

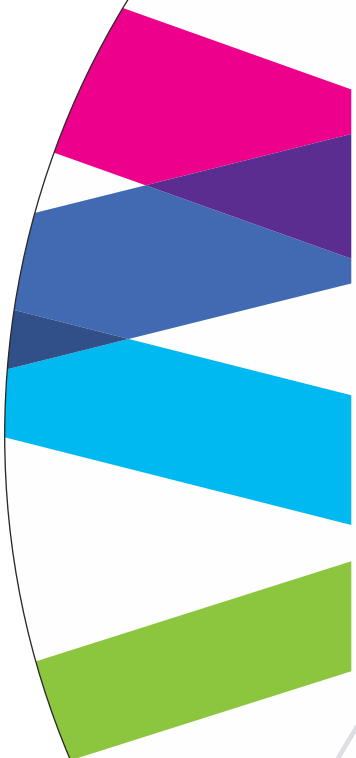


# MAŁOPOLSKA SMART SPECIALISATIONS

GUIDE

"Innovation  
distinguishes  
a leader and a follower"

*Steve Jobs*





## INNOVATION IS A WORD OF THE 21ST CENTURY

Both global corporations and local enterprises want to be innovative. Yet cities, regions and even countries also turn to innovation. Małopolska is among such regions. Here, innovations are perceived as a set of actions undertaken by people open to new ideas who, while striving to improve a company or community, implement solutions not applied before. Nowadays, innovation-based development is no longer an option but a necessity.

## MAŁOPOLSKA HAS BEEN OPENED TO INNOVATION FOR MORE THAN A DECADE

At that time we developed a document titled "Regional Innovation Strategy". We pointed out that the rate of development of the region will be determined by the participation of innovative enterprises. To realise such a vision, foundations are crucial. Małopolska has them in the form of intellectual capital as well as active citizens full of entrepreneurial spirit.

## THE REGION HAS FOCUSED ON SMART GROWTH

We have defined several areas through entrepreneurial discovery process that determine Małopolska growth directions. We called these areas **Małopolska smart specialisations**. This publication is to present Małopolska smart specialisations in a transparent and friendly manner. Thanks to it, entrepreneurs will learn which industries can count on special development support, as well as what to do to receive it. **This guide will show you the way.**





# WELCOME TO MAŁOPOLSKA

Małopolska is an exceptional and diverse region with strong identity, drawing inspiration from its unique heritage. It is attractive in every respect – as a place to live, work, and have fun. Undoubtedly, one of the most interesting regions in Poland. Here are some proofs. We have the largest number of monuments in Poland, every year visited by more than 17,2 million tourists who spend more than 15,2 billions PLN. Half of the region is a protected area. And there is a lot to protect – Babia Góra and Tatra National Parks (UNESCO Biosphere Reserves) are unique places in the world, with unparalleled natural qualities.

As many as **14 Małopolska sites have been included in the UNESCO World Heritage List.**

In 2020, Krakow took the second position in Europe among the most attractive cities for international business services in the prestigious Tholons Services Globalization City Index.

But there's something else. A unique investment climate. We say it out loud - Małopolska has been at the forefront of the national ratings of investment attractiveness for many years. Here, entrepreneurial aspirations can be successfully brought about.

## WHAT DO THE ENTREPRENEURS EXPECT?

- > Specific solutions
- > Support from self-government
- > Support from business environment institutions

We provide it all. And even more: qualified staff, economic security, a wide range of real estate. This support for entrepreneurship has been recognised. **Małopolska was the first in Poland to receive the title „European Entrepreneurial Region 2016” awarded by the Committee of the Regions and the European Commission.**



## DID YOU KNOW...

Małopolska as the first region from Central and Eastern Europe and the only one in Poland taking part in the **Vanguard Initiative** aimed at industrial renewal thanks to the economic cooperation of the most innovative regions within the EU.

# There are thousands of reasons for choosing Małopolska

Here are **7** key for entrepreneurs:

1. We are one of the leading regions in Poland in terms of economic potential and investment attractiveness,

2. We have good transport accessibility and location at the intersection of international transit routes,

3. The capital of Małopolska is the best European city to locate investments for the BPO&SSC\* industry,

4. We support modern infrastructure for staff education and development of companies,

5. We have a well-developed scientific and R&D base,

6. We invest in human capital – we have a large number of graduates and a high percentage of people with higher education,

7. We have natural and geothermal resources.

\* BPO – Business Process Outsourcing – outsourcing of business processes / SSC – Shared Service Center – a shared service center for the company, responsible for handling a number of its internal processes

**409 800**

BUSINESS ENTITIES  
OPERATING IN MAŁOPOLSKA



**1,42 million**  
square meters

OF MODERN OFFICE SPACE  
IN KRAKOW

**USD 22 billion**

THE VALUE OF FOREIGN  
INVESTMENTS (1989 - 2016)



**70**

INVESTMENT OFFERS IN THE BUSINESS  
IN MAŁOPOLSKA DATABASE

**1,485 million**

OF WORKING  
POPULATION



**EUR 8,8 billion**

THE VALUE OF EXPORTS OF GOODS AND  
SERVICES FROM MAŁOPOLSKA

1 region, 7 specialisations. Małopolska has focused on smart development and is implementing it in a consistent way. As a result, Małopolska has become one of the most innovative regions in the country.

Małopolska smart specialisations determine directions of the region's development. They support the collaboration of science and business which opens door for innovation.

# WELCOME

## TO THE LAND OF SMART SPECIALISATIONS

### WHY WERE SMART SPECIALISATIONS CREATED?

We picked Małopolska specialisations to support areas with the greatest growth potential in the region. We have conducted extensive consulting and research work with representatives of various institutions and environments, including the business, science and business environment sectors, to select the areas of specialisation. We chose those, which will strengthen the competitiveness of Małopolska both in the national and international arena.

### WHAT SHOULD YOU KNOW ABOUT MAŁOPOLSKA SMART SPECIALISATIONS?

- > The process started in 2009
- > They determine strategic directions of the region's development
- > They employ the unique resources of the region combining various industries
- > They make the greatest contribution to the region's GDP and create most of the jobs
- > They allow enterprises to access additional sources of financing
- > Any economic entity – both newly established and well-known incumbents of the market can enter the area of smart specialisations

### 7 SMART SPECIALISATIONS:

1. Life Science
2. Sustainable Energy
3. Information and Communication Technologies
4. Chemistry
5. Production of Metals, Metal Products and Non-metallic Mineral Products
6. Electrical Engineering and Machinery Industry
7. Creative and Leisure Industries

Within a specialisation, we accumulate funds from the Regional Operational Programme for research and innovation.



