

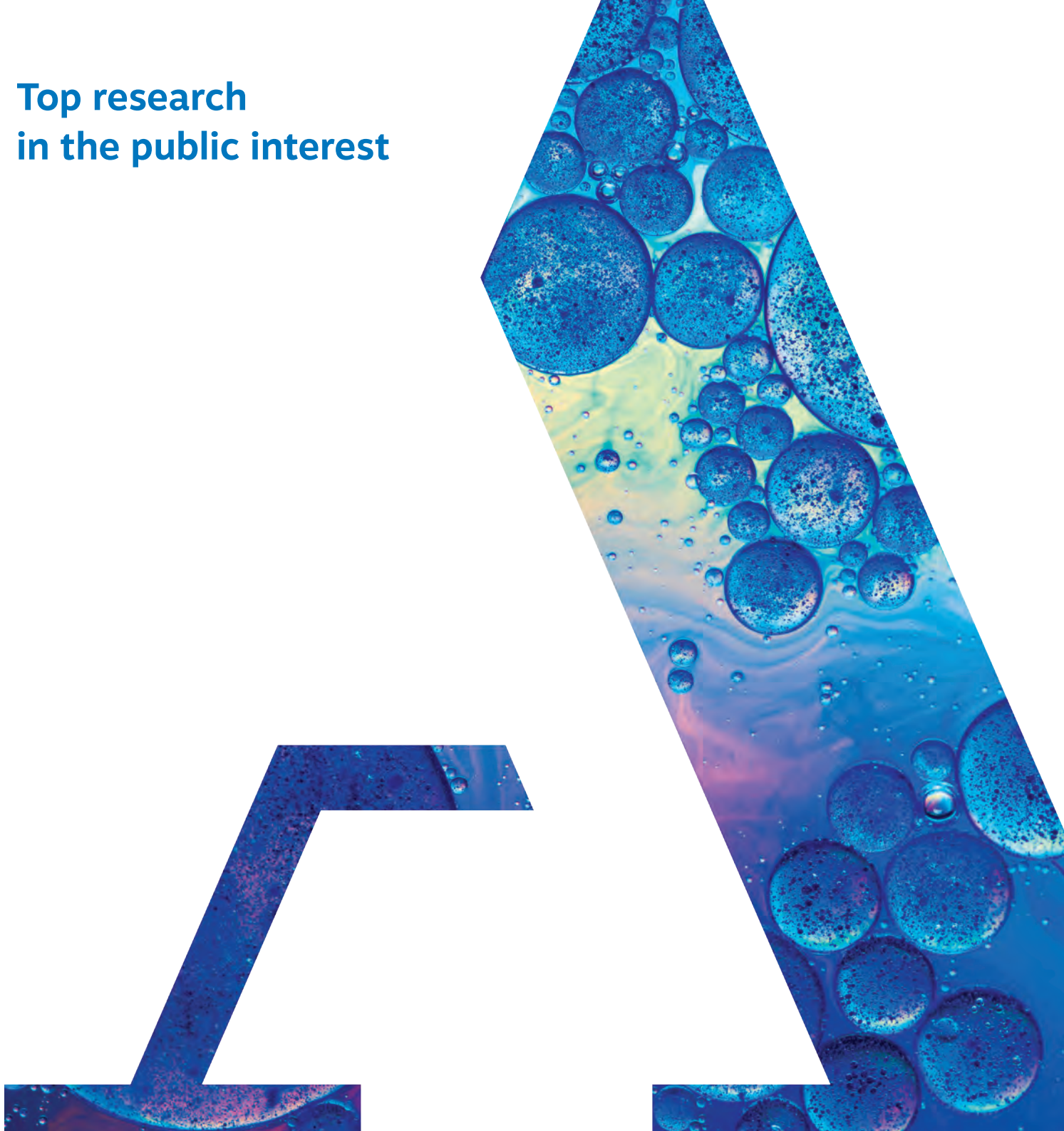


Top research
in the public interest



Czech Academy
of Sciences

**Top research
in the public interest**



Who we are

The Czech Academy of Sciences (CAS) is an organisational unit of the Czech Republic; its activities are thus funded by the state budget. On behalf of the state, the CAS establishes workplaces as public research institutions. Of the 54 public research institutions established by the CAS, two also provide infrastructure services for research.

The Academy is headed by the President of the CAS, appointed by the President of the Czech Republic, as proposed by the Academy Assembly. Its supreme self-governing body is the Academy Assembly, whose term of office is four years and which meets twice a year. In addition to the directors and elected representatives of CAS institutes, the Academy Assembly members include representatives of universities, eminent Czech-based scientists and scientists from abroad, and representatives of universities, state administration, industry, business and financial sectors, and prominent researchers at home and from abroad.

