

## National Academy of Sciences of Ukraine

*(as of 01/01/2016)*

The National Academy of Sciences of Ukraine was founded November 27, 1918 in Kyiv. V.I.Vernadsky - a prominent scholar of the world was its first President.

**Status.** According to current legislation the National Academy of Sciences of Ukraine (the NAS of Ukraine, the Academy) is a higher self-governing research organization of the country, based on state ownership. Academy's self-government lies in the self-determination of research topics and forms of their organization and holding. It also lies in the formation of its structure, solving scientific and organizational, economic and personnel issues. In addition, in the implementation of international scientific relations, in electing and collegiality of its management bodies. The Academy brings together the full members, corresponding members and foreign members, as well as all researchers of its institutions. It organizes and carries out fundamental and applied research on the most important issues of natural, technical, social and humanity sciences.

**Governing bodies.** The supreme governing body of the Academy is the General Meeting (the GM), consisting of the full members (academicians) and the corresponding members. In the GM sessions (except for matters related to the election of full members, corresponding members and foreign members of the NAS of Ukraine), participate with the right of decisive vote scientists delegated by labor groups of the Academy's scientific institutions, and in an advisory capacity - foreign members. Heads of the Academy's research institutions and representatives of the scientific community also participate in the GM sessions.

The NAS of Ukraine's Presidium, which is elected by the GM for a 5 years term, provides leadership by the Academy in the period between GM sessions. The Presidium of the NAS of Ukraine, elected in April 2015, consists of 32 persons, including the President, five Vice-Presidents, Chief Scientific Secretary, 14 Academicians-Secretaries of the Scientific Departments and 11 members of the Presidium. 4 executive Presidium members and 16 Presidium advisors also participate in the meetings of the Presidium in an advisory capacity.

**Structure.** The NAS of Ukraine has 3 sections (physical, technical and mathematical sciences; chemical and biological sciences; social sciences and humanities), which combine 14 Scientific Departments of: Mathematics; Informatics; Mechanics; Physics and Astronomy; Earth Sciences; Physical and Technical Problems of Materials Science; Physical and Technical Problems of Power Engineering; Nuclear Physics and Engineering; Chemistry; Biochemistry, Physiology and Molecular Biology; General Biology; Economy; History, Philosophy and Law; Literature, Language and Art.

The Academy also has 5 regional research centers of double subordination with the Ministry of Education and Science of Ukraine (the MES): Donetsk (Kramatorsk, Donetsk region), Western (Lviv), Southern (Odessa), Northeastern (Kharkiv), Dnieper (Dnipropetrovsk) and Innovation center in Kyiv. Statutory activities of Crimean Scientific Center and its financing from the budget of the NAS of Ukraine were suspended in 2014.

The main link of the structure of the NAS of Ukraine is scientific and research institutes and related academic institutions. The national institutions such as V.I. Vernadsky National Library of Ukraine, National Science Center "Kharkiv Institute of Physics and Technology", National Historical and Archaeological Reserve "Olviya", M.M. Hryshko National Botanical Garden, "Sofiyivka" National Dendrological Park, National Museum of Natural History, V. Stefanyk Lviv National Academic Library, National Center "Minor Academy of Sciences of Ukraine" under the NAS of Ukraine and MES of Ukraine are acting in the structure of the Academy.

The Academy's structure also includes the organizations of research and industrial base (research enterprise, design and technological organizations, data centers). Nowadays the total number of research academic institutions is 168, and research organizations of industrial base - 46.

**Cooperation with educational institutions.** In 2015, the NAS of Ukraine signed with universities nearly 200 cooperation agreements, passing the externship and internship students, etc. There were developed almost 200 joint research projects. The network of joint research and educational structures (more than 250 complexes, centres, laboratories, branches of the departments, etc.) makes extensive use of the Academy's potential for training of highly qualified specialists for the needs of higher education and the NAS of Ukraine itself. About 1,300 scientists of the Academy (every tenth person is an academician or a corresponding member of the NAS of Ukraine) read courses and series of lectures on topical areas of science. In 2015, some 280 scientists and educators have defended theses in the specialized academic councils of scientific institutions of the NAS of Ukraine for Doctor of Sciences and PhD. More than 1,200 students performed their graduate works under the guidance of leading scientists of the NAS of Ukraine. About 100 monographs were published, prepared in a creative collaboration with educators.

