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## Pages of History of Krasnoyarsk Scientific Centre of Siberian Branch of RAS

**Natalia A. Kupershtokh\***

*Institute of History SB RAS*

*8 Academician Nickolaev st., Novosibirsk, 630090 Russia <sup>1</sup>*

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*The article is devoted to academician L.V. Kirenskiy's (1909-1969) work on organization of the first academic institute in Krasnoyarsk – Institute of Physics, which laid the foundation of development of the system of scientific institutions eventually united in Krasnoyarsk scientific centre (KSC) of SB RAS. Today Krasnoyarsk scientists' achievements have become known to the whole world, and Krasnoyarsk scientific centre is an integral part of scientific and educational potential not only of the region but also of Russia as a whole.*

*Keywords: Full member of the Academy of Science L.V. Kirenskiy, Institute of Physics, Krasnoyarsk scientific centre of SB RAS, regional scientific centers, scientific institutes, scientific schools.*

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### Introduction

For the last years, the problem of formation of regional scientific centers has attracted researchers' attention in the context of identification of general and specific features in their development, attribution of various models of regional centers for the purpose of their effective operation and development, research on cooperation of the centers according to different grounds: capital – region, region – region, etc. At the same time, there is an increase of interest in the founders of academic scientific institutions, who gave some impulse for development of academic science in regions.

One of such founders is a full member of the Academy of Science Leonid Vasilyevich Kirenskiy (1909-1969). The scientific community celebrates the centenary of his birthday this year. Owing to L.V. Kirenskiy's efforts, the first

institute of academic type, that is Institute of Physics, had appeared in Krasnoyarsk in 1956 before adoption of the decree on organization of the first territorial department of the Academy of Science of the USSR in the east part of the country. Academic potential of the region began to increase more actively in Siberian Branch from 1957.

### Results of investigation

L.V. Kirenskiy's biography is a bright example of whole-hearted devotion to science. Having been born in a small town Amga in Yakutia, he came to Krasnoyarsk in 1940 and headed the chair of physics at Krasnoyarsk Teachers' Training Institute after he had graduated Moscow State University and postgraduate course at Moscow State University, and after he had defended his thesis. Kirenskiy founded Magnetic laboratory

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\* Corresponding author E-mail address: nataly.kuper@gmail.com

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which was involved in carrying out of the works on military defence at once in 1943. The laboratory was reinforced both by researchers from a local area and by personnel among the evacuated specialists with scientific degree.

Postgraduate course was set up in the institute after the war, and its students were engaged in their research work supervised by L.V. Kirenskiy. The results of Magnetic laboratory's research work started being published in the main scientific journals and reports of All-Soviet Union and regional conferences from the end of 1940s. L.V. Kirenskiy defended his PhD thesis in 1950 and set himself the task of establishment of Institute of Physics and Technology in Krasnoyarsk.

At that time, scientific investigations were being carried out in other institutes of higher education in Krasnoyarsk: Medical Institute investigated biophysics and Institute of Wood and Technique Studies dealt with spectroscopy (Chistyakov and others, 1981). Their consolidation within the walls of the academic institute might signify development of many scientific branches.

L.V. Kirenskiy raised the question of formation of a branch of the Academy of Science in Krasnoyarsk as far back as 1952. He supposed that Western Siberian (Novosibirsk) and Eastern Siberian (Irkutsk) branches of AS USSR «are concerned with the territorial problems, therefore those don't and can't be of any practical help to the development of productive forces of Krasnoyarsk region» (Chistyakov and others, 1981). The scientist's initiative was supported by the regional authorities, which, owing to their channels, substantiated the necessity of development of the complex of academic institutes.

Professor Kirenskiy directed the substantiation of the necessity of formation of the first scientific research institute to the supreme Party authorities and Presidium of AS USSR. The response was negative, but that fact didn't influence the rates and quality of

the performance of the Magnetic laboratory's collective. By the middle of 1950s, Krasnoyarsk became the third scientific centre of research on physics of magnetic phenomena after Moscow and Sverdlovsk. The collective of specialists in physics and magnetic phenomena was formed owing to Kirenskiy's efforts. This group became later a base for establishment of the first academic institute<sup>1</sup>.

