

Institute of Scientific Instruments CAS, v. v. i.

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Overview

The Institute of Scientific Instruments of the CAS, v.v.i., is a non-profit public research institution that has focused on finding new practices in the areas of advanced technologies and diagnostic methods since 1957. The Institute activities concentrate especially on the field of electron microscopy and lithography, magnetic resonance tomography, laser spectroscopy and nanometrology, micromanipulation techniques, special technologies for application of nanolayers and processing of materials, behavior of materials under cryogenic conditions, scanning and digital signal processing.

The institute's work covers basic and applied research, as well as realization of unique equipment and measurements.

Organizational structure

The research activities are concentrated in 14 research groups, grouped into six research departments:

- Special technologies
- Electron microscopy
- Magnetic resonance and cryogenics
- Medical signals
- Optical micromanipulation techniques
- Coherent optics



95 researchers operate in scientific departments. Service activities are provided by the financial department, IT, library, technical and project management. Contact information for heads of departments are available at the institute website.

Research projects and grants

The Institute was awarded one program of the VAVPI Operational Programme called Application and development laboratories of advanced microtechnology and nanotechnology (ALISI), which allowed the institute to significantly upgrade its infrastructure and to launch new directions in its research. The institute investigates almost 40 research projects of domestic and foreign providers focused in all areas of interest. The current list can be found on the institute website.

International cooperation

The institute collaborates with foreign institutions within the framework of international projects, agreements or informally through personal contacts of researchers. Long-term cooperation exists for example with the Mayo Clinic in Rochester (USA), the University of Toyama (Japan), the University of St. Andrews (UK), the Shimadzu Research Laboratory (UK), the University of York (UK), CERN, and the Institute of Biodiagnostics, Winnipeg (Canada).

Cooperation with universities

On the basis of awarded accreditations, the institute participates in postgraduate doctoral studies in collaboration with the Faculty of Science, Masaryk University, Faculty of Electrical Engineering and Communication, and with Faculty of Mechanical Engineering of the Technical University. Almost thirty PhD students prepare their doctoral dissertations at the institute, as well as 15 students (on average) who work on their diploma theses. Close cooperation also takes place in many areas of basic and applied research on joint research projects. In the field of medical diagnostics, there is a very fruitful cooperation with the University Hospital U sv. Anny.

Public services

The institute is regularly and very actively involved in events raising public awareness of science (Science Festival, Science Week, cooperation with the Amazing Physics Theater - ÚDIF). Every year, approximately 900 people visit the laboratories during the Science Week organized by the Academy of Sciences. Researchers at the institute provide expertise and regularly appear in the media where they talk about their activities and results to the general public. Laboratories of the institute offer a wide range of methods for displaying and analyzing various preparations, implementing unique technological processes at the macro and micro level.



The Institute