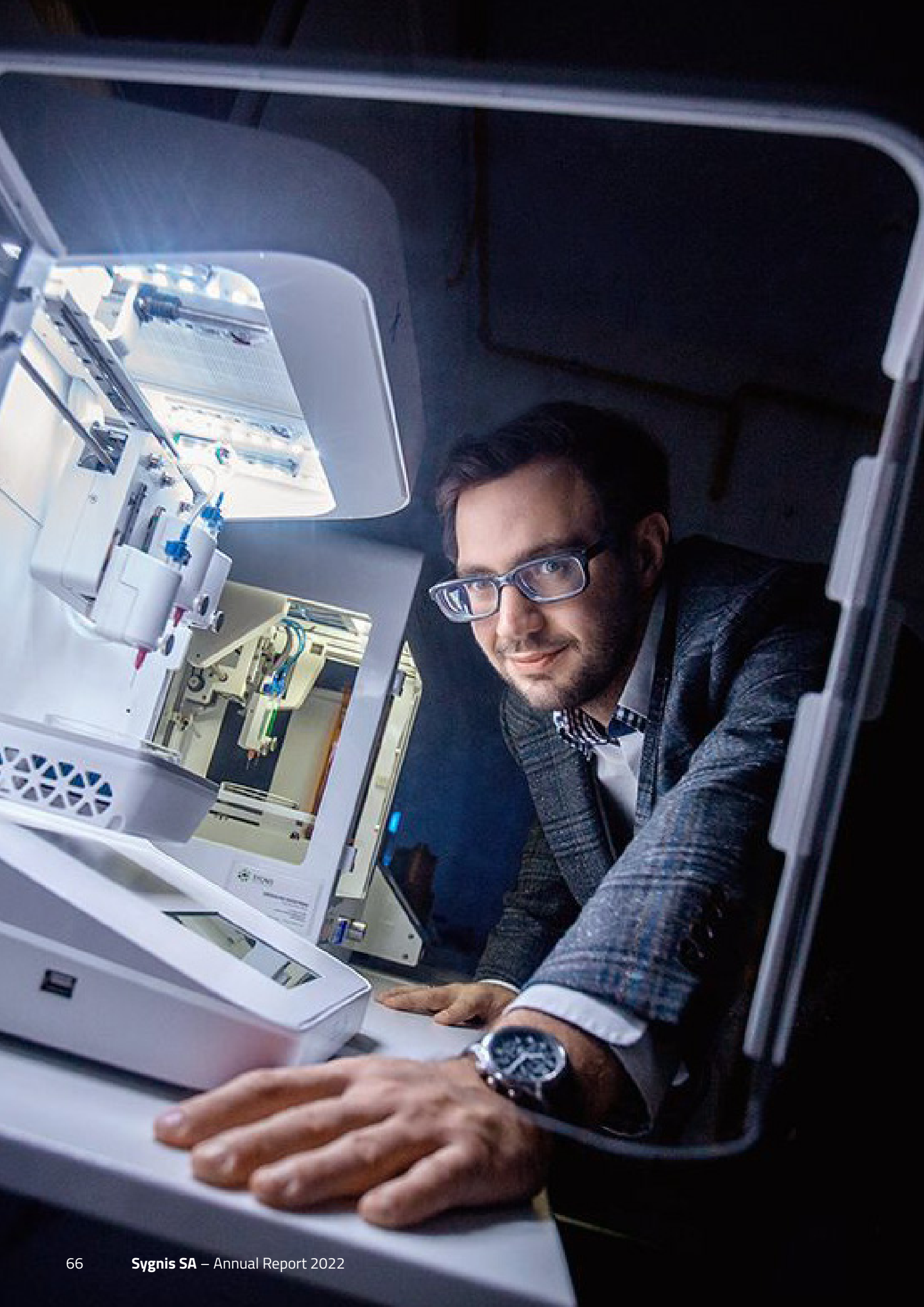
April 2018
2.6 million PLN from NCBiR
under 1.1.1. to develop a 3D printerfor
low temperature glass "SYGLASS"

2017 June
Turning point: Andrzej Burgs
takes over the company
and sets a new direction

December 2016
Reduction of employment
to 2 people

2013
Beginning of Sygnis sp. z o.o. activity
and cooperation with FlashForge





We are a research and development company. We want to effectively change the world with our inventions.

We solve problems and create new ideas in the areas of new additive technologies, biotechnology, energy and nanotechnology. Thanks to our projects we create breakthrough solutions in the field of energy storage, expanding access to nanotechnology solutions, as well as pioneering methods of saving life and health.

We use our knowledge and modern technologies to create a better tomorrow for all of us.

We, the people who constitute Sygnis, are physicists, mechatronic engineers, chemists, biotechnologists, engineers, makers, designers, sociologists, artists, electronic engineers. Interdisciplinarity and intellectual hyperactivity lead us to new fields of knowledge and technology, that we discover every day.

We bring technology, business and science together. We are users, vendors and researchers.

In addition to our own R&D efforts, we are also distributors of many pioneering solutions from our partners. We import them from all over the world to reach new levels of knowledge. With these, we develop proprietary, one-of-a-kind machines that enable production and research in previously unreachable areas.

We founded the Sygnis Group in 2012 as a trading company.

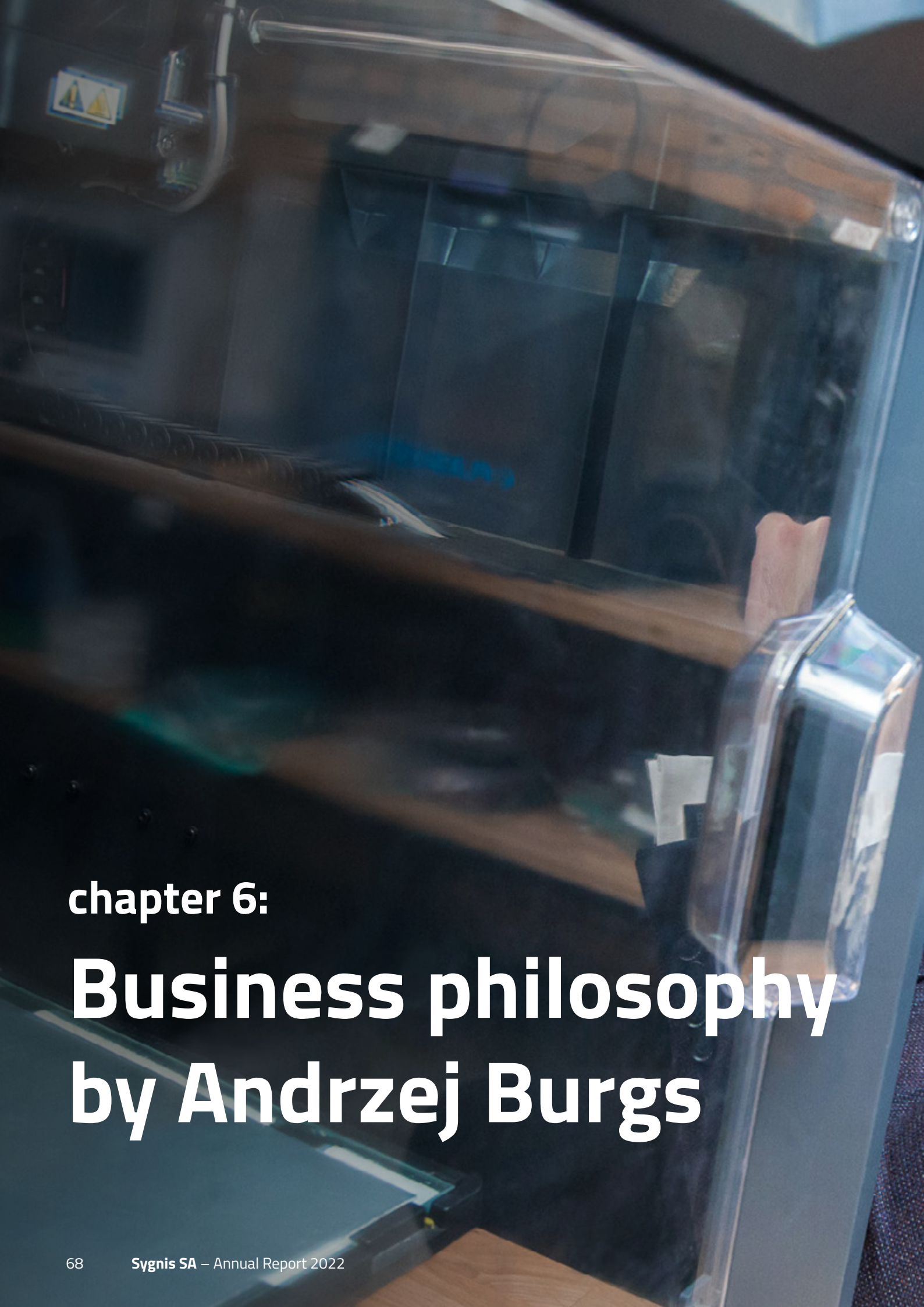
The year 2017 was a breakthrough moment for us - at that time we started conducting our own research in the area of new technologies.

With strong commercial roots, ensuring our company's financial stability, we built the company's largest department today – Research and Development. Our dynamic growth is a result of a unique in Europe system of managing prototyping processes, concerning both human resources and technological solutions.

We are doubling every year, and between 2020 and 2022 - we have grown almost tenfold.

Our ambitions go even further:

We want to become the largest hardware innovation company in Europe.



chapter 6:

Business philosophy by Andrzej Burgs


NEW TECHNOLO
FLASH
AB

Success depends significantly on the team that creates it

I encourage you to gain a deeper understanding of us as a company.

Sygnis is a deeptech multithreaded company where siloing of knowledge and resources is categorically avoided. We advocate cross-fertilization of areas, generalism and intensive collaboration. Why such a non-obvious decision? During my studies and later, during many years of work as an expert for employers of the Polish Accreditation Committee, I observed a highly harmful siloing at universities. It manifests itself in the fact that each Faculty/Institute tries to be maximally self-sufficient, which leads to inefficient management of resources from the perspective of the organization as a whole.

This desire for self-sufficiency manifests itself, for example, in a biologist spending dozens of hours learning Python programming in order to write a script to automate microscope work, instead of asking a colleague in Computer Science from the building next door for help. This also applies to physicists, for example, learning medicine on their own instead of drawing on the knowledge and collaboration of medics and biologists.

The closure to real cooperation on the level of everyday life, and not only on the level of big, controlled projects, was very memorable for me. When analyzing this situation, the conclusion is obvious: it is easier to work out costs and plan in the area of a lower level unit (e.g. Department). However, the whole organization, which is the University, loses out on this, as it achieves its goals highly inefficiently.

In contrast, examples of optimizing resource management in our company are numerous. They may consist, for example, in lending resources „assigned" to one of the departments to people from outside the department, without the participation of a special coordinator supervising such action. However, the key element, for which we care so much is an open cooperation and a comprehensive exchange of knowledge between employees.

To this end, we have jointly developed Culture Principles within the organization, divided into: thinking style, technical tips, slogans and quotes to make them easier to remember or visualize. You will find them at the end of this feature.

Every day at Sygnis is about building MVPs, prototyping new inventions and looking for the best working solutions. How do we do it?

When building a project MVP and prototype to present to investors or customers, we have to decide on some compromises. Very often originators are emotionally attached to their products/ideas and try to develop them to perfection. This is literally the end for a project

the 2020s! Getting a product to market as quickly as possible is crucial in today's world.

Let's introduce the concept of „time to market" and create a template (hanging on our wall) that depicts this regularity:

A good product MVP = $\lim_{t \to 0} \frac{Innovativeness \times Quality}{t}$

A good MVP is the product of innovation and product quality versus time. The faster we can achieve a functional prototype, the better. That's why we say „do it quick or not at all" so often in our company. Being late with a product is definitely worse than releasing it with reduced functionality but on time.

Where does this approach to prototyping come from? We come from the 3D printing industry, so we do everything with a rapid prototyping methodology. A new handle design? Let's make 10 different pieces and see which one is best. Prototyping and testing is always better than a drawn-out intellectual experiment where we'll ponder the details of the test pieces. This is also one of the famous sentences of experimental physicists:

Theory is valid, however it is experiment that confirms or disproves it.

Employees are encouraged to: prototype, test, try, improve, take shortcuts, take risks.

Rapid Prototyping methodology provides the fastest way to a working version, but requires multiple interactions and frequent repetition and looping of activities. When something doesn't fit or doesn't work properly – we go through the whole process again, analyzing its various stages. Such flexibility to adapt to processes is extremely valuable in the context of the modern world. Today, we believe it is important to adapt quickly, to be a generalist rather than a specialist.

Abandoning narrow fields of specialization in favor of a broader, interdisciplinary view brings many benefits. Thanks to this, we are able to e.g. combine industry with research conducted at CERN or follow the processes of shaping social ideas and translating them into the internal organization of a company.

Going back to the original thought – R&D project is like 3D printing.

In rapid prototyping, the process needs to be repeated using different means or methods until the desired effect is that is, until the desired effect is achieved.

3D Printing	R&D
Project CAD	Planning and literature/ business analysis
Slicer	Task division and execution of individual measurements on different types of machines
3D Printing	Producing the product, where knowledge and skills are the building blocks
Postprocessing	Confirmation of results, extended data analysis, finding additional correlations with other experimental results, customer feedback on the product

Technical note: **in order to achieve our prototype, „proof of concept" as quickly as possible, we need todiagnose the key elements of the project right at the beginning**. Then we start by verifyingif it makes sense to go in a particular direction at all before we begin extensive testing. Capturing the critical technological elements will determine the shape of the final product. At the beginning you need to focus on them - not on the brand logo or future profit sharing :)

Technology is all about people.

Success depends significantly on the team that creates it. So recruiting the right people - fast learning generalists with open minds - is the best investment for a startup. I'm glad to see that our investment of time in mentoring, teaching students and promoting new technologies is resulting in a steady stream of talents so far.

I strongly believe that knowledge has layers, which means that every employee of the company can bring interesting solutions to the project. When creating an internal MVP, we are generalists, we look for analogies in the whole world. We assume that an additional layer of knowledge can be created by anyone. Not only the scientific team specialized in this particular task, but any member of the organization (or even outside of it) is able to add such knowledge. It can be a contractor as well as an equipment supplier. We can draw knowledge and lay foundations for next layers almost from everywhere.

Therefore, as Sygnis, we look for people who can associate even the smallest nuances and see a whole range of analogies in the world around them. This feature is in our opinion the most desirable. Such attention to detail pushes research projects forward. When creating a product MVP, we can move forward rapidly if we break it down into individual layers and individual problems. Then we can quickly find these analogies, which give us a ready solution or hints where to look for these solutions.

What follows, we can perform such Rapid Prototyping and Rapid Tooling (tooling preparation) all the time.

Thanks to the rapid repetition of these processes we are able to dynamically move forward with R&D projects. Much faster than with traditional methodologies.

We are used to the fact that being a smaller company in relation to the world's giants, we have to be faster, more agile and much smarter in thinking how to create something. So... we act!

We always aim for the big goal. All the daily tasks are just means to achieve it.

Thinking Style

Teamwork

We support each other. The overriding value is responsibility towards the company and team members.

We make decisions with logical thinking

Everyone can make decisions according to their position.

Absolute honesty

Communicate directly and quickly what we think based on the 4P's principle.

There is always room to add an **idea for optimization**, and implementation depends on priorities.

We look beyond the horizon

We always try to achieve a step towards a long-term goal with our actions.

Prototype

Try, analyze, improve and try again. Action with mistakes is better than no action. Mistakes are the knowledge of the organization.

Quick is better

Pragmatism: we look for the quickest and easiest way to solve current problems.

Generalism is important

Look for analogies throughout the world.

Performance techniques

The 4P feedback principle

Positive intention + Practical purpose

+ Praise + Push or Pull (Accept or reject).

Principle of Decision Making

We always ask ourselves the questions: Why am I doing this? What is the context of this action? Will this help the company? What is the best decision in this case? How does this relate to our long-term goals? Overriding determinant: What is best for the company.

Principle of giving instructions

a. Commissioning: Storytelling the context of the overall project along with explaining the tasks. And how it relates to our long term goals.

b. Contractor: Paraphrasing the task, demonstrating how they understood their goals.

c. Mutual trust: If the contractor encounters a problem or lack of knowledge in accomplishing - will return to the contractor with additional questions.

Daily Report Rule

- Two levels:
  a) specific information, relevant as news to other readers;
  b) project implementation.
- We do not describe simple execution activities.
- We punctuate the problem, our solution or proposed solution, ask for help/resources.

Principle of curiosity

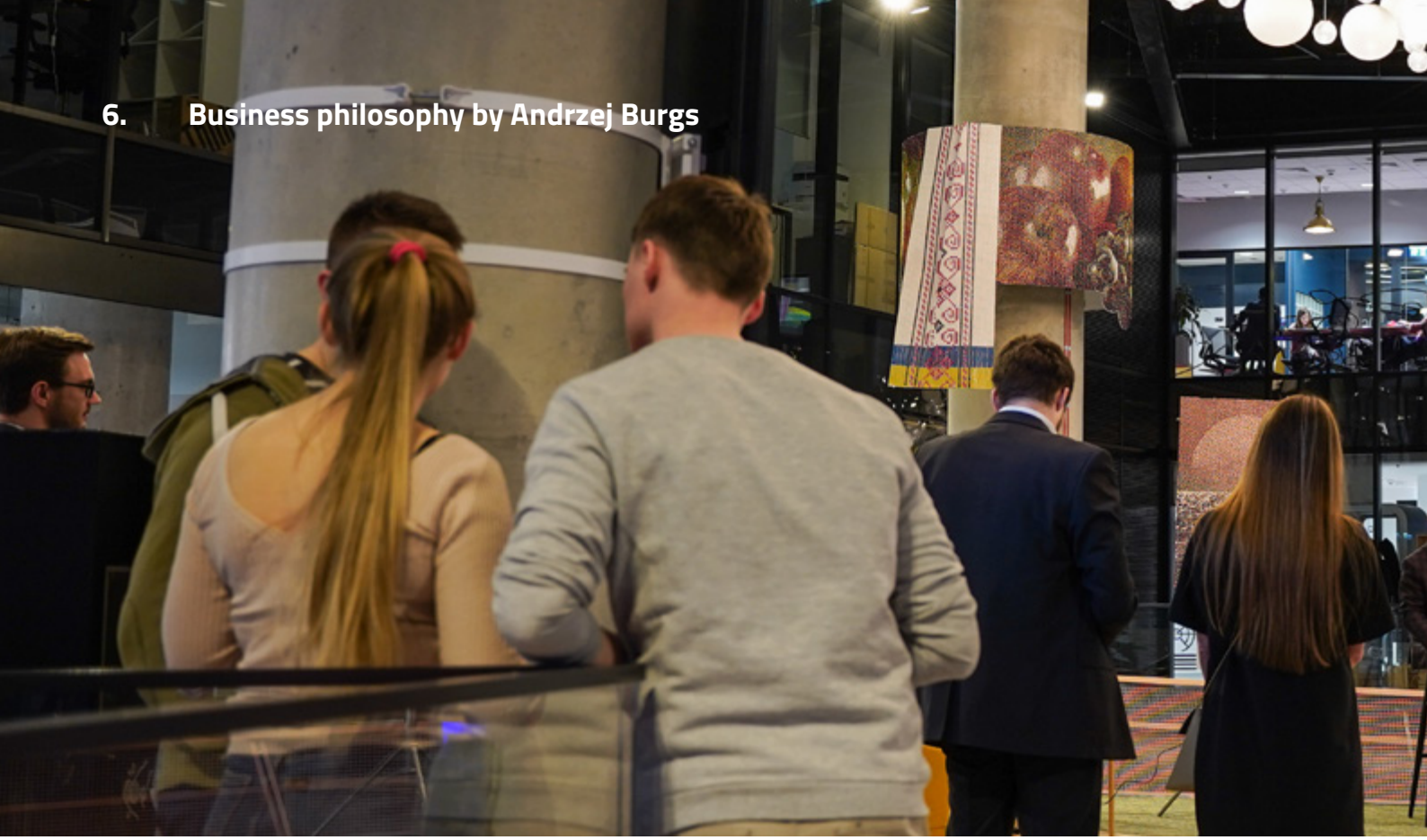
Let's exchange ideas and what we do (mainly during lunches, morning coffee and weekly status updates).

The principle of argumentation

If you are against or support one of the projects, argue logically why. Remember the different levels of knowledge and perspectives of the others. This does not mean a liberum veto.

Managers implementing Sygnis Culture Principles in the Capital Group

Sygnis management and C-level and M-level executives, from left: Piotr Piskorski, Olga Czerwińska, PhD, Kacper Krężelok, Łukasz Małek, Joanna Danaj, Patrycja Adamczuk, Marcin Adamczyk, PhD, Eng., Marek Lorent-Kamiński, Andrzej Burgs oraz Magdalena Krawczak



The 4P principle

Positive intention

Feedback must be constructive and presented with positive intent. Sharing critical feedback to vent frustration, intentionally hurt the other person, or pursue your own political goals is unacceptable. Be clear about how a specific behavior change will help the person or company, not how it will help you.

Practical purpose

Feedback must focus on what the recipient can do better.

Praise

Do not react defensively or make excuses. Your interlocutor has good intentions. Try to fight this natural reaction and ask yourself: How can I show my gratitude for these insights by listening carefully, considering them without prejudice, and not becoming defensive or angry.

Push or Pull (Accept or reject)

Listening to comments is required, following them is not. It is imperative, however, that you consider and think about whether the whole thing is a hit or miss.