For the first time, Krasnoyarsk physicists headed by L.V. Kirenskiy took part in the international Conference on magnetism in Moscow in 1956. The conference convinced Kirenskiy of topicality of the subjects worked out by his collective much more, and again it gave a cause to appeal to the Presidium of AS USSR with the request for formation of an academic laboratory unless an institute. At the meeting with academician-secretary of the Department of Physical and Mathematical Sciences M.A. Lavrentyev, Kirenskiy emphasized that the matter is of the official registration of the laboratory of magnetics, which had been existing at the chair of physics of Krasnoyarsk Teachers' Training Institute for a long time. After Kirenskiy's report presented for the department's bureau, its members adopted a resolution on formation of an independent institute, but not an academic laboratory (Chistyakov and others, 1981). However, the realization of the new project wasn't taken positively by everybody. The opponents, among them were both Moscow and Siberian scientists, were skeptical about the possibility of establishment of the institute, which would be able to carry out fundamental research in the provinces.

That attitude was overwhelmed owing to the constant support of full member of the Academy of Science M.A. Lavrentyev, and Presidium of the Academy of Science of the USSR passed

<sup>1</sup> KRRO. Backlog 2272. List 1. File 1. S. 23.

a resolution on establishment of Institute of Physics of AS USSR in Krasnoyarsk on the October 12, 1956. One of its first members of staff, a full member of the Academy of Science, I.I. Gitelzon said: «It's important to note that the institute had been opened half a year earlier than the establishment of Siberian Department of the Academy of Science, and it means that the institute didn't appear merely on the tide of advancement of science to the east, but it demanded enormous efforts» (Gitelzon, 1999). At first, three laboratories formed its base: physics of magnetic phenomena (L.V. Kirenskiy), biophysics (I.A. Terskov), and molecular spectroscopy (A.V. Korshunov). The laboratory of crystallophysics (K.S. Alexandrov) was established two years later. Those departments determined the institute's research trend for many years.

The first staff of the institute was formed mainly by the graduates of Krasnoyarsk colleges. L.V. Kirenskiy's former post-graduate students A.M. Rodichev, M.K. Savchenko, D.A. Laptey, I.F. Dyagterev and others came from the Teachers' Training Institute. When it became known of the institute's establishment outside Krasnoyarsk, several graduates came from Tomsk, Rostov-on-Don, Moscow, and Leningrad. For example, one of them was Kirill Sergeevich Alexandrov, a graduate of Leningrad Institute of Electrical Engineering and a future full member of the Academy of Science. Having gone down post-graduate course at the Institute of Crystallography, he has connected his scientific life with Krasnoyarsk from 1958. According to the scientist's recollections, he had some variants for a job after his post-graduate course, but he preferred Institute of Physics rather than something other, because Kirenskiy had promised him an absolute creative freedom (Alexandrov, 1991).

In the middle of 1950s, the scientific community of the country was actively discussing

the project of full members of AS USSR M.A. Lavrentyev, S.L. Sobolev, and S.A. Christianovich on the necessity of science's advancement to the east. At the general meeting of the Academy of Science of the USSR held in 1957, the director of Institution of Physics professor L.V. Kirenskiy was recognized as an outstanding expert in magnetism and one of those on whom the leaders of the future regional department of the Academy of Science of the USSR were going to rely in Eastern Siberia. At the conference held in Moscow on the 4<sup>th</sup> of May, 1957, L.V. Kirenskiy proved the necessity of siting of an academic scientific centre consisting of several institutes and a university in Krasnoyarsk. «Sometimes people say: why should you establish a university in Krasnoyarsk while there is the university nearby in Irkutsk. However, that «nearby» is the same as the distance from Moscow to the Crimea» – he remarked in his speech<sup>1</sup>.

