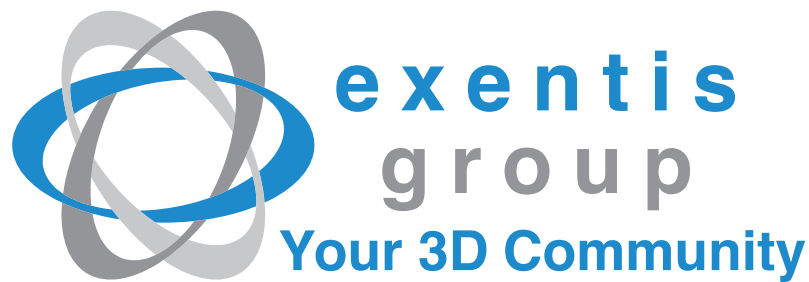


# exentis group

Industrialized  
Additive Manufacturing

Half-Year Report  
2024



## Highlights in the First Half 2024

### Profitable growth path sustained

- Group revenues increased by 24 % to CHF 14.1 million
- EBITDA significantly improved by CHF 1.1 million or 52 % to CHF 3.2 million
- Sound double-digit profitability with EBITDA margin of 23 %

### Internationalization further advanced – focus on the USA as the world's largest additive manufacturing market

- US subsidiary Exentis North America Inc. in Boston established
- Experienced top manager Eric Bert as President Exentis Americas responsible for further expanding the US sales and service network
- Multiple development projects with well-known industry customers in implementation

### Number of patent claims further increased by 14 % to 5,567 versus year-end 2023

### Three strategic initiatives being implemented to realize the market potential

- Further internationalization of the Exentis 3D technology platform, above all in the USA and Asia
- Revamping of the sales structures
- Complete digitalization of all core processes

### Management team further strengthened with Gürsel Demircali as new Chief Commercial Officer

- Establishment of a strong digital marketing function
- Expansion of collaboration with distributors
- Extension of direct sales

### Positive outlook

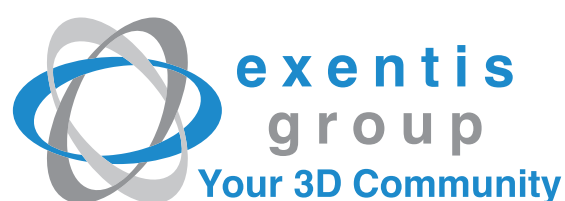
- Continuation of sound business development expected
- Further acceleration of growth dynamics in the second half of the year

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# Letter to the Shareholders

Dear shareholders,  
Dear friends of our Company,



**Ralf P. Brammer**  
Chairman of the Board of Directors

The dynamic business development towards the end of the financial year 2023 continued during the first half of 2024. Against the backdrop of a persistently challenging geopolitical environment, Exentis successfully sustained its profitable growth trajectory in all three of its strategic business areas Pharma, New Energy, and Ultra-fine Structures as well as in the new core market USA.

Compared to the first half of 2023, revenues rose by CHF 2.7 million to CHF 14.1 million in the first half of 2024, representing a growth of 24 %.

In terms of earnings, Exentis is in a solid position as well. On an EBITDA basis (earnings before interest, taxes, depreciation, and amortization), we achieved a sound double-digit profitability in the first half of the year. The EBITDA margin amounts to 23 %, and the EBITDA improved by CHF 1.1 million or 52 % compared to the first half of 2023 to CHF 3.2 million. Thus, Exentis has profitably grown well above average.

For reasons of confidentiality and protected by non-disclosure agreements, we are unable to name the majority of the highly innovative projects and applications that are being discussed with or implemented for internationally well-known customers. In general, we are seeing outstanding application possibilities for our technology in the Ultra-fine Structures business area, specifically in the flexible large-scale manufacturing of material-efficient cooling structures in high-performance computer chips for artificial intelligence applications. Also, in the New Energy business area, Phenogy, our global license holder for the large-scale production of energy storage systems, offers great potential for the placement of a large number of ad-

ditional Exentis 3D production systems. Phenogy is currently expanding with a franchise system in Europe and the USA and is planning to deploy two Exentis production systems at each manufacturing site.

A key differentiating factor of the Exentis 3D technology platform as compared to other production technologies is the possibility afforded to our customers, the Exentis 3D community members, to freely choose the materials used to manufacture their applications. The spectrum of possible materials ranges from metals, ceramics and polymers to active pharmaceutical ingredients and biomaterials. This freedom in the choice of materials is supported by the unique materials expertise of Exentis that is being continuously refined by a large number of internal materials specialists based on specific customer needs and applications.

Another key success factor is the license-based business model that builds on our technology platform. It grants our 3D community members exclusivity for their individual applications and provides them with the opportunity of charging premium prices. At the same time, it enables Exentis to enjoy the benefit of generating predictable, scalable, and recurring revenues and earnings.

In order for a license-based business model to be successful over the long term, broad patent protection for the technology platform must be ensured. The number of patents and patent claims is a key indicator of the independence of a technology. As of the end of June 2024, Exentis already had more than 5,500 patent claims. This represents a further increase of 14 % compared to the end of 2023. With

an average remaining patent term of 15 years, the license-based business with its recurring revenue generation will continue to deliver earnings with above-average profitability in the future. Industry experts call this a proprietary technology platform. In other words, a technology platform that is under the sole ownership of Exentis.

As you can see, dear shareholders and dear friends of our Company, we already have all the key success factors in place to realize our market potential of approximately CHF 200 billion, which was identified by Roland Berger on the basis of existing applications and projects as part of our preparations for the planned IPO.

To steadily realize this market potential, we are focusing on the execution of three strategic initiatives:

- continuing to internationalize our 3D technology platform, above all in the USA and Asia,
- revamping our sales structures, and
- completely digitalizing all core processes.

As we are continuing to internationalize our 3D technology platform, the USA is our top priority. We established Exentis North America Inc., a wholly owned subsidiary of Exentis Group AG, in 2023. Via this entity, which is domiciled in Delaware, and our American head office in Boston, Massachusetts – the technology and innovation hub on the east coast – we are working hard to further grow our footprint in the world's largest additive manufacturing market.

With Eric Bert, we found the ideal manager with extensive market knowledge and leadership experience in the additive manufacturing industry. In his role as

## Letter to the Shareholders

President Exentis Americas, he is responsible for further expanding our sales and service network in the USA.

In the first half of 2024, we again attended a large number of trade shows in Europe and the USA. These included the Additive Manufacturing Users Group Conference (AMUG) in Chicago and the Ceramics Expo in Detroit for industrial applications.

The market response to our 3D technology platform in the USA has been overwhelmingly positive. The growth of our business activities on the ground is promising, and several development projects with well-known industry customers are currently being implemented. This will result in extensive additional

ons of industrial parts or to use the Exentis Pharma production systems in the field of clean room applications, with the capacity to manufacture more than 200 million tablets with a single latest-generation Exentis Pharma system per year. In all cases using our resource-saving and sustainable cold printing process, without any post-processing whatsoever.

The next planned step in the USA is the opening of showrooms with Exentis 3D systems on the West and East Coasts, one each for industrial applications and for clean room applications such as tablets. These showrooms will provide our American customers with direct insights into the unique range of applications afforded by our technology platform and support the further growth of business.



Eric Bert, President Exentis Americas, together with our CEO Dr Gereon Heinemann at the Exentis booth at the AMUG in Chicago (left to right)

contract manufacturing orders for Exentis as well as first orders for 3D production systems. Customers especially appreciate the ability to manufacture milli-

In the first half of 2024, we delivered the first next-generation modular and expandable Exentis Pharma production system to a leading pharmaceutical manufacturer (CDMO) for installation at its newly established clean room 3D production space in Europe. The delivery of further Exentis clean room production systems is planned for the second half of the year. This makes Exentis a global pioneer also in clean room technology platforms for the production of 3D-printed pharmaceutical products, amongst others.

In June 2024, the Annual General Meeting of Exentis Group AG resolved to strengthen the Board of Directors with two additional experts. Dr Silvio Inderbitzin, former CEO of Spirig Pharma, was newly elected to the Board of Directors to bolster our competence in system solutions for clean rooms. This is reflecting the increased demand for patient-specific solutions in the pharmaceutical sector as well as in the field of designated nutraceuticals. Michael Widmer was also



elected as a new member of the Board of Directors. He has accompanied Exentis for many years and is highly experienced in developing and internationalizing companies.

In order to leverage our Group-wide growth potential in all strategic business areas in Europe, North America, and Asia to the greatest possible extent, we brought Gürsel Demircali, a proven sales professional, on board as new Chief Commercial Officer. As a former director of Desktop Metal in Europe, he has gained extensive international experience in the ad-

- active support for our 3D community members in expanding their presence in their respective market segments,
- expansion of collaboration with distributors, and
- extension of direct sales.