The executive body of the CAS is the Academy Council, which includes the President of the CAS, Vice Presidents, the President of the Science Council, and additional members elected from the Academy Assembly based on proposals from the CAS institutes. Members of the Academy Council are elected for a four-year period.

The CAS institutes are divided into three research areas according to their focus: 1) mathematics, physics, and computer science, 2) life and chemical sciences, and 3) humanities and social sciences. Research of the CAS covers a wide range of scientific disciplines and ranges from highly specialised to multidisciplinary, transcending the boundaries of individual fields of science. The aim is to develop at an international level while respecting the current needs of Czech society and local culture.





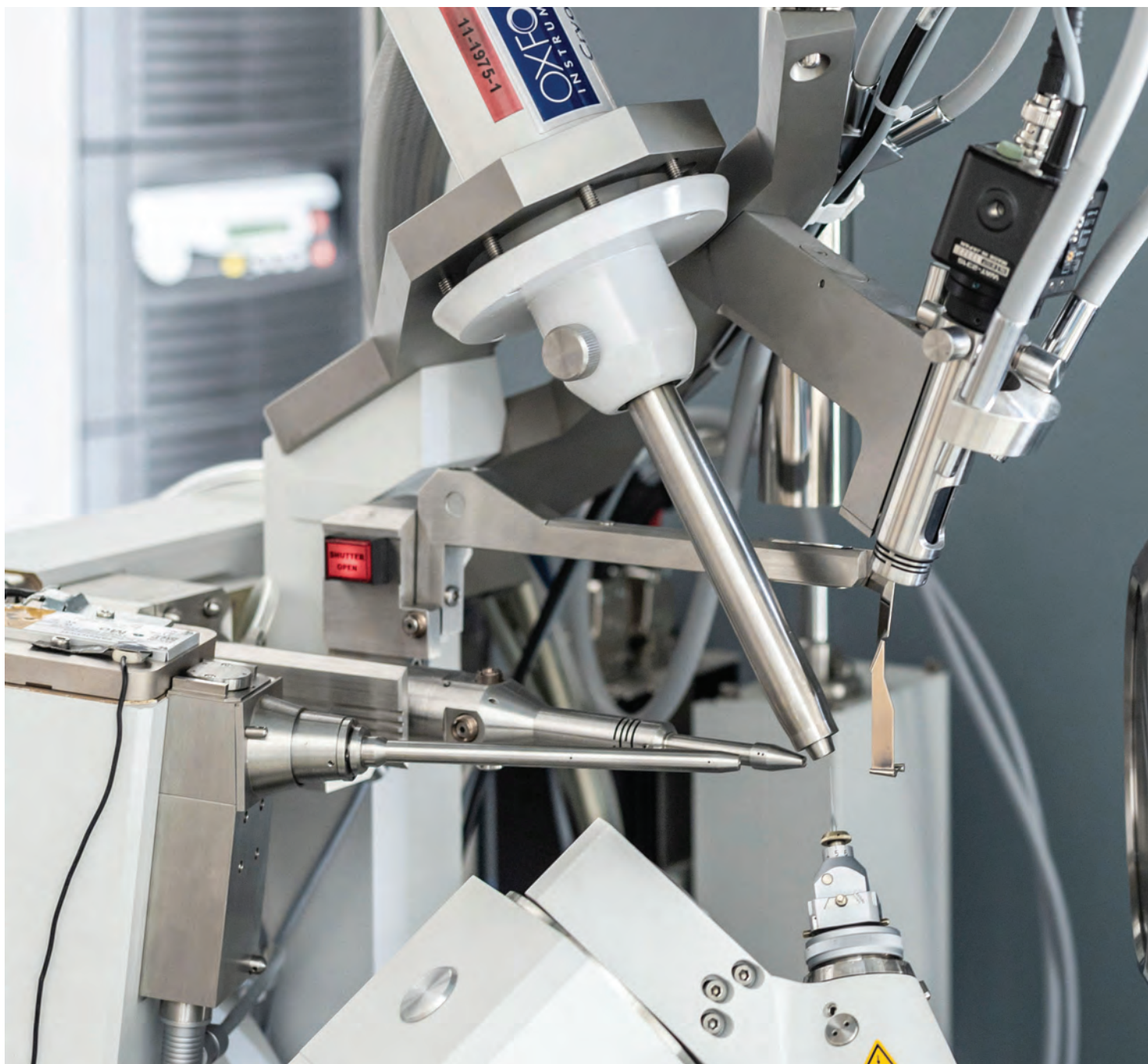


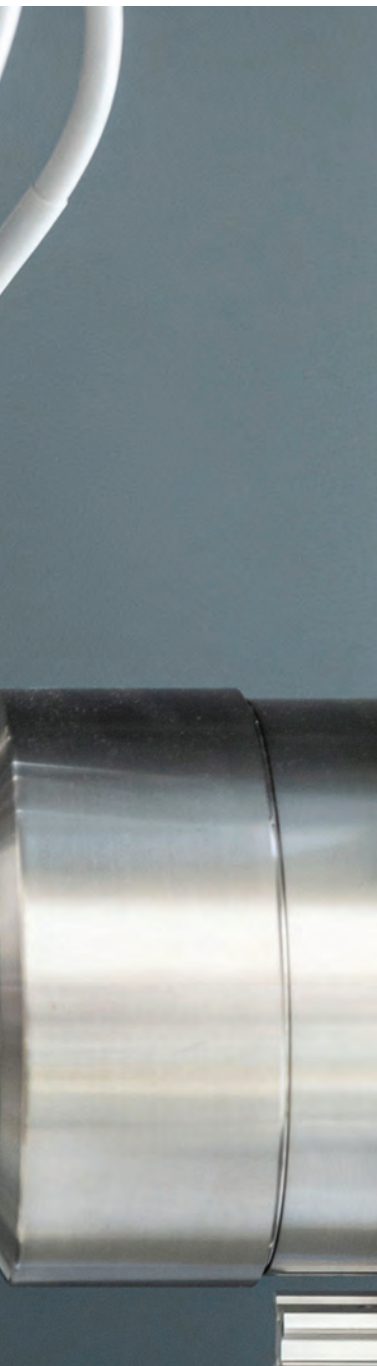
Our mission

The main mission of the Czech Academy of Sciences (CAS) and its institutes is to carry out high-quality scientific research at the frontiers of knowledge that respects the current and anticipated needs of our society. The CAS supports research in a wide range of disciplines with the understanding that significant socio-economic benefits can stem from any scientific field as a result of either basic research or research applied not only in a targeted manner and can also come into being as a byproduct of this research. The CAS thus places great emphasis on the freedom of scientific inquiry, regardless of whether the research is motivated by socio-economic benefit, the desire for knowledge, or both.

As a leading, internationally established institution, the CAS clearly defines its role within the research environment. Research conducted within the CAS is primarily publicly funded. This determines the focus of research efforts on topics and issues beyond industrial research motivated by short-term returns. Public funding for research enables more high-risk projects to be tackled which only find application in the longer term. At the same time, the CAS accepts its role in regard to directly influencing Czech society and culture, whether this is carried out by means of the transfer of knowledge and technology into economic practice, by putting together and disseminating expert opinions aimed at the decision-making sphere, or developing education and public outreach via printed materials, social media, public lectures, and other forms of interaction with the public and various societal stakeholders.







Goals

- to conduct top research in the public interest
- to take part in shaping the profile of Czech and international science by means of the institution's own research as well as activities conducive to formulating national and EU science policies
- to assist in the application of new scientific knowledge and the introduction of new technologies and to promote the use of research results in practice that is beneficial to our society
- to make use of and provide research-based expertise for informed policy decision-making
- to help address issues related to sustainable development and other societal challenges
- to contribute to the education of students in undergraduate, graduate, and mainly doctoral study programmes