### 1. LIFE SCIENCE

- 1.1 Active and healthy life
- 1.2 Medicinal products and medical devices
- 1.3 Modern diagnostics and therapy (Digital Health)
- 1.4 Modern therapeutic technologies and supporting medical devices
- 1.5 Innovative Medical Centre (Innovative Hospital)
- 1.6 Healthy food and nutrition
- 1.7 Modern, sustainable agriculture
- 1.8 Environment - environmental health factors
- 1.9 Bioeconomy



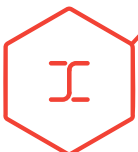
### 2. SUSTAINABLE ENERGY

- 2.1 Intelligent networks and energy storage
- 2.2 Clean technologies for the conversion of fossil fuels
- 2.3 Energy efficiency
- 2.4 Energy from waste and chemical energy carriers
- 2.5 Renewable energy sources
- 2.6 Energy-efficient smart buildings and cities



### 4. CHEMISTRY

- 4.1 Chemistry in health care
- 4.2 Chemistry in agriculture and agri-food, wood, pulp and paper industries
- 4.3 Biological and environmental chemistry
- 4.4 Chemistry in the power industry
- 4.5 Natural resources
- 4.6 Waste management
- 4.7 Materials for the construction and transportation
- 4.8 Advanced materials and nanotechnologies
- 4.9 Sensors



### 5. PRODUCTION OF METALS, METAL PRODUCTS AND NON-METALLIC MINERAL PRODUCTS

- 5.1 Innovative sustainable construction solutions and components in machines, devices and means of transport
- 5.2. Innovative environmental technologies for reduction and management of waste
- 5.3 Innovative manufacturing technologies and processes
- 5.4 Materials with improved functional properties
- 5.5 Acquisition and processing of raw materials

## FIND YOUR SPECIALISATION



### 6. ELECTRICAL ENGINEERING AND MACHINERY INDUSTRY

- 6.1 Medical engineering technologies
- 6.2 Innovative technologies, processes and products of the agri-food and forestry wood sectors
- 6.3 Sustainable energy, intelligent and energy-saving construction
- 6.4 Innovative manufacturing technologies and processes
- 6.5 Automation of technological processes
- 6.6 Smart creative technologies, design
- 6.7 Optoelectronic processes and materials



### 3. INFORMATION AND COMMUNICATION TECHNOLOGIES

- 3.1 Medical engineering technologies, including medical biotechnology
- 3.2 Diagnostics and therapy of civilization diseases and in personalised medicine
- 3.3 Innovative technologies, processes and products of the agri-food and forestry wood sectors
- 3.4 IT technologies supporting the production of high quality food
- 3.5 Highly efficient, low carbon integrated systems for generation, storage, transmission and distribution of energy
- 3.6 Intelligent building design and management systems
- 3.7 Environment-friendly transport solutions
- 3.8 Modern technologies of resources management including natural resources and manufacturing their substitutes
- 3.9 Multifunctional materials and composites with advanced properties, including nanoprocesses and nanoproducts
- 3.10 Sensors (including biosensors) and intelligent sensor networks
- 3.11 Intelligent networks, systems integration and geoinformation technologies
- 3.12 Electronics based on conductive polymers
- 3.13 Automation of technological processes
- 3.14 Optoelectronic processes and materials
- 3.15 Smart creative technologies



### 7. CREATIVE AND LEISURE INDUSTRIES

- 7.1 Creative industries
- 7.2. Graphic design and industrial design
- 7.3 Computer games and software (Interactive Leisure Software)
- 7.4. Leisure time industries

# 1

## LIFE SCIENCE



**277**

APPLICATIONS SELECTED  
FOR FUNDING




**508**

million PLN  
VALUE OF FUNDING

Life science is one of the most dynamically developing industry in the world. This is no different in Małopolska. Life Science is an interdisciplinary specialisation combining medical, biological and biochemical sciences. Here, innovations are created every day.





Life science is a very broad concept. Therefore, it was divided into two groups. The first one is health and quality of life. It consists of products and technologies used in the prevention, diagnosis, treatment and rehabilitation of diseases of both humans and animals. The other group encompasses bioeconomy and its intermediates as well as products used for the production of pharmaceuticals, cosmetics, food, materials and energy. Innovation costs money. That's why high expenses on R&D of Małopolska companies can be observed. These expenses increase year by year. Life science has a significant share in the education profile of future staff (in Małopolska there is a large percentage of students in the fields of biology, agriculture and environmental protection).

Another condition for success in the development of specialisation is close collaboration of various environments. Knowledge transfer from university laboratories to enterprises is necessary. There is a suitable climate for this in Małopolska. A large number of business environment institutions direct their offer to companies from the life science sector. The largest of these institutions are **Klaster LifeScience Krakow**, **MedCluster** and **the Jagiellonian Center of Innovation**.

**The Małopolska Center of Biotechnology** supports cooperation between science and business and conducts scientific research. The research and development institutions also include **the Jerzy Haber Institute of Catalysis and Surface Chemistry Polish Academy of Sciences**, **the Maj Institute of Pharmacology Polish Academy of Sciences** and **the National Research Institute of Animal Production**.

**15 448**

ENTITIES OPERATING  
IN THE FIELD OF LIFE SCIENCE

**53,9%**

OF ENTITIES ARE LOCATED  
OUTSIDE OF KRAKÓW

**9,2%**

OF ALL STUDENTS IN POLAND  
OF THE BIOLOGICAL, MEDICAL AND SOCIAL  
CARE STUDIES STUDYING IN MAŁOPOLSKA  
REGION (THE HIGHEST FOR  
BIOLOGICAL STUDIES - 15,2 %)

**6**

RESEARCH CENTRES  
RELATED TO LIFE SCIENCE

**11**

BUSINESS ENVIRONMENT  
INSTITUTIONS DIRECTING THEIR OFFER  
TO LIFE SCIENCE ENTERPRISES

#### EXAMPLES OF APPLICATIONS:

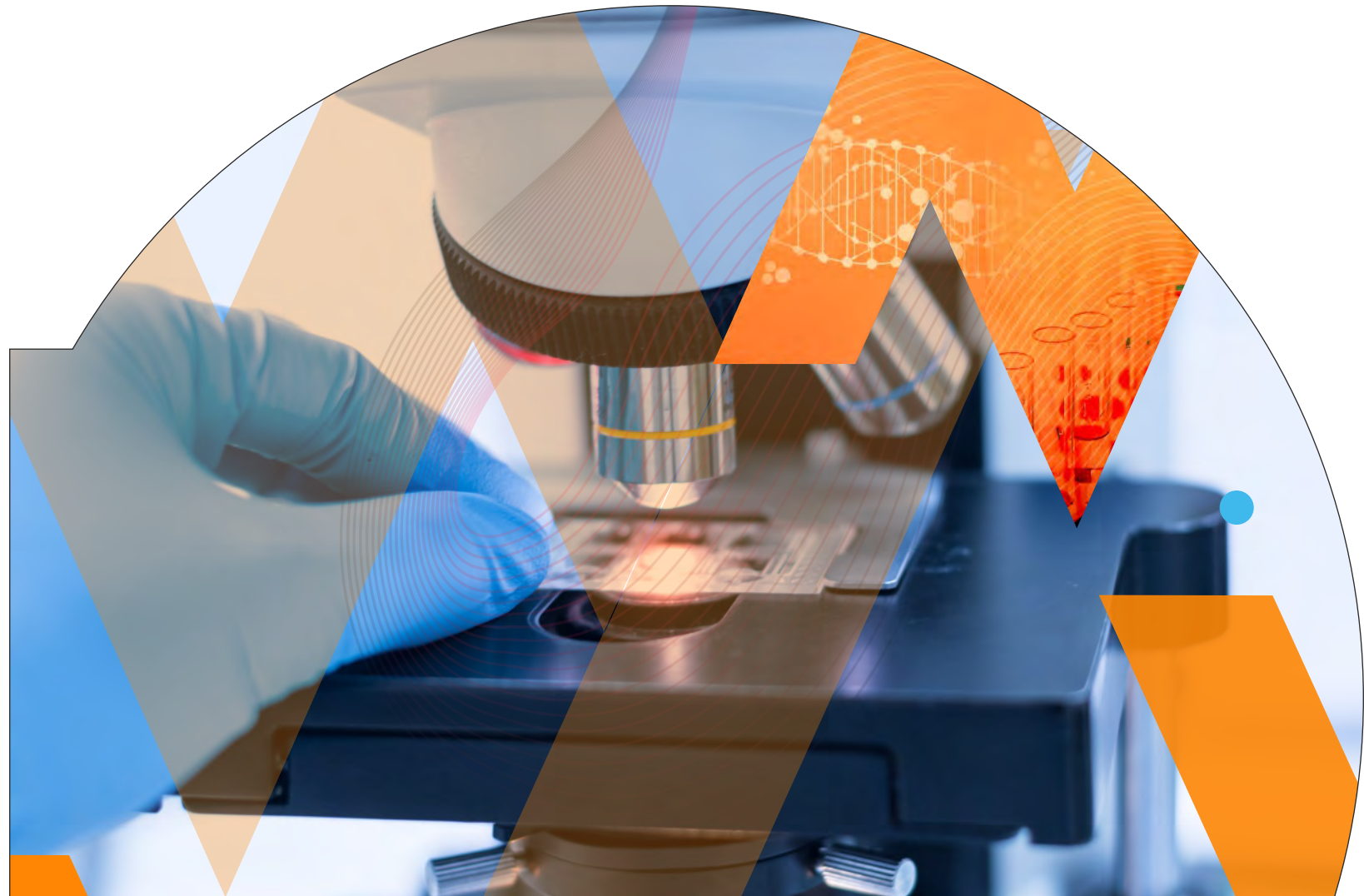
telemedicine, telecare, manufacture  
of medicines, production of healthy food,  
modern methods of plant protection,  
processes related to circular economy.