In direct sales, we are implementing an efficient sales funnel management system to attract new customers. This step is being accompanied by the optimization of our entire process and system landscape on the sales side. We are also establishing a systematic analysis process to identify promising future markets for Exentis with high growth potential.

In addition, we are realigning our marketing strategies and will focus on the regions of Europe, North America, and Asia going forward. In these regions, Exentis will conduct direct sales and also cooperate closely with selected distributors in order to ensure the best possible market penetration. The conclusion of a distribution agreement for the new market of South Korea with a well-established local partner is planned for the second half of the year.

Alongside the reorganization of our sales structures, we are also pursuing a comprehensive, Group-wide digitalization strategy. The goal is a fully digitalized business model. We have made considerable progress in establishing a global digital service platform that will enable us to efficiently support and maintain all the Exentis 3D systems currently in service from Switzerland. Additionally, we are building a digital customer acquisition platform to address potential customers in an innovative manner. To this end, we established a digital marketing function in the first half of 2024.



Extended Board of Directors of Exentis Group AG:  
Maximilian Büttiker, Michael Widmer, Ralf P. Brammer,  
Dr. Silvio Inderbitzin, Albert F. Angehrn (left to right)

divitive manufacturing industry and will further bolster the market presence of Exentis.

In this context, we are revamping our sales structures and will focus on three sales channels going forward:

## Letter to the Shareholders

We are closely monitoring the consolidation tendencies that have been emerging in the global additive manufacturing market for some time. This includes the acquisition of Desktop Metal by Nano Dimension announced early July. We are also seeing some successful IPOs such as that of BigRep, a provider of high-volume polymer-based 3D printers for small series production, on the Frankfurt stock exchange at the end of July. BigRep achieved a valuation of EUR 290 million on the first day of trading with significantly lower revenues than Exentis and clearly negative EBITDA.

We will actively seize any opportunities that will arise for Exentis in the prevailing dynamic market environment. In addition to the envisaged organic growth, we will strengthen our operations through selective strategic value-creating acquisitions where appropriate. We also see the conclusion of strategic partnerships as a suitable means to establish our technology platform more broadly in the market.

For the second half of the year, we expect the positive business performance to continue and to further accelerate our growth course. Numerous discussions with existing and new customers about the purchase of Exentis 3D systems and associated license agreements have reached an advanced stage.

The revenue that can be derived from the offers submitted to customers is a key indicator for the generation of additional revenues that can be expected with a high degree of certainty in the current financial year and beyond. Based on more than 40 customer projects that will result in system and license sales as well as in foreseeable contract manufacturing, the current offer volume in all three strategic business areas of Pharma, New Energy, and Ultra-fine Structures amounts to more than CHF 60 million. When taking into account these projects discussed with customers, revenues of approximately CHF 50 million can be expected at a healthy profitability for the full year 2024, from today's perspective.

On behalf of the Board of Directors, I would like to take this opportunity to thank all employees at our sites in Switzerland, Germany, and the USA for their tireless efforts and loyalty. Their outstanding commitment and dedication are making a major contribution to establishing our unique 3D technology platform as a new industry standard in the market.

I would also like to express my particular gratitude to you, our valued shareholders and friends of our Company, for your great support and the long-standing trust that you have placed in us.



# Management Report



# 3D Technology Platform and 3D Community

## Exentis 3D technology platform

Exentis offers the only 3D technology platform world-wide for the industrialized large-scale manufacturing of industrial parts and clean room applications such as tablets with a freely adjustable release profile for the active pharmaceutical ingredients.

In addition to the ability of large-scale manufacturing with an entirely free choice of materials and active pharmaceutical ingredients, which other additive manufacturing technologies do not allow, key strengths of the proprietary 3D technology platform that has been developed and extensively patented by Exentis also include the manufacturing of ultra-fine structures without any need for reworking or depowdering, the possibility to process multiple materials, and highest flexibility in the production process. The underlying technology on which this technology platform is based is 3D screen printing.

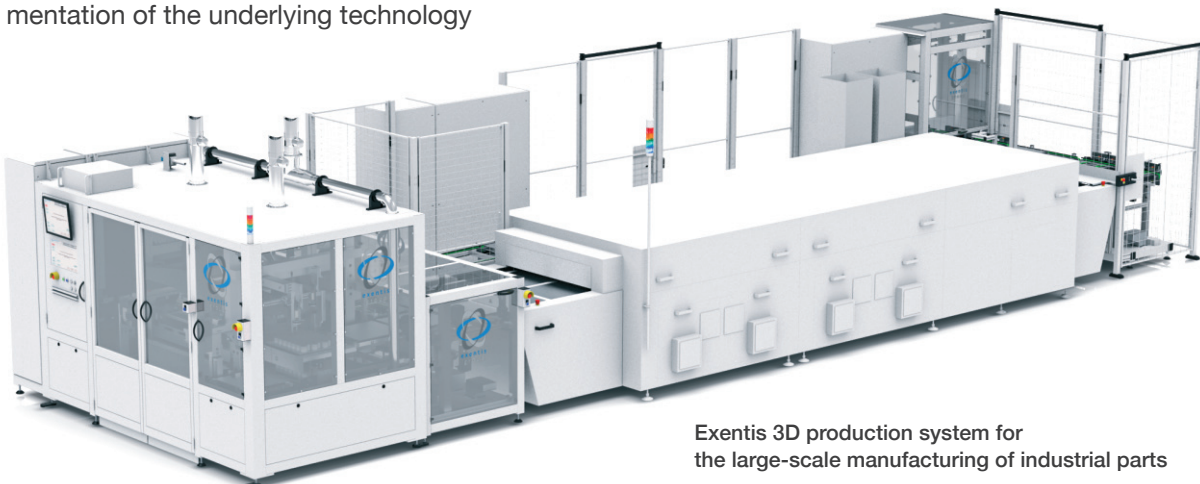
As Exentis 3D community members, customers are given exclusive access to this innovative additive manufacturing technology. Tried and tested manufacturing processes and a fully developed industrial implementation of the underlying technology

are required in order to be able to produce millions of industrial parts or clean room applications with consistently high quality.

The Exentis 3D technology platform meets both of these criteria. A number of aligned core components work together here, with the Exentis 3D production systems, paste systems, and special screens playing a decisive role. As an integrated solution provider, Exentis offers all components from one source.

**The Exentis 3D production systems as well as the comprehensive material and screen expertise are key USPs of the Exentis 3D technology platform.**

The Exentis 3D technology platform is comprehensively digitalized. All 3D production systems in operation are connected with a global digital service platform that is already at an advanced stage of development.



Exentis 3D production system for the large-scale manufacturing of industrial parts



**Exentis Pharma production systems for the manufacturing of innovative tablets with a freely adjustable release profile of the active pharmaceutical ingredients in the human body**

### 3D production systems

Thanks to its mature industrial manufacturing processes and 3D production systems, Exentis enables exacting tolerance levels combined with industry-leading production volumes. A single 3D production system can manufacture more than 5 million industrial parts or more than 200 million tablets in clean room production per year.

Exentis 3D technology creates a new degree of flexibility for manufacturing processes and eliminates the time-consuming and costly production of tools required if customers use conventional manufacturing technologies.

In contrast to conventional subtractive manufacturing processes such as milling, lathing, or even laser- or water-cutting processes, which require a great deal

of energy and generate a high level of waste, Exentis uses a cold printing process, conserving materials and the environment. Only the amount of material required to create the final parts is processed.

The 3D production systems have a modular structure to flexibly adapt them to customer requirements. This extensive modularization means that if customers scale up their production, they can continue to use previously purchased and installed 3D systems, and that they can add additional modules to their systems rapidly and at low cost.

Having direct control over the quality of the products during the printing process is a significant driver of success of the Exentis 3D production systems. This quality control is effected by means of continuous in-line checks with high-resolution camera systems.