Structure



RESEARCH AREA:
MATHEMATICS, PHYSICS,
AND EARTH SCIENCES



RESEARCH AREA:
LIFE AND CHEMICAL
SCIENCES

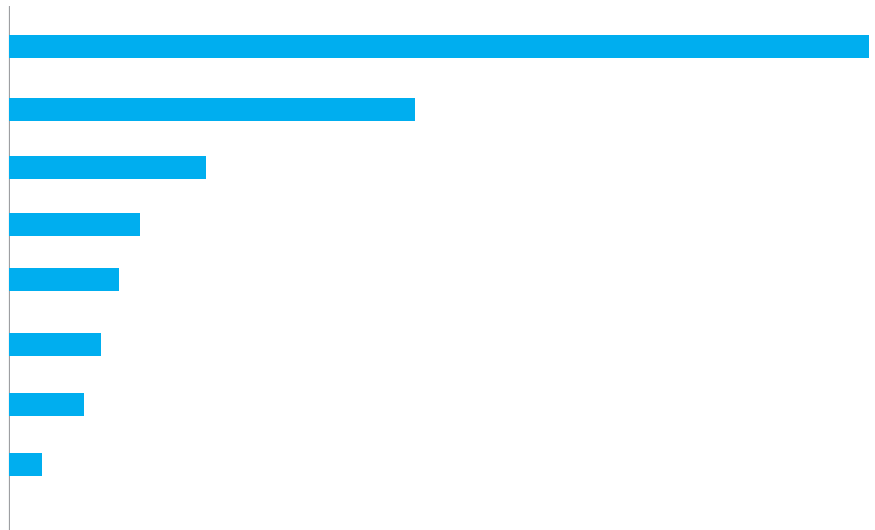
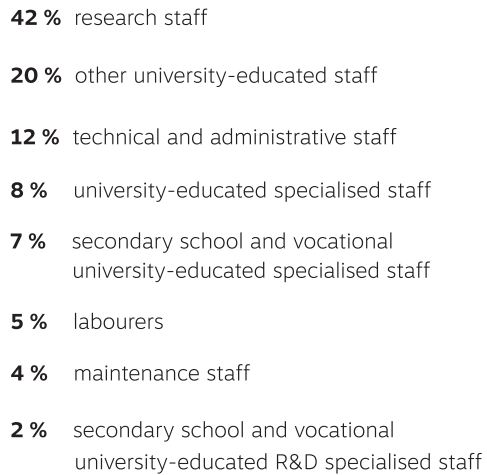


RESEARCH AREA:
HUMANITIES AND SOCIAL
SCIENCES



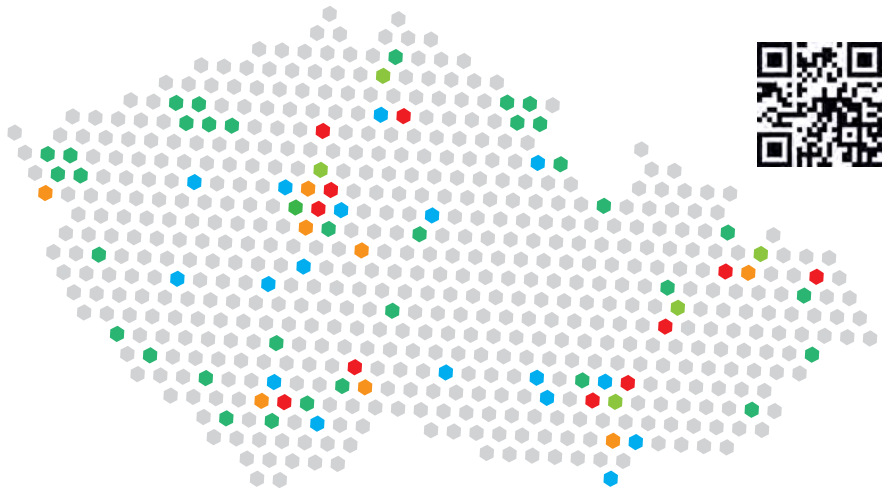
Employees

The Czech Academy of Sciences has approximately 12,000 employees, of whom over 7,000 are university-educated.



Map of Czech Academy of Sciences institutes

The CAS institutes are located in all regions of the Czech Republic – whether it be the institutes or affiliated labs, research stations, museums, and observatories. You can use the QR code to see an overview on the interactive map.





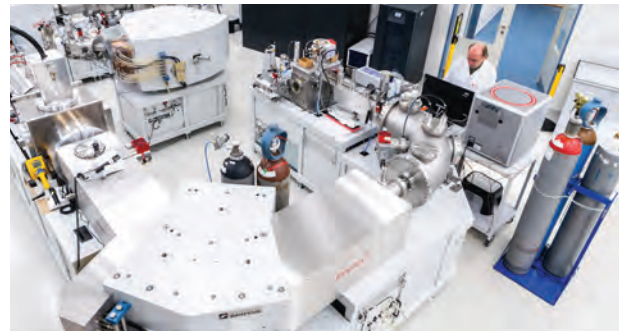
RESEARCH AREA: MATHEMATICS, PHYSICS, AND EARTH SCIENCES

1.

Mathematics, Physics, and Computer Science

*Astronomical Institute of the CAS
Institute of Physics of the CAS
Institute of Mathematics of the CAS
Institute of Computer Science of the CAS
Nuclear Physics Institute of the CAS
Institute of Information Theory and Automation
of the CAS*

Research activities range from purely theoretical to applied disciplines, from the microcosm of elementary particles to cosmic radiation, from the interactions of complex processes in the brain or climate processes to artificial intelligence.

