



The Ruđer Bošković Institute – Sixty Years As the Leading Scientific Institution in the Republic of Croatia

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The Ruđer Bošković Institute is regarded as Croatia's leading scientific institute in the natural and biomedical sciences as well as marine and environmental research, owing to its size, scientific productivity, international reputation in research, and the quality of its scientific personnel and research facilities.

The Institute is the leading and internationally most competitive Croatian institute by virtue of its participation in international research projects, such as the IAEA and EC FP5-7 programs funded by the European Commission, NATO, NSF, SNSF, DAAD and other international scientific foundations.

Today, the Ruđer Bošković Institute has over 550 scientists and researchers in more than 80 laboratories pursuing research in theoretical and experimental physics, physics and materials chemistry, electronics, physical chemistry, organic chemistry and biochemistry, molecular biology and medicine, the sea and the environment, informational and computer sciences, laser and nuclear research and development.

The acquisition of new knowledge to contribute to the development of the Republic Croatia.

To develop innovative research, participate in higher education, transfer knowledge to the economic sector in order to develop new hi-tech products, and raise social awareness regarding the importance and necessity of knowledge and science in modern society.

Over the next 5 to 10 years, to remain the leading Croatian center and become a recognizable regional and European center of excellence in research and postgraduate education in fundamental natural and related scientific fields within the scope of the Institute.

HISTORY OF THE RUĐER BOŠKOVIĆ INSTITUTE

1950. The Economic Council and Government of the Socialist Federal Republic of Yugoslavia adopted a decision regarding the establishment of the Institute for Atomic Physics under the auspices of the former Yugoslav Academy of Arts and Sciences (now the Croatian Academy of Arts and Sciences) in Zagreb. That year, the Academy established the Committee for the Construction of the Institute and construction started, according to plans by the architect Kazimir Ostrogović.

1951. According to a proposal by the academician Ivan Supek, the Institute was named after Josip Ruđer Bošković, a famous 18th century Croatian physicist and astronomer.

1952. The Academy presidency approved the Institute's temporary regulations, which established the Institute Council and the functions

of President, Vice President and Technical Director. Ivan Supek was elected as the Council President and Herman Mattes as the Technical Director. The Institute had four departments: Theoretical Physics, Nuclear Physics I (Electronic Generators), Nuclear Physics II (Monitoring Methods) and Molecular Physics.

1954. Based on a decision passed by the Institute Council, the four departments were replaced by the following groups: Theoretical, Nuclear-Structural, Neutronic, High-Energetic, Electronics, Spectral-Structural, Physical-Chemistry, Radioisotope and Cyclotron. A General Department is mentioned for the first time, which included the Administration and Library.

1955. By a resolution of the Federal Executive Council, the Institute was separated from the Academy, thus becoming an institution with autonomous financing. It was administered by the Executive Board, Scientific Council and Director.

1957. A postgraduate program in the natural sciences was launched, the first postgraduate studies in the former Yugoslavia.

1962. A cyclotron capable of accelerating deuterons up to 16MeV with an intensity of several hundred microamperes was placed into operation. It was built solely by Institute personnel, with support from Croatian industry, and was used in the production of radiopharmaceuticals.

1963. The Scientific Sector was restructured into seven departments: Theoretical Physics, Nuclear and Atomic Research, Solid State, Electronics, Physical Chemistry, Organic Chemistry and Biochemistry, and Biology, thereby reinforcing the multi-disciplinary character of the Institute.

1969. The Institute for Biology of the Sea in Rovinj of the Yugoslav Academy of Arts and Sciences merged with the Ruđer Bošković Institute, thereby establishing a new department within the Scientific Sector – the Center for Marine and Environmental Research. Part of the laboratory of the newly-established center was based in Zagreb.

1973. After the adoption of the new constitutions of the Socialist Federal Republic of Yugoslavia and the Socialist Republic of Croatia, as well as the Associated Labor Act, the Institute was structured into twelve basic organizations of associated labor within the Ruđer Bošković Institute. Research was financed by self-management communities of interest and direct cooperation with the economic sector was stimulated.

1990. The fifth wing of the Institute was built for the Center of Molecular Genetics, which today houses the Institute of Molecular Biology and part of the laboratory for the Institute of Molecular Medicine.

1991. The war of aggression waged against Croatia by the Yugoslav National Army and homeland defense had a profound impact on the Institute and its activities. The Institute's scientists and staff played significant roles in both the defense and international recognition of the Republic of Croatia. Using their very well developed international network, Institute scientists organized the sign-

ing of the Appeal by 104 Nobel Laureates for Peace in Croatia, which was ultimately signed by 126 Nobel Prize winners. The Appeal, spurred by Linus Pauling, was written by Ivo Banac and published in the New York Times on January 14, 1992.

1994. The Institute was reorganized into three departments (Department of Chemistry, Department of Physics, Department of Biology and Medicine), and two Centers (the Center for Marine Research and the Center for Laser and Atomic Research and Development), consisting of divisions. The Institute began to be financed by competitive bidding for programs/projects under the former Croatian Ministry of Science, Technology and Informatics (today's Ministry of Science, Education and Sports)

1997. The departments were abolished and the Institute was organized into twelve divisions. The Nuclear Magnetic Resonance Center and IT Center were established later, completing the current organizational structure.

2005. The Institute's first spin-off companies were founded. BioZyne Ltd. was created for research and development in the field of optimized active substances of molecules with potential anti-tumor effects. The Chirallica Company offers the pharmaceutical, chemical and other industries innovative, effective and optimal solutions for the chemical analysis, synthesis and separation of targeted compounds.

2006. Rudjer Innovations Ltd. was established as an office for the commercialization of knowledge and transfer of technologies, within the framework of the Technological Development Project funded by the World Bank.

2007. Three spin-off companies of the RBI were established. Initium Futuri Ltd. is a company that aims to be the most innovative Croatian company in the development and application of the latest ICT technologies, with an emphasis on the development of program solutions. Ruđer Medikol Cyclotron Ltd. is engaged in the production of radionuclides for tumor diagnostics, ongoing research and the development of new radionuclides and other processes connected with the cyclotron. Ruđer Medikol Diagnostics Ltd. offers genetic testing services for hereditary breast and ovarian cancers.

2009. The Institute adopted new bylaws, providing the basis for the independent international evaluation and re-organization of the RBI into sub-institutes and centers.

2009. A new 18 MeV cyclotron, the Cyclone 18/9 HC manufactured by IBA Molecular of Louvain-la-Neuve, Belgium, was installed in the newly refurbished cyclotron hall. In addition to the production of radiopharmaceuticals for medical diagnostics, It will be used in fundamental scientific research in physics, radiochemistry and biomedicine.

2010. Artes Calculi, a spin-off company based on the Robin Hood method, was founded, thus making the RBI the leading scientific institution in Croatia in the creation of spin-off companies based on the results of scientific research, which represent one of the greatest economic driving forces worldwide.