#### DID YOU KNOW...

Selvita SA from Krakow is one of  
the largest biotechnology companies  
in Europe operating in the field of  
discovery and development of drugs  
used in the oncological area.

#### SELECTED MAŁOPOLSKA COMPANIES IN THE AREA LIFE SCIENCE:

Aspel SA, Farmina Sp. z o.o.,  
Selvita SA, Silvermedia Sp. z o.o.,  
Teva Operations Poland Sp. z o.o.,  
BioCentrum Sp. z o.o., Bielenda Kosmetyki  
Naturalne Sp. z o.o. S.K., KZZ Herbapol  
w Krakowie SA, Intermag Sp. z o.o.,  
Laboratorium Kosmetyków Naturalnych  
Farmona Sp. z o.o., Ryvu Therapeutics SA



*Choosing the area of Life Science as one of seven smart specialisations is an important declaration when it comes to the potential and future of the region. I strongly believe that Małopolska has an aptitude to become one of the main centres of life science, not only at the national level, but throughout Central and Eastern Europe. It is a good sign that our economy is in line with the latest global trends – biotechnology and pharmacy are industries of growing importance in both Poland and Małopolska. In the global context, we are at the start of a long road, but we believe that investments will allow us to quickly join the world league*

Paweł Przewięźlikowski, Co-founder Selvita SA and  
Co-founder and CEO of Ryvu Therapeutics SA

# 2


## SUSTAINABLE ENERGY



  
**144**  
APPLICATIONS SELECTED  
FOR FUNDING

  
**443**  
million PLN  
VALUE OF FUNDING

Energy consumption is growing very fast and often is harmful to the environment. That is the reason why the world is moving towards a renewable energy sources system. It is also a direction that Małopolska takes.



The global share of renewable energy sources in the production of electricity is approx. 33%, including hydro, solar, wind, photovoltaic energy, biomass and biofuels. The capacity of renewable energy installations in Poland is currently 9.5 GW. Wind installations are the most numerous among RES, their number is 1207. Photovoltaics is in second place - 1104 installations. Today, every modern region strives to operate on the basis of sustainable energy. Małopolska is very much in it.

What are our actions in this area? We increase the use of renewable energy sources, we enhance the energy efficiency of Małopolska companies, we also reduce emissions and introduce low-emission urban transport. Sustainable energy, as a smart specialisation covers the development of power industry and energy use. It focuses on clean energy technologies, energy efficiency and prosumer energy.

The region already has a high potential for research on energy technologies. **The AGH University of Science and Technology in Krakow** coordinates one of the 6 Nodes (**CC Poland-Plus**) that form **the international Knowledge and Innovation Community (KIC InnoEnergy)**. The Community budget is approx. EUR 100-150 million per year. It comprises of the best European universities and research institutes working on innovations in the area of energy.

The leading research institutions in the region are the Center for Sustainable Development and Energy Efficiency AGH in Miękinia, the Mineral and Energy Economy Research Institute Polish Academy of Sciences and the Małopolska Center for Energy Efficient Building. **Regional Renewable Energy Cluster in Nowy Sącz, South Poland Cleantech Cluster** and **Sustainable Infrastructure Cluster** can be found among the business environment institutions working within this sector.

IN 2016 MAŁOPOLSKA ADOPTED AN ANTI-SMOG RESOLUTION THAT ONLY ALLOWS THE USE OF SELECTED, ECOLOGICAL HEATING INSTALLATIONS

449

ENTITIES OPERATING IN THE AREA OF SUSTAINABLE ENERGY



40,5%

OF ENTITIES ARE LOCATED OUTSIDE OF KRAKOW

71%

OF GREEN ENERGY COMES FROM SOLID BIOFUELS



EUR 64,5 million

THE VALUE OF FUNDING FROM REGIONAL OPERATIONAL PROGRAM 2014-2020 FOR SERVICE TO ENHANCE OF SUSTAINABLE ENERGY SOURCES

#### EXAMPLES OF APPLICATIONS:

modern and renewable methods of obtaining and processing energy and its storage, biofuels, smart buildings, transport and energy systems, improvement of energy efficiency of buildings.

#### / DID YOU KNOW...

Columbus Energy SA from Krakow is the largest service provider on the market of photovoltaic installations in Poland. The company offers complete solutions in the field of renewable energy sources for home and business.

#### SELECTED MAŁOPOLSKA COMPANIES IN THE AREA OF SUSTAINABLE ENERGY:

PGE Paliwa Sp. z o.o., PGE Energia Ciepła SA, InnoEnergy Central Europe Sp. z o.o., MPEC Kraków SA, Miejskie Przedsiębiorstwo Wodociągów i Kanalizacji SA w Krakowie, Savona Project Sp. z o.o., Frapol Sp. z o.o., DLJM System Sp. z o.o., Protech Sp. z o.o.



*Małopolska is a leading region in terms of business systems for applications assessment. As part of the cooperation, we use the knowledge and experience in the evaluation of projects applying for InnoEnergy programmes. The sustainable energy area is one of the region's smart specialisations. A so-called „panel of experts” appointed in Małopolska aims to reduce investment risk, increase the probability of achieving market success of supported initiatives by using tools applied successfully for many years*

Jakub Miler, CEO of InnoEnergy Central Europe


# 3

## INFORMATION AND COMMUNICATION TECHNOLOGIES



Although communication has always accompanied people, the development of technology has made it much easier. Nowadays, we are an information society. It is difficult to find an area of life in which information and communication technologies are not used.





The information resources are constantly growing and, at the same time, they are more and more dispersed. In order to use the collected data efficiently and quickly we need technology. This is where the ICT industry comes in. ICT encompasses all activities related to the production of communication and IT devices as well as the associated services.

What is the relationship between this industry and the information society? It is the information society where information processing using ICT creates a significant economic, social and cultural value. ICT fosters the diffusion of information and knowledge, and what is more geographical boundaries do not prevent the flow of information.

Małopolska is a region with a high concentration of ICT companies. It is the second region in Poland with the highest employment rate in this industry.

The ICT companies are supported by several business environment institutions: **Krakow Technology Park, Center for Intelligent Information Systems** (it is a platform for cooperation between the science and the business world including local government institutions; it implements innovative solutions in enterprises) and the **Academic Computer Centre CYFRONET AGH** (one of the largest supercomputing and network centres in Poland; it has the most powerful computers in Poland).

### EXAMPLES OF APPLICATIONS:

apps/platforms including those concerning health, air pollution, education, satellite data/navigation, e-health, e-hospital, e-government, Internet of Things, 3D printing, information management, data analysis.