Ideas

Fast or not at all
„Time to market" is key.

Knowledge has layers
We try to use all heads in the company.

Honesty eliminates lurking grievancese
It makes us understand each other better.

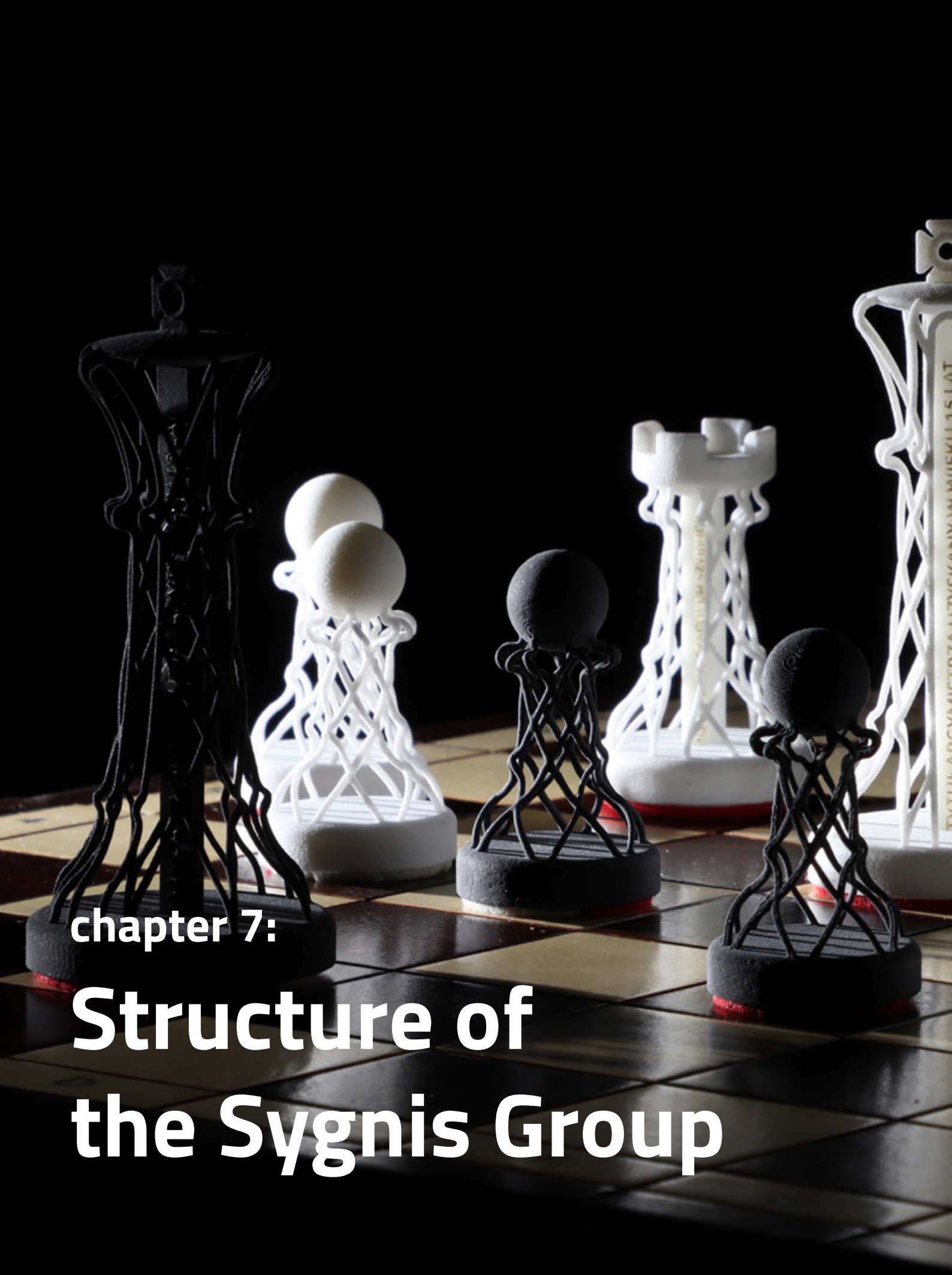
Storytelling and paraphrasing
Improve communication.

Superiority
What is best for our team?
What is best for the company?

Act
It is always better to correct mistakes than not to try anything.

Reduce time
Think about how long a task will take you and then try to do it twice as fast. Maybe you will come up with an amazing optimization solution by doing so?

Improve
If something doesn't work or is unattended – take over!



chapter 7:

Structure of the Sygnis Group

Strategic outline of the Sygnis Group's activities

In the coming months, the Sygnis Group will focus on the development of two main business areas:

1. Increasing market share on a European scale in the area of 3D printing (own and distribution products)
2. Commercialization of the Syglass project and bringing further R&D projects to the commercialization stage

We divide market development in the 3D printing industry as a Board of Directors into the following areas:

1. Sales of own products - export position
2. Sales of distribution products - regional market
3. Provision of design services - regional ecosystem
4. Increasing participation in the Military sector
5. Potential industry acquisitions

In terms of proprietary products, we highlight F-NIS machines (www.diw3d.com), which are the ones that now primarily feed research groups around the world - from Canada to Greece. These projects range from food processing to creating new materials or increasing CO2 absorption. The user community generated in this way can become an excellent source of regular international customers in the area of breakthrough research work.

We have made an investment decision to increase production of FAB machines, which are unique multitool machines.

The numerous international customers that make up the committed community provide this machine with grassroots support in setting the next stages of development. The goal is to reach a production capacity of a minimum of150 machines per month of this type, a threefold increase in existing capacity.

We have added specialists from Sygnis SA to the Zmorph SA team developing the i500 machine, as we believe it is a machine with the potential to be the most desirable equipment for 3D printing in the coming years in FDM/FFF technology. This is a project closely supervised by top management of the Sygnis Group.

The coming year will also be a programming expansion of Voxelizer, a proprietary software designed to prepare files for 3D printing. The development goal for this product is to introduce direct communication between the manufacturer and the end customer, as well as to segment it into free and paid services (micropayments, freemium model).

Increasing the warehouse space and expanding the logistics and e-commerce department allows for a stronger regional impact in terms of sales. In addition to Poland, the Czech Republic, Lithuania, Slovakia, Hungary, Romania, Bulgaria or Croatia should be mentioned in particular. These are markets where, thanks to distribution agreements, we can develop our sales networks not only directly, but also resellers.

Our design team, which has won numerous awards internationally, allows us to increase our margins in terms of the 3D printing and prototyping services we provide (made.sygnis.pl). We want to promote our solutions in this area primarily in Poland, Germany and Scandinavia. In the past year, the team developed a 3D printed stasis - a tourniquet, one of the key pieces of equipment for soldiers on the battlefield. They have proven to be effective in performance, as confirmed by studies conducted at Polish and Danish universities. This is the first medical device created and registered directly by Sygnis SA. The value of the stasis delivered to the Ukrainian army amounted to more than 300 thousand zlotys. This value is likely to increase in the next year. The prospect of public sector spending in the military sector in the next decade is almost unprecedented. As a Company, we are engaged in projects supporting military technology in logistics, drones, battlefield medicine, satellites and others.

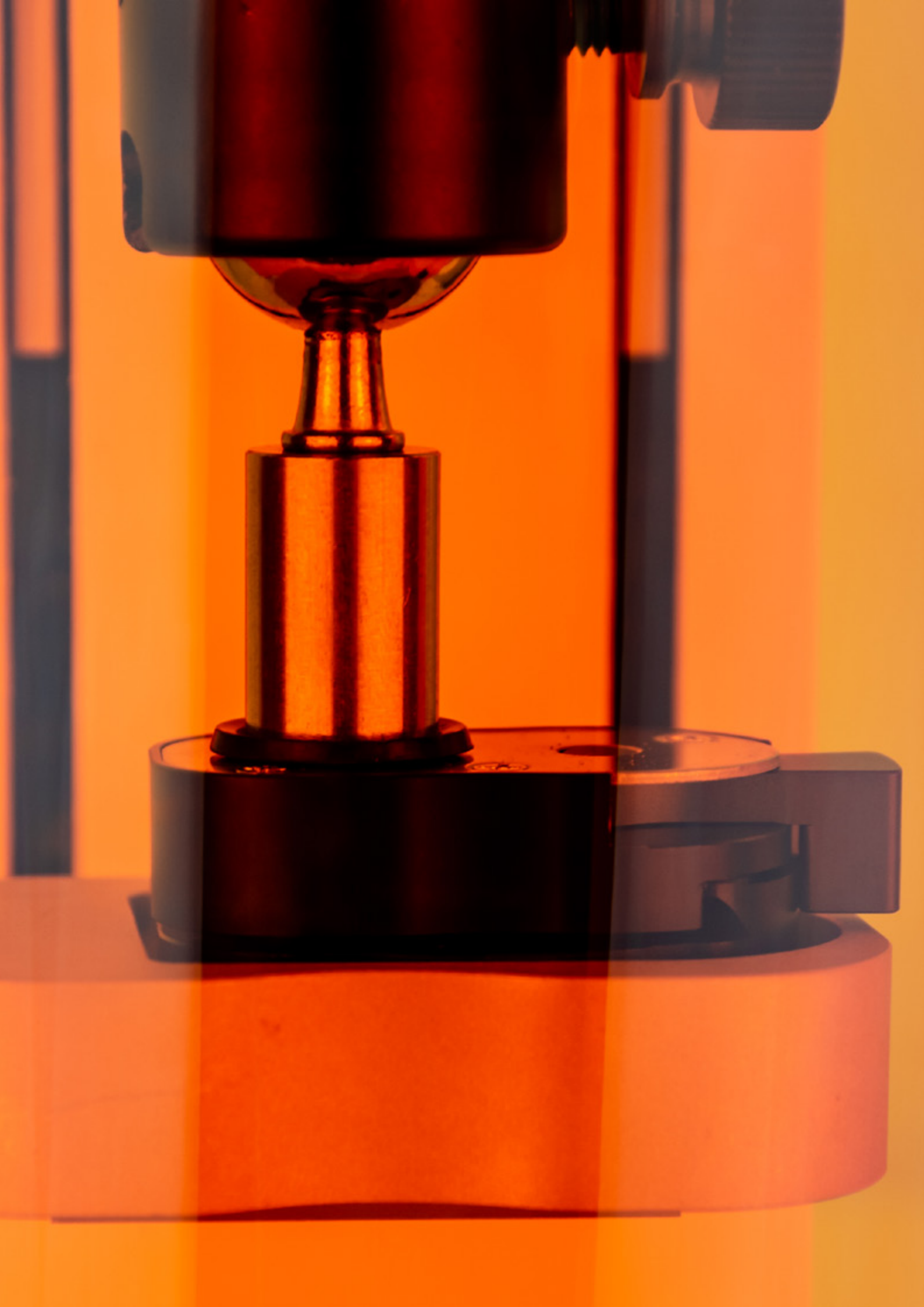
In the coming years, we also plan to continue to be active in acquiring industry companies in the CEE region in order to build a regional champion of the 3D printing industry. We have a natural opportunity to become an integrator of the Polish and regional markets. We want to take advantage of this and create an organization large enough to have the potential for equal industry competition on a global scale.

Reverse acquisition of MODE SA

In January 2021, a letter of intent was signed between Sygnis New Technologies sp. z o.o. and Mode SA, listed on the Warsaw Stock Exchange's NewConnect, to merge the companies. As part of this process, we merged two companies: Sygnis New Technologies sp. z o.o. and Sygnis Bio Technologies sp. z o.o. in January-May 2021. We then raised the capital in Sygnis New Technologies sp. z o.o. through the issuance of shares in July 2021, until we finally reached the most important merger - Sygnis New Technologies sp. z o.o. with Mode SA based on the decisions made by the companies' General Meetings of Shareholders held on November 29, 2021. Thus, already as one company, under the name Sygnis SA, we made our debut on December 30, 2021, when we obtained an entry in the National Court Register. In this way, the Mode production and trading company turned into the Sygnis deeptech company.

Here it is necessary to give you some explanations. The merger was carried out using the share acquisition method, which means that we cannot directly provide the aggregate results of revenue, expenses, etc. In accordance with the Accounting Act, the value of the acquired company (Sygnis New Technologies sp. z o.o.) is incorporated as an asset in the Company's balance sheet. The value of the company was determined by a court-appointed expert.

In order to provide you as investors, shareholders and supporters with a realistic picture of the Company, we present selected elements of the income statement in a proforma results table. These results represent the real result of the combined entities into one organization (Sygnis SA).



Structure of the Zmorph – Sygnis transaction

Informational introduction:

Zmorph SA had a significant debt to its main investor, i.e. Warsaw Equity Management SA (WEM), incurred as a result of investments made in the company since 2015. It amounted to PLN 17,017,000 (seventeen million seventeen thousand zlotys) on the date of the transaction, i.e. July 29, 2022.

WEM was willing to sell this claim together with its shares in Zmorph SA in the number of 5,421,668 (five million four hundred and twenty-one thousand six hundred and sixty-eight shares), which accounted for 77.88% of all Zmorph SA shares.

Sygnis SA, on the other hand, being a company listed on the New Connect on the WSE, has the option of issuing shares with a subscription price, which can serve as a kind of „payment" for the acquisition purchase.

A mutual receivables set-off transaction was concluded on July 29, 2022 between Zmorph SA's main shareholder Warsaw Equity Management SA and Sygnis SA. As a result, Sygnis SA agreed to allocate the purchase price for two assets.

1.
For the value of PLN 542,166.80 (five hundred and forty-two thousand one hundred and sixty-six zlotys, eighty cents) to purchase 5,421,668 (five million four hundred and twenty-one thousand six hundred and sixty-eight) shares of Zmorph SA (nominal price of PLN 0.10)

2.
1,551,418 (one million five hundred and fifty-one thousand four hundred and eighteen) Sygnis SA shares at a nominal value of PLN 2.00 each as an equivalent of Zmorph SA's claim to WEM worth PLN 17,017,000 (seventeen million seventeen thousand zlotys).

3.
500,000 (five hundred thousand) Sygnis SA shares taken up for cash in the amount of PLN 1,000,000 (one million zlotys) by WEM (until the settlement of the shares, it was a loan for such transaction).

The counter-payment was to be made by mutual offsetting of receivables. However - it did not take place by this method, due to the opinions of stock exchange experts who corrected the transaction's technicalities.

In the end, it took place through full price payments in transaction values. Hence, among other things, the notarial deposits to mutually mark the payments as cash. The notarial finalization of the transaction took place in November 2022.

The Extraordinary General Meeting of Sygnis SA passed a resolution in October to increase the share capital through the issuance of 2,500,000 (two million five hundred thousand) shares with a nominal value of PLN 2.00 (D Shares).

The increased stake was intended to enable similar transactions with other shareholders of Zmorph SA.

In the August-December period, Sygnis SA also completed purchase transactions of Zmorph SA shares from individual shareholders, thereby increasing its percentage share in the share capital to 96.41%.

Zmorph SA also has subsidiaries, i.e. LBL sp. z o.o., Value Factory sp. z o.o., and a subsidiary of Value Factory sp. z o.o. is still 3D Printers sp. z o.o.. 3D Printers had a debt of PLN 1,000,000 (one million zlotys) to Instytut Wspierania Innowacji sp. z o.o., which was acquired in December 2022, Sygnis SA paying PLN 201,050 (two hundred and one thousand and fifty zlotys).

The closing of the purchase transaction of Zmorph SA's shares and Zmorph SA's receivables from third parties took place on December 31, 2022, similarly to the transaction of sale of D series shares, which, in accordance with the resolution of shareholders of Sygnis SA, was directed to shareholders of Zmorph SA.

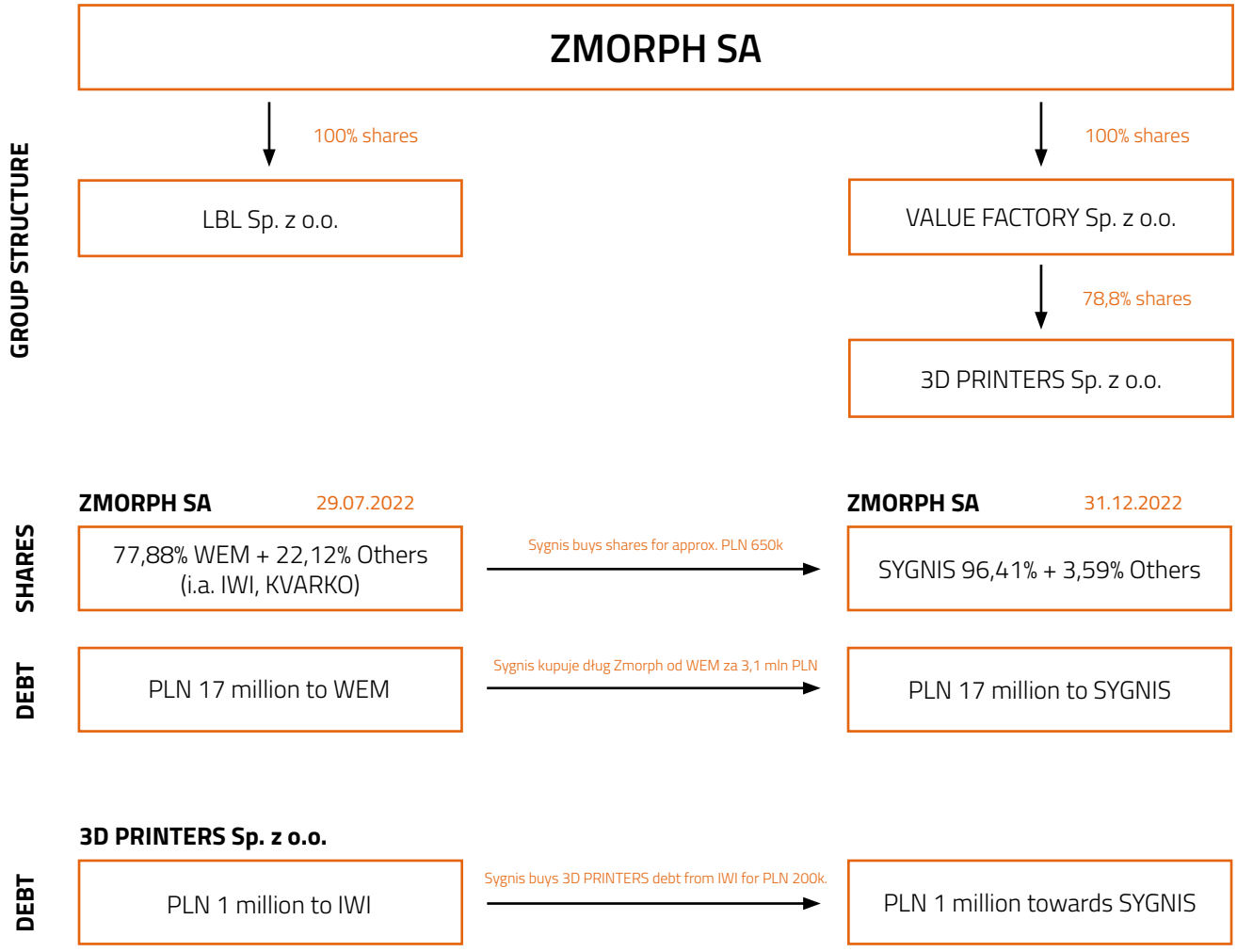
Registration in the court (KRS) of the new shareholders of Sygnis SA took place in January 2023.

To sum up:

Sygnis SA increased its share capital by PLN 500,000 (five hundred thousand) - this is the result of the issuance of 2,500,000 (two million five hundred thousand) shares with a transaction value of PLN 2.00 (D series shares with a nominal value of PLN 0.20).

Shares in Zmorph SA were acquired, which, due to the fact that Sygnis SA holds the vast majority of shares, became a subsidiary/subsidiary of Sygnis. Sygnis' stake is 96.42% in the shareholding held by Qsecuritas.

Currently, the own-subsidiary companies have a significant debt to Sygnis of about PLN 20,000,000 (twenty million zlotys). This is an internal debt within the group, which provides opportunities for financial transfer from Zmorph SA to Sygnis SA (the company's planned high-margin business, hence also capital expenditures by Sygnis SA).



Zmorph SA designs, builds and supplies high-quality machines for technical, educational and prototyping applications

The company is made up of a team of 3D printing enthusiasts. Some of them have come a long way since the establishment of the organization, starting their professional path from production positions to managers of various departments.

So they are very familiar with all the processes taking place at Zmorph. The company consists of several departments, and all of them resiliently make their contribution to the creation of the market's top 3D machines. These departments are: production, quality, sales and logistics, service/supervision and administration in the broadest sense. The heart of the company, however, is the R&D department, where new ideas are constantly being developed to increase the quality of current machines by adapting them to current customer needs. There is also a continuous construction effort to create new printers that, like the Zmorph FAB multi-tool, will conquer the market. Work is currently underway on the release of the Zmorph i500 large-size machine, which, with its sizable working area, repeatable print quality and intuitive operation, will be eagerly purchased by industry customers for prototyping and supporting medium-sized production lines. What is most important for the company, however, are signals from the market as to what needs the machine should still absolutely meet and what additional functionalities it must have.

Careful listening to the market is a priority for Zmorph, which is why the company's largest distributors have already been equipped with the i500, testing and reviewing the machines to give the best and most valuable feedback. Only after their voices are heard will the machine be ready for official release to the market.

The company is focusing primarily on export sales, mainly because of strong demand for high-quality machines, high-end after-sales care guaranteed by the manufacturer, 100% responsiveness in dealing with customers, and constant availability of spare parts and support software updates. Zmorph products will soon be available off-the-shelf to any individual customer, who will be able to purchase them through the company's web store.