The establishment of Siberian Branch of AS USSR gave hope of active development of scientific potential in Krasnoyarsk region. In 1957, Krasnoyarsk region committee of the Communist Party of the Soviet Union, taking into consideration the perspectives of economic and cultural development of the region, appealed to provide Krasnoyarsk for three scientific-research institutes of Siberian Branch: Nuclear physics, Non-ferrous metals, and Natural compounds. The response of Siberian department's leaders was reduced to the fact that «it will be very difficult to establish three institutes in Krasnoyarsk simultaneously with 13 institutes in Novosibirsk in the next two or three years»<sup>2</sup>.

Nevertheless, inclusion of Institute of Physics in Siberian department had positive results for the dynamics of its development. The Presidium of SB AS approved a new structure of

<sup>1</sup> Siberian Branch of Russian Academy of Science: establishment (1957-1961). Document collection. Ed. E.G. Vodichev. Novosibirsk, 2007. P. 47-48, 155.

<sup>2</sup> RRONH. Backlog 5. List 37. File 14. S. 31, 33.

the institute consisting of nine laboratories and determined its scientific fields in 1957: physics of solid body, biophysics, spectroscopy; it also provided development of scientific investigations with supplementary means, enlarged staff of researchers and amount of means for industrial buildings and apartment buildings for research workers<sup>1</sup>.

The academic potential of the city was increased by formation of new scientific-research institutes. Besides Institute of Physics, there appeared Institute of Wood transferred from Moscow, and there were established laboratories of Novosibirsk of Institutes of Geology, Geophysics, and Economics and organization of industrial production. The regional authorities gave a supplementary ground for industrial buildings and apartment buildings in the Aphontovo Mountain area in 1960. In 1961, the whole number of research workers of the city's academic institutions was 800 people, among them 15 doctors and over 50 candidates of science<sup>2</sup>. Institute of Physics had a function of basic institution under Kirenskiy, which made the administrative and economic services of Krasnoyarsk academic complex functionate.

In the course of building in the Aphontovo Mountain area, more than once, Kirenskiy had to defend his positions and the reasons of the building's disposition outside the city. The scientist proved his point of view proceeding from the region's powerful industrial potential and perspectives of development of science in Krasnoyarsk. He believed that Institute of Physics is only the first sign of the long-term programme on formation of the academic complex in the region, for that reason the disposition of the future scientific-research institute was in need of territorial space.

The commission of State Planning Committee and State Building Committee of the USSR working in the end of 1950s pointed at erroneous character of the building's disposition in the suburban rest zone (Academic town is situated in that place now – *N.K.*). The municipal authorities thought that the institute's buildings situated within the city's precincts would bring to economy of the planned value, and there wouldn't be any necessity of building the communications. In 1960, P.G. Safronov, the chairman of Krasnoyarsk Executive Committee of the City Soviet, made a complaint to Presidium of Siberian Branch accusing Kirenskiy of «worthless waste» and appealed to take measures restricting his wastefulness<sup>3</sup>.

After some other agreements and arrangements in all the instances, with support of director of the second academic Institute of Wood and Timber A.B. Zhukov, L.V. Kirenskiy managed to prove that the ground selected for the building was the most appropriate place for disposition of the future academic town. More than once Kirenskiy reproached the leaders of SB AS USSR for insufficient support of his initiative and said that «Siberian department is not very active at development of the scientific complex in Krasnoyarsk»<sup>4</sup>.

Two laboratory buildings, a biological station and two apartment buildings for research workers had been built for the institute by the end of 1962. The personnel consisted of over 320 employees including 5 doctors and 13 candidates of science. Training of specialists at post-graduate course began. Investigations of the seven laboratories were carried out on 35 subjects. The institute grew into an important scientific establishment and developed its scientific research in physics of magnetic phenomena, biophysics, molecular and emissive spectroscopy, and crystallophysics. The

<sup>1</sup> RRONH. Backlog 5. List 37. File 14. S. 33-34.

<sup>2</sup> RRONH. Backlog 5. List 37. File 87. S. 38.

<sup>3</sup> KADMHKRC. Backlog 26. List 13. File 12. S. 39-41.