### SELECTED MAŁOPOLSKA COMPANIES IN THE AREA OF COMMUNICATION AND INFORMATION TECHNOLOGIES:

Comarch SA, AdRem Software Sp. z o.o., Ericpol Sp. z o.o. Oddział w Krakowie, Mobile Experts Sp. z o.o., Motorola Solutions Systems Polska Sp. z o.o., Softhis Sp. z o.o., ASTOR Sp. z o.o., Cisco Global Support Center, Estimote Polska Sp. z o.o., brainly.pl Sp. z o.o., ZETO SA, DISKUS Polska Sp. z o.o., ProDevice Sp. z o.o. Sp.k.

### / DID YOU KNOW...

In 2020, Krakow is once again among the most technologically advanced "cities of the future". The international rating "25 Best Technological Cities of the Future 2020/2021" was prepared by the prestigious fDi Magazine.

  
**14 185**  
ENTITIES  
OPERATING  
IN THE  
ICT INDUSTRY

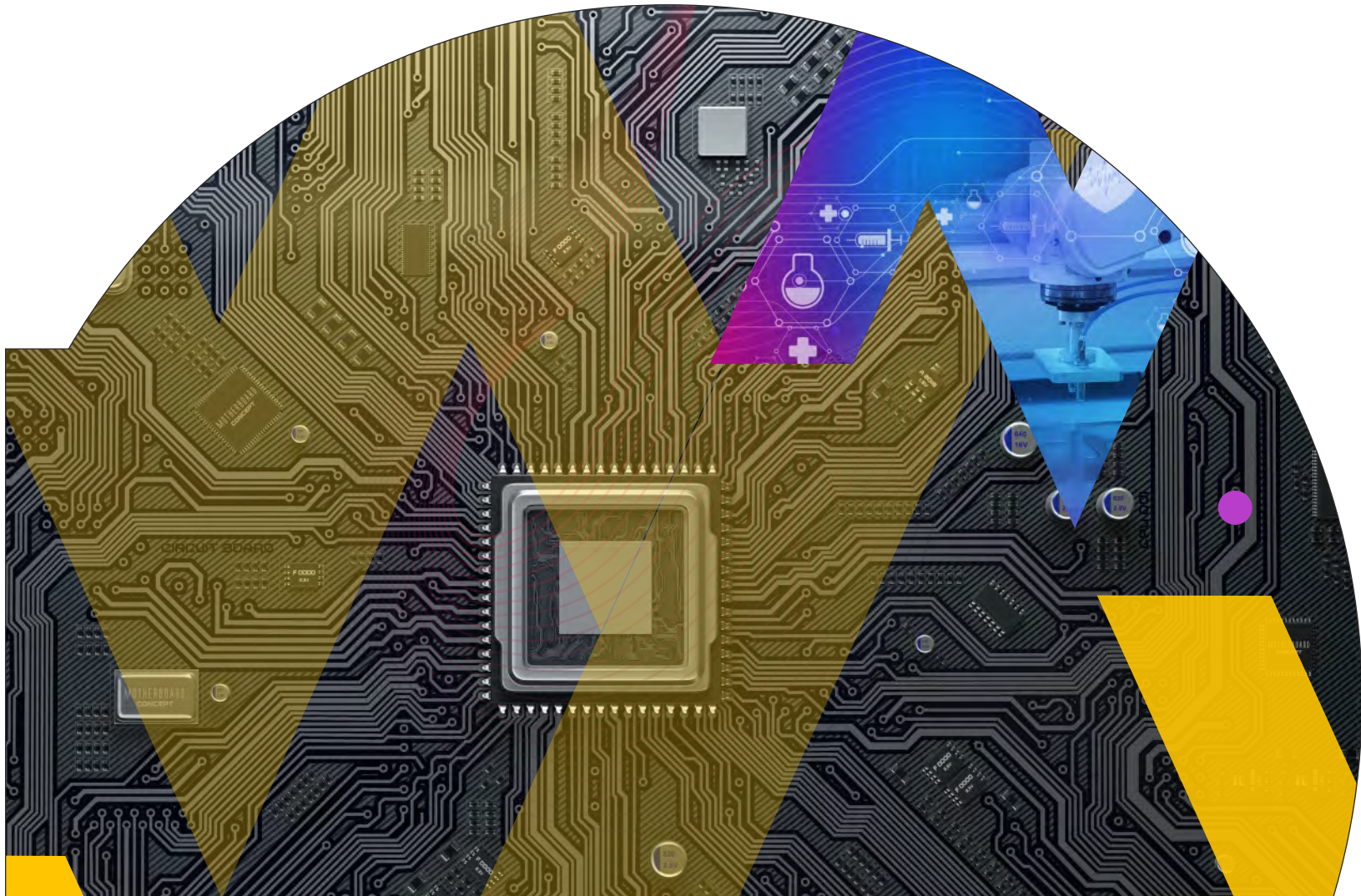
  
**37,4%**  
OF ENTITIES  
ARE LOCATED  
OUTSIDE  
OF KRAKOW

  
**38**  
BUSINESS  
ENVIRONMENT  
INSTITUTIONS OFFERING  
THEIR SERVICES  
TO ENTITIES OPERATING  
IN THE ICT INDUSTRY

  
**2**  
STRONG PROFILING  
AREAS OF STARTUPS  
RELATED TO THE ICT  
INDUSTRY OPERATING  
IN KRAKOW:  
EDUTECH AND  
INTERNET OF THINGS

  
**21%**  
OF CENTERS  
WITH DOMINATING  
IT PROFILE

  
**217**  
BUSINESS SERVICES  
CENTERS OPERATING  
IN KRAKOW



*From the beginning, we have been strongly connected with Małopolska, the company was founded in Krakow and it is the centre of Comarch's activity. The greatest advantage of Małopolska is the availability of highly qualified specialists, as well as good and close cooperation with universities. Over the last 27 years Comarch has developed from a company that occupied several rooms at the university to a „Silicon Valley near Wawel – Royal Castle in Krakow”. It is the combination of intellectual potential of the graduates of Małopolska universities and support for local institutions that have made the high-tech industry grow so dynamically in Małopolska*

Konrad Tarański, Vice President of the Management Board of Comarch SA

# 4

## CHEMISTRY



**228**

APPLICATIONS SELECTED  
FOR FUNDING



**734**

million PLN  
VALUE OF FUNDING

The chemical industry is a key sector of the Polish economy. It is a large part of Polish export. Its products are used in almost all sectors of the market. The chemical industry is also strategic in Małopolska.



The Polish Chamber of Chemical Industry defines fostering innovation as one of the greatest challenges for the chemical industry. Innovation is the only way for further growth of the European chemical industry on the global market. The chemical industry will undergo many significant changes while the market will force the development of modern production technologies and new materials.

The Małopolska specialisation includes particularly programmes aimed at implementing new chemical compounds, materials and technologies as well as solutions in the field of chemical engineering. The industry in the region can be characterized by high work efficiency. New enterprises are still being created. The large-scale of export of chemical products manufactured in the region (in 2018, the value of exports stood at 1.64 billion EUR) is definitely worth noticing.

If we look at the map, we will find out that the largest companies are located in Tarnów, Oświęcim, Alwernia and Skawina. The plants situated in those localities are not only manufacturers of products of strategic importance, but also significant employers.

Among the business environment institutions offering services directly to entities in the field of chemistry we should mention **the Tarnow Industrial Cluster J.S.C. and the Scientific and Technical Association of Engineers and Technicians of Oil and Gas Industry**. In addition, the Małopolska chemical industry is supported by R&D units, including: **Faculty of Chemistry of the Jagiellonian University** (the university authorities plan to establish a research and development centre) and **the Jerzy Haber Institute of Catalysis and Surface Chemistry, Polish Academy of Sciences**.