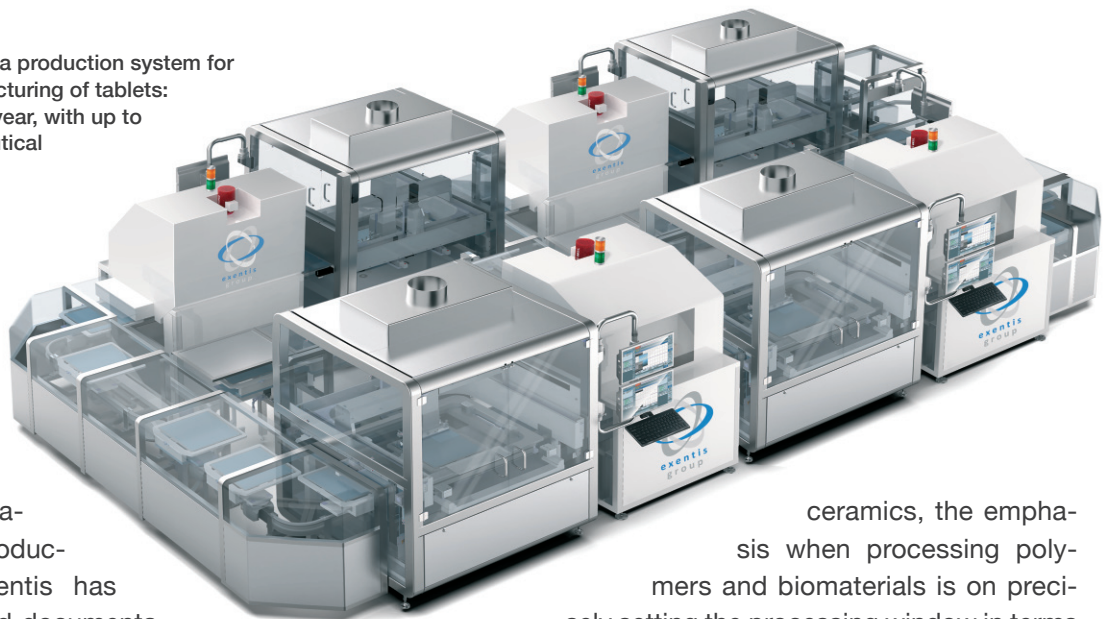
For every application, customers can individually define process speeds, quality assurance systems, and output volumes in collaboration with Exentis.

Highest precision levels in system technology is particularly important so that each printing cycle continues perfectly from the previous one. An enclosure that can be climate controlled, if necessary, ensures compliance with the tightest printing tolerances by precisely controlling the conditions in the printing area.

Biomaterials and pharmaceutical pastes for millions of tablets require different production conditions than are needed for ceramics, metals, or polymers. For large-scale manufacturing under clean room condi-

## 3D Technology Platform and 3D Community

Modular Exentis Pharma production system for the large-scale manufacturing of tablets: > 200 million units per year, with up to three active pharmaceutical ingredients per tablet



ons with appropriately certified 3D production systems, Exentis has certified control and documentation systems in place which meet all the standard requirements for manufacturing pharmaceutical products.

### Paste systems

All Exentis 3D production systems work with pastes. The starting material for the employed pastes is usually sourced in powder form. Exentis creates the required paste systems from these powders with additives and using specific paste preparation processes. The selection of materials and expertise in making pastes go hand in hand.

Developing special recipes for these paste systems, i.e. making it possible to process the materials, is a crucial element of the Exentis 3D technology. While a homogeneous material distribution is particularly important when making pastes containing metals and

ceramics, the emphasis when processing polymers and biomaterials is on precisely setting the processing window in terms of temperature, humidity, oxygen level, and light sensitivity.

These parameters are individually defined for each material and taken into consideration in the paste recipe and production. This ensures that the desired material characteristics are met during the large-scale industrial manufacturing process.

### Special screens

Special screens allow pastes specifically developed for customers to be output precisely as the desired parts or tablets. The use of special screens for shaping eliminates the time-consuming and costly tool-making and mold-making that is necessary when using conventional production technologies such as injection molding.

Exentis has extensive expertise and many years of experience in producing these special screens. They are manufactured within just 24 hours, which enables a never-before-seen degree of flexibility for customer production processes. Exentis 3D community members can thus deliver applications with an adapted geometry to their customers within the same week.

In addition to the 3D production systems and paste systems, 3D community members also purchase the special screens directly and exclusively from Exentis and therefore have access to everything that is required to manufacture millions of their applications, all from one source.

### Exentis 3D community

Exentis calls the users of its 3D technology platform “3D community members”. As is the case with other technology platforms, it is not Exentis as the technology provider that dictates specific applications. Rather, it is the customers as members of the 3D community that use the innovative Exentis technology in many different ways to produce millions of their applications on an industrial scale – because they themselves know their individual markets best.

### The Exentis 3D technology platform is open to all 3D community members.

The Exentis 3D technology platform and its users are thus directly interconnected by the many benefits that the Exentis business model offers them.

Exentis’ unique business model is explained in greater detail in the next section.

# Business Model

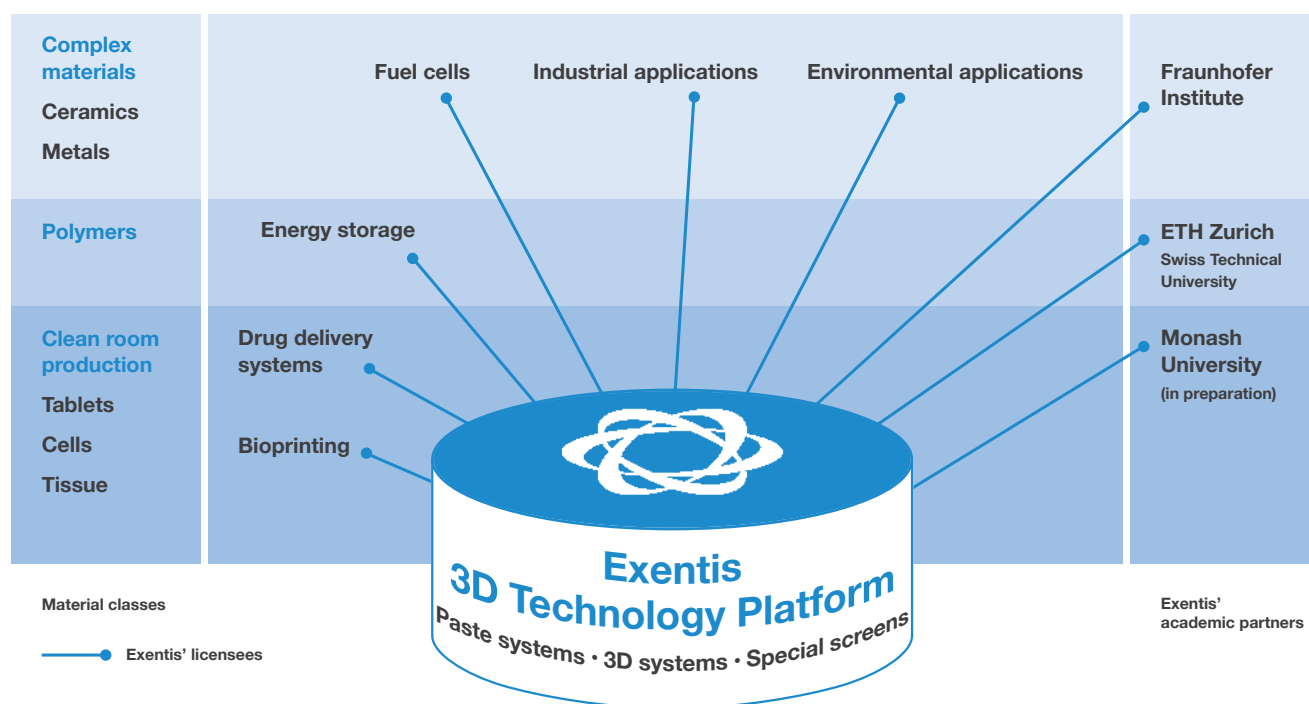
Exentis' license-based business model provides all customers as members of the Exentis 3D community with distinct benefits in their respective markets. They can choose between in-house production under license agreements when purchasing the Exentis 3D production systems themselves, or have millions of their industrial parts or clean room applications manufactured by Exentis.