The brand is particularly appreciated in France, UK, Germany. It is also undergoing its renaissance in the United States, as shown by a number of recently signed contracts with new customers in the US. It is also eagerly hosted recently in South Korea and Morocco. As you can see, there are no borders for Zmorph because almost every 3D printing enthusiast has already heard about the quality of the Polish company's products.

The SX, VX, FAB or i500 machines are still not all that Zmorph said.

The company has the appetite and huge aspirations to become the largest and most recognizable 3D printing brand in Central Europe, and maybe even in the world, which, with becoming part of the Sygnis group, is slowly starting to happen.

Learn more
https://zmorph3d.com/about-us/

chapter 8:

The many faces of Sygnis

We are developing in multiple ways

Internal diversity among employees allows us to operate efficiently in a variety of scientific, business and cultural areas. We engage in popular science initiatives, at which we support popularizers, educate and act as experts in mentoring programs. We address topics related to social and environmental responsibility, often speaking out on hot topics of public opinion. We cooperate with the space, agricultural, nanotechnology, photonics or optics sectors.

We are members of clusters, associations and organizations in which we find business and scientific partners, customers, and above all, people with whom we can effectively change the world.

2022
Innowator Mazowsza

Distinction in the competition in the Innovative Company category

2021
Deloitte Technology Fast 50 in Central Europe

Place 48

2020
Przedsiębiorca Roku UW

Finalist in the competition in the Master of Business category

2019
Rising Star Award

Pioneer in New Technologies Book of Lists 2029/2020

Other awards

- EuroSymbol of Innovation 2019 - Nomination to the Polish Intelligent Development Award 2019
- Nomination to the Innovation Architects of the Pulse of Business in 2018
- Very good rating in the Innovation Health Check performed by Enterprise Europe Network

8.3. They talk about us

Until a few years ago, Andrew Burgs' company was a garage project. Today, the Sygnis Group, which specializes in 3D printing, is making an acquisition, will compete with Siemens in Europe and wants to go public on the New York Stock Exchange in five years.

Natalia Chudzyńska-Stępień
Forbes Polska

Sygnis is taking advantage of the capabilities of 3D printing to help newborns.

Oliver Johnson
TCT Magazine

Much inspiration, great pleasure.
I wish you success in realizing your vision of becoming the largest manufacturer of hardware innovation in Europe.

Greg Albrecht
Albrecht & Partners

After looking at the SYGLASS2 3D printer from Sygnis, I am astonished at what it can 3D print: kilometers of optical fiber.

Kerry Stevenson
Fabbaloo

(Sygnis) is changing the world of 3D printing!

Maciej Kawecki, PhD
ONET, Lem Institute,
Megabit Bomb Festival

Entrepreneurs in Poland rush printers to the stricken neighboring country for use creating protective gear, tourniquets, periscopes – and even drones – for the Ukrainian defense.

Amy Feldman
Forbes

3D printing seems a bit underrated to me, yet there are things happening in the industry to put people in need on their feet.

Adam Bednarek
Spider's Web

A desirable project and, moreover, a model of firm comprised of a diversity of profiles capable to take on challenges is the formula which Europe wants to support.

Reviewer from the European Innovation Council

Delivered in 26 hours, the pre-operative skull 3D model of a newborn babygirl, which helped save her life.

– more on page 154

chapter 9:

Events 2022


SYGNIS
SPÓŁKA AKCYJNA
MORPH
500
SYGNIS
SYGLASS²
morph3d.com

We didn’t think it was possible, but 2022 was even busier than the previous years of our operations

We continue to accelerate, increasing the number and diversity of sectors in which we work. Last year was months of uncertainty related to the war in Ukraine, but also the determination and commitment of our employees who, without hesitation, decided to help the freedom-fighting Ukrainians. It’s tens of thousands of kilometers driven, a lot of roaming used and several travel playlists. It’s also inspiring meetings, difficult conversations and rewarding moments.

On the following pages, we present 2022 at Sygnis through the lens of the events we participated in.

58 203
traveled kilometers

23
cities visited

73
events

94
public appearances

Key events involving Sygnis SA in 2022

Sygnis team on the way to Ukraine

Soldier from „Kraken" unit with Sygnis tourniquets

Help for Ukraine

26.02.2022 - ...

Since the first days of Russia's unjustified and unprovoked aggression against Ukraine, we have offered our assistance to the Ukrainian community. We support the thriving community of 3D printers in Ukraine who perform projects for the Ukrainian military. For them, we provided the machine facilities of 20 3D printers and nearly 400 kg of 3D printing materials.

Together with 3YOURMIND and TeenCrunch, we created the Tech Against Tanks and Stand With Ukraine initiatives, which bring together a global community of technology companies, organize charity auctions, create projects and provide a free repository of 3D models selected after consultation with Polish and Ukrainian paramedics with combat experience, IRCC field doctors and battlefield medicine instructors.

We have supplied more than 25,000 3D prints to the Ukrainian Army Air Force, and our tourniquets are saving the lives of Ukrainian soldiers on the front lines.

International Defense Industry Exhibition

6-9.09.2022, Kielce

W dobrze znanej przez nas przestrzeni Targów Kielce We participated in the 30th anniversary edition of the International Defense Industry Exhibition from September 6-9, 2022, in the space of the Kielce Trade Fair at 1 Zakładowa Street, which we know well. During the event, we presented a number of solutions that additive technologies offer to the defense industry and the military.

Among other things, we presented our innovative Syglass technology, which allows the production of fiber optics of a new type. These will also find their application in the defense sector, mainly in segments related to communications and detection. As described by the organizers themselves, „The event was record-breaking in every respect. „(...) This year's Salon brought together 613 exhibitors from 33 countries around the world, including 312 Polish companies. The fair was visited by 60 delegations from 39 countries, including eight ministerial levels. MSPO 2022 attracted 25,000 visitors from all over the world, while another 10,500 visited the Open Day."

Formnext 2022

14-19.11.2022, Frankfurt am Main

The event is a kind of celebration of the 3D printing industry and the most important moment of the year for each company in the sector. Of course, we can't be missing there! That's more than 600 exhibitors and nearly 18,000 visitors, all in two huge, two-story halls covering more than 50,000 sqm at Mesago Halls in Frankfurt am Main.

This year we resided at two separate booths: a combined Sygnis and Zmorph booth (for Zmorph it was the first appearance at the event, which makes us even happier!); and at a second location as FlashForge Poland by Sygnis. During the fair, we showed new products and applications, including: Syglass_02 and FNIS 23151 from Sygnis SA, and from Zmorph, a new device - Zmorph Shape! Visitors expressed great interest in our technologies, and the press conference and media appearances attracted a huge crowd of curious people, both among 3D printing professionals and amateurs.

9.1 Highlighted events

Dni Druku 3D

5-7.04.2022, Kielce

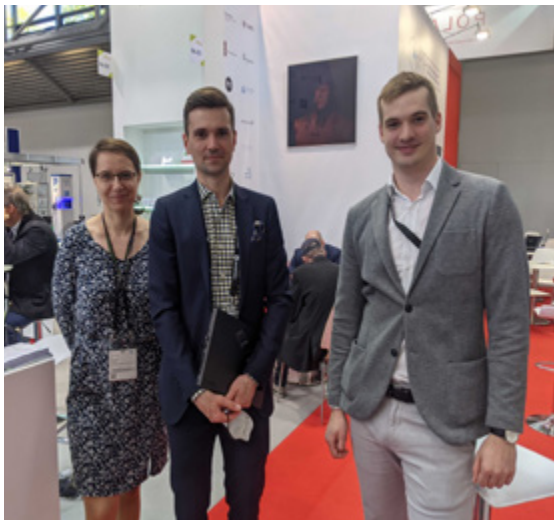
On April 5-7, the 3D Printing Days trade fair was held in Kielce, where we acted as Main Sponsor. 3D Printing Days is part of the STOM-TOOL Industrial Spring event of the Kielce Trade Fair.

During the event, for the first time in Poland, we showed a machine from Mimaki Europe - a 3D printer allowing to create objects in inkjet technology in more than 10 million colors and shades.

Laser World of Photonics

27.04.2022, Munich

The Laser World of Photonics event is the world's leading trade show for photonics components, systems and applications. Paweł Wienclaw, R&D Engineer at Sygnis, who was present at the event, had the opportunity to talk to representatives of photonics clusters from Germany, the United States and Israel, among others, and to introduce Syglass technology to the attendees.



Superbet Rapid & Blitz

Donation of a chess set auctioned as part of the Great Orchestra of Christmas Charity auction

18.05.2022, Warsaw

During the Superbet Rapid & Blitz Poland 2022, we donated a chess set designed for Poland's top chess player, chess grandmaster Jan-Krzysztof Duda, and made by us, 3D printed in SLS technology, which was auctioned off during the GOCC auction!

The entire amount was donated to charity.

The exhibition at the Institute of Design in Kielce titled „This is also ceramics".

01.2022, Kielce

The exhibition at the Institute of Design in Kielce entitled „This is also ceramics" was a project that showed the versatility of ceramic applications. One of the three parts into which the exhibition was divided focused on new technologies, 3D printing and the use of ceramics in industry. It was there that you could see low-temperature glass prints made by us using Syglass technology.

3W Congress

7-8.12.2022, Warsaw

During the 2nd 3W Congress organized by the National Bank, Andrzej Burgs, accompanied by UW Prof. Dr. Krzysztof Meissner, Paweł Smolen of Smart Nanotechnologies and Dr. Adam Szatkowski of the NANONET Foundation for the Support of Nanoscience and Nanotechnology, debunked myths about carbon..

The speakers touched on changing attitudes towards this element and its use in new technologies. Our CEO talked about the challenges facing the technology industry and the creation of unique solutions based on a completely different face of coal on the scale of both Poland itself and the foreign market.

Gitex Global

10-14.10.2022, Dubai

Held in Dubai, Gitex Global is one of the most important fairs for new technologies in the world. Representing Sygnis SA, Mateusz Lenart, then in the position of Sales Specialist & Technical Support, presented to the visitors of the stand a 3D printer - FNIS 23151, while the representative of Zmorph SA, Maciej Błędowski, Area Sales Manager, presented a proprietary multitool - Zmorph Fab. Interest in the stand exceeded our expectations. Visitors to the stand came from all corners of the world, eager to learn the secrets of 3D printing.

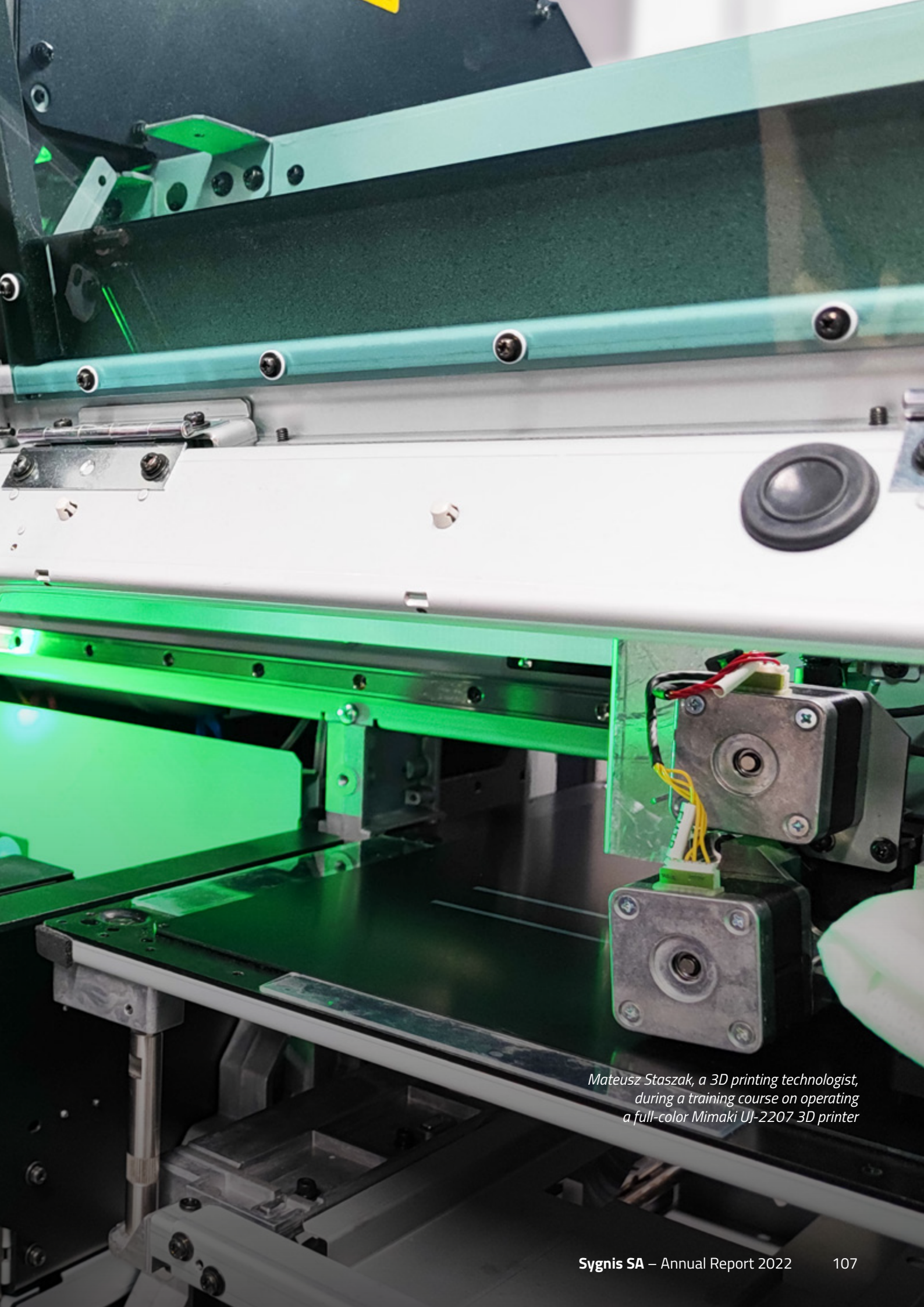
9.2 List of all events in 2022

January	**01.2022**	Exhibition at the Institute of Design in Kielce
	17.01	Andrew Burgs in the panel of experts receiving student projects from the subject "Intellectual Property and Entrepreneurship" at the Faculty of Physics of UW, Warsaw, Poland.
February	**7.02**	SpringFair, Birmingham
March	**23-25.03**	RemaDays, Warsaw
	25-26.03	Invest Cuffs, Cracow
April	**26-27.04**	KPT ScaleUP, Cracow
	27.04	Laser World of Photonics, Munich
May	**2 - 5.05**	**P**articipation in the official opening of the world's first GMP-class bioprinting laboratory, Goteborg
	12.05	Photonics and Fiber Optics Cluster meeting, Lublin
	12.05	Growth Through Innovation, Warsaw
	12.05	innoSHARE NETwork, Cracow
	14.05	Night of Museums, Warsaw
	14.05	Robotics Workshop for children from Ukraine, Warsaw
	16-18.05	PODIM Conference, Maribor
	17.05	CIC Skills 2.0 SkribiART, Warszawa
	18.05	Opening of the Superbet Rapid & Blitz Poland 2022 Supertournament, Warsaw
	17-19.05	Together We Are Strong: Support for Ukraine, Rapid TCT, Detroit
	20.05	1st International Photonic Job Fair at the Faculty of Physics, Warsaw University of Technology, Warsaw
	22.05	Donation of a chess set auctioned off as part of the GOCC auction to Superbet Rapid & Blitz Poland, Warsaw
	25.05	Central European BioForum 2022, Warsaw
	27.05	V4 Networking Event, Warsaw
	27-28.05	IV Ogólnopolska Konferencja IMPLANTY 2022, Gdańsk
	30.05-3.06	Targi ITM Industry Europe, Poznań
	30.05-2.06	Hannover Messe, Hannover
	30-31.05	Extracellular Vesicles in Immuno-Oncology, Warsaw
June	**2.06**	FESPA, Berlin
	2.06	Silesian Nano Cluster meeting, Cracow
	2.06	Reach4Biz, Warsaw
	2.06	UW Entrepreneur of the Year Gala, Warsaw
	2.06	Gathering #102 Creative Industries Awaken Your Child, Warsaw
	4.06	Warsaw Doctoral Student Ball, Warsaw
	7.06	Made in Poland 2022, Berlin
	9.06	Innovatorium - Łukasiewicz research network, Poznań
	10.06	Employer of Tomorrow Gala, Warsaw
	13.06	Second Birthday Party of CIC Warsaw, Warsaw
	15 – 19.06	BBGU, Warsaw
	19 – 22.06	EuroBioTech, Cracow
	15 – 18.06	Viva Technology, Paris
	21.06	Lecture at Gdansk University of Technology, Gdańsk

	24.06	Completion of the year of the Medical Post-secondary School No. 3 named after Dr. A. Krocin, Warsaw
	27.06	Termis, Cracow
	27-28.06	General Assembly of the Polish Photonics Technology Platform, Lublin
	29.06	World Urban Forum, Katowice
July	**3-8.07**	10th National Nanotechnology Conference, Cracow
	26.07	22nd New Horizons International Film Festival, Wrocław
August	**4-8.08**	IIJS PREMIERE SHOW 2022, Mumbai
	17.08	Symposium of Young Scientists Faculty of Physics, UW, Warsaw
	22-25.08	15th ISSRNS 2022, Przegorzały near Cracow
	24.08	Deep Tech Investor Day WSE, Warsaw
	26.08	Innovation Forum for Ukraine, Warsaw
September	**5.09**	PFR Pioneers School workshop, Warsaw
	6-8.09	XXXI Economic Forum "Europe facing new challenges", Karpacz
	6-9.09	MSPO Defense Fair, Kielce
	9-12.09	Megabit Bomb 2 Festival, Cracow
	12-14.09	Graphene and other 2D materials, Wrocław
	19-21.09	European Materials Research Society (E-MRS) Fall Meeting, Warsaw
	19-20.09	5th Scientific Conference - Rapid Prototyping 3D & 4D printing in engineering applications, Kielce
	28-29.09	European Research and Innovation Days 2022, online
October	**01.10**	Festival of Mathematics, Warsaw, Poland
	10-14.10	Gitex Global, Dubai
	13-16.10	Biomaterials Conference, Rytro
	13.10	Wrocław Tech Date #1, Wrocław
	18-19.10	Internano Poland 2022, Katowice
	19-21.10	POLECO trade fair, Poznań
	21-24.10	Dutch Design Week, Eindhoven
	26-27.10	PR Puls Biznesu Congress, Warsaw
November	**4.11**	Gala Finałowa Szkoła Pionierów PFR, Warszawa
	4-6.11	Poland 2.0 Summit, London
	8-9.11	Warsaw Industry Week, Warsaw
	14-19.11	Formnext 2022, Frankfurt am Main
	15-16.11	Deep Tech Summit, Warsaw
	16-17.11	Prototypes for Humanity, Dubai
	17.11	Gala Innowator Mazowsza, Warsaw
	17.11	CIC Thursday Gathering, Warsaw
	22.11	Startup Jump, Warsaw
	25.11	Biomedical applications of bioprinting, Poznań
	26.11	Wernisaż wystawy Strefa Debiutów, Warszawa
December	**7-8.12**	3W Congress, Warsaw
	7-8.12	Forum Rozwoju Mazowsza, Warsaw
	8.12	Międzynarodowe warsztaty z biodruku 3D, Wrocław
	9.12	TedxWarsawWomen, Warsaw
	14.12	Space Information Day, Warsaw

chapter 10:

About the company in detail



Mateusz Staszak, a 3D printing technologist, during a training course on operating a full-color Mimaki UJ-2207 3D printer

We function in the company as the additive technology taught us - we feel best in dispersion, remaining in constant communication with others

We specialize in specific areas of interest, and when we sit down to an interdisciplinary project, we use all the minds in the room. Everyone brings a unique perspective of looking at a given problem and a unique understanding of a particular issue.

This allows us to do more, better and faster.

In the following chapters, we will present profiles and areas of activity of individual, distinguished branches of the Company. We will describe their role in the Sygnis Group and present their projects from 2022.


SYGNIS
SYGNIS
BIO TECHNOLOGIES
SYGNIS
NANO TECHNOLOGIES
Apium
Heating

10.1 R&D Department

from left:
Kamil Kłosek – PLUMBO Project Leader
Joanna Wądołowska-Frej – SYGPAST Project Leader
Marcin Adamczyk, PhD, Eng. – Chief Technology Officer
Paweł Wiencław – SYGLASS Project Leader
Jakub Malinowski – SYGBIO Project Leader

The R&D department is currently the largest department of Sygnis SA

It consists of 50 specialists dealing with projects related to additive techniques, the development of modern materials, energy, optimization in the field of manufacturing technologies and more. The department is headed by Dr. Eng., employed in September 2022. Marcin Adamczyk: engineer, leader and manager with several years of experience gained in carrying out and running numerous R&D projects in the deeptech industry. The structure of the department also includes four Techleads - project managers, conducting research and development work as part of the company's operations. Each of the Techleads runs its own team consisting of specialists of various classes: electronics, foundry workers, materials scientists, constructors, chemists and physicists. Work in the R&D department requires creativity, innovation, unconventional thinking and the ability to solve complex problems, often on the borderline of various engineering and scientific fields.

