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**Mineral and Energy  
Economy Research Institute**  
Polish Academy of Sciences

# Management board of the Institute



Professor

**Krzysztof Galos**

Director of the Institute



D. Sc. Eng.

**Magdalena Wdowin**

Associate Professor,  
Deputy Director for Research



D. Sc. Eng.

**Michał Kopacz**

Associate Professor,  
Deputy Director for General Affairs

OVER  
**35**  
YEARS  
OF ACTIVITY



**HIGH**  
ACADEMIC STANDING  
OF THE INSTITUTE

CATEGORY A IN  
A PARAMETRIC EVALUATION  
OF SCIENTIFIC UNITS

MORE THAN  
**120**  
EMPLOYEES



INCLUDING ABOUT  
**60** PERSONS  
OF SCIENTIFIC STAFF



THE INSTITUTE'S  
SCIENTIFIC:

**5**  
DEPARTMENTS  
CONSISTING  
OF SEVERAL DIVISIONS



APPROXIMATELY  
**150**  
SCIENTIFIC  
PUBLICATIONS  
PER YEAR



**100** RESEARCH PROJECTS  
AND COMMERCIAL  
CONTRACTS  
CARRIED OUT EACH YEAR

INCLUDING  
**20**  
INTERNATIONAL  
PROJECTS




OVER  
**60**  
DOMESTIC  
AND FOREIGN  
RESEARCH UNITS,  
IN COOPERATION

THE INSTITUTE CARRIES OUT  
RESEARCH FOR MORE THAN

**100**  
BUSINESSES IN POLAND AND ABROAD





The history of the Mineral and Energy Economy Institute, Polish Academy of Sciences (MEERI PAS) dates back to the 1980s.

## From tradition to modernity

In 1986, the Department of Basic Research on Mineral Management was founded, transformed two years later into the Centre for Fundamental Problems of Mineral and Energy Management of the Polish Academy of Sciences.

From 1986 to 2004, the Director of the Institute was Prof. Roman Ney; from 2005 to 2016, it was Prof. Eugeniusz Mokrzycki and, since 2017, it has been Prof. Krzysztof Galos.

At present, the Institute is an important research and development institution, contributing to scientific and research progress in the field of mineral and energy management, in Poland and abroad. In the last parametric evaluation of scientific units, the Institute was awarded the "A" category.

It is worth mentioning that the Institute also houses three laboratories:

- **Geothermal Laboratory in Bańska Niżna-Biały Dunajec,**
- **Laboratory of Engineering Geophysics,**
- **Environmental Research Laboratory.**

However, we are making efforts to develop our research facilities. In Krakow, at Wybickiego 7A St., a modern laboratory office is being built, in which three laboratory units will be located.

**1986**

The Department of Basic Research on Mineral Management of the Polish Academy of Sciences

**1988**

The Centre for Fundamental Problems of Mineral and Energy Management of the Polish Academy of Sciences

**1998**

Mineral and Energy Economy Research Institute, Polish Academy of Sciences

**2021**

35<sup>th</sup> anniversary of the Institute foundation

# Mission

The mission of the Institute is to provide modern, economically viable, environmentally friendly and socially attractive scientific solutions for the sustainable development of the country and its regions in the field of minerals and energy.

**This mission is implemented under the motto:**

**MINERALS AND ENERGY  
FOR SOCIETY**



This is delivered through rationally designed actions and interrelated research, as well as organizational, technical and economic activities, in the following areas:

**RESOURCES | TECHNOLOGIES  
ECONOMICS | MARKET  
ENVIRONMENT**

In a scientific triangle:

**RESEARCH  
INNOVATION  
EDUCATION**





The most valuable capital of the Institute is its employees, whose number currently exceeds 120

## Diamonds of the Institute

The scientific personnel includes:

- **10 Professors,**
- **9 Associate Professors,**
- **22 Adjunct researchers,**
- **17 Assistant researchers.**

The other employees provide scientific, technical and administrative support to the scientific staff. Very high

expertise of our employees is supplemented by many years of experience in the implementation of research and development.

The substantive competence of our employees is systematically developed in the course of applied research, research and development, training and through active contacts with entrepreneurs, inscribed in the specifics of the activity of our Institute.