**Coordination of research.** Interagency Council for the Coordination of Basic Research, the Council of Presidents of the Academies of Sciences of Ukraine, and Expert Council on topics on fundamental evaluation of research at the National Academy of Sciences of Ukraine carry a significant contribution to the realization of this important area of activity of the Academy. The work of these bodies contributes to the development and implementation of a coherent science policy, preparation and submission to authorities of proposals for improving the regulatory and legal framework for the functioning of scientific sphere, logistical and financial support for research, to improve staffing.

Public scientific associations of the NAS of Ukraine conduct scientific and coordination work on certain topical scientific directions and problems.

Now the NAS of Ukraine operates 75 scientific councils, 19 committees, 15 commissions and 24 scientific societies. Their efforts are focused on the coordination of promising research, preparation of proposals and analysis for public authorities, organizing and conducting scientific readings, conferences, seminars and symposia.

**Implementation of scientific developments, innovation activity.** In 2015, scientific institutions of the NAS of Ukraine introduced in various sectors of economy of Ukraine over 1150 of the latest developments, including advanced technology, such as, information, machinery, equipment, materials, automatic complexes and systems, software, databases and knowledge bases, plant varieties, guidelines and methodologies, standards.

Academy institutions signed 20 license agreements in Ukraine and abroad, they received 576 patents for inventions and utility models. There were successfully implemented 40 scientific and technological innovation projects, which were selected on a competitive basis at the beginning of the year.

There were performing the tasks of the "State Scientific and Technical Program of Development and Creation of Knowledge Based Sensor Products for the years 2008-2017". The NAS of Ukraine was defined the state customer of this program.

In 2015, the Academy institutions realized about 160 contracts with corporations, companies, enterprises and centres from more than 20 highly developed countries in the framework of foreign trade activities.

There were supplied scientific and technical products, technology transfer, scientific and technical services totalling over UAH 92.9 million.

Scientific research of the NAS of Ukraine were presented at the 8 major exhibitions, including at the International Agricultural Exhibition "Grain Technology 2015", the Ukrainian Forum of Innovative Technologies "Innotech Ukraine", the International Healthcare Exhibition "MEDICAEXPO - 2015", the IX Ukrainian Science Festival, the International Specialized Exhibitions: "HI-TECH EXPO. High Tech", the "PHARMA TechExpo" and the "LABComplex", the International Exhibition "SECURITY 2015".

**Scientific and expert activities.** One of the main objectives of the Academy, as the highest scientific organization of the country, is to prepare scientific assessments and forecasts of socio-political, socio-economic and cultural development of the country, its economic situation and develop relevant proposals and recommendations on these issues, participation in shaping public policy development in the field of scientific and technical activities.

In 2015, institutions of the NAS of Ukraine commissioned by various state authorities gave more than 2,000 expert conclusions comments, remarks, approvals, comments, etc. to normative acts and policy documents, as well as information and

analytical materials (scientific estimates, predictions, suggestions and recommendations) on various aspects of social development. A considerable amount of expert work performs by experts of the Academy, which were included in a scientific expert and advisory boards, and commissions created under state authorities for prior review and scientific findings provision on various aspects of their activities.

The NAS of Ukraine assesses the topics of basic research of scientific institutions in the country on a regular basis. Assessment is carried out by funding from the State Budget of Ukraine. During 2015 there were examined 1,752 scientific researches of eight key spending budget units. Each of research was provided with a corresponding expert conclusion on the feasibility of its funding from the state budget.

**Publishing.** There are two publishers in the Academy's structure: a Subsidiary "Research and Production Enterprise "Publisher "Naukova Dumka" ("Scientific opinion") of the NAS of Ukraine and the Publishing House (PH) "Academperiodica" of the NAS of Ukraine. For these publishers account for about 7% of the Academy book production. In 2015 "Naukova Dumka" published 20 names of scientific monographs prepared by employees of the NAS of Ukraine with a total number amount of more than 400 accounting and publishing pages.

262 issues of academic journals with a circulation of over 46.8 thousand and with the amount of more than 3.0 thousand accounting and publishing pages were published in a publishing house (PH) "Academperiodica". Particularly, 195 numbers, 33 editions of magazines were published under the NAS of Ukraine Journals Support Program, including the only academic popular science magazine "Svitoglyad" ("World Vision"). Also the PH "Academperiodica" released 7 monographs titles totalling more than 152.0 accounting and publishing pages.