The head office of the department is located on the campus of the exact sciences of the University of Warsaw. Within a radius of less than 1 km there are also laboratories of the Medical University of Warsaw, the Institute of Fundamental Technological Research of the Polish Academy of Sciences, the Institute of Experimental Biology. Nencki, the Institute of Biochemistry and Biophysics, or the International Institute of Molecular Biology. Such a location provides a wide range of opportunities for cooperation with scientific and research units, and also facilitates access to advanced laboratories and measurement infrastructure (participation of Sygnis SA as a partner in the CEPT II project).

The key function of the R&D department is prototyping new solutions in the field of additive and industrial technologies.

A significant advantage of Sygnis SA's R&D Department over similar departments in other companies on the Polish market is the fact that it has a comprehensive prototyping infrastructure on site. The machines used in the work on prototypes include, for example, a 5-axis machining center, 3-axis milling machines, lathes, a locksmith workshop with a welding and painting workshop, a foundry workshop, as well as a farm of 3D printers working in a wide range of technologies: FDM (in including printouts from high-performance polymers, such as PEEK), DLP, LCD, SLS, MJP, DIW, LTG, etc.) By combining extensive hardware facilities with a strong network with Polish scientists and research centers, it ensures extraordinary efficiency and speed in solving technological problems.

The R&D department is fully involved in the research and development of modern additive technologies, and its projects focus on improving processes, developing new materials, machines and solutions and innovations in this field. In 2022, a total of 24 R&D projects were carried out in the department, which is a significant contribution to the company's development strategy. The most important projects include: Syglass, Sygbio, Sygpast, Plumbo, Depo 3D and F-NIS.

All members of the R&D department have appropriate education and experience in working with the latest manufacturing technologies.

They work together and with other departments in the company to ensure high quality products and services. The R&D department is a key element in the company's development strategy. Through its involvement in innovative projects and the use of the latest technologies, this department contributes to building the competitive advantage of Sygnis SA on the Polish and European markets.

10.1 R&D Department

Projects with funding from EU funds

10 Projects Implemented::

4 R&D + 6 for internationalization

Constructing a multifunctional hybrid 3D printer with real-time quality control system

POIR.01.01.01-00-0438/20 (NCBR)
budget: **7 670 462,50 PLN**

New functional 3d printing materials for urological needs

TECHMATSTRATEG2/407770/2/NCBR/2020 (NCBR)
budget: **8 022 495,00 PLN**

Creating a biomaterial printing technology and constructing a 3D bioprinter for automated creation of bionic organs

POIR.01.01.01-00-0166/20 (NCBR)
budget: **9 895 190,81 PLN**

Development of a proprietary system for product photography that enables automatic digital imaging of products through a compact device using remote work

POIR.01.01.01-00-2007/20 (NCBR)
budget: **4 520 838,63 PLN**

1 Project we joined

3 Projects in the period of sustainability

7 Fairs we participated in as part of internationalization

Value of ongoing projects

34 023 994,03 PLN

Total funding

27 693 390,15 PLN

Unia Europejska Europejski Fundusz Rozwoju Regionalnego

Fundusze Europejskie Inteligentny Rozwój

Rzeczpospolita Polska

Learn more:
https://sygnis.pl/projekty/

5

Scientific units with which we cooperated within the consortium:

Politechnika Łódzka,
Politechnika Warszawska i Uniwersytet Mikołaja Kopernika w Toruniu,
Poznańskie Centrum Superkomputerowo-Sieciowe Instytutu Chemii Bioorganicznej PAN
Fundacja Badań i Rozwoju Nauki

12

Scientific units with which we cooperated in design or research:

Uniwersytet Szczeciński,
Uniwersytet Mikołaja Kopernika,
Uniwersytet im. Adama Mickiewicza,
Politechnika Warszawska,
Uniwersytet Warmińsko-Mazurski,
Politechnika Białostocka,
Uniwersytet Warszawski,
Warszawski Uniwersytet Medyczny,
Politechnika Wrocławska,
Uniwersytet Kardynała Stefana Wyszyńskiego
Politechnika Krakowska,
Unipress PAN

3

Intermediary institutions

NCBR Narodowe Centrum Badań i Rozwoju
PARP
URZĄD MARSZAŁKOWSKI WOJEWÓDZTWA POMORSKIEGO

SYGPAST – hybrid 3D printer for liquid materials

Sygpast project

Constructing a multifunctional hybrid 3D printer with a real-time quality control system.

Project summary

The main goal of the project is to develop a prototype of the SYGPAST hybrid 3D printer that enables real-time control of the manufacturing process.

The device will allow printing from liquid materials and thermoplastic filaments in a single process and will provide the user with open access to modify the printing parameters, thus allowing the use of proprietary materials.

The SYGPAST printer will find applications in the space industry (demanding components of satellites), aerospace (small turbine tooling), energy industry specialized seals), chemical and materials industry (both for validation of manufactured materials and production of specialized fixtures assisting in research), and wherever the maintenance of continuous operation of machines and their parts requires their efficient adaptation to regularly changing operating conditions (rearming of machine lines by manufacturing specialized adapters, holders and safety devices).

Project Result: Sygpast 3D printing technology

Thanks to the versatility of the Sygpast printer, we can obtain spatial objects with geometries that increase battery capacities, among other things, or allow the creation of multi-cell batteries with good sub-insulators between the individual sections.

A favorable event for the success of the project is that Sygnis has joined the CePT II consortium (which includes, among others, UW, WUM, Unipress, PW, IBB and others) within which the Cell Prototyping Laboratory is also being established. Interest in machines that enable research prototyping and subsequent manufacturing of target energy storage products has been confirmed by a letter of intent from the University of Warsaw, among others.

The development of energy storage capabilities is key to achieving EU climate indicators. Research and development of batteries is one of the key issues of mankind in the coming decades. Sygpast is an ideal device for this and in subsequent development iterations also for production.

Also in this project, we are interested in participating in the development of electrochemical cells, where changing material mixtures (conductive carriers) and insulators of individual sections (non-conductive carriers) will be used.

The space industry requires materials with a special matching of components due to the extreme loads they are subjected to (temperature, radiation, among others), as well as utility vs. mass (it is important that lifted elements achieve the maximum ratio: utility - mass). Hence, among other things, according to DARP specialists, next-generation spacecraft will largely use 3D printed ceramics in their construction. Also, representatives of the Polish space sector identify dedicated ceramics of any shape as among the most essential for the development of Polish satellites.

One of the key competitive advantages of the Sygpast printer is its control system, which provides manufacturing stability, as well as the ability to report errors and deviations (quality control), a prelude to quality certification capabilities. Sygpast is also a unique device that allows research and development activities in the scientific sector. Research teams are struggling to access machines with open parametric systems to check the performance of materials and admixtures in final molds. In terms of industrial machinery, there are advanced solutions for specific materials, however, they do not allow for free exploration and testing of new materials under controlled conditions. Sygnis customers from the Departments of Materials of the Warsaw University of Technology (PW), AGH, PWr, Nanomaterials Engineering, Institute of High Pressure of the Polish Academy of Sciences (PAN), CMPW PAN Zabrze, IEN, UAM and others are extremely interested in the possibilities of testing new flexible, silicon materials, as well as doped nanomaterials.

The final result of the project is a 3D printing technology with a system for real-time control (and real-time compensation) of printing parameters and a machine in its first iteration using the developed technology - SYGPAST_01.

Market size

The technology has applications in three basic areas:

- Creation of spatial structures from binary materials with fixed parameters for industry
- Creation of spatial structures from ceramic materials freely doped (depending on the application) for industry
- Application in the development of specialized materials in research groups (research gate machine)

A. Industrial standardization requires full repeatability of processes and control of conditions. Sygpast, thanks to its internal control with compensation and execution report, provides for a controlled production process with 3D printing. As a result, it can become part of production lines in demanding industries such as automotive, aerospace and aerospace. These can include gaskets with unusual geometries, specialty shoes, insulators for sensitive space electronics.

In Poland alone, about 1% of the 40 million pairs of shoes each year are specialty shoes with complex requirements. Printing non-standard solutions is cheaper than current multi-batch methods for unit production.

B. Processes for creating ceramic, or preceramic, objects are currently complex and costly. They are also essential for the creation of energy, radioactive and temperature insulators. Demand for such products is growing worldwide, including in the rapidly expanding space or energy industry. Sygpast makes it possible to create qualitatively new satellites (better matching of free-form insulators), or carrier-free components of energy storage systems, among others. Technologies for manufacturing ceramic objects with unusual geometries by means of 3D printing are sometimes the only option, and are about 20% cheaper when compared with traditional methods. This is an added advantage in terms of market entry.

C. During the „Future of Materials" lecture at the Formnext conference, it was reported that nearly 1,000 research teams are currently working on the development of resin, ceramic and other liquid materials in Europe alone. Enabling them to test new solutions is analogous to the way Cellink has made the BioX research-gate machine available to biotech teams (Cellink's increase in value in 4 years is over 900%). The analogies we have to this development path are that we are creating

a machine that democratizes the testing of difficult materials (relatively low price of the solution) and we have our own carrier substances (realized voucher for Innovation with universal ceramic carrier).

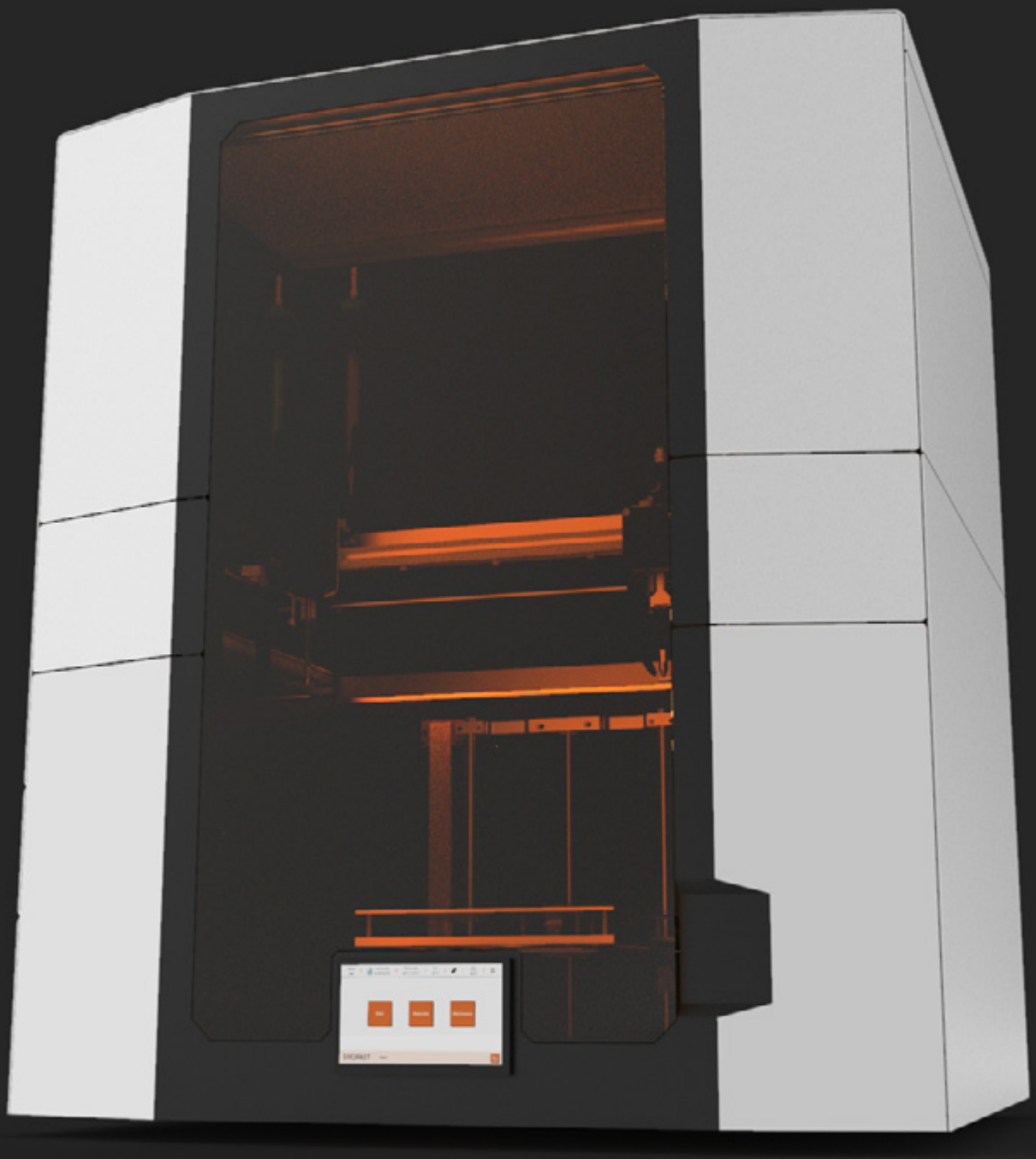
D. Development of energy storage, among other things, according to Bloomberg New Energy Finance (BNEF), by 2050, 50% of the world's production will come from renewable energy sources (up 40% from 2019st). Research work on batteries and energy storage is one of humanity's key issues in the coming decades, and Sygpast is an ideal tool for this work (in future iterations also for production). Energy storage facilities are key to achieving the energy transition.

E. The target markets for the solution under development have a total value of $50 billion to $80 billion (depending on estimates of the development of each branch).

Current value of the project

In the field of non-conductive carriers, we have completed the PARP Voucher for Innovation project (project value of about PLN 500 thousand). We implemented it together with the Energy Institute, the results of the research work were attached to the Sygpast project. The developed carrier wets a wide range of ceramic powders well, which allows universal use with different materials.

Research work worth PLN 7,670 thousand (carried out in a consortium of Sygnis SA (leader) and Poznan Supercomputing and Networking Center). The project was selected for funding by the National Research and Development Center, project number: POIR.01.01.01-00-0438/20, funding value of PLN 6206 thousand. The agreement between Sygnis SA and PSNC provides for exclusive licensing use of the machine's software.



** preliminary render of the SYGPAST machine, the international premiere of which will take place at Formnext 2023 in Frankfurt.*

PLUMBO – 3D printer for lead

Plumbo Project (from Esperanto: lead)

Development of a versatile tool for prototyping and serialization of power frames.

Streszczenie projektu

A universal tool, such as a dedicated 3D printer that processes materials such as lead, will allow the creation of frames and ultimately batteries with enhanced capabilities. Obtaining the ability to create any three-dimensional structures will translate into increased efficiency of use of cells created by this method, as well as increase their electrical capacity.

The technological adaptation of 3D printing, as well as the unusual materials in which Plumbo 3D will work, currently have no direct counterparts. Using the machine as a prototyping tool for new energy solutions will reduce the prototyping work of new solutions by 2-3 years, as well as provide opportunities previously unattainable (unusual geometries, unlimited by poured or milled molds).

In addition, the project aims to provide a tool for the development of lead-acid power generation. This is extremely important in terms of the strategic aspect of Poland's energy security.

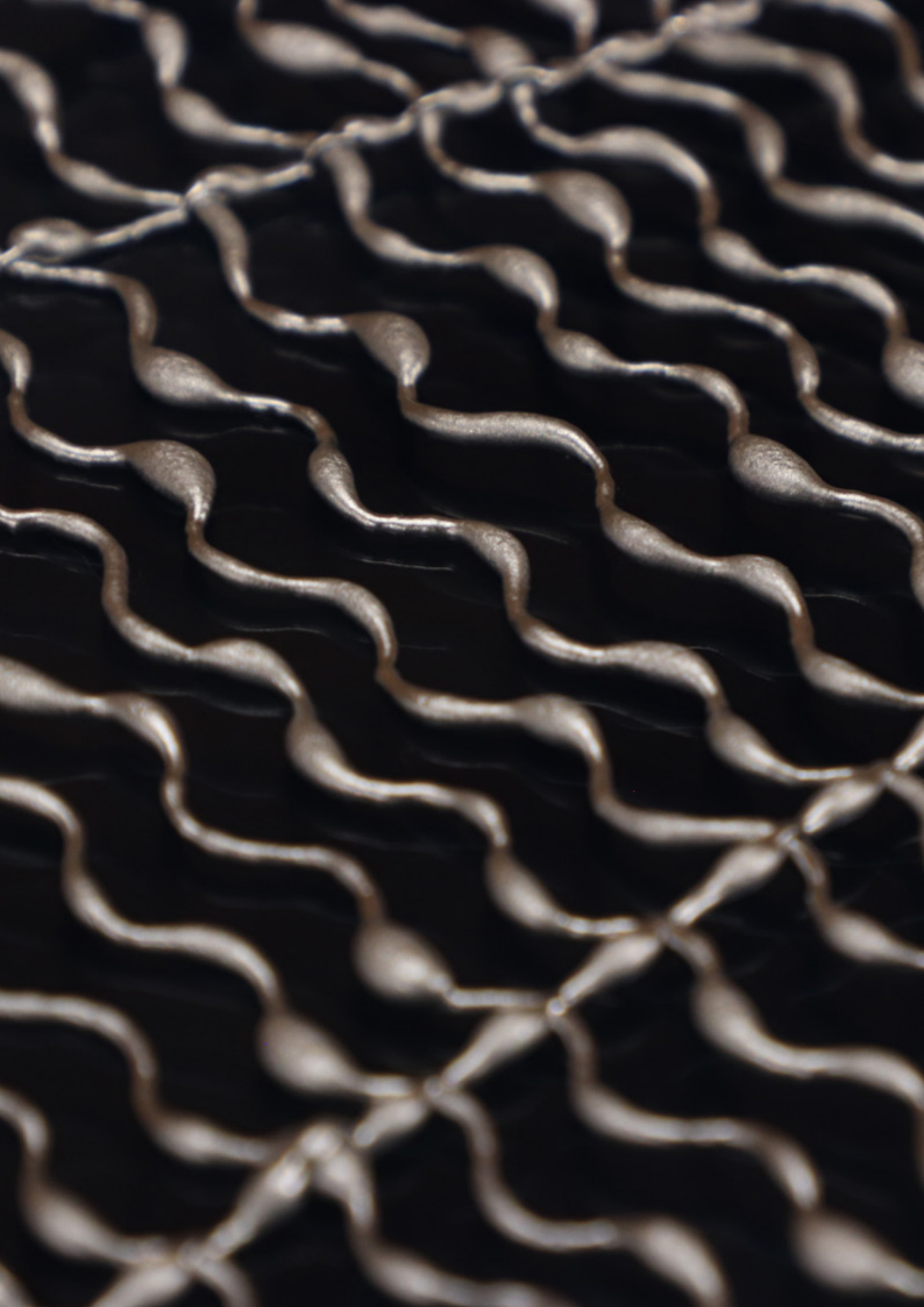
This is a technology that Poland can develop safely, as all the necessary raw materials are available locally, unlike lithium-ion technology.

Also, a post-processing machine will be developed for the main manufacturing device, ensuring the proper final properties of the products. In its entirety, the developed tool will be able to serve as modular components of a production line for manufacturing lead-acid cells. Multiplication of the equipment will allow the creation of an efficient cell factory.

- Competitive advantage/innovation
- Availability of new free form geometries
- Increased cell capacity through the use of new geometries
- Low cost and speed of prototyping of new solutions
- Ability to be encapsulated in small and low-cost manufacturing modules that can be scaled easily. Up to large manufacturing plants
- No equivalent in terms of lead generation tools.

Current status

The project is being continued and an industrial partner is currently being sought to implement a pilot solution.



SYGLASS – 3D printer for low-temperature glass

The technology of printing from low-temperature glass using the proprietary LTG 3DP method allows automation of many stages of production of nanostructured fiber optic preforms. The SYGLASS printer makes it possible to reduce the production process of a single optical fiber by a minimum of 14 times.

The world's leading universities are currently able to produce about 20 nanostructured preforms per year. Thanks to SYGLASS technology this number can be increased even to 180 pcs/year (using just one machine) while reducing costs.

The cost of making preforms, thanks to a significant reduction in the working time of special equipment and personnel have been reduced from about 50 thousand PLN to 20 thousand PLN, depending on the complexity of the fiber optic cable. By replacing the manual process with automatic 3D printing, we reduce the risk of errors and production delays.

The SYGLASS printer allows printing from any glass with a softening temperature of up to 700°C. This is a key advantage, since preforms of low-temperature glass are hard to come by, while research institutions need such products because of their unique properties. Components printed on SYGLASS have applications in the fields of photonics, cybersecurity and gradient optics.