Professors



Habilitated doctors  
D.Sc.



Doctors  
Ph.D.



Master's degrees  
M.Sc.



Others

# Minerals and energy for society

The research carried out at the Institute are characterized by interdisciplinarity and their complex character. They cover a full cycle of R&D processes - from basic research to application, with a particular emphasis on their usefulness.

The interdisciplinary nature of the Institute's activities includes in particular the following research fields and disciplines:

- **environmental engineering,**
- **mining,**
- **power engineering,**
- **engineering and applied geology,**
- **geophysics,**
- **chemical and materials engineering,**
- **environmental biotechnology,**
- **IT engineering in mining and energy**

and issues related to the economy: natural resources, minerals, fuels and energy, or the circular economy. The results of these works are, in turn, scientific publications, documented research, analyzes, documentation, studies, implementations, patents and various types of services provided for business entities, government and local administration authorities.

The scientific profile of the Institute includes the broadly understood issues of mineral and energy management, starting with the forecasting, identification and exploration of mineral deposits,

through their development and the acquisition of raw materials, and ending with processing, enrichment and recovery processes. Research and development activities include also different aspects of the strategy development and assessment of the domestic mineral and energy management, taking into account the newest technological developments and market, environmental, social and legal conditions. The current scope of statutory research covers basic thematic areas such as issues related to the efficiency of mineral resources, energy and waste management, renewable energy as a factor of sustainable development, information technologies in the analysis of mineral resources and energy management systems, regionalization of Polish energy policy and sustainable development of regions.

The Institute specializes in basic studies and applied research in the field of geothermal energy. It is worth emphasizing that our employees pioneered the use of geothermal energy for heating. Within the framework of the Institute's activities, the first Polish experimental geothermal plant in Bańska Niżna-Białe Dunajec was launched in 1993. As of today, this installation is also used as a geothermal laboratory.

## SCIENTIFIC FIELDS AND DISCIPLINES IN WHICH THE INSTITUTE OPERATES:

- Environmental engineering
- Mining
- Power engineering
- Engineering and applied geology
- Geophysics
- Chemical and materials engineering
- Environmental biotechnology
- IT engineering in mining and energy

## AREAS OF SCIENTIFIC ACTIVITY:

- Management of natural resources
- Management of mineral resources
- Fuel and energy management
- Circular economy

## THE RESULTS OF OUR WORK:

- Science publications
- Research papers
- Analyzes
- Documentation and studies
- Implementations,
- Patents
- Consultancy services



# Excellence in science and Integrated Management System (ISO)

Focusing on the scientific development of the employees is a key element in many of the initiatives implemented by our Institute, that aim to bridge the generational gaps and support the development of our researches.

In the field of scientific excellence, the Institute implements supportive actions:



Recruitment of young researchers



Supporting the completion of doctoral and postdoctoral dissertations



Promoting extraordinary publications

The quality and the scientific level of our employees are verified by the internal staff appraisal system, which promotes self-development within a specific career path. It is also worth mentioning that, the Institute has also been a member of the **Euraxess Researchers in Motion**, network, thus supporting researcher mobility and dissemination of knowledge in Europe.

The efforts of our Institute were recognized by the European Commission, which, after analysing our overall personnel policy, and as a result of the implementation of the Commission's guidelines contained in the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers, awarded us the prestigious **HR Excellence in Research**, in 2017, confirming the highest quality of science and HR policy in our Institute.



It is worth emphasizing that persons under the age of 40 make up about 40% of the total number our institute's employees.

## YOUNG PEOPLE IN SCIENCE

Within the framework of cooperation with universities, the Institute is involved in the organization of scientific internships and placements, providing development opportunities for future researchers. Every year, the Institute is visited by several students, including those pursuing a Ph.D., also from abroad who wish to develop their academic interests. The best of them are given the opportunity to work in our unit.

## INTEGRATED MANAGEMENT SYSTEM (ISO)

With respect to natural environment and to offer the best quality of our services, the Institute has implemented and maintains an Integrated Quality and Environmental Management System compliant with the requirements of ISO 9001: 2015 and ISO 14001: 2015. The scope of certification includes accomplishment of scientific researches, R&D and laboratory services, promotion and dissemination of scientific achievements.

The policy of the Integrated Management System is an integral part of the management system in our Institute.