If customers opt for in-house production, as is done in most cases by far, they obtain many years of exclusivity for their specific applications when signing the license agreement. This is another major advantage in addition to large-scale manufacturing. This exclusivity, i.e. the ability to produce industrial parts or clean room applications without any competitive pressure using the same technology for many years,

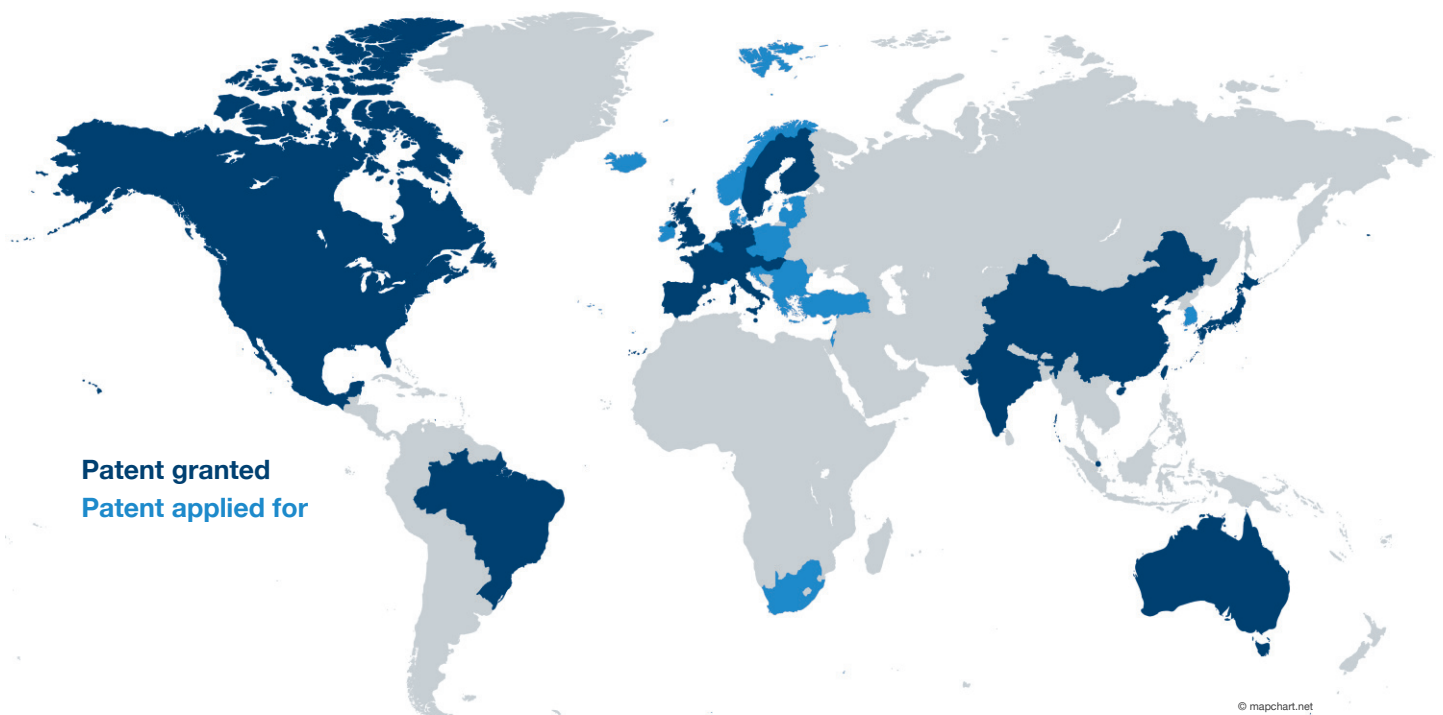
is directly linked to the terms of the relevant patents and may apply for up to 20 years, depending on the residual term of the patents concerned.

The proprietary Exentis 3D technology platform offers exactly this protection. It is protected by patents in all relevant economic regions of the world and is only available to the 3D community members. They obtain a major competitive advantage in the marketplace and, as a consequence, can demand premium prices.

Exentis protects all further developments of its proprietary 3D technology platform comprehensively and internationally. In the first half of 2024, the number of patent claims further increased by 14 % to 5,567 compared to year-end 2023.







Some customers only need to manufacture their applications occasionally, but on a large scale and in a short time. As purchasing licenses and their own 3D production systems does not make much sense in these cases, Exentis offers the possibility of contract manufacturing at its premises at fixed prices.

However, customers opt for in-house manufacturing on the basis of license agreements and the purchase of their own Exentis 3D production systems in the majority of the cases because of the advantages of exclusivity. In this case, different license types are available: global licenses for the worldwide use of the Exentis 3D technology platform within a specific field of application, regional licenses for a defined geographical region, or even protecting a certain material or a combination of materials for a specific application under individual licenses.

Exentis 3D community members often secure themselves global licenses, as in the case of Whitecell Power for the large-scale manufacturing of bipolar plates for use in fuel cells or of Phenogy for the production of millions of energy storage units. Global licenses also give 3D community members the right to issue sub-licenses.

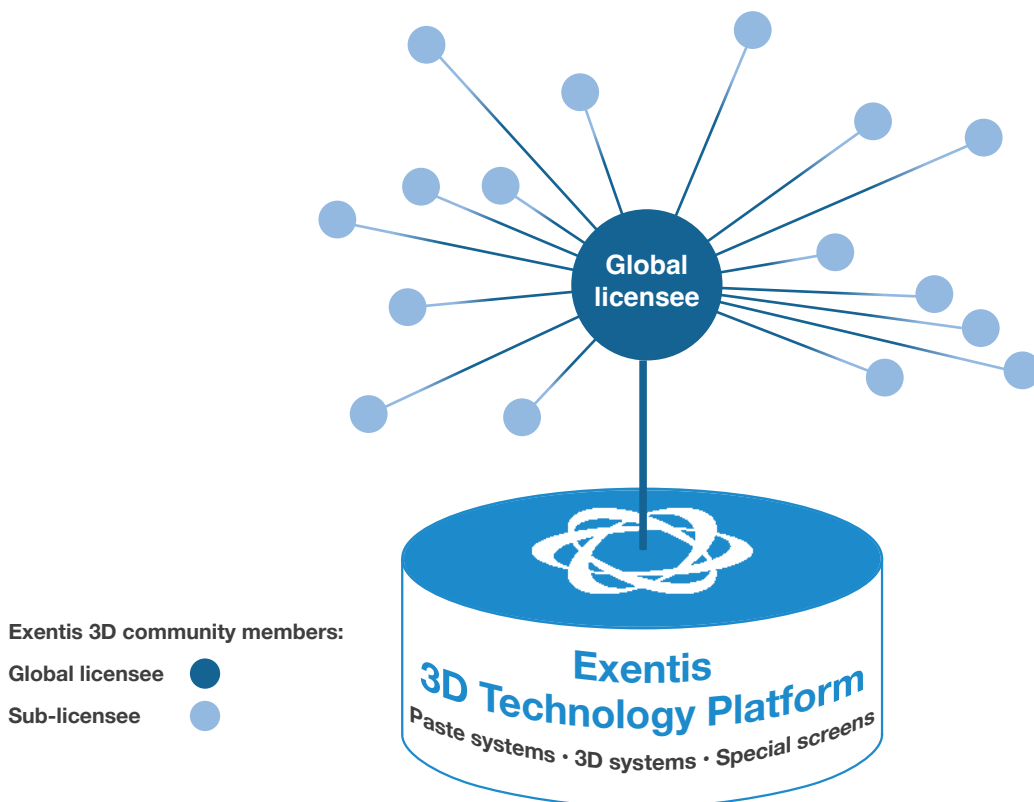
### Global licenses allow 3D community members to issue sub-licenses.

This kind of sub-licensing also pays off for Exentis. The number of Exentis customers grows with every granted license or sub-license. Licensees and sub-

## Business Model

licensees, all of which are 3D community members, use the same technology platform and will therefore purchase further 3D production systems as well as paste systems, special screens, and services directly from Exentis. This represents attractive outsourced business development to create further growth for Exentis in addition to the Company's own sales efforts.

The license-based business model enables Exentis to generate income from base license fees (when licenses/sub-licenses are issued) and from annual royalties. Exentis therefore has a robust, predictable, and scalable business model with a high share of recurring revenues. The goal is to further increase the share of recurring revenues as a proportion of total revenues by continuously expanding the Exentis 3D community in the coming years.



# Strategic Markets and Market Potential

Exentis is pursuing the goal of achieving sustainable and profitable growth. To this end, the company is focusing on three particularly attractive strategic business areas:

- 1. Pharma**
- 2. New Energy**
- 3. Ultra-fine Structures**

The Exentis 3D technology platform, on which a license-based business model is based, forms the foundation for simultaneously servicing these three strategic business areas.

Exentis commissioned Roland Berger, an international management consultancy firm, to investigate these strategic business areas as part of a comprehensive market study, and to assess them in terms of their end market potential for the applications already being processed at Exentis, or for which potential applications have been identified during existing development projects. The market sizes presented refer to the respective end markets, with Exentis addressing a part of these end markets<sup>1</sup> with its business model. The key results of this study and the strategic implications derived from them are outlined below.

## General outline of the market and market potential

The three strategic business areas of Pharma, New Energy, and Ultra-fine Structures are all characterized by long-term growth prospects, driven by underlying megatrends:

### Pharma

The continued growth of the pharmaceutical market is primarily being driven by the general demographic trend, rising healthcare spending in emerging markets, and further accelerating digitalization.