<sup>4</sup> KADMHKRC. Backlog 5986. List 1. File 39. S. 40.

investigations on cosmic biology were of special importance<sup>1</sup>.

In spite of scientific achievements, the institute was put under observation by the Party organs. The Party inspectors, who had checked the collective body's work, warned that some young research workers of the institute «are arrogant and think themselves to be great theorists being politically indifferent at judgements and solution of problems». The activities of the city scientists' Club initiated by K.S. Aleksandrov and opened in 1962 was put under suspicion<sup>2</sup>.

The institute's functioning was checked up by the commission of the Academy of Science headed by corresponding member of AS USSR S.V. Vonsovskiy, which came to conclusion that the institute was a large and efficient scientific organization of research in physics of solid body and biophysics. At the same time, the commission pointed to «insignificance of subject» and lack of the common subject matter in the institute<sup>3</sup>. Eventually, «insignificance of subject» has turned out to be an advantage for the development of academic science in Krasnoyarsk. The Institute of Physics became «an incubator» of the future scientific-research institute in biophysics, mathematical and chemical specializations.

Having taken part in the activities of XXIII congress of the Communist Party of the Soviet Union in 1964, Kirenskiy, being inspired, returned to Krasnoyarsk, and at his public speech he emphasized that the great tasks taken upon the region had brought to the problem of establishment of a scientific centre put on the agenda, and it «wouldn't duplicate, but reasonably supplement the program of investigations of Novosibirsk scientific centre» (Chistyakov and others, 1981). He thought it would be possible to organize six new scientific-research institutes, design bureau

of special biological instrument-making industry, and a university in the nearest years. But those plans were corrected hard in reality.

One of Kirenskiy's schemes was an effort to organize an independent institute on the base of A.V. Korshunov's department of optics and spectroscopy at Institute of Physics. AS USSR committee on spectroscopy passed an affirmative resolution on that question on May, 1967. But chairman of SB AS USSR academician M.A. Lavrentyev explained to the secretary of regional committee of CPSU A.A. Kokarev in his answer that «the poor quality of the building of Institute of Physics and incredibly prolonged building of the road to Academic town hardly promotes the organization of another institute in Krasnoyarsk»<sup>4</sup>.

The new scientific fields of Institute of Physics were in great need of specialists. The solution of the staff problem took several courses. Owing to the active assistance of professor P.G. Kontorovich, a group of mathematicians came from Sverdlovsk in 1964. The young candidates of science V.M. Busarkin, Y.M. Gorchakov, L.A. Ayzenberg, A.P. Yuzhakov became a main staff of the mathematical laboratories at Institute of Physics and simultaneously took active part in functioning of the branch of Novosibirsk State University in Krasnoyarsk established in 1963 (Chistyakov and others, 1981).

Kirenskiy believed that «first of all, a good institute is to have an influx of young forces, and such an influx can be given only by a university»<sup>5</sup>. The first Krasnoyarsk University as well as the first academic institute appeared in the city owing to Kirenskiy's consistent policy. The branch of NSU started training specialists in physics of solid body, biophysics, computer science, and computational mathematics. Later on, after reorganization of the branch of NSU into

<sup>1</sup> RRONH. Backlog 5. List 37. File 87. S. 38.

<sup>2</sup> KADMHKRC. Backlog 26. List 35. File 139. S. 81-82.

<sup>3</sup> KADMHKRC. Backlog 5986. List 1. File 39. S. 8, 19-20.

<sup>4</sup> KADMHKRC. Backlog. 26. List 38. File 55. S. 132-133.

<sup>5</sup> RRONH. Backlog 5. List 37. File 87. S. 38.

Krasnoyarsk State University (1969), new chairs and faculties were established regulating training specialists in theoretical physics, chemistry, and biology.

By the end of 1960s, Institute of Physics was multi-field scientific-research institute, where investigations on magnetism, physics of solid body, and biophysics were being carried out almost in twenty laboratories. The recognition of L.V. Kirenskiy's scientific and organizational merits was his election as a corresponding member (1964) and then as a full member of the Academy of Science of the USSR (1968).