**2 296**

ENTITIES  
OPERATING IN THE  
CHEMICAL INDUSTRY

**14**

SCIENTIFIC  
INSTITUTIONS  
RELATED  
TO CHEMISTRY

**67,3%**

OF ENTITIES  
ARE LOCATED  
OUTSIDE OF KRAKOW

**87%**

OF COMPANIES  
IN THE CHEMICAL INDUSTRY  
ARE INNOVATIVE ENTERPRISES

## **DID YOU KNOW...**

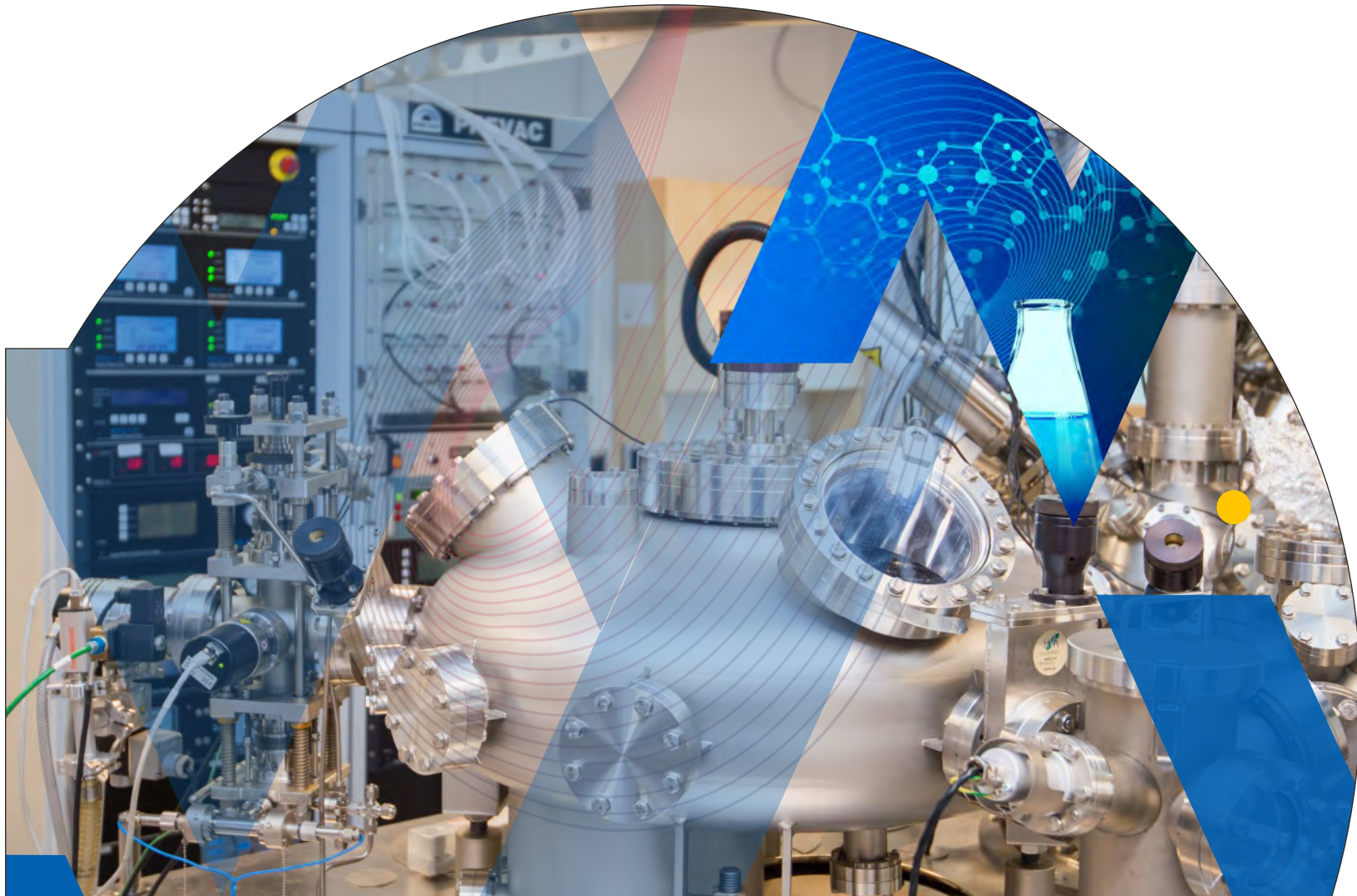
The merger of chemical plants in Tarnów and Puławy resulted in creating one of the largest chemical groups in Europe - Grupa Azoty - based in Małopolska.

### **EXAMPLES OF APPLICATIONS:**

new forms and ingredients of medicines, innovative cosmetics supporting treatment, fertilizers and plant protection products, bioproducts, technologies to reduce emissions, production and use of biofuels, natural resources and waste.

### **SELECTED MAŁOPOLSKIE COMPANIES IN THE FIELD OF CHEMISTRY:**

Alwernia SA, Synthos SA, Grupa Azoty SA, Dragon Poland Sp. z o.o. Sp. k., BP Europa SE Oddział w Polsce, Krakchemia SA, Linde Gaz Polska Sp. z o.o., Novatek Polska Sp. z o.o., Orlen Oil Sp. z o.o., Orlen Południe SA, Slovnaft Polska SA, Solvent Wistol SA, Rafineria Trzebinia, Cortex Chemicals



*We have been operating in Malopolska for 97 years. We are proud that while being one of the largest producers of chemicals with the highest quality parameters on the Polish market, we can make a significant contribution to the development of local, social and economic infrastructure. We owe our continuous development to the possibility of acquiring high-class specialists and fruitful cooperation with Krakow's universities. We also value effective cooperation with the leading companies in our region. Together with the Malopolska Region authorities, we make sure that the innovative and technical solutions which we develop and implement are also environmentally friendly*

Wiesław Hałucha, CEO of Alventa SA


# 5

## PRODUCTION OF METALS, METAL PRODUCTS AND NON-METALLIC MINERAL PRODUCTS



Metal industry is one of the most dynamically changing economy sectors in Poland. Production is increasing, the number of businesses is growing, automation solutions are advancing. However, there are also threats. The geopolitical situation is a challenge as it significantly affects metal prices and energy costs.