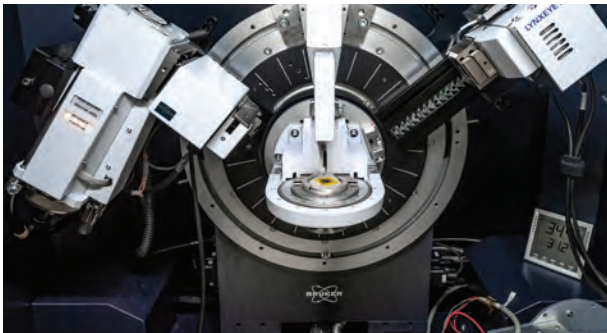


2.

Applied Physics

Institute of Photonics and Electronics of the CAS
Institute of Physics of Materials of the CAS
Institute of Plasma Physics of the CAS
Institute of Hydrodynamics of the CAS
Institute of Scientific Instruments of the CAS
*Institute of Theoretical and Applied
Mechanics of the CAS*
Institute of Thermomechanics of the CAS

The fundamental laws of physics are the basis for cutting-edge, interdisciplinary research on new structures and macroscopic properties of solids, fluids, and plasma. The research has broadscale potential for application in various fields of science, technology, and everyday life.



3.

Earth Sciences

Institute of Geophysics of the CAS
Institute of Geology of the CAS
Institute of Atmospheric Physics of the CAS
Institute of Geonics of the CAS
Institute of Hydrodynamics of the CAS
*Institute of Rock Structure and Mechanics
of the CAS*

The research focuses on continental physical and geological issues of Earth's composition, structure, and evolution, including its atmosphere, and local and regional features of the geologic structures of the Czech Republic, which represents a unique geological formation in the European context.





RESEARCH AREA: LIFE AND CHEMICAL SCIENCES

4.

Chemical Sciences

Institute of Analytical Chemistry of the CAS
Institute of Inorganic Chemistry of the CAS
Institute of Chemical Process Fundamentals of the CAS
J. Heyrovský Institute of Physical Chemistry of the CAS
Institute of Macromolecular Chemistry of the CAS
Institute of Organic Chemistry and Biochemistry of the CAS

The chemical research of today builds on the tradition established by prominent Czech chemists such as Nobel Prize winner Jaroslav Heyrovský, Rudolf Brdička, František Šorm, and Otto Wichterle. It covers both experimental and theoretical research in the fields of physical, organic, macromolecular, and analytical chemistry, as well as biochemistry and chemical engineering.



5.

Biological and Medical Sciences

Institute of Biophysics of the CAS
Institute of Biotechnology of the CAS
Institute of Physiology of the CAS
Institute of Microbiology of the CAS
Institute of Experimental Botany of the CAS
Institute of Experimental Medicine of the CAS
Institute of Molecular Genetics of the CAS
Institute of Animal Physiology and Genetics of the CAS

The aim of the research is to learn about the processes occurring in living systems – from the molecular and cellular level to whole organisms, i.e., viruses, bacteria, fungi, plants, and animals.



6.

Bio-Ecological Sciences

Biology Centre of the CAS
Institute of Botany of the CAS
Global Change Research Institute of the CAS
Institute of Vertebrate Biology of the CAS

Research is focused on obtaining new knowledge about the relationships and interactions between individual organisms, including parasites and their hosts, between organisms and their environment, and about the influence of humankind on the functioning of and changes in ecosystems.





RESEARCH AREA: HUMANITIES AND SOCIAL SCIENCES

7.

Social and Economic Sciences

Library of the CAS

Economics Institute of the CAS

Institute of Psychology of the CAS

Institute of Sociology of the CAS

Institute of State and Law of the CAS

The subject of research is the complexities of society and its transformations in all aspects of life: from the economy to changes in the social structure to the transformation of the legal system, which is also reflected in the issues studied by psychology and sociology.



8.

Historical Sciences

Institute of Archaeology of the CAS, Brno
Institute of Archaeology of the CAS, Prague
Institute of History of the CAS
Masaryk Institute and Archives of the CAS
Institute of Art History of the CAS
Institute of Contemporary History of the CAS

Historical sciences focus primarily on examining history in a broader, transnational context and studying developments on our territory from prehistoric times to the most recent past, with an emphasis on issues that have helped shape a national and cultural identity.