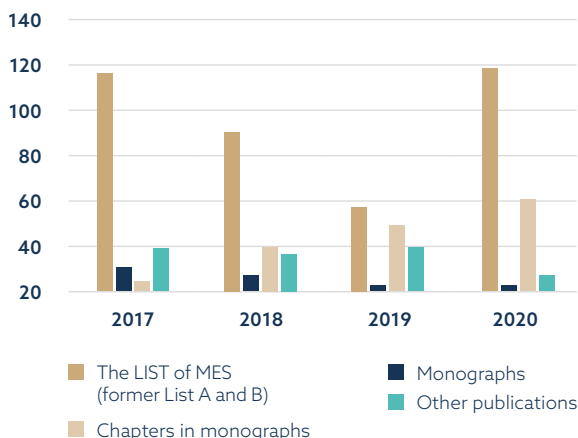
# Scientific achievements in numbers

For 35 years of its activity, the Institute has systematically built up its reputation as an important centre, advancing research quality in the area of its main activity in both Poland and abroad.

We are satisfied that the number of scientific publications in the period of 2017-2020, published by our employees was growing. In mentioned time it exceeded 568 items, which means nearly 150 publications per year. The average value of publications above 20 points, only for 2020, was 87.7.

In the last period, they were most often published in the following journals: Energies (140), Resources Policy (140), International Journal of Hydrogen Energy (140), Journal of Cleaner Production (140), Resources (100), Desalination and Water Treatment (100), Gospodarka Surowcami Mineralnymi-Mineral Resources Management (70), Sustainability (70), Przegląd Geologiczny (40), Przemysł Chemiczny (40), Inżynieria Mineralna-Journal of the Polish Mineral Engineering Society (40), Rynek Energii (40), Polityka Energetyczna - Energy Policy Journal (20), E3s Web of Conferences. Each year, several articles with a value of 200 points are also published.

Publications of MEERI PAS employees in 2017-2020



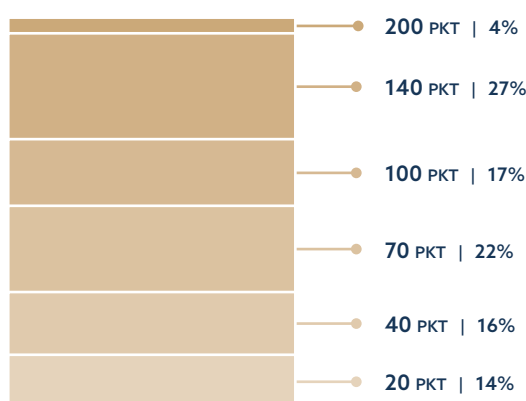
Statistics of publications of MEERI PAS employees in 2017-2020