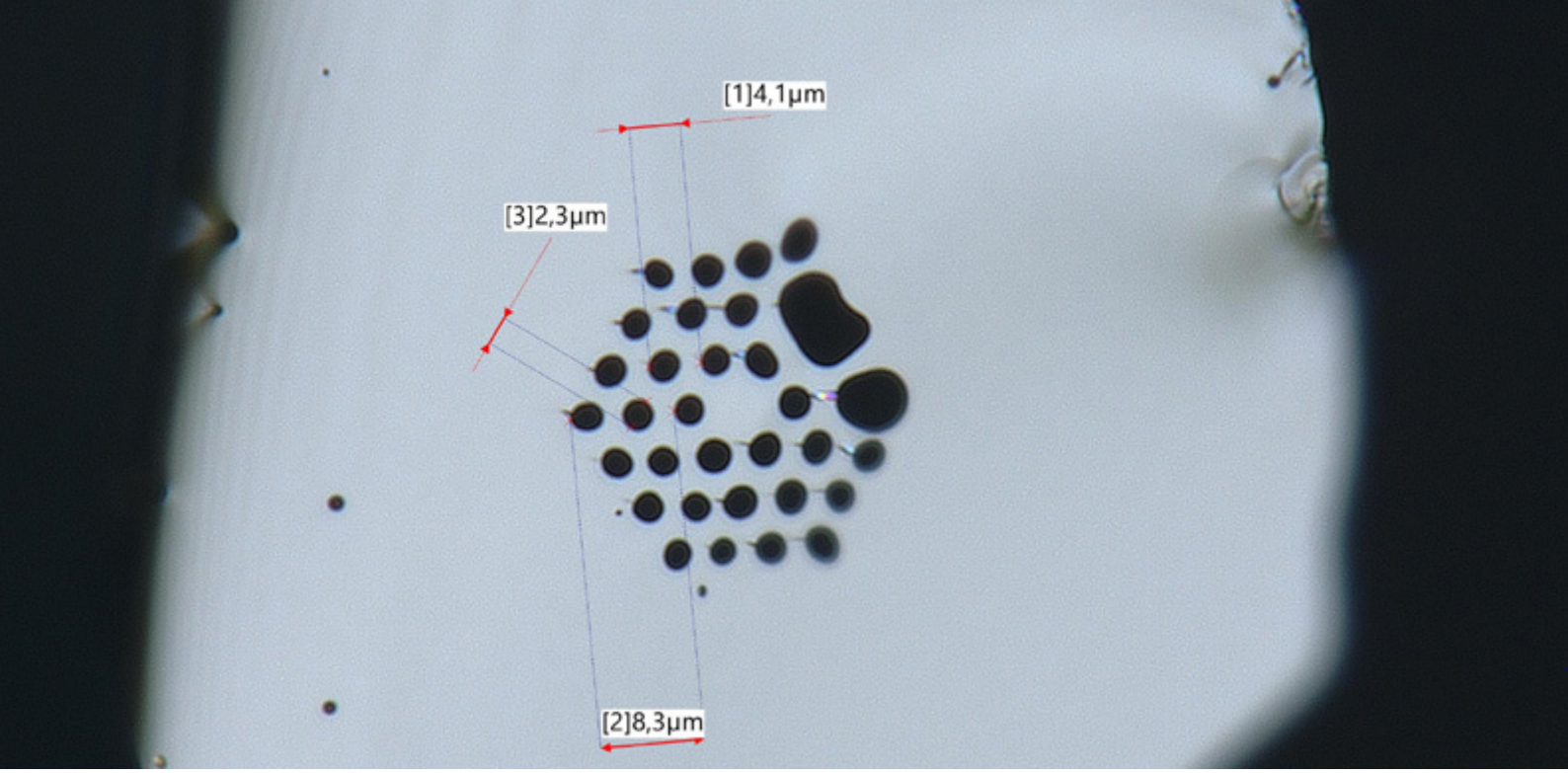
Unlike current glass 3D printing solutions, at SYGLASS we focus on the specific niche of printing fiber optic preforms. Currently, there are no other machines offering similar functionality. We are the only company that can print in the required size, from pure glass, and the resulting preforms do not require mechanical or thermal processing. Moreover, we offer printing with two types of glass (with different refractive indices). All the necessary production steps take place in one integrated process.

The development of low-temperature glass printing technology has opened up new markets. The demand for fiber optic preforms is dozens of times greater than production capacity, limiting the pace of global photonics development.

We do not offer yet another 3D printer. SYGLASS is an opportunity for more breakthroughs on a global scale allowing faster and more reliable data transfer, security, sensors with measurement spectra on a previously unavailable scale.

There is a huge surplus of theoretical work without the ability to validate and test.
The world's top universities and research institutions can only produce one or two preforms per month. We are responding to this need with a specific tool - SYGLASS.

Currently, we are custom printing single- and two-component glass preforms for special optical fibers such as photonic structures.



Our offer is to customize low-temperature glass 3D printing applications. Our target group includes research institutes, companies and universities involved in photonics, optics, cybersecurity and communications. We are also developing solutions for optical fiber companies and the military.

The SYGLASS technology in 2022 was presented at two international fairs - FORMNEXT (Frankfurt), GITEX (Dubai), as well as at the largest 3D printing trade fair in Poland - 3D Printing Days (Kielce). Each of the visits resulted in success in the form of new customers, partnerships or development directions.

The SYGLASS printer is also available for viewing at the Sygnis Prototyping Terrace at the Cambridge Innovation Centre in Warsaw. We work closely with scientific institutions to improve the product and promote the technology through articles in prestigious scientific journals. We work together with organizations that are members of the Photonics and Fiber Optics Cluster and the Polish Photonics Technology Platform in order to implement and promote SYGLASS.

We are in the process of filing patents that will secure our intellectual property.

The current printer has been evaluated at the TRL8 technology level - Demonstration of Final Version of Technology. We are producing prints with repeatable, user-defined properties. In 2022, we successfully established a technology platform on which we operate as a service to our Customers and Partners.

We also develop proprietary products based on preforms produced on the SYGLASS printer. These include a nanostructured gradient core, a fiber optic gradient optical vortex beam converter, volumetric lenses, an air-core preform for producing anti-resonant fibers, or a far-field camera using a hexagonal array of flat nanostructured lenses.

We plan to produce finished application products on Syglass_02 machines.

We are also seeking funding from EIC funds, among others.

We anticipate 40% revenue growth in the glass 3D printing market in the next few years.

This is supported by analysis in analogy with the development of 3D printing technologies for other materials.

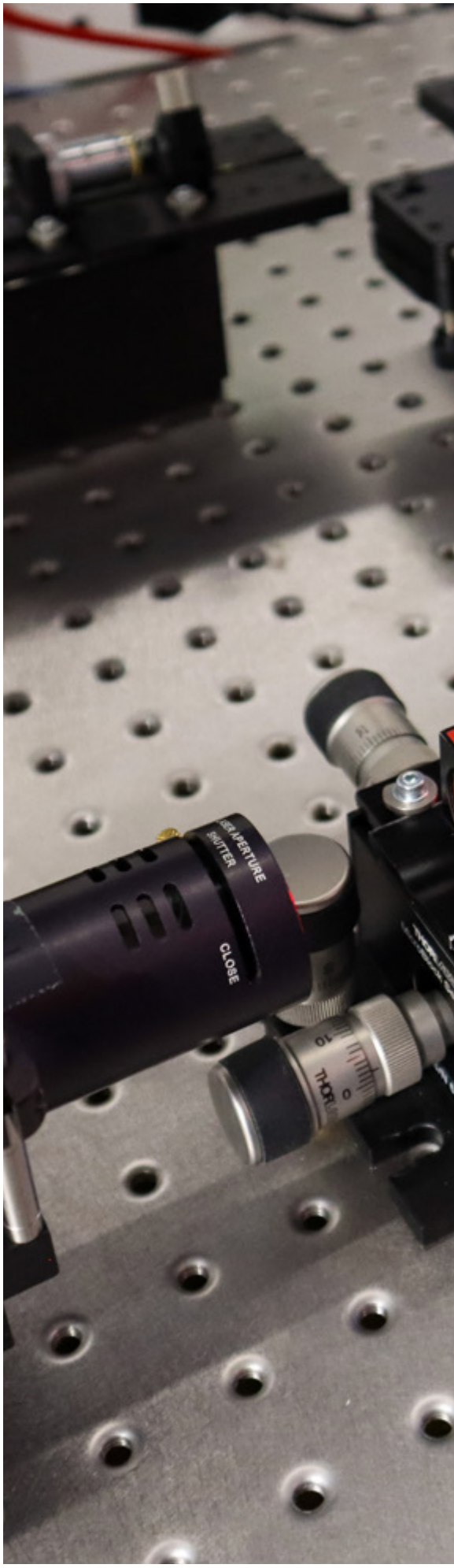
Success is also influenced by enablers such as responding to a specific market need and learning from competitors' mistakes, knowledge of future directions taken from global leading research groups, observable growth in the number of companies printing with glass, sales to the global market.

10.1 R&D Department

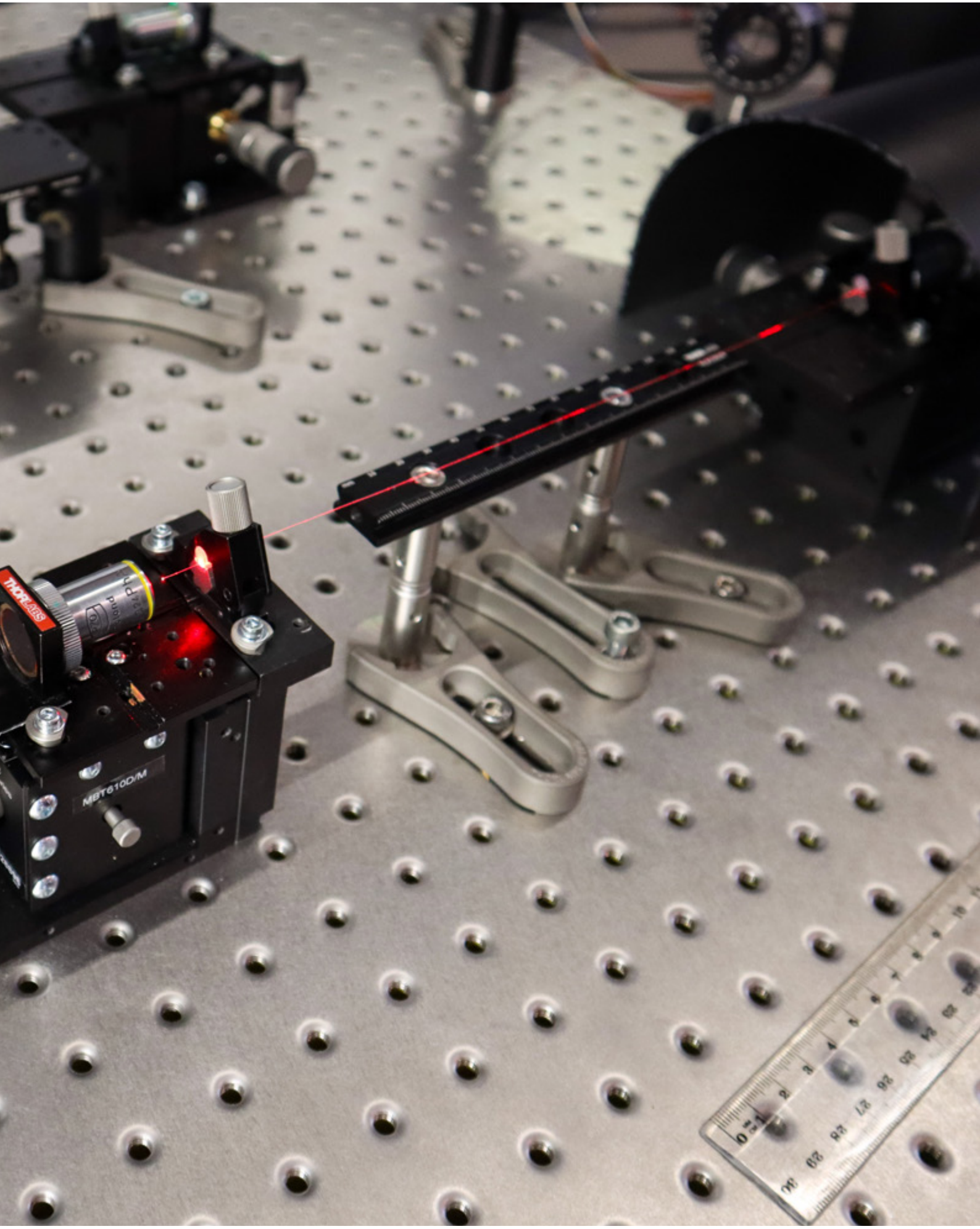
Our R&D projects

In the development plan for 2022-2024, we will focus on conducting industrial tests, improving the new version of the printer according to market demand, promoting proprietary products and applications, approving patents and achieving 20% of global revenue in the glass printing sector.

In 2024-2027, we will continue our growth. The goal is to become a leader in the global supply of machinery for the production of fiber optic preforms. To achieve this, we will build an advanced high-purity production hall and expand the range of machine functionality.



Optical system with nanostructured Optical fiber fabricated from a preform printed with proprietary LTG 3DP technology.


THORLABS
MBT610D/M

SYGBIO – 3D Bioprinter

Sygbio Project

Creating 3D printing technology from biomaterials and constructing a 3D bioprinter for the automated creation of bionic organs.

Project summary

The main goal of the project is to create a technology for printing from biomaterials and construct a 3D bioprinter for the automated creation of bionic organs. Our innovative 3D bioprinter is intended to be the world's first 3D bioprinter tailored for clinical applications - it is constructed with the end customer in mind, not just laboratory research. It will enable the creation of large constructs containing biological components such as bionic organs. The innovativeness of our 3D bioprinter on the scale of the Polish market and foreign markets is undeniable, because until now no 3D bioprinter for clinical applications with A-class purity and similarly large working volume has been developed.

What distinguishes our product from those currently available on the market is its integrated incubation chamber, acceleration of printing through the use of several heads, large volumes, and orientation towards the end customer - surgery and transplantation instead of the laboratory. Our cutting-edge product will simplify technically complex medical procedures and, above all, provide new opportunities in creating personalized organs for research and transplantation. Due to the involvement of end-users in the process of improving our product, new application areas for our technology are certain to emerge.

The main recipients of the implementation will be: medical and pharmaceutical companies, hospitals and clinics, R&D centers. The result of the project, i.e. the 3D bioprinter, is a novelty on the scale of the European market, but the technological solutions used and the key technical parameters will be an innovation on a global scale. The main objective of the project is to create the first Polish 3D bioprinter to be used in hospital facilities, including transplantation centers i.e. bioprinting of blood organs, or bioprinting of skin, and institutes and hospitals of ophthalmology, cardiology and orthopedics, e.g. bioprinting of corneas, heart valves and bones.

In addition, the 3D bioprinter will be used by pharmaceutical companies in preclinical research, e.g., evaluating toxicity and/or testing the effectiveness of potential drug products.

Market size

It should be noted here that the preclinical research market is about 12% of the drug research market, which reached a total of $54 billion in 2021 with annual growth of about 12%.

That is, the average growth in the value of the preclinical research market will be an estimated $6.5 billion per year. Printing tissues in multilayers or organoids, i.e., organs on a smaller scale, will allow for the imitation of the function of internal organs under physiological-like conditions, and will therefore make it possible to reduce animal testing (though not eliminate it). With current global trends, including the 3Rs principle, which states, among other things, to reduce the use of animals in preclinical and basic research, our bioprinter fits in with the bioethical approach to the problem.

In addition, the bioprinter will make it possible to print an organ on a smaller scale, a so-called „test organ," where, prior to the main process of bioprinting a functional organ, it will be possible to pre-assess the function, or to assess the risk of transplant rejection (e.g., by incubating the test organ with the recipient's blood and assessing the immune response).

This is a potential scenario for the future of clinical trials, when it will be an obligation as part of personalized therapy.

Current value of the project

Cost of research and development: PLN 9,895 thousand (including NCBiR funding of PLN 8,585 thousand, project no: POIR.01.01.01-00-0166/20).

DEPO 3D – 3D printing of glassy carbon directly from gas phase to solid phase

About the acquisition

3D printing of vitreous coal directly from the gas phase to the solid phase is a technology we purchased as intellectual and legal value from a trio of founders at the end of September 2022. The transaction amount was 330,000 pln gross.

Shortly thereafter, we formed an internal research team, which, with the support of the founders, is further developing the technology. We see great potential in it, which, combined with the technological and scientific competence of Sygnis' current R&D team, outlines very good growth prospects.

As the Board of Directors, we have diagnosed that the Company's area of focus at the strategic level should be the conductor and semiconductor sector. This is due to the geopolitical necessity of the dynamic development of these industries in Europe and the United States. The result of this situation is likely to be increased investment in these areas. As Sygnis SA, we have a technology that meets the needs of the aforementioned industries, while at the same time allowing us to quickly adapt to current demand.

This 3D printing technology will be developed in three primary application areas:

- Hydrogen cells
- Machining tools
- Biomaterials and electrodes.

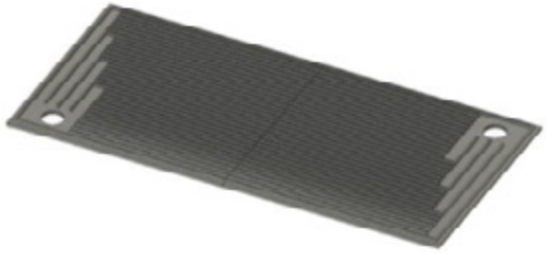
Technology development outlook

At the operational level, we plan to operate analogously to the development and commercialization process of Syglass technology. That is, we intend to create and industrialize machines within our organization to then, through them, produce components for end customers. In other words, we would provide middle links in value chains, such as bipolar plates for hydrogen fuel cells. To illustrate the potential application of this technology, just imagine the possibility of printing non-corrosive connectors made of carbon on metallic foil. Using them in electric cells would mean a much faster charging process for, say, a car.

The same goes for Syglass technology - keeping the machinery in-house and creating a technology platform to explore previously inaccessible deployment directions. It's a secure position that allows the company to grow well, due to contractual stability and long-term cooperation with customers.

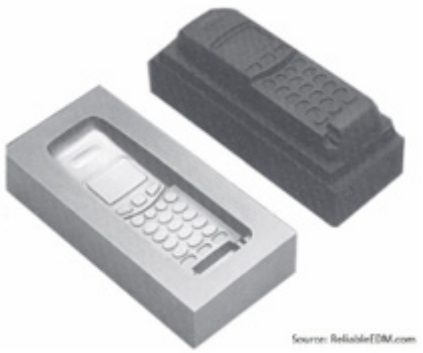
Bipolar plates for hydrogen fuel cells

- Using carbon printing, lighter, more durable and more efficient fuel cells can be achieved.
- Current technologies based on stainless steel and graphite are difficult to process or give low cell life.
- CAGR 5&% 2020-2030, Market size $4.4 Bn USD 2030.
- Mid-cell application in the value chain.



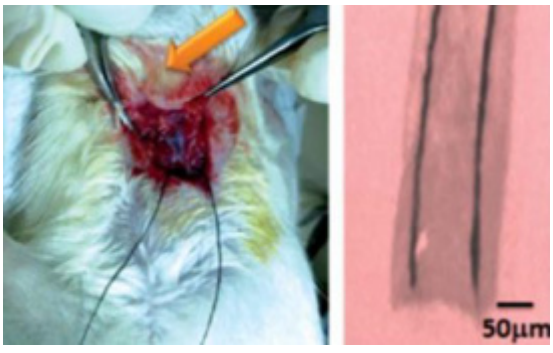
Electrodes for EDM (Electro Discharge Machining).

- Carbon printing is also an alternative method of making electrodes from carbon, which will not only create electrodes with more complex shapes, but also repair worn-out electrodes.
- Market value: $440 bn in 2030 (up from $212 bn in 2020).
- Mid-link application in the value chain .



Biomaterials and biocompatible electrodes

- Pyrolytic carbon is a robust material that is biocompatible with tissues.
- It is used to manufacture orthopedic implants.
- Carbon electrodes without additional modifications are suitable for cell stimulation and neurotransmitter detection.
- The basis for making the final product.



MATURO – breakthrough solutions for urology

The goal of the project is to build a 3D bioprinter that, together with the developed biotouch, will allow the production of 3D prints for reconstructive treatment of urethral defects in children and adults.

The main reason for undertaking research on a material to introduce such a solution in urology is the scale of the problem and the almost complete lack of implants to reconstruct the natural urethra. Spermatorrhea is the most common defect of the genital tract in boys and occurs in 1/200 male newborns. In adults, 1/600 men require urethral surgical intervention. Among men over the age of 55, the number of potential patients is even increasing due to the commonly used endoscopic treatment of prostatic hypertrophy, which can result in narrowing of the urethral lumen. Currently, there are no materials on the market that meet the specific requirements of the urinary system for use as an „artificial" urethra.

Repair procedures in the urethral area are performed using the patient's own tissues, for example: foreskin, penile skin, mucous membrane of the oral vestibule. Unfortunately, all of these procedures carry a high risk of complications, which can lead to complications and the need to create a suprapubic urinary diversion. Therefore, it is extremely important to develop a material that could be used in this type of repair procedure. This would, in the future, provide an opportunity to produce more complex organs, i.e., a ureter or bladder.

In parallel with the work related to the development of new materials, efforts are underway to build a multi-head 3D bioprinter, which makes it possible to produce a urethra composed of three different sheaths during a single process. Each sheath is a different material performing a well-defined function, both biological and mechanical.

The final product will give doctors new options in the future for treating urethral defects and injuries. The amount of material necessary for the reconstruction of the urethra will then be unlimited, which is a very big problem in the surgical techniques used today when taking native material (from the patient). The internal structure of the urethra will prevent the deposition of a bacterial film on it, which prevents the use of synthetic materials to permanently expand the lumen of the narrowed urethra.

With the new technology, patients will get the chance to have a better standard of living and reduce the use of catheters or stoma bags for urine collection.

The project is being carried out in consortium with: Lodz University of Technology (Leader, team led by Dorota Bociąga, MD, PhD),

the Department of Pediatric Surgery and Urology of the J. Korczak Pediatric Center in Lodz (group led by Marek Krakós, MD, PhD), Warsaw University of Technology (team led by prof. Wojciech Święszkowski of the Department of Materials Engineering), the Nicolaus Copernicus University in Toruń (Department of Chemistry and Department of Urology Collegium Medicum), the Prof. Zbigniew Religious Cardiac Surgery Development Foundation in Zabrze (Bioengineering Laboratory of the Heart Prosthesis Institute). Funding for the ongoing research of more than PLN 8 million was granted by the NCBiR under the TECHMATSTRATEG program. The project is divided into two phases: research (comprising 7 tasks) and the phase of preparation for implementation.