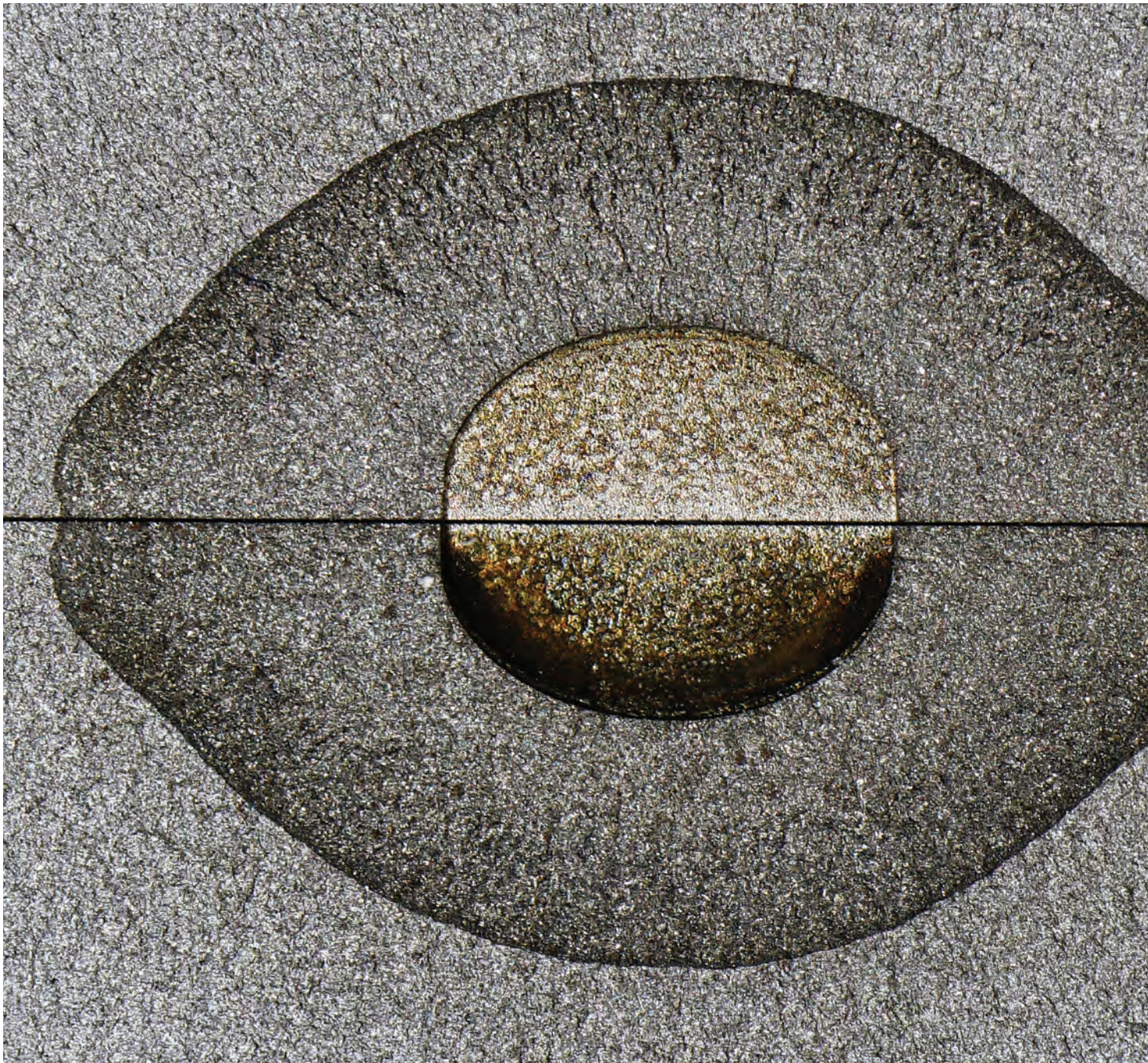
9.

Humanities and Philology

Institute of Ethnology of the CAS
Institute of Philosophy of the CAS
Oriental Institute of the CAS
Institute of Slavonic Studies of the CAS
Institute of Czech Literature of the CAS
Czech Language Institute of the CAS

Research relevant to a national culture and erudition, covering a period of time from the beginnings of philosophy and literature to the present day, is the focus of six CAS institutes whose research contributes to the understanding and preservation of the cultural heritage of our own and other nations.







STRATEGY AV21

Top research in the public interest

The mission of the Czech Academy of Sciences (CAS) is top research focused on the problems and challenges of contemporary society. Topics such as the energetic future of the Czech Republic, the health of its citizens, artificial intelligence, or quality of public policies present complex areas of issues whose solution requires a wide range of interdisciplinary research, both basic and applied.