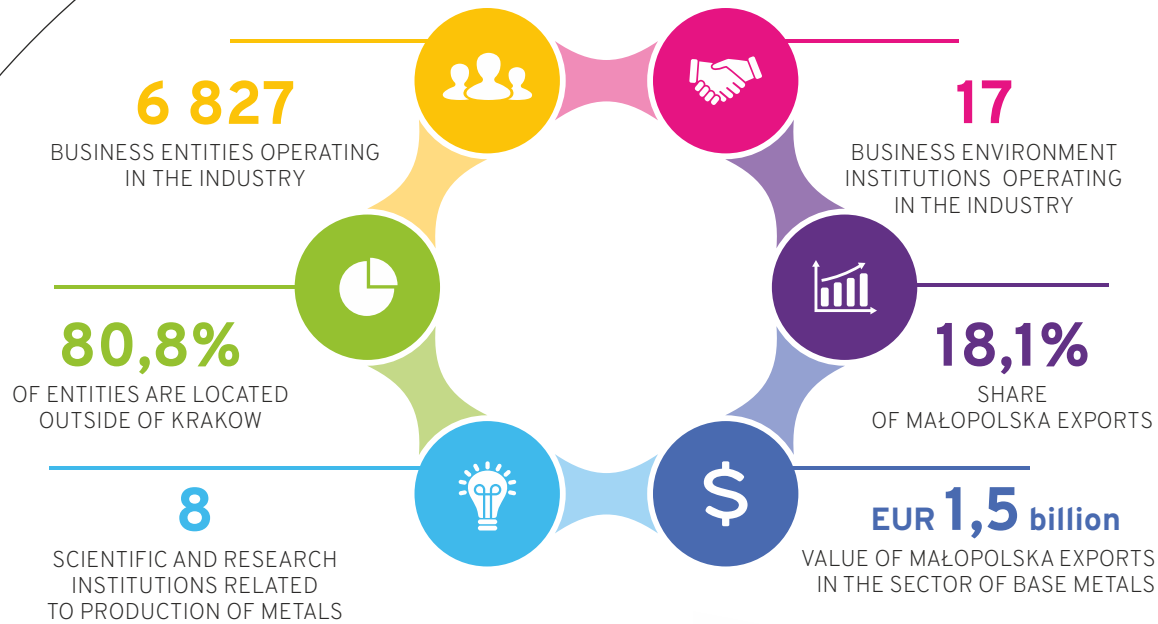


The specialisation (metal production) mainly comprises of research and development of technologies for manufacturing and forming of metallic and ceramic materials as well as waste management. Metal production dedicates particularly to the development of metal products for the electrical and energy industries. It also includes research in the field of material engineering. As for products from other mineral non-metallic materials those are mainly: glass, porcelain, ceramics, cement, lime, plaster.

Małopolska shows a very large research and development activity in the specialisation. This, in turn, translates into a high rate of innovation in enterprises (75% of Małopolska companies introduced innovations in recent years). The above-average employment, relatively high salaries and the dynamics in creating new companies indicate a good condition of the sector, and potential to create high added value.

Collaboration with specialised centres and enterprises from neighbouring region of Silesia is a great opportunity for the Małopolska metal industry. It will allow the entrepreneurs from both regions to compete more effectively on the international arena.

There are several business environment institutions in Małopolska which offer their services to entities from the sector of metal production. These include: **Polish Foundrymen's Technical Association, Technological Foundry Cluster Modern Cast Sp. z o.o.**, as well as **INNOAGH and INTECH PK** – institutions enabling the transfer of knowledge from the Krakow technological universities to the industry. There are also research and development organisations supporting metal industry in the region, in the first place it is mentioning **Lukasiewicz Research Network - Krakow Institute of Technology**.



#### EXAMPLES OF APPLICATIONS:


modern machine components, devices and means of transport, innovative construction solutions for industry, civil construction, raw materials processing, casting technologies, glass and ceramic products.

#### **DID YOU KNOW...**

Malopolska is a national leader in processing and preparation for reuse of valuable waste - paper, glass, metals and plastics.

#### SELECTED MALOPOLSKA COMPANIES IN THE AREA OF METAL PRODUCTION:

Alumetal SA, ArcelorMittal Poland SA Oddział w Krakowie, Grupa Kęty SA, Grupa Polska Stal SA, Kolejowe Zakłady Nawierzchniowe "Bieżanów" Sp. z o.o. – Grupa KZN Bieżanów, Stalprodukt SA, Tele-Fonika Kable SA, ZGH „Bolesław” SA, Krakodlew SA, Boryszew SA Oddział Nowoczesne Produkty Aluminiowe Skawina, INTERkrąż Sp. z o.o.



*Poland is the third largest producer of secondary aluminum casting alloys in Europe, and Małopolska is the heart of this industry in our country. It is in Małopolska where the three largest Polish companies producing aluminium alloys, included in the metal production industry, have their headquarters. Alumetal, as one of these companies, is dedicated to waste recycling, in our case we deal with aluminum scrap. For many years, the company has been investing in new technologies of melting and casting alloys as well as in innovative preliminary segregation lines recovering metal from waste. This allowed us to expand the range of recycled waste and today we can say that Alumetal uses all types of aluminum scrap available on the market. Thanks to this, we significantly contribute to the protection of Małopolska natural environment.*

Szymon Adamczyk, Member of the Supervisory Board Alumetal SA

# 6

## ELECTRICAL ENGINEERING AND MACHINE INDUSTRY



**144**


APPLICATIONS SELECTED  
FOR FUNDING



**356**

million PLN  
VALUE OF FUNDING

Nowadays, electrical engineering and machine industry, as branches of the electromechanical industry, are one of the largest industrial sectors in the world. Products manufactured within this sector (including machinery, electrical devices) are the most important Małopolska export goods.



The industry encompasses the production of electronic and optical products, electrical and mechanical equipment as well as the production of vehicles, means of transport and their components. Investments in machines and devices are not only related to the implementation of modern technologies. In fact these are largely expenses of transferring innovations to companies. Thanks to that, this sector has a high percentage of innovative enterprises (57% of Małopolska companies introduced at least one product, process, organizational or marketing innovation).

Małopolska is a significant exporter of electromechanical products. The export of electrical machines, equipment and their parts, as well as vehicles other than railway or tramway rolling-stock and parts and accessories there of has amounted to several billion euros in recent years. Within this specialisation Małopolska companies operate predominantly in the areas of repair, maintenance and installation of machinery and equipment.

The business environment institutions include **Sustainable Infrastructure Cluster** and **the Tarnow Industrial Cluster J.S.C** which main task is to create favourable conditions to allow entrepreneurial growth. It provides entrepreneurs with full support and legal consulting. The research and development institutions include **the Lukaszewicz Research Network - Krakow Institute of Technology** and **the Research and Development Center** operating within **Zakłady Mechaniczne Tarnów SA**.

### EXAMPLES OF APPLICATIONS:

medical engineering and artificial organs, devices for medical therapy and diagnostics, modern machines for agricultural and forestry sectors, means of transport and transport systems, physical and chemical sensors as well as biosensors and sensor networks, intelligent textiles, personal electronics, process automation, third generation solar cells, optoelectronic devices and systems, optical networks.

### SELECTED MAŁOPOLSKA COMPANIES IN THE AREA OF ELECTROMECHANICS AND MACHINE INDUSTRY:

BWI Poland Technologies Sp. z o.o., Centrum Techniczne Aptiv, Fabryka Maszyn Glinik SA, MAN Trucks Sp. z o.o., Newag SA, Valeo Autosystemy Sp. z o.o., Zakłady Mechaniczne Tarnów SA

### DID YOU KNOW...

Impuls 45WE, manufactured by Newag SA, is the fastest rail vehicle constructed in Poland. The train sped at 226 km/h.

