

HELMHOLTZ SCIENTISTS WORK TOGETHER IN SIX MAJOR RESEARCH FIELDS WHICH SPAN THE ASSOCIATION'S SEVENTEEN RESEARCH CENTRES. THEY DEVELOP RESEARCH PROGRAMMES WHOSE CONTENT AND GOALS ARE REVIEWED BY DISTINGUISHED SCIENTISTS FROM AROUND THE WORLD.

ENERGY

New solutions to provide a secure energy supply for tomorrow which are in keeping with environmental and climate protection are needed all around the world. The Helmholtz Association's energy research explores the potential of new energy sources, develops technologies for increasing the efficiency of conventional power stations and performs nuclear fusion research.

RESEARCH PROGRAMMES: Renewable Energies – Efficient Energy Conversion and Use – Nuclear Fusion – Nuclear Safety Research – Technology, Innovation and Society

EARTH AND ENVIRONMENT

Helmholtz scientists study the System Earth and the complex way in which society and nature interact. Such knowledge forms the basis for ensuring that the use of resources is sustainable so that future generations will also be able to enjoy a good quality of life.

RESEARCH PROGRAMMES: Geosystem: The Changing Earth – Marine, Coastal and Polar Systems – Atmosphere and Climate – Terrestrial Environment

HEALTH

Health research in the Helmholtz Association aims to gain a better understanding of the origins of complex diseases so that they can be treated more successfully in future. The goal is to develop new prevention, diagnosis and treatment strategies which can be used in practice, in collaboration with clinics.

RESEARCH PROGRAMMES: Cancer Research – Cardiovascular and Metabolic Diseases – Function and Dysfunction of the Nervous System – Infection and Immunity – Environmental Health – Systemic Analysis of Multifactorial Diseases

KEY TECHNOLOGIES

Research into key technologies aims to open up technology fields of great innovative potential for science, industry and society. Helmholtz scientists focus on those technologies which involve particularly complex methods – from basic research right through to industrial application.

RESEARCH PROGRAMMES: Supercomputing – Fundamentals of Future Information Technology – NANOMIKRO – Advanced Engineering Materials – BioSoft – BioInterfaces – Technology, Innovation and Society

STRUCTURE OF MATTER

Research in this field focuses on the world in its very smallest and very largest dimensions and on the complexity of matter. Scientists need large-scale facilities and scientific instrumentation such as particle accelerators, synchrotron radiation or neutron sources so that they can study outer space or subatomic structures. Such facilities represent a particular strength of the Helmholtz Association.

RESEARCH PROGRAMMES: Elementary Particle Physics – Astroparticle Physics – Physics of Hadrons and Nuclei – Research with Photons, Neutrons and Ions

AERONAUTICS, SPACE AND TRANSPORT

Mobility and transport safety, communication, information and sustainable environmental management – the satisfaction of these needs is of vital importance to modern societies. Helmholtz scientists develop concepts and technological solutions which contribute to mastering this challenge.

RESEARCH PROGRAMMES: Aeronautics – Space – Transport



HELMHOLTZ ASSOCIATION
OF GERMAN RESEARCH CENTRES

RESEARCH WITH AN IMPACT

 HELMHOLTZ
| ASSOCIATION

SHAPING THE FUTURE WITH CUTTING-EDGE RESEARCH

30,000 staff work together in 17 centres

The Helmholtz Association is made up of 17 national centres which perform research in the natural sciences, technology and engineering, and in biology and medicine. They have 30,000 staff and an annual budget in excess of 3 billion euros.

National research labs to solve grand challenges

Whether it's about new solutions for a reliable energy supply or mobility, about passing on an intact environment to future generations or about finding therapies for treating previously incurable diseases: The research carried out in the Helmholtz Association aims to secure the foundations of human life in a long-term perspective and to create a technological basis for wealth creation in a competitive economy.

Excellent results in basic and applied research

More than 12,600 scientific publications every year and around 440 new patent registrations, over 2,500 cooperations with business and industry – the Helmholtz Association shows excellent results in both basic research and application. The association has the technical facilities and management capacity to master major projects. It can quickly bundle expertise from various research fields and react flexibly to new challenges.

MISSION OF THE HELMHOLTZ ASSOCIATION

- We contribute to solving the grand challenges which face society, science and industry by performing top-rate research in strategic programmes in the fields of Energy, Earth and Environment, Health, Key Technologies, Structure of Matter, Aeronautics, Space and Transport.

ACHIEVING MORE TOGETHER

Collaboration as a key to outstanding results

Collaboration and networks with national and international partners from science and research and from business and industry: This is the Helmholtz Association's key to achieving outstanding research results. Research must cross national and disciplinary borders in order to be internationally competitive and produce results of worldwide significance.

Efficient Infrastructure

The Helmholtz Association provides an excellent infrastructure for research with large-scale facilities, such as particle accelerators, super computers and research ships, some of which are globally unique. Every year, the Helmholtz centres welcome several thousand visiting scientists from home and abroad who come to use these scientific research opportunities.

A strong member of the global scientific community

Helmholtz couples an efficient infrastructure with experience in the management of complex projects. This is why the Helmholtz Association often and with good reason forms the focal point of major international research projects. As a strong member of the global scientific community, Helmholtz intends to play its part in shaping the future of modern societies.

- We research systems of great complexity with our large-scale facilities and scientific infrastructures, cooperating closely with national and international partners.
- We contribute to shaping our future by combining research and technology development with perspectives for innovative applications and provisions for tomorrow's world.

Contact us

Would you like to learn more about our goals and research work?

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