### New Energy

This business area covers e-mobility, fuel cells, and energy storage. The strong growth in electrification in the automotive sector, e.g. driven by increasingly strict CO<sub>2</sub> emission regulations, is expected to drive demand within the e-mobility sector, while the energy transition to cleaner energy is projected to fuel rising production volumes of fuel cells.

### Ultra-fine Structures

In this business area, significant market growth is anticipated in areas including micro filter applications.

Other markets such as for semiconductor applications are also expected to develop favorably, driven by general market growth and an overall rising market awareness of and penetration by additive manufacturing technologies.

### Competitive landscape

The strategic business areas differ in terms of competitive environment. Exentis primarily competes with conventional manufacturing technologies and less with other additive manufacturing technologies. For example, in the production of stator and rotor sheets, Exentis competes with blanking, a formative technology. Other additive manufacturing technologies are

<sup>1</sup>According to Roland Berger, success within these end markets requires meeting technical specifications, a competitive business case and the scaling of the license-based business model.

## Strategic Markets and Market Potential

most suited to the production of applications requiring a low output volume and are unable to effectively match with the proprietary Exentis 3D technology's offering of industrial large-scale production with a high degree of flexibility in the materials used.

### Current market potential

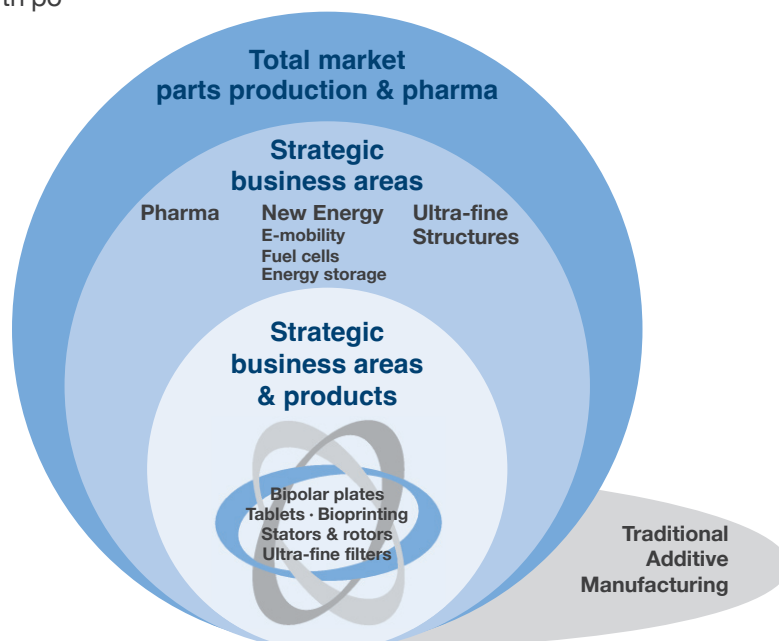
The strategic business areas of Pharma, New Energy, and Ultra-fine Structures are part of the total parts production and pharmaceuticals market, which has a total market value of approximately CHF 3,267 billion<sup>1</sup>. Exentis covers approximately 39 % of this market with its three business areas, representing an absolute value of approximately CHF 1,260 billion<sup>2</sup>.

When considering just the partial markets in which Exentis already has applications or projects for applications, the market value is still approximately a considerable CHF 198 billion. Additional expansion in these markets offers Exentis significant growth potential.

If subjecting the business areas of Pharma, New Energy, and Ultra-fine Structures to more detailed individual consideration in terms of their proportion of the market value of approximately CHF 198 billion, it becomes evident that the pharmaceutical market accounts for the largest share by far, but that the New Energy area also represents a market value of several billion Swiss francs.

**The market potential of Exentis' current applications is approximately CHF 198 billion.**

The exciting opportunities for Exentis in these business areas and the unique advantages that Exentis offers its customers compared with its competitors are discussed in greater detail below.



<sup>1</sup> Comprises the parts production market based on the automotive segment as a major sub-market, the market for precision parts, and the entire pharmaceutical market and tissue engineering.

<sup>2</sup> Includes the market sizes for the pharmaceutical market and the markets for tissue engineering, e-mobility (electric motors for cars), fuel cells, micro filters, casting filters, and collimators.

## Business area Pharma

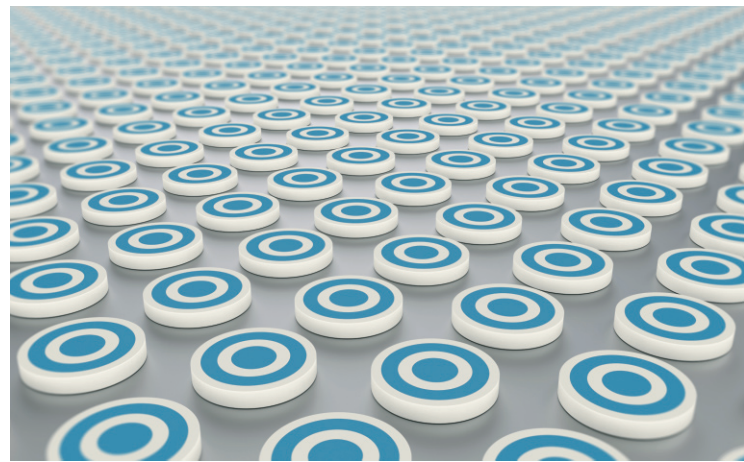
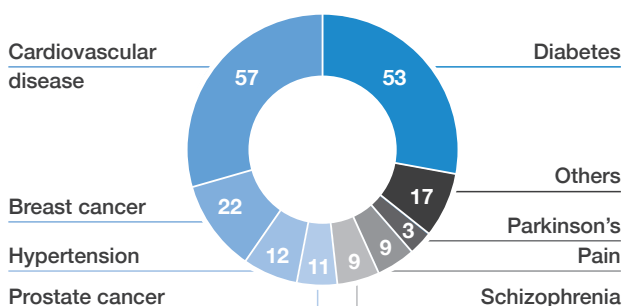
### Market overview

The pharmaceutical market is particularly important, especially when taking into account its market potential and the state of development of 3D applications. There is a wide range of application areas for Exentis 3D technology in the broadly-based pharmaceutical sector.

**Exentis 3D technology allows the large-scale manufacturing of tablets with freely adjustable API release profiles.**

Exentis 3D technology allows the production of tablets with a freely adjustable release profile of the active pharmaceutical ingredients in the human body, at volumes of millions of units per year on a single Exentis Pharma production system. Exentis can contribute to an increase in the efficiency of pharmaceuticals through its technology while also increasing patient compliance levels and comfort.

**MARKET VOLUME FOR MEDICAL INDICATIONS**  
[in CHF billion]



**3D-printed tablets with a freely adjustable release profile of the active pharmaceutical ingredients in the human body**

Market growth of approximately 7 % per annum is projected for selected relevant medical indications in the period from 2023 to 2026.

The most important market drivers with a positive effect on the pharmaceutical market and the market penetration of additive manufacturing technology include the following:

- **Rising need for precise drug delivery**

Especially in fields such as oncology or neurology, drugs must be precisely designed in terms of dosage, timing and location of substance release. By using 3D screen printing, the release of active pharmaceutical ingredients can be precisely aligned with patients' biological rhythms.

- **Underlying growth of the overall pharmaceutical market**

The pharmaceutical market is expected to continue to grow, driven by the general demographic trend, rising healthcare spending in emerging mar-

## Strategic Markets and Market Potential

kets, and further accelerating digitalization. The growth of the overall market will increase the demand for pharmaceuticals in general, and thus also the demand for 3D-printed pharmaceuticals.

### Competitive landscape

In the pharmaceutical sector, conventional technologies represent the main competition. Additive manufacturing provides additional benefits, including flexible formulations with personalized dosage levels, shapes, and sizes, the controlled release of the active pharmaceutical ingredients, and multiple combinations of active pharmaceutical ingredients.

Compared with other additive manufacturing providers in the pharmaceutical market, Exentis 3D technology stands out particularly due to its excellent suitability for large-scale production.

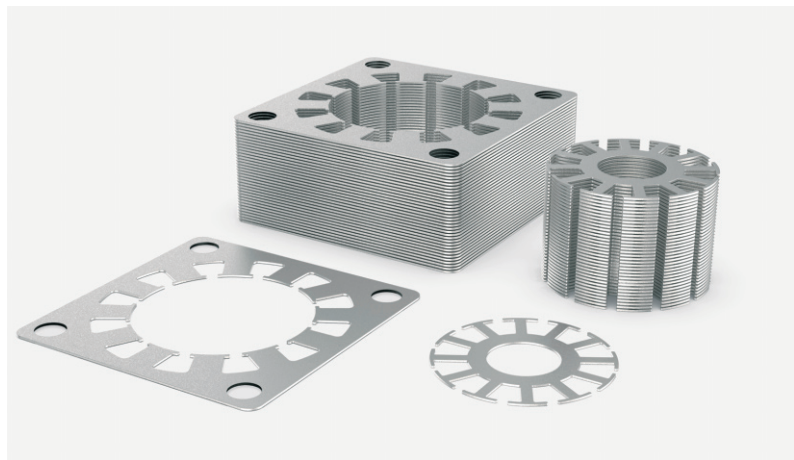
### Business area New Energy

#### Market overview

In the New Energy business area, Exentis is focusing on e-mobility, fuel cells, and energy storage.