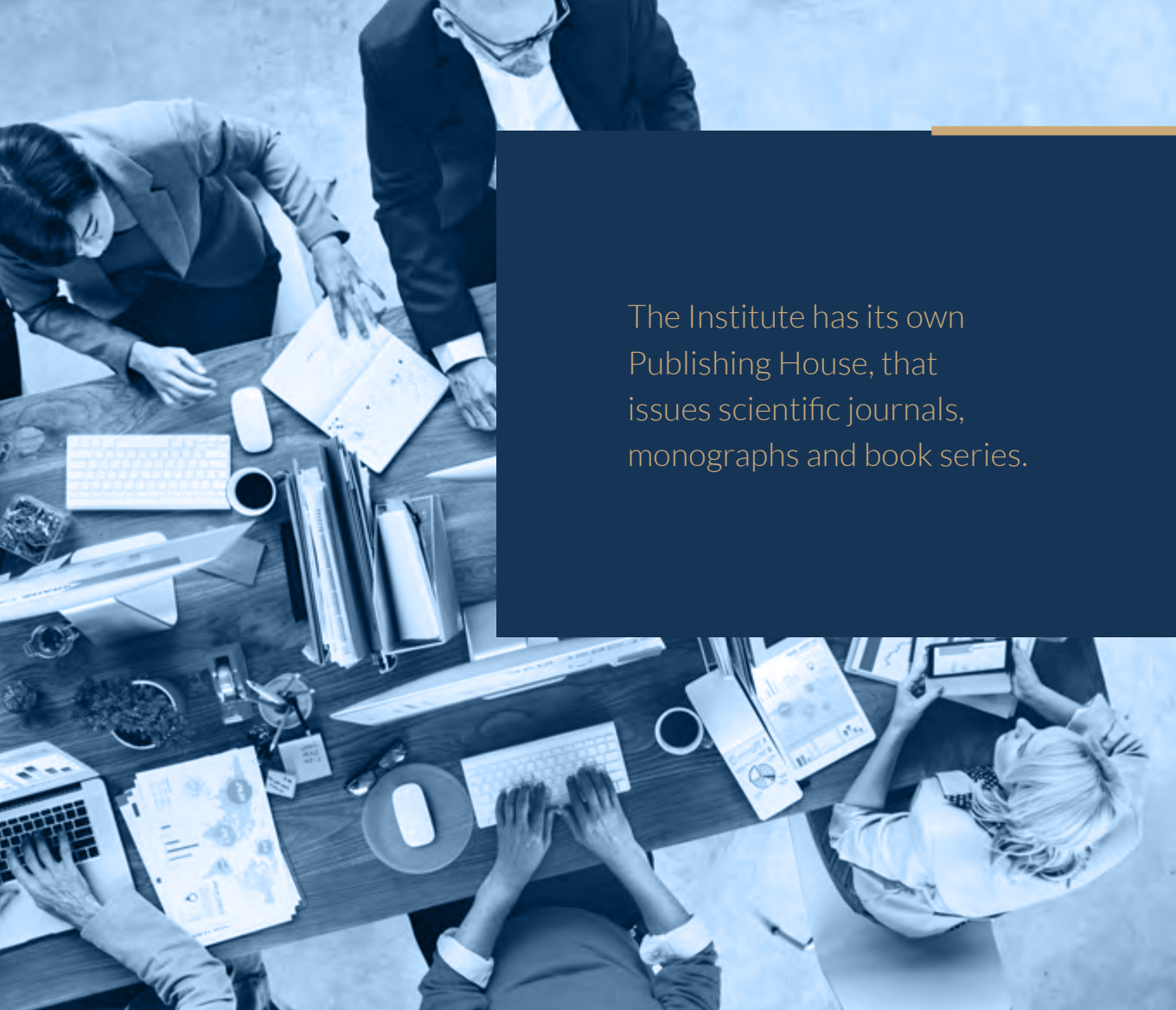
ITEM	2017	2018	2019	2020	TOTAL	MEAN VALUE	PARTICIPATION
THE LIST OF MES (FORMER LIST A AND B)	114	92	58	118	382	95,5	67%
MONOGRAPHS	11	8	4	4	27	6,8	5%
CHAPTERS IN MONOGRAPHS	5	20	30	41	96	24,0	17%
OTHER PUBLICATIONS	19	16	20	8	63	15,8	11%
					<b>568</b>	<b>142,0</b>	<b>100%</b>

Statistics of the publications for 2020 (above 20 points)

Publications	No of the publications	Point value
20 PKT	16	320
40 PKT	19	760
70 PKT	25	1 750
100 PKT	20	2 000
140 PKT	31	4 340
200 PKT	5	1 000
<b>Total per publication</b>	<b>116</b>	<b>87,7</b>

Statistics of the publications for 2020 (above 20 points)





The Institute has its own Publishing House, that issues scientific journals, monographs and book series.

## Dissemination of science

**Gospodarka Surowcami Mineralnymi - Mineral Resources Management is indexed in the Web of Science and the Scopus repositories. In 2020 the Impact Factor of this journal was 0.838, CiteScore: 1.3 and SNIP: 0.534.**

A valuable offer for Polish and foreign scientists are also our other journals, such as:

- **Polityka Energetyczna - Energy Policy Journal (indexed in Scopus),**
- **Zeszyty Naukowe IGSMiE PAN - Bulletin of the MEERI PAS.**

Since its foundation, the Publishing House has developed and published its own publishing book series, including Studia Rozprawy Monografie - Studies, Dissertations and Monographs (over 210 volumes since 1988) and Surowce Mineralne Polski - Mineral

Raw Materials of Poland (12 volumes since 1996). In addition, the Publishing House distributes monographs (scientific publications of the employees of the Institute and, to a lesser extent, employees of universities and other research institutes).