The strategy of the CAS responds to current social challenges by means of a sophisticated formulation of research programmes, based on the cooperation of scientific fields and institutions. The basic programme framework of the Strategy AV21 was accepted by the Academy Assembly in December 2014. The research programmes of the CAS are open to partners from universities, corporations, and institutions of state and regional administration, as well as foreign research groups and organisations. The research programmes are proposed and formulated in discussion of the leadership of the CAS with directors of the CAS institutes with regard to trends in global science, social relevance of the research, and National Priorities of Oriented Research. The motto of the Strategy AV21 is “Top research in the public interest”.

For the further development of the CAS, it is key not only for the Academy to be able to identify important scientific points of interest on a long-term basis, define the issues in an informed way, and develop proposals for solutions in light of the current state of knowledge, but also to be able to respond to current societal issues.

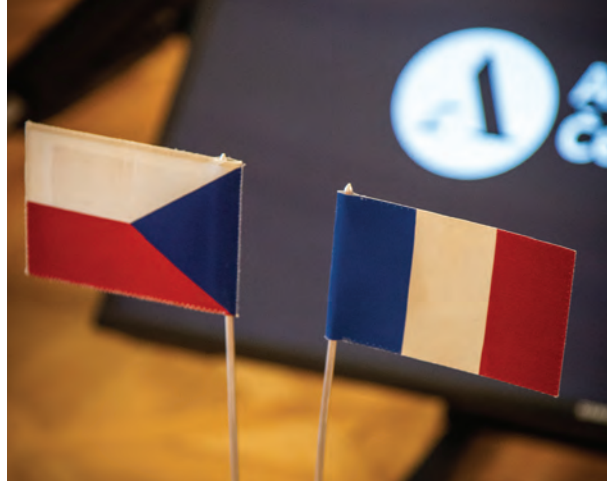


Research cooperation

In addition to the scientific community abroad, key partners include universities, state departmental and private research organisations, applied research institutions, the business sector, and state and public administration agencies.

International cooperation

The Academy's long-term plan for its international cooperation efforts reflects the challenges and changes the global scientific community is facing (including the emergence of new research organisations and infrastructures). It is based on the principle of the freedom of movement for researchers and knowledge. The main objective is to strengthen the international character and increase the standard of the CAS institutes and their research teams. Our institution therefore supports the creation of international centres of excellence and laboratories with state-of-the-art equipment and technical facilities. It also encourages the involvement of scientists in research at similar centres in developed countries. It attaches fundamental importance to the participation of experts from abroad in the evaluation process of the CAS institutes and their participation in advisory bodies.



Cooperation with universities

Universities are the closest partners of the CAS both in research and in the training of future researchers. The main forms of cooperation include joint projects and research institutes. Having at their disposal unique and well-equipped facilities, the CAS institutes can thus support the activities of cooperating universities. An important part of the mission of the CAS is its educational role. In particular, the CAS institutes play an important role in educating university students by means of doctoral study programmes.



Cooperation with the application sector

Communication with partners regarding the application of research is an important part of the effort to translate research results into practice. The CAS continues to present itself to the corporate sector as a potential partner for cooperation and as a complex of institutes conducting cutting-edge research with significant potential for applications in practice. Effective knowledge and technology transfer, i.e., the transfer of knowledge from the academic sphere to the application sector, is a possible solution to the major issues and challenges facing our society.



Cooperation with providers and the decision-making sector

The CAS engages in dialogue and cooperates with the decision-making sector in order to reach consensus regarding the support and funding of research and innovation. These include primarily providers of earmarked research support but also state administration agencies at national and regional levels with a research-related agenda.

Cooperation with the state administration and local government at the regional and municipal level

State administration and local governments are important segments of the user sphere that make use of research results in various research areas. In the Regional Cooperation Programme, the CAS helps regions and municipalities of the Czech Republic in improving the quality of life and preserving cultural heritage by working together on jointly funded research projects and their applications.



History



The earliest predecessor of today's Czech Academy of Sciences was the **Royal Czech Society of Sciences** (1784–1952). Its founders include philologist Josef Dobrovský and mathematician and founder of Prague University Observatory, Joseph Stepling; later it was headed by historian František Palacký. Throughout the nineteenth century, it maintained a bilingual character (with both German and Czech in use). Patriotic Czech circles therefore strived to establish a purely Czech-language academy, which they eventually managed to achieve. The actual negotiations were initiated by the contractor Josef Hlávka (1831–1908), who anonymously donated 200,000 Austro-Hungarian gulden to the future academy.

The establishment of the **Emperor Franz Joseph Czech Academy for Sciences, Literature and Arts** was approved by the Bohemian Diet on 9 October 1888, its resolution not coming into force until the establishment of the academy was authorised and its statutes approved by Emperor Franz Joseph I on 23 January 1890.