**4684**

BUSINESS ENTITIES OPERATING IN THE INDUSTRY

**61,2%**

OF ENTITIES ARE LOCATED OUTSIDE OF KRAKOW

**7**

SCIENTIFIC AND RESEARCH INSTITUTIONS RELATED TO THE INDUSTRY

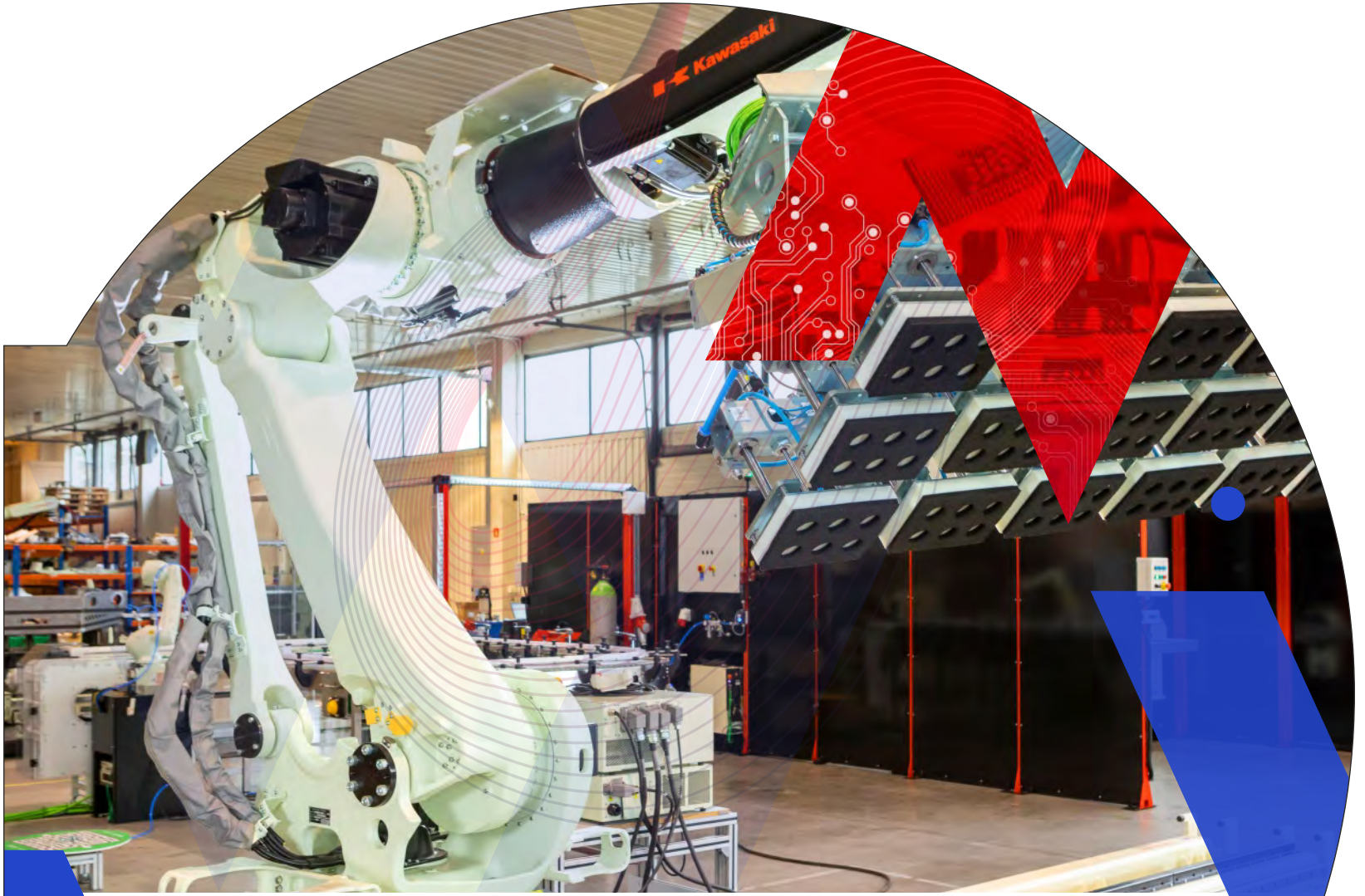
**EUR 2,5 billion**

(PLN 10,8 BILLION) VALUE OF MAŁOPOLSKA EXPORTS OF MACHINERY AND EQUIPMENT IN 2018

**4,7%**

SHARE OF MAŁOPOLSKA EXPORTS





*Drawing from the scientific potential of Małopolska and the availability of qualified specialists, it is in Krakow where we located a branch of our Construction Office. In nurturing the growth we closely cooperate with the Cracow University of Technology. Together we launch a new course - Rail Vehicles Engineering, we also award the most talented students with scholarships. As a leading Polish rolling stock manufacturer, we have completed a contract for the supply of electric multiple units for the Marshal Office of Małopolska Region. I am very pleased that the vehicles manufactured from scratch in Nowy Sącz serve passengers in our region.*

Józef Michalik, Vice President of the Management Board of NEWAG SA

# 7

## CREATIVE AND LEISURE INDUSTRIES



Poland is one of the largest exporters of the creative industry products and services. Creative industries are also considered to be an important factor in the economic development of Malopolska. They produce over 6% of the region's GDP.





Creative industries are one of the most recent economy sectors. It was identified only at the end of the last century, when the American sociologist and economist Richard Florida distinguished the creative class. According to him, it was a key driving force for economic development of postindustrial civilization. It is composed of scientists, researchers and inventors, artists, architects, writers, publishers, journalists, IT specialists and programmers. Florida's creative class is characterized by three basic values (so called 3Ts): **talent, tolerance and technology.**

We have similarly defined the Małopolska specialisation. These activities have potential to create wealth and jobs through individual talent. The companies working in creative industries are among the most active on the market in terms of creating and implementing innovations. Małopolska specialisation includes creative industries, graphic design, computer games and software, industrial design, architecture, fashion and leisure industry. The last one encompasses tourism, entertainment and recreation.

There is an excellent environment for development of leisure time industries in the region. Małopolska is one of the most attractive tourist regions in Poland. The unique cultural heritage (the largest number of UNESCO sites in the country) and nature (the largest number of national parks in the country), as well as the multitude of cultural offer (various museums, galleries, theatres, international festivals) makes it the most visited region in the country. Krakow was entitled as European Capital of Culture and the UNESCO City of Literature. The largest conference in the gaming industry – Digital Dragons – is organised in Krakow, with more than 1,500 specialists, creators and business representatives participating every year.

Creative and leisure industries can count on the support of various business environment institutions, for instance, **Małopolska Printing Cluster, Cluster of Culture and Krakow Film Cluster, Krakow Gastronomic Cluster and Active Tourism Cluster.** The oldest Faculty of Industrial Forms in Poland educating industrial designers is a part of **the Academy of Fine Arts in Krakow.** This specialisation can be characterized by high work efficiency and a high percentage 107 of art students.

27

BUSINESS SUPPORT INSTITUTIONS  
PROVIDE ASSISTANCE FOR ENTREPRENEURS  
OPERATING IN THE SECTOR

54 507

ENTITIES WITHIN  
THE SPECIALISATION

24

SCIENTIFIC AND RESEARCH  
INSTITUTIONS RELATED  
TO THE SECTOR



17,8 million

TOURISTS VISIT  
MAŁOPOLSKA (2019)  
1/5 ARE FROM ABROAD

13,3%

OF ALL ART STUDENTS  
IN POLAND STUDY IN MAŁOPOLSKA

#### EXAMPLES OF APPLICATIONS:

film productions, video games, technologies and solutions for the media, design of clothing and items, IT systems and applications enabling access to, for example, tourist information, booking, availability of tourist offer, active tourism.

#### / DID YOU KNOW...

8,400 business meetings were held in Krakow in 2019. 78% of which were domestic. The number of participants in meetings and events is over 1.2 million people. Nearly 670,000 delegates attended conventions and conferences.

#### SELECTED MAŁOPOLSKA COMPANIES IN THE AREA OF CREATIVE AND LEISURE INDUSTRIES:

Agencja Reklamowa OPUS B Sp.j., Alvernia Planet, Barton Film Sp. z o.o., Bloober Team SA, BUKOVINA Resort, Gamesture Sp. z o.o., Imperia Film, Ingarden i Ewý – Architekci Sp. z o.o., KreaTech Dagna Grzesik, One More Level SA, Outside Music, Pigeon Group Sp. z o.o., Perfectfi Im.tv, Symposium Cracoviense



*The combination of learning through play with elements of science and English language education, has a key role in educating the young generation. Teaching how to create applications as well as prototyping, constructing and programming robots is very important. The participants, based on the knowledge we provide, will form the elite of the IT, robotics, automation and design industry in Małopolska. Currently, there is a large demand for engineers and IT specialists on the market. In order to meet this need, we create an attractive environment for young people from Małopolska to develop their interests from an early age*

Marek Grzesik, CEO of KreaTech

# MEET

## THE MOST IMPORTANT ENTITIES RELATED TO SMART SPECIALISATIONS

### **KRAKOW TECHNOLOGY PARK (KPT)**

Krakow Technology Park is the most complete one-stop-shop for business in Poland. It has over 20 years of practice in the market environment. Together with entrepreneurs, scientists and local government representatives, it creates an ecosystem which has 350 companies for development of the Małopolska economy. KPT has a range of instruments and collaborates with over 50 specialists who help creating the best conditions for company growth and testing innovative solutions.