Learn more:

https://blog.p.lodz.pl/index.php/nauka-i-badania/politechnika-lodzka-w-projekcie-maturo-3d

MATURO consortium members

Source: https://www.facebook.com/dorota.bo.3/posts/pfbid02QcxLvVYoRbJAQT3Syw7boPs9E7EuhzKxDTXmdBuTXgLDm1gaSGo83iQkyE3PRyZhl

10.2 Sales Department

The sales department of Sygnis SA is a well-coordinated team with the highest quality of customer service.

from left:
Maciej Brodecki, Bartłomiej Jarkiewicz, Kacper Krężelok, Izabela Łęgowska, Stanisław Gołębiewski, Beata Drabik, Patrycja Adamczuk, Karolina Sobeczek, Giorgi Tchutchulashvili, Mateusz Lenart, Aleksander Hyz, Robert Kozłowski

10.2 Sales Department

The sales department of Sygnis SA is a well-coordinated team with the highest quality of customer service.

Sales department of Sygnis SA is a well-coordinated team that has been improving sales skills for years, ensuring the highest quality of customer service and efficient participation in public procurement. Within the sales department, there are smaller teams of specialists in specific fields. These teams deal with various industries such as a segment of research equipment, the education sector or online sales.

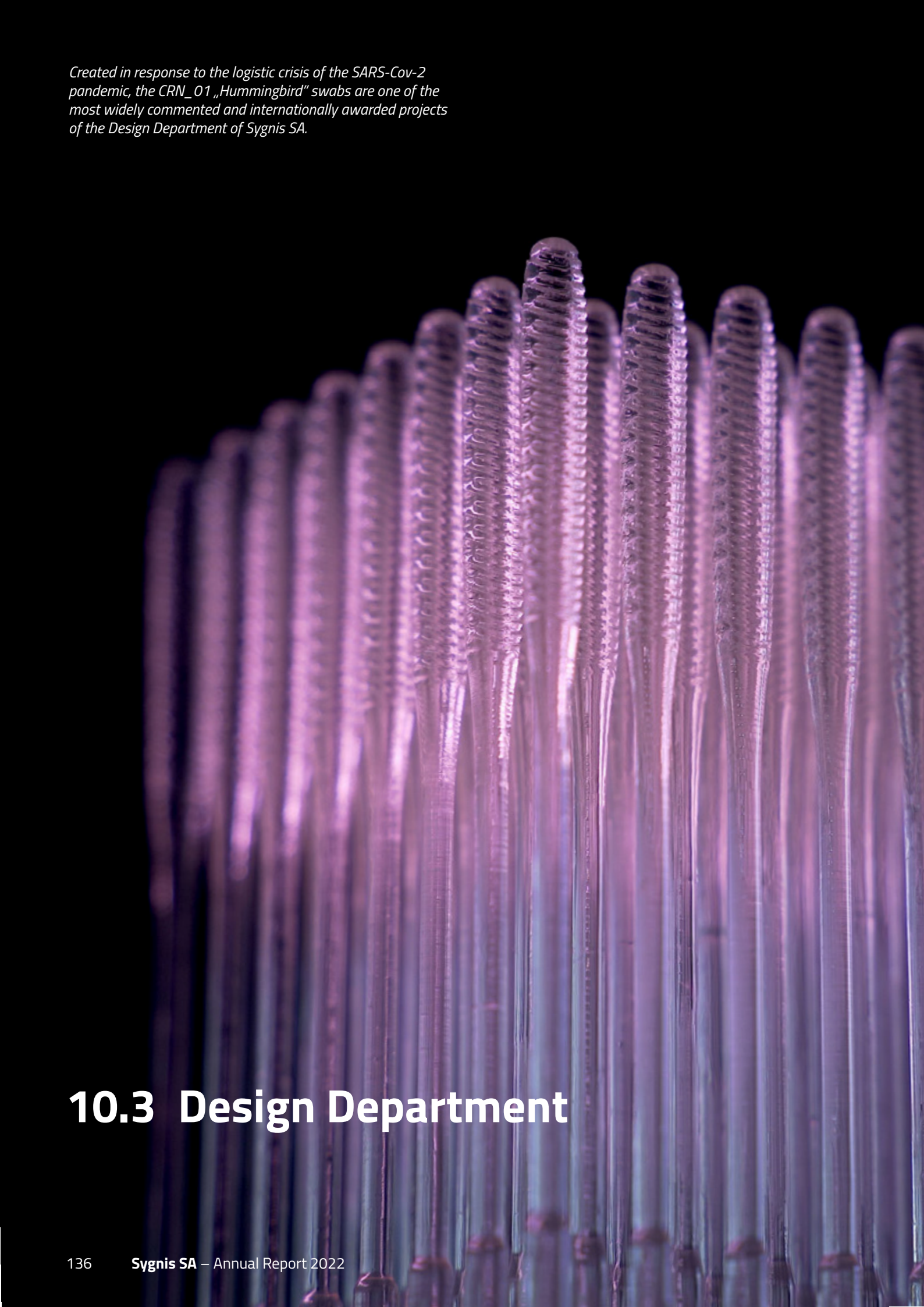
We operate simultaneously in two directions:

- We look for the best solutions from abroad, import them to Poland and equip schools, research institutes and enterprises with them;
- Our products are exported globally, thanks to an extensive network of Authorized Distributors and Agents in many countries in Europe and around the world.

We are constantly working on expanding our product portfolio. We are proud of the machines we offer. They are among the best in their class. Cooperation with leading global companies allows us to quickly adapt solutions to the dynamically changing market and the highest requirements of our clients.

The experts of the Sygnis SA Sales Department are not only sellers, but also talented animators and charismatic trainers. The photo shows Mateusz Lenart, Business Development Manager, introducing the Warsaw customers visiting the Cambridge Innovation Center to the world of 3D printing.

Created in response to the logistic crisis of the SARS-Cov-2 pandemic, the CRN_01 „Hummingbird" swabs are one of the most widely commented and internationally awarded projects of the Design Department of Sygnis SA.



10.3 Design Department

As the Design Department of Sygnis we have been undertaking all kinds of design challenges for years.

Including the following report :)

– Maciej Głowacki

Chief Design Officer Sygnis SA

From the development of casings and ergonomics of specialized laboratory equipment to interior design elements or UX designs of software and machine user interfaces – the Sygnis Design Department has been undertaking all kinds of design challenges for years. We have completed dozens of projects, both individual objects on special order and serially or mass-produced solutions. Design is our passion, in which we constantly strive for perfection. The Sygnis Design Department was created and is run by Maciej Głowacki, the Company's Chief Designer, who has been a member of the team since 2014, almost from the very beginning of the company's existence. For him, design is a combination of empathy and precision of reasoning - a tool for understanding and solving users' problems.

Our portfolio includes projects for the Polish Armed Forces, the University of Warsaw, Ikea, Displate, Bacardi and Johnson Electric. We are winners of Polish and international design competitions, including: 2022 Prototypes for Humanity Dubai, 2022 Make Me!, 2022 James Dyson Award, 2022 Agrafa, Design32 2022, Main Award for product at the 13th Days of 3D Printing 2021, 2017 Glassberries Design Award, 2017 Siemens Future Living Award and 2017 Plastpol Award.

Many years of experience, knowledge of the broad context of contemporary design trends, as well as close cooperation with scientists, engineers, craftsmen and jewelers add up to numerous layers of practical knowledge possessed by the Sygnis Design Department. Knowledge resulting in well-thought-out, cost-optimized and visually attractive projects.

We create projects for almost any manufacturing technology, according to the needs of our clients: injection molding, vacuum casting, CNC machining, 3D FDM printing, SLS, SLA, DLP, DMLS, 3D bioprinting. We also offer many types of craft processing. We work in metal, plastics, wood, ceramics and glass. In addition, close cooperation with scientists and research units gives us access to many unique materials and manufacturing techniques as well as the know-how necessary to implement even the most unusual projects.

Design awards in 2022

MakeMe! 2022
16th Łódź Design Festival RE:GENERACJA

CRN_01 "Hummingbird" swabs project
12 – 22.05.2022, Łódź

Make Me! is an international design competition organized since 2008 as part of the Łódź Design Festival – one of the leading design festivals in Poland.

Our CRN_01 "Hummingbird" swabs took second place in the 2022 competition. The jury appreciated the environmental and innovative aspects of the project.

In addition, the swabs were shown to a wider audience during the post-competition exhibition lasting throughout the festival.

Dutch Design Week 2022

CRN_01 "Hummingbird" swabs project
22 – 29.10.2022, Eindhoven

Dutch Design Week is one of Europe's largest design events. Every year, more than three hundred thousand visitors from all over the world come to Eindhoven for this festival.

As Sygnis, we had the pleasure of presenting our CRN_01 "Hummingbird" swab project to the audience in the inspiring space of BioArt Laboratories, and our chief designer, Maciej Głowacki, performed during the official Opening Gala of the festival.

Prototypes for Humanity

3D printed tourniquets project

16 – 17.11.2022, Dubai

Prototypes for Humanity is an international competition that rewards design innovations with a real chance to change the world for the better.

In November, as finalists of this competition, we were invited to Dubai to present our project of 3D printed tourniquets. We created the project as part of our commitment to help Ukrainians fighting for their freedom.

C-IDEA Design Award 2022

3D printed tourniquets project

12.2022 (Final Gala will be held in Australia, TBA)

Every year, the C-Idea competition selects the most innovative and visionary projects in the field of industrial design, architecture and graphic design from around the world.

We received the prestigious C-IDEA Golden Award | for our design of 3D printed tourniquets.

Adam Zaorski, 3D Printing Specialist, assembling the Idea 3W statuettes

10.4 Made by Sygnis

Made by Sygnis is the result of close cooperation between the Production, Design and R&D Departments.

Thanks to our shared knowledge, we can create even the most amazing projects.

– Piotr Piskorski

Head of Production Sygnis SA

In September 2022, we launched a website dedicated to our service activity - https://made.sygnis.pl/. Although this digital space dedicated to our services has only just been created, at Sygnis we have been dealing with various projects using 3D printing technology since the Company's beginnings.

Our projects covered a wide spectrum in the third quarter of 2022 – from 3D printing of simple illuminated advertising letters, through various series of prototype test prints, to innovative sets of steel swivel holders for SEM microscopes. Projects carried out as part of Made by Sygnis respond to a wide range of needs of our clients.

A recurring challenge in many of our service projects is the multi-stage prototyping process. It is necessary to know the specifics of the client's industry and the appropriate prototyping technologies, accompanied by the ability to create 3D models and visualizations, as well as to later adapt the project for serial or mass production.

The implementation of subsequent projects is significantly facilitated by the synergy between the Technical, Design, Research and Development departments and the specialized Lab Equipment Department. Thanks to well-coordinated communication between departments, we are able to quickly and precisely verify any emerging problems and optimize processes in our manufacturing projects. We create interdisciplinary teams within the company structure, focused on the implementation of specific projects and Made service goals.

Learn more:
https://made.sygnis.pl

SYGNIS Tourniquet – 3D printed & combat-verified

Need

War always means shortages of goods and broken supply chains. Tourniquets are medical equipment used directly to save lives. An effective, well-placed tourniquet completely cuts off the blood supply to the injured limb, significantly reducing the risk of death on the battlefield. The demand for them was intensively reported by the Ukrainian side: both the media and our contacts in Ukraine.

The offensive of 3D printed tourniquets sent to Ukraine, mostly non-functional and of very low quality, resulted in general skepticism of paramedics and the Territorial Defense Forces to the use of 3D printing. Thus, we decided to thoroughly analyze the production process and mechanics of certified tourniquets in order to create our own, fully tested, unique proposal. While working on the project, we were guided by a sense of responsibility. Tourniquets save lives, which is why we subjected the project to rigorous testing and thorough verification by medical and military specialists.

Our Answer

Our solution was created in consultation with combat-experienced Polish and Ukrainian paramedics, IRCC field medics, TCCC instructors, as well as the team of prof. Robert Przekop from the Adam Mickiewicz University in Poznań – specialists in the field of materials science (Research Center for 3D Printing and Composite Materials). The final version of the design has undergone rigorous testing in their lab. Then the samples were sent to the front for testing in combat conditions.

Our tourniquet works. As of early 2023, more than 1,700 of them have been sent to Ukraine.

We know of at least 3 confirmed human lives saved in the Kherson region thanks to our 3D prints.

Design for real support

Design and production are 100% non-profit. 3D models and instructions for their assembly and preparation can be downloaded for free here: https://techagainsttanks.com/modele/opaska-uciskowa-staza/

Slava Ukraini!

Link to the project page:
https://www.behance.net/gallery/157749951/SYGNIS-Tourniquet-open-source-combat-verified

Grandmaster Jan Krzysztof Duda's unique chess set for the 30th Finale of the Great Orchestra of Christmas Charity

auctioned for: **10 200 PLN**

On the occasion of the 30th Finale of the Great Orchestra of Christmas Charity, we prepared a unique project for their charity auction! For the best Polish chess player, grandmaster Jan Krzysztof Duda, we have designed and created a unique 3d printed set of chess. This is the only chess set in the world dedicated to the young Polish grandmaster. On each of the figures there is a record about a breakthrough moment in the career of Jan-Krzysztof Duda. They commemorate the achievements of the Polish genius so far, crowned with winning the World Cup in August 2021.

Openwork chess figures were made in the SLS technology from two types of polyamide powder, commonly used for the production of parts for the aviation and automotive industries. The design was complemented by metal weights and 3D prints in DLP technology, which allowed for precise printout of records of the Grandmaster's triumphs.

The 23-year-old Jan-Krzysztof Duda is currently the most outstanding Polish chess player, winner of the World Cup, the current European champion and world runner-up in blitz chess, the winner of the „Ace of Sport 2021" plebiscite organized by Interia and the winner of over a hundred national and international tournaments.

Link to the project page:
https://www.behance.net/gallery/136287277/Grandmaster-Dudas-3D-printed-chess-set

IDEA 3W statuettes for Bank Gospodarstwa Krajowego

The 3W Project: water-hydrogen-carbon (polish: Woda-Wodór-Węgiel) is a new initiative of Bank Gospodarstwa Krajowego. The aim of the project is to support the world of science and business in the development of modern technologies used in industry, energy and medicine.

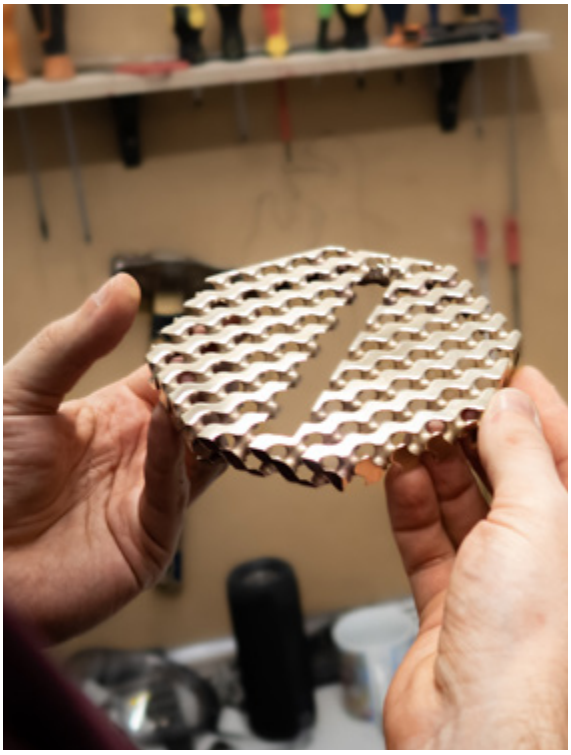
Three resources – water, hydrogen and coal – properly used will change the Polish economy into a more innovative and competitive one. 3W is a long-term project aimed at activating society, business, the world of science and the state administration. 3W means activities for the sustainable development of the economy and society.

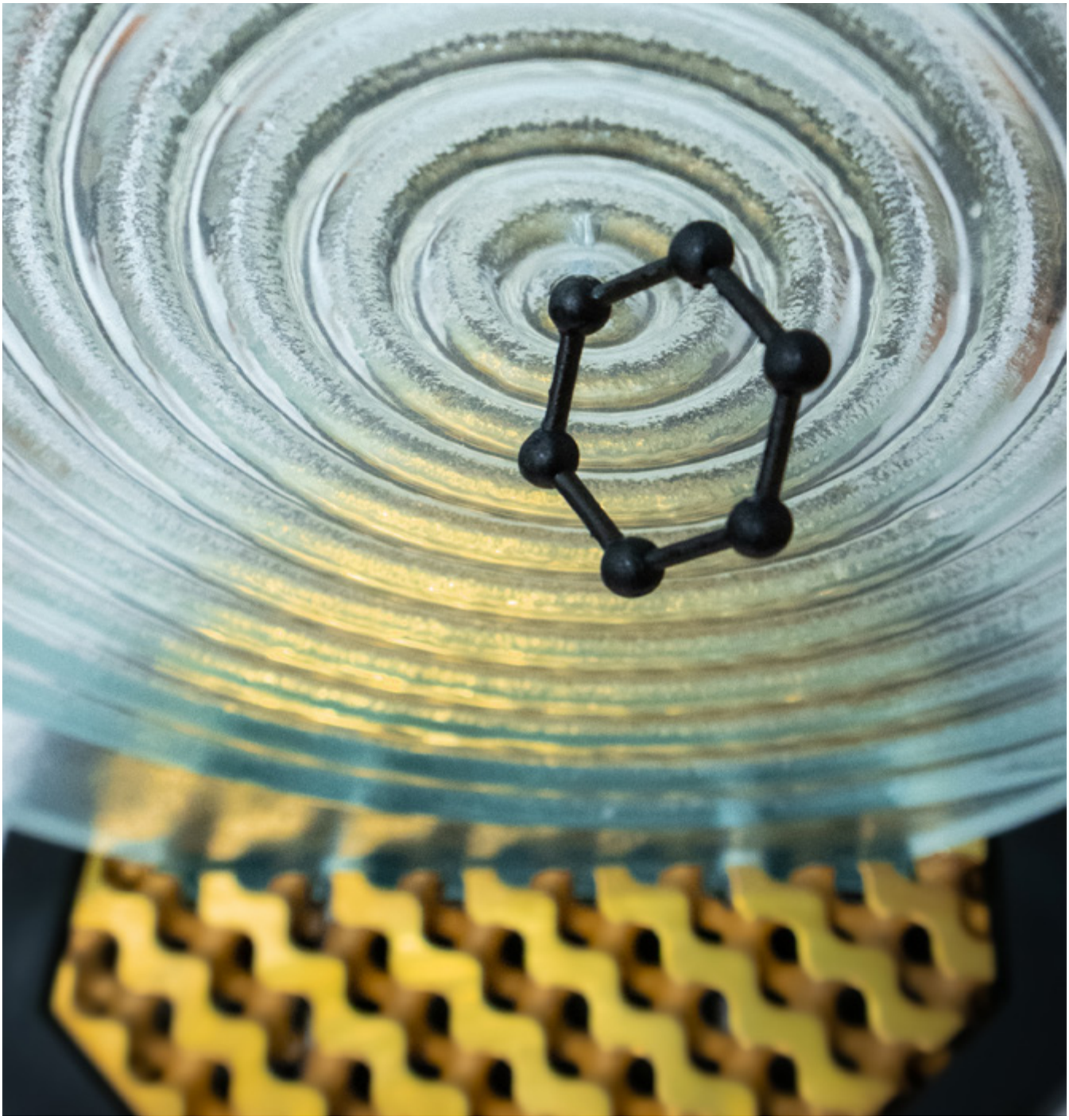
The IDEA 3W statuette, prepared on the occasion of the 2nd 3W Congress held in Warsaw, is an interpretation of the impact of coal and hydrogen on the world around us and the near future. Scientific discoveries related to these elements are inextricably linked to impact and belong to the disruptive innovations.

The IDEA 3W statuette consists of three 3W pillars:

- Water: represented by an undulating sheet of glass,
- Carbon: a wave-making molecule, 3D printed,
- Hydrogen: 3D printed base made of graphene-based material, refers to the structures used in hydrogen cells.

We made a total of 9 statuettes, 3 awards for 3 categories of the Idea 3W: Science + Business + Public Administration. In just a month, we managed to realize: matrices for forming glass panes and the panes themselves, 3D prints from casting wax on the WaxJet printer, bronze and silver castings with gilding, a number of prints in other technologies and full assembly of final objects.





We design and manufacture. Thanks to the use of new manufacturing technologies, we deliver the highest quality to our clients and partners

Ambient Light for Displate

A mass-produced backlight system for metal posters that are the hallmark of our partners at Displate.

The project included designing a housing that enables assembly of electronic components along with a wall mounting system. It was project was prototyped both dimensionally and conceptually on 3D prints in FDM technology. In addition, apart from verification, we prepared fine-finished 3D printed models simulating those obtained from injection molding technology. After the prototyping stage, we went through modifications of the project so that mass production in injection molding technology could be started.

Glow for Displate

This project consisted of designing a model of a frame illuminating metal posters by Displate. The difference in relation to the Ambient Light project was the way of lighting, in this case from the front, and the fixing of the poster along the outer contour. In addition, the posters were illuminated with LED UV, using the full potential of the production technology of Displate posters.

The implementation of the project included the design of an electronic system that detects a person in front of the device and activates the LEDs for a certain period of time. The challenge in the design was both the size of the element and their integration with electronics.

*The project before final implementation remains classified at Displate's request.

Voice of Poland – cyclical project

In the area of Made by Sygnis' activities, there are also cyclical projects. One of such projects are the statuettes of the nationwide talent show Voice of Poland for Rochstar, produced for the fifth year in a row.