The published articles are available in an open repository under the Creative Commons Attribution CC BY-SA 4.0 license.

It is also worth mentioning that since 2019, for our key journals, we have implemented professional tools that enhance management and publishing process with DOI standard, as well as easy bibliography search.

These tools are available on the website of our Publishing House at the: <https://min-pan.krakow.pl/wydawnictwo/czasopisma/>.

# Domestic and foreign cooperation

Over the last few years, our institution has carried out several hundred research and development projects.

The following should be mentioned, in particular:

- **international and domestic R&D projects,**
- **research services for Polish business entities,**
- **studies for governmental units and regional and local authorities.**

The Institute receives funds from public and private sources by participating in the European Union Framework Programmes, using structural funds, grants and corporate funds. In recent years, the Institute

has participated in about 50 international projects implemented through the combined efforts of science and industry.

Over 40 of them were co-funded by the European Union and carried out by international consortia. Participation in international consortia creates a space for building and strengthening relationships with foreign partners and enables the transfer of knowledge and experience.



UE Framework Programmes



Horizon 2020 Programme



MF EOG Grants



EIT Raw Materials Grants



Structural funds



Other foreign projects

**Cooperation with business entities is very important for the functioning of the Institute. The MEERI PAS is involved in the implementation of 60-80 research and development projects for business entities each year. The Institute's employees very often participated in the implementation of their ideas, solutions and tools in mining and energy companies.**

Moreover, in the framework of cooperation with governmental and local authorities units, we implement nearly 20 projects every year. The Institute's portfolio is also enriched by several patents granted by the Patent Office of the Republic of Poland and the World Intellectual Property Organization.

We cooperate with both domestic and foreign scientific units, from most European Union countries, as well as

from Norway, Great Britain, the United States, South Africa and others.

Our industrial partners represent the major companies in the mining, mineral and energy sectors, as well as state offices and institutions, and the largest consulting companies. Our relationship with these entities is often confirmed by letters of intent and cooperation agreements.



Organizing and participating in congresses and conferences has been a part of the Institute's activities for many years.

Our employees are involved in the organization of occasional international congresses and conferences and numerous national initiatives.

## At the crossroads of science and industry

The Institute also organizes regular conferences:

- **Since 1979: Zagadnienia Surowców Energetycznych i Energii w Gospodarce Krajowej (Issues of Fuels and Energy in the Domestic Economy),**
- **Since 1990: Aktualia i Perspektywy Gospodarki Surowcami Mineralnymi (Topicalities and Perspectives of Minerals Management),**
- **Since 1992: Szkoła Eksploatacji Podziemnej (School of Underground Mining),**
- **Since 1997: Warsztaty Górnicze - Zagrożenia Naturalne w Górnictwie (Mining Workshop - Natural Hazards in Mining),**
- **Since 2018: Forum Gospodarki Energetycznej (The Energy Economy Conference).**

Occasionally, conferences on environmental issues,

mineral resources and waste management, recycling, circular and the low-carbon economy are organized. In the recent years, the Institute was also a co-organizer of international conferences devoted to the issues of applied geophysics, coal products and technologies related to the coal processing, zeolites or geothermal energy. Conference materials, both in printed and electronic formats, are also available on conference websites, providing a valuable source of information.

The most important of these are:

- **World Mining Congress,**
- **Polish Mining Congress,**
- **Polish Geothermal Congress,**
- **International Mining Forum.**

# Towards the future

The Institute's Mission is to permanently develop our employees. We strive to make our institution a workplace where ethical values are respected. Our actions are aimed at increasing the scientific prestige of the Institute in both national and international research arenas.

We intend to pursue this mainly through:

- Creating favourable conditions for the development of scientific interests and knowledge transfer for all our employees.
- Cultivating and promoting ethical behaviour when performing scientific activities and creating a forum for the free exchange of ideas.
- Facilitating cooperation with other scientific institutions on research projects at a national and European level, in particular, in the field of innovative research on the broadly understood management of minerals and energy.
- Developing relationships with other scientific institutions and industry in the country and abroad through the joint implementation of research and development projects.
- Developing existing laboratory equipment and associated research and development services in the fields in which the Institute specializes.
- Constantly increasing the number of academic staff of the Institute, adjusted to ongoing and planned directions of research.
- Expanding the importance and prestige of journals published by the Institute in the international arena.
- Conducting systematic research and developing databases using modern information technologies.
- Disseminating scientific achievements and knowledge through the organization of conferences (especially cyclical) and the publication of dedicated, publicly available reports.
- Promoting educational activities by launching postgraduate and Ph. D. programmes in the scientific disciplines covered by the Institute.