During the 2015 the NAS of Ukraine institutions have published 404 titles of scientific monographs, 154 titles of scientific papers collections, 105 educational publications and 245 reference and scientific and popular books. The total number of articles in periodicals is 21,250 and over 16,600 (approximately 78%) of which is in domestic and foreign issues. 81 scientific books (20%) of scientific books and over 5,500 articles in periodicals were published abroad.

Current researchers' papers were published in 85 scientific journals of the NAS of Ukraine in 2015, as well as in other periodicals and book series publications. 20 scientific journals of the NAS of Ukraine were translated into English and published by foreign publishers. Another 10 magazines in English publish in Ukraine academic research institutions by their own funds.

**International scientific cooperation** is carried out within 120 valid agreements concluded by the National Academy of Sciences of Ukraine with Academies, government agencies, research organizations, educational institutions, firms and industrial companies of about 50 countries, including Europe, America, Asia and Africa. In general, the

implementation of various forms of international cooperation involved over 130 academic institutions.

The NAS of Ukraine represents the country at nearly 40 international organizations, in particular, the International Association of Academies of Sciences (IAAS), the International Union of Academies (IUA), the European Federation of Academies of Sciences and Humanities (ALLEA), the International Committee on Space Research (COSPAR) and is actively involved in international scientific associations and centres: the International Institute for Applied Systems Analysis (IIASA), the European Research Association of Geophysical Research (EISCAT), the European Organization for Nuclear Research (CERN), the Joint Institute for Nuclear Research (JINR), the UNESCO-MAB Strategic Group to develop a strategy of this program for the next decade, etc. Separate research teams work on each of the abovementioned directions.

Scientists of the NAS of Ukraine are active participants of the international research programs of the European Commission, UNESCO, DFG, CRDF, STCU IAEA and NATO. More than 400 research, coordinating and supporting scientific exchange projects are realized by mentioned organizations' grants. The grants are obtained on a competitive basis annually. Relations with the EU countries and the European Commission institutions are expanding, particularly, through participation in EU research and innovation Programme "Horizon 2020". New formats of cooperation in EURATOM Programme are working out. In cooperation with the European Commission Joint Research Centre the Academy was determined the main organization of scientific support for implementation of the EU Strategy for the Danube Region in Ukraine. And the Academy conducts related work through its complex scientific programs and projects of the EU, particularly, in the framework of FP 7 «Danube-INCO. NET» project.

As part of the NAS of Ukraine scientists exchange programmes each year are carried over 150 bilateral projects on agreed lists with the Austrian Academy of Sciences, Bulgarian Academy of Sciences, Polish Academy of Sciences, Academy of Sciences of the Czech Republic, Slovak Academy of Sciences, National Centre for Scientific Research (CNRS) of France, Serbian Academy of Sciences and Arts, Hungarian Academy of Sciences, Romanian Academy, Montenegrin Academy of Sciences and Arts and the Turkish International Cooperation and Development Agency with the envisaged exchange of scientists on quotas, due to the relevant agreements.

The joint scientific projects competitions are held together with international and foreign organizations on a competitive basis annually in recent years. Examples of such interaction are cooperation with the Ukrainian Science and Technology Centre under the "Targeted Research and Development Initiatives", National Centre for Scientific Research (CNRS) of France and the National Academy of Sciences of Belarus. Over 100 bilateral research projects were carried out in 2015 on the basis of parity funding.

Scientific and technical cooperation with institutions and organizations of the People's Republic of China is actively developing. It has a tendency to expand further in terms of the commercialization of scientific and technical developments and technologies

created by the Academy scientists. Today, one-fifth of all the institutions of the NAS of Ukraine cooperate with more than 75 Chinese partners within bilateral framework agreements of the Academy and direct inter-institutional contacts.

**Staffing.** The total number of employees working in the NAS of Ukraine as of 01/01/2016 was 37,447 people, including 18,346 scientists. Among them, 2530 doctors and 7603 candidates of science. The average age of scientists was 51.3 years, average age of doctors of science - 63.8, candidates of science - 50.0 years.

Personal composition. As of /01/01/2016 the NAS of Ukraine consists of 197 full members (academicians), 379 corresponding members and 104 foreign members.