The models of the statuettes are printed and then subjected to post-processing to be finally covered with chrome and assembled with a plate identifying the category of the winner.

Every year, for five years, we have been realizing the Voice of Poland Kids, Senior and the standard Voice of Poland statuettes.

22nd International Film Festival "New Horizons" – Sygnis SA as sponsor of the Festival and contractor of large format decorations

MADE by Sygnis projects are not limited to 3D printing. The project, which we carried out for the 22nd "New Horizons" International Film Festival, consisted of production of 17 sets of „swallows" cut out of sheet plastic. The sets consisted of three size versions of 75 - 100 - 150 cm and were adapted to be hung from the ceiling and stored for future projects in an appropriate packaging. In addition, we have prepared small swallows in the form of key chains for festival participants.

Project ERNA

As part of our cooperation with the Warsaw Zoo, we are 3D scanning the bones of the late elephantess Erna to make a monumental 1:1 3D print.

For next year we are planning extensive marketing and promotional campaigns related to the protection of endangered species and the development of new technologies.

At the moment, we have managed to scan almost all the bones of the elephant.

Learn more:
www.projekterna.pl/en

The „Little Amber" project – combining various 3D printing technologies

Our capabilities also include combining 3D printing technologies to obtain a finished product. An example of such an approach is the design of the „Little Amber" ring. The design began with the desire to test the possibility of producing artificial amber on our Mimaki 3DUJ-2207 3D printer.

After promising tests, we have prepared a model of a sea jewel with a ship model sunk inside, with full color detail reproduction. The model was then made on a Mimaki 3DUJ-2207 printer and polished to obtain the appropriate transparency.

Using the MultiJet technology, we made a frame that holds the stone. Its development began with dimensional tests on quick prints from light-curing resins.

During our work on the project, Patrycja Adamczuk, who runs our Sales Department, became interested in this piece of jewelry, which is why we adjusted the size to her finger and took special care of the wearing comfort.

After necessary verifications, using the FlashForge WaxJet 400 machine, we made the final print from pure casting wax which we used to make the silver casting. A bit of jewelery processing and voila - you can admire the final effect at our fair stands, usually on Patrycja's hand.

Cartridge for printing from pastes and semi-liquid materials

We designed and CNC-milled a new cartridge model for a specialized 3D printing machine for pastes and semi-liquid materials. The task of the cartridge was to enable additional heating of printed materials to temperatures over 100oC, which significantly increases the functionality of the device and the range of materials that can be used. The key to the project was a high-class surface finish and adaptation to the existing machine system.

Modification of the build platform and resin tank of the Hunter DLP 3D printer

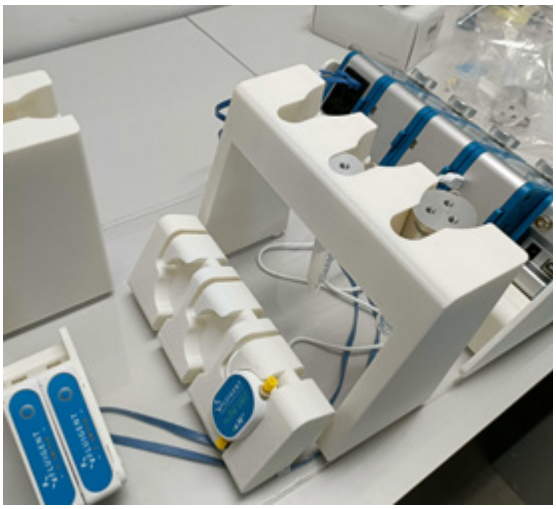
Another project based on resin printing machines was the adjustment of the resin tank of the Hunter DLP 3D printer for one of the laboratories of the Warsaw University of Technology. In the case of specialty resins, our customers very often do not have the possibility to fill a full resin tank due to high costs or experimental nature of the materials.

Therefore, we often make special adapters that reduce the working area while maintaining the full functionality of the machines. For the described implementation, it was necessary to ensure high chemical resistance and resistance to UV radiation. After testing a proper material was chosen for the insert limiting the tank.

Microfluidic system

An example of both combining technologies in the manufacturing process and adapting devices to the customer's needs was the creation of a complete system consisting of Fluigent microfluidic elements and personalized holders and stands. This approach made it possible to optimize the emulsion generation process by facilitating the use of specific controllers and sensors and by limiting the space required to work with the system.

As part of a similar project, a microfluidic system was prepared for encapsulation of single cells and observation of the process under an accompanying microscope.



Serial production Made by Sygnis

Made by Sygnis services also include serial production. Two projects that we carry out cyclically every month are holders and cable clips. The models are adapted to the customer's needs depending on the number of cables used and their thickness. Additional modifiable parameters are color and surface finish. In the third quarter of 2022, we made over 600 pieces of various cable holders and about 600 pieces of clips. In the above applications, the most common materials we work with are thermoplastics such as PLA, ABS or PLA doped with wooden sawdust.

Creator 4 industrial 3D printers in the Sygnis machine park

The Sygnis machine park is located in Warsaw at Żwirki i Wigury 101, St. A room once called the „Boiler Room", providing warmth at the heart of the Faculty of Chemistry of the University of Warsaw, today it houses over 70 machines working day and night in several different manufacturing technologies.

Flashforge Creator 4 – a new quality of production

In August 2022, 10 new Creator 4 machines from Flashforge Corporation were added to our machine park. Huge 3D printers with a working space of 400 x 350 x 500 mm are a real step, or even several steps forward into the future for our production department.

First of all, it is easier for us to manage manufacturing processes. Working with machines just got easier. Both myself as a production manager and other employees save a lot of time by managing all production at once through FlashCloud.

– **Piotr Piskorski, Eng.**
Head of Production Sygnis SA

Creator 4 3D printers in the Sygnis machine park are supported by software that unifies and automates production processes. Our machine park is the first manufacturing plant in the world that has decided to base its production on a complex system of Creator 4 machines.

In our "3D printing laboratory", work has become not only more effective, but also more effective! Working 24/7, implementing projects on commission, the machine park perfectly shows the production possibilities of 3D printing. It has already delighted our partners and customers many times.

– **Andrzej Burgs**
CEO and President of the Management Board of Sygnis SA

How does Creator 4 3D printer production line automation work?

Newly developed FlashPrint 5 software can be integrated to control more Flashforge printers as it is today in our machine park. Advanced software can preheat and keep temperature before and after printing. The thermal control system maintains a constant temperature inside the chamber working temperature up to 65°C, reducing thermal shrinkage of the model in the printing process. This ensures a successful 3D printing process, and once it's done, the system helps you adjust the cooling temperature to prepare for the next print without having to wait again. It works perfectly at work with high shrink materials such as ABS or PP.

About the FlashForge Creator 4 3D printer itself

The machine is equipped with two extruders with replaceable modules and an advanced temperature control system. It is open for different materials and has a library of parameters appropriately selected for many of the most popular consumables. Replaceable modules and active temperature control inside the working chamber ensure that 3D prints have excellent mechanical strength and high precision.

Great quality hardware

High-precision linear guides on the XY axes ensure printing accuracy, and the all-new S-type motion control will achieve smoother start and stop, more accurate positioning and excellent accuracy of the printed model. The stainless steel body ensures the stability of the printer, reduces the risk of upsets and ensures a balanced and efficient operation. An even larger working area will allow you to get large-size prints.

Wide range of materials

The Creator 4 has a built-in space for two types of spools (2kg and 1kg). The printer has been tested on materials such as: PC / PA / PP / PETG / ASA / ABS / PLA / PC-ABS / PACF / PET-CF / PP-CF / PA-GF / PC-ABS / PP-GF / PS - CF / TPU 85A / TPE / TPB / TPC. We are currently testing new materials for 3D printing on the Creator 4 printer in cooperation with MaxFilament. Effects coming soon!

Park of the future

The main advantage of our machine park is the ability to use various 3D printing technologies. Its equipment includes 3D printers working, among others, in FDM/FFF, SLA, DLP, LCD, MJP, PolyJet, DIW, SLS technologies, as well as the AD1 machine for the production of advertising signs, the Apium P220 machine printing in high-temperature FDM technology from high-performance polymers (e.g. PEEK, CFR PEEK), Vacu3D thermoformer, laser/cutting plotter, 2D printing plotter, lathes/threaders and metalworking tools. Thanks to the appearance of the Creator 4 model, our machine park has increased its efficiency, production capacity, and working with machines has become even easier and faster.

Pre-operative newborn skull model straight from a 3D printer

Our task was to 3D print a preoperative model of a newborn baby's skull. At the time we received the order, the baby with a severe bone defect had just been born. The reason to use additive technologies was to accurately represent the defects in the skull and help surgeons prepare for life-saving surgery.

SCOPE OF WORK:

Creating 3D prints of the preoperative model of the skull of a newborn based on the provided file.

STARTING POINT:

Receiving a finished 3D model based on CT/MRI scans.

IDEA:

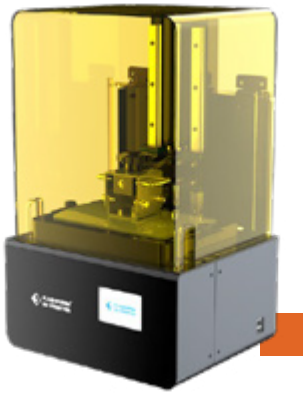
3D printing of a skull model in two different technologies in order to minimize risk of damaging the 3D prints in transport and to provide doctors the widest possible field of analysis of possible scenarios for the course of the procedure.

PREPARATION:

Verification of the received 3D model based on the DICOM model and preparing it for 3D printing in SLS and LCD technologies.

The project has been carried out with the use of the following 3D printers:

- **FlashForge Foto 8.9 s**
- **Sinterit Lisa Pro**

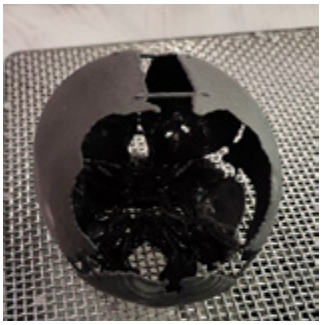


TECHNICAL DEVELOPMENT:

3D printing of a newborn baby's skull model using two different technologies:

- The first model was created using SLS (selective laser sintering) technology on a Sinterit Lisa Pro 3D printer from PA12 material. Production time - 24 hours.
- The second model was created using LCD technology (3D printing technology involving the curing of liquid photosensitive resins) - realized on a FlashForge Foto 8.9s 3D printer from white, standard resin. Production time - 8 hours.
- Both SLS and LCD technology are characterized by high precision and detail, which are indispensable for preoperative anatomical models.



IMPLEMENTATION:

When we received the call from the doctors, the girl's life was seriously threatened. We managed to deliver the project in 26 hours. After this time, the 3D prints were already in the hospital, in the hands of the doctors. Soon after, we received information about the success of the operation and the patient's discharge from the hospital. The 3D prints, however, ended up in the surgical case archive, where they will remain as an exemplary case of medical practice supported by modern technology.

CRN_01 „Hummingbird” swabs for COVID-19 tests

Our original idea was to develop a new design for swabs, speeding up the process of their production. The CRN_01 "Hummingbird" swabs are Sygnis' response to the logistical crisis of the beginning of the COVID-19 pandemic and shortages in medical supplies, reported directly to us by public health institutions and medical facilities.

SCOPE OF WORK:

Redesigning the form and mass production process of the swab for performing tests for the presence of COVID-19 and other respiratory system diseases. An example of the intervention design in response to global demand in times of crisis.

STARTING POINT:

Broken supply chains and shortages in the availability of diagnostic swabs that were crucial for monitoring and prevention of the development of COVID-19 outbreak in Poland and worldwide.

IDEA:

Nature-inspired design. Creating the complete redesign of the product in order to shorten the manufacturing process of the swabs. Rapid prototyping of the project with the use of 3D printing.

The project has been carried out with the use of the following 3D printer:
FlashForge Hunter

PREPARATION:

1. **Functionality analysis and diagnosis of current production stages**

   Features:
   - ease and comfort of application to the nasopharynx
   - collecting and returning as much material as possible for testing
   - use of approved materials

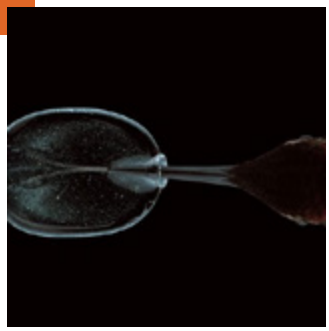
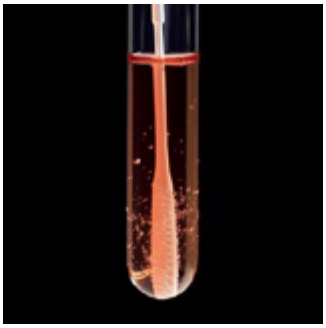
   Production stages:
   - injection molding
   - flocking

2. **Project assumptions**
   - designing a swab adapted to single-stage injection molding production
   - recyclability of plastic (circular economy)
   - execution of laboratory tests verifying the project effectiveness

TECHNICAL DEVELOPMENT:

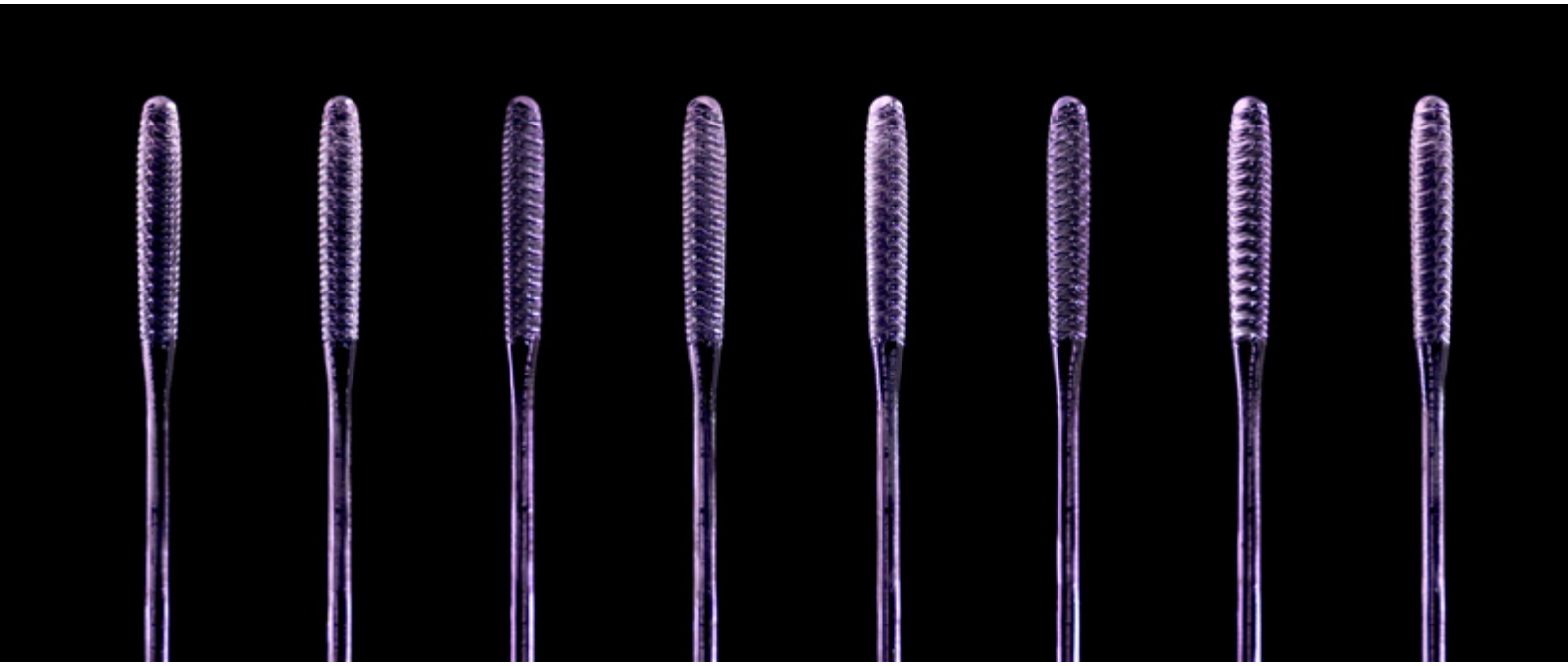
1. Commercially available swabs are produced in two stages: injection molded and then flocked. In order to obtain the appropriate parameters of the swab, specific types of flocs are needed, and therefore also appropriate production lines for their application. The CRN_01 „Hummingbird" project is characterized by a faster and cheaper one-step production process – injection molding.
2. Testing:
   - consultations with diagnosticians
   - trial sample collection with the use of the prototype swabs
   - verification of the results

In the spirit of biomimetics, the shape of the swab was inspired by the hummingbird's tongue, adapted for collecting nectar from the narrow calyxes of flowers. The designed grooves and cavities allow to capture and collect a large amount of swab material, thus ensuring the effectiveness of the testing. What's more, due to the sheer lack of flocs, the CRN_01 swabs "give back" in a laboratory test more sample than their market counterparts.

IMPLEMENTATION:

From the idea to the implementation of the first series of injections has been less than two months, of which more than a week took the process of intricate electrodeposition of the four-cavity mold. Inspired by nature, a single-part object was created, with a simplified one-step production process – faster and cheaper, which performs the same, very important, diagnostic function. At the same time, it achieves all expectations submitted before this type of project.



NINE's TROPHY BAR for Nine's Restaurant and Sports Bar

Our task was to develop the design of an innovative barware - a goblet with a dispenser - to perform bartending functions. The cup serves as an attraction during group meetings: the bartender mixes a drink in the vessel, which each guest can pour into the glass by himself using the dispenser-cranks.

SCOPE OF WORK:

Adaptation of the sports cup to contact with food and change its functionality by adding a dispensing faucet.

STARTING POINT:

Several sports cups provided by the customer with indicated changes that we are to develop and implement.

IDEA:

We received a ready-made idea with clear guidelines. One of our 3D printing specialists developed the design in cooperation with the Design Department.

MOST IMPORTANT GUIDELINES:

- **impermeability**
- **durability in gastronomic environment (contact with alcohol)**
- **safety of contact with food**
- **aesthetic finish**
- **tightness**

The project has been carried out with the use of the following 3D printer:

PROTOTYPE:

The tap was connected to the vessel using an adapter 3D printed from PLA material, screwed to the surface of the cup.

TESTS:

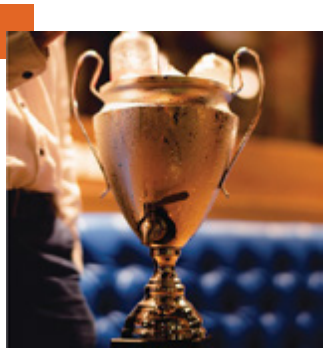
- reactions of the substances used
- paint covering the goblet
- tightness
- stability

COMPONENTS AND MATERIALS:

- faucet
- PLA
- silicone
- food contact paint

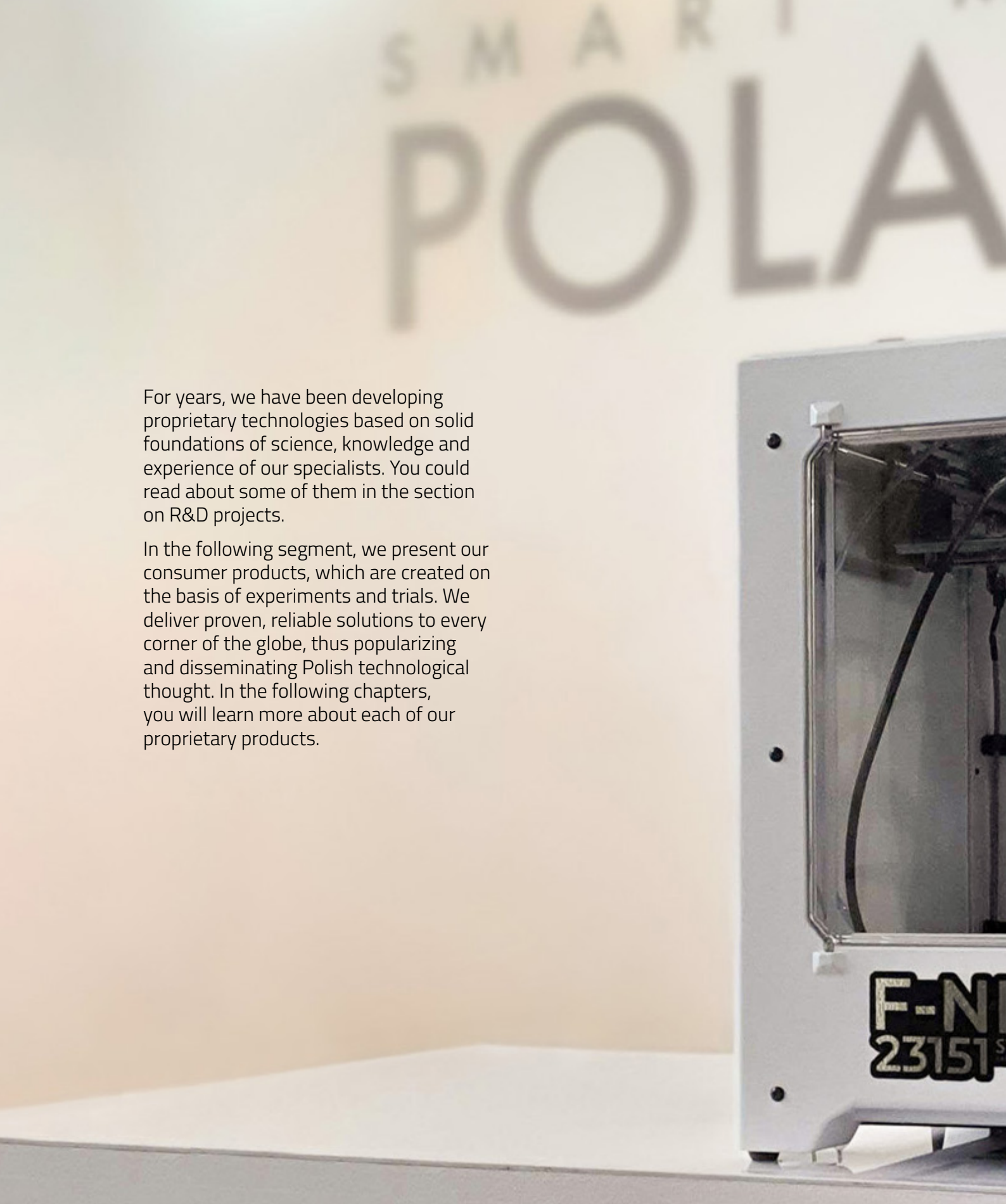
TECHNICAL DEVELOPMENT:

To fill the space between the element designed and 3D printed by us and the cup we used the appropriate **silicone certified for use with food**, while resistant to processes connected with work in gastronomy such as frequent washing and scalding of dishes. The component 3D printed from PLA material has been designed so that it does not come into direct contact with the vessel's contents. The bolts stabilizing the structure have also been secured, protecting users from the possibility of injuring themselves on their edges. Our engineer took care of functional and aesthetic sealing of the construction.