The Academy underwent significant changes after the establishment of the Czechoslovak Republic. On 10 November 1918, it was renamed the **Czech Academy of Sciences and Arts**. In 1923, the possibility of full membership was opened up to women (the first elected woman was Czech writer Eliška Krásnohorská in 1924).

1784

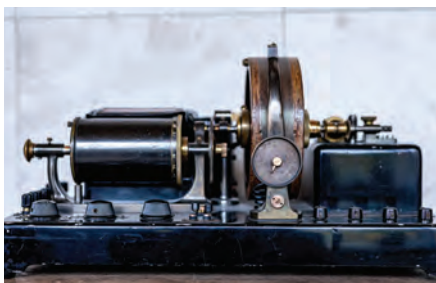
Royal Czech Society of Sciences

1890

Emperor Franz Joseph Czech Academy for Sciences, Literature and Arts

1918

Czech Academy of Sciences and Arts



A number of specialised departments of the Czech Academy of Sciences and Arts began to transform into scientific institutes. An additional seven central research institutes were gradually established as part of the so-called Scientific Research Centre, founded in 1949. In 1952, both entities (together with the research facilities of the Royal Czech Society of Sciences, the Masaryk Academy of Labour, and the Czechoslovak National Research Council) were then integrated into the newly founded **Czechoslovak Academy of Sciences**, under which the research facilities, up until that point falling under the Ministry of Education, Sciences and Arts, were transferred.

Despite facing heavy ideological pressure until the fall of the Communist regime in 1989, Czech science was nevertheless able to maintain its creative energy and find its way to the global scientific community. This fact was made evident, for instance, by the awarding of the Nobel Prize to Jaroslav Heyrovský in 1959 and by the worldwide recognition attained by Otto Wichterle for his discovery of contact lenses. The Czechoslovak Academy of Sciences was found–ed on 17 November 1952 as a top scientific institution combining both a learned society and a complex of research institutes concentrated on the territory of the Czech lands (the Slovak Academy of Sciences was an autonomous part of the overarching institution). It ceased to exist on 31 December 1992 and on the same date the **Czech Academy of Sciences** was established, which today claims the scientific legacy of its predecessors.

1952

**Czechoslovak Academy
of Sciences**

1959

**The Nobel Prize goes
to Jaroslav Heyrovský**

1992

**Czech Academy
of Sciences**

Important figures and milestones in the life of the Czech Academy of Sciences



1890

Founding of the Emperor
Franz Joseph Czech
Academy for Sciences,
Literature and Arts

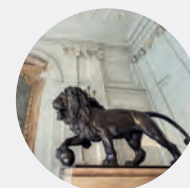
1952

The Czechoslovak Academy
of Sciences is established



1961

Otto Wichterle invents
the first device for producing
contact lenses



1992

The Czech Academy
of Sciences is established

1918

The Czech Academy
of Sciences and Arts
is established

1959

Jaroslav Heyrovský
is awarded the Nobel Prize
in Chemistry for his
discovery of polarography



1990

Antonín Holý, the creator of
antivirals and pharmaceutical
drugs used to control AIDS,
establishes a partnership with
Gilead Sciences, Inc.





2001

Helena Illnerová becomes the first woman to head the Czech Academy of Sciences



2003

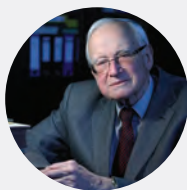
Physical chemist Zdeněk Herman is the first representative of the CAS to receive the most prestigious Czech scientific award, Česká hlava

2008

Two researchers from the Institute of Organic Chemistry and Biochemistry of the CAS, Detlef Schroeder and Josef Michl, receive the prestigious ERC Advanced Grant

1993

Rudolf Zahradník becomes the first President of the Czech Academy of Sciences



2002

The CAS establishes the scientific degree “Research Professor”, abbreviated as Res. Prof. (DSc.)



The CAS begins to award the Otto Wichterle Award to talented researchers under 35

2007

The CAS awards the first Academic Award – Praemium Academiae

2018

The CAS begins to award the Lumina Quaeruntur fellowship as a tool to promote scientific excellence

English

Published by: Centre of Administration and Operations of the CAS, Národní 1009/3, 110 00, Prague 1
Academic Media Section, External Relations Division

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Translation: Tereza Novická

Graphic design: Bogdan Jovanović

Photo: Jana Plavec, Pavlína Jáchimová, Shutterstock, Photogenic Science

Printing: Akontext

Prague, 2023