In the e-mobility segment, stator and rotor sheets, which are used in electric motors, offer the greatest potential for Exentis.

Stator and rotor sheets are thin electrical steel sheets with a specific contour. Multiple stacked stator or rotor sheets form a stator or rotor block, which is responsible for conducting the magnetic current in an electric motor. The stacked sheets are insulated against each other to prevent any electrical contact between the single sheets (e.g., by a thin coated layer).



3D-printed stacked stator and rotor sheets

3D screen printing enables the manufacturing of stator and rotor sheets with a lower thickness and higher conductivity compared with conventional production technologies, which considerably increases the efficiency of electric motors.

**The market for stator and rotor sheets for electric vehicle power units is expected to grow by 17 % per annum from 2023 to 2026.**

The market growth for stator and rotor sheets is primarily being driven by the expected increase in sales of electric vehicles.

In the fuel cells segment, bipolar plates are particularly relevant for Exentis 3D technology. Bipolar plates are thin plates made of metal, graphite, or a composite material that are placed between the gas diffusion layers in fuel cells.



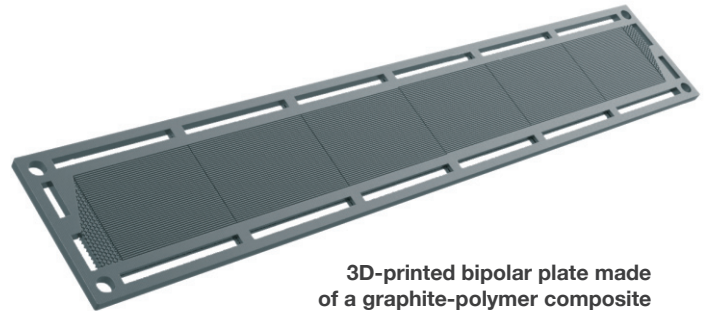
Complex flow fields can be printed using Exentis 3D screen printing – while the weight and volume of the parts are reduced at the same time. This increases the efficiency of the fuel cells.

The market value for bipolar plates is projected to grow by approximately 13 % per annum from 2023 to 2026. This increase will be driven primarily by higher demand for CO<sub>2</sub>-free energy.

The most important market drivers that are having a positive effect on the overall New Energy market and the market penetration of 3D printing include:

- **Increasing demand for CO<sub>2</sub>-free energy**

This demand is being significantly supported by existing government agreements and goals to reduce CO<sub>2</sub> emissions, a growing awareness among end consumers and B2B customers of the need

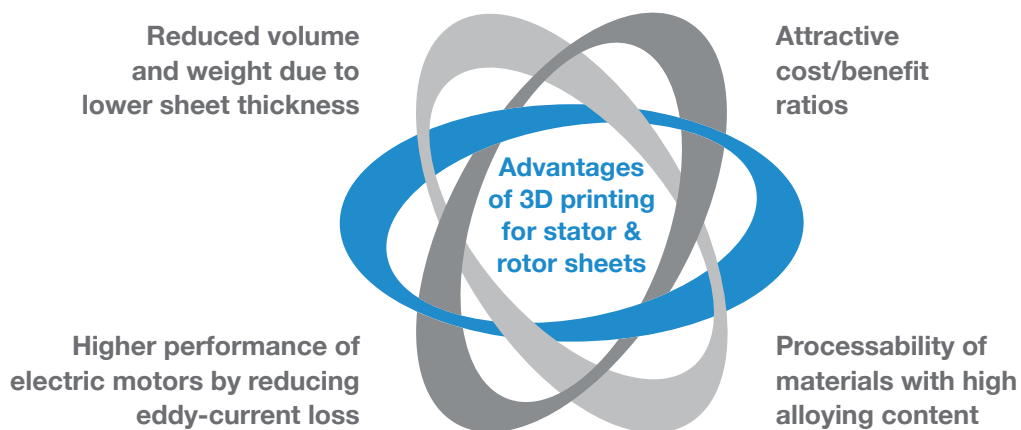


3D-printed bipolar plate made of a graphite-polymer composite

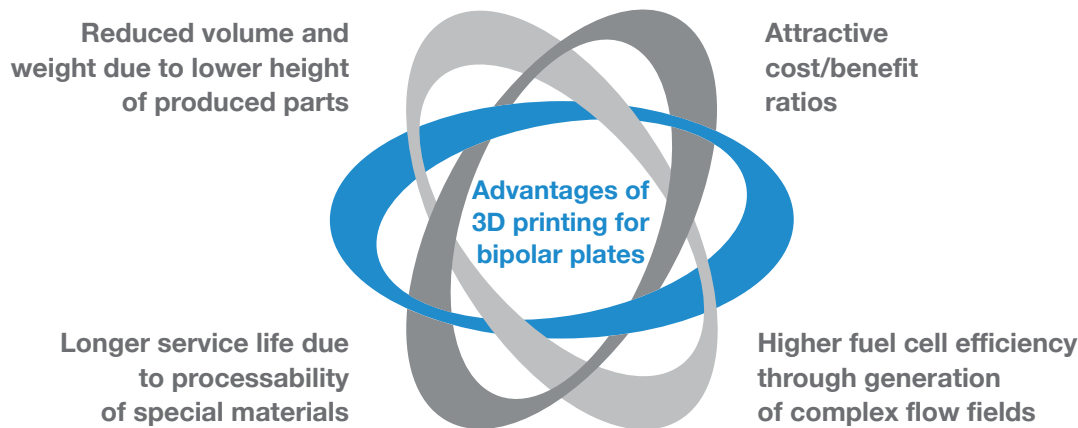
to avoid carbon-intensive products and processes, the global increase in demand for electricity, and the capability of fuel cells to generate electricity from CO<sub>2</sub>-free fuels (such as hydrogen).

- **Subsidies for hydrogen and fuel cell technology**

Extensive subsidies and tax benefits for fuel cell electric vehicles (FCEVs) to stimulate demand for hydrogen (“pull” investments), government commitments to fund hydrogen projects, and the reduction in investment risks are all creating incentives to use this new technology.



## Strategic Markets and Market Potential



- **Reduction of fuel cell costs**

The cost of manufacturing fuel cells is expected to decline due to increasing technological maturity and economies of scale as production volumes grow. This is expected to increase the competitiveness of this technology in comparison with other CO<sub>2</sub>-free technologies.

- **Increasing technological maturity**

The expected increase in the degree of maturity of fuel cell technology may improve its efficiency and increase its competitiveness compared to other CO<sub>2</sub>-free technologies.

### Competitive landscape

In the manufacturing of stator and rotor sheets, 3D screen printing is competing with the conventional technologies of blanking and laser cutting. Other additive technologies do not play a major role.

The main advantages of 3D screen printing in this area are the ability to improve product characteristics and the cost efficiency that is possible with ultra-thin sheets for high-end motors.

When manufacturing bipolar plates for fuel cells, Exentis 3D technology also mainly competes with conventional production methods. Embossing and hydroforming are the competing technologies in the metal segment, while injection and compression molding are the competing technologies for bipolar plates made of composite materials.

Being able to achieve flow field designs with high complexity and almost no waste material are the main advantages of 3D screen printing in comparison with other technologies when manufacturing bipolar plates.

## Business area Ultra-fine Structures

### Market overview

Exentis focuses on the following applications in the Ultra-fine Structures business area:

- **Micro-disc filters:** used in fluid systems to filter liquid and gaseous materials, screen or deep filtration
- **Casting filters:** used to filter non-metallic inclusions from molten metal and harmonize or slow the flow of the molten liquid
- **X-ray collimators:** used to change the diverging radiation from an X-ray source into a parallel beam to improve the image resolution

The market for ultra-fine filters, which consists of the aforementioned application areas, is expected to grow by approximately 6 % per annum between 2023 and 2026.

**Ultra-fine filter structures are employed in a wide range of markets with significant growth potential.**

Ultra-fine filter structures are used in a variety of markets such as the automotive, casting, and radiography industries. These markets have exhibited solid growth in the past, and are expected to continue growing in the coming years.