IMPLEMENTATION:

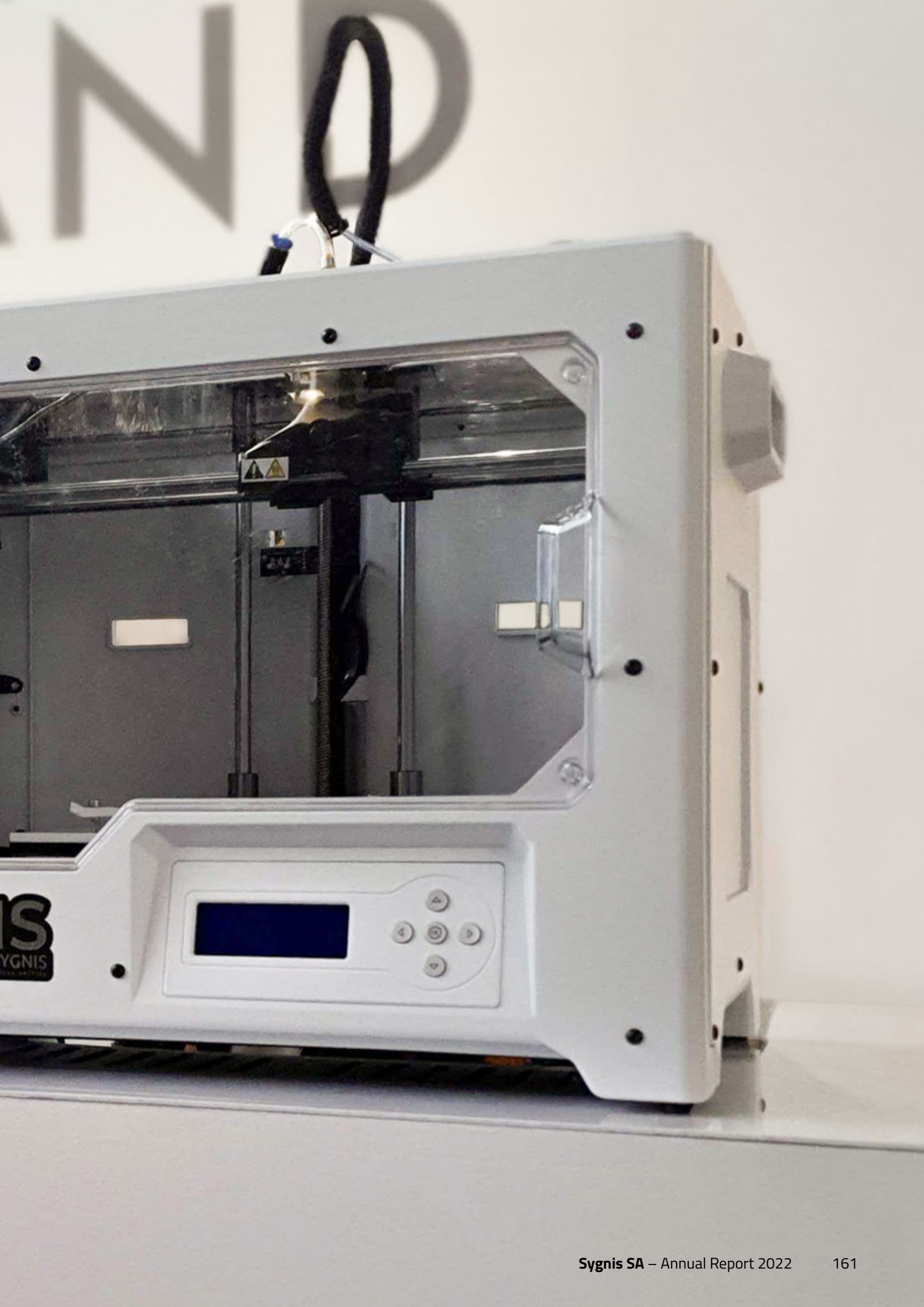
The cup made by us is a distinctive element of NINE's Restaurant & Sports Bar premises in Warsaw's Wola district. One of the items on the menu is NINE's Trophy Bar - a cup with a faucet, used for serving original drinks. During the implementation of this project we had the opportunity to cooperate with the staff of the managers of NINE's Restaurant & Sports Bar. It is a great complement to the sports décor of the premises and emphasizes the value of integration, a very important aspect for sports games.



For years, we have been developing proprietary technologies based on solid foundations of science, knowledge and experience of our specialists. You could read about some of them in the section on R&D projects.

In the following segment, we present our consumer products, which are created on the basis of experiments and trials. We deliver proven, reliable solutions to every corner of the globe, thus popularizing and disseminating Polish technological thought. In the following chapters, you will learn more about each of our proprietary products.

10.6 Our products



Original Sygnis 3D printer working in DIW (Direct Ink Writing) technology

F-NIS will find its application in chemical and material laboratories, among research groups working on new materials, flexible robots, flexible electronics, ceramic insulators, UV-cured materials, silicones, conductive pastes and in research on new types of batteries.

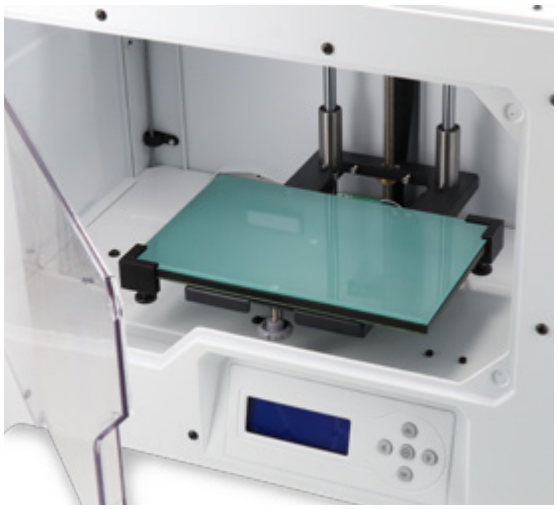
It is a simple and reliable tool, helpful in the initial stages of proof-of-concept, constituting a universal base for prototyping original materials in 3D printing.

As a universal Direct Ink Writing 3D printer, F-NIS perfectly meets the needs of universities, laboratories and research groups in various fields of science.

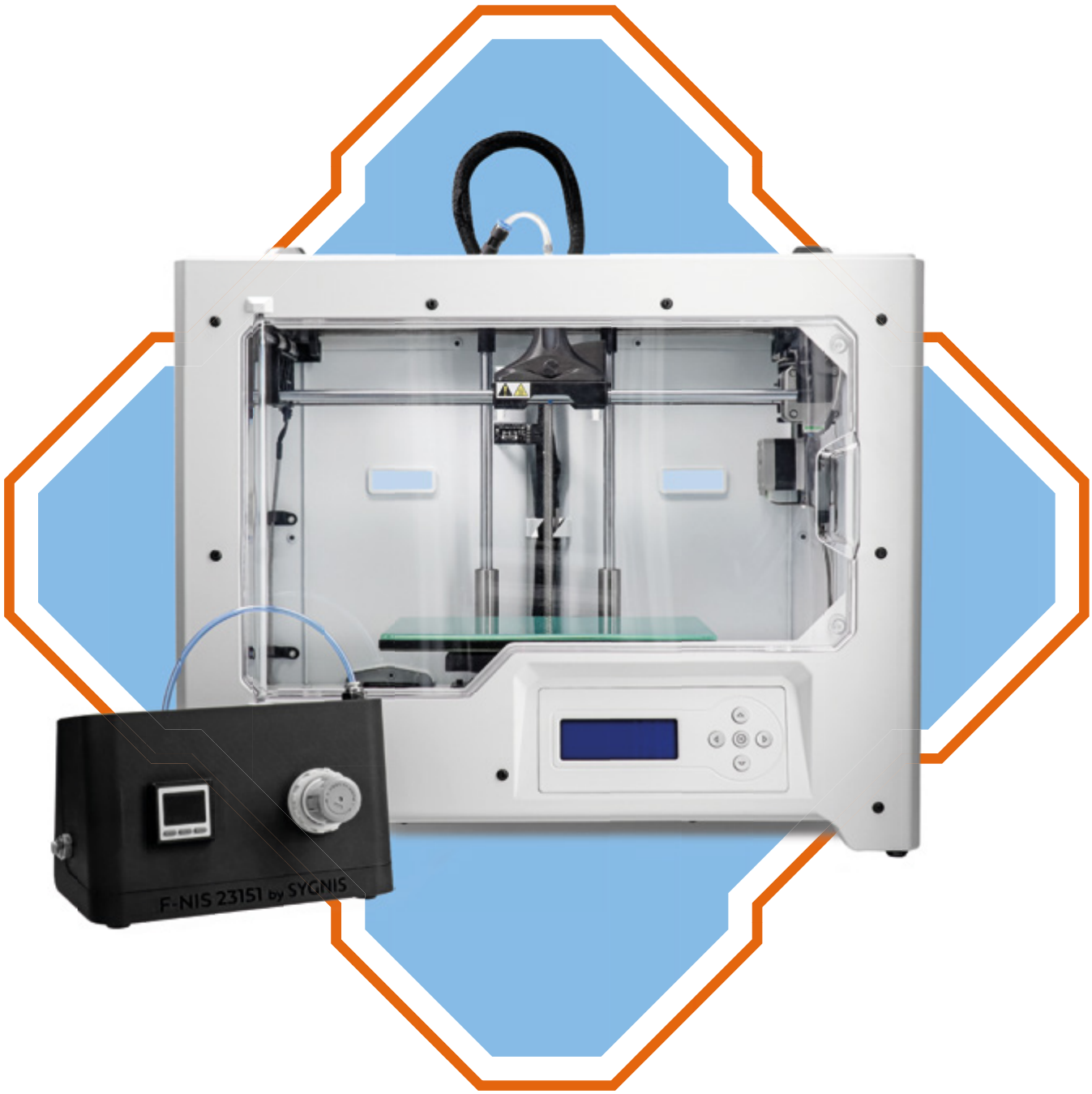
F-NIS 23151 has been installed and recommended by such units as the AGH University of Science and Technology in Cracow, the University of Adam Mickiewicz in Poznań or the Cracow University of Technology.

Learn more:

https://diw3d.com/



F-NIS 23151



Thanks to Zmorph Fab, you can turn your desk into a workshop

It is an intelligent 3D printer with a single or double extruder, which we have equipped with a professional work table and an easy-to-use material assembly system.

Dedicated software meets the standards of CAM programs. Thanks to it, the user can work with STEP files and visualize the tool path. The closed chamber maintains a higher temperature inside the machine, which allows printing with demanding materials such as ABS. The covers limit the scattering of waste generated during CNC milling. Zmorph FAB has been equipped with a sensor that stops the operation of the machine after opening the chamber, ensuring safety.

The accessible and intuitive user interface is designed for both professionals and beginners.

Carbon/HEPA filters collect semi-toxic fumes and particles released by molten plastic during 3D printing and CNC machining dust. Zmorph Fab will inform you when the filters need to be replaced.

The system of interchangeable heads and a wide range of compatible materials make this device the most versatile 3D printer available on the market.

We offer Zmorph FAB in 2 sets. The Zmorph Fab Basic 2 in 1 Learning & Prototyping Kit includes a Single Extruder Tool Head and a CNC Milling Tool Head. Thanks to the excellent workmanship, friendly interface and standard electronics, it is an ideal solution for all Creators. Changing tools is quick and easy - takes no more than 60 seconds.

For those who need more, we have created the Zmorph Fab Advanced Set 5 in 1. This version has been extended with Dual Extruder Toolhead, Thick Paste Extruder Toolhead and 6W Blue Laser Diode Toolhead.

Learn more:
https://zmorph3d.com/products/zmorph-fab/


ZMORPH FAB


i500

i500 is a 3D printer designed for reliable and durable operation

The Zmorph i500 is a 3D printer that we designed with you in mind with long and durable operation. It is an economical solution for low-volume production. It is ideal for making plastic prints in Fused Filament Fabrication (FFF) technology.

The Zmorph i500 is equipped with a system of two heads with a cradle, which is able to perform clean one- and two-material prints.

Its accuracy and capabilities make it one of the best solutions of this type on the market.

The large, enclosed working area and dual filtration system provide a constant temperature working atmosphere, allowing you to achieve the best results with minimal effort. Demanding and long 3D printing processes are something the Zmorph i500 was created for.

Zmorph i500 can work alone or cooperate with an external computer. The built-in LCD touch panel serves as a graphical interface, and the intuitiveness of the entire system is a great advantage of the printer. The possibilities offered by the i500 are unrivaled and allow you to achieve sensational results.

Currently, the Zmorph i500 is undergoing hardware changes to improve the printing process, as well as allow the use of groundbreaking solutions so that the i500 becomes the number 1 choice for everyone. The new version of the printer will debut at the end of the second quarter of 2023.

Table-top vacuum thermoforming – Zmorph SHAPE

Zmorph SHAPE is a tabletop vacuum thermoformer designed for thermoforming of plastic films. It complements the portfolio of our devices and works perfectly with our printers.

A well-thought-out, ergonomic design allows the user to work safely with the device without additional protective measures. The great advantage is also the simplicity of using the machine itself and the ability to work with a wide range of materials.

Non-contact measurement using a pyrometer and a modified turbine makes the thermoforming process efficient, despite its compact form. Efficiency is not the only advantage of the device, its versatility and intuitiveness allow for excellent work results. In addition, the construction of the machine guarantees the user a long and reliable operation. On Zmorph SHAPE, thermoforming is pure pleasure, and the popular A4 format is sufficient for most applications.

Learn more:
https://zmorph3d.com/products/zmorph-shape/

Proprietary Zmorph VOXELIZER software

Voxelizer is proprietary, advanced software that allows you to control 3D printing processes and other processing techniques when using machines from the Zmorph portfolio. It is an extremely intuitive and user-friendly software that not only gives great satisfaction from work, but also precisely guides you through various 3D printing processes.

The software was created with customer ease of use and maximum technological and functional advancement in mind. Our dedicated IT department is constantly working on the development of Voxelizer's usability and functions.

The proprietary software undoubtedly allows to generate additional sales benefits by customers working on machines from the Zmorph portfolio. These benefits generate additional opportunities for the development of the software itself, as well as the printers themselves.

The company plans to develop the Voxelizer software by combining it with another proprietary Z-HUB software. Product development will be based on the division into basic functionalities in order to ensure the possibility of using machines, as well as to ensure global communication between the manufacturer and the end user. Additional functionalities, which are strong software tools, such as 5-axis control or operations on files from MRI examinations, will be additionally payable in subscription plans. We want thousands of users of our software to have the opportunity to develop their passions and businesses based on the unique capabilities of the Voxelizer slicer and the Z-Hub 3D printing PML management program.

Learn more:
https://zmorph3d.com/software/

REGISTERED OFF

Gdańsk, 472 Grun

PRODUCTION

Pruszcz Gdański

SHOP/STUDIO

78 Solidarności St

HEAD OFFICE

78 Grzybowska St

PROTOTYPING TA

Cambridge Innova

PRODUCTION, R&

101 Żwirki i Wigur

WAREHOUSE, SE

15a Muszkieteró

ZMORPH

Wrocław, 9 Ostro

chapter 11:
Contact

ICE

nwaldzka Avenue

treet

treet

ARRACE

ation Center

&D

ry Street

RVICE

w Street

wskiego Street

Sygnis SA:

almost 120 people

over 1700 m² of space

3D printing machine park

Prototype and production workshop

2 production halls

Bioprinting Lab

Microscopy Lab

ISO 7 Cleanroom (ISO 13485)

Exhibition spaces

Feel free to contact us – we are always open to cooperation!

Sygnis SA
kontakt@sygnis.pl
+48 22 668 47 57

Registration Data:
NIP: 9571029651
REGON: 220906517
KRS: 0000393095

Our knowledge and information base:

Visit the “Layers” blog

Our social media:

/Sygnis SA
@Sygnis3d
@SygnisPL
@sygnis_nt3d
/Sygnis SA

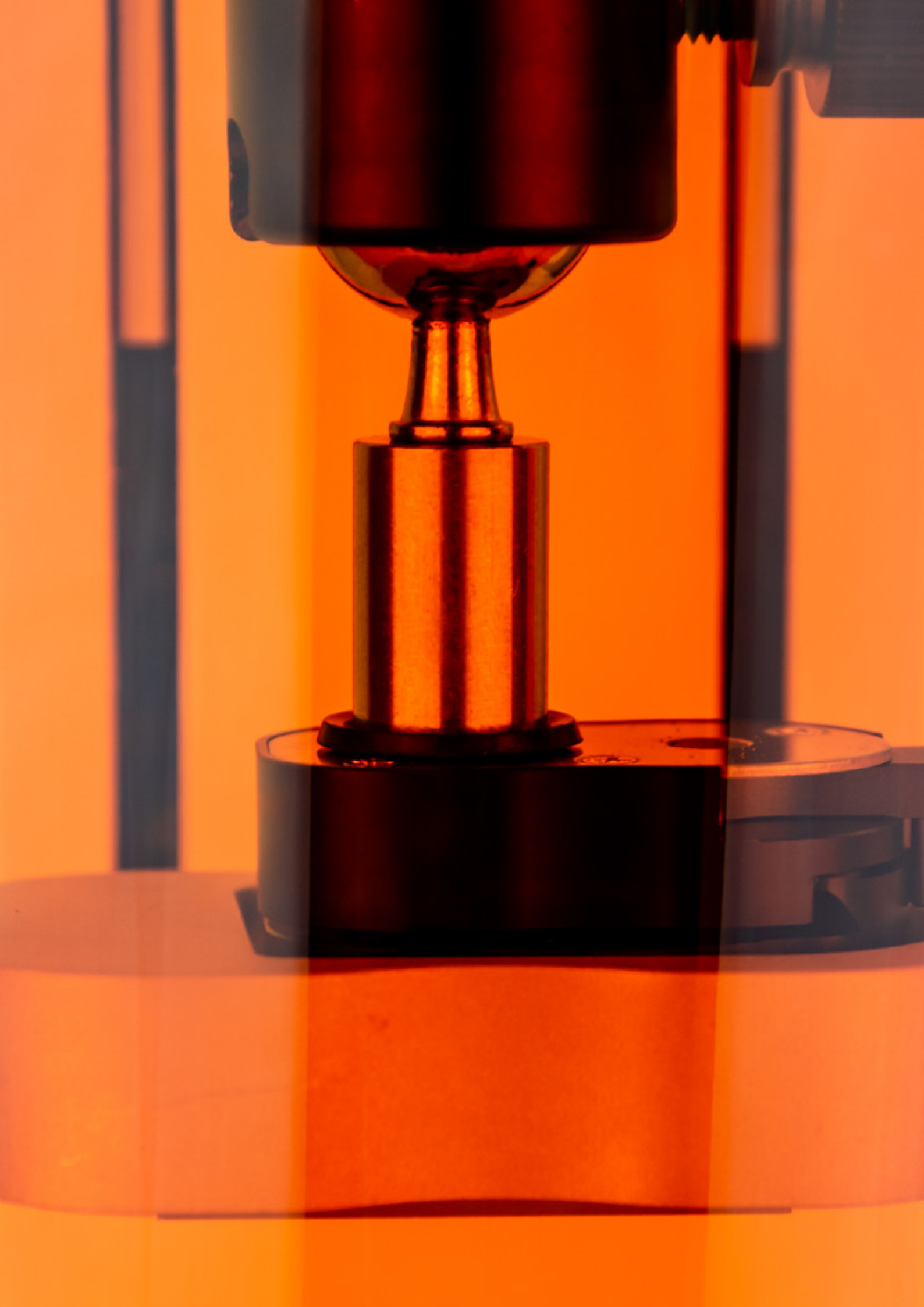
Machine park
FDM, SLA, SLS 3D printers, CNC machines

ISO 7 Cleanroom
in Warsaw

Prototyping Terrace
Technology Hub at CIC Warsaw

In 2022, we caught up with the largest companies in the deeptech industry.

In 2023, the industry will start chasing us.



Knowledge has layers™

www.sygnis.pl