### **WHAT DOES THE KPT OFFER?**

- > It manages the Krakow special economic zone – it grants tax exemptions
- > It attracts and supports new investments in Małopolska
- > It promotes the economic offer of the Małopolska
- > It prepares local governments for getting in contact with an investor
- > It provides space and technical facilities for the development of small- and medium-sized companies
- > With the use of the technological incubator and accelerator, it stabilises and strengthens the market position of the most promising startups and inspires them to develop globally
- > It provides a unique know-how and extensive experience in project implementation
- > It is one of 2 certified Living Labs

### **SOLARIS NATIONAL SYNCHROTRON RADIATION CENTRE**

The first Polish synchrotron was built in Małopolska. It is located at the SOLARIS National Synchrotron Radiation Centre in Krakow. The Centre has been working by the Jagiellonian University since 2015.

Synchrotrons are particle accelerators which enable breakthrough research. They are research factories: thanks to them, scientists can perform simultaneous measurements 24 hours a day.

The excellent parameters of SOLARIS put it in the top of this kind of devices in the world.

### **WHAT ARE THE BENEFITS OF SOLARIS?**

- > It allows to look into the depths of matter itself, and carry out precise analyses
- > Thanks to synchrotrons, scientists study not only the composition of a given substance, but also its structure
- > Synchrotrons open up completely new research possibilities. Thanks to them, analyses which were previously impossible can be carried out
- > Synchrotrons also allow obtaining better results than those from studies carried out using traditional methods
- > It is used for research purposes in many fields of science, including biology, physics, chemistry, medicine, nanotechnology, materials engineering



## **CENTRES FOR TECHNOLOGY TRANSFER**

A CTT is an entity established to sell or transfer the results of research carried out within a certain R&D institution to the economy. The aim of CTT's activity is the commercialisation of knowledge. Małopolska has the largest number of CTTs in Poland. In addition to 5 CTTs established at universities, also one investment fund has a status of CTT.

## **BUSINESS IN MAŁOPOLSKA CENTRE**

Partner institutions, i.e. Małopolska Region, Małopolska Regional Development Agency, Krakow Technology Park carry out tasks aimed at attracting new foreign investments and supporting expansion of companies from Małopolska to foreign markets.

### **What tasks does CeBiM perform?**

- > It keeps a database of investment offers from the Małopolska
- > It prepares investment offers
- > It promotes contacts between Małopolska based companies and foreign companies
- > It promotes Małopolska economic potential internationally
- > It collaborates with local governments, business support institutions and the science sector



## REGIONAL INNOVATION STRATEGY 2030

RIS MB 2030 is a document that describes in detail the Development Strategy of the Malopolska until 2030. It develops and implements one of the objectives of the main strategy: an innovative and competitive economy. The main goal of the Regional Innovation Strategy is to increase the level of innovation in the region by 2030. RIS also proposes a set of goals and actions to achieve them in the following areas:

- > further building Innovation base, potential and image of the region
- > strengthening innovation and supporting industrial transformation of enterprises
- > building trust, communication and diffusion of knowledge in the innovation ecosystem

The Innovation Strategy also includes a detailed diagnosis, analysis of needs and challenges for all key economic areas of the region, the so-called smart specialization.

The entire RIS WM 2030 document is available at:  
[www.malopolska.pl](http://www.malopolska.pl)

**WOULD YOU LIKE TO LEARN MORE  
ABOUT SMART SPECIALISATIONS?**

**ARE YOU WONDERING HOW TO APPLY  
FOR FINANCIAL RESOURCES?**

## **CONTACT US!**

### **Business Centre in Małopolska**

ul. Podole 60, 30-394 Kraków  
phone: +48 12 620 91 40  
contact@businessinmalopolska.com  
www.businessinmalopolska.com

### **Małopolska Centre for Entrepreneurship**

ul. Jasnogórska 11, 31-358 Kraków  
phone: +48 12 376 91 00  
sekretariat@mcp.malopolska.pl

### **European Funds Information Points**

Opening hours:  
Mon 8:00-18:00  
Tue-Fri 8:00-16:00

### **Information Point in Krakow**

For the residents of the following counties:  
Krakow, Bochnia, Wieliczka, Myślenice,  
Miechów and Proszowice.

ul. Wielicka 72B, 30-552 Kraków  
Hotline: +48 12 616 06 16  
phone: +48 12 616 06 26  
phone: +48 12 616 06 36  
phone: +48 12 616 06 46  
phone: +48 12 616 06 56  
phone: +48 12 616 06 66  
phone: +48 12 616 06 76  
phone: +48 12 616 06 86

### **Information Point in Chrzanów**

For the residents of the following counties:  
Chrzanów, Olkusz, Oświęcim and Wadowice.

ul. Grunwaldzka 5, 32-500 Chrzanów  
phone: +48 12 616 03 91  
phone: +48 12 616 03 92  
phone: +48 12 616 03 93

### **Information Point in Tarnów**

For the residents of the following counties:  
Tarnów, Brzesko and Dąbrowa.

ul. Wałowa 37, 33-100 Tarnów  
phone: +48 12 616 03 61  
phone: +48 12 616 03 62  
phone: +48 12 616 03 63

### **Information Point in Nowy Targ**

For the residents of the following counties:  
Nowy Targ, Tatra and Sucha.

al. 1000-lecia 35, 34-400 Nowy Targ  
phone: +48 12 616 03 81  
phone: +48 12 616 03 82  
phone: +48 12 616 03 83

### **Information Point in Nowy Sącz**

For the residents of the following counties:  
Nowy Sącz, Gorlice and Limanowa.

ul. Wazów 3, 33-300 Nowy Sącz  
phone: +48 12 616 03 71  
phone: +48 12 616 03 72  
phone: +48 12 616 03 73

### **Business Environment Institutions in Małopolska**

> Małopolska Regional Development  
Agency: [www.marr.pl](http://www.marr.pl)

> Western Małopolska Development  
Agency: [www.armz.pl](http://www.armz.pl)

> Sądecka Regional Development  
Agency: [www.sarr.com.pl](http://www.sarr.com.pl)

> Tarnów Regional Development  
Agency: [www.tarr.tarnow.pl](http://www.tarr.tarnow.pl)

> Tarnow Center  
of Entrepreneurship  
[www.tarnow.pl](http://www.tarnow.pl)

> Krakow Technology Park:  
[www.kpt.krakow.pl](http://www.kpt.krakow.pl)

> Life Science Park in Krakow:  
[www.lifescience.pl](http://www.lifescience.pl)

> Chamber of Industry and Commerce  
in Krakow: [www.iph.krakow.pl](http://www.iph.krakow.pl)

> Chamber of Industry and Commerce  
in Tarnów:  
[www.chamber-tarnow.com.pl](http://www.chamber-tarnow.com.pl)

> Chamber of Commerce in Chrzanów:  
[www.chrzanowskaizba.pl](http://www.chrzanowskaizba.pl)

> Jurajska Chamber of Commerce:  
[www.jig.krakow.pl](http://www.jig.krakow.pl)

> Chamber of Commerce  
in Nowy Sącz:  
[www.sig.org.pl](http://www.sig.org.pl)



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