3D-printed micro filter made of stainless steel with 211 ultra-fine channels

### Competitive landscape

In this market segment, Exentis is competing with conventional manufacturing technologies.

Compared with other manufacturing technologies, Exentis 3D technology makes it possible to efficiently produce ultra-fine channels for micro-disc filters, enables significantly improved processing capabilities for specific materials, and allows the manufacturing of complex geometries – all of which are key advantages of 3D screen printing technology.

# Business Development in the First Half 2024

Exentis was able to sustain its profitable growth path in the first half of 2024 and achieved good results in a persistently challenging geopolitical environment dominated above all by armed conflict in Ukraine and Russia as well as in the Middle East.

Revenues increased by CHF 2.7 million to CHF 14.1 million compared to the first half of 2023, representing a growth rate of 24 %. The share of recurring revenues in total revenues is 24 %. This is a substantial increase compared to the financial year 2023 and underlines the robustness of the license-based business model.

In terms of earnings, Exentis is on an outstanding course as well with a solid double-digit profitability in EBITDA terms (earnings before interest, taxes, depreciation, and amortization) in the first half of 2024. The EBITDA margin amounts to 23 %, and the EBITDA improved by CHF 1.1 million or 52 % compared to the first half of 2023 to CHF 3.2 million. Thus, Exentis has profitably grown well above average.

Exentis again expanded the patent protection on its 3D technology platform in the first half of 2024. The number of patents and patent claims – a key indicator

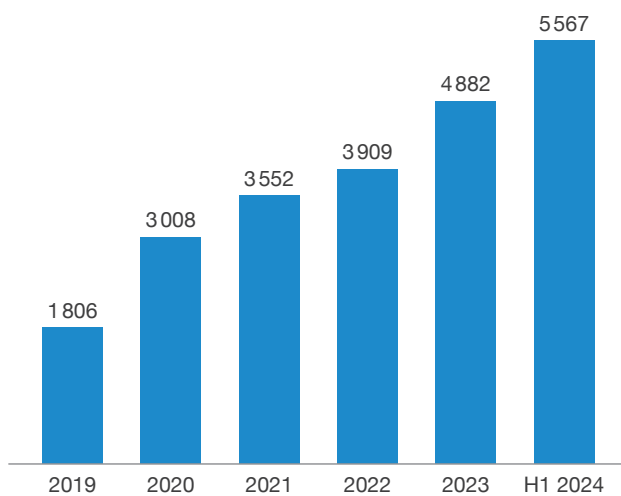
of the independence of a technology – further increased. At the end of June, Exentis had 5,567 patent claims, an improvement of 14 % compared to the end of 2023. With an average remaining patent term of 15 years, the license-based business with its recurring revenue generation is well positioned to deliver earnings with above-average profitability in the future.

**Exentis achieved  
profitable growth well  
above average in  
the first half of 2024.**

As the internationalization of the Exentis 3D technology platform continues, the primary focus is being placed on the USA as the world's largest additive manufacturing market. After the establishment of Exentis North America Inc. last year, concerted efforts are currently under way to build an own local sales and service network. Via this new entity, which is domiciled in Delaware, and its American head office in Boston, Massachusetts – the technology and innovation hub on the east coast – Exentis will consistently expand its footprint in the US market.

[in CHF]	01.01.-30.06.2024	01.01.-30.06.2023	Change
Revenues	14 105 573	11 413 557	+24 %
EBITDA	3 239 784	2 135 472	+52 %
EBITDA margin	23 %	19 %	+4 pts

## PATENT CLAIMS



The business activities in the USA are developing promisingly, and several development projects with well-known industry customers are currently being implemented. This will result in extensive additional contract manufacturing orders for Exentis as well as first orders for 3D production systems. Customers especially appreciate the ability to manufacture millions of industrial parts or to use the Exentis Pharma production systems in the field of clean room applications, with the capacity to manufacture more than 200 million tablets with a single latest-generation Exentis Pharma system per year.

The next planned step in the USA is the opening of showrooms with Exentis 3D systems on the West and East Coasts, one each for industrial applications and for clean room applications such as tablets. These two showrooms will provide American customers with direct insights into the unique range of applica-

tions afforded by the Exentis technology platform and support the further growth of business.

In the first half of 2024, the first next-generation modular and expandable Exentis Pharma production system was delivered to a leading pharmaceutical manufacturer (CDMO) for installation at its newly established clean room 3D production space in Europe. The delivery of further Exentis clean room production systems is planned for the second half of the year. This makes Exentis a global pioneer also in clean room technology platforms for the production of 3D-printed pharmaceutical products, amongst others.

**The market response to the innovative Exentis 3D technology platform in the USA has been overwhelmingly positive.**

For reasons of confidentiality and protected by non-disclosure agreements, the majority of the highly innovative projects and applications that are currently being discussed with or implemented for internationally well-known customers cannot be named. In general, there are outstanding application possibilities for the Exentis technology in the Ultra-fine Structures business area, specifically in the flexible large-scale manufacturing of material-efficient cooling structures for high-performance computer chips in artificial intelligence applications. Also, in the New Energy business area, Phenogy, Exentis' global license holder for the large-scale production of energy storage systems, offers great potential for the placement of a large number of additional Exentis 3D production

## Business Development in the First Half 2024

systems. Phenogy is currently expanding with a franchise system in Europe and the USA and is planning to deploy two Exentis production systems at each manufacturing site.

On June 21, 2024, the ordinary Annual General Meeting of Exentis Group AG was held at the Exentis engineering and final assembly site in Malterdingen near Freiburg, Germany. Attendance at this year's event was particularly high. The more than 120 attending shareholders were shown numerous Exentis 3D production systems for the large-scale manufacturing of pharmaceutical and industrial applications along with selected innovative applications.

At the Annual General Meeting, approximately 60 % of the share capital were present. The shareholders present or represented by others accepted the proposals made by the Board of Directors without any exceptions. All proposals were approved with over 90 % of the votes present. In detail, the following resolutions were passed:

- Approval of the annual financial statements of Exentis Group AG for the financial year 2023
- Carrying forward of the net profit for 2023
- Discharge of the members of the Board of Directors for the financial year 2023
- Appointment of Dr Silvio Inderbitzin and Michael Widmer as additional members of the Board of Directors for the coming two financial years
- Election of BDO, Switzerland, as auditors of Exentis Group AG for the financial year 2024

### Outlook

Exentis is closely monitoring the consolidation tendencies that have been emerging in the global additive manufacturing market for some time. This includes the acquisition of Desktop Metal by Nano Dimension announced early July. There were also some successful IPOs such as that of BigRep, a provider of high-volume polymer-based 3D printers for small series production, on the Frankfurt stock exchange at the end of July. BigRep achieved a valuation of EUR 290 million on the first day of trading with significantly lower revenues than Exentis and clearly negative EBITDA.

Exentis will actively seize any opportunities that will arise in the prevailing dynamic market environment. In addition to the envisaged organic growth, operations will also be strengthened through selective strategic value-creating acquisitions where appropriate. Exentis also sees the conclusion of strategic partnerships as a suitable means to establish the technology platform more broadly in the market.

For the second half of the year, Exentis expects the positive business performance to continue and to further accelerate its growth course. Numerous discussions with existing and new customers about the purchase of Exentis 3D systems and associated license agreements have reached an advanced stage.

The revenue that can be derived from the offers submitted to customers is a key indicator for the generation of additional revenues that can be expected



with a high degree of certainty in the current financial year and beyond. Based on more than 40 customer projects that will result in system and license sales as well as in foreseeable contract manufacturing, the current offer volume in all three strategic business areas of Pharma, New Energy, and Ultra-fine Struc-

tures amounts to more than CHF 60 million. When taking into account these projects discussed with customers, revenues of approximately CHF 50 million can be expected at a healthy profitability for the full year 2024, from today's perspective.

**Disclaimer:**

Certain information included in the Half-Year Report 2024 of Exentis Group AG is derived from third-party market studies. Market studies are often based on certain assumptions and expectations that may not be accurate or appropriate and their methodology is by nature predictive and speculative. The data reflected in market studies is typically based largely on other industry publications as well as market research, which itself is based on sampling and subjective judgments by both the researchers and the respondents, including judgments about what types of products and transactions should be included in the relevant market. Accordingly, market studies generally state that the information contained therein is believed to be accurate but that no representation or warranty is made by the market study provider as to the accuracy or completeness of such information. The information from market studies reproduced in the Half-Year Report 2024 should be assessed accordingly.