According to a full member of AS I.I. Gitelzon's recollections, there was to be a meeting of the chairman of SB AS a full member of the Academy of Science Lavrentyev, the secretary of Krasnoyarsk regional committee of CPSU V.I. Dolgih and director of Institute of Physics academician Kirenskiy they could discuss the problem of organization of Krasnoyarsk scientific centre. The sudden decease of Kirenskiy delayed the solution for many years (Gitelzon, 1999).

After Kirenskiy's decease, the institute was headed by one of his closest associates Ivan Alexandrovich Terskov<sup>1</sup>. Being a graduate of Krasnoyarsk Teachers' Training Institute, a front-line soldier, he was one of those who had formed scientific subjects of the first academic institute. I.A. Terskov was elected as a corresponding member of the Academy of Science of the USSR in 1968. Institute of Physics was one of the successful scientific-research institutes, where, besides theoretical investigations, the works on economic contracts were carried out, which considerably filled up the institute's budget. The annual volume of such works exceeded 1 million roubles in the midst of 1970s. More than 600 employees worked in the institute in 1975,

among them 212 research workers, including 2 full members of the Academy of Science of the USSR, 14 doctors and 96 candidates of science<sup>2</sup>.

The corresponding member and then full member of the Academy of Science of the USSR K.S. Alexandrov, a famous expert in crystallophysics and a founder of a new field, acoustic crystallophysics, was a director of the institute since 1981<sup>3</sup>. He initiated the organization of Special Experimental Design Bureau «Science» for the closer connection of science and production in 1986. K.S. Alexandrov was awarded the State Prize for the works on research of new materials and production of new devices on their basis in 1989.

Under the direct guidance of the scientist, there was worked out a new approach to description of large families of crystals, including materials of high laser technique and optoelectronics and high-temperature superconductors. Those investigations are being actively developed within the academic and international cooperative system at Institute of Physics with its scientific centres in Moscow, Novosibirsk, Spain, France, and many other countries.

The heaviest years of development of Russian science fell upon the time of K.S. Alexandrov's directorship. One of the most powerful Krasnoyarsk institutes didn't avoid the loss of potential of personnel in 1990s. The whole number of personnel was reduced approximately twice and there remained only one third of research workers. Concerning the situation in the institute, Alexandrov emphasizes that «the middle group is not very well in the present conditions. In general, the matter is of candidates of science. If their laboratories don't find several study grant programmes in a year, the scientists draw only regular salary absolutely insufficient

<sup>1</sup> Terskov Ivan Alexandrovich // Russian Academy of Science. Siberian Branch. Personnel staff. Ed. V.M. Fomin. Novosibirsk: Science, 2007. P. 14-15.

<sup>2</sup> RRONH. Backlog 5. List 69. File 524. S. 31.

<sup>3</sup> Alexandrov Kirill Sergeevich // Russian Academy of Science. Siberian Branch. Personnel staff. Ed. V.M. Fomin. Novosibirsk: Science, 2007. P. 14-15.

for the living with a family. So there is a necessity of looking for some new ways of their support: by means of lectureship, contracts ...» (Alexandrov, 2001).

The basic trend of the institute's fundamental research under Alexandrov was formed as physics of magnetic phenomena and materials, physics of condensed media, and materials of electronic technology. Krasnoyarsk physicists' research works on structure and phase changes of crystals, study of physical characteristics of new materials and establishment of their connection with microscopic characteristics of matter, and theoretical physics became widely recognized. The carrying out of fundamental research had experimental base as the unique complex of installations for research of physical characteristics of solid bodies in super-powerful (up to 15 Tesla) stationary and impulsive magnetic fields. The institute was the only scientific centre in Eastern Siberia where the investigations on materials were carried out at helium temperatures.

Among applied research works of the second half of 1990s, the results of research on processes of spreading of UHF fields in irregular microstrip resonators of irregular shape turned out to be demanded. They became the base of working-out and setup of the optimal constructions of multilevel devices of UHF electronics, an expert system of projecting of UHF filters with the given characteristics, a set of electromagnetic transducers for UHF diapason and measuring devices based on them. There were also found new principles of magnetic separation of rocks, which allow the components to be effectively separated from the similar magnetic characteristics (Vtyurin, 1998).