## Together, we can do more

The Institute is particularly interested in facilitating cooperation with academic institutions and enterprises through the implementation of mutual projects.

**We are optimistic about the future and build lasting relationships, based on the knowledge and experience of our employees.**

The invitation to cooperate with the Institute is particularly addressed to:

- **Entrepreneurs associated with broadly understood mining, energy and environmental engineering.**
- **Universities and other research and development institutions.**
- **Young scientific workers, Ph. D. students and students from technical universities who are thinking about their own scientific development.**
- **Anyone else interested in mutual and fruitful cooperation.**



# Centre for Sustainable Management of Minerals and Energy

The project entitled: „Centre for Sustainable Management of Minerals and Energy”, implemented by the Institute, is co-financed from funds of the Regional Operational Programme of Małopolska Voivodeship for the years 2014-2020. The business partners in this Project are: ZGH Bolesław S.A., Geotermia Mazowiecka S.A. and EGM S.A.

## THE PURPOSE OF THE PROJECT AND THE INSTITUTE'S NEW RESEARCH OFFER

The primary goal of the Project is to advance development of scientific and research progress in Poland through the implementation of high quality scientific and R&D works, as well as commercial services. We believe that the implementation of this Project will allow us to develop new areas of scientific and R&D activity in our Institute.

We want to address our offer to the scientific and business entities operating especially in the areas of renewable energy, microenergy and industrial power sector, sustainable production of mineral raw materials from mineral deposits, and from secondary and waste

sources, as well as government and local administration authorities, research and development units, universities, non-governmental organizations related to the subject of sustainable management of mineral raw materials and energy.

## SCOPE OF THE PROJECT - NEW LABORATORY COMPLEXES

In Krakow, at Wybickiego 7A Street, a modern laboratory and office building is being built, in which three complexes of laboratories will be located:

- **Comprehensive Waste and Biomass Research Laboratory,**
- **Engineering Modeling Laboratory,**
- **Engineering Geophysics Laboratory.**

Additionally, the Geothermal Laboratory in Bańska Niżna near Nowy Targ is planned to be renovated and expanded.



Thanks to constantly developing competences among our employees, the Institute can offer knowledge and skills in the field of the mineral and energy economy, sustainable development, resource and energy security in Poland, and waste management.

The Institute continues to develop competences in:

- Methods of forecasting, prospecting, identifying, exploring and classifying mineral deposits, their protection and rational management.
- Renewable energy sources, in particular, geothermal, hybrid and biomass sources.
- Geophysical studies on the assessment of the structure and properties of soil and rock mass.
- Modelling and optimization of minerals, energy and climate policy.
- Methods for optimizing the management of the deposits, exploitation, enrichment and processing of minerals.
- The valuation of investment projects in the mining, fuel and energy sectors.
- The assessment of the formal, legal, technical, technological and environmental conditions of mineral resources acquisition.
- Research and forecasts of mineral and energy markets.
- The development of energy economy models, optimization using mathematical methods, and the assessment of the impact of national and international regulations on the fuel and energy sector.
- Circular economy.
- Optimization of waste management and innovative solutions based on wastes.
- LCA and LCC of raw materials and environmental and carbon footprint analyses.
- Production and disposal of zeolites and biogenic substances.
- Studies of the effects of human impact on the environment including degraded and urbanized areas.
- Construction of IT systems and tools to support decisions in the power and mining industries.



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If you would like to cooperate with us, please visit our website:

[www.min-pan.krakow.pl](http://www.min-pan.krakow.pl)

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Polish Academy of Sciences

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secretary's office: (+48) 12 632-38-35  
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HR EXCELLENCE IN RESEARCH



**ISO 14001**  
LL-C (Certification)



**ISO 9001**  
LL-C (Certification)