# Half-Year Information as of June 30, 2024

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**CONSOLIDATED PROFIT AND LOSS INFORMATION**

[in CHF]	01.01.2024 – 30.06.2024	01.01.2023 – 30.06.2023
Revenues	14 105 573	11 413 557
Cost of goods sold	(4 629 734)	(3 289 788)
<b>Gross profit</b>	<b>9 475 839</b>	<b>8 123 769</b>
Other revenues	–	57 914
Impairments and defaults on receivables	–	(150 000)
Personnel expenses	(4 227 668)	(3 942 689)
Administrative expenses	(2 008 387)	(1 953 522)
<b>Earnings before interest, taxes, depreciation and amortization</b>	<b>3 239 784</b>	<b>2 135 472</b>
Depreciation and amortization on property, plant and equipment and intangible assets	(3 180 451)	(897 717)
<b>Earnings before interest and taxes</b>	<b>59 333</b>	<b>1 237 755</b>
Financial income	3	149
Financial expenses	(166 981)	(185 389)
<b>Result before income taxes</b>	<b>(107 645)</b>	<b>1 052 516</b>
Income taxes	19 182	(312 598)
<b>Net loss (Net profit in prior-year period)</b>	<b>(88 463)</b>	<b>739 917</b>

# Comments on the Half-Year Information as of June 30, 2024

## 1. General information

Exentis Group AG (“Exentis”) has the only 3D technology platform worldwide that allows large-scale manufacturing. Industrialized Additive Manufacturing is universally applicable – for industrial or clean room applications, with a free choice of materials, such as metals, ceramics, polymers, pharmaceutical or bio-printing products. The cold printing process in use is sustainable and conserves materials as well as resources. The highly flexible 3D production technology combines rework-free component geometries with advantageous cost/benefit ratios. This enables customers, the users of the 3D technology platform, as members of the Exentis 3D community to decide between in-house production under license agreements when acquiring the Exentis 3D production systems or having millions of components produced by Exentis for them.

Amounts are specified in Swiss francs (CHF) unless stated otherwise. Both individual and total amounts represent the value with the smallest rounding difference. When adding up the individual figures presented, minor differences compared to the total amounts shown might occur.

## 2. Principles of the profit and loss information

### 2.1 Standards applied

For the preparation of this information, simplified methods were used. In particular, revenue information was derived from all of the Group's ongoing projects as it was not possible to determine reliable percentages of completion due to system changes (ERP and financial system).

### 2.2 Estimation uncertainties and discretionary decisions

When applying profit and loss assessment methods previously described, management needs to assess circumstances, make estimates and assumptions in relation to the carrying amounts of assets and liabilities, which cannot necessarily be established from other sources. The estimates and the underlying assumptions are based on past experience and other factors that are considered to be relevant. The actual values may differ from these estimates.

The assumptions underlying the estimates are subject to regular review. If a change only affects one period, changes to estimates are only considered in that period. If the changes affect the current and the following reporting periods, they are considered in this period and in the following ones accordingly.

The most important cases where discretion has been exercised which management has used as part of applying the Company's assessment methods are shown below, as well as the most important effects of exercising discretion on the reported amounts. The most important assumptions regarding the future and

the other main sources of estimation uncertainties at the end of the reporting period are also specified. They could create a significant risk, which would make it necessary to extensively adjust the asset and liability figures that are recognized within the next financial year.

- When making the assumptions underlying the assessment of technology / applications, there is no insignificant estimation uncertainty regarding the development and market launch dates. The Company has made assumptions about the market launch date for its various projects. The Company has estimated the development and the market launch date for the different applications, and they form the basis for the valuation of the technology. The valuation of the technology depends on whether the assumptions made regarding the market launch date can be fulfilled. Based on a sensitivity analysis, the Company assesses the impairment risk for the technology because of possible delays to the market launch date as follows: if the market launch is delayed by more than 24 months compared to the Company's plan, the value in use will continue to exceed the carrying amount to a significant degree.
- With regard to the revenue reporting, simplified methods were applied compared to the annual financial statements. Specifically, revenue information was derived from all of the Group's ongoing projects as it was not possible to determine reliable percentages of completion due to system changes (ERP and financial system).
- The recognition of deferred tax assets for losses carried forward depends on the future revenue potential assessed by the Company. The deferred tax assets are estimated for what will probably be the deductible losses carried forward.
- When assessing accounts receivable and work in progress not yet invoiced, the Company estimates the default risk on the basis of information available from its customers.

### 3. Additional information

#### 3.1 Information about subsidiaries

Name of the subsidiary	Main business	Location	Voting rights & capital share 30.06.2024	Voting rights- & capital share 31.12.2023
Exentis Knowledge GmbH	Marketing of its own and external technology expertise using industrial property rights	Stetten (CH)	100 %	100 %
Exentis Innovations GmbH	Development and final assembly of 3D production systems	Malterdingen (DE)	100 %	100 %
Exentis North America Inc.	Marketing of the 3D technology platform in North America	Everett, MA (USA)	100 %	100 %
Exentis Technology GmbH	Project development and production of industrial 3D components	Jena (DE)	100 %	100 %
Exentis Tooling GmbH	Development and production of the 3D screen technology	Velden (DE)	100 %	100 %
Exentis Engineering GmbH	Research and development of own and external 3D technologies	Hillscheid (DE)	100 %	100 %

### 3.2. Currency conversion

The accounts of fully consolidated subsidiaries, whose functional currency is not the Swiss franc, are converted to the corporate reporting currency of Swiss francs using the modified reporting date exchange rate method. The conversion of the assets and liabilities takes place at the exchange rate on the reporting date. Items in the profit and loss information are converted at the average exchange rate for the period. Equity items are converted at historical exchange rates at the times when they accrued for the Group.

The Group's reporting currency is the Swiss franc (CHF).

[CHF / EUR]	30.06.2024	31.12.2023	30.06.2023
Average exchange rate for the period (for converting revenues and expenses)	0.96713		0.99820
Exchange rate at the end of the period (for converting assets and liabilities)	0.97175		0.99049
Exchange rate at year-end (for converting assets and liabilities)		0.92970	

## 4. Information about the consolidated profit and loss information

### 4.1 Revenue information from business with customers

[in CHF]	01.01.2024 – 30.06.2024	01.01.2023 – 30.06.2023
<b>Revenues</b>	<b>14 105 573</b>	<b>11 413 557</b>

Revenues from business with customers arise from business related to 3D production systems, business related to licenses, and the provision of services. Revenues from licenses and services are recognized at a particular point in time, while revenues from the sale of 3D production systems are recognized over the production period. The proportionate revenues per period are measured using the completion of the most important components for the 3D production systems by the suppliers.

### 4.2 Personnel expenses

[in CHF]	01.01.2024 – 30.06.2024	01.01.2023 – 30.06.2023
Wages and salaries	3 461 095	3 343 624
Social security contribution expenses	473 226	394 757
Costs for pension schemes	160 047	113 529
Other personnel expenses	133 300	90 779
<b>Total</b>	<b>4 227 668</b>	<b>3 942 689</b>



### 4.3 Administrative expenses

[in CHF]	01.01.2024 – 30.06.2024	01.01.2023 – 30.06.2023
Cleaning and rental ancillary costs	266 297	228 007
Vehicle expenses	22 582	12 601
Maintenance, IT, and energy expenses	142 313	78 999
Charges and fees, insurance policies	42 796	25 426
Expenses for consultancy services, accounting, and the Board of Directors	654 339	934 236
Advertising and sales expenses, travel expenses	140 394	76 555
Representation expenses	154 935	85 214
Electricity, water, waste disposal	33 634	24 625
Other administrative expenses	505 930	453 075
Other operating expenses (including capital taxes)	45 167	34 784
<b>Total</b>	<b>2 008 387</b>	<b>1 953 522</b>

## 5. Major events

The following events have taken place so far in 2024:

Besides the ongoing war in Ukraine, the conflict in the Middle East has added another factor of uncertainty. Customers' potential reluctance to introduce new technologies as a consequence of a global economic slowdown related to these armed conflicts has not been taken into account at this time.

In autumn 2024, presidential elections will be held in the USA. The risk of a potential weakening of demand depending on the outcome of the election cannot be conclusively assessed at this time.

Stetten, August 31, 2024



Ralf P. Brammer  
Chairman of the Board of Directors



Dr Gereon W. Heinemann  
CEO

# Contact

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## **Exentis Group AG**

Im Stetterfeld 2

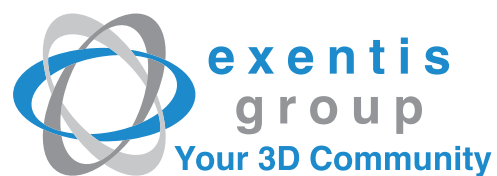
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