Having checked the work at Institute of Physics in 2000, the members of Presidium SB RAS noted high scientific level of its fundamental research and applied projects. That high level had been considerably supported by the international

scientific contacts laid by the first director Kirenskiy and developed under his successors. The traditional partners of Institute of Physics under Alexandrov were national laboratories in the USA, scientific centres in Switzerland, France, Germany, Spain, Poland, Slovenia, Korea, and other countries.

The research workers of the institute carried out research works on several projects of federal programs in 2000. Institute of Physics became a leading organization of one of the greatest projects of «Integration» federal program and, together with technical institutes, it took part in establishment of Krasnoyarsk scientific centre of high technologies oriented to training specialists of higher qualification at high materials studies.

The institute was headed by full member of RAS Vasilyi Philippovich Shabanov in 2003<sup>1</sup>. Having graduated Omsk Teachers' Training Institute, he started his work as a trainee at A.V. Korshunov's laboratory of molecular spectroscopy at Institute of Physics and he became an outstanding specialist in physics of condensed molecular media and a founder of the scientific school on spectroscopy of anisotropic media.

A new field of science exploring characteristics of photonic crystals was formed in the institute for the period of 2000-2005 – that is characteristics of structured media with dielectric nature periodically changed in one, two or three dimensions with their characteristic spatial scale of order of optical wavelength. The important results on crystallophysics and physics of photonic crystals were obtained. For the first time, there were synthesized and explored porous ceramics on the base of high-temperature superconductors with foam microstructure. As it turned out, those perspective materials can find their wide use in practice. There has been worked out a high-

<sup>1</sup> Shabanov Vasilyi Philippovich. // The Russian academic of science. Siberian Branch. Personnel staff. Ed. V.M. Fomin. Novosibirsk: Science, 2007. P. 276-277.

efficient method of producing of fullerenes and their derivatives under laboratory conditions.

Fundamental investigations are carried out on powerful experimental base. Many unique experimental installations of a level of the world standards have been set up in the institute. The complex of equipment set used at oscillatory spectroscopy of condensed bodies is applied within the multi-access centre in the institute. Institute of Physics has a cryogenic station supplying KSC SB RAS institutes with liquid helium and nitrogen. The experimental installations have been equipped with modern facilities for the last few years owing to the means provided by Presidium SB RAS. The institute is the only scientific centre in Eastern Siberia where the researches in material science are carried out at helium temperatures. The research works on creating a new stationary magnet up to 30 tesla are being carried out together with Kurchatov's scientific centre.

The research workers activated the work on receiving patents for inventions and making contracts for carrying out of research investigations with different organizations in 2000s. The commission of Presidium SB RAS observed the volume of contracts increased by four times as a positive fact in the activity of Institute of Physics, and that made the share of the brought means be increased almost by half in the institute's budget in 2005.

Institute of Physics has become a frequent initiator of scientific events for the last few years. More than 140 representatives of the leading academic institutes, large institutes of higher education, scientific centres, and Russian, Byelorussian, Kazakhstan and German industrial enterprises took part in the third Russian conference on growth of crystals and silicic films and research on their physical characteristics and structural perfection («Silicon-2006») held in Krasnoyarsk in 2006.

The chairman of steering committee a full member of RAS A.L. Aseev noted that Krasnoyarsk had not been selected for the place of holding of such an important forum by chance: there were not only development of works on production of high-technological equipment for obtaining and processing of silicon at the region's industrial enterprises, but, what is more important, the elaboration of competitive automated systems of measuring of the main parameters of plates of monocrystalline silicon had been carried out by forces of the scientists of Krasnoyarsk scientific centre SB RAS.

The traditional trend of the institute's research works on measuring of parameters of rocks has found its new development: there has been started the exploration of granite massifs in the areas of the supposed disposal of nuclear wastes in the territory of Krasnoyarsk region together with Scientific-research Physical and Technical Institute of Krasnoyarsk State University. There were found out new ecologically pure methods of minerals processing implemented at mining and metallurgical enterprises in Siberia (Churilov, 2006).

