

THE SCIENTIFIC POTENTIAL OF THE FAR EAST, PRESENT AND FUTURE

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Dear Chairman, ladies and gentlemen, dear colleagues!

It is a great honor for me to speak before you at the opening ceremony of the international Symposium on exotic nuclei. I welcome you in this beautiful hall, belonging to the Far Eastern Federal University



Figure 1. Far Eastern Federal University campus Opening Ceremony, 1 October 2012

and thank you that you have responded to our invitation and were able to arrive to our city in order to discuss the latest achievements in the field on nuclear physics. This is the first major scientific event, which takes place in the new University campus, where only a few weeks ago ended the APEC summit.



Figure 2. Complete overview of the FEFU campus (from the site: <http://www.dvfu.ru>)

Among the issues discussed at the summit were the issues of security and sustainable development of the Asia-Pacific region and the world as a whole. Actual problems of modern nuclear physics, as it seems to me, are of direct relevance to the problems of security and to the problems of sustainable development.

The twentieth century was a period of blooming of physics. A lot of distinguish results were obtained in field of solid-state physics, electrodynamics, physics of low-temperature and plasma physics, radio physics and significant achievements, which have influence on the history of mankind, were obtained in the field of atomic and nuclear physics. As a result, in a short time were worked out a unique technologies and engineering solutions, allowing to simultaneously implement the achievements of science in the form

of weapons, atomic and hydrogen bombs and in the form of energy facilities, revealing the long-term prospects in the field of ensuring the energy needs of the of humanity.



Figure 2. Far Eastern Federal University campus.

Although for a number of tragic accidents occurred in different countries of the world, according to experts opinion, a nuclear energy today is, and probably will for a long time as a guarantee of the sustainable development of science will lead to the discovery of new sources of energy, which is caused by the decay of nuclei, or at their synthesis.

Dear participants of the Symposium, Vladivostok is a major city in the East of Russia. It is not only the centre of political, cultural and economic activity in the Far East of Russia, but today it is a centre of a rapidly growing scientific and educational activity of this region, the territory of which is a quarter of the territory of Russia. Here are located more than a half of research institutes of the Far Eastern Branch of the Russian Academy of Sciences, and a large number of universities. Far Eastern Federal University is the main of them. The Far Eastern Federal University and the Far Eastern Branch of the RAS a long time and closely cooperate. In the last decade the University has become a major source of young investigators for FEB RAS, as well as for the emerging

hi-tech business. Today, FEB RAS and FEFU forming a single research and education complex. Leading scientists of the FEB RAS are the heads of educational programs, lectures and seminars. A students, postgraduates and teachers of the University are involved in research projects FEB RAS, work in the laboratories of our institutions, take part in the marine and terrestrial expeditions. Scientists of the Far Eastern Branch of the RAS and the University together perform grants, publish articles, monographs, make presentations at the Russian and international symposia and conferences.

The history of academic science in the Far East has only 80 years. In 1932 near from Ussuriisk was established the first academic institution. It was a taiga- mountain station. President of the USSR Academy of Sciences academician B.L.Komarov was a first director of this station and spend here a few summer seasons together with his employees. The Station exists and now, fulfilling important biological and taxonomic research.

In the later periods a lot of new institutes were established in Vladivostok, Khabarovsk, Yuzhno-Sakhalinsk, Petropavlovsk-Kamchatskiy and other cities of the Far East. Today in the FEB RAS is 34 research institutes. The total number of the employed about 6,000 people. Of these, only 2370 scientific staff. Among them, more than 430 doctors of Sciences and about 1300 candidates of Sciences. In the FEB RAS consists of 14 academicians and 27 corresponding members of the Russian Academy of Sciences.

A fields of scientific interests of institutes of FEB RAS are rather wide. From mathematics, physics, chemistry, biology to geology, geophysics, astrophysics, biotechnology and ecology. But the main scientific activity still is grouped around a few areas. First of all, it is the study of the World Ocean and the adjacent seas, studies of biodiversity, mineral resources, structure of the earth crust in the zone of transition from the continent to the ocean, natural catastrophic phenomena – earthquakes, volcanic eruptions, tsunami waves. Research in the field of physics, mathematics on the priority directions of the science – nanoelectronics, quantum optics, nano-materials and nano-technologies, supercomputer calculations, modeling of technological processes and natural phenomena. An important place belongs to the research and development of autonomous robotic devices for research and exploration of the world ocean. In the FEB RAS is not carried out the works in the field of

nuclear physics, but we actively use the achievements of science in this field for the establishment of modern analytical technologies determine the composition and structure of matter. For many years we use ampoule sources of structure of matter. For many years we use ampoule sources of matter. For many years we use ampoule sources of neutrons on the basis of isotope Cf-252 for neutron-activation analysis of chemical composition of geological samples and analysis of different artificial materials. We plan together with the University to develop the methods of nuclear medicine. Buy magnetron for the study of the structure and properties of materials.

FEB RAS is a famous destination in Russia and in the world, where work is underway in the field of radioecology. More precisely in the field of processing and disposal of radioactive waste arising in the operation of nuclear facilities. Our materials and technologies are used by Russian Navy, at the Chernobyl NPP, Kursk and Novo-Voronezh NPP. In the nearest time we are planning together with our German colleagues to start implementing a worked out technologies and materials on the Fukushima nuclear power plant. Our employees are members of the working groups of the IAEA.

It is known that science can develop successfully in a closed system. For the successful development of scientific community, the exchange of ideas, methods of research, and materials of experimental and theoretical studies. Scholars of the FEB RAS conduct research in the framework of more than 120 international projects and international agreements. Among our partners are leading universities and research centers of Japan, China, USA, Sweden, France, Great Britain, Germany, Spain, India, Vietnam. In spite of the objective reasons of international cooperation of the Asia-Pacific region. Every year we accept in our laboratories to 600 foreign scientists, about the same number of our scientists go for short-term work in the leading foreign scientific centers, to participate in the work of international congresses, symposiums, seminars. We conduct research on the joint grant with the scientists of the USA, Canada, Japan, China, Vietnam, Germany and France. The number of annual joint publications exceed 150-170. It is approximately a quarter of our foreign publications. The vast majority of marine expeditions on ship of FEB RAS as well as archeological and ethnographical expeditions is done with the participation of our foreign partners.

Dear friends, Far Eastern Branch of RAS, as well as Far Eastern Federal University are open for cooperation.

In conclusion, allow me to wish you successful work, successful presentations and useful discussions.



Figure 3. International media centre of Far Eastern Federal University campus.

I hope that your staying in our city will be not only useful, but also pleasant and you will take a good impression of Vladivostok city and the people living here.

Thank you for your attention.