16 laboratories and auxiliary scientific subunits were active at Institute of Physics named after L.V. Kirenskiy in 2007. The number of staff was more than 300 employees including 132 research workers, among them two full members of RAS, 29 doctors and 87 candidates of science<sup>1</sup>. There has been traced a positive dynamics of the personnel's age characteristics: more than one third of the collective is the part of specialists under 40 years old, and that is the result of successful work of post-graduate course on training young personnel for the institute's laboratories.

Scientific-research institute co-operates with almost all the institutes of higher education

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<sup>1</sup> Counted according to the data of Staff Office of Presidium of SB RAS.



in Krasnoyarsk on training of specialists. The experience on long-term integration of science and institutes of higher education is of a special importance in connection with the establishment of Siberian Federal University.

Institute of Physics celebrated its fiftieth anniversary in October, 2006. The works of Krasnoyarsk physics at research on structure and phase changes in crystals, studies on physical characteristics of new materials and determination of their connection with microscopic characteristics of materials, and other fields of scientific knowledge have become recognized worldwide for the last decades.

The significance of L.V. Kirenskiy as an organizer and first director was especially accentuated at celebration days of the fiftieth anniversary of Institute of Physics. The institute became the very «cornerstone» that was laid in the base of contemporary Academic town.

At first, the organizing status of scientific centre as a branch of SB AS USSR was got by the group of Krasnoyarsk institutes in 1978, and then as Krasnoyarsk scientific centre of SB AS USSR in 1988. Academician L.V. Kirenskiy's dream has come true. KSC SB RAS consists of five scientific-research institutes at present: Institute of Physics named after L.V. Kirenskiy, Institute of Biophysics, Institute of Computing Modelling, Institute of Wood named after V.N. Sukachyov, Institute of Chemistry and Chemical Technologies; Special Experimental Design Bureau «Science»; three international centers; several departments and sectors at Presidium of KSC; regional geo-information centre; regional multi-access centre SB RAS; Central scientific library. KSC takes the fourth place at number of scientific personnel SB RAS (about 2000 employees including 600 research workers) and represents the formed scientific centre of Siberia with its unique scientific research branches.

The formation of scientific body in Krasnoyarsk city had many specific features (Kupershtokh, 2006). On the one hand, there appeared a number of institutes only owing to Krasnoyarsk people's initiative with the support of the local forces and some separate experts who came from other cities (physics and biophysics). On the other hand, a number of institutes were formed owing to the initiative of not only Krasnoyarsk scientists but also those ones from Novosibirsk (Computing modelling, Chemistry and chemical technologies). In this case, at the first stage, the personnel main body was formed by scientific «landings» from Novosibirsk institutes and also by the specialists invited from other cities, which gradually acquired the specialists trained at Krasnoyarsk institutes of higher education. In conclusion, Institute of Wood transferred from Moscow also had its special historical way.

Today directors of Krasnoyarsk institutes are graduates of the institutes of higher education in Omsk, Novosibirsk, Krasnoyarsk, and Petropavlovsk. The scientific schools of the level of world standards, formed by L.V. Kirenskiy, K.S. Alexandrov, V.Ph. Shabanov, I.A. Terskov, I.I. Gitelzon, A.G. Degermendzhy, A.B. Zhukov, A.S. Isaev, E.A. Vaganov, V.G. Dulov, Y.I. Shokin, V.V. Shaidurov, A.I. Holkin, G.L. Pashkov, and other scientists, have appeared and have been developed in Krasnoyarsk.

### **Resume**

Today Krasnoyarsk scientific centre of SB RAS including Institute of Physics, with their sources of formation initiated by L.V. Kirenskiy, are being dynamically developed owing to the main principles laid in their base: development of fundamental investigations of the world standards level, appliance of investigations in industry and reinforcement of the regional innovative potential, integration of

science and education with the aim of training personnel for the perspective fields of science, education, knowledge-intensive industry, and business.

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